

Roto NT

The world's biggest selling Tilt&Turn hardware system for windows and balcony doors

Installation instructions
for aluminium profiles with 16 mm hardware groove



Liability exclusion

All specifications in this brochure were diligently compiled and validated. Changes due to technical progress, changes in legislation and the passage of time are unavoidable. We therefore hope you understand that we cannot be held liable for the accuracy or completeness of the contents.

All rights, in particular the right to copy and circulate, reserved.

Imprint

Copyright: November 2011

Roto Frank AG

Wilhelm-Frank-Platz 1

D-70771 Leinfelden-Echterdingen

Telephone: +49 (0)711-7598-0

Telefax: +49 (0)711-7598-253

info@roto-frank.com

www.roto-frank.com

General information	Introduction	5
	Product liability guidelines	6
	General advice	11
	Application diagram.....	12



Hardware overview	Tilt&Turn hardware – Basic security.....	14
	Tilt&Turn hardware BRG1 (DIN V ENV 1627–1630).....	16
	Turn-Only hardware – Basic security.....	18
	Tilt-Only hardware (with variable/centred handle height T&T espagnolette)	20
	Turn-Only / Tilt&Turn hardware – Basic security	22
	Turn-Only / Tilt&Turn hardware BRG1 (DIN V ENV 1627– 1630).....	24
	Combination Lever-operated espagnolette / T&T espagnolette	26
	Profile-related components	28



Installation and operation

Sash cross section, window-handle drilling / installation	30
Frame	31
Drilling dimensions.....	31
Sash	32
Cropper / installation hardware	32
Installation of stay arm / tilt restrictor / anti-slam device.....	33
Sash	34
rebate corner hinge fixing	34
Gasket-compression adjustment / Hinge passage.....	35
Frame, Installing Hardware Components.....	36
Jigs	45
Turn-restrictor	46
Sash.....	47
Hinging and unhinging the sash	47
Locking cam adjustment instructions	48
Stay bearing / pivot rest adjustment instructions.....	49



Maintenance and operation instructions		50
--	-------	-----------



Safety instructions		53
---------------------	-------	-----------



The surface-finish

RotoSil Nano surface-finish for elegant matt silvery aesthetics. Unmistakable consistent silver look.

Optimal protection by means of galvanising, chromating, and additional sealing.

Increased corrosion protection.

The NT security concept

The basic version of Roto NT is already equipped with basic security on the bottom horizontal sash-plane.

Highest burglary inhibition results are achieved with exemplary hardware combinations for security windows in accordance with DIN V ENV 1627–1630. This standard includes an overall test of all individual window components.

Cover caps

Upon request all visible hinge components can be equipped with cover caps from the extensive Roto product range. Correspondingly numerous coloured versions are available.

The NT striker concept

All strikers in the Roto NT hardware system have identical screwing axes.

This concept renders prefitting the sash with security cams possible, and a later frame retrofitting with security strikers (zinc or steel). All locking cam versions are combinable with all strikers.

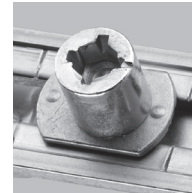
Three locking cam versions

The Roto NT hardware system offers 3 different locking cam versions that differ in application and adjusting capabilities.

The detailed adjusting dimensions are to be found in these installation instructions.

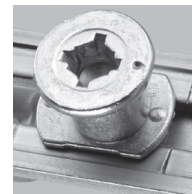
Locking cam E

Gasket-compression adjustable cam



Locking cam P

Gasket-compression adjustable security cam



Locking cam V

Height and gasket-compression adjustable security cam



Tilt&Turn hardware for windows and balcony doors

According to the defined manufacturer's liability described in paragraph 4 of the "product liability law", the following information regarding Turn-Only and Tilt&Turn hardware for window and balcony door sashes should be observed. Non-compliance exempts the manufacturer of his liability.

1. Product information and stipulated application

1.1 Turn-Only and Tilt&Turn hardware

Definition: Turn-Only and Tilt&Turn hardware as covered by this definition is one-hand-operation Turn-Only and Tilt&Turn hardware for windows and balcony doors in building construction. This is used to enable windows and balcony-door sashes into a turning position by operating a 'hand-lever' (handle) or into a limited tilting position in the case of the scissors (sash-stay) version.

Application: Turn-Only and Tilt&Turn hardware is used on vertically installed windows and balcony-doors made of timber, PVC, aluminium or steel and their corresponding material combinations. Conventional Turn-Only and Tilt&Turn hardware as covered by this definition, locks window and balcony door sashes or enables various ventilating positions. When closing, the gasket counter force must be overcome as a rule.

1.2 Differing application – Liability exclusion

All applications differing from § 1.1 are regarded as non-stipulated applications and excludes any liability on our part.

1.3 Advice concerning restrictions of use

Opened balcony doors and window sashes, as well as window and balcony door sashes not locked or in the tilted modus, provide only a shielding function and do not meet any demands on joint impermeability, water tightness, sound reduction, heat-insulation and burglary resistance.

In the case of wind and draught, the window and balcony door sashes must be closed and locked. Wind and draught is present, if a window or balcony-door sash

while in one of its opening positions, can open or close on its own, in an uncontrolled manner by means of either air pressure or air suction. A static opening position of windows and balcony door sashes can only be achieved by means of additional hardware.

1.4 Particular necessary agreements for extended requirements

Burglar-resistant windows and balcony doors, windows and balcony doors for damp rooms and those for use in environments with aggressive, corrosive air content, require hardware adapted for the respective application and individually agreed upon performance features.

The resistance against wind loads in a closed and locked state is dependent on the respective designs of windows & balcony doors. If wind loading tests need to be carried out (for example in accordance with DIN EN 12210 – in particular pressure test p3), suitable hardware compilations are to be matched in relation to the respective window design and frame material, and each case individually agreed upon.

Generally speaking, the hardware defined in § 1.1 fulfils the requirements for barrier-free dwellings (for example, in accordance with DIN 18025). However corresponding hardware compilations and installations for windows and balcony doors are necessary, which must be coordinated and each case individually agreed upon.

2. Misuse

Misuse – therefore not the stipulated product utilisation – occurs in particular with hardware for windows and balcony doors as described in § 1.1 and/or § 1.2 in particular:

- If obstacles are inserted in the opening vicinity between frame and sash, thus preventing or inhibiting its proper specified use,
- if additional loads are put on windows or balcony-door sashes (for example if children swing on the window or balcony door sash),

- if window and balcony-door sashes are pressed adversatively or uncontrolled (for example by the wind) up against the window reveals, so that the hardware or the frame material or other individual window or balcony-door components are damaged or destroyed and/or if consequential damage can arise,

- if while closing (or sliding) someone reaches between the sash and frame, and/or a person (or parts thereof) are in the vicinity (risk to life and limb).

3. Liability

The respective entire hardware set may only consist of hardware components from Roto's NT system. In the case of non factory-approved combinations by Roto Frank AG and/or inappropriately assembled hardware, and/or the use of non-original and/or non factory-approved accessory components, no liability is accepted.

For professional screw-fixing, the Quality Assurance Association: Locks and Hardware's directive 'TBDK' (Fixing load-bearing Turn-Only and Tilt&Turn hardware components) is to be adhered to.

When using PVC or aluminium profiles, the profile manufacturer's and/or system owner's information is to be observed. The window fabricator is essentially responsible for the compliance of the specified system-related dimensions (for example, the gasket gap dimensions). These specified system-related dimensions are to be checked regularly, in particular when using new hardware components for the first time, and also during production as well as during the window installation process. The hardware components are designed in such a manner, that the system-related dimensions can be adjusted, provided the hardware can have an effect on these. Should there be a deviation from these dimensions that leads to a fault that has not been noted before the window installation, no liability is accepted for the additional expenses incurred.

4. Product performance – Manufacturer's application advice

4.1 Maximum sash weights

The listed maximum sash weights for the individual hardware versions may not be exceeded. The building component with the least permissible load-carrying capacity determines the maximum sash weight. Application diagrams and component classification are to be adhered to (refer to chapter Diagrams / Profile cross sections).

4.2 Sash sizes

The description of the application diagrams in the planning documentation, product catalogues or installation instructions depict the relationships between the permissible sash rebate widths and sash rebate heights, depending on various glass weights and/or thickness. The resulting sash dimensions or sash formats (portrait and/or landscape format) – as well as the maximum sash weight – may not under any circumstance be exceeded.

4.3 Hardware combination

The manufacturer's regulations that deal with the combination of hardware are obligatory (for example: the application of additional stay arms, the hardware design for burglar-resistant window sashes and balcony-door leaves etc.).

5. Product maintenance

Security relevant hardware components are to be examined at least once a year for stability and wear and tear. Depending on the requirements, the fixing screws are to be tightened and/or parts to be replaced. In addition to this, the following maintenance work is to be carried out annually:

- All movable parts and all locking points of the hardware are to be lubricated and tested.
- Only cleaning and maintenance agents, that do not damage the corrosion protection of the hardware components, are to be used.

The hardware adjustments – particularly in the vicinity of the pivot rests and the scissors-stays – as well as replacing parts and the unhinging & hinging of the active sash are to be carried out by a specialist company.

When coating – for example when painting or varnishing – the windows' and balcony doors hardware is to be excluded from this process and is also to be protected against any impurities (paint/varnish splashes).

5.1 Preservation of the surface finish

Electrolytically applied zinc coatings are not attacked in a normal room climate, if no condensation can form on the hardware or occasionally formed condensation can dry rapidly.

In order to permanently preserve the hardware's surface quality and to avoid deterioration by corrosion, it is imperative to observe the following points:

- The hardware and/or the rebate areas are to be ventilated sufficiently in particular during the building phase so that they are not exposed either to direct wetness nor to condensation. In any case, necessary steps are to be taken to ensure that (permanent) moist ambient air cannot condense in the rebate areas.
- The hardware is to be kept free from deposits and soiling from building materials (building dust, plaster, cement etc.). Possible soiling from plaster, mortar or similar materials is to be removed with water before it cures.
- Aggressive vapours (e.g. by means of formic acid or acetic acid, ammonia, amine or ammonia compounds, aldehydes, phenols, chlorine, tannic acid etc.) in connection with even small formations of condensation can lead to fast corrosion of the hardware. For this reason, evaporation in the vicinity of the windows is to be absolutely avoided.

■ On windows and balcony doors made of oak or other types of timber with a high concentration of (tannic-) acid, ensure that by means of a suitable window surface treatment, these content substances can not evaporate out of the timber. The hardware may not come in direct contact with untreated timber surfaces.

■ Furthermore no acetic-acid or crosslinked acidic sealing compounds or those with the above mentioned contents may be used, since both the direct contact with the sealing compound and its vaporisation can attack the hardware's surface.

■ The hardware may only be cleaned with mild, pH-neutral cleaning agent in diluted form. Under no circumstances may aggressive, acidiferous cleaners or abrasive cleaning agents whose contents are listed in the above paragraph be used.

■ Basically only zinc-plated and passivated screws are to be used for fixing the hardware components. By no means may stainless-steel screws be used, as this promotes the corrosion of zinc-plated surfaces.

6. Obligation to issue information and instructions

The following documentation in particular is available in order to fulfil the information and instruction duties, as well as implementing maintenance operations. This documentation is to be passed on to dealers, intermediaries, fabricators and end users.

- Planning documentation
- Product catalogues
- Installation instructions
- Maintenance and care instructions as well as operating instructions

This is described subsequently as 'product information' – whether in whole or in part.

In order to safeguard the relevant function of windows and balcony doors:

- Planning engineers are obliged to request and comply with the manufacturers or authorised dealers 'product information'.
- Specialised dealers are obliged to observe the 'product information' from the manufacturer – particularly valid for advertising measures – and to pass this on to subsequent dealers and/or fabricators, and to point out to them that they are also obliged to pass this on to their customers.

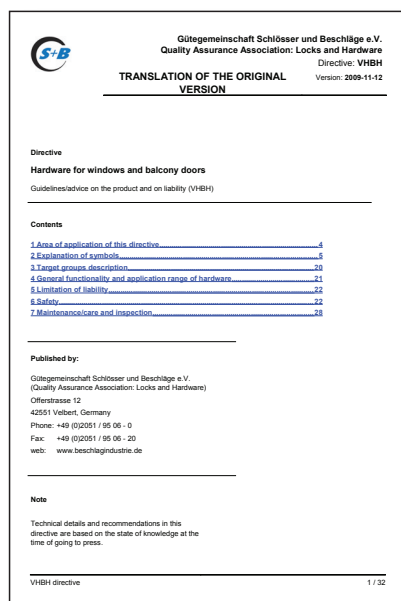
- Fabricators are obliged to observe the 'product information' and in particular, to pass on service & maintenance instructions as well as operating manuals to the builders and end users.

7. Use of related hardware

The variations possible within individual hardware systems (e.g. Tilt-Only and Top-Hung hardware, or hardware that provides a circumferential ventilation-gap by parallel-retracting the sash instead of, or in addition to the tilted position) are to be treated according to the corresponding valid features of product information, stipulated application, misuse, product performance, product maintenance, information & instruction obligations.

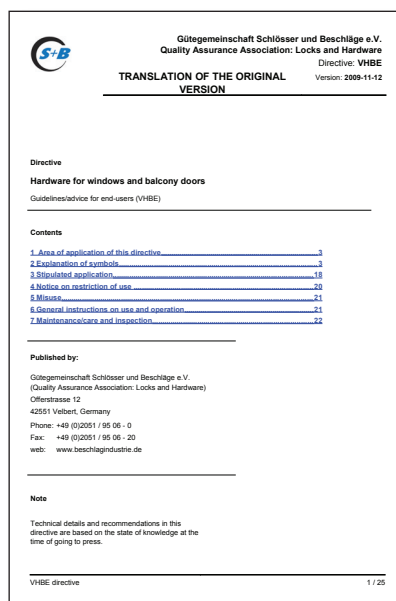
Directives of the Quality Assurance Association: Locks and Hardware

In the directives of the Quality Assurance Association: Locks and Hardware all information about the correct use and maintenance of the hardware for windows and balcony doors can be found.



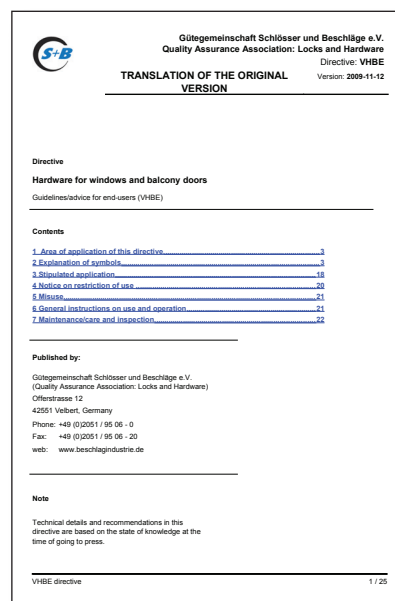
■ VHBH

Hardware for windows and balcony doors Guidelines/advice on the product and on liability



■ VHB

Hardware for windows and balcony doors Guidelines/advice for end users



■ TBDK

Attachment of supporting fitting components for turn-only and tilt&turn fittings with definitions for turn-only and tilt&turn fittings and their possible installation positions



12 mm clearance
18/20 mm overlap width
9/13 mm hardware axis

Hardware functional safety

- In order to warrant continuous hardware functional safety, the following is to be adhered:
 1. Professional installation of the hardware components in accordance with the installation instructions.
 2. Professional installation of the elements throughout the window installation process.
 3. The window fabricator is obliged to give the maintenance and operation instructions and where appropriate, the product liability guidelines to the user.
 4. The entire hardware may consist of only original Roto system components. The use of non-Roto components excludes any liability on our part.

Product liability regulations

- Roto recommends the use of fenestration screws (stainless steel or zinc flake coated) for installing the hardware components in the aluminium profiles with 16 mm hardware groove. The application of other screws can lead to contact corrosion.

When making burglar-resistant windows, it is recommended to use partially-threaded screws (cylindrical shaft).

The window fabricator must ensure adequate fixing of the hardware components, consulting the screw manufacturer if necessary.

When fixing **security relevant**, supportive hardware components such as **stay bearings** and **pivot rests**, the tearing-forces vertical to the sash plane surface must be reached in accordance with the following table (the tractive-force values depend on the sash weights from the TBDK).

Sash weight in kg	Tractive force in N
60	1650
70	1900
80	2200
90	2450
100	2710

The stated values refer to the stay bearing. These are also valid for the pivot rest if the fixing is carried out in the same manner as with the stay bearing.

If Tilt&Turn windows are requested according to DIN 18360 – VOB part C for metal construction work – lifting mishandling devices have to be installed.

Do not use any acid cross-linked sealing compounds that could lead to corrosion of the hardware components.

The glazing spacer-block regulations for the glazing method are to be adhered to.

Product liability – Liability exclusion

- The hardware manufacturer is not liable for malfunctions or damage to the hardware and to the windows or balcony doors equipped with the hardware, if any such malfunctions or damage have been caused by inadequate tendering procedures, failure to adhere to the installation instructions or application drawings, or was exposed to stringent soiling. The warranty covers only original Roto components.

Application diagram

NT Aluminium hinge side – TU-ON/T&T hardware for rectangular windows

Application diagram

NT Aluminium hinge side



Turn-Only/Tilt&Turn hardware for rectangular windows

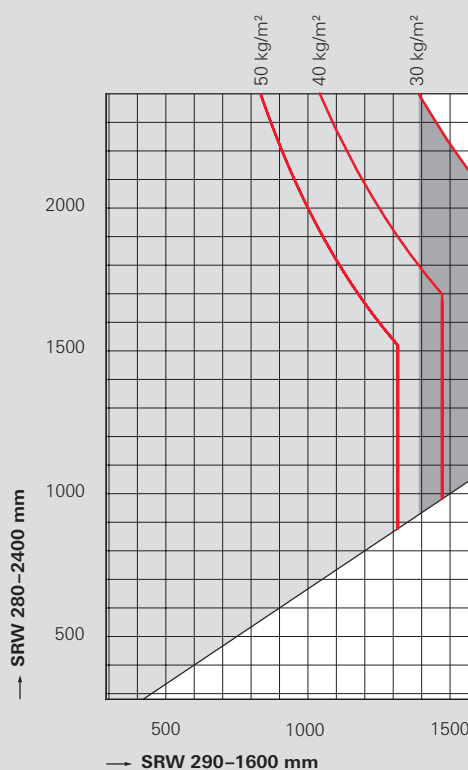
Application range

Sash Rebate Width (SRW) .. 290 – 1600 mm

Sash Rebate Height (SRH) . 280 – 2400 mm

Sash weight max. 100 kg

1 mm/m² glass thickness = 2.5 kg



 = Additional scissor stay required from SRW 1400 mm

 = Impermissible application range

Application diagram

NT Aluminium hinge side



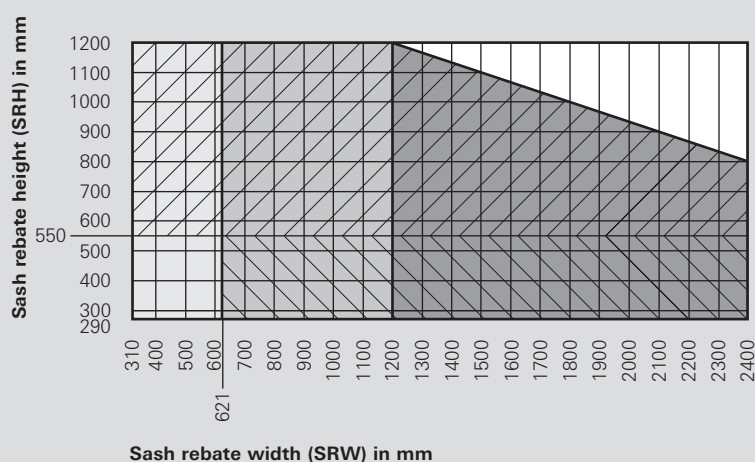
Tilt-Only hardware for rectangular windows

Application range

Sash Rebate Width (SRW) 310 – 2400mm

Sash Rebate Height (SRH) ... 290 – 1200mm

Sash weight max. 80kg



Please note:

Restrictor and cleaning stays are recommended; and necessary on fanlights (in accordance with RAL RG 607/12)

For restrictor and cleaning stays diagram refer to installation instructions AB 544_EN.

1 mm/m² glass thickness = 2.5 kg

-  = 2 tilt-stays laterally
-  = 1 tilt-stay on top or 2 tilt-stays laterally
-  = 2 tilt-stays on top or 2 tilt-stays laterally
-  = Restrictor and cleaning stays required in addition
-  = Additional restrictor and cleaning stays for top tilt-stay(s)
-  = Impermissible application range

Tilt&Turn hardware – Basic security

Parts list

Application range

Sash Rebate Width (SRW) 290 – 1600 mm⁽¹⁾

Sash Rebate Height (SRH)..... 280 – 2400 mm

Sash weight max. 100 kg

1 T&T espagnolette, fixed handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
280 – 360 ⁽³⁾	120	370	284 314 ⁽²⁾
361 – 480 ⁽⁴⁾			
481 – 600	170	490	259 830
601 – 800	263	690	259 831
801 – 1000	413	890	259 834
1001 – 1200	513	1090 1 E	259 838
1201 – 1400	563	1290 1 E	259 840
1401 – 1600	563	1490 1 E	259 842
1601 – 1800	563	1690 2 E	259 846
1601 – 1800	1000	1690 2 E	259 847
1801 – 2000	1000	1890 2 E	259 849
2001 – 2200	1000	2090 2 E	259 851
2201 – 2400	1000	2290 2 E	259 854

2 T&T espagnolette, centred/variable handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
310 – 450 ⁽³⁾	155 – 225	430	259 717 ⁽²⁾
451 – 620 ⁽⁴⁾	225 – 310	400	259 718 ⁽²⁾
621 – 800	311 – 400	580 1 E	259 719
801 – 1200	401 – 600	980 1 E	259 720
1201 – 1600	601 – 800	1380 2 E	259 721
1601 – 2000	801 – 1000	1780 2 E	259 762
2001 – 2400	1001 – 1200	2180 4 E	259 763

3 Bullet catch cam

	256 020
--	----------------

4 Corner drive not dep.

1 E	260 275
-----	----------------

4 Corner drive

1 P	260 277
-----	----------------

5 T&T corner drive

1 P	260 290
-----	----------------

6 Special corner drive not dep.

1 E	260 280
-----	----------------

(SRH < 360 mm)

6 Special corner drive

1 P	260 282
-----	----------------

(SRH < 360 mm)

7 Stay guide

SRW/mm	Description/length	Material no.
290 – 410	150 / 300	260 201 ⁽⁵⁾
411 – 600	250 / 490	256 024
601 – 800	350 / 690	260 204
801 – 1000	500 / 890	260 205
1001 – 1200	500 / 1090	260 209
1201 – 1400 ⁽¹⁾	500 / 1290	1 E 260 215

8 Additional scissor stay (from SRW 1400 mm)

	255 237
--	----------------

9 Stay arm K, system 12/18-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁶⁾	L 258 048
		R 258 049
411 – 600	250	L 258 050
		R 258 051
601 – 800	350	L 258 052
		R 258 053
801 – 1400	500	L 258 037
		R 258 038

9a Stay arm K, system 12/18-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁶⁾	L 349 687
		R 349 688
411 – 600	250	L 349 689
		R 349 690
601 – 800	350	L 349 691
		R 349 692
801 – 1400	500	L 349 693
		R 349 694

9b Stay arm K, system 12/20-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁶⁾	L 258 054
		R 258 055
411 – 600	250	L 258 056
		R 258 057
601 – 800	350	L 258 058
		R 258 059
801 – 1400	500	L 258 039
		R 258 041

9c Stay arm K, system 12/20-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁶⁾	L 258 060
		R 258 061
411 – 600	250	L 258 062
		R 258 063
601 – 800	350	L 258 064
		R 258 065
801 – 1400	500	L 258 042
		R 258 043

10 Stay bearing K3/100

	230 177
--	----------------

10 Stay bearing K6/100

	230 178
--	----------------

10a Stay-bearing pin

	227 354
--	----------------

11 Stay corner drive

1 P	260 286
-----	----------------

12 Multipart centre lock, horizontal and vertical

SRW/mm	SRH/mm	Size	Material no.
1101 – 1600	1101 – 1800	600 1 E	255 281
	1801 – 2400	600CON 1 E	255 282
		600 1 E	255 281

13 Rebate corner hinge NT Alu 12/18-9

L	616 324
---	----------------

13 Rebate corner hinge NT Alu 12/18-13

L	616 367
---	----------------

13 Rebate corner hinge NT Alu 12/20-9

L	616 369
---	----------------

13 Rebate corner hinge NT Alu 12/20-13

L	616 371
---	----------------

14 Rebate corner hinge extension

	624 462
--	----------------

15 Pivot rest K3/100

	258 590
--	----------------

15 Pivot rest K6/100

	258 592
--	----------------

16 Lifting mishandling device, sash component

	260 538
--	----------------

Profile-related frame components: refer to the table on page 28-29

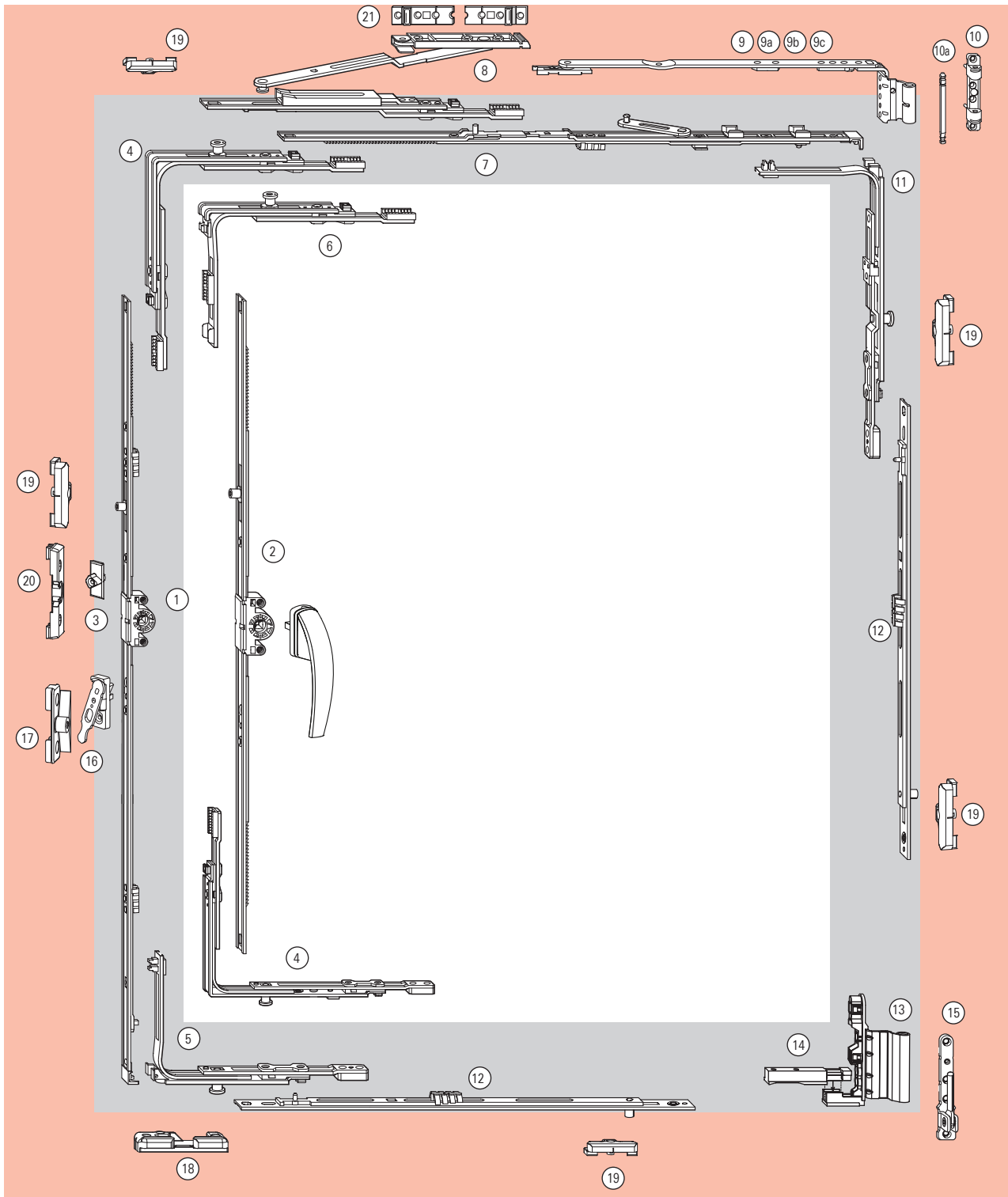
17 Lifting mishandling device, frame component

18 Horizontal Tilt&Turn striker

19 Striker

20 Bullet catch

21 Packers for tilt-stay



On SRH < 500 mm, the tilt-range must be limited to 80 mm!

- ⁽¹⁾ Use an additional scissor stay from SRW 1400 mm ⁽⁸⁾
- ⁽²⁾ Not possible in combination with a lifting mishandling device.
- ⁽³⁾ With special corner drive ⁽⁶⁾
- ⁽⁴⁾ With corner drive ⁽⁴⁾
- ⁽⁵⁾ On SRW < 310 mm assembly clip must be removed
- ⁽⁶⁾ Maximum tilt-range 80 mm

Tilt&Turn hardware BRG1 (DIN V ENV 1627–1630)

Parts list

Application range

Sash Rebate Width (SRW) 400 – 1400 mm

Sash Rebate Height (SRH)..... 280 – 2400 mm

Sash weight max. 100 kg

① T&T espagnolette, fixed handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
280 – 360 ⁽²⁾	120	370	284 314 ⁽¹⁾
361 – 480 ⁽³⁾			
481 – 600	170	490	259 830
601 – 800	263	690	259 831
801 – 1000	413	890	259 834
1001 – 1200	513	1090 1 E	259 838
1201 – 1400	563	1290 1 E	259 840
1401 – 1600	563	1490 1 E	259 842
1601 – 1800	563	1690 2 E	259 846
1601 – 1800	1000	1690 2 E	259 847
1801 – 2000	1000	1890 2 E	259 849
2001 – 2200	1000	2090 2 E	259 851
2201 – 2400	1000	2290 2 E	259 854

② T&T espagnolette, centred/variable handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
310 – 450 ⁽²⁾	155 – 225	430	259 717 ⁽¹⁾
451 – 620 ⁽³⁾	225 – 310	400	259 718 ⁽¹⁾
621 – 800	311 – 400	580 1 E	259 719
801 – 1200	401 – 600	980 1 E	259 720
1201 – 1600	601 – 800	1380 2 E	259 721
1601 – 2000	801 – 1000	1780 2 E	259 762
2001 – 2400	1001 – 1200	2180 4 E	259 763

③ Bullet catch cam **256 020**

④ Corner drive. 1 P **260 277**

⑤ T&T corner drive 1 P **260 290**

⑥ Special corner drive (SRH <360 mm) 1 P **260 282**

⑦ Stay guide

SRW/mm	Description/length	Material no.
290 – 410	150 / 300	260 201 ⁽⁴⁾
411 – 600	250 / 490	256 024
601 – 800	350 / 690	260 204
801 – 1000	500 / 890	260 205
1001 – 1200	500 / 1090	260 209
1201 – 1400	500 / 1290 1 E	260 215

⑧ Stay arm K, system 12/18-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 048 R 258 049
411 – 600	250	L 258 050 R 258 051
601 – 800	350	L 258 052 R 258 053
801 – 1400	500	L 258 037 R 258 038

⑧a Stay arm K, system 12/18-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 349 687 R 349 688
411 – 600	250	L 349 689 R 349 690
601 – 800	350	L 349 691 R 349 692
801 – 1400	500	L 349 693 R 349 694

⑧b Stay arm K, system 12/20-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 054 R 258 055
411 – 600	250	L 258 056 R 258 057
601 – 800	350	L 258 058 R 258 059
801 – 1400	500	L 258 039 R 258 041

⑧c Stay arm K, system 12/20-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 060 R 258 061
411 – 600	250	L 258 062 R 258 063
601 – 800	350	L 258 064 R 258 065
801 – 1400	500	L 258 042 R 258 043

⑨ Stay bearing K3/100 **230 177**

Stay bearing K6/100 **230 178**

⑨a Stay-bearing pin **227 354**

⑩ Stay corner drive 1 P **260 286**

⑪ Multipart centre lock, horizontal, BRG1

SRW/mm	Size	Material no.
400 – 600	200 1 P	255 284
601 – 800	400 1 P	255 285
801 – 1000	600 1 P	255 286
1001 – 1200	600CON 1 E 200 1 P	255 282 255 284
1201 – 1400	600CON 1 E 400 1 P	255 282 255 285

⑫ Multipart centre lock, vertical, BRG1

SRH/mm	Size	Material no.
1101 – 1800	600 1 E	255 281
1801 – 2400	600CON 1 E 600 1 E	255 282 255 281

⑬ Rebate corner hinge NT Alu 12/18-9 L **616 324**

R **616 366**

Rebate corner hinge NT Alu 12/18-13 L **616 367**

R **616 368**

Rebate corner hinge NT Alu 12/20-9 L **616 369**

R **616 370**

Rebate corner hinge NT Alu 12/20-13 L **616 371**

R **616 372**

⑭ Rebate corner hinge extension **624 462**

⑮ Pivot rest K3/100 **258 590**

Pivot rest K6/100 **258 592**

⑯ Lifting mishandling device, sash component **260 538**

⑰ Drilling-protection **264 601**

Profile-related frame components: refer to the table on page 28-29

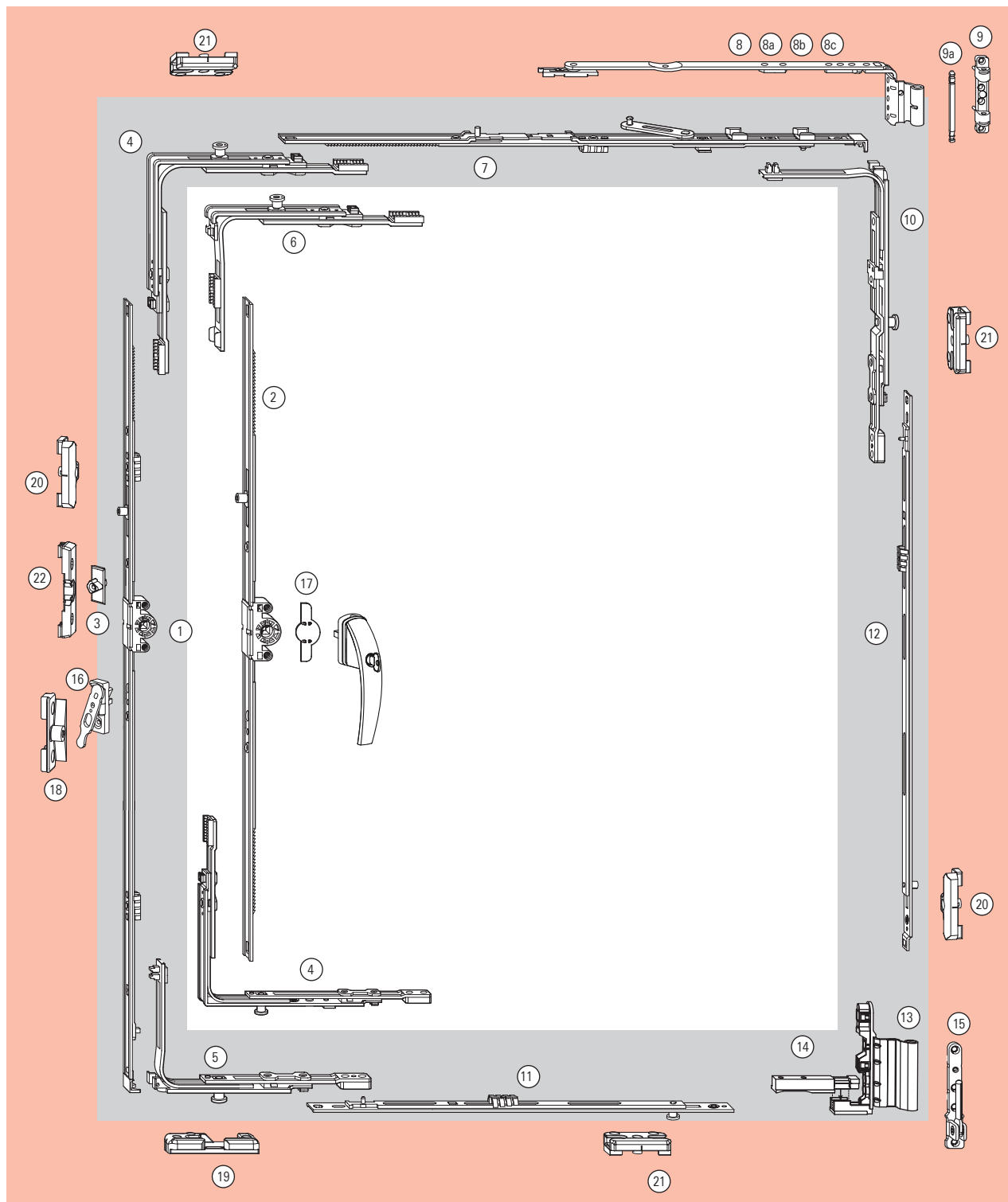
⑱ Lifting mishandling device, frame component

⑲ Horizontal Tilt&Turn striker

⑳ Striker

㉑ Security striker

㉒ Bullet catch



On SRH < 500 mm, the tilt-range must be limited to 80 mm!

⁽¹⁾ Not possible in conjunction with a lifting mishandling device.

⁽²⁾ With special corner drive (8)

⁽³⁾ With corner drive (4)

⁽⁴⁾ On SRW < 310 mm assembly clip must be removed.

⁽⁵⁾ Maximum tilt-range 80 mm

Turn-Only hardware – Basic security

Parts list

Application range

Sash Rebate Width (SRW) 290 – 1600 mm

Sash Rebate Height (SRH)..... 280 – 2400 mm

Sash weight max. 100 kg

① T&T espagnolette, fixed handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
280 – 360 ⁽²⁾	120	370	284 314⁽¹⁾
361 – 480 ⁽³⁾			
481 – 600	170	490	259 830
601 – 800	263	690	259 831
801 – 1000	413	890	259 834
1001 – 1200	513	1090 1 E	259 838
1201 – 1400	563	1290 1 E	259 840
1401 – 1600	563	1490 1 E	259 842
1601 – 1800	563	1690 2 E	259 846
1601 – 1800	1000	1690 2 E	259 847
1801 – 2000	1000	1890 2 E	259 849
2001 – 2200	1000	2090 2 E	259 851
2201 – 2400	1000	2290 2 E	259 854

② T&T espagnolette, centred/variable handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
310 – 450 ⁽²⁾	155 – 225	430	259 717⁽¹⁾
451 – 620 ⁽³⁾	225 – 310	400	259 718⁽¹⁾
621 – 800	311 – 400	580 1 E	259 719
801 – 1200	401 – 600	980 1 E	259 720
1201 – 1600	601 – 800	1380 2 E	259 721
1601 – 2000	801 – 1000	1780 2 E	259 762
2001 – 2400	1001 – 1200	2180 4 E	259 763

③ Bullet catch cam

④ Corner drive not dep.	1 E	260 275
Corner drive	1 P	260 277

⑤ T&T corner drive

⑥ Special corner drive not dep. (SRH < 360 mm)	1 E	260 280
Special corner drive (SRH < 360 mm)	1 P	260 282

⑦ Multipart centre lock, horizontal

SRW/mm	Size	Material no.
1101 – 1600	600	1 E 255 281

⑧ Sash-component for rebate hinge

⑨ Rebate-hinge arm K 12/18-9	L 264 081
	R 264 083
Rebate-hinge arm K 12/20-9	L 263 183
	R 263 184
Rebate-hinge arm K 12/20-13	L 230 639
	R 230 640

⑩ Stay bearing K3/100	230 177
Stay bearing K6/100	230 178

⑩a Stay-bearing pin

⑪ Rebate corner hinge NT Alu 12/18-9	L 616 324
	R 616 366
Rebate corner hinge NT Alu 12/20-9	L 616 369
	R 616 370
Rebate corner hinge NT Alu 12/20-13	L 616 371
	R 616 372

⑫ Rebate corner hinge extension

624 462

⑬ Pivot rest K3/100

258 590

Pivot rest K6/100

258 592

⑭ Lifting mishandling device, sash component

260 538

⑮ 90° travel restrictor

264 603

Profile-related frame components: refer to the table on page 28-29

⑯ Lifting mishandling device, frame component

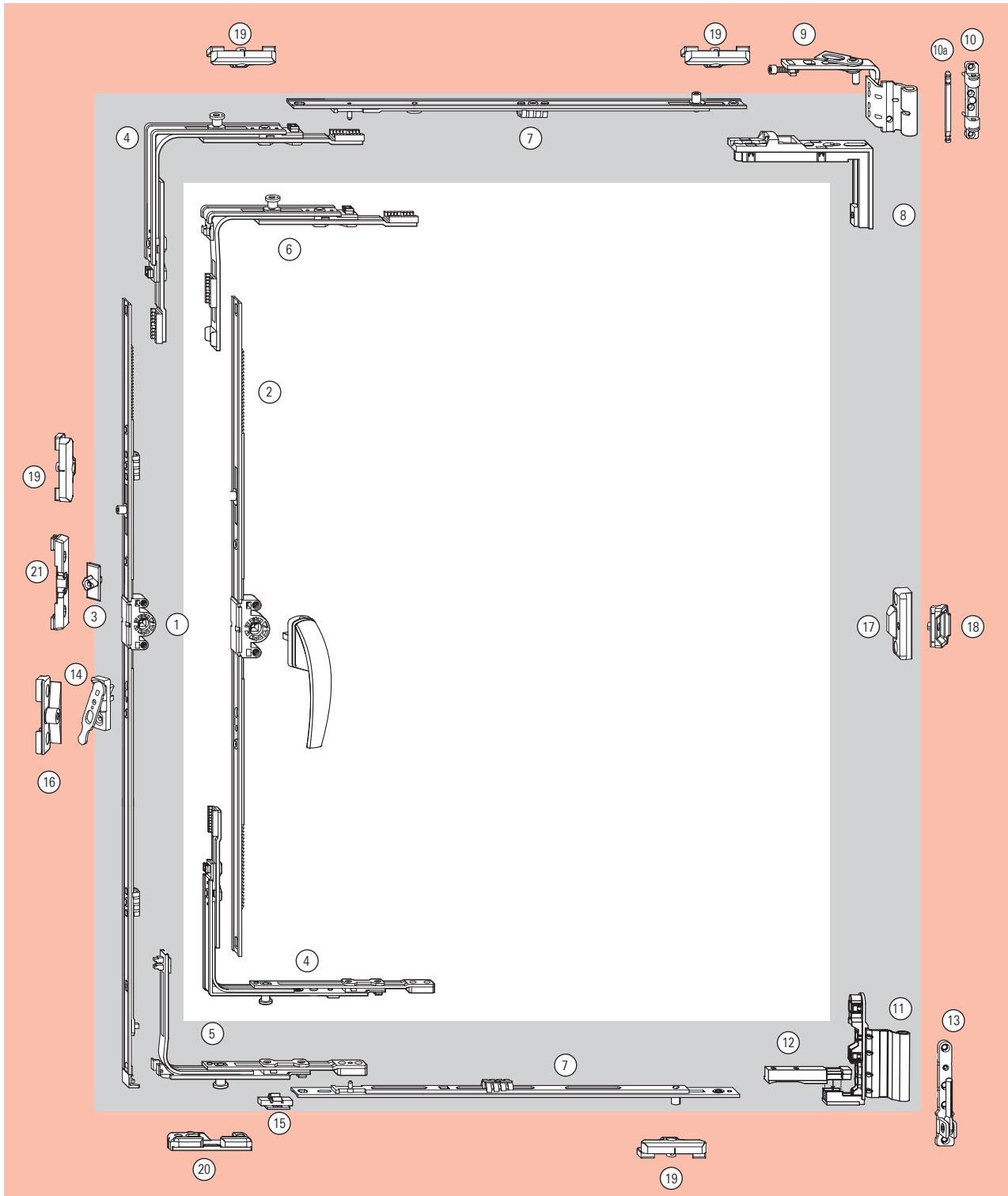
⑰ Concealed centre closer, sash component

⑱ Concealed centre closer, frame component

⑲ Striker

⑳ Horizontal Tilt&Turn striker

㉑ Bullet catch



⁽¹⁾ Not possible in conjunction with a lifting mishandling device.

⁽²⁾ With special corner drive (6)

⁽³⁾ With corner drive (4)

Tilt-Only hardware (with variable/centred handle height T&T espagnolette) Parts list

Application range (refer to the application diagram)

Sash Rebate Width (SRW) 310 – 2400 mm

Sash Rebate Height (SRH)..... 290 – 1200 mm

Sash weight max. 80 kg

① T&T espagnolette, centred/variable handle height, backset 15 mm⁽¹⁾

SRW/mm	Size/mm	Material no.
310 – 450	430	259 717⁽²⁾
451 – 620	400	259 718
621 – 800	580 1 E	259 719
801 – 1200	980 1 E	259 720
1201 – 1600	1380 2 E	259 721
1601 – 2000	1780 2 E	259 762
2001 – 2400	2180 4 E	259 763

② Corner drive not dep.	1 E	260 275
Corner drive	1 P	260 277

③ Multipart centre lock, vertical

SRW/mm	Size/mm	Material no.
801 – 1200	400 1 E	255 280

④ Stay bearing K 3/100	230 177
Stay bearing K 6/100	230 178

④a Stay-bearing pin	227 354
----------------------------	----------------

⑤ Tilt-stay	482 823
--------------------	----------------

⑥ Turn-Only/Tilt-Only rebate hinge K, system 12/18-9

	Material no.
with alignment	264 001
without alignment ⁽³⁾	264 003

⑥a Turn-Only/Tilt-Only rebate hinge K, system 12/18-13

	Material no.
with alignment	563 843
without alignment ⁽³⁾	563 844

⑥b Turn-Only/Tilt-Only rebate hinge K, system 12/20-9

	Material no.
with alignment	264 007
without alignment ⁽³⁾	264 009

⑥c Turn-Only/Tilt-Only rebate hinge K, system 12/20-13

	Material no.
with alignment	264 015
without alignment ⁽³⁾	264 019
90° travel restrictor	264 603

Profile-related frame components: refer to the table on page 27

⑧ Striker

⑨ Packers for tilt-stay

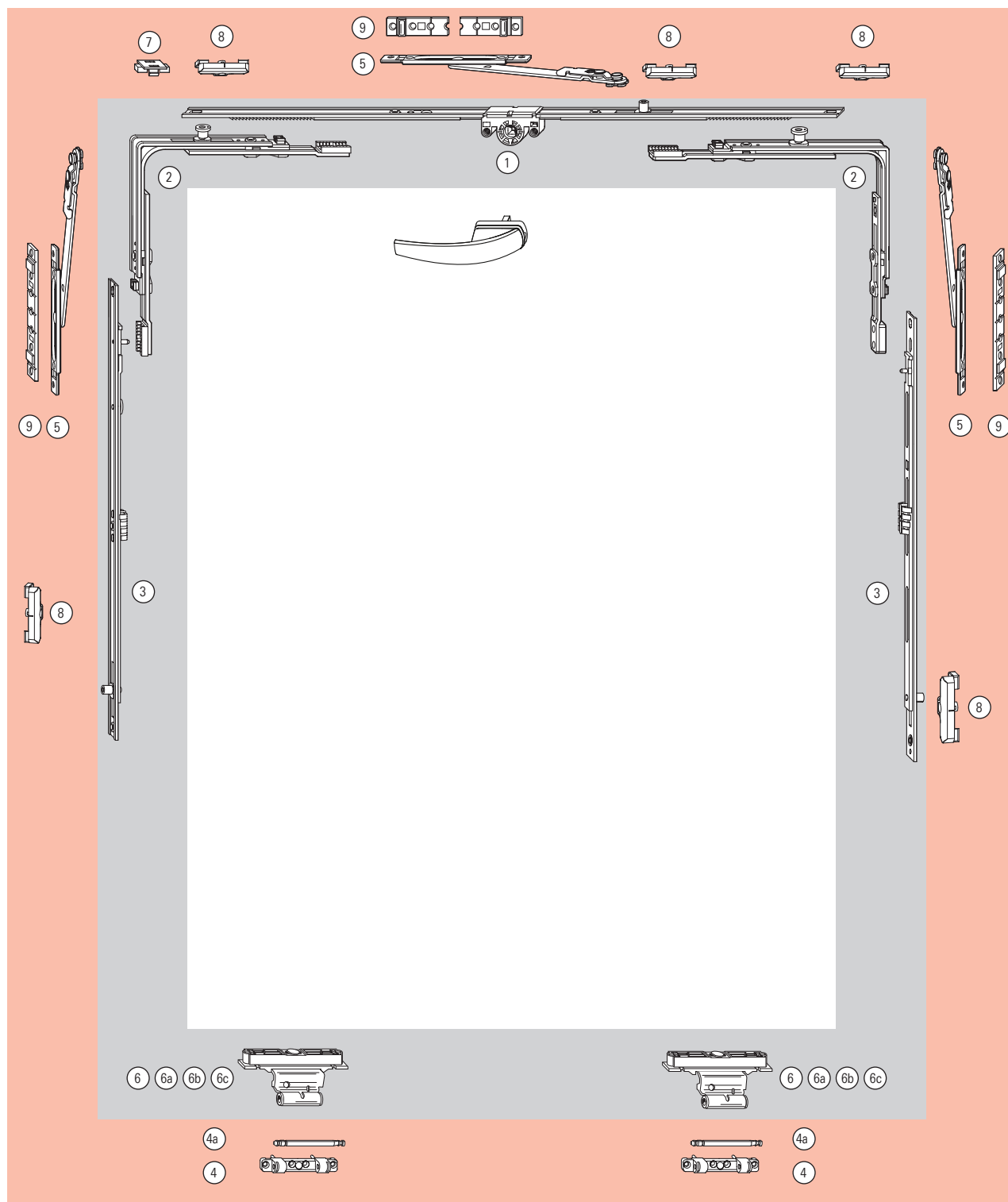
⁽¹⁾ Backset 8 mm, refer to the catalogue BK 10 EN

⁽²⁾ With special corner drive

⁽³⁾ When using two or more Turn-Only/Tilt-Only rebate hinges, one hinge without alignment must be used.



Hardware overview



Turn-Only / Tilt&Turn hardware – Basic security

Parts list

Application range

Sash Rebate Width (SRW) 290 – 1600 mm⁽¹⁾

Sash Rebate Height (SRH)..... 431 – 2400 mm

Sash weight max. 100 kg

1 T&T espagnolette, fixed handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
431 – 480 ⁽⁴⁾	120	370	284 314 ⁽²⁾
481 – 600	170	490	259 830
601 – 800	263	690	259 831
801 – 1000	413	890	259 834
1001 – 1200	513	1090	1 E 259 838
1201 – 1400	563	1290	1 E 259 840
1401 – 1600	563	1490	1 E 259 842
1601 – 1800	563	1690	1 E 259 846
1601 – 1800	1000	1690	2 E 259 847
1801 – 2000	1000	1890	2 E 259 849
2001 – 2200	1000	2090	2 E 259 851
2201 – 2400	1000	2290	2 E 259 854

2 T&T espagnolette, centred/variable handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
370 – 450 ⁽³⁾	155 – 225	430	259 717 ⁽²⁾
451 – 620 ⁽⁴⁾	225 – 310	400	259 718 ⁽²⁾
621 – 800	311 – 400	580	1 E 259 719
801 – 1200	401 – 600	980	1 E 259 720
1201 – 1600	601 – 800	1380	2 E 259 721
1601 – 2000	801 – 1000	1780	2 E 259 762
2001 – 2400	1001 – 1200	2180	4 E 259 763

3 Bullet catch cam

256 020

4 Corner drive (not dep.)

1 E **260 275**

Corner drive

1 P **260 277**

5 T&T corner drive

1 P **260 290**

6 Special corner drive (SRH < 360 mm) (not dep.)

1 E **260 280**

Special corner drive (SRH < 360 mm)

1 P **260 282**

7 Stay guide

SRW/mm	Description / length	Material no.
290 – 410	150 / 300	260 201 ⁽⁵⁾
411 – 600	250 / 490	256 024
601 – 800	350 / 690	260 204
801 – 1000	500 / 890	260 205
1001 – 1200	500 / 1090	260 209
1201 – 1400	500 / 1290	1 E 260 215

8 Stay arm K, system 12/18-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁷⁾	L 258 048
		R 258 049
411 – 600	250	L 258 050
		R 258 051
601 – 800	350	L 258 052
		R 258 053
801 – 1400	500	L 258 037
		R 258 038

8a Stay arm K, system 12/20-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁷⁾	L 258 054
		R 258 055
411 – 600	250	L 258 056
		R 258 057
601 – 800	350	L 258 058
		R 258 059
801 – 1400	500	L 258 039
		R 258 041

8b Stay arm K, system 12/20-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁷⁾	L 258 060
		R 258 061
411 – 600	250	L 258 062
		R 258 063
601 – 800	350	L 258 064
		R 258 065
801 – 1400	500	L 258 042
		R 258 043

9 Stay bearing K3/100

230 177

Stay bearing K6/100

230 178

9a Stay-bearing pin

227 354

10 Stay corner drive

1 P **260 286**

11 Multipart centre lock, horizontal and vertical

SRW/mm	SRH/mm	Size	Material no.
1101 – 1600	1101 – 1800	600	1 E 255 281
	1801 – 2400	600CON	1 E 255 282
		600	1 E 255 281

12 Rebate corner hinge NT Alu 12/18-9

L **616 324**

R **616 366**

Rebate corner hinge NT Alu 12/20-9

L **616 369**

R **616 370**

Rebate corner hinge NT Alu 12/20-13

L **616 371**

R **616 372**

13 Rebate corner hinge extension

624 462

14 Pivot rest K3/100

258 590

Pivot rest K6/100

258 592

15 Lifting mishandling device, sash component

260 538

16 Sash-component for rebate hinge

331 488

17 Rebate-hinge arm K 12/18-9

L **264 081**

R **264 083**

Rebate-hinge arm K 12/20-9

L **263 183**

R **263 184**

Rebate-hinge arm K 12/20-13

L **230 639**

R **230 640**

⁽¹⁾ Use an additional scissor stay ⁽²⁰⁾ from SRW 1400 mm

⁽²⁾ Not possible in combination with a lifting mishandling device

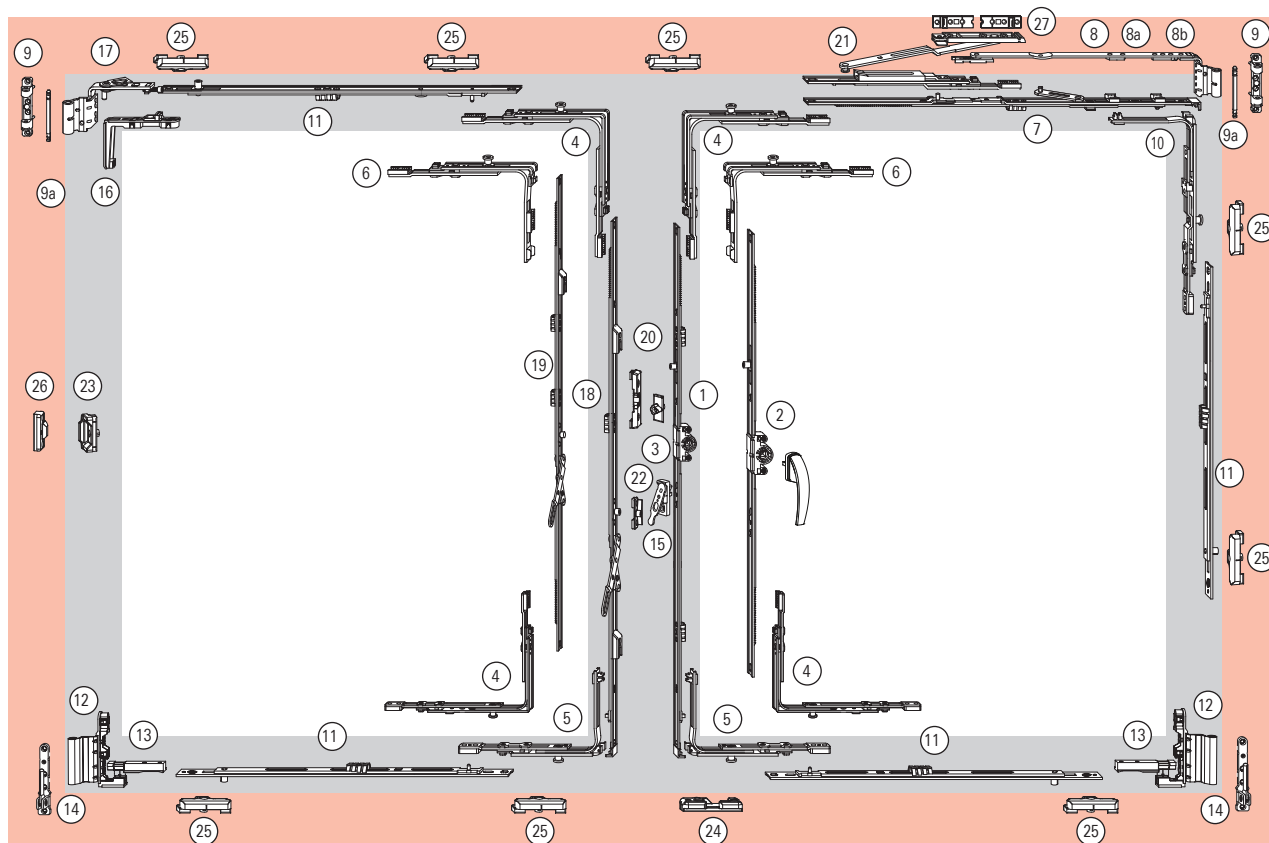
⁽³⁾ With special corner drive ⁽⁶⁾

⁽⁴⁾ With corner drive ⁽⁴⁾

⁽⁵⁾ On SRW < 310 mm assembly clip must be removed

⁽⁶⁾ When using the lever-operated espagnolette on the right hand side (viewed from inside), turn the eccentric cam 180°

⁽⁷⁾ Maximum tilt-range 80 mm



On SRH < 500 mm, the tilt-range must be limited to 80 mm!

18 Lever-operated espagnolette, fixed lever-height ⁽⁶⁾			
SRH/mm	Lever position	Length/mm	Material no.
431 – 500 ⁽³⁾	195	490	233 408
501 – 600 ⁽⁴⁾			
601 – 620 ⁽³⁾	335	690	233 409
621 – 800 ⁽⁴⁾			
801 – 1000	490	890	233 410
1001 – 1200	335	1090	233 411
1201 – 1400	335	1290	233 412
1401 – 1600	335	1490	233 413
1601 – 1800	335	1690	296 145
1801 – 2000	640	1890	296 074
2001 – 2200	640	2090	296 075
2201 – 2400	640	2290	296 076

19 Lever-operated espagnolette, centred/variable lever-height ⁽⁶⁾			
SRH/mm	Lever position	Espagnolette length/mm	Material no.
370 – 520 ⁽³⁾	225 – 350	400	233 418 ⁽²⁾
521 – 620 ⁽⁴⁾	–		
621 – 650 ⁽³⁾	393 – 482	680	233 419
651 – 800 ⁽⁴⁾	–		
801 – 1200	482 – 682	980	233 420
1201 – 1600	448 – 658	1380	290 912
1601 – 2000	680 – 890	1780	296 146
2001 – 2400	880 – 1090	2180	296 147

20 Bullet catch for lever-operated espagnolette	385 031
21 Additional scissor stay from SRW 1400mm	255 237
22 Lifting mishandling device	257 600
LMD striker plate for lever-operated espagnolettes	
Profile-related frame components: refer to the table on page 28-29	
23 Concealed centre closer, sash component	
24 Horizontal Tilt&Turn striker	
25 Striker	
26 Concealed centre closer, frame component	
27 Packers for tilt-stay	

Turn-Only / Tilt&Turn hardware BRG1 (DIN V ENV 1627 – 1630)

Parts list

Application range

Sash Rebate Width (SRW) 400 – 1400 mm

Sash Rebate Height (SRH)..... 431 – 2400 mm

Sash weight max. 100 kg

1 T&T espagnolette, fixed handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
361 – 480 ⁽³⁾	120	370	284 314⁽¹⁾
481 – 600	170	490	259 830
601 – 800	263	690	259 831
801 – 1000	413	890	259 834
1001 – 1200	513	1090	1 E 259 838
1201 – 1400	563	1290	1 E 259 840
1401 – 1600	563	1490	1 E 259 842
1601 – 1800	563	1690	2 E 259 846
1601 – 1800	1000	1690	2 E 259 847
1801 – 2000	1000	1890	2 E 259 849
2001 – 2200	1000	2090	2 E 259 851
2201 – 2400	1000	2290	2 E 259 854

2 T&T espagnolette, centred/variable handle height, backset 15 mm

SRH/mm	Handle height/mm	Espagnolette length/mm	Material no.
310 – 450 ⁽²⁾	155 – 225	430	259 717⁽¹⁾
451 – 620 ⁽³⁾	225 – 310	400	259 718⁽¹⁾
621 – 800	311 – 400	580	1 E 259 719
801 – 1200	401 – 600	980	1 E 259 720
1201 – 1600	601 – 800	1380	2 E 259 721
1601 – 2000	801 – 1000	1780	2 E 259 762
2001 – 2400	1001 – 1200	2180	4 E 259 763

3 Bullet catch cam

256 020

4 Corner drive

1 P **260 277**

5 T&T corner drive

1 P **260 290**

6 Special corner drive (SRH < 360 mm)

1 P **260 282**

7 Stay guide

SRW/mm	Description / length	Material no.
290 – 410	150 / 300	260 201
411 – 600	250 / 490	256 024
601 – 800	350 / 690	260 204
801 – 1000	500 / 890	260 205
1001 – 1200	500 / 1090	260 209
1201 – 1400	500 / 1290	1 E 260 215

8 Stay arm K, system 12/18-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 048 R 258 049
411 – 600	250	L 258 050 R 258 051
601 – 800	350	L 258 052 R 258 053
801 – 1400	500	L 258 037 R 258 038

8a Stay arm K, system 12/20-9

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 054 R 258 055
411 – 600	250	L 258 056 R 258 057
601 – 800	350	L 258 058 R 258 059
801 – 1400	500	L 258 039 R 258 041

8b Stay arm K, system 12/20-13

SRW/mm	Size	Material no.
290 – 410	150 ⁽⁵⁾	L 258 060 R 258 061
411 – 600	250	L 258 062 R 258 063
601 – 800	350	L 258 064 R 258 065
801 – 1400	500	L 258 042 R 258 043

9 Stay bearing K3/100

230 177

Stay bearing K6/100

230 178

9a Stay-bearing pin

227 354

10 Stay corner drive

1 P **260 286**

11 Multipart centre lock, horizontal, BRG1

SRW/mm	Size	Material no.
400 – 600	200	1 P 255 284
601 – 800	400	1 P 255 285
801 – 1000	600	1 P 255 286
1001 – 1200	600CON	1 E 255 282
	200	1 P 255 284
1201 – 1400	600CON	1 E 255 282
	400	1 P 255 285

12 Multipart centre lock, vertical, BRG1

SRH/mm	Size	Material no.
1101 – 1800	600	1 E 255 281
1801 – 2400	600CON	1 E 255 282
	600	1 E 255 281

13 Rebate corner hinge NT Alu 12/18-9

L **616 324**

R **616 366**

Rebate corner hinge NT Alu 12/20-9

L **616 369**

R **616 370**

Rebate corner hinge NT Alu 12/20-13

L **616 371**

R **616 372**

14 Rebate corner hinge extension

624 462

15 Pivot rest K3/100

258 590

Pivot rest K6/100

258 592

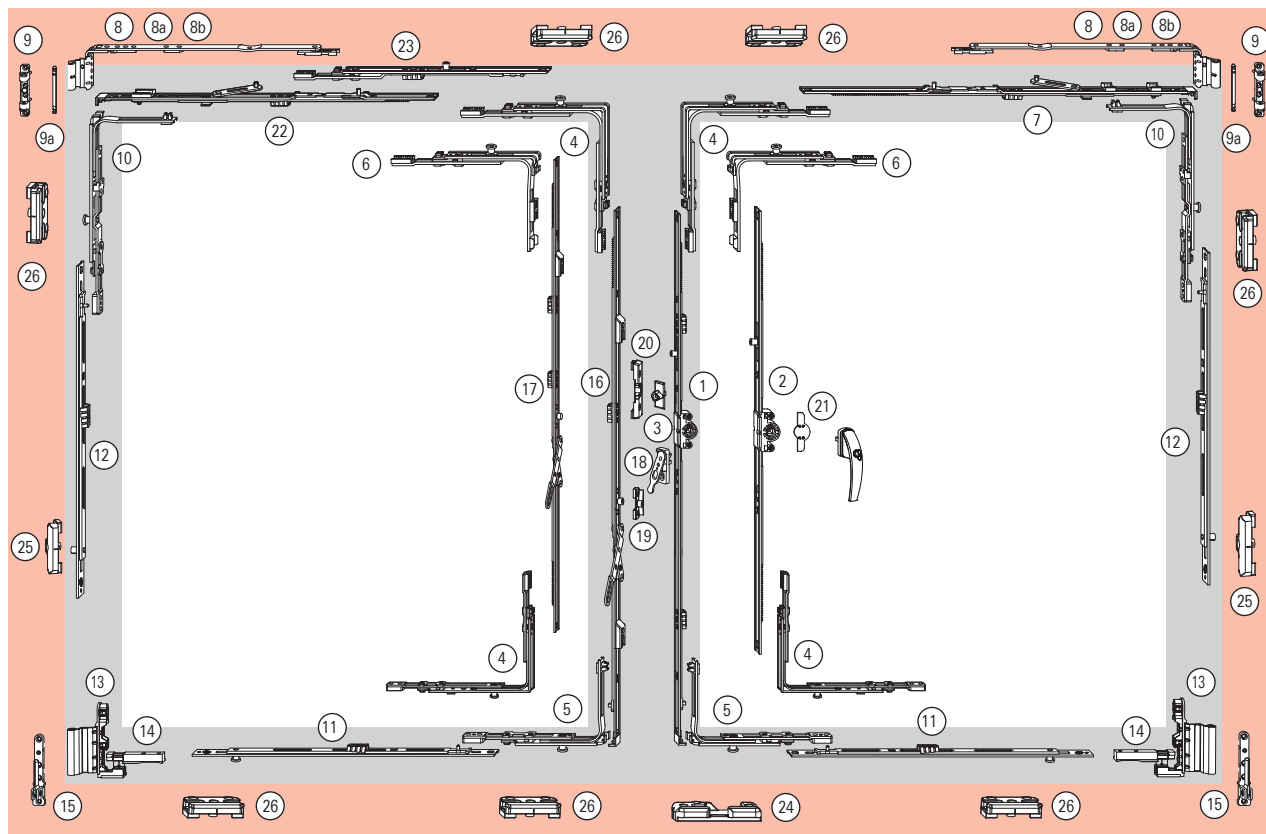
⁽¹⁾ Not possible in combination with a lifting mishandling device

⁽²⁾ With special corner drive ⑥

⁽³⁾ With corner drive ④

⁽⁴⁾ When using the lever-operated espagnolette on the right hand side (viewed from inside), turn the eccentric cam 180°

⁽⁵⁾ Maximum tilt-range 80 mm



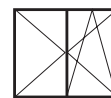
On SRH < 500 mm, the tilt-range must be limited to 80 mm!

16 Lever-operated espagnolette, fixed lever-height ⁽⁴⁾			
SRH/mm	Lever position	Length/mm	Material no.
431 – 500 ⁽²⁾	195	490	233 408
501 – 600 ⁽³⁾			
601 – 620 ⁽²⁾	335	690	233 409
621 – 800 ⁽³⁾			
801 – 1000	490	890	233 410
1001 – 1200	335	1090	233 411
1201 – 1400	335	1290	233 412
1401 – 1600	335	1490	233 413
1601 – 1800	335	1690	296 145
1801 – 2000	640	1890	296 074
2001 – 2200	640	2090	296 075
2201 – 2400	640	2290	296 076

17 Lever-operated espagnolette, centred/variable lever-height ⁽⁴⁾			
SRH/mm	Lever position	Length/mm	Material no.
370 – 520 ⁽²⁾	225 – 350	400	233 418 ⁽¹⁾
521 – 620 ⁽³⁾	–		
621 – 650 ⁽²⁾	393 – 482	600	233 419
651 – 800 ⁽³⁾	–		
801 – 1200	482 – 682	980	233 420
1201 – 1600	448 – 658	1380	290 912
1601 – 2000	680 – 890	1780	296 146
2001 – 2400	880 – 1090	2180	296 147

18	Lifting mishandling device, sash component	260 538
19	Lifting mishandling device	257 600
	LMD striker plate for lever-operated espagnolettes	
20	Bullet catch for lever-operated espagnolette	385 031
21	Drilling-protection	264 601
22	Stay guide, Turn-Only sash	
SRW/mm	Description/length	Material no.
290 – 410	150 / 300	255 957
411 – 600	250 / 490	255 967
601 – 800	350 / 690	257 137
801 – 1000	500 / 890	1 E 257 138
1001 – 1200	500 / 890	1 E 257 138
1201 – 1400	500 / 890	1 E 257 138
23	Centre lock, connectable	
SRW/mm	Size	Material no.
1101 – 1200	200CON	308 267
1201 – 1400	400CON 1 E	280 346
Profile-related frame components: refer to the table on page 28-29		
24	Horizontal Tilt&Turn striker	
25	Striker	
26	Security striker	

Combination Lever-operated espagnolette / T&T espagnolette



Lever-operated espagnolette / T&T espagnolette, fixed handle height, backset 15 mm

Lever-operated espagnolette with fixed lever-height			
SRH/mm	Lever position	Size	Material no.
431 – 600	195	490	233 408
601 – 800	335	690	233 409
801 – 1000	490	890	233 410
1001 – 1200	335	1090	233 411
1201 – 1400	335	1290	233 412
1401 – 1600	335	1490	233 413
1601 – 1800	335	1690	296 145
Doors			
1801 – 2000	640	1890	296 074
2001 – 2200	640	2090	296 075
2201 – 2400	640	2290	296 076

T&T espagnolette, fixed handle height			
Possible in conjunction with lifting mishandling device	Material no.		Material no.
X	259 830		
X	259 831	or	259 833
X	259 834	or	259 836
X	259 838		
X	259 840		
X	259 843	or	259 842
X	259 847	or	259 846
X	259 849		
X	259 852	or	259 851
X	259 855	or	259 854

Lever-operated espagnolette / T&T espagnolette, variable/centred handle height, backset 15 mm

Lever-operated espagnolette with centred/variable lever-height			
SRH/mm	Lever position	Size	Material no.
370 – 520	225 – 350	400	233 418
521 – 620			
621 – 800	393 – 482	680	233 419
801 – 1200	482 – 682	980	233 420
1201 – 1600	448 – 658	1380	290 912
Doors			
1601 – 2000	680 – 890	1780	296 146
2001 – 2400	880 – 1090	2180	296 147

T&T espagnolette, centred/variable handle height			
Possible in conjunction with lifting mishandling device	Material no.		Material no.
– (SRH 310-450)	259 717	or (SRH 310-450)	259 718
X	259 719		
X	259 720		
X	259 721		
X	259 762		
X	259 763		



Profile-related components
9 mm hardware axis

Note: The hardware components listed in the table depend on the specific profile and represent a selection of the Roto NT product range for aluminium profiles with 16 mm hardware groove.

Roto assists the customer in checking the profiles and offers further hardware component solutions (e.g. for other groove widths). Please contact your your local Roto sales representative.

[illegible]

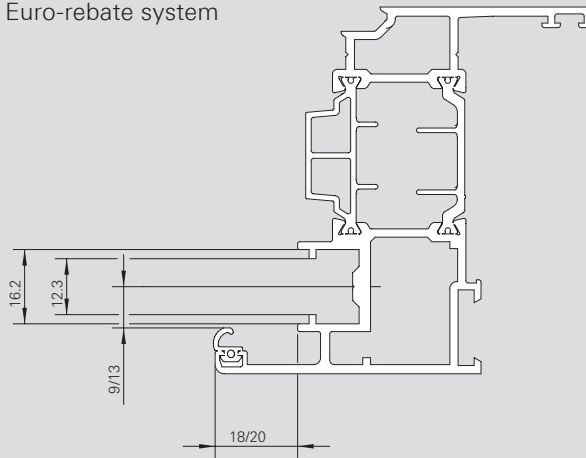
Roto assists the customer in checking the profiles and offers further hardware component solutions (e.g. for other groove widths). Please contact your your local Roto sales representative.



Sash cross section, window-handle drilling / installation

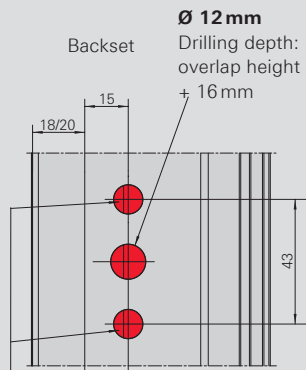
1. Sash cross section,

Dimensional data for hardware
Euro-rebate system



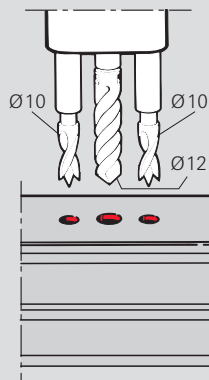
2. Window handle drill-holes

Drill-holes for sprocket and lugs of **window handle**.



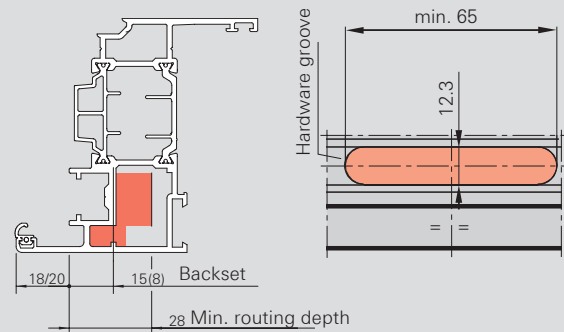
Drill Ø 10 mm

Overlap height (16–22)
+16 mm for countersunk screws
(DIN 965 M5 x ...)



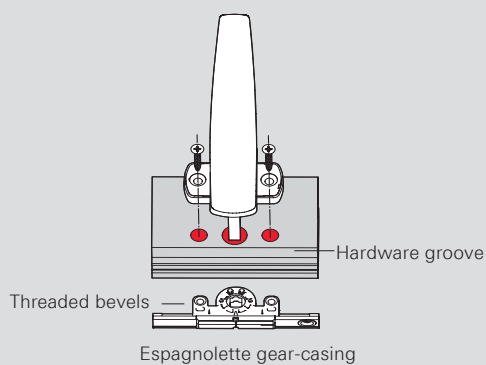
Milling

Espagnolette gear-casing



3. Window handle installation

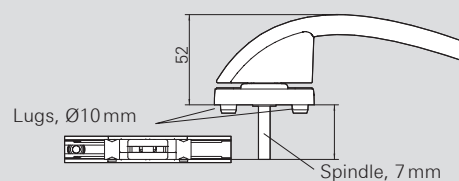
Fastening of the window handle with countersunk screws in accordance with DIN 965 M 5 x ... in the main-lock casing



Roto Swing window handle

With lugs

Spindle, 7 mm



Frame

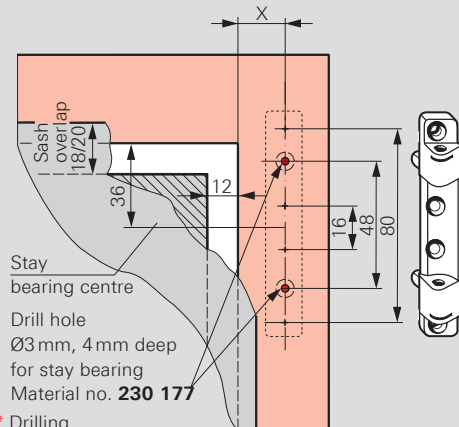
Drilling dimensions



Drilling dimensions (frame)

Stay bearing K 3/100

* K 6/100



Drill hole
Ø3 mm, 4 mm deep
for stay bearing
Material no. **230 177**

* Drilling
Ø6 mm, 9 mm deep
for stay bearing
Material no. **230 178**

For sash overlap 18 mm dimension X = 16.5 mm
and for sash overlap 20 mm dimension X = 18.5 mm

Drilling jigs (frame)

Stay bearing / Pivot rest

Material no. **230 727**



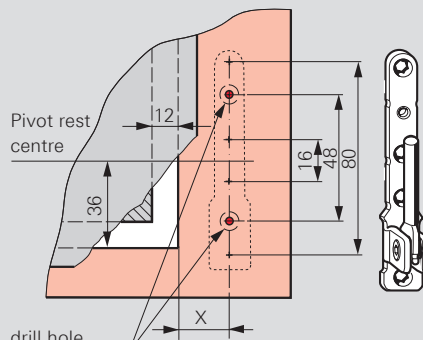
For stay bearing K 3/100
Material no. **230 177**
and

Pivot rest K 3/100
Material no. **258 590**

Drilling dimensions (frame)

Pivot rest K 3/100

* K 6/100



drill hole
Ø3 mm, 3 mm deep
for pivot rest
Material no. **258 590**

* Drilling
top Ø6 mm, 4 mm deep
bottom Ø6 mm, 19 mm deep
for pivot rest material no. **258 592**

For sash overlap 18 mm dimension X = 16.5 mm
and for sash overlap 20 mm dimension X = 18.5 mm

Drilling jigs (frame)

Stay bearing / Pivot rest

Material no. **230 729**



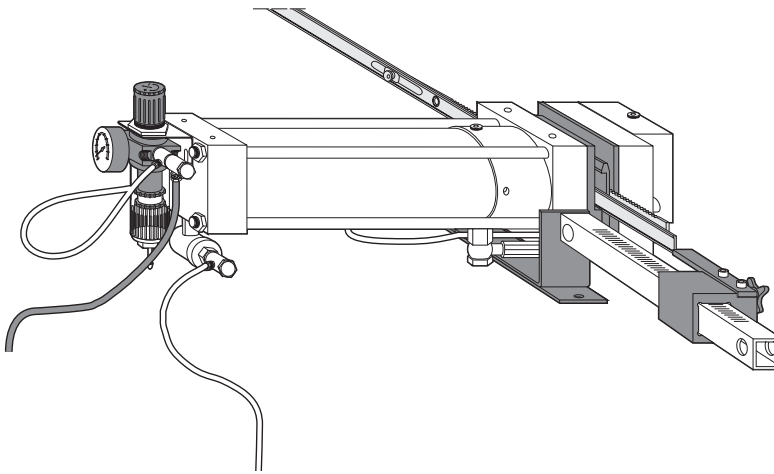
For stay bearing K 6/100
Material no. **230 178**
and

Pivot rest K 6/100
Material no. **258 592**

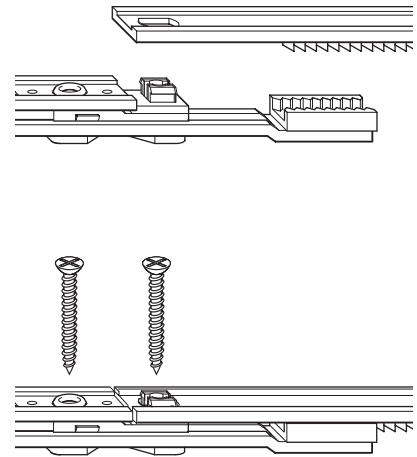
Note: Corner connectors have to be adjusted to the drilling position.

Sash Cropper / installation hardware

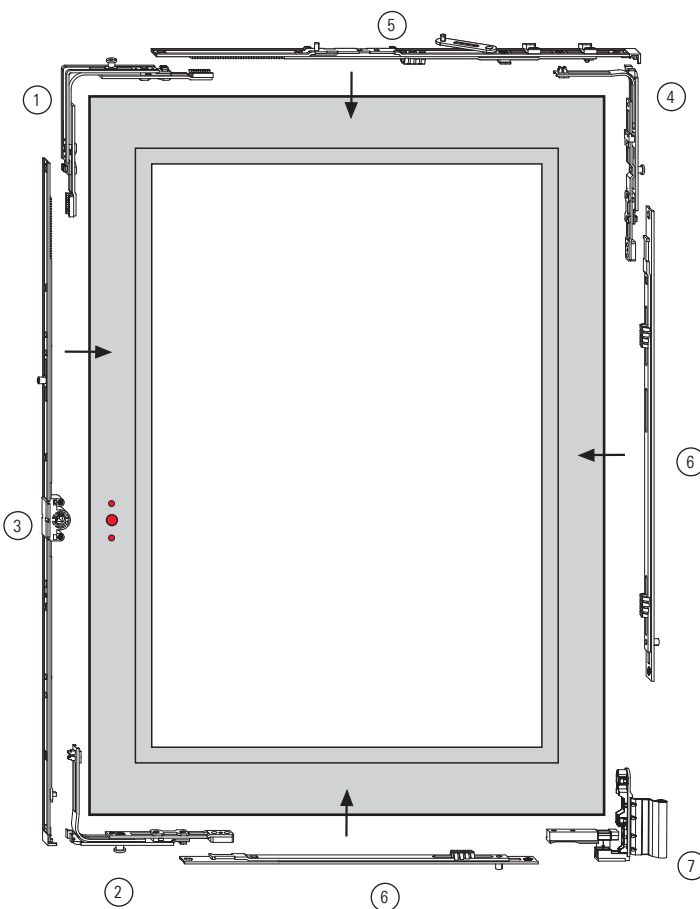
1. Crop with pneumatic cropper (punched hole)



2. Strong interlocking hardware connection



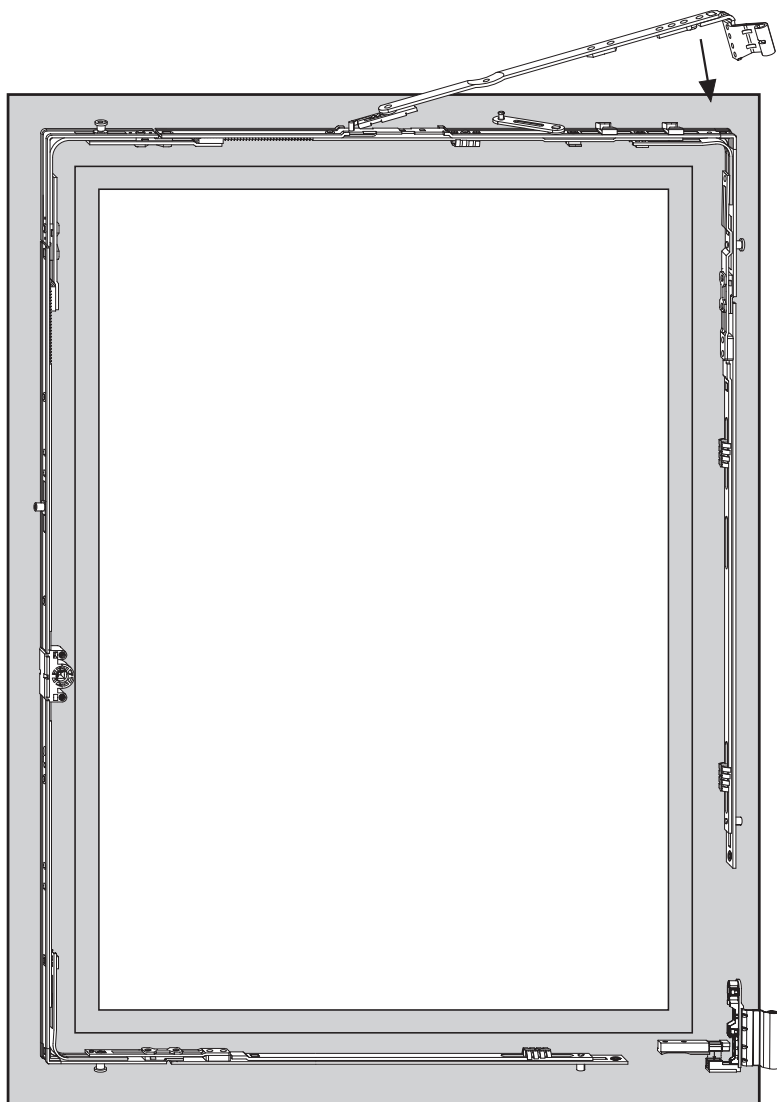
3. Installation procedure (suggestion)



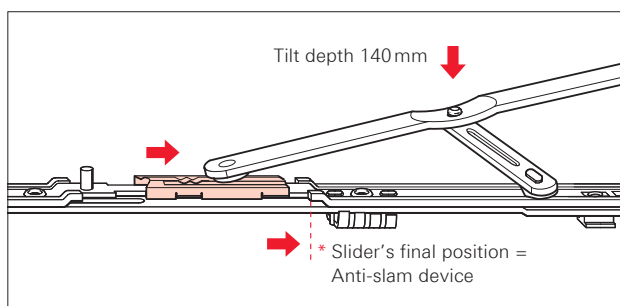
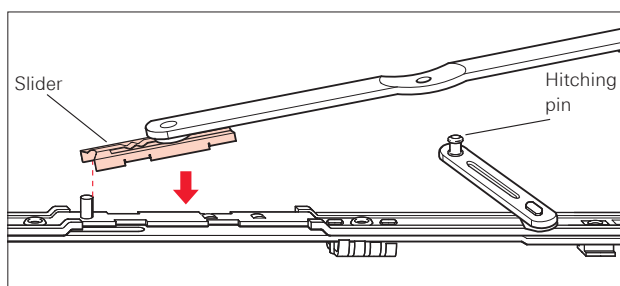
- ① Corner drive
- ② T&T corner drive P
- ③ T&T espagnolette
- ④ Stay corner drive P
- ⑤ Stay guide
- ⑥ Centre lock, vertical and horizontal
- ⑦ Rebate corner hinge NT Alu



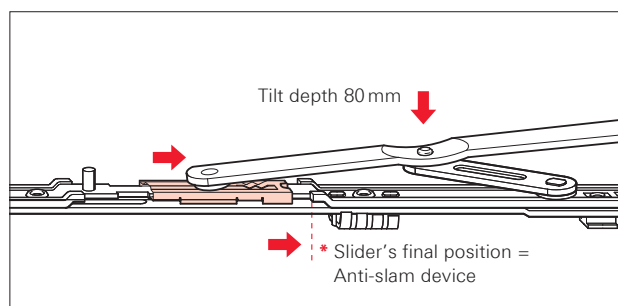
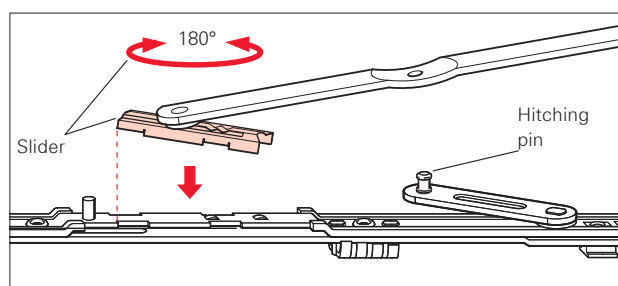
Installation of stay arm / tilt restrictor / anti-slam device



Standard tilt depth (140 mm)



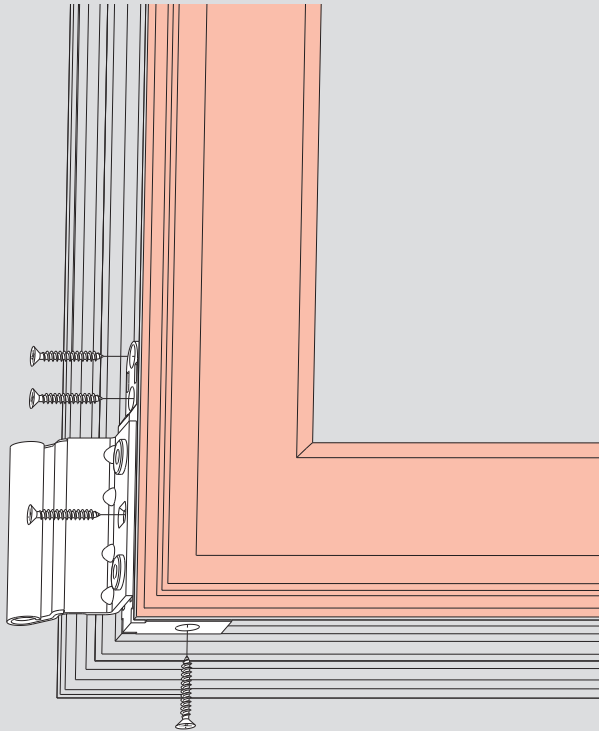
Reduced tilt depth (80 mm)



* The slider's final position (anti-slam device) is reached automatically by means of tilting the sash.

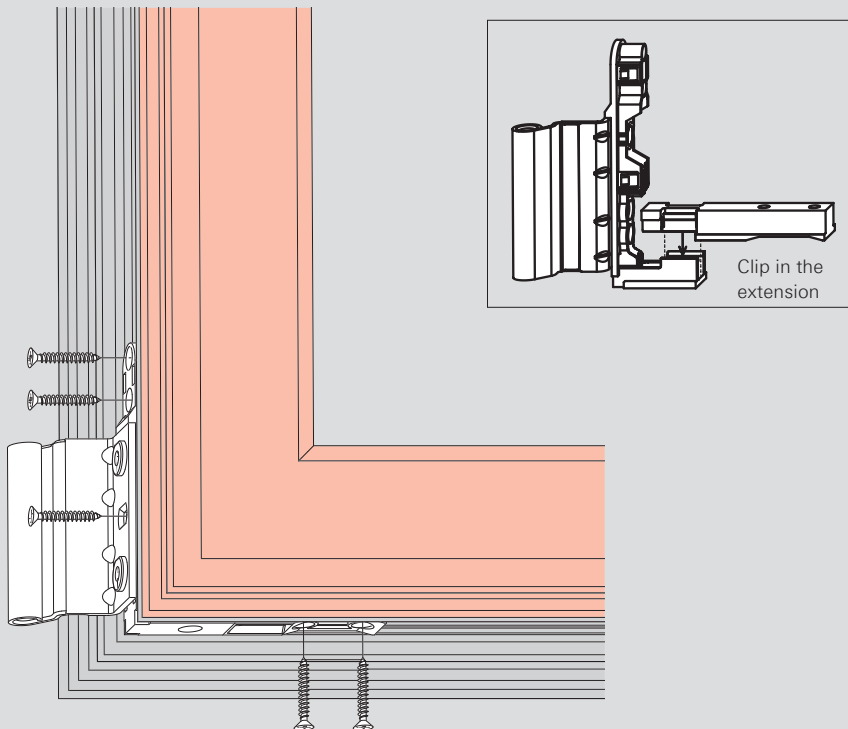
4. Rebate corner hinge fixing

Standard screw-fixing



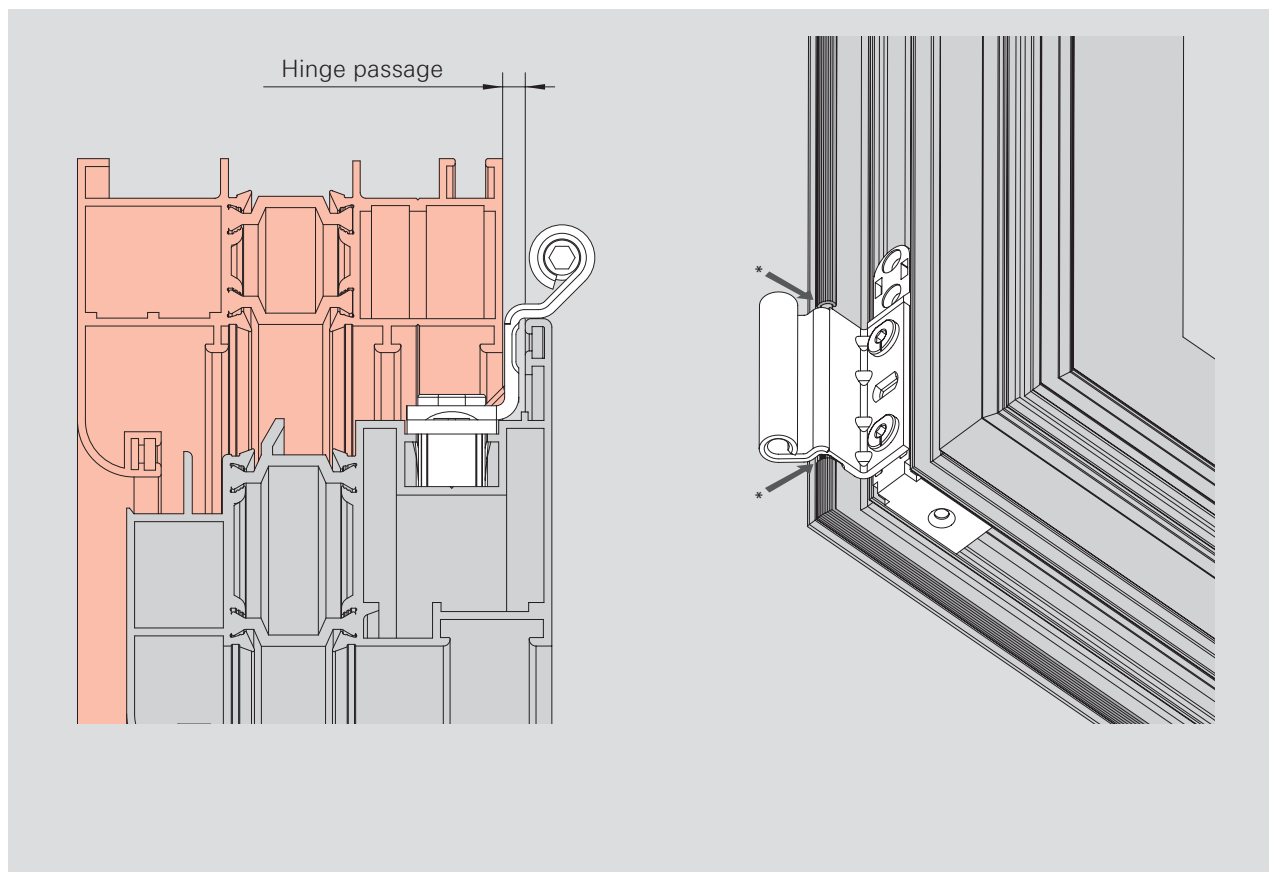
4. Installation of the rebate corner hinge extension

Alternative screw-fixing with extension (in case of collision with corner connector or use of a turn restrictor)



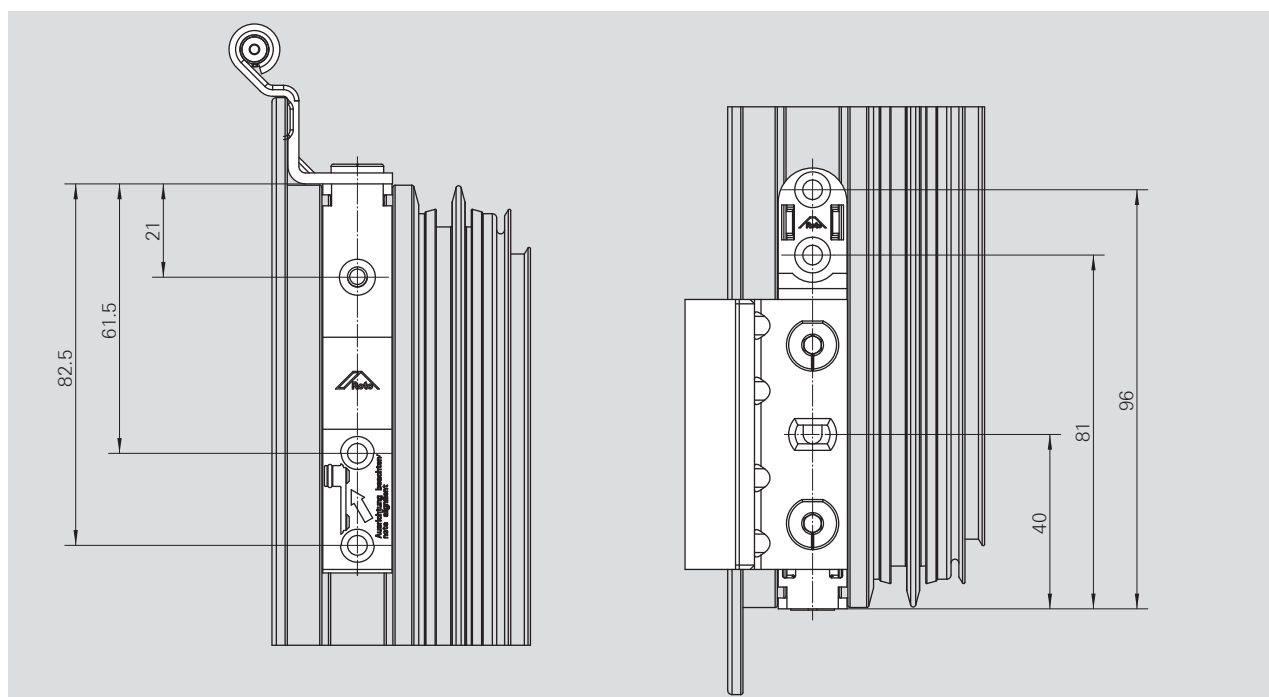


Gasket-compression adjustment / Hinge passage



Hinge passage 3–4 mm: Cut out the gasket in the area of the hinge roller (stay arm and rebate corner hinge), gasket-compression adjustment only partially possible.

Hinge passage > 4 mm No need to cut out the gasket, gasket-compression adjustment is fully possible.



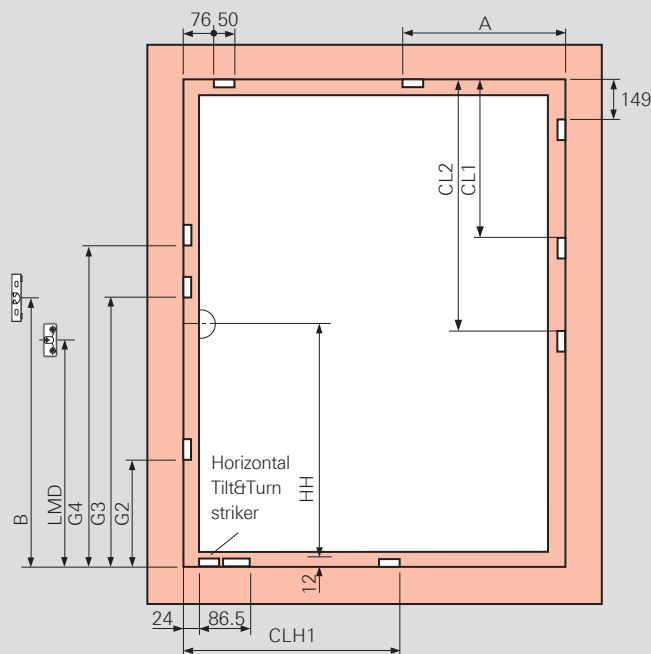
Frame, Installing hardware components

Basic security

Striker dimensions (mm)

T&T espagnolette, fixed handle height

Basic security



LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette

SRH/mm	HH	G1	G2	G3	G4	LMD	B
280 – 480	120	–	–	–	–	–	–
481 – 600	170	–	–	–	–	223	–
601 – 800	263	–	–	–	–	138	–
801 – 1000	413	–	–	–	–	288	–
1001 – 1200	513	–	700	–	–	388	–
1201 – 1400	563	–	700	–	–	388	–
1401 – 1600	563	–	700	–	–	388	–
1601 – 1800	563	–	700	1370	–	388	–
1601 – 1800	1000	–	700	1370	–	1121	1244
1801 – 2000	1000	–	700	1370	–	1121	1244
2001 – 2200	1000	–	700	1370	–	1121	1244
2201 – 2400	1000	–	700	1370	–	1121	1244

CL vertical

SRH/mm	CL1	CL2	CL3
1101 – 1800	746	–	–
1801 – 2400	746	1346	–

CL horizontal

SRW/mm	CLH1
1100 – 1600	658

Stay guide

SRW/mm	A	Size
801 – 1000	–	500 / 890
1001 – 1200	–	500 / 1090
1201 – 1400	750	500 / 1290
1401 – 1600	750	500 / 1290 ⁽¹⁾

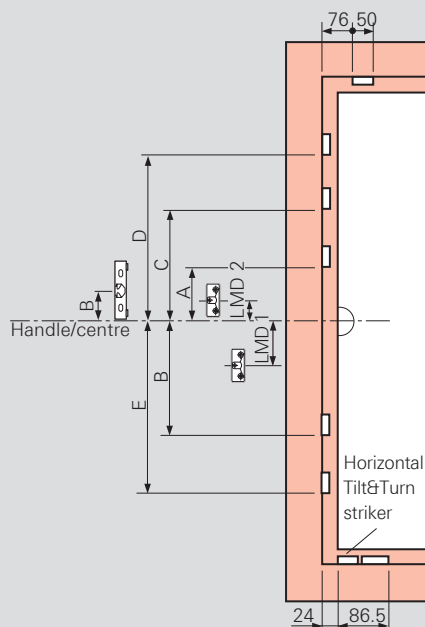
⁽¹⁾ With additional scissor stay



Striker dimensions (mm)

T&T espagnolette, centred/variable handle height

Basic security



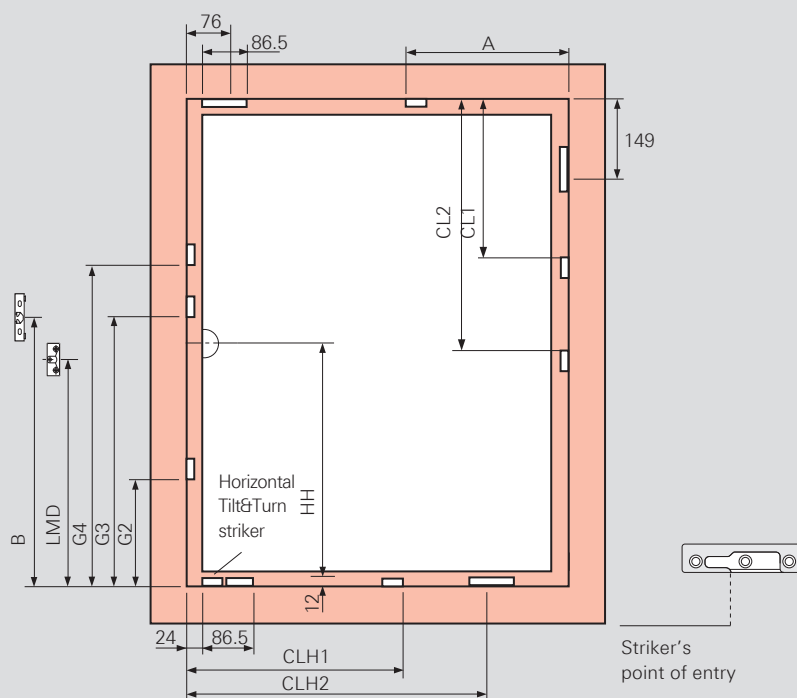
LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette, centred/variable handle height, backset 15								
SRH/mm	A	B	C	D	E	LMD 1	LMD 2	B
450 – 620	–	–	–	–	–	–	–	–
621 – 800	125	–	–	–	–	137	–	–
801 – 1200	125	–	–	–	–	137	–	–
1201 – 1600	125	340	–	–	–	137	–	–
1601 – 2000	–	312	358	–	–	–	109	232
2001 – 2400	–	312	358	758	740	–	109	232

Frame, Installing hardware components BRG1 (DIN V ENV 1627–1630)

Striker dimensions (mm)

T&T espagnolette, fixed handle height BRG1



LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette

SRH/mm	HH	G1	G2	G3	G4	LMD	B
280 – 480	120	–	–	–	–	–	–
481 – 600	170	–	–	–	–	223	–
601 – 800	263	–	–	–	–	138	–
801 – 1000	413	–	–	–	–	288	–
1001 – 1200	513	–	700	–	–	388	–
1201 – 1400	563	–	700	–	–	388	–
1401 – 1600	563	–	700	–	–	388	–
1601 – 1800	563	–	700	1370	–	388	–
1601 – 1800	1000	–	700	1370	–	1121	1244
1801 – 2000	1000	–	700	1370	–	1121	1244
2001 – 2200	1000	–	700	1370	–	1121	1244
2201 – 2400	1000	–	700	1370	–	1121	1244

Stay guide

SRW/mm	A	Size
801 – 1000	–	500 / 890
1001 – 1200	–	500 / 1090
1201 – 1400	750	500 / 1290

CL vertical

SRH/mm	CL1	CL2	CL3
1101 – 1800	746	–	–
1801 – 2400	746	1346	–

CL horizontal

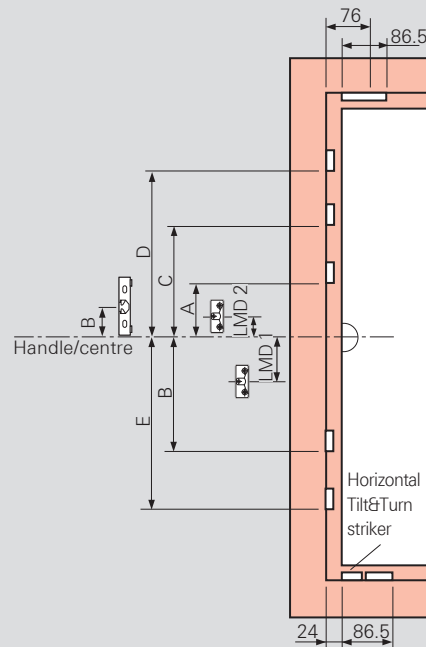
SRW/mm	CLH1	CLH2
400 – 600	258	–
601 – 800	462	–
801 – 1000	658	–
1001 – 1200	658	858
1201 – 1400	658	1062



Striker dimensions (mm)

T&T espagnolette, centred/variable handle height

Basic security



LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette, centred/variable handle height, backset 15

SRH/mm	A	B	C	D	E	LMD 1	LMD 2	B
450 – 620	–	–	–	–	–	–	–	–
621 – 800	125	–	–	–	–	137	–	–
801 – 1200	125	–	–	–	–	137	–	–
1201 – 1600	125	340	–	–	–	137	–	–
1601 – 2000	–	312	358	–	–	–	109	232
2001 – 2400	–	312	358	758	740	–	109	232

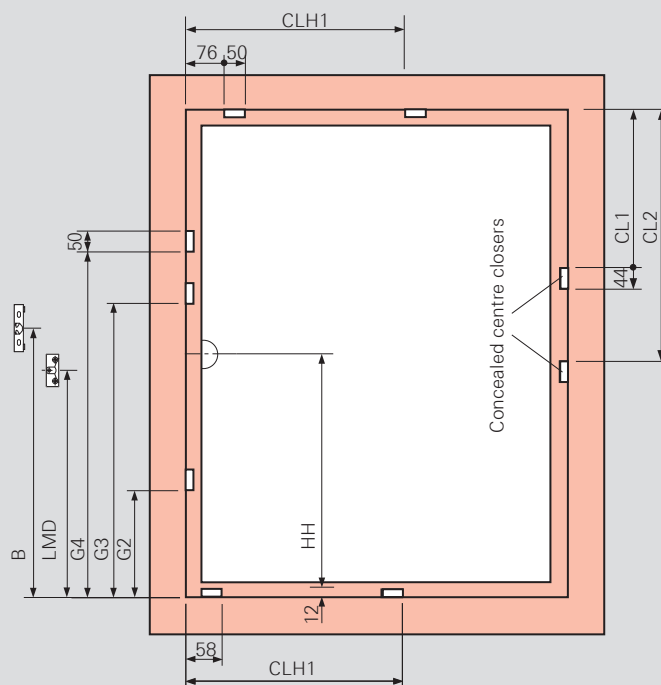
Frame, Installing hardware components

Basic security

Striker dimensions (mm)

T&T espagnolette, fixed handle height

Basic security



LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette, backset 15

SRH/mm	HH	G1	G2	G3	G4	LMD	B
280 – 480	120	–	–	–	–	–	–
481 – 600	170	–	–	–	–	223	–
601 – 800	263	–	–	–	–	138	–
801 – 1000	413	–	–	–	–	288	–
1001 – 1200	513	–	700	–	–	388	–
1201 – 1400	563	–	700	–	–	388	–
1401 – 1600	563	–	700	–	–	388	–
1601 – 1800	563	–	700	1370	–	388	–
1601 – 1800	1000	–	700	1370	–	1121	1244
1801 – 2000	1000	–	700	1370	–	1121	1244
2001 – 2200	1000	–	700	1370	–	1121	1244
2201 – 2400	1000	–	700	1370	–	1121	1244

CL vertical, concealed

SRH/mm	CL1	CL2
1101 – 1800	746	–
1801 – 2400	746	1346

CL horizontal

SRW/mm	CLH1	Top	
1101 – 1600	676	–	–
		CL 600 E	

CL horizontal

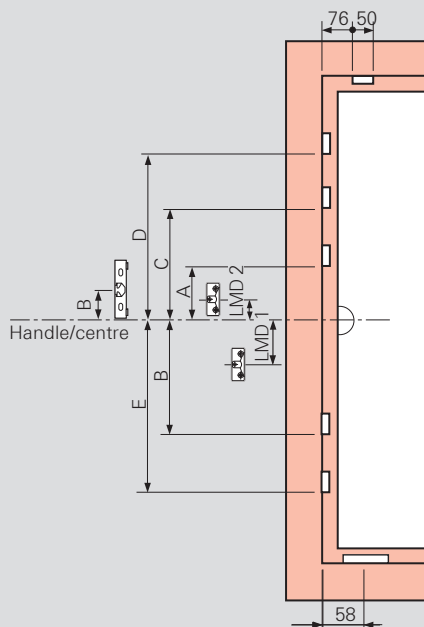
SRW/mm	CLH1	Bottom	
1101 – 1600	658	–	–
		CL 600 E	



Striker dimensions (mm)

T&T espagnolette, centred/variable handle height

Basic security



LMD = Lifting mishandling device B = Bullet catch

T&T espagnolette, centred/variable handle height, backset 15								
SRH/mm	A	B	C	D	E	LMD 1	LMD 2	B
450– 620	–	–	–	–	–	–	–	–
621– 800	125	–	–	–	–	137	–	–
801– 1200	125	–	–	–	–	137	–	–
1201– 1600	125	340	–	–	–	137	–	–
1601– 2000	–	312	358	–	–	–	109	232
2001– 2400	–	312	358	758	740	–	109	232

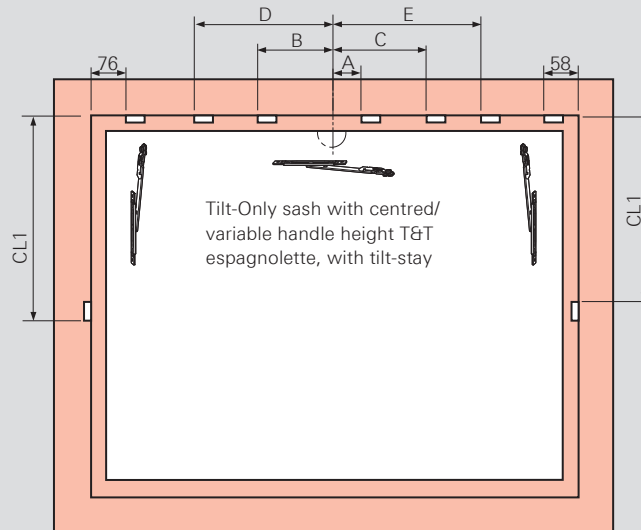
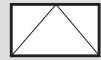
Frame, Installing hardware components

Basic security

Striker dimensions (mm)

T&T espagnolette, centred/variable handle height

Basic security



T&T espagnolette, centred/variable handle height, backset 15

SRW/mm	A	B	C	D	E
621 – 800	125	–	–	–	–
801 – 1200	125	–	–	–	–
1201 – 1600	125	340	–	–	–
1601 – 2000	–	312	358	–	–
2001 – 2400	–	312	358	740	758

CL vertical

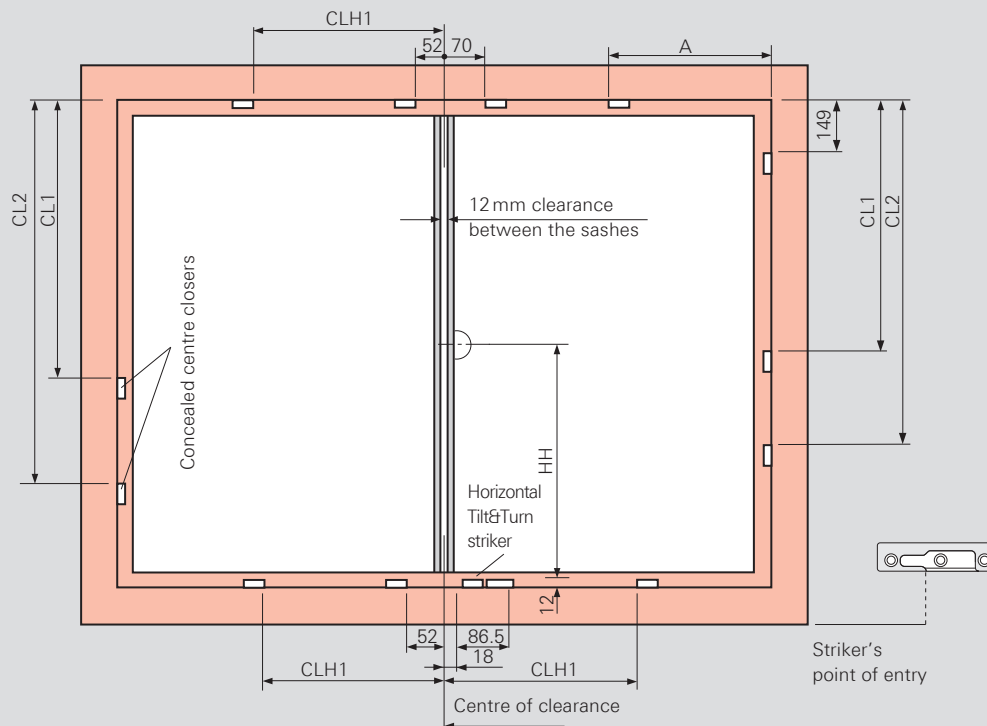
SRH/mm	CL1			Right
801 – 1200	480	–	–	400 E

CL vertical

SRH/mm	CL1			Left
801 – 1200	462	–	–	400 E



Striker dimensions (mm)
T&T espagnolette, fixed handle height
Basic security



LMD = Lifting mishandling device B = Bullet catch

CL vertical, concealed

SRH/mm	CL1	CL2	
1101 – 1800	746	–	–
1801 – 2400	746	1346	–

CL horizontal

SRH/mm	CLH1	Top
1101 – 1600	652	CL 600 E

CL horizontal

SRW/mm	CLH1	Bottom
1101 – 1600	652	CL 600 E

CL vertical

SRH/mm	CL1	CL2	CL3	
1101 – 1800	746	–	–	CL 600 E
1801 – 2400	746	1346	–	CL 600 E CON + 600 E

CL horizontal

SRW/mm	CLH1	
1101 – 1600	652	CL 600 E

T&T espagnolette, backset 15

SRH/mm	HH	G1	G2	G3	G4	LMD	B
280 – 480	120	–	–	–	–	–	–
481 – 600	170	–	–	–	–	223	–
601 – 800	263	–	–	–	–	138	–
801 – 1000	413	–	–	–	–	288	–
1001 – 1200	513	–	–	–	–	388	–
1201 – 1400	563	–	–	–	–	388	–
1401 – 1600	563	–	700	–	–	388	–
1601 – 1800	563	–	700	1370	–	388	–
1601 – 1800	1000	–	700	1370	–	1121	1244
1801 – 2000	1000	–	700	1370	–	1121	1244
2001 – 2200	1000	–	700	1370	–	1121	1244
2201 – 2400	1000	–	700	1370	–	1121	1244

Stay guide

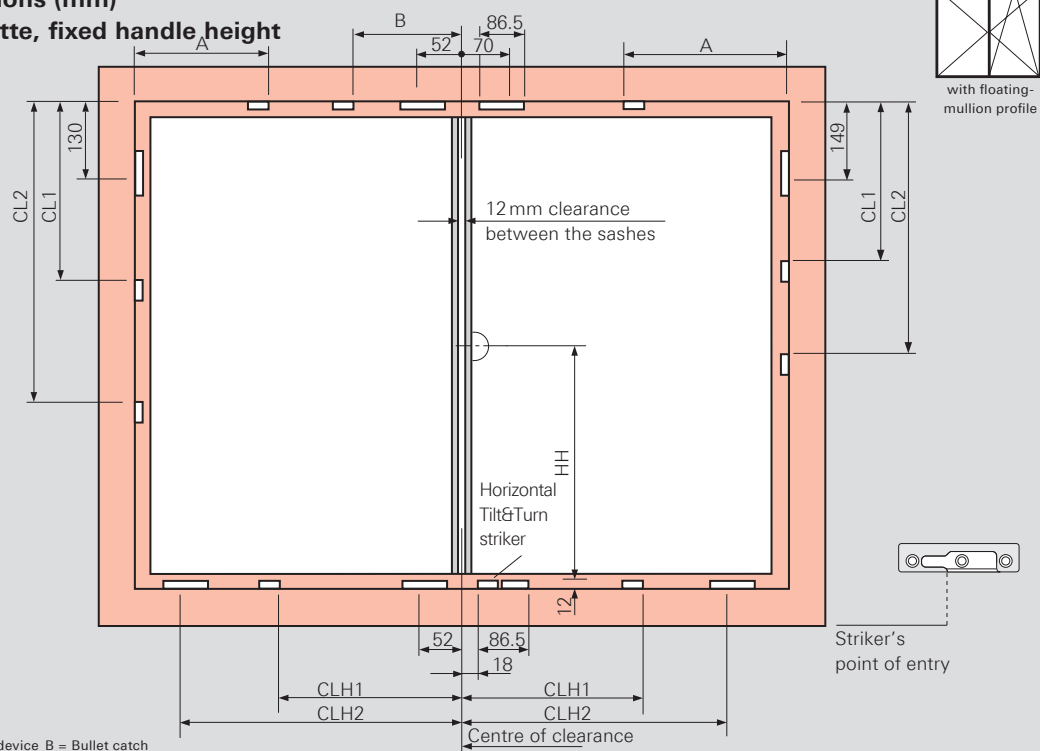
SRW/mm	A	Size
801 – 1000	–	500 / 890
1001 – 1200	–	500 / 1090
1201 – 1400	750	500 / 1290
1401 – 1600	750	500 / 1290 ⁽¹⁾

⁽¹⁾ With additional scissor stay

Frame, Installing hardware components BRG1 (DIN V ENV 1627–1630)

Striker dimensions (mm)

T&T espagnolette, fixed handle height BRG1



LMD = Lifting mishandling device B = Bullet catch

CL vertical

SRH/mm	CL1	CL2	CL3	
1101 – 1800	728	–	–	CL 600 E
1801 – 2400	728	1328	–	CL 600 E CON + CL 600 E

CL horizontal

SRW/mm	CLH1	CLH2	
400 – 600	252	–	CL 200 P
601 – 800	456	–	CL 400 P
801 – 1000	652	–	CL 600 P
1001 – 1200	652	856	CL 600 E CON + CL 200 P
1201 – 1400	652	1056	CL 600 E CON + CL 400 P

CL vertical

SRH/mm	CL1	CL2	CL3	
1101 – 1800	746	–	–	CL 600 E
1801 – 2400	746	1346	–	CL 600 E CON + CL 600 E

CL horizontal

SRW/mm	CLH1	CLH2	
400 – 600	252	–	CL 200 P
601 – 800	456	–	CL 400 P
801 – 1000	652	–	CL 600 P
1001 – 1200	652	852	CL 600 E CON + CL 200 P
1201 – 1400	652	1056	CL 600 E CON + CL 400 P

Turn-Only stay guide

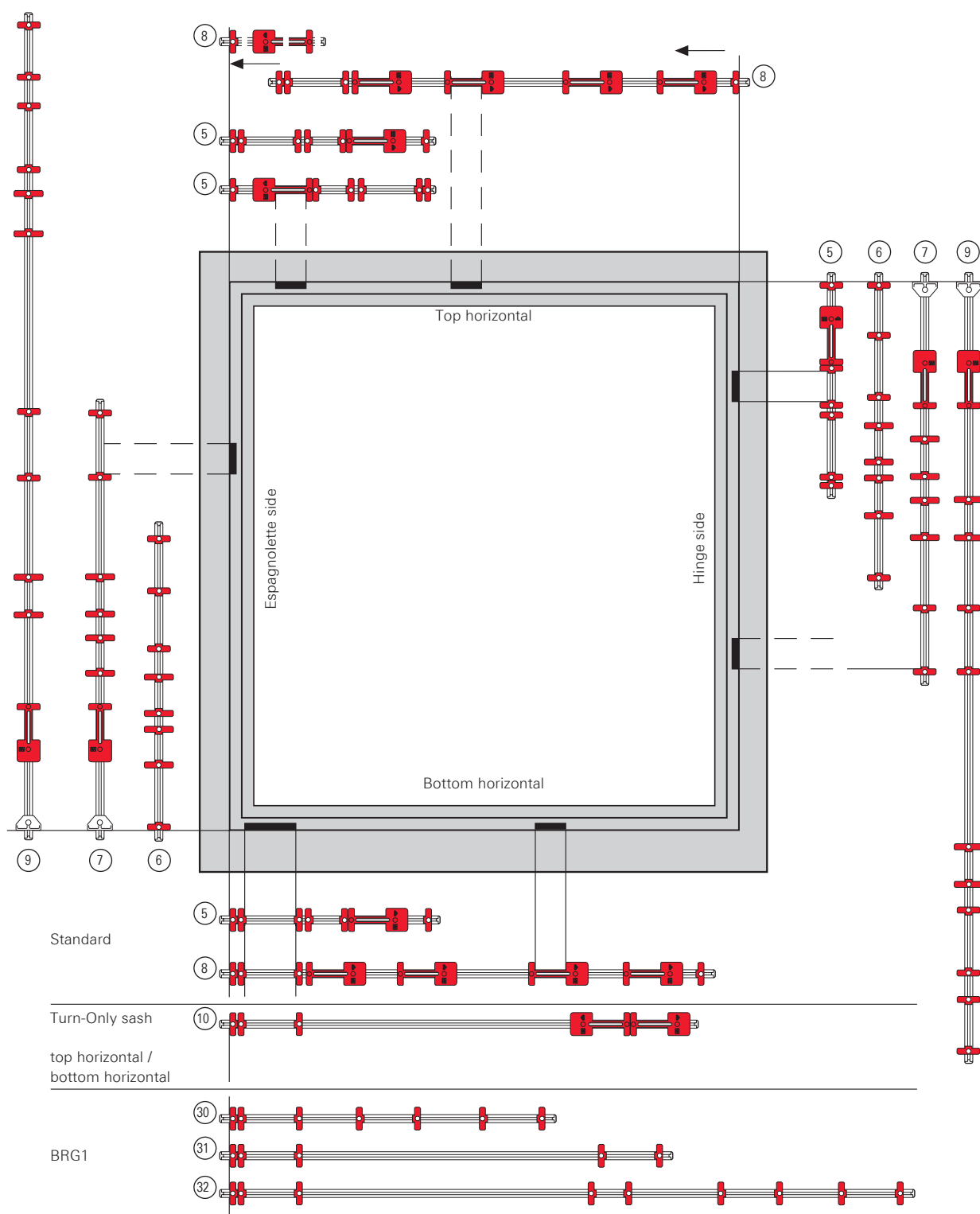
SRW/mm	A	B	CL connectable
290 – 410	–	–	150 / 300 –
411 – 600	–	–	250 / 490 –
601 – 800	–	–	350 / 590 –
801 – 1000	618	–	500 / 890 –
1001 – 1200	618	–	500 / 890 CL 200 CON
1201 – 1400	618	452	500 / 890 CL 400 E CON

T&T espagnolette, backset 15

SRH/mm	HH	G1	G2	G3	G4	LMD	B
280 – 480	120	–	–	–	–	–	–
481 – 600	170	–	–	–	–	223	–
601 – 800	263	–	–	–	–	138	–
801 – 1000	413	–	–	–	–	288	–
1001 – 1200	513	–	700	–	–	388	–
1201 – 1400	563	–	700	–	–	388	–
1401 – 1600	563	–	700	–	–	388	–
1601 – 1800	563	–	700	1370	–	388	–
1601 – 1800	1000	–	700	1370	–	1121	1244
1801 – 2000	1000	–	700	1370	–	1121	1244
2001 – 2200	1000	–	700	1370	–	1121	1244
2201 – 2400	1000	–	700	1370	–	1121	1244

Stay guide

SRW/mm	A	Size
801 – 1000	–	500 / 890
1001 – 1200	–	500 / 1090
1201 – 1400	750	500 / 1290



5–10 Single positioning jigs/fixed handle height

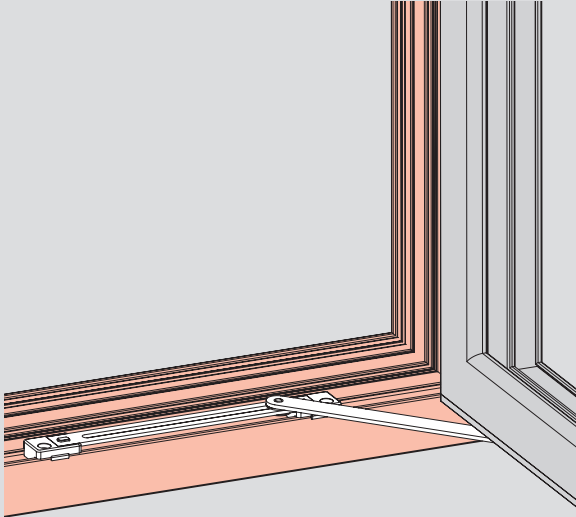
Description	Material no.
5 Single positioning jig for horizontal T&T striker/corner drive	290 072
6 Single positioning jig for lifting mishandling device/corner drive	290 073
7 Single positioning jig for espagnolette/hinge side 801–1600	290 074
8 Single positioning jig top horizontal/ bottom horizontal 1001–1600	290 075
9 Single positioning jig for espagnolette/hinge side doors	290 076
10 Single positioning jig TU-ON sash horizontal T&T striker/top/bottom horizontal	290 081

30–32 Positioning jig

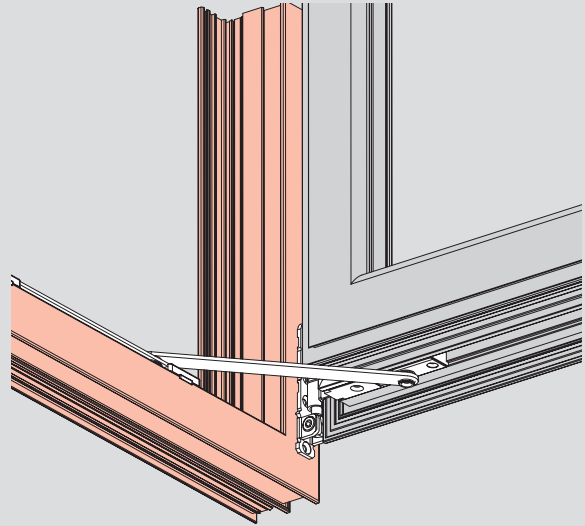
Description	Material no.
30 Positioning jig, bottom horizontal 400–800	268 931
31 Positioning jig, bottom horizontal 801–1000	268 932
32 Positioning jig, bottom horizontal 1001–1400	268 933

Turn-restrictor

Function of the turn-restrictor 90°



Installation of the turn-restrictor 90°



Installation of the turn-restrictor:

Place the sash hinge bearing (365 922) on the rebate corner hinge with extension (624 462) and screw-fix.

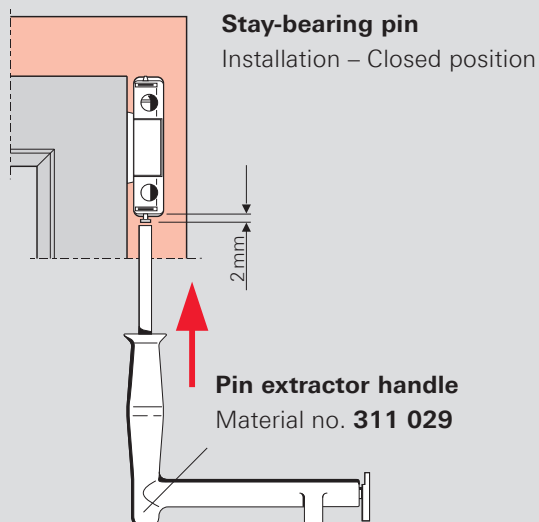


Sash

Hinging and unhinging the sash

Hinging the sash

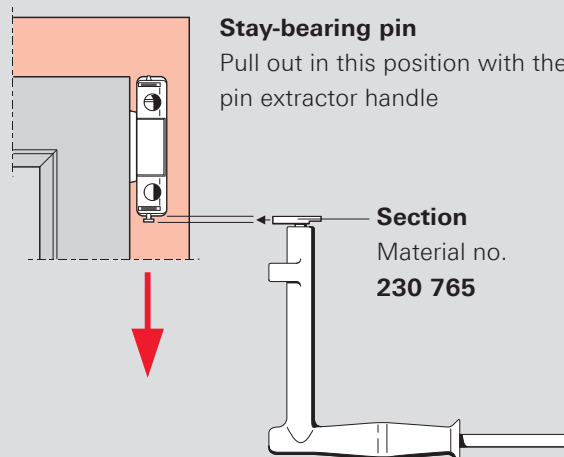
Insert the stay bearing pin with the sash closed and the handle in the tilted position.



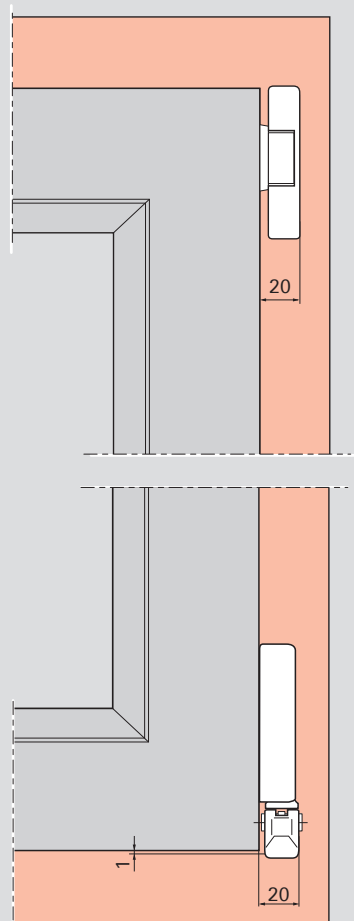
1. Slide in the stay-bearing pin manually
2. Push in the stay-bearing pin with the pin extractor handle

Unhinging the sash

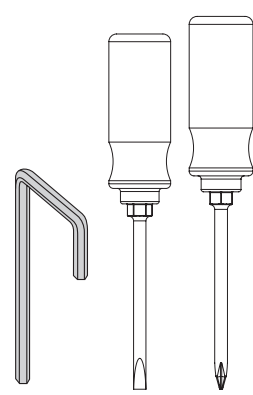
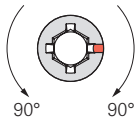
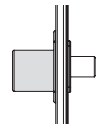
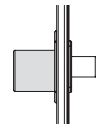
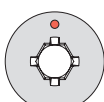
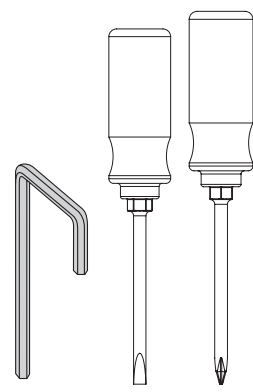
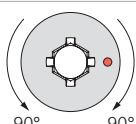
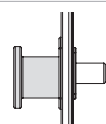
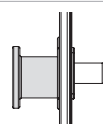
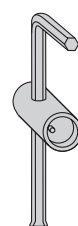
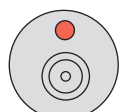
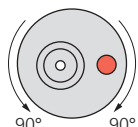
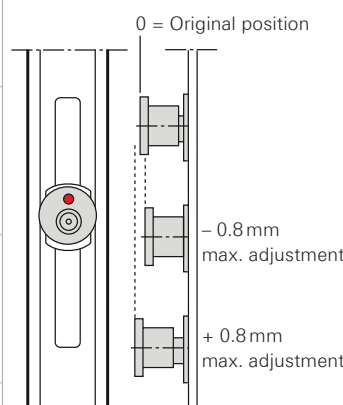
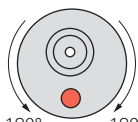
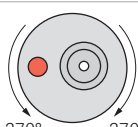
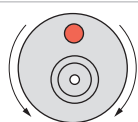
Remove the stay-bearing pin using the pin extractor handle while the sash is closed and the handle is in the tilted position.



Frame clearances (including cover cap)



Locking cam adjustment instructions

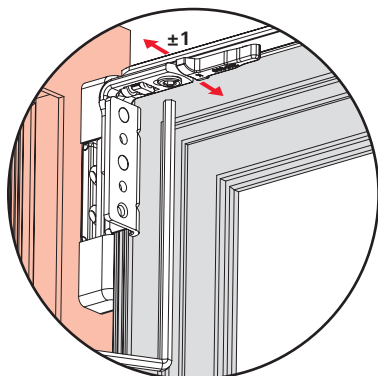
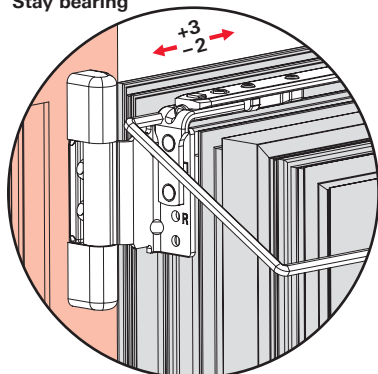
Locking cam adjustment instructions						
Cam type	Adjustment range	Gasket-compression	Height	Side view		Tools
E cam						
						
	 90° 90°	+/- 0.8mm				
P cam						
						
	 90° 90°	+/- 0.8mm				
V cam						
Cam type	Adjustment range	Gasket-compression adjustment / in mm	Height adjustment / in mm	Side view/top view		Tools
						
						
	 90° 90°	+/- 0.8mm	+/- 0.2mm	 0 = Original position - 0.8mm max. adjustment + 0.8mm max. adjustment		
	 180° 180°	-	+/- 0.4mm			
	 270° 270°	+/- 0.8mm	+/- 0.6mm			
	 360° 360°	-	+/- 0.8mm			



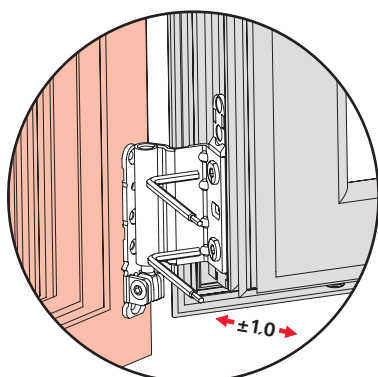
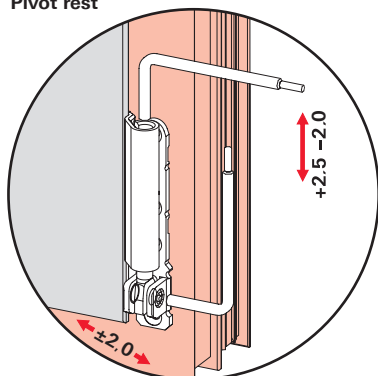
Stay bearing / pivot rest adjustment instructions

Hinge side NT for aluminium profiles with 16 mm hardware groove

Stay bearing



Pivot rest



Maintenance and operating information

The windows you have produced are equipped with high-quality Roto hardware. This means: ease of operation, perfect function, and high durability.

The precondition for the function and smooth operation of the hardware is the compliance with our regulations concerning sash size and sash weight, as well as our product liability guidelines.

Function and condition of the hardware is to be checked in accordance with the following criteria:

- Smooth operation
- Hardware fixing
- Hardware wear and tear
- Damage to the hardware

Smooth operation

The hardware's smooth operation can be checked by means of moving the window handle. In accordance with DIN 18055, the locking and unlocking moment of the window handle is determined to max. 10 Nm. It can be checked using a torque wrench.

The smooth operation can be improved by **greasing/oiling** or adjusting the hardware. Roto Tilt&Turn hardware components can be adjusted bi- or trilaterally. Incorrect and/or inappropriate retro-adjustments to the hardware can result in the windows not fulfilling their function anymore.

Hardware fixing

The window's function and its operational safety depend on the solid fixing of the hardware. Stability and location of the individual screws in the PVC are to be checked. Should it be revealed, that for example screws have loosened or that screw heads have broken off, these are to be tightened or replaced immediately.

Hardware wear and tear

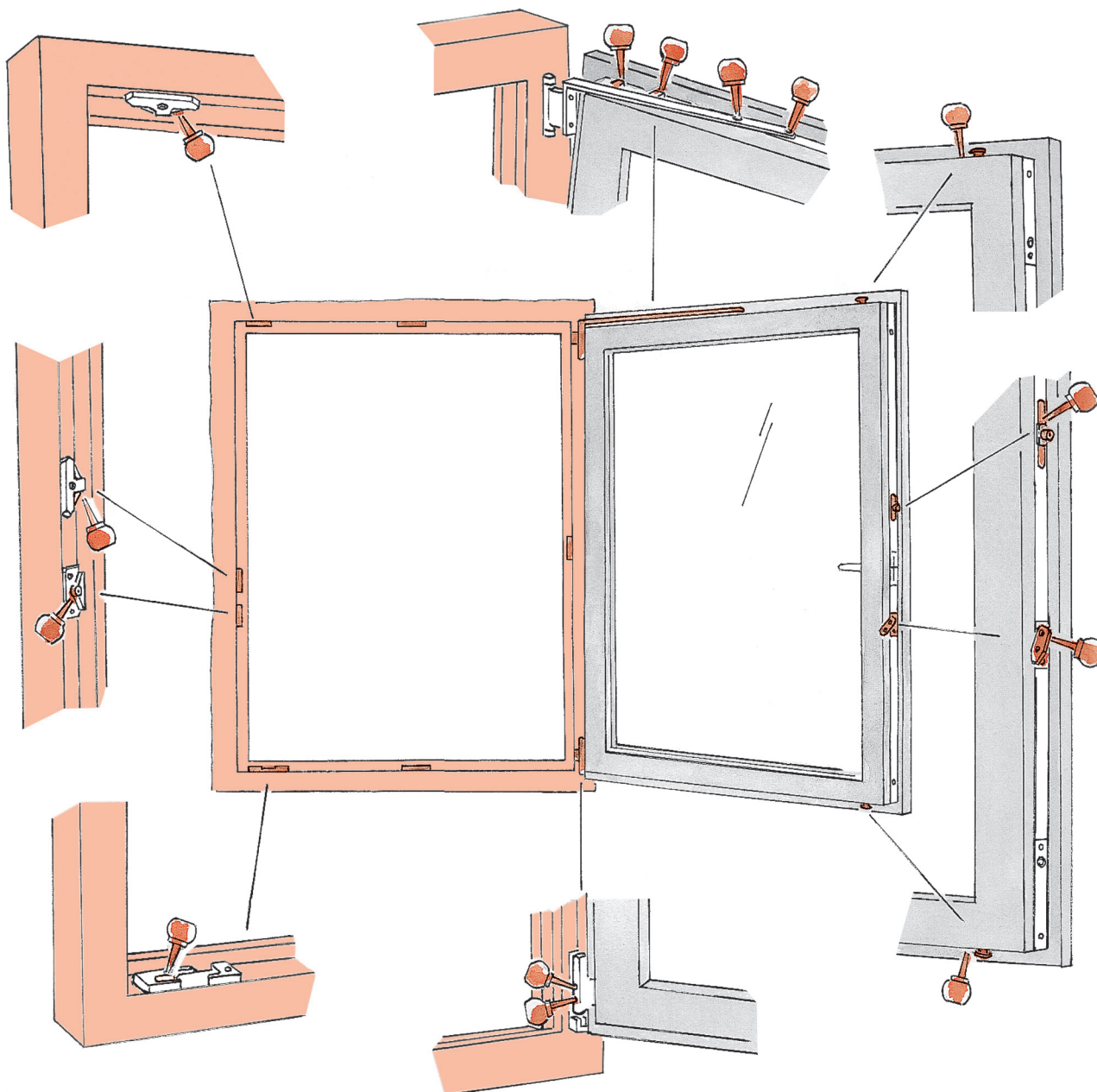
To protect them against wear and tear, all function-relevant hardware components are to be **greased respectively oiled** according to our specifications.

Damage to the hardware

Damaged hardware components are to be replaced, especially if they are load-bearing hardware components. The hardware may only be cleaned with a soft cloth and mild, pH-neutral cleaning agent in diluted form. Never use aggressive, acidiferous cleaners or abrasive cleaning agents. This can lead to hardware damage.

No legal claims can be derived from these recommendations, the application is to be conveyed for each concrete individual case.

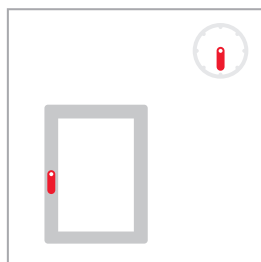
Roto Frank AG recommends window fabricators to make maintenance agreements with their end users.



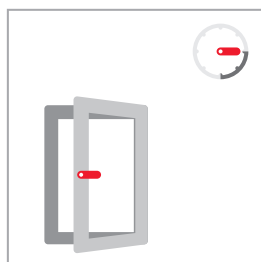
Maintenance

By means of regular **greasing and oiling**^(*) (at least once a year) all operation-relevant components in the sash and frame, you maintain the smooth operation of your Roto hardware and you protect against premature wear and tear. Security strikers made of steel require continuous greasing in order to avoid unnecessary abrasion. In addition, the positions of the screws are to be checked. Possible loose screws or broken off screw-heads are to be replaced immediately by a specialised company.

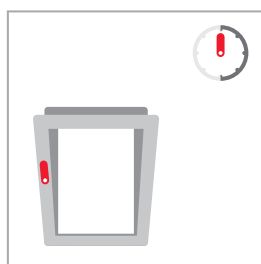
(*) Please use acid free and non resinous grease and/or oil from a specialised dealer.



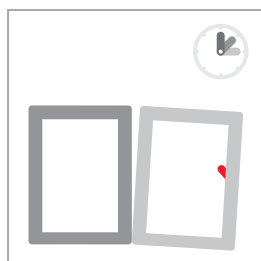
Closed



Opened



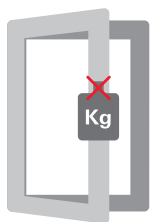
Tilted position



**Avoid
mishandling!**



Safety instructions



Do not burden the sash with additional weight.



Do not insert any objects between the sash and frame.

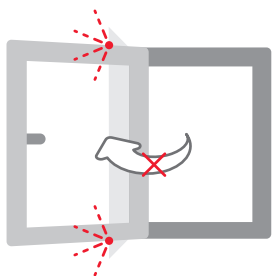


Risk of injury!

There is a risk of injury by catching one's fingers or other body parts in the opening gap between the sash and frame. While closing, do not grasp between the sash and frame.



Do not leave the sash open in the turn mode when it is windy.



Do not force the sash up against the wall reveal.



Risk of falling out!

Prevent the sashes turn mode where children or other vulnerable people have access to the window. Install a child safety lock or a lockable handle.



Creates inner values

Roto Frank AG

Window and door technology

Wilhelm-Frank-Platz 1
D-70771 Leinfelden-Echterdingen
Telephone +49 711 7598-0
Telefax +49 711 7598-253
info@roto-frank.com

www.roto-frank.com



BKWK / textract Dated: November 2011. Subject to change. IMO_146_EN_v0
© 2011 Roto Frank AG ® Roto is a registered trademark

From a single source: The optimum hardware system to meet all challenges

Roto NT | The world's biggest selling Tilt&Turn hardware system
for windows and balcony doors

Roto AluVision | Comprehensive hardware solutions for windows and doors made of aluminium

Roto Patio | Hardware systems for large sliding windows and doors

Roto Door | The attuned range of components for permanently tight shutting doors