

Roto Patio PS

The standard hardware
for parallel Opening&Sliding windows and doors

Installation, maintenance and operation instructions
for timber and PVC profiles



Imprint

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This manual contains important information, instructions and application diagrams (maximum sash sizes and sash weights) as well as installation instructions regarding the further work of the hardware.

Also, this manual contains binding guidelines to ensure the duty to instruct through to the end-user.

The information and instructions in this manual refer to the products of the Roto Patio hardware system.

Apart from these installation, maintenance and operation instructions, the following documents apply:

- Directives VHBH of the Quality Assurance Association: Locks and Hardware (Richtlinie VHBH der Gütegemeinschaft Schlösser und Beschläge e. V.)
- Directives VHBE of the Quality Assurance Association: Locks and Hardware (Richtlinie VHBE der Gütegemeinschaft Schlösser und Beschläge e. V.)

This manual should be stored in such a manner that it can be quickly used, if needed.

Additional markings

To highlight handling directives, results, lists, references and other elements, the following signs are used in this manual:

Marking	Explanation
	Sash
	Frame
	Drill holes
	Hardware components
	Action steps
	Anodised
	Powder coated (for RAL colours)
■	First level of the hierarchy in a list
—	Unordered list (second level of the hierarchy)
→ p. 12	(Cross) reference in tables
Refer to page 12	(Cross) reference in the text
Abbreviation	Explanation
d_k	Head diameter
SRW	Sash rebate width
SRH	Sash rebate height
S.kg	Sash weight
not dep.	not depicted
TEFF	Top edge of finished floor
RC1 N	Resistance Class 1
RC2 / RC2 N	Resistance Class 2
St.	Striker

Illustrations are depicted in the left-hand version (DIN 12519). All dimensions stated in millimetres. Otherwise the values are indicated.

Protection of copyright

The contents of this manual are protected by copyright. In the framework of the hardware manufacturing, the use of the contents is allowed. Any other or further use is not permitted without written permission of the manufacturer.

The information in this document is intended for the following target groups:

Hardware dealers

The “hardware dealers” target group includes all companies/persons who purchase hardware from the hardware manufacturer to resell it without the hardware being modified or subjected to further work.

Manufacturers of windows and balcony doors

The “manufacturers of windows and balcony doors” target group includes all companies/persons who purchase hardware from the hardware manufacturer or the hardware dealer and build it into windows and balcony doors.

Building element dealers/Installation company

The “building element dealers” target group includes all companies/persons who purchase windows and balcony doors from the manufacturer of windows and balcony doors in order to sell these on and to install them into a building development, without the windows or balcony doors being modified.

The “installation company” target group includes all companies/persons who purchase windows and balcony doors from the manufacturer of windows and balcony doors, or from a building element dealer, in order to sell these and to install them into a building development, without the windows or balcony doors being modified.

Builder

The “builder” target group includes all companies/persons who order windows and/or balcony doors for installation into their building project.

End-users

The “end-users” target group includes all persons who operate the installed windows and/or balcony doors.

**NOTE!**

Every target group must fully comply with its instruction obligation.

Unless defined otherwise in the following, the documents and information may be transmitted e.g. as printed documents, CD-ROM, or via Internet access.

Responsibility of the hardware dealer

The hardware dealer must transmit the following documents to the manufacturer of windows and balcony doors:

- Catalogue
- Installation, maintenance and operation instructions
- Directive for fixing load-bearing Turn-Only and Tilt&Turn hardware components (TBDK)
- Guidelines/advice on the product and on liability (VHBH)
- Specifications/information for end-users (VHBE)

Responsibility of the manufacturer of windows and balcony doors

The manufacturer of windows and balcony doors must transmit the following documents to the building element dealer or to the builder, even when a subcontractor (installation company) is acting as an intermediary:

- Installation, maintenance and operation instructions
- Directive for fixing load-bearing Turn-Only and Tilt&Turn hardware components (TBDK)
- Guidelines/advice on the product and on liability (VHBH)
- Specifications/information for end-users (VHBE)

He must ensure that the end-user is provided with the documents and information intended for him, in printed format.

Responsibility of the building element dealer/installation company

The building element dealer must transmit the following documents to the builder, even when a subcontractor (installation company) is acting as an intermediary:

- Maintenance and operating instructions (with the focus on hardware)
- Guidelines/advice on the product and on liability (VHBH)
- Specifications/information for end-users (VHBE)

Responsibility of the builder

The builder must transmit the following documents to the end-user:

- Maintenance and operating instructions (with the focus on hardware)
- Specifications/information for end-users (VHBE)

In this instructions, safety information is indicated by a symbol. The safety information is introduced by a key word that indicates the severity of the danger.

**DANGER!**

This symbol in conjunction with the signal word indicates an imminently hazardous situation, which could result in death or serious damage to health if it is not avoided.

**WARNING!**

This symbol in conjunction with the signal word indicates a potentially dangerous situation, which could result in death or serious damage to health if it is not avoided.

**CAUTION!**

This symbol in conjunction with the signal word indicates a potentially dangerous situation, which may lead to minor or light injuries if it is not avoided.

**NOTE!**

This symbol in conjunction with the signal word indicates a potentially dangerous situation, which may lead to property or environmental damage if it is not avoided.

All details and instructions in this document were compiled taking into account the relevant standards and regulations, the state of the art, and also many years of knowledge and experience.

The hardware manufacturer accepts no liability for damages resulting from:

- Failure to comply with this document and all product-specific documents and related applicable directives (refer to the chapters Security and Stipulated use).
- Non-stipulated use/misuse (refer to the chapters Security and Stipulated use).
- Insufficient invitation to tender, failure to adhere to the installation instructions or application drawings.
- Increased soiling.

Claims by third parties against the hardware manufacturer on the ground of damages resulting from misuse or failure to follow the instruction obligation on the part of the hardware dealer, the manufacturer of windows and balcony doors, and of the building element dealer or the builder are transferred accordingly.

The undertakings agreed in the delivery contract, the general conditions of business and the delivery conditions of the hardware manufacturer, and the legal regulations applicable at the time of concluding a contract are effective.

The warranty covers only original Roto components.

The right to technical modifications for the improvement of performance characteristics and for further development is reserved.

Sliding hardware is hardware for sliding sashes for windows and balcony doors that are mainly used as glazed exterior structures.

In combination with the sliding sashes, fixed-glazing-units and/or further sashes can be situated in a window element.

Sliding hardware is equipped with a locking mechanism that fastens the sliding sash. Sliding hardware is equipped with rollers that are mainly located on the bottom horizontal plane of the sliding sash.

In addition, scissor stay-arms for tilting and mechanisms to lift and/or parallel-retract the sashes can be specified. By means of the hardware, the sashes are locked, brought into the ventilation position and pushed to the side.

Sliding hardware is solely used for further processing of vertically installed windows and balcony door sashes made of timber, PVC or aluminium, and their corresponding material combinations.

**NOTE!**

Depending on the outside temperature, relative air humidity of the ambient air, as well as the application location of the sliding element, a temporary formation of condensation water on the aluminium tracks on the inside may occur. This is particularly promoted when the air circulation is hindered; for example due to deep reveals, curtains as well as unfavourable radiator positioning and the like.

Correct use also includes adhering to all the specifications in the product-specific documents, such as:

- These installation, maintenance and operation instructions
- Product catalogues
- Information and specifications of the profile manufacturer (e.g. PVC or light metal profiles etc.)
- The relevant directives VHBH and VHBE of the Quality Assurance Association: Locks and Hardware (Gütegemeinschaft Schlösser und Beschläge e. V.)
- The valid national laws and directives

Any type of use that goes beyond or differs from the defined correct use shall be regarded as misuse.

**WARNING!****Danger from misuse!**

Misuse and incorrect installation of hardware can result in hazardous situations.

- Never use hardware combinations that have not been approved by the hardware manufacturer.
- Never use accessories that are not original products or that have not been approved by the hardware manufacturer.



On windows or balcony doors with sliding hardware the sashes can be moved horizontally or vertically by operating a 'hand-lever' (handle). On special constructions the sashes additionally can be folded by sliding (like an accordion – Fold&Slide windows). On special constructions some of the sashes additionally can be brought into a turning position and/or into a limited tilting position in the case of the scissors (sash-stay) version. When a sash is closed and the hardware is locked, the resistance of a gasket usually needs to be overcome.

**WARNING!****Danger of injury and material damage from incorrect closing and opening the sash!**

Incorrect closing and opening of sashes can result in serious injuries and significant material damage.

Therefore:

- Ensure that when opening or closing the sash, it does not collide with the frame or with another sash.
- Ensure that the sash is guided slowly by hand throughout the entire range of movement as far as the fully opened or closed position, and that it is brought very slowly towards the frame, the opening restrictor or another sash (technical value – maximum reference speed of the closing edge $v \leq 0.2 \text{ m/s}$).

Any use beyond or other than the stipulated application and installation of the products is deemed to be misuse and can result in dangerous circumstances.

**WARNING!****Danger from misuse!**

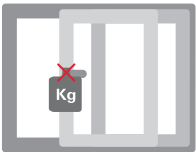
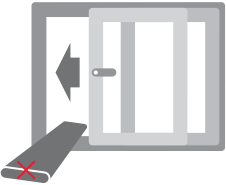
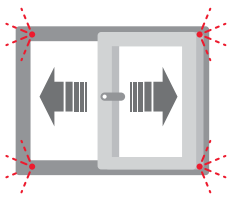
Misuse of windows and balcony doors can result in dangerous circumstances.

In particular, avoid the following applications:

- insertion of obstacles in the opening area between the frame and the window and balcony door sashes,
- the deliberate or negligent application of excessive loads on windows and balcony doors,
- deliberate or uncontrolled slamming or pushing of windows and balcony doors against the window reveal. This can destroy the hardware, frame materials, or other individual components of the windows or balcony doors.

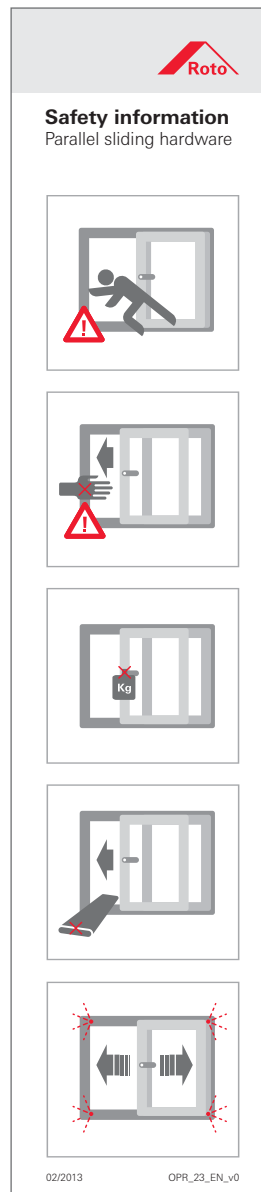
Claims for damages of any type whatsoever resulting of operation other than that stipulated are excluded.

Comply with the following symbols and their meanings in order to avoid accidents, injuries and material damage.

Symbol	Meaning
	DANGER! Danger of injury from falling through open windows and balcony doors. ■ Proceed cautiously in the vicinity of open windows and balcony doors. ■ Please keep children and persons that cannot appreciate the danger away from the hazard area.
	WARNING! Danger of injury through trapping of body parts in the opening gap between sash and frame. ■ When closing windows and balcony doors, never reach between sash and frame, and always act with care. ■ Please keep children and persons that cannot appreciate the danger away from the hazard area.
	WARNING! Danger of injury and material damage from overloading the sash ■ Refrain from additionally loading the sash.
	CAUTION! Danger of injury and material damage from insertion of obstructions into the opening gap between sash and frame ■ Refrain from inserting obstacles in the opening gap between the sash and the frame.
	CAUTION! Injury and property damage from uncontrolled opening and closing of the sash ■ Ensure that the sash is guided slowly by hand throughout the entire range of movement as far as the fully opened or closed position.



The following symbols can be used on windows and balcony doors to protect the end-user. Always keep these symbols in a clearly legible state. Please order stickers separately (OPR_23_EN).



Maximum sash sizes and weights

The technical data, application diagrams, and component classifications in the product-specific documentation of the hardware manufacturer give instructions on the maximum permitted sash sizes and weights. Here, the component with the smallest permitted load bearing capacity decides the maximum permitted sash weight.

- Check compliance of the technical data, application diagrams, and component classifications before the use of electronic data sets, and especially their use in fenestration programmes.
- The maximum permitted sash sizes and weights must never be exceeded. In the case of uncertainty contact the hardware manufacturer.

Guidelines from the profile manufacturer

The manufacturer of windows and/or balcony doors must comply with all specified system-related dimensions (e.g. gasket gap dimensions or locking-point distances). Furthermore, he must check these regularly and make certain of them, especially on the first use of new hardware components, during manufacture, in an ongoing manner up to and including the window installation.



NOTE!

The hardware components should in principle be designed in such a manner, that the system-related dimensions can be adjusted to the extent that they are affected by the hardware. If a deviation from these dimensions is noticed only after the installation of the windows, the hardware manufacturer is not responsible for any possible additional work arising.

Composition of hardware

Burglary inhibiting windows and balcony doors require hardware which fulfils particular requirements.



NOTE!

The security grade depends on the overall system (hardware, profile, glazing).

Windows and balcony doors for damp rooms, and those for use in environments with aggressive and corrosive air components require hardware which fulfils particular requirements.

The resistance of windows and balcony doors to wind loads when closed and locked depends on the actual designs of the windows and balcony doors. Wind loads prescribed by law and standards (e.g. as per EN 12210 – especially test pressure P3) can be dissipated by the hardware system.

The hardware combinations and installations appropriate for windows and balcony doors in the previously mentioned areas should be specifically selected and agreed with the hardware manufacturer and the profile manufacturer.



NOTE!

The guidelines of the hardware manufacturer relating to the combination of the hardware (e.g. the use of additional stay arms, the design of hardware for burglary-inhibiting sashes for windows and balcony doors, etc.) are binding.

- The hardware components described in these installation, maintenance and operation instructions are made of steel, colourless passivated and sealed according to DIN EN 12329.
- The hardware components may only be used with timber and/or PVC profiles.
- The hardware components may not be used in environments with salty, aggressive or corrosion-promoting air.
- The guide track and the roller track must not be painted.
- Surface-treating of Tilt&Slide elements may only be carried out before installation. A subsequent surface treatment may restrict the functioning of the hardware components.
- If in some cases it is expected (due to operation in hotels, schools, kindergartens etc.) that the element will be excessively used, this must be prevented by adequate measures. Also in movable objects like trains or ships there may occur disorders caused by the object movement.



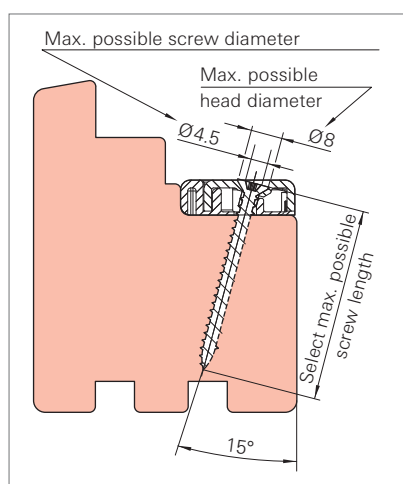
DANGER!

Danger to life from incorrectly installed and threaded hardware components!

Incorrect installation and threading of hardware components can result in dangerous circumstances and cause severe accidents, even including death.

Therefore:

- For installation and especially for threaded components, observe the product-specific documentation and the information of the hardware manufacturer.



NOTE!

Screwed connection of timber strikers with 15° angle, screw diameter 4.5 mm and maximum possible screw length.

- The application ranges on page 18 and 19Roto Patio PS for timber and PVC profiles are valid for the hardware.
- Information with respect to screwing speed and torque are binding. (Do not overtighten the screws!)
- Fasten the hardware components with the included screws.
- Install all hardware components properly in accordance with these instructions.
- For the glazing packers the Technical Guidelines of the Glazing Trade, no. 3 "Packing of Glazing Units" must be observed.

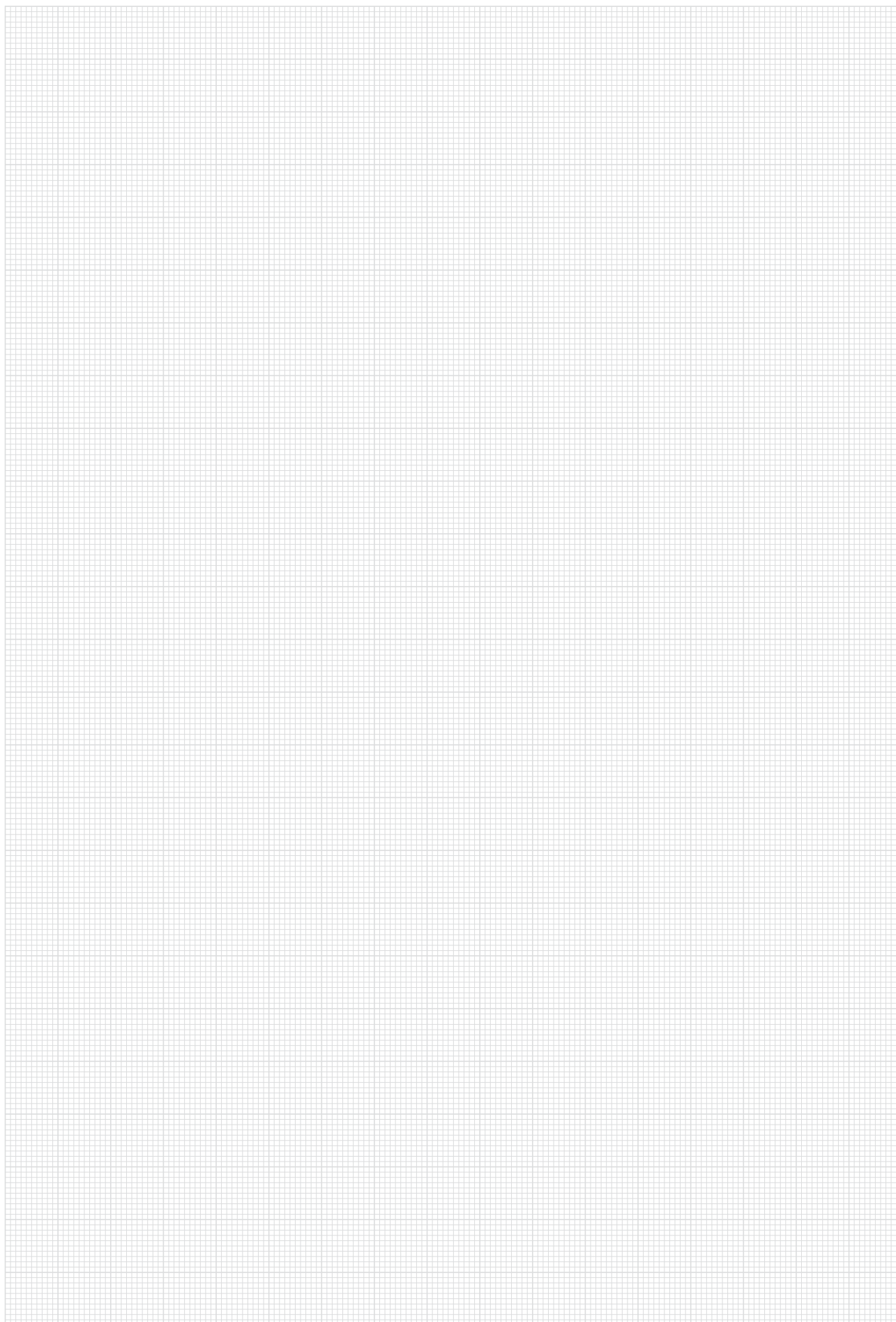
Fixing screws for hardware components

These are not included in the delivery scope. The length is to be selected to match the profile being used.

Countersunk screws	3.9 x ... mm
Countersunk screws	4.0 x ... mm, Important: Head diameter d_k 7 mm
Countersunk screws	4.5 x ... mm
Countersunk screws	4.8 x ... mm

General hardware characteristics

- Automatic convenience soft closing of sash into frame through upper and lower spring damper unit
- Concealed central locking system with E cams or V cams, and circumferential, locked night ventilation position
- Clearance 12 mm
- Overlap width: 18 – 22 mm
- Hardware axis: 9 mm only available without night ventilation
- Hardware axis: 13 mm available with and without night ventilation
- Sash arrangement as per diagram A, C, G, K
- Internal and external aesthetics like Tilt&Turn windows:
narrow profiles, no offset glazing in the facade, handle position when the door is closed “downwards”
- Retracting distance: max. 125 mm
- Sash rebate width: max. 2000 mm
- Sash rebate height: max. 2700 mm
- Sash weight: max. 200 kg
- Minimum overlap height 15 mm



Application diagram

Bogie up to 160 kg

Application range, diagram A,

Timber and PVC

Sash rebate width **SRW** 750–1650 mm

Sash rebate height **SRH** 650–2350 mm

Sash weight **S.kg** max. 160 kg

Handle height centred (SRH/2)¹⁾

Glass weight max. 60 kg / m²

1) A handle height of < SRH/2 may lead to an impairment of user convenience.

Application range, diagram C, Timber

2-sashed without centre post

Sash rebate width (passive sash) **SRW** . 770+y²⁾–1650 mm

All other values cf. Application range chapter, diagram A

2) Refer to page 24 for dimension y

Application range, diagram C, PVC

2-sashed, concealed hardware groove

Sash rebate width (passive sash) **SRW** 750–1650 mm

All other values cf. Application range chapter, diagram A

2-sashed, with opposing hardware groove

Sash rebate width (passive sash) **SRW** 770–1650 mm

All other values cf. Application range chapter, diagram A

1 mm/m² glass thickness = 2.5 kg

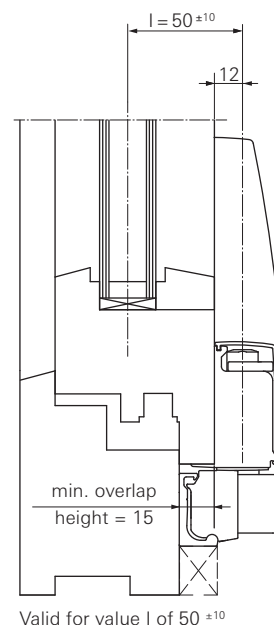
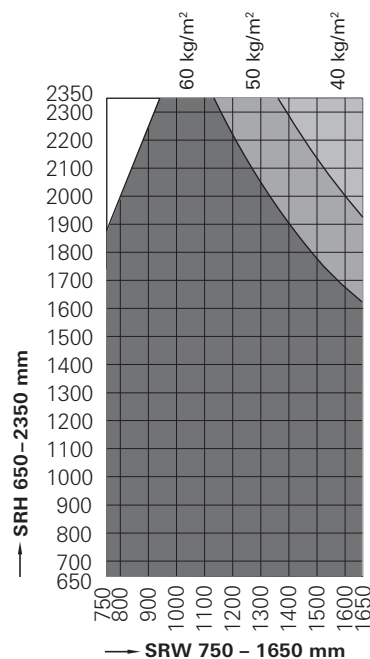
SRH : SRW = max. 2.5 : 1

 = Impermissible application range

 ≤ 40 kg/m²

 ≤ 50 kg/m²

 ≤ 60 kg/m²





Application diagram

Heavy-duty bogie from 160 kg

Application range, diagram A,

Timber and PVC

Sash rebate width **SRW** 1250–2000 mm

Sash rebate height **SRH** 650–2700 mm

Sash weight **S.kg** max. 200 kg

Handle height centred (SRH/2)¹⁾

Glass weight max. 60 kg / m²

1) A handle height of < SRH/2 may lead to an impairment of user convenience.

Application range, diagram C, Timber

2-sashed without centre post

Sash rebate width (passive sash) **SRW** 1270 + $\gamma^{2)}$ – 2000 mm

All other values cf. Application range chapter, diagram A

2) Refer to page 24 for dimension γ

Application range, diagram C, PVC

2-sashed, concealed hardware groove

Sash rebate width (passive sash) **SRW** 1250–2000 mm

All other values cf. Application range chapter, diagram A

2-sashed, with opposing hardware groove

Sash rebate width (passive sash) **SRW** 1270–2000 mm

All other values cf. Application range chapter, diagram A

1 mm/m² glass thickness = 2.5 kg

SRH : SRW = max. 2.5 : 1

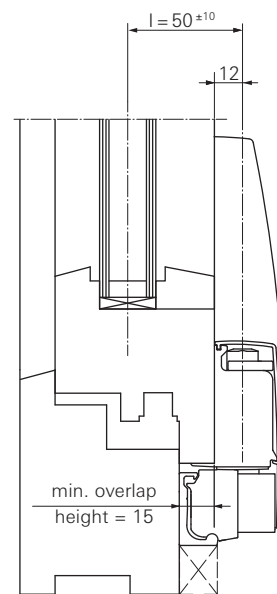
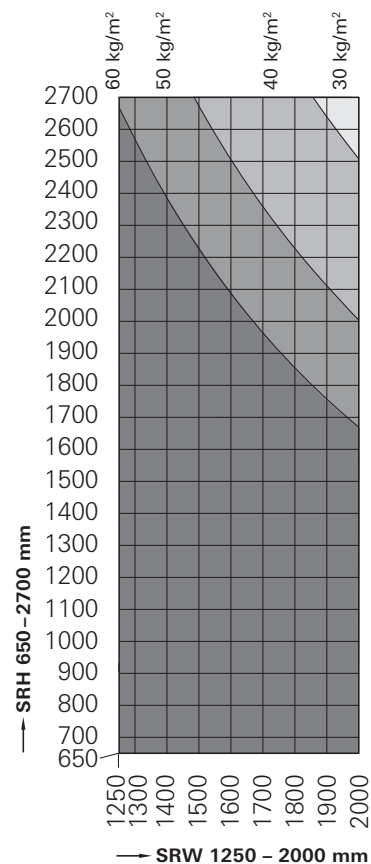
 = Impermissible application range

 ≤ 30 kg / m²

 ≤ 40 kg / m²

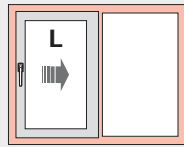
 ≤ 50 kg / m²

 ≤ 60 kg / m²

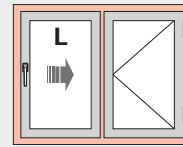


Valid for value l of 50 ±10

Diagram A

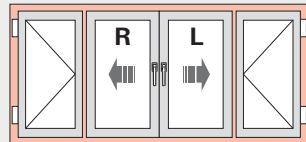


1 sliding sash (L or R)
1 fixed glazing

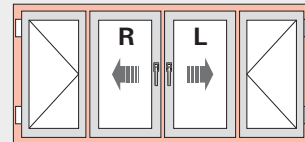


1 sliding sash (L or R)
1 Turn-Only sash

Diagram C

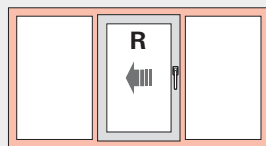


2 sliding sashes (L and R) with/without
centre post (dummy mullion)
2 Turn-Only sashes (alternatively fixed glazing)

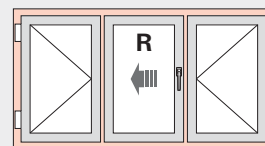


2 sliding sashes (L and R)
with fixed centre post
2 Turn-Only sashes
(alternatively fixed glazing)

Diagram G



1 sliding sash (L or R)
2 fixed glazings



1 sliding sash (L or R)
2 Turn-Only sashes

Diagram K



2 sliding sashes (L and R)
1 fixed glazing



Diagram A Sliding sash / Fixed glazing

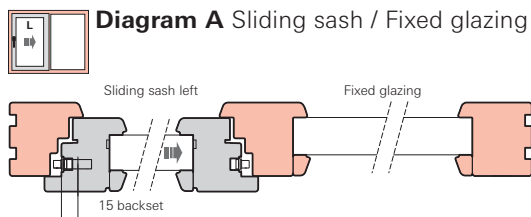


Diagram A Sliding sash / Turn-Only sash (with fixed centre post)

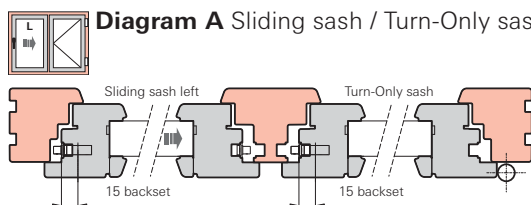


Diagram C Sliding sash (with fixed centre post) / Turn-Only sash (alternatively fixed glazing)

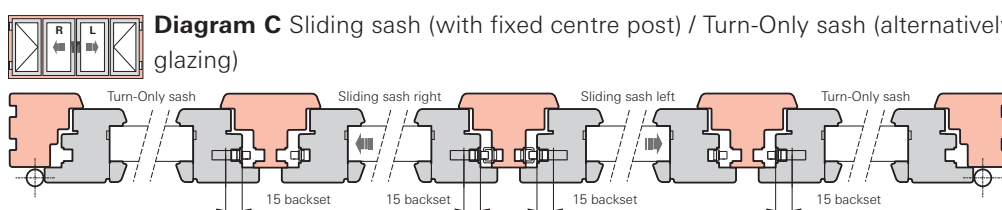


Diagram C Sliding sash (without fixed centre post) / Turn-Only sash (alternatively fixed glazing)

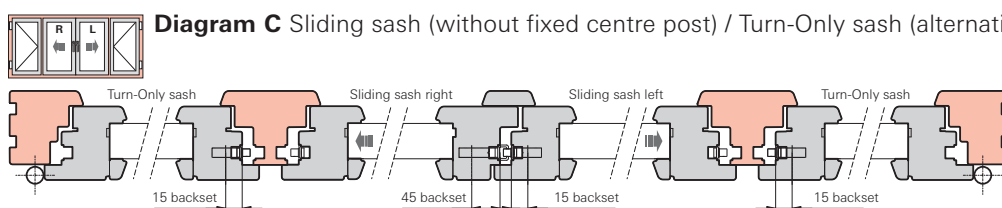


Diagram A Sliding sash / Fixed glazing

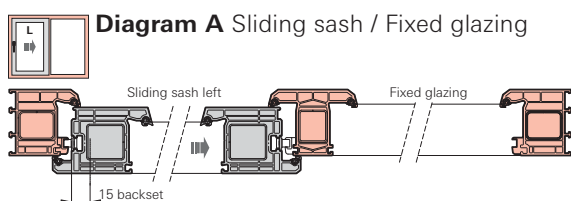


Diagram A Sliding sash / Turn-Only sash (with fixed centre post)

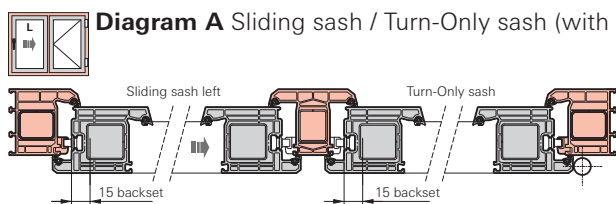


Diagram C Sliding sash (with fixed centre post) / Turn-Only sash (alternatively fixed glazing)

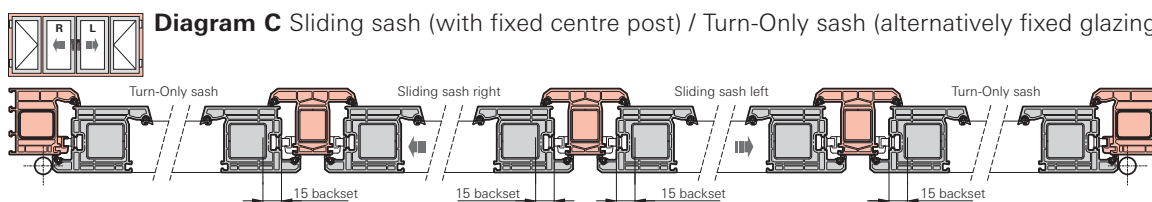
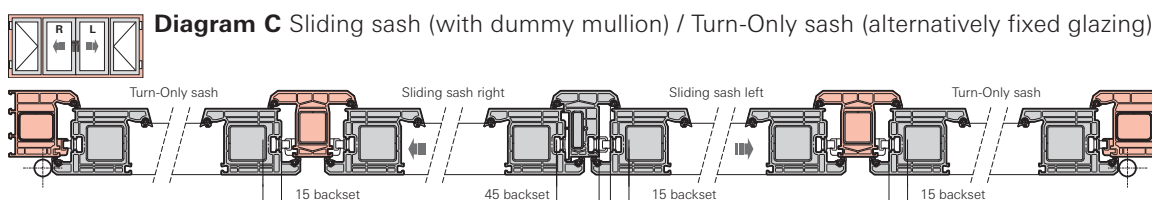
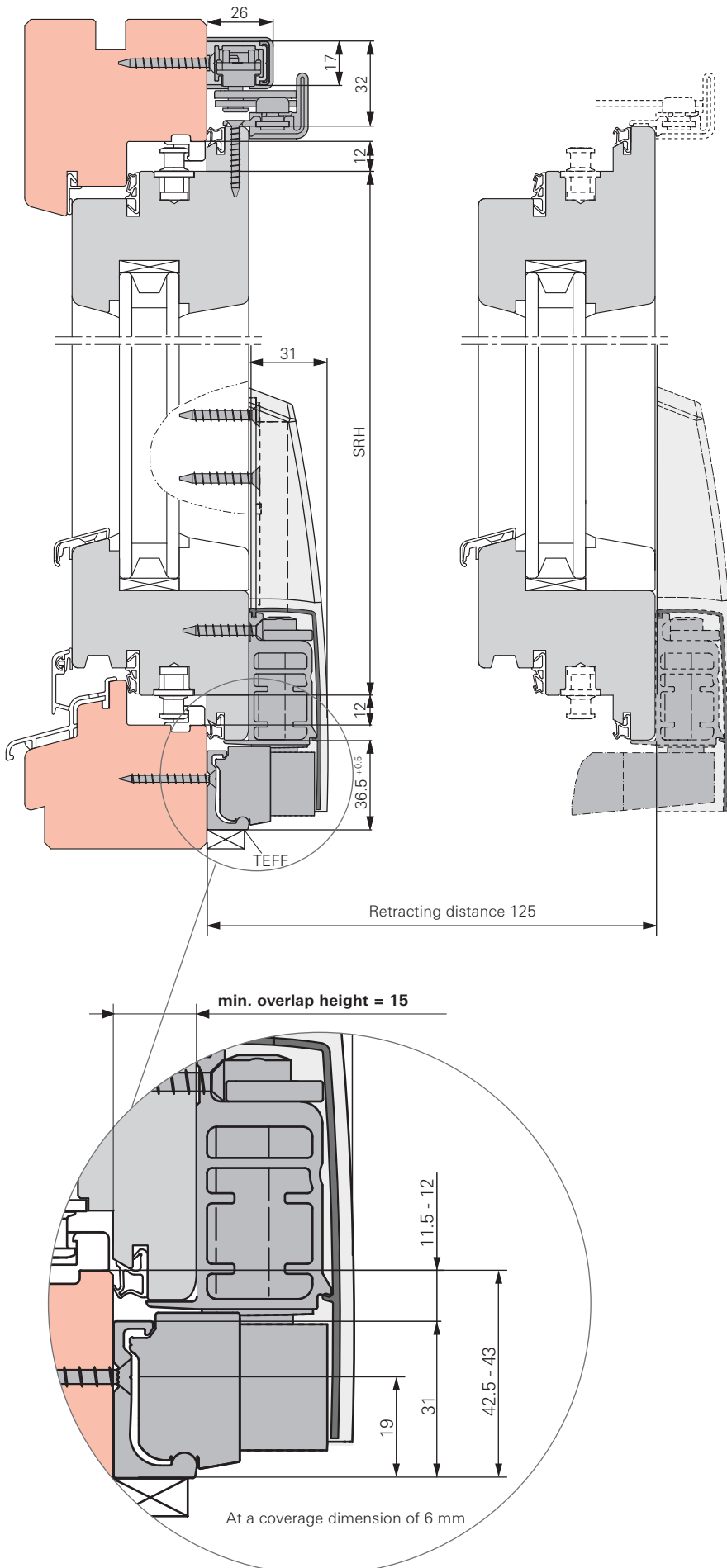
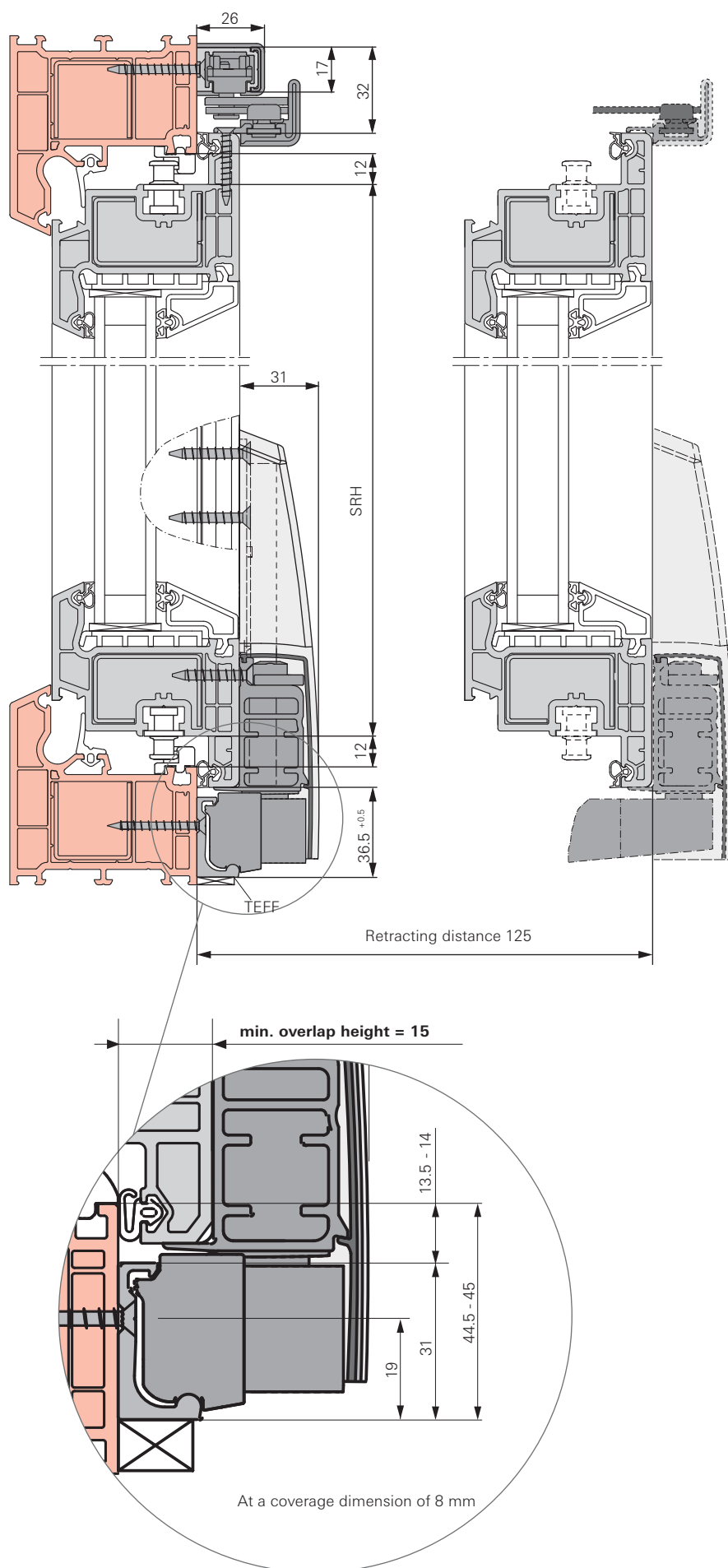


Diagram C Sliding sash (with dummy mullion) / Turn-Only sash (alternatively fixed glazing)





All dimensions stated in mm.



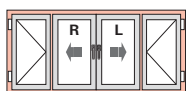
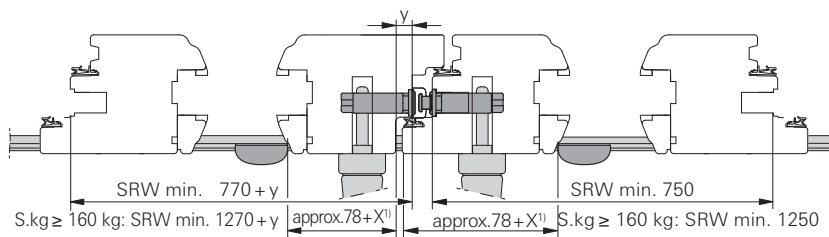


Diagram C 2-sashed, (without fixed centre post)/Fixed glazing



¹⁾ Dimension X, see pages 74 and 76

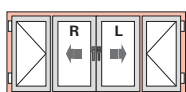
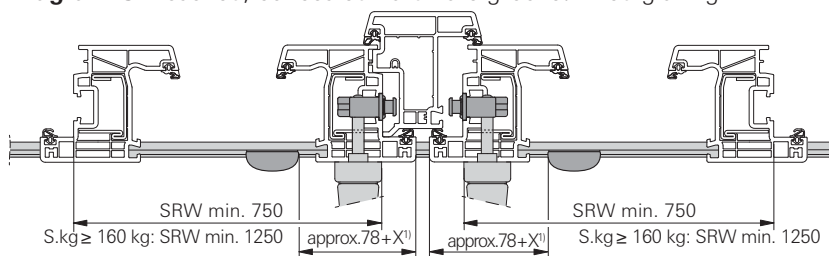


Diagram C 2-sashed, concealed hardware groove/Fixed glazing



¹⁾ Dimension X, see pages 74 and 76

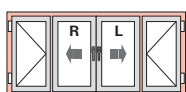
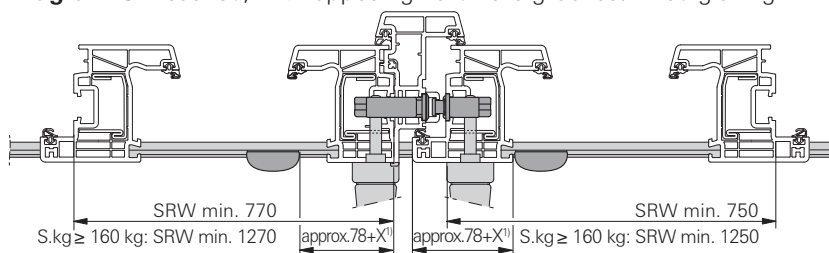
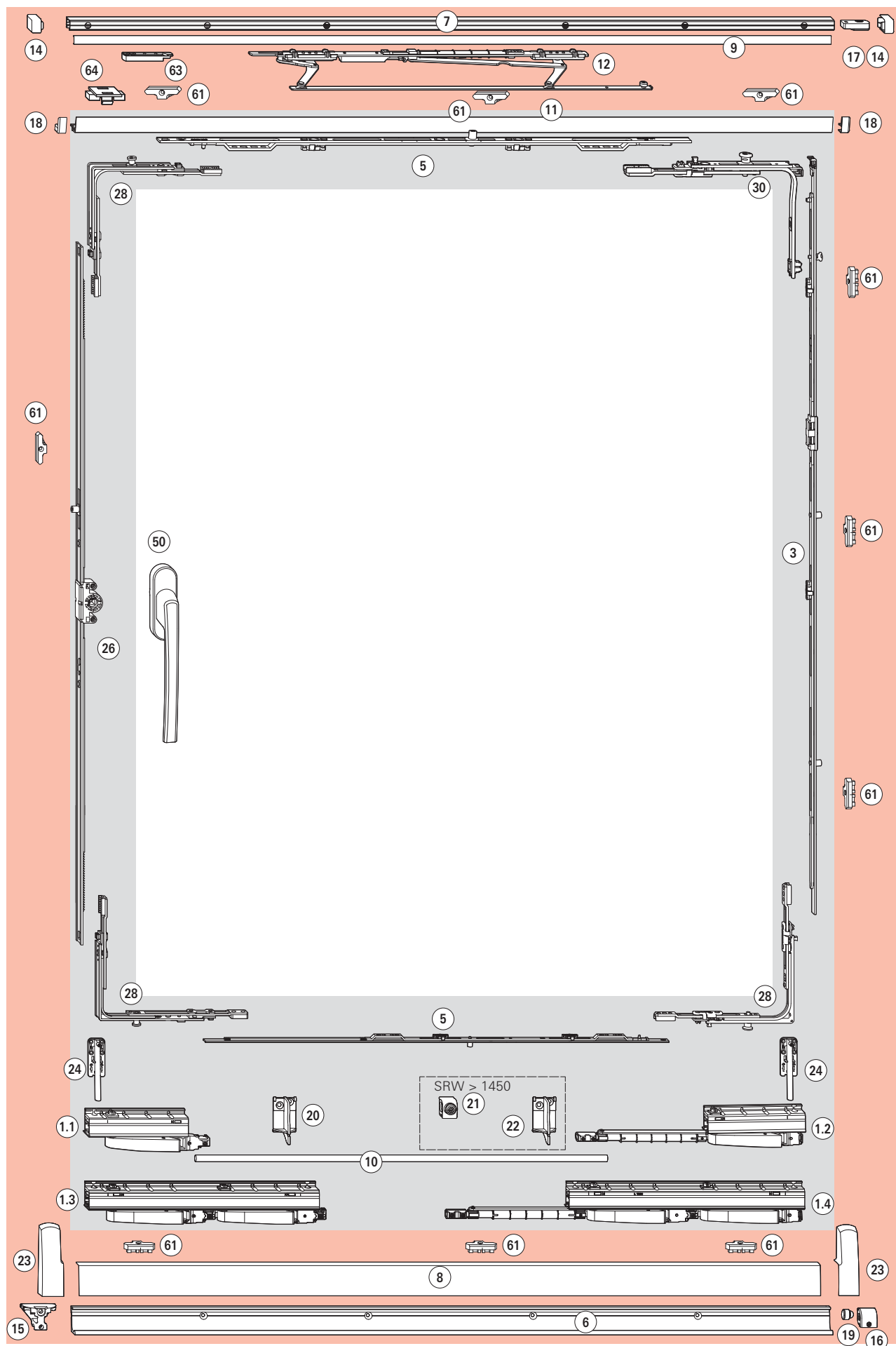


Diagram C 2-sashed, with opposing hardware grooves/Fixed glazing



¹⁾ Dimension X, see pages 74 and 76







Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton	L 635675
	R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (2.4) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton	L 641215
	R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (2.4) 2 reinforcement brackets

Centre lock component

3 Centre lock component, vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1E	604190
801 – 1000	890	1E 1V	281244
1001 – 1200	1090	1E 1V	281245
1201 – 1400	1290	1E 1V	281246
1401 – 1600	1490	2E 1V	281247
1601 – 1800	1690	2E 1V	281248
1801 – 2000	1890	2E 1V	281249
2001 – 2200	2090	3E 1V	281250
2201 – 2400	2290	3E 1V	281251
2401 – 2600	2290	3E 1V	281251
Espagnolette extension 200 (not dep.)		1E	450821
2601 – 2700	2290	3E 1V	281251
Espagnolette extension 400 (not dep.)		1E	280346

5 Centre lock component, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 E	603444
1001 – 1200	990	1 E	603447
1201 – 1400	1190	1 E	603462
1401 – 1600	1440	1 E	603466
1601 – 1800	1440	1 E	603466
Espagnolette extension 200 (not dep.)		1 E	450821
1801 – 2000	1440	1 E	603466
Espagnolette extension 400 (not dep.)		1 E	280346

Track set

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

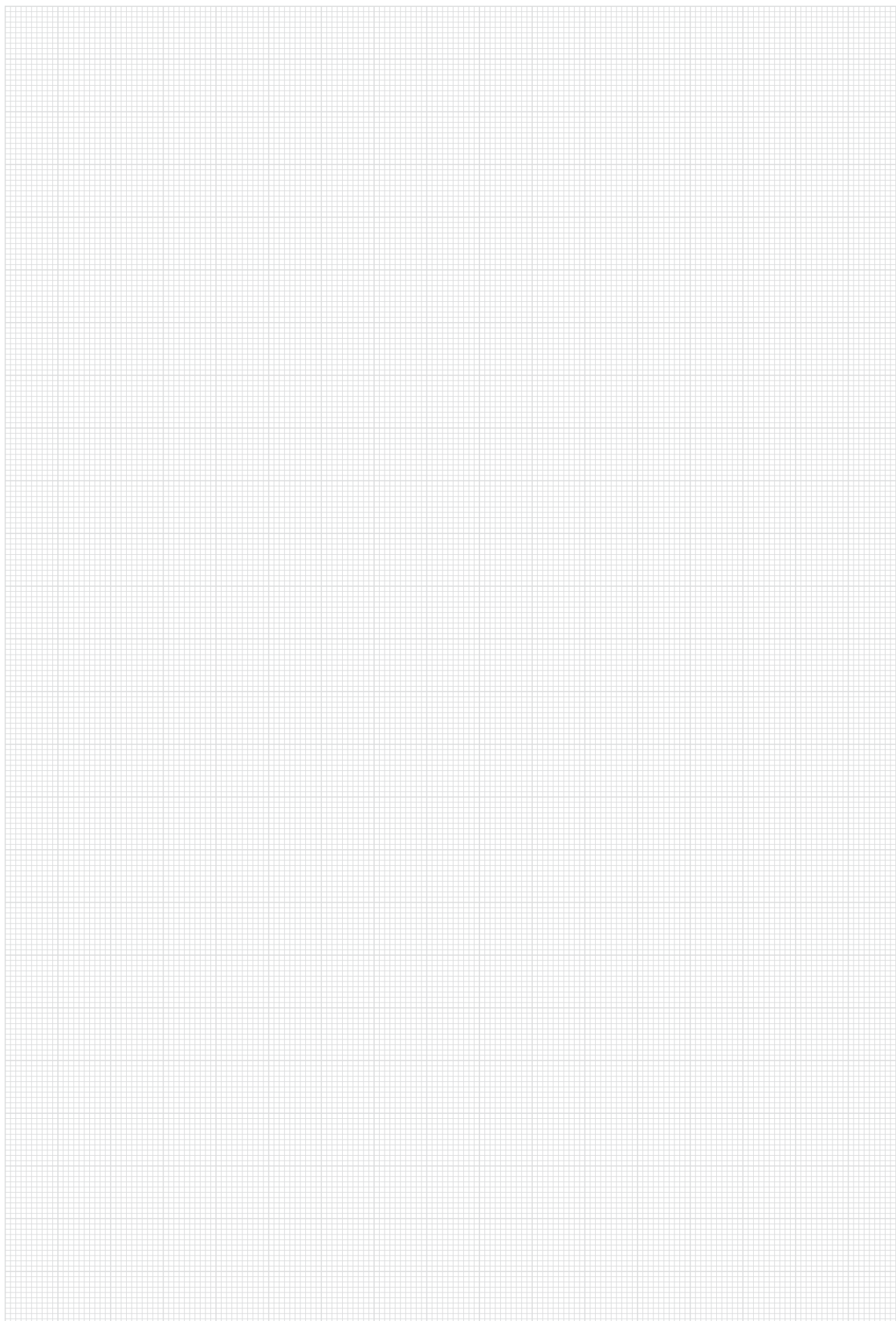
- (21) 1 support-block
- (22) 1 cover support bracket

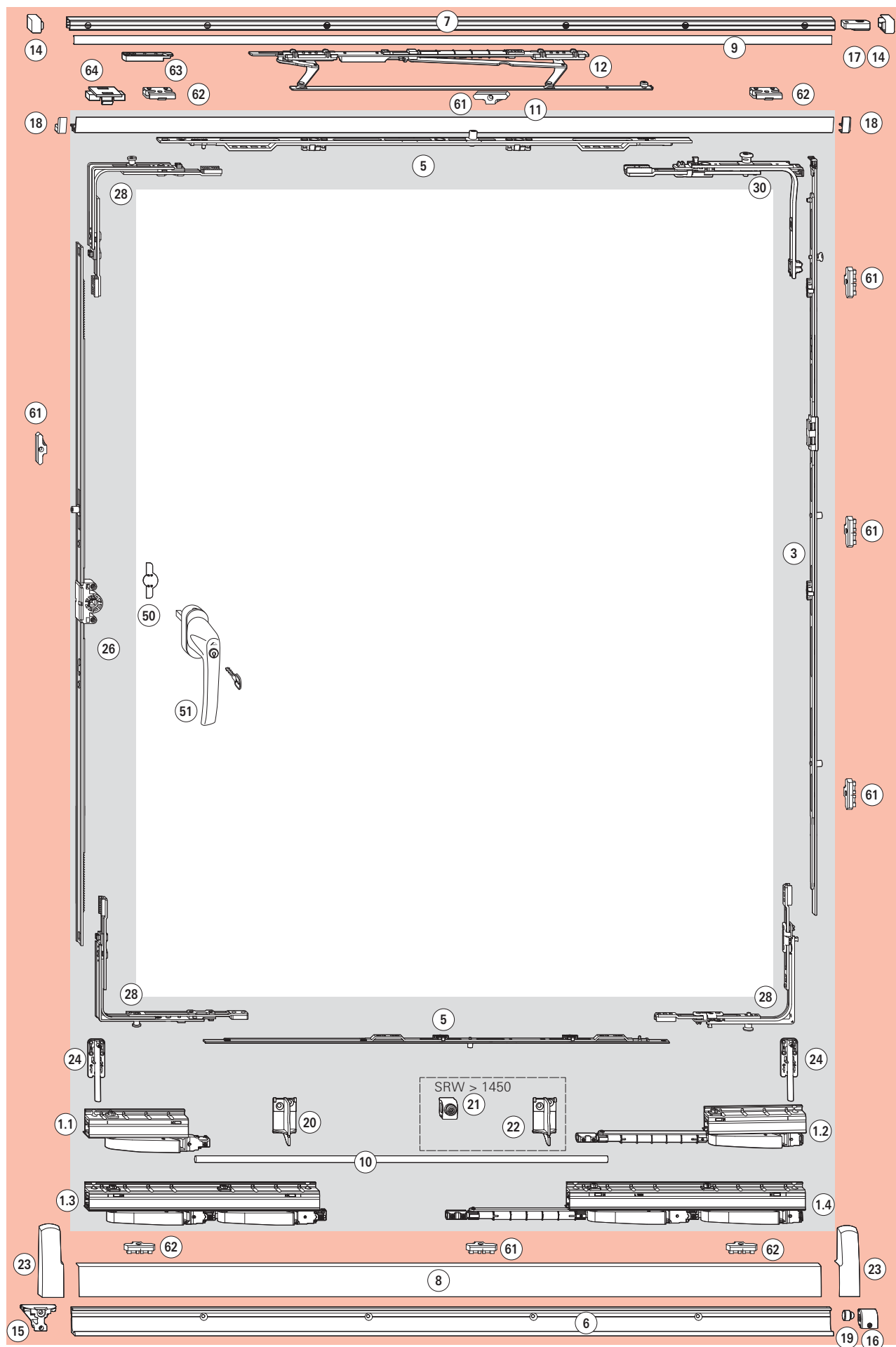
Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 E	259719
801 – 1200	980	1 E	259720
1201 – 1600	1380	2 E	259721
1601 – 2000	1780	2 E	259762
2001 – 2400	2180	4 E	259763
2401 – 2700	2180	4 E	259763
2 x espagnolette extension 200 (not dep.)		1 E	450821
Corner drive			
28 Corner drive RC1 N and RC2/RC2N		1 V	260272
30 Corner drive		1 V	260288
50 Roto Line Patio S handle with Roto logo		see page 58	
Roto Swing Patio S handle with Roto logo (not dep.)		see page 60	
61 Striker		see page 66	
64 90° travel restrictor		264603	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

- 12 1 scissors-slider
- 11 1 stay-connecting profile
- 18 2 end caps for stay-connecting profile
- 63 1 guide block, top





**Basic carton Patio PS NT for up to 160 kg sash weight**

Patio PS NT Basic carton	L 635675
	R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (2.4) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton	L 641215
	R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (2.4) 2 reinforcement brackets

Centre lock component**3 Centre lock component, vertical**

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1E	604190
801 – 1000	890	1E 1V	281244
1001 – 1200	1090	1E 1V	281245
1201 – 1400	1290	1E 1V	281246
1401 – 1600	1490	2E 1V	281247
1601 – 1800	1690	2E 1V	281248
1801 – 2000	1890	2E 1V	281249
2001 – 2200	2090	3E 1V	281250
2201 – 2400	2290	3E 1V	281251
2401 – 2600	2290	3E 1V	281251
Espagnolette extension	200 (not dep.)	1E	450821
2601 – 2700	2290	3E 1V	281251
Espagnolette extension	400 (not dep.)	1E	280346

5 Centre lock component, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 E	603444
1001 – 1200	990	1 E	603447
1201 – 1400	1190	1 E	603462
1401 – 1600	1440	1 E	603466
1601 – 1800	1440	1 E	603466
Espagnolette extension	200 (not dep.)	1 E	450821
1801 – 2000	1440	1 E	603466
Espagnolette extension	400 (not dep.)	1 E	280346

Track set**Track set for sash and frame incl. misc. small components pack****R 01.1 Silver**

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:**Track set:**

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

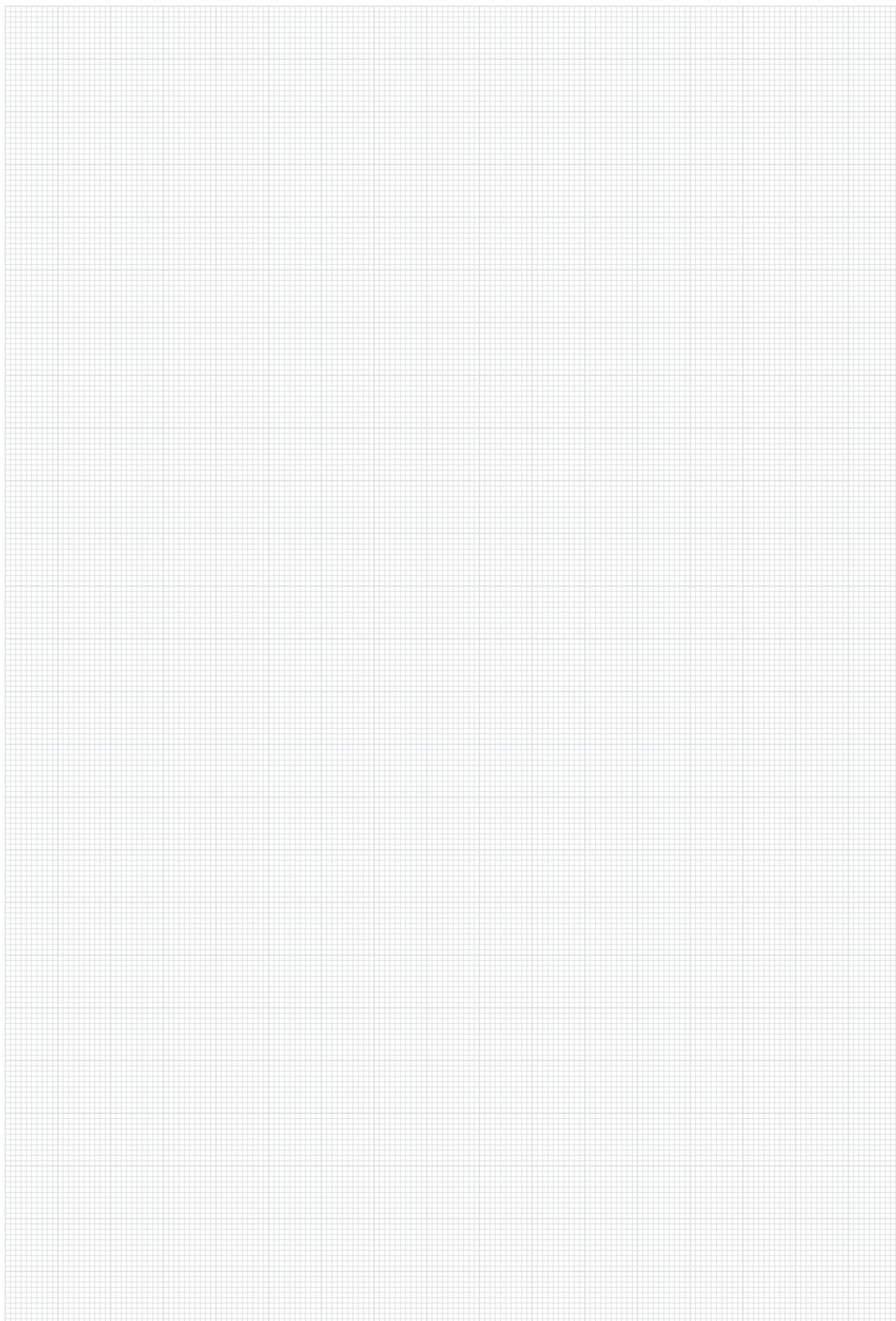
- (21) 1 support-block
- (22) 1 cover support bracket

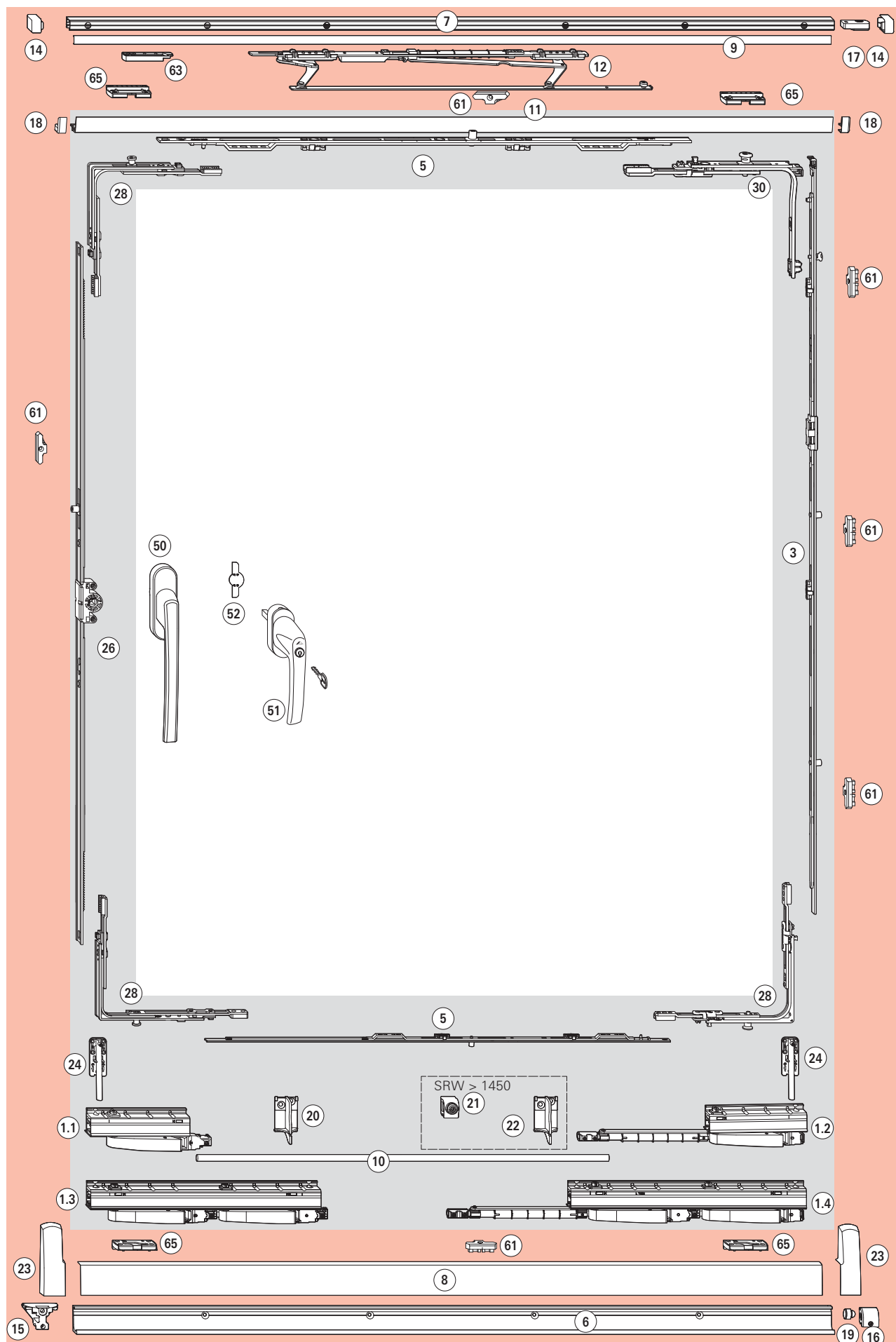
Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 E	259719
801 – 1200	980	1 E	259720
1201 – 1600	1380	2 E	259721
1601 – 2000	1780	2 E	259762
2001 – 2400	2180	4 E	259763
2401 – 2700	2180	4 E	259763
2 x espagnolette extension 200 (not dep.)		1 E	450821
Corner drive			
28 Corner drive RC1 N and RC2/RC2N		1 V	260272
30 Corner drive		1 V	260288
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
61 Striker		see page 66	
62 Security striker		see page 66	
64 90° travel restrictor		264603	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

- 12** 1 scissors-slider
- 11** 1 stay-connecting profile
- 18** 2 end caps for stay-connecting profile
- 63** 1 guide block, top







Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

(3) Centre lock component, vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1E	604190
801 – 1000	890	1E 1V	281244
1001 – 1200	1090	1E 1V	281245
1201 – 1400	1290	1E 1V	281246
1401 – 1600	1490	2E 1V	281247
1601 – 1800	1690	2E 1V	281248
1801 – 2000	1890	2E 1V	281249
2001 – 2200	2090	3E 1V	281250
2201 – 2400	2290	3E 1V	281251
2401 – 2600	2290	3E 1V	281251
Espagnolette extension	200 (not dep.)	1E	450821
2601 – 2700	2290	3E 1V	281251
Espagnolette extension	400 (not dep.)	1E	280346

(5) Centre lock component, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 E	603444
1001 – 1200	990	1 E	603447
1201 – 1400	1190	1 E	603462
1401 – 1600	1440	1 E	603466
1601 – 1800	1440	1 E	603466
Espagnolette extension	200 (not dep.)	1 E	450821
1801 – 2000	1440	1 E	603466
Espagnolette extension	400 (not dep.)	1 E	280346

Track set

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

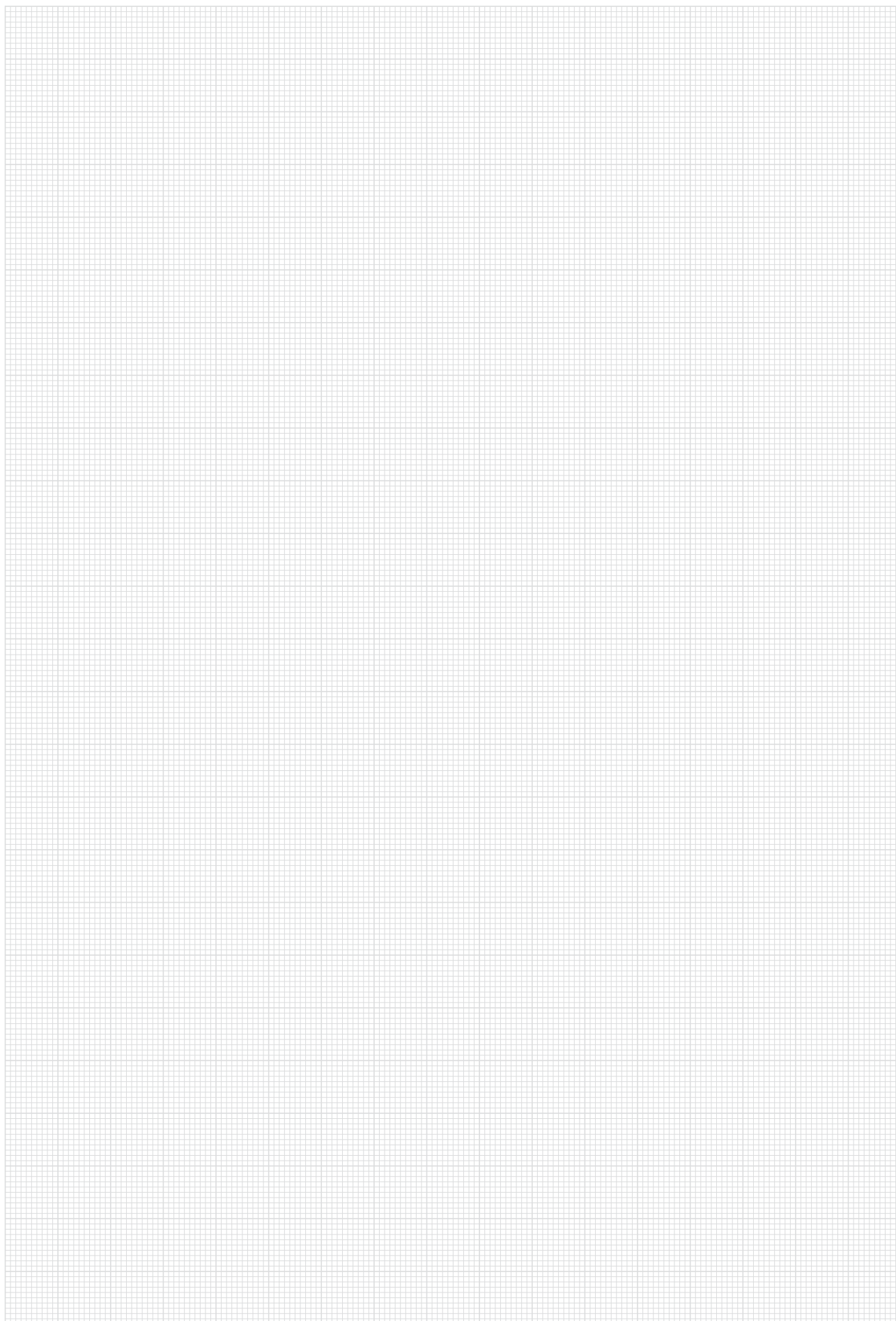
- (21) 1 support-block
- (22) 1 cover support bracket

Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 E	259719
801 – 1200	980	1 E	259720
1201 – 1600	1380	2 E	259721
1601 – 2000	1780	2 E	259762
2001 – 2400	2180	4 E	259763
2401 – 2700	2180	4 E	259763
2 x espagnolette extension 200 (not dep.)		1 E	450821
Corner drive			
28 Corner drive RC1 N and RC2/RC2N		1 V	260272
30 Corner drive		1 V	260288
50 Roto Line Patio S handle with Roto logo		see page 58	
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
61 Striker		see page 66	
65 Night ventilation striker, PVC		see page 66	
65a Night ventilation striker, timber (not dep.)		see page 66	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

- 12 1 scissors-slider
- 11 1 stay-connecting profile
- 18 2 end caps for stay-connecting profile
- 63 1 guide block, top







Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

(3) Centre lock component, security vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1 V	604191
801 – 1000	890	2 V	603396
1001 – 1200	1090	2 V	603397
1201 – 1400	1290	2 V	603398
1401 – 1600	1490	3 V	603399
1601 – 1800	1690	3 V	603400
1801 – 2000	1890	3 V	603409
2001 – 2200	2090	4 V	603410
2201 – 2400	2290	4 V	603411
2401 – 2600	2290	4 V	603411
Espagnolette extension	200 (not dep.)	1 V	337708
2601 – 2700	2290	4 V	603411
Espagnolette extension	400 (not dep.)	1 V	337710

(5) Centre lock component, security, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 V	603472
1001 – 1200	990	1 V	603473
1201 – 1400	1190	1 V	603474
1401 – 1600	1440	1 V	603475
1601 – 1800	1440	1 V	603475
Espagnolette extension	200 (not dep.)	1 V	337708
1801 – 2000	1440	1 V	603475
Espagnolette extension	400 (not dep.)	1 V	337710

Track set

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

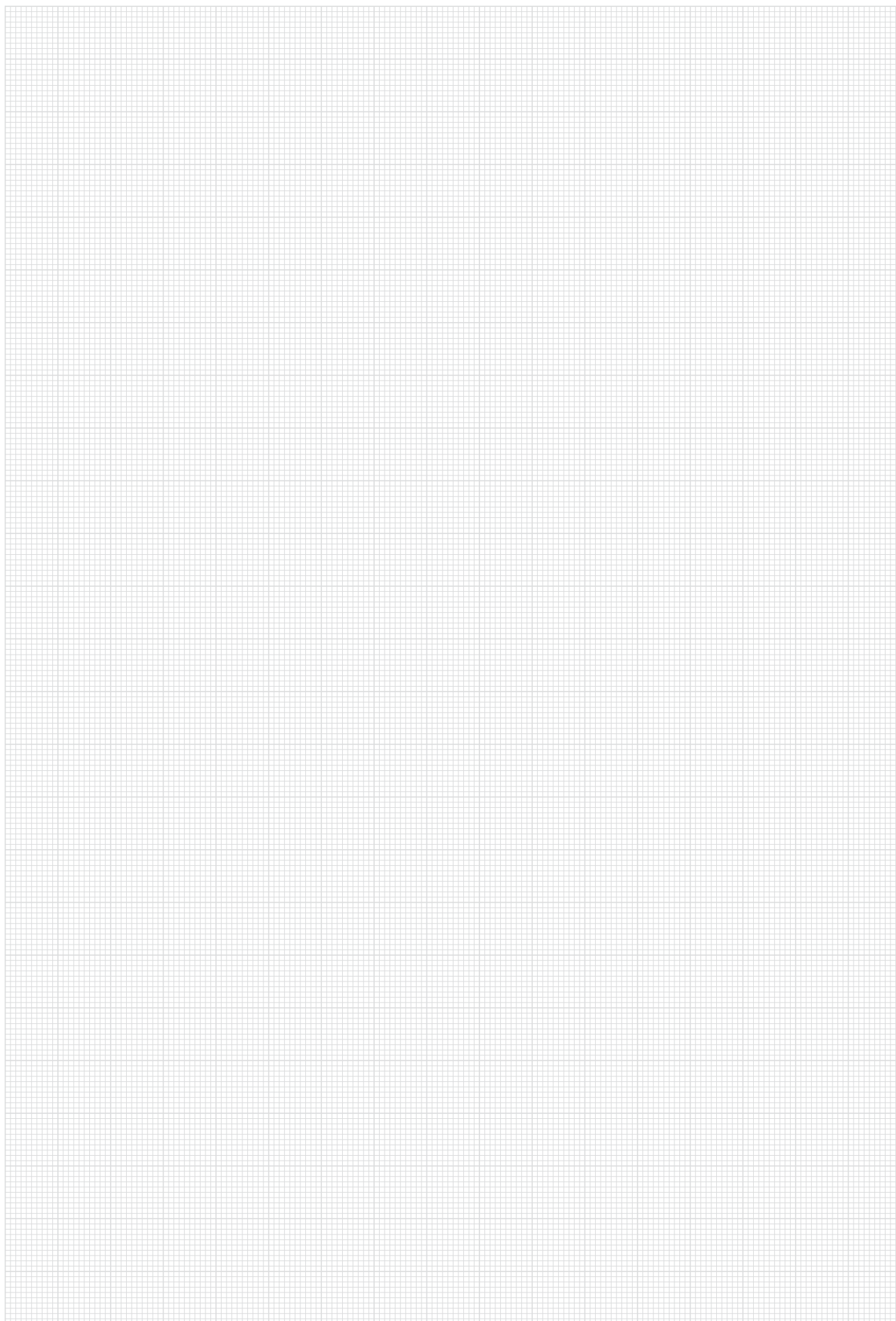
- (21) 1 support-block
- (22) 1 cover support bracket

Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 V	355743
801 – 1200	980	1 V	355744
1201 – 1600	1380	2 V	355745
1601 – 2000	1780	2 V	355746
2001 – 2400	2180	4 V	355747
2401 – 2700	2180	4 V	355747
2 x espagnolette extension 200 (not dep.)			1 V 337708
Corner drive			
28 Corner drive RC1 N and RC2/RC2N		1 V	260272
30 Corner drive		1 V	260288
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
62 Security striker		see page 66	
64 90° travel restrictor		264603	
66 Run-up block – faceplate mounted		281289	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

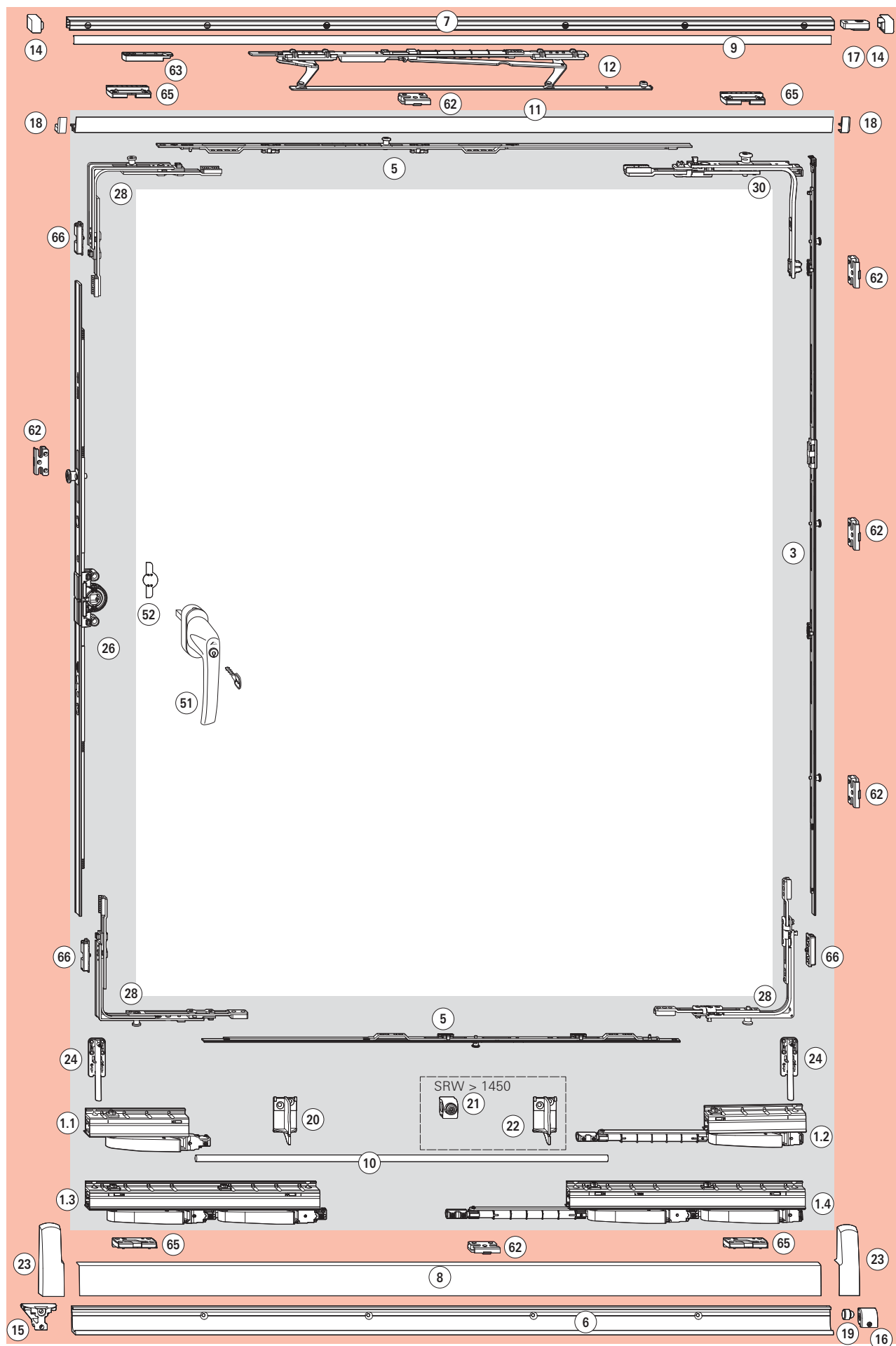
- 12 1 scissors-slider
- 11 1 stay-connecting profile
- 18 2 end caps for stay-connecting profile
- 63 1 guide block, top



Hardware overview

RC2/RC2 N – With night ventilation, RC2/RC2 N in closed position only

Hardware overview





Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

(3) Centre lock component, security vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1 V	604191
801 – 1000	890	2 V	603396
1001 – 1200	1090	2 V	603397
1201 – 1400	1290	2 V	603398
1401 – 1600	1490	3 V	603399
1601 – 1800	1690	3 V	603400
1801 – 2000	1890	3 V	603409
2001 – 2200	2090	4 V	603410
2201 – 2400	2290	4 V	603411
2401 – 2600	2290	4 V	603411
Espagnolette extension	200 (not dep.)	1 V	337708
2601 – 2700	2290	4 V	603411
Espagnolette extension	400 (not dep.)	1 V	337710

(5) Centre lock component, security, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 V	603472
1001 – 1200	990	1 V	603473
1201 – 1400	1190	1 V	603474
1401 – 1600	1440	1 V	603475
1601 – 1800	1440	1 V	603475
Espagnolette extension	200 (not dep.)	1 V	337708
1801 – 2000	1440	1 V	603475
Espagnolette extension	400 (not dep.)	1 V	337710

Track set

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

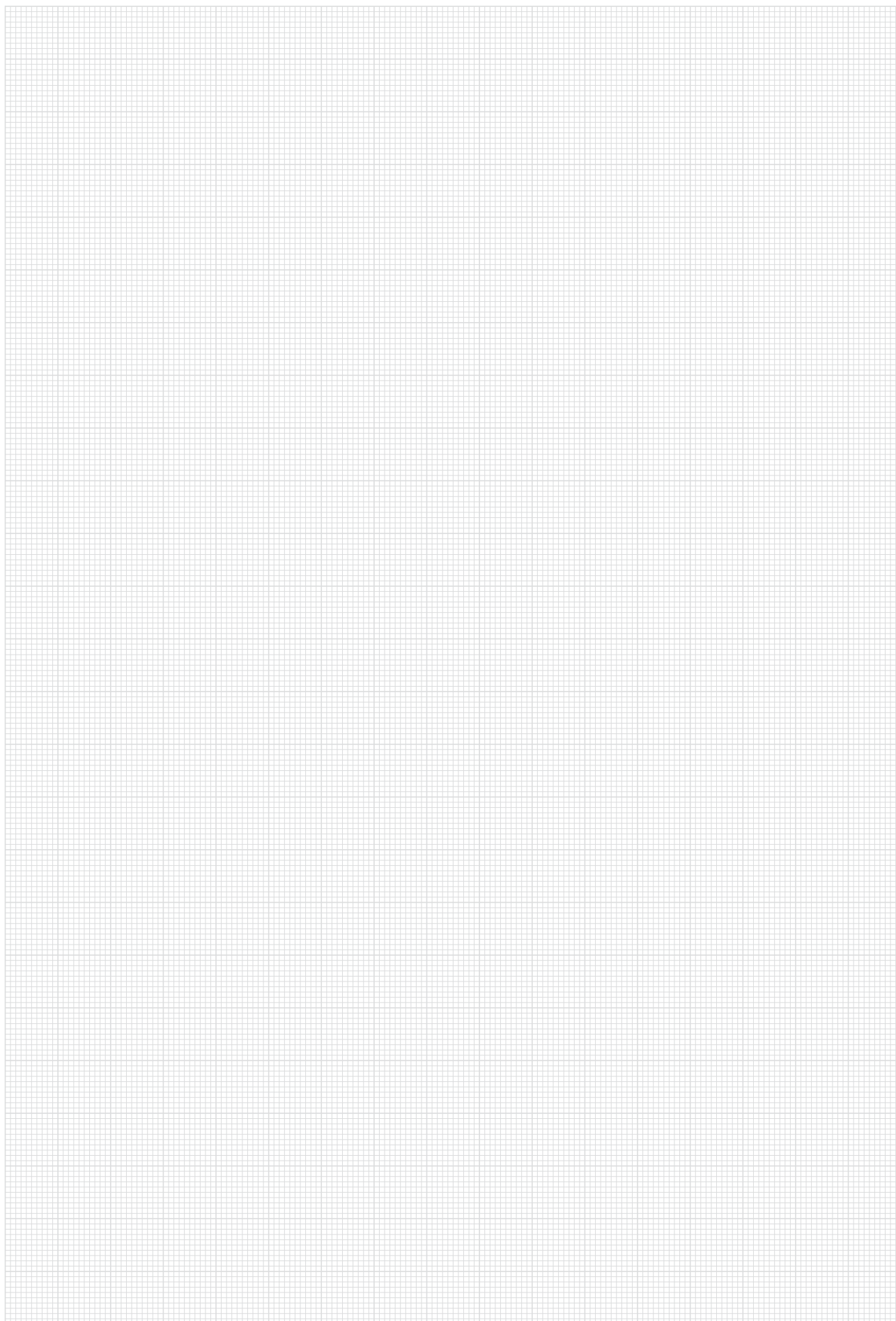
- (21) 1 support-block
- (22) 1 cover support bracket

Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 V	355743
801 – 1200	980	1 V	355744
1201 – 1600	1380	2 V	355745
1601 – 2000	1780	2 V	355746
2001 – 2400	2180	4 V	355747
2401 – 2700	2180	4 V	355747
2 x espagnolette extension 200 (not dep.)		1 V	337708
Corner drive			
28 Corner drive RC1 N and RC2/RC2 N		1 V	260272
30 Corner drive		1 V	260288
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
62 Security striker		see page 66	
65 Night ventilation striker, PVC		see page 66	
65a Night ventilation striker, timber (not dep.)		see page 66	
66 Run-up block – faceplate mounted		281289	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

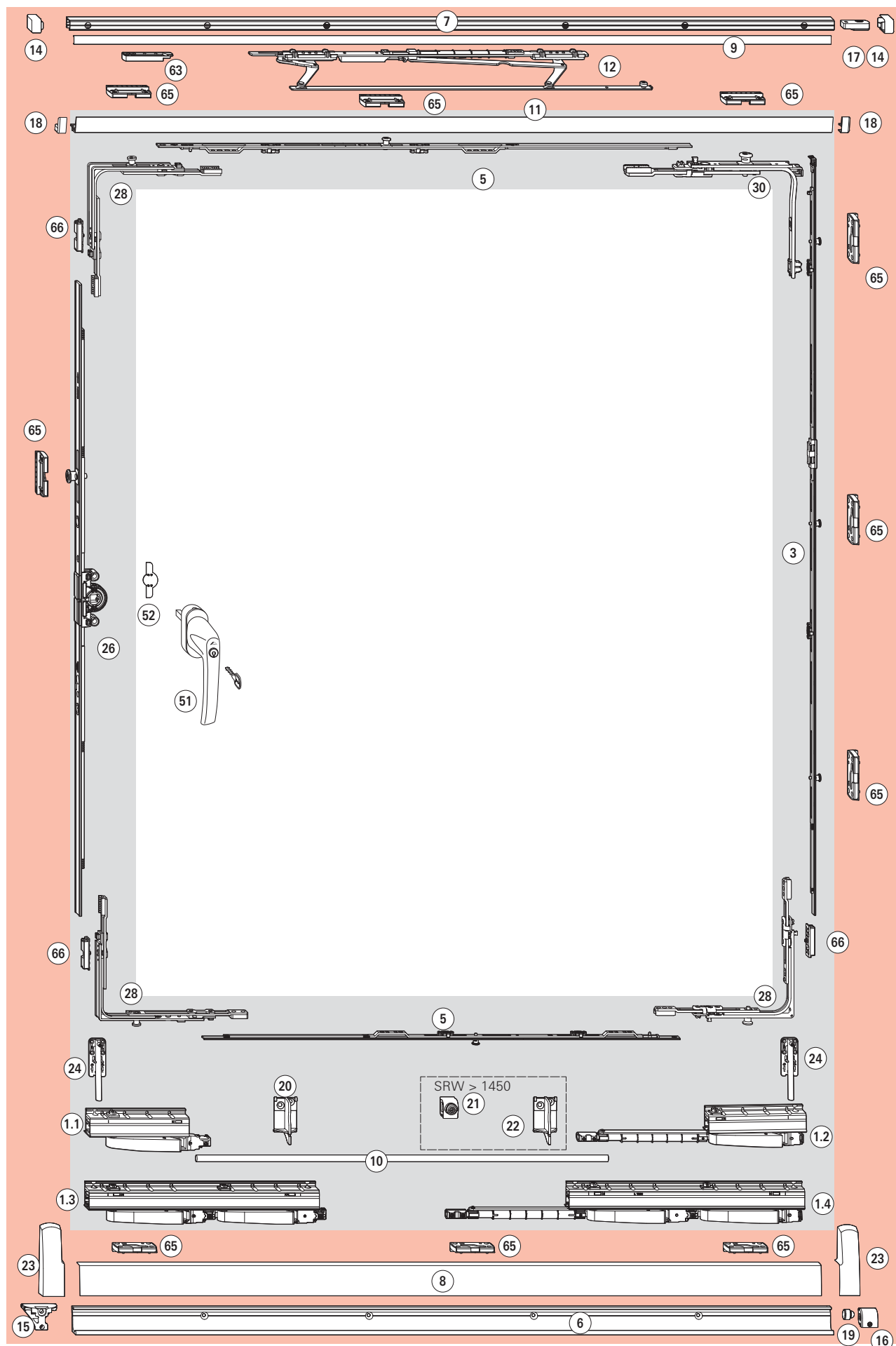
- 12 1 scissors-slider
- 11 1 stay-connecting profile
- 18 2 end caps for stay-connecting profile
- 63 1 guide block, top



Hardware overview

RC2/RC2N – With night ventilation, RC2/RC2N in closed and night ventilation position

Hardware overview





Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie (not dep.)
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie (not dep.)
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

(3) Centre lock component, security vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1 V	604191
801 – 1000	890	2 V	603396
1001 – 1200	1090	2 V	603397
1201 – 1400	1290	2 V	603398
1401 – 1600	1490	3 V	603399
1601 – 1800	1690	3 V	603400
1801 – 2000	1890	3 V	603409
2001 – 2200	2090	4 V	603410
2201 – 2400	2290	4 V	603411
2401 – 2600	2290	4 V	603411
Espagnolette extension	200 (not dep.)	1 V	337708
2601 – 2700	2290	4 V	603411
Espagnolette extension	400 (not dep.)	1 V	337710

(5) Centre lock component, security, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 V	603472
1001 – 1200	990	1 V	603473
1201 – 1400	1190	1 V	603474
1401 – 1600	1440	1 V	603475
1601 – 1800	1440	1 V	603475
Espagnolette extension	200 (not dep.)	1 V	337708
1801 – 2000	1440	1 V	603475
Espagnolette extension	400 (not dep.)	1 V	337710

Track set

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

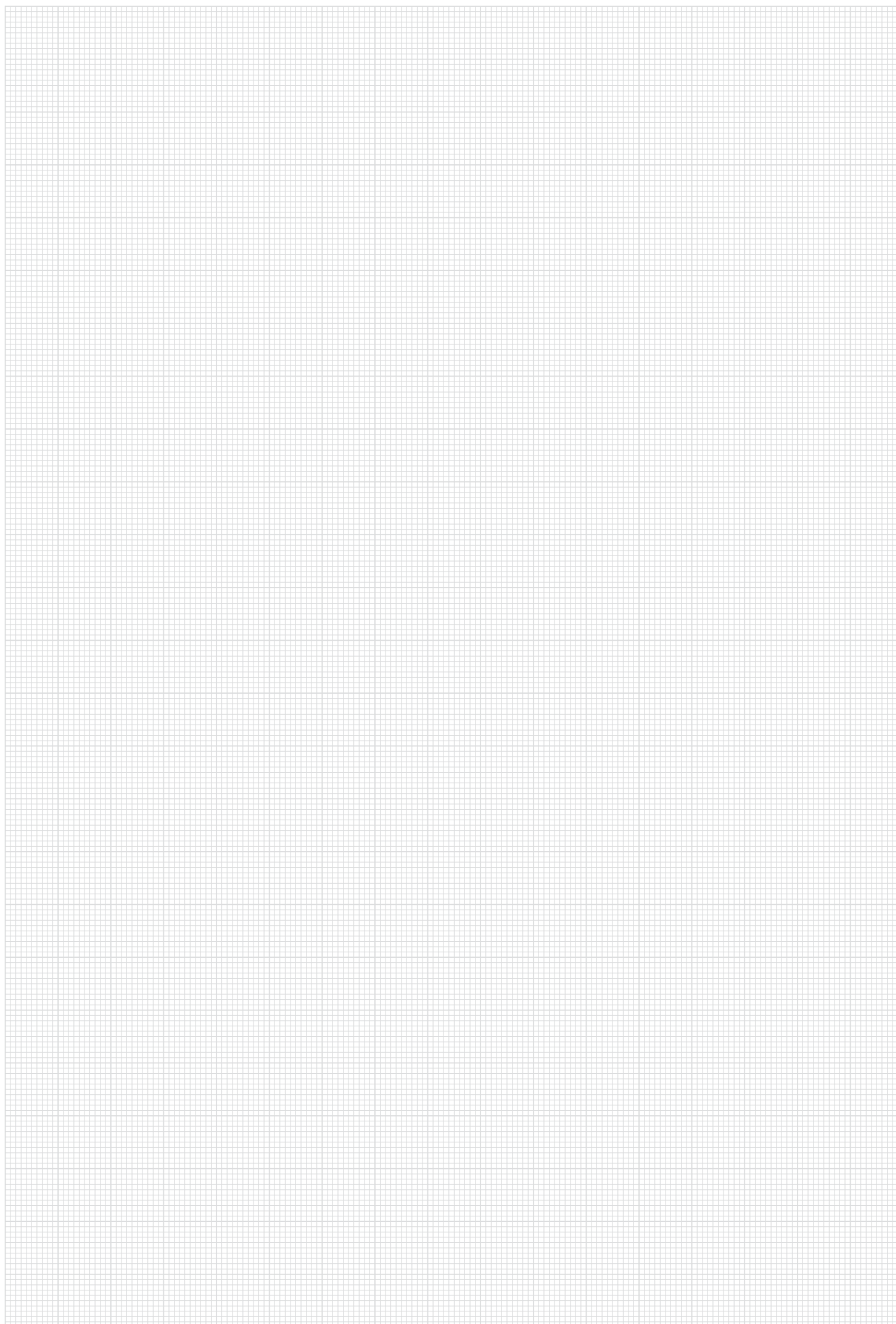
- (21) 1 support-block
- (22) 1 cover support bracket

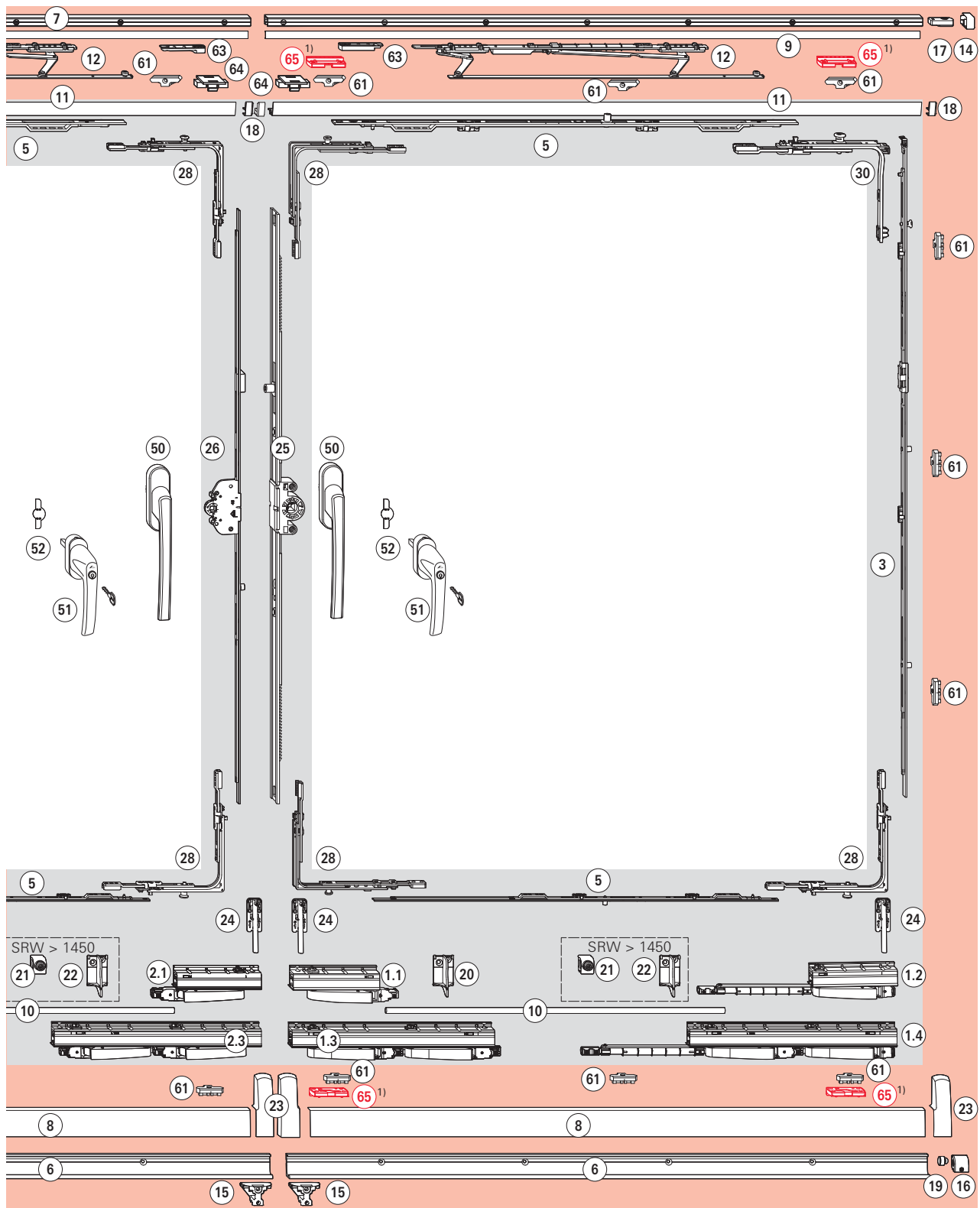
Espagnolette			
26 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 V	355743
801 – 1200	980	1 V	355744
1201 – 1600	1380	2 V	355745
1601 – 2000	1780	2 V	355746
2001 – 2400	2180	4 V	355747
2401 – 2700	2180	4 V	355747
2 x espagnolette extension 200 (not dep.)		1 V	337708
Corner drive			
28 Corner drive RC1 N and RC2/RC2 N		1 V	260272
30 Corner drive		1 V	260288
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
65 Night ventilation striker, PVC		see page 66	
65a Night ventilation striker, timber (not dep.)		see page 66	
66 Run-up block – faceplate mounted		281289	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

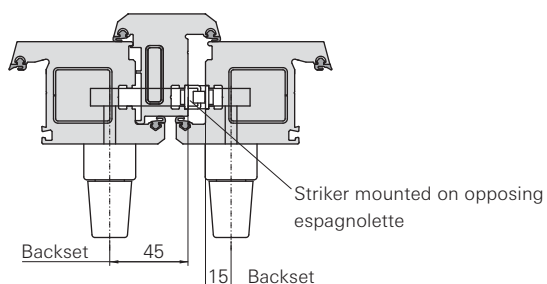
Content:

- 12** 1 scissors-slider
- 11** 1 stay-connecting profile
- 18** 2 end caps for stay-connecting profile
- 63** 1 guide block, top





1) RC1 N with night ventilation is depicted and marked in red.





Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

3 Centre lock component, vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1E	604190
801 – 1000	890	1E 1V	281244
1001 – 1200	1090	1E 1V	281245
1201 – 1400	1290	1E 1V	281246
1401 – 1600	1490	2E 1V	281247
1601 – 1800	1690	2E 1V	281248
1801 – 2000	1890	2E 1V	281249
2001 – 2200	2090	3E 1V	281250
2201 – 2400	2290	3E 1V	281251
2401 – 2600	2290	3E 1V	281251
Espagnolette extension	200 (not dep.)	1E	450821
2601 – 2700	2290	3E 1V	281251
Espagnolette extension	400 (not dep.)	1E	280346

5 Centre lock component, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 E	603444
1001 – 1200	990	1 E	603447
1201 – 1400	1190	1 E	603462
1401 – 1600	1440	1 E	603466
1601 – 1800	1440	1 E	603466
Espagnolette extension	200 (not dep.)	1 E	450821
1801 – 2000	1440	1 E	603466
Espagnolette extension	400 (not dep.)	1 E	280346

Track set, 1 piece per sash

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

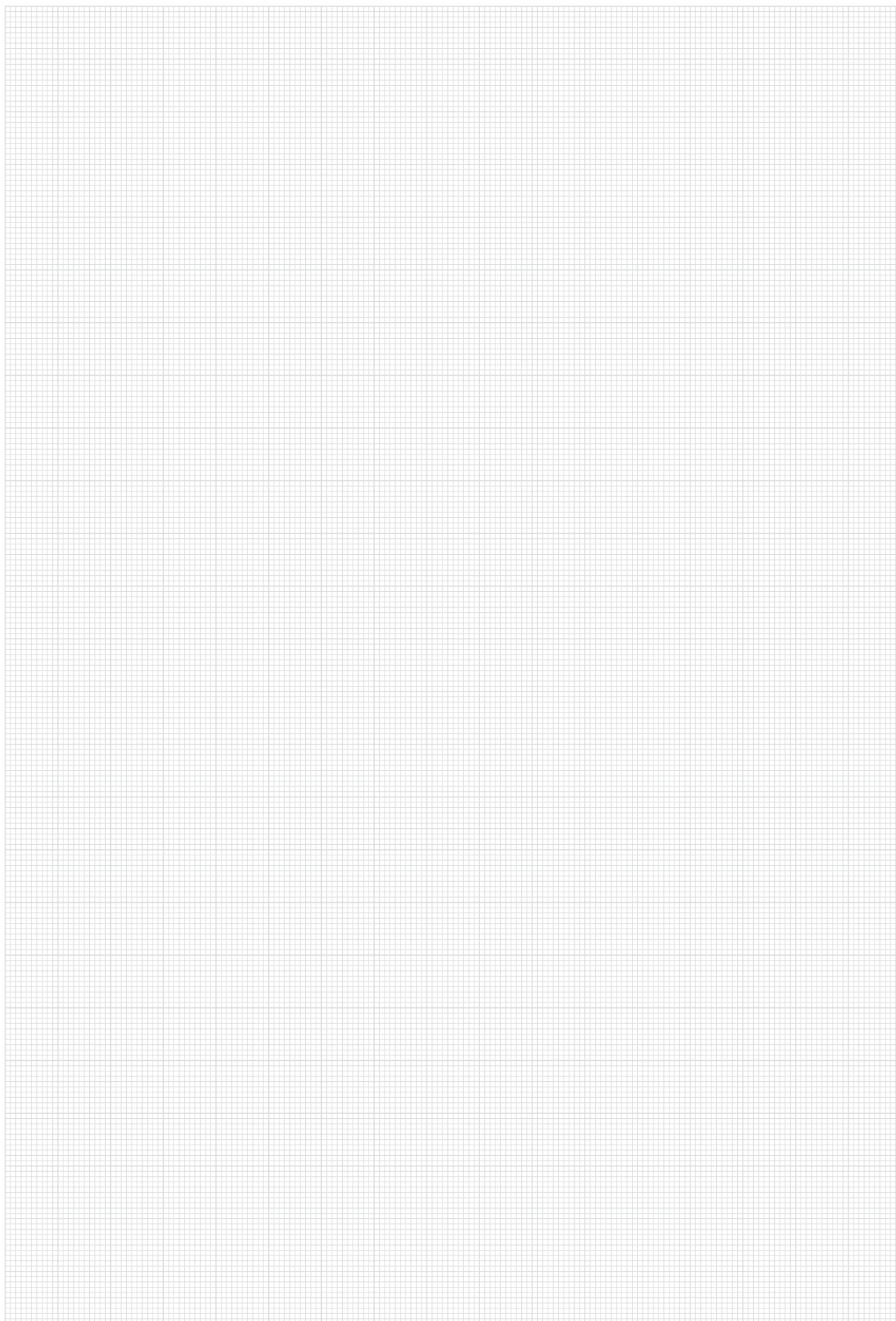
- (21) 1 support-block
- (22) 1 cover support bracket

Espagnolette			
25 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 E	259719
801 – 1200	980	1 E	259720
1201 – 1600	1380	2 E	259721
1601 – 2000	1780	2 E	259762
2001 – 2400	2180	4 E	259763
2401 – 2700	2180	4 E	259763
2 x espagnolette extension 200 (not dep.)		1 E	450821
26 T&T espagnolette, centred/variable handle height 45 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 St.	259796
801 – 1200	980	1 St.	259798
1201 – 1600	1380	2 St.	259800
1601 – 2000	1780	2 St.	259802
2001 – 2400	2180	4 St.	259804
2401 – 2700	2180	4 St.	259804
1 x espagnolette extension 200, top (not dep.)		1 St.	450822
1 x espagnolette extension 200, bottom (not dep.)		1 St.	280342
T&T espagnolette, centred/variable handle height 50 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 St.	259807
801 – 1200	980	1 St.	259809
1201 – 1600	1380	2 St.	259811
1601 – 2000	1780	2 St.	259813
2001 – 2400	2180	4 St.	259815
2401 – 2700	2180	4 St.	259815
1 x espagnolette extension 200, top (not dep.)		1 St.	450822
1 x espagnolette extension 200, bottom (not dep.)		1 St.	280342
Corner drive			
28 Corner drive RC1 N and RC2/RC2 N		1 V	260272
30 Corner drive		1 V	260288
50 Roto Line Patio S handle with Roto logo		see page 58	
Roto Swing Patio S handle with Roto logo (not dep.)		see page 60	
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
61 Striker		see page 66	
64 90° travel restrictor		264603	
65 Night ventilation striker, PVC		see page 66	
65a Night ventilation striker, timber (not dep.)		see page 66	

Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

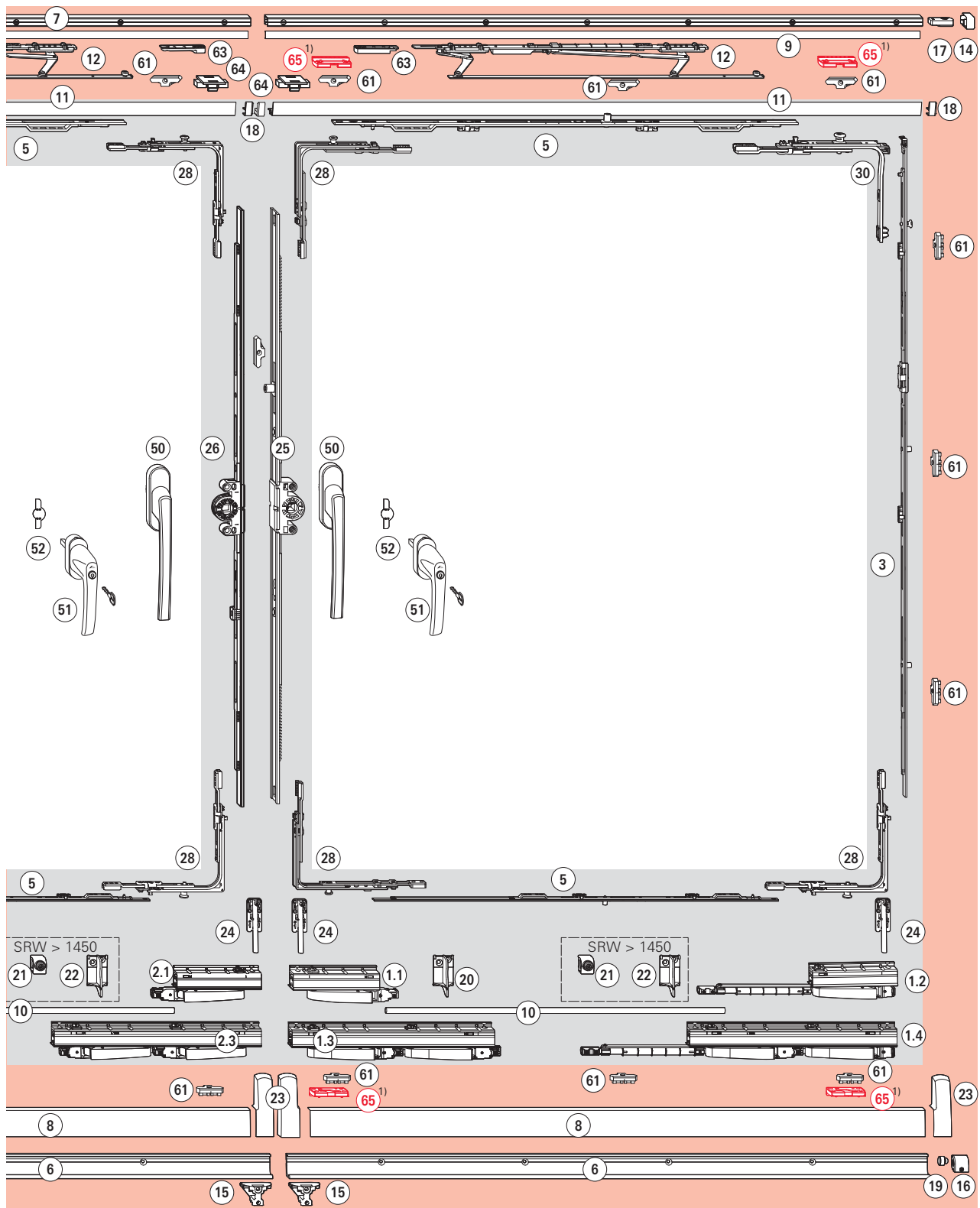
- 12** 1 scissors-slider
- 11** 1 stay-connecting profile
- 18** 2 end caps for stay-connecting profile
- 63** 1 guide block, top



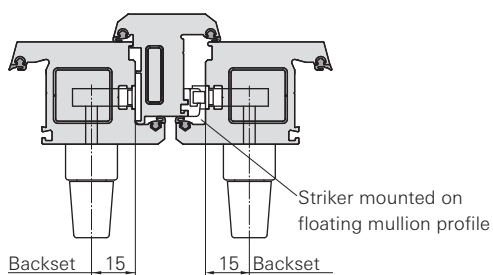
Hardware overview

Concealed hardware groove 2-sashed – Basic security without night ventilation – RC1 N with night ventilation

Hardware overview



1) RC1N with night ventilation is depicted and marked in red.





Basic carton Patio PS NT for up to 160 kg sash weight

Patio PS NT Basic carton L 635675

Content:

- (1.1) 1 leading bogie
- (1.2) 1 bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 635679

Content:

- (2.1) 1 leading bogie
- (2.2) 1 bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Basic carton Patio PS NT from 160 kg sash weight

Patio PS NT Basic carton L 641215

Content:

- (1.3) 1 leading heavy-duty bogie
- (1.4) 1 heavy-duty bogie with spring damper unit
- (24) 2 reinforcement brackets

Patio PS NT Basic carton R 641216

Content:

- (2.3) 1 leading heavy-duty bogie
- (2.4) 1 heavy-duty bogie with spring damper unit (not dep.)
- (24) 2 reinforcement brackets

Centre lock component

(3) Centre lock component, vertical

SRH / mm	Length / mm	Cam	Material no.
650 – 800	690	1E	604190
801 – 1000	890	1E 1V	281244
1001 – 1200	1090	1E 1V	281245
1201 – 1400	1290	1E 1V	281246
1401 – 1600	1490	2E 1V	281247
1601 – 1800	1690	2E 1V	281248
1801 – 2000	1890	2E 1V	281249
2001 – 2200	2090	3E 1V	281250
2201 – 2400	2290	3E 1V	281251
2401 – 2600	2290	3E 1V	281251
Espagnolette extension	200 (not dep.)	1E	450821
2601 – 2700	2290	3E 1V	281251
Espagnolette extension	400 (not dep.)	1E	280346

(5) Centre lock component, horizontal top/bottom (2 pieces per sash)

SRW / mm	Length / mm	Cam	Material no.
750 – 800	590	–	603442
801 – 1000	790	1 E	603444
1001 – 1200	990	1 E	603447
1201 – 1400	1190	1 E	603462
1401 – 1600	1440	1 E	603466
1601 – 1800	1440	1 E	603466
Espagnolette extension 200(not dep.)		1 E	450821
1801 – 2000	1440	1 E	603466
Espagnolette extension 400 (not dep.)		1 E	280346

Track set, 1 piece per sash

Track set for sash and frame incl. misc. small components pack

R 01.1 Silver

SRW / mm	Frame external width (FEW) / mm	Material no.
750 – 900	1930	562652
901 – 1050	2230	562657
1051 – 1250	2630	562662
1251 – 1450	3030	562667
1451 – 1650	3430	562672
1651 – 2000	4130	562677

R 05.3 Medium bronze

750 – 900	1930	562653
901 – 1050	2230	562658
1051 – 1250	2630	562663
1251 – 1450	3030	562668
1451 – 1650	3430	562673
1651 – 2000	4130	562678

R 05.4 Dark bronze

750 – 900	1930	562654
901 – 1050	2230	562659
1051 – 1250	2630	562664
1251 – 1450	3030	562669
1451 – 1650	3430	562674
1651 – 2000	4130	562679

R 07.2 Traffic white

750 – 900	1930	562655
901 – 1050	2230	562660
1051 – 1250	2630	562665
1251 – 1450	3030	562670
1451 – 1650	3430	562675
1651 – 2000	4130	562680

R 07.3 Cream white

750 – 900	1930	562656
901 – 1050	2230	562661
1051 – 1250	2630	562666
1251 – 1450	3030	562671
1451 – 1650	3430	562676
1651 – 2000	4130	562681

Content:

Track set:

- (6) 1 roller track
- (7) 1 guide track
- (8) 1 cover profile
- (9) 1 PVC cover profile
- (10) 1 connecting rod

Misc. small components pack:

- (25) 2 cover caps scissor stay (not required)

Misc. small components pack:

- (23) 2 cover caps reinforcement bracket

Misc. small components pack:

- (14) 2 end caps for guide track
- (15) 1 guide block
- (16) 1 buffer stop, bottom
- (17) 1 buffer stop, top
- (19) 1 rubber buffer stop
- (20) 1 cover support bracket

From SRW 1450 mm – misc. small components pack:

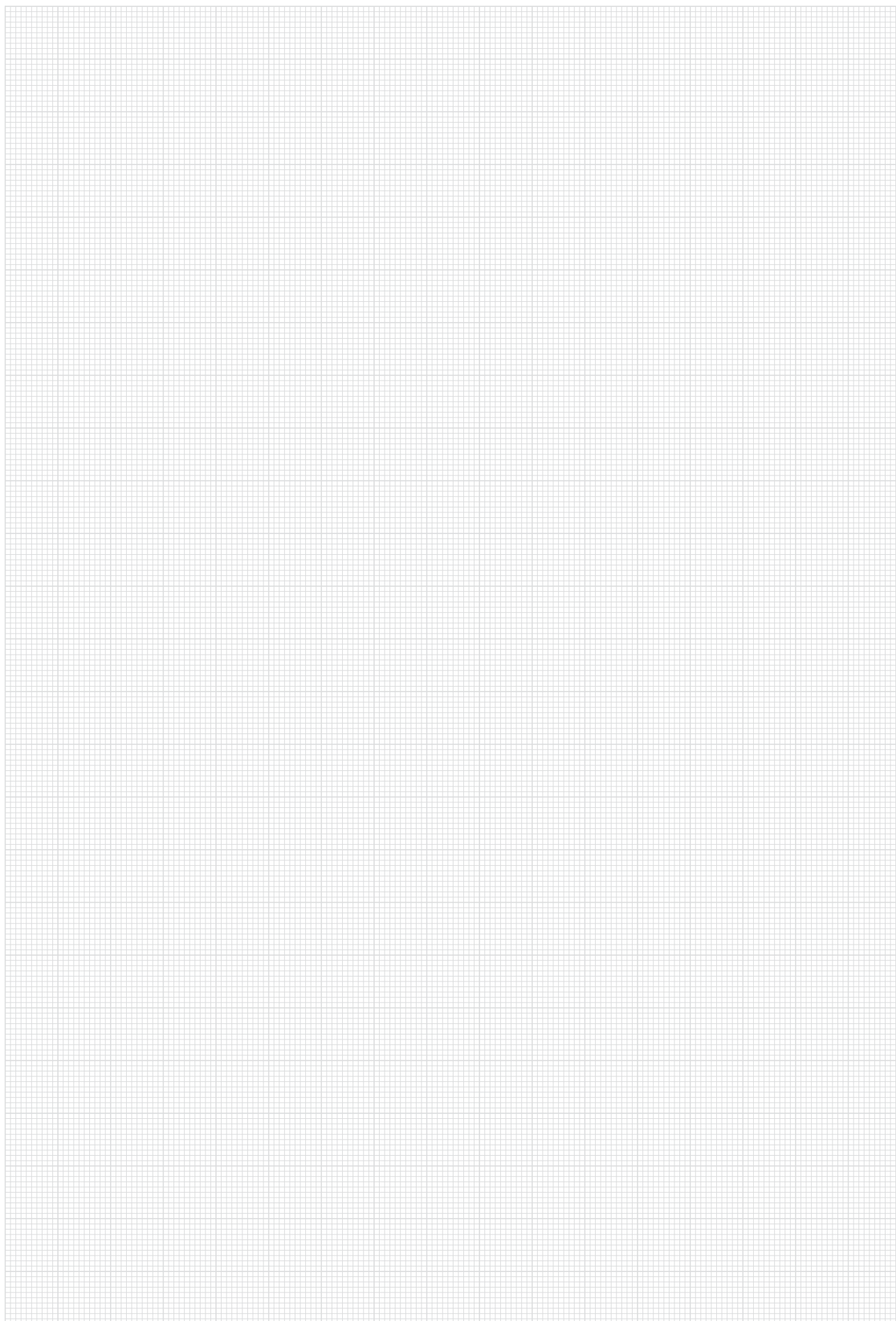
- (21) 1 support-block
- (22) 1 cover support bracket

Espagnolette			
25 T&T espagnolette, centred/variable handle height 15 mm backset			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 E	259719
801 – 1200	980	1 E	259720
1201 – 1600	1380	2 E	259721
1601 – 2000	1780	2 E	259762
2001 – 2400	2180	4 E	259763
2401 – 2700	2180	4 E	259763
2 x espagnolette extension 200 (not dep.)		1 E	450821
26 T&T espagnolette, centred/variable handle height, 15 mm backset, without locking cam			
SRH / mm	Length / mm	Cam	Material no.
650 – 800	580	1 St.	289862
801 – 1200	980	1 St.	289863
1201 – 1600	1380	2 St.	289864
1601 – 2000	1780	2 St.	289865
2001 – 2400	2180	4 St.	289866
2401 – 2700	2180	4 St.	289866
2 x espagnolette extension 200 (not dep.)		1 St.	450821
Corner drive			
28 Corner drive RC1 N and RC2/RC2 N		1 V	260272
30 Corner drive		1 V	260288
50 Roto Line Patio S handle with Roto logo		see page 58	
Roto Swing Patio S handle with Roto logo (not dep.)		see page 60	
51 Roto Line handle with Roto logo, lockable, 100 Nm		see page 59	
Roto Swing Patio S handle, lockable 100 Nm, with Roto logo (not dep.)		see page 61	
52 Drilling protection		264601	
61 Striker		see page 66	
64 90° travel restrictor		264603	
65 Night ventilation striker, PVC		see page 66	
65a Night ventilation striker, timber (not dep.)		see page 66	

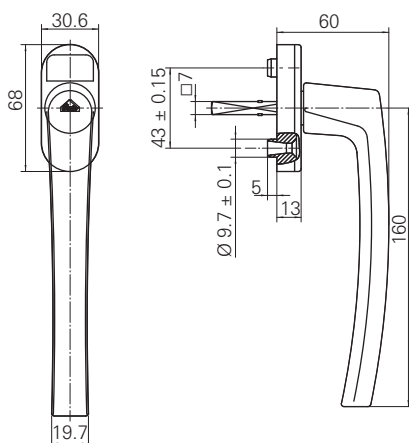
Set scissors-slider and stay-connecting profile		
R 01.1 Silver		
SRW / mm	Version	Material no.
750 – 900	Left	635682
901 – 1250	Left	635683
1251 – 1650	Left	635684
1651 – 2000	Left	641188
R 05.3 Medium bronze		
750 – 900	Left	636044
901 – 1250	Left	636045
1251 – 1450	Left	636046
1651 – 2000	Left	641191
R 05.4 Dark bronze		
750 – 900	Left	636038
901 – 1250	Left	636039
1251 – 1650	Left	636040
1651 – 2000	Left	641190
R 07.2 Traffic white		
750 – 900	Left	635892
901 – 1250	Left	635893
1251 – 1650	Left	635894
1651 – 2000	Left	641189
R 07.3 Cream white		
750 – 900	Left	636050
901 – 1250	Left	636051
1251 – 1650	Left	636052
1651 – 2000	Left	641209
R 01.1 Silver		
750 – 900	Right	635685
901 – 1250	Right	635686
1251 – 1650	Right	635687
1651 – 2000	Right	641210
R 05.3 Medium bronze		
750 – 900	Right	636047
901 – 1250	Right	636048
1251 – 1450	Right	636049
1651 – 2000	Right	641213
R 05.4 Dark bronze		
750 – 900	Right	636041
901 – 1250	Right	636042
1251 – 1650	Right	636043
1651 – 2000	Right	641212
R 07.2 Traffic white		
750 – 900	Right	636035
901 – 1250	Right	636036
1251 – 1650	Right	636037
1651 – 2000	Right	641211
R 07.3 Cream white		
750 – 900	Right	636053
901 – 1250	Right	636054
1251 – 1650	Right	636055
1651 – 2000	Right	641214

Content:

- 12 1 scissors-slider
- 11 1 stay-connecting profile
- 18 2 end caps for stay-connecting profile
- 63 1 guide block, top



Roto Line Patio S



Parts list

Colour							Nº
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Spindle length 35

Silver	R01.1		-	35		1	211598
Nickel silver	R01.2		-	35		1	211599
Titanium matt	R01.3		-	35		1	288728
Medium bronze	R05.3		-	35		1	211597
Dark bronze	R05.4		-	35		1	288727
Traffic white	R07.2		-	35		1	211596

Spindle length 43

Silver	R01.1		-	43		1	601161
Nickel silver	R01.2		-	43		1	601162
Titanium matt	R01.3		-	43		1	601163
Medium bronze	R05.3		-	43		1	601164
Dark bronze	R05.4		-	43		1	601165
Traffic white	R07.2		-	43		1	601166

Product description

- Basic handle without additional functions
- 90-degree lock-in position
- 10-year functional warranty

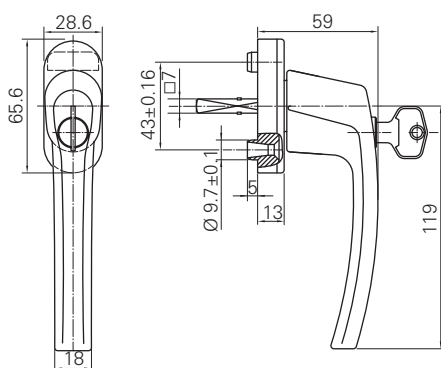


Scope of delivery

- 1 window handle



Roto Line, lockable – 100 Nm



Parts list

Colour							Nº
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Spindle length 35

Silver	R01.1		-	M5X45	35		20	333973
Nickel silver	R01.2		-	M5X45	35		20	333974
Titanium	R01.3		-	M5X45	35		20	333975
Medium bronze	R05.3		-	M5X45	35		20	333978
Traffic white	R07.2		-	M5X45	35		20	333981

Spindle length 40

Silver	R01.1			-	40		20	490653
Traffic white	R07.2			-	40		20	490656
Cream white	R07.3			-	40		20	490657

Spindle length 43

Silver	R01.1		-	M5X50	43		20	594347
Nickel silver	R01.2		-	M5X50	43		20	594348
Titanium matt	R01.3		-	M5X50	43		20	594349
Medium bronze	R05.3		-	M5X50	43		20	594352
Traffic white	R07.2		-	M5X50	43		20	594354

Product description

- lockable handle with tested torque of 100 Nm
- Locking: Push cylinder with turn-key
- simple and quick locking by pushing down the cylinder
- burglar-inhibiting retrofit product (DIN 18104-1)
- meets the requirements of DIN EN 1627-1630, RC1 – RC6
- 90-degree lock-in position
- 10-year functional warranty



Scope of delivery

- 1 window handle
- 1 key
- Fixing screws, see table

Note

For the use with aluminium profiles, a flush-encased gearbox is required.

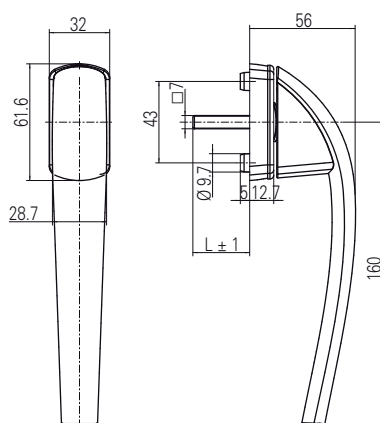
Roto replacement key



Parts list

Description				Nº
Replacement key 1G1 "big" L=44 mm, not suitable for Roto Swing TF and Roto Swing A40			1	257830
Replacement key 1G1 "small" L=37 mm, suitable for all Roto Swing, Roto Samba and Roto Line window handles incl. Roto Swing TF and Roto Swing A40			1	639099

Roto Swing Patio S



Parts list

Colour



Spindle length 35

Silver	R01.1		-	35		15	619714
Medium bronze	R05.3		-	35		15	619725
Traffic white	R07.2		-	35		15	619726

Spindle length 40

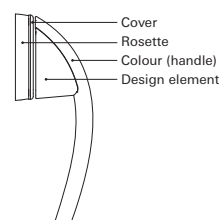
Silver	R01.1		-	40		15	619727
Medium bronze	R05.3		-	40		15	619728
Traffic white	R07.2		-	40		15	619729

Spindle length 43

Silver	R01.1		-	43		15	619730
Titanium	R01.3		-	43		15	729278
Medium bronze	R05.3		-	43		15	619731
Traffic white	R07.2		-	43		15	619732

Product description

- Handle range with elements designed in different colours



- Basic handle without additional functions
- 90-degree lock-in position
- 10-year functional warranty

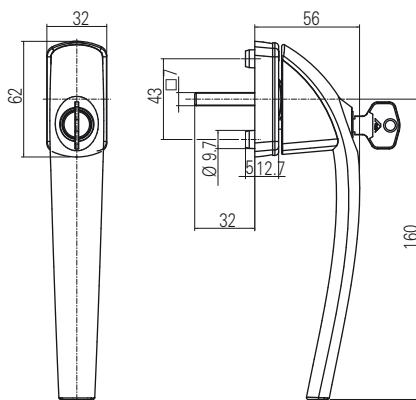


Scope of delivery

- 1 window handle



Roto Swing Patio S, lockable 100 Nm



Parts list

Colour



Spindle length 35

Silver	R01.1		-	35		15	619733
Medium bronze	R05.3		-	35		15	619734
Traffic white	R07.2		-	35		15	619735

Spindle length 40

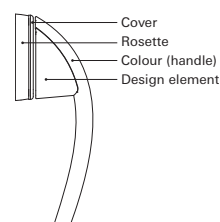
Silver	R01.1		-	40		15	619736
Medium bronze	R05.3		-	40		15	619737
Traffic white	R07.2		-	40		15	619738

Spindle length 43

Silver	R01.1		-	43		15	619739
Medium bronze	R05.3		-	43		15	619740
Traffic white	R07.2		-	43		15	619741

Product description

- Handle design with elements in different colours



- lockable handle with tested torque of 100 Nm
- Locking: Push cylinder with turn-key
- simple and quick locking by pushing down the cylinder
- burglar-inhibiting retrofit product (DIN 18104-1)
- meets the requirements of DIN EN 1627-1630, RC1 – RC6
- 90-degree lock-in position
- 10-year functional warranty
-
-

Scope of delivery

- 1 window handle with key

Roto replacement key



Parts list

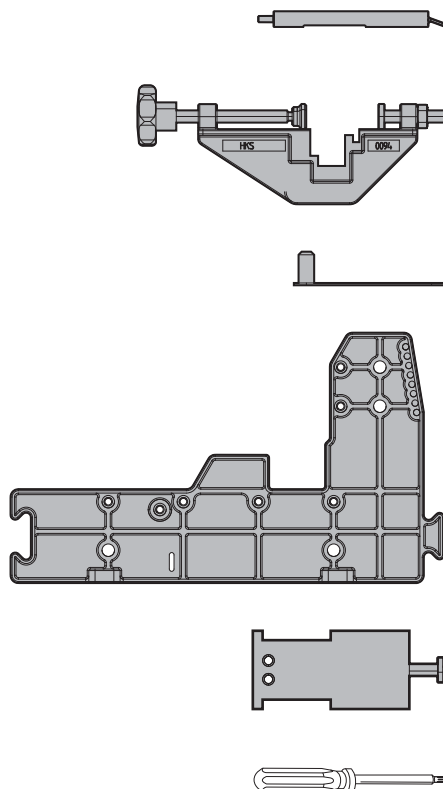
Description



Replacement key 1G1 "small"

L=37 mm, suitable for all Roto Swing, Roto Samba and Roto Line window handles incl. Roto Swing TF and Roto Swing A40

1 639099



Slider-release device 562759

Jig for roller track and guide track 563967

Drilling aid for roller track and guide track 207583

Drilling jig for bogie 563968

Jig for guide block 563969

Torx screwdriver T15 625173

Torx screwdriver T25 563971

Torx screwdriver T40 563970



Positioning jigs, horizontal

SRW/mm	Material no.
750 – 800	L 602139
	R 602155
801 – 1000	L 602140
	R 602156
1001 – 1200	L 602141
	R 602157
1201 – 1400	L 602142
	R 602158
1401 – 1600	L 602144
	R 602159

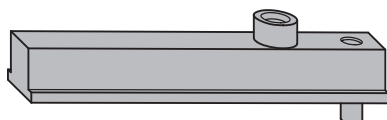
Positioning jigs, vertical, fixed handle height

SRH/mm	Material no.
650 – 800	388127
801 – 1400	388126
1401 – 2000	388125
1601 – 2400	388124

Positioning jigs, vertical, centred/variable handle height

SRH/mm	Material no.
650 – 1200	268943
1201 – 1600	268944
1601 – 2000	268945
2001 – 2400	268946

Drilling jig locking screw scissors-slider 735308





Tracks				
Description	Colour	Comment	Length in mm	Material no.
⑥ Roller track	Non-treated	Uncoated	6070	562763
	R 01.1	Silver	6070	562764
	R 05.3	Medium bronze	6070	562766
	R 05.4	Dark bronze	6070	562765
⑦ Guide track			6070	217140
⑩ Connecting rod			3600	217057

Cover profiles				
Description	Colour	Comment	Length in mm	Material no.
⑧ Aluminium cover profile	Non-treated	Uncoated	5170	562767
	R 01.1	Silver	5170	562768
	R 05.3	Medium bronze	5170	562771
	R 05.4	Dark bronze	5170	562770
	R 07.2	Traffic white	5170	562769
	R 07.3	Cream white	5170	562772
⑨ PVC cover profile	Grey	Consistent with R 01.1 (silver)	6080	562779
	Medium brown	Consistent with R 05.3 (medium bronze)	6080	217168
	Brown	Consistent with R 05.4 (dark bronze)	6080	217167
	White	Consistent with R 07.2 (traffic white)	6080	217165
	Cream white	Consistent with R 07.3 (cream white)	6080	562780

Cover caps for reinforcement brackets				
Description	Colour	Comment	Length in mm	Material no.
②③ Cover caps for reinforcement bracket L/R	R 01.1	Silver		562799
	R 05.3	Medium bronze		562801
	R 05.4	Dark bronze		562800
	R 07.2	Traffic white		562802
	R 07.3	Cream white		562803

**ADVICE!**

Treat uncoated parts as follows:

- Never coat roller tracks and guide tracks.
Only anodised surfaces may be coated.
- Stay-connecting profiles and cover profiles may only be powder-coated or wet painted.

Procedural instructions for PVC cover caps:

- Pre-treat with plasma in a vacuum chamber.
- Clean with ionised air.
- Paint with bi-component acrylic varnish.
- Oven drying at 70 °C

11 Stay-connecting profile 13

Description	Colour	Comment	Length in mm	Material no.
Stay-connecting profile 13	Non-treated	Uncoated	5220	631707
	R 01.1	Silver	5220	631708
	R 05.3	Medium bronze	5220	631711
	R 05.4	Dark bronze	5220	631710
	R 07.2	Traffic white	5220	631709
	R 07.3	Cream white	5220	631712

18 End caps for stay-connecting profile 13

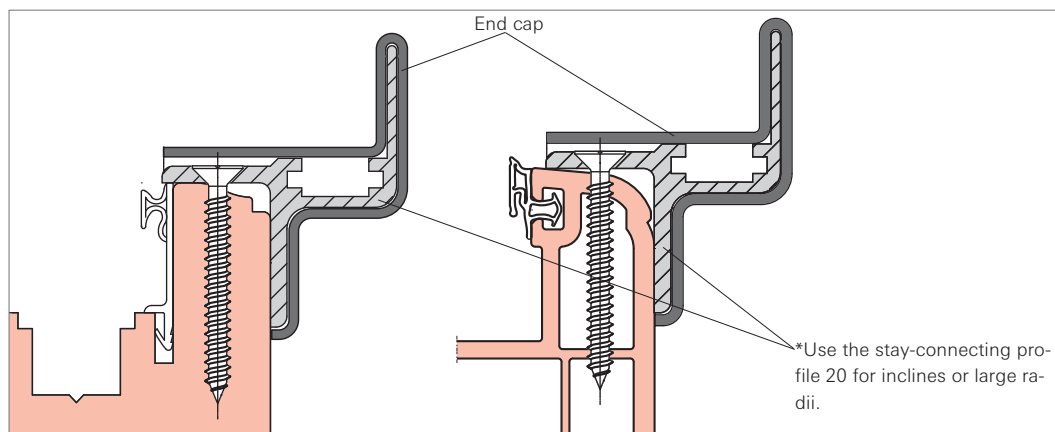
Description	Colour	Comment	Material no.
End cap SCP 13	DIN L R 01.1	Silver	631845
	DIN R		631846
	DIN L R 05.3	Medium bronze	631842
	DIN R		631840
	DIN L R 05.4	Dark bronze	631841
	DIN R		631839
	DIN L R 07.2	Traffic white	631844
	DIN R		631843
	DIN L R 07.3	Cream white	631847
	DIN R		631848

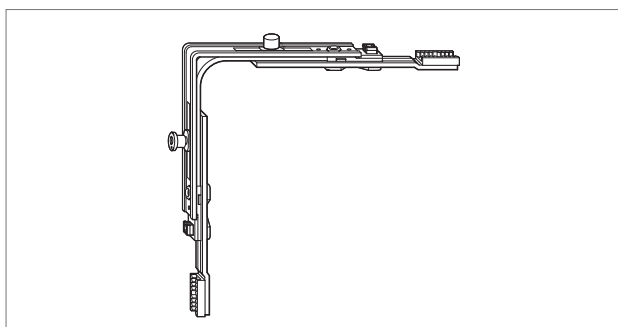
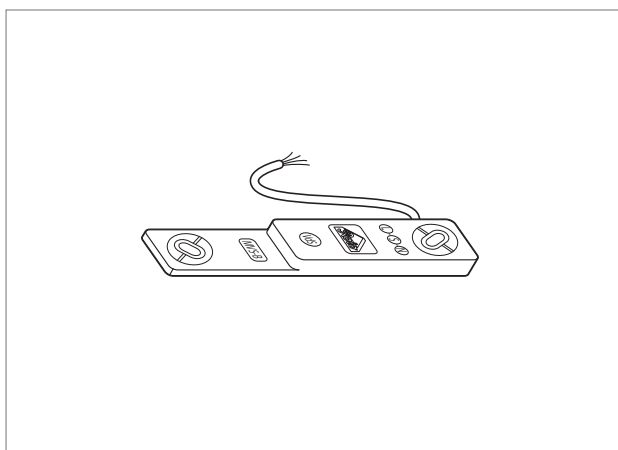
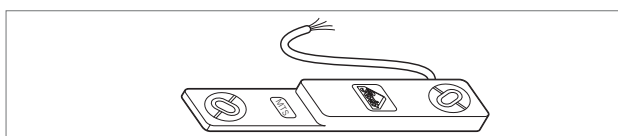
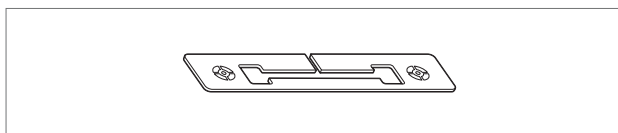
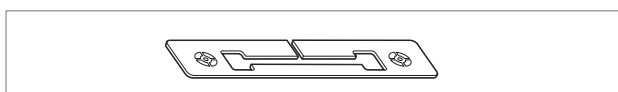
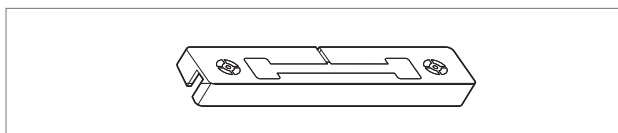
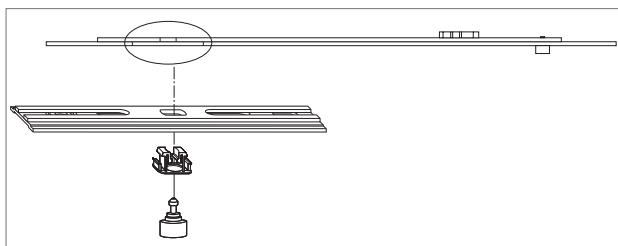
11a Stay-connecting profile 20*

Description	Colour	Comment	Length in mm	Material no.
Stay-connecting profile 20	R 01.1	Silver	5220	641179
	R 05.3	Medium bronze	5220	641182
	R 05.4	Dark bronze	5220	641181
	R 07.2	Traffic white	5220	641180
	R 07.3	Cream white	5220	641183

18a End caps for stay-connecting profile 20

Description	Colour	Comment	Material no.
End cap SCP 20	DIN L R 01.1	Silver	641184
	DIN R R 01.1		641245
	DIN L R 05.3	Medium bronze	641250
	DIN R R 05.3		641251
	DIN L R 05.4	Dark bronze	641248
	DIN R R 05.4		641249
	DIN L R 07.2	Traffic white	641246
	DIN R R 07.2		641247
	DIN L R 07.3	Cream white	641252
	DIN R R 07.3		641253





MVS installation set

For centre locks 400 and 600

292119



NOTE!

When mounting the MVS installation set (assembly clip / magnet retainer) on the bottom of the sash, always a suitable run-up block must be installed. For suitable run-up blocks please refer to the arched-components table.

Packers

Installation base, PVC



NOTE!

See installation, maintenance and operation instructions E-Tec Control MVS and MTS (IMO_302).

Installation base, timber

RAL 7035, 0.5 mm high, for even profiles

309245

Compensation base

RAL 7035, 0.5 mm high, as joint clearance spacer stackable on timber and PVC installation base, and MVS base V.01 + V.02.

309245

Contact elements

MTS - contact element*

With 6 m cable, white, with installation instructions

292118

With 10 m cable, white, with installation instructions

335077

With cable in special length

Upon request

MVS contact element VdS-B*

With 6 m cable, white, with installation instructions

292101

With 10 m cable, white, with installation instructions

335078

With cable in special length¹⁾

Upon request

MVS contact element VdS-B LSN*

Only for systems with LSN bus system

With 6 m cable, white, with installation instructions

336318

With 10 m cable, white, with installation instructions

—

With cable in special length¹⁾

Upon request

MVS contact element VdS-C*

With 6 m cable, white, with installation instructions

292114

With 10 m cable, white, with installation instructions

335079

With cable in special length¹⁾

Upon request

^{*)} Only use the screws included.

¹⁾ The VdS grade is only valid for a cable length up to 10 m.

For lengths over 10 m, an individual approval by the VdS is required.

Extension, espagnolette connector, corner drive

MVS corner drive

1 V cam, 1 magnet

292121

Profile system	Striker, standard (61)	Security striker, zinc (62)	Security striker, steel (62)	Night ventilation striker (4 pc./bag) (65)	
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Striker ordering / marking

Actual Solar Garant 600	349807	349808	–	R 632845	L 632847	
Aluplast Ideal 2000 / 3000	331489	260395	260423	R 632848	L 632849	
Aluplast Ideal 4000 / 5000 / 6000 / 8000	350192	257357	257358	R 632856	L 632857	
Aluplast Energeto 4000 / 5000						
Brüggmann AD / MD 13	341485	292194	501486	R 632845	L 632847	
Deceuninck 3000 / Zendow	370071	370072	607925	R 632858	L 632859	
Dimex Contur 7.0 / Elegance 8.0	341485	292194	501486	R 632848	L 632849	
Dimex Komfort	350192	257357	257358	R 632856	L 632857	
Finstral 200	552377	R 552378 ¹⁾	L 552379 ¹⁾			
Finstral 550	486210	R 486212 ¹⁾	L 491098 ¹⁾			
Gealan 3000 / 7000 / 8000	319744	260393	260421	R 632854	L 632855	
Inoutic AD13 / MD100	260370	260394	260422	R 632852	L 632853	
Inoutic Prestige AD / Elite	260370	260394	260422	R 632852	L 632853	
Inoutic Prestige MD	260370	260394	–	R 632852	L 632853	
KBE 70 AD	338070	289941	R 289976 ¹⁾	L 289972 ¹⁾	R 632854	L 632855
KBE 70 MD	338070	289941		R 632854	L 632855	
Kömmerling EuroFutur Classic	334957	334958	334962	R 632868	L 632869	
Kömmerling Eurodur	457090	258303	260417	R 632868	L 632869	
Kömmerling 88 Plus	457090	258303	260417	R 632868	L 632869	
Kömmerling Gold	338070	289941	–	R 632854	L 632855	
LB PAD	331489	260395	260423	R 632848	L 632849	
Rehau (730) Brillant Design	332439	316942	260418	R 632872	L 632873	
Rehau Geneo	332439	496019	260418	R 632850	L 632851	
Salamander 2D / 3D	486195	365385	R 314271 ¹⁾	L 314270 ¹⁾	R 632876	L 632877
Salamander SL76	486195	365385	R 314271 ¹⁾	L 314270 ¹⁾	R 632876	L 632877
Schüco Corona AD	350192	257357	311977	R 632848	L 632849	
Schüco Corona MD / AS	350192	313014	311977	R 632856	L 632857	
Schüco Corona 60 Vision	350192	257357	311977	R 632856	L 632857	
Schüco Corona CT70AD/MD; Si82/MD	331489	260395	260423	R 632848	L 632849	
Trocal Confort	263032	263033	–	–	–	
Trocal InnoNova 70 M5 / A5	336797	336810	336812	R 632864	L 632865	
Trocal InnoNova 2000	290127	290128	R 291566 ¹⁾	L 291565 ¹⁾	R 632866	L 632867
Trocal 88+	290127	290128	R 291566 ¹⁾	L 291565 ¹⁾	R 632866	L 632867
Veka Alphaline 90	332438	260396	260424	R 632874	L 632875	
Veka Softline 70 AD / MD	332438	260396	260424	R 632845	L 632847	
Veka Topline AD / MD 13	332438	260396	260424	R 632845	L 632847	

Further profile-related components are available upon request.

Timber, 13 mm hardware axis, without supporting-pins						(65a)	
Timber 22 mm rebate ²⁾	260360	R 260383 ¹⁾	L 260382 ¹⁾	R 280447 ¹⁾	L 280446 ¹⁾	R 634893	L 634894
Timber 24 mm rebate	261933	R 262930 ¹⁾	L 261935 ¹⁾	–	–	R 634905	L 634906
Timber 30 mm rebate	599651	631527		602215		R 634907	L 634908

Further profile-related components are available upon request.

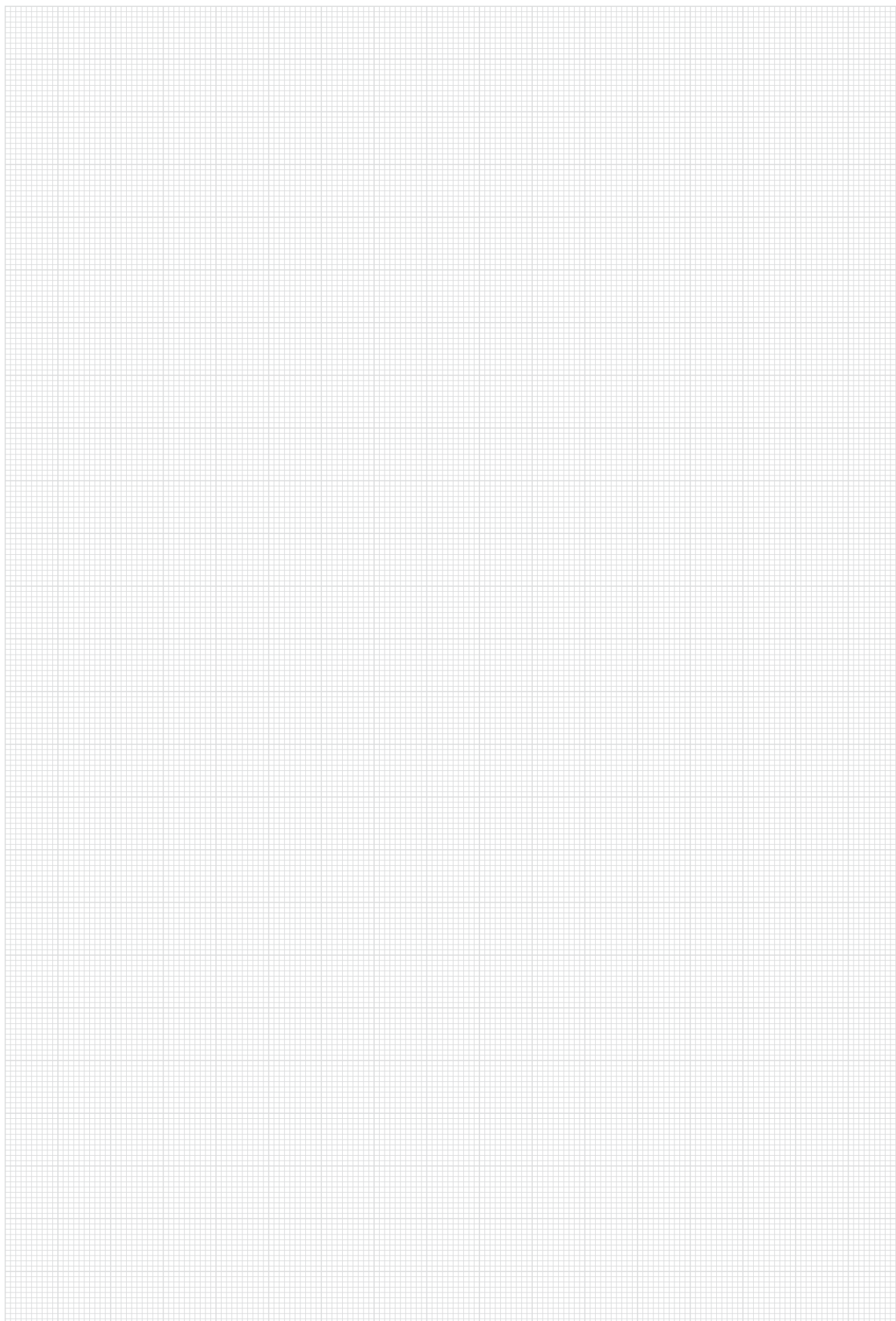
**NOTE!**

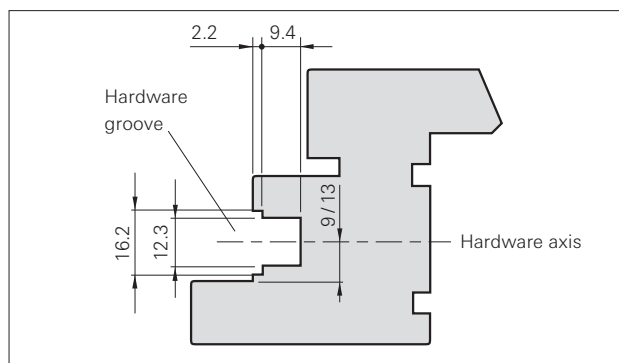
1) Order right-handed security strikers for left-handed version (in accordance with DIN 12519).

Order left-handed security strikers for right-handed version (in accordance with DIN 12519).

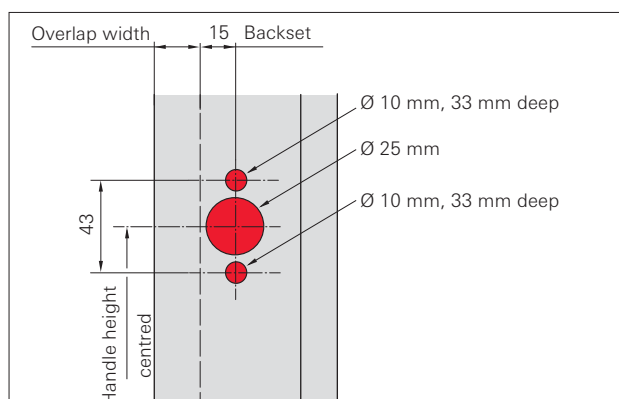
This note is valid only for security strikers made of zinc and steel (62).

2) In the night ventilation position, the "Timber 22 mm rebate" night-vent striker provides no burglary inhibition.





Sash profile cross section, Dimensional data for hardware

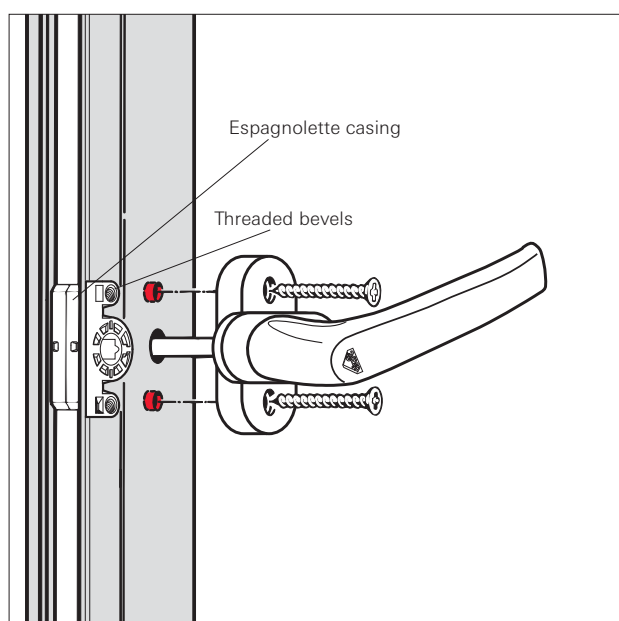
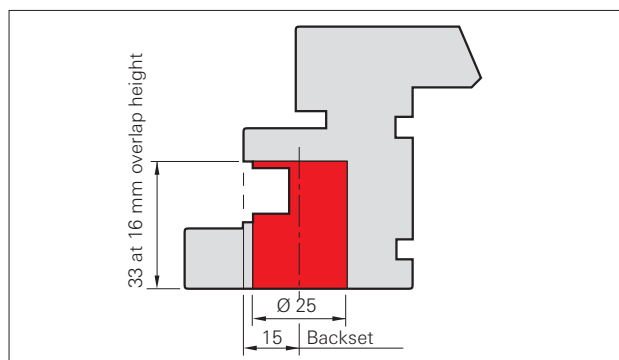


Carry out the drillings for the window handle's sprocket and lugs.

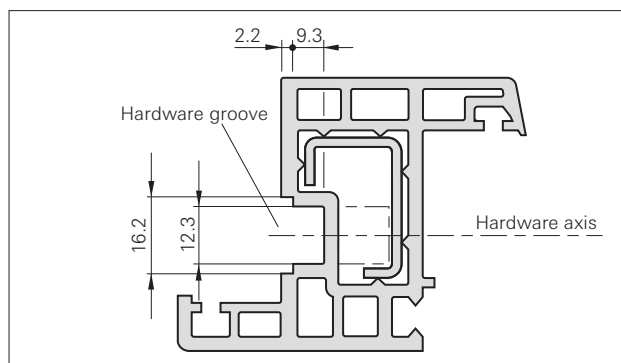


NOTE!

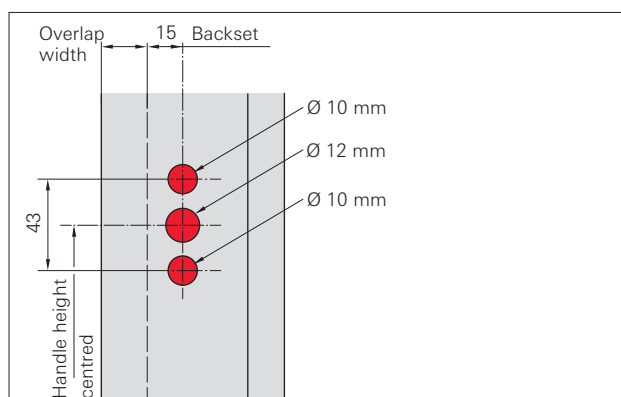
Select handle position in centre, to ensure that the sash can be parallel retracted with maximum ease of operation.



Screw-fix the window handle in the espagnolette casing with DIN 965 M5 x ... countersunk screws.



Sash profile cross section
Dimensional data for hardware



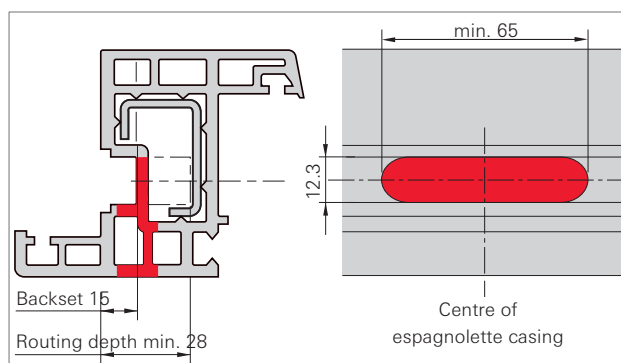
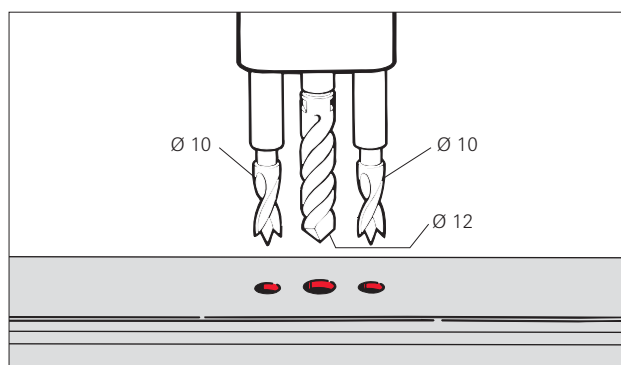
Carry out the drillings for the window handle's sprocket and lugs.

- Drill-hole Ø 10 mm:
Overlap height (16–22) + 16 mm for countersunk screws (DIN 965 M5 x ...)
- Drill-hole Ø 12 mm:
Drilling depth: Overlap height + 16 mm

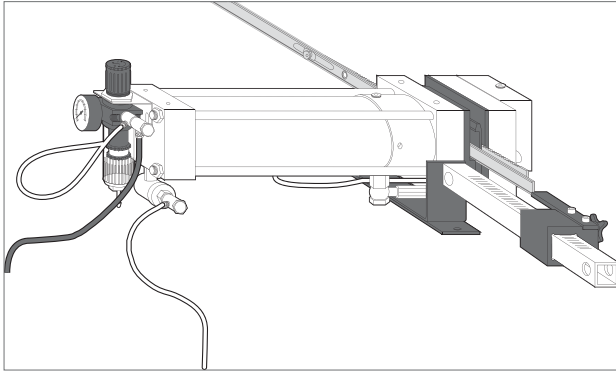


NOTE!

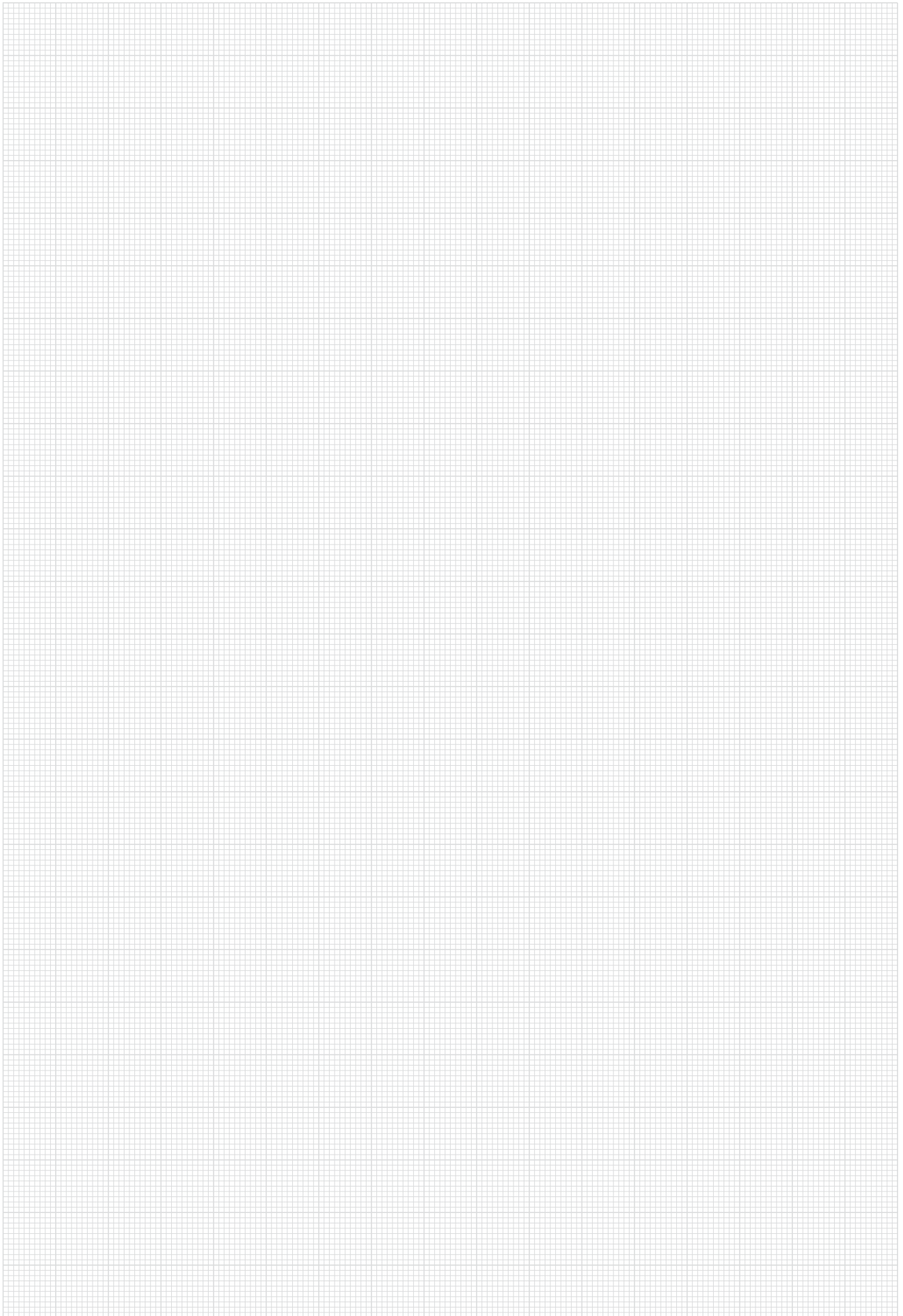
Select handle position in centre, to ensure that the sash can be parallel retracted with maximum ease of operation.



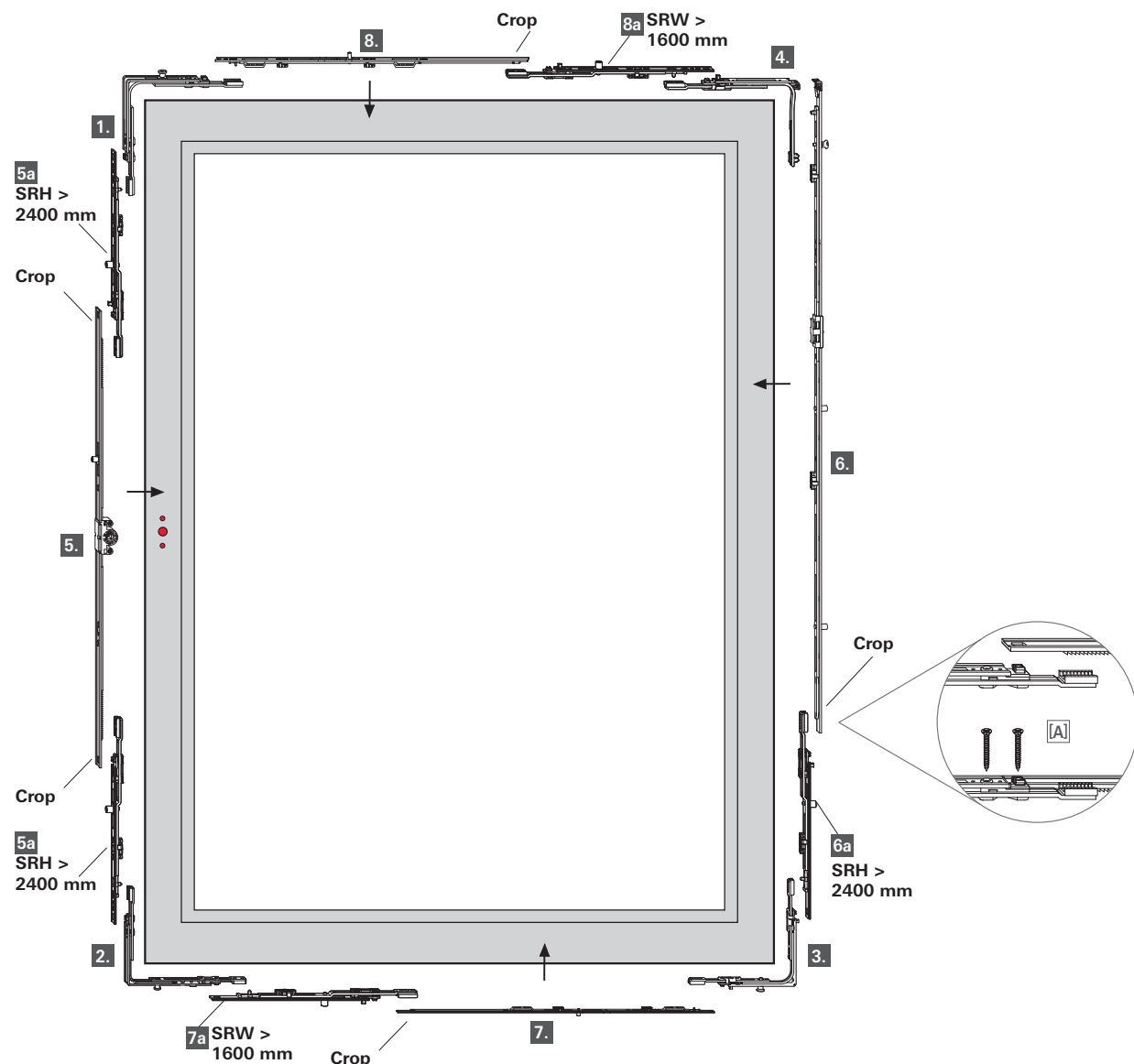
Routing for the espagnolette casing



Crop with pneumatic cropper (punched hole).



Installation procedure (suggestion)

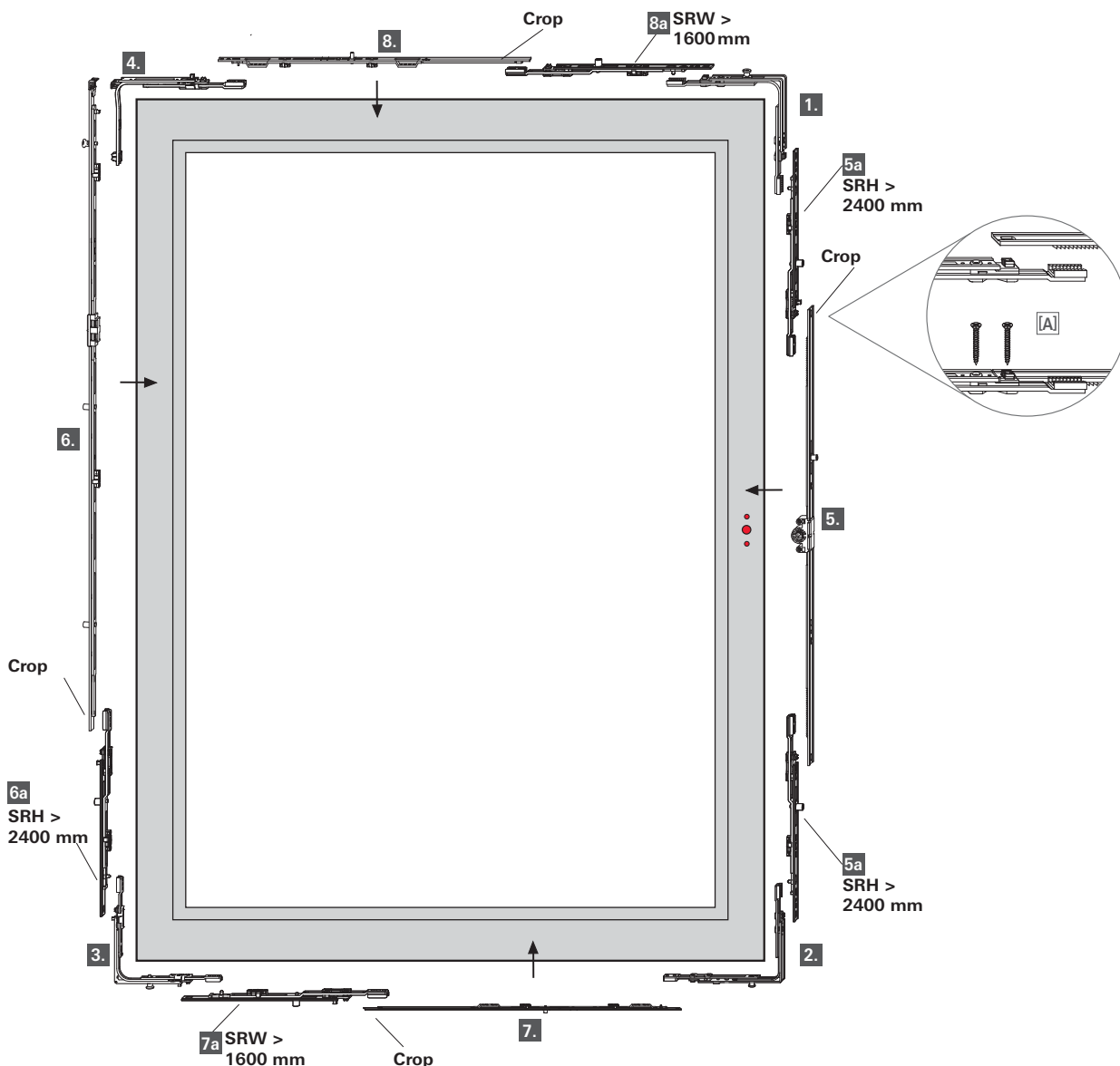


1. Screw-fix the top left-hand corner drive.
2. Screw-fix the bottom left-hand corner drive.
3. Screw-fix the bottom right-hand corner drive.
4. Screw-fix the top right-hand corner drive.
5. Mark the centre of the handle on the sash, line up the espagnolette at the sash centre, mark at both ends, crop both ends and screw-fix.
- 5a Please note: If SRH is > 2400 mm, the espagnolette extensions have to be installed first.
6. Insert the vertical centre lock component, mark below the handle position, crop at the bottom on one side and screw-fix.
- 6a Please note: If SRH is > 2400 mm, the espagnolette extensions have to be installed first.
7. Insert the bottom horizontal centre lock component, mark on the espagnolette side, crop on one side of the espagnolette side and screw-fix.
- 7a Please note: If SRW is > 1600 mm, the espagnolette extensions have to be installed first.
8. Insert the top horizontal centre lock component, mark on the centre lock side, crop on one side of the centre lock side and screw-fix.
- 8a Please note: If SRW is > 1600 mm, the espagnolette extensions have to be installed first.
9. Screw-fix the handle (not dep.).
10. Undo the centre-fixing (not dep.).



NOTE!

Create a strong interlocking connection with the Clip&Fit system [A].


Installation procedure (suggestion)


1. Screw-fix the top right-hand corner drive.
2. Screw-fix the bottom right-hand corner drive.
3. Screw-fix the bottom left-hand corner drive.
4. Screw-fix the top left-hand corner drive.
5. Insert the espagnolette, mark above the handle position, crop at the top on one side and screw-fix.
- 5a Please note: If SRH is > 2400 mm, the espagnolette extensions have to be installed first.
6. Insert the vertical centre lock component, mark below the handle position, crop at the bottom on one side and screw-fix.
- 6a Please note: If SRH is > 2400 mm, the espagnolette extensions have to be installed first.
7. Insert the bottom horizontal centre lock component, mark on the centre lock side, crop on one side of the centre lock side and screw-fix.
- 7a Please note: If SRW is > 1600 mm, the espagnolette extensions have to be installed first.
8. Insert the top horizontal centre lock component, mark on the espagnolette side, crop on one side of the espagnolette side and screw-fix.
- 8a Please note: If SRW is > 1600 mm, the espagnolette extensions have to be installed first.
9. Screw-fix the handle (not dep.).
10. Undo the centre-fixing (not dep.).


NOTE!

Create a strong interlocking connection with the Clip&Fit system [A].

Drillings for the bogies

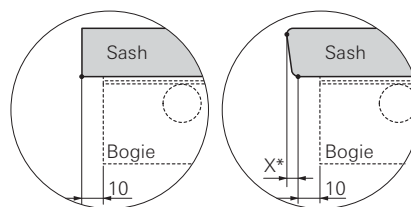
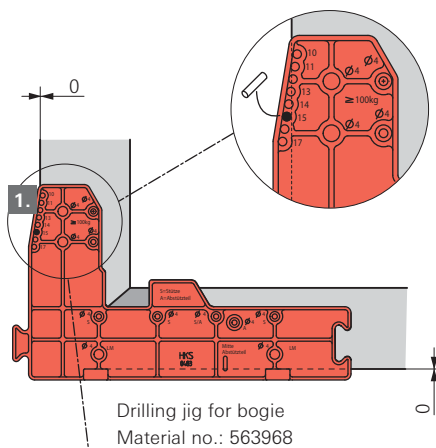
1. Set the bogie drilling jig to dimension 10 + X (depending on sash curves or bevels) with the dowel pin.
2. Drill the holes for the bogies and adjustable reinforcement brackets.
3. Mark the cover support bracket's position and drill.
(SRW < 900 mm **no** cover support bracket,
SRW 901 – 1450 mm 1 cover support bracket,
SRW > 1450 mm 2 cover support brackets).

Example: X = 5

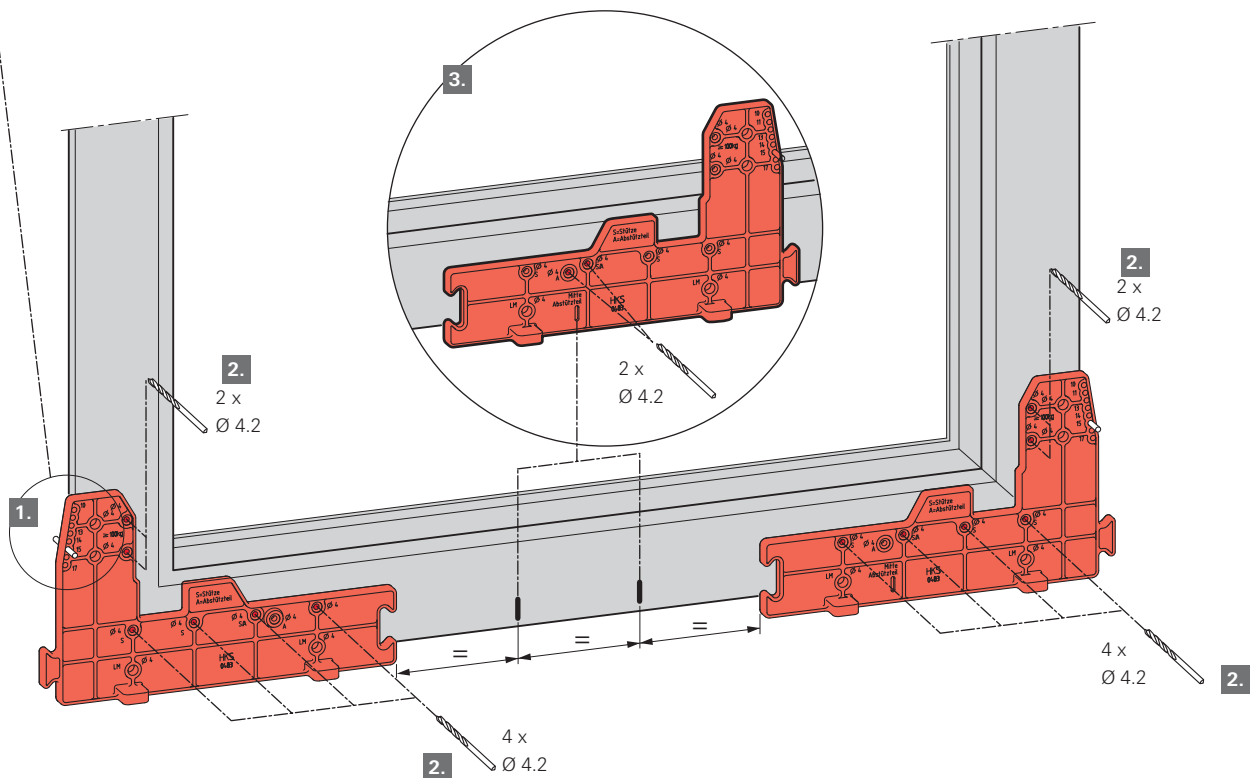
Dowel pin position: 10 + 5 = 15

X = 0

X > 0



*) "X" must be determined for later guide block installation.



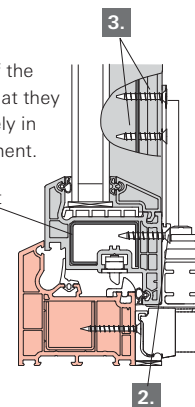


Installing sash bogies and stay-connecting profile

- 1a Cut stay-connecting profile to length – sash width minus 8 mm – and screw onto sash.
- 1b Use the stay-connecting profile 20 for sash overlaps with large radii (not dep.).
- 1c Drill the stay-connecting profiles on the opposite side of the handle for fixing the scissors-slider (drilling jig mat. no. 735308 or drill-hole pattern).
2. Screw on each bogie with 4 screws 4.8 x ... at a lateral distance of 10 mm to the sash outer-edges and flush with the bottom edge of the sash profile. Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).
3. Screw-fix each of the adjustable reinforcement brackets with 2 screws (4.8 x ...) (refer to the illustration for screw holes). Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).
4. Position the cover support bracket(s) evenly between the bogies and screw-fix each with 2 (4.8 x ...) screws.
5. Mark connecting rod to match the bogie markings, and cut 364 mm shorter than the markings.
6. As from SRW > 1450: Slide an additional support block onto centre of connecting rod and fix in place. (Torx screwdriver T25, 2 Nm – 3 Nm).
7. Insert the connecting rod into the bogie couplings; tighten the screw of the bogie on the opposite side of the handle first, then the screw on the handle side (T25, 5 Nm – 7 Nm).

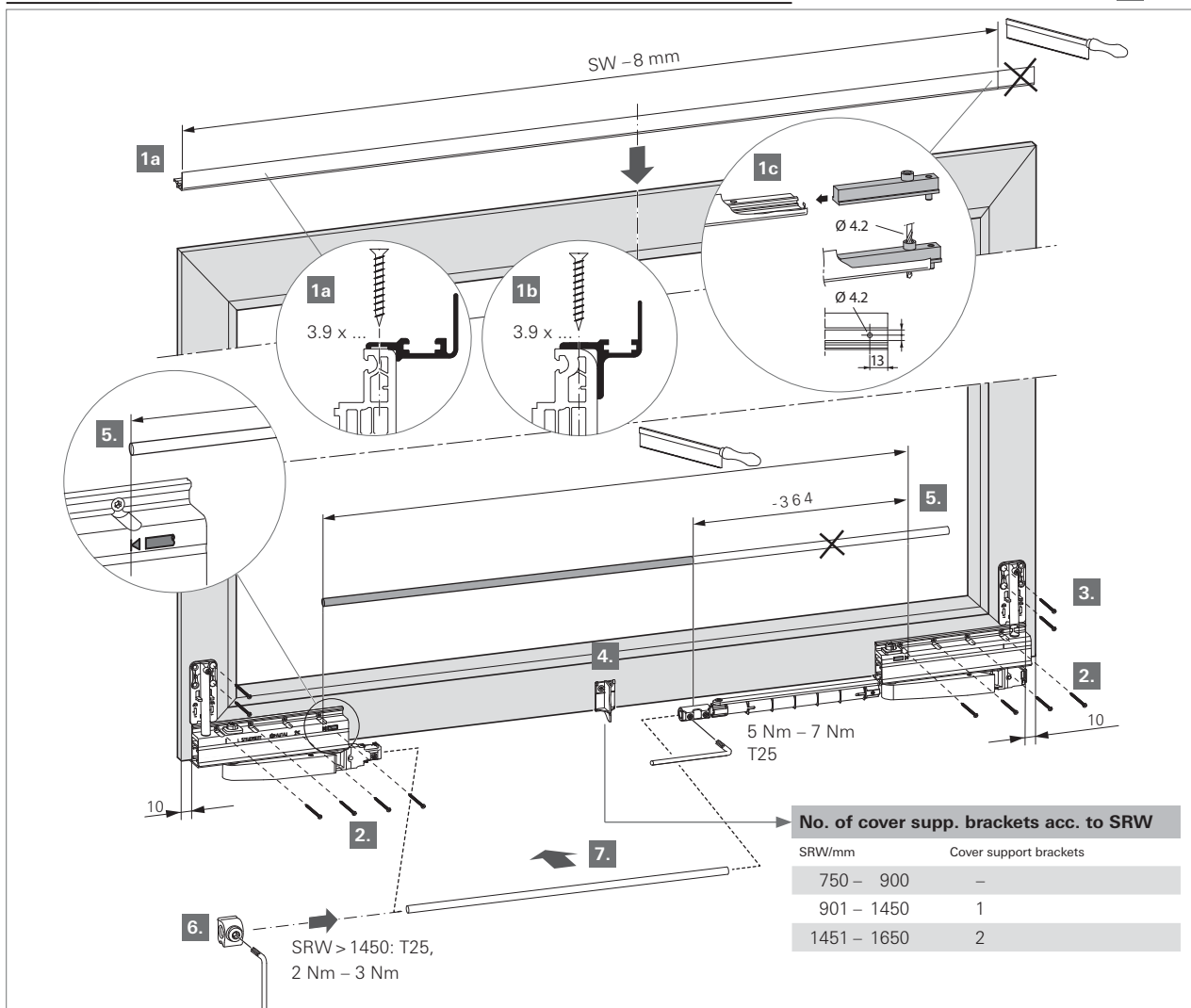
Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement.

Steel reinforcement



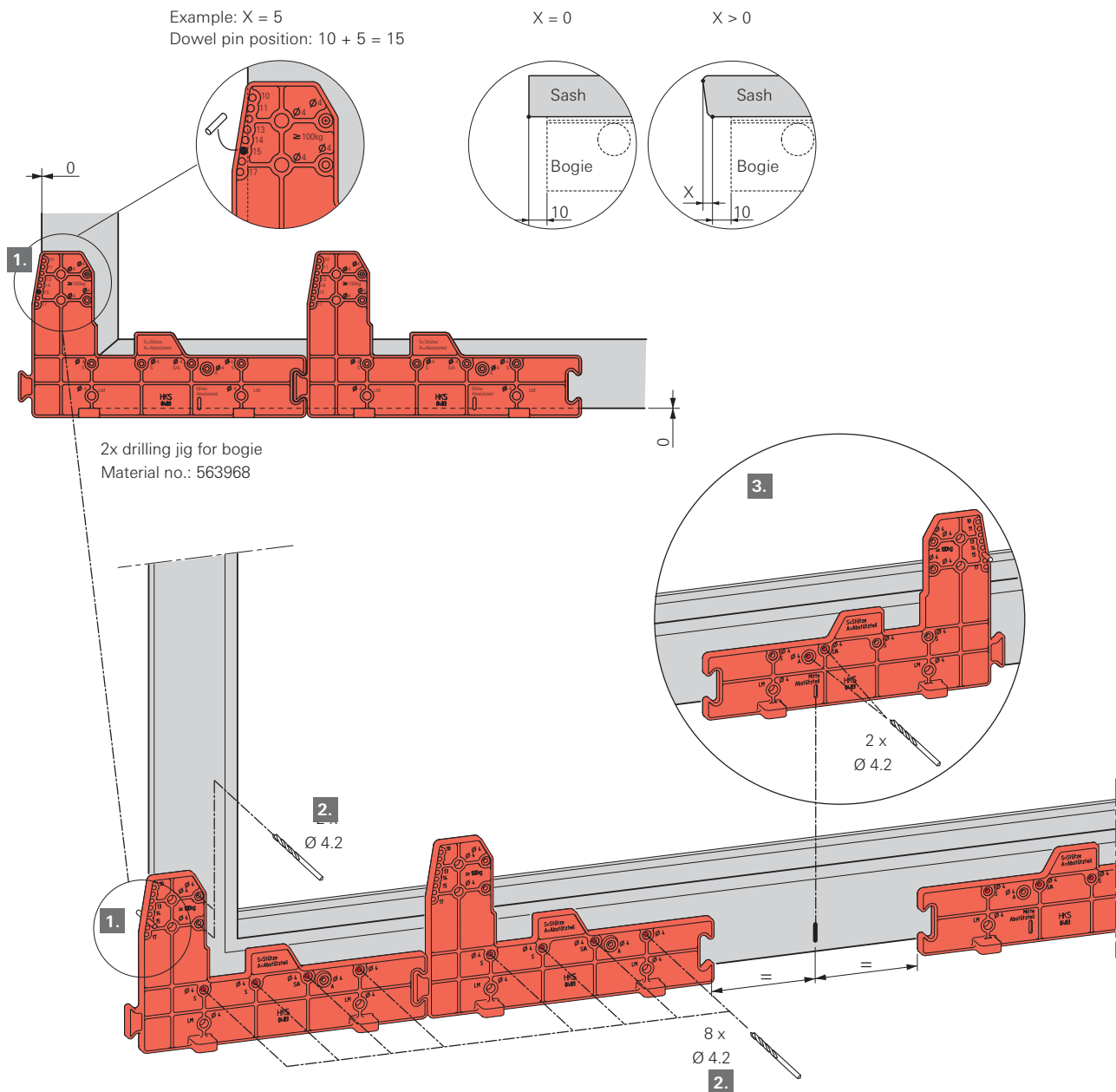
WARNING!

The spring-and-damper unit is pressurized. It may on no account be opened or bent nor may any other forces be applied to it. Otherwise, bodily injuries may be caused by parts suddenly flying around.



Drillings for heavy-duty bogies

1. Set the bogie drilling jig to dimension $10 + X$ (depending on sash curves or bevels) with the dowel pin.
2. Drill the holes for the bogies and reinforcement brackets (≥ 160 kg).
3. Mark the cover support bracket's position and drill.
(SRW < 1450 mm **no** cover support bracket, SRW > 1450 mm 1 cover support bracket).



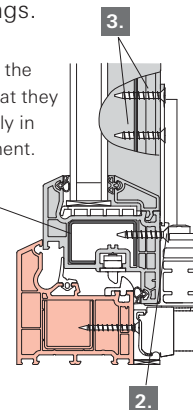


Installing heavy-duty bogies and stay-connecting profile

- 1a Cut stay-connecting profile to length – sash width minus 8 mm – and screw onto sash.
- 1b Use the stay-connecting profile 20 for sash overlaps with large radii (not dep.).
- 1c Drill the stay-connecting profiles on the opposite side of the handle for fixing the scissors-slider (drilling jig mat. no. 735308 or drill-hole pattern).
2. Screw on each heavy-duty bogie with 8 screws (4.8 x ...) at a lateral distance of 10 mm to the sash outer-edges and flush with the bottom edge of the sash profile. Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).
3. Screw-fix each of the adjustable reinforcement brackets with 2 screws (4.8 x ...) (refer to the illustration for screw holes). Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).
4. Position the cover support bracket(s) evenly between the bogies and screw-fix each with 2 (4.8 x ...) screws.
5. Mark connecting rod to match the bogie markings, and cut 364 mm shorter than the markings.
6. As from SRW > 1450: Slide an additional support block onto centre of connecting rod and fix in place. (Torx screwdriver T25, 2 Nm – 3 Nm).
7. Insert the connecting rod into the bogie couplings; tighten the screw of the bogie on the opposite side of the handle first, then tighten the screw on the handle side (Torx screwdriver T25, 5 Nm – 7 Nm).

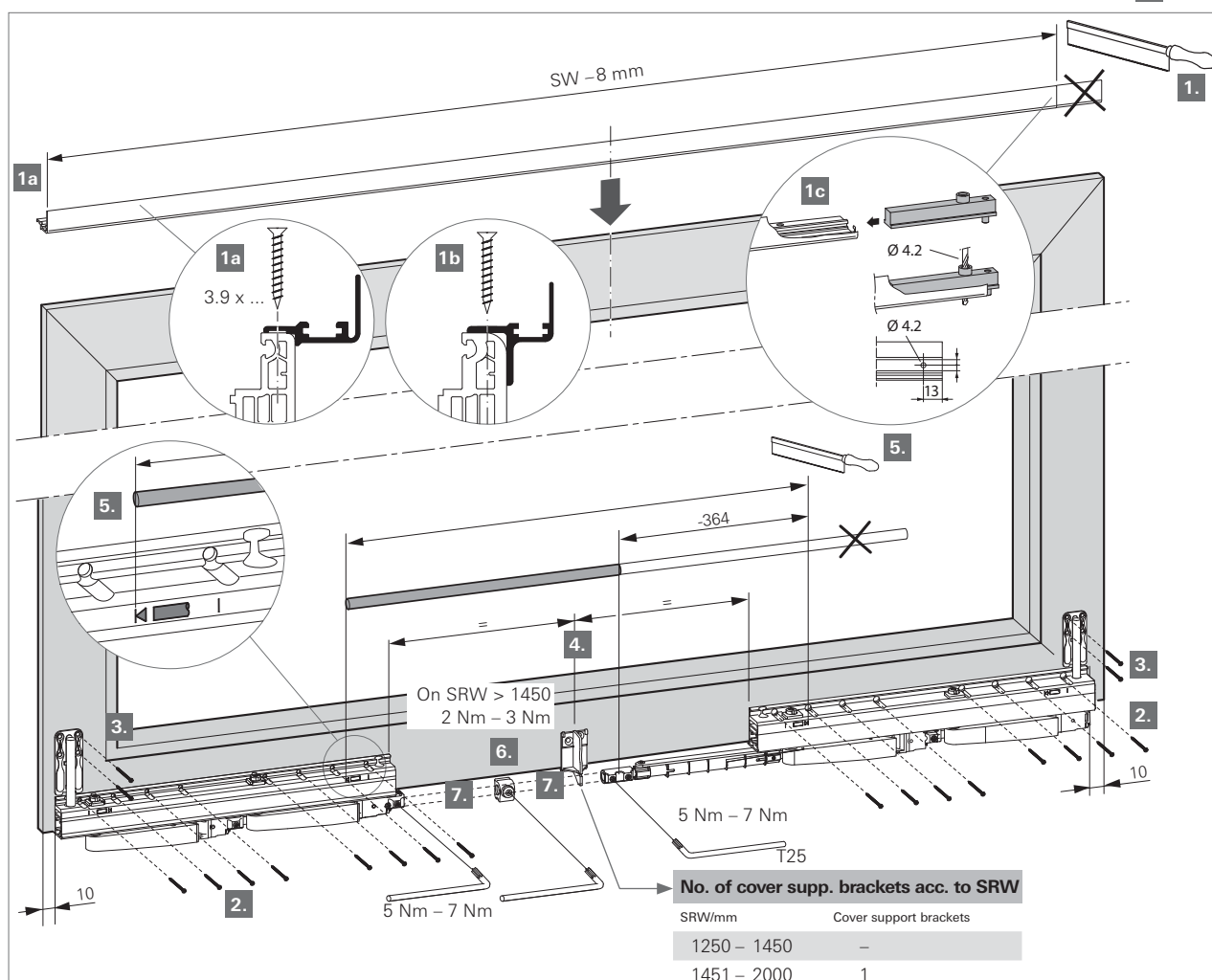
Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement.

Steel reinforcement

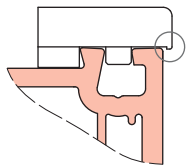
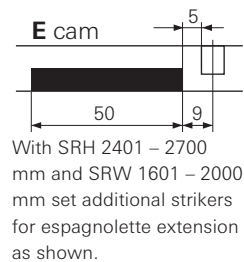
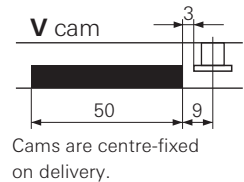
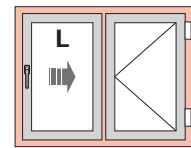
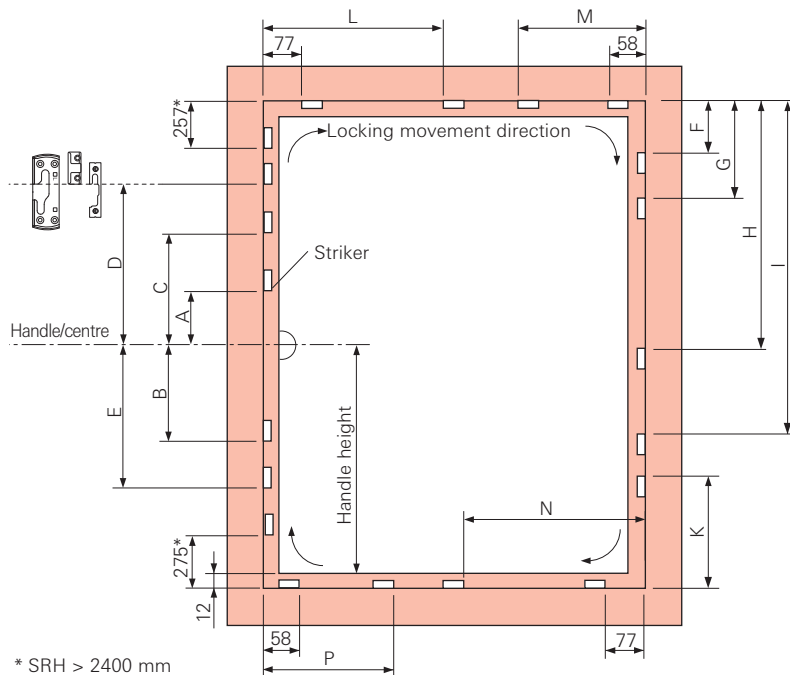


WARNING!

The spring-and-damper unit is pressurized. It may on no account be opened or bent nor may any other forces be applied to it. Otherwise, bodily injuries may be caused by parts suddenly flying around.



**Striker dimensions (mm) – centred/variable handle height,
Basic security, RC1 N and RC2 / RC2 N**



NOTE!

The fact that the night ventilation strikers are not flush-fitted to the frame in the case of PVC profiles is a feature specific to the system (ventilation position). They protrude. In the case of timber profiles, they are flush.

T&T espagnolette, centred/variable handle height, 15 mm backset, striker positions on espagnolette side

SRH / mm	A	B	C	D	E	Used jig
650 – 1200	125	–	–	–	–	268943
1201 – 1600	125	340	–	–	–	268944
1601 – 2000	–	312	358	–	–	268945
2001 – 2400	–	312	358	758	740	268946
2401 – 2600	–	312	358	758	740	268946
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						
2601 – 2700	–	312	358	758	740	268946
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						

Centre lock component, horizontal, striker positions left-hand version, top

SRW / mm	L	M	Used jig
750 – 800	–	–	602139
801 – 1000	468	–	602140
1001 – 1200	618	–	602141
1201 – 1400	618	–	602142
1401 – 1600	868	–	602144
1601 – 1800	868	257	602144
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	868	457	602144
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			

Centre lock component, vertical, striker positions on hinge side

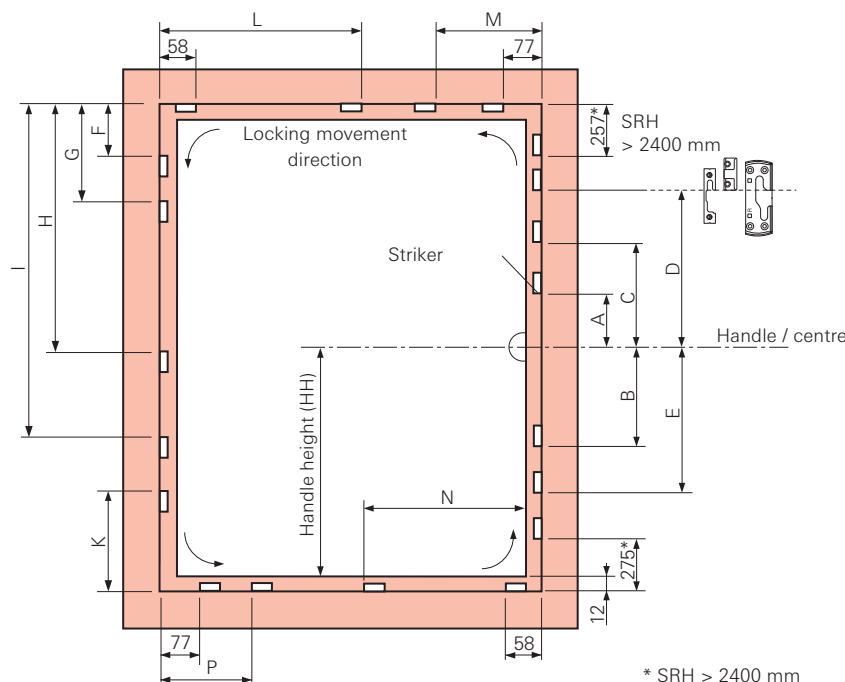
SRH / mm	F	G	H	I	K	Used jig
650 – 800	–	383	–	–	–	388127
801 – 1000	160	550	–	–	–	388126
1001 – 1200	160	700	–	–	–	388126
1201 – 1400	160	700	–	–	–	388126
1401 – 1600	160	700	1170	–	–	388125
1601 – 1800	160	700	1370	–	–	388125
1801 – 2000	160	700	1370	–	–	388125
2001 – 2200	160	700	1370	1770	–	388124
2201 – 2400	160	700	1370	1770	–	388124
2401 – 2600	160	700	1370	1770	257	388124
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						
2601 – 2700	160	700	1370	1770	457	388124
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						

Centre lock component, horizontal, striker positions left-hand version, bottom

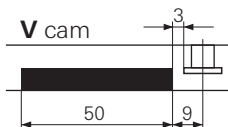
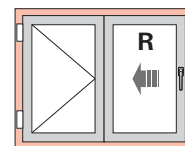
SRW / mm	N	P	Used jig
750 – 800	–	–	602139
801 – 1000	468	–	602140
1001 – 1200	618	–	602141
1201 – 1400	618	–	602142
1401 – 1600	868	–	602144
1601 – 1800	868	257	602144
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	868	457	602144
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			



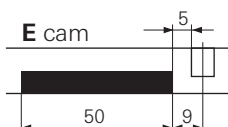
Striker dimensions (mm) – centred/variable handle height
Basic security RC1 N and RC2/RC2 N



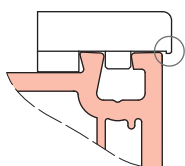
* SRH > 2400 mm



Cams are centre-fixed on delivery.



With SRH 2401 – 2700 mm and SRW 1601 – 2000 mm set additional strikers for espagnolette extension as shown.



NOTE!

The fact that the night ventilation strikers are not flush-fitted to the frame in the case of PVC profiles is a feature specific to the system (ventilation position). They protrude. In the case of timber profiles, they are flush.

T&T espagnolette, centred/variable handle height, 15 mm backset, striker positions on espagnolette side

SRH / mm	A	B	C	D	E	Used jig
650 – 1200	125	–	–	–	–	268943
1201 – 1600	125	340	–	–	–	268944
1601 – 2000	–	312	358	–	–	268945
2001 – 2400	–	312	358	758	740	268946
2401 – 2600	–	312	358	758	740	268946
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						
2601 – 2700	–	312	358	758	740	268946
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						

Centre lock component, horizontal, striker positions right-hand version, top

SRW / mm	L	M	Used jig
750 – 800	–	–	602155
801 – 1000	450	–	602156
1001 – 1200	600	–	602157
1201 – 1400	600	–	602158
1401 – 1600	850	–	602159
1601 – 1800	850	275	602159
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	850	475	602159
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			

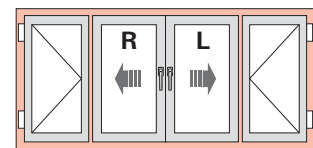
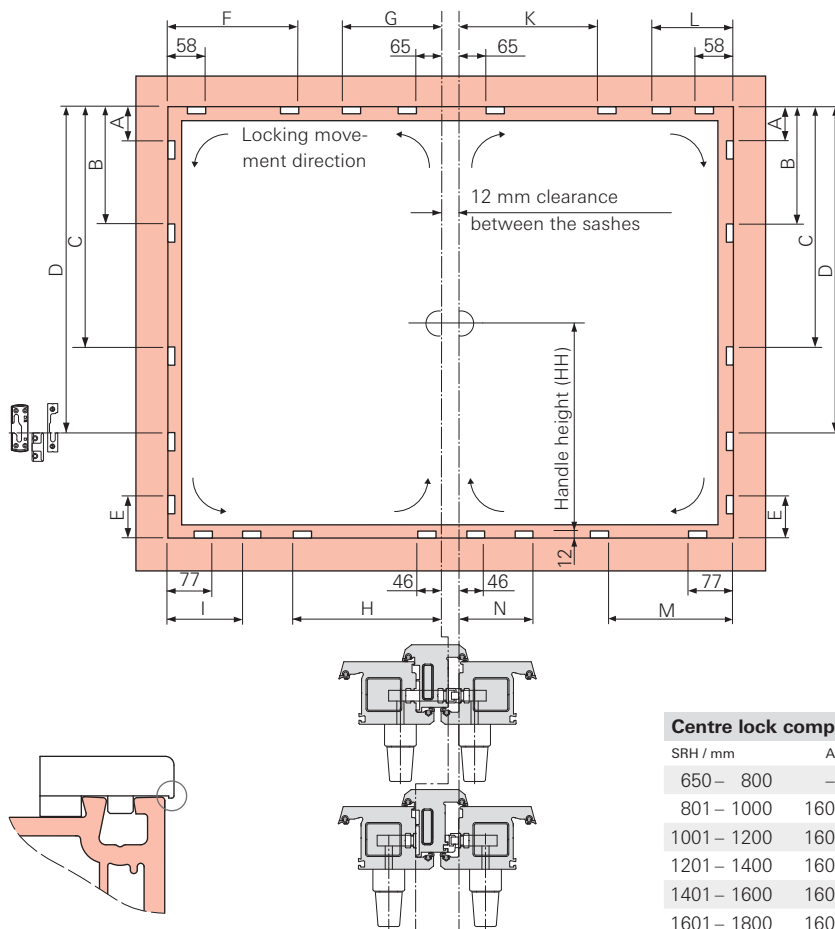
Centre lock component, vertical, striker positions on hinge side

SRH / mm	F	G	H	I	K	Used jig
650 – 800	–	383	–	–	–	388127
801 – 1000	160	550	–	–	–	388126
1001 – 1200	160	700	–	–	–	388126
1201 – 1400	160	700	–	–	–	388126
1401 – 1600	160	700	1170	–	–	388125
1601 – 1800	160	700	1370	–	–	388125
1801 – 2000	160	700	1370	–	–	388125
2001 – 2200	160	700	1370	1770	–	388124
2201 – 2400	160	700	1370	1770	–	388124
2401 – 2600	160	700	1370	1770	257	388124
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						
2601 – 2700	160	700	1370	1770	457	388124
With espagnolette extension.						
Striker for espagnolette extension – set in accordance with illustration.						

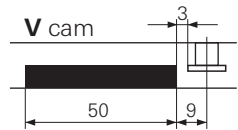
Centre lock component, horizontal, striker positions right-hand version, bottom

SRW / mm	N	P	Used jig
750 – 800	–	–	602155
801 – 1000	450	–	602156
1001 – 1200	600	–	602157
1201 – 1400	600	–	602158
1401 – 1600	850	–	602159
1601 – 1800	850	275	602159
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	850	475	602159
With espagnolette extension.			
Striker for espagnolette extension – set in accordance with illustration.			

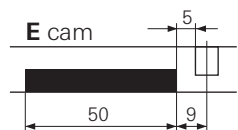
Positioning frame hardware components diagram C – Centred/variable handle height
Basic security, RC1 N



Without fixed
centre-post profile



Cams are centre-fixed
on delivery.



With SRH 2401 – 2700 mm
and SRW 1601 – 2000 mm
set additional strikers for
espagnolette extension
as shown.

Centre lock component, vertical, striker positions on hinge side

SRH / mm	A	B	C	D	E	Used jig
650 – 800	–	383	–	–	–	388127
801 – 1000	160	550	–	–	–	388126
1001 – 1200	160	700	–	–	–	388126
1201 – 1400	160	700	–	–	–	388126
1401 – 1600	160	700	1170	–	–	388125
1601 – 1800	160	700	1370	–	–	388125
1801 – 2000	160	700	1370	–	–	388125
2001 – 2200	160	700	1370	1770	–	388124
2201 – 2400	160	700	1370	1770	–	388124
2401 – 2600	160	700	1370	1770	257	388124
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.						
2601 – 2700	160	700	1370	1770	457	388124
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.						

NOTE!

The fact that the night ventilation strikers are not flush-fitted to the frame in the case of PVC profiles is a feature specific to the system (ventilation position). They protrude. In the case of timber profiles, they are flush.

Centre lock component, horizontal, striker positions left-hand version, top

SRW / mm	K	L	Used jig
750 – 800	–	–	–
801 – 1000	456	–	–
1001 – 1200	606	–	–
1201 – 1400	606	–	–
1401 – 1600	856	–	–
1601 – 1800	856	257	–
1801 – 2000	856	457	–

Centre lock component, horizontal, striker positions left-hand version, bottom

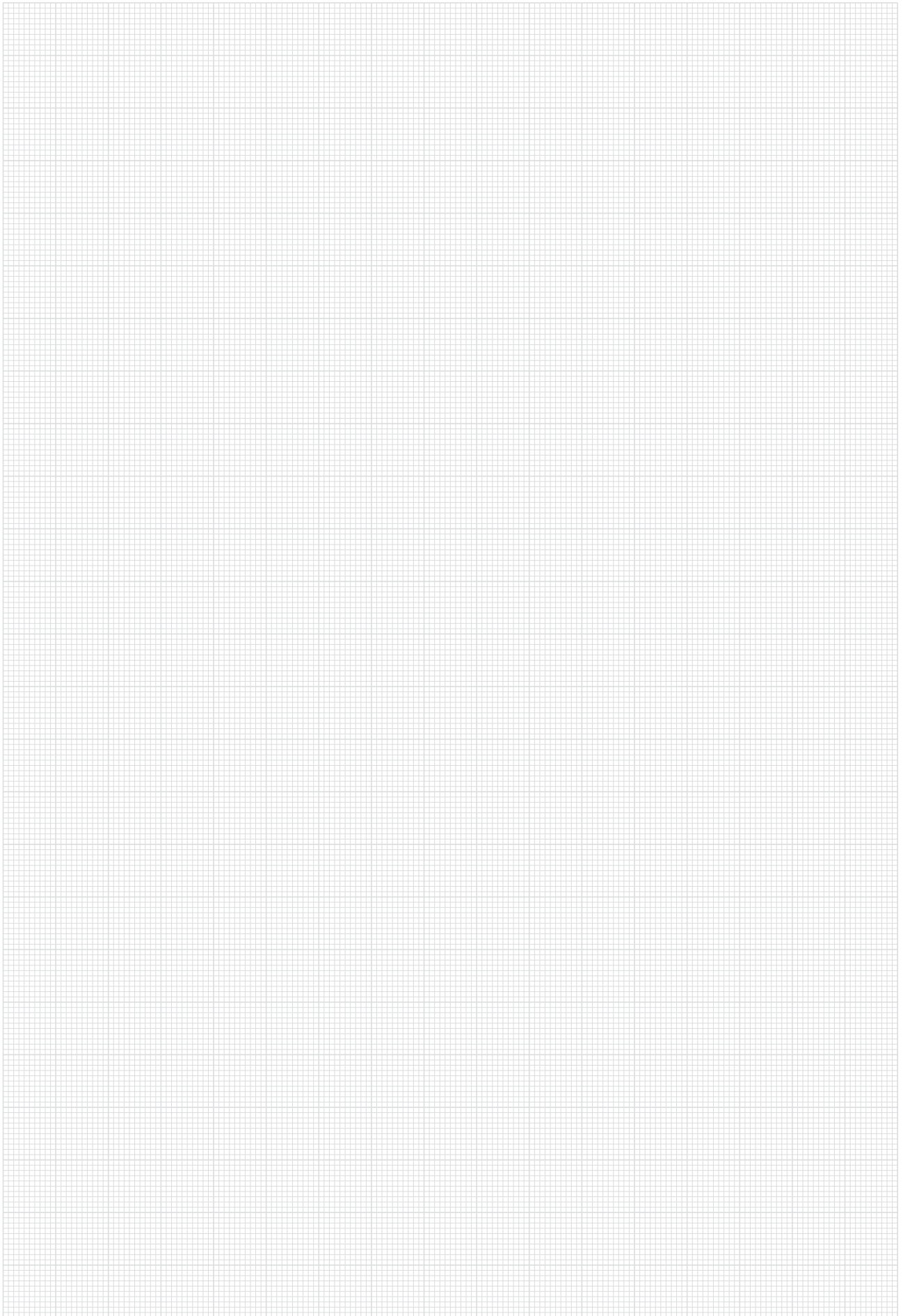
SRW / mm	M	N	Used jig
750 – 800	–	–	602139
801 – 1000	468	–	602140
1001 – 1200	618	–	602141
1201 – 1400	618	–	602142
1401 – 1600	868	–	602144
1601 – 1800	868	245	602144
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	868	445	602144
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.			

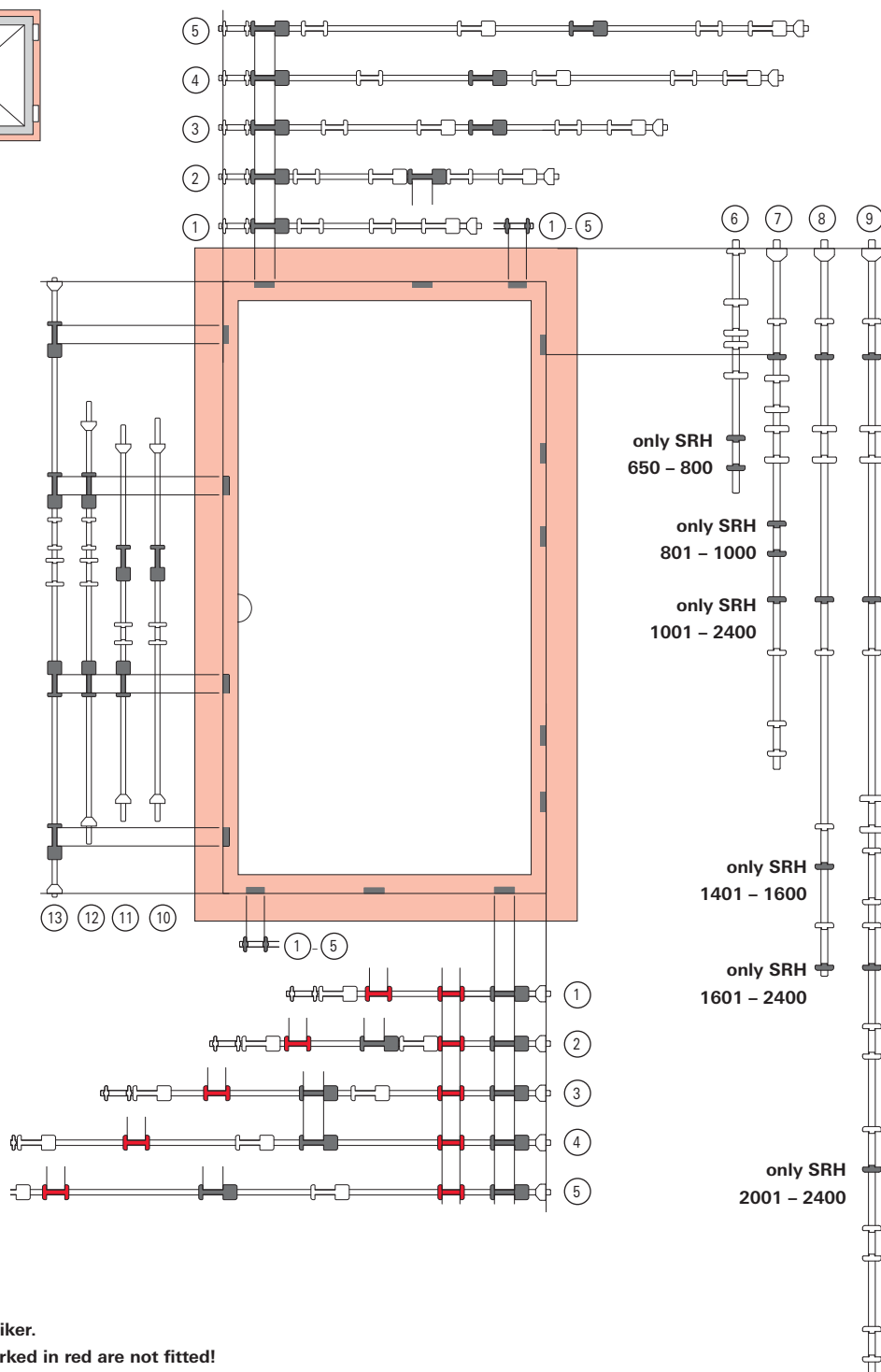
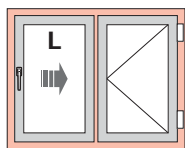
Centre lock component, horizontal, striker positions right-hand version, top

SRW / mm	F	G	Used jig
750 – 800	–	–	602155
801 – 1000	450	–	602156
1001 – 1200	600	–	602157
1201 – 1400	600	–	602158
1401 – 1600	850	–	602159
1601 – 1800	850	263	602159
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.			
1801 – 2000	850	463	602159
With espagnolette extension. Striker for espagnolette extension – set in accordance with illustration.			

Centre lock component, horizontal, striker positions right-hand version, bottom

SRW/mm	H	I	Used jig
750 – 800	–	–	–
801 – 1000	437	–	–
1001 – 1200	587	–	–
1201 – 1400	587	–	–
1401 – 1600	837	–	–
1601 – 1800	837	275	–
1801 – 2000	837	475	–





■ Insert the striker.

■ Positions marked in red are not fitted!

Horizontal jigs

SRW/mm	Material no.
① 750 – 800	602139
② 801 – 1000	602140
③ 1001 – 1200	602141
④ 1201 – 1400	602142
⑤ 1401 – 1600	602144

ADVICE!

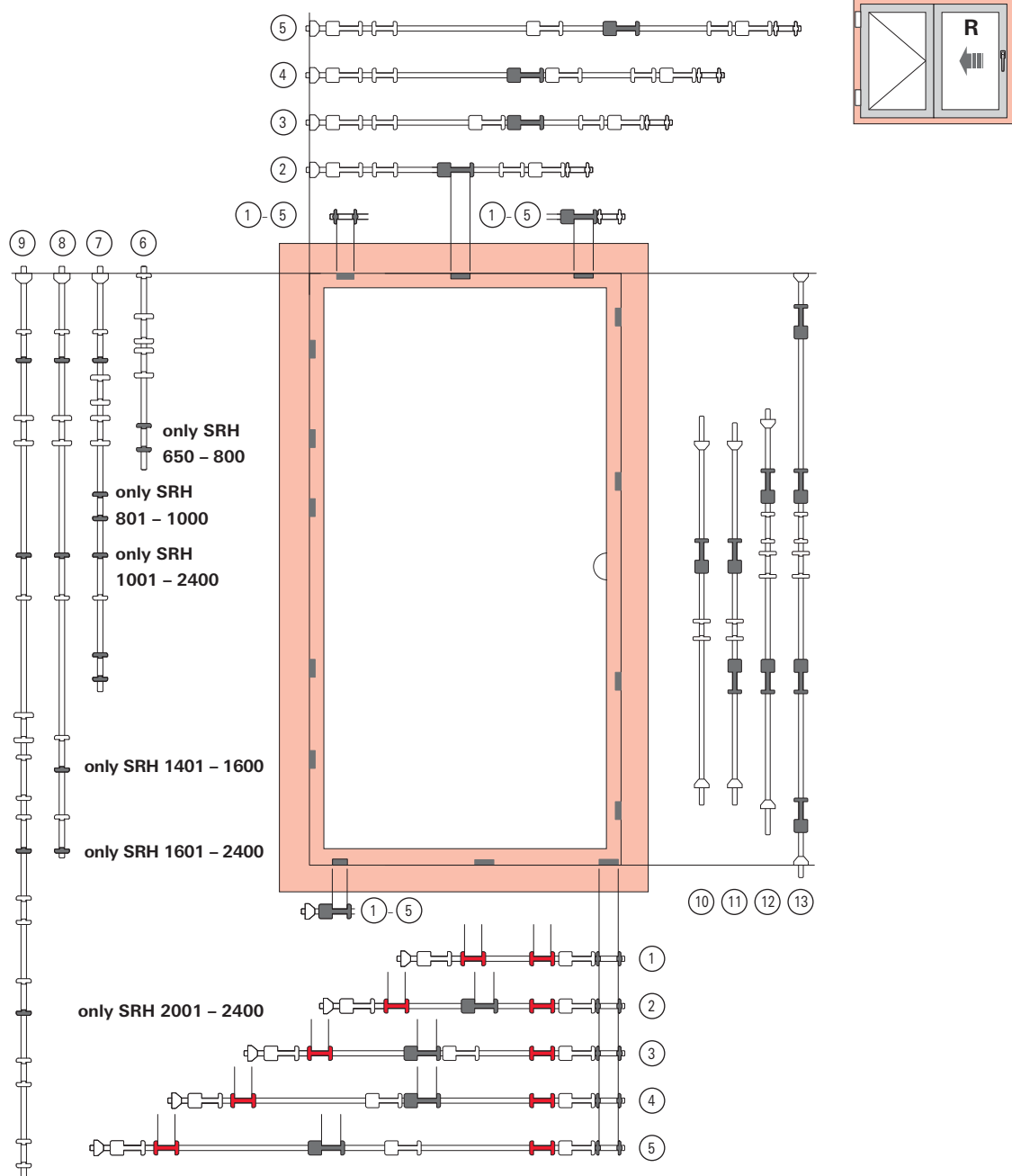
- Set additional strikers manually with:
SRH 2401–2700 mm and SRW 1601–2000 mm
- Do not process night ventilation strikers using the jigs!

Vertical striker positioning jigs, fixed handle height

SRH/mm	Material no.
⑥ 650 – 800	388127
⑦ 801 – 1400	388126
⑧ 1401 – 2000	388125
⑨ 2001 – 2400	388124

Vertical striker positioning jigs, centred/variable handle height

SRH/mm	Material no.
⑩ 650 – 1200	268943
⑪ 1201 – 1600	268944
⑫ 1601 – 2000	268945
⑬ 2001 – 2400	268946



■ Insert the striker.

■ Positions marked in red are not fitted!

Night ventilation strikers cannot be processed using the jigs!

Horizontal jigs		
	SRW/mm	Material no.
①	750 – 800	602155
②	801 – 1000	602156
③	1001 – 1200	602157
④	1201 – 1400	602158
⑤	1401 – 1600	602159

NOTE!
 With SRH 2401 – 2700 mm and SRW 1601 – 2000 mm set additional strikers manually.

Vertical striker positioning jigs, fixed handle height		
	SRH/mm	Material no.
⑥	650 – 800	388127
⑦	801 – 1400	388126
⑧	1401 – 2000	388125
⑨	2001 – 2400	388124

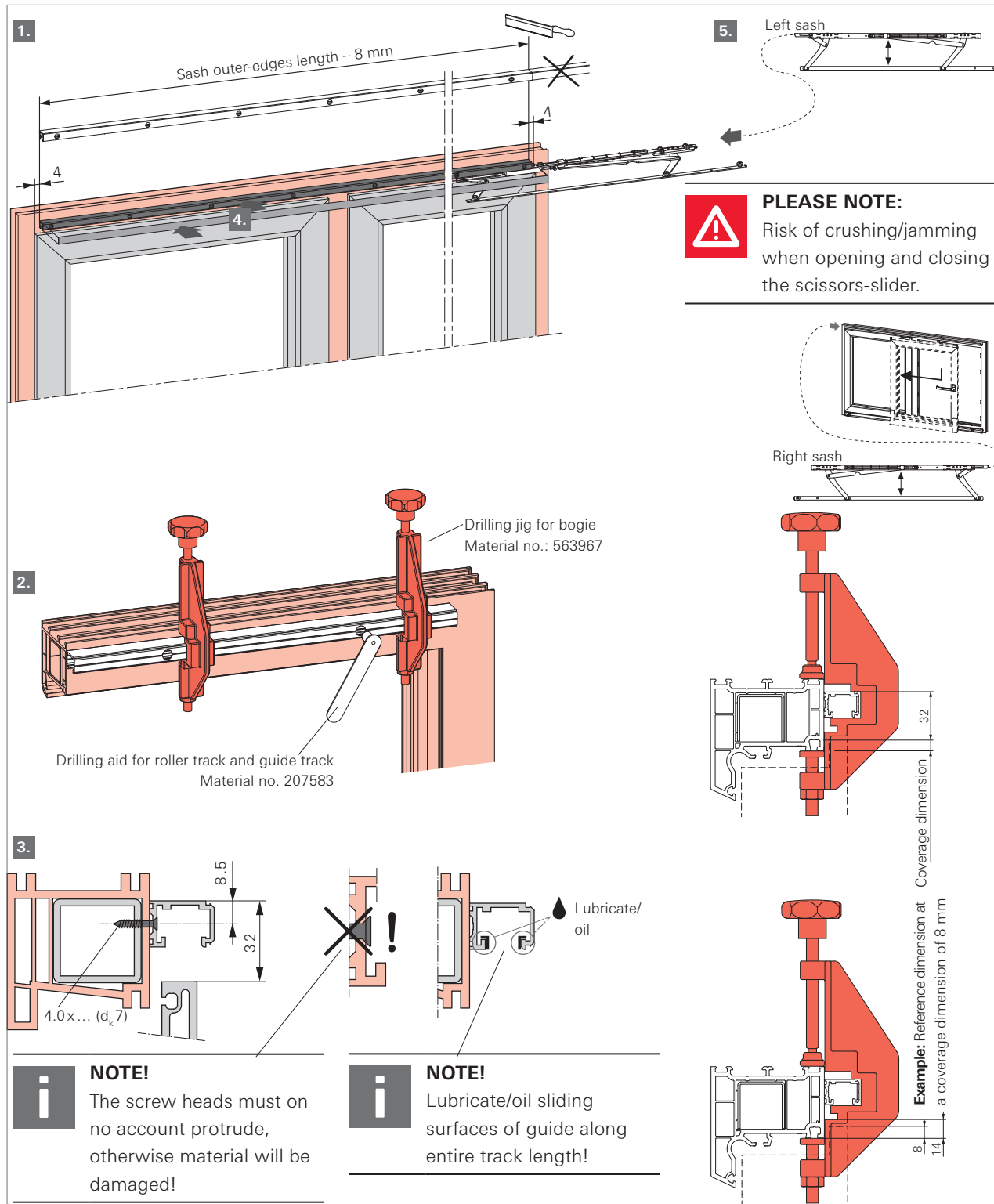
Vertical striker positioning jigs, centred/variable handle height		
	SRH/mm	Material no.
⑩	650 – 1200	268943
⑪	1201 – 1600	268944
⑫	1601 – 2000	268945
⑬	2001 – 2400	268946

Mounting the guide track on the frame

1. Cut the guide track to length: Sash outer-edges distance minus 8 mm
2. Fix the guide track to the frame using the jig for roller track and guide track (material no. 563967), predrill with drilling aid (bush) and Ø 3.0 mm drill.
3. Screw-fix the guide track to the frame with 4.0 x ... screws (d_k 7). Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).
4. Cut the PVC cover profile to the length of the guide track and clip on.

Installation of the scissors-slider in the guide track

5. Open the scissors-slider and slide it into the guide track as shown.
Pay attention to the correct side!





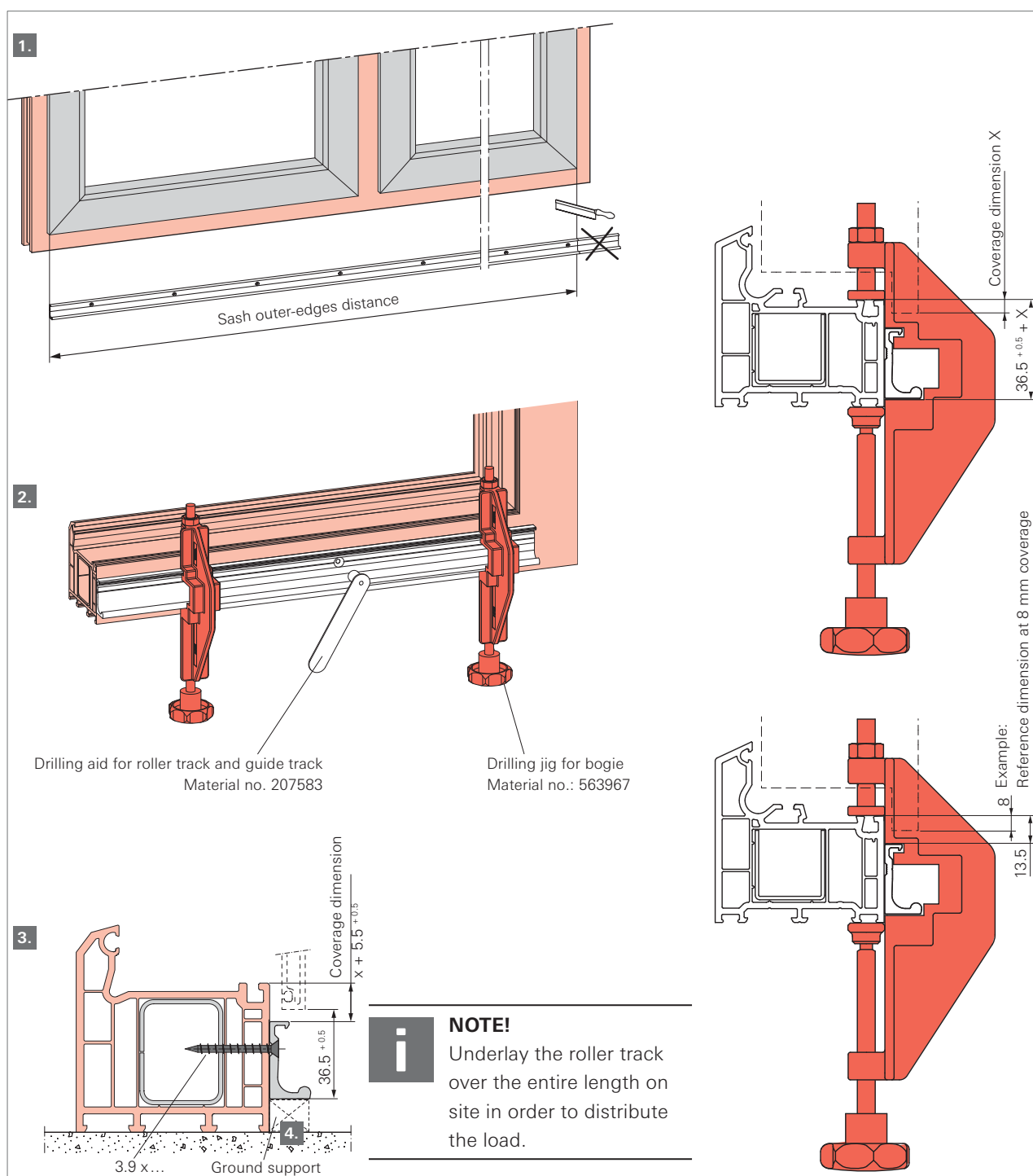
Mounting the roller track on the frame

1. Cut the roller track to the length between the sash outer edges
 2. Fix the roller track to the frame using the jig for roller track and guide track, predrill with drilling aid (bush) and Ø 3.0 mm drill.
 3. Screw-fix the roller track to the frame with 3.9 x ... screws.
- Select the length of the screws, ensuring that they are fastened securely in the steel reinforcement (cf. profile cross section).



NOTE!

Underlay the roller track over the entire length on site in order to distribute the load (see 4.).



Set the sash profile on the roller track

1. Move the handle into the horizontal sliding position.
2. Lift the sash at a slight angle with at least 2 people and set the bogie rollers down on the front edge of the roller track. Check the position of the rollers by sliding the sash and correct if necessary.

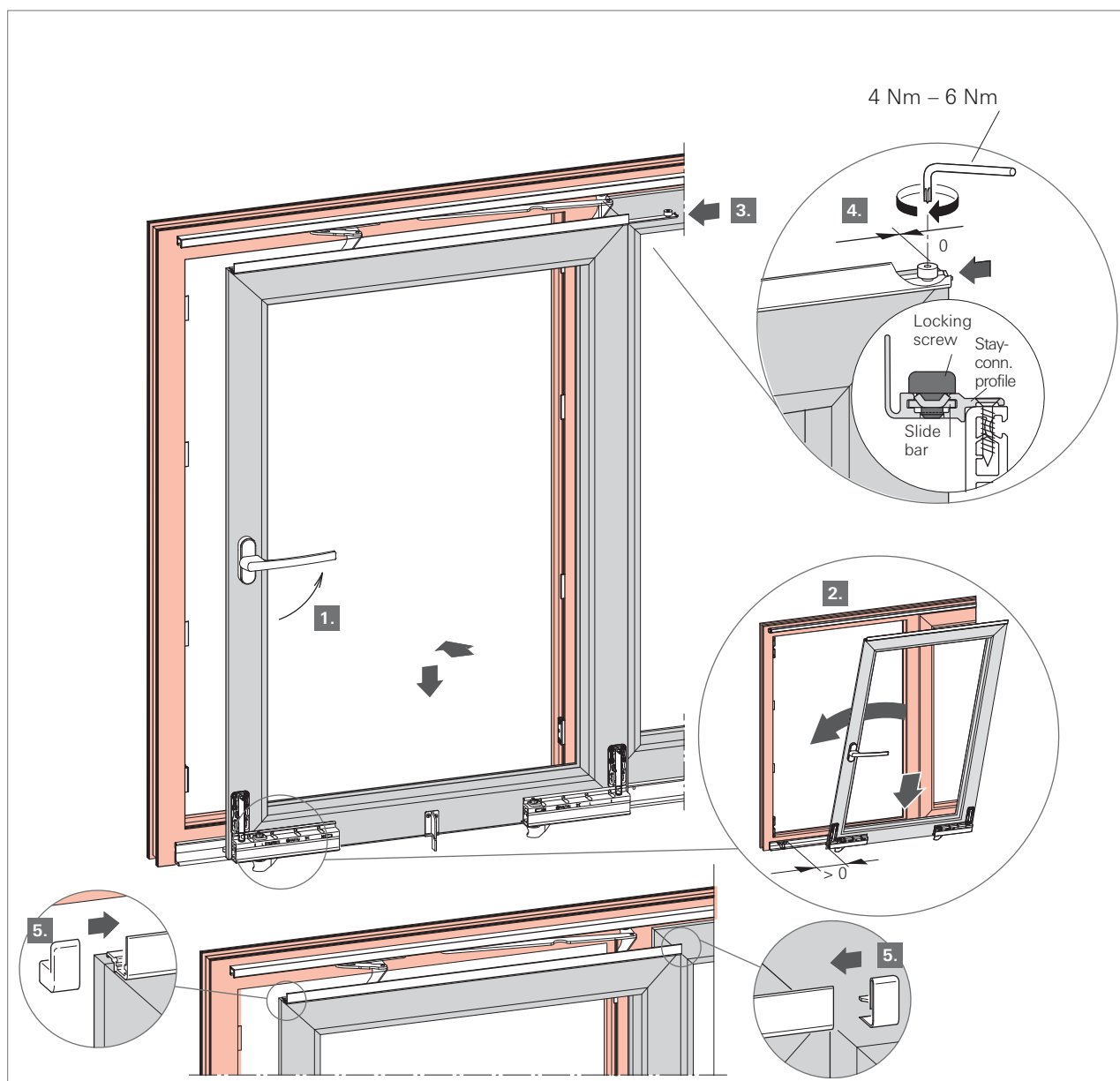
Connecting sash frame to guide track

3. Slide the scissors-slider into the stay-connecting profile.
4. Position the scissors-slider flush with the edge of the sash and tighten the locking screw in an interlocking manner (Torx screwdriver T25, 4 Nm – 6 Nm).

**WARNING!**

If the locking screw is not firmly (positive locking) connected to the stay-connecting profile, the window sash is not sufficiently secured. This can lead to grievous bodily harm.

5. Mount the cover caps on the ends of the stay-connecting profile at the left and right.





Aligning the sash horizontally

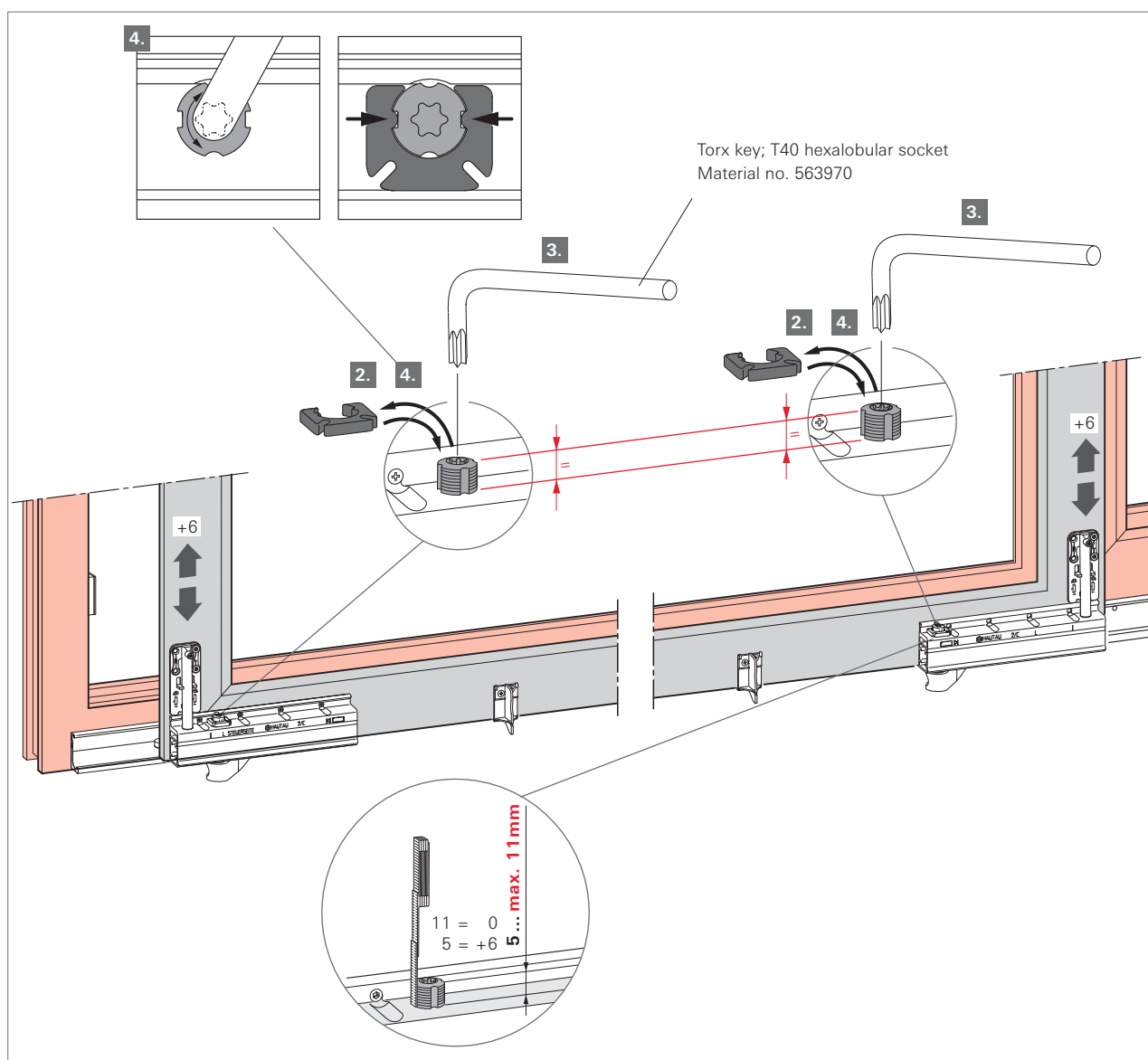
1. Check the clearance all round (not dep.).
2. Remove the anti-twist devices.
3. Raise the bogies via the adjusting screws with a T40 hexalobular socket Torx key (material no. 563970). 1 adjustment screw per bogie.



NOTE!

If the height adjustment for the bogies is adjusted differently, then the guide block at the top will have to be aligned again (see page 92). Unscrew the adjusting screws **by max. 11 mm**, as otherwise the bogies will be destroyed.

4. Install the anti-twist devices after adjusting the bogies, correct the adjusting screws' setting beforehand if necessary.



Aligning the sash horizontally

1. Check the clearance all round (not dep.).
2. Remove the anti-twist devices.
3. In order to adjust the sash, raise the bogies via the adjustment screws with a T40 hexalobular socket Torx key (material no. 563970).

1 adjustment screw per bogie.

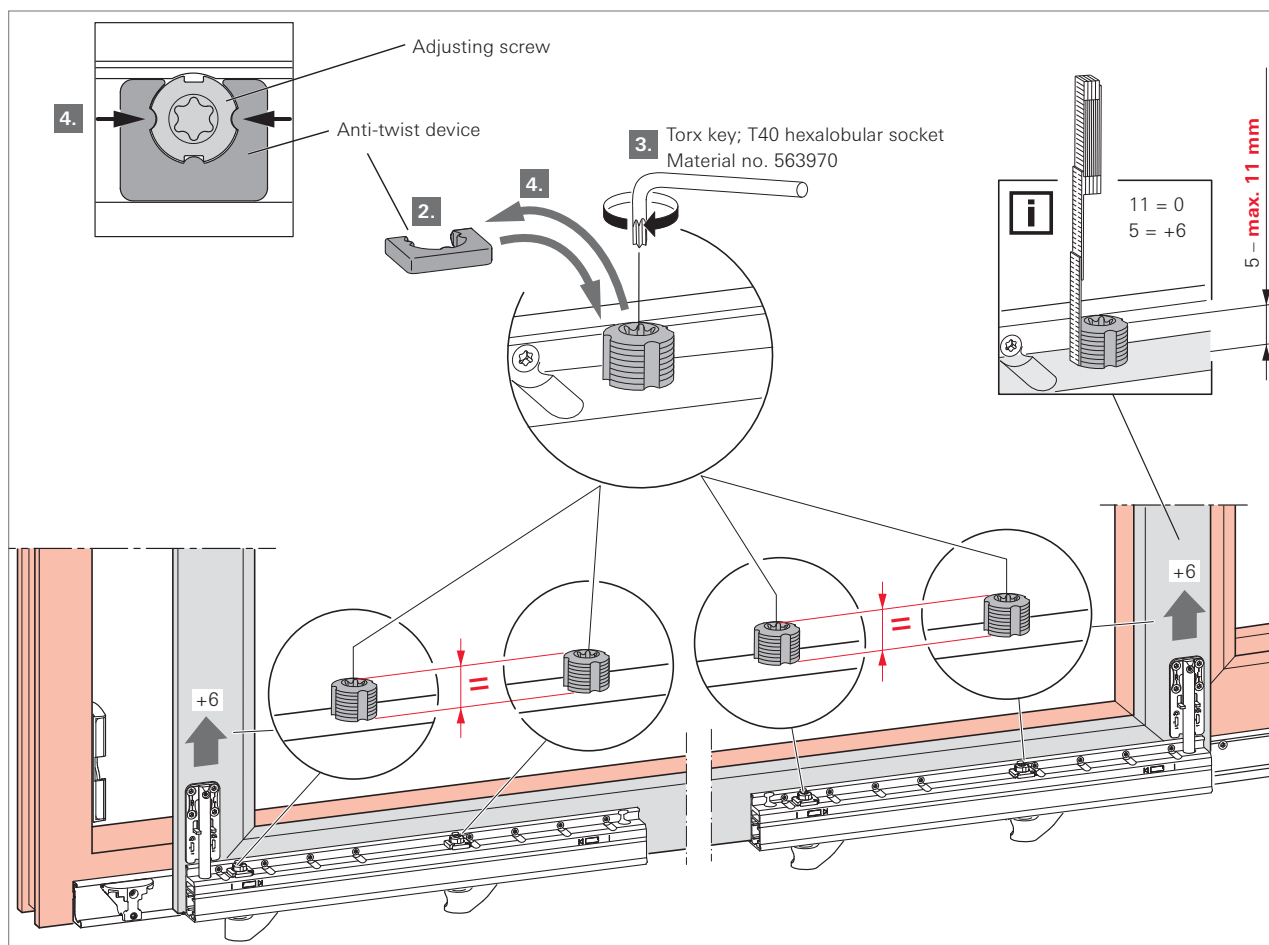
The bogies are uniformly preset in the factory. When aligning the sash, the bogies must be adjusted evenly at their adjusting screws in order to avoid jamming.



Note!

If the height adjustment for the bogies is adjusted differently, then the guide block at the top will have to be aligned again (see page 92). Unscrew the adjusting screws **by max. 11 mm**, as otherwise the bogies will be destroyed.

4. Install the anti-twist devices after adjusting the bogies, correct the adjusting screws' setting beforehand if necessary. The anti-twist devices shall be aligned parallel to the outer edge of the bogies.

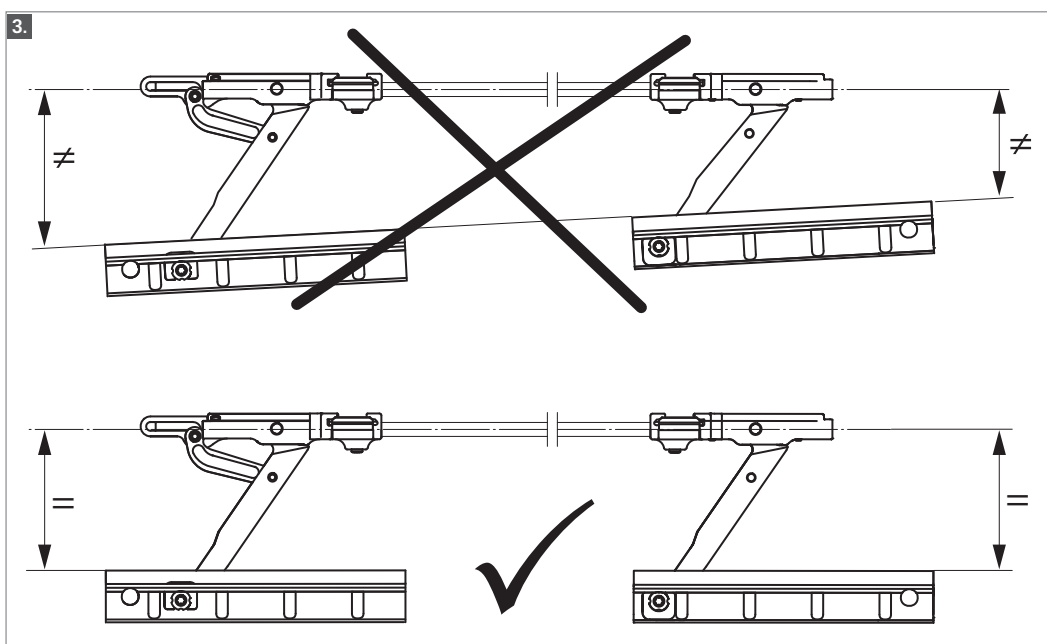
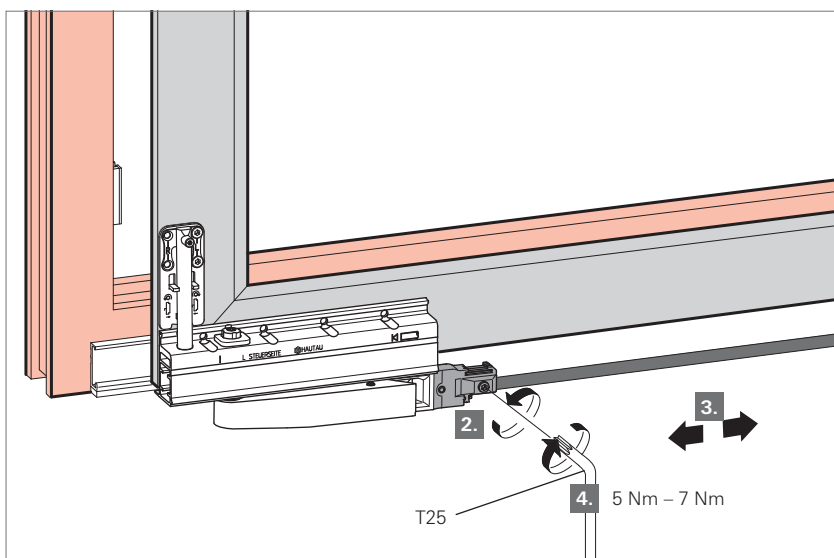




Aligning the bogies parallel

in order to warrant the sash entering the frame smoothly.

1. Move the sash into the tilted position (not dep.).
2. Loosen the connecting rod on the handle-sided bogie with a Torx screwdriver T25.
3. Align the hinge-sided bogie parallel by sliding the connecting rod to the left or right.
4. Tighten up the connecting rod on the handle-sided bogie with a Torx screwdriver T25 (5 Nm – 7 Nm).



Activating the bogie safety mechanism and mounting the bogie cover

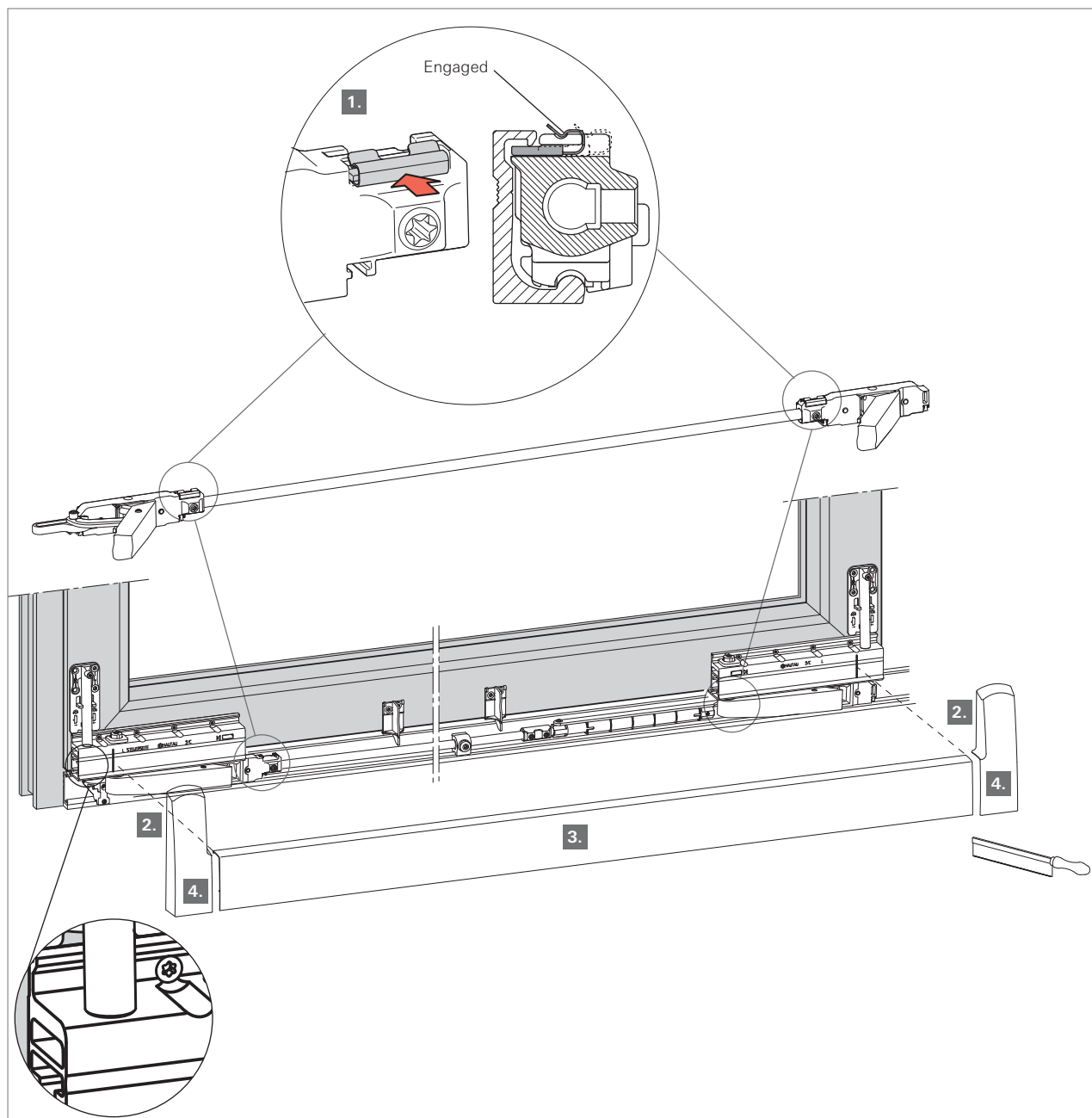
1. Slide back the bogie safety mechanism on both bogies, until they engage in the depicted position.

**DANGER!**

If the bogie safety mechanism is not correctly engaged (or not at all) in the depicted position, the sash is not sufficiently safeguarded. This may lead to hazardous situations (e.g. grievous bodily harm).

Always secure the window sashes from falling out.

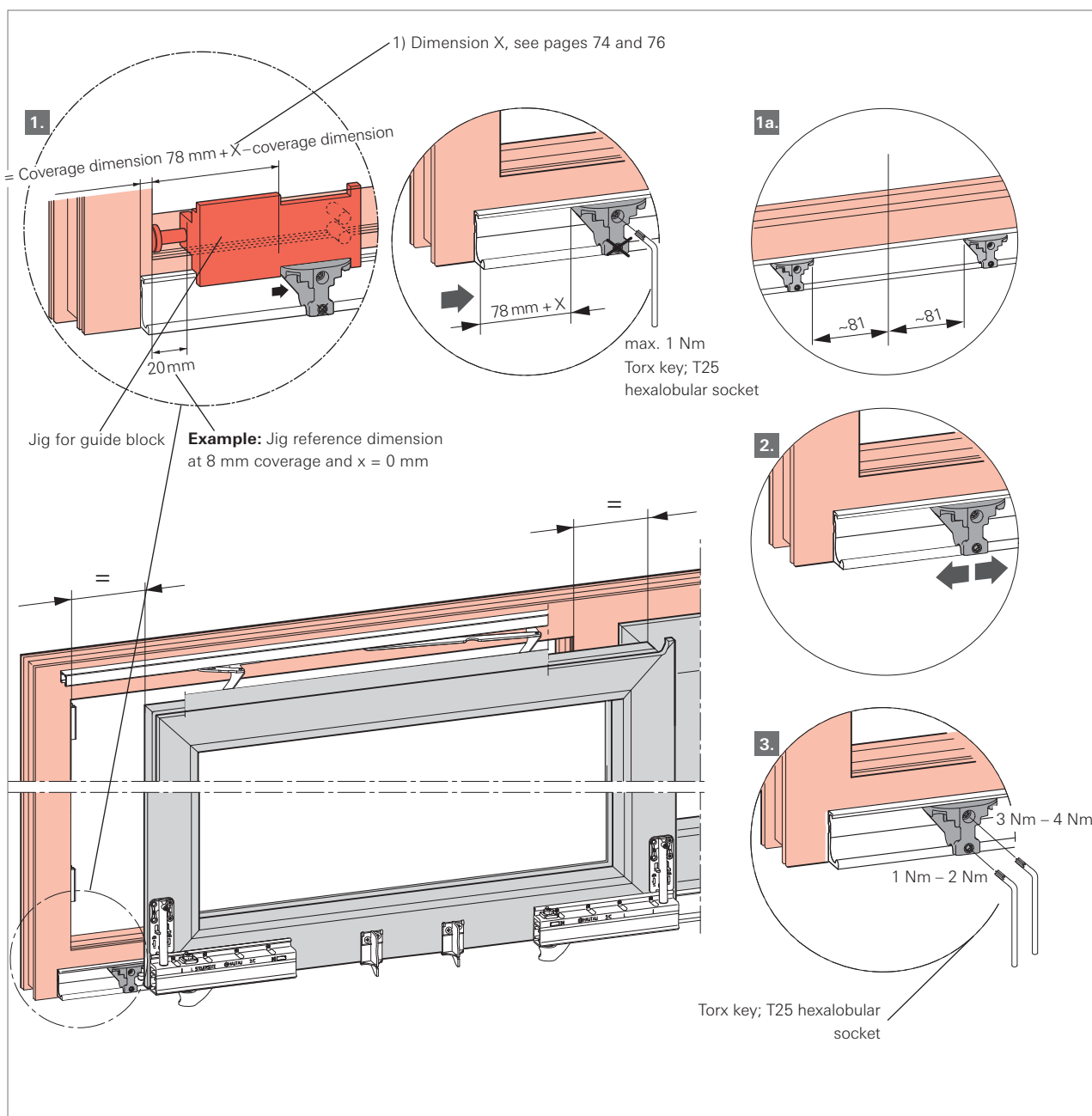
2. Cut the cover profile to length in line with the marks on the bogies.
3. Line up the cover profile with the bogie marks and clip onto the bogie and cover support bracket.
4. Clip on the bottom-left and bottom-right cover cap to the reinforcement brackets.





Mounting guide block at bottom

1. Position the guide block jig as depicted in the drawing, alternatively position the guide block on the handle side approx. 78 mm + X from the roller track's outer edge.
Lightly tighten the top screw with a T25 hexalobular socket Torx key (max. 1 Nm).
- 1a. Note to diagram C: With a continuous roller track, the position of the guide blocks is approx. 81 mm from the frame centre.
2. Bring the sash into the tilted position and check the clearance on both sides (12 mm).
Reposition the guide block if need be.
3. Firstly, tighten the top screw of the guide block with 3 – 4 Nm, then the lower screw of the guide block with 1 – 2 Nm (T25 hexalobular socket Torx key).

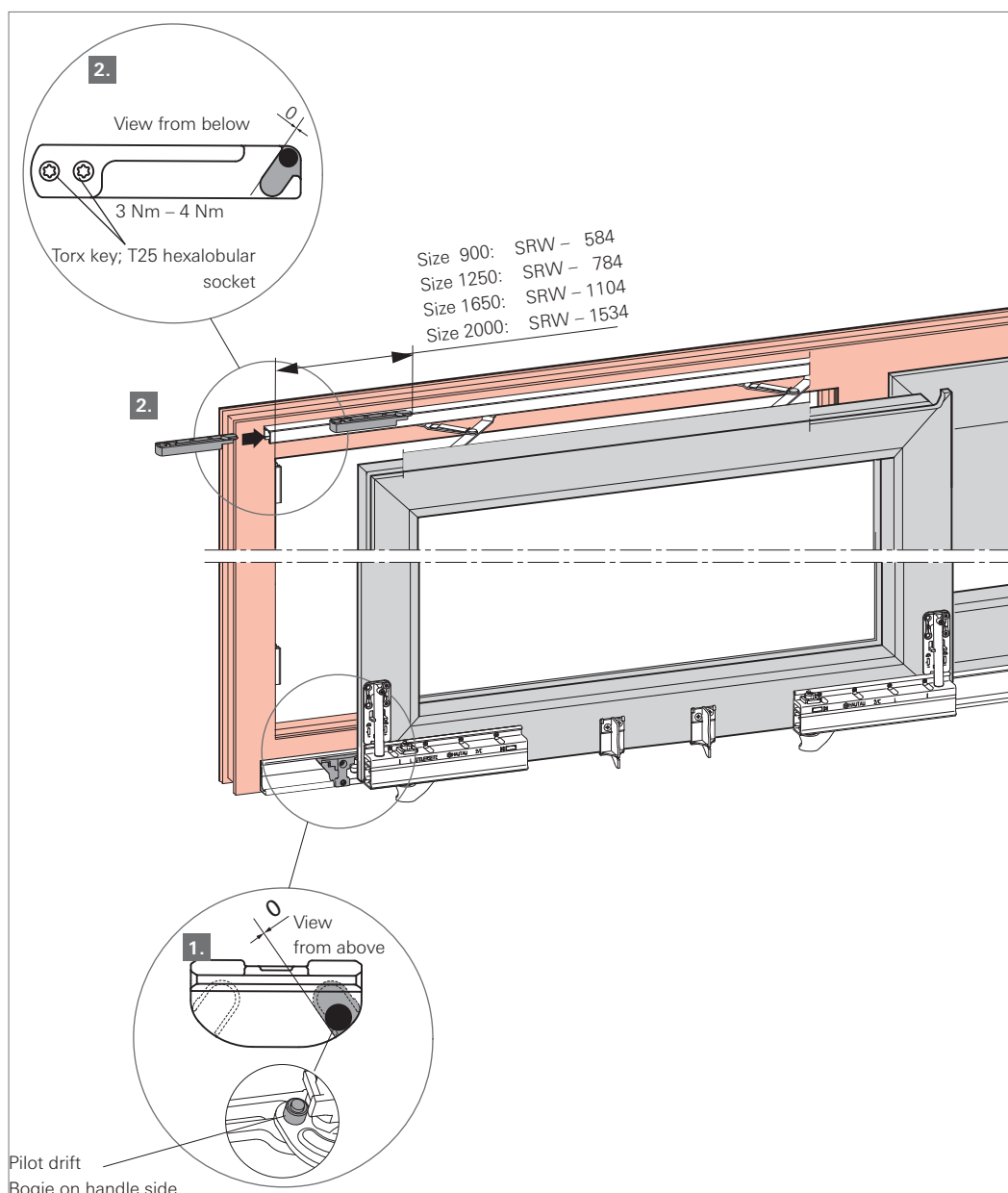


Mounting guide block at top

1. Slide the sash onto the guide block at bottom, until the pilot drift of the "leading bogie" (handle-sided) makes contact with the entry-area curve but it is not yet inserted.
2. Slide the guide block at the top, up to pilot drift of the scissors-slider, in the guide track. Lightly tighten the screws (Torx key 25) on the guide block.
3. Bring the sash into the closed position and check the clearance on both sides (12 mm). Reposition the guide block, if necessary (not dep.).
4. Firmly tighten both screws of the guide block (T25 hexalobular socket Torx key, 3 Nm – 4 Nm).

**NOTE!**

Alternatively, the position of the guide block can also be measured at the top. See dimensioning in depiction. The dimensions refer to a 12 mm clearance, 20 mm overlap width and a correctly positioned stay-connecting profile (4 mm from overlap width) and the size of the scissors-slider (size 900, 1250, 1650, 2000).



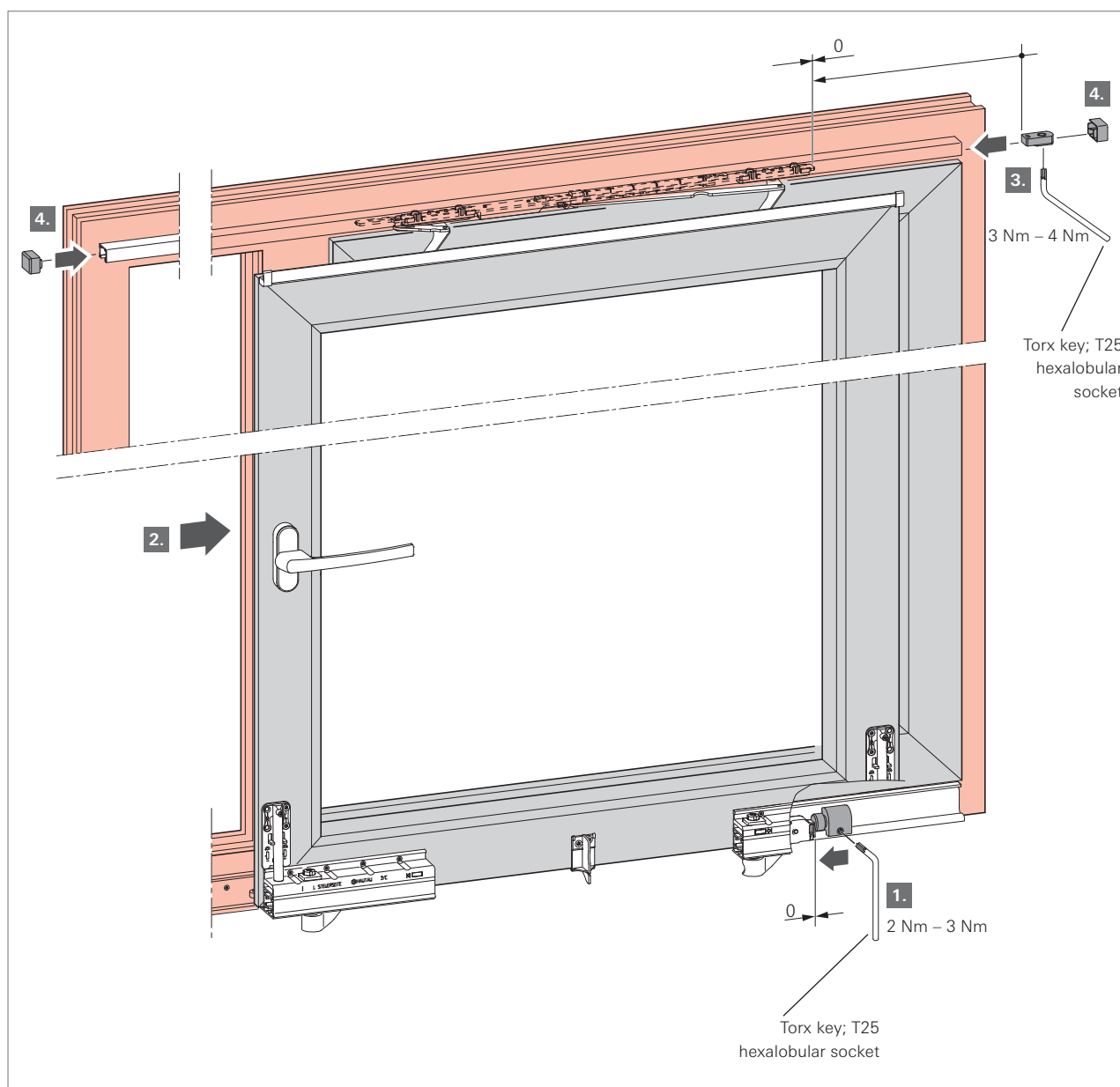


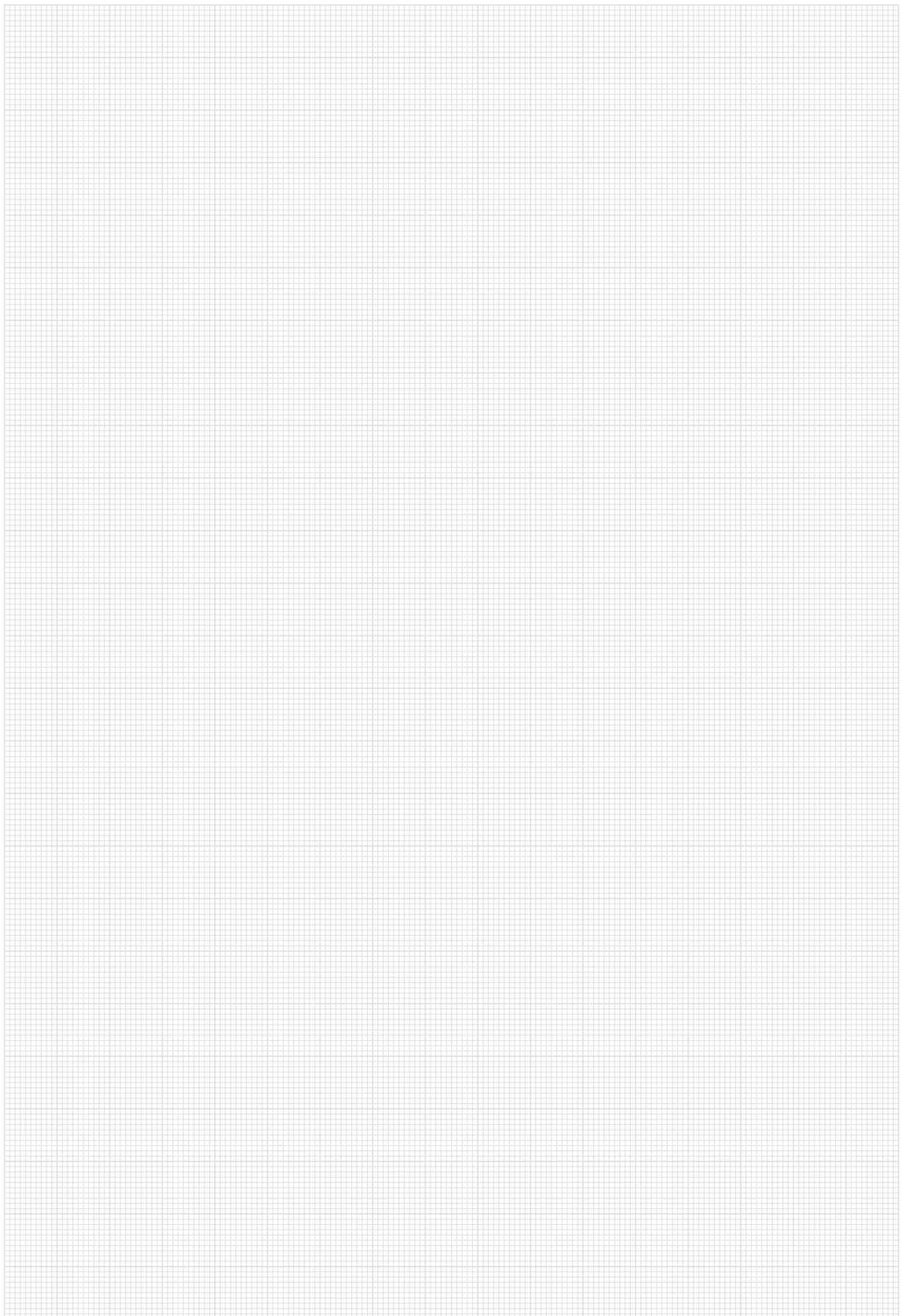
1. Screw on the bottom buffer-stop to the roller track in the desired position. Torx key; T25 hexalobular socket, 2 Nm – 3 Nm
2. Slide the sash as far as the buffer stop.
3. Slide in the top buffer stop into the guide track and screw-fix (Torx key; T25 hexalobular socket, 3 Nm – 4 Nm).
4. Mount the end caps for the guide track.



CAUTION!

In order to avoid damaging the hardware components, the sash must run up against the top and bottom buffer-stop simultaneously.







Adjust the reinforcement brackets to optimise the smooth running of the sash in the frame.

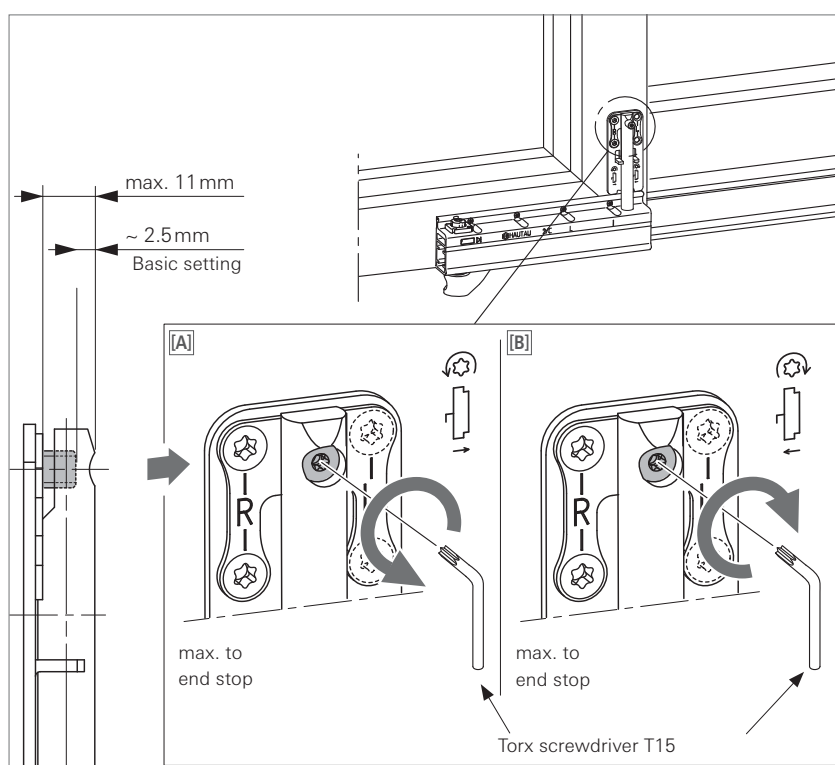
1. Optimise running in.
2. Optimise running out.

**NOTE!**

Starting from the basic setting, both reinforcement brackets should be adjusted equally in direction [A] only.

If the adjustment in direction [A] is too much, the bogies may rub up against each other, depending on the profile and sash weight.

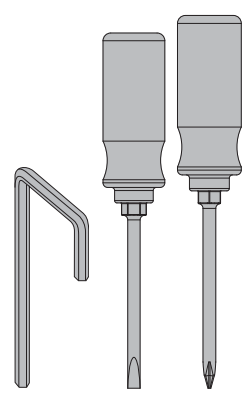
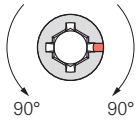
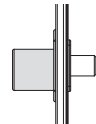
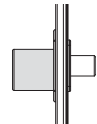
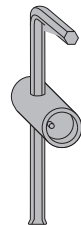
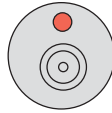
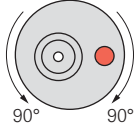
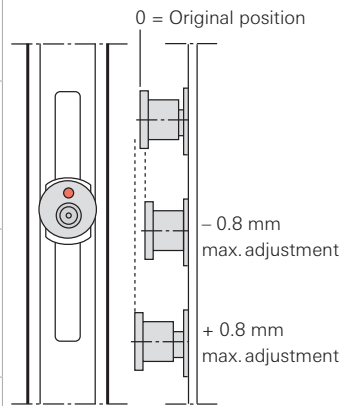
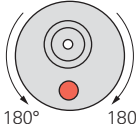
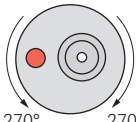
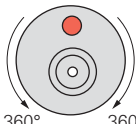
In this case, adjust the reinforcement brackets in [B] direction until the bogies can be moved without rubbing.



Adjustment

Adjustment instructions

Locking cam

Locking cam adjustment instructions						
Cam type	Adjustment range	Gasket compression	Height	Side view		Tools
E cam						
						
	90°	±0.8 mm				
V cam						
Cam type	Adjustment range	Gasket-compression adjustment / in mm	Height adjustment / mm	Side view / top view		Tools
						
						
	90°	±0.8 mm	±0.2 mm			
	180°	—	±0.4 mm			
	270°	±0.8 mm	±0.6 mm			
	360°	—	±0.8 mm			



Troubleshooting

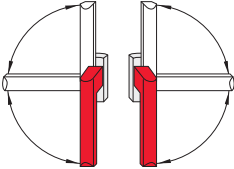
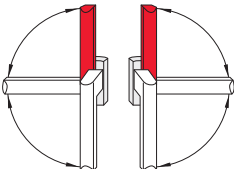
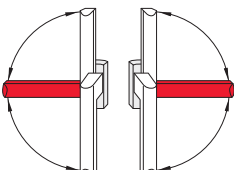
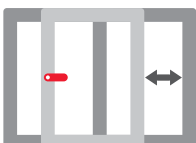
Problem	Cause	Corrective action	Specialist company	End-users
Handle is difficult to rotate.	– Frame parts are not properly greased. – Faulty handle. – Handle screws are screwed in too strong. – Oblique screws in the sash parts. – Faulty sash parts. – Faulty striker locations.	– Grease frame parts. – Replace the handle. – Slightly loosen the screws. – Straight screw-fixing of the sash parts. – Replace the sash parts. – Adjust the striker locations.	☐ ■ ■ ■ ■ ■	☐ – – – – –
Handle can not rotate 180°.	– Faulty hinging or installation of sash parts.	– Check adjustment in turn position (if necessary, rehing the sash proceeding from T&T espagnolette).	■	–
Locking cams rub at striker.	– Faulty hinging of the sash. – Faulty striker locations.	– Hinge the sash once again. – Adjust the striker locations.	■ ■	– –

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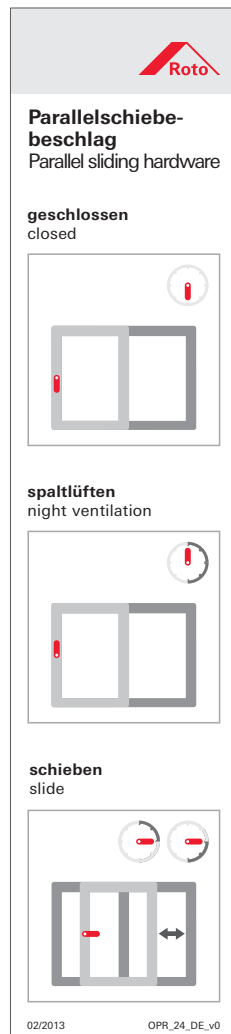
The following symbols show the different handle positions and the resulting sash positions of windows and balcony doors.

Handle position	Sash position	Symbol	Meaning
			Closed position of the sash
			Sash night ventilation position
		 	Sash slide position



The following symbols and signs can be used on windows and balcony doors to protect the end-user.

Please order stickers separately (OPR_24_DE_EN).



Maintenance



WARNING!

Danger of injury through incorrectly conducted maintenance work!

Incorrect maintenance can result in serious personal injury or material damage.

- Before starting work, ensure that there is sufficient installation room.
- Maintain order and cleanliness at the installation location.
- Ensure that the window or balcony door is prevented from suddenly slamming during maintenance work.
- Get a specialist company to carry out adjustment work on hardware – especially in the area of pivot rests or bogies and of scissor stays – as well as replacement of parts and hinging, and unhinging of sashes.
- Do not unhinge the sash for maintenance work.

At least annually, every six months for school and hotel buildings:

	Specialist company	End-users
If necessary, tighten fixing screws.	■	–
Replace damaged screws.	■	–
If necessary, replace components.	■	–
Lubricate all moving components with acid free and non resinous oil from a specialised dealer.	□	□
Lubricate strikers with acid free and non resinous grease from a specialised dealer.	□	□

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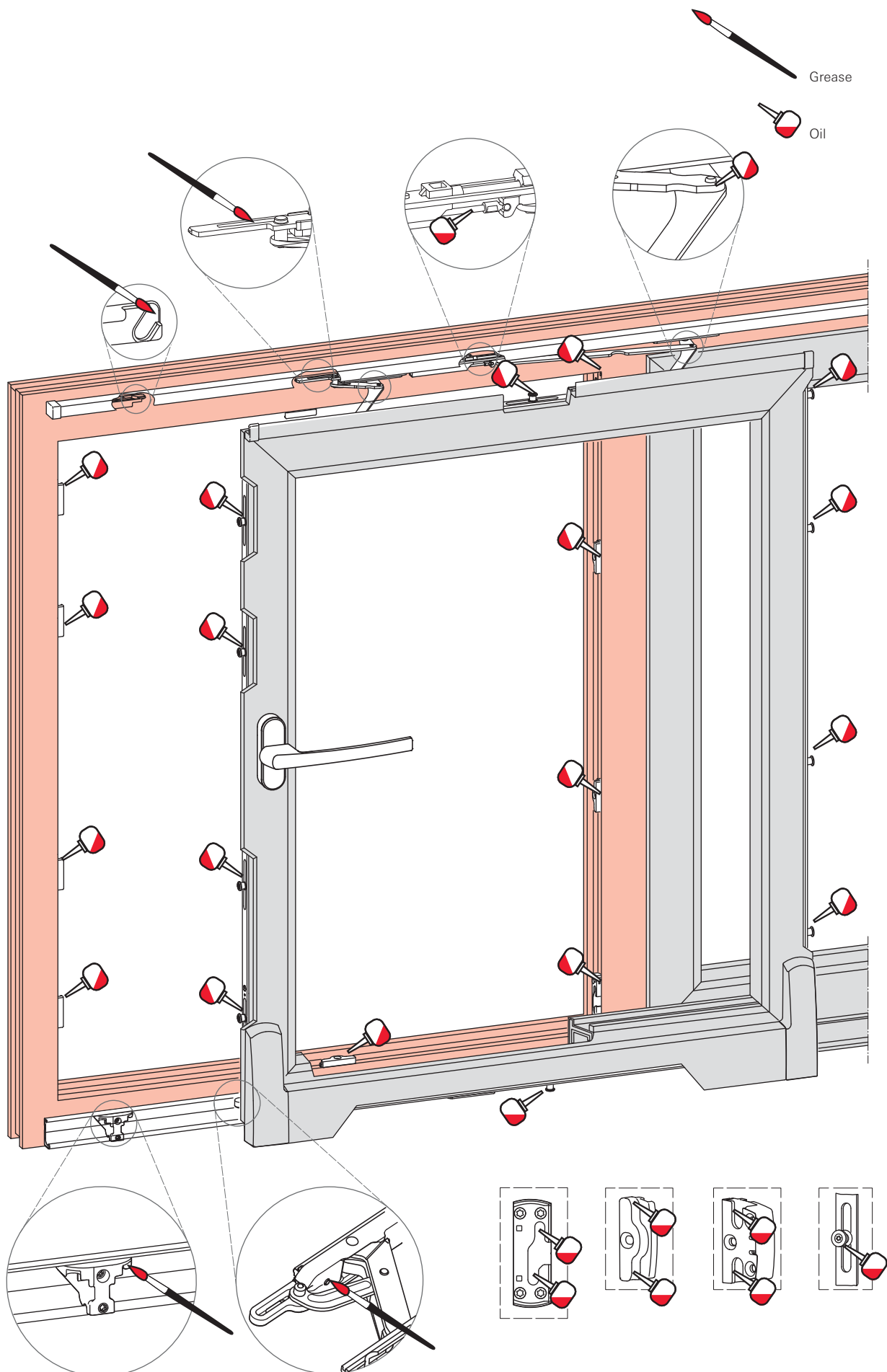


NOTE!

Observe the following environmental protection notes during maintenance work:

- Remove emerging or residual grease at the lubricating points and dispose of in accordance with the valid local regulations.
- Collect exchanged oil in suitable containers and dispose of in accordance with the environmental regulations.

The hardware overview shows the arrangement of the lubrication points. The illustrated overview does not necessarily correspond to the installed hardware. The number of lubrication points depends on the size and design of the window.



Inspection

At least annually, every six months for school and hotel buildings:

	Specialist company	End-users
Check that safety-relevant hardware components are mounted securely.	☐	☐
Examine safety-relevant hardware components for wear and tear.	☐	☐
All movable parts are to be operation-tested.	☐	☐
All locking points are to be operation-tested.	☐	☐
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 is max. 10 Nm.	■	—
■ It can be checked using a torque wrench.	■	—
■ The smooth operation can be improved by greasing/oiling or adjusting the hardware.	■	—

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Care

	Specialist company	End-users
Keep the hardware free from deposits and soiling.	☐	☐
Never use aggressive, acidiferous cleaners or abrasive cleaning agents.	☐	☐
Only use mild, pH-neutral cleaning agents in diluted form.	☐	☐
Only use a soft cloth for cleaning.	☐	☐

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No legal claims can be derived from these recommendations, the application is to be conveyed for each concrete individual case. The window and balcony door manufacturer must draw builders and end-user's particular attention to these maintenance instructions. Roto Frank AG recommends window fabricators to make maintenance agreements with their end-users.



Protection against corrosion

	Specialist company	End-users
Aggressive vapours (e.g. by means of formic acid or acetic acid, ammonia, amine or ammonia compounds, aldehydes, phenols, chlorine, tannic acid etc.) in the vicinity of the windows must be absolutely avoided.	■	—
Never use acetic-acid or crosslinked acidic sealing compounds or those with the above mentioned contents, since both the direct contact with the sealing compound and its vaporisation can attack the hardware's surface.	■	—
Always use stainless-steel screws.	■	—

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Protection against dirt

	Specialist company	End-users
Remove deposits and dirt from building materials (building dust, plaster, cement, etc.) or similar materials with water before it cures.	□	□
Keep the hardware free from deposits and soiling.	□	□
Never use aggressive, acidiferous cleaners or abrasive cleaning agents.	□	□
Only use mild, pH-neutral cleaning agents in diluted form.	□	□
Only use a soft cloth for cleaning.	□	□

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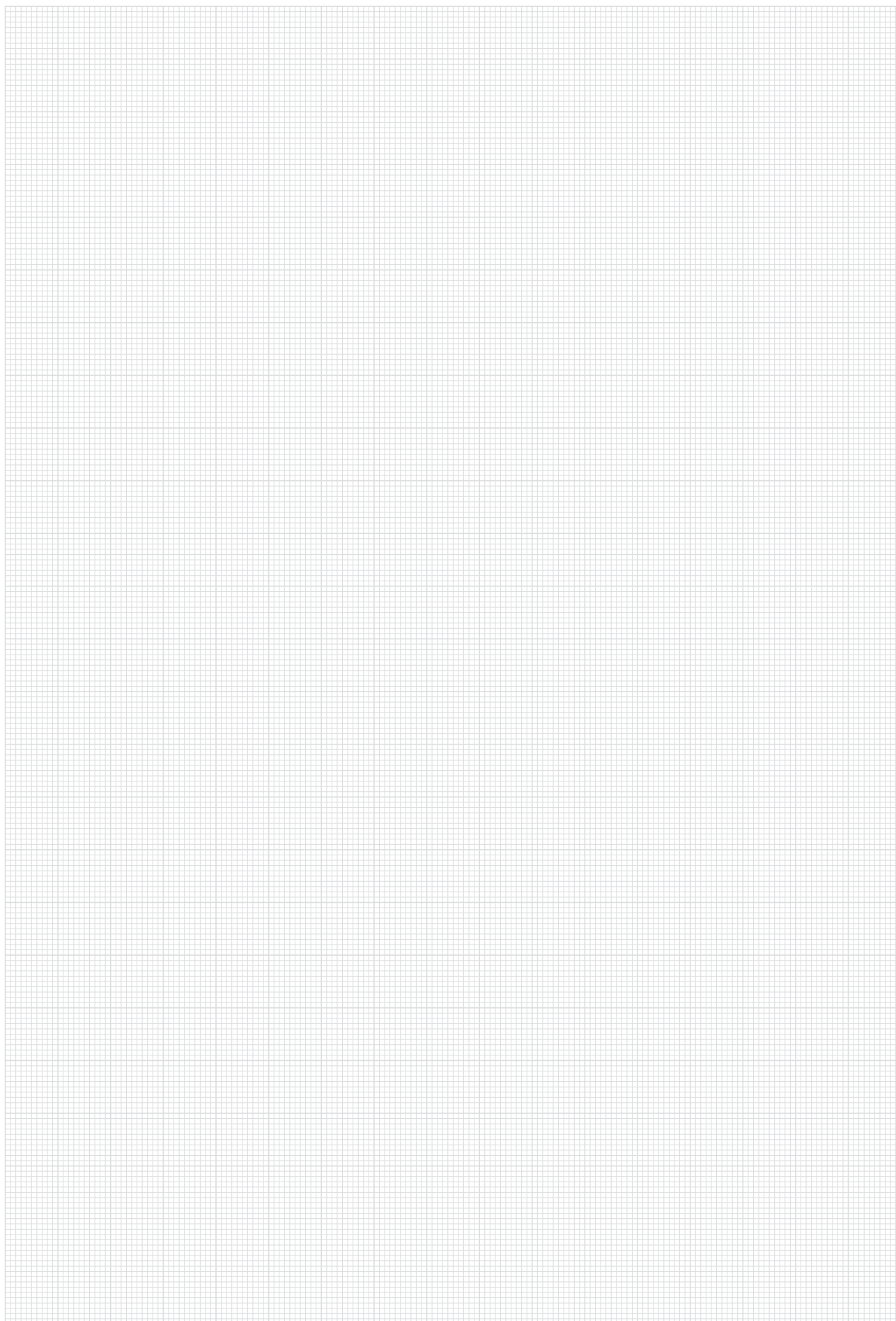
Protection against (permanent) moist interior air

	Specialist company	End-users
Ventilate the hardware and the rebate areas – especially in the construction phase – so that they are neither exposed to direct contact with water nor to formation of condensation water.	☐	☐
Ensure that (permanently) damp spatial air cannot condense in the hinge and rebate areas: ■ Force ventilate several times each day (open all windows for approx. 15 minutes). ■ Also ventilate during holidays and absences. ■ For more complex construction projects, develop a ventilation plan if necessary. If described systematic ventilation is not possible, e.g. because fresh screed must not be traversed, or it cannot take draughts, put the windows into the tilted position and make them airtight by taping on the indoor side. Divert the moisture present in the room air to the outside by means of condensation dryers.	☐	☐

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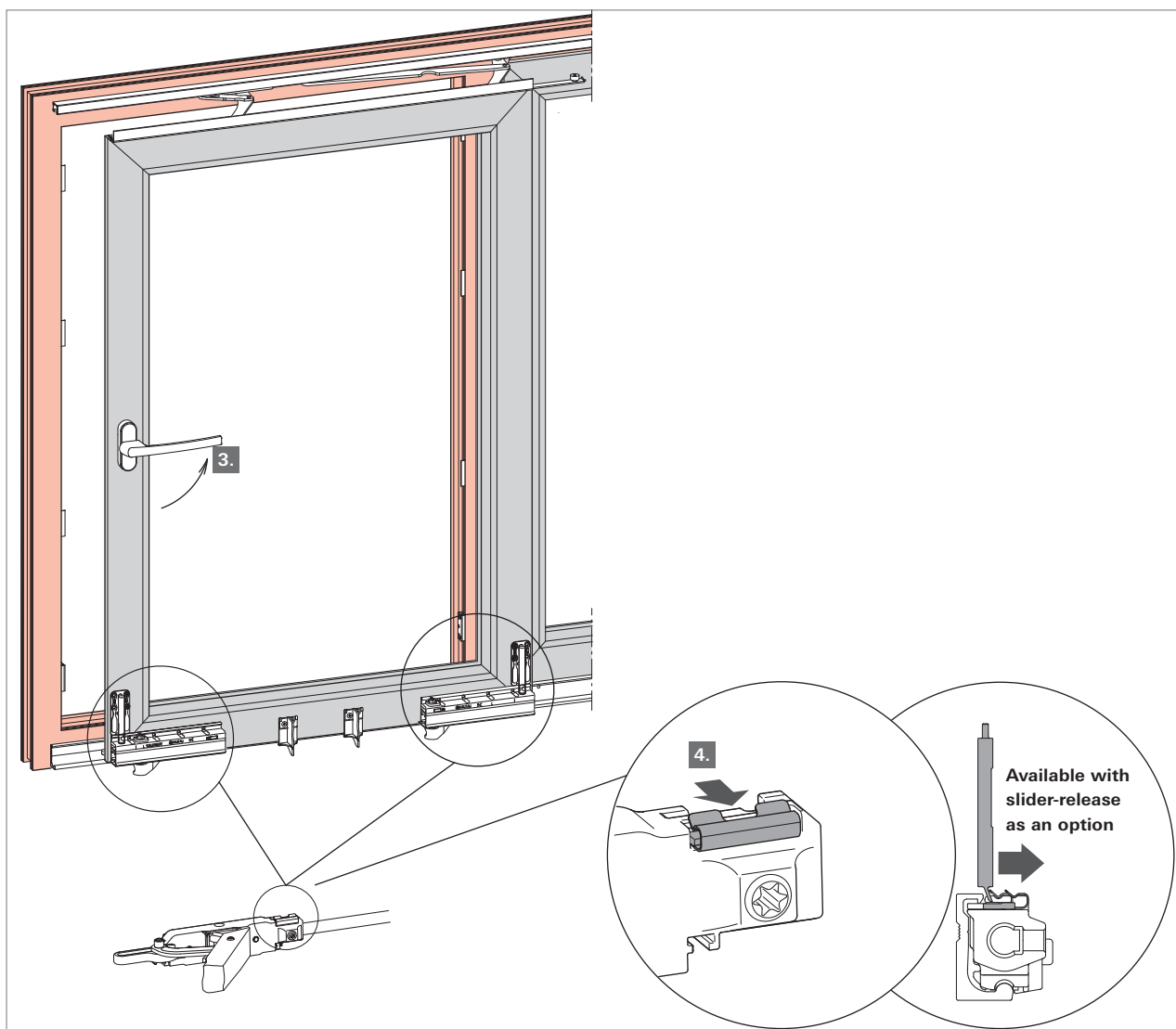
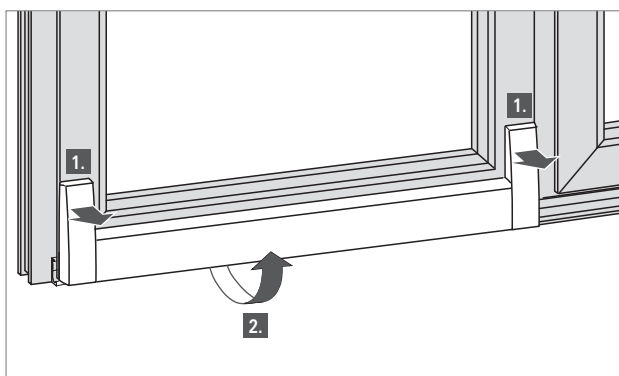
□ = To be carried out either by a specialist company or by the end-user.



1. Remove the cover caps of the reinforcement brackets by pulling them forward.
2. Grip the rear of the cover profile on the bogie and pull it at an incline upwards. Pull forcefully with both hands.
3. Bring the handle into the sliding mode and open the sash.
4. Bring each of the bogie safety mechanisms into the disengaged position.

**PLEASE NOTE:**

Safeguard the sash against falling out prior to releasing the locking screw.





5. Take off the cover caps from the stay-connecting profile on the opposite side of the handle.
6. Loosen the locking screw.
7. Pull out the scissors-slider of the stay-connecting profile.
8. Tilt the disengaged sash and lift it from the roller track with at least two people.

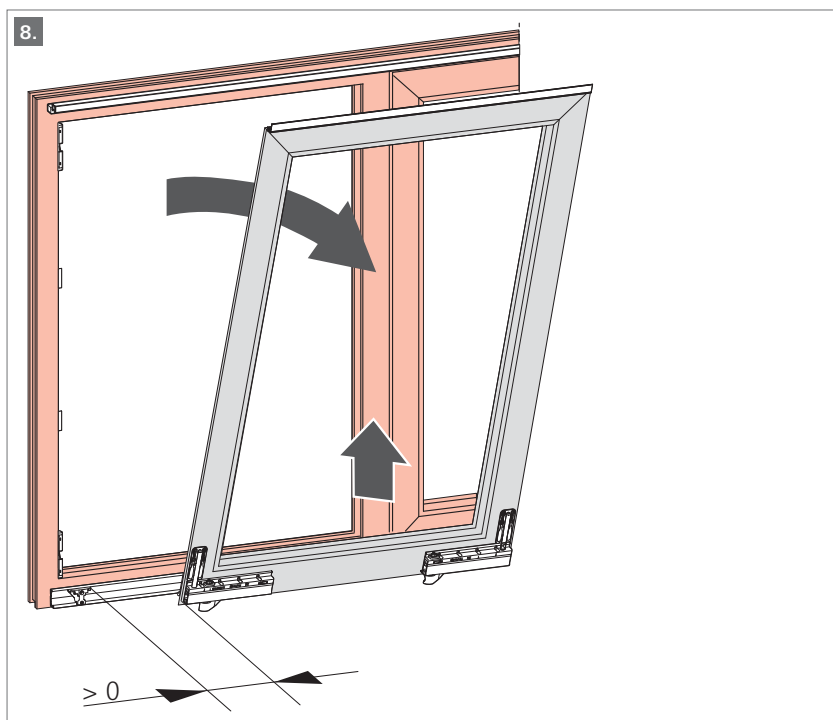
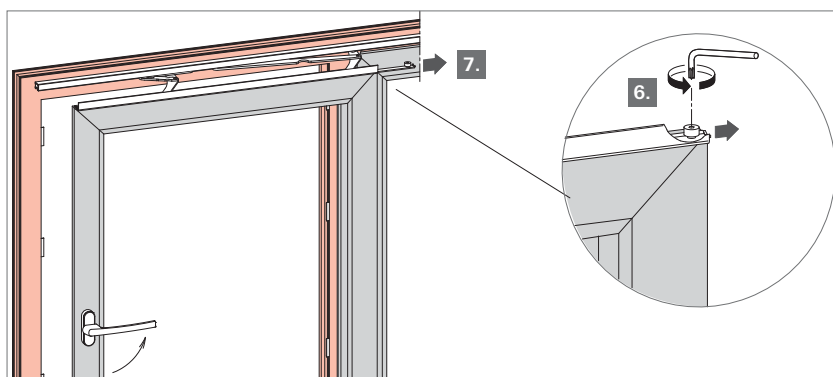
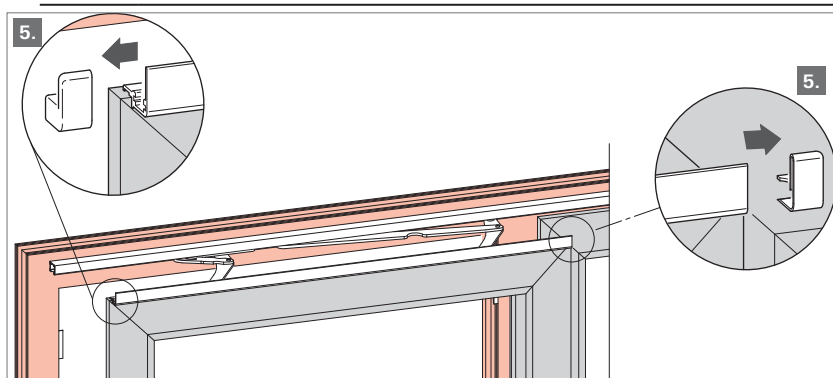


DANGER!

Risk of injury from unsecured window sashes.

Window sashes that are not sufficiently safeguarded may lead to hazardous situations (e.g. grievous bodily harm).

Always secure the window sashes from falling out also when dismantling!



**DANGER!****Danger to life from incorrect handling and transport!**

Incorrect handling and unsuitable transport of window elements can result in dangerous circumstances and cause severe accidents, even including death.

Therefore:

- During loading and unloading, select force application points which exclusively create reaction forces appropriate to the designed layout of the hardware components for the intended installation location.
- During handling and transport, ensure that hardware is in the locked position, so as to prevent an uncontrolled opening of the sash. Use suitable securing equipment to do this.
- Use only transport protections designed for the respective clearance.
- Wherever possible, transport the windows in the intended installation position. If transport in the intended installation position is not possible, unhinge the sash, and transport it separately from the frame to which it belongs.

During transport, loading, and unloading, especially when auxiliaries such as suckers, transport nets, forklifts, or cranes are used for support, reaction forces may arise which result in damage or overload of the installed hardware. Therefore observe the following during all transport, loading, and unloading:

- The type and the force application points when transporting, loading, and unloading have a significant effect on the reaction forces which arise.
 - Always choose the force application points so that the resulting reaction forces are dissipated appropriate to the designed layout of the hardware components for the intended installation location. This applies particularly for the hinge positions.



Check the delivery on receipt immediately for completeness and transport damage.



NOTE!

Claim any damage as soon as it is detected. Claims for damage can only be invoked within the statutory reclamation period.

Disposal

Disposal of window hardware

Separate the hardware components from the window and dispose of as metal scrap.

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