

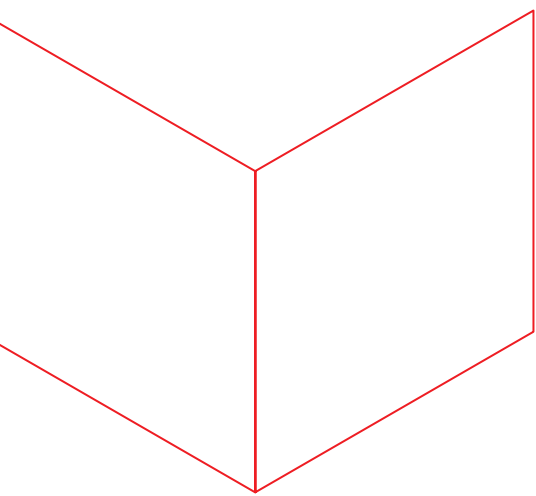


# Protective Facilities

for person, machine and plant safety



*First in safety*



## Protective Facilities

for person, machine and plant safety







## First in safety

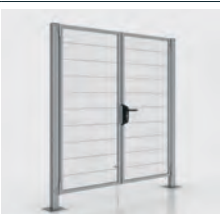
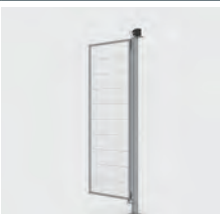
Safety is more than just business to us. Safety is our driver and our promise to you. For more than thirty years, we have characterised protection of man and machine. With our high-quality safety fence systems, we keep setting new standards as one of the leading and largest manufacturers in Europe. We develop and produce machine and plant solutions flexibly, comprehensively and absolutely customised as needed, bringing longevity, function and safety in line. We use our developed know-how as well as many certification and testing procedures for this. We do this knowing that we develop and promote safety – for us, our customers and partners. To keep you on the safe side at all times, we at Brühl offer all services around machine and plant protection from a single source – with the predicate „Made in Germany“.



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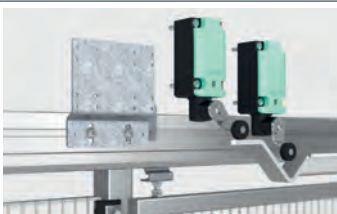
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## Safety at all levels – for man and machine

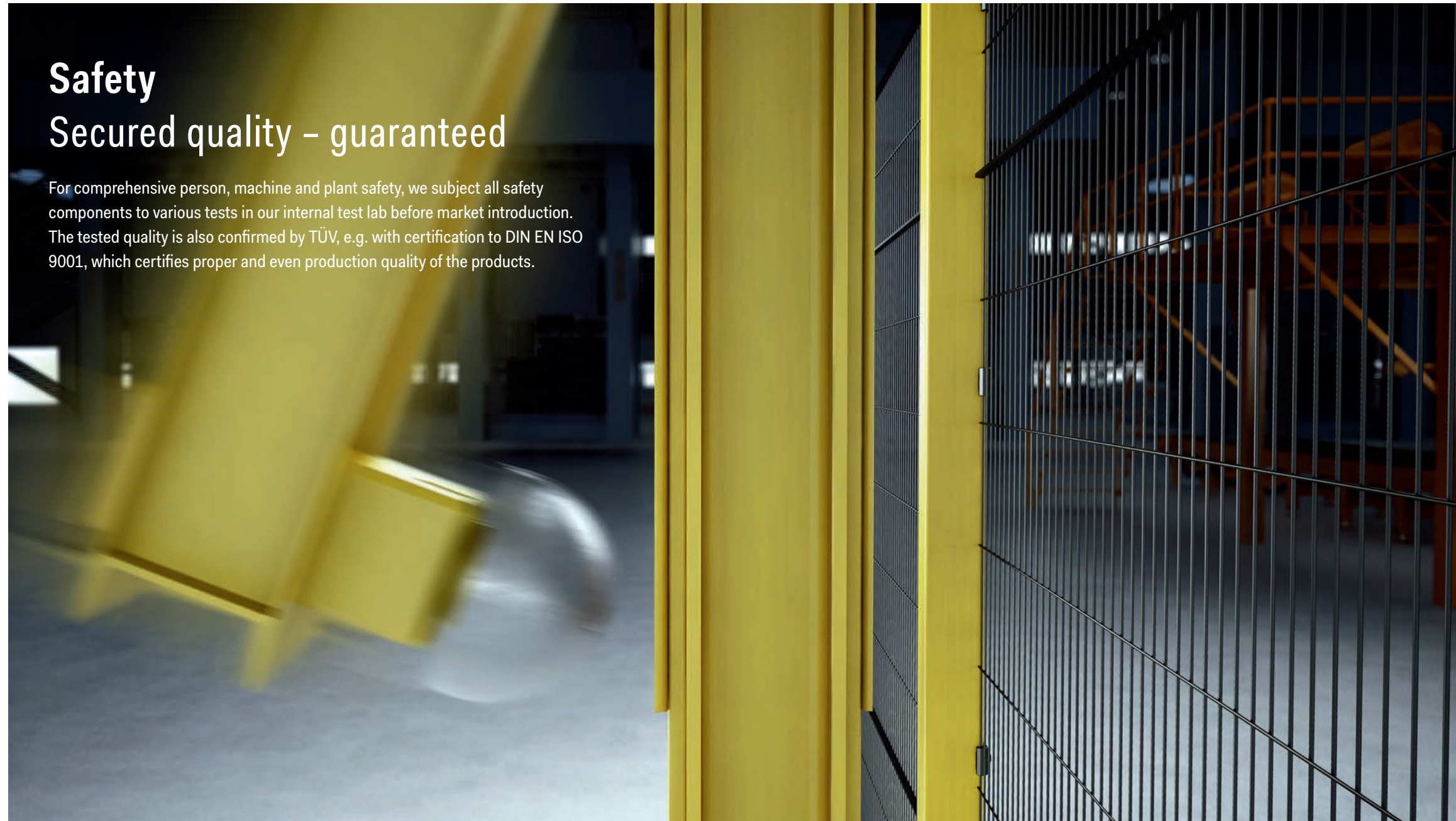
Leading in quality and safety. This is what characterises Brühl as one of the largest manufacturers of protective facilities for machine and plant construction in the world. For more than thirty years, we have connected the claim to value retention with the requirement to comprehensive safety - also regarding environmental standards. For this, we use individual consulting and support as well as completely certified quality at fair conditions - from beginning to end. Use of high-quality materials and continuous controls ensures maximum longevity, robustness and stability. To keep it this way, we rely on production at the local site in Netphen and with the predicate "Made in Germany" to set a clear sign for our region. For more information, see our guideline on machine safety, which we can mail to you or that you can download from our website.



# Safety

## Secured quality – guaranteed

For comprehensive person, machine and plant safety, we subject all safety components to various tests in our internal test lab before market introduction. The tested quality is also confirmed by TÜV, e.g. with certification to DIN EN ISO 9001, which certifies proper and even production quality of the products.



## Safety - crash test for safety fences

Safety must be tested! To ensure this continually, we at Brühl also take a pioneering role. In 2009 already, we performed comprehensive test series on safety fence safety in a diploma thesis in the scope of a university cooperation, using a pendulum impact facility. We have since developed these findings continually.

The ISO-standard 14120 "Safety of machinery – separating guards" names measuring procedures like the pendulum impact procedure for reliable assessment of stability of a protective facility. In the pendulum impact procedure, a test body at a defined size and mass controlledly hits different locations in a protective facility. High-speed cameras reliably document the individual test series and subsequently assess them.

Brühl's pendulum impact procedure thus permits reproducible measurements and assessments on the dynamic resilience of protective facilities. Additionally, the procedure grants defined safety targets for safety fences pursuant to ISO 14120 (cf. annex D.5 pendulum impact procedure). It is a fact that secures your Brühl safety fence doubly and promises tested quality to you.



### Made in Germany

The separating protective facilities of Brühl Safety GmbH are produced only at the site of Netphen in the Siegerland. We connect the site of Germany to qualified staff, sustainable employment and valuable high-quality products for machine and plant construction as a result.



### Production monitored, type-tested.

The test sign „type-tested“ from TÜV Süd confirms a product's safety. Manufacture is monitored by TÜV at regular intervals right at the production site.



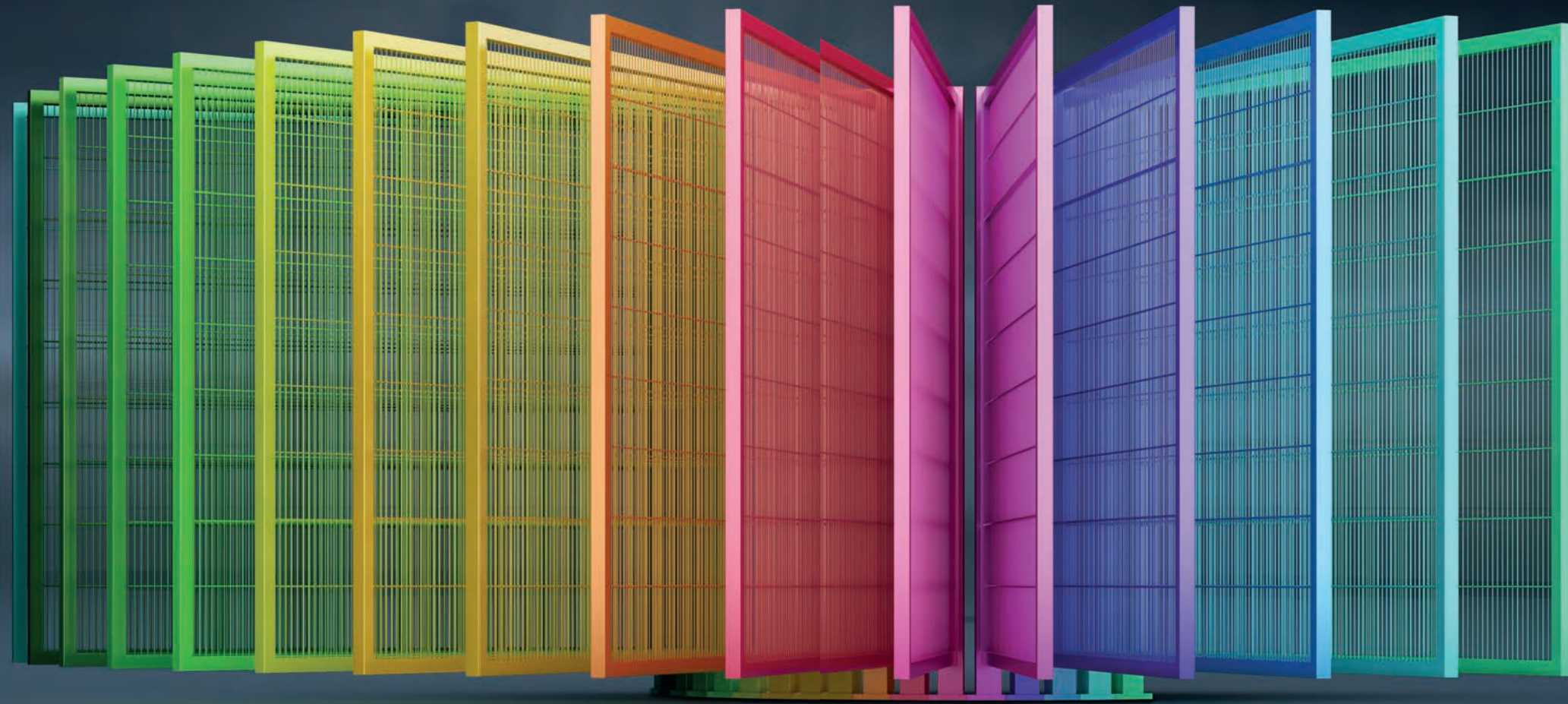
### ISO 9001

As an innovative and competitive company, Brühl Safety GmbH meets all requirements to a quality management system according to DIN EN ISO 9001. Our products offer best safety and quality, while also being flexibly adjustable to customer needs. In order to keep meeting the quality management standard, we continually work to improve our products and service offers.



# Safely customised – diverse design and development options

Not all fences are made alike for us. Like your company has an individual note, Brühl can also make your safety fence system a unique product. We set limits with our Brühl safety fences, Brühl lifting and rolling gates and the matching switch solutions, exclusively at the scope specified by you.



## Brühl shows its colours Choose from more than 200 different RAL-shades/NCS-colours

No matter if you want to have it unobtrusively integrated or deliberately offset from the rest – we at Brühl have no limits to the colours we offer. Our fence surfaces can be painted and processed in your desired colour specifically. Single- or bicoloured, special or standard colours – it's your decision! For best durability, all elements of the desired safety fence system are sand-blasted and then powder-coated or zinc-plated.

## Customised safety fence systems – the Brühl special solution

Reliable like a serial product and yet unique like a custom product. We at Brühl make everything in one go with our special solutions. Our highly qualified employees enable us to develop plant and fence systems to precisely meet our customers' needs. This way, the latest CAD-processing and personal support create the perfect framework conditions for your customised solution. For this, we develop a customised safety fence system together with you, based on relevant corner data, to ensure that it matches you properly.



# Simply safe support Brühl's all-round carefree service

Offering the optimal solution for any application is of the utmost relevance at Brühl. With a variety of services, we therefore deliberately rely on comprehensive supplementation of our high-quality protective facilities for machine and plant construction. Our experienced specialists support and accompany you in all matters of development, inspection and maintenance of safety fence solutions - right on site and remotely alike - with the all-round carefree service.



1

## Safety check

The annual Brühl safety check according to standards DIN EN ISO 12100, DIN EN ISO 13857, DIN EN 953 and DIN EN 1088 minimise the risk of targeted manipulations and the resulting liability for system operators to a minimum.

3

## Gate inspection according to ASR A1.7

The regular inspection of force-actuated machine safety gates is mandatory according to BGR 232. Depending on the number of strokes and the usage area, Brühl will review both own facilities and makes of other manufacturers through internal specialists, including the necessary test documentation.

4

## Maintenance and care

Careful maintenance and care verifiably increase the service life and function of protective facilities. On request, Brühl takes over regular maintenance and care of force-actuated doors and gates.

5

## Assembly service world-wide

From instructions to installation, to overall assembly. The globally available Brühl assembly service is used for professional installation of separating protective facilities by qualified specialists on site.

6

## Consulting and project support

Individual consulting and planning safety from a single source. No matter if by detailed analysis before commencement of the actual safety fence development or by competent support from a dedicated project manager: Brühl creates perfect framework conditions for any project - from beginning to end.

7

## CAD processing

Implementing adjustment and change wishes directly in the project layout. With the Brühl contract and project processing and the associated CAD-workplaces, we ensure comprehensive machine and safety construction development.

2

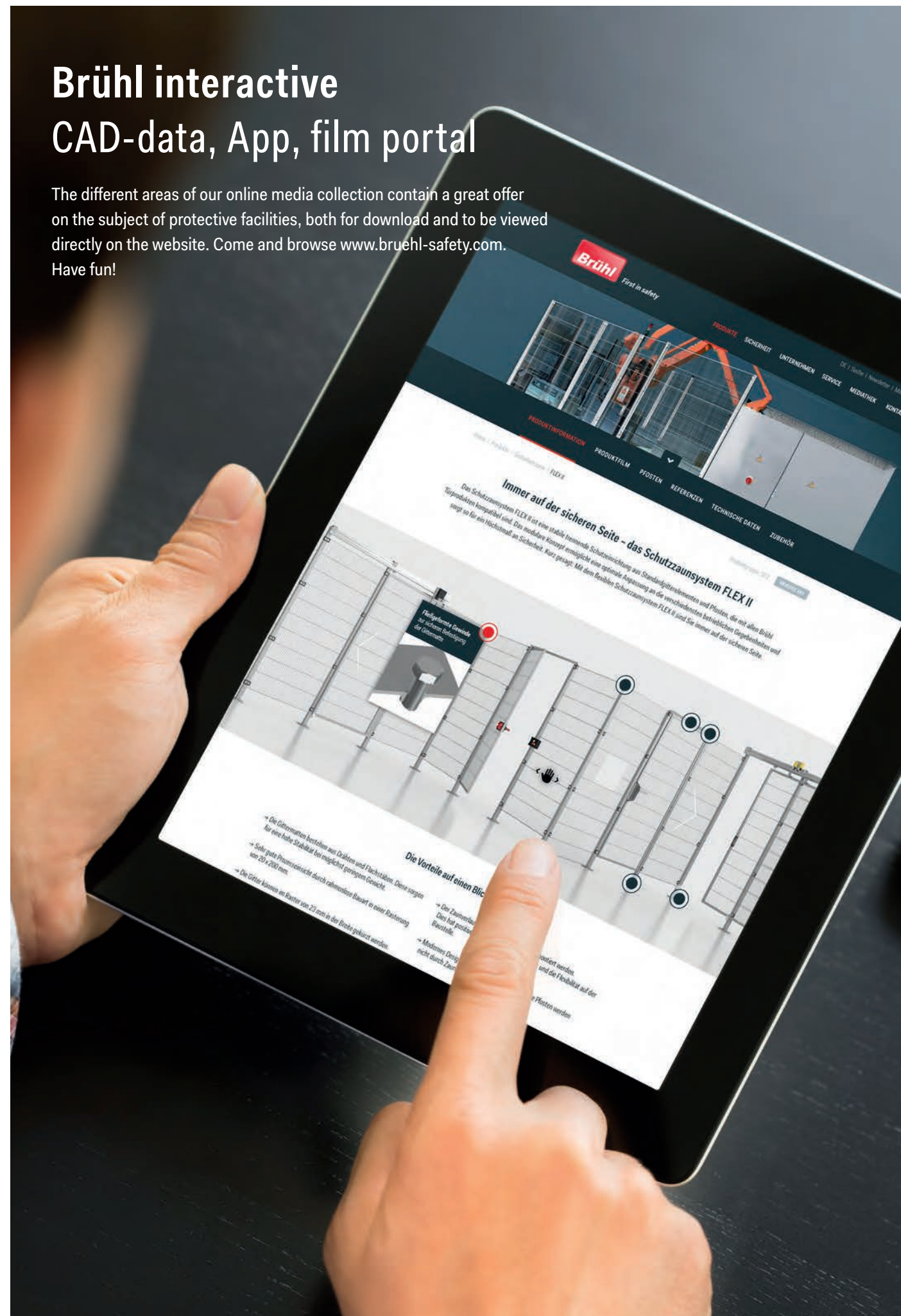
## Support at risk assessment

The risk assessment demanded by the legislator is an unavoidable step on the way to CE-marking for every machine and plant constructor. Based on our customers' and stakeholders' risk assessments, we support this by the correct design of a protective facility, in particular if there are any questions on special applications.



# Brühl interactive CAD-data, App, film portal

The different areas of our online media collection contain a great offer on the subject of protective facilities, both for download and to be viewed directly on the website. Come and browse [www.bruehl-safety.com](http://www.bruehl-safety.com). Have fun!



## Brühl Safety Fence Designer



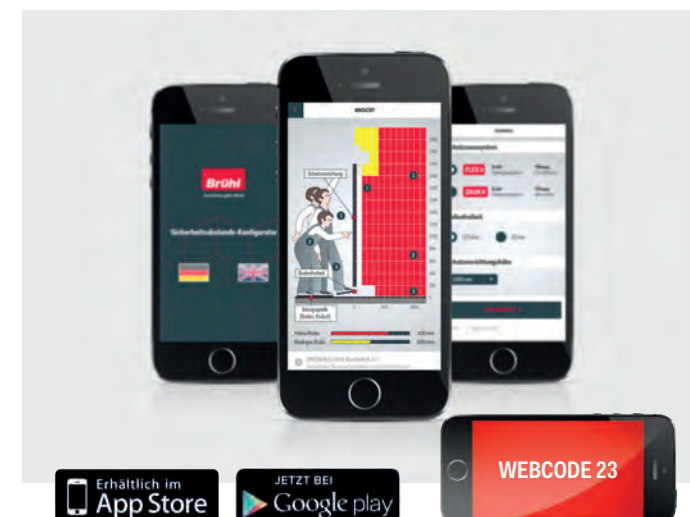
The interactive Brühl fence planning tool permits individual planning of safety fence systems without a dedicated CAD-system or program knowledge. The Brühl Safety Fence Designer developed by CADENAS permits simple generation of 3D-fence models. Use the intuitive user guidance to design whole or partial safety fence facilities with just a few clicks. You can easily integrate planned Brühl safety fences into existing system layouts this way.

## Brühl - 3D parts catalogue



Brühl safety fence systems can be precisely planned and created without any problems using the pre-produced 3D-Step-files from the 3D-parts catalogue. After registration, you will have access to the portal and thereby to all existing 3D-parts by Brühl. This way, you will be able – from the beginning – to work with your in-house CAD-system.

## Brühl safety clearance configurator app



The Brühl safety clearance configurator is meant for persons who deal with safety clearances ensured by separating guards in development of machines and plants in the scope of the risk and danger assessment, or project managers who have to review safety clearances on site during safety fence installation at the construction site. Users can choose between the Desktop version, the mobile web version or the app version.

## Visible safety – the Brühl film portal



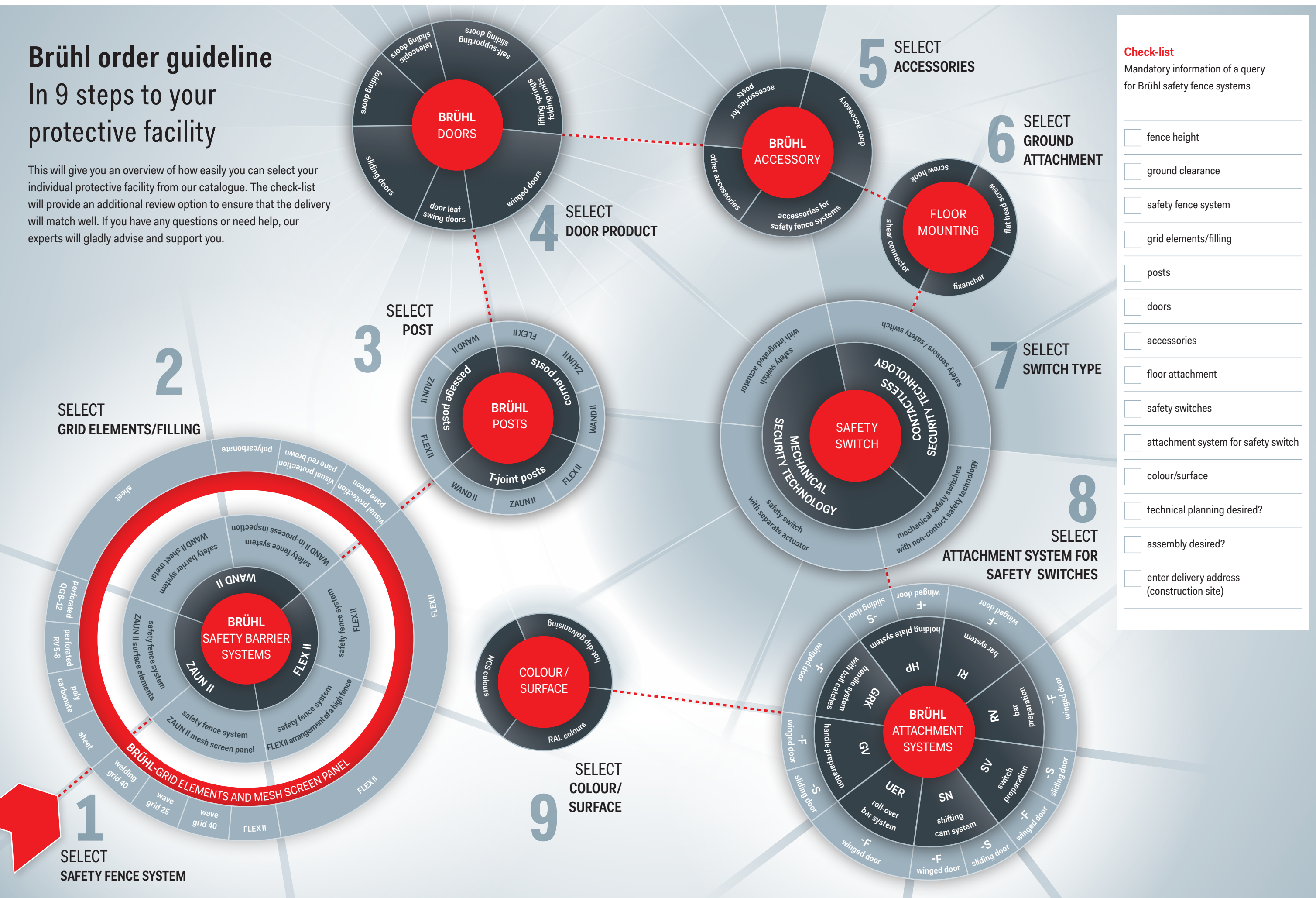
Application, safety and development – we inform! The most important information on Brühl's protective facilities for machine and plant construction can be found on our Brühl film portal and on the Brühl Safety Youtube-Channel. The most important information on our company and our products is provided easily distilled and sorted by various categories. In addition to the new Brühl image film, you can choose from product and 3D-product films.



# Brühl order guideline

## In 9 steps to your protective facility

This will give you an overview of how easily you can select your individual protective facility from our catalogue. The check-list will provide an additional review option to ensure that the delivery will match well. If you have any questions or need help, our experts will gladly advise and support you.



**Check-list**  
Mandatory information of a query for Brühl safety fence systems

|                          |                                            |
|--------------------------|--------------------------------------------|
| <input type="checkbox"/> | fence height                               |
| <input type="checkbox"/> | ground clearance                           |
| <input type="checkbox"/> | safety fence system                        |
| <input type="checkbox"/> | grid elements/filling                      |
| <input type="checkbox"/> | posts                                      |
| <input type="checkbox"/> | doors                                      |
| <input type="checkbox"/> | accessories                                |
| <input type="checkbox"/> | floor attachment                           |
| <input type="checkbox"/> | safety switches                            |
| <input type="checkbox"/> | attachment system for safety switch        |
| <input type="checkbox"/> | colour/surface                             |
| <input type="checkbox"/> | technical planning desired?                |
| <input type="checkbox"/> | assembly desired?                          |
| <input type="checkbox"/> | enter delivery address (construction site) |





## Brühl Safety Fence Systems

After more than 30 years of experience and development in close cooperation with our customers, it has become clear: The applications for safety fences in practice are so diverse that there is no one consistent standard safety fence solution. Therefore, we offer our customers the safety fence systems FLEX II, ZAUN II and WAND II in individual designs. On the following pages, we will show you the “standard designs” of the Brühl safety fence systems adjusted to the respective machine and system situation from project to project. Using the matching safety fence system for security enables our customers to rely on getting the optimal solution for the respective application under consideration of the different operational situations.



# Safety fence systems

## The matching safety fence system for any application

Which safety fence system is the right one for your application?  
The assembly-friendly FLEX II-system, the stable system ZAUN II or the full protection system WAND II? You can choose from three basic systems that will be adjusted precisely to your individual requirements.



**FLEX II** Brühl Safety fence system



**FLEX II** Brühl HIGH FENCE PLANNING Safety fence system



**WAND II** Brühl PROCESS INSIGHT Safety fence system



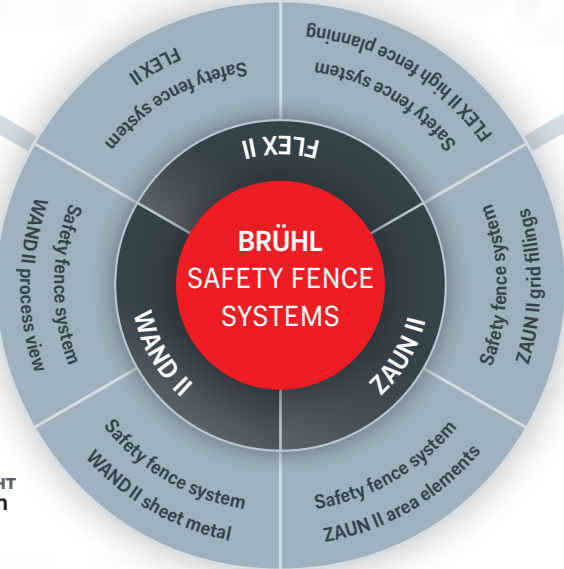
**WAND II** Brühl SHEET METAL Safety fence system



**ZAUN II** Brühl GRID FILLINGS Safety fence system



**ZAUN II** Brühl AREA ELEMENTS Safety fence system



### Surface diversity

|                      |                                            | Safety fence systems |                                |                          |                          |                        |                         |
|----------------------|--------------------------------------------|----------------------|--------------------------------|--------------------------|--------------------------|------------------------|-------------------------|
|                      |                                            | FLEX II              | FLEX II<br>High fence planning | ZAUN II<br>Grid fillings | ZAUN II<br>Area elements | WAND II<br>Sheet metal | WAND II<br>Process view |
| Dimensions           | max. height                                | 2600 mm              | 4835 mm                        | 2600 mm                  | 2600 mm                  | 2600 mm                | 2600 mm                 |
|                      | min. height                                | 1400 mm              | 2835 mm                        | 1400 mm                  | 1400 mm                  | 1400 mm                | 2000 mm                 |
|                      | max. axle size                             | 2210 mm              | 2230 mm                        | 2410 mm                  | 2410 mm                  | 1510 mm                | 1510 mm                 |
|                      | min. axle size                             | 300 mm               | 300 mm                         | 300 mm                   | 300 mm                   | 300 mm                 | 1000 mm                 |
|                      | max. field width                           | 2130 mm              | 2130 mm                        | 2330 mm                  | 2330 mm                  | 1440 mm                | 1440 mm                 |
|                      | min. field width                           | 230 mm               | 230 mm                         | 230 mm                   | 230 mm                   | 240 mm                 | 940 mm                  |
| Filling versions     | FLEX II                                    | ●                    | ●                              | ●                        | ×                        | ×                      | ×                       |
|                      | Wave grid 40                               | ×                    | ×                              | ●                        | ×                        | ×                      | ×                       |
|                      | Wave grid 25                               | ×                    | ×                              | ●                        | ×                        | ×                      | ×                       |
|                      | Welding grid 40                            | ×                    | ×                              | ●                        | ×                        | ×                      | ×                       |
|                      | Polycarbonate                              | ×                    | ×                              | ×                        | ●                        | ×                      | ●                       |
|                      | Sight protection glass reddish-brown (T50) | ×                    | ×                              | ×                        | ○                        | ×                      | ●                       |
|                      | Sight protection glass green (T75/T90)     | ×                    | ×                              | ×                        | ○                        | ×                      | ●                       |
|                      | Sheet metal (t= 1.5 mm)                    | ×                    | ×                              | ×                        | ●                        | ●                      | ●                       |
|                      | Perforated sheet round holes Rv 5-8        | ×                    | ×                              | ×                        | ●                        | ×                      | ×                       |
|                      | Perforated sheet square holes Qg 8-12      | ×                    | ×                              | ×                        | ●                        | ×                      | ×                       |
| Surface diversity    | Powder-coating                             | ●                    | ●                              | ●                        | ●                        | ●                      | ●                       |
|                      | Hot-dip galvanisation                      | ●                    | ●                              | ●                        | ●                        | ●                      | ●                       |
| Optional accessories | Equipotential bonding                      | ●                    | ●                              | ●                        | ●                        | ●                      | ●                       |
|                      | Cable duct holder                          | ●                    | ●                              | ●                        | ●                        | ●                      | ●                       |
|                      | Panel installation                         | ×                    | ×                              | ●                        | ●                        | ●                      | ●                       |
|                      | Cut-outs                                   | ●                    | ●                              | ●                        | ●                        | ○                      | ×                       |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



The frameless build of the safety fence system FLEX II ensures an optimal process view at high safety



## Standard product properties for all Brühl-safety fence systems with standard references

### Flexible adjustment

Elements can be placed next to or on top of each other (e.g. sections, diagonals, frames, separating points possible)

➔ EN ISO 14120; 5.2.1/5.3.1/5.3.7

### Modern design

By flush fence course, posts are not concealed by fence elements, low total depth of the fence

➔ EN ISO 14120; 5.3.7/5.2.3

### Single-field disassembly

without destabilisation of the adjacent fields

➔ EN ISO 14120; 5.4.3

### Distance only with tool

The attachment material can only be removed with a tool

➔ EN ISO 14120; 5.3.9

### Robust post profile strength

of at least 2.0 mm

➔ EN ISO 14120; 5.1.3/5.4.2

### Flow-moulded threads

For safe attachment of the elements

➔ EN ISO 14120; 5.3.8/5.4.4

### Diversity of colours

Available in different colours and hot-dip galvanised

➔ EN ISO 14120; 5.2.2/5.2.4/5.9

### Safe installation and removal

takes place from outside the machine

**FLEX II** Brühl  
Safety fence system

**ZAUN II** Brühl  
Safety fence system

**WAND II** Brühl  
Safety fence system

### Position-bound installation

by specified threads in the post profile/avoidance of wrong assembly

➔ EN ISO 13857; 4.2.2/4.3  
➔ EN ISO 14120; 5.2.6

### Stable four-hole bottom plate

for safe bottom attachment

➔ EN ISO 14120; 5.1.3/5.3.8/5.4.2/5.4.3

### Height compensation

for greater irregularities of the ground; available optionally

➔ EN ISO 14120; 5.2.6

### No protruding cross-wires

this avoids rising edges at the fence elements

➔ EN ISO 14120; 5.18

### Different ground clearances possible

➔ EN ISO 13857; 4.3

### Simple alignment of the adjustment post

by adjustability at slightly uneven ground; available as an option

➔ EN ISO 14120; 5.2.1

### Optimal stability

by all-round welded connections of the bottom plate and post profile

➔ EN ISO 14120; 5.1.3/5.3.8/5.4.2/5.4.3

### Maximum impact resilience of the paint structure

by sand-blasted and powder-coated elements

➔ EN ISO 14120; 5.6



# Safety fence system FLEX II

## Always on the safe side

The safety fence system FLEX II is a stable separating protective facility made of standard grid elements and posts that are compatible with all Brühl door products. The modular concept permits an optimal adjustment to the different operational situations and can be shortened individually on site. The safety fence system FLEX II thus ensures maximum safety.

### Flexible widths

Grids can be shortened in the grid from 23 mm in width

EN ISO 14120; 5.3.7

### Captive installation of the attachments

Fixing material is screwed on to the elements.

EN ISO 14120; 5.3.8/5.4.4/5.19

### Easy assembly

Lateral compensation tolerance of  $\pm 2.37$  mm

### Flexible angle adjustment

Fence can be installed in any angle (oval fence planning possible)

### High stability at low weight

Grid elements are made up of wires and rounded flat steel

EN ISO 14120; 5.2.5/5.4.3

### Diagonal fence fields

for, e.g., conveyor technology inlets

EN ISO 14120; 5.3.2/5.3.7

### Integrated height compensation

per field  $\pm 1$  mm

EN ISO 14120; 5.2.2

### High plane levelness, optimal process view

from frameless build with a slitted opening of  $20 \times 200$  mm

EN ISO 14120; 5.2.2/5.2.4/5.9



Safety fence system FLEX II



| Standard grid elements for safety fence system FLEX II |         |                         |                        |                                                       |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |        |                                                                                  |        |        |
|--------------------------------------------------------|---------|-------------------------|------------------------|-------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------------------------------------------------------------------|--------|--------|
| Fence height                                           | Product | Mat height              |                        | Planned axle size ❷ from post centre to post centre ❸ |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |        | Number of post attachment material per mat. Please order separately. ❹ s. p. 166 |        |        |
|                                                        |         |                         |                        | 300                                                   | 400   | 500   | 600   | 700   | 800   | 900   | 1000  | 1100   | 1200   | 1300   | 1400   | 1500   | 1600   | 1700   | 1800   | 1900   | 2000   |                                                                                  | 2100   | 2200   |
|                                                        |         | Ground clearance 175 mm | Ground clearance 20 mm | real axle size ❹                                      |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |        |                                                                                  |        |        |
|                                                        |         |                         |                        | 303,5                                                 | 395,5 | 510,5 | 602,5 | 694,5 | 809,5 | 901,5 | 993,5 | 1108,5 | 1200,5 | 1292,5 | 1407,5 | 1499,5 | 1614,5 | 1706,5 | 1798,5 | 1913,5 | 2005,5 |                                                                                  | 2097,5 | 2212,5 |
|                                                        |         |                         |                        | Mat width b (axle size - post profile - 20 mm) ❺      |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |        |                                                                                  |        |        |
|                                                        |         |                         |                        | 233,5                                                 | 325,5 | 440,5 | 532,5 | 624,5 | 739,5 | 831,5 | 923,5 | 1038,5 | 1130,5 | 1222,5 | 1337,5 | 1429,5 | 1544,5 | 1636,5 | 1728,5 | 1843,5 | 1935,5 |                                                                                  | 2027,5 | 2142,5 |
|                                                        |         |                         |                        | Number of vertical rods                               |       |       |       |       |       |       |       |        |        |        |        |        |        |        |        |        |        |                                                                                  |        |        |
|                                                        |         | 11                      | 15                     | 20                                                    | 24    | 28    | 33    | 37    | 41    | 46    | 50    | 54     | 59     | 63     | 68     | 72     | 76     | 81     | 85     | 89     | 94     |                                                                                  |        |        |
| 1400                                                   | SF2     | -1225                   | -1380                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -2028                                                                            | -2143  | 6      |
| 1600                                                   | SF2     | -1425                   | -1580                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -2028                                                                            | -2143  | 6      |
| 1800                                                   | SF2     | -1625                   | -1780                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -2028                                                                            | -2143  | 8      |
| 2000                                                   | SF2     | -1825                   | -1980                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -2028                                                                            | -2143  | 8      |
| 2200                                                   | SF2     | -2025                   | -2180                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -2028                                                                            | -2143  | 8      |
| 2400                                                   | SF2     | -2225                   | -2380                  | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -1844  | -1936  | -                                                                                | -      | 10     |
| 2600 ❶                                                 | SF2     | -2425                   | -                      | -234                                                  | -326  | -441  | -533  | -625  | -740  | -832  | -924  | -1039  | -1131  | -1223  | -1338  | -1430  | -1545  | -1637  | -1729  | -      | -      | -                                                                                | -      | 10     |

Example for item number key  
Product-mat height-mat width (rounded up)  
SF2-1825-1131

❶ Height 2600 mm is executed with post profile QR60, all other heights with post profile QR50.

❷ Axle size at post profile QR60 +10 mm.

❸ Definition axle size/mat width: See fence scope p. 182.

❹ Mat height corresponds to fence height minus ground clearance.

❺ Grid pitch 23×200 mm, vertical wires Ø 3,5 mm, horizontal flat steel 15×6 mm, horizontal wires Ø 5,5 mm.

❻ Maximum tolerances in mat height ± 2.5 mm, maximum tolerances in mat width ± 4.5 mm

❼ Cable duct holders: see p. 167.

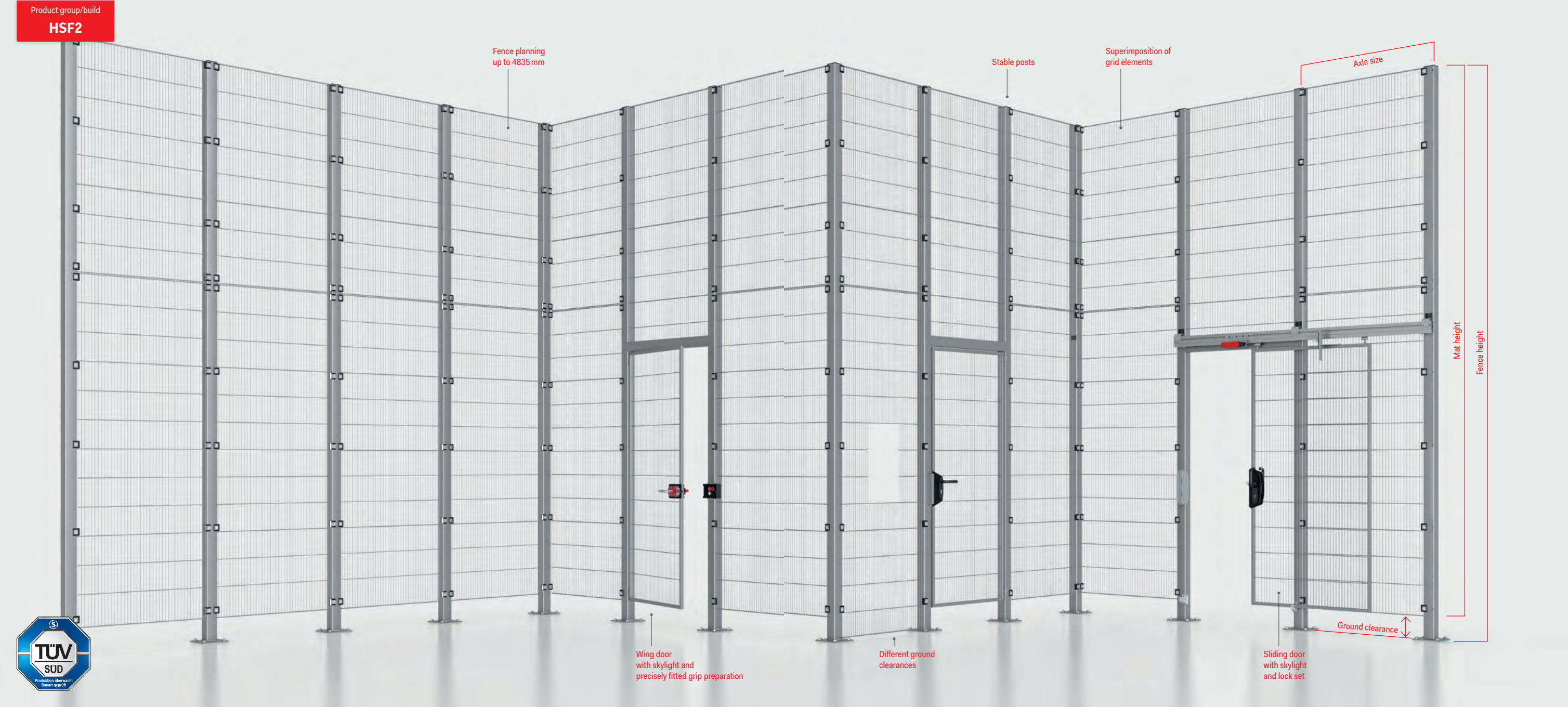
❽ For different fence heights the wires and flat bars can drift horizontally.

❾ When the fence course contains any doors, there may be a slight height offset at the horizontal wires and flat rods.





Safety fence system FLEX II High fence planning



| Standard grid elements for safety fence system FLEXII High fence planning |         |                         |                        |                                                       |       |       |       |       |        |        |        |        |        |                                                                                  |        |
|---------------------------------------------------------------------------|---------|-------------------------|------------------------|-------------------------------------------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|----------------------------------------------------------------------------------|--------|
| Fence height                                                              | Product | Mat height              |                        | Planned axle size ❶ from post centre to post centre ❷ |       |       |       |       |        |        |        |        |        | Number of post attachment material per mat. Please order separately. ❸ s. p. 166 |        |
|                                                                           |         | Ground clearance 175 mm | Ground clearance 20 mm | 300                                                   | 400   | 600   | 800   | 1000  | 1200   | 1400   | 1600   | 1800   | 2000   |                                                                                  | 2200   |
|                                                                           |         |                         |                        | Real axle size ❷                                      |       |       |       |       |        |        |        |        |        |                                                                                  |        |
|                                                                           |         |                         |                        | 303,5                                                 | 395,5 | 602,5 | 809,5 | 993,5 | 1200,5 | 1407,5 | 1614,5 | 1798,5 | 2005,5 |                                                                                  | 2212,5 |
|                                                                           |         |                         |                        | Mat width b (axle size - post profile - 20 mm) ❸      |       |       |       |       |        |        |        |        |        |                                                                                  |        |
|                                                                           |         |                         |                        | 233,5                                                 | 325,5 | 532,5 | 739,5 | 923,5 | 1130,5 | 1337,5 | 1544,5 | 1728,5 | 1935,5 |                                                                                  | 2142,5 |
| Number of vertical rods                                                   |         |                         |                        |                                                       |       |       |       |       |        |        |        |        |        |                                                                                  |        |
| 11                                                                        | 15      | 24                      | 33                     | 41                                                    | 50    | 59    | 68    | 76    | 85     | 94     | FL2    |        |        |                                                                                  |        |
| 2835 ❶                                                                    | HSF2    | -2660                   | -2815                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 14     |
| 3035 ❶                                                                    | HSF2    | -2860                   | -3015                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 14     |
| 3235                                                                      | HSF2    | -3060                   | -3215                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 14     |
| 3435                                                                      | HSF2    | -3260                   | -3415                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 14     |
| 3635                                                                      | HSF2    | -3460                   | -3615                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 16     |
| 3835                                                                      | HSF2    | -3660                   | -3815                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 16     |
| 4035                                                                      | HSF2    | -3860                   | -4015                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 16     |
| 4235                                                                      | HSF2    | -4060                   | -4215                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 18     |
| 4435                                                                      | HSF2    | -4260                   | -4415                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 18     |
| 4635                                                                      | HSF2    | -4460                   | -4615                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 18     |
| 4835                                                                      | HSF2    | -4660                   | -4815                  | -234                                                  | -326  | -533  | -740  | -924  | -1131  | -1338  | -1545  | -1729  | -1936  | -2143                                                                            | 20     |

Example for item number key

Product-mat height-mat width (rounded up)

HSF2-3660-1936

❶ Heights 2835 and 3035 mm are executed with post profile QR60, all other heights with post profile QR80.

❷ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm.

❸ Definition axle size/mat width: See fence scope p. 182.

❹ Mat height corresponds to fence height minus ground clearance.

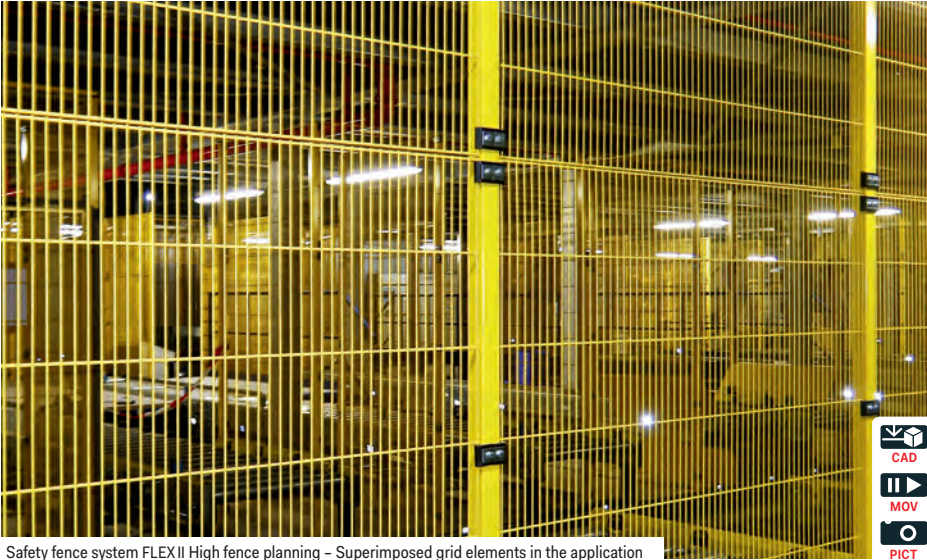
❺ Grid pitch 23 × 200 mm, vertical wires Ø 3,5 mm, horizontal flat steel 15 × 6 mm, horizontal wires Ø 5,5 mm.

❻ Maximum tolerances in mat height ± 2,5 mm, maximum tolerances in mat width ± 4,5 mm.

❼ The distance between the two superimposed mats is approx. 10 mm.

❽ For different fence heights the wires and flat bars can drift horizontally.

❾ When the fence course contains any doors, there may be a slight height offset at the horizontal wires and flat rods.



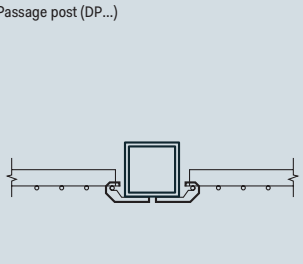


Post for safety fence system FLEX II and safety fence system FLEX II High fence planning

Straight fence course



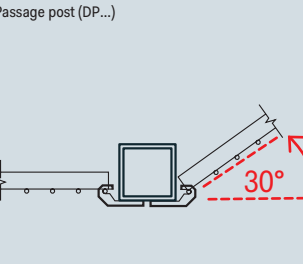
Passage post (DP...)



Diagonal fence course



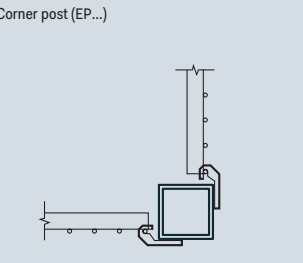
Passage post (DP...)



Outer corner



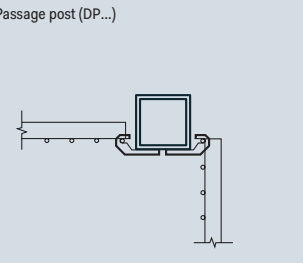
Corner post (EP...)



Inner corner



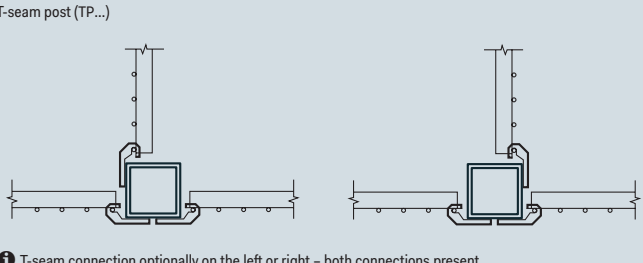
Passage post (DP...)



T-seam fence course



T-seam post (TP...)



1 T-seam connection optionally on the left or right – both connections present.



Safety fence system FLEX II – Oval fence course

Post for safety fence system FLEX II

| Post without height compensation                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                          |   |   |   |   |   |   |   |
| Fence height                                                                                                                                                                                                                                                                                                                                                                                                             | Passage post                                                                         | Passage post                                                                         | Corner post                                                                          | T-seam post                                                                          | Passage post adjustable                                                              | Corner post adjustable                                                               | T-seam post adjustable                                                               |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-1400-0613                                                                  | DP-QR50-F-1400-1313                                                                  | EP-QR50-F-1400-1313                                                                  | TP-QR50-F-1400-1313                                                                  | DPJ-QR50-F-1400-1313                                                                 | EPJ-QR50-F-1400-1313                                                                 | TPJ-QR50-F-1400-1313                                                                 |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-1600-0613                                                                  | DP-QR50-F-1600-1313                                                                  | EP-QR50-F-1600-1313                                                                  | TP-QR50-F-1600-1313                                                                  | DPJ-QR50-F-1600-1313                                                                 | EPJ-QR50-F-1600-1313                                                                 | TPJ-QR50-F-1600-1313                                                                 |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-1800-0613                                                                  | DP-QR50-F-1800-1313                                                                  | EP-QR50-F-1800-1313                                                                  | TP-QR50-F-1800-1313                                                                  | DPJ-QR50-F-1800-1313                                                                 | EPJ-QR50-F-1800-1313                                                                 | TPJ-QR50-F-1800-1313                                                                 |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-2000-0613                                                                  | DP-QR50-F-2000-1313                                                                  | EP-QR50-F-2000-1313                                                                  | TP-QR50-F-2000-1313                                                                  | DPJ-QR50-F-2000-1313                                                                 | EPJ-QR50-F-2000-1313                                                                 | TPJ-QR50-F-2000-1313                                                                 |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-2200-0613                                                                  | DP-QR50-F-2200-1313                                                                  | EP-QR50-F-2200-1313                                                                  | TP-QR50-F-2200-1313                                                                  | DPJ-QR50-F-2200-1313                                                                 | EPJ-QR50-F-2200-1313                                                                 | TPJ-QR50-F-2200-1313                                                                 |
| 2400                                                                                                                                                                                                                                                                                                                                                                                                                     | DP-QR50-F-2400-0613                                                                  | DP-QR50-F-2400-1313                                                                  | EP-QR50-F-2400-1313                                                                  | TP-QR50-F-2400-1313                                                                  | DPJ-QR50-F-2400-1313                                                                 | EPJ-QR50-F-2400-1313                                                                 | TPJ-QR50-F-2400-1313                                                                 |
| 2600 ❶                                                                                                                                                                                                                                                                                                                                                                                                                   | DP-QR60-F-2600-0715                                                                  | DP-QR60-F-2600-1515                                                                  | EP-QR60-F-2600-1515                                                                  | TP-QR60-F-2600-1515                                                                  | DPJ-QR60-F-2600-1515                                                                 | EPJ-QR60-F-2600-1515                                                                 | TPJ-QR60-F-2600-1515                                                                 |
| Post with height compensation                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                      |                                                                                      |                                                                                      |                                                                                      | Transfer post                                                                        |                                                                                      |                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |  |
| Fence height                                                                                                                                                                                                                                                                                                                                                                                                             | Passage post with height compensation                                                | Passage post with height compensation                                                | Corner post with height compensation                                                 | T-seam post with height compensation                                                 | Transfer post as passage post                                                        | Transfer post as corner post                                                         | Transfer post as T-seam post                                                         |
| Height compensation                                                                                                                                                                                                                                                                                                                                                                                                      | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          |                                                                                      |                                                                                      |                                                                                      |
| 1400                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-1400-0613                                                               | DPHV1-QR50-F-1400-1313                                                               | EPHV1-QR50-F-1400-1313                                                               | TPHV1-QR50-F-1400-1313                                                               | UDP-QR50-F-1400-...❷                                                                 | UEP-QR50-F-1400-...❷                                                                 | UTP-QR50-F-1400-...❷                                                                 |
| 1600                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-1600-0613                                                               | DPHV1-QR50-F-1600-1313                                                               | EPHV1-QR50-F-1600-1313                                                               | TPHV1-QR50-F-1600-1313                                                               | UDP-QR50-F-1600-...❷                                                                 | UEP-QR50-F-1600-...❷                                                                 | UTP-QR50-F-1600-...❷                                                                 |
| 1800                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-1800-0613                                                               | DPHV1-QR50-F-1800-1313                                                               | EPHV1-QR50-F-1800-1313                                                               | TPHV1-QR50-F-1800-1313                                                               | UDP-QR50-F-1800-...❷                                                                 | UEP-QR50-F-1800-...❷                                                                 | UTP-QR50-F-1800-...❷                                                                 |
| 2000                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-2000-0613                                                               | DPHV1-QR50-F-2000-1313                                                               | EPHV1-QR50-F-2000-1313                                                               | TPHV1-QR50-F-2000-1313                                                               | UDP-QR50-F-2000-...❷                                                                 | UEP-QR50-F-2000-...❷                                                                 | UTP-QR50-F-2000-...❷                                                                 |
| 2200                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-2200-0613                                                               | DPHV1-QR50-F-2200-1313                                                               | EPHV1-QR50-F-2200-1313                                                               | TPHV1-QR50-F-2200-1313                                                               | UDP-QR50-F-2200-...❷                                                                 | UEP-QR50-F-2200-...❷                                                                 | UTP-QR50-F-2200-...❷                                                                 |
| 2400                                                                                                                                                                                                                                                                                                                                                                                                                     | DPHV1-QR50-F-2400-0613                                                               | DPHV1-QR50-F-2400-1313                                                               | EPHV1-QR50-F-2400-1313                                                               | TPHV1-QR50-F-2400-1313                                                               | UDP-QR50-F-2400-...❷                                                                 | UEP-QR50-F-2400-...❷                                                                 | UTP-QR50-F-2400-...❷                                                                 |
| 2600 ❶                                                                                                                                                                                                                                                                                                                                                                                                                   | DPHV1-QR60-F-2600-0715                                                               | DPHV1-QR60-F-2600-1515                                                               | EPHV1-QR60-F-2600-1515                                                               | TPHV1-QR60-F-2600-1515                                                               | UDP-QR60-F-2600-...❷                                                                 | UEP-QR60-F-2600-...❷                                                                 | UTP-QR60-F-2600-...❷                                                                 |
| ❶ Height 2600 is executed with post profile QR60, all other heights with post profile QR50.    ❷ Transfer post: The item number results from the system and height; for explanations, see p.183.<br>❸ When ordering, observe inner corner (DP) and outer corner (EP).    ❹ T-seam connection optionally on the left or right – both connections present.    ❺ Please order floor attachment media separately. See p.168. |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |

Post for safety fence system FLEX II High fence planning

| Post without height compensation                                                                                                                                                                                                                                                                                               |                      |                      |                      |                      |                              |                             |                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|------------------------------|-----------------------------|-----------------------------|
| Fence height                                                                                                                                                                                                                                                                                                                   | High Passage post    | High Passage post    | High Corner post     | High T-seam post     | High passage post adjustable | High corner post adjustable | High T-seam post adjustable |
| 2835 ❶                                                                                                                                                                                                                                                                                                                         | HDP-QR60-F-2835-0715 | HDP-QR60-F-2835-1515 | HEP-QR60-F-2835-1515 | HTP-QR60-F-2835-1515 | HDPJ-QR60-F-2835-1515        | HEPJ-QR60-F-2835-1515       | HTPJ-QR60-F-2835-1515       |
| 3035 ❶                                                                                                                                                                                                                                                                                                                         | HDP-QR60-F-3035-0715 | HDP-QR60-F-3035-1515 | HEP-QR60-F-3035-1515 | HTP-QR60-F-3035-1515 | HDPJ-QR60-F-3035-1515        | HEPJ-QR60-F-3035-1515       | HTPJ-QR60-F-3035-1515       |
| 3235                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-3235-1020 | HDP-QR80-F-3235-2020 | HEP-QR80-F-3235-2020 | HTP-QR80-F-3235-2020 | HDPJ-QR80-F-3235-2020        | HEPJ-QR80-F-3235-2020       | HTPJ-QR80-F-3235-2020       |
| 3435                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-3435-1020 | HDP-QR80-F-3435-2020 | HEP-QR80-F-3435-2020 | HTP-QR80-F-3435-2020 | HDPJ-QR80-F-3435-2020        | HEPJ-QR80-F-3435-2020       | HTPJ-QR80-F-3435-2020       |
| 3635                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-3635-1020 | HDP-QR80-F-3635-2020 | HEP-QR80-F-3635-2020 | HTP-QR80-F-3635-2020 | HDPJ-QR80-F-3635-2020        | HEPJ-QR80-F-3635-2020       | HTPJ-QR80-F-3635-2020       |
| 3835                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-3835-1020 | HDP-QR80-F-3835-2020 | HEP-QR80-F-3835-2020 | HTP-QR80-F-3835-2020 | HDPJ-QR80-F-3835-2020        | HEPJ-QR80-F-3835-2020       | HTPJ-QR80-F-3835-2020       |
| 4035                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-4035-1020 | HDP-QR80-F-4035-2020 | HEP-QR80-F-4035-2020 | HTP-QR80-F-4035-2020 | HDPJ-QR80-F-4035-2020        | HEPJ-QR80-F-4035-2020       | HTPJ-QR80-F-4035-2020       |
| 4235                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-4235-1020 | HDP-QR80-F-4235-2020 | HEP-QR80-F-4235-2020 | HTP-QR80-F-4235-2020 | HDPJ-QR80-F-4235-2020        | HEPJ-QR80-F-4235-2020       | HTPJ-QR80-F-4235-2020       |
| 4435                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-4435-1020 | HDP-QR80-F-4435-2020 | HEP-QR80-F-4435-2020 | HTP-QR80-F-4435-2020 | HDPJ-QR80-F-4435-2020        | HEPJ-QR80-F-4435-2020       | HTPJ-QR80-F-4435-2020       |
| 4635                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-4635-1020 | HDP-QR80-F-4635-2020 | HEP-QR80-F-4635-2020 | HTP-QR80-F-4635-2020 | HDPJ-QR80-F-4635-2020        | HEPJ-QR80-F-4635-2020       | HTPJ-QR80-F-4635-2020       |
| 4835                                                                                                                                                                                                                                                                                                                           | HDP-QR80-F-4835-1020 | HDP-QR80-F-4835-2020 | HEP-QR80-F-4835-2020 | HTP-QR80-F-4835-2020 | HDPJ-QR80-F-4835-2020        | HEPJ-QR80-F-4835-2020       | HTPJ-QR80-F-4835-2020       |
| ❶ Heights 2835 and 3035 are executed with post profile QR60, all other heights with post profile QR80.    ❷ When ordering, observe inner corner (DP) and outer corner (EP).<br>❸ T-seam connection optionally on the left or right – both connections present.    ❹ Please order floor attachment media separately. See p.168. |                      |                      |                      |                      |                              |                             |                             |

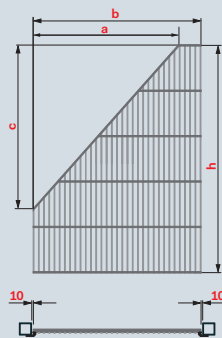


Special grid elements for safety fence system FLEX II

### FLEX II-grid elements with diagonal

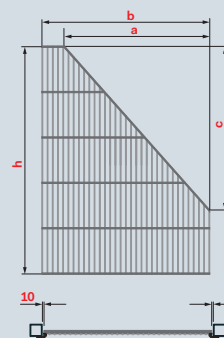
#### Diagonal left

Item number key: SF2-h-b-SL-a-c



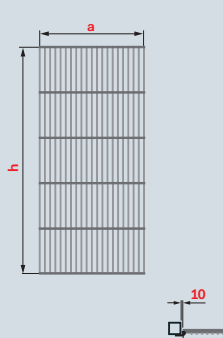
#### Diagonal right

Item number key: SF2-h-b-SR-a-c



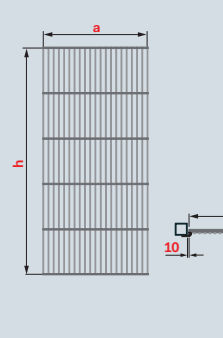
#### Outer corner

Item number key: SF2AE-h-a-c



#### Inner corner

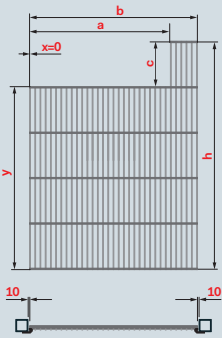
Item number key: SF2IE-h-a-c



### FLEX II-grid elements with cut-out

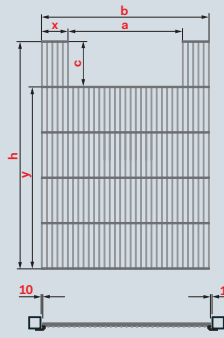
#### Cut-out top left (x=0)

Item number key: SF2-h-b-AR-0-y-a-c



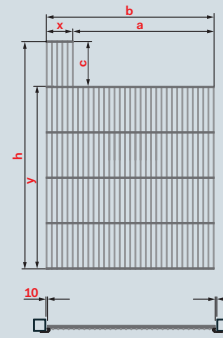
#### Cut-out top

Item number key: SF2-h-b-AR-x-y-a-c



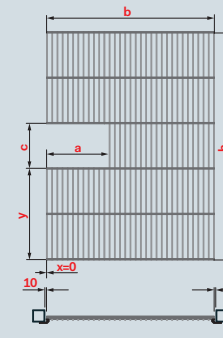
#### Cut-out top right

Item number key: SF2-h-b-AR-x-y-a-c



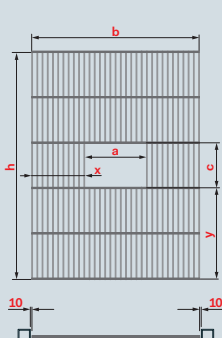
#### Cut-out left (x=0)

Item number key: SF2-h-b-AR-0-y-a-c



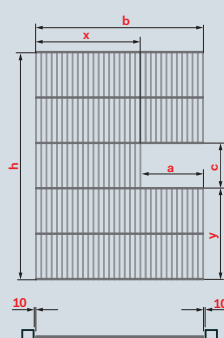
#### Cut-out inside

Item number key: SF2-h-b-AR-x-y-a-c



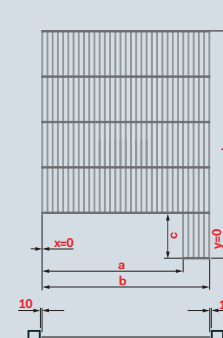
#### Cut-out right

Item number key: SF2-h-b-AR-x-y-a-c



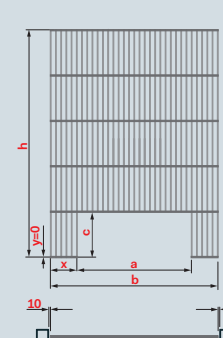
#### Cut-out down left (x=0 and y=0)

Item number key: SF2-h-b-AR-0-0-a-c



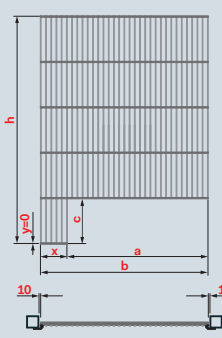
#### Cut-out down (y=0)

Item number key: SF2-h-b-AR-x-0-a-c



#### Cut-out down right (y=0)

Item number key: SF2-h-b-AR-x-0-a-c



| SF2-h-b-                                                                          | AR-                 | x-y-a-c                         |
|-----------------------------------------------------------------------------------|---------------------|---------------------------------|
| Designation of the grid element from the safety fence system FLEX II ☛ See p. 31. | Cut-out rectangular | Dimension values of the cut-out |

Dimension values:  
x = Distance between the left outer edge of the grid element and the left inner edge of the cut-out  
y = Distance between the lower edge of the grid element and the lower edge of the cut-out  
a = Width of the cut-out  
c = Height of the cut-out

☛ The free-standing remainder of the grid mat on the left and right of the cut-out must not exceed 130 mm.

### Reach-through protection of polycarbonate panes for danger areas



Connection element SF2-PCV with polycarbonate disc at FLEX II

#### Polycarbonate disc t=5 mm<sup>ø</sup> as reach-through protection

| Fence height | Product | Height                  |                        | Width |      |       |       |       |
|--------------|---------|-------------------------|------------------------|-------|------|-------|-------|-------|
|              |         | Ground clearance 175 mm | Ground clearance 20 mm | 234   | 326  | ... ☛ | 2028  | 2143  |
| 1400         | PCB     | -1225                   | -1380                  | -234  | -326 | ...   | -2028 | -2143 |
| 1600         | PCB     | -1425                   | -1580                  | -234  | -326 | ...   | -2028 | -2143 |
| ...          | PCB     | ...                     | ...                    | ...   | ...  | ...   | ...   | ...   |
| 2400         | PCB     | -2225                   | -2380                  | -234  | -326 | ...   | -2028 | -2143 |
| 2600         | PCB     | -2425                   | -2580                  | -234  | -326 | ...   | -2028 | -2143 |

☛ Other thicknesses available on request. ☛ Order sizes of the polycarbonate discs according to FLEX II-grid elements; see tables p. 31 and 33.  
☛ The polycarbonate disc reduces the angle setting with a passage post of 30 degrees to 22 degrees  
☛ Order connection element SF2-PCV separately, see p. 166.

The combination of FLEX II-grid elements with polycarbonate discs improves safety in danger areas. Transparency continues to ensure full process view. Polycarbonate is only available cut flush with the grid element. An area of 20 mm that can be used to reach through between the post and element remains (no full protection).

### Safety grid cut-out mats



Example application

#### Safety grid cut-out mat for contour adjustment for cut-outs, e.g. at conveyor technology inlets and outlets

| SF2-SGA<br>Grid elements for cut-outs |         |            | Axle size 1800 |                                                             |
|---------------------------------------|---------|------------|----------------|-------------------------------------------------------------|
| Fence height                          | Product | Mat height | Mat width      | Number of the post attachment materials per mat ☛ s. p. 166 |
| 2000                                  | SF2-SGA | -1825      | -1729          | 8                                                           |
| 2200                                  | SF2-SGA | -2025      | -1729          | 8                                                           |
| 2400                                  | SF2-SGA | -2225      | -1729          | 10                                                          |

The safety grid cut-out mat has a much narrower mesh in the middle: this permits very precise adjustment of the contour, e.g. to conveyor inlets or outlets. A rail or similar device is not necessary. For lower fences, the cut-out mat is shortened by a horizontal cut.

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl

SAFETY FENCE SYSTEMS



# Safety fence system ZAUN II

## One system with many options

The stable, separating safety device is made up of fence elements with square profile frames and different filling versions, so that this system can be divided into two designs: ZAUN II grid fillings and ZAUN II area elements. The system ZAUN II is compatible with all Brühl door products. When the risk and danger assessment indicates a too-high force application to the safety fence, the components of the safety fence are designed more strongly.

**Frame structure**  
at particularly large  
heights and widths

**Captive installation of the  
attachments**

Attachments remain on the  
elements with the screws

EN ISO 14120; 5.3.8/5.4.4/5.19

**High twist  
resistance/stability**

Elements are made up of  
mitre-welded profile frames  
(no open frame profiles)  
with welded-in or  
inserted fillings

EN ISO 14120; 5.4.3

**Panel installation**

with clamping angles, no adhesion,  
easy panel exchange possible

**Fastening screw  
pre-installed**  
for quick installation

EN ISO 14120; 5.4.4

**Cut-outs**

with angle or clamping profile  
as edge protection



Safety fence system ZAUN II grid fillings

Product group/build  
SZ2-GF

Diagonal fence field  
⦿ Special fields,  
see p. 46

Sliding door  
with lock set

Wing door  
with grip preparation

Cut-out  
⦿ Special fields,  
see p. 46

Wing door  
with lock set

Sliding door  
with handle and  
switching cam system

Axle size

Field height  
Fence height

Ground clearance

Different  
ground clearances

TÜV  
SÜD  
Produktion überwacht  
Bauteil geprüft

FRAME FILLING

Wave grid 40

FLEX II

Wave grid 40

Welding grid 40

FRAME

Square tube 25 – QR25

Square tube 35 – QR35

| Standard grid elements for safety fence system ZAUN II – grid fillings                                                        |         |                                        |                 |                  |               |       |              |         |              |                 |                         |                        |                                                 |      |      |      |      |      |      |      |       |       |       |                                               |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------------------------------------------------------------------------------------------------------|---------|----------------------------------------|-----------------|------------------|---------------|-------|--------------|---------|--------------|-----------------|-------------------------|------------------------|-------------------------------------------------|------|------|------|------|------|------|------|-------|-------|-------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Fence height                                                                                                                  | Product | Fence course                           |                 |                  | Frame profile |       | Filling      |         |              |                 | Field height            |                        | Axle size ② from post centre to post centre ③   |      |      |      |      |      |      |      |       |       |       | Axle size ② from post centre to post centre ③ |       |       |       |       |       |       |       |       |       |       |       |
|                                                                                                                               |         | Straight fence course/<br>outer corner | Inner corner    |                  | QR25          | QR35  | Wave grid 40 | FLEX II | Wave grid 25 | Welding grid 40 | Ground clearance 175 mm | Ground clearance 20 mm | 300                                             | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | 1100  | 1200  |       | 1300                                          | 1400  | 1500  | 1600  | 1700  | 1800  | 1900  | 2000  | 2100  | 2200  | 2300  | 2400  |
|                                                                                                                               |         |                                        | Corner tab left | Corner tab right |               |       |              |         |              |                 |                         |                        | Field width b (axle size - post profile - 20) ④ |      |      |      |      |      |      |      |       |       |       |                                               |       |       |       |       |       |       |       |       |       |       |       |
|                                                                                                                               |         |                                        |                 |                  |               |       |              |         |              |                 |                         |                        | 230                                             | 330  | 430  | 530  | 630  | 730  | 830  | 930  | 1030  | 1130  |       | 1230                                          | 1330  | 1430  | 1530  | 1630  | 1730  | 1830  | 1930  | 2030  | 2130  | 2230  | 2330  |
| 1400                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -1225                   | -1380                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 1600                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -1425                   | -1580                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 1800                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -1625                   | -1780                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 2000                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -1825                   | -1980                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 2200                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -2025                   | -2180                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 2400                                                                                                                          | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -2225                   | -2380                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| 2600 ①                                                                                                                        | SZ2-GF  | -                                      | -EL             | -ER              | -QR25         | -QR35 | -WG40        | -F      | -WG25        | -SG40           | -2425                   | -2580                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |                                               | -1330 | -1430 | -1530 | -1630 | -1730 | -1830 | -1930 | -2030 | -2130 | -2230 | -2330 |
| Example for item number key Product-fence course-frame profile-filling-field height-field width    SZ2-GF-QR25-WG40-1825-1430 |         |                                        |                 |                  |               |       |              |         |              |                 |                         |                        |                                                 |      |      |      |      |      |      |      |       |       |       |                                               |       |       |       |       |       |       |       |       |       |       |       |

CUT-OUT BY CUSTOMER

Cut-outs by customers with clamping profile as edge protection ⦿ See accessories p. 166.

CUT-OUT IN THE FACTORY

Cut-outs in the factory with angle profile as edge protection ⦿ See special elements p. 46.

⦿ Height 2600 mm is executed with post profile QR60, all other heights with post profile QR50.  
⦿ Axle size at post profile QR60 + 10 mm.  
⦿ Definition of axle size/field width: See fence scope p. 182.  
⦿ Field height corresponds to fence height minus ground clearance.  
⦿ Cable duct holders: see p. 167.

COMBINATION POSTS, FRAME PROFILE AND FILLING ■ Standard

| Post profile | Frame profile |      | Fillings      |         |               |                 |
|--------------|---------------|------|---------------|---------|---------------|-----------------|
|              | QR25          | QR35 | Shaft grid 40 | FLEX II | Shaft grid 25 | Welding grid 40 |
| QR50         | ●             | ×    | ●             | ●       | ●             | ●               |
| QR60         | ●             | ●    | ●             | ●       | ●             | ●               |

● Combination is possible.    × Combination is not possible.



Safety fence system ZAUN II area elements

Product group/build  
SZ2-FE

Fillings welded into QR-profile

Sliding door with lock set

Wing door with grip preparation

Polycarbonate with RP-profile enclosure

Wing door with lock set

Sliding door with holding plate system

Easy panel exchange possible

Ground clearance

Field height

Fence height

Axle size

Different ground clearances



FRAME FILLING



Polycarbonate



Sheet metal (t=1.5 mm)

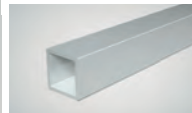


Perforated sheet round

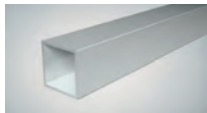


Perforated sheet square holes

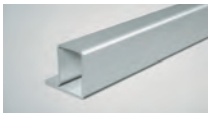
FRAME



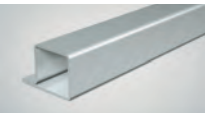
Square tube 25 – QR25



Square tube 35/35



Stop tube 20/34 – RP144



Stop tube 35/34 – RP106

| Standard elements for safety fence system ZAUN II – area elements |         |                                      |                 |                  |               |       |        |        |               |             |                                    |                               |                                               |                        |                                                 |      |      |      |      |      |      |      |       |       |       |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|---------|--------------------------------------|-----------------|------------------|---------------|-------|--------|--------|---------------|-------------|------------------------------------|-------------------------------|-----------------------------------------------|------------------------|-------------------------------------------------|------|------|------|------|------|------|------|-------|-------|-------|--|--|--|--|--|--|--|--|--|--|
| Fence height                                                      | Product | Fence course                         |                 |                  | Frame profile |       |        |        | Filling       |             | Field height                       |                               | Axle size ② from post centre to post centre ③ |                        |                                                 |      |      |      |      |      |      |      |       |       |       |  |  |  |  |  |  |  |  |  |  |
|                                                                   |         | Straight fence course / outer corner | Inner corner    |                  | QR25          | QR35  | RP144  | RP106  | Polycarbonate | Sheet metal | Perforated sheet Round perforation | Perforated sheet square holes | Ground clearance 175 mm                       | Ground clearance 20 mm | 300                                             | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | 1100  | 1200  |       |  |  |  |  |  |  |  |  |  |  |
|                                                                   |         |                                      | Corner tab left | Corner tab right |               |       |        |        |               |             |                                    |                               |                                               |                        | Field width b (axle size - post profile - 20) ④ |      |      |      |      |      |      |      |       |       |       |  |  |  |  |  |  |  |  |  |  |
|                                                                   |         |                                      |                 |                  |               |       |        |        |               |             |                                    |                               |                                               |                        | 230                                             | 330  | 430  | 530  | 630  | 730  | 830  | 930  | 1030  | 1130  |       |  |  |  |  |  |  |  |  |  |  |
|                                                                   |         |                                      |                 |                  |               |       |        |        |               |             |                                    |                               |                                               |                        | Field width b (axle size - post profile - 20) ④ |      |      |      |      |      |      |      |       |       |       |  |  |  |  |  |  |  |  |  |  |
| 1400                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -1225                                         | -1380                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 1600                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -1425                                         | -1580                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 1800                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -1625                                         | -1780                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 2000                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -1825                                         | -1980                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 2200                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -2025                                         | -2180                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 2400                                                              | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -2225                                         | -2380                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |
| 2600 ⑤                                                            | SZ2-FE  | -                                    | -EL             | -ER              | -QR25         | -QR35 | -RP144 | -RP106 | -P            | -BL         | -LBR                               | -LBQ                          | -2425                                         | -2580                  | -230                                            | -330 | -430 | -530 | -630 | -730 | -830 | -930 | -1030 | -1130 | -1230 |  |  |  |  |  |  |  |  |  |  |

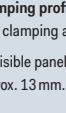
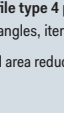
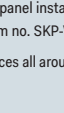
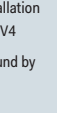
Example for item number key Product-fence course-frame profile-filling-field height-field width SZ2-FE-EL-QR25-BL-1225-430

① Height 2600 mm is executed with post profile QR60, all other heights with post profile QR50.

② Axle size at post profile QR60 + 10 mm.

③ Definition of axle size/field width: See fence scope p. 182.

| COMBINATION POSTS, FRAME PROFILE AND FILLING                                                                                                                                                                                                                          |                                    |               |                                    |               |                                    |               | Standard |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------|------------------------------------|---------------|------------------------------------|---------------|----------|
| Post profile                                                                                                                                                                                                                                                          | QR50                               |               | QR60                               |               |                                    |               |          |
| Frame profile                                                                                                                                                                                                                                                         | QR25                               | RP144         | QR25                               | RP144         | QR35                               | RP106         |          |
| Filling                                                                                                                                                                                                                                                               | Sheet metal                        |               | Sheet metal                        |               | Sheet metal                        |               |          |
|                                                                                                                                                                                                                                                                       | Perforated sheet round perforation | Polycarbonate | Perforated sheet round perforation | Polycarbonate | Perforated sheet round perforation |               |          |
|                                                                                                                                                                                                                                                                       | Perforated sheet square holes      |               | Perforated sheet square holes      |               | Perforated sheet square holes      | Polycarbonate |          |
| ① Field height corresponds to fence height minus ground clearance.<br>② Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12<br>③ Sheet fillings in zinc-plated design are screwed on to the frame from the machine side.<br>④ Cable duct holders: see p. 167. |                                    |               |                                    |               |                                    |               |          |

| PANEL INSTALLATION                                                                                                                            |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                          |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Clamping profile type 4 panel installation with clamping angles, item no. SKP-V4<br>① Visible panel area reduces all around by approx. 13 mm. |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |

CAD

MOV

PICT

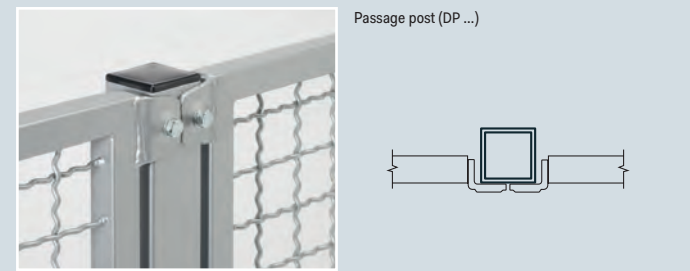
Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl

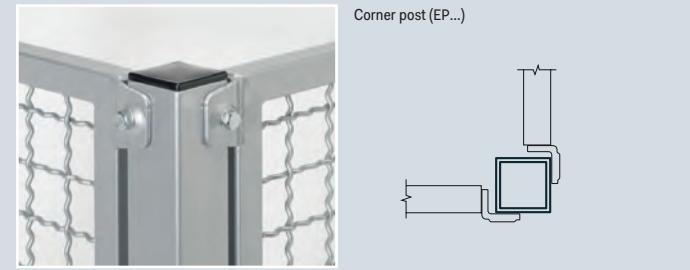


Post for safety fence system ZAUN II

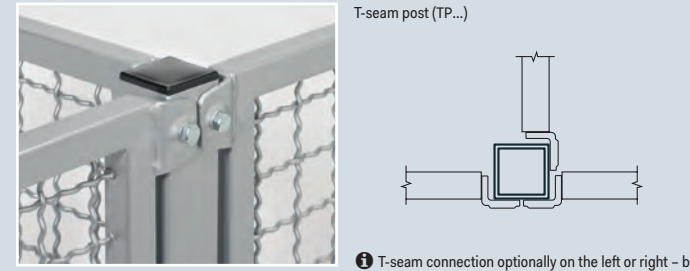
Straight fence course



Outer corner



T-seam fence course



❗ T-seam connection optionally on the left or right – both connections present.



Safety fence system ZAUN II at a belt system

Post for safety fence system ZAUN II

| Post without height compensation |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                  |   |   |   |   |   |   |   |
| Fence height                     | Passage post                                                                         | Passage post                                                                         | Corner post                                                                          | T-seam post                                                                          | Passage post adjustable                                                              | Corner post adjustable                                                               | T-seam post adjustable                                                               |
| 1400                             | DP-QR50-Z-1400-0613                                                                  | DP-QR50-Z-1400-1313                                                                  | EP-QR50-Z-1400-1313                                                                  | TP-QR50-Z-1400-1313                                                                  | DPJ-QR50-Z-1400-1313                                                                 | EPJ-QR50-Z-1400-1313                                                                 | TPJ-QR50-Z-1400-1313                                                                 |
| 1600                             | DP-QR50-Z-1600-0613                                                                  | DP-QR50-Z-1600-1313                                                                  | EP-QR50-Z-1600-1313                                                                  | TP-QR50-Z-1600-1313                                                                  | DPJ-QR50-Z-1600-1313                                                                 | EPJ-QR50-Z-1600-1313                                                                 | TPJ-QR50-Z-1600-1313                                                                 |
| 1800                             | DP-QR50-Z-1800-0613                                                                  | DP-QR50-Z-1800-1313                                                                  | EP-QR50-Z-1800-1313                                                                  | TP-QR50-Z-1800-1313                                                                  | DPJ-QR50-Z-1800-1313                                                                 | EPJ-QR50-Z-1800-1313                                                                 | TPJ-QR50-Z-1800-1313                                                                 |
| 2000                             | DP-QR50-Z-2000-0613                                                                  | DP-QR50-Z-2000-1313                                                                  | EP-QR50-Z-2000-1313                                                                  | TP-QR50-Z-2000-1313                                                                  | DPJ-QR50-Z-2000-1313                                                                 | EPJ-QR50-Z-2000-1313                                                                 | TPJ-QR50-Z-2000-1313                                                                 |
| 2200                             | DP-QR50-Z-2200-0613                                                                  | DP-QR50-Z-2200-1313                                                                  | EP-QR50-Z-2200-1313                                                                  | TP-QR50-Z-2200-1313                                                                  | DPJ-QR50-Z-2200-1313                                                                 | EPJ-QR50-Z-2200-1313                                                                 | TPJ-QR50-Z-2200-1313                                                                 |
| 2400                             | DP-QR50-Z-2400-0613                                                                  | DP-QR50-Z-2400-1313                                                                  | EP-QR50-Z-2400-1313                                                                  | TP-QR50-Z-2400-1313                                                                  | DPJ-QR50-Z-2400-1313                                                                 | EPJ-QR50-Z-2400-1313                                                                 | TPJ-QR50-Z-2400-1313                                                                 |
| 2600 ❶                           | DP-QR60-Z-2600-0715                                                                  | DP-QR60-Z-2600-1515                                                                  | EP-QR60-Z-2600-1515                                                                  | TP-QR60-Z-2600-1515                                                                  | DPJ-QR60-Z-2600-1515                                                                 | EPJ-QR60-Z-2600-1515                                                                 | TPJ-QR60-Z-2600-1515                                                                 |
| Post with height compensation    |                                                                                      |                                                                                      |                                                                                      | Transfer post                                                                        |                                                                                      |                                                                                      |                                                                                      |
|                                  |  |  |  |  |  |  |  |
| Fence height                     | Passage post with height compensation                                                | Passage post with height compensation                                                | Corner post with height compensation                                                 | T-seam post with height compensation                                                 | Transfer post as passage post                                                        | Transfer post as corner post                                                         | Transfer post as T-seam post                                                         |
| Height compensation              | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          | + 52<br>- 7                                                                          |                                                                                      |                                                                                      |                                                                                      |
| 1400                             | DPHV1-QR50-Z-1400-0613                                                               | DPHV1-QR50-Z-1400-1313                                                               | EPHV1-QR50-Z-1400-1313                                                               | TPHV1-QR50-Z-1400-1313                                                               | UDP-QR50-Z-1400-... ❷                                                                | UEP-QR50-Z-1400-... ❷                                                                | UTP-QR50-Z-1400-... ❷                                                                |
| 1600                             | DPHV1-QR50-Z-1600-0613                                                               | DPHV1-QR50-Z-1600-1313                                                               | EPHV1-QR50-Z-1600-1313                                                               | TPHV1-QR50-Z-1600-1313                                                               | UDP-QR50-Z-1600-... ❷                                                                | UEP-QR50-Z-1600-... ❷                                                                | UTP-QR50-Z-1600-... ❷                                                                |
| 1800                             | DPHV1-QR50-Z-1800-0613                                                               | DPHV1-QR50-Z-1800-1313                                                               | EPHV1-QR50-Z-1800-1313                                                               | TPHV1-QR50-Z-1800-1313                                                               | UDP-QR50-Z-1800-... ❷                                                                | UEP-QR50-Z-1800-... ❷                                                                | UTP-QR50-Z-1800-... ❷                                                                |
| 2000                             | DPHV1-QR50-Z-2000-0613                                                               | DPHV1-QR50-Z-2000-1313                                                               | EPHV1-QR50-Z-2000-1313                                                               | TPHV1-QR50-Z-2000-1313                                                               | UDP-QR50-Z-2000-... ❷                                                                | UEP-QR50-Z-2000-... ❷                                                                | UTP-QR50-Z-2000-... ❷                                                                |
| 2200                             | DPHV1-QR50-Z-2200-0613                                                               | DPHV1-QR50-Z-2200-1313                                                               | EPHV1-QR50-Z-2200-1313                                                               | TPHV1-QR50-Z-2200-1313                                                               | UDP-QR50-Z-2200-... ❷                                                                | UEP-QR50-Z-2200-... ❷                                                                | UTP-QR50-Z-2200-... ❷                                                                |
| 2400                             | DPHV1-QR50-Z-2400-0613                                                               | DPHV1-QR50-Z-2400-1313                                                               | EPHV1-QR50-Z-2400-1313                                                               | TPHV1-QR50-Z-2400-1313                                                               | UDP-QR50-Z-2400-... ❷                                                                | UEP-QR50-Z-2400-... ❷                                                                | UTP-QR50-Z-2400-... ❷                                                                |
| 2600 ❶                           | DPHV1-QR60-Z-2600-0715                                                               | DPHV1-QR60-Z-2600-1515                                                               | EPHV1-QR60-Z-2600-1515                                                               | TPHV1-QR60-Z-2600-1515                                                               | UDP-QR60-Z-2600-... ❷                                                                | UEP-QR60-Z-2600-... ❷                                                                | UTP-QR60-Z-2600-... ❷                                                                |

❶ Height 2600 is executed with post profile QR60, all other heights with post profile QR50. ❷ Transfer post: The item number results from the system and height; for explanations, see p. 183.  
❸ When ordering, observe inner corner (DP) and outer corner (EP). ❹ T-seam connection optionally on the left or right – both connections present. ❺ Please order floor attachment media separately. See p. 168.



Safety fence system ZAUN II with Wave grid 40



# Special elements for safety fence system ZAUN II Mesh screens

### ZAUN II-grid elements with diagonal

#### Diagonal left

Item number key:  
SZ2-GF-QR25-WG40-h-b-SL-a-c

#### Diagonal right

Item number key:  
SZ2-GF-QR25-WG40-h-b-SR-a-c

### ZAUN II-grid elements for corner situation

#### Outer corner

Item number key:  
SZ2AE-GF-QR25-WG40-h-a-c

#### Inner corner

Item number key:  
SZ2IE-GF-QR25-h-a-c

### ZAUN II-grid elements with rectangular cut-out

#### Cut-out top left (x=0)

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-0-y-a-c

#### Cut-out top

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-y-a-c

#### Cut-out top right

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-y-a-c

#### Cut-out left (x=0)

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-0-y-a-c

#### Cut-out inside

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-y-a-c

#### Cut-out right

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-y-a-c

#### Cut-out down left (x=0 and y=0)

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-0-0-a-c

#### Cut-out down (y=0)

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-0-a-c

#### Cut-out down right (y=0)

Item number key:  
SZ2-GF-QR25-WG40-h-b-AR-x-0-a-c

#### Element with 2 tabs

Item number key:  
SZ2LER(right) / SZ2LEL(left)-GF-QR25-WG40-h-b

#### Standard element

Item number key:  
SZ2-GF-QR25-WG40-h-b

#### SZ2-GF-QR25-WG40-h-b-AR-x-y-a-c

Design of the grid element from the safety fence system ZAUN II ➡ See p. 40/41.

#### SZ2-GF-WG40-h-b-AR-x-y-a-c

Cut-out rectangular

#### SZ2-GF-WG40-h-b-AR-x-y-a-c

Dimension values of the cut-out

**Dimension values:**

x = Distance between the left outer edge of the grid element and the left inner edge of the cut-out

y = Distance between the lower edge of the grid element and the lower edge of the cut-out

a = Width of the cut-out

c = Height of the cut-out

➡ When placing the order, observe the fence course in the item number. ➡ See p. 44.

BRÜHL · SAFETY FENCE SYSTEM ZAUN II 47

Precisely fitting ZAUN II-elements with individual cut-outs

System example with tunnel, constructed of special fields

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl

SAFETY FENCE SYSTEMS



# Safety fence system WAND II

## Modular all-round protection

The safety fence system WAND II by Brühl is made up of sheet metal elements and posts that are compatible with all Brühl door products. This stable, separating safety device is used in particular where system safety through safety grids cannot be ensured and where additional mbience conditions – such as protection from smoke formation, protection from sight, sound or very small parts – must be considered. The system WAND II process view was developed specifically for areas where a view of the system is required.

### Process view window

Large view, square window = simple exchange possible

EN ISO 14120: 5.2.4/5.4.2/5.9/5.10/5.16/5.17



### Integrated height compensation

per field +5/-5 mm

EN ISO 14120: 5.2.2



### Sight protection

Support of sheet metal walls on post

EN ISO 14120: 5.1.3/5.1.4/ 5.1.5/5.1.6/5.3.7/5.5/5.16/5.17



### High quality

Sheet elements are made of laser-cut and canted sheet metal

EN ISO 14120: 5.4.3



### Sight window installation

Sight windows of polycarbonate, sight protection panels and prevention of break through can be supplemented

EN ISO 14120 5.2.4/5.4.2/5.9/5.10/5.16/5.17



### Full protection

Sight protection, spray protection, protection against particles, protection from bright light, smoke, heat, dust, draft

EN ISO 14120: 5.1.3/5.1.4/ 5.1.5/5.1.6/5.3.7/5.5/5.16/5.17





Safety fence system WAND II sheet metal



| Standard sheet metal elements for safety fence system WAND II sheet metal                   |         |                                      |                  |                   |                          |                         |                                                   |      |      |      |      |      |      |      |       |       |       |       |       |
|---------------------------------------------------------------------------------------------|---------|--------------------------------------|------------------|-------------------|--------------------------|-------------------------|---------------------------------------------------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| Fence height                                                                                | Product | Fence course                         |                  |                   | Wall height              |                         | Axle size ❷ from post centre to post centre ❸     |      |      |      |      |      |      |      |       |       |       |       |       |
|                                                                                             |         | Straight fence course / outer corner | Inner corner     |                   | Ground clearance: 175 mm | Ground clearance: 20 mm | 300                                               | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | 1100  | 1200  | 1300  | 1400  | 1500  |
|                                                                                             |         |                                      | Corner bend left | Corner bend right |                          |                         | Wall width b (axle size - post profile - 10 mm) ❹ |      |      |      |      |      |      |      |       |       |       |       |       |
|                                                                                             |         |                                      |                  |                   |                          |                         | 240                                               | 340  | 440  | 540  | 640  | 740  | 840  | 940  | 1040  | 1140  | 1240  | 1340  | 1440  |
| 1400                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -1225                    | -1380                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 1600                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -1425                    | -1580                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 1800                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -1625                    | -1780                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 2000                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -1825                    | -1980                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 2200                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -2025                    | -2180                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 2400                                                                                        | SW2-BL  | -                                    | -EL              | -ER               | -2225                    | -2380                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| 2600❶                                                                                       | SW2-BL  | -                                    | -EL              | -ER               | -2425                    | -2580                   | -240                                              | -340 | -440 | -540 | -640 | -740 | -840 | -940 | -1040 | -1140 | -1240 | -1340 | -1440 |
| Example for item number key Product-fence course-wall height-wall width SW2-BL-ER-1980-1240 |         |                                      |                  |                   |                          |                         |                                                   |      |      |      |      |      |      |      |       |       |       |       |       |

① Height 2600 mm is executed with post profile QR60, all other heights with post profile QR50.  
② Axle size at post profile QR60 + 10 mm.  
③ Definition axle size/wall width: See fence scope p. 183.  
④ Wall height corresponds to fence height minus ground clearance.  
⑤ Cable duct holders: see p. 167.

MATERIAL OPTION

also sendzimir zinc-plated  
Sheet metal design available

COLOUR RECOMMENDATION

For the safety fence system WAND II, we recommend designing the post and sheet-metal elements in the same colour. We also recommend (if available) a fine-structure varnish so that the surface is less sensitive.



System example: Safety fence system WAND II with a double wing door





Safety fence system WAND II Process view, prevents from break-through

Product group/build  
SW2-PE

Prevents from break-through Design

Wing door with grip preparation

Wing door with lock set

Sliding door with switching cam system

Axle size

UK Window = 1255 mm

Wall height

Fence height

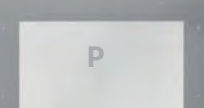
Ground clearance

Different ground clearances

Compriband for sealing  
Accessories, see p. 166.



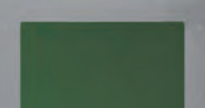
WINDOW FILLINGS



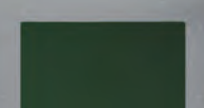
Polycarbonate



Reddish-brown T50



Green T75



Green T90

| Standard sheet metal elements for safety fence system WAND II Process view, prevents from break-through                                       |         |                                 |                                           |                    |                     |                |                                            |                                    |                             |                            |                                                   |       |       |                                                                                                                                                |       |       |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------------|-------------------------------------------|--------------------|---------------------|----------------|--------------------------------------------|------------------------------------|-----------------------------|----------------------------|---------------------------------------------------|-------|-------|------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|--|--|--|--|--|
| Fence height                                                                                                                                  | Product | Option<br>Prevent break through | Fence course                              |                    |                     | Window filling |                                            |                                    | Wall height                 |                            | Axle size ② from post centre to post centre ③     |       |       |                                                                                                                                                |       |       |  |  |  |  |  |
|                                                                                                                                               |         |                                 | Straight<br>fence course/<br>outer corner | Inner corner       |                     | Polycarbonate  | Sight protection<br>glass<br>reddish-brown | Sight protection<br>glass<br>green | Ground clearance:<br>175 mm | Ground clearance:<br>20 mm | 1000                                              | 1100  | 1200  | 1300                                                                                                                                           | 1400  | 1500  |  |  |  |  |  |
|                                                                                                                                               |         |                                 |                                           | Corner tab<br>left | Corner tab<br>right |                |                                            |                                    |                             |                            | Wall width b (axle size - post profile - 10 mm) ④ |       |       |                                                                                                                                                |       |       |  |  |  |  |  |
|                                                                                                                                               |         |                                 |                                           |                    |                     |                |                                            |                                    |                             |                            | 940                                               | 1040  | 1140  | 1240                                                                                                                                           | 1340  | 1440  |  |  |  |  |  |
| 2000                                                                                                                                          | SW2-PE  | -D                              | -                                         | -EL                | -ER                 | -P             | -SSB                                       | -SSG                               | -1825                       | -1980                      | -940                                              | -1040 | -1140 | -1240                                                                                                                                          | -1340 | -1440 |  |  |  |  |  |
| 2200                                                                                                                                          | SW2-PE  | -D                              | -                                         | -EL                | -ER                 | -P             | -SSB                                       | -SSG                               | -2025                       | -2180                      | -940                                              | -1040 | -1140 | -1240                                                                                                                                          | -1340 | -1440 |  |  |  |  |  |
| 2400                                                                                                                                          | SW2-PE  | -D                              | -                                         | -EL                | -ER                 | -P             | -SSB                                       | -SSG                               | -2225                       | -2380                      | -940                                              | -1040 | -1140 | -1240                                                                                                                                          | -1340 | -1440 |  |  |  |  |  |
| 2600 ⑤                                                                                                                                        | SW2-PE  | -D                              | -                                         | -EL                | -ER                 | -P             | -SSB                                       | -SSG                               | -2425                       | -2580                      | -940                                              | -1040 | -1140 | -1240                                                                                                                                          | -1340 | -1440 |  |  |  |  |  |
| Example for item number key Product-(Option penetration protection)-fence course-window filling-wall height-wall width SW2-PE-D-SSB-1980-1240 |         |                                 |                                           |                    |                     |                |                                            |                                    |                             |                            |                                                   |       |       | COLOUR RECOMMENDATION                                                                                                                          |       |       |  |  |  |  |  |
|                                                                                                                                               |         |                                 |                                           |                    |                     |                |                                            |                                    |                             |                            |                                                   |       |       | MATERIAL OPTION                                                                                                                                |       |       |  |  |  |  |  |
|                                                                                                                                               |         |                                 |                                           |                    |                     |                |                                            |                                    |                             |                            |                                                   |       |       |  also sendzimir zinc-plated Sheet metal design availabler |       |       |  |  |  |  |  |

PANEL INSTALLATION



Windows of the process view are clamped with a Z-profile.

② Square window installation, easy changeability

③ Dimension maximum: 1195 × 1195 mm

① Height 2600 mm is executed with post profile QR60, all other heights with post profile QR50.

② Axle size at post profile QR60 + 10 mm.

③ Definition axle size/wall width: See fence scope p. 183.

④ Wall height corresponds to fence height minus ground clearance.

⑤ The height from the bottom to the lower edge of the process view windows always is 1255 mm.

⑥ In a fence course with doors, the frames of the doors are completely filled with te process view windows; therefore, a slight offset at the horizontal upper edge of the process view windows from the doors to the wall elements results.

⑦ Cable duct holders: see p. 167.



Safety fence system WAND II Process view with penetration protection



CAD



MOV



PICT

Brühlwww.bruehl-safety.com

www.bruehl-safety.comBrühl



Post for safety fence system WAND II

Straight fence course



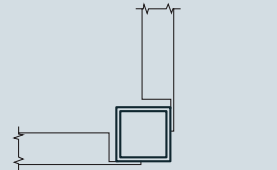
Passage post (DP...)



Outer corner



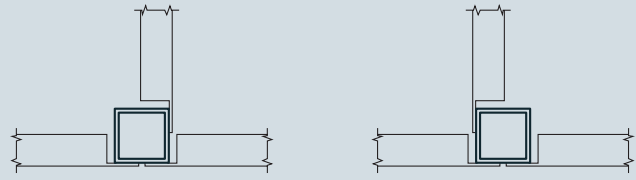
Corner post (EP...)



T-seam fence course



T-seam post (TP...)



T-seam connection optionally on the left or right – both connections present..

Connection on the left



Passage post (DP...)

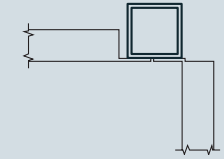


Inner corner

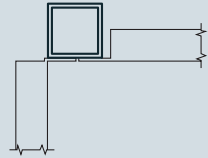


Passage post (DP...)

Corner canting left



Corner canting right



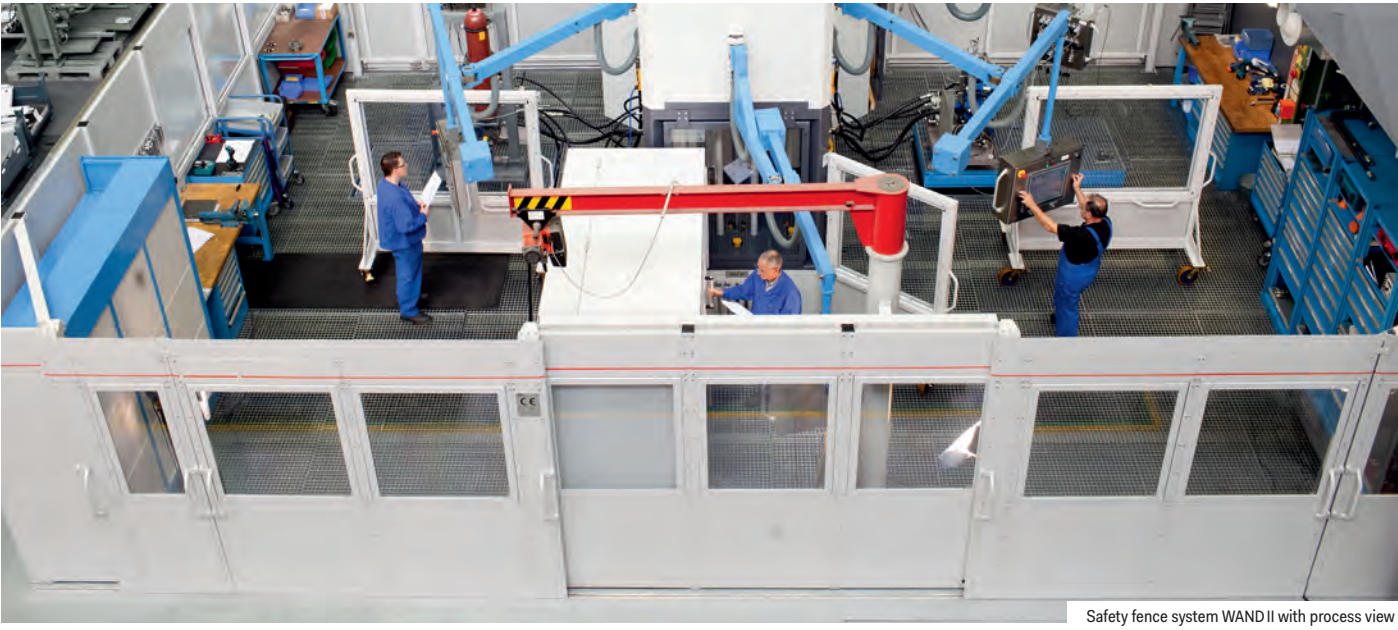


Safety fence system WAND II

Post for safety fence system WAND II

| Post without height compensation |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                  |   |   |   |   |   |   |   |
| Fence height                     | Passage post                                                                         | Passage post                                                                         | Corner post                                                                          | T-seam post                                                                          | Passage post adjustable                                                              | Corner post adjustable                                                               | T-seam post adjustable                                                               |
| 1400                             | DP-QR50-W-1400-0613                                                                  | DP-QR50-W-1400-1313                                                                  | EP-QR50-W-1400-1313                                                                  | TP-QR50-W-1400-1313                                                                  | DPJ-QR50-W-1400-1313                                                                 | EPJ-QR50-W-1400-1313                                                                 | TPJ-QR50-W-1400-1313                                                                 |
| 1600                             | DP-QR50-W-1600-0613                                                                  | DP-QR50-W-1600-1313                                                                  | EP-QR50-W-1600-1313                                                                  | TP-QR50-W-1600-1313                                                                  | DPJ-QR50-W-1600-1313                                                                 | EPJ-QR50-W-1600-1313                                                                 | TPJ-QR50-W-1600-1313                                                                 |
| 1800                             | DP-QR50-W-1800-0613                                                                  | DP-QR50-W-1800-1313                                                                  | EP-QR50-W-1800-1313                                                                  | TP-QR50-W-1800-1313                                                                  | DPJ-QR50-W-1800-1313                                                                 | EPJ-QR50-W-1800-1313                                                                 | TPJ-QR50-W-1800-1313                                                                 |
| 2000                             | DP-QR50-W-2000-0613                                                                  | DP-QR50-W-2000-1313                                                                  | EP-QR50-W-2000-1313                                                                  | TP-QR50-W-2000-1313                                                                  | DPJ-QR50-W-2000-1313                                                                 | EPJ-QR50-W-2000-1313                                                                 | TPJ-QR50-W-2000-1313                                                                 |
| 2200                             | DP-QR50-W-2200-0613                                                                  | DP-QR50-W-2200-1313                                                                  | EP-QR50-W-2200-1313                                                                  | TP-QR50-W-2200-1313                                                                  | DPJ-QR50-W-2200-1313                                                                 | EPJ-QR50-W-2200-1313                                                                 | TPJ-QR50-W-2200-1313                                                                 |
| 2400                             | DP-QR50-W-2400-0613                                                                  | DP-QR50-W-2400-1313                                                                  | EP-QR50-W-2400-1313                                                                  | TP-QR50-W-2400-1313                                                                  | DPJ-QR50-W-2400-1313                                                                 | EPJ-QR50-W-2400-1313                                                                 | TPJ-QR50-W-2400-1313                                                                 |
| 2600                             | DP-QR60-W-2600-0715                                                                  | DP-QR60-W-2600-1515                                                                  | EP-QR60-W-2600-1515                                                                  | TP-QR60-W-2600-1515                                                                  | DPJ-QR60-W-2600-1515                                                                 | EPJ-QR60-W-2600-1515                                                                 | TPJ-QR60-W-2600-1515                                                                 |
| Post with height compensation    |                                                                                      |                                                                                      |                                                                                      |                                                                                      | Transfer post                                                                        |                                                                                      |                                                                                      |
|                                  |  |  |  |  |  |  |  |
| Fence height                     | Passage post with height compensation                                                | Passage post with height compensation                                                | Corner post with height compensation                                                 | T-seam post with height compensation                                                 | Transfer post as passage post                                                        | Transfer post as corner post                                                         | Transfer post as T-seam post                                                         |
| Height compensation              | + 52                                                                                 | + 52                                                                                 | + 52                                                                                 | + 52                                                                                 |                                                                                      |                                                                                      |                                                                                      |
|                                  | - 7                                                                                  | - 7                                                                                  | - 7                                                                                  | - 7                                                                                  |                                                                                      |                                                                                      |                                                                                      |
| 1400                             | DPHV1-QR50-W-1400-0613                                                               | DPHV1-QR50-W-1400-1313                                                               | EPHV1-QR50-W-1400-1313                                                               | TPHV1-QR50-W-1400-1313                                                               | UDP-QR50-W-1400-... ②                                                                | UEP-QR50-W-1400-... ②                                                                | UTP-QR50-W-1400-... ②                                                                |
| 1600                             | DPHV1-QR50-W-1600-0613                                                               | DPHV1-QR50-W-1600-1313                                                               | EPHV1-QR50-W-1600-1313                                                               | TPHV1-QR50-W-1600-1313                                                               | UDP-QR50-W-1600-... ②                                                                | UEP-QR50-W-1600-... ②                                                                | UTP-QR50-W-1600-... ②                                                                |
| 1800                             | DPHV1-QR50-W-1800-0613                                                               | DPHV1-QR50-W-1800-1313                                                               | EPHV1-QR50-W-1800-1313                                                               | TPHV1-QR50-W-1800-1313                                                               | UDP-QR50-W-1800-... ②                                                                | UEP-QR50-W-1800-... ②                                                                | UTP-QR50-W-1800-... ②                                                                |
| 2000                             | DPHV1-QR50-W-2000-0613                                                               | DPHV1-QR50-W-2000-1313                                                               | EPHV1-QR50-W-2000-1313                                                               | TPHV1-QR50-W-2000-1313                                                               | UDP-QR50-W-2000-... ②                                                                | UEP-QR50-W-2000-... ②                                                                | UTP-QR50-W-2000-... ②                                                                |
| 2200                             | DPHV1-QR50-W-2200-0613                                                               | DPHV1-QR50-W-2200-1313                                                               | EPHV1-QR50-W-2200-1313                                                               | TPHV1-QR50-W-2200-1313                                                               | UDP-QR50-W-2200-... ②                                                                | UEP-QR50-W-2200-... ②                                                                | UTP-QR50-W-2200-... ②                                                                |
| 2400                             | DPHV1-QR50-W-2400-0613                                                               | DPHV1-QR50-W-2400-1313                                                               | EPHV1-QR50-W-2400-1313                                                               | TPHV1-QR50-W-2400-1313                                                               | UDP-QR50-W-2400-... ②                                                                | UEP-QR50-W-2400-... ②                                                                | UTP-QR50-W-2400-... ②                                                                |
| 2600 ③                           | DPHV1-QR60-W-2600-0715                                                               | DPHV1-QR60-W-2600-1515                                                               | EPHV1-QR60-W-2600-1515                                                               | TPHV1-QR60-W-2600-1515                                                               | UDP-QR60-W-2600-... ②                                                                | UEP-QR60-W-2600-... ②                                                                | UTP-QR60-W-2600-... ②                                                                |

③ Height 2600 is executed with post profile QR60, all other heights with post profile QR50. ② Transfer post: The item number results from the system and height; for explanations, see p. 183.  
④ When ordering, observe inner corner (DP) and outer corner (EP). ① T-seam connection optionally on the left or right – both connections present. ⑤ Please order floor attachment media separately. See p. 168.



Safety fence system WAND II with process view





## Brühl Safety Doors – Solutions for any application

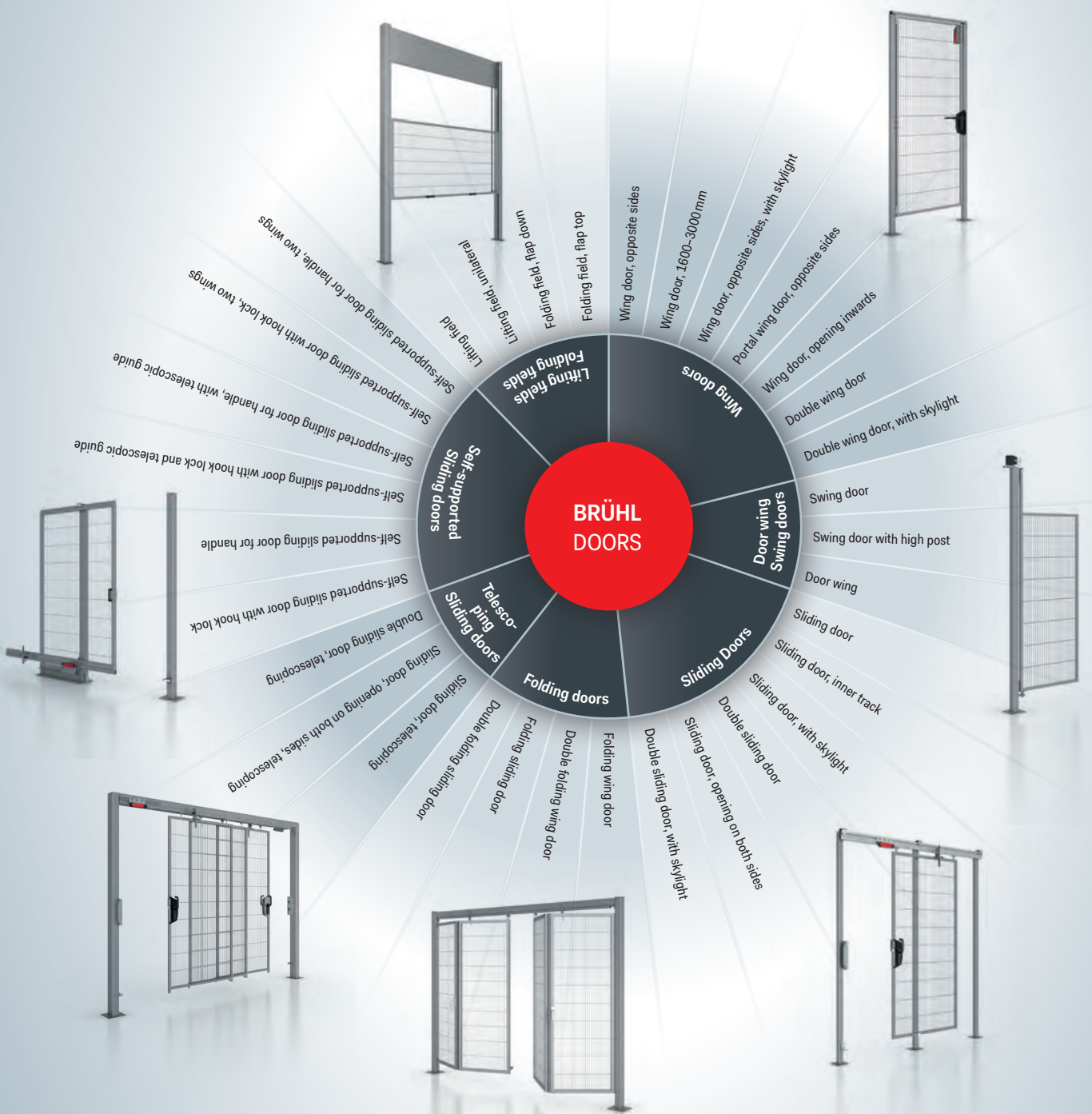
The following pages provide an overview of many different door assemblies of Brühl Safety GmbH. The chapter is broken down into the assemblies of wing, sliding, swing and special doors. The product tables contain all technical specifications. The corresponding door accessories, such as precisely fitting attachment systems for safety switches, are referred to on the individual product pages.



# Safety doors

## The matching door for any opening area

Which door is the right one for your facility access? A functional wing door, a comfortable sliding door, a self-supported sliding door without annoying guide elements in the opening area or a particularly space-saving version like the folding door or the telescopic sliding door? You can use many different door systems that meet your individual production runs.



Combination overview doors and safety fence systems/frame fillings

| Product description                       |                                                                                 | Product group / build | Safety fence systems     |                                                 |                                           |                                           |                                         |                                          |
|-------------------------------------------|---------------------------------------------------------------------------------|-----------------------|--------------------------|-------------------------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------------------|------------------------------------------|
|                                           |                                                                                 |                       | FLEX II<br>⌚ s. p. 30/31 | FLEX II<br>High fence planning<br>⌚ s. p. 32/33 | ZAUN II<br>Grid fillings<br>⌚ s. p. 40/41 | ZAUN II<br>Area elements<br>⌚ s. p. 42/43 | WAND II<br>Sheet metal<br>⌚ s. p. 50/51 | WAND II<br>Process view<br>⌚ s. p. 52/53 |
| Wing doors                                | Wing door for handle, latch or deadlock slam lock, opposite sides               | FTW                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Wing door for handle, latch or deadlock slam lock, 1600–3000 mm                 | FT                    | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Wing door for handle, latch or deadlock slam lock, opposite sides with skylight | FTWO                  | ●                        | ●                                               | ○                                         | ○                                         | ○                                       | ○                                        |
|                                           | Portal wing door for handle, latch or deadlock slam lock, opposite sides        | PFTW                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Wing door for handle, latch or deadlock slam lock, opening inwards              | FTEO                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double wing door for handle, latch or deadlock slam lock                        | DFT                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double wing door for handle, latch or deadlock slam lock, with skylight         | DFTO                  | ●                        | ●                                               | ○                                         | ○                                         | ○                                       | ○                                        |
| Swing doors, door wings                   | Swing door                                                                      | PT                    | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Swing door with high post                                                       | HPT                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Door wing for handle, latch or deadlock slam lock                               | TF                    | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
| Sliding doors                             | Sliding door for handle or hook lock                                            | ST                    | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Sliding door for handle or hook lock, inner track                               | STI                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Sliding door for handle or hook lock, with skylight                             | STO                   | ●                        | ●                                               | ○                                         | ○                                         | ○                                       | ○                                        |
|                                           | Double sliding door for handle or hook lock                                     | DST                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Sliding door for handle or hook lock, opening on both sides                     | STB                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double sliding door for handle or hook lock, with skylight                      | DSTO                  | ●                        | ●                                               | ○                                         | ○                                         | ○                                       | ○                                        |
| Folding wing doors, folding sliding doors | Folding hinged door for latch                                                   | FAFTR                 | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double folding hinged door for latch                                            | DFAFTR                | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double folding sliding door                                                     | FASTG                 | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double folding sliding door for handle                                          | DFASTG                | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
| Telescoping sliding doors                 | Sliding door for handle or hook lock, telescoping                               | STT                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Sliding door for handle or hook lock, opening on both sides, telescoping        | STBT                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Double sliding door for handle or hook lock, telescoping                        | DSTT                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
| Self-supported sliding doors              | Self-supported sliding door with hook lock                                      | FSTS                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Self-supported sliding door for handle                                          | FSTG                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Self-supported sliding door with hook lock and telescopic guide                 | FSTST                 | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Self-supported sliding door for handle, with telescopic guide                   | FSTGT                 | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Self-supported sliding door with hook lock, two wings                           | FSTS-2                | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Self-supported sliding door for handle, two wings                               | FSTG-2                | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
| Lifting fields, Folding fields            | Lifting field                                                                   | HF                    | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Lifting field, unilateral                                                       | HFE                   | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Folding field, flap down                                                        | KF-U                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |
|                                           | Folding field, flap top                                                         | KF-O                  | ●                        | ○                                               | ●                                         | ●                                         | ●                                       | ●                                        |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



# Wing doors for effective work processes

The Brühl wing doors are an optimal solution of or particularly cost-efficient and functional fence facilities. Thanks to the great diversity of this build, you will surely find the right product for any application to be integrated into your individual production processes.

Removable  
assembly aid – no  
interfering elements in  
the opening area

High  
twist resilience of  
the door wing

Large, stable,  
firmly welded four-hole  
ground plate

## Overview: Advantages of the wing doors

### Fast installation

Brühl wing doors are highly stable and ensure quick installation – without any time loss on the construction site.

### Assembly aid that can be removed

No interfering elements within the opening area.

### Simple height adjustment

Height adjustment at irregular ground for easy alignment of the posts is optionally available.

### Different ground clearances

All wing doors are delivered by default with a ground clearance of 175 mm or 20 mm.

### Large opening

For the wing doors, an opening by up to 180° is possible.

### Flexible planning

The door posts are provided for transit and for corner situations. These have a positive influence on the assembly time and the flexibility at the site

### Compatible

All wing doors are available in combination with our attachment systems for safety switches.

### Customer-specific solutions

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation.

### Maximum shock resilience

All elements are sand-blasted and powder-coated.

| Technical data for standard wing doors ⓘ Special productions on request. |        |        |        |        |        |        |        |
|--------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Product group/build                                                      | FTW    | FT     | FTWO   | PFTW   | FTEO   | DFT    | DFTO   |
| Dimensions                                                               |        |        |        |        |        |        |        |
| max. axle size in mm                                                     | 1410   | 3010   | 1430   | 1410   | 1410   | 6030   | 2830   |
| max. door-/fence height in mm                                            | 2600   | 2600   | 4835   | 2600   | 2600   | 2600   | 4835   |
| Frame filling                                                            |        |        |        |        |        |        |        |
| FLEX II                                                                  | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Wave grid 40                                                             | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Wave grid 25                                                             | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Welding grid 40                                                          | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Sheet metal                                                              | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Polycarbonate                                                            | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Perforated sheet round holes Rv 5-8                                      | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Perforated sheet square holes Qg 8-12                                    | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Process view – Sight protection glass reddish-brown (T50)                | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Process view – Sight protection glass green (T75/T90)                    | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Process view – Polycarbonate                                             | ●      | ●      | ○      | ●      | ●      | ●      | ○      |
| Brühl door accessories                                                   |        |        |        |        |        |        |        |
| Handle set                                                               | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Shutting protection                                                      | ●      | ●      | ●      | ●      | ×      | ●      | ●      |
| Attachment systems for safety switches                                   |        |        |        |        |        |        |        |
| Handle preparation BRÜHL-GV                                              | ●      | ●      | ●      | ●      | ×      | ●      | ●      |
| Handle system with bullet crossbow BRÜHL-GRK®                            | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Retaining plate system BRÜHL-HP-F®                                       | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Latch system BRÜHL-RI®                                                   | ●      | ●      | ●      | ●      | ×      | ●      | ●      |
| Latch preparation BRÜHL-RV                                               | ●      | ●      | ●      | ●      | ×      | ●      | ●      |
| Switching cam system BRÜHL-SN-F                                          | ×      | ●      | ×      | ×      | ●      | ●      | ×      |
| Safety switch preparation BRÜHL-SV                                       | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Rollover latch system BRÜHL-UER®                                         | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Surfaces                                                                 |        |        |        |        |        |        |        |
| Powder-coating/paint                                                     | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Hot-dip galvanised surface                                               | ●      | ●      | ●      | ●      | ●      | ●      | ●      |
| Ground clearance                                                         |        |        |        |        |        |        |        |
| Standard                                                                 | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm |
| Reduced                                                                  | 20 mm  | 20 mm  | 20 mm  | 20 mm  | 20 mm  | 20 mm  | 20 mm  |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



Wing door for handle, latch or mortise lock, opposite sides

Product group/build  
**FTW**

❶ Illustration shows FTW with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F®

Retaining plate system

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

❶ Illustration shows FTW with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F®

Handle system

RI-F®

Latch system

RV-F

Latch preparation

GV-F

Handle preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

THE POSTS OF THE BILATERAL WING DOOR ARE MADE OF A STABLE STEEL PROFILE WITH WELDED-ON SQUARE BOTTOM PLATE. BY DEFAULT, THE TWO DOOR POSTS ARE PREPARED FOR A CORNER AND PASSAGE SITUATION. THE SCREW-ON HINGES PERMIT EXCHANGE OF THE STOP DIRECTION AT ANY TIME. THE FTW BUILD IS PARTICULARLY FLEXIBLE AND COMPATIBLE WITH ANY ATTACHMENT SYSTEM FOR WING DOORS.

Wing door for handle, latch or mortise lock, opposite sides

| Build | Post profile | Wing profile |        | Safety fence system / filling |               |              |              |                 |             |               |                                    |                                     |             |               | Ground clearance                      |                              | Fence height | Axle size ❶ from post centre to post centre ❷ |       |      |       |       |       |
|-------|--------------|--------------|--------|-------------------------------|---------------|--------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------------|-------------|---------------|---------------------------------------|------------------------------|--------------|-----------------------------------------------|-------|------|-------|-------|-------|
|       |              |              |        | ZAUN II                       |               |              |              |                 |             |               |                                    |                                     |             |               |                                       |                              |              | 800                                           | 1000  | 1200 | 1400  |       |       |
|       |              | QR25         | RP106  | FLEX II                       | Grid fillings |              |              |                 |             | Area elements |                                    |                                     |             |               |                                       |                              |              | Open width ❸                                  |       |      |       |       |       |
|       |              |              |        |                               | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square perforation | Sheet metal | Polycarbonate | Sight protection glass red-dish-brown | Sight protection glass green |              | 700                                           | 900   | 1100 | 1300  |       |       |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -             | -                                     | -                            | -175         | -20                                           | -1400 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -             | -                                     | -                            | -175         | -20                                           | -1600 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -             | -                                     | -                            | -175         | -20                                           | -1800 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175         | -20                                           | -2000 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175         | -20                                           | -2200 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175         | -20                                           | -2400 | -800 | -1000 | -1200 | -1400 |
| FTW   | -QR60        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175         | -20                                           | -2600 | -800 | -1000 | -1200 | -1400 |

Example for item number key Build-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **FTW-QR50-QR25-Z-GF-WG40-175-1400-1000**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-FTW-QR50-QR25-Z-GF-WG40-175-1400-1150** for special axle size 1150).

DOOR OPENING❶

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

PRODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment.

FLOOR ATTACHMENT ❸

|                                   |                          |
|-----------------------------------|--------------------------|
| Required number                   | 8 pcs.                   |
| Attachment type                   | Fixed or shear connector |
| Size · Length                     | M10 · 120/130 mm         |
| Weight example FTW 2000 × 1000 mm | 27.53 kg                 |

❶ Axle size in post profile QR60 +10 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

❹ The doors are not pre-installed by default – the opening direction can be chosen freely on site. Optionally, pre-installation is possible as well; please indicated with your order.

❺ Please order floor attachment media separately. See p. 168.

❻ Perforated sheet: Round holes Rv5-8/ square holes Qg 8-12

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates centred in the middle by default.

❾ For specific floor plate positioning, see p. 187.

❿ Doors are designed opening outwards by default. For doors opening inwards, see p. 70 and following.

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl

CAD  
MOV  
PICT



Wing door for handle, latch or mortise lock, 1600–3000 mm

Product group/build  
**FT**

❗ Illustration shows FT with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

**TG**

Door sets

**SG-F**

Lock set

**STR-BR**

Fixed caster

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**HP-F®**

Retaining plate system

**SN-F**

Switching can system

**SV**

Switch preparation

❗ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❗ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

❗ Illustration shows FT with a grip system.

OUTSIDE

MACHINE-SIDE

The posts of the wing door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The stable welded-on hinges implement an opening width of up to 3000 mm.

DOOR ACCESSORIES

**TZ-GRK-F**

Handle with bullet crossbow

**TZ-RI-F**

Latch

**STR-BR**

Fixed caster

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**GRK-F®**

Handle system

**RV-F**

Latch preparation

**GV-F**

Handle preparation

❗ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❗ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

SAFETY DOORS

BRÜHL · WING DOORS 65

Wing door for handle, latch or mortise lock, 1600–3000 mm

| Build | Stop direction |           | Post profile            |                         | Wing profile |        | Safety fence system / filling |         |    |         |            |            |            |          |         |           |           |       |         |           | Ground clearance |        | Fence height | Axle size ❶ from post centre to post centre ❷ |       |       |       |       |       |       |       |       |
|-------|----------------|-----------|-------------------------|-------------------------|--------------|--------|-------------------------------|---------|----|---------|------------|------------|------------|----------|---------|-----------|-----------|-------|---------|-----------|------------------|--------|--------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|       |                |           |                         |                         |              |        | ZAUN II                       |         |    |         |            |            |            | WAND II  |         |           |           |       |         |           |                  |        |              |                                               | 1600  | 1800  | 2000  | 2200  | 2400  | 2600  | 2800  | 3000  |
|       | DIN left       | DIN right | for axle size ≤ 2000 mm | for axle size > 2000 mm | QR25         | RP106  | QR35                          | RP1191  | F  | Z-GF-F  | Z-GF-WG40  | Z-GF-WG25  | Z-GF-SG40  | Z-FE-BL  | Z-FE-P  | Z-FE-LBR  | Z-FE-LBQ  | -W-BL | -       | -         | -                | 175 mm | 20 mm        |                                               | 1500  | 1700  | 1900  | 2100  | 2300  | 2500  | 2700  | 2900  |
|       |                |           |                         |                         |              |        |                               |         |    |         |            |            |            |          |         |           |           |       |         |           |                  |        |              |                                               |       |       |       |       |       |       |       |       |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -       | -         | -                | -175   | -20          | -1400                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -       | -         | -                | -175   | -20          | -1600                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -       | -         | -                | -175   | -20          | -1800                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -W-PE-P | -W-PE-SSB | -W-PE-SSG        | -175   | -20          | -2000                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -W-PE-P | -W-PE-SSB | -W-PE-SSG        | -175   | -20          | -2200                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -W-PE-P | -W-PE-SSB | -W-PE-SSG        | -175   | -20          | -2400                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |
| FT    | -L             | -R        | -QR50                   | -QR60                   | -QR25        | -RP106 | -QR35                         | -RP1191 | -F | -Z-GF-F | -Z-GF-WG40 | -Z-GF-WG25 | -Z-GF-SG40 | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR | -Z-FE-LBQ | -W-BL | -W-PE-P | -W-PE-SSB | -W-PE-SSG        | -175   | -20          | -2600                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -3000 |

**Example for item number key** Build-stop direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **FT-L-QR50-QR25-Z-GF-WG40-175-1400-1600**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-FT-L-QR50-QR25-Z-GF-WG40-175-1400-1550** for special axle size 1550).

| FLOOR ATTACHMENT ❶               |                          |
|----------------------------------|--------------------------|
| Required number                  | 8 pcs.                   |
| Attachment type                  | Fixed or shear connector |
| Size · Length                    | M10 · 120/130 mm         |
| Weight example FT 2000 × 1600 mm | 36.82 kg                 |

- ❶ Axle size in post profile QR60 +10 mm
- ❷ For axle size definition, see p. 184.
- ❸ Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.
- ❹ Please order floor attachment media separately. See p. 168.
- ❺ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12
- ❻ Doors by default with 175 mm ground clearance.
- ❼ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.
- ❽ Fixed caster included in the delivery.

DOOR OPENING

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

PRODUCT OPTION: HEIGHT COMPENSATION



Optional with post -J for height adjustment.

CAD  
MOV  
PICT

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www.bruehl-safety.com Brühl



Wing door for handle, latch or mortise lock, opposite sides, with skylight

Product group/build  
**FTWO**

❶ Illustration shows FTWO with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F®

Retaining plate system

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

❶ Illustration shows FTWO with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F®

Handle system

RI-F®

Latch system

GV-F

Handle preparation

RV-F

Latch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

SAFETY DOORS

| Wing door for handle, latch or mortise lock, opposite sides, with skylight                                                                                                                                                                                     |              |              |                     |                  |       |              |                                             |       |       |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|---------------------|------------------|-------|--------------|---------------------------------------------|-------|-------|-------|
| Build                                                                                                                                                                                                                                                          | Post profile | Wing profile | Safety fence system | Ground clearance |       | Fence height | Axle size🅐 from post centre to post centre🅑 |       |       |       |
|                                                                                                                                                                                                                                                                |              | QR25         | FLEX II             | 175 mm           | 20 mm |              | 800                                         | 1000  | 1200  | 1400  |
|                                                                                                                                                                                                                                                                |              |              |                     |                  |       |              | Open width🅓                                 |       |       |       |
|                                                                                                                                                                                                                                                                |              |              |                     |                  |       |              | 700                                         | 900   | 1100  | 1300  |
| FTWO                                                                                                                                                                                                                                                           | -QR50        | -QR25        | -F                  | -175             | -20   | -2400        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR60        | -QR25        | -F                  | -175             | -20   | -2600        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR60        | -QR25        | -F                  | -175             | -20   | -2835        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR60        | -QR25        | -F                  | -175             | -20   | -3035        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -3235        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -3435        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -3635        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -3835        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -4035        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -4235        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -4435        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -4635        | -800                                        | -1000 | -1200 | -1400 |
| FTWO                                                                                                                                                                                                                                                           | -QR80        | -QR25        | -F                  | -175             | -20   | -4835        | -800                                        | -1000 | -1200 | -1400 |
| Example for item number key Build-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size <b>FTWO-QR50-QR25-F-175-2400-1000</b>                                                                                          |              |              |                     |                  |       |              |                                             |       |       |       |
| For dimensions that are not in the table, <b>SO-</b> must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. <b>SO-FTWO-QR50-QR25-F-175-2400-1350</b> for special axle size 1350). |              |              |                     |                  |       |              |                                             |       |       |       |

FLOOR ATTACHMENT ❹

Required number

8 pcs.

Attachment type

Fixed or shear connector

Size · Length

M10 · 120/130 mm  
M12 · 145/160 mm ❺

Weight example FTWO 2400×1000 mm

34.5 kg

❶ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

❹ The doors are not pre-installed by default – the opening direction can be chosen freely on site. Optionally, pre-installation is possible as well; please indicated with your order.

❺ Please order floor attachment media separately. See p. 168.

❻ As of a height of 3235 mm, use M12.

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

DOOR OPENING ❸

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

PRODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment.

The posts of the wing door with skylight are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The screw-on hinges permit exchange of the stop direction at any time. The FTWO build is particularly flexible and compatible with any attachment system for wing doors. Both posts are connected to each other with a transom profile and a skylight grid mat.





Portal wing door for handle, latch or mortise lock, opposite sides

Product group/build  
**PFTW**

❶ Illustration shows PFTW with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F®

Retaining plate system

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

❶ Illustration shows PFTW with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F®

Handle system

RI-F®

Latch system

GV-F

Handle preparation

RV-F

Latch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The posts of the portal wing doors are connected to each other by a welded steel profile. By default, the two door posts are prepared for a corner and passage situation. The screw-on hinges permit exchange of the stop direction at any time.

The posts of the portal wing doors are connected to each other by a welded steel profile. By default, the two door posts are prepared for a corner and passage situation. The screw-on hinges permit exchange of the stop direction at any time.

SAFETY DOORS

| Portal wing door for handle, latch or mortise lock, opposite sides                                                                                                                                                                                       |              |              |        |                               |         |              |              |                         |             |               |                        |                              |             |               |                                       |                              |        |       |              |                                               |      |       |       |                |      |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------|-------------------------------|---------|--------------|--------------|-------------------------|-------------|---------------|------------------------|------------------------------|-------------|---------------|---------------------------------------|------------------------------|--------|-------|--------------|-----------------------------------------------|------|-------|-------|----------------|------|--|
| Product group/build                                                                                                                                                                                                                                      | Post profile | Wing profile |        | Safety fence system / filling |         |              |              |                         |             |               |                        |                              |             |               |                                       | Ground clearance             |        |       | Fence height | Axle size ❶ from post centre to post centre ❷ |      |       |       | Passage height |      |  |
|                                                                                                                                                                                                                                                          |              |              |        | ZAUN II                       |         |              |              |                         |             |               |                        | WAND II                      |             |               |                                       |                              |        |       |              | 800                                           | 1000 | 1200  | 1400  |                |      |  |
|                                                                                                                                                                                                                                                          |              | QR25         | RP106  | ZAUN II - Grid fillings       |         |              |              | ZAUN II - Area elements |             |               |                        | WAND II - Process view (-PE) |             |               |                                       |                              |        |       |              | Open width ❸                                  |      |       |       |                |      |  |
|                                                                                                                                                                                                                                                          |              |              |        | FLEX II                       | FLEX II | Wave grid 40 | Wave grid 25 | Welding grid 40         | Sheet metal | Polycarbonate | Perforated sheet Round | Perforated sheet Square      | Sheet metal | Polycarbonate | Sight protection glass red-dish-brown | Sight protection glass green | 175 mm | 20 mm |              |                                               |      |       |       |                |      |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -             | -                                     | -                            | -175   | -20   |              | -1400                                         | -800 | -1000 | -1200 | -1400          | 2210 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -             | -                                     | -                            | -175   | -20   |              | -1600                                         | -800 | -1000 | -1200 | -1400          | 2210 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -             | -                                     | -                            | -175   | -20   |              | -1800                                         | -800 | -1000 | -1200 | -1400          | 2210 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20   |              | -2000                                         | -800 | -1000 | -1200 | -1400          | 2210 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20   |              | -2200                                         | -800 | -1000 | -1200 | -1400          | 2210 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20   |              | -2400                                         | -800 | -1000 | -1200 | -1400          | 2410 |  |
| PFTW                                                                                                                                                                                                                                                     | -QR60        | -QR25        | -RP106 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40              | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ                    | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20   |              | -2600                                         | -800 | -1000 | -1200 | -1400          | 2610 |  |
| Example for item number key Build-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size PFTW-QR50-QR25-Z-GF-WG40-175-1400-1000                                                                                   |              |              |        |                               |         |              |              |                         |             |               |                        |                              |             |               |                                       |                              |        |       |              |                                               |      |       |       |                |      |  |
| For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-PFTW-QR50-QR25-Z-GF-WG40-175-2400-1350 for special axle size 1350). |              |              |        |                               |         |              |              |                         |             |               |                        |                              |             |               |                                       |                              |        |       |              |                                               |      |       |       |                |      |  |

FLOOR ATTACHMENT ❶

Required number

8 pcs.

Attachment type

Fixed or shear connector

Size · Length

M10 · 120/130 mm

Weight example PFTW 2000x1000 mm

31.83 kg

❶ Axle size in post profile QR60 +10 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

❹ The doors are not pre-installed by default – the opening direction can be chosen freely on site. Optionally, pre-installation is possible as well; please indicated with your order.

❺ Please order floor attachment media separately. See p. 168.

❻ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates centred in the middle by default.

For specific floor plate positioning, see p.187.

DOOR OPENING ❶

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

RODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment

CAD

MOV

PICT

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Wing door for handle, latch or mortise lock, opening inwards

Product group/build  
**FTEO**

Illustration shows FTEO with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Door sets

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Retaining plate system

Switching cam system

Switch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

Illustration shows FTEO with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Handle system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The posts of the wing door opening inwards are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The door wing is constructionally designed to open inwards.

| Wing door for handle, latch or mortise lock, opening inwards                                                                                                                                                                                              |                |           |              |              |        |                               |               |              |              |                 |               |               |                        |                         |             |               |                                       |                              |        |              |                                               |      |       |       |       |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|--------------|--------------|--------|-------------------------------|---------------|--------------|--------------|-----------------|---------------|---------------|------------------------|-------------------------|-------------|---------------|---------------------------------------|------------------------------|--------|--------------|-----------------------------------------------|------|-------|-------|-------|--|
| Build                                                                                                                                                                                                                                                     | Stop direction |           | Post profile | Wing profile |        | Safety fence system / filling |               |              |              |                 |               |               |                        |                         |             |               |                                       | Ground clearance             |        | Fence height | Axle size ① from post centre to post centre ② |      |       |       |       |  |
|                                                                                                                                                                                                                                                           |                |           |              |              |        | ZAUN II                       |               |              |              |                 |               | WAND II       |                        |                         |             |               |                                       |                              |        |              | 800                                           | 1000 | 1200  | 1400  |       |  |
|                                                                                                                                                                                                                                                           | DIN left       | DIN right |              | QR25         | RP106  | FLEX II                       | Grid fillings |              |              |                 | Area elements |               |                        |                         | Sheet metal | Process view  |                                       |                              |        |              | Open width ③                                  |      |       |       |       |  |
|                                                                                                                                                                                                                                                           |                |           |              |              |        |                               | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal   | Polycarbonate | Perforated sheet Round | Perforated sheet Square |             | Polycarbonate | Sight protection glass red-dish-brown | Sight protection glass green | 175 mm |              | 20 mm                                         |      |       |       |       |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -             | -                                     | -                            | -175   | -20          | -1400                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -             | -                                     | -                            | -175   | -20          | -1600                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -             | -                                     | -                            | -175   | -20          | -1800                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20          | -2000                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20          | -2200                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR50        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20          | -2400                                         | -800 | -1000 | -1200 | -1400 |  |
| FTEO                                                                                                                                                                                                                                                      | -L             | -R        | -QR60        | -QR25        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL       | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175   | -20          | -2600                                         | -800 | -1000 | -1200 | -1400 |  |
| Example for item number key Build-stop direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size FTEO-L-QR50-QR25-Z-GF-WG40-20-1400-1000                                                                    |                |           |              |              |        |                               |               |              |              |                 |               |               |                        |                         |             |               |                                       |                              |        |              |                                               |      |       |       |       |  |
| For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-FTEO-L-QR50-QR25-Z-GF-WG40-20-1400-1350 for special axle size 1350). |                |           |              |              |        |                               |               |              |              |                 |               |               |                        |                         |             |               |                                       |                              |        |              |                                               |      |       |       |       |  |

FLOOR ATTACHMENT ④

|                                  |                          |
|----------------------------------|--------------------------|
| Required number                  | 8 pcs.                   |
| Attachment type                  | Fixed or shear connector |
| Size · Length                    | M10 · 120/130 mm         |
| Weight example FTEO 2000×1000 mm | 27.53 kg                 |

Axle size at post profile QR60 + 10 mm

For axle size definition, see p. 184.

Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

Please order floor attachment media separately. See p. 168.

Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

Doors by default with 175 mm ground clearance.

Floor plates centred in the middle by default.

For specific floor plate positioning, see p. 187.

DOOR OPENING

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

PRODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment.

CAD

MOV

PICT

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Double wing door for handle, latch or mortise lock

Product group/build  
**DFT**

❶ Illustration shows DFT with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F®

Retaining plate system

SN-F

Switching cam system (2x)

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

❶ Illustration shows DFT with an overroll latch system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-GR-F

Handle (2x)

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F®

Handle system

RI-F®

Latch system

UER-F®

Overroll latch system

RV-F

Latch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop posts of the double wing door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The welded-on hinges implement an opening width of up to 4000 mm.

Double wing door for handle, latch or mortise lock

| Build | Stop direction   |                   | Post profile            |                         | Wing profile |        | Safety fence system / filling |         |         |               |              |              |                 |               |               |                        |                         |              |               |                                       | Ground clearance             |      | Fence height | Axle size❶ from post centre to post centre❷ |       |       |      |       |       |
|-------|------------------|-------------------|-------------------------|-------------------------|--------------|--------|-------------------------------|---------|---------|---------------|--------------|--------------|-----------------|---------------|---------------|------------------------|-------------------------|--------------|---------------|---------------------------------------|------------------------------|------|--------------|---------------------------------------------|-------|-------|------|-------|-------|
|       |                  |                   |                         |                         |              |        | ZAUN II                       |         |         |               |              |              |                 | WAND II       |               |                        |                         |              |               |                                       |                              |      |              | 1600 1800 ... 5800 6000                     |       |       |      |       |       |
|       | Active leaf left | Active leaf right | for axle size ≤ 2800 mm | for axle size > 2800 mm | QR35         | RP106  | QR35                          | RP1191  | FLEX II | Grid fillings |              |              |                 | Area elements |               |                        |                         | Process view |               |                                       |                              |      |              | Open width❸                                 |       |       |      |       |       |
|       |                  |                   |                         |                         |              |        |                               |         |         | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal   | Polycarbonate | Perforated sheet Round | Perforated sheet Square | Sheet metal  | Polycarbonate | Sight protection glass red-dish-brown | Sight protection glass green | 1445 |              | 1645                                        | ...   | 5625  | 5825 |       |       |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -             | -                                     | -                            | -175 | -20          | -1400                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -             | -                                     | -                            | -175 | -20          | -1600                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -             | -                                     | -                            | -175 | -20          | -1800                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175 | -20          | -2000                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175 | -20          | -2200                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175 | -20          | -2400                                       | -1600 | -1800 | ...  | -5800 | -6000 |
| DFT   | -L               | -R                | -QR60                   | -QR80                   | -QR35        | -RP106 | -QR35                         | -RP1191 | -F      | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR              | -Z-FE-LBQ               | -W-BL        | -W-PE-P       | -W-PE-SSB                             | -W-PE-SSG                    | -175 | -20          | -2600                                       | -1600 | -1800 | ...  | -5800 | -6000 |

Example for item number key Build-stop direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **DFT-L-QR60-QR35-Z-GF-F-20-2200-2410**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-DFT-L-QR60-QR35-Z-GF-F-20-2200-2410-1750** for special axle size 1750).

DETAIL VIEW

The bottom latch on the machine side is included in the delivery

FLOOR ATTACHMENT ❶

|                                 |                                      |
|---------------------------------|--------------------------------------|
| Required number                 | 8 pcs.                               |
| Attachment type                 | Fixed or shear connector             |
| Size · Length                   | M10 · 120/130 mm / M12 · 145/160 mm❷ |
| Weight example DFT 2000×2010 mm | 48.45 kg                             |

DOOR OPENING

MACHINE-SIDE

OUTSIDE

Active leaf left

Active leaf right

PRODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment.

❶ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

❹ Please order floor attachment media separately. See p. 168.

❺ As of an axle size of 2610 mm, use M12.

❻ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates centred in the middle by default.

For specific floor plate positioning, see p. 187.

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Double wing door for handle, latch or mortise lock, with skylight

Product group/build  
**DFTO**

❶ Illustration shows DFTO with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F®

Retaining plate system

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

❶ Illustration shows DFTO with an overroll latch system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-GR-F

Handle (2×)

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F®

Handle system

RI-F®

Latch system

UER-F®

Overroll latch system

RV-F

Latch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop posts of the double wing door with skylight are made of a stable steel profile with welded-on square bottom plate. Both posts are connected to each other with a transom profile and a skylight grid mat. By default, the two door posts are prepared for a corner and passage situation. The welded-on hinges implement an opening width of up to 2800 mm.

| Double wing door for handle, latch or mortise lock, with skylight |                  |                   |              |              |                                |                  |       |              |                                             |       |       |       |       |       |       |
|-------------------------------------------------------------------|------------------|-------------------|--------------|--------------|--------------------------------|------------------|-------|--------------|---------------------------------------------|-------|-------|-------|-------|-------|-------|
| Build                                                             | Stop direction   |                   | Post profile | Wing profile | Safety fence system<br>FLEX II | Ground clearance |       | Fence height | Axle size❶ from post centre to post centre❷ |       |       |       |       |       |       |
|                                                                   | Active leaf left | Active leaf right |              |              |                                | 175 mm           | 20 mm |              | 1600                                        | 1800  | 2000  | 2200  | 2400  | 2600  | 2800  |
|                                                                   | Open width❸      |                   |              |              |                                |                  |       |              | 1425                                        | 1625  | 1825  | 2025  | 2225  | 2425  | 2625  |
| DFTO                                                              | -L               | -R                | -QR50        | -QR35        | -F                             | -175             | -20   | -2400        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR60        | -QR35        | -F                             | -175             | -20   | -2600        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR60        | -QR35        | -F                             | -175             | -20   | -2835        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR60        | -QR35        | -F                             | -175             | -20   | -3035        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -3235        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -3435        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -3635        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -3835        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -4035        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -4235        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -4435        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -4635        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |
| DFTO                                                              | -L               | -R                | -QR80        | -QR35        | -F                             | -175             | -20   | -4835        | -1600                                       | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |

**Example for item number key** Build-stop direction-post profile-wing profile-safety fence system-ground clearance-fence height-axle size **DFTO-L-QR80-QR35-F-175-4035-2800**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-DFTO-L-QR50-QR35-F-175-2400-1750** for special axle size 1750).

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BRÜHL · WING DOORS 75

SAFETY DOORS

CAD  
MOV  
PICT

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# Swing doors and door wing

## Individuality for effective work processes

Swing doors permit quick access to the machine area and are particularly suitable for use on turning tables or assembly belts. Door wings are integrated directly at your machine and usually used in removal and equipment stations.

Fastest access to the machine area

Safety switch attachment in combination with switching cam system SN-F

Swing doors permit adjustment to the contour of the machine

## Overview: Advantages...

### ... of the swing doors

**High stability**  
Robust and durable hinges corresponding to the size.

**Quick access**  
Quick access to the machine area is ensured.

**Individuality**  
Individual contour adjustment to the machine is possible.

### ... of the door wing

**Integration**  
The door wings can be integrated into any access of machines or systems in which attachment options are constructionally present. This permits a consistent appearance of the entire course of the fence.

**Different ground clearances**  
All doors are delivered by default with a ground clearance of 175 mm or 20 mm.

**Compatible**  
The door wings are compatible with the Brühl attachment system for safety switches.

### ... both

**Fast installation**  
Brühl doors are highly stable and ensure quick installation – without any time loss on the construction site.

**Maximum shock resilience**  
All elements are sand-blasted and powder-coated.

| Technical data for standard swing doors and door wings ⓘ Special productions on request. |        |        |        |
|------------------------------------------------------------------------------------------|--------|--------|--------|
| Product group/build                                                                      | PT     | HPT    | TF     |
| Dimensions                                                                               |        |        |        |
| max. distance from the outer edge of the post to the outer edge of the wing              | 1400   | 1400   | ×      |
| max. open width in mm                                                                    | ×      | ×      | 1350   |
| max. door-/fence height in mm                                                            | 2600   | 2600   | 2600   |
| Frame filling                                                                            |        |        |        |
| FLEXII                                                                                   | ●      | ●      | ●      |
| Wave grid 40                                                                             | ●      | ●      | ●      |
| Wave grid 25                                                                             | ●      | ●      | ●      |
| Welding grid 40                                                                          | ●      | ●      | ●      |
| Sheet metal                                                                              | ●      | ●      | ●      |
| Polycarbonate                                                                            | ●      | ●      | ●      |
| Perforated sheet round holes Rv 5-8                                                      | ●      | ●      | ●      |
| Perforated sheet square holes Qg 8-12                                                    | ●      | ●      | ●      |
| Process view – Sight protection glass reddish-brown                                      | ×      | ×      | ●      |
| Process view – Sight protection glass green                                              | ×      | ×      | ●      |
| Process view – Polycarbonate                                                             | ×      | ×      | ●      |
| Attachment systems for safety switches                                                   |        |        |        |
| Handle preparation BRÜHL-GV                                                              | ×      | ×      | ●      |
| Handle system with bullet crossbow BRÜHL-GRK®                                            | ×      | ×      | ●      |
| Retaining plate system BRÜHL-HP-F®                                                       | ×      | ×      | ●      |
| Latch system BRÜHL-RI®                                                                   | ×      | ×      | ●      |
| Latch preparation BRÜHL-RV                                                               | ×      | ×      | ●      |
| Switching cam system BRÜHL-SN-F                                                          | ●      | ●      | ×      |
| Safety switch preparation BRÜHL-SV                                                       | ×      | ×      | ●      |
| Rollover latch system BRÜHL-UER®                                                         | ×      | ×      | ●      |
| Surfaces                                                                                 |        |        |        |
| Powder-coating/paint                                                                     | ●      | ●      | ●      |
| Hot-dip galvanised surface                                                               | ●      | ●      | ●      |
| Ground clearance                                                                         |        |        |        |
| Standard                                                                                 | 175 mm | 175 mm | 175 mm |
| Reduced                                                                                  | ×      | ×      | 20 mm  |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



Swing door

Product group/build  
**PT**

❗ Illustration shows PT with a switching can system.

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Switching can system

➡ Attachment systems for safety switches (as of p. 127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

Swing door with high post

Product group/build  
**HPT**

❗ Illustration shows HPT with a switching can system.

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Switching can system

➡ Attachment systems for safety switches (as of p. 127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

The door post of the swing doors is made of a stable steel profile with welded-on four-hole floor plate and long-lived hinges. A ball catch in the middle position prevents punching through of the door wing.

| Swing door / Swing door with high post |                |              |              |               |                 |                               |               |                                    |                                     |             |          |         |             |           |       |              |                                                |  |                                                                          |      |       |       |       |  |
|----------------------------------------|----------------|--------------|--------------|---------------|-----------------|-------------------------------|---------------|------------------------------------|-------------------------------------|-------------|----------|---------|-------------|-----------|-------|--------------|------------------------------------------------|--|--------------------------------------------------------------------------|------|-------|-------|-------|--|
| Build                                  | Stop direction |              | Post profile | Wing profile  |                 | Safety fence system / filling |               |                                    |                                     |             |          |         |             |           |       | Fence height | Wing height<br>(minus 175 mm ground clearance) |  | Outer size from the outer edge of the post to the outer edge of the wing |      |       |       |       |  |
|                                        |                |              |              |               |                 |                               |               |                                    |                                     |             |          |         |             |           |       |              |                                                |  | 625                                                                      | 825  | 1025  | 1225  | 1425  |  |
|                                        | left           | right        |              |               |                 | QR25                          | RP106         | FLEX II                            | ZAUN II                             |             |          |         |             | WAND II   |       |              |                                                |  | Open width                                                               |      |       |       |       |  |
|                                        |                |              |              | Grid fillings |                 |                               |               |                                    | Area elements                       |             |          |         | Sheet metal | 460       | 660   |              |                                                |  | 860                                                                      | 1060 | 1260  |       |       |  |
|                                        | FLEX II        | Wave grid 40 |              | Wave grid 25  | Welding grid 40 | Sheet metal                   | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square perforation | Sheet metal |          |         |             |           |       |              |                                                |  |                                                                          |      |       |       |       |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -1400        | -1225                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -1600        | -1425                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -1800        | -1625                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2000        | -1825                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2200        | -2025                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2400        | -2225                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| PT                                     | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2600        | -2425                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| HPT                                    | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2200        | -1825                                          |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| HPT                                    | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2400        | -1825-2025                                     |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |
| HPT                                    | -L             | -R           | QR-60        | -QR25         | -RP106          | -F                            | -Z-GF-F       | -Z-GF-WG40                         | -Z-GF-WG25                          | -Z-GF-SG40  | -Z-FE-BL | -Z-FE-P | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -2600        | -1825-2025-2225                                |  | -625                                                                     | -825 | -1025 | -1225 | -1425 |  |

**Example for item number key** Build-stop direction-post profile-wing profile-safety fence system/filling-fence height-wing height-outer size PT-L-QR60-QR25-W-BL-1400-1225-1025 or HPT-L-QR60-QR25-W-BL-2400-1825-1025

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-PT-L-QR60-QR25-W-BL-1400-1225-1150** for special axle size 1150).

DOOR OPENING

FLOOR ATTACHMENT PT/ HPT

|                               |                          |
|-------------------------------|--------------------------|
| Required number               | 4 pcs.                   |
| Attachment type               | Fixed or shear connector |
| Size · Length                 | M10 · 120/130 mm         |
| Weight example PT 2200×810 mm | 27.5 kg                  |

APPLICATIONS

a) Swing door PT: same height of the wing and fence course

b) Swing door with high post: different height of wing and fence course. The safety switch must be executed unreachable at low fence heights.

❗ Please order floor attachment media separately. See p. 168.

❗ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❗ Doors by default with 175 mm ground clearance.

❗ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

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PICT

SAFETY DOORS



Door wings for handle, latch or deadlock slam lock

Product group/build  
**TF**

Illustration shows TF with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-F

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-F

Retaining plate system

SV

Switch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

Illustration shows TF with a latch system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GRK-F

Handle with bullet crossbow

TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GRK-F

Handle system

RI-F

Latch system

GV-F

Handle preparation

RV-F

Latch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

SAFETY DOORS

| Door wing for handle, latch or deadlock slam lock                                                                                                                                                                              |       |                |       |              |        |         |              |              |                 |             |               |                                    |                               |                              |                                                     |                                             |                                 |                                |      |      |       |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------------|-------|--------------|--------|---------|--------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|------------------------------|-----------------------------------------------------|---------------------------------------------|---------------------------------|--------------------------------|------|------|-------|-------|
| Fence height                                                                                                                                                                                                                   | Build | Stop direction |       | Wing profile |        | Filling |              |              |                 |             |               |                                    |                               |                              |                                                     | Wing height                                 |                                 | Door opening                   |      |      |       |       |
|                                                                                                                                                                                                                                |       |                |       |              |        |         |              |              |                 |             |               |                                    |                               |                              |                                                     |                                             |                                 | 750                            | 950  | 1150 | 1350  |       |
|                                                                                                                                                                                                                                |       | left           | right | QR25         | RP106  | FLEX II | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Process view - Polycarbonate | Process view - Sight protection glass reddish-brown | Process view - Sight protection glass green | (minus 175 mm ground clearance) | (minus 20 mm ground clearance) | 716  | 916  | 1116  | 1316  |
| 1400                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -                            | -                                                   | -                                           | -1225                           | -1380                          | -750 | -950 | -1150 | -1350 |
| 1600                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -                            | -                                                   | -                                           | -1425                           | -1580                          | -750 | -950 | -1150 | -1350 |
| 1800                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -                            | -                                                   | -                                           | -1625                           | -1780                          | -750 | -950 | -1150 | -1350 |
| 2000                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -PE-P                        | -PE-SSB                                             | -PE-SSG                                     | -1825                           | -1980                          | -750 | -950 | -1150 | -1350 |
| 2200                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -PE-P                        | -PE-SSB                                             | -PE-SSG                                     | -2025                           | -2180                          | -750 | -950 | -1150 | -1350 |
| 2400                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -PE-P                        | -PE-SSB                                             | -PE-SSG                                     | -2225                           | -2380                          | -750 | -950 | -1150 | -1350 |
| 2600                                                                                                                                                                                                                           | TF    | -L             | -R    | -QR25        | -RP106 | -F      | -WG40        | -WG25        | -SG40           | -BL         | -P            | -LBR                               | -LBQ                          | -PE-P                        | -PE-SSB                                             | -PE-SSG                                     | -2425                           | -2580                          | -750 | -950 | -1150 | -1350 |
| Example for item number key Build-stop direction-wing profile-filling-wing height-door opening TF-L-QR25-BL-1825-1000                                                                                                          |       |                |       |              |        |         |              |              |                 |             |               |                                    |                               |                              |                                                     |                                             |                                 |                                |      |      |       |       |
| For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-TF-L-25-F-1425-870 for special size 870). |       |                |       |              |        |         |              |              |                 |             |               |                                    |                               |                              |                                                     |                                             |                                 |                                |      |      |       |       |

DOOR OPENING

MACHINE-SIDE

OUTSIDE

DIN left

DIN right

Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

DETAIL VIEW

The hinge is welded to the door wing and is screwed, e.g. to a steel carrier on site.

INSTALLATION SKETCH

20 mm

14 mm

Door opening

WEIGHT

Weight example TF 2000×916 mm

13.64 kg

The door wings are used in opening areas for machine and system accesses. The frame elements of the door wing are welded together with a mitre and can be equipped with different fillings. The scope of delivery includes hinges such as splints and pins, including the means of attachment.



# Sliding doors

## One door, many uses

The sliding doors by Brühl are the right choice at a limited space offer. Thanks to the continuous sill rockers, the door wing can be moved freely. The guide rail has stoppers installed as limitation. These stoppers also serve to protect the safety switch.

Smooth-running guide profile of aluminium or steel

Maintenance-free polyamide guide elements

Large stable, robust four-hole bottom plate for stop posts

## Overview: Advantages of the sliding doors

### Comfortable operation

The standard design contains a precise aluminium guide profile – optionally also as a steel guide profile.

### Different ground clearances

All sliding doors are delivered by default with a ground clearance of 175 mm or 20 mm.

### Compatible

The sliding doors are compatible with the Brühl attachment system for safety switches.

### Safe movement of the wings

Robust stops by stoppers and inlet centring.

### Flexible planning

The fence route can be installed in any manner. This positively influences the assembly time and flexibility on the construction site.

### Customer-specific solutions

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation.

### Fast installation

Brühl sliding doors are highly stable and ensure quick installation – without any time loss on the construction site.

### Maximum shock resilience

All elements are sand-blasted and powder-coated.

| Technical data for standard sliding doors                                                  |            |        |        |        |        |        |
|--------------------------------------------------------------------------------------------|------------|--------|--------|--------|--------|--------|
| Special productions on request.                                                            |            |        |        |        |        |        |
| Product group/build                                                                        | ST         | STI    | STO    | DST    | STB    | DSTO   |
| Dimensions                                                                                 |            |        |        |        |        |        |
| max. axle size in mm                                                                       | 2910       | 2910   | 1430   | 2810   | 6030   | 2830   |
| max. door-/fence height in mm                                                              | 2600       | 2600   | 4835   | 2600   | 2600   | 4835   |
| Rail running profile                                                                       |            |        |        |        |        |        |
| Aluminium guide profile with ball-bearing casters                                          | ●          | ●      | ●      | ●      | ●      | ●      |
| Fillings                                                                                   |            |        |        |        |        |        |
| FLEX II                                                                                    | ●          | ●      | ●      | ●      | ●      | ●      |
| Wave grid 40                                                                               | ●          | ●      | ○      | ●      | ●      | ○      |
| Wave grid 25                                                                               | ●          | ●      | ○      | ●      | ●      | ○      |
| Welding grid 40                                                                            | ●          | ●      | ○      | ●      | ●      | ○      |
| Sheet metal                                                                                | ●          | ●      | ○      | ●      | ●      | ○      |
| Polycarbonate                                                                              | ●          | ●      | ○      | ●      | ●      | ○      |
| Perforated sheet round holes Rv 5-8                                                        | ●          | ●      | ○      | ●      | ●      | ○      |
| Perforated sheet square holes Qg 8-12                                                      | ●          | ●      | ○      | ●      | ●      | ○      |
| Process view – Sight protection glass reddish-brown                                        | ●          | ●      | ○      | ●      | ●      | ○      |
| Process view – Sight protection glass green                                                | ●          | ●      | ○      | ●      | ●      | ○      |
| Process view – Polycarbonate                                                               | ●          | ●      | ○      | ●      | ●      | ○      |
| Brühl door accessories                                                                     |            |        |        |        |        |        |
| Handle set                                                                                 | ●          | ●      | ●      | ●      | ●      | ●      |
| Attachment systems for safety switches                                                     |            |        |        |        |        |        |
| Handle preparation BRÜHL-GV                                                                | ●          | ×      | ●      | ●      | ●      | ●      |
| Retaining plate system BRÜHL-HP-S®                                                         | ●          | ●      | ●      | ●      | ●      | ●      |
| Switching cam system BRÜHL-SN-S                                                            | ●          | ●      | ●      | ●      | ●      | ●      |
| Safety switch preparation BRÜHL-SV                                                         | ●          | ●      | ●      | ●      | ●      | ●      |
| Special latch                                                                              | on request |        |        |        |        |        |
| Surfaces                                                                                   |            |        |        |        |        |        |
| Powder-coating/paint                                                                       | ●          | ●      | ●      | ●      | ●      | ●      |
| Hot-dip galvanised surface                                                                 | ●          | ●      | ●      | ●      | ●      | ●      |
| Ground clearance                                                                           |            |        |        |        |        |        |
| Standard                                                                                   | 175 mm     | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm |
| Reduced                                                                                    | 20 mm      | 20 mm  | 20 mm  | 20 mm  | 20 mm  | 20 mm  |
| ● Combination is possible.    × Combination is not possible.    ○ Combination is optional. |            |        |        |        |        |        |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



Sliding door for handle or hook lock

Product group/build  
**ST**

Illustration shows ST with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Door sets

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Retaining plate system

Switching can system

Switch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

Illustration shows ST with a grip system.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Retaining plate system

Handle preparation

Switching can system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The special aluminium profile, long-lived rolls of steel and a guide of polyamid guarantee for a very smooth and precise opening and closing of the door wing. The posts of the sliding door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

Sliding door for handle or hook lock

| Build | Opening direction   |                      | Post profile | Wing profile        |        |                    |         | Safety fence system / filling |         |              |              |                 |             |               |                                    |                               |             |               | Ground clearance                    |                             | Fence height | Axle size ❶ from post centre to post centre ❷ |     |       |      |       |       |       |       |       |       |       |       |       |       |       |  |  |
|-------|---------------------|----------------------|--------------|---------------------|--------|--------------------|---------|-------------------------------|---------|--------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|-------------|---------------|-------------------------------------|-----------------------------|--------------|-----------------------------------------------|-----|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
|       | Opening to the left | Opening to the right |              | Axle size ≤ 1400 mm |        | Axle size >1400 mm |         | ZAUN II                       |         |              |              |                 |             | WAND II       |                                    |                               |             |               | 175 mm                              | 20 mm                       |              | Open width ❸                                  |     |       |      |       |       |       |       |       |       |       |       |       |       |       |  |  |
|       |                     |                      |              | QR35                | RP106  | RR50x34            | RP1191  | FLEX II                       | FLEX II | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal | Polycarbonate | Sight protection-pane reddish-brown | Sight protection-pane green |              |                                               |     |       |      |       |       |       |       |       |       |       |       |       |       |       |  |  |
|       |                     |                      |              |                     |        |                    |         |                               |         |              |              |                 |             |               |                                    |                               |             |               |                                     |                             |              |                                               |     |       |      |       |       |       |       |       |       |       |       |       |       |       |  |  |
| ST    | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |              | -175                                          | -20 | -2000 | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |  |  |
| ST    | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |              | -175                                          | -20 | -2200 | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |  |  |
| ST    | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |              | -175                                          | -20 | -2400 | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |  |  |
| ST    | -L                  | -R                   | -QR60        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |              | -175                                          | -20 | -2600 | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |  |  |

Example for item number key Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size

ST-L-QR50-QR35-Z-GF-20-SG40-2400-1000

For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-ST-L-QR50-QR35-Z-GF-20-SG40-2400-1750 for special axle size 1750).

FLOOR ATTACHMENT ❶

|                                |                          |
|--------------------------------|--------------------------|
| Required number                | 8/12 pieces ❷            |
| Attachment type                | Fixed or shear connector |
| Size · Length                  | M10 · 120/130 mm         |
| Weight example ST 2000x1000 mm | 42.42 kg                 |

PRODUCT OPTION: HEIGHT COMPENSATION

Optional with post -J for height adjustment.

❶ Axle size in post profile QR60 +10 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches, door accessories.

❹ Please order floor attachment media separately. See p. 168.

❺ As of an axle size of 1000 mm, 12 floor attachments are needed.

❻ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❼ Doors by default with 175 mm ground clearance.

❽ Lock parts, zinc-plated steel.

❾ Floor plates at the front centre by default. For specific floor plate positioning, see p. 187.

DOOR OPENING

MACHINE-SIDE

Opening to the left

Opening to the right

OUTSIDE

ADDITIONAL POSTS

As of an axle size of 1000 mm, an additional post (a) is included in the delivery. When planning the fence course, observe: order a separate grid element (b) at fence height.

CAD

MOV

PICT

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Sliding door for handle or hook lock, inner track

Product group/build  
**STI**

Illustration shows STI with handle set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

SG-S

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-S®

Retaining plate system

SN-S

Switching can system

SV

Switch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

Illustration shows STI with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-S®

Retaining plate system

SN-S

Switching can system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The special aluminium profile, long-lived rolls of steel and a guide of polyamid guarantee for a very smooth and precise opening and closing of the door wing. The door wing is designed with an inner track and is used, e.g., when a control cabinet is attached to the outside of the safety device in the return or if a parking position of a pallet is located there.

| Sliding door for handle or hook lock, inner track |                     |                      |              |                     |        |                    |         |                               |               |              |                 |             |               |                                    |                               |           |             |               |                                     |                             |     |              |                                               |              |      |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------------------------|---------------------|----------------------|--------------|---------------------|--------|--------------------|---------|-------------------------------|---------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|-----------|-------------|---------------|-------------------------------------|-----------------------------|-----|--------------|-----------------------------------------------|--------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Build                                             | Opening direction   |                      | Post profile | Wing profile        |        |                    |         | Safety fence system / filling |               |              |                 |             |               |                                    |                               |           |             |               |                                     | Ground clearance            |     | Fence height | Axle size ④ from post centre to post centre ② |              |      |       |       |       |       |       |       |       |       |       |       |       |
|                                                   |                     |                      |              | Axle size ≤ 1400 mm |        | Axle size >1400 mm |         | ZAUN II                       |               |              |                 |             |               | WAND II                            |                               |           |             |               |                                     |                             |     |              |                                               | Open width ③ |      |       |       |       |       |       |       |       |       |       |       |       |
|                                                   | Opening to the left | Opening to the right |              | QR35                | RP106  | RR50x34            | RP1191  | FLEX II                       | Grid fillings |              |                 |             | Area elements |                                    |                               |           | Sheet metal | Polycarbonate | Sight protection-pane reddish-brown | Sight protection-pane green |     |              |                                               |              |      |       |       |       |       |       |       |       |       |       |       |       |
|                                                   |                     |                      |              |                     |        |                    |         |                               | Wave grid 40  | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | 175 mm    |             |               |                                     | 20 mm                       | 630 |              | 830                                           | 1030         | 1230 | 1430  | 1630  | 1830  | 2030  | 2230  | 2430  | 2630  | 2730  |       |       |       |
| STI                                               | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25      | -Z-GF-SG40  | -Z-FE-BL      | -Z-FE-P                            | -Z-FE-LBR                     | -Z-FE-LBQ | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |     | -175         | -20                                           | -2000        | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |
| STI                                               | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25      | -Z-GF-SG40  | -Z-FE-BL      | -Z-FE-P                            | -Z-FE-LBR                     | -Z-FE-LBQ | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |     | -175         | -20                                           | -2200        | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |
| STI                                               | -L                  | -R                   | -QR50        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25      | -Z-GF-SG40  | -Z-FE-BL      | -Z-FE-P                            | -Z-FE-LBR                     | -Z-FE-LBQ | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |     | -175         | -20                                           | -2400        | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |
| STI                                               | -L                  | -R                   | -QR60        | -QR35               | -RP106 | -RR50x34           | -RP1191 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25      | -Z-GF-SG40  | -Z-FE-BL      | -Z-FE-P                            | -Z-FE-LBR                     | -Z-FE-LBQ | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   |     | -175         | -20                                           | -2600        | -800 | -1000 | -1200 | -1400 | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 | -2900 |

Example for item number key Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **STI-L-QR50-QR35-Z-GF-20-SG40-2400-1000**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-STI-L-QR50-QR35-Z-GF-20-SG40-2400-1750** for special axle size 1750).

DOOR OPENING

MACHINE-SIDE

OUTSIDE

With inner track, opening to the left

With inner track, opening to the right

ADDITIONAL POSTS

1000 1000

a b

As of an axle size of 1000 mm, an additional post (a) is included in the delivery. When planning the fence course, observe: order a separate grid element (b) at fence height.

CAD

MOV

PICT

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Sliding door for handle or hook lock, with skylight

Product group/build  
**STO**

❗ Illustration shows STO with door set TG-V2.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

**TG**

Door sets

**SG-S**

Lock set

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S**

Retaining plate system

**SN-S**

Switching can system

**SV**

Switch preparation

🔧 Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

📋 For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

OUTSIDE

MACHINE-SIDE

**DOOR ACCESSORIES**

**TZ-GR-S**

Handle

**TZ-GRK-S**

Handle with bullet crossbow

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S**

Retaining plate system

**GV-S**

Handle preparation

🔧 Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

📋 For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

| Sliding door for handle or hook lock, with skylight |                   |       |              |              |                     |                  |       |              |                                               |       |       |       |
|-----------------------------------------------------|-------------------|-------|--------------|--------------|---------------------|------------------|-------|--------------|-----------------------------------------------|-------|-------|-------|
| Build                                               | Opening direction |       | Post profile | Wing profile | Safety fence system | Ground clearance |       | Fence height | Axle size ❶ from post centre to post centre ❷ |       |       |       |
|                                                     |                   |       |              |              |                     |                  |       |              | 800                                           | 1000  | 1200  | 1400  |
|                                                     | left              | right |              | QR35         | FLEX II             | 175 mm           | 20 mm |              | Open width ❸                                  |       |       |       |
|                                                     |                   |       |              |              |                     |                  |       |              | 630                                           | 830   | 1030  | 1230  |
| STO                                                 | -L                | -R    | -QR50        | -QR35        | -F                  | -175             | -20   | -2400        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR60        | -QR35        | -F                  | -175             | -20   | -2600        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR60        | -QR35        | -F                  | -175             | -20   | -2835        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR60        | -QR35        | -F                  | -175             | -20   | -3035        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -3235        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -3435        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -3635        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -3835        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -4035        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -4235        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -4435        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -4635        | -800                                          | -1000 | -1200 | -1400 |
| STO                                                 | -L                | -R    | -QR80        | -QR35        | -F                  | -175             | -20   | -4835        | -800                                          | -1000 | -1200 | -1400 |

**Example for item number key**  
Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size  
**STO-L-QR50-QR35-F-20-2400-800**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-STO-L-QR50-QR35-F-20-2400-1750** for special axle size 1750).

**ADDITIONAL POSTS**

As of an axle size of 1000 mm, an additional post (a) is included in the delivery. Please consider the following when planning the fence course: Order a separate grid element (b1) and skylight grid mat (b2). Grid element (c) above the door enclosed.

❶ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches or door accessories.

❹ Please order floor attachment media separately. See p. 168.

❺ As of an axle size of 1000 mm, 12 floor attachments are needed.

❻ As of a height of 3235 mm, use M12.

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates at the front centre by default. For specific floor plate positioning, see p. 187.

**FLOOR ATTACHMENT ❶**

|                                 |                                        |
|---------------------------------|----------------------------------------|
| Required number                 | 8/12 pieces ❷                          |
| Attachment type                 | Fixed or shear connector               |
| Size · Length                   | M10 · 120/130 mm<br>M12 · 145/160 mm ❸ |
| Weight example STO 3035×1000 mm | 85.8 kg                                |

**DOOR OPENING**

MACHINE-SIDE

OUTSIDE

Opening to the left

Opening to the right

**PRODUCT OPTION: HEIGHT COMPENSATION**

Optional with post -J for height adjustment.

The special aluminium profile, long-lived rolls of steel and a guide of polyamid guarantee for a very smooth and precise opening and closing of the door wing. The door post of the sliding door with skylight are made of a stable steel profile with welded-on square bottom plate. Both posts are connected to each other with a transom profile and a skylight grid mat. By default, the two door posts are prepared for a corner and passage situation.

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CAD  
MOV  
PICT



Double sliding door for handle or hook lock

Product group/build  
**DST**

❗ Illustration shows DST with door set TG-V2.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

Door sets

Lock set

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

Retaining plate system (2x)

Switching can system (2x)

➡ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

❗ Illustration shows DST with a grip system.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

Handle (2x)

Handle with bullet crossbow

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

Handle preparation

Retaining plate system (2x)

➡ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

The special aluminium profile, long-lived rollers of steel and a guide of polyamide ensure a very smooth and precise opening and closing of the two door wings that can e opened to the left and right outside of te open width. The door posts of the double sliding door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

**Double sliding door for handle or hook lock**

| Build | Opening direction               |                                  | Post profile | Wing profile |        | Safety fence system / filling |               |              |              |                 |               |               |                                    |                               |        |         |              | Ground clearance |                                     | Fence height | Axle size ❶ from post centre to post centre ❷ |       |       |       |       |       |       |       |  |
|-------|---------------------------------|----------------------------------|--------------|--------------|--------|-------------------------------|---------------|--------------|--------------|-----------------|---------------|---------------|------------------------------------|-------------------------------|--------|---------|--------------|------------------|-------------------------------------|--------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|--|
|       | Active leaf opening to the left | Active leaf opening to the right |              | QR35         | RP106  | FLEX II                       | ZAUN II       |              |              |                 | WAND II       |               |                                    |                               | 175 mm | 20 mm   | Open width ❸ |                  |                                     |              |                                               |       |       |       |       |       |       |       |  |
|       |                                 |                                  |              |              |        |                               | Grid fillings |              |              |                 | Area elements |               |                                    |                               |        |         | Process view |                  |                                     |              |                                               |       |       |       |       |       |       |       |  |
|       |                                 |                                  |              |              |        |                               | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal   | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes |        |         | Sheet metal  | Polycarbonate    | Sight protection-pane reddish-brown |              | Sight protection-pane green                   |       |       |       |       |       |       |       |  |
| DST   | -L                              | -R                               | -QR50        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL  | -W-PE-P | -W-PE-SSB    | -W-PE-SSG        | -175                                | -20          | -2000                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |
| DST   | -L                              | -R                               | -QR50        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL  | -W-PE-P | -W-PE-SSB    | -W-PE-SSG        | -175                                | -20          | -2200                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |
| DST   | -L                              | -R                               | -QR50        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL  | -W-PE-P | -W-PE-SSB    | -W-PE-SSG        | -175                                | -20          | -2400                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |
| DST   | -L                              | -R                               | -QR60        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL  | -W-PE-P | -W-PE-SSB    | -W-PE-SSG        | -175                                | -20          | -2600                                         | -1600 | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |

**Example for item number key** Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **DST-L-QR50-QR35-Z-GF-SG40-175-2400-1600**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-DST-L-QR50-QR35-Z-GF-SG40-175-2400-1750** for special axle size 1750).

**FLOOR ATTACHMENT ❹**

|                                 |                          |
|---------------------------------|--------------------------|
| Required number                 | 8/16 pieces ❺            |
| Attachment type                 | Fixed or shear connector |
| Size · Length                   | M10 · 120/130 mm         |
| Weight example DST 2000×2000 mm | 81.94 kg                 |

**PRODUCT OPTION: HEIGHT COMPENSATION**  
  
Optional with post -J for height adjustment.

❶ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm  
❷ For axle size definition, see p. 184.  
❸ Width and height of lights can be reduced according to the system for safety switches or door accessories.  
❹ Please order floor attachment media separately. See p. 168.  
❺ As of an axle size of 2000 mm, 16 floor attachments are needed.  
❶ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12  
❶ Doors by default with 175 mm ground clearance.  
❷ Floor plates at the front centre by default. For specific floor plate positioning, see p. 187.

**DOOR OPENING**

MACHINE-SIDE

OUTSIDE

Active leaf opening to the right

Active leaf opening to the left

**ADDITIONAL POSTS**

1000 2000 1000

a b b a

As of an axle size of 2000 mm, two additional posts (a) is included in the delivery. When planning the fence course, observe: order two separate grid elements (b) at fence height.

CAD  
  
MOV  
  
PICT



Sliding door for handle or hook lock, opening on both sides

Product group/build  
**STB**

❶ Illustration shows STB with door set TG-V2.

MACHINE-SIDE

DOOR ACCESSORIES

**TG**

Door sets (2x)

**SG-S2**

Lock set (2x)

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**HP-S®**

Retaining plate system (2x)

**SV**

Switch preparation (2x)

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

OUTSIDE

❶ Illustration shows STB with a grip system.

MACHINE-SIDE

DOOR ACCESSORIES

**TZ-GR-S**

Handle (2x)

**TZ-GRK-S**

Handle with bullet crossbow (2x)

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**GV-S**

Handle preparation (2x)

**HP-S®**

Retaining plate system (2x)

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

OUTSIDE

The aluminium profile, long-lived rolls of steel and a guide of polyamid guarantee for a very smooth and precise movement of the two door wings. The door post of the sliding door opening to both sides are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The outer wing is opens to the right, the inner wing to the left within the portal.

Sliding door for handle or hook lock, opening on both sides

| Build | Opening direction | Post profile | Wing profile        |        | Safety fence system / filling |         |         |         |              |               |                 |             |               |                                    | Ground clearance                    | Fence height | Axle size ❶ from post centre to post centre |                                     |                             |      |      |       |       |       |      |       |       |       |       |     |       |       |
|-------|-------------------|--------------|---------------------|--------|-------------------------------|---------|---------|---------|--------------|---------------|-----------------|-------------|---------------|------------------------------------|-------------------------------------|--------------|---------------------------------------------|-------------------------------------|-----------------------------|------|------|-------|-------|-------|------|-------|-------|-------|-------|-----|-------|-------|
|       |                   |              | ≤ 4000 mm axle size |        | ZAUN II                       |         |         |         |              |               |                 |             |               |                                    |                                     |              | 1600                                        | 1800                                | ...                         | 3800 | 4000 | 4200  | 4400  | ...   | 5800 | 6000  |       |       |       |     |       |       |
|       |                   |              |                     |        | Grid fillings                 |         |         |         |              | Area elements |                 |             |               |                                    |                                     |              | Open width ❷                                |                                     |                             |      |      |       |       |       |      |       |       |       |       |     |       |       |
|       |                   |              | QR35                | RP106  | RR50x34                       | RP1191  | FLEX II | FLEX II | Wave grid 40 | Wave grid 25  | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square perforation | Sheet metal  | Polycarbonate                               | Sight protection-pane reddish-brown | Sight protection-pane green | 585  | 685  | ...   | 1685  | 1785  | 1885 | 1985  | ...   | 2685  | 2785  |     |       |       |
| STB   | -R                | -QR80        | -QR35               | -RP106 | -RR50x34                      | -RP1191 | -F      | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25    | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL        | -W-PE-P                                     | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20  | -2000 | -1600 | -1800 | ...  | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STB   | -R                | -QR80        | -QR35               | -RP106 | -RR50x34                      | -RP1191 | -F      | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25    | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL        | -W-PE-P                                     | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20  | -2200 | -1600 | -1800 | ...  | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STB   | -R                | -QR80        | -QR35               | -RP106 | -RR50x34                      | -RP1191 | -F      | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25    | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL        | -W-PE-P                                     | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20  | -2400 | -1600 | -1800 | ...  | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STB   | -R                | -QR80        | -QR35               | -RP106 | -RR50x34                      | -RP1191 | -F      | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25    | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                           | -W-BL        | -W-PE-P                                     | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20  | -2600 | -1600 | -1800 | ...  | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |

Example for item number key Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **STB-R-QR80-RP106-Z-FE-P-20-2600-2630**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-STB-R-QR80-RP106-Z-FE-P-20-2600-1750** for special axle size 1750).

FLOOR ATTACHMENT ❸

|                                 |                          |
|---------------------------------|--------------------------|
| Required number                 | 10 pcs.                  |
| Attachment type                 | Fixed or shear connector |
| Size · Length                   | M12 · 145/160 mm         |
| Weight example STB 2000x2030 mm | 69.25 kg                 |

DOOR OPENING

MACHINE-SIDE

Front wing opens to the right

OUTSIDE

PRODUCT OPTION: HEIGHT COMPENSATION



Optional with post -J for height adjustment.

❶ Axle size at post profile QR80 +30 mm

❷ Open width and height may reduce depending on the Width and height of lights can be reduced according to the system for safety switches or door accessories..

❸ Please order floor attachment media separately. See p. 168.

❹ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❺ Doors by default with 175 mm ground clearance.

❻ Design of lock set: Outer wing is provided for a Euro profile cylinder dia 17mm with a length of 30/10 mm. The inner wing is provided for a Euro profile cylinder dia 17mm with a length of 30/65 mm

❼ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

❽ Compare telescopic sliding door STBT Page 106.

CAD

MOV

PICT



# Double sliding door for handle or hook lock, with skylight

Product group/build  
**DSTO**

❶ Illustration shows DSTO with door set TG-V2.

MACHINE-SIDE

DOOR ACCESSORIES

**TG**

Door sets

**SG-S2**

Lock set

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**HP-S®**

Retaining plate system (2x)

**SN-S**

Switching can system (2x)

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

OUTSIDE

❶ Illustration shows DSTO with a grip system.

MACHINE-SIDE

DOOR ACCESSORIES

**TZ-GR-S**

Handle (2x)

**TZ-GRK-S**

Handle with bullet crossbow

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

**HP-S®**

Retaining plate system (2x)

**GV-S**

Handle preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

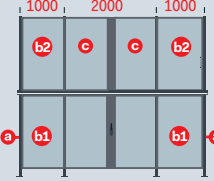
OUTSIDE

SAFETY DOORS

| Double sliding door for handle or hook lock with top light |                                 |                                  |              |              |                     |                  |       |              |                                               |       |       |       |       |       |       |  |  |
|------------------------------------------------------------|---------------------------------|----------------------------------|--------------|--------------|---------------------|------------------|-------|--------------|-----------------------------------------------|-------|-------|-------|-------|-------|-------|--|--|
| Build                                                      | Opening direction               |                                  | Post profile | Wing profile | Safety fence system | Ground clearance |       | Fence height | Axle size ❶ from post centre to post centre ❷ |       |       |       |       |       |       |  |  |
|                                                            | Active leaf opening to the left | Active leaf opening to the right |              | QR35         | FLEX II             | 175 mm           | 20 mm |              | 1600                                          | 1800  | 2000  | 2200  | 2400  | 2600  | 2800  |  |  |
|                                                            |                                 |                                  |              |              |                     |                  |       |              | Open width ❸                                  |       |       |       |       |       |       |  |  |
| DSTO                                                       | -L                              | -R                               | -QR50        | -QR35        | -F                  | -175             | -20   | -2400        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR60        | -QR35        | -F                  | -175             | -20   | -2600        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR60        | -QR35        | -F                  | -175             | -20   | -2835        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR60        | -QR35        | -F                  | -175             | -20   | -3035        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -3235        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -3435        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -3635        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -3835        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -4035        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -4235        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -4435        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -4635        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |
| DSTO                                                       | -L                              | -R                               | -QR80        | -QR35        | -F                  | -175             | -20   | -4835        | -1600                                         | -1800 | -2000 | -2200 | -2400 | -2600 | -2800 |  |  |

**Example for item number key**  
Build-opening direction-post profile-wing profile-safety fence system-ground clearance-fence height-axle size  
**DSTO-L-QR80-QR35-F-20-4635-2830**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number  
(e.g. **SO-DSTO-L-QR80-QR35-F-20-4635-1750** for special axle size 1750).

ADDITIONAL POSTS



As of an axle size of 2000 mm, two additional posts (a) is included in the delivery. Please consider the following when planning the fence course: Order two separate grid elements (b1) and two skylight grid mats (b2). Grid elements (c) above the door enclosed.

PRODUCT OPTION: HEIGHT COMPENSATION



Optional with post -J for height adjustment.

❶ Axle size at post profile QR60 +10 mm, at post profile QR80 +30 mm

❷ For axle size definition, see p. 184.

❸ Width and height of lights can be reduced according to the system for safety switches or door accessories.

❹ Please order floor attachment media separately. See p. 168.

❺ As of an axle size of 2000 mm, 16 floor attachments are needed.

❻ As of a height of 3235 mm, use M12.

❼ Doors by default with 175 mm ground clearance.

❽ Floor plates at the front centre by default. For specific floor plate positioning, see p. 187.

The special aluminium profile, long-lived rollers of steel and a guide of po each other with a transom profile and a skylight grid mat. The door post of the double sliding door with skylight are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl

CAD MOV PICT



# Folding wing and folding sliding doors

## The space-saving version

Folding doors are a particularly space-saving version with strongly limited opening and movement paths, or if no guide elements can be placed in the opening area (folding wing doors).

Folding wing doors without interfering guide elements in the opening area

Use with strongly limited opening/movement paths in the outer area of the machine

Stable welded-on hinges and wing stops

## Overview: Advantages of folding wing and folding sliding doors

### Fast installation

Brühl doors are highly stable and ensure quick installation – without any time loss on the construction site.

### For large openings

Smallest space demand in the open condition – even with large openings.

### Comfortable operation

The sliding doors are equipped with a smooth-running steel guide profile.

### Safe movement of the wings

Robust stops by stoppers and inlet centring.

### Different ground clearances

The doors are delivered by default with a ground clearance of 175 mm or 20 mm.

### Flexible planning

The door posts are provided for transit and also for corner situations. These have a positive influence on the assembly time and the flexibility at site.

### Compatible

The folding wing and folding doors are compatible with the Brühl attachment system for safety switches.

### Customer-specific solutions

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation.

### Maximum shock resilience

All elements are sand-blasted and powder-coated.

SAFETY DOORS

| Technical data for folding wing doors and folding sliding doors <span>Special productions on request.</span> |        |        |        |        |
|--------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|
| Product group/build                                                                                          | FAFTR  | DFAFTR | FASTG  | DFASTG |
| Dimensions                                                                                                   |        |        |        |        |
| max. axle size in mm                                                                                         | 4000   | 8000   | 5000   | 5000   |
| max. door-/fence height in mm                                                                                | 2600   | 2600   | 2600   | 2600   |
| Frame filling                                                                                                |        |        |        |        |
| FLEX II                                                                                                      | •      | •      | •      | •      |
| Wave grid 40                                                                                                 | •      | •      | •      | •      |
| Sheet metal 1.5 mm                                                                                           | •      | •      | •      | •      |
| Polycarbonate 5 mm                                                                                           | •      | •      | •      | •      |
| Wave grid 25                                                                                                 | •      | •      | •      | •      |
| Welding grid 40                                                                                              | •      | •      | •      | •      |
| Perforated sheet round holes Rv 5-8                                                                          | •      | •      | •      | •      |
| Perforated sheet square holes Qg 8-12                                                                        | •      | •      | •      | •      |
| Process view – Sight protection glass reddish-brown                                                          | •      | •      | •      | •      |
| Process view – Sight protection glass green                                                                  | •      | •      | •      | •      |
| Process view – Polycarbonate                                                                                 | •      | •      | •      | •      |
| Attachment systems for safety switches                                                                       |        |        |        |        |
| Rollover latch system BRÜHL-UER®                                                                             | •      | •      | ×      | ×      |
| Surfaces                                                                                                     |        |        |        |        |
| Powder-coating/paint                                                                                         | •      | •      | •      | •      |
| Hot-dip galvanised surface                                                                                   | •      | •      | •      | •      |
| Ground clearance                                                                                             |        |        |        |        |
| Standard                                                                                                     | 175 mm | 175 mm | 175 mm | 175 mm |
| Reduced                                                                                                      | 20 mm  | 20 mm  | 20 mm  | 20 mm  |
| ● Combination is possible.    × Combination is not possible.    ○ Combination is optional.                   |        |        |        |        |



# Folding wing door for latch

Product group/build  
**FAFTR**

❗ Illustration shows FAFTR with overroll latch.

**DOOR ACCESSORIES**

TZ-GR-F

Handle

STR-LR

Caster

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

UER-F®

Overroll latch system

SV

Switch preparation

➡ Door accessories (see p.170) and attachment systems for safety switches (as of p.127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p.185.

❗ Please indicate safety switch and actuator types.

The folding wing doors have no interrupting guiding elements in the thin opening and only have a small space requirement in open condition. They are executed as latch doors and equipped with a floor latch, which prevents the pushing in of the door wings. The door post of the folding wing door for latches are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

**DOOR OPENING**

Order UER-FL for opening to the left, UER-FR for opening to the right

MACHINE-SIDE

Opening to the left

Opening to the right

OUTSIDE

| FLOOR ATTACHMENT ➡                |                          |
|-----------------------------------|--------------------------|
| Required number                   | 8 pcs.                   |
| Attachment type                   | Fixed or shear connector |
| Size · Length                     | M12 · 145/160 mm         |
| Weight example FAFTR 2200×3030 mm | 84.6 kg                  |

❗ Please order floor attachment media separately. See p.168.

❗ Available with 2 or 3 wings.

❗ Available in axle sizes from 1.6 to 4 m.

❗ Doors by default with 175 mm ground clearance.

❗ Floor latch is enclosed in the delivery.

❗ The wing number is determined by the space needed in the outer area.

➡ For frame filling, see table p. 186.

➡ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

➡ Caster is not included in the delivery. Please order it separately, see p.171

# Double folding wing door for latch

Product group/build  
**DFAFTR**

❗ Illustration shows DFAFTR with overroll latch.

**DOOR ACCESSORIES**

TZ-GR-F

Handle

STR-LR

Caster

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

UER-F®

Overroll latch system

SV

Switch preparation

➡ Door accessories (see p.170) and attachment systems for safety switches (as of p.127) must be ordered separately.

➡ For a combination overview of all matching door accessories and attachment systems, see p.185.

❗ Please indicate safety switch and actuator types.

**DOOR OPENING**

MACHINE-SIDE

Opening to the left

Opening to the right

OUTSIDE

| FLOOR ATTACHMENT ➡                 |                          |
|------------------------------------|--------------------------|
| Required number                    | 8 pcs.                   |
| Attachment type                    | Fixed or shear connector |
| Size · Length                      | M12 · 145/160 mm         |
| Weight example DFAFTR 2200×3030 mm | 95.4 kg                  |

❗ Please order floor attachment media separately. See p.168.

❗ Available with 3 to 6 wings.

❗ Available in axle sizes from 3 to 8 m.

❗ Doors by default with 175 mm ground clearance.

❗ Floor latch is enclosed in the delivery.

❗ The wing number is determined by the space needed in the outer area.

➡ For frame filling, see table p. 186.

➡ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

➡ Caster is not included in the delivery. Please order it separately, see p.171

The folding wing doors have no interrupting guiding elements in the thin opening and only have a small space requirement in open condition. They are executed as latch doors and equipped with a floor latch, which prevents the pushing in of the door wings. The door posts of this door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.



# Folding sliding door

Product group/build  
**FASTG**

❶ Illustration shows FASTG with door dead bolt.

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

OUTSIDE

The folding sliding door have only a small space requirement in the open condition. The door posts of this door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. Long-lived guide rails and casters give the folding sliding doors very accurate and precise wing movement paths.

# Double folding sliding door

Product group/build  
**DFASTG**

❶ Illustration shows DFASTG with door dead bolt.

OUTSIDE

DOOR ACCESSORIES

TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

SV

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

MACHINE-SIDE

The double folding sliding door have only a small space requirement in the open condition. The door posts of this door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. Long-lived guide rails and casters give the folding sliding doors very accurate and precise wing movement paths.



# Telescopic sliding doors

## Maximum opening width

Narrow space and the wish for maximum access width determine the application of the telescopic sliding doors. Due to the variable applications, the sliding doors are ideal for, e.g, material storage.

Robust, long-lived guide rails and carriages

Multiple-wing versions are extremely space-saving in their opening/movement paths (STT/DSTT)

Door wing openings to outside of the open width (STT/DSTT)

Large stable, robust four-hole bottomplate for stop posts

## Overview: Advantages of telescopic sliding doors

### Different ground clearances

All sliding doors are delivered by default with a ground clearance of 175 mm or 20 mm.

### Comfortable operation

The standard design contains a precise aluminium guide profile – can optionally be combined with a steel guide profile.

### Suitable for large openings

The sliding doors of the build STT are completely outside of the open width.

### Small space demand

This build contains a telescoping wing guide to minimise the overall space demand, at maximum opening width.

### Flexible planning

The door posts are provided for transit and also for corner situations. These have a positive influence on the assembly time and the flexibility at site.

### Fast installation

Brühl doors are highly stable and ensure quick installation – without any time loss on the construction site.

### Simple height adjustment

A height adjustment of the guide elements is quickly possible via adjustment screws.

### Maximum shock resilience

All elements are sand-blasted and powder-coated.

### Customer-specific solutions

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation. Telescoping sliding doors are available in combination with our attachment systems for safety switches.

| Technical data for telescopic sliding doors ⓘ Special productions on request. |        |        |        |
|-------------------------------------------------------------------------------|--------|--------|--------|
| Product group/build                                                           | STT    | STBT   | DSTT   |
| Dimensions                                                                    |        |        |        |
| max. axle size in mm                                                          | 5430   | 6030   | 5030   |
| max. door-/fence height in mm                                                 | 2600   | 2600   | 2600   |
| Rail running profile                                                          |        |        |        |
| Aluminium guide profile                                                       | ●      | ×      | ●      |
| Steel guide profile                                                           | ×      | ●      | ×      |
| Frame filling                                                                 |        |        |        |
| FLEX II                                                                       | ●      | ●      | ●      |
| Wave grid 40                                                                  | ●      | ●      | ●      |
| Wave grid 25                                                                  | ●      | ●      | ●      |
| Welding grid 40                                                               | ●      | ●      | ●      |
| Polycarbonate                                                                 | ●      | ●      | ●      |
| Sheet metal                                                                   | ●      | ●      | ●      |
| Perforated sheet round holes Rv 5-8                                           | ●      | ●      | ●      |
| Perforated sheet square holes Qg 8-12                                         | ●      | ●      | ●      |
| Process view – Sight protection glass reddish-brown                           | ●      | ●      | ●      |
| Process view – Sight protection glass green                                   | ●      | ●      | ●      |
| Process view – Polycarbonate                                                  | ●      | ●      | ●      |
| Brühl door accessories                                                        |        |        |        |
| Door sets                                                                     | ●      | ●      | ●      |
| Handles                                                                       | ●      | ●      | ●      |
| Attachment systems for safety switches                                        |        |        |        |
| Retaining plate system BRÜHL-HP-S®                                            | ●      | ●      | ●      |
| Handle preparation BRÜHL-GV                                                   | ●      | ●      | ●      |
| Switching cam system BRÜHL-SN-S                                               | ●      | ●      | ●      |
| Safety switch preparation BRÜHL-SV                                            | ●      | ●      | ●      |
| Surfaces                                                                      |        |        |        |
| Powder-coating                                                                | ●      | ●      | ●      |
| Hot-dip galvanised surface                                                    | ●      | ●      | ●      |
| Ground clearance                                                              |        |        |        |
| Standard                                                                      | 175 mm | 175 mm | 175 mm |
| Reduced                                                                       | 20 mm  | 20 mm  | 20 mm  |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



Sliding door for handle or hook lock, telescoping

Product group/build  
**STT**

Illustration shows STT with door set TG-V2.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

**TG**

Door sets

**SG-S2**

Lock set

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S®**

Retaining plate system

**SV**

Switch preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

Illustration shows STT with a grip system.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

**TZ-GR-S**

Handle

**TZ-GRK-S**

Handle with bullet crossbow

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**GV-S**

Handle preparation

**HP-S®**

Retaining plate system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The telescoping sliding doors are equipped with a special aluminium profile that ensures highly precise movement paths. The wings are arranged in parallel in the guide profiles and can be opened easily to the left or right outside of the open width. The door posts of this door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

| Sliding door for handle or hook lock, telescoping |                     |       |              |                    |        |               |         |                               |              |                 |             |               |                                    |                               |             |               |                                      |                              |           |                  |              |                                             |           |           |      |       |      |       |       |       |       |       |       |       |
|---------------------------------------------------|---------------------|-------|--------------|--------------------|--------|---------------|---------|-------------------------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|-------------|---------------|--------------------------------------|------------------------------|-----------|------------------|--------------|---------------------------------------------|-----------|-----------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| Build                                             | Opening direction   |       | Post profile | Wing profile       |        |               |         | Safety fence system / filling |              |                 |             |               |                                    |                               |             |               |                                      |                              |           | Ground clearance | Fence height | Axle size ① from post centre to post centre |           |           |      |       |      |       |       |       |       |       |       |       |
|                                                   |                     |       |              |                    |        |               |         | ZAUN II                       |              |                 |             |               |                                    | WAND II                       |             |               |                                      |                              |           |                  |              | 800                                         | 1000      | ...       | 3800 | 4000  | 4200 | 4400  | ...   | 5200  | 5400  |       |       |       |
|                                                   | ≤ 4000 mm axle size |       |              | >4000 mm axle size |        | Grid fillings |         |                               |              | Area elements   |             |               |                                    | Process view                  |             |               |                                      | Open width ②                 |           |                  |              |                                             |           |           |      |       |      |       |       |       |       |       |       |       |
|                                                   | QR35                | RP106 |              | RR50x34            | RP1191 | FLEX II       | FLEX II | Wave grid 40                  | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal | Polycarbonate | Sight protection glass reddish-brown | Sight protection glass green | 600       |                  |              | 800                                         | ...       | 3600      | 3800 | 4000  | 4200 | ...   | 5000  | 5200  |       |       |       |       |
|                                                   | STT                 | -L    |              | -R                 | -QR80  | -QR35         | -RP106  | -RR50x34                      | -RP1191      | -F              | -Z-GF-F     | -Z-GF-WG40    | -Z-GF-WG25                         | -Z-GF-SG40                    | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                            | -Z-FE-LBQ                    | -W-BL     |                  |              | -W-PE-P                                     | -W-PE-SSB | -W-PE-SSG |      | -175  | -20  | -2000 | -800  | -1000 | ...   | -3800 | -4000 | -4200 |
| STT                                               | -L                  | -R    | -QR80        | -QR35              | -RP106 | -RR50x34      | -RP1191 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                                | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG        |              | -175                                        | -20       | -2200     | -800 | -1000 | ...  | -3800 | -4000 | -4200 | -4400 | ...   | -5200 | -5400 |
| STT                                               | -L                  | -R    | -QR80        | -QR35              | -RP106 | -RR50x34      | -RP1191 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                                | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG        |              | -175                                        | -20       | -2400     | -800 | -1000 | ...  | -3800 | -4000 | -4200 | -4400 | ...   | -5200 | -5400 |
| STT                                               | -L                  | -R    | -QR80        | -QR35              | -RP106 | -RR50x34      | -RP1191 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                                | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG        |              | -175                                        | -20       | -2600     | -800 | -1000 | ...  | -3800 | -4000 | -4200 | -4400 | ...   | -5200 | -5400 |

Example for item number key Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **STT-R-QR80-RP106-Z-FE-P-175-2600-2630**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-STT-R-QR80-RP106-Z-FE-P-20-2600-1750** for special axle size 1750).

FLOOR ATTACHMENT ③

|                                 |                          |
|---------------------------------|--------------------------|
| Required number                 | 12 pcs.                  |
| Attachment type                 | Fixed or shear connector |
| Size · Length                   | M12 · 145/160 mm         |
| Weight example STT 2000×2030 mm | 105.96 kg                |

PRODUCT OPTION: HEIGHT COMPENSATION



Optional with post -J for height adjustment.

① Axle size in post profile QR80 +30 mm

② Width and height of the lights can be reduced according to the system for safety switches or door accessories.

③ Please order floor attachment media separately. See p. 168.

④ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

⑤ Available with 2 wings.

⑥ Doors by default with 175 mm ground clearance.

⑦ For frame filling, see table p. 186.

⑧ Bottom plate for handle posts centred in the middle by default; centred at the front for guide and additional posts by default. For specific floor plate positioning, see p. 187.

DOOR OPENING

MACHINE-SIDE

OUTSIDE

Opening to the left

Opening to the right

CAD

MOV

PIC



Sliding door for handle or hook lock, opening on both sides, telescoping

Product group/build  
**STBT**

❗ Illustration shows STBT with door set TG-V2.

MACHINE-SIDE



OUTSIDE

**DOOR ACCESSORIES**

**TG**

Door sets (2x)

**SG-S2**

Lock set (2x)

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S®**

Retaining plate system (2x)

**SV**

Switch preparation (2x)

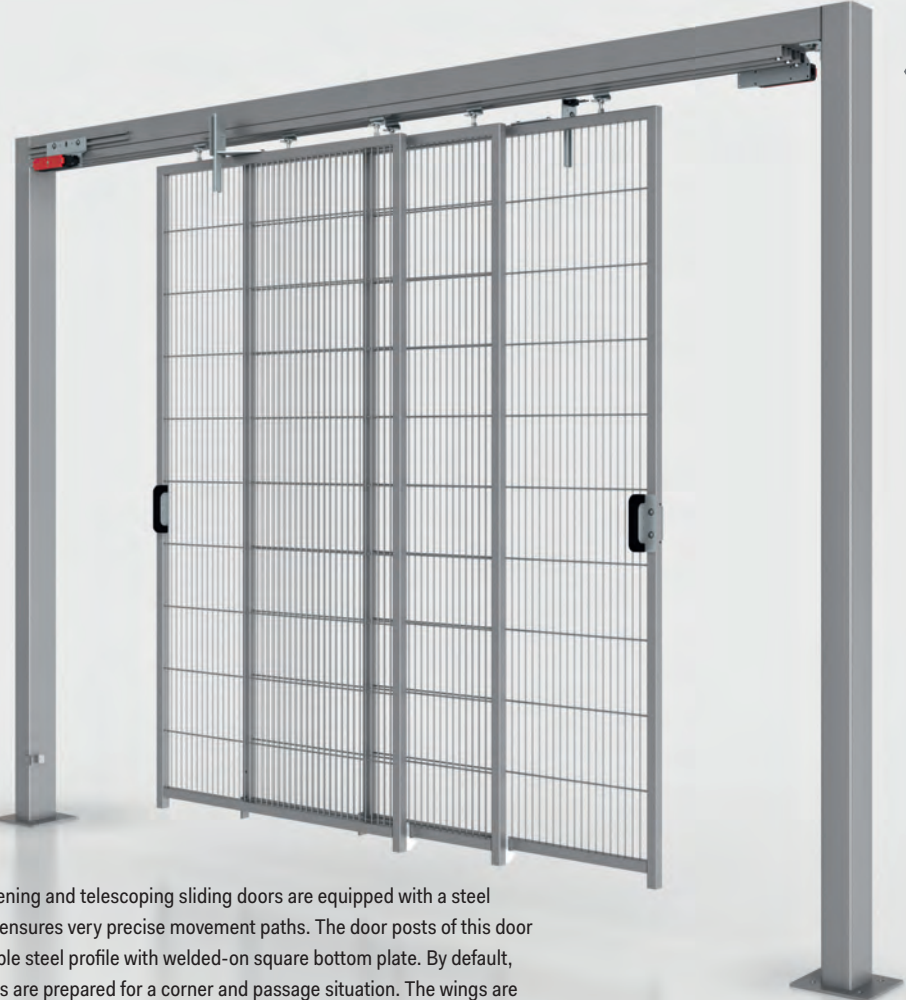
❗ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❗ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

❗ Illustration shows STBT with a grip system.

MACHINE-SIDE



OUTSIDE

**DOOR ACCESSORIES**

**TZ-GR-S**

Handle (2x)

**TZ-GRK-S**

Handle with bullet crossbow (2x)

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**GV-S**

Handle preparation (2x)

**HP-S®**

Retaining plate system (2x)

❗ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❗ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❗ Please indicate safety switch and actuator types.

The bilaterally opening and telescoping sliding doors are equipped with a steel guide profile that ensures very precise movement paths. The door posts of this door are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation. The wings are arranged in parallel in the guide profiles and within the portal and can be opened easily to the left or right outside of the open width.

Sliding door for handle or hook lock, opening on both sides, telescoping

| Build | Opening direction | Post profile | Wing profile        |       | Safety fence system / filling |        |               |         |              |              |                 |             |               |                                    | Ground clearance              | Fence height | Axle size ❶ from post centre to post centre |                                      |                              |       |       |     |       |       |       |       |     |       |       |
|-------|-------------------|--------------|---------------------|-------|-------------------------------|--------|---------------|---------|--------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|--------------|---------------------------------------------|--------------------------------------|------------------------------|-------|-------|-----|-------|-------|-------|-------|-----|-------|-------|
|       |                   |              |                     |       | ZAUN II                       |        |               |         |              | WAND II      |                 |             |               |                                    |                               |              |                                             |                                      |                              |       |       |     |       |       |       |       |     |       |       |
|       |                   |              | ≤ 4000 mm axle size |       | >4000 mm axle size            |        | Grid fillings |         |              |              | Area elements   |             |               |                                    |                               |              | Open width ❷                                |                                      |                              |       |       |     |       |       |       |       |     |       |       |
|       |                   |              | QR35                | RP106 | RR50x34                       | RP1191 | FLEX II       | FLEX II | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal  | Polycarbonate                               | Sight protection glass reddish-brown | Sight protection glass green | 790   | 930   | ... | 2260  | 2390  | 2530  | 2660  | ... | 3590  | 3730  |
| STBT  | -R                | -RR80x120    | QR35                | RP106 | RR50x34                       | RP1191 | -F            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL        | -W-PE-P                                     | -W-PE-SSB                            | -W-PE-SSG                    | -1600 | -1800 | ... | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STBT  | -R                | -RR80x120    | QR35                | RP106 | RR50x34                       | RP1191 | -F            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL        | -W-PE-P                                     | -W-PE-SSB                            | -W-PE-SSG                    | -1600 | -1800 | ... | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STBT  | -R                | -RR80x120    | QR35                | RP106 | RR50x34                       | RP1191 | -F            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL        | -W-PE-P                                     | -W-PE-SSB                            | -W-PE-SSG                    | -1600 | -1800 | ... | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |
| STBT  | -R                | -RR80x120    | QR35                | RP106 | RR50x34                       | RP1191 | -F            | -Z-GF-F | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL    | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL        | -W-PE-P                                     | -W-PE-SSB                            | -W-PE-SSG                    | -1600 | -1800 | ... | -3800 | -4000 | -4200 | -4400 | ... | -5800 | -6000 |

**Example for item number key** Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **STBT-R-RR80x120-QR35-Z-GF-SG40-175-2200-2830**  
For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-STBT-R-RR80x120-RP106-Z-FE-P-20-2600-1750** for special axle size 1750).

**DOOR OPENING**

MACHINE-SIDE

Front wing opens to the right



OUTSIDE

**PRODUCT OPTION: HEIGHT COMPENSATION**



Optional with post -J for height adjustment.

**FLOOR ATTACHMENT ❸**

Required number

8 pcs.

Attachment type

Fixed or shear connector

Size · Length

M12 · 145/160 mm

Weight example STBT 2200x3000 mm

134.9 kg

❶ Axle size in post profile QR80 +30 mm

❷ Width and height of the lights can be reduced according to the system for safety switches or door accessories.

❸ Please order floor attachment media separately. See p. 168.

❹ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

❺ Available with 3 wings.

❻ Doors by default with 175 mm ground clearance.

❼ Design of lock set: Outer wing is provided for a Euro profile cylinder dia 17mm with a length of 30/10 mm. The inner wing is provided for a Euro profile cylinder dia 17mm with a length of 30/65 mm

❽ For frame filling, see table p. 186.

❾ Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

❿ Compare door STB p. 92.

**CAD**

**MOV**

**PICT**

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Double sliding door for handle or hook lock, telescoping

Product group/build  
**DSTT**

Illustration shows DSTT with door set TG-V2.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

**TG**

Door sets

**SG-S2**

Lock set

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S®**

Retaining plate system (2x)

**SV**

Switch preparation (2x)

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

MACHINE-SIDE

OUTSIDE

**DOOR ACCESSORIES**

**TZ-GR-S**

Handle (2x)

**TZ-GRK-S**

Handle with bullet crossbow

**ATTACHMENT SYSTEMS FOR SAFETY SWITCHES**

**HP-S®**

Retaining plate system (2x)

**GV-S**

Handle preparation

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The telescoping double sliding doors are equipped with a special aluminium profile that ensures highly precise movement paths. The door wings of the door can be opened to the left and right outside of the open width. The door posts are made of a stable steel profile with welded-on square bottom plate. By default, the two door posts are prepared for a corner and passage situation.

Double sliding door for handle or hook lock,telescoping

| Build | Opening direction   |                      | Post profile | Wing profile |        | Safety fence system / filling |               |              |              |                 |               |               |                                    |                               |             |               |                                     |                             |      | Ground clearance |        | Fence height | Axle size ① from post centre to post centre |              |       |       |       |       |       |       |       |       |       |  |  |
|-------|---------------------|----------------------|--------------|--------------|--------|-------------------------------|---------------|--------------|--------------|-----------------|---------------|---------------|------------------------------------|-------------------------------|-------------|---------------|-------------------------------------|-----------------------------|------|------------------|--------|--------------|---------------------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|
|       | Opening to the left | Opening to the right |              | QR35         | RP106  | FLEX II                       | ZAUN II       |              |              |                 |               |               |                                    | WAND II                       |             |               |                                     |                             |      |                  | 175 mm |              | 20 mm                                       | Open width ② |       |       |       |       |       |       |       |       |       |  |  |
|       |                     |                      |              |              |        |                               | Grid fillings |              |              |                 | Area elements |               |                                    | Process view                  |             |               |                                     |                             |      |                  |        |              |                                             |              |       |       |       |       |       |       |       |       |       |  |  |
|       |                     |                      |              |              |        |                               | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal   | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal | Polycarbonate | Sight protection-pane reddish-brown | Sight protection-pane green |      |                  |        |              |                                             |              |       |       |       |       |       |       |       |       |       |  |  |
| DSTT  | -L                  | -R                   | -QR80        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20              | -2000  | -2800        | -3000                                       | -3200        | -3400 | -3600 | -3800 | -4000 | -4200 | -4400 | -4600 | -4800 | -5000 |  |  |
| DSTT  | -L                  | -R                   | -QR80        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20              | -2200  | -2800        | -3000                                       | -3200        | -3400 | -3600 | -3800 | -4000 | -4200 | -4400 | -4600 | -4800 | -5000 |  |  |
| DSTT  | -L                  | -R                   | -QR80        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20              | -2400  | -2800        | -3000                                       | -3200        | -3400 | -3600 | -3800 | -4000 | -4200 | -4400 | -4600 | -4800 | -5000 |  |  |
| DSTT  | -L                  | -R                   | -QR80        | -QR35        | -RP106 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P       | -W-PE-SSB                           | -W-PE-SSG                   | -175 | -20              | -2600  | -2800        | -3000                                       | -3200        | -3400 | -3600 | -3800 | -4000 | -4200 | -4400 | -4600 | -4800 | -5000 |  |  |

**Example for item number key** Build-opening direction-post profile-wing profile-safety fence system/filling-ground clearance-fence height-axle size **DSTT-L-QR80-QR35-Z-GF-F-175-2400-3630**

For dimensions that are not in the table, **SO-** must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. **SO-DSTT-L-QR80-QR35-Z-GF-F-175-2400-2750** for special axle size 2750).

**PRODUCT OPTION: HEIGHT COMPENSATION**



Optional with post -J for height adjustment.

① Axle size in post profile QR80 +30 mm

② Width and height of the lights can be reduced according to the system for safety switches or door accessories.

③ Please order floor attachment media separately. See p. 168.

④ Perforated sheet: Round holes Rv 5-8 / square holes Qg 8-12

⑤ Available with 4 wings.

⑥ Doors by default with 175 mm ground clearance.

⑦ For frame filling, see table p. 186.

⑧ Floor plates at the front centre by default. For specific floor plate positioning, see p. 187.

**FLOOR ATTACHMENT ⑧**

|                                  |                          |
|----------------------------------|--------------------------|
| Required number                  | 16 pcs.                  |
| Attachment type                  | Fixed or shear connector |
| Size · Length                    | M12 · 145/160 mm         |
| Weight example DSTT 2200x3010 mm | 145.7 kg                 |

**DOOR OPENING**

MACHINE-SIDE

OUTSIDE

Active leaf opening to the left

Active leaf opening to the right

**CAD**

**MOV**

**PICT**

www.bruehl-safety.com





# Self-supported sliding doors

## No limitation of the open height

Where use of guide elements on the floor (stacker traffic) or in the upper area (crane) is not possible, self-supported sliding doors are used. If you need particularly space-saving solutions, choose telescoping or two-wing sliding doors.

No interfering elements in the opening area

Telescoping or two-wing versions minimise the overall space demand

Highly stable portal construction with firmly welded guide strut – no construction kit system

## Overview: Advantages of the self-supported sliding doors

- No interfering guide elements**

No guide elements on the floor or above the open height. Smoothly running, long-lived guide elements. Precise ball-carriage guide available as an option.
- Simple height adjustment**

A height adjustment of the guide elements is quickly possible via adjustment screws.
- Small space demand**

The FSTST/FSTGT builds are given a telescoping wing guide to minimise the overall space demand. The two-wing build FSTG-2/FSTS-2 is used for further space demand reduction.
- Suitable for large openings**

The opposite arrangement of two self-supported sliding doors for securing openings permits use in openings of up to 8 m. Two-wing design to bridge large openings is possible.
- Maximum shock resilience**

All elements are sand-blasted and powder-coated.
- Customer-specific solutions**

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation. Self-supported sliding doors are available in combination with our attachment systems for safety switches.
- Flexible planning**

The fence route can be installed in any manner. This positively influences the assembly time and flexibility on the construction site.
- Fast installation**

Brühl doors are highly stable and ensure quick installation – without any time loss on the construction site, since they are entirely pre-installed.

SAFETY DOORS

| Technical data for self-supported sliding doors ⓘ Special productions on request. |        |        |        |        |        |        |
|-----------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|
| Product group/build                                                               | FSTS   | FSTG   | FSTST  | FSTGT  | FSTS-2 | FSTG-2 |
| Dimensions                                                                        |        |        |        |        |        |        |
| max. axle size in mm                                                              | 4830   | 4830   | 4030   | 4030   | 4030   | 4030   |
| max. door-/fence height in mm                                                     | 2600   | 2600   | 2600   | 2600   | 2600   | 2600   |
| Build                                                                             |        |        |        |        |        |        |
| Telescopic guide                                                                  | ×      | ×      | ●      | ●      | ×      | ×      |
| Frame filling                                                                     |        |        |        |        |        |        |
| FLEX II                                                                           | ●      | ●      | ●      | ●      | ●      | ●      |
| Wave grid 40                                                                      | ●      | ●      | ●      | ●      | ●      | ●      |
| Sheet metal 1.5 mm                                                                | ●      | ●      | ●      | ●      | ●      | ●      |
| Polycarbonate 5 mm                                                                | ●      | ●      | ●      | ●      | ●      | ●      |
| Wave grid 25                                                                      | ●      | ●      | ●      | ●      | ●      | ●      |
| Welding grid 40                                                                   | ●      | ●      | ●      | ●      | ●      | ●      |
| Perforated sheet round holes Rv 5-8                                               | ●      | ●      | ●      | ●      | ●      | ●      |
| Perforated sheet square holes Qg 8-12                                             | ●      | ●      | ●      | ●      | ●      | ●      |
| Process view – Sight protection glass reddish-brown                               | ●      | ●      | ●      | ●      | ●      | ●      |
| Process view – Sight protection glass green                                       | ●      | ●      | ●      | ●      | ●      | ●      |
| Process view – Polycarbonate                                                      | ●      | ●      | ●      | ●      | ●      | ●      |
| Attachment systems for safety switches                                            |        |        |        |        |        |        |
| Retaining plate system BRÜHL-HP-S®                                                | ●      | ●      | ●      | ●      | ×      | ×      |
| Handle preparation BRÜHL-GV                                                       | ×      | ●      | ×      | ●      | ×      | ●      |
| Safety switch preparation BRÜHL-SV                                                | ●      | ●      | ●      | ●      | ●      | ●      |
| Surfaces                                                                          |        |        |        |        |        |        |
| Powder-coating/paint                                                              | ●      | ●      | ●      | ●      | ●      | ●      |
| Hot-dip galvanised surface                                                        | ●      | ●      | ●      | ●      | ●      | ●      |
| Ground clearance                                                                  |        |        |        |        |        |        |
| Standard                                                                          | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm | 175 mm |
| Reduced                                                                           | 50 mm  | 50 mm  | ×      | ×      | ×      | ×      |

● Combination is possible.    × Combination is not possible.    ○ Combination is optional.



Self-supported sliding door with hook lock

Product group/build  
FSTS

❶ Illustration shows FSTS (inner track) with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

TG

Door sets

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

HP-S®

Retaining plate system

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop post of the self-supported sliding door with hook lock is prepared for a corner and passage situation by default. The guide of steel profile with ball-bearing casters ensures particularly precise movement paths. The door has no interfering guide elements in the opening area.

Self-supported sliding door for handle

Product group/build  
FSTG

❶ Illustration shows FSTG (running on outside) with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

GV-S

Handle preparation

HP-S®

Retaining plate system

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The guide of steel profile with ball-bearing casters ensures particularly precise movement paths in the self-supported sliding door. The door has no interfering elements in the opening area, and the stop post is prepared for a corner and passage situation by default.

Self-supported sliding door with hook lock / self-supported sliding door for handle

| Build |      | Opening direction   |                      | Post profile | Floor guide             |                         | Wing profile |         | Safety fence system / filling |               |              |              |                 |               |               |                                    |                               |             | Ground clearance |               | Fence height                          | Axle size❶ from post centre to post centre |     |       |      |       |     |       |       |       |       |      |       |       |      |     |       |      |       |      |       |       |       |       |     |       |       |
|-------|------|---------------------|----------------------|--------------|-------------------------|-------------------------|--------------|---------|-------------------------------|---------------|--------------|--------------|-----------------|---------------|---------------|------------------------------------|-------------------------------|-------------|------------------|---------------|---------------------------------------|--------------------------------------------|-----|-------|------|-------|-----|-------|-------|-------|-------|------|-------|-------|------|-----|-------|------|-------|------|-------|-------|-------|-------|-----|-------|-------|
|       |      |                     |                      |              |                         |                         |              |         | ZAUN II                       |               |              |              |                 | WAND II       |               |                                    |                               |             |                  |               |                                       | 800                                        |     | 1000  |      | ...   |     | 2200  |       | 2400  |       | 2600 |       | 2800  |      | ... |       | 4600 |       | 4800 |       |       |       |       |     |       |       |
|       |      | Opening to the left | Opening to the right |              | for axle size ≤ 2500 mm | for axle size ≥ 2500 mm | QR40         | RP1008  | FLEX II                       | Grid fillings |              |              |                 | Area elements |               |                                    |                               | Sheet metal |                  |               |                                       | Process view                               |     |       |      | 590   | 790 | ...   | 1990  | 2190  | 2390  | 2590 | ...   | 4390  | 4590 |     |       |      |       |      |       |       |       |       |     |       |       |
|       |      |                     |                      |              |                         |                         |              |         |                               | FLEX II       | Wave grid 40 | Wave grid 25 | Welding grid 40 | Sheet metal   | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes |             | Sheet metal      | Polycarbonate | Sight protection - pane reddish-brown | Sight protection glass green               |     |       |      |       |     |       |       |       |       |      |       |       |      |     |       |      |       |      |       |       |       |       |     |       |       |
| FSTS  | FSTG | -L                  | -R                   | -QR80        | -408                    | -510                    | -QR40        | -RP1008 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -                | -             | -                                     | -175                                       | -50 | -1400 | -800 | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ...  | -4600 | -4800 | -175 | -50 | -1600 | -800 | -1000 | ...  | -2200 | -2400 | -2600 | -2800 | ... | -4600 | -4800 |
| FSTS  | FSTG | -L                  | -R                   | -QR80        | -408                    | -510                    | -QR40        | -RP1008 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -                | -             | -                                     | -175                                       | -50 | -1800 | -800 | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ...  | -4600 | -4800 | -175 | -50 | -2000 | -800 | -1000 | ...  | -2200 | -2400 | -2600 | -2800 | ... | -4600 | -4800 |
| FSTS  | FSTG | -L                  | -R                   | -QR80        | -408                    | -510                    | -QR40        | -RP1008 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P          | -W-PE-SSB     | -W-PE-SSG                             | -175                                       | -50 | -2200 | -800 | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ...  | -4600 | -4800 | -175 | -50 | -2400 | -800 | -1000 | ...  | -2200 | -2400 | -2600 | -2800 | ... | -4600 | -4800 |
| FSTS  | FSTG | -L                  | -R                   | -QR80        | -408                    | -510                    | -QR40        | -RP1008 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P          | -W-PE-SSB     | -W-PE-SSG                             | -175                                       | -50 | -2600 | -800 | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ...  | -4600 | -4800 | -175 | -50 | -2600 | -800 | -1000 | ...  | -2200 | -2400 | -2600 | -2800 | ... | -4600 | -4800 |
| FSTS  | FSTG | -L                  | -R                   | -QR80        | -408                    | -510                    | -QR40        | -RP1008 | -F                            | -Z-GF-F       | -Z-GF-WG40   | -Z-GF-WG25   | -Z-GF-SG40      | -Z-FE-BL      | -Z-FE-P       | -Z-FE-LBR                          | -Z-FE-LBQ                     | -W-BL       | -W-PE-P          | -W-PE-SSB     | -W-PE-SSG                             | -175                                       | -50 | -2600 | -800 | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ...  | -4600 | -4800 | -175 | -50 | -2600 | -800 | -1000 | ...  | -2200 | -2400 | -2600 | -2800 | ... | -4600 | -4800 |

Example for item number key

Build-opening direction-post profile-helmet and bottom guide-wing profile-safety fence system/filling-ground clearance-fence height-axle size

FSTS-L-QR80-510-QR40-Z-GF-F-175-1800-3630 or FSTG-L-QR80-510-QR40-Z-GF-F-175-1800-3630

For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-FSTS-L-QR80-510-QR40-Z-GF-F-175-1800-2750 for special axle size 2750).

FLOOR ATTACHMENT❷

|                                  |                          |
|----------------------------------|--------------------------|
| Required number                  | 10 pcs.                  |
| Attachment type                  | Fixed or shear connector |
| Size · Length                    | M10 · 120/130 mm         |
| Weight example FSTS 2000×3030 mm | 144.37 kg                |
| Weight example FSTG 2000×3030 mm | 141.48 kg                |

DETAIL VIEW



Bullet crossbow is enclosed with the FSTG.mfang der FSTG enthalten.

DOOR OPENING

MACHINE-SIDE

OUTSIDE

Opening to the left

Opening to the right

CAD

MOV

PIC



Self-supported sliding door with hook lock and telescopic guide

Product group/build  
FSTST

❶ Illustration shows FSTST (inner track) with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Door sets

TG

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Retaining plate system

HP-S®

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop post of the telescoping self-supported sliding door with hook lock is prepared for a corner and passage situation by default.

The telescoping guide of steel profile with ball-bearing casters ensures particularly precise movement paths. The door has no interfering guide elements in the opening area.

Self-supported sliding door for handle, with telescopic guide

Product group/build  
FSTGT

❶ Illustration shows FSTGT (outer track) with a grip system.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES

Handle

TZ-GR-S

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Handle preparation

GV-S

Retaining plate system

HP-S®

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop post of the telescoping self-supported sliding door for grip is prepared for a corner and passage situation by default. The door has no interfering guide elements in the opening area. The telescoping guide of steel profile with ball-bearing casters ensures particularly precise movement paths of the door.

Self-supported sliding door with hook lock and telescopic guide / self-supported sliding door for handle and telescopic guide

| Build   |         | Opening direction |              | Post profile    | Floor guide |               | Interim guide                      |                               | Wing profile |         | Safety fence system / filling |              |                 |             |               |                                    |                               |             |           |       |         |      | Ground clearance |      | Fence height | Axle size ❶ from post centre to post centre |              |       |     |       |       |       |       |     |       |       |  |  |  |
|---------|---------|-------------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|--------------|---------|-------------------------------|--------------|-----------------|-------------|---------------|------------------------------------|-------------------------------|-------------|-----------|-------|---------|------|------------------|------|--------------|---------------------------------------------|--------------|-------|-----|-------|-------|-------|-------|-----|-------|-------|--|--|--|
|         |         |                   |              |                 |             |               |                                    |                               |              |         | ZAUN II                       |              |                 |             |               |                                    |                               |             |           |       | WAND II |      |                  |      |              |                                             | Open width ❷ |       |     |       |       |       |       |     |       |       |  |  |  |
|         |         |                   |              |                 |             |               |                                    |                               |              |         | Grid fillings                 |              |                 |             |               | Area elements                      |                               |             |           |       |         |      |                  |      |              |                                             |              |       |     |       |       |       |       |     |       |       |  |  |  |
|         |         |                   |              |                 |             |               |                                    |                               |              |         | Wave grid 40                  | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal | 175 mm    | 50 mm | 800     | 1000 | ...              | 2200 |              | 2400                                        | 2600         | 2800  | ... | 3800  | 4000  |       |       |     |       |       |  |  |  |
| FLEX II | FLEX II | Wave grid 40      | Wave grid 25 | Welding grid 40 | Sheet metal | Polycarbonate | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal  | 175 mm  | 50 mm                         | 590          | 790             | ...         | 1990          | 2190                               | 2390                          | 2590        | ....      | 3590  | 3790    |      |                  |      |              |                                             |              |       |     |       |       |       |       |     |       |       |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -1400                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -1600                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -1800                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -2000                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -2200                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -2400                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |
| FSTST   | FSTGT   | -L                | -R           | -QR80           | -508        | -510          | -407                               | -409                          | -QR40        | -RP1008 | -F                            | -Z-GF-F      | -Z-GF-WG40      | -Z-GF-WG25  | -Z-GF-SG40    | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ | -W-BL | -       | -    | -                | -175 | -50          | -2600                                       | -800         | -1000 | ... | -2200 | -2400 | -2600 | -2800 | ... | -3800 | -4000 |  |  |  |

Example for item number key Build-opening direction-post profile-helmet and bottom guide-interim guide-wing profile-safety fence system/filling-ground clearance-fence height-axle size

FSTST-L-QR80-510-QR40-Z-GF-F-175-1800-3630 or FSTGT-L-QR80-510-QR40-Z-GF-175-1800-3630

For dimensions that are not in the table, SO- must be put in front of the item number and the special size must be entered in the corresponding location in the item number (e.g. SO-FSTGT-L-QR80-510-QR40-Z-GF-F-175-1800-2750 for special axle size 2750).

FLOOR ATTACHMENT ❸

|                                   |                          |
|-----------------------------------|--------------------------|
| Required number                   | 10 pcs.                  |
| Attachment type                   | Fixed or shear connector |
| Size · Length                     | M10 · 120/130 mm         |
| Weight example FSTGT 2000×1000 mm | 92.81 kg                 |
| Weight example FSTST 2000×1000 mm | 95.8 kg                  |

DETAIL VIEW



Bullet crossbow is included in the delivery of the FSTGT.

DOOR OPENING

MACHINE-SIDE

OUTSIDE

Opening to the left

Opening to the right

CAD

MOV

PIC

❶ Axle size in post profile QR80 +30 mm

❷ Width and height of the lights can be reduced according to the system for safety switches or door accessories.

❸ Please order floor attachment media separately. See p. 168.

❹ Perforated sheet: Round holes Rv5-8 / square holes Qg 8-12

❺ Doors are delivered with inner track by default. Available with outer track on request.

❻ Formula for calculation of the space demand see p. 184.



Self-supported sliding door with hook lock, two wings

Product group/build  
FSTS-2

❶ Illustration shows FSTS-2 (outer track) with door set TG-V2.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Door sets

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Switch preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The stop post of the two-wing self-supported sliding door with hook lock is prepared for a corner and passage situation by default.

The guide of steel profile with ball-bearing casters ensures particularly precise movement paths. The door has no interfering guide elements in the opening area.

Self-supported sliding door for handle, two wings

Product group/build  
FSTG-2

❶ Illustration shows FSTG-2 (inner track) with a grip system.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Handle preparation

❷ Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

❸ For a combination overview of all matching door accessories and attachment systems, see p. 185.

❹ Please indicate safety switch and actuator types.

The guide of steel profile with ball-bearing casters ensures particularly precise movement paths in the self-supported sliding door with two wings. The door has no interfering elements in the opening area, and the stop post is prepared for a corner and passage situation by default.

| Self-supported sliding door with hook lock, two wings / self-supported sliding door for handle, two wings                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |        |                   |              |              |              |               |              |         |                               |                 |             |               |            |                                    |                               |             |               |                                     |                              |           |           |                  |      |              |                                             |      |       |      |       |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------------|--------------|--------------|--------------|---------------|--------------|---------|-------------------------------|-----------------|-------------|---------------|------------|------------------------------------|-------------------------------|-------------|---------------|-------------------------------------|------------------------------|-----------|-----------|------------------|------|--------------|---------------------------------------------|------|-------|------|-------|-------|
| Build                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        | Opening direction |              | Post profile | Bottom guide | Interim guide | Wing profile |         | Safety fence system / filling |                 |             |               |            |                                    |                               |             |               |                                     |                              |           |           | Ground clearance |      | Fence height | Axle size ❶ from post centre to post centre |      |       |      |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                   |              |              |              |               |              |         | ZAUN II                       |                 |             |               |            |                                    |                               |             | WAND II       |                                     |                              |           |           |                  |      |              | 800                                         | 1000 | ...   | 3800 | 4000  |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        | Grid fillings     |              |              |              |               |              |         | Area elements                 |                 |             |               |            | Process view                       |                               |             | Open width ❷  |                                     |                              |           |           |                  |      |              |                                             |      |       |      |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        | FLEX II           | Wave grid 40 |              |              |               |              |         | Wave grid 25                  | Welding grid 40 | Sheet metal | Polycarbonate |            | Perforated sheet Round perforation | Perforated sheet Square holes | Sheet metal | Polycarbonate | Sight protection-pane reddish-brown | Sight protection glass green |           |           |                  |      |              |                                             |      |       |      |       |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |                   |              |              |              |               |              |         |                               |                 |             |               |            |                                    |                               |             |               |                                     |                              |           |           |                  |      |              |                                             |      |       |      |       |       |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -                            | -         | -         |                  | -175 | -50          | -1400                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -                            | -         | -         |                  | -175 | -50          | -1600                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -                            | -         | -         |                  | -175 | -50          | -1800                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG |                  | -175 | -50          | -2000                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG |                  | -175 | -50          | -2200                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG |                  | -175 | -50          | -2400                                       | -800 | -1000 | ...  | -3800 | -4000 |
| FSTS-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | FSTG-2 | -L                | -R           | -QR80        | -510         | -408          | -QR40        | -RP1008 | -F                            | -Z-GF-F         | -Z-GF-WG40  | -Z-GF-WG25    | -Z-GF-SG40 | -Z-FE-BL                           | -Z-FE-P                       | -Z-FE-LBR   | -Z-FE-LBQ     | -W-BL                               | -W-PE-P                      | -W-PE-SSB | -W-PE-SSG |                  | -175 | -50          | -2600                                       | -800 | -1000 | ...  | -3800 | -4000 |
| Example for item number key Build-opening direction-post profile-helmet and bottom guide-interim guide-wing profile-safety fence system/filling-ground clearance-fence height-axle size<br>FSTS-2-L-QR80-510-QR40-Z-GF-WG40-175-1800-3630 or FSTG-2-L-QR80-510-QR40-Z-GF-WG40-175-1800-3630<br>For dimensions that are not in the table, <b>SO-</b> must be put in front of the item number and the special size must be entered in the corresponding location in the item number<br>(e.g. <b>SO-FSTS-2-L-QR80-510-QR40-Z-GF-F-175-1800-2750</b> for special axle size 2750). |        |                   |              |              |              |               |              |         |                               |                 |             |               |            |                                    |                               |             |               |                                     |                              |           |           |                  |      |              |                                             |      |       |      |       |       |

DOOR OPENING

MACHINE-SIDE

Opening to the left

OUTSIDE

DOOR OPENING

MACHINE-SIDE

Opening to the right

OUTSIDE

DETAIL VIEW

Bullet crossbow is included in the scope of delivery.

FLOOR ATTACHMENT ❸

|                                    |                          |
|------------------------------------|--------------------------|
| Required number                    | 16 pcs.                  |
| Attachment type                    | Fixed or shear connector |
| Size · Length                      | M10 · 120/130 mm         |
| Weight example FSTG-2 2200×3030 mm | 189.6 kg                 |
| Weight example FSTS-2 2200×3030 mm | 194.2 kg                 |

❶ Axle size in post profile QR80 +30 mm

❷ Width and height of the lights can be reduced according to the system for safety switches or door accessories.

❸ Please order floor attachment media separately. See p. 168.

❹ Perforated sheet: Round holes Rv5-8/ square holes Qg 8-12

❺ Formula for calculation of the space demand see p. 184.



# Lifting and folding fields

## The slightly facility system access

The vertical movement direction makes hand-actuated lifting fields particularly space-saving. The weight runs concealed in the post to protect the machine operator. The wing is secured against falling off by several carrying elements. You do not always need a door to perform maintenance and adjustment work on the machines and systems. The folding fields by Brühl can be used for this.

Particularly smooth operation thanks to the concealed counter-weight

All wing fillings are available to match the safety fence system

Safety-switch attachment possible

## Overview: Advantages...

### ... of the lifting fields

#### Low installation depth

The lifting fields move horizontally and therefore have a very low installation depth.

#### Comfortable operation

The optional linear guide makes the lifting fields particularly smooth and highly comfortable to operate.

#### No danger of injury

Safety is important to Brühl. All lifting fields are delivered with the gear covered.

#### Comprehensive safety equipment

The lifting fields are equipped with several carrying elements for optimal safety.

### ... of the folding fields

#### Flexible planning

The fence route can be installed in any manner. This positively influences the assembly time and flexibility on the construction site.

#### Fast installation

Brühl folding fields are highly stable and ensure quick installation – without any time loss on the construction site.

#### Customer-specific solutions

An individual execution is possible depending on demand – in different colours and with hot-dip galvanisation.

#### Maximum shock resilience

All elements are sand-blasted and powder-coated.

SAFETY DOORS

| Technical data for lifting and folding fields ⓘ Special productions on request.            |      |      |      |      |
|--------------------------------------------------------------------------------------------|------|------|------|------|
| Product group/build                                                                        | HF   | HFE  | KF-U | KF-O |
| Dimensions                                                                                 |      |      |      |      |
| max. width in mm                                                                           | 2900 | 2900 | 2900 | 2900 |
| max. installation height in mm                                                             | 3500 | 3500 | ×    | ×    |
| max. folding field height in mm                                                            | ×    | ×    | 1000 | 1000 |
| Frame filling                                                                              |      |      |      |      |
| FLEX II                                                                                    | ●    | ●    | ●    | ●    |
| Wave grid 40                                                                               | ●    | ●    | ●    | ●    |
| Sheet metal 1.5 mm                                                                         | ●    | ●    | ●    | ●    |
| Polycarbonate 5 mm                                                                         | ●    | ●    | ●    | ●    |
| Wave grid 25                                                                               | ●    | ●    | ●    | ●    |
| Welding grid 40                                                                            | ●    | ●    | ●    | ●    |
| Perforated sheet round holes Rv 5-8                                                        | ●    | ●    | ●    | ●    |
| Perforated sheet square holes Qg 8-12                                                      | ●    | ●    | ●    | ●    |
| Process view – Sight protection glass reddish-brown                                        | ●    | ●    | ●    | ●    |
| Process view – Sight protection glass green                                                | ●    | ●    | ●    | ●    |
| Process view – Polycarbonate                                                               | ●    | ●    | ●    | ●    |
| Attachment systems for safety switches                                                     |      |      |      |      |
| Retaining plate system BRÜHL-HP-F®                                                         | ×    | ×    | ●    | ●    |
| Retaining plate system BRÜHL-HP-S®                                                         | ●    | ●    | ×    | ×    |
| Surfaces                                                                                   |      |      |      |      |
| Powder-coating/paint                                                                       | ●    | ●    | ●    | ●    |
| Hot-dip galvanised surface                                                                 | ●    | ●    | ●    | ●    |
| ● Combination is possible.    × Combination is not possible.    ○ Combination is optional. |      |      |      |      |



# Lifting field

Product group/build  
HF

Illustration shows HF with handle.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES



TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



HP-S®

Retaining plate system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The lifting field is opened and closed manually. It is made of a stable steel structure with concealed weight. The lifting field is prepared for position switches and rails for adjustment. A fall protection via several carrying elements serves to protect against falling.

SCREEN FITTING



MACHINE-SIDE

OUTSIDE



Clamping profile type 5

Screen fitting with clamping angles art no SKP-V5

Visible screen parts is reduced circumferentially by about 13 mm.

FLOOR ATTACHMENT

|                 |                          |
|-----------------|--------------------------|
| Required number | 8 pcs.                   |
| Attachment type | Fixed or shear connector |
| Size · Length   | M12 · 145/160 mm         |

Please order floor attachment media separately. See p. 168.

Available in open widths of 0.6 to 2.9 m.

Available in installation heights from 1.5 to 3.5 m.

Lifting fields with 175 mm ground clearance by default.

Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

# Lifting field, unilateral

Product group/build  
HFE

Illustration shows HFE with handle.

OUTSIDE

MACHINE-SIDE

DOOR ACCESSORIES



TZ-GR-S

Handle

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



HP-S®

Retaining plate system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.



FLOOR ATTACHMENT

|                 |                          |
|-----------------|--------------------------|
| Required number | 4 pcs.                   |
| Attachment type | Fixed or shear connector |
| Size · Length   | M16 · 130/190 mm         |

Please order floor attachment media separately. See p. 168.

Available in open widths of 0.6 to 2.9 m.

Available in installation heights from 1.5 to 3.5 m.

Optionally available with additional guide profile.

Lifting fields with 175 mm ground clearance by default.

Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

The unilateral lifting field is opened and closed manually. It is made of a stable steel structure with concealed weight. The lifting field is prepared for position switches and rails for adjustment. A fall protection via several carrying elements serves to protect against falling.



# Folding field, flap down

Product group/build  
**KF-U**

Illustration shows KF-U with handle.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES



TZ-GR-S

Handle



TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



HP-F®

Retaining plate system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.

The folding fields are built particularly stable and optionally equipped with gas return springs. The posts of the structure are made of a stable steel profile with welded-on four-hole bottom plate and are prepared for corner and passage situations by default.

| FLOOR ATTACHMENT KF-U / KF-O        |                          |
|-------------------------------------|--------------------------|
| Required number                     | 8 pcs.                   |
| Attachment type                     | Fixed or shear connector |
| Size · Length                       | M10 · 120/130 mm         |
| Weight example<br>KF-U 1600×2000 mm | 58.5 kg                  |
| Weight example<br>KF-O 2200×3030 mm | 58.5 kg                  |

Please order floor attachment media separately. See p. 168.

Available in open widths of 0.6 to 2.9 m.

Available in installation heights from 1.5 to 3.5 m.

Floor plates centred in the middle by default. For specific floor plate positioning, see p. 187.

Folding fields by default with 175 mm ground clearance.

# Folding field, flap top

Product group/build  
**KF-O**

Illustration shows KF-O with handle.

MACHINE-SIDE

OUTSIDE

DOOR ACCESSORIES



TZ-GR-S

Handle



TZ-RI-F

Latch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



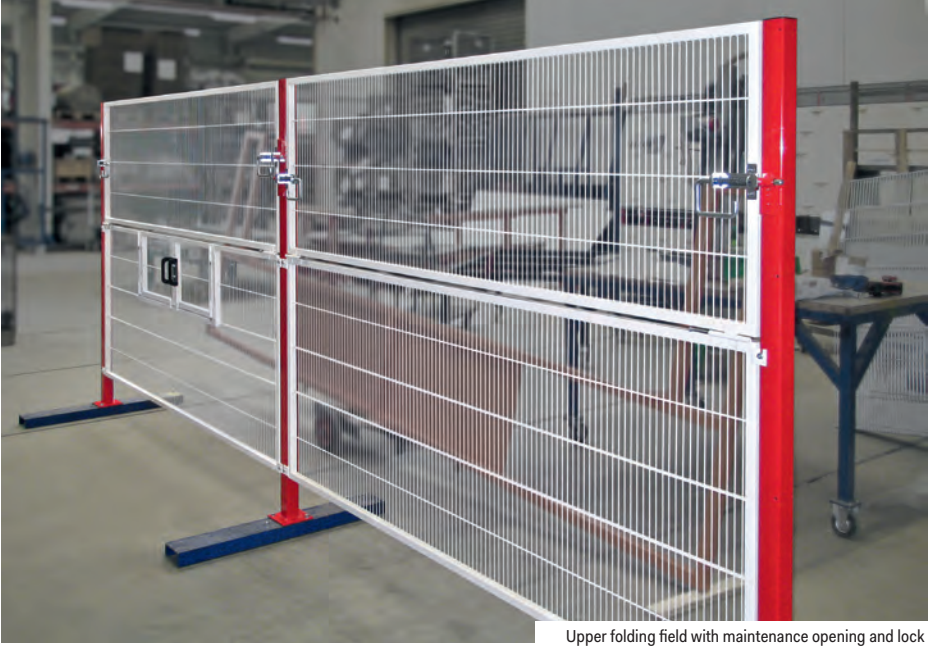
HP-F®

Retaining plate system

Door accessories (see p. 170) and attachment systems for safety switches (as of p. 127) must be ordered separately.

For a combination overview of all matching door accessories and attachment systems, see p. 185.

Please indicate safety switch and actuator types.



Upper folding field with maintenance opening and lock







### Precisely fitting attachment systems for each safety switch

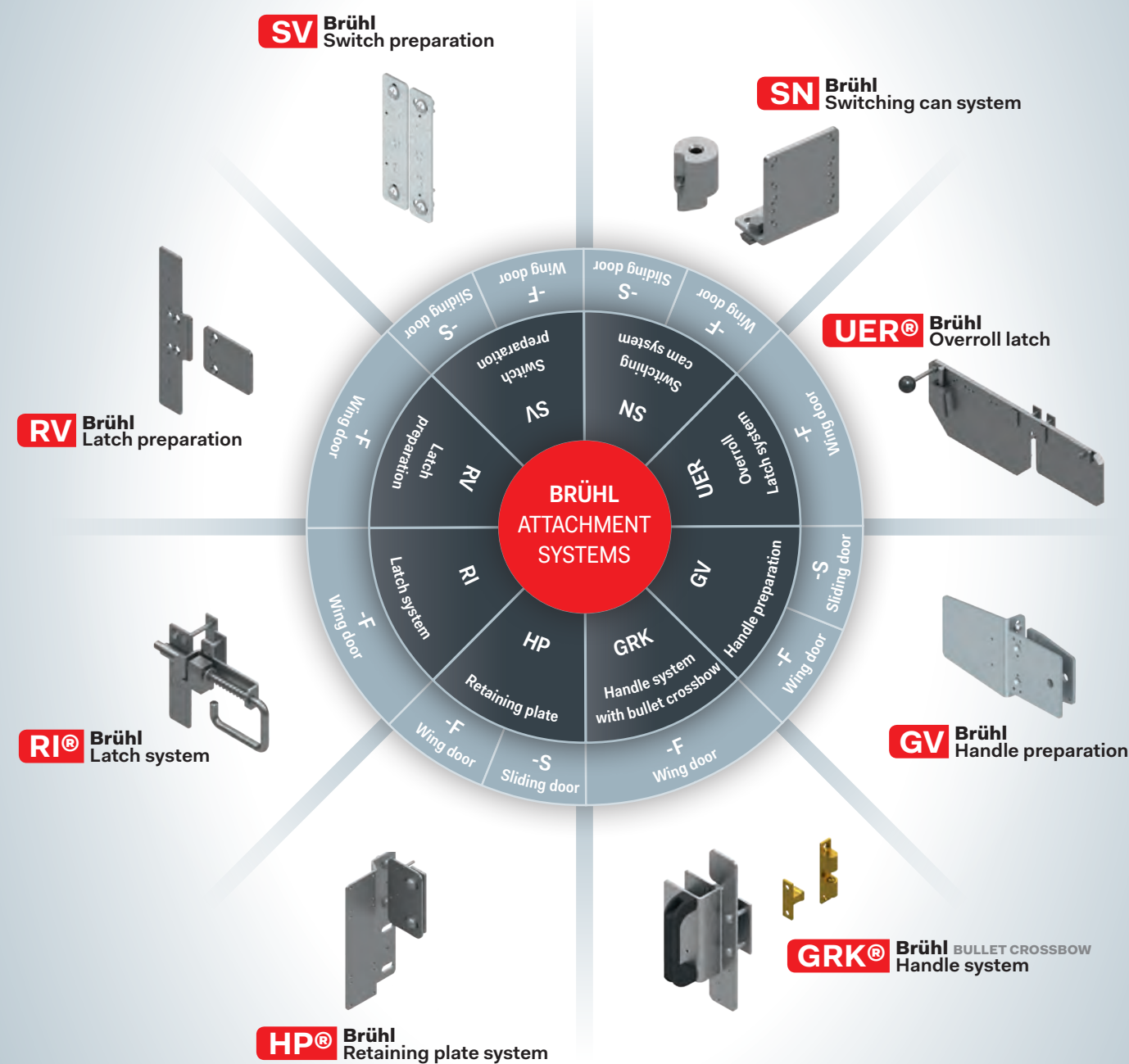
In addition to all safety doors, Brühl offers a comprehensive range of attachment systems for safety switches that meets every customer wish. Brühl relies both on high-quality goods from renowned manufacturers and on high-quality components from own production. These products have proven their worth where handling and wear is concerned in thousands of applications in the past



# Attachment systems for safety switches

## Brühl combination overview

This figure provides a first overview of our diverse attachment systems. We provide the precisely fitting attachment system for every door build. We rely on cooperation with renowned manufacturers or our internally developed and produced preparations.



## Overview: Advantages of the Brühl attachment systems for safety switches

- Diverse possible combinations**

Thanks to the diversity of attachment systems for safety switch, access doors of all kinds with different closure or opening options can be put together. The right safety switch or the right attachment system for any application will be available.
- Flexible and modular uses**

Many accessory elements can be replaced easily at any time thanks to their modular build (e.g. handles or latch). Simple adjustment of the many attachment systems.
- Quality and reliability**

The cooperation with renowned manufacturers ensures bet reliability and quality in all products.
- Prevention of mechanical manipulation**

Brühl protective facilities with the corresponding attachment systems are designed to avoid mechanical manipulations by users as far as possible.
- Assembly instructions included**

The complete delivery includes an understandable assembly instruction for each product.

| Combination overview for door attachment systems with door product groups                                                                                                |                                                                                  |                                       |      |      |        |          |       |         |       |       |      |       |      |    |         |         |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------|------|------|--------|----------|-------|---------|-------|-------|------|-------|------|----|---------|---------|-------|
| Product description                                                                                                                                                      |                                                                                  | Product type/<br>construction<br>type | GV-F | GV-S | GRK-F® | GRK-FEO® | HP-F® | HP-FEO® | HP-S® | RI-F® | RV-F | SN-F® | SN-S | SV | UER-FR® | UER-FL® | GR-S® |
|                                                                                                                                                                          |                                                                                  |                                       |      |      |        |          |       |         |       |       |      |       |      |    |         |         |       |
| Wing doors                                                                                                                                                               | Wing door for handle, latch or deadlock slam lock, opposite sides                | FTW                                   | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Wing door for handle, latch or deadlock slam lock, 1600–3000 mm                  | FT                                    | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ●     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Wing door for handle, latch or deadlock slam lock, opposite sides, with skylight | FTWO                                  | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Portal wing door for handle, latch or deadlock slam lock, opposite sides         | PFTW                                  | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Wing door for handle, latch or deadlock slam lock, opening inwards               | FTEO                                  | ×    | ×    | ×      | ●        | ×     | ●       | ×     | ×     | ×    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Double wing door for handle, latch or deadlock slam lock                         | DFT                                   | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ●     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Double wing door for handle, latch or deadlock slam lock, with skylight          | DFTO                                  | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ×     | ×    | ●  | ●       | ●       | ×     |
| Swing doors<br>door wing                                                                                                                                                 | Swing door                                                                       | PT                                    | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ●     | ×    | ×  | ×       | ×       | ×     |
|                                                                                                                                                                          | Swing door with high post                                                        | HPT                                   | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ●     | ×    | ×  | ×       | ×       | ×     |
|                                                                                                                                                                          | Door wing for handle, latch or deadlock slam lock                                | TF <sup>②</sup>                       | ●    | ×    | ●      | ×        | ●     | ×       | ×     | ●     | ●    | ×     | ×    | ●  | ●       | ●       | ×     |
| Sliding doors                                                                                                                                                            | Sliding door for handle or hook lock                                             | ST                                    | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Sliding door for handle or hook lock, inner track                                | STI                                   | ×    | ×    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ×     |
|                                                                                                                                                                          | Sliding door for handle or hook lock, with skylight                              | STO                                   | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Double sliding door for handle or hook lock                                      | DST                                   | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Sliding door for handle or hook lock, opening on both sides                      | STB                                   | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Double sliding door for handle or hook lock, with skylight                       | DSTO                                  | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
| Folding doors                                                                                                                                                            | Folding wing door for latch                                                      | FAFTR                                 | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Double folding wing door for latch                                               | DFAFTR                                | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ●       | ●       | ×     |
|                                                                                                                                                                          | Folding sliding door                                                             | FASTG                                 | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ×     |
|                                                                                                                                                                          | Double folding sliding door                                                      | DFASTG                                | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ×     |
| Telescoping<br>sliding doors                                                                                                                                             | Sliding door for handle or hook lock, telescoping                                | STT                                   | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Sliding door for handle or hook lock, opening on both sides, telescoping         | STBT                                  | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Double sliding door for handle or hook lock, telescoping                         | DSTT                                  | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ●    | ●  | ×       | ×       | ●     |
| Self-supported<br>sliding doors                                                                                                                                          | Self-supported sliding door with hook lock                                       | FSTS                                  | ×    | ×    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ×     |
|                                                                                                                                                                          | Self-supported sliding door for handle                                           | FSTG                                  | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Self-supported sliding door with hook lock and telescopic guide                  | FSTST                                 | ×    | ×    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ×     |
|                                                                                                                                                                          | Self-supported sliding door for handle, with telescopic guide                    | FSTGT                                 | ×    | ●    | ×      | ×        | ×     | ×       | ●     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ●     |
|                                                                                                                                                                          | Self-supported sliding door with hook lock, two wings                            | FSTS-2                                | ×    | ×    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ×     |
|                                                                                                                                                                          | Self-supported sliding door for handle, two wings                                | FSTG-2                                | ×    | ●    | ×      | ×        | ×     | ×       | ×     | ×     | ×    | ×     | ×    | ●  | ×       | ×       | ●     |
| ① Possible with adjustment.    ② Possible with on-site adjustment.    ● Combination is possible.    × Combination is not possible.    ○ Combination possible optionally. |                                                                                  |                                       |      |      |        |          |       |         |       |       |      |       |      |    |         |         |       |

① Please indicate the complete designation of the safety switch and actuator in your order/request at all times. ② Call us if the attachment system for safety switch chosen by you is not available in our product selection.  
③ For product combinations, see p. 185.



Product group/build

GV

MACHINE-SIDE

OUTSIDE

Mechanical stop to avoid damage to the door and safety switch

Flight unlatching possible

Standard for all Brühl-attachment systems:

➤

Robust zinc-plated surface

➤ ISO 14120, 5.6

➤

Symmetrical construction for door stop device DIN left/ DIN right

➤

Rounded laser canting parts

➤ ISO 14120, 5.3.7

➤

Precisely fitting threads for switch attachment

➤ ISO 14119, 5.2/(j)

➤

Precisely fitting provisions for safety switch

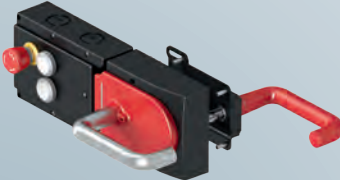
➤

All screw-connections are manipulation-proof

Handle preparation BRÜHL-GV

The grip system BRÜHL-GV is a precisely fitting preparation for attachment of compact and multifunctional safety holding-shut devices for different safety switchgear manufacturers. Depending on the switch build, the product properties include an additional mechanical stop to avoid damage to the door and safety switch, robust zinc-plated surfaces and precisely fitting threads for quick installation.

This is how it works:



➤ You have already chosen a safety switch: e.g. Euchner MGB.➤

➤ DIN EN ISO 14119



➤ We supply the attachment system to match: Grip preparation BRÜHL-GV with matching provision.



➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview of grip preparations BRÜHL-GV for wing doors |                     |                 |                            |
|-------------------------------------------------------|---------------------|-----------------|----------------------------|
| Manufacturer                                          |                     | Switch assembly | Item no.                   |
| Euchner                                               | EUCHNER             | MGB             | GV-F-V2-MGB-B004           |
|                                                       |                     |                 |                            |
| Fortress Interlocks                                   | Fortress Interlocks | amGardpro EI-I6 | GV-F-V4-EI16-B090          |
|                                                       |                     | amGardpro EN-T6 | GV-F-V4-EN4T6SL-B085       |
| Jokab Safety                                          |                     | Knox            | GV-F-V3-KNOX-B069          |
| Schmersal                                             | SCHMERSAL           | AZM200          | GV-F-V2-AZM200-B003        |
|                                                       |                     | AZM200-SZ200    | GV-FR-V2-AZM200-SZ200-B035 |
|                                                       |                     | AZ200-SZ200     | GV-FR-V2-AZ200-SZ200-B035  |
|                                                       |                     | AZM200-SZ200    | GV-FL-V2-AZM200-SZ200-B036 |
|                                                       |                     | AZ200-SZ200     | GV-S-V2-AZ200-SZ200-B036   |

| Overview of grip preparations BRÜHL-GV for sliding doors |           |                     |
|----------------------------------------------------------|-----------|---------------------|
| Manufacturer                                             |           | Item no.            |
| Euchner                                                  | EUCHNER   | GV-S-V2-MGB-B059    |
| Schmersal                                                | SCHMERSAL | GV-S-V2-AZM200-B060 |

Explanation of attachment situation abbreviations:  
FL = wing door DIN left (doors attached on the left),  
FR = wing door DIN right (doors attached on the right),  
F = wing door, S = sliding door

➤ Safety switches are not enclosed.

➤ Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.

➤ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).

➤ Observe for fence planning: For grip preparations, the attachment system may protrude in one outer corner; at inner corners, you may need to plan for an additional fence element (e.g. Euchner MGB).

➤ To prevent reaching over and actuation of the flight unlatching mechanism, we recommend that the door height be at least 1800 mm and a transfer with a diagonal element at low fence heights. ➤ See special elements p.36 and 46.

➤ See combination overview on p.185.

PRODUCT OPTION



Protection against reaching through for safety switch with flight unlatching

➤ Ordering options s. p.171.

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

Brühl

www.bruehl-safety.com

www.bruehl-safety.com

Brühl



Product group/build

GRK®

MACHINE-SIDE

Switch protection thanks to coverage by the grip system

Mechanical stop to avoid damage to the door and safety switch

Bullet crossbow for fastening of the door wing

Stable PA-handle

OUTSIDE

Standard for all Brühl-attachment systems:

➤

Robust zinc-plated surface

➤ ISO 14120, 5.6

➤

Symmetrical construction for door stop device DIN left/ DIN right

➤

Rounded laser canting parts

➤ ISO 14120, 5.3.7

➤

Precisely fitting threads for switch attachment

➤ ISO 14119, 5.2/(j)

➤

Precisely fitting provisions for safety switch

➤

All screw-connections are manipulation-proof

Handle system with bullet crossbow BRÜHL-GRK®

The attachment system BRÜHL-GRK® is the standard attachment system for the precisely fitting attachment of safety switches at Brühl-wing doors. The safety switch is attached from the outside of the machine at the height of the stable plastic handle. The system is characterised by an optional bullet crossbow that is used according to the Brühl product recommendation for safety switches with a latching force below 30 N. The attachment system can be used for doors attached on the right or on the left. The Brühl grip system can be combined with different manufacturer-comprehensive safety switches.

This is how it works:

➤ You have already chosen a safety switch, e.g. Siemens 3SE5.①

② DIN EN ISO 14119

➤ We supply the attachment system to match: Grip system with bullet crossbow BRÜHL-GRK® with matching provision.

➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview grip system with bullet crossbow BRÜHL-GRK® for wing doors |           |                 |                        |
|---------------------------------------------------------------------|-----------|-----------------|------------------------|
| Manufacturer                                                        |           | Switch assembly | Item no.               |
| Bernstein                                                           | BERNSTEIN | SK              | GRK-F-V4-SK-B001       |
|                                                                     |           | SKC             | GRK-F-V4-SKC-B001      |
| Honeywell                                                           | Honeywell | GKN             | GRK-F-V4-GKN-B001      |
| ABB                                                                 |           | Magne           | GRK-F-V2-MAGNE-B071    |
| Pilz                                                                | PILZ      | PSENme2         | GRK-F-V4-PSENME2-B001  |
|                                                                     |           | PSENme3         | GRK-F-V4-PSENME3-B001  |
|                                                                     |           | PSNslock        | GRK-F-V2-PSENSL-B043   |
| Schmersal                                                           | SCHMERSAL | MZM100          | GRK-FEO-V1-MZM100-B005 |
|                                                                     |           | AZ15            | GRK-F-V4-AZ15-B001     |
|                                                                     |           | AZ16            | GRK-F-V4-AZ16-B001     |
|                                                                     |           | AZ300           | GRK-F-V2-AZ300-B078    |
|                                                                     |           | AZM161          | GRK-F-V4-AZM161-B002   |
|                                                                     |           | AZM170          | GRK-F-V4-AZM170-B055   |
|                                                                     |           | AZM300          | GRK-F-V2-AZM300-B078   |
|                                                                     |           | EX-AZ16         | GRK-F-V4-EX-AZ16-B001  |
|                                                                     |           | EX-AZM161       | GRK-F-V4EX-AZM161-B002 |
|                                                                     |           | MZM100          | GRK-F-V2-MZM100-B006   |
| Sick                                                                | SICK      | BNS-B20         | GRK-F-V3-BNS-B20-B007  |
|                                                                     |           | i16             | GRK-F-V4-i16-B001      |
|                                                                     |           | i17             | GRK-F-V4-i17-B001      |
| Siemens                                                             | SIEMENS   | 3SE2            | GRK-F-V4-3SE2-B001     |
|                                                                     |           | 3SE5            | GRK-F-V2-3SE5-B040     |
| Rockwell Automation                                                 |           | 440K-T          | GRK-F-V4-440K-T-B001   |

Explanation of attachment situation abbreviations: F = wing door, FEO = wing door opening inwards

① Safety switches are not enclosed.

② Screws for switch attachments are not enclosed. Cf. EN ISO 14119, 7.2 c and table 3.

③ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).

④ See combination overview on p. 185.

Product example: Handle with bullet crossbow and safety switch by Schmersal

Product example: Handle with bullet crossbow and safety switch by Bernstein

CAD

MOV

PICT



Product group/build

HP-F®

MACHINE-SIDE

Simple adjustability of the switch and actuator plate

Mechanical stop to avoid damage to the door and safety switch in handle, grip or latch system

OUTSIDE

Standard for all Brühl-attachment systems:

➤

Robust zinc-plated surface

➤ ISO 14120, 5.6

➤

Symmetrical construction for door stop device DIN left/ DIN right

➤

Rounded laser canting parts

➤ ISO 14120, 5.3.7

➤

Precisely fitting threads for switch attachment

➤ ISO 14119, 5.2/(j)

➤

Precisely fitting provisions for safety switch

➤

All screw-connections are manipulation-proof

Retaining plate system BRÜHL-HP-F® for wing doors

The retaining plate system BRÜHL-HP-F® is supplemented according to access comfort with a handle set, a handle or latch. The safety switch is attached with the Brühl retaining plate system in the upper area of the door wing on the machine side. The system can be used for doors attached on the left or right equally. Aluminium plugs serve manipulation protection. The retaining plate system BRÜHL-HP-F® can be combined easily with safety switches of build 2 (with or without safety holding-shut device).

This is how it works:

➤ You have already chosen a safety switch, e.g. Schmersal AZM161.➤

DIN EN ISO 14119

➤ We supply the attachment system to match: Retaining plate system BRÜHL-HP-F® for wing doors with matching provision.

➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview of retaining plate system BRÜHL-HP-F® for wing doors |                                                                                                |                 |                        |                                                                                       |                                                                                       |                               |                                                                                       |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------|------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|
| Manufacturer                                                  |                                                                                                | Switch assembly | Item no.               | Manufacturer                                                                          |                                                                                       | Switch assembly               | Item no.                                                                              |
| Bernstein                                                     |  BERNSTEIN | SK              | HP-F-V1-SK-B052        | Pilz                                                                                  |  | PSENme1                       | HP-F-V1-PSENME1-B012                                                                  |
|                                                               |                                                                                                | SKC             | HP-F-V1-SKC-B052       |                                                                                       |                                                                                       | PSENme2                       | HP-F-V1-PSENME2-B052                                                                  |
|                                                               |                                                                                                | SLK             | HP-F-V1-SLK-B012       |                                                                                       |                                                                                       | PSENme3                       | HP-F-V1-PSENME3-B052                                                                  |
| Comitronic-BTI                                                |                                                                                                | AMX             | HP-F-V1-AMX-B067       |                                                                                       |                                                                                       | PSEnlock                      | HP-F-V2-PSEnSL-B041                                                                   |
| Euchner                                                       |           | CET             | HP-F-V1-CET-B049       | Rockwell Automation                                                                   |                                                                                       | 440K-T                        | HP-F-V1-440K-T-B052                                                                   |
|                                                               |                                                                                                | GP              | HP-F-V1-GP-B013        |  |                                                                                       | AZ15                          | HP-F-V1-AZ15-B052                                                                     |
|                                                               |                                                                                                | NZ              | HP-F-V1-NZ-B011        |                                                                                       |                                                                                       | AZ16                          | HP-F-V1-AZ16-B052                                                                     |
|                                                               |                                                                                                | SGP             | HP-F-V1-SGP-B013       |                                                                                       |                                                                                       | AZ17                          | HP-F-V1-AZ17-B058                                                                     |
|                                                               |                                                                                                | STA             | HP-F-V1-STA-B013       |                                                                                       |                                                                                       | AZ300                         | HP-F-V1-AZ300-B079                                                                    |
|                                                               |                                                                                                | STP             | HP-F-V1-STP-B013       |                                                                                       |                                                                                       | AZM161                        | HP-F-V1-AZM161-B038                                                                   |
|                                                               |                                                                                                | TP              | HP-F-V1-TP-B013        |                                                                                       |                                                                                       | AZM170                        | HP-F-V1-AZM170-B038                                                                   |
| TZ                                                            | HP-F-V1-TZ-B030                                                                                | AZM300          | HP-F-V1-AZM300-B079    |                                                                                       |                                                                                       |                               |                                                                                       |
| Honeywell                                                     |           | GKN             | HP-F-V1-GKN-B052       |                                                                                       |                                                                                       | BNS16                         | HP-F-V1-BNS16-B052                                                                    |
|                                                               |                                                                                                | GKS             | HP-F-V1-GKS-B013       |                                                                                       |                                                                                       | BZ16                          | HP-F-V1-BZ16-B052                                                                     |
| Leuze electronic                                              |           | L200            | HP-F-V1-L200-B013      |                                                                                       |                                                                                       | EX-AZ16                       | HP-F-V1-EX-AZ16-B052                                                                  |
|                                                               |                                                                                                | S20             | HP-F-V1-S20-B058       |                                                                                       |                                                                                       | EX-AZM161                     | HP-F-V1-EX-AZM161-B038                                                                |
| Omron Electronics                                             |           | D4NL            | HP-F-V1-D4NL-B046      |                                                                                       |                                                                                       | Teleme-<br>canique<br>Sensors |  |
|                                                               |                                                                                                | D4NS            | HP-F-V1-D4NS-B058      | XCS-B                                                                                 | HP-F-V1-XCS-B-B011                                                                    |                               |                                                                                       |
|                                                               |                                                                                                |                 | XCS-C                  | HP-F-V1-XCS-C-B011                                                                    |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | XCS-E                  | HP-F-V1-XCS-E-B030                                                                    |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | XCS-PA                 | HP-F-V1-XCS-PA-B052                                                                   |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | XCS-TA                 | HP-F-V1-XCS-TA-B052                                                                   |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | XCS-TE                 | HP-F-V1-XCS-TE-B030                                                                   |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | i10                    | HP-F-V1-i10-B013                                                                      |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | i12                    | HP-F-V1-i12-B058                                                                      |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | i16                    | HP-F-V1-i16-B052                                                                      |                                                                                       |                               |                                                                                       |
|                                                               |                                                                                                |                 | i17                    | HP-F-V1-i17-B052                                                                      |                                                                                       |                               |                                                                                       |
| Pilz                                                          |           | PSENme2         | HP-FEO-V1-PSENME2-B008 | Siemens                                                                               |  | 3SE2                          | HP-F-V1-3SE2-B052                                                                     |
|                                                               |                                                                                                | PSENme3         | HP-FEO-V1-PSENME3-B008 |                                                                                       |                                                                                       | 3SE5                          | HP-F-V1-3SE5-B010                                                                     |
|                                                               |                                                                                                | AZ15            | HP-FEO-V1-AZ15-B008    |                                                                                       |                                                                                       | 3SE5                          | HP-F-V1-3SE5-B051                                                                     |
|                                                               |                                                                                                | AZ16            | HP-FEO-V1-AZ16-B008    |                                                                                       |                                                                                       |                               |                                                                                       |

Explanation of attachment situation abbreviations: F = wing door, FEO = wing door opening inwards  
➤ Safety switches are not enclosed.  
➤ Screws for switch attachments are not enclosed. Cf. EN ISO 14119, 7.2 c and table 3.  
➤ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).  
➤ See combination overview on p. 185.



Product group/build  
HP-S®

MACHINE-SIDE

Adjustability of the switch and actuator plate

Mechanical stop to avoid damage to the door and safety switch by stopper in the aluminium profile

Optimal run-in of actuator and switch guaranteed

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
ISO 14119, 5.2/(j)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

Retaining plate system BRÜHL-HP-S® for sliding doors

The retaining plate system BRÜHL-HP-S® is supplemented with a handle set or handle according to the access comfort and can be used for doors attached on the left or right. A mechanical stop in the aluminium profile avoids damage to the safety switch and actuator. The position of the safety switches depends on the door build and wing availability. The retaining plate system BRÜHL-HP-S® can be combined easily with safety switches of build 2 (with or without safety holding-shut device).

This is how it works:

➤ You have already chosen a safety switch: e.g. Euchner TZ.®

DIN EN ISO 14119

➤ We supply the attachment system to match: Retaining plate system BRÜHL-HP-S® for sliding doors with matching provision.

➤ You will receive a precisely fitting attachment system for your safety switch.

Overview of the retaining plate system BRÜHL-HP-S® for sliding doors

| Manufacturer      | Switch assembly  | Item no.            | Manufacturer           | Switch assembly       | Item no. |         |        |
|-------------------|------------------|---------------------|------------------------|-----------------------|----------|---------|--------|
| Bernstein         | BERNSTEIN        | SK                  | Schmersal              | SCHMERSAL             | AZ15     |         |        |
|                   |                  | SKC                 |                        |                       | AZ16     |         |        |
|                   |                  | SLK+ENK             |                        |                       | AZ17     |         |        |
|                   |                  | SLK                 |                        |                       | AZM161   |         |        |
| Comitronic-BTI    |                  | AMX                 |                        | AZM170                |          |         |        |
| Euchner           | EUCHNER          | NZ                  | Telemechanique Sensors | Telemecanique Sensors | BNS16    |         |        |
|                   |                  | STA                 |                        |                       | BZ16     |         |        |
|                   |                  | STP                 |                        |                       | AZM400   |         |        |
|                   |                  | TP                  |                        |                       | XCS-A    |         |        |
|                   |                  | TZ                  |                        |                       | XCS-B    |         |        |
|                   |                  | CET                 |                        |                       | XCS-C    |         |        |
| Honeywell         | Honeywell        | GKN                 | Sick                   | SICK                  | XCS-E    |         |        |
|                   |                  | GKS                 |                        |                       | XCS-PA   |         |        |
| Jokab Safety      |                  | EDEN                |                        |                       | Siemens  | SIEMENS | XCS-PA |
| Leuze electronic  | Leuze electronic | L200                |                        |                       |          |         | XCS-TA |
| S20               |                  | XCS-TE              |                        |                       |          |         |        |
| Omron Electronics | PILZ             | D4NS                |                        |                       |          |         | Sick   |
| Pilz              |                  | PSENme1             | i12                    |                       |          |         |        |
|                   |                  | PSENme2             | i16                    |                       |          |         |        |
|                   |                  | PSENme3             | i17                    |                       |          |         |        |
|                   |                  | PSENSlook           | T400-DNA               |                       |          |         |        |
|                   |                  | PSENcs3             | 3SE2                   |                       |          |         |        |
|                   |                  | PSENcs4             | 3SE5                   |                       |          |         |        |
|                   |                  | PSENma1             | 3SE5                   |                       |          |         |        |
|                   |                  | PSENma2             |                        |                       |          |         |        |
|                   |                  | Rockwell Automation | 440G-T                 |                       |          |         |        |
|                   |                  | 440K                |                        |                       |          |         |        |

Explanation of attachment situation abbreviations: S = sliding door

① Safety switches are not enclosed.

② Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.

③ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).

④ See combination overview on p. 185.

Product example: Retaining plate with safety switch by Euchner

CAD

MOV

PICT

Brühl www.bruehl-safety.com

www.bruehl-safety.com Brühl



Product group/build  
RI®

MACHINE-SIDE

With latch guide and latch holder

With pressure spring for forced positioning "latch closed"

Very robust low-maintenance and low-cleaning system

Mechanical stop to avoid damage to the door and safety switch

OUTSIDE

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
➤ ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
➤ ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
➤ ISO 14119, 5.2/(j)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

Latch system BRÜHL-RI® for wing doors

The latch bolt mechanically guides the actuator when it moves into the safety switch. The BRÜHL-RI® latch system has an integrated protection against falling shut; a pressure spring holds the latch tab in the position "latch closed" without actuation. Aluminium plugs serve manipulation protection. This system is very robust, requires little maintenance and cleaning and has proven its worth in the industrial environment for more than 30 years. The attachment system BRÜHL-RI® can be combined easily with safety switches of build 2 (with or without safety holding-shut device).

This is how it works:

➤ You have already chosen a safety switch: e.g. Euchner TP. ➊

➤ DIN EN ISO 14119

➤ We supply the attachment system to match: Latch system BRÜHL-RI® for wing doors with matching provision.

➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview of the latch system BRÜHL-RI® for wing doors |                       |                 |                      |
|-------------------------------------------------------|-----------------------|-----------------|----------------------|
| Manufacturer                                          |                       | Switch assembly | Item no.             |
| Bernstein                                             | BERNSTEIN             | SLK             | RI-F-V1-SLK-B016     |
|                                                       |                       | SK              | RI-F-V5-SK-B021      |
|                                                       |                       | SKC             | RI-F-V5-SKC-B021     |
| Euchner                                               | EUCHNER               | CTP             | RI-F-V1-CTP-B017     |
|                                                       |                       | NZ              | RI-F-V1-NZ-B054      |
|                                                       |                       | STA             | RI-F-V1-STA-B017     |
|                                                       |                       | STP             | RI-F-V1-STP-B017     |
|                                                       |                       | TP              | RI-F-V1-TP-B017      |
|                                                       |                       | TZ              | RI-F-V1-TZ-B018      |
| Honeywell                                             | Honeywell             | GKS             | RI-F-V1-GKS-B017     |
|                                                       |                       | GKN             | RI-F-V5-GKN-B021     |
| Leuze electronic                                      | Leuze electronic      | L200            | RI-F-V1-L200-B017    |
| Pilz                                                  | PILZ                  | PSENme1         | RI-F-V1-PSENME1-B016 |
|                                                       |                       | PSENme2         | RI-F-V5-PSENME2-B021 |
|                                                       |                       | PSENme3         | RI-F-V5-PSENME3-B021 |
| Rockwell Automation                                   |                       | 440K-C          | RI-F-V1-440K-C-B054  |
|                                                       |                       | 440K-C          | RI-F-V5-440K-C-B021  |
|                                                       |                       | 440K-T          | RI-F-V5-440K-T-B021  |
| Schmersal                                             | SCHMERSAL             | AZ15            | RI-F-V5-AZ15-B021    |
|                                                       |                       | AZ16            | RI-F-V5-AZ16-B021    |
|                                                       |                       | AZM161          | RI-F-V5-AZM161-B022  |
|                                                       |                       | AZM190          | RI-F-V5-AZM190-B057  |
|                                                       |                       | BNS16           | RI-F-V5-BNS16-B021   |
|                                                       |                       | TZK             | RI-F-V5-TZK-B057     |
| Telemecanique Sensors                                 | Telemecanique Sensors | XCS-E           | RI-F-V1-XCS-E-B018   |
| Sick                                                  | SICK                  | i10             | RI-F-V1-i10-B017     |
|                                                       |                       | i16             | RI-F-V5-i16-B021     |
|                                                       |                       | i17             | RI-F-V5-i17-B021     |
| Siemens                                               | SIEMENS               | 3SE5            | RI-F-V1-3SE5-B015    |
|                                                       |                       | 3SE2            | RI-F-V5-3SE2-B021    |

Explanation of attachment situation abbreviations: F = wing door

- ➊ Safety switches are not enclosed.
- ➋ Screws for switch attachments are not enclosed. Cf. EN ISO 14119, 7.2 c and table 3.
- ➌ Attachment elements can only be released with tools. Cf. EN ISO 14119, 5.2 (a).
- ➍ See combination overview on p.185.

Product example: Latch system with safety switch by Pilz

Product example: Latch system with safety switch by Euchner in attachment situation

CAD

MOV

PICT

Brühl www.bruehl-safety.com

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ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



Product group/build  
RV

MACHINE-SIDE

Can be combined with many safety switches

Escape unlatching device as switch preparation (SV) possible

Mechanical stop to avoid damage to the door and safety switch

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
➤ ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
➤ ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
➤ ISO 14119, 5.2/(i)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

OUTSIDE

Latch preparation BRÜHL-RV for wing doors

This system is a preparation for safety switches that is made of a combination of safety switch, attachment plates/elements and latches of many different safety switchgear manufacturers. The BRÜHL-RV-system is used to install the safety switch precisely to ensure long-lived latching function. A high assembly effort is avoided by using standard hole patterns at Brühl wing doors.

This is how it works:



➤ You have already chosen a safety switch, e.g. Fortress Interlocks AMS1STOP. ❶

❶ DIN EN ISO 14119



➤ We supply the attachment system to match: Latch preparation BRÜHL-RV for wing doors with matching provision.



➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview of latch preparation BRÜHL-GV for wing doors |                        |                 |                       |
|-------------------------------------------------------|------------------------|-----------------|-----------------------|
| Manufacturer                                          |                        | Switch assembly | Item no.              |
| Dold                                                  | DOLD                   | STS             | RV-F-V4-ST3-B063      |
|                                                       |                        | CTP             | RV-F-V3-CTP-B020      |
| Euchner                                               | EUCHNER                | GP              | RV-F-V3-GP-B020       |
|                                                       |                        | NZ              | RV-F-V3-NZ-B020       |
|                                                       |                        | SGP             | RV-F-V3-SGP-B020      |
|                                                       |                        | STA             | RV-F-V3-STA-B020      |
|                                                       |                        | STP             | RV-F-V3-STP-B020      |
|                                                       |                        | TP              | RV-F-V3-TP-B020       |
|                                                       |                        | TX              | RV-F-V3-TX-B020       |
|                                                       |                        | TZ              | RV-F-V3-TZ-B020       |
| Fortress Interlocks                                   | Fortress Interlocks    | AMA1STOP        | RV-F-V2-AMA1STOP-B019 |
|                                                       |                        | AMS1STOP        | RV-F-V2-AMS1STOP-B019 |
|                                                       |                        | DM1             | RV-F-V4-DM1-B033      |
|                                                       |                        | DM2             | RV-F-V4-DM2-B033      |
| Pilz                                                  | PILZ                   | PSEncs1         | RV-F-V3-PSENCs-B032   |
|                                                       |                        | PSEncs2         | RV-F-V3-PSENCs-B032   |
|                                                       |                        | PSEnme1         | RV-F-V3-PSENME1-B032  |
|                                                       |                        | PSEnsgate       | RV-F-V6-PSENSG-B064   |
| Telemechanique Sensors                                | Telemechanique Sensors | XCS-A           | RV-F-V2-XCS-A-B066    |
|                                                       |                        | XCS-B           | RV-F-V2-XCS-B-B066    |
|                                                       |                        | XCS-C           | RV-F-V2-XCS-C-B066    |
|                                                       |                        | XCS-E           | RV-F-V2-XCS-E-B066    |

Explanation of attachment situation abbreviations: F = wing door

❶ Safety switches are not enclosed.  
❷ Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.  
❸ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).  
❹ To prevent reaching over and actuation of the flight unlatching mechanism, we recommend that the door height be at least 1800 mm and a transfer with a diagonal element at low fence heights.  
❺ See special elements p. 36 and 46.  
❻ See combination overview on p. 185.



Product example: Latch preparation with safety switch by Dold

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES





Product group/build  
**SN-F**

MACHINE-SIDE

Two-channel  
signal emission of the  
safety switch

Simple  
adjustability  
of the  
switch panel

OUTSIDE

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
➤ ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
➤ ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
➤ ISO 14119, 5.2/(j)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

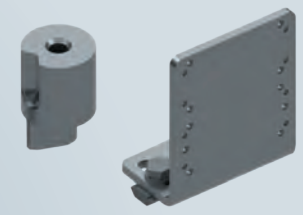
Switching cam system **BRÜHL-SN-F** for wing doors

The switching cam system BRÜHL-SN-F is used only on pendulum and wing doors due to the effective principle. This attachment system is highly beneficial when a very fast system access is desired. It is combined with two roller plunger switches (Build 1) that permit safe two-channel signal query that can have a positive effect on the Performance-Level or the safety category in the scope of risk assessment.

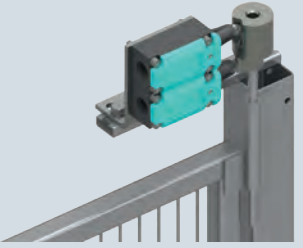
This is how it works:



➤ You have already chosen a safety switch: e.g. Siemens 3SE5 (2x).  
➤ DIN EN ISO 14119



➤ We supply the attachment system to match: Switching cam system BRÜHL-SN-F for wing doors with matching provision.



➤ You will receive a precisely fitting attachment system for your safety switch.

Overview of the switching cam system **BRÜHL-SN-F** for wing doors

| Manufacturer        |                                                                                                        | Switch assembly | Item no.          |
|---------------------|--------------------------------------------------------------------------------------------------------|-----------------|-------------------|
| Bernstein           |  <b>BERNSTEIN</b>   | ENK             | SN-F-V1-ENK-B034  |
| Euchner             |  <b>EUCHNER</b>    | NZ              | SN-F-V1-NZ-B034   |
| Rockwell Automation |                                                                                                        | 440P-MR         | SN-F-V1-440P-B034 |
| Schmersal           |  <b>SCHMERSAL</b> | 332ZR           | SN-F-V1-332-B034  |
|                     |                                                                                                        | 335TR           | SN-F-V1-335-B034  |
| Siemens             |  <b>SIEMENS</b>   | 3SE5            | SN-F-V1-3SE5-B034 |

Explanation of attachment situation abbreviations: F = Wing door  
① Safety switches are not enclosed.  
① Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.  
① Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).  
➤ See combination overview on p. 185.



Product example: Hinge switch with Schmersal TV10 on a swing door



Product example: Switching cam system with safety switch by Euchner

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

 CAD  
 MOV  
 PICT



Product group/build  
SN-S

MACHINE-SIDE

Simple adjustability of the switch and actuator plate

Mechanical stop to avoid damage to the door and safety switch by stopper in the aluminium profile

Two-channel signal emission of the safety switch

OUTSIDE

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
➤ ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
➤ ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
➤ ISO 14119, 5.2/(j)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

Switching cam system BRÜHL-SN-S for sliding doors

The attachment panels of the switching cam system BRÜHL-SN-S are rounded laser-edge parts that are made of robust, zinc-plated steel. The switching cam profile has a powder-coated surface in wing colour. Two roller lever switches (build 1) can be installed on the switching

cam system across manufacturers and precisely fitting for safe two-channel signal query; they can have a positive effect on the Performance-Level or the safety category in the scope of risk assessment.

This is how it works:

➤ You have already chosen a safety switch: e.g. Siemens 3SE5 (2×).  
➤ DIN EN ISO 14119

➤ We supply the attachment system to match: Switching cam system BRÜHL-SN-S for sliding doors with matching provision.

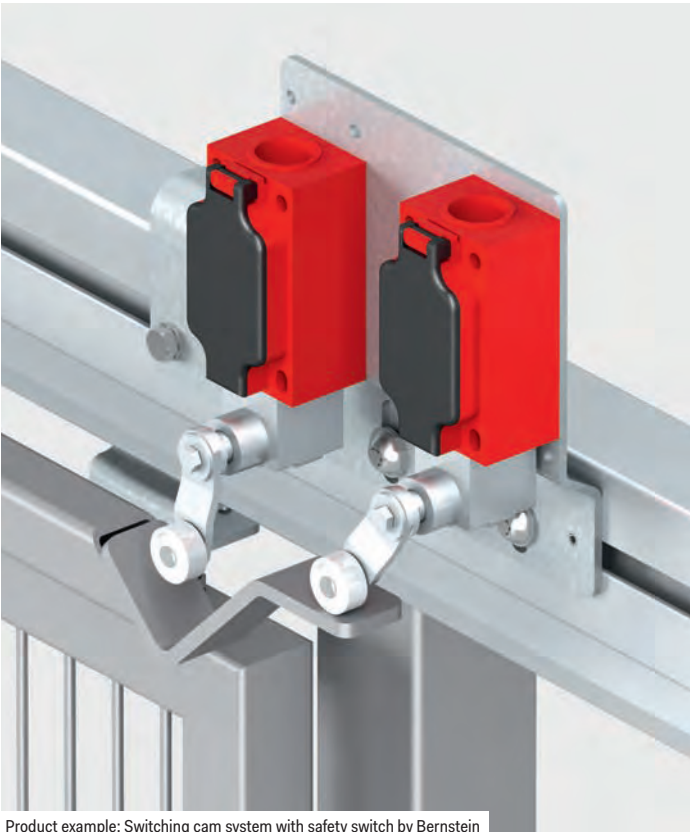
➤ You will receive a precisely fitting attachment system for your safety switch.

Overview of the switching cam system BRÜHL-SN-S for sliding doors

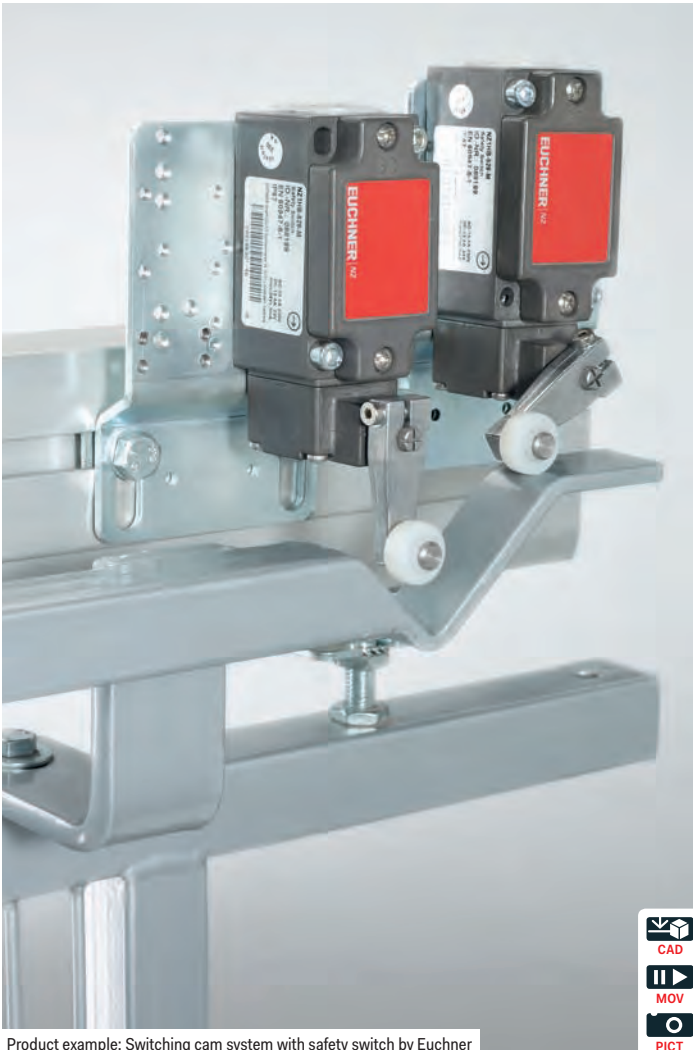
| Manufacturer        |           | Switch assembly | Item no.           |
|---------------------|-----------|-----------------|--------------------|
| Bernstein           | BERNSTEIN | ENK             | SN-S-V1-ENK-B023   |
| Euchner             | EUCHNER   | NZ              | SN-S-V1-NZ-B023    |
| Rockwell Automation |           | 440P-M          | SN-S-V1-440P-B023  |
| Schmersal           | SCHMERSAL | Z4VH332         | SN-S-V1-332-B023   |
|                     |           | T4VH335         | SN-S-V1-335-B023   |
|                     |           | Z4VH336         | SN-S-V1-336-B023   |
| Sick                | SICK      | i110R           | SN-S-V1-i110P-B023 |
| Siemens             | SIEMENS   | 3SE5            | SN-S-V1-3SE5-B023  |

Explanation of attachment situation abbreviations: S = sliding door

➤ Safety switches are not enclosed.  
➤ Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.  
➤ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).  
➤ See combination overview on p.185.



Product example: Switching cam system with safety switch by Bernstein



Product example: Switching cam system with safety switch by Euchner



Product group/build  
SV

MACHINE-SIDE

Factory-side switch preparation for special switches or flight/emergency unlatching

Hinge switches are prepared optimally, e.g. with attachment plates and welded parts

Flight unlatching preparation by hole pattern adjustment at the post or door wing

OUTSIDE

Standard for all Brühl-attachment systems:

➤ Robust zinc-plated surface  
ISO 14120, 5.6

➤ Symmetrical construction for door stop device DIN left/ DIN right

➤ Rounded laser canting parts  
ISO 14120, 5.3.7

➤ Precisely fitting threads for switch attachment  
ISO 14119, 5.2/(j)

➤ Precisely fitting provisions for safety switch

➤ All screw-connections are manipulation-proof

Safety switch preparation BRÜHL-SV

The switch preparation BRÜHL-SV is mostly used in any Brühl-doors when safety switches are prepared precisely fitting in the factory (for quick installation on site). With this system preparation, the safety switch is function-dependent and may take the form of, e.g., hole pattern adjustment at the post/door wing as preparation of a flight unlatching, special hole pattern and welding substructure adjustment.

This is how it works:



➤ You have already chosen a safety switch: e.g. Pilz PSENcode. ①

DIN EN ISO 14119



➤ We supply the attachment system to match with door adjustment: Safety switch preparation BRÜHL-SV e.g. by supporting the post and/or wing preparation.



➤ You will receive a precisely fitting attachment system for your safety switch.

| Overview of safety switch preparation BRÜHL-SV for wing doors |                     |                 |                           |              |          |
|---------------------------------------------------------------|---------------------|-----------------|---------------------------|--------------|----------|
| Manufacturer                                                  |                     | Switch assembly | Item no.                  | Manufacturer |          |
| ABB                                                           |                     | EDEN            | SV-F-V5-EDEN-B077         | Schmersal    | TV8S-521 |
|                                                               |                     | SLK+ENK         | SV-F-V4-SLK+ENK-B044      |              | BNS260   |
| Bernstein                                                     | BERNSTEIN           | MAK             | SV-F-V5-MAK-B077          |              | BNS250   |
|                                                               |                     | CES             | SV-F-V5-CES-B077          |              |          |
| Euchner                                                       | EUCHNER             | CMS             | SV-F-V5-CMS-B077          |              |          |
|                                                               |                     | MGB-PN          | SV-F-V6-MGB-PN            |              |          |
| Fortress Interlocks                                           | Fortress Interlocks | SBILOKIR        | SV-F-V7-SBILOKIR-B076     |              |          |
|                                                               |                     | SBNLOCK         | SV-F-V7-SBNLOCK-B076      |              |          |
|                                                               |                     | SBSLOCK         | SV-F-V7-SBSLOCK-B076      |              |          |
|                                                               |                     | tGard THE-RX/RZ | SV-F-V7-THE-B084          |              |          |
|                                                               |                     | tGard THH-RX/RZ | SV-F-V7-THH-B084          |              |          |
| Leuze electronic                                              | Leuze electronic    | tGard THN-RX/RZ | SV-F-V7-THN-B084          |              |          |
|                                                               |                     | MC336           | SV-F-V5-MC3-B077          |              |          |
| Omron Electronics                                             | OMRON               | F3S-TGR         | SV-F-V5-F3S-TGR-B077      |              |          |
| Pilz                                                          | PILZ                | PSEN1.1         | SV-F-V5-PSENMA-B077       |              |          |
|                                                               |                     | PSEN2.1         | SV-F-V5-PSENMA-B077       |              |          |
|                                                               |                     | PSENcode        | SV-F-V5-PSENCs-B077       |              |          |
|                                                               |                     | PSENCs3         | SV-F-V5-PSENCs-B077       |              |          |
|                                                               |                     | PSENCs4         | SV-F-V5-PSENCs-B077       |              |          |
|                                                               |                     | PSENCs4         | SV-F-V5-PSENCs-B077       |              |          |
|                                                               |                     | PSENmag         | SV-F-V5-PSENMA-B077       |              |          |
| Rockwell Automation                                           |                     | 440N-S          | SV-F-V5-440N-S-B077       |              |          |
|                                                               |                     | 440N-Z          | SV-F-V5-440N-Z-B077       |              |          |
| Schmersal                                                     | SCHMERSAL           | AZM161-ST30     | SV-F-V1-AZM161-ST30-01    |              |          |
|                                                               |                     |                 | (...)                     |              |          |
|                                                               |                     |                 | SV-F-V1-AZM161-ST30-08    |              |          |
|                                                               |                     | AZM415-ST30     | SV-F-V1-AZM415-ST30-01    |              |          |
|                                                               |                     |                 | (...)                     |              |          |
|                                                               |                     |                 | SV-F-V1-AZM415-ST30-08    |              |          |
|                                                               |                     | AZM161-ST30     | SV-F-V1-EX-AZM161-ST30-01 |              |          |
|                                                               |                     |                 | (...)                     |              |          |
|                                                               |                     |                 | SV-F-V1-EX-AZM161-ST30-08 |              |          |
|                                                               |                     | AZM415-ST30     | SV-F-V1-EX-AZM415-ST30-01 |              |          |
|                                                               |                     |                 | (...)                     |              |          |
|                                                               |                     |                 | SV-F-V1-EX-AZM415-ST30-08 |              |          |

Explanation of attachment situation abbreviations: FEO = wing door opening inwards, F = wing door

① Safety switches are not enclosed.

② Screws for switch attachments are not enclosed.

Cf. EN ISO 14119, 7.2 c and table 3.

③ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).

④ To prevent reaching over and actuation of the flight unlatching mechanism, we recommend that the door height be at least 1800 mm and a transfer with a diagonal element at low fence heights.

⑤ See special elements p. 36 and 46.

⑥ See combination overview on p. 185.

CAD

MOV

PICT

www.bruehl-safety.com Brühl

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES



Product group/build

UER®

MACHINE-SIDE

Latch with ball knob and centring mandrel

Protection against pushing through of the door wing at folding or double wing doors

Mechanical stop to avoid damage to the door and safety switch

OUTSIDE

Standard for all Brühl-attachment systems:

➤

Robust zinc-plated surface

➤ ISO 14120, 5.6

➤

Symmetrical construction for door stop device DIN left/ DIN right

➤

Rounded laser canting parts

➤ ISO 14120, 5.3.7

➤

Precisely fitting threads for switch attachment

➤ ISO 14119, 5.2/(j)

➤

Precisely fitting provisions for safety switch

➤

All screw-connections are manipulation-proof

Overroll latch system BRÜHL-UER®

The overroll latch system BRÜHL-UER® prevents pushing through of the wings at folding or double folding wing doors, which permits compliance with the safety distances of the risk and danger assessment. This system is very robust, requires little maintenance and cleaning and has proven its worth in the industrial environment for many years. Combinations are available with many safety switches – Brühl recommends the combination of safety switch and a contact free principle of effect.

This is how it works:



➤ You have already chosen a safety switch: e.g. Schmersal MZM100. ❶

➤ DIN EN ISO 14119



➤ We supply the attachment system to match: Overroll latch system BRÜHL-UER® with matching provision.



➤ You will receive a precisely fitting attachment system for your safety switch.

Overview of the overroll latch system BRÜHL-UER®

| Manufacturer |           | Switch assembly | Item no.              |
|--------------|-----------|-----------------|-----------------------|
| Euchner      | EUCHNER   | TZ              | UER-FR-V1-TZ-B028     |
|              |           | TZ              | UER-FL-V1-TZ-B025     |
| Schmersal    | SCHMERSAL | MZM100          | UER-FL-V2-MZM100-B073 |
|              |           | MZM100          | UER-FR-V2-MZM100-B073 |

Explanation of attachment situation abbreviations: FL = wing door DIN left (doors with left attachment)  
FR = wing door DIN right (doors with right attachment)

❶ Safety switches are not enclosed.

❷ Screws for switch attachments are not enclosed.  
Cf. EN ISO 14119, 7.2 c and table 3.

❸ Attachment elements can only be released with tools. Cf. EN ISO 14119, 52 (a).

❹ See combination overview on p.185.

Product example: Overroll latch system with safety switch by Schmersal

Product example: Overroll latch system without safety switch

ATTACHMENT SYSTEMS FOR SAFETY SWITCHES

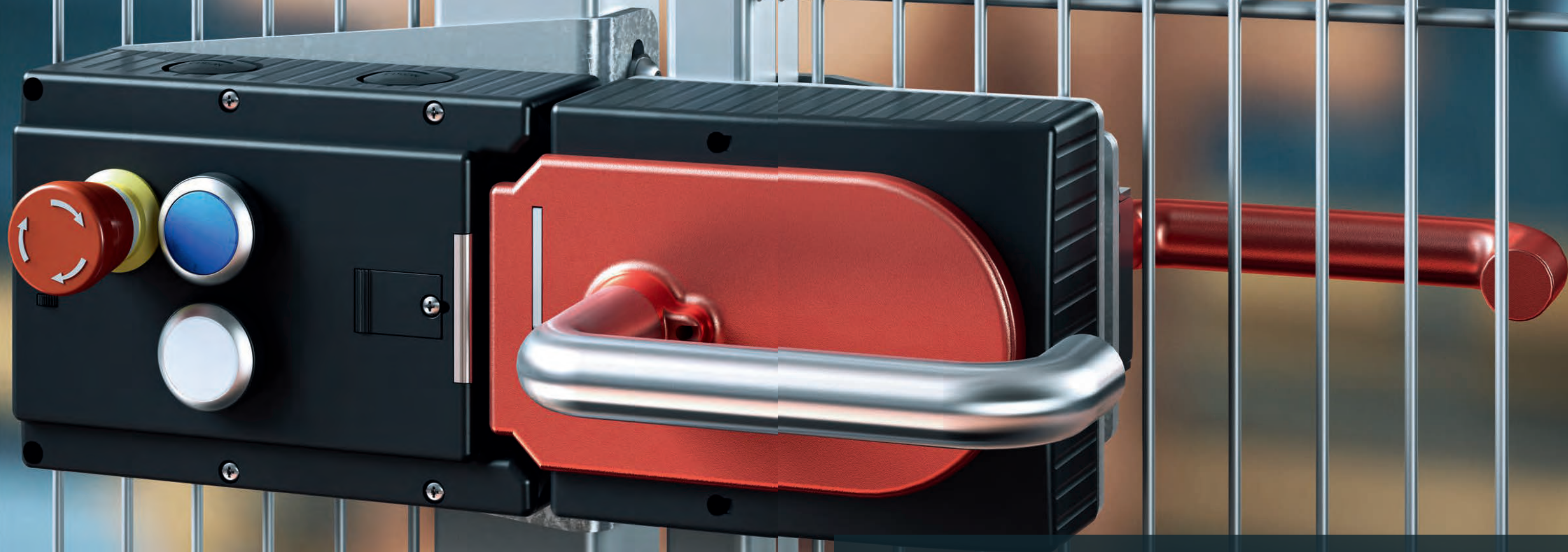
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## Safety switches

The applications for the installed safety switches are just as diverse as the applications for our protective facilities. The optimal solution for our customers is of the utmost priority for us. Therefore, we rely on strong partners. The next pages will tell you all that is interesting about the subject of safety switches and will provide an overview of the different manufacturers with whom we cooperate closely for our customers at all times.



# Safety switches

## The right switch for any use

Our partners offer many different safety switches for you to choose from. A safety switch is part of a safety chain – it supplies a safe signal in the input circuit. Opening the protective facility produces a stop signal, prevents undesired machine start-up and thus ensures latching. An overview of the safety switch types can be found in this figure:



## Overview: General safety switch knowledge

### Flight unlatching

Flight unlatching must permit unlocking without tools from the danger area/from the machine side in case of danger. The facility must be hand-operated and force-act on the latching element. The actuation must permanently block the holding-shut device (also see auxiliary unlatching).

### Emergency unlatching/ emergency unlocking

The emergency unlocking serves to unlatch a holding-shut device in emergency. Unlatching is possible without tools from the access side/ outside. At emergency unlatching, the switch latches in the unlatched position and can only be reset to the initial position with a repair-like effort.

### Safety Integrity Level (SIL)

The Safety Integrity Level is the level that describes the probability that a safety-related system meets the required safety functions under all specified conditions within a specified period according to requirements. For this, compare the required Safety Integrity Level (SILr; the "r" meaning "required") and the "actual" SIL that is in fact achieved.

### Auxiliary unlatching

When the holding-shut device fails, it can be unlocked with an auxiliary unlatching device from the access side/outside. A tool or key is used to unlock. The auxiliary unlatching mechanism should be secured against abuse (seal, varnish).

### Performance Level (PL)

Discrete level that specifies the ability of safety-related parts of a control to perform a safety function under foreseeable conditions (definition according to standard EN 13849). Putting it more simply, the Performance Level is a measure for reliability of a safety function. We distinguish between the Performance Level required (PLr; with "r" for "required") and the "actual" PL that is in fact reached. There are five performance levels that reflect different residual risks.

| Strong partners of Brühl: Manufacturers of safety switches |  |  |                       |  |  |
|------------------------------------------------------------|--|--|-----------------------|--|--|
| Manufacturer                                               |  |  | Manufacturer          |  |  |
| Euchner                                                    |  |  | Telemecanique Sensors |  |  |
| SIEMENS                                                    |  |  | BERNSTEIN             |  |  |
| SCHMERSAL                                                  |  |  | Leuze electronic      |  |  |
| PILZ                                                       |  |  | DOLD                  |  |  |
| SICK                                                       |  |  | Fortress Interlocks   |  |  |

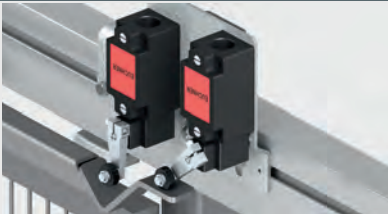
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Safety switches by EUCHNER

EUCHNER

 The link to the manufacturer's page can be found at [www.bruehl-safety.com/euchner](http://www.bruehl-safety.com/euchner)

| Mechanical safety switches by EUCHNER <small>As of 2017</small>   |                                                                                                                                                                |                                                                                                                                                                |                                                                                                                                                                                |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                                                       | Safety switches with separate actuator                                                                                                                         | Safety holding-shut devices with separate actuator                                                                                                                             |
| Example                                                           |                                                                               |                                                                              |                                                                                             |
| Valid for the following products                                  | all safety switches of build 1<br>NZ, N1A, NB01, NM, ESH (latches)                                                                                             | all safety switches of build 2<br>NZ.VZ, NX, NM.VZ, NQ, NP, GP, SGP (latches)                                                                                  | all safety switches of build 2 with holding-shut devices TZ, TX, TP, TQ, STP, STA, STM, TK  |
| Which standards were considered in product development?           |                                                                                                                                                                |                                                                                                                                                                |                                                                                                                                                                                |
| The products meet the requirements of the following standards     | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                                                | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                                                | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                                                                |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                                                |                                                                                                                                                                |                                                                                                                                                                                |
| For category 1/PL c according to EN ISO 13849-1                   | 1 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                                                                                                           | 1 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                                                                                                           | 1 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                                                                                                                           |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 EUCHNER safety switch<br>1 safety relay (e.g. ESM) exclusion of errors or solution b)<br>2 EUCHNER safety switch<br>1 safety relay (e.g. ESM) | solution a)<br>1 EUCHNER safety switch<br>1 safety relay (e.g. ESM) exclusion of errors or solution b)<br>2 EUCHNER safety switch<br>1 safety relay (e.g. ESM) | solution a)<br>1 EUCHNER safety switch<br>1 safety relay (e.g. ESM) exclusion of errors or solution b)<br>2 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                 |
| For category 4/PL e according to EN ISO 13849-1                   | 2 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                                                                                                           | 2 EUCHNER safety switch<br>1 safety relay (e.g. ESM)                                                                                                           | 2 EUCHNER safety switch<br>2 safety relay (e.g. ESM)                                                                                                                           |

| Contact-free safety switch by EUCHNER <small>as of 2017</small>   |                                                                                                                              |                                                                                                                                                         |                                                                                                                                                        |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electronic devices                                                | System familyCES-AZ<br>(System comprising a reading head and evaluation unit with relay outputs)                             | System familiesCES-A-5, CES-AH, CES-AP, CET-AP, CTP-AP, MGB-AP for operation as a single unit                                                           | System familiesCES-AR, CET-AR, CTP-AR, CEM-AR, MGB-AR for serial circuit                                                                               |
| Example                                                           |                                           |                                                                     |                                                                   |
| Valid for the following products                                  | Evaluation units CES with the reading heads CES-A-L... and the reading heads with holding-shut device CEM, CET-AX of build 4 | Safety switch CES-A-5, CES-AH, CES-AP, safety switch with holding-shut device CET-AP, CTP-AP and MGB-AP with and without holding-shut device of build 4 | Safety switch CES-AR, ESL-AR, safety switch with holding-shut device CET-AR, CEM-AR, CTP-AR and MGB-AR with and without holding-shut device of build 4 |
| Which standards were considered in product development?           |                                                                                                                              |                                                                                                                                                         |                                                                                                                                                        |
| The products meet the requirements of the following standards     | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119<br>EN ISO 13849-1                                                               | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119<br>EN ISO 13849-1                                                                                          | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119<br>EN ISO 13849-1                                                                                         |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                              |                                                                                                                                                         |                                                                                                                                                        |
| For category 1/PL c according to EN ISO 13849-1                   | 1 reading head<br>1 evaluation unit CES-AZ                                                                                   | 1 safety switch CES, CTP, CET, MGB                                                                                                                      | 1 safety switch CES, CET, ESL, CTP, CEM or 1 MGB                                                                                                       |
| For category 3/PL d according to EN ISO 13849-1                   | 1 reading head<br>1 evaluation unit CES-AZ                                                                                   | 1 safety switch CES, CTP, CET, MGB                                                                                                                      | 1 safety switch CES, CET, ESL, CTP, CEM or 1 MGB                                                                                                       |
| For category 4/PL e according to EN ISO 13849-1                   | 1 reading head<br>1 evaluation unit CES   | 1 safety switch CES  , CTP, CET, MGB                                 | 1 safety switch CES, CET, ESL, CTP, CEM or 1 MGB                                                                                                       |

 Depending on the product used. **Disclaimer:** Technical changes and errors reserved (2017). All information is provided without liability. Brühl assumes no liability for the information provided being accurate, up to date, complete or of good quality. Damages claims against Brühl or its employees based on the provided information shall be excluded, except in case of gross negligence or intent. The information and examples provided on this page do not relieve the constructor from his risk assessment or analysis obligations; the original standard must be viewed and information must be collected from the safety switch manufacturer independently of this information.

Safety switches by Siemens

SIEMENS

 The link to the manufacturer's page can be found at [www.bruehl-safety.com/siemens](http://www.bruehl-safety.com/siemens)

| Mechanical safety switches by Siemens <small>As of 2017</small>   |                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                                    |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                            | Safety switches with separate actuator                                                                                                                                  | Safety holding-shut devices with separate actuator                                                                                                                                 |
| Example                                                           |                                                  |                                                                                      |                                                                                                 |
| Valid for the following products                                  | all safety switches of build 1<br>3SES1/52, 3SE54 (latches)                                                                         | all safety switches of build 2<br>3SE51/52 (latches)                                                                                                                    | all safety switches of build 2 with holding-shut devices 3SES3                                                                                                                     |
| Which standards were considered in product development?           |                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                                    |
| The products meet the requirements of the following standards     | EN 60947-5-1, annex K<br>force-opening contacts<br>DIN EN ISO 14119, TÜV certificate                                                | EN 60947-5-1, annex K<br>force-opening contacts<br>DIN EN ISO 14119, TÜV certificate                                                                                    | EN 60947-5-1, annex K<br>force-opening contacts<br>DIN EN ISO 14119, TÜV certificate                                                                                               |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                                    |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                      | 1 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                                                          | 1 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                                                                     |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 safety evaluation unit (e.g. 3SK) or solution b)<br>2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK) | solution a)<br>1 Siemens safety switch<br>1 safety evaluation unit exclusion of errors or solution b)<br>2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK) | solution a)<br>1 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK) exclusion of errors or solution b)<br>2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK) |
| For category 4/PL e according to EN ISO 13849-1                   | 2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                      | 2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                                                          | 2 Siemens safety switch<br>1 safety evaluation unit (e.g. 3SK)                                                                                                                     |

| Contact-free safety switch by Siemens <small>As of 2017</small>   |                                                                                       |                                                                                       |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Electronic units                                                  | RFID-safety switch                                                                    | SIRIUS-magnetic switch                                                                |
| Example                                                           |  |  |
| Valid for the following products                                  | 3SE63                                                                                 | 3SE66, 3SE67                                                                          |
| Which standards were considered in product development?           |                                                                                       |                                                                                       |
| The products meet the requirements of the following standards     | EN ISO 13849-12<br>EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119                       | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119                                          |
| What is required, for example, to achieve a specific category/PL? |                                                                                       |                                                                                       |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Siemens safety switch<br>1 Siemens actuator                                         | 1 Siemens safety switch<br>1 Siemens actuator                                         |
| For category 3/PL d according to EN ISO 13849-1                   | 1 Siemens safety switch<br>1 Siemens actuator                                         | 1 Siemens safety switch<br>1 Siemens actuator                                         |
| For category 4/PL e according to EN ISO 13849-1                   | 1 Siemens safety switch<br>1 Siemens actuator                                         | 1 Siemens safety switch<br>1 Siemens actuator                                         |

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Safety switches by Schmersal

The link to the manufacturer's page can be found at [www.bruehl-safety.com/schmersal](http://www.bruehl-safety.com/schmersal)



| Mechanical safety switches by Schmersal As of 2017                |                                                                                                                                          |                                                                                                                                                                     |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                                 | Safety switches with separate actuator                                                                                                                              |
| Example                                                           |                                                        |                                                                                  |
| Valid for the following products                                  | Series TV and similar<br>Effective principle electromechanical                                                                           | Series AZM and similar<br>Effective principle electromechanical                                                                                                     |
| Which standards were considered in product development?           |                                                                                                                                          |                                                                                                                                                                     |
| The products meet the requirements of the following standards     | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                          | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                                                     |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                          |                                                                                                                                                                     |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Schmersal safety switch<br>1 safety evaluation unit                                                                                    | 1 Schmersal safety switch<br>1 safety evaluation unit                                                                                                               |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 safety evaluation unit (e.g. 3SK)<br>or solution b)<br>2 Schmersal safety switch<br>1 safety evaluation unit (e.g. 3SK) | solution a)<br>1 Schmersal safety switch<br>1 safety evaluation unit exclusion of errors<br>or solution b)<br>2 Schmersal safety switch<br>1 safety evaluation unit |
| For category 4/PL e according to EN ISO 13849-1                   | 2 Schmersal safety switch<br>1 safety evaluation unit                                                                                    | 2 Schmersal safety switch<br>1 safety evaluation unit                                                                                                               |

| Contact-free safety switches by Schmersal As of 2017              |                                                                                      |                                                                                       |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                   | Magnetic switch                                                                      | Electronic units                                                                      |
| Example                                                           |  |  |
| Valid for the following products                                  | Series BNS<br>Effective principle: contact-free                                      | Series CSS, AZ/AZM 200/201, MZM<br>Effective principle: Pulse-echo procedure/RFID     |
| Which standards were considered in product development?           |                                                                                      |                                                                                       |
| The products meet the requirements of the following standards     | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119<br>EN ISO 13849-1                       | EN 60947-5-2<br>EN 60947-5-3<br>EN ISO 14119<br>EN ISO 13849-1                        |
| What is required, for example, to achieve a specific category/PL? |                                                                                      |                                                                                       |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Schmersal safety switch<br>1 Schmersal actuator                                    | 1 Schmersal safety switch<br>1 Schmersal actuator                                     |
| For category 3/PL d according to EN ISO 13849-1                   | 1 Schmersal safety switch<br>1 Schmersal actuator                                    | 1 Schmersal safety switch<br>1 Schmersal actuator                                     |
| For category 4/PL e according to EN ISO 13849-1                   | 1 Schmersal safety switch<br>1 Schmersal actuator                                    | 1 Schmersal safety switch<br>1 Schmersal actuator                                     |

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Safety switches by Pilz

The link to the manufacturer's page can be found at [www.bruehl-safety.com/pilz](http://www.bruehl-safety.com/pilz)



| Mechanical safety switches by Pilz As of 2017                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Switch type                                                   | Hinge switch PSEnhinge                                                              | Mechanical safety switch PSENmech                                                   | Safety latch PSEnbolt                                                               | Encoded safety switch PSENcode                                                      |
| Example                                                       |  |  |  |  |
| Valid for the following products                              | PSEN hs1 (web150410)                                                                | PSEN me3<br>(other types under web150414)                                           | PSEN b2<br>(other types under web150411)                                            | PSEN cs4<br>(other types under web150412)                                           |
| Which standards were considered in product development?       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| The products meet the requirements of the following standards | EN 60947-5-1<br>EN ISO 13849-1<br>EN/IEC 62061                                      | EN 60947-5-3<br>EN ISO 13849-1<br>EN/IEC 62061                                      | EN ISO 13849-1<br>EN/IEC 62061                                                      | EN ISO 13849-1<br>EN/IEC 62061                                                      |
| Which category/PL is reached?                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                                               | PL d<br>SIL CL 2<br>PL e at two switches<br>SIL CL 3 at two switches                | PL d<br>SIL CL 2<br>PL e at two switches<br>SIL CL 3 at two switches                | PL e<br>SIL CL 3<br>depending on combination<br>with safety switches                | PL e<br>SIL CL 3                                                                    |

| Safe safety door systems (combination of sensor and actor) by Pilz As of 2017 |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Switch type                                                                   | Electromagnetic holding-shut device (process) PSENSlock                               | Person and process protection PSENmlock                                               | Safety door system PSENsgate                                                          |
| Example                                                                       |  |  |  |
| Valid for the following products                                              | PSEN sl-0.5p<br>(other types under web150408)                                         | PSEN ml b 1<br>(other types under web150409)                                          | PSEN sg2c-3LPE<br>(other types under web150407)                                       |
| Which standards were considered in product development?                       |                                                                                       |                                                                                       |                                                                                       |
| The products meet the requirements of the following standards                 | EN 60947-5-3<br>EN ISO 13849-1<br>EN/IEC 62061                                        | EN 60947-5-3<br>EN ISO 13849-1<br>EN/IEC 62061                                        | EN 60947-5-3<br>EN ISO 13849-1<br>EN/IEC 62061                                        |
| Which category/PL is reached?                                                 |                                                                                       |                                                                                       |                                                                                       |
|                                                                               | PL e (latch/sensor)<br>SIL CL 3 (latch/sensor)                                        | PL e<br>SIL CL 3                                                                      | PL e<br>SIL CL 3                                                                      |

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# Safety switches by Sick

 The link to the manufacturer's page can be found at [www.bruehl-safety.com/sick](http://www.bruehl-safety.com/sick)



| Mechanical safety switches by Sick As of 2017                     |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                              | Safety switches with separate actuator                                                                                                | Safety holding-shut devices with separate actuator                                                                                    |
| Example                                                           |                                                      |                                                     |                                                    |
| Valid for the following products                                  | i110R<br>Effective principle: Snap-action contact/slow-action contact                                                                 | i16<br>Effective principle: Slow-action contact                                                                                       | i10<br>Effective principle: Slow-action contact                                                                                       |
| Which standards were considered in product development?           |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |
| The products meet the requirements of the following standards     | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                       | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                       | EN 60947-5-1, annex K<br>force-opening contacts<br>EN ISO 14119                                                                       |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                       |                                                                                                                                       |                                                                                                                                       |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Sick safety switch<br>1 safety relay                                                                                                | 1 Sick safety switch<br>1 safety relay (e.g. UEs)                                                                                     | 1 Sick safety switch<br>1 safety relay (e.g. UEs)                                                                                     |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 Sick safety switch<br>1 safety relay<br>exclusion of errors or solution b)<br>2 Sick safety switch<br>1 safety relay | solution a)<br>1 Sick safety switch<br>1 safety relay<br>exclusion of errors or solution b)<br>2 Sick safety switch<br>1 safety relay | solution a)<br>1 Sick safety switch<br>1 safety relay<br>exclusion of errors or solution b)<br>2 Sick safety switch<br>1 safety relay |
| For category 4/PL e according to EN ISO 13849-1                   | 2 Sick safety switch<br>1 safety relay                                                                                                | 2 Sick safety switch<br>1 safety relay                                                                                                | 2 Sick safety switch<br>1 safety relay                                                                                                |

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# Safety switch by Telemecanique Sensors

 The link to the manufacturer's page can be found at [www.bruehl-safety.com/telemecanique-sensors](http://www.bruehl-safety.com/telemecanique-sensors)



| Safety switches by Telemecanique Sensors As of 2017               |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                                                             | Safety switches with separate actuator                                                                                                                               | Safety holding-shut devices                                                                                                                                          | Encoded magnetic switches                                                                                                                                            |
| Example                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Valid for the following products                                  | XCS P, XCS M, XCS D                                                                                                                                                  | XCS MP, XCS PA, XCS TA                                                                                                                                               | XCS LE, XCS LF                                                                                                                                                       | XCS DMD, XCS DMR, XCS DMC                                                                                                                                            |
| Which standards were considered in product development?           |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |
| The products meet the requirements of the following standards     | EN 60947-5-3<br>EN ISO 1349-1<br>EN/IEC 62061                                                                                                                        | EN 60947-5-3<br>EN ISO 1349-1<br>EN/IEC 62061                                                                                                                        | EN 60947-5-3<br>EN ISO 1349-1<br>EN/IEC 62061                                                                                                                        | EN 60947-5-3<br>EN ISO 1349-1<br>EN/IEC 62061                                                                                                                        |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |                                                                                                                                                                      |
| For category 2/PL c according to EN ISO 13849-1                   | 1 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 1 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 1 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 1 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 Telemecanique Sensors safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Telemecanique Sensors safety switch<br>1 safety relay | solution a)<br>1 Telemecanique Sensors safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Telemecanique Sensors safety switch<br>1 safety relay | solution a)<br>1 Telemecanique Sensors safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Telemecanique Sensors safety switch<br>1 safety relay | solution a)<br>1 Telemecanique Sensors safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Telemecanique Sensors safety switch<br>1 safety relay |
| For category 4/PL e according to EN ISO 13849-1                   | 2 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 2 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 2 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              | 2 Telemecanique Sensors safety switch<br>1 safety relay                                                                                                              |

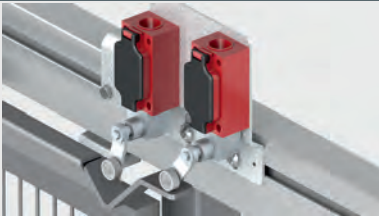
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Safety switches by BERNSTEIN

The link to the manufacturer's page can be found at [www.bruehl-safety.com/bernstein](http://www.bruehl-safety.com/bernstein)



| Safety switches by BERNSTEIN As of 2017                           |                                                                                                                                                  |                                                                                                                                                  |                                                                                                                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                                         | Safety switches with separate actuator                                                                                                           | Safety holding-shut devices with separate actuator                                                                                               |
| Example                                                           |                                                                 |                                                                |                                                               |
| Valid for the following products                                  | Product group IN65<br>Product group ENK                                                                                                          | Product group SK                                                                                                                                 | Product group SLK                                                                                                                                |
| Which standards were considered in product development?           |                                                                                                                                                  |                                                                                                                                                  |                                                                                                                                                  |
| The products meet the requirements of the following standards     | EN 60947-5-1<br>ISO 14119                                                                                                                        | EN 60947-5-1<br>ISO 14119                                                                                                                        | EN 60947-5-1<br>ISO 14119                                                                                                                        |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                                  |                                                                                                                                                  |                                                                                                                                                  |
| For category 1/PL c according to EN ISO 13849-1                   | 1 BERNSTEIN safety switch<br>Optional 1 safety relay                                                                                             | 1 BERNSTEIN safety switch<br>Optional 1 safety relay                                                                                             | 1 BERNSTEIN safety switch<br>Optional 1 safety relay                                                                                             |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 BERNSTEIN safety switch<br>1 safety relay and exclusion of errors or solution b)<br>2 BERNSTEIN safety switch<br>1 safety relay | solution a)<br>1 BERNSTEIN safety switch<br>1 safety relay and exclusion of errors or solution b)<br>2 BERNSTEIN safety switch<br>1 safety relay | solution a)<br>1 BERNSTEIN safety switch<br>1 safety relay and exclusion of errors or solution b)<br>2 BERNSTEIN safety switch<br>1 safety relay |
| For category 4/PL e according to EN ISO 13849-1                   | 2 BERNSTEIN safety switch<br>1 safety relay                                                                                                      | 2 BERNSTEIN safety switch<br>1 safety relay                                                                                                      | 2 BERNSTEIN safety switch<br>1 safety relay                                                                                                      |

| Safety switches by BERNSTEIN As of 2017                           |                                                                                      |                                                                                       |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Switch type                                                       | Magnetic switch. encoded                                                             | RFID-safety sensors, high and low coded                                               |
| Example                                                           |  |  |
| Valid for the following products                                  | Product group MAK                                                                    | Product group CSMS                                                                    |
| Which standards were considered in product development?           |                                                                                      |                                                                                       |
| The products meet the requirements of the following standards     | EN 60947-5-3<br>ISO 14119                                                            | EN 60947-3<br>ISO 14119                                                               |
| What is required, for example, to achieve a specific category/PL? |                                                                                      |                                                                                       |
| For category 1/PL c according to EN ISO 13849-1                   | 1 BERNSTEIN safety switch<br>1 safety relay                                          | 1 BERNSTEIN CSMS                                                                      |
| For category 3/PL d according to EN ISO 13849-1                   | 1 BERNSTEIN safety switch<br>1 safety relay                                          | 1 BERNSTEIN CSMS                                                                      |
| For category 4/PL e according to EN ISO 13849-1                   | 1 BERNSTEIN safety switch<br>1 safety relay                                          | 1 BERNSTEIN CSMS                                                                      |

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Safety switches by Leuze electronic

The link to the manufacturer's page can be found at [www.bruehl-safety.com/leuze](http://www.bruehl-safety.com/leuze)



| Mechanical safety switches by Leuze electronic As of 2017         |                                                                                                                                                               |                                                                                                                                                            |                                                                                                                                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                       | Safety switches with integrated actuator                                                                                                                      | Safety switches with separate actuator                                                                                                                     | Safety holding-shut devices                                                                                                                                                               |
| Example                                                           |                                                                            |                                                                         |                                                                                                        |
| Valid for the following products                                  | Series S300, position switches<br>Series S400, hinge switches                                                                                                 | S20<br>S200                                                                                                                                                | L10<br>L100<br>L200<br>L300                                                                                                                                                               |
| Which standards were considered in product development?           |                                                                                                                                                               |                                                                                                                                                            |                                                                                                                                                                                           |
| The products meet the requirements of the following standards     | EN ISO 14119<br>EN ISO 13849-1<br>EN/IEC 62061                                                                                                                | EN ISO 14119<br>EN ISO 13849-1<br>EN/IEC 62061                                                                                                             | EN ISO 14119<br>EN ISO 13849-1<br>EN/IEC 62061                                                                                                                                            |
| What is required, for example, to achieve a specific category/PL? |                                                                                                                                                               |                                                                                                                                                            |                                                                                                                                                                                           |
| For category 1/PL c according to EN ISO 13849-1                   | 1 Leuze electronic safety switch<br>1 safety relay                                                                                                            | 1 Leuze electronic safety switch<br>1 safety relay                                                                                                         | 1 Leuze electronic safety holding-shut device<br>1 safety relay                                                                                                                           |
| For category 3/PL d according to EN ISO 13849-1                   | solution a)<br>1 Leuze electronic safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Leuze electronic safety switch<br>1 safety relay    | solution a)<br>1 Leuze electronic safety switch<br>1 safety relay exclusion of errors or solution b)<br>2 Leuze electronic safety switch<br>1 safety relay | solution a)<br>1 Leuze electronic safety holding-shut device<br>1 safety relay exclusion of errors or solution b)<br>2 Leuze electronic safety holding-shut devices<br>1 safety relay     |
| For category 4/PL e according to EN ISO 13849-1                   | solution a)<br>2 Leuze electronic safety switch<br>1 safety relay or solution b)<br>1 Leuze electronic S420 safety switch with OSSD-outputs<br>1 safety relay | 2 Leuze electronic safety switch<br>1 safety relay                                                                                                         | solution a)<br>2 Leuze electronic safety holding-shut devices<br>1 safety relay or solution b)<br>1 Leuze electronic L300 safety holding-shut devices with OSSD-outputs<br>1 safety relay |

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Safety switches by Dold

The link to the manufacturer's page can be found at [www.bruehl-safety.com/dold](http://www.bruehl-safety.com/dold)



| Safety switches, holding-shut devices, key transfer by Dold As of 2017 |                                                                                                                                        |                                                                                                                                        |                                                                                                                                                     |                                                                                                                                                       |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switch type                                                            | Safety switches with separate actuator                                                                                                 | Safety holding-shut devices with separate actuator                                                                                     | Mechanical Safety holding-shut device with separate actuator and key transfer function                                                              | Safety holding-shut devices and switches with separate actuator, key transfer function and command functions                                          |
| Example                                                                |                                                       |                                                       |                                                                   |                                                                    |
| Valid for the following products                                       | For SAFEMASTER STS-units (latches) based on switch modules in stainless steel or plastic designs                                       | For SAFEMASTER STS-units (latches) based on holding-shut modules in stainless steel or plastic designs                                 | For SAFEMASTER STS-units based on mechanical modules in stainless steel or plastic designs                                                          | For SAFEMASTER STS-systems in stainless steel or plastic designs                                                                                      |
| Which standards were considered in product development?                |                                                                                                                                        |                                                                                                                                        |                                                                                                                                                     |                                                                                                                                                       |
| The products meet the requirements of the following standards          | EN60947-5-1, Annex K<br>EN ISO 14119<br>GS-ET-15<br>GS-ET-31<br>EC type-testing certificate pursuant to MRL 2006/42/EG, Annex IV, p.21 | EN60947-5-1, Annex K<br>EN ISO 14119<br>GS-ET-19<br>GS-ET-31<br>EC type-testing certificate pursuant to MRL 2006/42/EG, Annex IV, p.21 | EN60947-5-1, Annex K<br>EN ISO 14119<br>GS-ET-31<br>EC type-testing certificate pursuant to MRL 2006/42/EG, Annex IV, p.21                          | EN60947-5-1, Annex K<br>EN ISO 14119<br>GS-ET-15<br>GS-ET-19<br>GS-ET-31<br>EC type-testing certificate pursuant to MRL 2006/42/EG, Annex IV, p.21    |
| What is required, for example, to achieve a specific category/PL?      |                                                                                                                                        |                                                                                                                                        |                                                                                                                                                     |                                                                                                                                                       |
| For category 2/PL d according to EN ISO 13849-1                        | 1 SAFEMASTER STS-unit with e.g.<br>1 Emergency off module LG 5925                                                                      | 1 SAFEMASTER STS-unit with e.g.<br>1 sensor-less standstill monitor LH5946                                                             | 1 mechanical SAFEMASTER STS-unit in connection with<br>1 key-operated safety holding-shut device or switch                                          | 1 SAFEMASTER STS-system in combination with, e.g.<br>1 modular, software-free safety system SAFEMASTER M                                              |
| For category 3/PL d or e according to EN ISO 13849-1                   | 1 SAFEMASTER STS-unit with 1 or 2 actuators (application-dependent) with e.g.<br>1 Emergency off module LG 5925                        | 1 SAFEMASTER STS-unit with 1 or 2 actuators (application-dependent) with e.g.<br>1 sensor-less standstill monitor LH5946               | 1 mechanical SAFEMASTER STS-unit with 1 or 2 actuators (user-independent) in the system with<br>1 key-operated safety-holding-shut device or switch | 1 SAFEMASTER STS-system with 1 or 2 actuators (application-dependent) in connection with e.g.<br>1 modular, programmable safety system SAFEMASTER PRO |
| For category 4/PL e according to EN ISO 13849-1                        | 1 SAFEMASTER STS-unit with 2 actuators with e.g.<br>1 Emergency off module LG 5925                                                     | 1 SAFEMASTER STS-unit with 2 actuators with e.g.<br>1 sensor-less standstill monitor LH5946                                            | 1 mechanical SAFEMASTER STS-unit with 2 actuators in the system with<br>1 key-operated safety-holding-shut device or switch                         | 1 SAFEMASTER STS-system with 2 actuators with e.g.<br>1 multifunctional safety module UG 6970                                                         |

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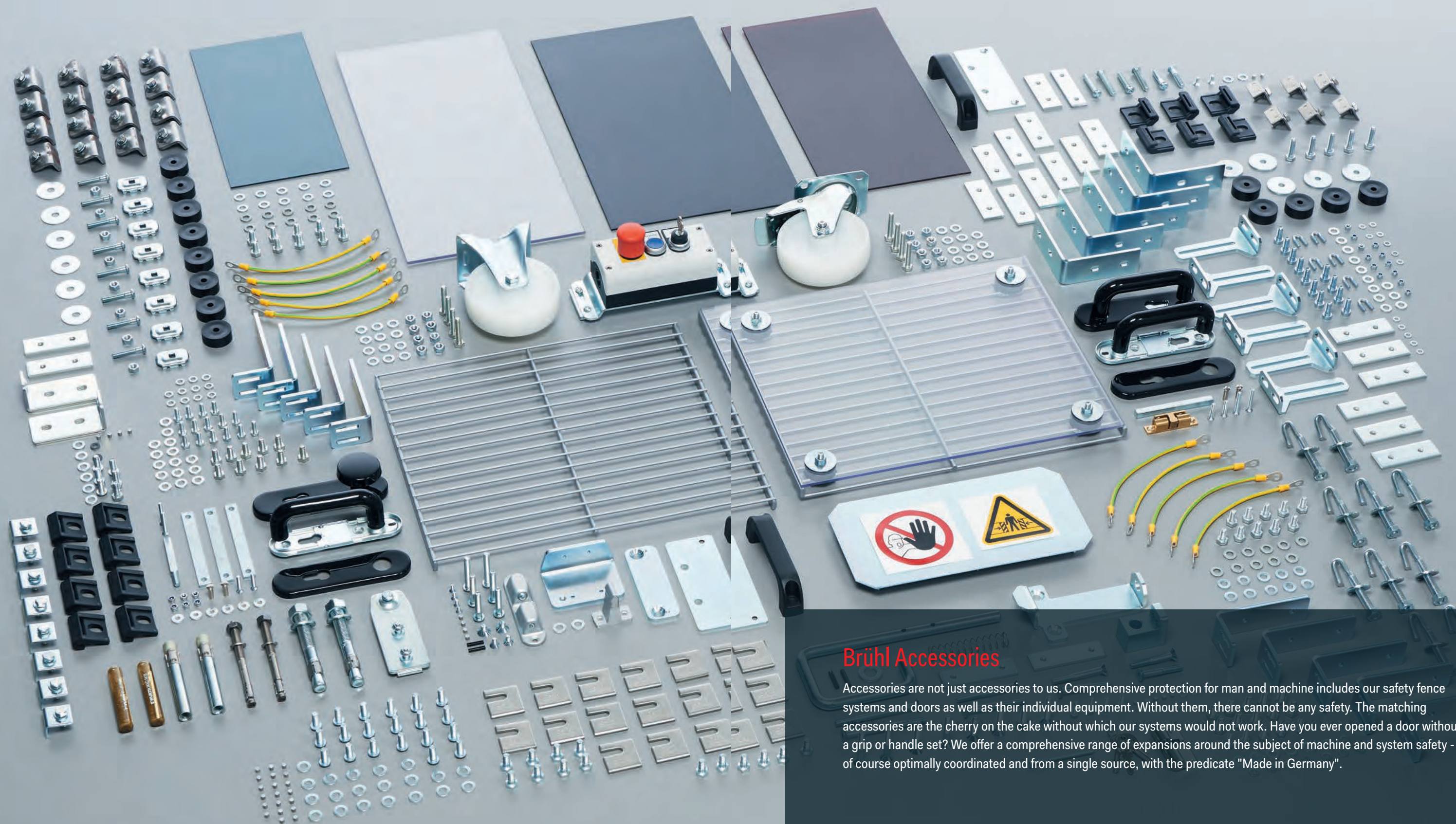
Key transfer systems/safety switches by Fortress Interlocks

The link to the manufacturer's page can be found at [www.bruehl-safety.com/fortress](http://www.bruehl-safety.com/fortress)

| Key transfer systems/safety switches by Fortress Interlocks As of 2017 |                                                                                                                |                                                                                                                |                                                                                                         |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Switch type                                                            | Mechanical key transfer system                                                                                 | Electromechanical safety switch with/without holding-shut device                                               | Electromechanical safety switch with/without holding-shut device                                        |
| Example                                                                |                             |                             |                      |
| Valid for the following products                                       | Safety switches of the mGard-series                                                                            | Safety switches of the amGardpro-series                                                                        | Safety switches of the tGard-series                                                                     |
| Which standards were considered in product development?                |                                                                                                                |                                                                                                                |                                                                                                         |
| The products meet the requirements of the following standards          | EN ISO 13849-1:2008/AC:2009<br>ISO 13849-2:2012<br>EN 62061:2005/A1:2013<br>EN ISO 14119:2013<br>GS-ET-19:2011 | EN ISO 13849-1:2008/AC:2009<br>ISO 13849-2:2012<br>EN 62061:2005/A1:2013<br>EN ISO 14119:2013<br>GS-ET-19:2011 | EN ISO 13849-1:2008/AC:2009<br>ISO 13849-2:2012<br>EN 62061:2005<br>EN ISO 14119:2013<br>GS-ET-19 :2011 |
| What is required, for example, to achieve a specific category/PL?      |                                                                                                                |                                                                                                                |                                                                                                         |
| For category 1/PL c according to EN ISO 13849-1                        | 1 holding-shut device<br>1 key<br>1 switch element<br>1 safety evaluation unit                                 | 1 safety switch<br>1 actuator<br>1 safety evaluation unit                                                      | 1 safety switch<br>1 actuator<br>1 safety evaluation unit                                               |
| For category 3/PL d according to EN ISO 13849-1                        | 1 holding-shut device<br>1 key<br>1 switch element<br>1 safety evaluation unit                                 | 1 safety switch<br>1 actuator<br>1 safety evaluation unit                                                      | 1 safety switch<br>1 actuator<br>1 safety evaluation unit exclusion of errors                           |
| For category 4/PL e according to EN ISO 13849-1                        | 2 holding-shut devices<br>2 key<br>1 switch element<br>1 safety evaluation unit                                | 1 safety switch<br>1 actuator<br>1 safety evaluation unit                                                      | 2 safety switch<br>2 actuator<br>1 safety evaluation unit                                               |
| What is needed, for example, when there is a danger of locking in?     |                                                                                                                |                                                                                                                |                                                                                                         |
| Accidental restart prevention                                          | Personal safety key to take along into the danger area                                                         | Personal safety key to take along into the danger area                                                         | Personal safety key to take along into the danger area                                                  |
| Leaving the danger area must be possible at all times                  |                                                                                                                | Escape unlocking for safety switch with holding-shut device                                                    | Escape unlocking for safety switch with holding-shut device                                             |

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## Brühl Accessories

Accessories are not just accessories to us. Comprehensive protection for man and machine includes our safety fence systems and doors as well as their individual equipment. Without them, there cannot be any safety. The matching accessories are the cherry on the cake without which our systems would not work. Have you ever opened a door without a grip or handle set? We offer a comprehensive range of expansions around the subject of machine and system safety - of course optimally coordinated and from a single source, with the predicate "Made in Germany".



# Accessories

## For functional safety

This figure will provide an initial insight into our diverse accessories precisely coordinated for any application. A protective facility by Brühl always provides a well-matched safety package.



# Overview: Brühl Accessories

### Robust surface

Our accessory is electro-galvanized according to DIN 50979 or sand-blasted together with the protective facility and then powder-coated.

### Precisely fitting threads for attachment

All safety fence systems are optimally prepared for the desired accessories and guarantee for quick assembly without losing any time on the construction site.

### Simple installation

The accessories are delivered individually in assembly packs with a detailed assembly manual; the parts do not need to be sorted and assembly is possible quickly.

| Combination overview Accessories          |              |                  |                       |                              |                           |                           |               |        |
|-------------------------------------------|--------------|------------------|-----------------------|------------------------------|---------------------------|---------------------------|---------------|--------|
| Post                                      |              |                  |                       |                              | Floor attachment material |                           |               |        |
| Post height                               | Post profile |                  | Ground plate          |                              |                           |                           |               |        |
| 1400–2400 mm                              | QR50         |                  | 60 × 130 mm           |                              | M10                       | 120/130 mm                | 2             |        |
|                                           |              |                  | 130 × 130 mm          |                              |                           |                           | 4             |        |
| 2600–3035 mm                              | QR60         |                  | 70 × 150 mm           |                              | M10                       | 120/130 mm                | 2             |        |
|                                           |              |                  | 150 × 150 mm          |                              |                           |                           | 4             |        |
| 3235–4835 mm                              | QR80         |                  | 100 × 200 mm          |                              | M12                       | 145/160 mm                | 2             |        |
|                                           |              |                  | 200 × 200 mm          |                              |                           |                           | 4             |        |
|                                           | Options      | Door accessories |                       |                              |                           | Floor attachment material |               |        |
|                                           | Adjustment   | Lock set         | Size Profile cylinder | Item number Profile cylinder | Caster/ Block roller      | Thread size               | Thread length | Number |
| Wing doors                                |              |                  |                       |                              |                           |                           |               |        |
| FTW                                       | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| FT                                        | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| FTWO                                      | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| PFTW                                      | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| FTEO                                      | ●            | SG-FEO           | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| DFT                                       | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| DFTO                                      | ●            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | BR                        | M10                       | 120/130 mm    | 8      |
| Swing doors, door wings                   |              |                  |                       |                              |                           |                           |               |        |
| PT                                        | ×            | ×                | ×                     | ×                            | ×                         | M10                       | 120/130 mm    | 8      |
| HPT                                       | ×            | ×                | ×                     | ×                            | ×                         | M10                       | 120/130 mm    | 8      |
| TF                                        | ×            | SG-F             | 30/10                 | PZ-V4/PZ-V5                  | ×                         | ×                         | ×             | ×      |
| Sliding doors                             |              |                  |                       |                              |                           |                           |               |        |
| ST                                        | ●            | SG-S             | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M10                       | 120/130 mm    | 8/12 ❶ |
| STI                                       | ●            | SG-S             | 30/65                 | PZ-V6/PZ-V7                  | ●                         | M10                       | 120/130 mm    | 8/12 ❶ |
| STO                                       | ●            | SG-S             | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M10                       | 120/130 mm    | 8/12 ❶ |
| DST                                       | ●            | SG-S2            | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M10                       | 120/130 mm    | 8/16 ❶ |
| STB                                       | ●            | SG-S2            | 30/10 & 30/65         | PZ-V4/PZ-V5 & PZ-V6/PZ-V7    | ●                         | M12                       | 145/160 mm    | 10     |
| DSTO                                      | ●            | SG-S2            | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M10                       | 120/130 mm    | 8/16 ❶ |
| Folding wing doors, folding sliding doors |              |                  |                       |                              |                           |                           |               |        |
| FAFT                                      | ×            | ×                | ×                     | ×                            | LR                        | M12                       | 145/160 mm    | 8      |
| DFAFT                                     | ×            | ×                | ×                     | ×                            | LR                        | M12                       | 145/160 mm    | 8      |
| FAST                                      | ×            | ×                | ×                     | ×                            | ●                         | M10                       | 120/130 mm    | 8      |
| DFAST                                     | ×            | ×                | ×                     | ×                            | ●                         | M10                       | 120/130 mm    | 8      |
| Telescoping sliding doors                 |              |                  |                       |                              |                           |                           |               |        |
| STT                                       | ×            | SG-S2            | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M12                       | 145/160 mm    | 12     |
| STBT                                      | ×            | SG-S2            | 30/10 & 30/65         | PZ-V4/PZ-V5 & PZ-V6/PZ-V7    | ●                         | M12                       | 145/160 mm    | 8      |
| DSTT                                      | ×            | SG-S2            | 30/10                 | PZ-V4/PZ-V5                  | ●                         | M12                       | 145/160 mm    | 16     |
| Self-supported sliding doors              |              |                  |                       |                              |                           |                           |               |        |
| FSTS                                      | ×            | ×                | 31/31                 | PZ-V1/PZ-V2                  | BR                        | M10                       | 120/130 mm    | 10     |
| FSTG                                      | ×            | ×                | ×                     | ×                            | BR                        | M10                       | 120/130 mm    | 10     |
| FSTST                                     | ×            | ×                | 31/31                 | PZ-V1/PZ-V2                  | BR                        | M10                       | 120/130 mm    | 10     |
| FSTGT                                     | ×            | ×                | ×                     | ×                            | BR                        | M10                       | 120/130 mm    | 10     |
| FSTS-2                                    | ×            | ×                | 31/31                 | PZ-V1/PZ-V2                  | BR                        | M10                       | 120/130 mm    | 10     |
| FSTG-2                                    | ×            | ×                | ×                     | ×                            | BR                        | M10                       | 120/130 mm    | 10     |
| Lifting fields, folding fields            |              |                  |                       |                              |                           |                           |               |        |
| HF                                        | ×            | ×                | ×                     | ×                            | ×                         | M12                       | 145/160 mm    | 8      |
| HFE                                       | ×            | ×                | ×                     | ×                            | ×                         | M16                       | 130/190 mm    | 4      |
| KF-U                                      | ×            | ×                | ×                     | ×                            | ×                         | M10                       | 120/130 mm    | 8      |
| KF-O                                      | ×            | ×                | ×                     | ×                            | ×                         | M10                       | 120/130 mm    | 8      |

❶ A larger number of floor attachment materials is required as of a defined width. ❷ See sliding doors as of p. 82.  
● Combination is possible. x Combination is not possible. ○ Combination is optional.



Accessories for safety fence systems

Safety fence system FLEX II

**FLEX II-tab with captive hexagon screw**  
Plastic brackets with angle profile and fasteners.



**FLEX II-tab with captive Torx screw**  
Plastic brackets with angle profile and fasteners.



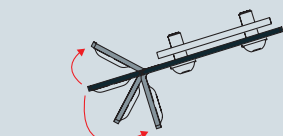
**FLEX II-tab with captive hexagon screw and spacer plate**  
Plastic brackets with angle profile and fasteners.



**Flex angle with attachment**  
Angle bracket with fasteners



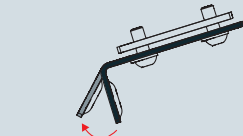
**FLEX I-tab with captive hexagon screw**  
Bracket with fasteners



❶ Angle position can be adjusted by bending inwards: up to 90 degrees; outwards: up to 45 degrees



**FLEX I-tab with captive hexagon screw and canting for corner connection**  
Bracket with fasteners



❶ Angle position can be adjusted by bending outwards: up to 45 degrees



**Connection element**  
of FLEX II-grid elements with polycarbonate disc as protection against reaching through  
❷ see p. 37  
❶ Ensure that there is no polycarbonate coverage between the grid element and post.  
❶ Attachments are not captive.



**Spacer disc**  
with hexagon screw and washer for assembly of grid elements at bottlenecks at the posts or for frontal assembly of grid elements at machinery/ systems without further lateral attachment.



Accessories for safety fence systems

| Product description                                                             | VPE (pcs.) | Item no.   |
|---------------------------------------------------------------------------------|------------|------------|
| FLEX II-tab with captive hexagon screw                                          | 6          | FL2-V1-6   |
|                                                                                 | 8          | FL2-V1-8   |
|                                                                                 | 10         | FL2-V1-10  |
|                                                                                 | 50         | FL2-V1-50  |
| FLEX II-Bracket with captive Torx screw and fasteners                           | 10         | FL2-V2-10  |
| FLEX II-tab with captive hexagon screw and spacer plate                         | 5          | FL2DP-V1-5 |
| Flex angle with attachment                                                      | 5          | FL1W-V1-5  |
| FLEX I-tab with captive hexagon screw                                           | 8          | FL1-V2-8   |
| FLEX I-tab with captive hexagon screw and canting for corner connection         | 5          | FL1-V3-5   |
|                                                                                 | 6          | SF2-PCV-6  |
|                                                                                 | 8          | SF2-PCV-8  |
| Connection element for FLEX II-grid element with polycarbonate                  | 10         | SF2-PCV-10 |
|                                                                                 | 5          | FL2DP-V2-5 |
| Compriband 20 mm for sealing WAND II-elements                                   | 6,5 m      | CPB        |
| Edge enclosure for on-site cut-outs at sheet metal elements – clamp area 1-2 mm | (m)        | KTS-V1     |
| Edge enclosure for on-site cut-outs at fence elements – clamp area 1-4 mm       | (m)        | KTS-V2     |

Safety fence system WAND II

**Compriband**  
for sealing between WAND II-elements and floor  
❶ Other versions available on request



Safety fence system ZAUN II

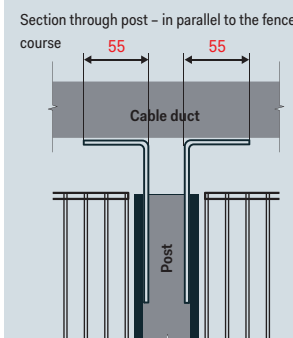
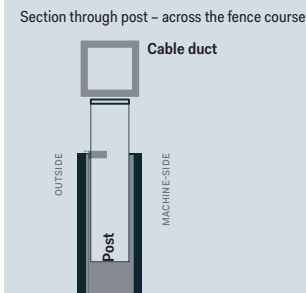
**Wheel mounts**  
for on site section as edge protection



Cable duct holder

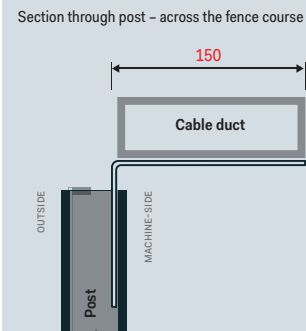
Version 1

Holders for screwing of small ducts on posts, fastening angles and fasteners

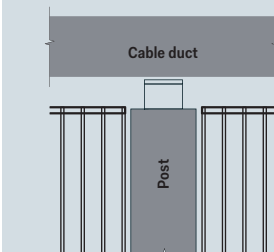


Version 2

Holders for screwing of bigger ducts on posts, fastening angles and fasteners

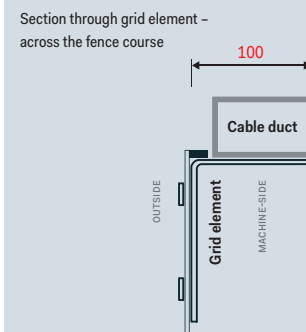


View - parallel to the fence course



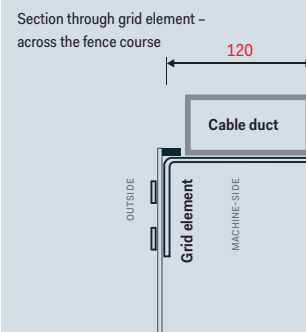
Version 4

Holder for screwing on smaller cable ducts on FLEX II mesh elements, fastening angle and fasteners.



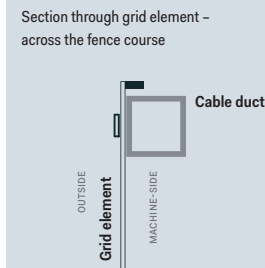
Version 5

Holder for screwing on larger cable ducts on FLEX II mesh elements, fastening angle and fasteners.



Version 3

Holders for screwing of ducts on FLEX II mesh elements, clamping plates and fasteners.



KKH-V3



Safety fence system FLEX II with cable duct – attached with KKH-V3



Safety fence system FLEX II with cable duct

Cable duct holder

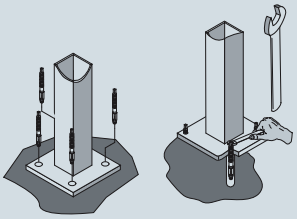
| Product description         | VPE (pcs.) | Item no.  |
|-----------------------------|------------|-----------|
| Cable duct holder version 1 | 10         | KKH-V1-10 |
| Cable duct holder version 2 | 10         | KKH-V2-10 |
| Cable duct holder version 3 | 10         | KKH-V3-10 |
| Cable duct holder version 4 | 10         | KKH-V4-10 |
| Cable duct holder version 5 | 10         | KKH-V5-10 |



Accessories for post

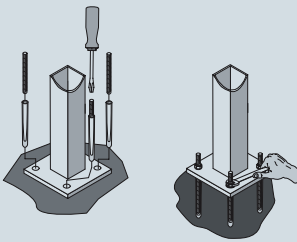
Floor attachment media

Fixed anchor





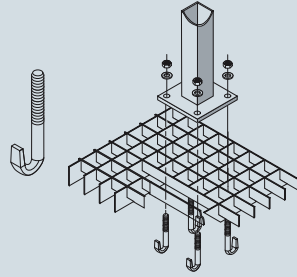
Compound anchor





Hook screw

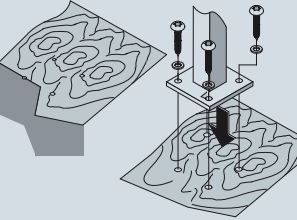
Hook screw for attachment to grids and special attachment points





Wafer-head screw

Wood construction screw with wafer-head for attachment to wood floors





| Floor attachment media                |        |             |            |                 |
|---------------------------------------|--------|-------------|------------|-----------------|
| Product description                   | Thread | Length (mm) | VPE (pcs.) | Item no.        |
| Fixed anchor                          | M10    | 120         | 10         | BMF-10 x 120-10 |
|                                       | M12    | 145         | 10         | BMF-12 x 145-10 |
|                                       | M16    | 130         | 10         | BMF-16 x 130-10 |
| Shear connectors of zinc-plated steel | M10    | 130         | 10         | BMV-10 x 130-10 |
|                                       | M12    | 160         | 10         | BMV-12 x 160-10 |
|                                       | M16    | 190         | 10         | BMV-16 x 190-10 |
| Clip bolt                             | M10    | 90          | 10         | BMH-10 x 90-10  |
| Disk head screw                       | M8     | 50          | 10         | BMT-8 x 50      |



Floor attachment



Hook screw



Post support for special application of individual fields

Other post accessories

Threaded plates

Hot-dip galvanizing at high-temperature according to DIN EN ISO 1461 with screws electro-galvanized.

Application 1: Threaded plate for post attachment by clamping to grids



Application 2: Threaded plate for post attachment by welding to steel bases



Equipotential bonding cross-section 6 mm²

Equipotential bonding to avoid electrostatic charging of the protective facilities

PA-V1



PA-V2



Post base plate

As push-off plate for adjustment posts or to compensate for slight irregularities

ULP-V1



ULP-V2



Post support

for increasing the standard safety of posts, for e.g. in case of single springs or single doors. Hot-dip galvanizing at high temperature according to DIN EN ISO 1461 with screws electro-galvanized. (not required at standard doors)

PS-V1



❗ Only with floor fastening compound anchor in stainless steel.

❗ Please order equipotential bonding twice per grid element and indicate whether preparation at the post and grid elements is to take place and whether it is performed on site.

| Other post accessories                     |                   |            |             |
|--------------------------------------------|-------------------|------------|-------------|
| Product description                        | Ground plate size | VPE (pcs.) | Item no.    |
| Threaded plates                            | 60 × 130 mm       | 1          | GP-V1-0613  |
|                                            | 130 × 130 mm      | 1          | GP-V1-1313  |
|                                            | 70 × 150 mm       | 1          | GP-V1-0715  |
|                                            | 150 × 150 mm      | 1          | GP-V1-1515  |
|                                            | 100 × 200 mm      | 1          | GP-V1-1020  |
|                                            | 200 × 200 mm      | 1          | GP-V1-2020  |
| Washer ULP-V1                              | 130 × 130 mm      | 1          | ULP-V1-1313 |
|                                            | 150 × 150 mm      | 1          | ULP-V1-1515 |
|                                            | 200 × 200 mm      | 1          | ULP-V1-2020 |
| Washer ULP-V2                              | 130 × 130 mm      | 1          | ULP-V2-1313 |
|                                            | 150 × 150 mm      | 1          | ULP-V2-1515 |
|                                            | 200 × 200 mm      | 1          | ULP-V2-2020 |
| Product description                        | VPE (pcs.)        |            | Item no.    |
| Post support                               | 2                 |            | PS-V1-2     |
| Equipotential bonding cross-section 6 mm²  | 10                |            | PA-V1-10    |
| Equipotential bonding cross-section 16 mm² | 10                |            | PA-V2-10    |



Equipotential bonding



Accessories for doors

Lock sets

Lock set for wing doors

for attaching on the door wing

➊ Prepared for Euro profile cylinder, dia 17mm-profile cylinder not included in delivery scope.

SG-F



Lock set for inwards-opening wing doors

for attaching on the door wing

➊ Prepared for Euro profile cylinder, dia 17mm-profile cylinder not included in delivery scope.

SG-FEO



Lock set for single-wing sliding doors

for attaching on the door wing

➊ Prepared for Euro profile cylinder, dia 17mm-profile cylinder not included in delivery scope.

SG-S



Lock set for multiple-wing sliding doors

for attaching on the door wing

➊ Prepared for Euro profile cylinder, dia 17mm-profile cylinder not included in delivery scope.

SG-S2



Door sets

Door set with handle on the inside➊ and knob on the outside➋

Door set for wing doors with fixed knob on the outside and handle on the inside, opening from the outside only possible with key

➊ Can only be combined with closed fillings sheet metal/polycarbonate.

➋ Profile cylinder not included in the delivery.

TG-V1





Application with lock set SG-F

Door set with handle inside➊ and outside ➋

Door set for wing and sliding doors with handle inside and outside

➊ Profile cylinder not included in the delivery.

TG-V2





Application with lock set SG-F

Door set with handle inside, knob outside and protection against reaching through➊

Door set for wing doors with fixed knob on the outside, a handle on the inside and a protection against reaching through, opening from the outside only possible with key

➊ Profile cylinders not enclosed.

TG-V5





Application with lock set SG-F

Profile cylinder

Profile cylinders simultaneous-locking

Euro-profile cylinders simultaneous-locking, Ø 17 mm, length: 31/31 mm with emergency feature

➊ Profile cylinders simultaneous-locking, cannot be guaranteed at subsequent order.

PZ-V1



Profile cylinders not simultaneous-locking

Euro-profile cylinders not simultaneous-locking, Ø 17 mm, length: 31/31 mm with emergency feature

PZ-V2



Profile cylinders simultaneous-locking

Euro profile cylinders simultaneous-locking, Ø 17 mm, length: 30/10 mm

➊ Profile cylinders simultaneous-locking, cannot be guaranteed at subsequent order.

PZ-V4



Profile cylinders not simultaneous-locking

Euro-profile cylinders not simultaneous-locking, Ø 17 mm, length: 31/31 mm

PZ-V5



Profile cylinders simultaneous-locking

Simultaneous locking Euro profile cylinder, with emergency feature, dia 17 mm, length: 30/65 mm

➊ Profile cylinders simultaneous-locking, cannot be guaranteed at subsequent order.

PZ-V6



Profile cylinders not simultaneous-locking

multaneous locking Euro profile cylinder, with emergency feature, dia 17 mm, length: 30/65 mm

PZ-V7



Grips/latch

Handle for wing door

Plastic handle with mounting plate for attachment to wing doors

TZ-GR-F-V1



Handle for sliding door

Plastic handle with mounting plate for attachment to sliding doors

TZ-GR-S-V3



Latch for wing doors without safety switch holder

Safe latching without query

TZ-RI-F-V1



Protection against falling shut for wing doors

Provision against unintentional shutting of doors.

TZ-ZS-F-V1



Handle with bullet crossbow for wing door

Plastic handle with mounting plate and bullet crossbow for attachment to wing doors

TZ-GRK-F-V1



Handle with bullet crossbow for sliding door

Plastic handle with mounting plate and bullet crossbow for attachment to sliding doors

TZ-GRK-S-V1



Supporting rollers

Fixed caster

STR-F-V1-BR



Caster

STR-F-V1-LR



Other accessories

Protection against reaching through

for safety switch with flight unlatching

DGS-V1



Holding plate with ball catch

for attachment to sliding doors

TZ-HPK-S-V1



Holding plate attachment angle for attachment system HP

HP-BW





Application

| Accessories for doors                                                             |            |             |
|-----------------------------------------------------------------------------------|------------|-------------|
| Product description                                                               | VPE (pcs.) | Item no.    |
| Lock set for wing doors                                                           | 1          | SG-F        |
| Lock set for inwards-opening wing doors                                           | 1          | SG-FEO      |
| Lock set for single-wing sliding doors                                            | 1          | SG-S        |
| Lock set for multiple-wing sliding doors                                          | 1          | SG-S2       |
| Door set with handle inside and knob outside                                      | 1          | TG-V1       |
| Door set with handle inside and outside                                           | 1          | TG-V2       |
| Door set with handle inside, knob outside and protection against reaching through | 1          | TG-V5       |
| Profile cylinders 31/31 simultaneous-locking                                      | 1          | PZ-V1       |
| Profile cylinders 31/31 not simultaneous-locking                                  | 1          | PZ-V2       |
| Profile cylinders 30/10 simultaneous-locking                                      | 1          | PZ-V4       |
| Profile cylinders 30/10 not simultaneous-locking                                  | 1          | PZ-V5       |
| Profile cylinders 30/65 simultaneous-locking                                      | 1          | PZ-V6       |
| Profile cylinders 30/65 not simultaneous-locking                                  | 1          | PZ-V7       |
| Handle for wing door                                                              | 1          | TZ-GR-F-V1  |
| Handle for sliding door                                                           | 1          | TZ-GR-S-V3  |
| Handle for sliding doors with inner door wings                                    | 1          | TZ-GR-S-V1  |
| Latch for wing doors without safety switch holder                                 | 1          | TZ-RI-F-V1  |
| Protection against falling shut for wing doors                                    | 1          | TZ-ZS-F-V1  |
| Handle with bullet crossbow for wing door                                         | 1          | TZ-GRK-F-V1 |
| Handle with bullet crossbow for sliding door                                      | 1          | TZ-GRK-S-V1 |
| Fixed caster                                                                      | 1          | STR-F-V1-BR |
| Caster                                                                            | 1          | STR-F-V1-LR |
| Protection against reaching through for safety switch with flight unlatching      | 1          | DGS-V1      |
| Retaining plate attachment angle for attachment system HP                         | 1          | HP-BW       |
| Holding plate with ball catch for sliding doors                                   | 1          | TZ-HPK-S-V1 |

- ➊ Handle optionally available in red.
- ➋ In sliding doors, the handle is turned by 90 degrees upwards.
- ➌ Wing doors with an SG-F or an SG-FEO can only be opened from the outside through a key movement via a profile cylinder.
- ➍ Sliding doors with an SG-S or an SG-S2 can be opened from the inside and outside with a key movement via a profile cylinder.
- ➎ Door and accessory combination, see page 165



# Securing conveyor technology inlets and outlets

### Standing prevention

**Standing prevention grid mat**  
to secure conveyor technology inlets and outlets



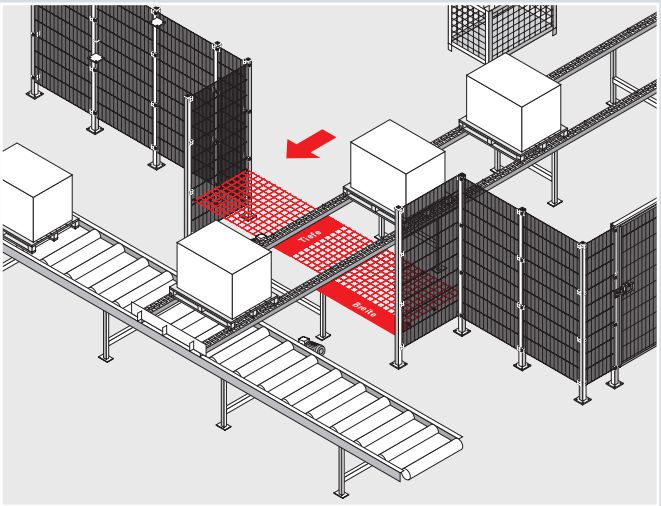
**Angle for standing prevention grid mats**  
Incl. attachments and clamping plate



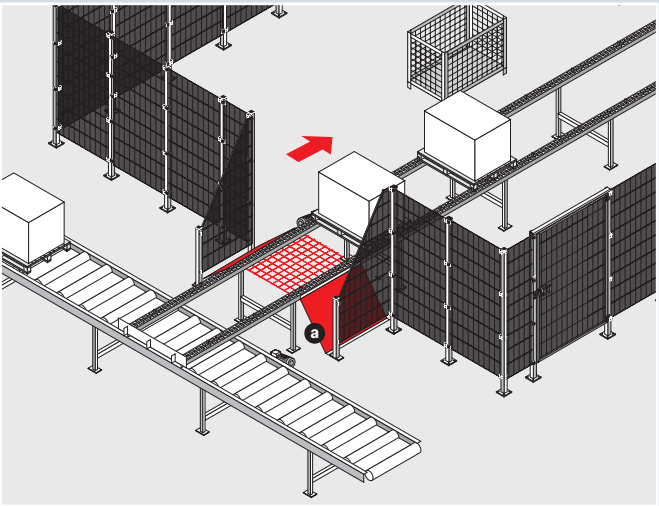
| Standing prevention grid mat            |            |            |            |                |
|-----------------------------------------|------------|------------|------------|----------------|
| Product description                     | Depth (mm) | Width (mm) | VPE (pcs.) | Item no.       |
| Standing prevention grid mat            | 1200       | 900        | 1          | SVGM-1200x900  |
|                                         | 1200       | 1200       | 1          | SVGM-1200x1200 |
| Angle for standing prevention grid mats | —          | —          | 6          | BMSV-6         |

➡ For diagonal fence fields, see p. 36. ⓘ Standing prevention sheets ⓘ available in request.

**Application conveyor technology outlets**



**Application conveyor technology inlets with diagonal fence course**





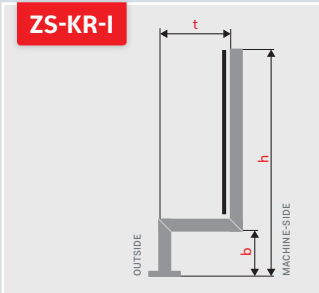
Standing prevention grid mats on a conveyor technology outlet in the application

# Special solutions available on request

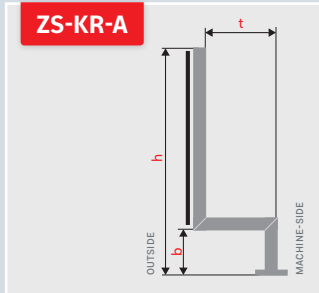
### Post versions

**Post with offset**  
ⓘ Please enclose sketch with dimensions at request!  
ⓘ Lateral offset possible as well.

inwards



outwards

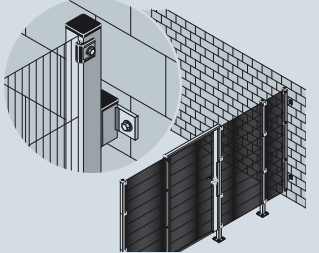




Offset outwards

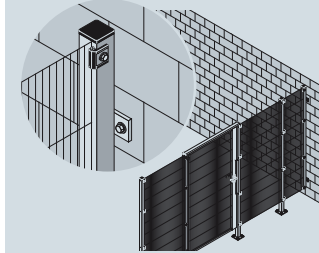
### Wall attachment insulations – exemplary illustrations

**Special post for machine and wall connection with distance**



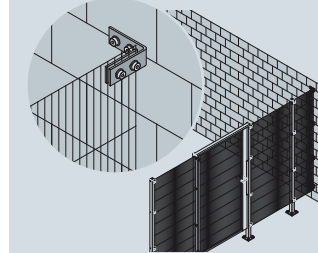
MA

**Special post for machine and wall connection without distance**



MA

**Angle for wall connection**



FL1W

### Light barrier post

**stable post with ground plate for attachment of light barriers**  
Welded-on C-profile for height compensation.  
Height 2600 mm is executed with post profile QR80, all other heights with post profile of QR60.

ⓘ Further executions, e.g. with adjustment, available on request.



LSP

### Mounting plates

**Attachment plate for attachment housing on grid element**  
including assembly material and optionally with drilling screw for attachment to parts.

AG-V1: 80 × 155 mm (e.g. for 2–3 buttons)  
AG-V2: 80 × 225 mm (e.g. for 4 buttons)



AG-V1/V2

**Attachment plate for attachment housing on post**  
including mounting material.

AG-V3: 80 × 160 mm (e.g. for 2–3 buttons)  
AG-V4: 80 × 225 mm (e.g. for 4 buttons)



AG-V3/V4



Mounting plate AG-V1 in the application



Mounting plate AG-V4 in the application



Marking danger areas

Shield attachment set version 1

Sign attachment set for 2 stickers

DIN ISO 3864

300/460

150/240

Please order stickers for prohibition or warning notes separately. See p. 175.

| Product description                                                                                                     | Item no. |
|-------------------------------------------------------------------------------------------------------------------------|----------|
| Attachment set for 2 prohibition and 7 or warning signs with Ø 100 mm for assembly on the protective facility; RAL 7035 | SD2-100  |
| Attachment set for 2 prohibition and 7 or warning signs with Ø 200 mm for assembly on the protective facility; RAL 7035 | SD2-200  |

Shield attachment set version 2

Sign attachment set for 3 stickers

DIN ISO 3864

365/690

150/240

Please order stickers for prohibition or warning notes separately. See p. 175.

| Product description                                                                                                     | Item no. |
|-------------------------------------------------------------------------------------------------------------------------|----------|
| Attachment set for 3 prohibition and 7 or warning signs with Ø 100 mm for assembly on the protective facility; RAL 7035 | SD3-100  |
| Attachment set for 3 prohibition and 7 or warning signs with Ø 200 mm for assembly on the protective facility; RAL 7035 | SD3-200  |

| Signage                                 |         |              |                         |      |
|-----------------------------------------|---------|--------------|-------------------------|------|
| Sticker designation                     | Product | Warning note | Sticker diameter/height |      |
| Use hearing protection                  | BSG     | M003         | -100                    | -200 |
| Use eye protection                      | BSG     | M004         | -100                    | -200 |
| Use foot protection                     | BSG     | M008         | -100                    | -200 |
| Use safety helmet                       | BSG     | M014         | -100                    | -200 |
| Use catching harness                    | BSG     | M018         | -100                    | -200 |
| Power down before maintenance or repair | BSG     | M021         | -100                    | -200 |
| No access for pedestrians               | BSG     | P004         | -100                    | -200 |
| No access for unauthorised persons      | BSG     | P006         | -100                    | -200 |
| Do not touch                            | BSG     | P010         | -100                    | -200 |
| Do not reach in                         | BSG     | P015         | -100                    | -200 |
| No climbing for unauthorised persons    | BSG     | P022         | -100                    | -200 |
| Warning of a danger point               | BSG     | W001         | -100                    | -200 |
| Warning of non-ionising radiation       | BSG     | W005         | -100                    | -200 |
| Warning of magnetic field               | BSG     | W006         | -100                    | -200 |
| Warning of obstacles on the floor       | BSG     | W007         | -100                    | -200 |
| Warning of danger of falling            | BSG     | W008         | -100                    | -200 |
| Warning of low temperature/frost        | BSG     | W010         | -100                    | -200 |
| Warning of dangerous electrical voltage | BSG     | W012         | -100                    | -200 |
| Warning of industrial trucks            | BSG     | W014         | -100                    | -200 |
| Warning of suspended load               | BSG     | W015         | -100                    | -200 |
| Warning of hot surface                  | BSG     | W017         | -100                    | -200 |
| Warning of automatic start-up           | BSG     | W018         | -100                    | -200 |
| Warning of danger of crushing           | BSG     | W019         | -100                    | -200 |
| Warning of hand injury                  | BSG     | W024         | -100                    | -200 |
| Warning of opposite rollers             | BSG     | W025         | -100                    | -200 |
| Warning of optical radiation            | BSG     | W027         | -100                    | -200 |

Example for item number key

Product warning note sticker diameter    **BSG-W012-200**

Stickers are enclosed with the sign attachment sets.

Sticker for sign attachment sets according to DIN EN ISO 7010

|                                                 |                                          |                                                 |                                      |                                           |
|-------------------------------------------------|------------------------------------------|-------------------------------------------------|--------------------------------------|-------------------------------------------|
|                                                 |                                          |                                                 |                                      |                                           |
| M003<br>Use hearing protection                  | M004<br>Use eye protection               | M008<br>Use foot protection                     | M014<br>Use safety helmet            | M018<br>Use catching harness              |
|                                                 |                                          |                                                 |                                      |                                           |
| M021<br>Power down before maintenance or repair | P004<br>No access for pedestrians        | P006<br>No access for unauthorised persons      | P010<br>Do not touch                 | P015<br>Do not reach in                   |
|                                                 |                                          |                                                 |                                      |                                           |
| P022<br>No climbing for unauthorised persons    | W001<br>Warning of a danger point        | W005<br>Warning of non-ionising radiation       | W006<br>Warning of magnetic field    | W007<br>Warning of obstacles on the floor |
|                                                 |                                          |                                                 |                                      |                                           |
| W008<br>Warning of danger of falling            | W010<br>Warning of low temperature/frost | W012<br>Warning of dangerous electrical voltage | W014<br>Warning of industrial trucks | W015<br>Warning of suspended load         |
|                                                 |                                          |                                                 |                                      |                                           |
| W017<br>Warning of hot surface                  | W018<br>Warning of automatic start-up    | W019<br>Warning of danger of crushing           | W024<br>Warning of hand injury       | W025<br>Warning of opposite rollers       |
|                                                 |                                          |                                                 |                                      |                                           |
| W027<br>Warning of optical radiation            |                                          |                                                 |                                      |                                           |





## Annex

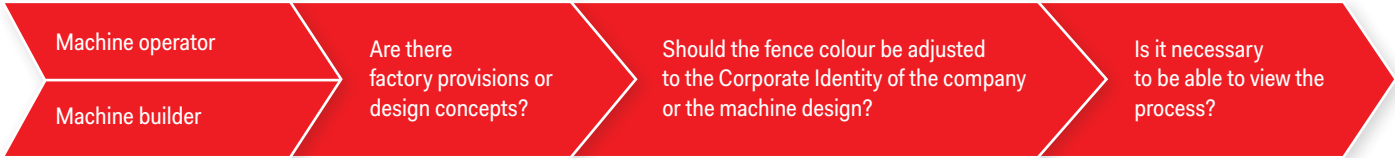
Safety needs clear facts. Our annex summarises all the important subjects and terms around our safety fence systems for machine and system safety in an easily understandable manner. You can find many technical planning aids, colour recommendations, definitions of terms and a detailed item index there.



# The right colour for your safety fence

## Guideline for colour selection pursuant to EN ISO 14120:2013

Observe the following items:



1. Natural respect of black and yellow

This is often due to users believing that a standard requires that safety fences be painted in black and yellow. After all, many warning notes are also black and yellow, and the mandatory marking of hazard points uses these colours as well. This is also sensible in the hazard area, since –as the example of the wasp shows –perceiving this colour combination as a warning and being accordingly attentive appears to be inborn (☞ cf. EN ISO 14120:2013; 5.22 colour).

2. Standard requirements

There is no general standard that defines the colours for a separating protective facility. Only the danger points need to be marked in black and yellow. It must be noted that the safety device as such is not a danger point. Therefore, it also does not need to be painted in warning colours. A safety device must be designed so that it will not have any detrimental physiological and psychological effects (☞ see EN ISO 14120:2013; 5.23 Appearance). In practice, production processes are made restless by a yellow-black contrast. Also: Specifically in order to identify “real” danger points as such, it may be sensible to choose a different colour for any other areas of the protective device that are not subject to any risk.

3. Process view

In many applications, it is recommended to use a restrained, darker colour for the grid as such - in particular where the process is to be seen, since these colours permit a better view through the grid. We generally use colours with a low glossiness that are more pleasant for the eye and that reduce reflections between the wires to a minimum (☞ cf. EN ISO 14120:2013; 5.9 Observation of the machine operation and 5.10 Transparency).



Natural respect of black and yellow



Less than optimal process view



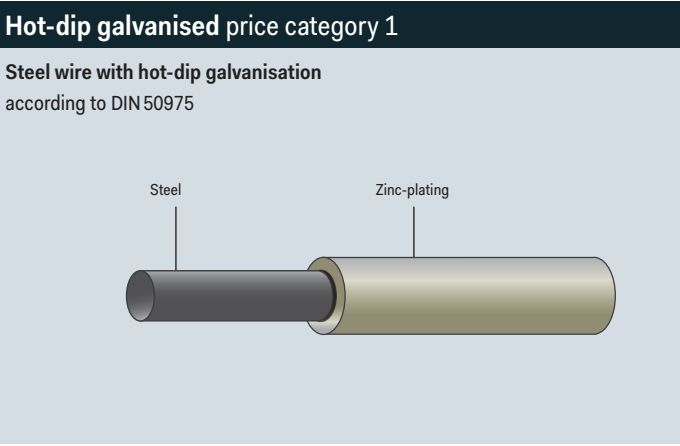
Good process view, optimally adjusted to the machine design

# Hot-dip galvanised surfaces

Hot-dip galvanisation protects steel from corrosion cost-efficiently and extends its service life by a multiple. Therefore, hot-dip galvanised surfaces are used outdoors and in transfer areas.



Hot-dip galvanised surface



Safety device FLEX II in zinc-plated design in the application of a packaging station



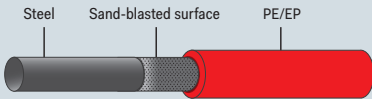
# Colour diversity and surfaces

In order to achieve best colour adjustments or, where necessary, colour differentiation at the machines and systems of our customers, we offer a great selection of standard colours.

Overview of paint structure

Default:  
Steel wire and powder-coating

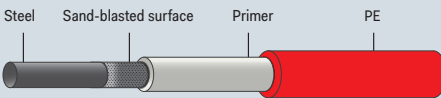
Colour specifications: powder-coated PE/EP: DIN EN ISO 12944-C2M



Indoor application: DIN EN ISO 12944 – blasting SA 2 1/2 and powder PE/EP correspond to corrosion protection classC2M.

Increased corrosion protection:  
Steel wire, primer and powder-coating

Colour specifications: powder-coated PE/EP: DIN EN ISO 12944-C4M



Special application: DIN EN ISO 12944 – blasting SA 2 1/2 and corrosion protection powderEPOXY and final coating with polyester powder PE correspond to corrosion protection classC4M.

RAL-shades Price category 2



C Many RAL-shades can be chosen freely.

C The elements are sand-blasted and then powder-coated – the guarantee for maximum durability and impact resilience. C Structure and other effect coatings are available on request.  
C Our surfaces are based on PE/EP-mixed powder with a degree of gloss of 60 GE (gloss units) according to DIN 67530 for indoor applications. C Special paint structures and special primers available on request.

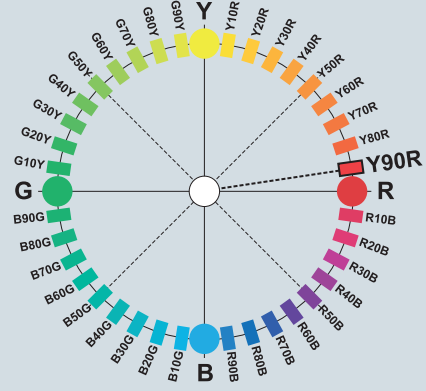


One-coloured posts and grid elements

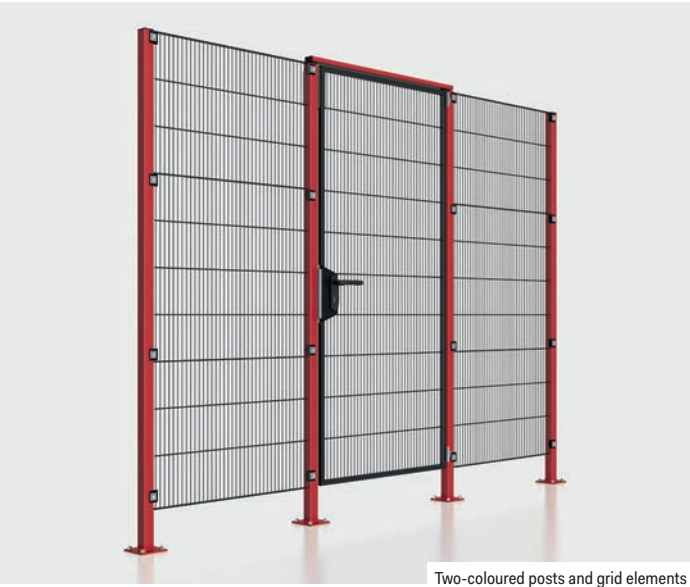
Standard colours Price category 1

| Shade | RAL      | Designation         |
|-------|----------|---------------------|
|       | RAL 1021 | Rapeseed yellow     |
|       | RAL 1018 | Zinc yellow         |
|       | RAL 3020 | Traffic red         |
|       | RAL 5005 | Signal blue         |
|       | RAL 5017 | Traffic blue        |
|       | RAL 7016 | Anthracite grey     |
|       | RAL 7035 | Light grey          |
|       | RAL 7037 | Dusty grey          |
|       | RAL 9005 | Deep black          |
|       |          | Hot-dip galvanized* |

NCS-shades Price category 3



C NCS-shades available on request. A Please name the colour code in the order.



Two-coloured posts and grid elements

RAL-colours in the overview Price category 2

|          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|
| RAL 1000 | RAL 2000 | RAL 3027 | RAL 5014 | RAL 6017 | RAL 7012 | RAL 8004 |
| RAL 1001 | RAL 2001 | RAL 3031 | RAL 5015 | RAL 6018 | RAL 7013 | RAL 8007 |
| RAL 1002 | RAL 2002 | RAL 3032 | RAL 5018 | RAL 6019 | RAL 7015 | RAL 8008 |
| RAL 1003 | RAL 2003 | RAL 3033 | RAL 5019 | RAL 6020 | RAL 7016 | RAL 8011 |
| RAL 1004 | RAL 2008 | RAL 4001 | RAL 5020 | RAL 6021 | RAL 7021 | RAL 8012 |
| RAL 1005 | RAL 2009 | RAL 4002 | RAL 5021 | RAL 6022 | RAL 7022 | RAL 8014 |
| RAL 1006 | RAL 2010 | RAL 4003 | RAL 5022 | RAL 6024 | RAL 7023 | RAL 8015 |
| RAL 1007 | RAL 2011 | RAL 4004 | RAL 5023 | RAL 6025 | RAL 7024 | RAL 8016 |
| RAL 1011 | RAL 2012 | RAL 4005 | RAL 5024 | RAL 6026 | RAL 7026 | RAL 8017 |
| RAL 1012 | RAL 2013 | RAL 4006 | RAL 5025 | RAL 6027 | RAL 7030 | RAL 8019 |
| RAL 1013 | RAL 3000 | RAL 4007 | RAL 5026 | RAL 6028 | RAL 7031 | RAL 8022 |
| RAL 1014 | RAL 3001 | RAL 4008 | RAL 6000 | RAL 6029 | RAL 7032 | RAL 8023 |
| RAL 1015 | RAL 3002 | RAL 4009 | RAL 6001 | RAL 6032 | RAL 7033 | RAL 8024 |
| RAL 1016 | RAL 3003 | RAL 4010 | RAL 6002 | RAL 6033 | RAL 7034 | RAL 8025 |
| RAL 1017 | RAL 3004 | RAL 4011 | RAL 6003 | RAL 6034 | RAL 7036 | RAL 8028 |
| RAL 1018 | RAL 3005 | RAL 4012 | RAL 6004 | RAL 6035 | RAL 7037 | RAL 8029 |
| RAL 1019 | RAL 3007 | RAL 5000 | RAL 6005 | RAL 6036 | RAL 7039 | RAL 9001 |
| RAL 1020 | RAL 3009 | RAL 5001 | RAL 6006 | RAL 7000 | RAL 7040 | RAL 9002 |
| RAL 1023 | RAL 3011 | RAL 5002 | RAL 6007 | RAL 7001 | RAL 7042 | RAL 9003 |
| RAL 1024 | RAL 3012 | RAL 5003 | RAL 6008 | RAL 7002 | RAL 7043 | RAL 9004 |
| RAL 1027 | RAL 3013 | RAL 5004 | RAL 6009 | RAL 7003 | RAL 7044 | RAL 9006 |
| RAL 1028 | RAL 3014 | RAL 5005 | RAL 6010 | RAL 7004 | RAL 7045 | RAL 9007 |
| RAL 1032 | RAL 3015 | RAL 5007 | RAL 6011 | RAL 7005 | RAL 7046 | RAL 9010 |
| RAL 1033 | RAL 3016 | RAL 5008 | RAL 6012 | RAL 7006 | RAL 7047 | RAL 9011 |
| RAL 1034 | RAL 3017 | RAL 5009 | RAL 6013 | RAL 7008 | RAL 7048 | RAL 9016 |
| RAL 1035 | RAL 3018 | RAL 5011 | RAL 6014 | RAL 7009 | RAL 8000 | RAL 9017 |
| RAL 1036 | RAL 3020 | RAL 5012 | RAL 6015 | RAL 7010 | RAL 8001 | RAL 9018 |
| RAL 1037 | RAL 3022 | RAL 5013 | RAL 6016 | RAL 7011 | RAL 8002 | RAL 9022 |
|          |          |          |          |          | RAL 8003 | RAL 9023 |

A Please observe that the shades displayed here are a reference without being binding. Depending on manufacturer, the same RAL-colours may appear differently.



# Technical planning basis for safety fence systems

Fence planning for safety fence system FLEX II

Due to the change of the post profile of QR50 to QR60 at heights > 2400 mm or from QR60 to QR80 at heights > 3035 mm, the axle size increases by 10 or 30 mm.  
The mat width remains constant at all times:  
In this example: 930 mm.

❶ The axle size reduces by 15 mm for inner corners.  
AM = Axle size  
MB = Mat width

Fence planning for safety fence system ZAUN II

Due to the change of the post profile of QR50 to QR60 at heights > 2400 mm, the axle size increases by 10 mm.  
The field width remains constant at all times:  
In this example: 930 mm.

❶ The axle size reduces by 5 mm for inner corners.  
AM = Axle size  
FB = Field width

Fence planning for safety fence system WAND II

Due to the change of the post profile of QR50 to QR60 at heights > 2400 mm, the axle size increases by 10 mm.  
The wall width remains constant at all times:  
In this example: 940 mm.

AM = Axle size  
WB = Wall width

Transfer post for all safety fence systems

Transfer post for connection of different safety fence systems and/or fence heights.  
The safety fence systems FLEX II, ZAUN II and WAND II can be combined easily with each other.

Transfer post as passage post

Example for item number key  
UDP-System1-height1-System2-height2-ground plate  
UDP-QR50-F-2000-Z-1600-1313

System FLEX II = F  
System ZAUN II = Z  
System WAND II = W

Transfer post as corner post

Example for item number key  
UEP-System1-height1-System2-height2-ground plate  
UEP-QR60-F-2600-W-1400-1515

System FLEX II = F  
System ZAUN II = Z  
System WAND II = W

Transfer post as T-seam post

Example for item number key  
UTP-System1-height1-System2-height2-System3-height3-System4-height4-ground plate  
UTP-QR50-F-1600-Z-1800-W-2000-W-2000-1313

System FLEX II = F  
System ZAUN II = Z  
System WAND II = W

Transfer post

for system combination and/or when switching the fence heights

ANNEX

www.bruehl-safety.com Brühl



# Technical planning basis

## for doors

Axle definition wing doors FT/FTO

Due to the change of the post profile of QR50 to QR60 at heights > 2400 mm or from QR60 to QR80 at heights > 3035 mm, the axle size increases by 10 or 30 mm. The open width remains constant at all times. Width and height of lights can be reduced according to the system for safety switches, door accessories or opening degree.

Post profile QR50  
Open width=950  
Axle size=1000

Post profile QR60  
Axle size=1010

Post profile QR80  
Axle size=1030

Axle definition sliding doors ST/STO

Due to the change of the post profile of QR50 to QR60 at heights > 2400 mm or from QR60 to QR80 at heights > 3035 mm, the axle size increases by 10 or 30 mm. The open width remains constant at all times. Width and height of lights can be reduced according to the system for safety switches, door accessories, door hinges or opening degree.

Post profile QR50  
Open width=750  
Axle size=800

Post profile QR60  
Axle size=810

Post profile QR80  
Axle size=830

Space demand Return path of self-supported sliding doors

Self-supported sliding doors have a large space demand. The space demand of a two-wing self-supported sliding door is the smallest. These formulas can be used to determine the build to match your space demand.

**FSTG/FSTS**  
Space demand = 2 × open width + ground plate + 240 mm

**FSTGT/FSTST**  
Space demand = 2 × open width + ground plate - 200 mm (up to AM 2530)  
Space demand = 2 × open width + ground plate - 300 mm (as of AM 2531)

**FSTGT-2/FSTST-2**  
Space demand = 1.5 × open width + ground plate + 240 mm

Open width  
Axle size  
Base plate  
Space demand

❶ The open width can reduce depending on attachment system for safety switches or door accessories.

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# Product combinations

## of the doors with door accessories and attachment systems for safety switches

| Safety doors                 |        | Combination: Door – lock set – Door accessories – attachment system for safety switches |                        |                                                  |   |   |   | Combination: Door – attachment system for safety switch (without door accessories) |   |                                    |   |   |   | Combination: Door – door accessories – attachment system for safety switch |   |                  |                                     |   |   | Combination: Door – door accessories (without safety switch) |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------------|--------|-----------------------------------------------------------------------------------------|------------------------|--------------------------------------------------|---|---|---|------------------------------------------------------------------------------------|---|------------------------------------|---|---|---|----------------------------------------------------------------------------|---|------------------|-------------------------------------|---|---|--------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|                              |        | Lock set                                                                                | Door accessories       | Selection of attachment system for safety switch |   |   |   |                                                                                    |   | No further door accessories needed |   |   |   |                                                                            |   | Door accessories | Attachment system for safety switch |   |   | Door accessories                                             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                              |        |                                                                                         |                        |                                                  |   |   |   |                                                                                    |   |                                    |   |   |   |                                                                            |   |                  |                                     |   |   |                                                              |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Wing doors                   | FTW    | SG-F                                                                                    | ●                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ×                                  | × | ● | × | ●                                                                          | ● | ×                | ×                                   | ● | ● | ×                                                            | × | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |
|                              | FT     | SG-F                                                                                    | ●                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ●                                  | × | ● | × | ●                                                                          | ● | ×                | ●                                   | ● | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
|                              | FTWO   | SG-F                                                                                    | ×                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ×                                  | × | ● | × | ●                                                                          | ● | ×                | ●                                   | × | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
|                              | PFTW   | SG-F                                                                                    | ●                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ×                                  | × | ● | × | ●                                                                          | ● | ×                | ●                                   | × | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
|                              | FTEO   | SG-FEO                                                                                  | ●                      | ●                                                | ● | × | ● | ×                                                                                  | ● | ●                                  | × | × | × | ×                                                                          | ● | ×                | ×                                   | × | × | ×                                                            | ● | ● | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | DFT    | SG-F                                                                                    | ●                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ●                                  | × | ● | × | ×                                                                          | ● | ×                | ×                                   | ● | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
|                              | DFTO   | SG-F                                                                                    | ×                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ×                                  | × | ● | × | ×                                                                          | ● | ×                | ×                                   | ● | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
| Swing doors, door wing       | PT     | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | × | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ×                                                            | × | × | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | HPT    | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | × | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ×                                                            | × | × | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | TF❶    | SG-F                                                                                    | ●                      | ●                                                | ● | ● | × | ×                                                                                  | ● | ×                                  | × | ● | × | ●                                                                          | ● | ×                | ●                                   | × | × | ×                                                            | ● | ● | × | × | ● |   |   |   |   |   |   |   |   |   |
| Sliding doors                | ST     | SG-S                                                                                    | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | ● | ● | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | STI    | SG-S                                                                                    | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | × | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | ● | ● | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | STO    | SG-S                                                                                    | ×                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | × | ● | ● | × | × |   |   |   |   |   |   |   |   |   |
|                              | DST    | SG-S2                                                                                   | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | ● | ● | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | STB    | SG-S2                                                                                   | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | ● | ● | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | DSTO   | SG-S2                                                                                   | ×                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ●                                   | ● | × | ×                                                            | × | ● | ● | × | × |   |   |   |   |   |   |   |   |   |
| Folding doors                | FAFTR  | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ×                                                            | × | × | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | DFAFTR | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ×                                                            | × | × | × | × | × |   |   |   |   |   |   |   |   |   |
|                              | FASTG  | ×                                                                                       | Door deadbolt enclosed |                                                  |   | × | × | ×                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | Door latches in scope of delivery                            |   |   | × | × | × | × | × | × | × | × | × | × | × | × |
|                              | DFASTG | ×                                                                                       |                        |                                                  |   | × | × | ×                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × |                                                              |   |   | × | × | × | × | × | × | × | × | × | × | × |   |
| Telescoping sliding doors    | STT    | SG-S2                                                                                   | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | ● | ● | × |   |   |   |   |   |   |   |   |
|                              | STBT   | SG-S2                                                                                   | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | ● | ● | × |   |   |   |   |   |   |   |   |
|                              | DSTT   | SG-S2                                                                                   | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | ● | × | ● | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | ● | ● | × |   |   |   |   |   |   |   |   |
| Self-supported sliding doors | FSTS   | ×                                                                                       | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |
|                              | FSTG   | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | ● | ●                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |
|                              | FSTST  | ×                                                                                       | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |
|                              | FSTGT  | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | ● | ●                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |
|                              | FSTS-2 | ×                                                                                       | ●                      | ●                                                | ● | × | × | ●                                                                                  | ● | ×                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |
|                              | FSTG-2 | ×                                                                                       | ×                      | ×                                                | × | × | × | ×                                                                                  | ● | ●                                  | × | × | × | ×                                                                          | × | ×                | ×                                   | × | × | ●                                                            | ● | × | × | × | × | × |   |   |   |   |   |   |   |   |

❶ Combination is possible with adjustment. ❷ Combination is possible with on-site adjustment. ❸ Only in combination with a lock set. ● Combination is possible. × Combination is not possible.

ANNEX



# Frame fillings with safety clearances according to EN ISO 13857:2008 when reaching through regular openings

Our diverse safety fence systems and doors are supplemented by many different frame fillings:

FLEX II

FLEX II: Safety distance at a slitted opening of 20 × 200 mm ≥ 120 mm

Wave grid 40

ZAUN II: Safety distance at a square opening of 40 × 40 mm ≥ 200 mm

Sheet metal

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm, between fence element and post ≥ 100 mm  
WAND II: Safety distance for a slit-shaped opening ≥ 2 mm

Polycarbonate

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm  
WAND II: Safety distance for a slit-shaped opening ≥ 2 mm

Wave grid 25

ZAUN II: Safety distance at a square opening of 25 × 25 mm ≥ 120 mm

Welding grid 40

ZAUN II: Safety distance at a square opening of 40 × 40 mm ≥ 200 mm

Perforated sheet round holes Rv 5-8

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm

Perforated sheet square holes Qg 8-12

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm

Sight protection glass reddish-brown T50

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm  
WAND II: Safety distance for a slit-shaped opening ≥ 2 mm

Sight protection glass green T75

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm  
WAND II: Safety distance for a slit-shaped opening ≥ 2 mm

Sight protection glass green T90

ZAUN II: Safety distance for a slit-shaped opening ≤ 12 mm between fence element and post ≥ 100 mm  
WAND II: Safety distance for a slit-shaped opening ≥ 2 mm

# Technical information for ground plate positioning

All door posts of Brühl Safety GmbH are welded on centred in the middle by default. An offset of the ground plate is possible both for the standard posts and for the door posts for a surcharge.

MACHINE-SIDE/DANGER AREA

POSITION 1: left rear

POSITION 2: middle rear

POSITION 3: right rear

POSITION 4: left centred

POSITION 5: middle centred

POSITION 6: right centred

POSITION 7: left front

POSITION 8: middle front

POSITION 9: right front

EXPOSED SIDE/OUTSIDE

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ANNEX



# Definitions of terms

## Axle size (AM)

Size of a part from the middle of the first post to the middle of the second post.

## Stop direction

The stop direction is determined from the stop side. The stop side of a door is the side on which the door hinges are attached. This distinguishes between DIN left (stop left) or DIN right (stop right).

## Opening outwards

By default, the wing doors are designed so that the door wing opens outwards (i.e. towards the operator's side).

## Ground clearance

Height from the ground to the lower edge of the grid element.  
Ground clearance + grid height = fence height

## Opening inwards

When the doors open inwards, the wing opens towards the machine side. This may be necessary, i.e. when there is not enough space on the outside. Always check if this is permitted in the respective safety concept. This option is not possible for escape doors. They always must open in the escape direction outwards.

## Danger area

Area in or around a machine in which a person is exposed to the risk of injury or damage to health.  
The danger may be:  
· either permanent during intended use of the machine (movement of dangerous moving parts, light arcs during a welding phase, etc.)  
· or occur unexpectedly (accidental, unexpected start-up, etc.).

## Danger marking

All signs necessary for safe use must be installed on the machine, e.g.:

- Maximum speed of rotating parts,
- Largest carrying capacity
- Necessity to wear protective equipment
- Set values for separating protective device,
- Frequency of inspections, etc.

The labels on the machine should remain permanently legible during the expected service life. Signs or written warning notes that only say "Danger" must not be used. Marks, signs and written warning notes must be easily understandable and clearly refer to the respective partial function of the machine. Easily understandable signs (icons) should be preferred to written warning notes. Only signs and icons that are understandable in the culture where the machine is to be used should be used. Written warning notes must be given in the language of the country where the machine is first used, and also in the language that is understandable to the operators on request. According to the machine safety standards, such signs are part of the indicative safety technology (user information regarding residual risk).

## Grid elements

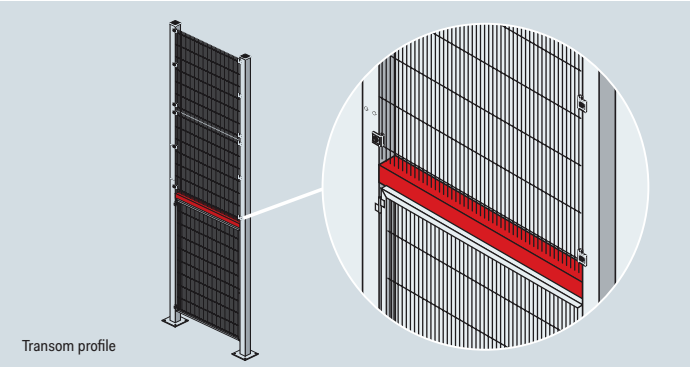
A grid element is part of a barrier of an area, usually by complex enclosure of the respective danger area. Grid elements in combination with posts lead to a safety fence system.

## Grid height

The grid height is the height of a grid element.  
Grid height + ground clearance = fence height

## Transom profile

The transom profile is a horizontal connection element of the frame, above the door wing. The stiffness of the door portal increases by the connection of the crossbar with posts.



## Conventional safety switch

Electromechanical safety switches that are equipped either with an integrated actuator element (Build 1) or with a separate actuator (Build 2).

## Open width (LB)

The open width corresponds to the actually existing passage width of doors.

## Open height (LH)

The open height corresponds to the actually existing passage height in doors up to the lower edge of the door sill.

## Manipulation

Manipulation means the deliberate deactivation or bypassing of safety facilities and their components. Safety switches and other safety devices must be made in such a way that the safety functions cannot be changed or bypassed manually or with simple tools. Simple tools include:

- Nails,
- Wire pieces,
- Adhesive strips, etc.

No easy bypassing (BGI 575) means:

- Disassembly of parts,
- Turning away of the safety switch from its protective position,
- Using a second actuator,
- Bridging contacts, etc.

Constructionally, it should be observed that simple and intended operation of machines and systems is possible in spite of protective devices. If this is not considered, the probability that safety measures are bypassed, increases.

## Machine safety

Machine safety colloquially describes protective measures on machines and systems with the target of avoiding dangerous situations and their risks. The subject of machine safety is viewed from two perspectives. The machine's manufacturer must market safe machines based on the machinery directive, and consider safety measures even during construction. The operator of the machine or system must ensure safe work on and with the machine to protect his employees.

## Performance Level (PL)

Discrete level that specifies the ability of safety-related parts of a control to perform a safety function under foreseeable conditions (definition according to standard EN 13849). Putting it more simply, the Performance Level is a measure for reliability of a safety function. We distinguish between the Performance Level required (PLr; with "r" for "required") and the "actual" PL that is in fact reached. There are five performance levels that reflect different residual risks.

## Polycarbonate

Polycarbonate is used where other plastics are too soft, too fragile, scratch too easily, are not stable enough or not transparent enough. Polycarbonate is transparent like glass, can be dyed, welded and glued. It also maintains its size and has high impact resilience.

## Position switches

Position switches record the position of moving protective facilities. When a position switch is used as a safety-relevant part, this is called a position switch with a safety function or a safety-related position switch. In this case, the switching element must have at least one forced opener.

## Latch

The latch tab mechanically guides the actuator when it moves into the safety switch. The latch part installed in the floor frame consists of a protruding latch tag in a guide, a handle and the actuator. The latch holder and the safety switch are installed on the post side. The latch holder catches the forces that arise in the closed condition of the door, which would otherwise act on the switch and the actuator and may damage these parts.

## Safety Integrity Level (SIL)

The Safety Integrity Level is the level that describes the probability that a safety-related system meets the required safety functions under all specified conditions within a specified period according to requirements. For this, compare the required Safety Integrity Level (SILr; the "r" meaning "required") and the "actual" SIL that is in fact achieved.

## Safety facility

A safety facility is to protect persons, production goods and the environment from a danger. We distinguish between separating protective facilities and non-separating protective facilities.

## Protective measure

A protective measure is a way to mitigate the risk. Protective measures are distinguished by constructional ones and those taken when operating the system.

## Welding grid/spot-welded meshes

Spot-welded meshes are produced using smooth, drawn wires of steel or stainless steel. These are connected to each other at crossing points at right angles by electrical resistance point welding. The welded nodes make the grid extraordinarily stable.

## Fence height

The fence height corresponds to the entire height of the safety fence from the ground to the upper edge of the fence element. Fence height = ground clearance + grid height



Safety fence system ZAUN II-grid fillings with Wave grid 40



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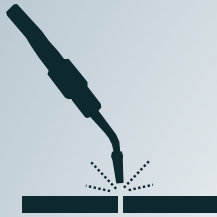
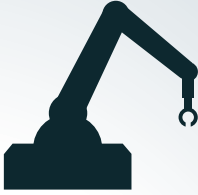
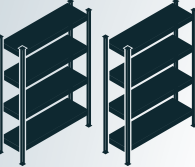
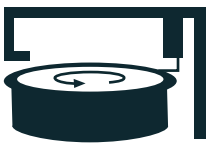
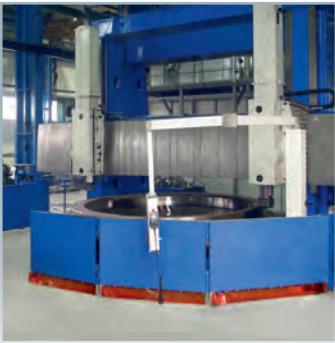


Safety fence system high resistant



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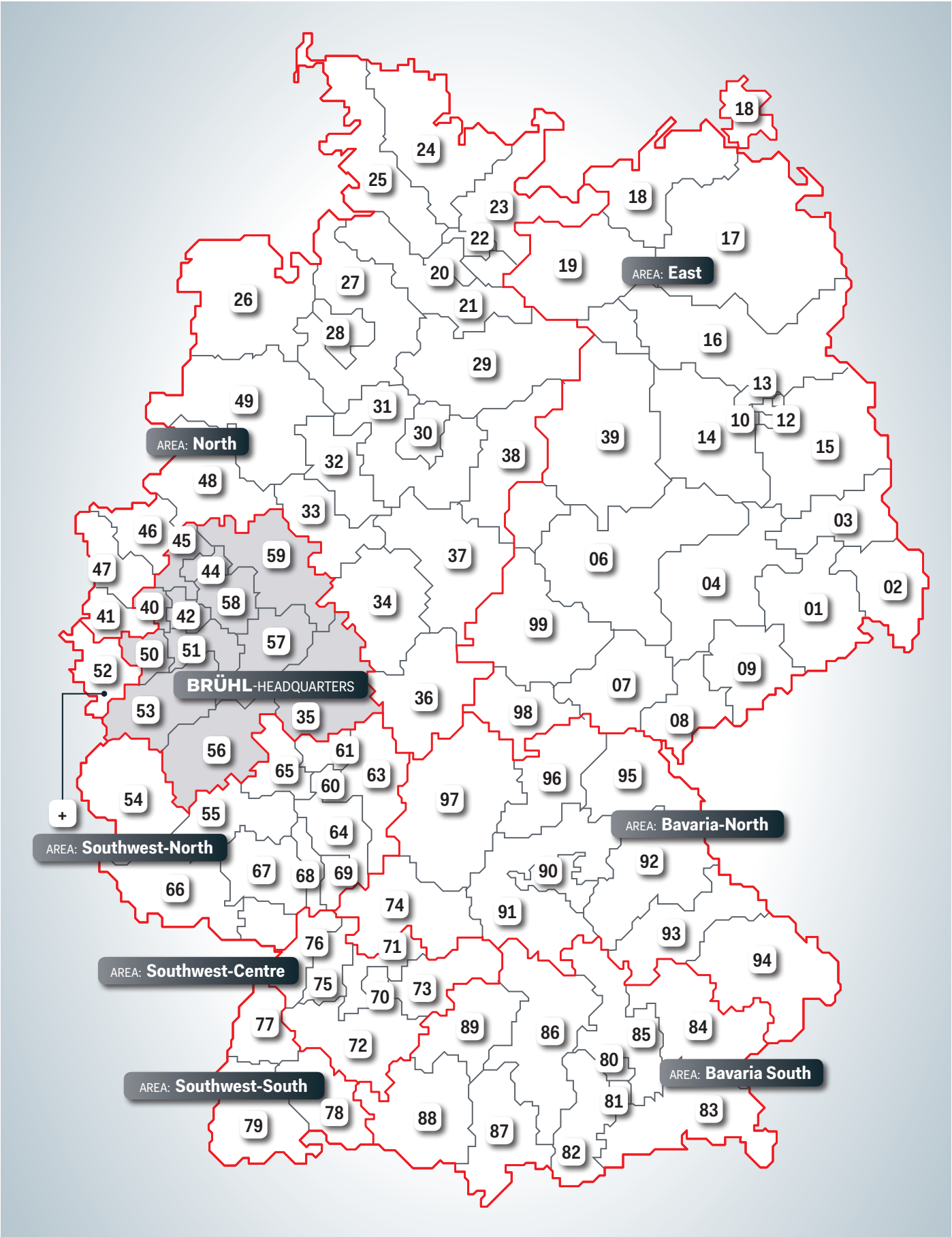
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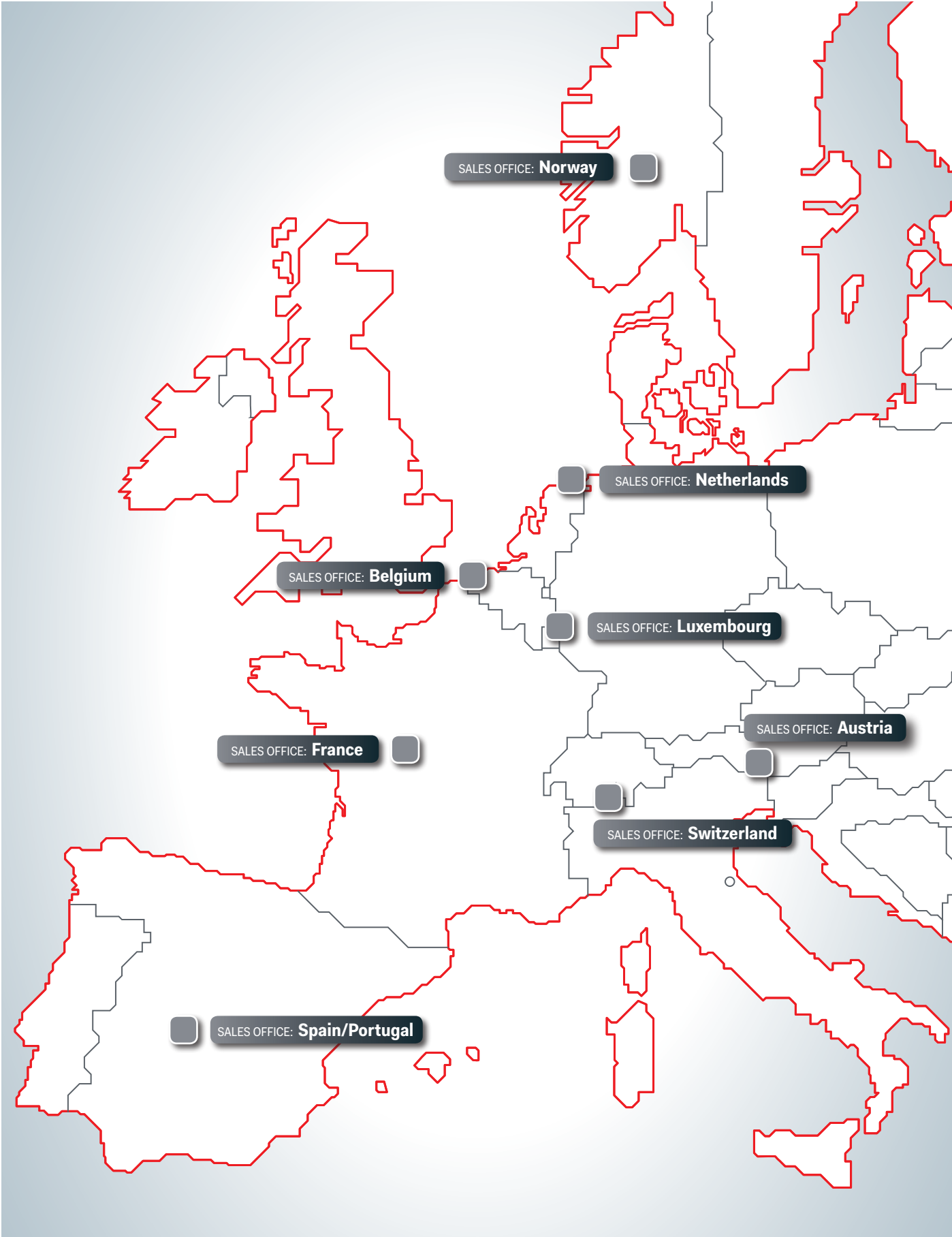
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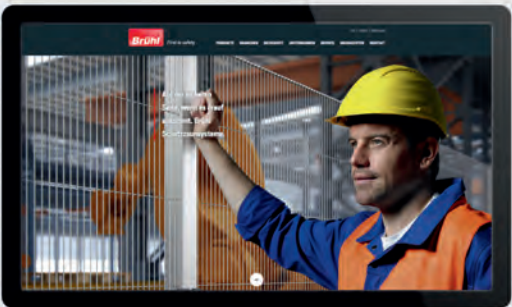
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