

TG

Pull Handles

The Shape
of Quality



What it takes to be a DORMA pull handle

Pull handles from DORMA Door Furniture epitomise the claim to quality underlying the DORMA brand. In critically scrutinising every detail, we deliver products offering the same distinctive quality features whatever their shape, size or customisation.

So you can be sure of an attractive design and a high-grade surface finish with negligible hairlines joint. We provide a uniform grain virtually devoid of sink marks and irregularities – and that also goes for the more inaccessible locations such as curve inside radii, 90-degree

mitre cuts or the transition points from pull handle to fixing spacer/support. You will surely be impressed by the high standard of workmanship and the care we apply to every aspect.

Our strictly regulated quality management system ensures maximum functional and maximum visual appeal. DORMA has defined its own strict requirements against which we constantly check the quality of our pull handles. We verify compliance with demanding technical parameters such as pull-off force and continuous-mode compressive

and tensile loading. Plus, the machining quality and appearance are constantly checked to ensure compliance with our – and your – high demands.

Only once the product has satisfied our exacting quality standards is it given the seal of approval as a DORMA pull handle.

DORMA pull handles offer safe absorption of compression and tension once properly installed with our superior fixing systems. These enable fast and easy installation on virtually any door.

In short, with DORMA pull handles you can be confident that you have chosen a true quality product.



DORMA – now that's quality

- Great workmanship
- Great resilience
- Great appearance

Setting the standards: Fewer fixing sets plus divine proportionality

1. Fewer fixing sets

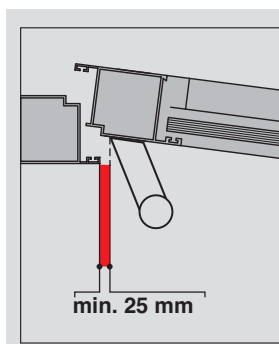
In order to facilitate matching the fixing materials to the door, we have reduced the number of fixing sets from 24 to 14. These sets can be widely used, ensure high stability and are easy and quick to apply.

To make selection even easier, the fixing sets have been divided into three categories:

Timber doors, narrow-stile doors and toughened glass doors. So now it is even simpler to choose which fixing set is most suited to your door. See page 22/23.

2. The golden ratio

We use one of nature's formulae, the "golden ratio", to define the relationship between fixing spacer/support centres and overall length. For further information, turn to pages 4/5 in this brochure.



Please note:

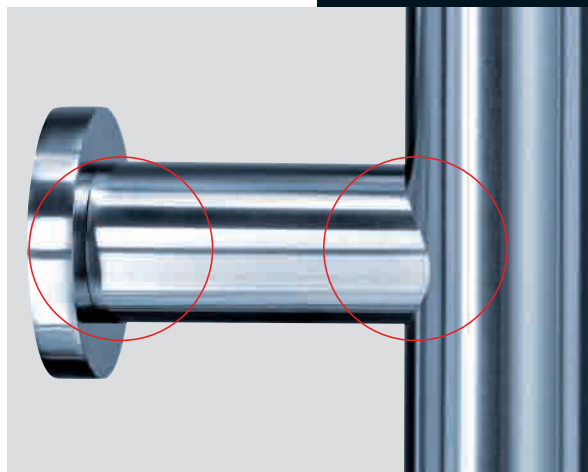
In order to minimise the nip and graze hazard associated with doors, we recommend that you install your pull handles to allow a sufficiently large clearance with respect to the closing edge of the frame – particularly on the pull side of narrow-stile doors. As in the case of

lever handles, there needs to be a minimum clearance of 25 mm between pull handle and frame edge. We particularly recommend our model TG 9377 with angled fixing spacers. This keeps the hand safely away from the frame as the door is opened and closed.

Quality feature I

High precision in pull handles with fixing spacers.

The susceptible transition point between the pull handle and the fixing spacer/support needs to feature a consistent, high-quality grain, and the radii of both the pull handle and the spacer also have to fit perfectly to meet DORMA's demanding standards.

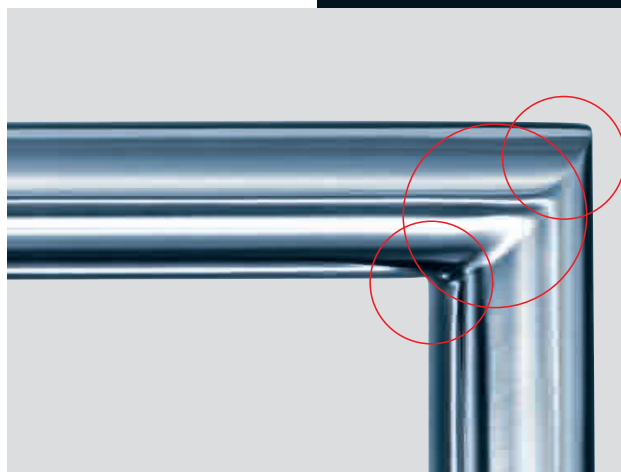


Quality feature II

Mitred joints place enormous requirements on welding and grinding accuracy.

There can be no defects in the joint area. The weld has to be perfect in order to render it properly invisible by grinding.

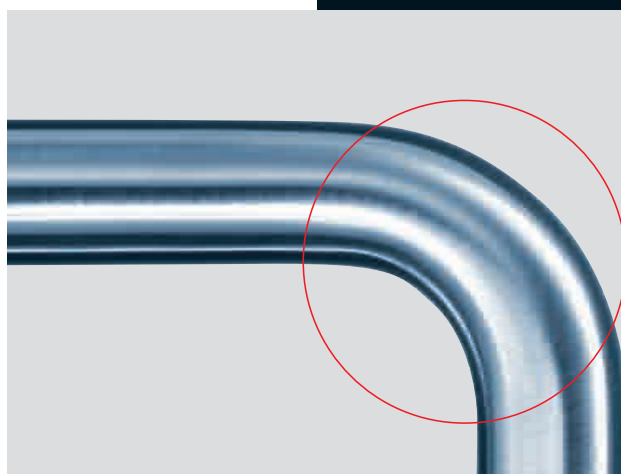
Because the inside angle is very hard to access, the grinder has to work with the utmost precision. And the same goes for the outside angle where it is important to enhance the clarity of the contours.

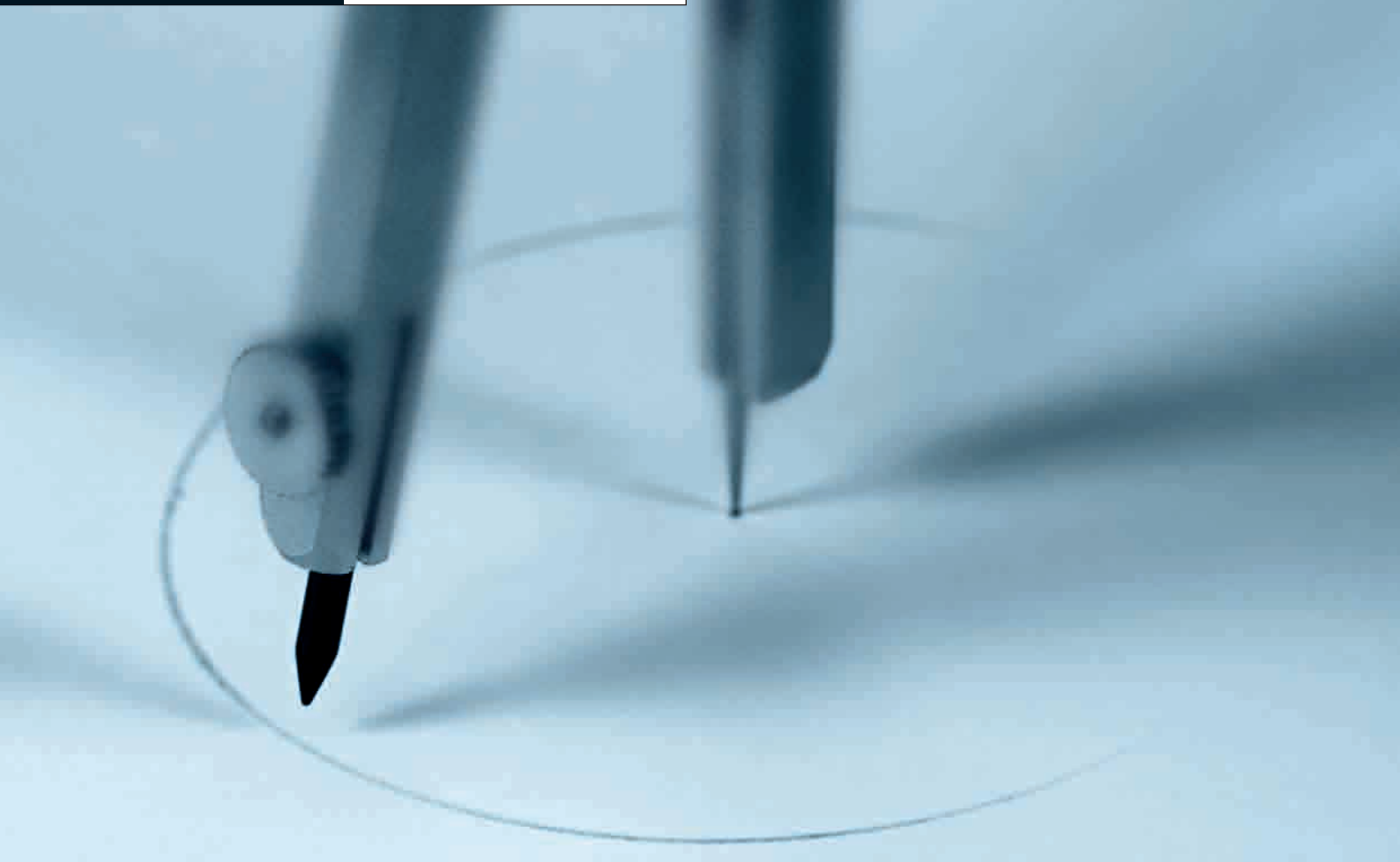


Quality feature III

The ends of our curved pull handles are likewise machined with the utmost care. High-quality bending jigs ensure the avoidance of dents and sink marks.

As in the case of the mitred joints, maximum precision has to be applied to both the inside and outside radii in order to produce a uniformly smooth, high-quality surface.





Unique appeal.

We combine outstanding workmanship with “character forming” shapeliness – either in the form of our own creations or designed in close cooperation with architects and designers.

The DORMA approach is to constantly take a fresh look at our products and to further develop them in the very best way we can.

With pull handles in which the length between the fixing spacer centres (DORMA dimension Li) is not identi-

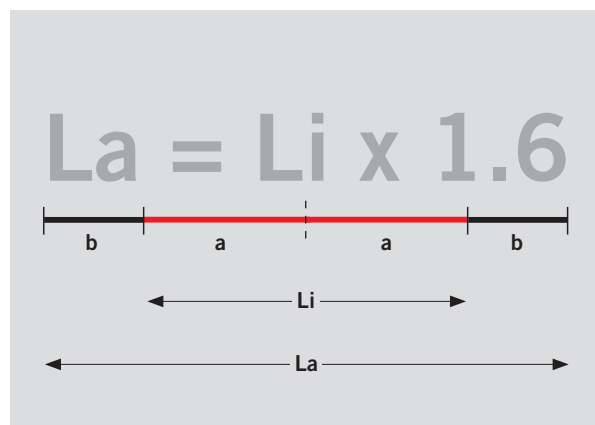
cal with the overall length (DORMA dimension La), the question inevitably arises as to what the best ratio is between these two variables. Or, to put it another way, how big should the overhang be? And the answer is invariably to apply a certain ratio encountered not only in nature but also in art and architecture. A natural rule of aesthetic elegance and harmony, It offers ideal proportionality and goes by the name of the “golden ratio” (aka golden section – lat. sectio aurea).

In architecture, there are many references to the golden ratio – for example in relation to the Great Pyramid of Cheops, the Parthenon Temple on the Acropolis, Florence Cathedral or Notre-Dame Cathedral in Paris. However, deliberate use of this proportionality is only rarely claimed or proven.

The first exact description of the golden ratio was provided by Euclid (around 300 B.C.). During analysis of Euclid's work, the Franciscan monk Luca Pacioli di Borgo San Sepolcro (1445 – 1514) and later the German mathematician and

astronomer Johannes Kepler (1571 – 1630) picked up on this divine proportionality between two lengths.

The golden ratio rule reads as follows:
a is to b as a+b is to a.



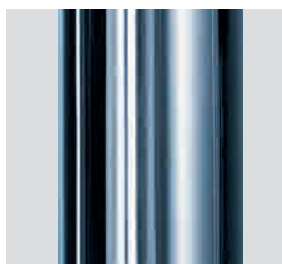
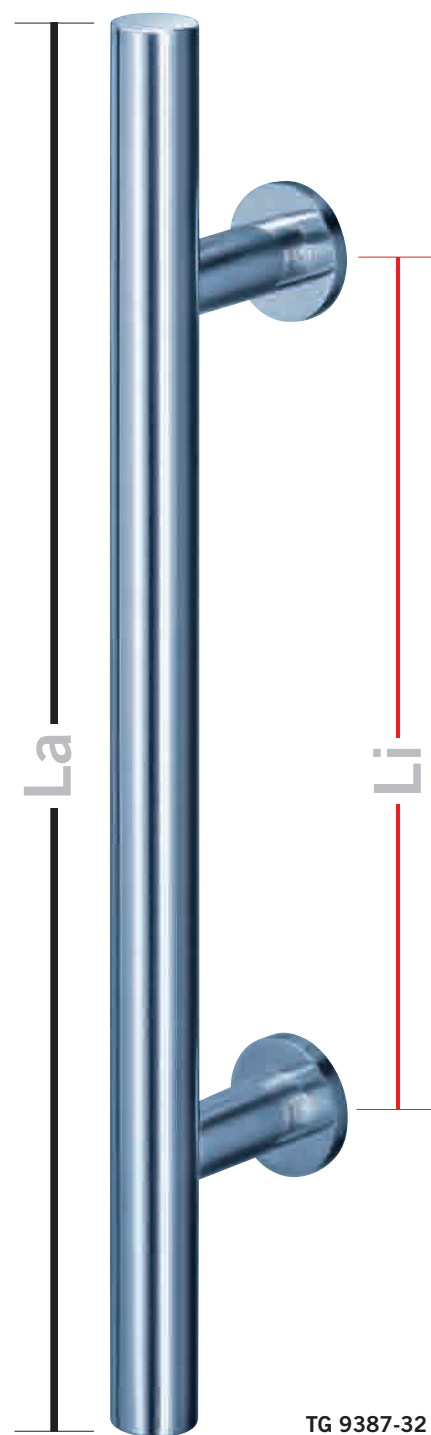
According to the golden ratio rule, the ideal proportion between a and b is almost precisely 1.6:1 and is usually designated with the Greek letter Φ (phi).

We translate this golden ratio for our pull handles using the simple formula: $La = Li \times 1.6$. If, for example, the fixing spacer/support centres Li measure 350 mm, the total length La adopted is 560 mm (350 mm \times 1.6).

We use the golden ratio for our pull handle models TG 9377 (with angled spacers) and TG 9387 (with straight spacers).

Naturally, we will continue to supply DORMA pull handles in accordance with your personal requirements. However, if your customers should need help in deciding and place particular value on aesthetic appearance, why not tell them too of the golden ratio?

Because DORMA products are always designed with elegance in mind, all we need for your pull handle enquiries or orders is the spacer centres dimension Li . Unless you have specific requirements for the full length La , we will simply supply you the pull handle in accordance with the golden ratio.



Materials and surface finishes

Stainless steel, S/S

- satin brushed
- mirror finish
- 240 grain

Stylish in diversity.

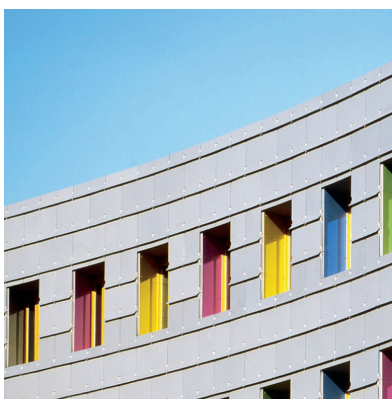
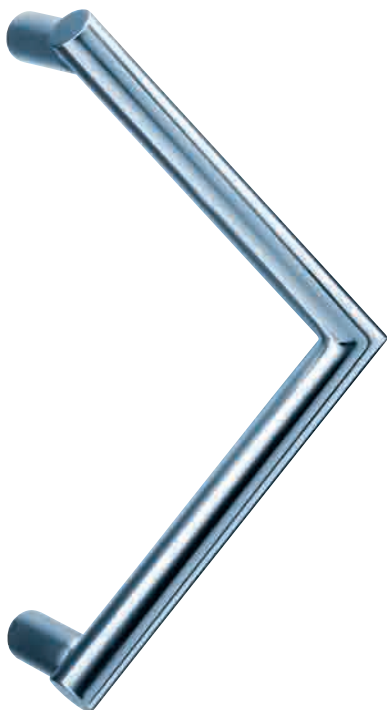
DORMA pull handles are a successful synthesis of reliable function and aesthetic appeal. In order to meet each individual requirement, we have divided our

pull handle range into four product lines, each of which expresses its own unique character: TG Classic, TG Avantgarde, TG Vario and Impact Protection Guards

– a diverse portfolio that further underlines DORMA competency, while making choosing the right solution easier than ever.

TG Classic

Pages 08 – 15



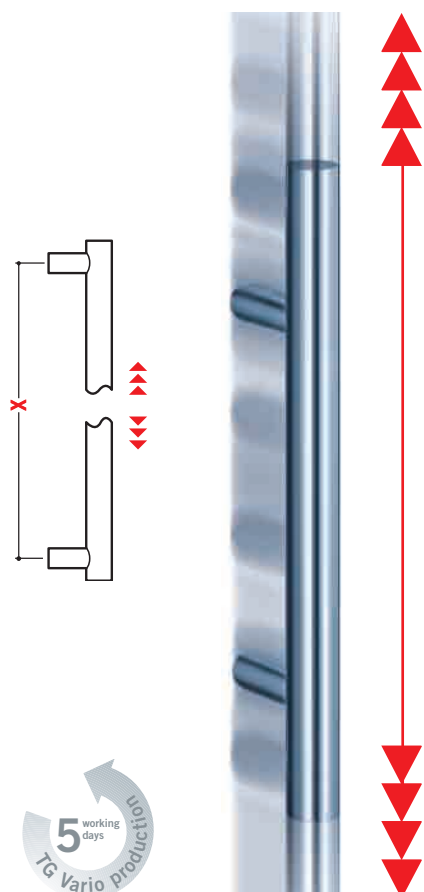
TG Avantgarde

Pages 16 – 17



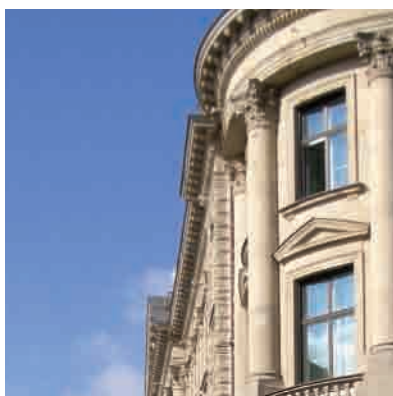
TG Vario

Pages 18 – 19



Impact Protection Guards

Pages 20 – 21



Pull handle series with straight and angled fixing spacers.

With our new pull handle series TG 9377 (angled spacers) and TG 9387 (straight spacers), we are able to satisfy the preference in architecture these days for supports of a more

slender diameter than that of the pull bar. The result is particularly pleasing to the eye, with no adverse effect on the stability of the pull handle assembly.

The ratio between the diameters of the pull bar (G) and the spacer (S) is identical in both series.

Ø 20 | 18

Ø G | Ø S mm

Ø 25 | 18

Ø 32 | 26

Ø 40 | 32

— Ø S —



— Ø G —

Pull handle
with straight
spacers



TG 9387-20



TG 9387-25



TG 9387-32



TG 9387-40

— Ø S —



— Ø G —

Pull handle
with angled
spacers



TG 9377-25



TG 9377-32



TG 9377-40

Support roses of stainless steel – for better force distribution and improved door surface protection.

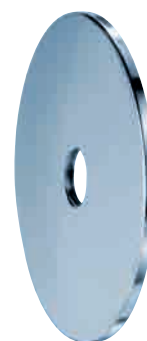
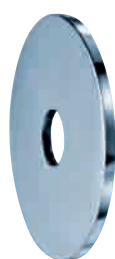
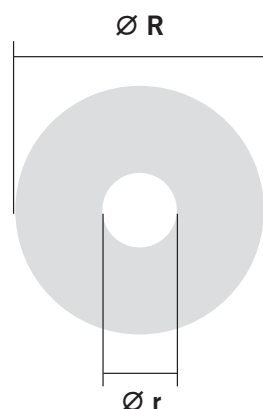
We use 2 mm support roses as standard for pull handle fixing sets GZ 203 (bolt through-fixing with screw-on cap opposite) and GZ 215 (pull handles back-to-back). This ensures that the opera-

ting forces are better distributed and the glass is more effectively protected. The diameter of the support rose is aligned to the diameter of the pull handle or spacer. Because of their attractive

design, our support roses are also frequently used in conjunction with other DORMA fixing arrangements. We offer roses in four different diameters (37, 40, 44 and 50 mm) and two material thicknesses

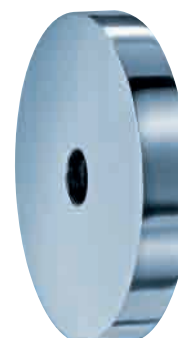
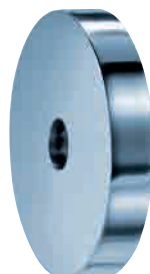
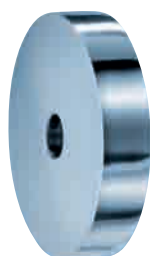
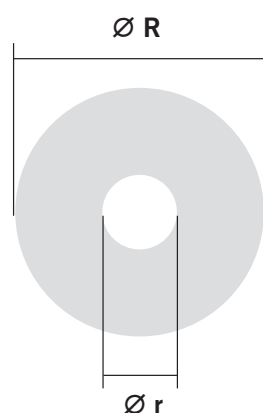
(2 and 8 mm). If you would like to take advantage of this alternative, simply tell us the fixing set/method you intend to use and the desired thickness of your support rose.

Support roses of 2 mm and 8 mm material thickness



Material
thickness
2 mm

	GZ 537	GZ 540	GZ 544	GZ 550
Ø R mm	37	40	44	50
Ø r mm	6,2	6,2	8,2	8,2
Thickness in mm	2	2	2	2
For pull handle Ø mm	20	25	32	40



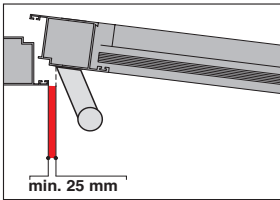
Material
thickness
8 mm

	GZ 537	GZ 540	GZ 544	GZ 550
Ø R mm	37	40	44	50
Ø r mm	6,2	6,2	8,2	8,2
Thickness in mm	8	8	8	8
For pull handle Ø mm	20	25	32	40

Pull handles with angled fixing spacers.

The TG 9377 is a pull handle with **angled fixing spacers** in elegant stainless steel. The ratio between its spacer centres (Li) and overall length (La) is in keeping with the golden ratio rule.

Below are some impressive examples of what we can do. And of course we will also be glad to supply pull handles in accordance with your individual dimensions.



TG 9377

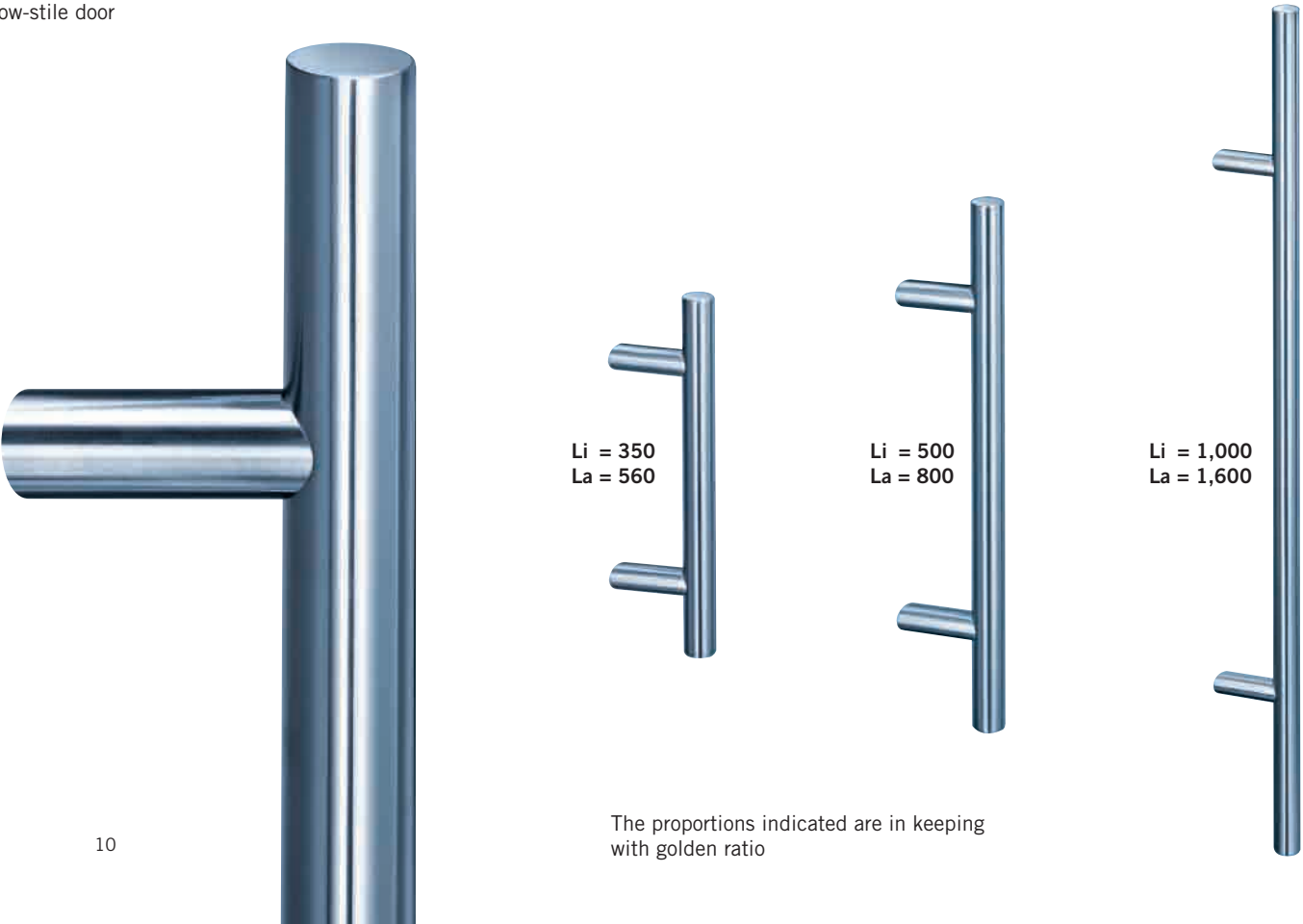
La = Li x 1,6

Ø G mm	25	32	32	40 x 2,0	40 x 3,0
Ø S mm	18	26	26	32	32
H mm	75	85	85	100	100
A mm	31	38	67	46	46
B mm	60	71	104	85	85
Stütze	60°	60°	45°	60°	60°
3rd spacer required from Li mm	1,200	1,600	1,600	2,100	2,400

La = Li x 1.6
Other length ratios and spacer centres on request

If ordering a 32 mm Ø 32 handle, please indicate whether you want the spacer angle to be 45° or 60°

Recommended arrangement for a narrow-stile door



Li = 350
La = 560

Li = 500
La = 800

Li = 1,000
La = 1,600

The proportions indicated are in keeping with golden ratio

Pull handle with straight fixing spacers.

The TG 9387 in stainless steel further extends our range of pull handles with **straight fixing spacers**. Here once more, we stick to the golden ratio rule in determining the proportionality

between the spacer centres (Li) and the overall length (La). Again we recommend the formula $La = Li \times 1.6$. The examples shown below illustrate what you can expect. Needless to say, the

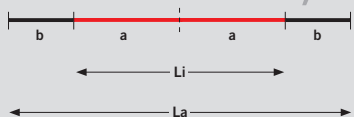
TG 9387 is also available in customised lengths and dimensions.

It can be combined with support roses GZ 537 - GZ 550 if required.

TG 9387



$$La = Li \times 1,6$$



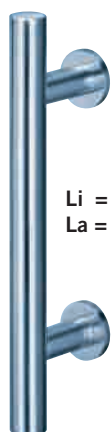
Ø G mm	20	25	32	40 x 2,0	40 x 3,0
Ø S mm	18	18	26	32	32
H mm	65	75	85	100	100
3rd spacer required from Li mm	1,200	1,500	1,900	2,600	2,900

$$La = Li \times 1.6$$

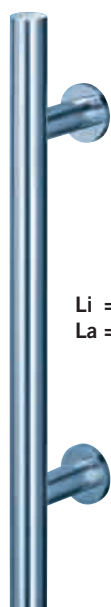
Other length ratios and spacer centres on request



Recommendation for timber doors



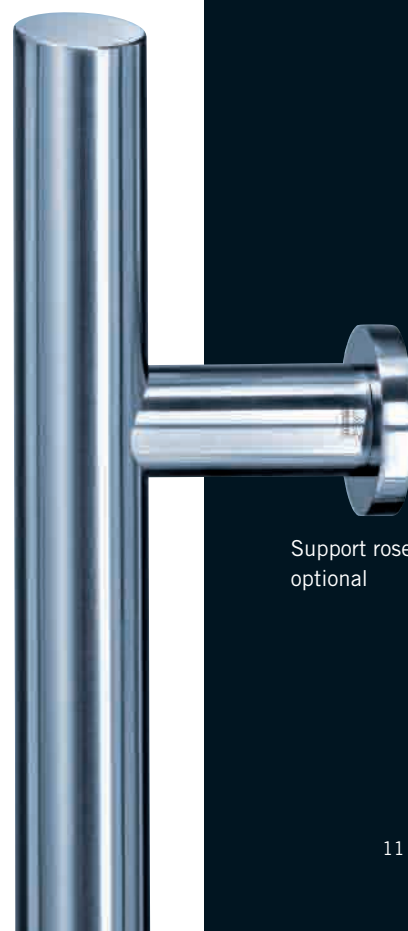
Li = 350
La = 560



Li = 500
La = 800



Li = 1,000
La = 1,600



Support rose optional

The proportions shown are examples of the golden ratio

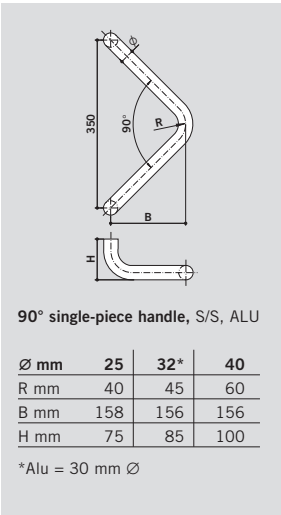
TG Classic

Designed and developed for tough applications in heavily used buildings, the Classic range with its resilience and quality is ideally suited for equipping schools and local authority establishments, for example.

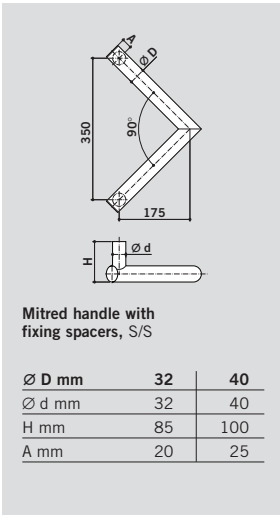
If you have your own ideas of what your pull handles should look like, we will be glad to turn them into reality. We will prepare a production drawing in accordance with your sketch and, once you have approved our design and placed your order, we will manufacture your pull handle based on our quotation.



TG 9359



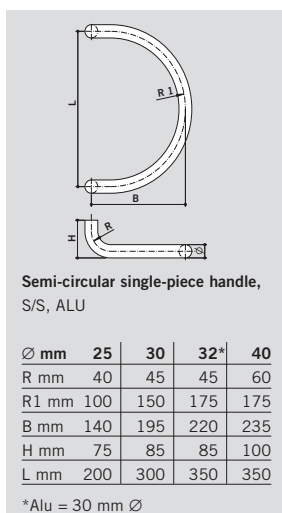
TG 9316



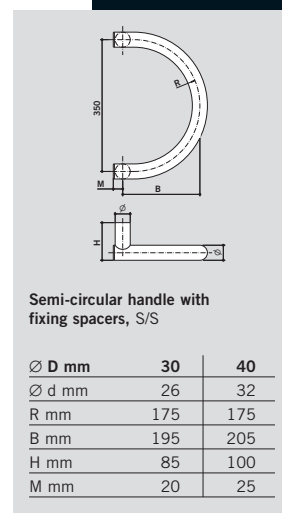
Other pull handle heights (dimension H) on request



TG 9304



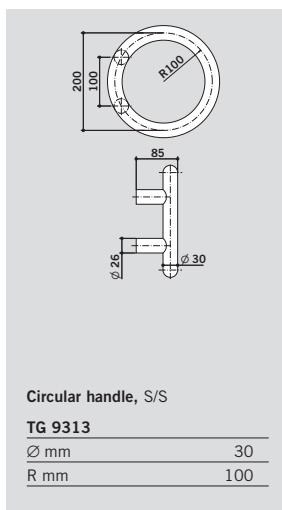
TG 9306



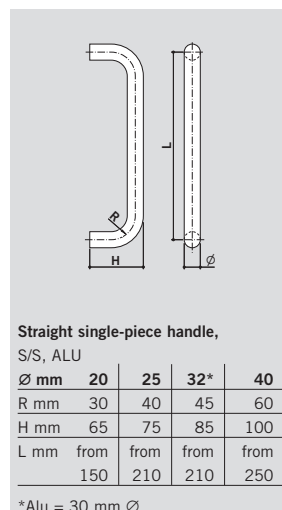
TG 9356



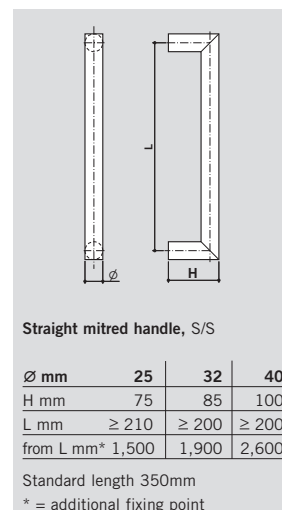
TG 9313



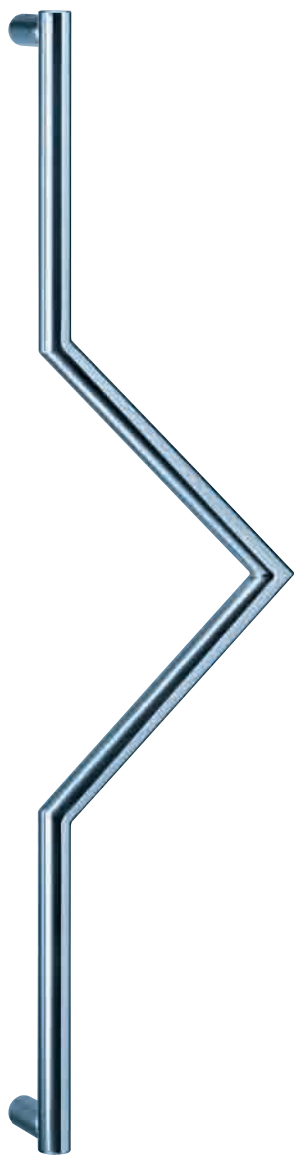
TG 9355



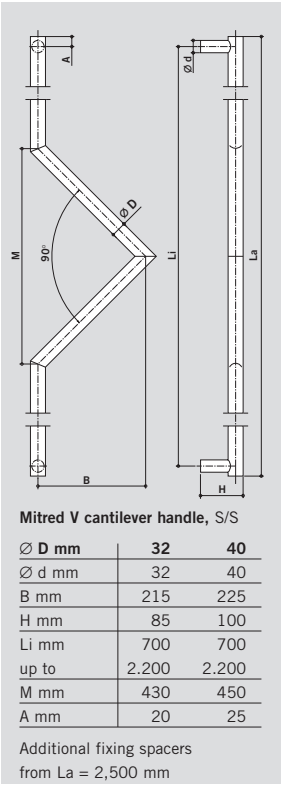
TG 9335



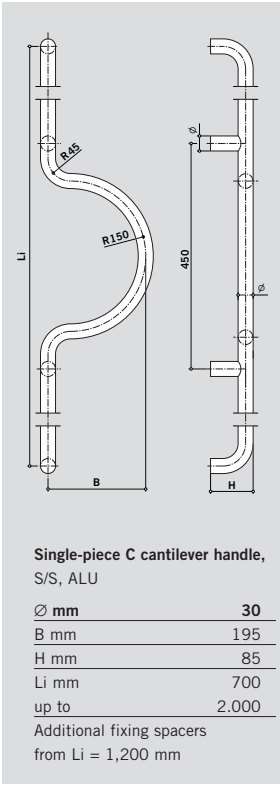
Other pull handle heights (dimension H) on request

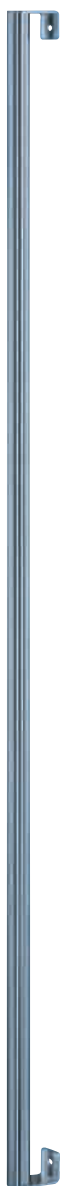


TG 9317



TG 9318





TG 9391

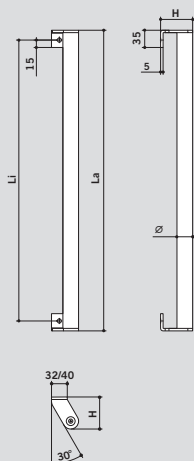


TG 9394

Pull handles with fixing brackets.

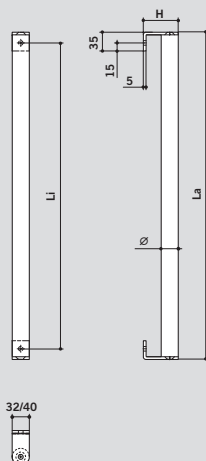
Stainless steel pull handles are often offered as modular systems with the tube and spacers being separately supplied. These kits can then be tailored to the door on site by cutting the stainless steel tubes to length and fixing the support brackets in place. However, this can result in dimensional and installation inaccuracies as well as causing problems if the support centres are too large to provide the necessary long-term resilience. The use of unsuitable saws when cutting to length can also adversely affect the corrosion behaviour of pull handles.

At DORMA, we make sure that our customers are not confronted by such problems. As with our TG Vario system (see also pages 18/19), we supply the two models TG 9391 with angled and TG 9394 with straight supports as ready-made pull handles. That way you can be sure that the hardware ordered on the basis of your length specifications will readily withstand the wear and tear of continuous usage.



TG 9391

Ø D mm	32	40
H mm	65	80



TG 9394

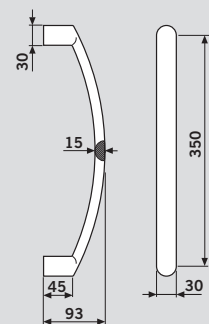
Ø D mm	32	40
H mm	65	80

Fixing materials for the TG 9391 and TG 9394 pull handles will need to be provided by others.



design award
winner

TG 9830



Design Award Winner 2002

TG 9830

S/S

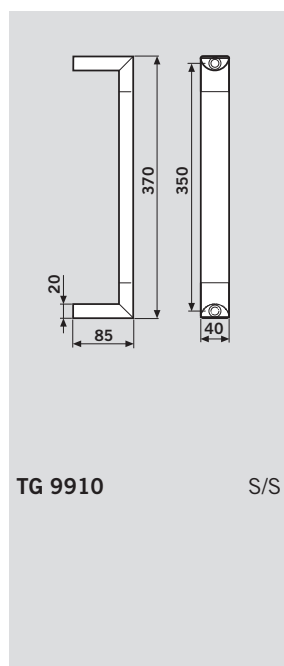
TG Avantgarde

Designed to create a prestigious and progressive appearance as part of an advanced architectural concept, these pull handles always leave the right visual impression, making them ideal for banks, insurance company buildings and similar.

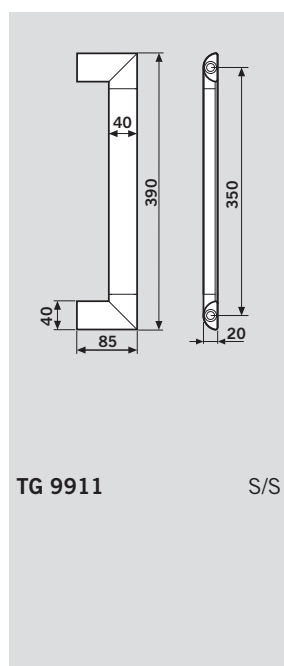
They certainly represent a step forward in creativity for contemporary entrance designs – so it will come as no surprise that Avantgarde pull handles from DORMA have also garnered Germany's coveted iF design award.



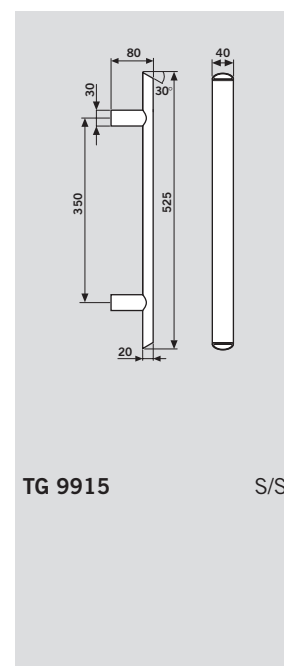
TG 9910



TG 9911



TG 9915



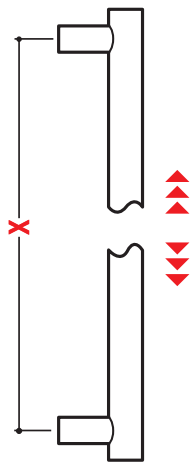


TG Vario – individual lengths from the same stock.

Until now, pull handles could usually only be quickly supplied in standard lengths of 350 mm. Customisation with special lengths could take weeks. But we pledge fast delivery of almost any length. DORMA pull handles, even when manufactured precisely to specification, are delivered on time. And you have the benefit of

no on-site adaptation work. Product liability for deficiency-free supply therefore remains with DORMA as the hardware manufacturer.

You'll be hard pushed to find a faster, technically more reliable and more convenient solution - so make the most of this innovative service.

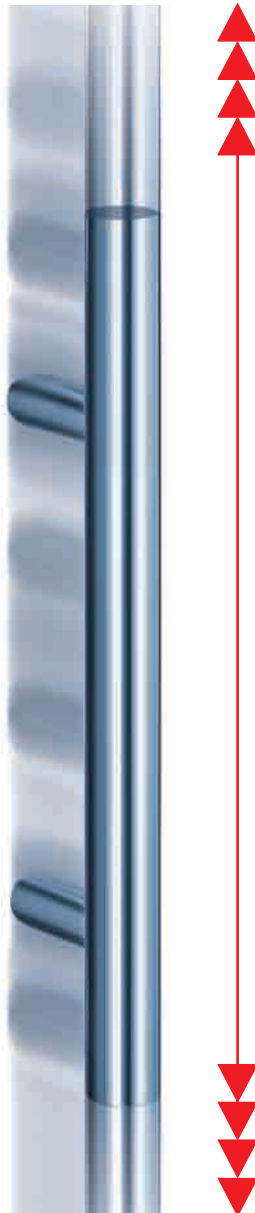


X You specify the precise centres dimension and we ensure on-schedule production with shipment in five working days.

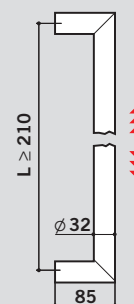


The DORMA pledge:

We offer a production time of generally five working days following order receipt and clarification of all technical details for our five stainless steel models TG 9335, TG 9355, TG 9356, TG 9377 and TG 9387, subject to manufacture and delivery in standard commercial volumes.



TG 9335

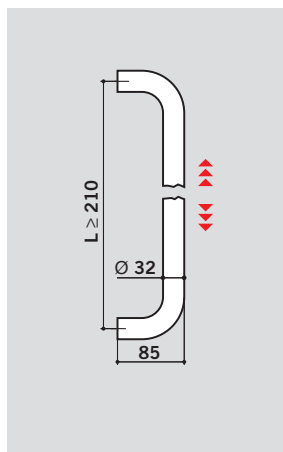


All the benefits at a glance:

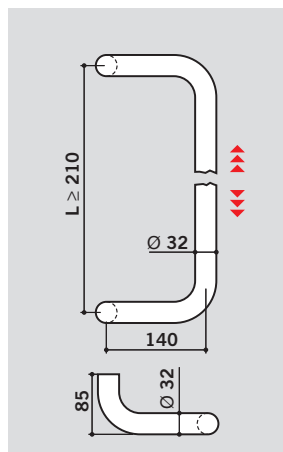
- No pull handle adaptation on site – saving you time and money.
- No off-cuts as DORMA pull handles are also supplied precisely fabricated to customised lengths – saving you material and cost.
- The pull handles are shipped to order, eliminating storage expenses.
- Highly resilient pull handle performance with manufacture from a single stock length.
- Minimal corrosion susceptibility as only stainless steel is cut and machined on the saw and grinding equipment used for the TG Vario range – something that is almost impossible to guarantee on site.
- DORMA's TG Vario pull handles can be combined with all DORMA fixing sets.
- Identical appearance of all pull handles within a building.



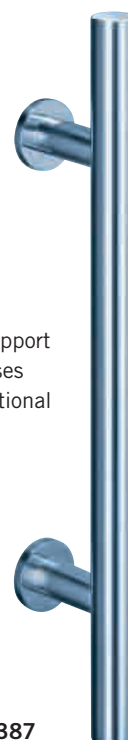
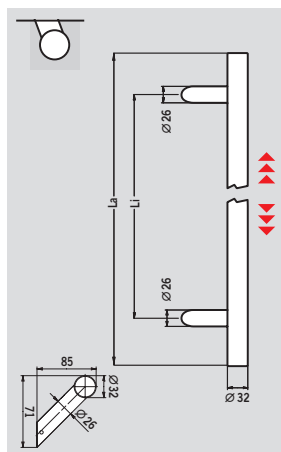
TG 9355



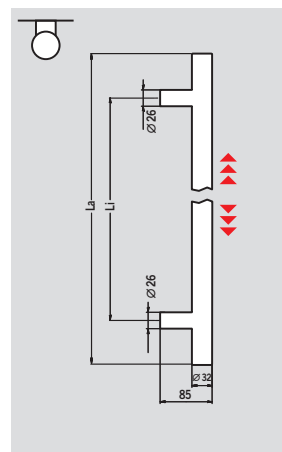
TG 9356



TG 9377



TG 9387



Support
roses
optional



DORMA impact protection guards in stainless steel.

In many buildings, there will be walls and doors that tend to suffer from heavy, unintended contact, causing damage to their surface.

In hospitals, senior residences and care homes, for example, beds may frequently impact against walls or doors, either because they have been “parked” in

corridors or are used for the transportation of patients. The consequences of even light contact are unsightly surfaces with chips and numerous other forms of damage at the height of the contact point. And that can mean expensive repairs. Moreover, the same damage is likely to be inflicted again after just a short period.

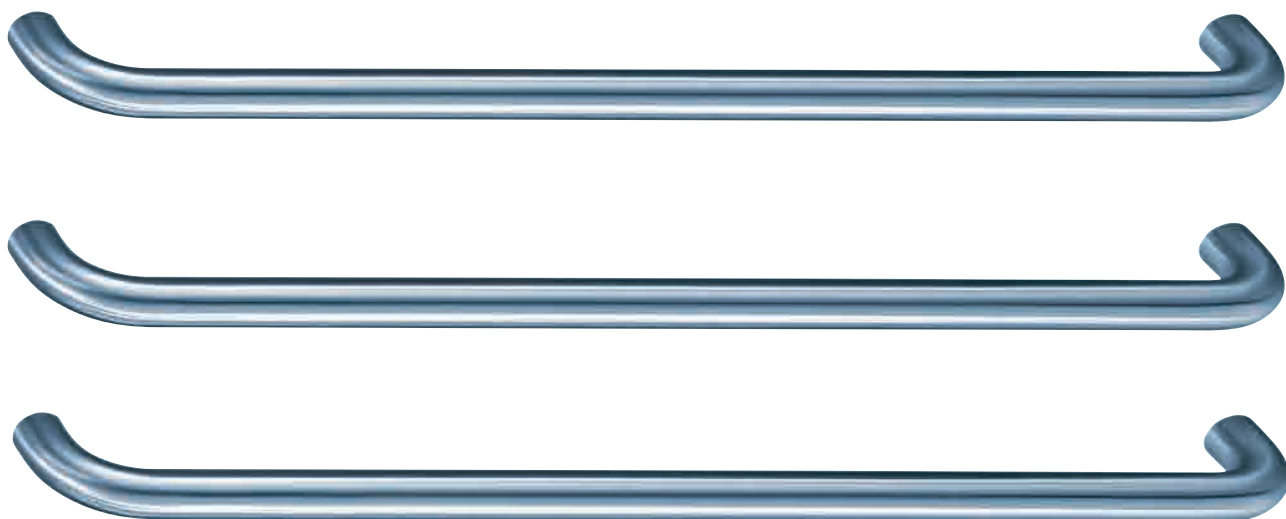
The guards can be fixed using our accessories to virtually any door or wall to provide sturdy protection.

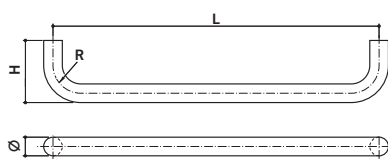


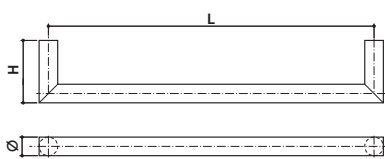
Wherever walls and doors are exposed to such attrition, we recommend the use of DORMA impact protection guards.

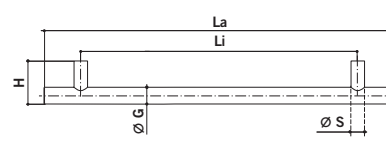
Because these components are there to absorb impact and are therefore themselves exposed to contact, we prepare their surfaces with our proven basic-grain finish.

Simply send your enquiries or orders under the heading “impact Protection Guards” to your DORMA contact or our main address.



Curved			
			
Ø mm	20	25	32
R mm	30	40	45
H standard mm	65	75	85
H min. mm	60	60	85

Mitred		
		
Ø mm	25	32
H standard mm	75	85
H min. mm	55	60

Fixing spacers			
			
Ø G mm	20	25	32
Ø S mm	18	18	26
H mm	65	75	85



The ends of the impact protection guards can be curved, mitred or provided with fixing spacers.



The right pull handle fixing solution for every door type

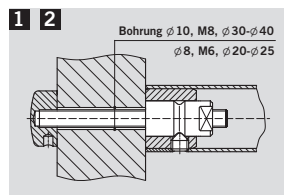
Selecting the appropriate pull handle fixings has now become even easier. Simply select your door type from photos 1 – 3 and make a note of the number (e.g. 2 for narrow-stile doors). Each fixing set is likewise indicated by the numbers 1, 2 or 3. This indicates the door type for which each set of fixings is best suited. For

your narrow-stile door, therefore, you can use all the fixing arrangements with the number 2 in the corner.

1 Timber door

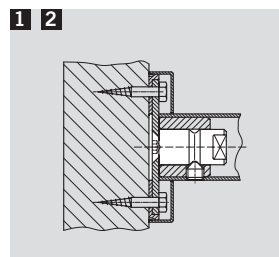


Fixing sets for timber, narrow-stile and toughened glass doors.



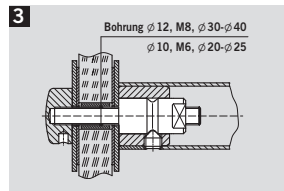
GZ 202*

Fixing to narrow-stile and timber doors
Single-sided, through-bolt fixing with screw-on cap opposite.
Door thickness 35-100 mm.
When placing an order, please indicate colour, pull handle Ø and door thickness.



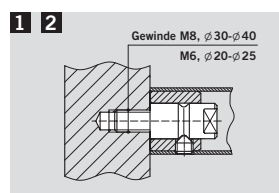
GZ 224*

Fixing to narrow-stile and timber doors
Single-sided, concealed with clip-on rose.
Minimum door thickness 35 mm.
Suitable for straight pull handles only. Fixing screws not supplied
When placing an order, please indicate colour and pull handle Ø.



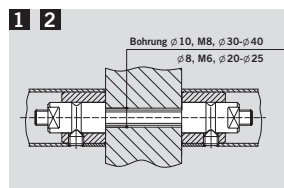
GZ 203*

Fixing to glass doors
Single-sided, through-bolt fixing with screw-on cap opposite.
Glass thickness 8-15 mm.
When placing an order, please indicate colour, pull handle Ø and the glass thickness.



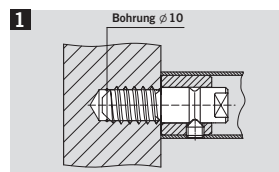
GZ 234*

Fixing to narrow-stile and timber doors
Single-sided, concealed
Bolting depth 20 mm.
When placing an order, please indicate colour and pull handle Ø.



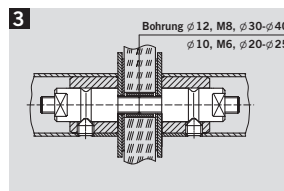
GZ 214*

Fixing to narrow-stile and timber doors. Back-to-back, concealed.
Door thickness 35-100 mm.
When placing an order, please indicate colour, pull handle Ø and door thickness.



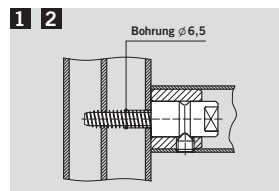
GZ 274*

Fixing to timber doors
Single-sided, concealed
Minimum door thickness 40 mm.
When placing an order, please indicate colour and pull handle Ø.



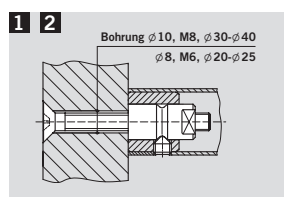
GZ 215*

Fixing to glass doors
Back-to-back, concealed.
Glass thickness 8-15mm.
When placing an order, please indicate colour, pull handle Ø and the glass thickness.



GZ 284*

Fixing to narrow-stile and timber doors
Single-sided, concealed.
When placing an order, please indicate pull handle Ø and profile thickness < 39 mm, 40 – 54 mm or > 54 mm.



GZ 216*

Fixing to narrow-stile and timber doors
Single-sided, through-bolt fixing.
Door thickness 35-80 mm.
When placing an order, please indicate pull handle Ø and door thickness.

All fixing sets GZ 2xx and GZ 3xx are unsuitable for pull handles TG 9391 and TG 9394. Fixings for these pull handles will need to be provided by others.

* * Please note the reduced hole diameter.

Fixing set GZ 202 to GZ 284 cannot be combined with pull handle TG 9377 (for TG 9377, see page 23).

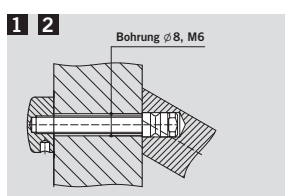
2 Narrow-stile door



3 Toughened glass door

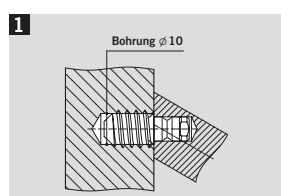


Special fixing sets for the TG 9377.



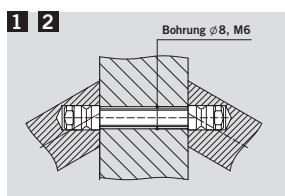
GZ 302

Fixing to narrow-stile and timber doors, Single-sided, bolt through fixing with screw-on cap opposite. Door thickness 35-100 mm. When placing an order, please indicate colour, pull handle Ø and door thickness.



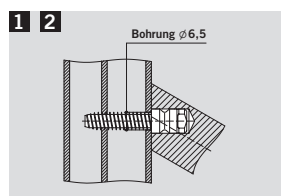
GZ 374

Fixing to timber doors Single-sided, concealed Minimum door thickness 40 mm. When placing an order, please indicate colour, pull handle Ø.



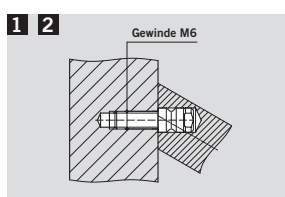
GZ 314

Fixing to narrow-stile and timber doors, Back-to-back, concealed Door thickness 35-100 mm. When placing an order, please indicate colour, pull handle Ø and door thickness.



GZ 384

Fixing to narrow-stile and timber doors, Single-sided, concealed. When placing an order, please indicate pull handle Ø and profile thickness < 39 mm, 40 – 54 mm or > 54 mm.



GZ 334

Fixing to narrow-stile and timber doors, Single-sided, concealed Bolting depth 20 mm. When placing an order, please indicate colour, pull handle Ø.

All fixing sets GZ 2xx and GZ 3xx are unsuitable for pull handles TG 9391 and TG 9394. Fixings for these pull handles will need to be provided by others.

Support roses



	GZ 537	GZ 540	GZ 544	GZ 550
Ø Rose mm	37	40	44	50
Ø Hole mm	6.2	6.2	8.2	8.2
Thickness mm	2	2	2	2
For pull handles Ø mm	20	25	32	40

Provided as standard with fixing sets GZ 203 and GZ 215 for toughened glass doors.



	GZ 537	GZ 540	GZ 544	GZ 550
Ø Rose mm	37	40	44	50
Ø Hole mm	6.2	6.2	8.2	8.2
Thickness mm	8	8	8	8
For pull handles Ø mm	20	25	32	40

See support roses, page 9



Door Control



Automatic



**Glass Fittings
and Accessories**



**Security/Time
and Access (STA)**



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