FSB

Door Pulls
& Glass Door Hardware

North American Manual

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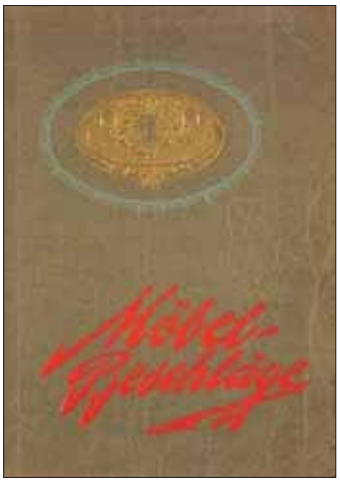
About FSB



1881
FSB was established in 1881. Together with a modest workforce, company founder Franz Schneider produced antique-style brass cabinet fittings.

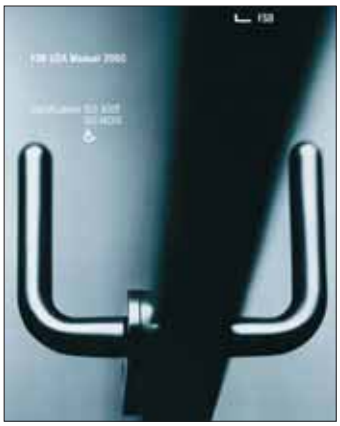
1920s
In the early 1920s, the first door and window fittings appeared in the FSB production program. The design of these years echoed the modernism of the Bauhaus era. Silver metal components were combined with black composite features.

1950s
Beginning with in-house designer Johannes Potente in the 1950s, FSB created the first handles which exemplify minimalism, modernism and ergonomics. FSB is still known for the use of these design principles today.

Four of Potente's lever designs have been included in the permanent collection of the Museum of Modern Art (MoMA).

1990s
Inspired by an international design workshop held in Brakel in 1986, FSB began engaging the market with contemporary designs in an initiative dubbed "Tour d'Europe." Throughout this initative FSB created design suites with such renouned designers as Philippe Starck, Jasper Morrison, Richard Rogers and many others.

For the past two decades, FSB has continued to work with Architects and Designers to create handles – each with their own personality.



2000s
FSB introduces a limited range of levers supplied in complete locksets to the Amercian design community. The first catalog was approximately 80 pages. Two later catalogs increased FSB's North American offering to nearly 100 lever designs.

In 2007, FSB expanded the North American distribution center, moving it to Madison, CT, where the majority of products are stocked in natural anodized aluminum and satin stainless steel. Stock items can be shipped in 48 hours. All non-stock items can be shipped within two to eight weeks regardless of the product type, finish or project size.

This is FSB's fourth edition for the North American market. It represents a huge step foward to offer a complete program which brings design consistency across more openings and applications.

This catalog is seperated into different sections, tailored to your specific needs.

For the latest information please go to www.fsbna.com.

New Products

METRIC Bath Accessories
FSB has dedicated an entire section to a well designed range of bathroom accessories in solid stainless steel. The design principle is based on a minimal rectangular post centered on a small round escutcheon.

Sliding Door Hardware
Building owners are demanding more efficient use of space. Consequently, architects and designers are utilizing many more sliding and pocket doors.

In recognition of this trend FSB has developed an entire range of flush mounted trim for passage, privacy and entry applications. We demonstrate our penchant for divising aesthetically pleasing technical solutions by offering the market's first flush pulls with spring loaded covers, as pictured above.

A complete overview of these products is provided in the "Sliding Door Hardware" section.

Bronze
There is an increase in an "old meets new aesthetic" in which designers are combining traditional finishes with more minimal and modern design. For years, FSB has offered ten of our best selling handles in solid brass, either polished or oxidized to give them varying degrees of antiquing to suit the designers' needs.

FSB now introduces Bronze as a new material for our lever handles and accessories. The special appeal of bronze is the patina that develops on its surface. In the course of daily use, polished bronze parts darken naturally, becoming more distinguished with time.

We have created a complete section titled "Brass and Bronze Products" to cover all the products we offer in these two exceptional base materials. We offer eight bronze handles and ten brass handles for projects that may benefit from this "old meets new" aesthetic. All brass and bronze products can be oxidized to varying degrees of darkness, depending on "the mood" a designer would like to create.

Glass Door Hardware
Creating more open spaces has become a cornerstone of modern architecture. Utilizing large pieces of glass, whether for windows, doors, or walls, facilitates this objective.

FSB has broadened its glass door program to include locks and hinges for swinging glass doors as well as exposed rolling gears for sliding glass doors. These products can be found in the section "Door Pulls and Glass Door Hardware".

Materials and Finishes

Most of our hardware is available in aluminum and stainless steel as a base material.

We offer up to five finishes on certain base materials with twenty finishes overall. Aluminum is either anodized or powder coated.

To confirm a particular finish is available, consult the bottom of the lever pages.

On overview pages, and all pages throughout this catalog, only the base material is indicated. It can be assumed that all finishes shown to the right of the base material below are available whenever a base material is indicated for a product.

If, by exception, a specific finish is not available for a given base material, it will be stated by the detail page for that product.

Base Material	FSB Finish (BHMA Code)
Aluminum Anodized	0105 Natural Color (628) 0205 German Silver (Champagne) Color 0305 Brass Color (688) 0405 Bronze Color (709) 0704 Dark Bronze Color (710)
Aluminum Powder Coated	8220 White (714E) 8320 Red 8120 Black (693)
AluGrey Anodized	1005 AluGrey
Stainless Steel	6204 Satin (630) 6205 Mirror Polished (629) 6206 Matte 6210 Brass Color PVD (605E)
Bronze	7305 Polished Oil Rubbed 7615 Artificially Aged and Oil Rubbed (615) 7625 Patinated and Oil Rubbed (613)
Brass	4205 Polished Lacquered (605) 4305 Polished Oil Rubbed (721) 4694 Oxidized Lacquered 4404 Oxidized Oil Rubbed (607)

Aluminum

0105
Aluminum
Natural Color
Anodized

0205
Aluminum
German Silver
(Champagne) Color
Anodized

0305
Aluminum
Brass Color
Anodized

0405
Aluminum
Bronze Color
Anodized

0704
Aluminum
Dark Bronze Color
Anodized

8220
Aluminum Powder
Coated White
approx. RAL 9003

8320
Aluminum Powder
Coated Red
approx. RAL 3002

8120
Aluminum Powder
Coated Black
approx. RAL 9004

AluGrey

1005
AluGrey

Stainless Steel

6204
Satin
Stainless Steel

6205
Mirror Polished
Stainless Steel

6206
Matte
Stainless Steel

6210
Stainless Steel
in Brass Color PVD

Bronze

7305
Bronze Polished
Oil Rubbed

7615
Bronze Artificially
Aged and Oil
Rubbed

7625
Bronze Patinated
and Oil Rubbed

Brass

4205
Brass Polished
Lacquered

4305
Brass Polished
Oil Rubbed

4694
Oxidized Brass
Lacquered

4404
Oxidized Brass
Oil Rubbed

For availability of these base materials,
please refer to the lever overview pages.

Materials, Fixing Options, Safety Clearance

Over the past decade, FSB has added a fully-fledged alternative to its traditional tubular pull-handle range with a comprehensive collection of oval designs. Both sets of designs can be fixed in a wide variety of ways. The traditional range of push/pull pad handles and profiles with brackets has also been further developed.

Materials

In principle, FSB supplies its entire pull-handle range in either aluminum, stainless steel, brass and bronze, with stainless steel being particularly recommended for heavy-duty applications. Aluminum surfaces can easily get blemished in such circumstances, though this "aging process" in no way impairs the functioning of the handle. Owing to their tendency to corrode, brass and bronze pulls are only offered with an oil rubbed finish. When ordering non-oxidized product that has not been lacquered, it takes several years before a natural brown protective patina forms on brass or bronze handles.

Fixing Scenarios

Pulls can be either face or through fixed to doors made of the most diverse of materials. In the case of through-bolted fixing, either a pair of pulls or a single handle can be fitted.

FSB offers the four fixing options below:

- back-to-back fixing,
- through-bolted fixing,
- concealed fixing with expansion plug (for solid doors),
- concealed fixing with drop clamp (for hollow doors).

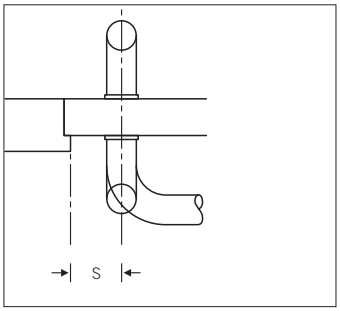
This section has clear identifying symbols that can be found on all relevant product pages. (Examples show fixing for tubular pulls).

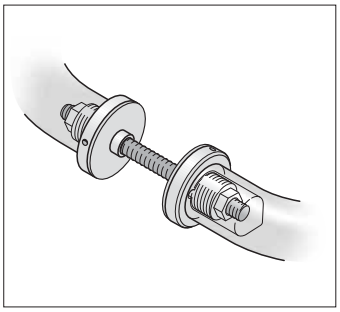
Regarding the issue of concealed versus through-bolted fixing, FSB wishes to point out that, on account of the compression ring technique deployed by FSB, concealed fixing is both aesthetically pleasing and sufficiently durable as a rule. This needs to be qualified, however, in the case of heavy-duty applications, (i.e. in schools, office blocks and other public institutions): here, we emphatically recommend through-bolt fixing, which ensures that the trim remains fit for use even after years of heavy treatment, since the forces involved are absorbed on both sides of the door.

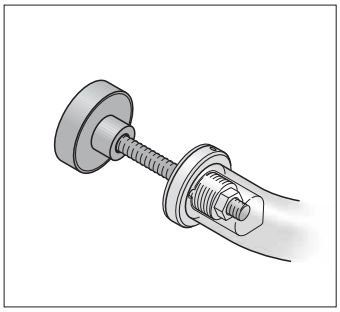
Safety Clearance (S)

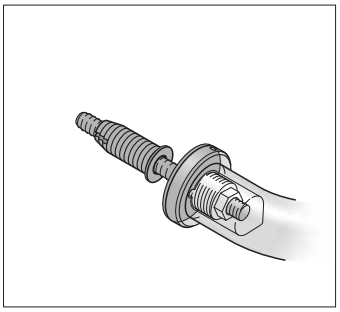
When fitting a handle to the closing face of a door, a safety clearance needs to be allowed for between the handle and the edge of the door and the jamb. The assembly scenario is made more readily comprehensible by the following sketch.

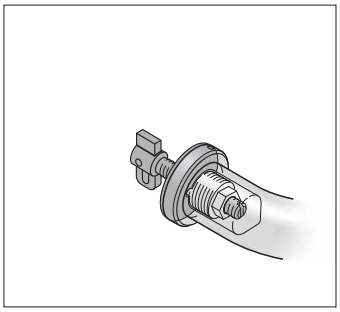
Ideally, safety clearances as recommended by FSB should be adhered to. Nevertheless, conditions at the point of assembly are crucial. It is particularly advisable to make use of offset pulls purpose-designed by FSB for especially narrow stiles, which sets the handle sufficiently far away from the edge.




Back-to-Back Fixing


Through-Bolted Fixing


Concealed Fixing
With Expansion Plug
(for Solid Doors)

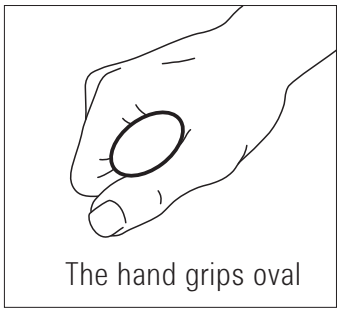

Concealed Fixing
With Drop Clamp
(for Hollow Doors)

Pull Handles Oval Series

FSB has developed over the past decade an alternative to traditional pulls of circular cross-section. Adopting the formula "diagonal + oval = ideal gripping" identified by FSB reduces the amount of effort required to take hold of and operate the handles on entrance doors.

The oval styling offers the market a new gripping quality for eye and hand which FSB has had copyright protected. The experience FSB has amassed now allows it to supply almost all its traditional styles both as circular pulls and as optimized-grip oval variants.

A new flattened oval pull series airily and elegantly underpins architectural solutions.



The hand grips oval

Pull Handles Round Series

The proven FSB range of tubular pulls has profited from the burst of innovation in the sphere of oval designs. New shapes and brackets have been added.

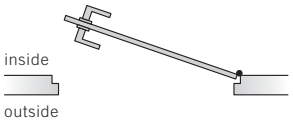
This is particularly true of the lightweight pull series in 20 mm tubular material, for which a new design-conscious bracket fixture has been developed that FSB has likewise had utility and design patented. Hence, this lightweight pull-handle series in its familiar "straight, rectangular, triangular and crescent" styles can continue its victorious campaign against the traditional "heavyweights".

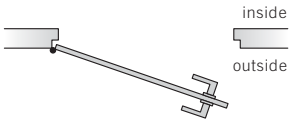
Custom lengths can be provided for several of our round and oval pulls. Where it is possible we provide a sheet to be populated with the desired dimensions.

If no such sheet exists, the ability to provide custom lengths is indicated with a "99" following the pull handle number. When ordering, please provide the overal length desire.

European Handing for Pulls and Glass Door Locks

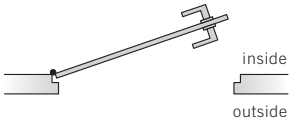
European (DIN) left hand inward opening

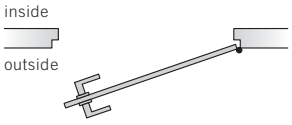




European (DIN) right hand outward opening

European (DIN) right hand inward opening





European (DIN) left hand outward opening

Explanation:

The European (German DIN) specifications "European right hand (r. h.)" respective "European left hand (l. h.)" refer to the positioning of the things on the opening face of the door.

Overview

FSB

FSB North American Stock Items (stocked in Natural Color Aluminum and Satin Stainless Steel)

Base Material
- Aluminum
- AluGrey
- Stainless Steel
- Bronze
- Brass
- Alu + Color
- Plastic Black

6655

Page 45

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6677, 6688

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2160

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3601

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3603

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3617

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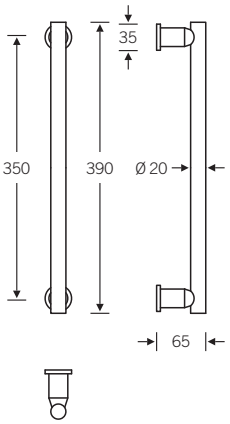
5325

Page 63

Pull Handles
Round Series



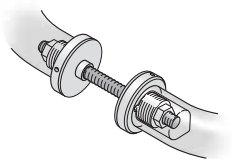
6501

Ø 20 mm

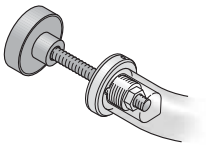
- Aluminum
- Stainless Steel
- Brass

Safety clearance 49 mm
Fixing M8

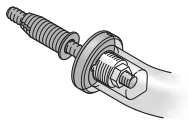
The “heavyweights” of the long-running standard program are juxtaposed with a “lighter than air” series of pull handles (20 mm) in several shapes on plain brackets (25 mm).
For detailed information on fixing, please turn to page 68.



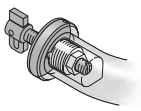
Back-to-Back Fixing



Through-Bolted Fixing

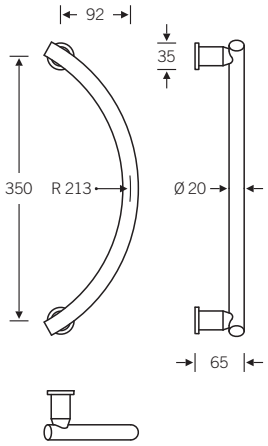


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



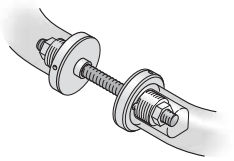
6504

Ø 20 mm

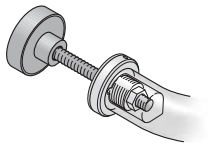
- Aluminum
- Stainless Steel
- Brass

Safety clearance 59 mm
Fixing M8

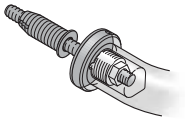
For detailed information on fixing, please turn to page 68.



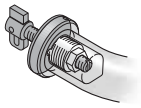
Back-to-Back Fixing



Through-Bolted Fixing

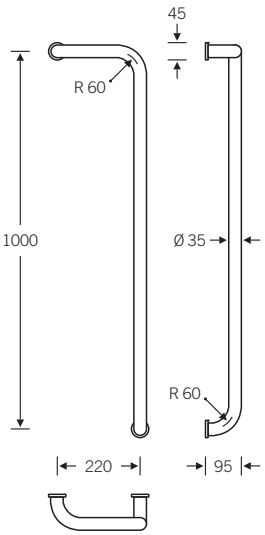


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



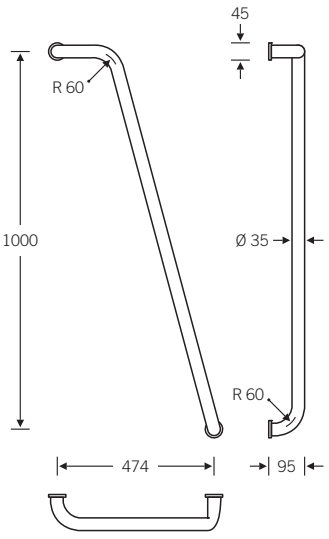
6506 xx

xx = 65 (r. h.) or 75 (l. h.)
Ø 35 mm

- Aluminum
- Stainless Steel
- Bronze

Illustration r. h., outside view
handing details, see page 11.

Safety clearance 47 mm
Fixing M8



6507 xx

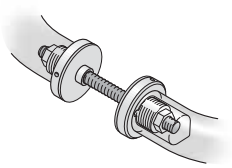
xx = 65 (r. h.) or 75 (l. h.)
Ø 35 mm

- Aluminum
- Stainless Steel
- Bronze

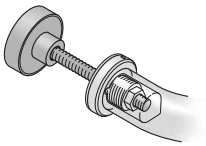
Illustration r. h., outside view
handing details, see page 11.

Safety clearance 47 mm
Fixing M8

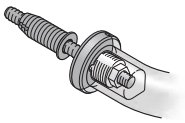
For detailed information on
fixing, please turn to page 68.



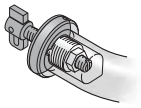
Back-to-Back Fixing



Through-Bolted Fixing

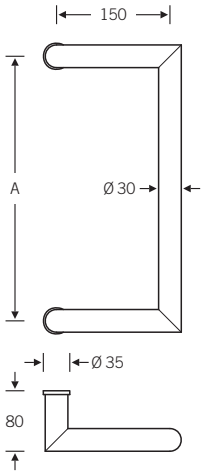


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



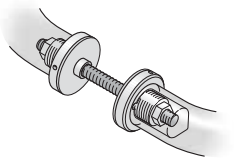
6514

Stainless Steel

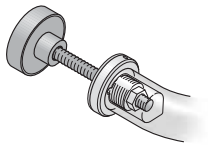
Safety clearance 55 mm
Fixing M8

Item nos.	Ø	A
6514 38	30	350
6514 45	30	450

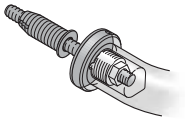
For detailed information on fixing, please turn to page 68.



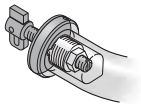
Back-to-Back Fixing



Through-Bolted Fixing

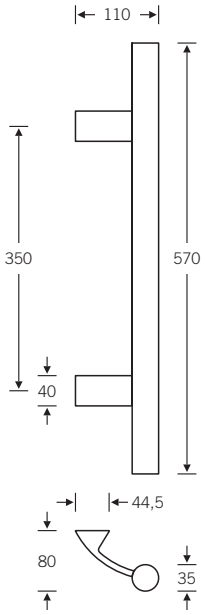


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



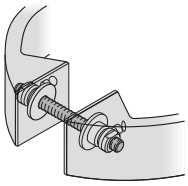
6526

Aluminum
Stainless Steel
(brackets Aluminum)

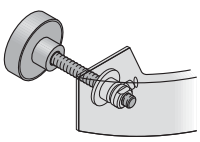
With the publication of its 02/03 Manual, FSB supplemented its proven and long-successful in-line pull series in aluminum and stainless steel with a particularly safe-to-grip design featuring heavily offset fixing points on which the ends of brackets are incorporated into the pull section. The in-line pull sections are supplied with a diameter of 35 mm in either aluminum or stainless steel. The brackets are made of aluminum and anodized in the metal's natural color.

The standard version has an A dimension of 350 mm and a length of 570 mm. Other center-to-center dimensions and lengths are possible.

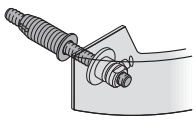
For detailed information on fixing, please turn to page 73.



Back-to-Back Fixing

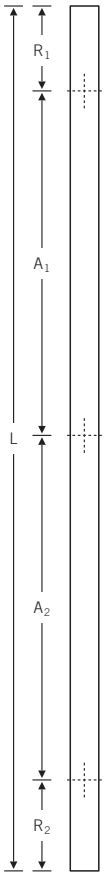


Through-Bolted Fixing

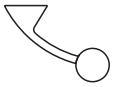


Concealed Fixing
With Expansion Plug

Pull Handles
Round Series



☐ 6526 99 Ø 35 mm



To order custom designs in the pull handle series 6526, please use a copy of this page:

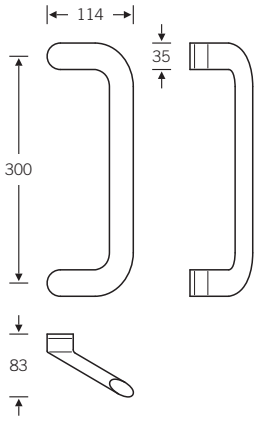
First specify the model desired citing the applicable order code above. Then enter the quantity required and overall length in the table below. Then enter details of the distances between brackets and, where applicable, their distance from the end of the handle in mm.

To ensure stability, the distance between brackets should not exceed 1,200 mm.

Qte.	Overall length L	Distance between brackets A_1	A_2	A_3	Edge spacing* R_1	R_2	Fixing method

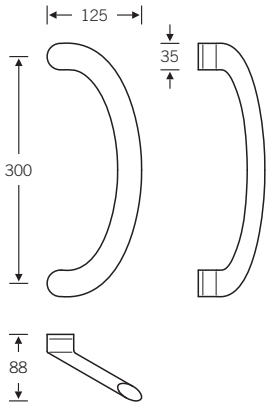
*least. 40 mm
max. 350 mm

Pull Handles
Oval Series



6533

- Aluminum
- Stainless Steel
- Bronze



6534

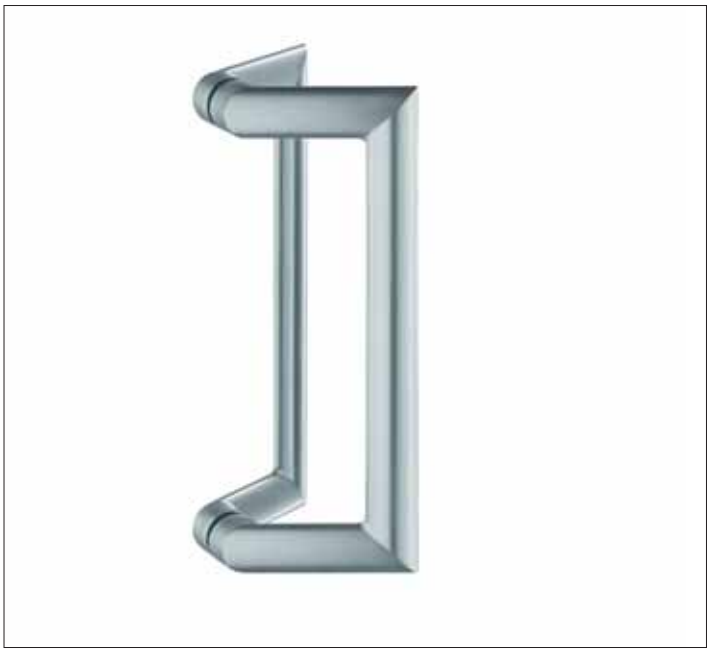
- Aluminum
- Stainless Steel
- Bronze

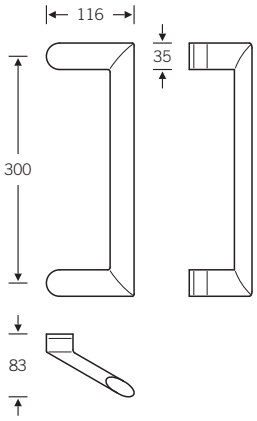
The flattened oval pull handle series 6533, 6534, 6535 and 6536 see FSB's philosophy of the ovally gripping hand and the diagonal moving arm put to effect in telling manner.

The circular fastening section has been shortened and the grip tilted towards the user by dint of a flattened oval cross-section. The hand therefore enjoys optimum clearance whilst, stylistically, these airy, elegant handles display a decidedly architectural dimension.

Guaranteeing FSB's usual production excellence are the traditional casting technique for aluminum and an innovative internal high-pressure metal forming process for the stainless steel variant.

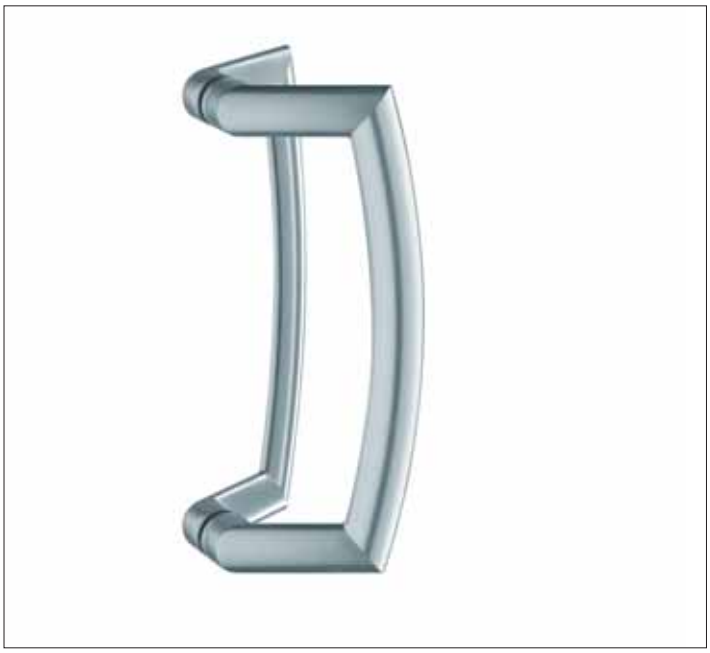
Pull Handles
Oval Series

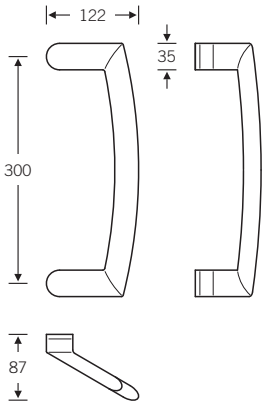




6535

- Aluminum
- Stainless Steel
- Bronze

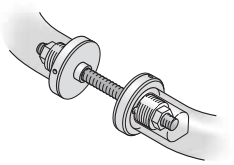




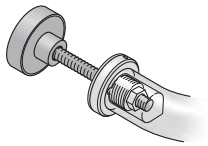
6536

- Aluminum
- Stainless Steel
- Bronze

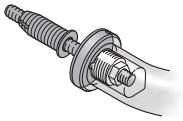
For detailed information on fixing, please turn to page 68.



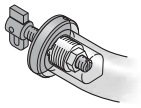
Back-to-Back Fixing



Through-Bolted Fixing

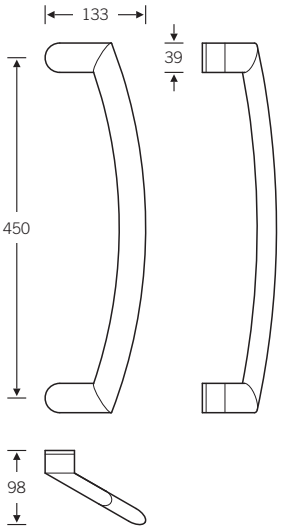


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series

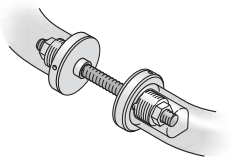


6537

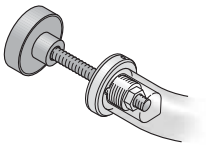
Stainless Steel
Bronze

Door pulls 6537 are visually related to the 300 mm range of pulls.

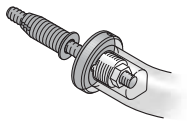
For detailed information on fixing, please turn to page 68.



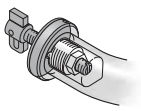
Back-to-Back Fixing



Through-Bolted Fixing

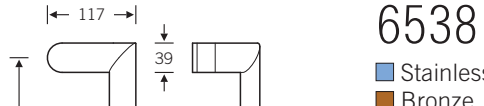


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series



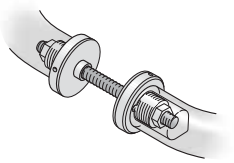
6538

Stainless Steel
Bronze

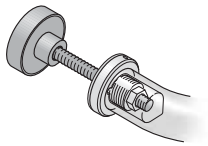
Door pulls 6538 are visually related to the 300 mm range of pulls.

If selecting stainless steel, this pull is available up to 1400 mm in total length by simply adding 99 after 6538 and your length (L) in parenthesize.
Example: 6538 99 (L = 40").

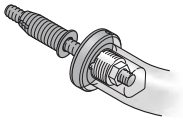
For detailed information on fixing, please turn to page 68.



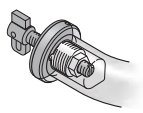
Back-to-Back Fixing



Through-Bolted Fixing

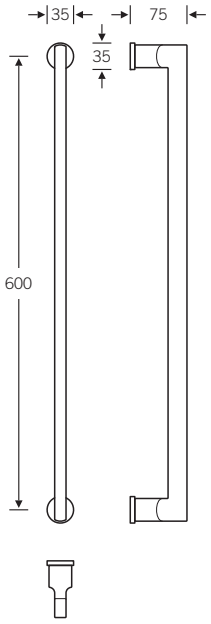


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



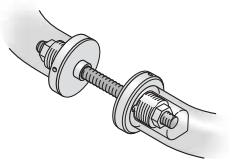
6540

Stainless Steel

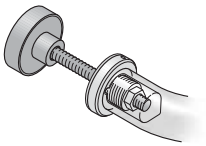
Matches FSB lever handle model 1035.

Safety clearance 45 mm

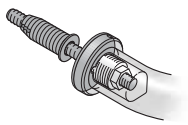
For detailed information on fixing, please turn to page 68.



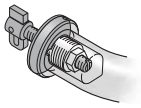
Back-to-Back Fixing



Through-Bolted Fixing

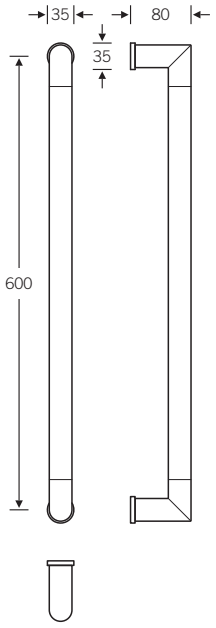


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



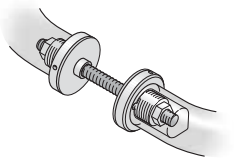
6541

Stainless Steel (grip)
Aluminum (corners)

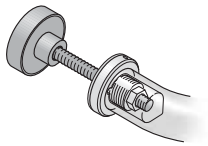
Matches FSB lever handle model 1077.

Safety clearance 51 mm

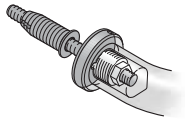
For detailed information on fixing, please turn to page 68.



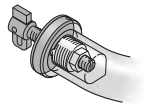
Back-to-Back Fixing



Through-Bolted Fixing

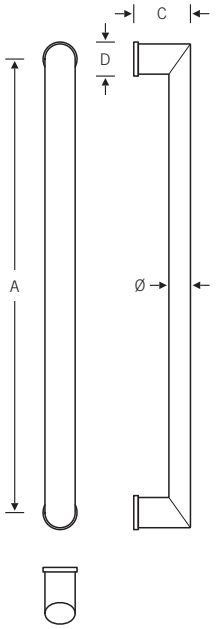


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series



6542

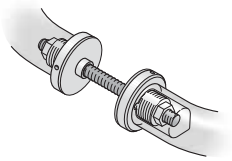
Stainless Steel

Matches FSB lever handle models 1107/1108.

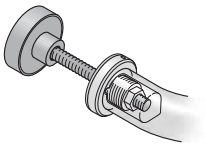
Item nos.	Ø	A	C	D	S
6542 3095	30 × 15	300	60	35	48
6542 6095	30 × 28,5	600	75	45	53

S = Safety clearance

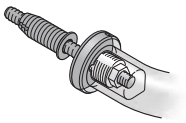
For detailed information on fixing, please turn to page 68.



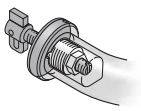
Back-to-Back Fixing



Through-Bolted Fixing

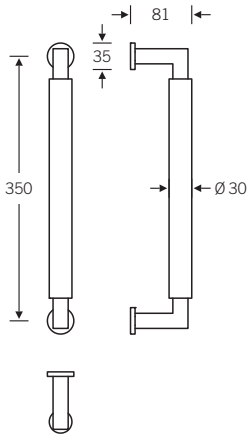


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



6546

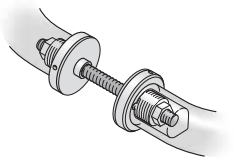
Stainless Steel

Matches FSB lever handle model 1102.

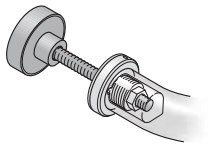
Available length up to 1200 mm.

Safety clearance 51 mm

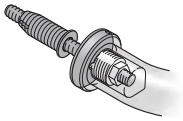
For detailed information on fixing, please turn to page 68.



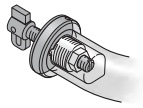
Back-to-Back Fixing



Through-Bolted Fixing

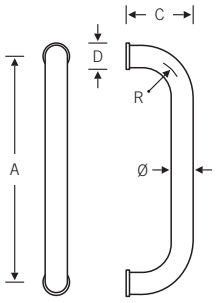


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



6602 38

- Aluminum
- Stainless Steel
- Bronze (only 6602 38)
- Brass
- Aluminum + Color

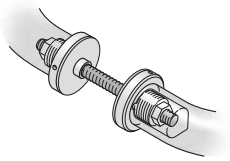
Matches FSB lever handle model 1075.

Fixing Ø = 20 mm M6
Ø ≥ 25 mm M8

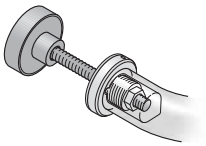
Item-nos.	Ø	R	A	C	D	S
6627 34	20	25	200	75	30	45
6670 34	25	40	200	80	35	48
6670 37	25	40	300	80	35	48
6670 38	25	40	350	80	35	48
6602 38	30	55	350	90	35	51
6603 38	35	60	350	95	45	56
6604 38	40	60	350	105	45	65
6670 99*	25	40	200 – 1200	80	35	48
6602 99*	30	55	300 – 1200	90	35	51
6603 99*	35	60	300 – 1200	95	45	56
6604 99*	40	60	350 – 1200	105	45	65

S = Safety clearance
* = Simply specify the desired CTC in parenthesize after the product code. Example: 6670 99 (500 CTC)

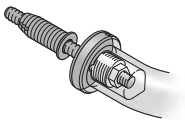
For detailed information on fixing, please turn to page 68.



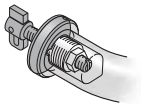
Back-to-Back Fixing



Through-Bolted Fixing

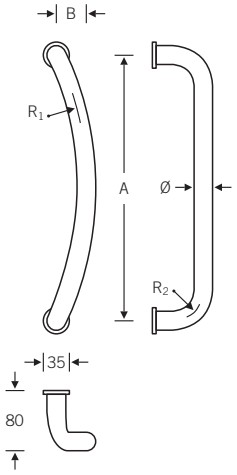


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



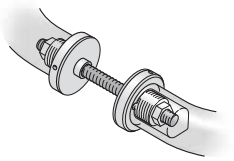
6605

- Aluminum
- Stainless Steel
- Brass
- Aluminum + Color

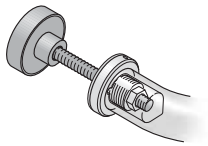
Safety clearance 45 mm
Fixing M8

Item nos.	Ø	R1	R2	A	B
6605 25	25	260	40	250	32
6605 38	25	260	40	350	68
6605 50	25	400	40	500	88

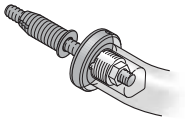
For detailed information on fixing, please turn to page 68.



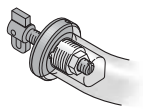
Back-to-Back Fixing



Through-Bolted Fixing



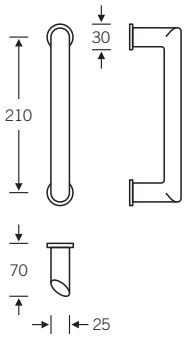
Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series

● FSB North American Stock Items (stocked in Natural Color Aluminum and Satin Stainless Steel)

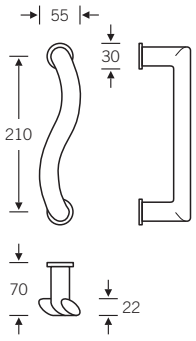


6610

Aluminum
Stainless Steel

Matches FSB lever handle model 1025.

Safety clearance 45 mm
Fixing M6



6611 xx

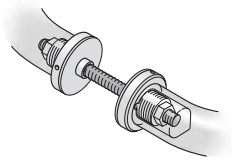
xx = 24 (r. h.) or 25 (l. h.)
Aluminum ●
Stainless Steel ●

Matches FSB lever handle model 1028.

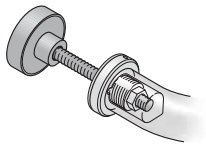
Safety clearance 60 mm
Fixing M6

Illustration r. h., outside view, handing details, see page 11.

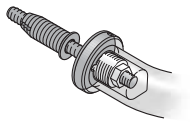
For detailed information on fixing, please turn to page 70.



Back-to-Back Fixing

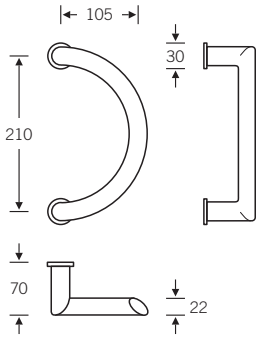


Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Oval Series

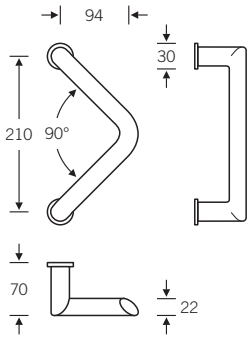


6612

Aluminum
Stainless Steel

Matches FSB lever handle model 1026.

Safety clearance 48 mm
Fixing M6

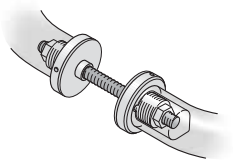


6613

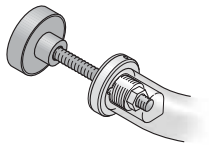
Aluminum
Stainless Steel

Safety clearance 48 mm
Fixing M6

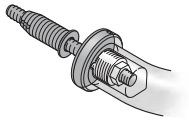
For detailed information on fixing, please turn to page 70.



Back-to-Back Fixing

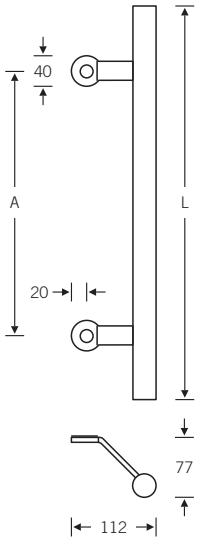


Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Round Series



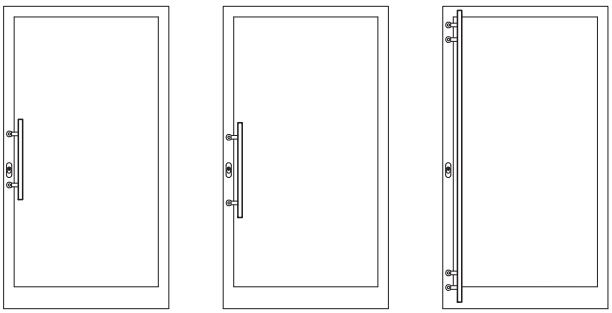
6615

Stainless Steel

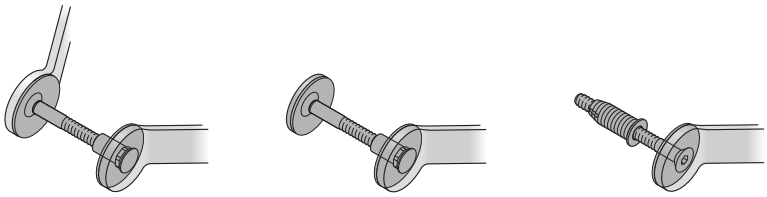
In door pull series FSB 6615 (Ø 30 mm), fixing is by means of laterally offset strap-type brackets. The fastening and gripping sides are separated from one another and hence protect hands. The innovative combination of fixing strap and pull lends the design an airy, vivacious appearance.

Item nos.	Ø	A	L
6615 35	30	350	550
6615 45	30	450	650
6615 99*	30	451 – 2100	

* = Simply specify the desired CTC in parenthesize after the product code. Example: 6615 99 (500 CTC)



For detailed information on fixing, please turn to page 71.

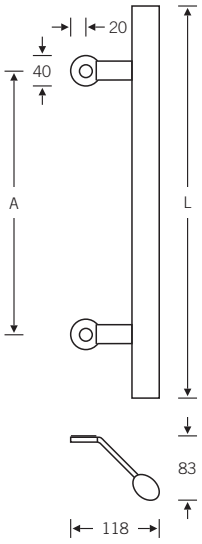


Back-to-Back Fixing

Through-Bolted Fixing

Concealed Fixing
With Expansion Plug

Pull Handles
Oval Series



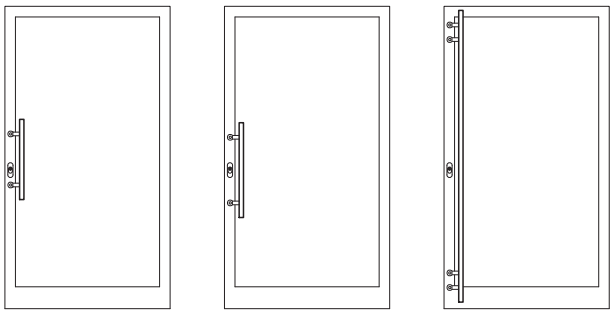
6616

Stainless Steel

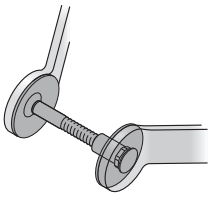
In door pull series FSB 6616 (Ø 40 × 28 mm), fixing is by means of laterally offset strap-type brackets. The fastening and gripping sides are separated from one another and hence protect hands. The innovative combination of fixing strap and pull lends the design an airy, vivacious appearance.

Item nos.	Ø	A	L
6616 35	40 × 28	350	550
6616 45	40 × 28	450	650
6616 99*	40 × 28	451 – 2100	

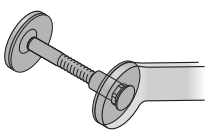
* = Simply specify the desired CTC in parenthesize after the product code. Example: 6616 99 (500 CTC)



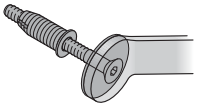
For detailed information on fixing, please turn to page 71.



Back-to-Back Fixing

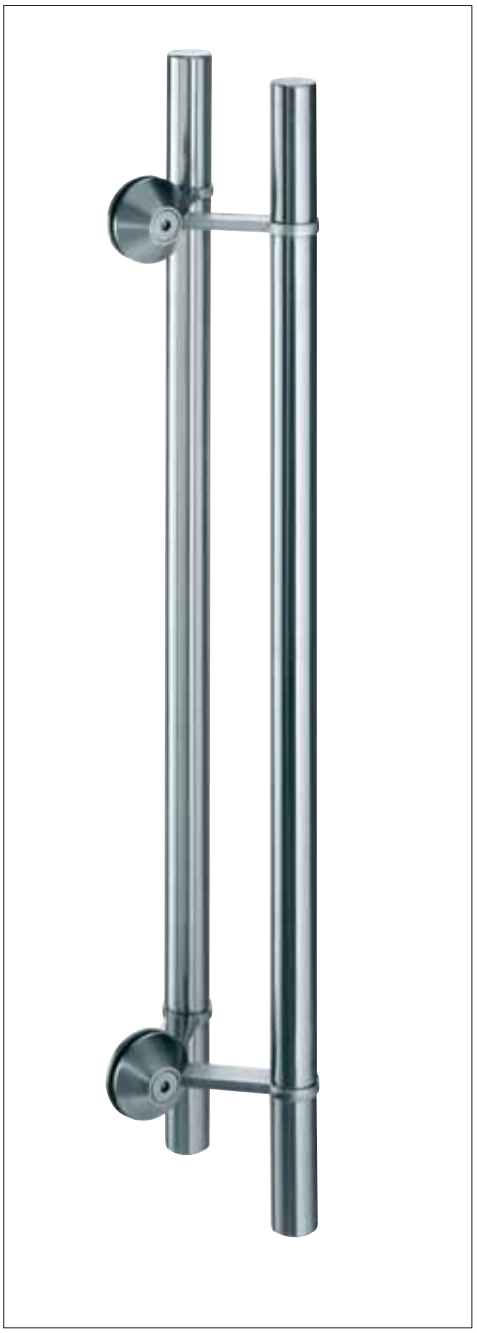


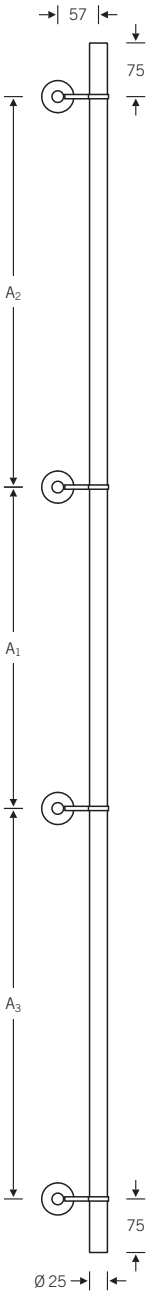
Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Round Series



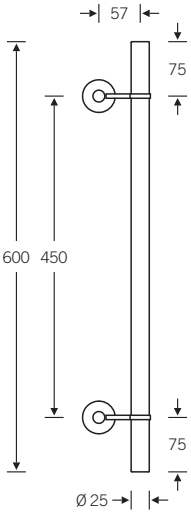


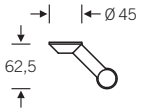
6620

Ø 25 mm

Stainless Steel

Overall length 600 mm.





Item nos.	Ø	A_1	A_2	A_3	Length	Ending
6620 45	25	450	n/a	n/a	600 mm	75 mm
6620 99*	25	X	X	X	X	75 mm

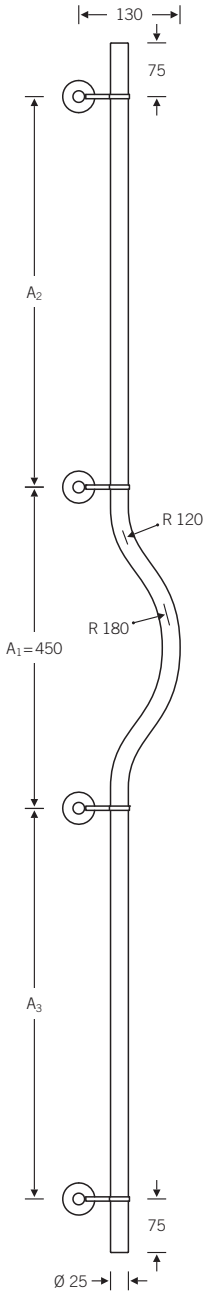
* For customized lengths with multiple brackets, please provide dimensions for A_1, A_2 and/or A_3.
For example: 6620 99 (A_1 = 400, A_2 = 400, A_3 = 400).

The stiles on glass doors have become narrower in recent years. FSB has responded by producing a filigree handle series in stainless steel (Ø 25 mm). The straight bar handle features a clearance between the fixing center and the center of the bar of no less than 57 mm.

With the curved version, the clearance is a mighty 130 mm. Both are supplied as standard with an A dimension of 450 mm and an overall length of 600 mm. Optionally, they can both extend over the entire door. The standard measurement for the end sections is 75 mm.

FSB recommends a distance between brackets of at most 1,200 mm.

Pull Handles
Round Series

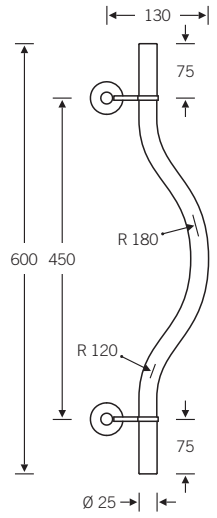


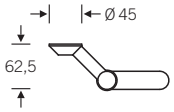
6621

Ø 25 mm

Stainless Steel

A_1 = 450 mm
Overall length 600 mm.

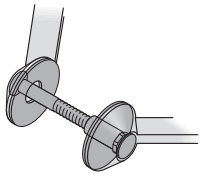




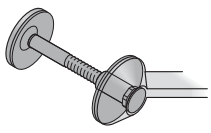
Item nos.	Ø	A_1	A_2	A_3	Length	Ending
6621 45	25	450	n/a	n/a	600 mm	75 mm
6621 99*	25	450	X	X	X	75 mm

* For customized lengths with multiple brackets, please provide dimensions for A_2 and/or A_3.
For example: 6621 99 (A_2 = 400, A_3 = 400).

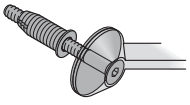
For detailed information on fixing, please turn to page 72.



Back-to-Back Fixing



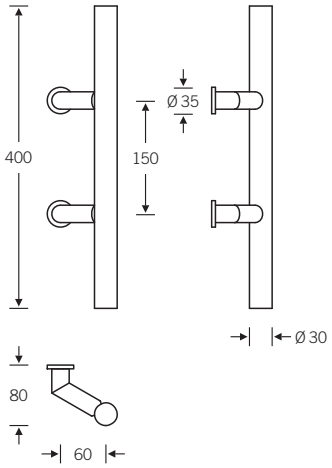
Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Round Series

● FSB North American Stock Items (stocked in Natural Color Aluminum and Satin Stainless Steel)



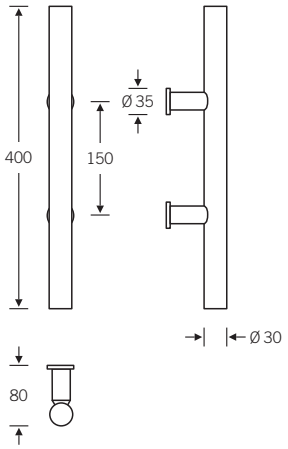
6630

Ø 30 mm

Stainless Steel

Standard length 400 mm
(also available in custom designs, see fax form next page).

Fixing M8



6681

Ø 30 mm

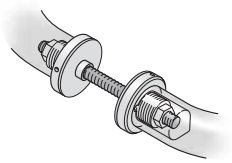
Stainless Steel ●
Bronze

Standard length 400 mm
(also available in custom designs, see fax form next page).

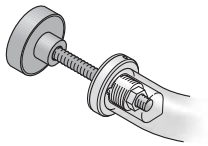
Safety clearance 38 mm
Fixing M8

The 6630 and 6681 can be supplied with two custom caps, one a shallow curvature (10), the other a stepped flat cap (20).

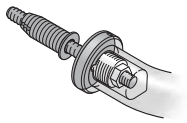
..00 ..10 ..20



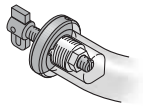
Back-to-Back Fixing



Through-Bolted Fixing

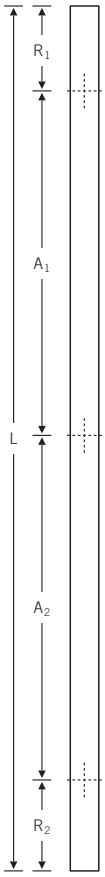


Concealed Fixing With Expansion Plug

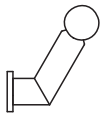


Concealed Fixing With Drop Clamp

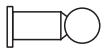
Pull Handles
Round Series



☐ 6529 99 Ø 25 mm
☐ 6630 99 Ø 30 mm
☐ 6531 99 Ø 35 mm
☐ 6532 99 Ø 40 mm



☐ 6580 99 Ø 25 mm
☐ 6681 99 Ø 30 mm
☐ 6582 99 Ø 35 mm
☐ 6583 99 Ø 40 mm



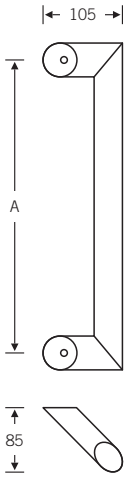
To order custom designs in the pull handle series 6630 or 6681, please use a copy of this page:

- First specify the model desired citing the applicable order code above.
- Then enter the quantity required and overall length in the table below.
- Then enter details of the distances between brackets and, where applicable, their distance from the end of the handle in mm.
- To ensure stability, the distance between brackets should not exceed 1,200 mm.
- Finally, please pick the cap required for standard versions with a diameter of 30 Ø.

Qte.	Overall length L	Caps for 6681 and 6630 ..00	..10	..20	Distance between brackets A_1	A_2	A_3	Edge spacing* R_1	R_2	Fixing method

* least. 30 mm
max. 350 mm

Pull Handles
Oval Series



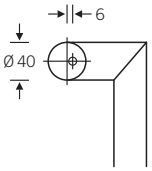
6635

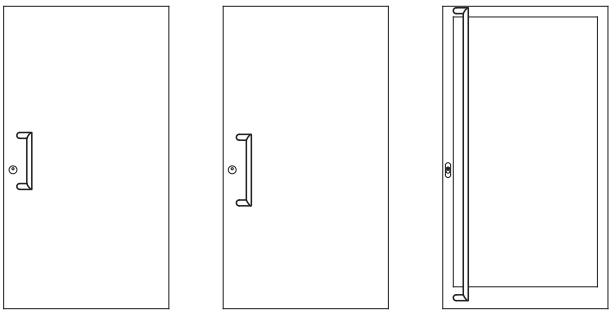
Stainless Steel

Door pull design FSB 6635 was the first member of the oval family. A hefty oval tube (Ø 40 × 28 mm) was required to be ergonomically designed to ensure hands could grip safely and purposefully. This objective was achieved by welding handle and brackets together in a mitre-joint. The upshot was a design in stark contrast to the gentle curves of its tubular counterparts. The market was immediately receptive.

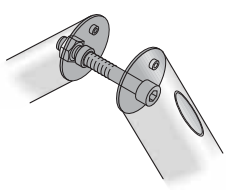
Item nos.	Ø	A
6635 38	40 × 28	350
6635 45	40 × 28	450
6635 99*	40 × 28	451 – 2100

* = Simply specify the desired CTC in parenthesize after the product code. Example: 6635 99 (500 CTC)

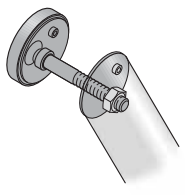




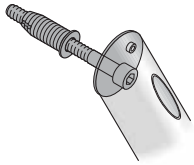
When locating the fixing points, especially on narrow stiles of glass doors, please note the off-center location of the threaded holes from the center of the contact plane of the handle. The measurement's difference is exactly 6 mm, in the case of FSB 6635.
For detailed information on fixing, please turn to page 67.



Back-to-Back Fixing

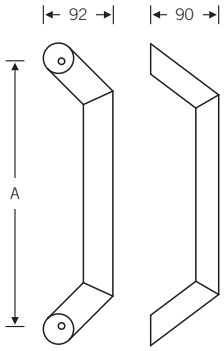


Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Oval Series



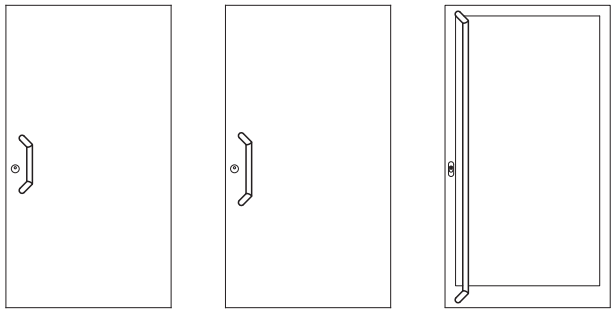
6636

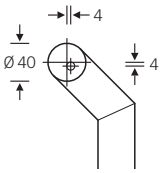
Stainless Steel

Door pull design FSB 6636 is a variation on the now classic first design FSB 6635. The visual severity of the first model is softened by having the brackets slope towards the grip. The angle between the two is 135°. The new design qualities really come into their own given shorter lengths.

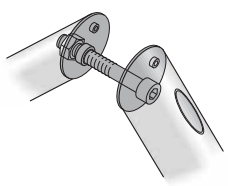
Item nos.	Ø	A
6636 38	40 × 28	350
6636 45	40 × 28	450
6636 99*	40 × 28	451 – 2100

* = Simply specify the desired CTC in parenthesize after the product code. Example: 6636 99 (500 CTC)

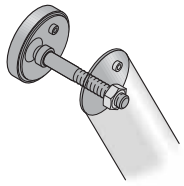




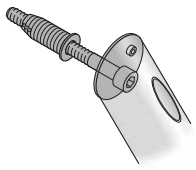
When locating the fixing points, especially on narrow stiles of glass doors, please note the off-center location of the threaded holes from the center of the contact plane of the handle. The measurement's difference is exactly 4 mm, in the case of FSB 6636.
For detailed information on fixing, please turn to page 67.



Back-to-Back Fixing



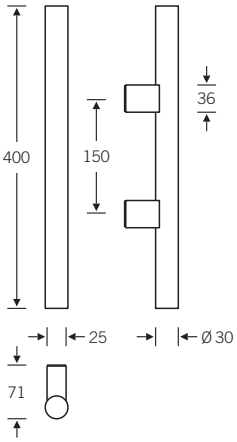
Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Round Series

● FSB North American Stock Items (stocked in Natural Color Aluminum and Satin Stainless Steel)



6642

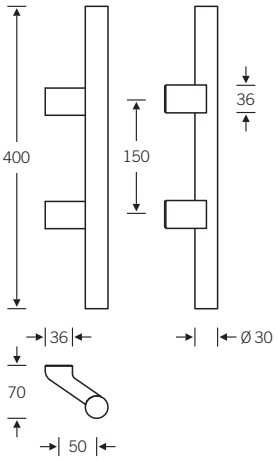
Ø 30 mm

Brackets
Aluminum ●

Grip
Aluminum ● or
Stainless Steel ●

Standard length 400 mm
(also available in custom designs, see fax form next page).

Safety clearance 38 mm
Fixing M6



6643

Ø 30 mm

Brackets
Aluminum

Grip
Aluminum or
Stainless Steel

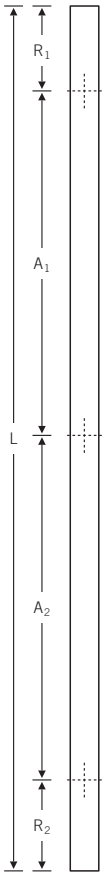
Standard length 400 mm
(also available in custom designs, see fax form next page).

Fixing M6

For detailed information on fixing of the pull handles 6642 and 6643, please turn to page 70.

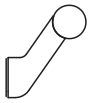
Back-to-Back Fixing | Through-Bolted Fixing | Concealed Fixing With Expansion Plug | Concealed Fixing With Drop Clamp

Fax copy



☐ 6642 99 Ø 30 mm

☐ 6643 99 Ø 30 mm



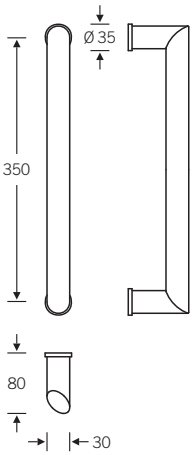
To order custom designs in the pull handle series 6642 or 6643, please use a copy of this page:

- First specify the model desired citing the applicable order code above.
- Then enter the quantity required and overall length in the table below.
- Then enter details of the distances between brackets and, where applicable, their distance from the end of the handle in mm.
- To ensure stability, the distance between brackets should not exceed 1200 mm.

Qte.	Overall length L	Distance between brackets A_1	A_2	A_3	Edge spacing* R_1	R_2	Fixing method

*least. 40 mm
max. 350 mm

Pull Handles
Oval Series



6650

Stainless Steel

FSB could not resist squeezing all the experience gained in fashioning the 40 × 28 mm oval tube into a smaller diameter. And thus it was that the standard in-line pull FSB 6650 came into being .It features a skewed oval grip 36 by 22 mm in diameter affixed to circular brackets.

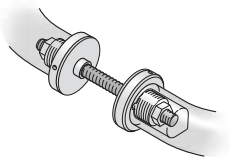
If so desired, FSB 6650 can also be supplied in other lengths.

Safety clearance 49 mm
Fixing M8

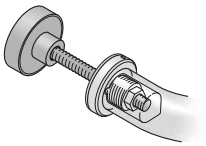
Item nos.	Ø	A
6650 38	36 × 22	350
6650 99*	36 × 22	351 – 1500

* = Simply specify the desired CTC in parenthesize after the product code. Example: 6650 99 (500 CTC)

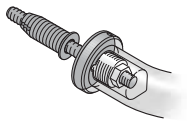
For detailed information on fixing, please turn to page 68.



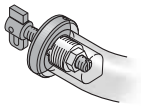
Back-to-Back Fixing



Through-Bolted Fixing

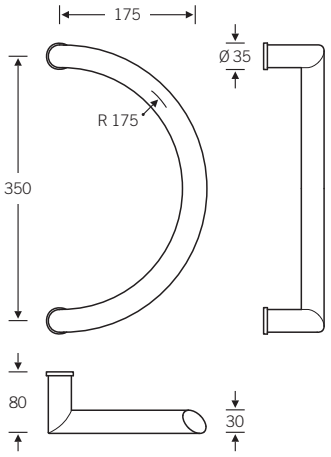


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series



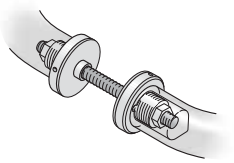
6652

Stainless Steel

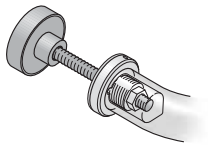
Handle models FSB 6650 (inline), FSB 6682 (U-shape), FSB 6652 (semicircular) and FSB 6685 (triangular) are living proof that tested designs featuring new oval cross-sections have the edge over their round counterparts both optically and in terms of gripping ergonomics. The hand glides effortlessly around them.

Safety clearance 53 mm
Fixing M8

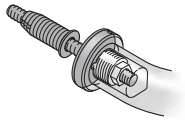
For detailed information on fixing, please turn to page 68.



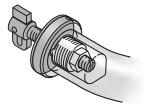
Back-to-Back Fixing



Through-Bolted Fixing

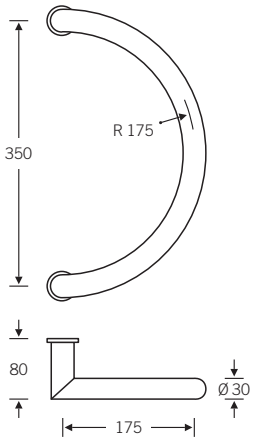


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



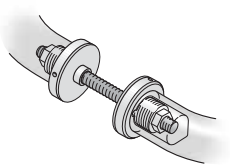
6653

Ø 30 mm

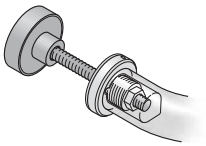
Stainless Steel

Safety clearance 55 mm
Fixing M8

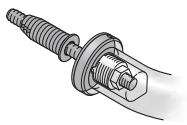
For detailed information on fixing, please turn to page 68.



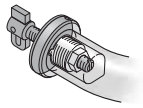
Back-to-Back Fixing



Through-Bolted Fixing

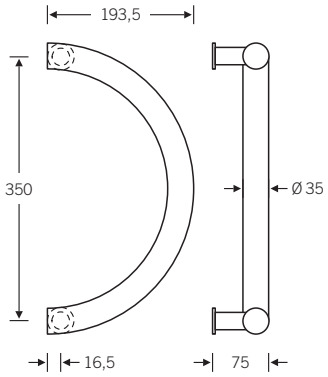


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



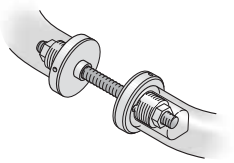
6655

Ø 35 mm

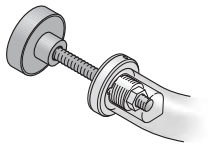
Aluminum
Stainless Steel

Safety clearance 55 mm
Fixing M8

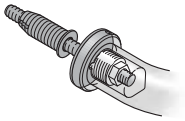
For detailed information on fixing, please turn to page 68.



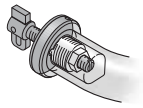
Back-to-Back Fixing



Through-Bolted Fixing

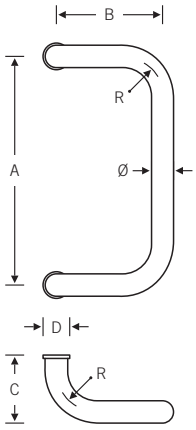


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



6662

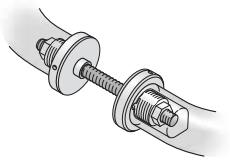
- Aluminum
- Stainless Steel
- Brass
- Aluminum + Color

Fixing Ø = 20 mm M6
Ø ≥ 25 mm M8

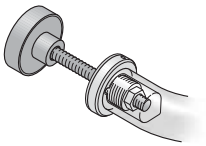
Items-nos.	Ø	R	A	B	C	D	S
6660 34	20	25	200	100	75	30	41
6661 34	25	40	200	100	80	35	42
6661 37	25	40	300	100	80	35	42
6661 38	25	40	350	100	80	35	42
6662 38	30	55	350	140	90	35	43
6663 38	35	60	350	140	95	45	45
6664 38	40	60	350	150	120	45	52
6661 99*	25	40	200 – 1200	100	80	35	42
6662 99*	30	55	300 – 1200	140	90	35	43
6663 99*	35	60	300 – 1200	140	95	45	45
6664 99*	40	60	350 – 1200	150	120	45	52

S = Safety clearance
* = Simply specify the desired CTC in parenthesize after the product code. Example: 6661 99 (500 CTC)

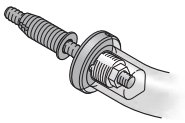
For detailed information on fixing, please turn to pagse 68, 69 and 70.



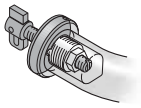
Back-to-Back Fixing



Through-Bolted Fixing

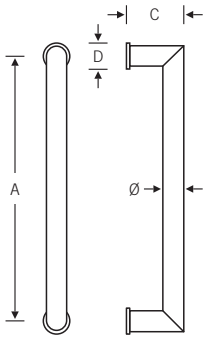


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



6669

- Stainless Steel
- Bronze
  (only 6669 38 and 6669 99 with available length up to 1200 mm)

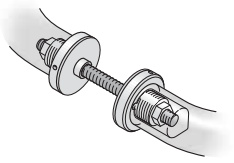
Matches FSB lever handle model 1076.

Fixing M8

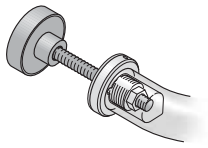
Items nos.	Ø	A	C	D	S
6606 38	25	350	75	35	50
6669 38	30	350	80	35	55
6669 99*	30	special length	80	35	55
6607 38	35	350	85	45	57
6609 38	40	350	90	45	60
6609 99*	40	special length	90	45	60

S = Safety clearance
* = Simply specify the desired CTC in parenthesize after the product code. Example: 6669 99 (500 CTC)

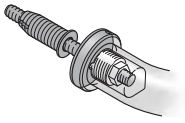
For detailed information on fixing, please turn to page 68.



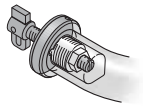
Back-to-Back Fixing



Through-Bolted Fixing

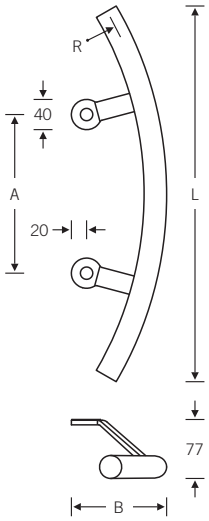


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



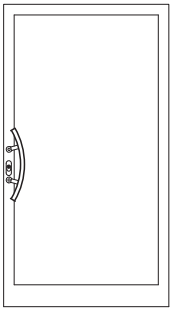
6674

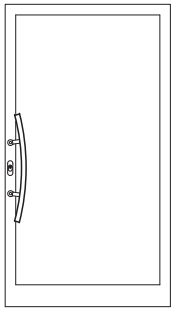
Stainless Steel

Door pull FSB 6674 takes the offset strap-type brackets from the FSB 6615 series and fuses these with the sweep of the crescent-shaped round pull (Ø 30 mm).

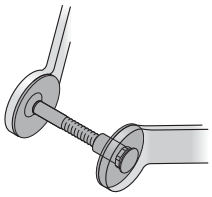
This pull series is only supplied with A dimensions of 210 mm and 350 mm.

Items nos.	Ø	R	A	B	L
6674 21	30	485	210	126	497
6674 35	30	1420	350	123	742

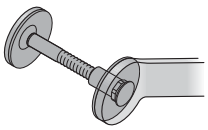




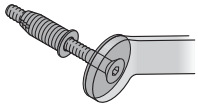
For detailed information on fixing, please turn to page 71.



Back-to-Back Fixing

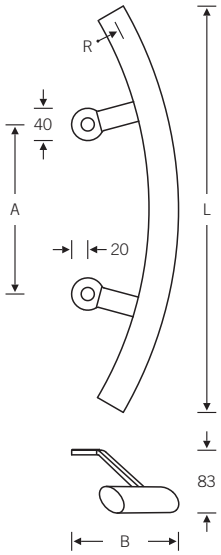


Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Oval Series



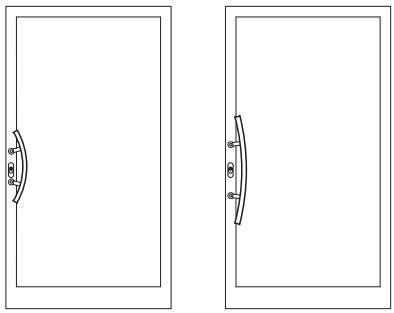
6675

Stainless Steel

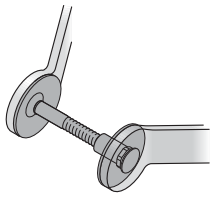
Door pull FSB 6675 takes the offset strap-type brackets from the FSB 6616 series and fuses these with the sweep of the crescent-shaped oval pull (Ø 40 × 28 mm).

This pull series is only supplied with A Dimensions of 210 mm and 350 mm.

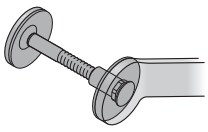
Items nos.	Ø	R	A	B	L
6675 21	40 × 28	485	210	132	504
6675 35	40 × 28	1420	350	129	745



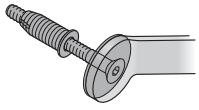
For detailed information on fixing, please turn to page 71.



Back-to-Back Fixing

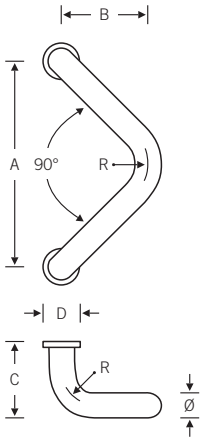


Through-Bolted Fixing



Concealed Fixing
With Expansion Plug

Pull Handles
Round Series



6679

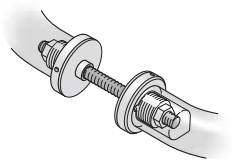
- Aluminum
- Stainless Steel
- Brass
- Aluminum + Color

Fixing Ø = 20 mm M6
Ø ≥ 25 mm M8

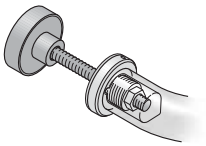
Items-nos.	Ø	R	A	B	C	D	S
6649 34	20	25	200	90	75	30	41
6679 34	25	40	200	83	80	35	42
6679 37	25	40	300	133	80	35	42
6679 38	25	40	350	158	80	35	42
6623 38	30	55	350	152	90	35	43
6624 38	35	60	350	150	95	45	45
6625 38	40	60	350	150	105	45	49

S = Safety clearance

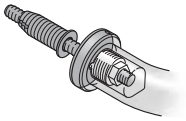
For detailed information on fixing, please turn to pages 68, 69 and 70.



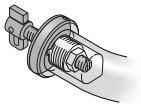
Back-to-Back Fixing



Through-Bolted Fixing

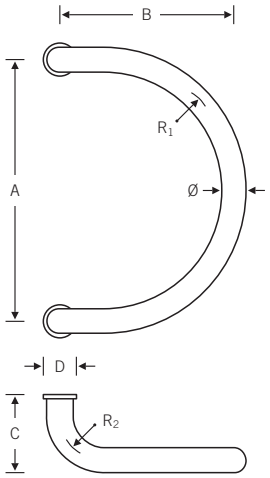


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series



6683

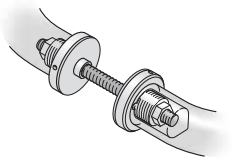
- Aluminum
- Stainless Steel
- Bronze (only 6683 38)
- Brass
- Aluminum + Color

Fixing Ø = 20 mm M6
Ø ≥ 25 mm M8

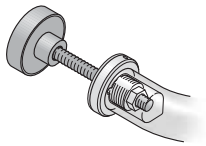
Items-nos.	Ø	R1	R2	A	B	C	D	S
6626 34	20	100	25	200	130	75	30	41
6673 34	25	100	40	200	140	80	35	42
6673 37	25	150	40	300	190	80	35	42
6673 38	25	175	40	350	215	80	35	42
6683 38	30	175	55	350	230	90	35	43
6659 38	35	175	60	350	235	95	45	45
6678 38	40	175	60	350	235	120	45	52

S = Safety clearance

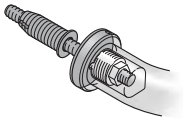
For detailed information on fixing, please turn to pages 68, 69 and 70.



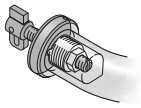
Back-to-Back Fixing



Through-Bolted Fixing

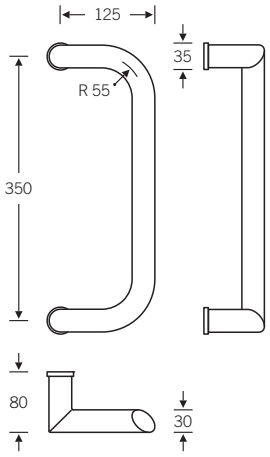


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series



6682

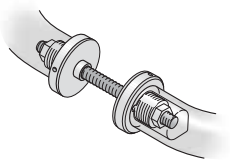
Stainless Steel

Door handle FSB 6682 is the U-shaped design in handle series 6650 (inline, ref. to page 40), 6652 (semicircular, ref. to page 41) and 6685 (triangular, besides).

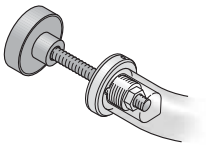
In all four cases, the easy-grip oval tube with a diameter of 36 × 22 mm is supported on round fixing brackets.

Safety clearance 53 mm
Fixing M8

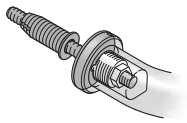
For detailed information on fixing, please turn to page 68.



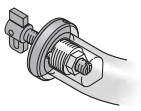
Back-to-Back Fixing



Through-Bolted Fixing

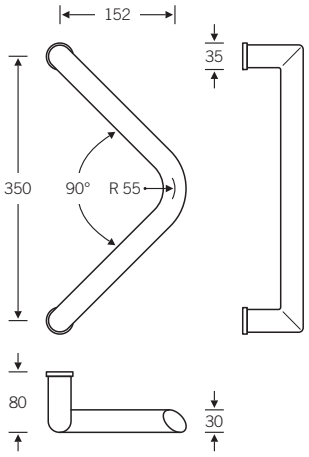


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Oval Series



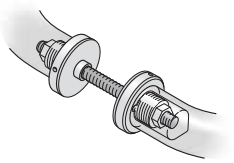
6685

Stainless Steel

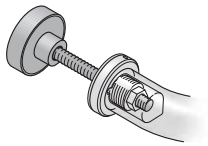
The triangular tubular pull became a top-seller, echoing as it does the diagonal trussing so commonly to be found on front doors. The oval-section pull handle 6685 adds ergonomically enhanced gripping qualities to what are already very fine visuals.

Safety clearance 53 mm
Fixing M8

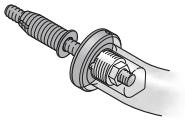
For detailed information on fixing, please turn to page 68.



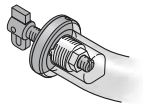
Back-to-Back Fixing



Through-Bolted Fixing

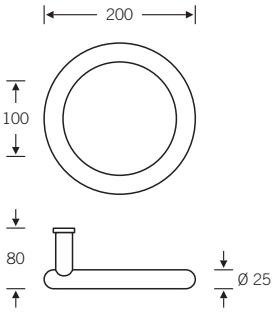


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Round Series

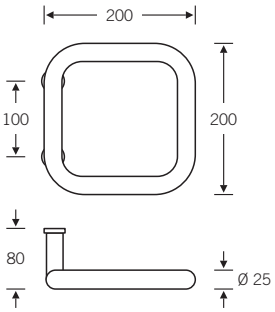


6677 00

Ø 25 mm

Stainless Steel

Safety clearance 65 mm
Fixing M8



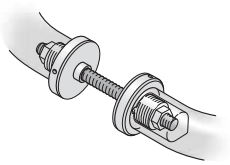
6688 00

Ø 25 mm

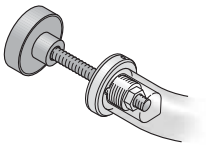
Stainless Steel

Safety clearance 48 mm
Fixing M8

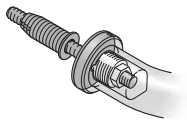
For detailed information on fixing, please turn to page 68.



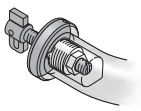
Back-to-Back Fixing



Through-Bolted Fixing

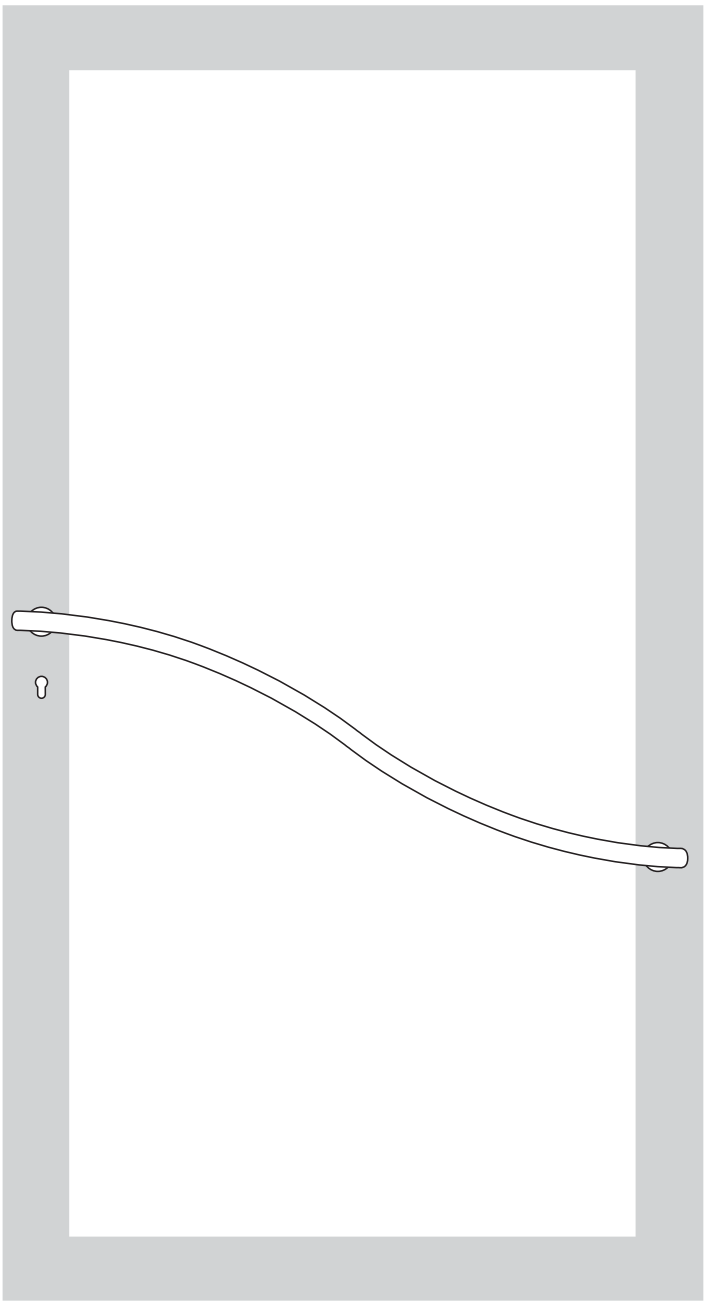


Concealed Fixing
With Expansion Plug



Concealed Fixing
With Drop Clamp

Pull Handles
Wave



6510

30 mm Ø

- Aluminum
- Stainless Steel
- Brass

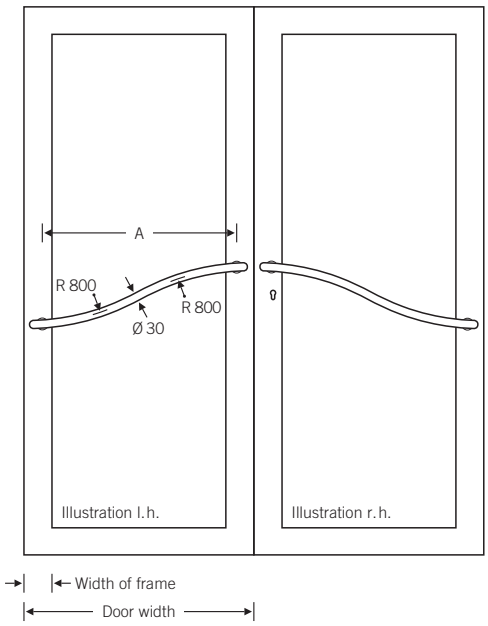
Safety clearance 65 mm for 30 mm handle projection, fixing M8.

The wave handle is offered in aluminum, stainless steel and brass with the following specifications:

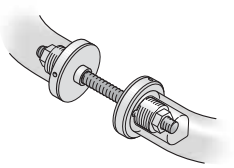
Torsion radius: 800 mm
Handle diameter: 30 mm
Bracket diameter: 35 mm

For quoting purposes, we require the following details together with a dimensioned sketch:

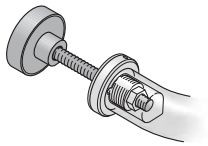
1. Width of door
2. Size A required
3. Frame widths
4. Profile section
5. In case of glass doors: distance of fixing holes from edge



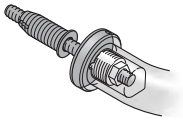
For detailed information on fixing, please turn to page 68.



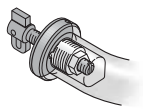
Back-to-Back Fixing



Through-Bolted Fixing

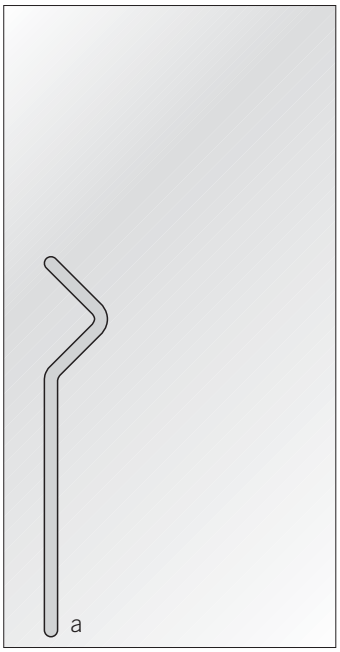


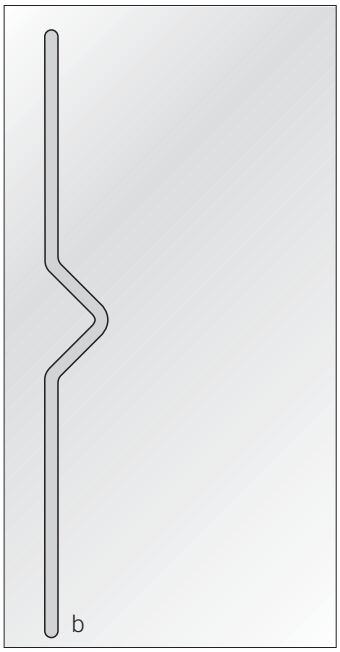
Concealed Fixing With Expansion Plug

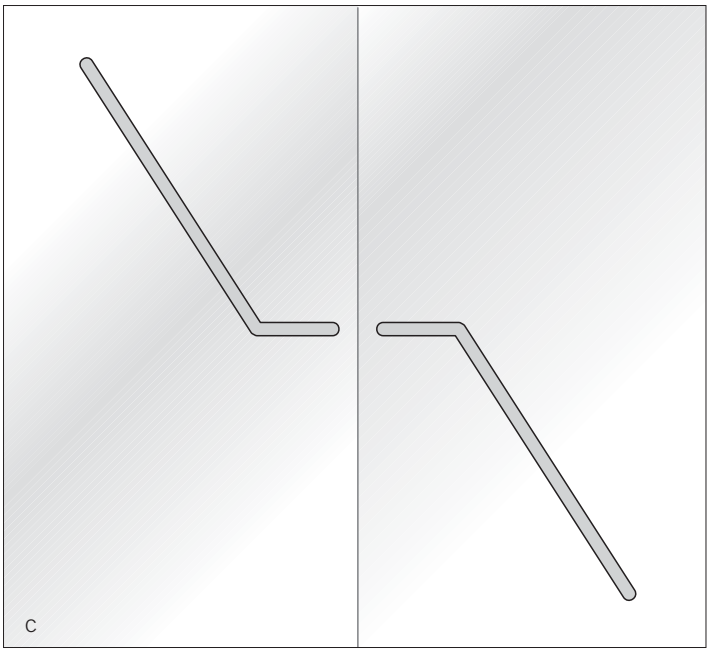


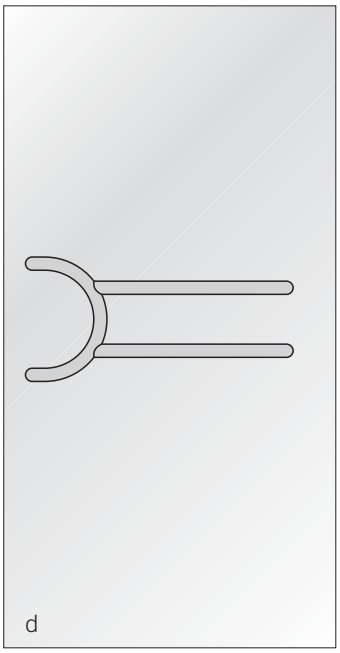
Concealed Fixing With Drop Clamp

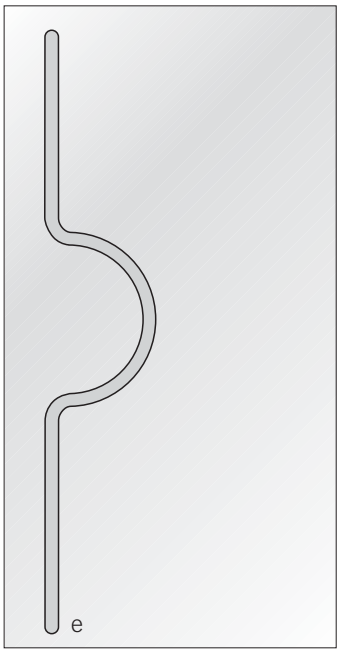
Pull Handles
Round Series

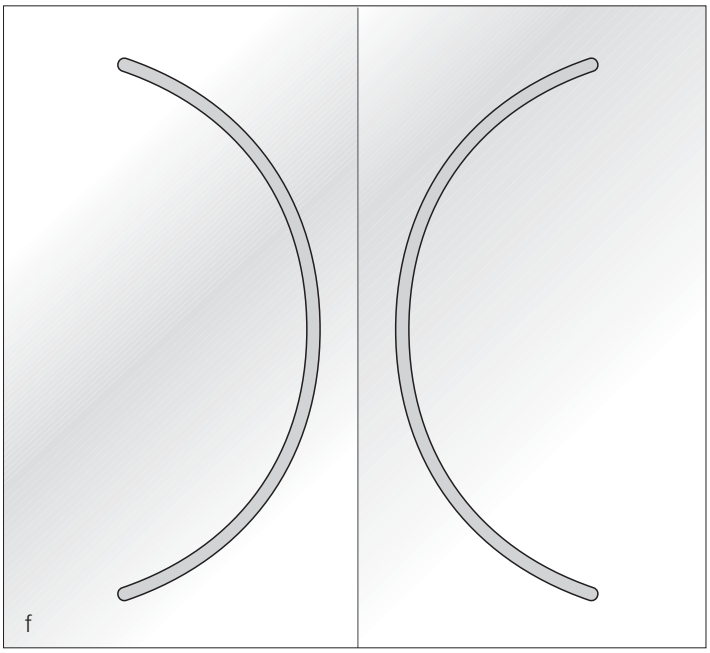










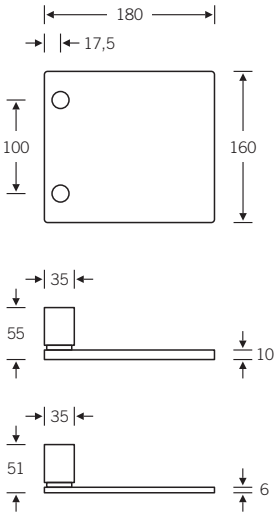


The stainless steel pull handle designs shown here are intended as creative aids for architects, planners, designers, retailers and builder clients alike.

Please always give details of the door's type, material and weight. We must have accurate drawings before we can supply quotes or implement orders.

For detailed information on fixing, please turn to page 68.

Push and Pull
Pad Handles



6108

Fixing M8

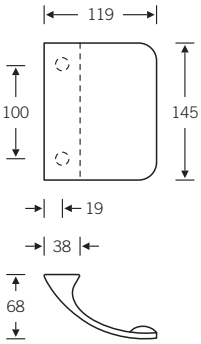
Available in:

Bracket: Aluminum
Pad: Aluminum

Bracket: Aluminum
Pad : Stainless Steel

The round M8 fixing sets are suitable for these pad handles.
For details page 68.
Fixing accessories are shown in “Components” section.

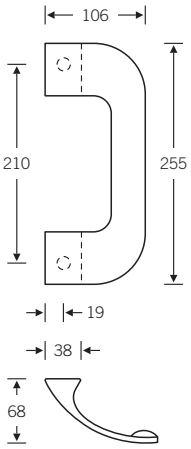
Push and Pull Pad Handles



6112

Aluminum

Fixing M6



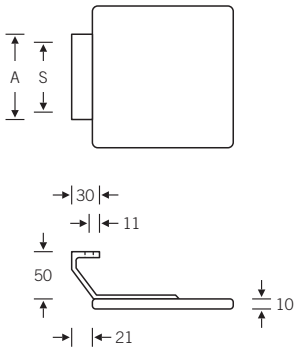
6113

Aluminum

Fixing M6

For detailed information on fixing, please turn to page 74, fixing accessories are shown in “Components” section.

Push and Pull
Pad Handles



6181 62

Aluminum

Pad 150 × 150 mm
Dimension A 90 mm
c:c screw holes 70 mm

6181 70

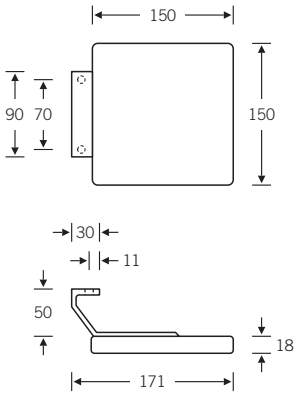
Aluminum

Pad 180 × 180 mm
Dimension A 120 mm
c:c screw holes 100 mm

6181 74

Aluminum

Pad 200 3 200 mm
Dimension A 120 mm
c:c screw holes 100 mm



6184 62

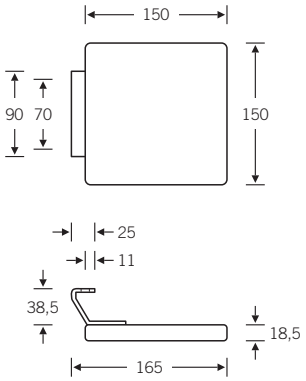
Aluminum

Plastic-Pad, black

Fixing accessories are shown in “Components” section.

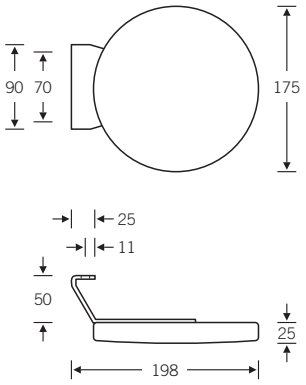
Screw hole Ø 8.5 mm

Push and Pull
Pad Handles



6254 62

Stainless Steel



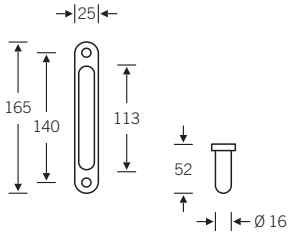
6268

Stainless Steel

Fixing accessories are shown in "Components" section.

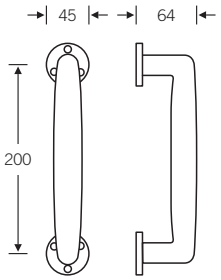
Screw hole Ø 8.5 mm

Pull Handles



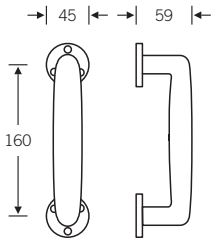
2160

Aluminum



3601

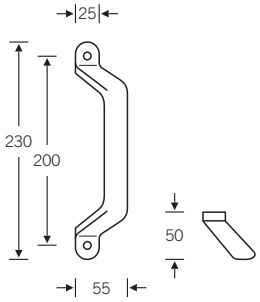
Aluminum



3602

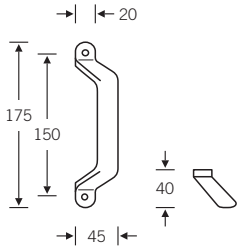
Aluminum

Pull Handles



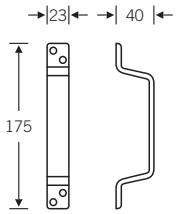
3603

Aluminum



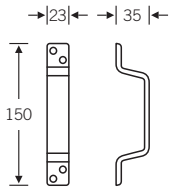
3604

Aluminum



3617

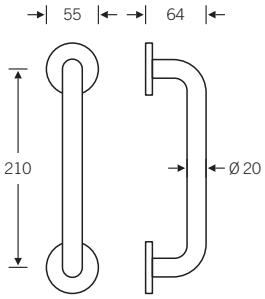
Aluminum



3618

Aluminum

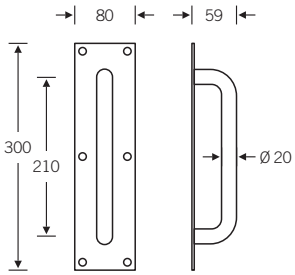
Pull Handles



6628

Aluminum
Stainless Steel

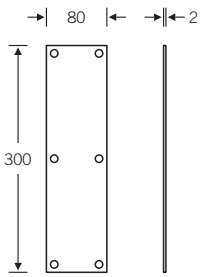
Fittings feature two fixing points concealed by a clip-on cover



6629

Aluminum
Stainless Steel

Boreholes for 4.0 mm countersunk screws



5325

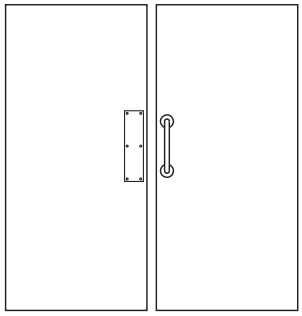
Aluminum
Stainless Steel

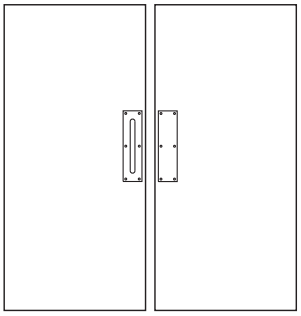
counterplate to 6629

Boreholes for 4.0 mm countersunk screws

Double-action swing doors in restaurants, canteens, hospitals and so forth are generally fitted with both push and pull plates for added protection.

An alternative arrangement is conceivable in the gripping area, however. Furnishing the two faces of the door with the combination shown above allows the desired direction of swing to be implied.





FSB's Threaded Insert Fixing Method

FSB's threaded insert method is a practically-minded and, at the same time, enhanced means of fixing concealed pulls to solid doors, and in the process allowing distension forces to be absorbed far more effectively by the door stile.

Regardless of door thickness or stile type, a single type of threaded insert 34 mm long is used.

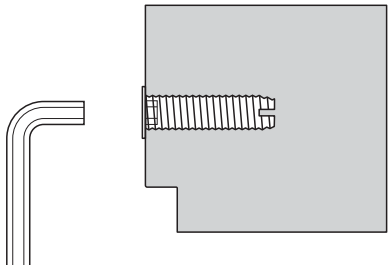
The self-tapping thread creates an excellent bond with comparatively little play between door stile and threaded insert, thus ensuring an even and effective frictional connection – assuming the accurate drilling of 12.5 mm-diameter borehole has been made.

Step One

Whether a manual or a power drill is used, threaded inserts require holes 12.5 mm in diameter to be drilled.

Step Two

Then the threaded insert is screwed in using a size 8 Allen key until the washer at the end of the threaded insert lies flush against the stile.
FSB recommends an Allen key with handle, as this is the best way of guaranteeing the requisite force is exerted.



Step Three

The "mounting post" is screwed into the threaded insert.

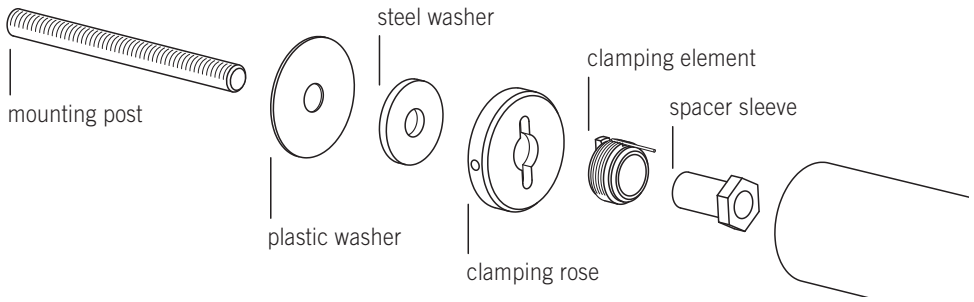
Step Four

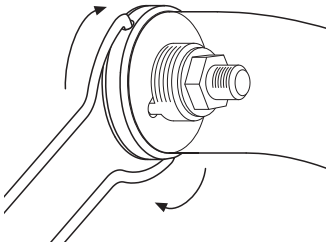
The handle is then placed on the projecting "mounting post".

FSB Clamping Rose Fastening

The FSB clamping rose fastening is a new method of assembling door-pulls whereby the pull is tightened fast against the surface of the door. Visible fixing screws are done away with.

All door pulls with round necks are supplied as female parts with an internal left-handed thread 18 × 1.5 mm (M8 fixing) or 14 × 1.5 mm (M6 fixing). A clamping rose fastening comprises a plastic washer, a steel washer, a clamping element (with “lock-tight”), a rotating rose and a spacer sleeve that are securely held in place by a plastic clip and pre-attached to the end of the handle.





FSB Clamping Rose Fastening

The new FSB clamping rose fastening allows all FSB door pulls with round necks to be screwed tight against the surface of the door by means of an easy-to-operate clamping rose. Radial play allowed for by FSB ensures the necessary tolerances during fitting. Assembly is as follows:

Step One

First install the “mounting post”. How this is done depends on which fixing method you are using (back-to-back fixing, through-bolted fixing or concealed fixing).

Step Two

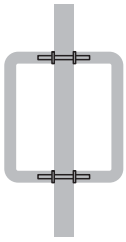
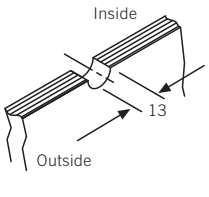
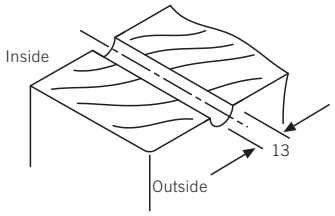
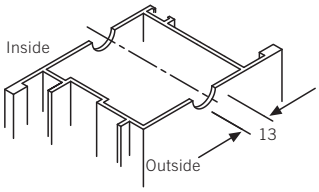
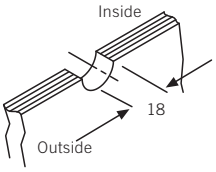
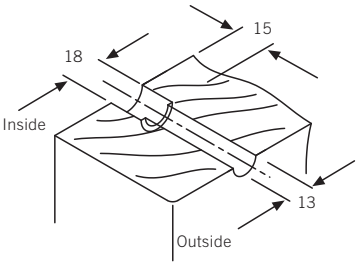
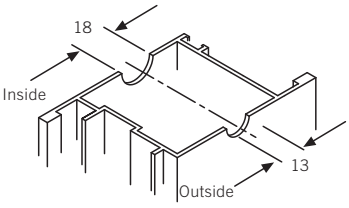
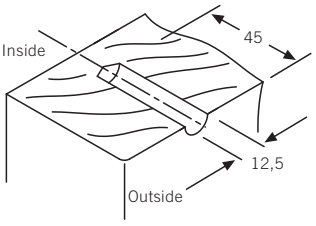
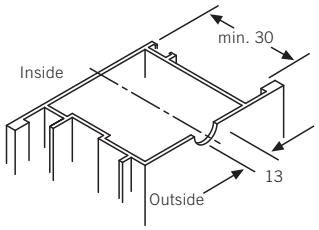
Then detach the clamping elements from the end of the pull by turning them counterclockwise. Remove the plastic clip and slip the plastic washer, the steel washer, the clamping rose and the clamping element over the mounting post in that order. Using the spacer sleeve, screw the elements together, ensuring that the clamping rose and clamping element remain free to rotate.

Step Three

Place the handle on the fixing points and tighten against the door by alternately turning the clamping roses in a clockwise direction.

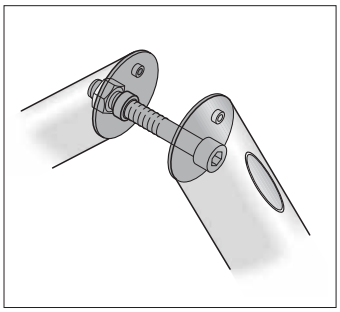
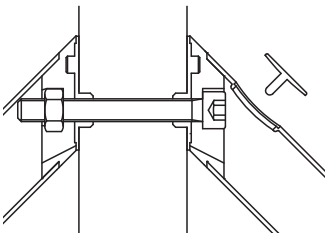
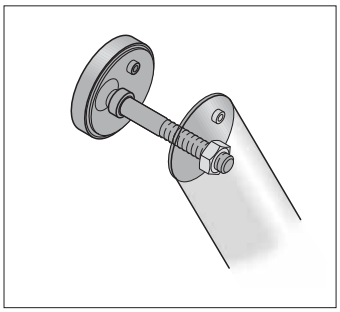
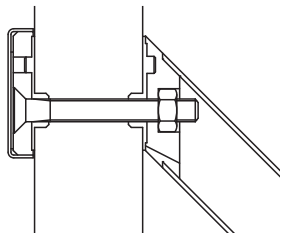
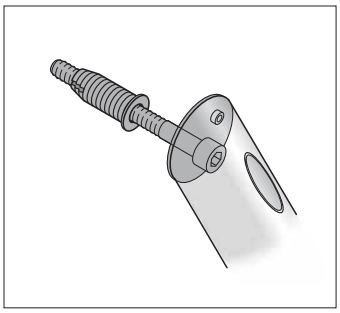
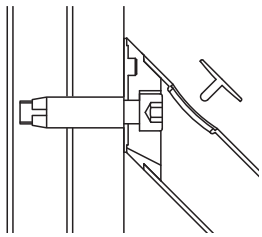
A turning device for the FSB clamping rose is supplied with the product.

Borehole Dimensions

Fixing method	Glass door	Wood door	Metal door
Back-to-Back Fixing				
Through-Bolted Fixing				
Concealed Fixing With Expansion Plug				
Concealed Fixing With Drop Clamp				

Fixing Methods
Pull Handles

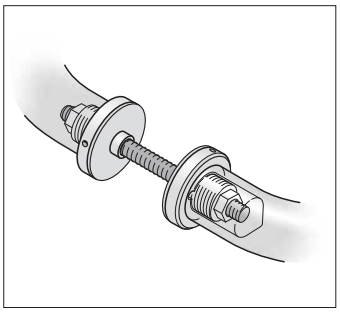
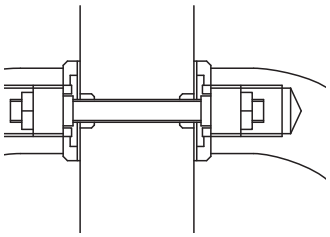
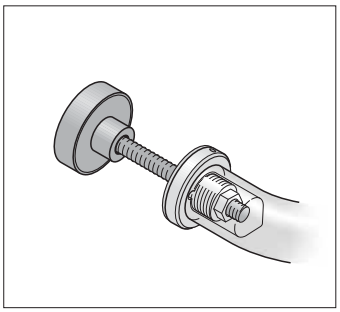
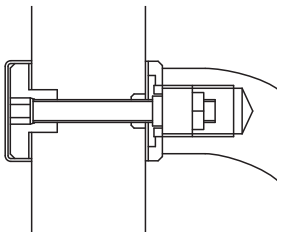
Pull handle series	When selecting and ordering pull handles, please note that the pulls in this series are produced as threaded-part and through-bolted fixing sections.
6635	
6636	

	Fixing method	Fixing accessories	Item nos.	
	Back-to-Back Fixing 	2 each socket head cup screws M8 4 each plastic washers 2 each lids stainless steel Borehole Ø 13 mm	0582 1008 glass door 8 –10 mm 0582 3038 0582 3045 0582 3050 0582 3055 0582 3060 0582 3065 0582 3070 0582 3075 0582 3080	 38 – 44 mm 45 – 49 mm 50 – 54 mm 55 – 59 mm 60 – 64 mm 65 – 69 mm 70 – 74 mm 75 – 79 mm 80 – 84 mm
	Through-Bolted Fixing 	2 each countersunk screw M8 4 each plastic washers 2 each fixing washers with caps stainless steel Borehole Ø 13 mm	0582 2008 glass door 8 –10 mm 0582 4038 0582 4045 0582 4050 0582 4055 0582 4060 0582 4065 0582 4070 0582 4075 0582 4080	 38 – 44 mm 45 – 49 mm 50 – 54 mm 55 – 59 mm 60 – 64 mm 65 – 69 mm 70 – 74 mm 75 – 79 mm 80 – 84 mm
	Concealed Fixing With Expansion Plug 	2 each socket head cup screws M8 2 each plastic washers 2 each expansion plugs brass dull nickel finish 2 each lids stainless steel Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0582 0335 length of dowel 34 mm	

Fixing Methods
Pull Handles

Pull handle series round M8

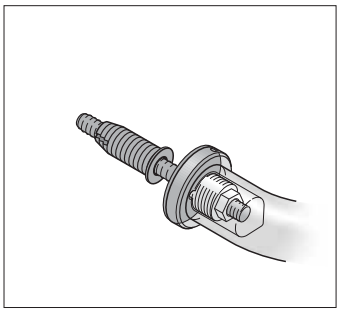
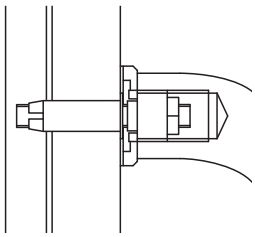
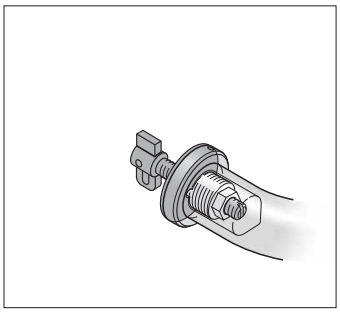
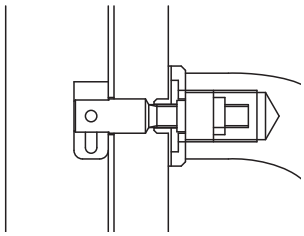
6108, 6501, 6504, 6506, 6507, 6510, 6514, 6529, 6531, 6532, 6533, 6534, 6535, 6536, 6537, 6538, 6540, 6541, 6542, 6546, 6580, 6582, 6583,* 6602, 6603, 6604, 6605, 6606, 6607, 6609, 6623, 6624, 6625, 6630, 6647, 6650, 6652, 6653, 6655, 6659, 6661, 6662, 6663, 6664, 6669, 6670, 6673, 6677, 6678, 6679, 6681, 6682, 6683, 6685, 6688

	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each set screws M8 Borehole Ø 13 mm	0580 1008 glass door 8 – 10 mm 0580 3035 35 – 54 mm 0580 3055 55 – 74 mm 0580 3075 75 – 94 mm
	Through-Bolted Fixing 	2 each set screws M8 2 each fixing nuts with caps Borehole Ø 13/18 mm, please turn to page 66	Grip diameter 25/30 mm 0580 2308 glass door 8 – 10 mm 0580 4335 35 – 44 mm 0580 4345 45 – 54 mm 0580 4355 55 – 64 mm 0580 4365 65 – 74 mm 0580 4375 75 – 84 mm Grip diameter 35/40 mm 0580 2408 glass door 8 – 10 mm 0580 4435 35 – 44 mm 0580 4445 45 – 54 mm 0580 4455 55 – 64 mm 0580 4465 65 – 74 mm 0580 4475 75 – 84 mm

Fixing Methods
Pull Handles

Pull handle series round M8

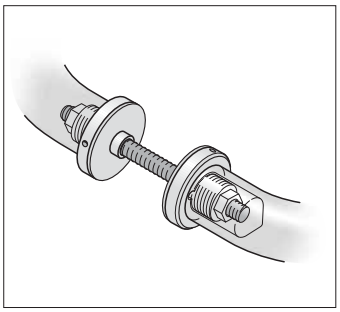
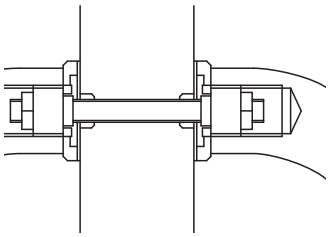
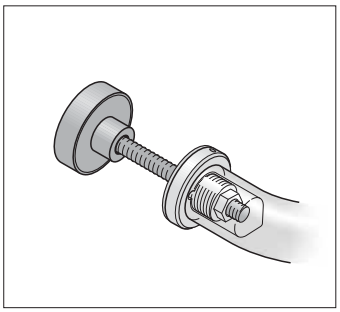
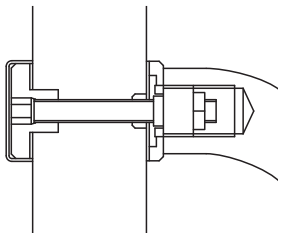
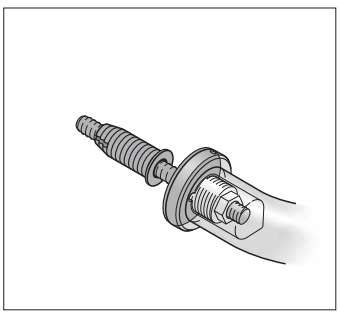
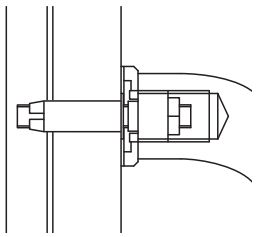
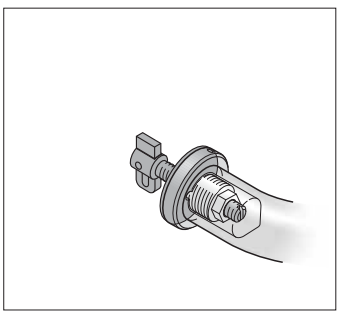
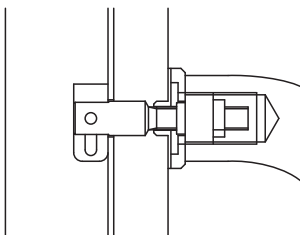
6108, 6501, 6504, 6506, 6507, 6510, 6514, 6529, 6531, 6532, 6533, 6534, 6535, 6536, 6537, 6538, 6540, 6541, 6542, 6546, 6580, 6582, 6583,* 6602, 6603, 6604, 6605, 6606, 6607, 6609, 6623, 6624, 6625, 6630, 6647, 6650, 6652, 6653, 6655, 6659, 6661, 6662, 6663, 6664, 6669, 6670, 6673, 6677, 6678, 6679, 6681, 6682, 6683, 6685, 6688

	Fixing method	Fixing accessories	Item nos.	
	Concealed Fixing With Expansion Plug 	2 each set screws M8 2 each expansion plugs brass dull nickel finish Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0580 0335 length of dowel 34 mm	
	Concealed Fixing With Drop Clamp 	1 plastic washer 1 clamp Borehole Ø 13 mm	0580 9002 0580 9016	2 – 15 mm 16 – 30 mm

Fixing Methods
Pull Handles

Pull handle series round M6

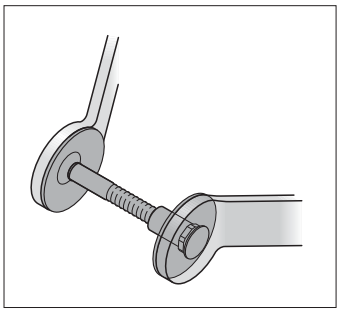
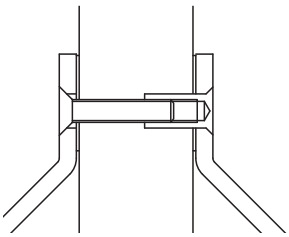
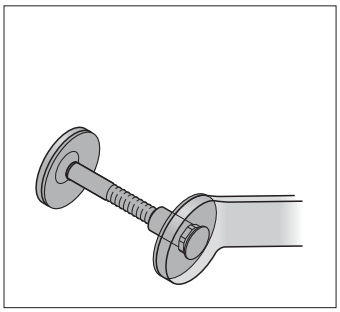
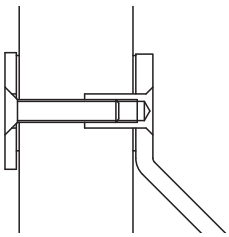
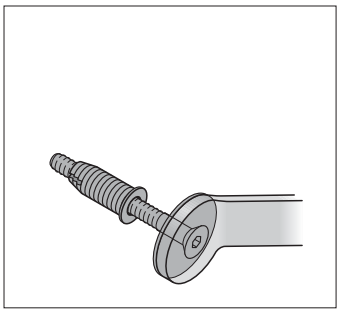
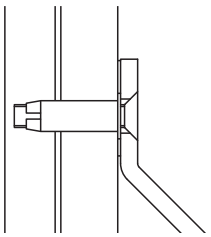
3684, 3688, 6610, 6611, 6612,
6613, 6626, 6627, 6642, 6643,
6649, 6660

	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each set screws M6 Borehole Ø 13 mm	0580 1208 glass door 8 – 10 mm 0580 3235 35 – 54 mm 0580 3255 55 – 74 mm 0580 3275 75 – 94 mm
	Through-Bolted Fixing 	2 each set screws M8 2 each fixing nuts with caps Borehole Ø 13/18 mm, please turn to page 66	Grip diameter 20/25 mm 0580 2208 glass door 8 – 10 mm 0580 4235 35 – 44 mm 0580 4245 45 – 54 mm 0580 4255 55 – 64 mm 0580 4265 65 – 74 mm 0580 4275 75 – 84 mm
	Concealed Fixing With Expansion Plug 	2 each set screws M6 2 each expansion plugs brass dull nickel finish Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0580 0435 length of dowel 34 mm
	Concealed Fixing With Drop Clamp 	1 plastic washer 1 clamp Borehole Ø 13 mm	0580 9202 2 – 15 mm 0580 9216 16 – 30 mm

Fixing Methods
Pull Handles

Pull handle series

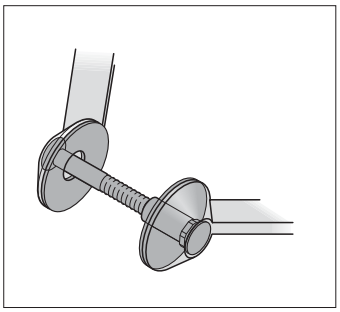
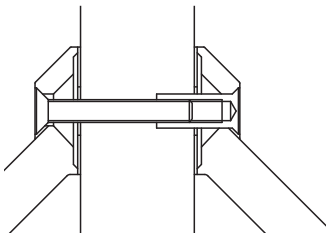
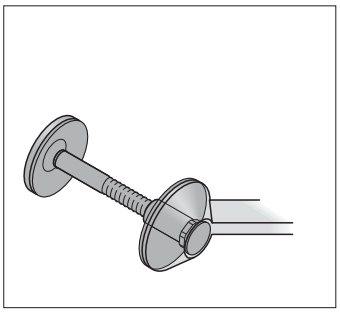
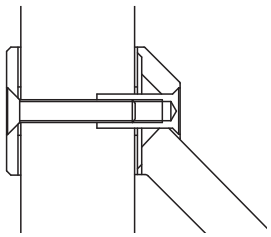
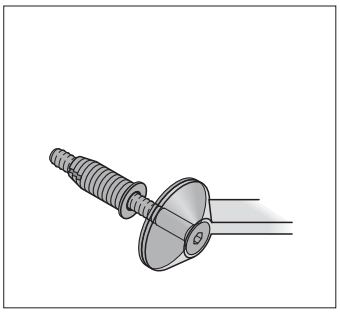
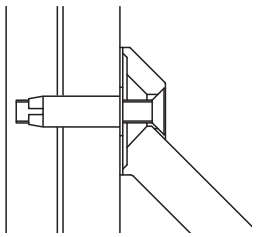
6615
6616
6674
6675

	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each countersunk screws M8 with sleeve nuts M8 stainless steel 4 each plastic washers Borehole Ø 13 mm	0583 1008 glass door 8 – 10 mm 0583 3034 34 – 43 mm 0583 3044 44 – 53 mm 0583 3054 54 – 63 mm 0583 3064 64 – 73 mm 0583 3074 74 – 83 mm
	Through-Bolted Fixing 	2 each countersunk screws M8 with sleeve nuts M8 stainless steel 2 each washers stainless Steel 4 each plastic washers Borehole Ø 13 mm	0583 2008 glass door 8 – 10 mm 0583 4036 36 – 45 mm 0583 4046 46 – 55 mm 0583 4056 56 – 65 mm 0583 4066 66 – 75 mm 0583 4076 76 – 85 mm
	Concealed Fixing With Expansion Plug 	2 each countersunk screws M8 stainless steel 2 each expansion plugs brass dull nickel finish 2 each plastic washers Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0583 0335 length of dowel 34 mm

Fixing Methods
Pull Handles

Pull handle series

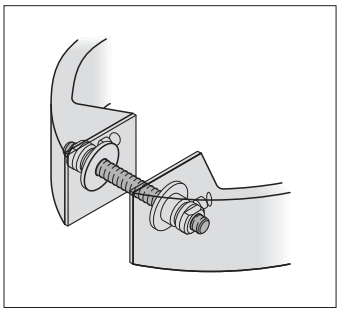
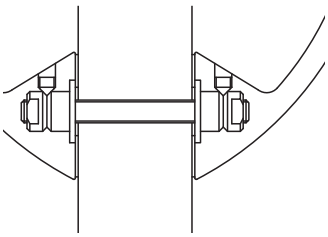
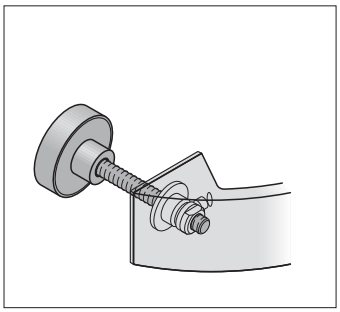
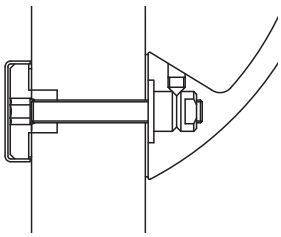
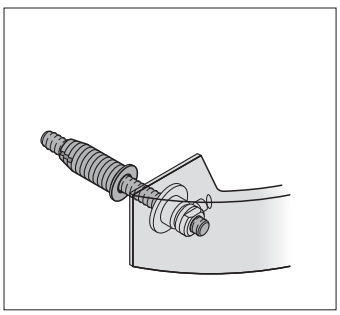
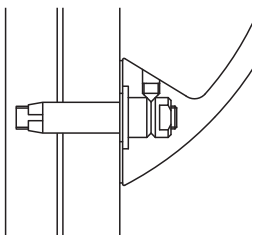
6620
6621

	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each countersunk screw M 8 with sleeve nuts M8 stainless steel 4 each plastic washers Borehole Ø 13 mm	0584 1008 glass door 8– 10 mm 0584 3035 35 – 44 mm 0584 3045 45 – 54 mm 0584 3055 55 – 64 mm 0584 3065 65 – 74 mm 0584 3075 75 – 84 mm
	Through-Bolted Fixing 	2 each countersunk screw M8 with sleeve nuts M8 stainless steel 2 each washers stainless steel 4 each plastic washers Borehole Ø 13 mm	0584 2008 glass door 8 – 10 mm 0584 4035 35 – 44 mm 0584 4045 45 – 55 mm 0584 4055 55 – 65 mm 0584 4065 65 – 75 mm 0584 4075 75 – 85 mm
	Concealed Fixing With Expansion Plug 	2 each countersunk screw M8 stainless steel 2 each expansion plugs brass dull nickel finish 2 each plastic washers Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0584 0335 length of dowel 34 mm

Fixing Methods
Pull Handles

Pull handle series

6526

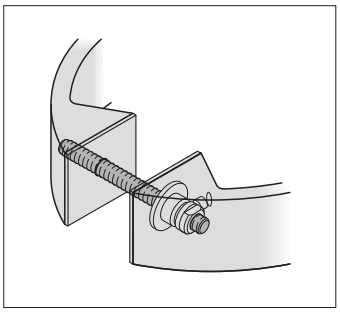
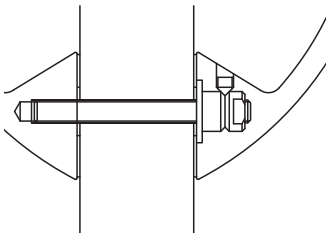
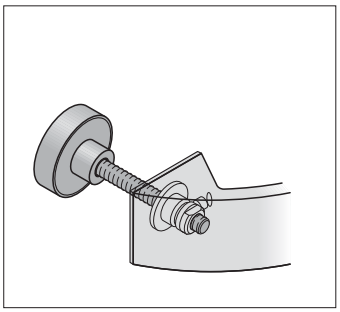
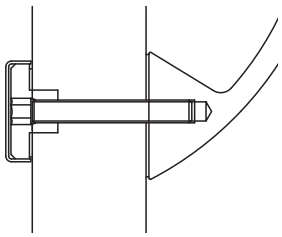
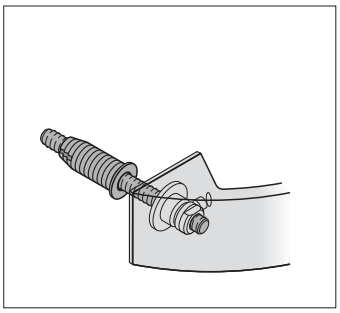
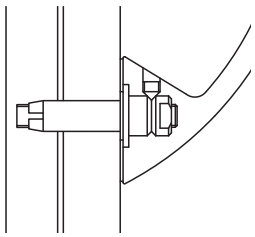
	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each set screws M8 Borehole Ø 13 mm	0587 1008 glass door 8 – 10 mm 0587 3035 35 – 54 mm 0587 3055 55 – 74 mm 0587 3075 75 – 94 mm
	Through-Bolted Fixing 	2 each set screws M8 2 each fixing nuts with caps Borehole Ø 13/18 mm, please turn to page 60	0587 2308 glass door 8 – 10 mm 0587 4335 35 – 44 mm 0587 4345 45 – 54 mm 0587 4355 55 – 64 mm 0587 4365 65 – 74 mm 0587 4375 75 – 84 mm
	Concealed Fixing With Expansion Plug 	2 each set screws M8 2 each expansion plugs brass dull nickel finish Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0587 0335 length of dowel 34 mm

Fixing Methods
Pull Handles

Pull handle series

6112
6113

6642
6643

	Fixing method	Fixing accessories	Item nos.
	Back-to-Back Fixing 	2 each set screws M6 Borehole Ø 13 mm	0580 1208 glass door 8 – 10 mm 0580 3235 35 – 54 mm 0580 3255 55 – 74 mm 0580 3275 75 – 94 mm
	Through-Bolted Fixing 	2 each set screws M6 2 each fixing nuts with caps Borehole Ø 13/18 mm, look page 60	0580 2208 glass door 8 – 10 mm 0580 4235 35 – 44 mm 0580 4245 45 – 54 mm 0580 4255 55 – 64 mm 0580 4265 65 – 74 mm 0580 4275 75 – 84 mm
	Concealed Fixing With Expansion Plug 	2 each set screws M6 2 each expansion plugs brass dull nickel finish Borehole Ø 12.5 mm (wood doors), Ø 13 mm (metal doors)	0580 0435 length of dowel 34 mm

Overview

FSB North American Stock Items (stocked in Natural Color Aluminum and Satin Stainless Steel)

Base Material
- Aluminum
- AluGrey
- Stainless Steel
- Bronze
- Brass

4220 41/51

Page 78

4220 42/52

Page 78

4223 41/51

Page 79

4223 42/52

Page 79

4224 42/52

Page 76

4220 45/55

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4224 45/55

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8812

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2302 07

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2322 07

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2329 07

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2374 07

Page 86

3684

Page 84

3686

Page 85

3688

Page 84

4227

Page 83

4228

Page 82

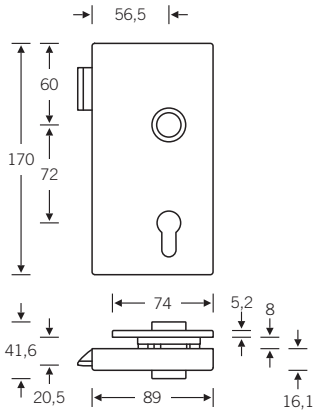
8820

Page 94

8821

Page 96

Glass door trim



4224 42 r. h.
4224 52 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Heavy-duty bearing
Rectangular lockset plate compact with cover plates
with heavy-duty glass door lock (DIN 18251, Class 4)
designed for use with PZ cylinder
CTC 72 mm
8 mm split follower
cast-steel latch

shown here European (DIN) l. h.
drawing European (DIN) r. h.

Door frames that are not to the European (DIN) specification can, of course, also be used – though the flush-frame effect cannot then be guaranteed. The trim can also be used in conjunction with partition systems.

The door's transparency is underscored by the tight dimensions of the lock cover, which at 170 mm by 89 mm is some 10 % smaller than in standard glass door trim. This paring-down was achieved by developing a special-purpose lock that is every bit as rugged and functional as larger models as well as being suitable for all sizes of glass door. We have developed a special heavy-duty bearing for high frequency transited doors involving an expansion sleeve in Teflon-coated stainless steel that encompasses the door handle over its entire bushing area whilst also dependably withstanding the mechanical forces exerted on large-format glass doors.

Technical notes:

Dimensions given assume glass 8 mm thick. Lockset plates for glass doors are prepared at the factory for glass 8 mm, 10 mm and 12 mm thick. Hardware for glass 12 mm thick is available to order. For further technical notes, cf. Pages 87 – 89.

The handle shown is illustrative. Virtually any other FSB handle could be used instead.

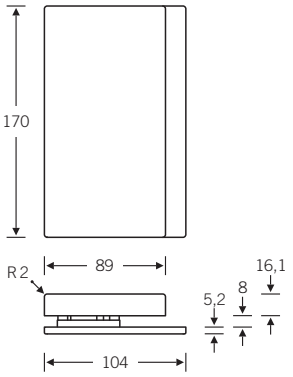
Handles, strikes, and PZ cylinder must be ordered seperately.

Options:

- Passage
- Privacy (with or without indicator): Please indicate when ordering, as trim is fitted with thumbturn and indicator (1735 0054) as standard.

Compact strike box
for twin-leaf glass doors

shown here European (DIN) l. h.

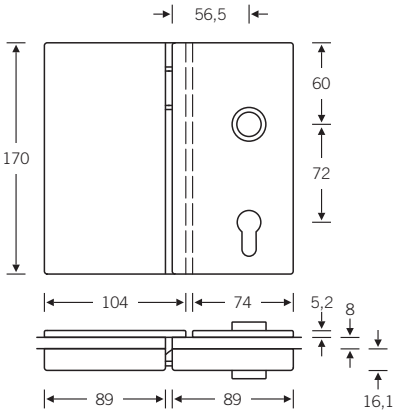


4224 45 r. h.
4224 55 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular strike box compact

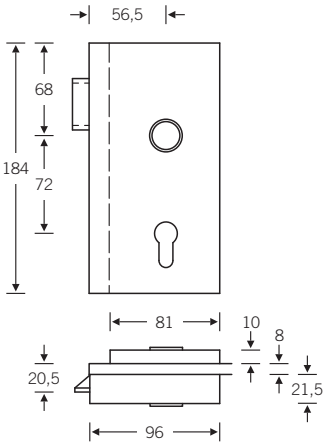
To suit lockset plate for glass doors 4224



Technical notes:

Dimensions given assume glass 8 mm thick. Strike boxes are prepared at the works for glass 8 mm and 10 mm thick. Hardware for glass 12 mm thick is available to order.

Glass door trim



4220 41 r. h.
4220 51 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular lockset plate with cover plates
with heavy-duty glass door lock (DIN 18251, analogous to Class 4)
designed for use with PZ cylinder CTC 72 mm

4220 42 r. h.
4220 52 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular lockset plate with cover plates
with heavy-duty glass door lock (DIN 18251, Class 4)
designed for use with PZ cylinder CTC 72 mm

shown here European (DIN) r. h.

Technical notes:

Dimensions given assume glass 8 mm thick. Lockset plates for glass doors are prepared at the factory for glass 8 mm, 10 mm and 12 mm thick.
For further technical notes cf. Pages 87 – 89. .

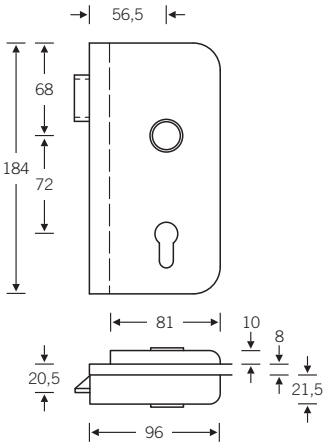
The handle shown is illustrative. Virtually any other FSB handle could be used instead.

Handles, strikes, and PZ cylinder must be ordered seperately.

Options:

- Passage
- Privacy (with or without indicator): Please indicate when ordering, as trim is fitted with thumbturn and indicator (1735 0054) as standard.

Glass door Trim



4223 41 r. h.
4223 51 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular lockset plate
rounded corners
with cover plates
with heavy-duty glass door lock
(DIN 18251, Class 4)
designed for use with PZ cylinder
CTC 72 mm

shown here European (DIN) r. h.

4223 42 r. h.
4223 52 l. h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular lockset plate
rounded corners
with cover plates
with heavy-duty glass door lock
(DIN 18251, Class 4)
designed for use with PZ cylinder
CTC 72 mm

Technical notes:

Dimensions given assume glass 8 mm thick. Lockset plates for glass doors are prepared at the factory for glass 8 mm, 10 mm and 12 mm thick.
For further technical notes cf. Pages 87 – 89. .

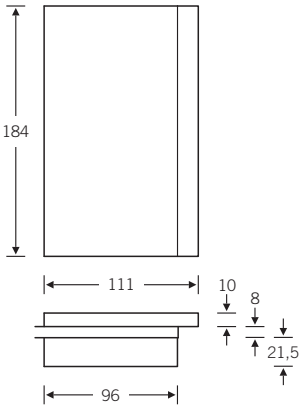
The handle shown is illustrative. Virtually any other FSB handle could be used instead.

Handles, strikes, and PZ cylinder must be ordered seperately.

Options:

- Passage
- Privacy (with or without indicator): Please indicate when ordering, as trim is fitted with thumbturn and indicator (1735 0054) as standard.

Strike box for twin-leaf glass doors

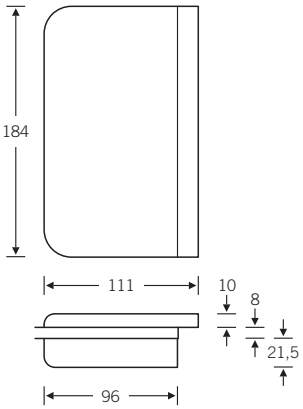


4220 45 r.h.
4220 55 l.h.

- Aluminum
- AluGrey
- Stainless Steel

Rectangular strike box to suit lockset plates for glass doors 4220 41/51 and 4220 42/52

shown here European (DIN) l.h.



4223 45 r.h.
4223 55 l.h.

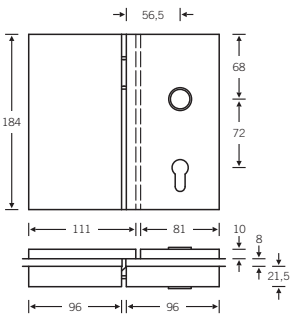
- Aluminum
- AluGrey
- Stainless Steel

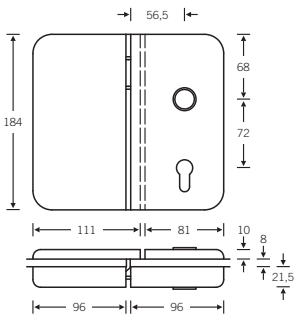
Rectangular strike box rounded corners to suit lockset plates for glass doors 4223 41/51 and 4223 42/52

shown here European (DIN) l.h.

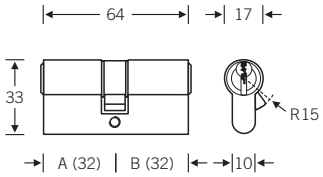
Technical notes:

Dimensions given assume glass 8 mm thick. Strike boxes are prepared at the factory for glass 8 mm, 10 mm and 12 mm thick.





European Profile Cylinders (PZ)



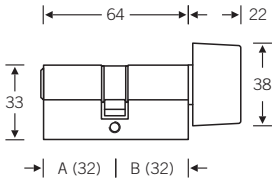
8812 0064

Cylinder length 64 mm

FSB's shortest cylinder is 64mm (shown here). The 8812 0064 will work, but will extend beyond the face of the plate an extra 4 – 7mm per side.

The ideal cylinder length for glass door locks is 50 or 55mm depending on the lock design. Please see specifics on pages 88 and 89. These shorter cylinders would need to be procured separately.

For 8, 10 and 12 mm door thickness



8812 0164

Cylinder length 64 mm

FSB's shortest cylinder is 64mm (shown here). The 8812 0064 will work, but will extend beyond the face of the plate an extra 4 – 7mm per side.

The ideal cylinder length for glass door locks is 50 or 55mm depending on the lock design. Please see specifics on pages 88 and 89. These shorter cylinders would need to be procured separately.

For 8, 10 and 12 mm door thickness

Thumbturn: Stainless Steel
Aluminum

Keyway

"C-type" 5 pin on each side. Supplied keyed alike up to 20 as standard. May be keyed differently of master keyed on request.

Keys

Nickel plated brass, supplied with two keys per cylinder.

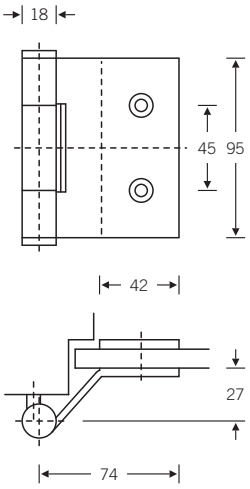
Cylinder Finish

Nickel plated brass.

Thumbturn and Finishes

· 1744 turnpiece only
· US 28 (matches FSB 0105) Aluminum Natural Color Anodized
·US 32 D (matches FSB 6204) Satin Stainless Steel

Straight-cornered hinges for glass doors

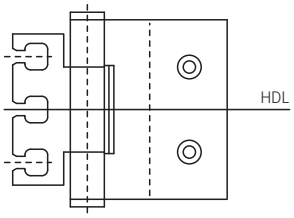


4228

Satin chromium-plated Steel
Stainless Steel

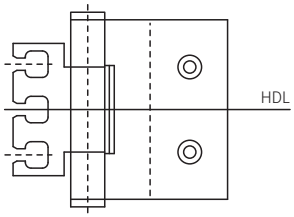
VARIANT glass door hinge in satin chromium-plated steel to suit Aluminum, AluGrey® or Stainless Steel finishes with hinge connector

To suit 4220 and 4224 Series lockset plates for glass doors



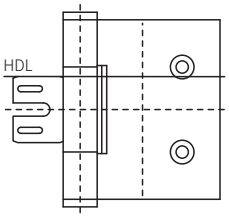
4228 0101

VARIANT VXG 7990/100K
heavy-duty hinge for glass doors on rabbeted, wood, steel or aluminum frames with three-dimensionally adjustable mating elements



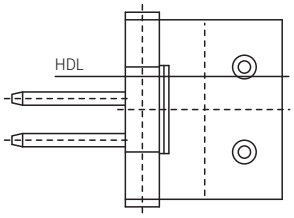
4228 0102

VARIANT VNG 7990/100K
heavy-duty hinge for glass doors on rabbeted steel frames with three-dimensionally adjustable mating elements



4228 0103

VARIANT VG 8790K
heavy-duty hinge for glass doors on rabbeted steel frames



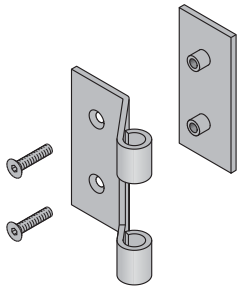
4228 xx04

xx = 41 (r. h.) or 51 (l. h.)
VARIANT VG 3990K
heavy-duty hinge for glass doors on rabbeted wooden soffit and blockwood frames

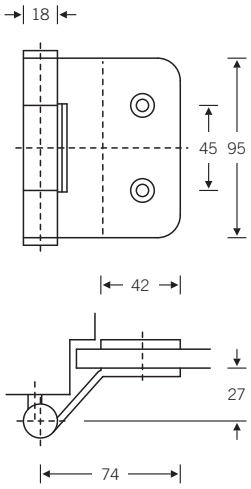
Technical notes:

Loading capacity 60 kg

Glass door hinges prepared at the factory for glass 8 mm and 10 mm thick.
For further technical notes see pages 90 and 91.



Round-cornered hinges for glass doors

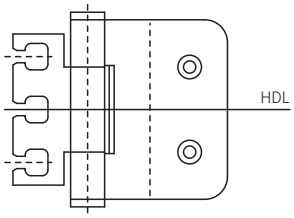


4227

Satin chromium-plated Steel
Stainless Steel

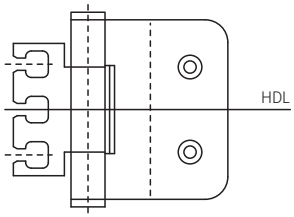
VARIANT glass door hinge in satin chromium-plated steel to suit Aluminum, AluGrey® or Stainless Steel finishes with hinge connector

To suit 4223 Series lockset plate for glass doors



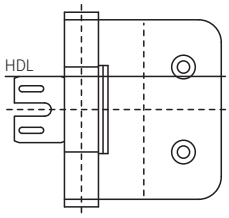
4227 0101

VARIANT VXG 7990/100
heavy-duty hinge for glass doors on rabbeted wood, steel or aluminum frames with three-dimensionally adjustable mating elements.



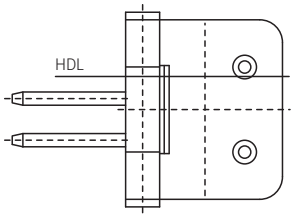
4227 0102

VARIANT VNG 7990/100
heavy-duty hinge for glass doors on rabbeted steel frames with three-dimensionally adjustable mating elements



4227 0103

VARIANT VG 8790
heavy-duty hinge for glass doors on rabbeted steel frames



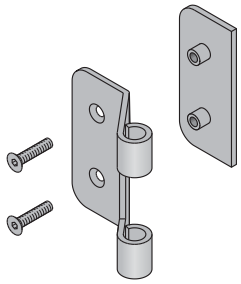
4227 xx04

xx = 41 (r.h.) or 51 (l.h.)
VARIANT VG 3990
heavy-duty hinge for glass doors on rabbeted wooden soffit and blockwood frames

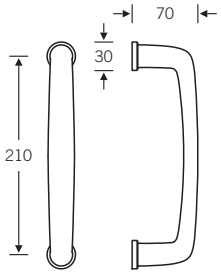
Technical notes:

Loading capacity 60 kg

Glass door hinges prepared at the factory for glass 8 mm and 10 mm thick.
For further technical notes see pages 90 and 91.



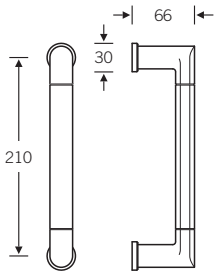
Pulls for glass doors



3684 2114

- Aluminum
- AluGrey

Design: Ton Haas



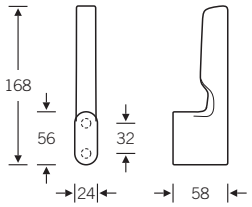
3688 2114

- AluGrey
- Stainless Steel

Design: Christoph Ingenhoven

Back-to-back and through-bolted fixing, cf. Page 66

Sliding door handle
Door holder

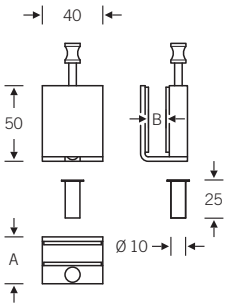


3686

- Aluminum
- AluGrey
- Stainless Steel

Sliding door handle for fixing in pairs

Design: Jahn/Lykouria

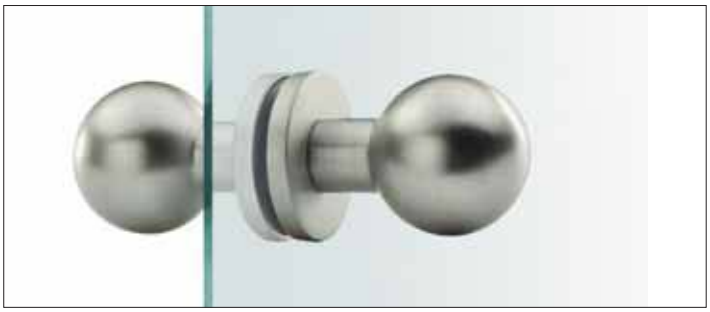


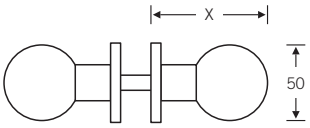
4230 xxxx

- Stainless Steel

Items-nos.	(A) width overall	(B) thickness of glass
xxxx = 0000	27 mm	8 mm
xxxx = 1000	29 mm	10 mm
xxxx = 1200	31 mm	12 mm

Fixed knobs for glass doors

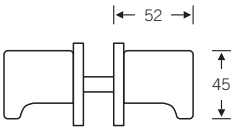




2302 07

- Aluminum (X = 77 mm)
- AluGrey (X = 77 mm)
- Stainless Steel (X = 73 mm)
- Bronze (X = 72 mm)
- Brass (X = 72 mm)

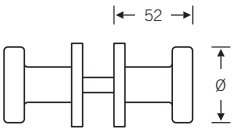
Borehole Ø 13 mm



2322 07

- Aluminum
- Stainless Steel

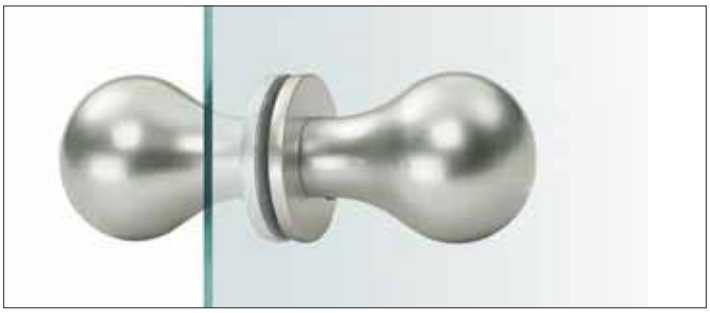
Borehole Ø 13 mm

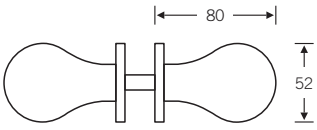


2329 07

- Aluminum (Ø = 50 mm)
- AluGrey (Ø = 50 mm)
- Stainless Steel (Ø = 55 mm)
- Bronze (Ø = 55 mm)

Borehole Ø 13 mm





2374 07

- Aluminum
- AluGrey
- Stainless Steel

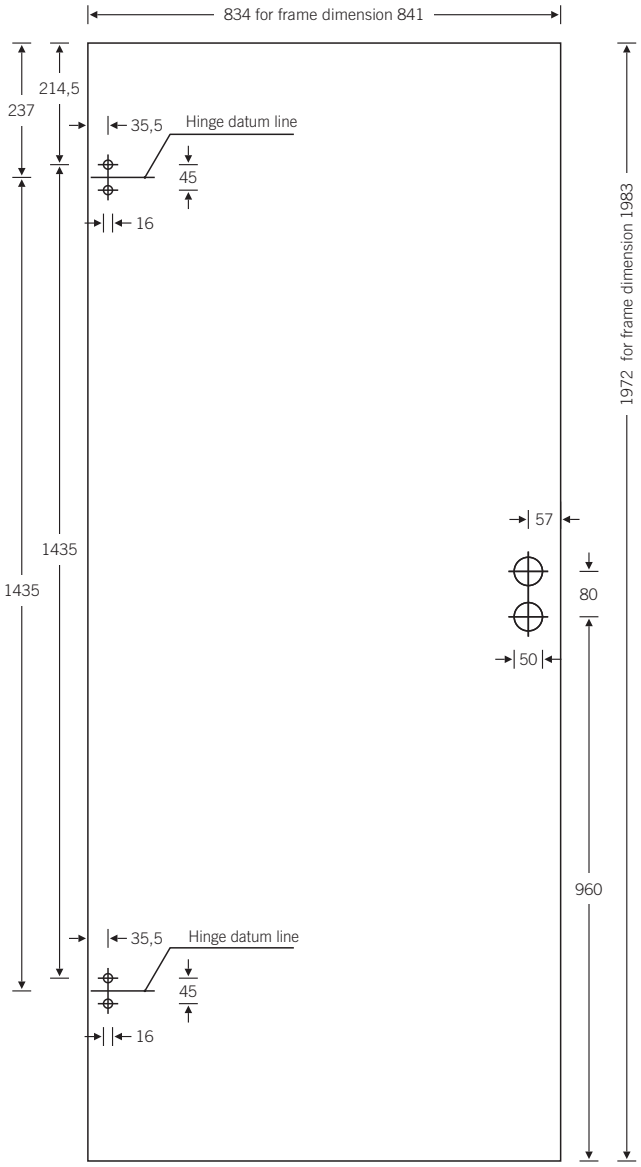
Borehole Ø 13 mm

Design: Jasper Morrison

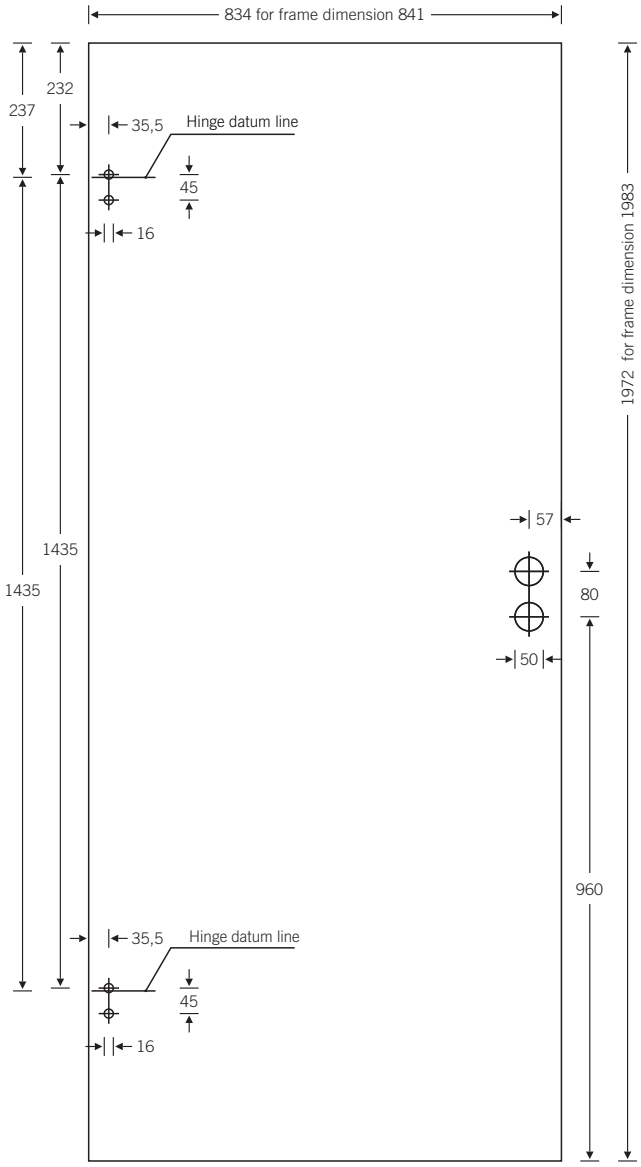
Deadknobs are generally fitted directly to glass doors. There are no locks involved.

The knobs are joined together at the assembly stage by means of an 8 mm square spindle (for two female parts).

Door dimensions acc. DIN 18101



4227 01 | 4227 02
4228 01 | 4228 02

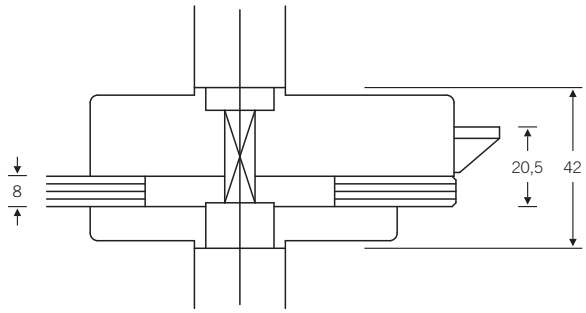


4227 03 | 4227 04
4228 03 | 4228 04

T.D.I.U.S.*	750 × 2000	875 × 2000	1000 × 2000
Frame rabbet dimensions	716 × 1983	841 × 1983	966 × 1983
Standard glass dimensions	709 × 1972	843 × 1972	959 × 1972
T.D.I.U.S.*	750 × 2125	875 × 2125	1000 × 2125
Frame rabbet dimensions	716 × 2108	841 × 2108	966 × 2108
Standard glass dimensions	709 × 2097	834 × 2097	959 × 2097

* = theoretical dimensions in unfinished state

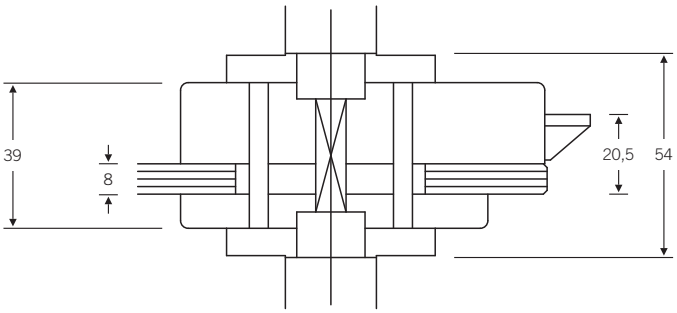
Technical Notes
4220 and 4223 Series



Handle specification

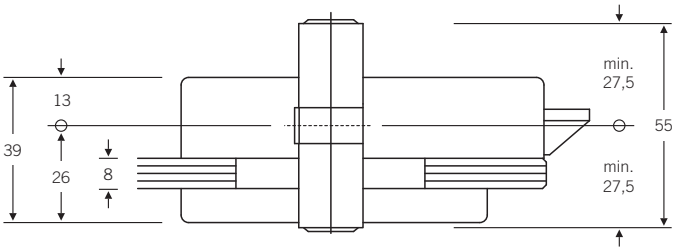
Series 4220 41/51 and 4223 41/51 lockset plates for glass doors require specially adapted pairs of lever handles, one of which has a truncated shank.

Our In-house Sales Service personnel implement this specification when orders are made.



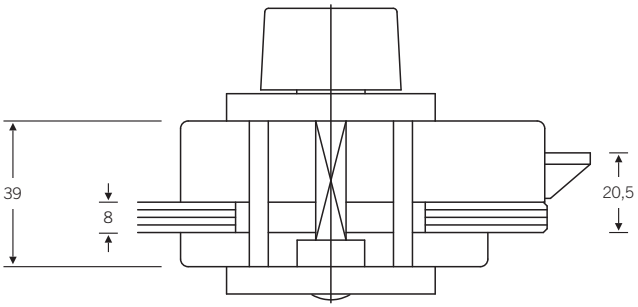
Bearings

Series 4220 42/52 and 4223 42/52 lockset plates for glass doors may be fitted either with standard bearings and pairs of lever handles, with or without roses, or with heavy-duty hardware having AGL® bearings and roses.



Profile cylinder

On aesthetic grounds, profile cylinders 27.5/27.5 mm long are recommended for all lockset plates for glass doors owing to the comparatively short projections involved.



Bathroom/indicating variants

All lockset plates for glass doors can also be used in privacy trim. The 4220 and 4223 Series models can be fitted with any indicator FSB supplies (please refer to “Lever, Knob and Trim Designs” section).

Please order these separately; they are assembled on site. The hardware is suitable for doors opening either inwards or outwards.

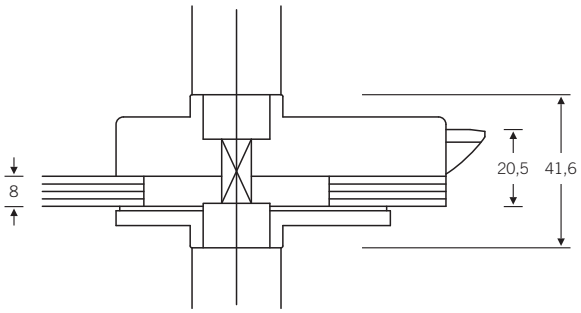
The dimensions given assume glass 8 mm thick. Lockset plates for glass doors are prepared at the works for glass 8 mm, 10 mm and 12 mm thick.

Order details required:

We do not supply our lockset plates for glass doors complete with handles. When ordering these, please specify that they are for glass doors and 4220 or 4223 Series hardware as well as advising:

- the lever handle model required
- the type of hardware (standard or heavy-duty bearings)
- European handing

Technical Notes
4224 Series



Handle specification

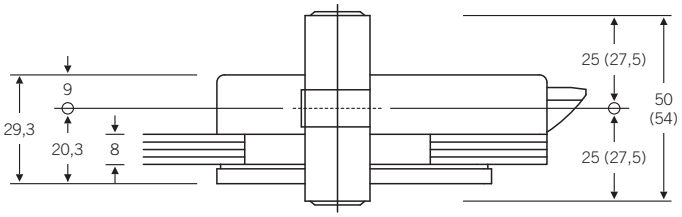
Series 4224 lockset plates for glass doors require specially adapted lever handle sets featuring a spindle projection that differs from the FSB standard.

Our In-house Sales Service personnel implement this specification when orders are made.

Bearings

The bearings used for the 4224 Series take the form of heavy-duty Teflon-coated sleeves that encompass the door handle over its entire bushing area whilst also dependably withstanding the mechanical forces exerted on large-format glass doors.

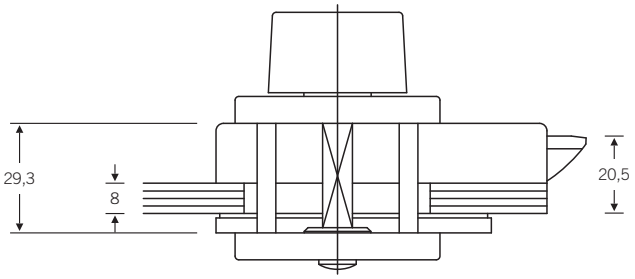
There is no need to additionally fit roses in heavy-duty bearings.



Profile cylinder

On aesthetic grounds, profile cylinders either 25/25 mm or 27.5/27.5 mm long are recommended for all lockset plates for glass doors owing to the comparatively short projections involved.

Checks should be made on a case-by-case basis as to whether 25/25mm profile cylinders are fit to function in closing systems.



Bathroom/indicating variants

Please specify indicating variant when ordering, since the trim is fitted with indicator 1735 0054 (please refer to “Lever, Knob and Trim Designs” section) as standard at the factory. The indicator is not assembled on site.

The hardware is suitable for doors opening either inwards or outwards.

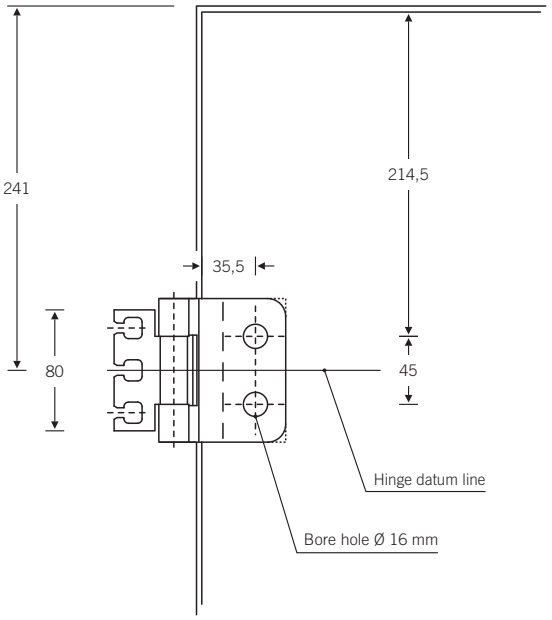
The dimensions given assume glass 8 mm thick. Lockset plates for glass doors are prepared at the works for glass 8 mm and 10 mm thick. Hardware prepared for glass 12 mm thick can be obtained on request.

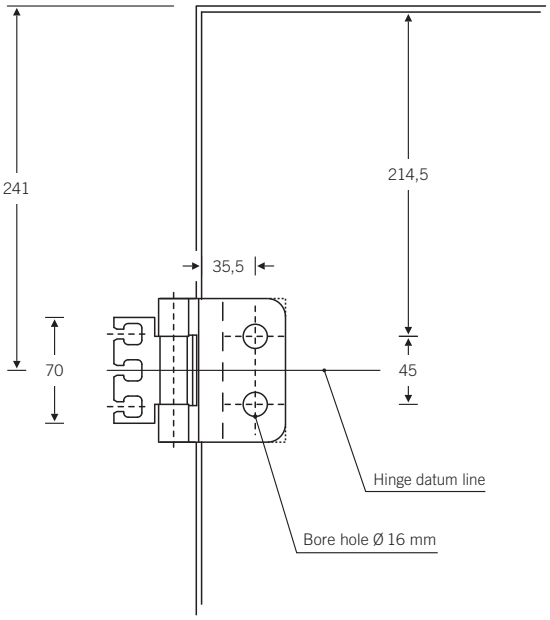
Order details required:

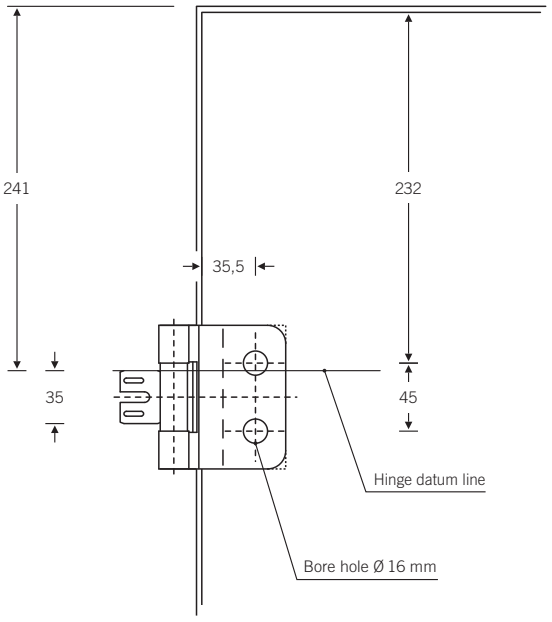
We do not supply our lockset plates for glass doors complete with handles. When ordering these, please specify that they are for glass doors and 4224 Series hardware as well as advising:

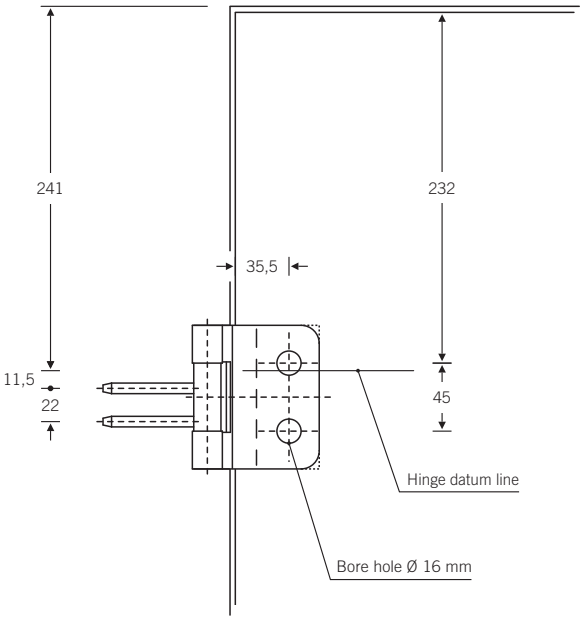
- the lever handle model required
- European handing

Technical notes for 4227 and 4228



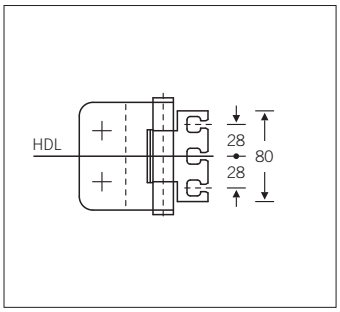






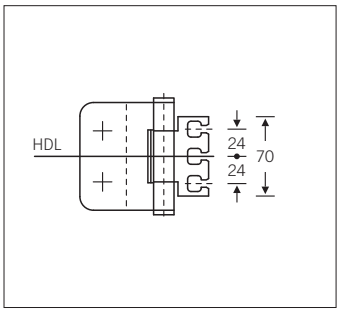
The positioning of hinge connectors relative to the hinge datum line also necessitates adapting boreholes in the glass door. This should be borne in mind most notably in the cases of VX and VN commercial hinges.

Frame connection dimensions



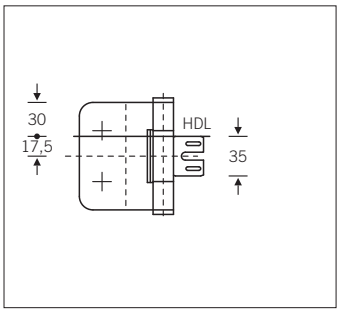
VARIANT commercial hinge for glass doors on rabbeted timber, steel or aluminium frames with three-dimensionally adjustable mating elements VX

- suitable for wholly glazed doors with standard vertical borehole layout
- for glass 8 and 10 mm thick
- twistproof threaded stud
- concealed, no-maintenance axial-radial sliding bearings
- combinable with mating element:
  for blockwork frames VX 7601 3D
  for soffit frames VX 7602 3D
  for blockwork frames VX 7605 3D
  for steel frames VX 7611 3D
  VX 7612 3D
  for aluminium frames VX 7621 3D
- non-handed



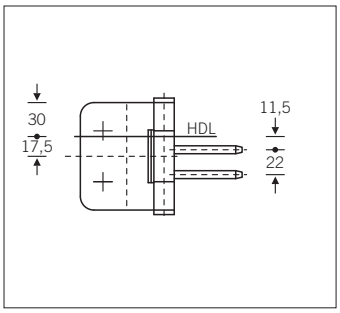
VARIANT commercial hinge for glass doors on rabbeted steel frames with three-dimensionally adjustable mating elements

- suitable for wholly glazed doors with standard vertical borehole layou t
- for glass 8 and 10 mm thick
- twistproof threaded stud
- concealed, no-maintenance axial-radial sliding bearings
- combinable with mating element VN 7608/120 3D
- non-handed



VARIANT commercial hinge for glass doors on rabbeted steel frames

- suitable for wholly glazed doors with standard vertical borehole layout
- for glass 8 and 10 mm thick
- for mating elements V 8600 or V 8610
- non-handed



VARIANT commercial hinge for glass doors on rabbeted wooden soffit and blockwork frames

- suitable for wholly glazed doors with standard vertical borehole layout
- for glass 8 and 10 mm thick
- for mating elements of the V 3600, V 3610, V 3630, V 3650 series and clamping block V 3604 or V 3607
- necessary to indicate DIN handing

SIMONSWERK engineering and quality are a byword for safety and stability to the highest professional standards. For further information on hinges, hinge connectors, frame fastening elements etc., please consult the latest SIMONSWERK manual.

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Roller-guided Sliding Door Gears

Product information for sliding door gears

In accordance with the definition of the liability of manufacturers for their products set out in § 4 of the "Produkthaftungsgesetz" (German Manufacturer's Liability Law), the following information on sliding door gear should be observed. Failure to do so absolves the manufacturer from liability.

Product information and use in accordance with intended purpose

Sliding door gear, according to this definition, are fittings for doors and other push-able elements, henceforth called objects, which are not normally moved faster than walking pace. Sliding door gear is used in vertically fitted doors made of wood, plastic, glass, aluminum or steel and appropriate combinations of these materials. A floor guide is provided at the lower horizontal edge of the door. Special versions of products must be specified for damp rooms, direct exposure to the elements, exposure to cross winds, for installation near the sea and in highly corrosive conditions.

Correct installation by qualified personnel is a particularly important aspect of use for intended purpose. The object must be sufficiently rigid at all of these points. The function of the gear must not be hindered or altered by installation. A buffer must be used in order to limit the displacement path.

Misuse

Misuse – in other words use in a manner not in accordance with the intended purpose – can be said to occur in the following cases in particular:

- if the gear is used with a higher max. load than specified in the catalogue and in the other product documents,
- if incorrectly installed or attached,
- if ambient temperatures are too high or too low,
- if particularly aggressive media can affect the gear,
- if subjected to inordinately great pushing or pulling loads,
- if the position of the track deviates too greatly from the horizontal,
- if foreign bodies get into the track,
- if the rollers are operated too fast,
- if alterations are carried out without the manufacturer's authorization,
- if obstacles are placed in the opening or between the door or the object thereby preventing intended use,
- if additional loads act upon the door or object,
- if someone is trapped between the door and the door frame while the door is being pushed or closed, or if a person or part of the body is in this area.

Product Performance

In cases where the performance of the product is not specifically described in the catalogues, brochures, instructions etc., special requirements must be discussed with and agreed by the manufacturer. Our regulations, which affect the composition of the sliding door gear, are binding.

Product Maintenance

Components of sliding door gear which are relevant to safety must be regulary inspected for proper fixing and signs of wear. Fixing screws are to be re-tightened and faulty components must be replaced. In addition, the following maintenance work must be carried out at least once a year:

- All moving parts are to be tested for free movement.
- In the case of running carriages with metal rollers, the moving parts must be greased (type of grease to be used on request). Plastic rollers must not be greased.
- Only use cleaning agents which do not impair the anti-corrosion protection of the gear.
- Faulty sliding door gears must be replaced.
- Adjustment work on the gears and the replacement must be carried out by qualified personnel.

Duty of Information and Instructions

The following sources of information are available to planners, specialist dealers, administrative personnel, building contractors and users by way of fulfillment of the duty of information and instruction:

- catalogues, brochures
- quotations, descriptions of offer
- mounting and installation drawings, maintenance and operation instructions.

In order to ensure correct use, proper functioning and maintenance and care of sliding door gear,

- architects and planners must request and apply the necessary product information,
- specialist dealers must take account of the product information and notes in the price lists, and in particular must request all necessary instructions and pass these on to the installation personnel,
- installation personnel must take account of all product information, and in particular must request operating and maintenance instructions and pass these on to the ordering party and the user.

Categorization according to DIN EN 1527:1998

Category of the application (1st number)
There is no category of application fixed.

Duration of the operability (2nd number)
· Class 1 = 2,500 cycles
· Class 2 = 5,000 cycles
· Class 3 = 10,000 cycles
· Class 4 = 25,000 cycles
· Class 5 = 50,000 cycles
· Class 6 = 100,000 cycles

Door weight (3rd number)
· Class 1 = door weight up to 50 kg (110 lbs)
· Class 2 = door weight from 51 kg (112 lbs) up to 100 kg (220 lbs)
· Class 3 = door weight from 101 kg (222 lbs) up to 330 kg (726 lbs)
· Class 4 = door weight more than 330 kg (726 lbs)

Refractory quality (4th number)
· Class 0 = not suitable for the use on fire doors
· Class 1 = suitable for the use on fire doors

Safety (5th number)
No requirement for these products.

Corrosion behavior (6th number)
According to the 5 classes specified in EN 1670 the products are divided in class 1–4: Class 0 is intended for products which are not tested.

Protection (7th number)
For the protection no class is fixed.

Type of door (8th number)
· Class 1 = sliding door
· Class 2 = folding door (double-leaf)
· Class 3 = multi-leaf folding door

Initial friction (9th number)

There are three classes existing:

	Door weight up to 50 kg 110 lbs	**51–100 kg 112–220 lbs**	**101–330 kg 222–726 lbs**	**>330 kg >726 lbs**
Class 1	50 N	80 N	100 N	5% of door weight
Class 2	40 N	60 N	5% of door weight	4% of door weight
Class 3	30 N	40 N	4% of door weight	3% of door weight

Top Mounted System

8820

Description	ID No.
Set for wall mounting	119408
Set for ceiling mounting	122581

Floor guide, stainless steel

· for toughened safety glass 8 mm	121003
· for toughened safety glass 10 mm	121004
· for toughened safety glass 12 mm	121005

Projected solutions on request.

The high quality stainless steel sliding door gear for glass doors are the visible combination of functionality and appealing design.

The system is suitable for wall as well as ceiling installation and therefore it is usable in various building situations.

· For every glass strength (ESG 8/10/12 mm) there is a precision-floor guide available. It consists of wear-free felt and therefore it is extremly noiseless
· High quality plastic bearing surfaces of the rollers for extreme quiet running with a minimum energy expenditure

Product features

· Due to the small dimensions of the carrier rollers there is enough mounting clearance even at low ceilings
· Track fixing for wall and ceiling
· Rail consists of full material with flat turned ends provided with chamfers
· Door leaf holder with a diameter of 35 mm contributes to an optimal clamping area
· The digging safety device is precisely adjustable by an excenter. It consists of a plastic roller and can be led exactly under the rail. Thus the roll characteristic of the sliding door can be adjusted individually

Application range

· For sliding doors and elements in interior and exterior areas
· For door leaf weights up to 105 kg (231 lbs)
· For office as well as living areas

Installation drawing

Drawing-No. 10801-ep01 and 10801-ep02

Table glass strength ESG (toughened safety glass)

for wall mounting

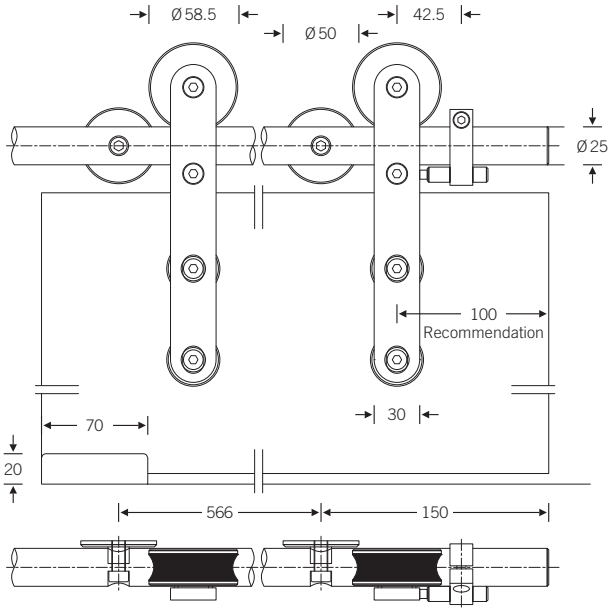
Dim.	8 mm	10 mm	12 mm
A	13.0 mm	11.0 mm	9.0 mm
B	7.5 mm	5.5 mm	3.5 mm
C	24.0 mm	26.0 mm	28.0 mm

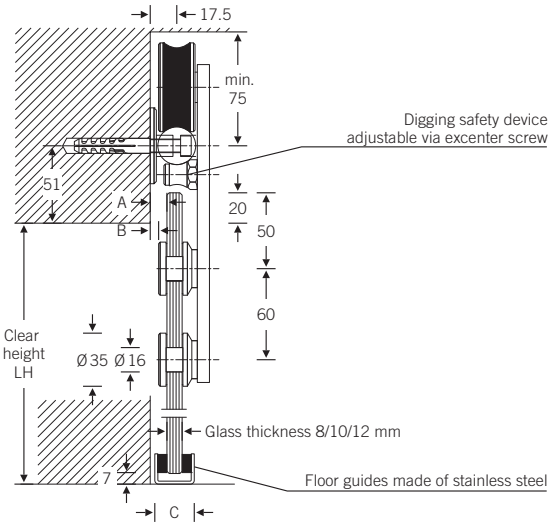
for ceiling mounting

Dim.	8 mm	10 mm	12 mm
A	24.0 mm	26.0 mm	28.0 mm
B	33.5 mm	32.5 mm	31.5 mm

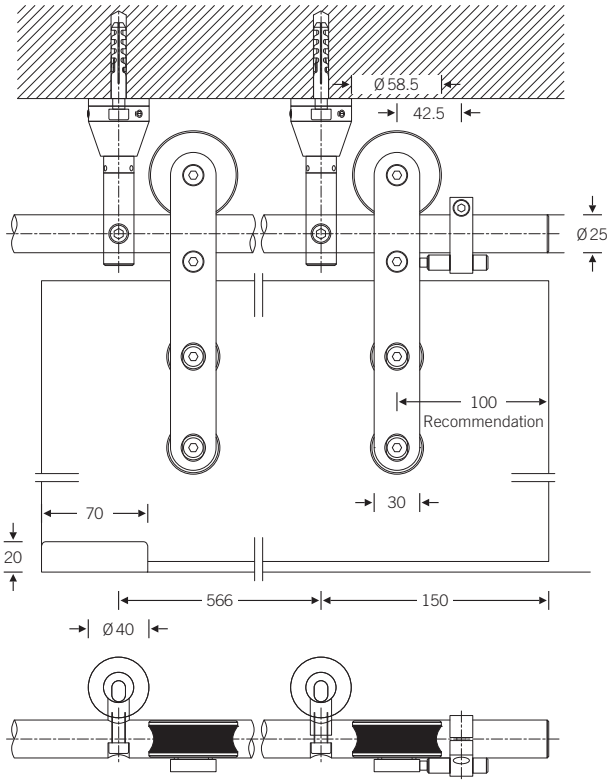
8820

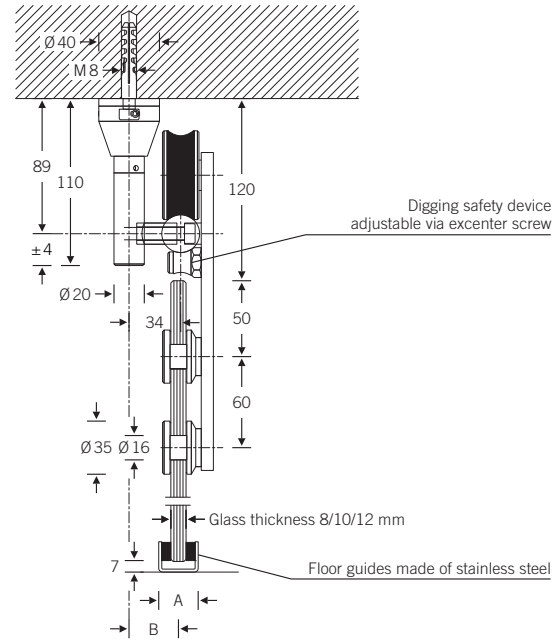
Installation for wall mounting





Installation for ceiling mounting





Floor Mounted System

8821

Description	ID No.
Set for ceiling mounting,	
screwed 10 mm	121392
adhesive 10 mm	119409
Set for wall mounting,	
screwed 10 mm	123250

Projected solutions on request.

Visible rollers on floor mounted semicircular rail. The floor rail carries the door weight. At the top a u-shaped profile guides the door. Especially for areas where wall or ceiling mounting is not possible.

Product features

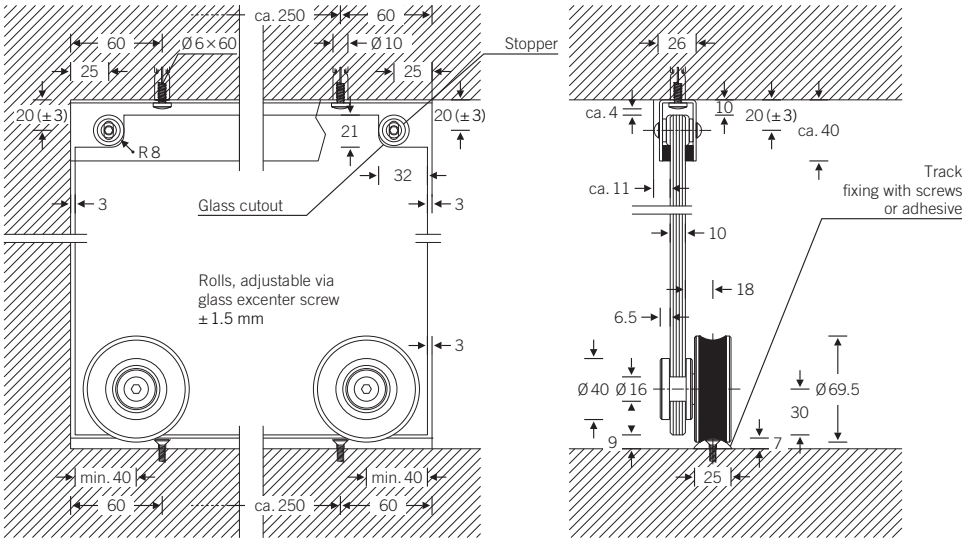
- High quality sliding door hardware combines aesthetics and function
- Track fixing for wall and ceiling (guide rail) allows a flexible field of application
- The overall weight of the sliding door is carried by a track on the floor, thereby a usage in various building situations is possible, e. g. in areas where a suspension can not be mounted
- High quality plastic bearing surfaces of the rollers for extreme quiet running with a minimum energy expenditure

Application range

- For sliding doors and elements in interior and exterior areas
- For door leaf weights up to 135 kg (297 lbs)
- Application also with suspended ceilings cause the overall weight of the sliding door is carried by a track on the floor
- For living as well as office areas

Installation drawing

Drawing-No. 10801-ep03



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