

PORTAL

PORTAL FS^{PLUS}

Product catalogue:
PORTAL hardware for FS^{PLUS} fold and slide elements
made of timber or PVC profiles.

Window systems

Door systems

Comfort systems

CATALOGUE PORTAL

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Technische und farbliche Änderungen vorbehalten.

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6.1. General information

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Technische und farbliche Änderungen vorbehalten.

Target group of this documentation

This documentation is intended to be used by specialist wholesalers and fabricators only.

Correct use

- All products shown and described in the catalogue are used for the manufacture of windows and/or French doors only.
- SIEGENIA hardware components must only be combined with SIEGENIA accessories.

Improper use

- All windows and/or French doors fitted with SIEGENIA hardware must not be built into tilting or inclining facades.

Safety notices

- For your safety assemble your complete set of fittings from the SIEGENIA hardware components only. Otherwise damage could occur, for which we accept no liability.
- All hardware components must be properly assembled as per the description in the assembly instructions. Do not overtighten the screws!
- Never use acid curing sealants as they may cause the hardware components to corrode.
- The size ranges given for the SIEGENIA FS PORTAL hardware must not be exceeded.
- For timber elements, the standards specified by DIN 68 121 (timber profiles for windows and French doors) apply for timber quality and design.

Feedback on documentation

We welcome your comments and suggestions on how to improve our documentation. Please e-mail us your comments to 'dokumentation@siegenia.com'.

Information regarding the use of this catalogue

- For pieces numbered 1/2, 1 piece, or' if necessary, 2 pieces can be used or for 1 - 4, 1, 2, 3 or 4 pieces can be used if required.

Abbreviations used in PORTAL product catalogues	
BS	Hinge side
BSO	Hinge side, top
BSU	Hinge side, bottom
CS	Sliding door
DF	Turning sash
DH	Turn resistance
DKB	Turn & tilt fitting
DS	Secondary sash gear (integr. handle)
DSG	Secondary sash gear, reverse action
E	Anti-intruder
EB	Corner hinge; notch hinge jig
EL	Bottom hinge
F	Guiding rail; folding sash
FA	Sash clearance
FB	Sash width
FBS	Mishandling device
FEB	Rebate corner hinge
FFB	Sash rebate width
FFH	Sash rebate height
FH	Sash height; sash lift
FHD	Sash timber width
FI	Airgap
FS	Fold & slide door fitting
G	Handle position
GH	Handle for drive gear
GS	Basic security
H	Timber; rear
HH	Lift & slide timber
HK	Lift & slide PVCu
HS	Lift & slide fitting
HS-H	Lift & slide fitting timber elements
HSK	Lift, tilt & slide fitting
HS-KF	Lift & slide PVCu elements
KF	PVC window
KH	Lift, tilt & slide timber
KK	Lift, tilt & slide PVCu
KRB	Tilt lock component
KRL	Tilt lock bearing
KSB	Tilt striker plate
LH	left
LM	Aluminium
MV	Centre lock
OKFF	Finished floor level
ON	Without groove
OS	without lock
PDB	Profile data sheet
PSK	Parallel tilt & slide hardware

Abbreviations used in PORTAL product catalogues	
PSK-Z	Parallel tilt & slide fitting, handle driven
PZD	Pozidriv
RAB	Frame width
RAH	Frame height
RH	right
RFB	Frame rebate width
RFH	Frame rebate height
S	mirror image
SEC	Secustik® - The window handle with the built-in security you can hear
S-ES	Steel-enhanced security
SL	Top hinge
SW	Key dimension
TBT	Tilt before turn
TL	Component for doors (door length)
TS	Silver titanium
U	bottom
Üb	Rebate width
UE	Opening monitoring
VKE	Sales unit (quantity)
VPE	Packaging unit (type)
VSL	Locking side
VSO	Locking side, top
LSB	Locking side, bottom
W-H	Stay hinge, timber
WK	Resistance requirements (intruder resistance)
W-KF	Stay hinge, PVCu windows
Z	handle driven
ZV	Central locking gear:
220	Schemes 220, 440 and 660

Pictograms used in PORTAL product catalogues



Fig. 1: Pictogram for timber elements



Fig. 2: Pictogram for PVC elements



Fig. 3: Pictogram for jigs

Important instructions for retailers and fabricators

Preliminary and applicable documents TBDK, VHBH and VHBE

- Guidelines on product liability:
TBDK - fixing of bearing hardware components of turn-only and turn & tilt hardware with definitions of turn-only and turn & tilt hardware as well as their potential installation positions,
VHBH - hardware for windows and French doors - specifications/notes on product and on liability,
VHBE - hardware for windows and French doors - specifications and notes for end users
- Operating, care and maintenance instructions
- All of these documents can be found under PORTAL "product catalogue > Proper Use".

Directives of the Trade Organisation for Locks and Fittings (Gütegemeinschaft Schlösser und Beschläge e. V.)

The directives of the Trade Organisation for Locks and Fittings provide comprehensive information on the correct operation and maintenance of hardware for windows and French doors. We deem these directives to be binding.

You can find the latest versions of the directives here in a range of languages:

<http://www.beschlagindustrie.de/ggsb/richtlinien.asp>



TBDK – Attachment of supporting fitting components for turn-only and tilt & turn fittings

with definitions for turn-only and tilt & turn fittings and their possible installation positions.

VHBH – Hardware for windows and French doors

Guidelines/advice on the product and on liability

VHBE – Hardware for windows and patio doors

Guidelines/advice for end-users

Further relevant documents

You can find further documents such as assembly instructions, profile-related assembly instructions, maintenance instructions and operating instructions in our documentation portal:

<http://produktdokumentation.siegenia-aubi.com>



Hardware systems

The size ranges that are specified are binding for the hardware solutions that are included in this document. The following specifications must also be adhered to:

- **For PVC elements**

The specifications of the profile manufacturers or system providers also apply, especially with regard to possible restrictions on sash dimensions, sash weight and lock distance. Where special manufacturing instructions or fabrication guidelines exist, these must be explicitly adhered to. The specifications given for torques must be adhered to.

- **For timber elements**

The specifications of DIN 68 121 (timber windows and French doors).

Hardware area of application

All hardware solutions are intended for installation on **inward** opening windows and French doors. Exceptions can be made for fitting solutions designated for use with outward opening windows and French doors. The specified steel hardware components are electro-galvanised and then finished using a special process. They are not suitable for use:

- In damp locations
- In environments where the air contains aggressive, corrosive components
- In environments where the air contains salt
- With timbers containing aggressive substances

Please contact your SIEGENIA sales consultant in such cases.

Hardware solutions FS PLUS

The illustrations below of hardware solutions for burglar resistance on fold & slide windows and fold & slide French doors are recommendations only. You will find hardware compositions for the achievement of the necessary resistance classes with profile-dependent central locking gear components for sashes and frames in the FAVORIT and TITAN catalogue.

Special measures must be taken in order for test certificates to be obtained, depending on the regulation/test standard and target resistance class, with regard to the type of timber, profiling, reinforcement and the screwing of hardware.

The specifications relating to this in the "Anti-intruder features of a PVC window", or "Anti-intruder features of a timber element" sections in this document section and references to DIN EN 1627 - 1630 in the "Security and Standards" section must be observed. In individual cases, contact SIEGENIA with regard to appropriate testing versions.

Excessive strain

Bearing components can break if they are exposed to excessive strain. This may lead to the window sash falling out, causing serious injuries. If it is anticipated that the bearing components may be subject to excessive strain under certain conditions (use in schools, nursery schools, etc.), appropriate measures must be taken to prevent this from happening, such as using lockable handles.

In case of doubt, please contact your SIEGENIA sales consultant.

Complete set of hardware

Your complete set of hardware should **solely** be composed of SIEGENIA hardware components. Otherwise damage could occur, for which we accept no liability.

Mounting the hardware components

All hardware components must be mounted properly. When doing so, pay particular attention to the mounting position and ensure that all hardware components on the hinge side are firmly attached.

In particular hinge pins for sash hinges must be pressed in to the stop if they are pushed in **from below**.

These procedures must be carried out by experienced professionals only.

Mounting the hardware components

- Handle: countersunk screws M 5 x .. , in accordance with DIN 965-4.8; the screws should be long enough that they engage a minimum of 6 mm into the screw thread of the component (outside handle, sliding grip or gear). The maximum torque may not exceed 2 Nm.
- Remaining hardware components:
Window screws for PVC windows
Window screws for timber windows - Note: pre-drilling is required for softwoods!
Window screws with a galvanised surface must be used for hardware components with galvanised and passivated surfaces for "Titan Silver" in order to prevent contact corrosion.
Window screws with a Zn-Ni or Deltatone with Delta-Seal surface must be used for hardware components with "E-Look" surfaces in order to prevent contact corrosion.
- Do not overtighten the screws!

Surface treatment for timber elements

Timber windows and door elements should only be surface treated **before** the hardware components are assembled. Treating these surfaces at a later stage can reduce the functional capacity of the hardware components.

Inserting blocks

When inserting blocks, please observe technical guideline no. 3 from the German Glazing Trade [Glaserhandwerk], "Blocking glazing units" [Klotzung von Verglasungseinheiten].

Sealants

Never use acid curing sealants as they may cause the hardware components to corrode.

Cleaning

Keep the rebates free from deposits and dirt, especially from residues of cement and plaster. Avoid exposing the fitting directly to water and do not let cleaning agents come into contact with the fitting.

Information for end users

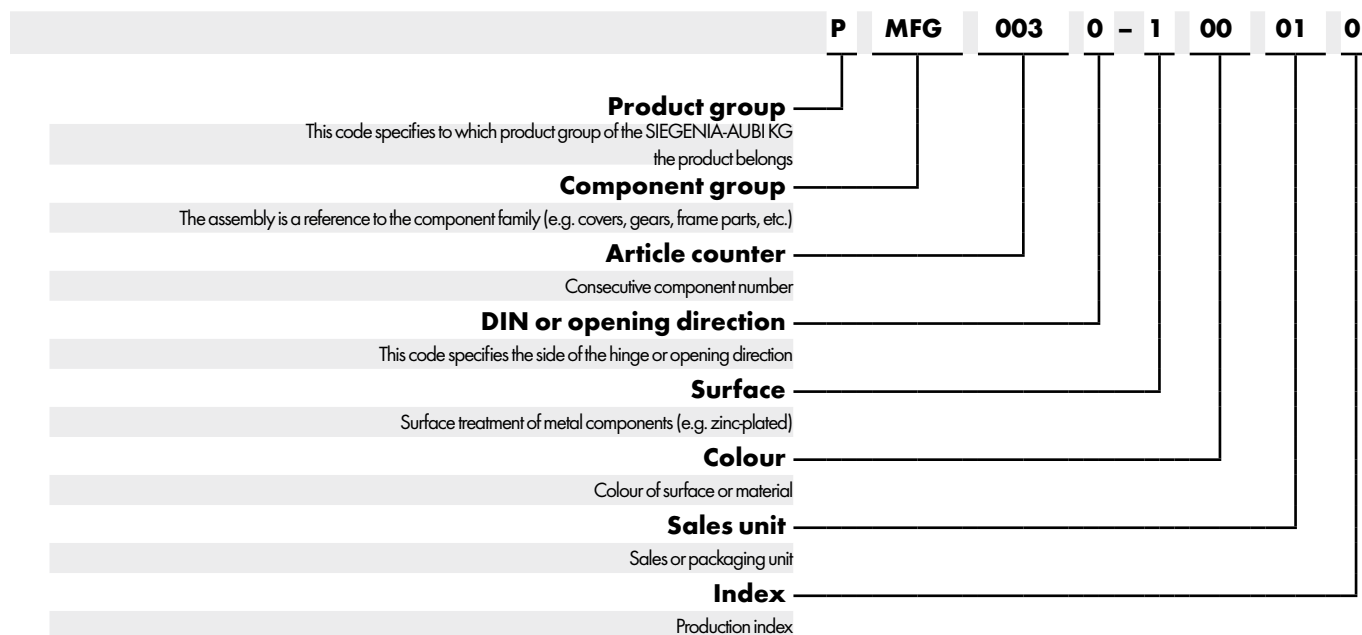
If required, affix the user information "Label for protection of hardware" (order no. H4001.2806) to the installed window or door element in a place that can be seen easily.

Provide the user with the following documents:

- Operating and Care Instructions order no. xxxx

Material numbers key

The material number is a code for components and consists of eight segments. The material number allows products to be precisely assigned to their corresponding component drawing, surface, colour and other properties



P MFG 003 0 - 1 00 01 0

1 2 3 4 5 6 7 8

1 Product group					
A	A300	G	Building technology	T	TITAN
B	BASICline	K	Small parts	Z	Accessories (general)
C	Casement	L	Ventilation technology		
D	Door (door lock programme)	M	Aluminium		
F	FAVORIT	P	PORTAL		

2 Component group					
A	Jig	H	handles	S	Stays
B	Hinge side parts	K	Cover caps	U	Monitoring (AEROCONTROL/radio sensor)
D	Seal, distance piece, documentation	L	Bogie wheels	V	Extension
E	Corner drives, locking bolts, locking part	M	Mixed packages	Z	Linkages/accessories
F	Sash components	P	Profiles/PORTAL profile sets		
G	Gear	R	Frame parts		

The abbreviations ONLY apply to the 1st digit. Further digits are assigned individually.

3 Article counter	
<i>The articles are assigned consecutive numbers from 001 to 999.</i>	

4 DIN or opening direction					
0	Independent of opening	1	DIN right	2	DIN left

5 Surface					
0	Neutral (finished surface) e.g. PVC	2	E-Look (galvanised)	6	Clear - chromated (galvanised)
1	Titanium silver (galvanised)	5	Aluminium, suitable for anodising, painting or coating	L	Painted

6 Colour					
01	RAL 9001 cream	21	RAL 7035 light grey	33	si-brown
02	RAL 9003 signal white	23	RAL 9005 jet black	34	Titan matt bright
03	RAL 9010 pure white	24	EV1 silver anodised	38	Si-old gold
04	RAL 9016 traffic white	26	EV2 new silver anodised	E6	RAL 7040 window grey
11	RAL 8019 grey brown	30	C33 medium bronze	H4	F 9 aluminium-steel colours
12	RAL 8022 black brown	32	C34 dark bronze		

These specifications do not apply to custom stock colours. For further colours please inquire.

7 Packaging unit					
01	1 piece	04	25 piece	07	250 pieces
02	10 pieces	05	50 piece	08	500 pieces
03	20 pieces	06	100 pieces		

For further packaging units please inquire.

8 Processing index	
<i>The processing index indicates the processing status and is assigned consecutively.</i>	

Liability

Intended use

Any use of this product that is not in accordance with its correct use, or any adaptation of or modification to the product and its associated components for which our express consent has not been obtained, is strictly prohibited. We accept no liability whatsoever for any material losses or injury to people caused by failure to comply with this stipulation.


Liability for defects

Our products are guaranteed – subject to correct installation and proper use – for a period of one year from the date of receipt by a company (according to our general terms and conditions) or as otherwise agreed, and for a period of two years for end consumers, in accordance with statutory provisions. As part of our ongoing improvements, we reserve the right to replace individual components or entire products. Consequential losses resulting from defects are excluded from the warranty within the limits of the law. The warranty shall become void if modifications that are not authorised by us or have not been described in this documentation are performed on the product and/or individual components, or if the product and/or individual components is/are dismantled or partly dismantled, and the defect is due to the changes made.

Disclaimer of liability

The product and its components are subject to stringent quality controls. As a result, they function reliably and safely when used correctly. Our liability for consequential losses and/or claims for damages is excluded, except in the case of wilful misconduct or gross negligence, or where we are responsible for injury to life, physical injury or damage to health. Strict liability under the German Product Liability Act (Produkthaftungsgesetz) remains unaffected. Liability for the culpable violation of significant contractual obligations also remains unaffected; liability in this case is limited to losses that are specific to the contract and that could have been foreseen. The above regulations do not imply a change in the burden of proof to the detriment of the consumer.

EU Declaration of Conformity

 We, SIEGENIA KG, declare under our own responsibility that the product complies with the provisions of Directives 2008/108/EC and 2006/95/EC of the Council of the European Union.

Environmental protection

Although our products do not fall within the scope of the German Electrical and Electronic Equipment Act, SIEGENIA will continue to meet the requirements of this Act and will endeavour to completely eliminate the use of substances that are hazardous to the environment as soon as this becomes technically feasible. Electrical products should not be disposed of as household waste.

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Technische und farbliche Änderungen vorbehalten.

6.2.1 Scheme overview and general information

Scheme overview

All schemes can also be implemented in mirror image.

Note: definition of the intersection points e. g. A = intersection point in DIN direction, A_s = intersection point in mirror image,

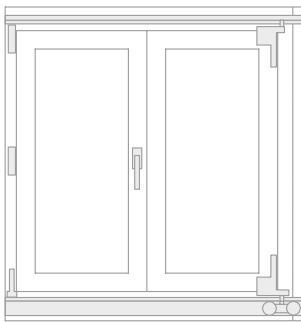
D = intersection point in DIN direction, D_{220} = intersection point in scheme 220, 440 and 660, D_{ZV} = central locking at intersection point D. see notes page 134.

For scheme 220, 440 and 660, please observe the additional notes in the assembly instructions FSde1006!

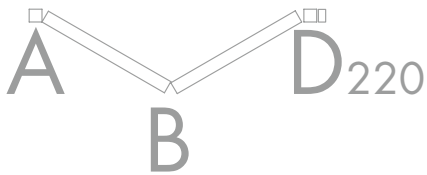
You will find the assembly instructions FSde1006 as a PDF file on the SIEGENIA homepage

[Assembly instructions FSde1006](#)

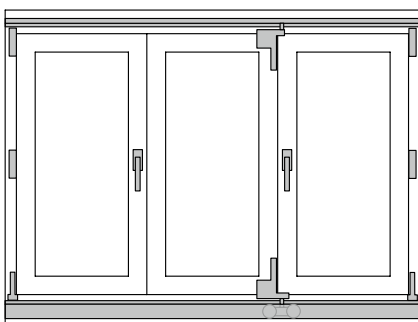
Scheme 220



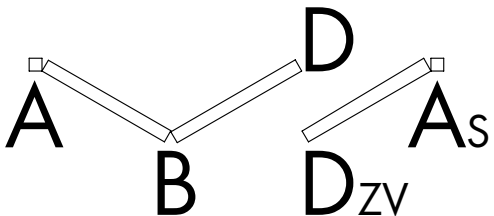
2 folding sash/0 sash providing access
Access through the first folding sash
Sash rebate width at least 700 mm



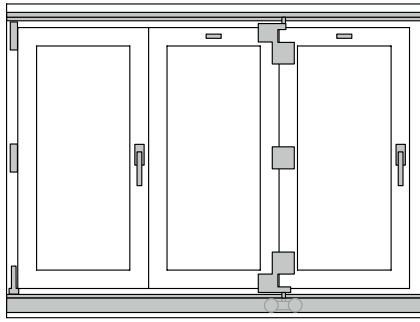
Scheme 321



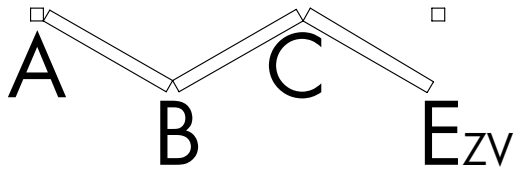
2 folding sash/1 sash providing access



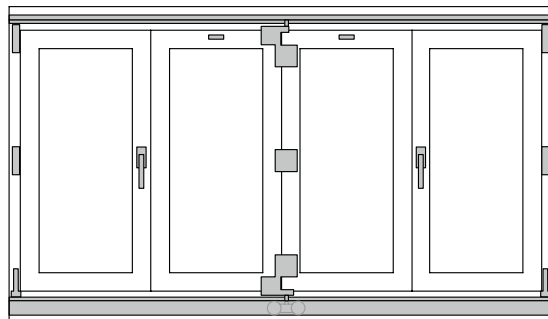
Scheme 330



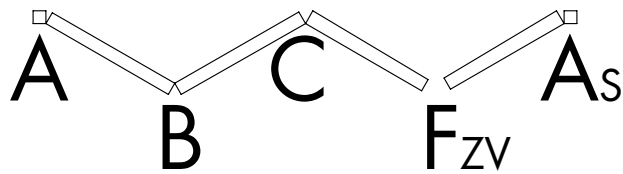
3 folding sash/0 sash providing access
Access through the first folding sash



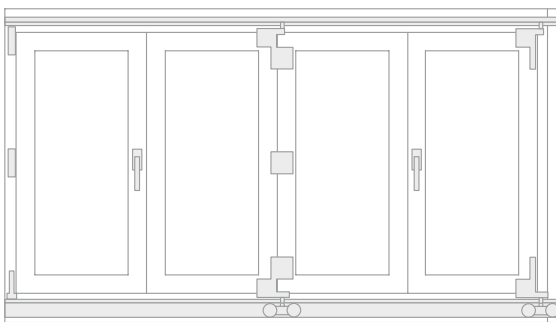
Scheme 431



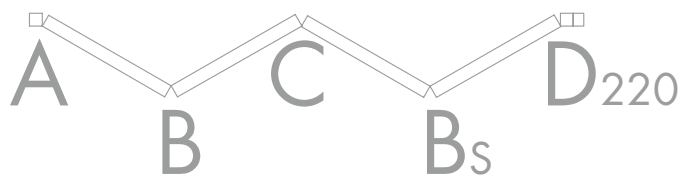
3 folding sash/1 sash providing access



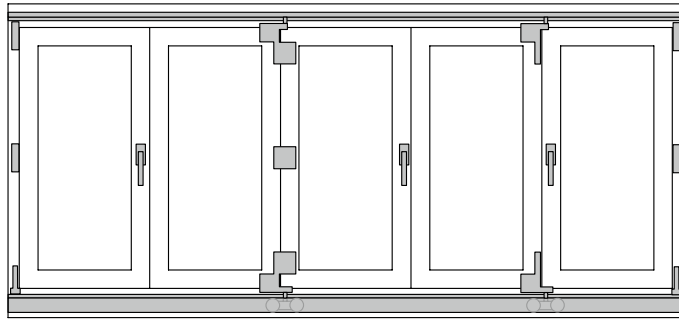
Scheme 440



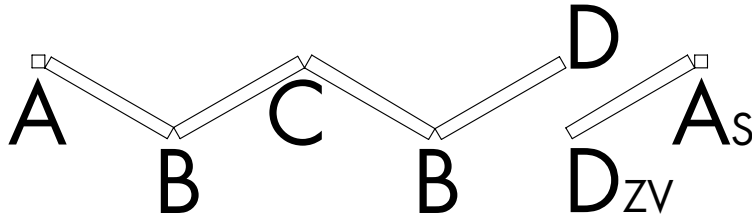
4 folding sash/0 sash providing access
Access through the first folding sash
Sash rebate width at least 700 mm



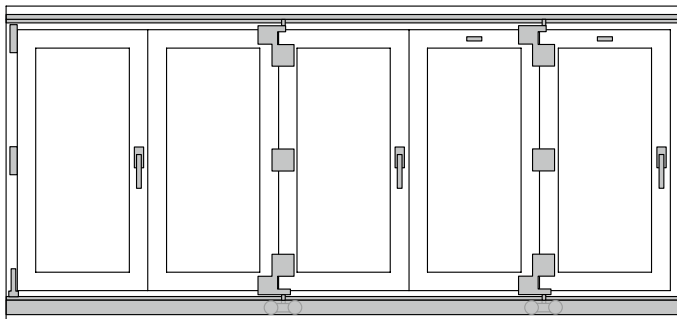
Scheme 541



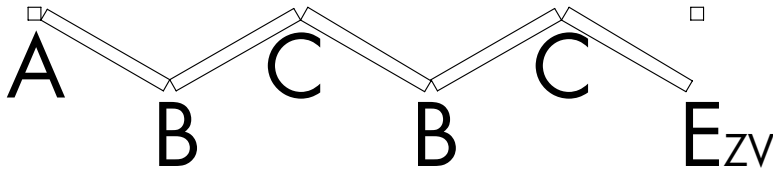
4 folding sash/1 sash providing access



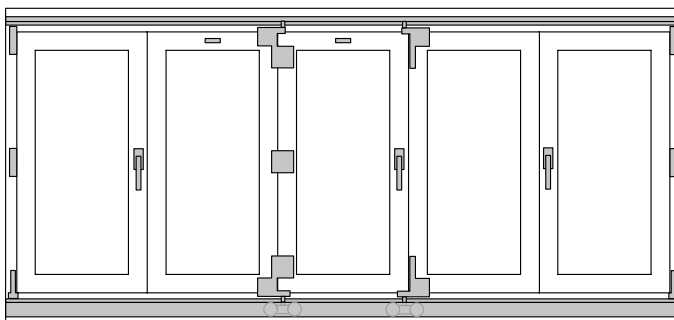
Scheme 550



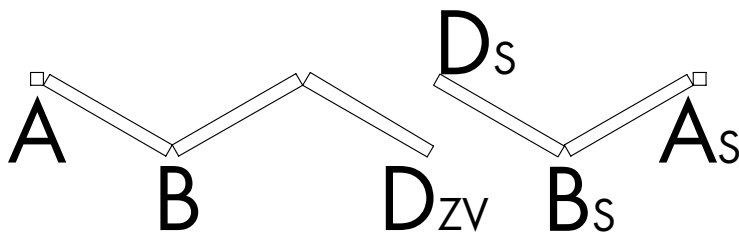
5 folding sash/0 sash providing access
Access through the first folding sash



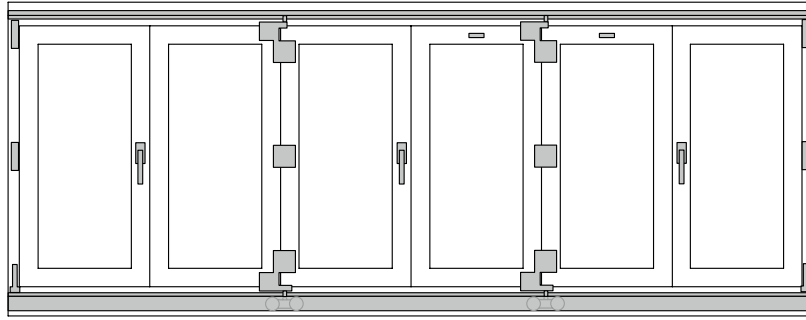
Scheme 532



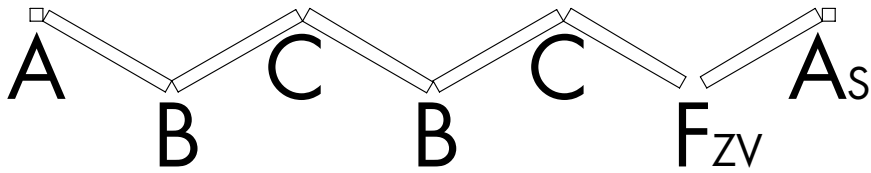
3+2 folding sash/0 sash providing access
Access through the first folding sash



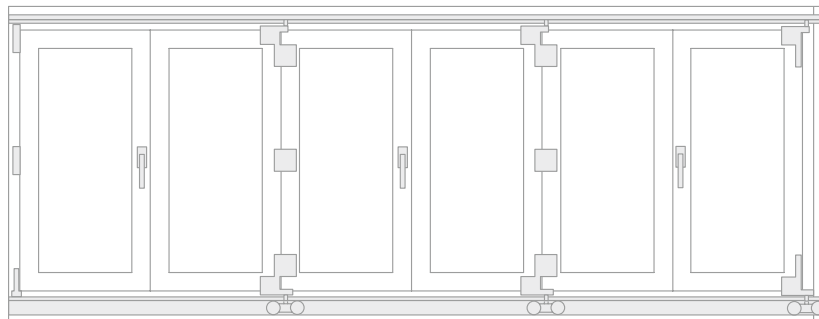
Scheme 651



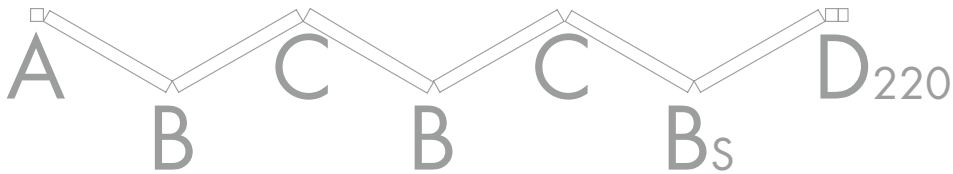
5 folding sash/
1 sash providing access



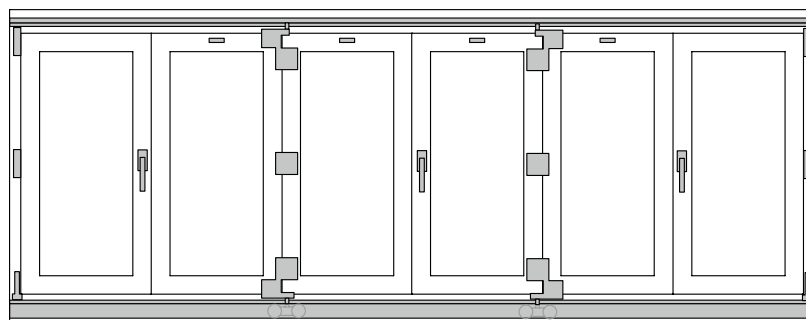
Scheme 660



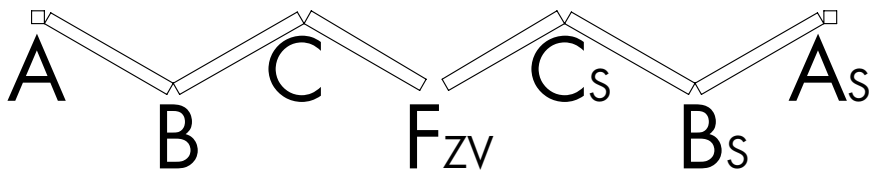
6 folding sash/
0 sash providing access
Access through the first folding sash
Sash rebate width at least 700 mm



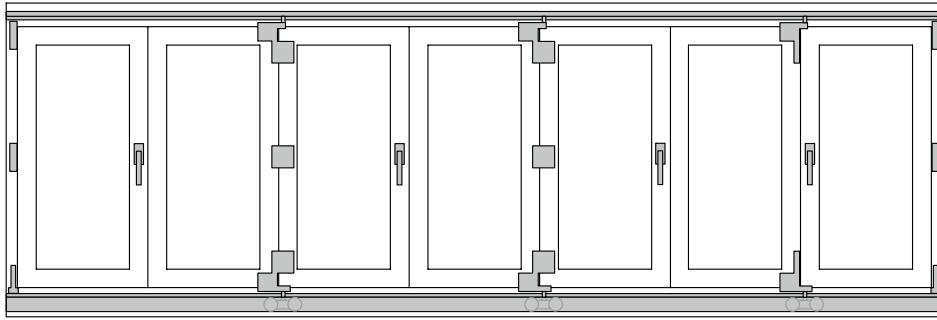
Scheme 633



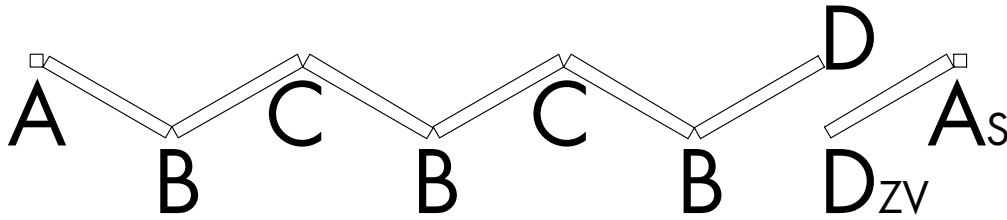
3+3 folding sash/
0 sash providing access
Access through the first folding sash



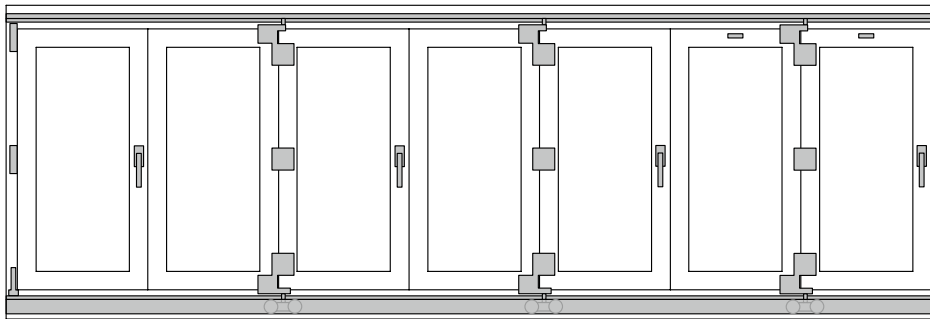
Scheme 761



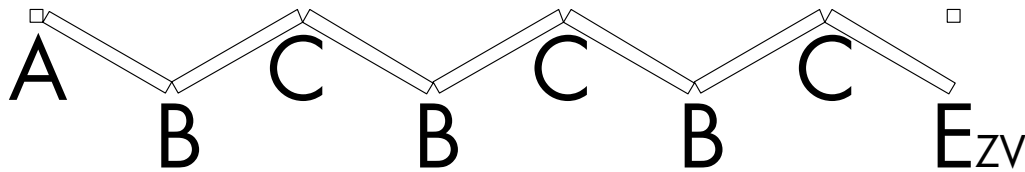
6 folding sash/1 sash providing access



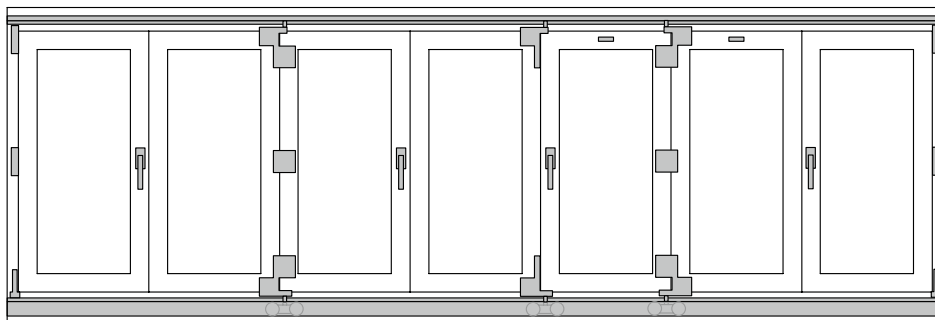
Scheme 770



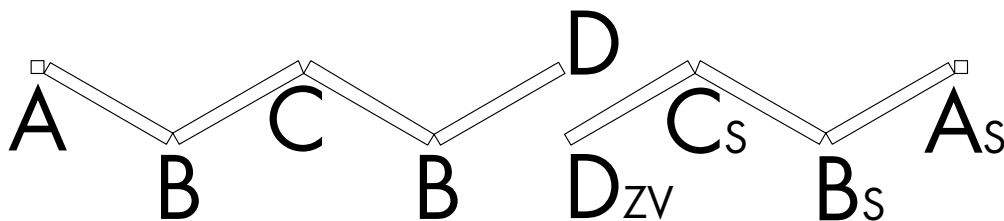
7 Folding sash/
0 sash providing access
Access through the first folding sash



Scheme 743



4+3 folding sash/
0 sash providing access
Access through the first folding sash



Note:

You can find profile-related information concerning striker plates and frame parts in the TITAN profile data sheets

⚠ ATTENTION The size ranges given for the SIEGENIA PORTAL FS PLUS hardware must not be exceeded.

- For timber elements

the standards specified by DIN 68 121 (timber profiles for windows and French doors) apply for profile section, timber quality and design, especially with regard to possible restrictions on permissible sash dimensions and/or sash weight.


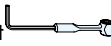
- For PVC elements

the specifications of the profile manufacturers or system owners also apply, especially with regard to possible restrictions on permissible sash dimensions and/or sash weight.

6.2.2 Size ranges

The size ranges specified above must not be exceeded.		
Sash rebate width (FFB)	(mm)	330 to 900
Sash rebate height (FFH)	(mm)	840 to 2360
Frame width (RAB)	(mm)	Fig. 1: depends on profile system; determined by the sash rebate width
Sash weight	(kg)	max. 80
Backset standard gear	(kg)	16
Backset lockable gear	(mm)	40
Handle position variable	(mm)	420 to 1180
Groove axis	(mm)	9 and 13
Rebate height	(mm)	13 to 24
Sash rebate width (FFB) for sash providing access should be larger than 600 mm, for scheme 220, 440, 660 larger than 700 mm Components for rebate heights 19 to 24 mm, see accessories page		

Adjustment options

Elevating adjustment of the bogie wheels  SW 5	(mm)	+3/-2
Sash pressure adjustment  SW 4/SW 11	(mm)	±1

Vertical sections

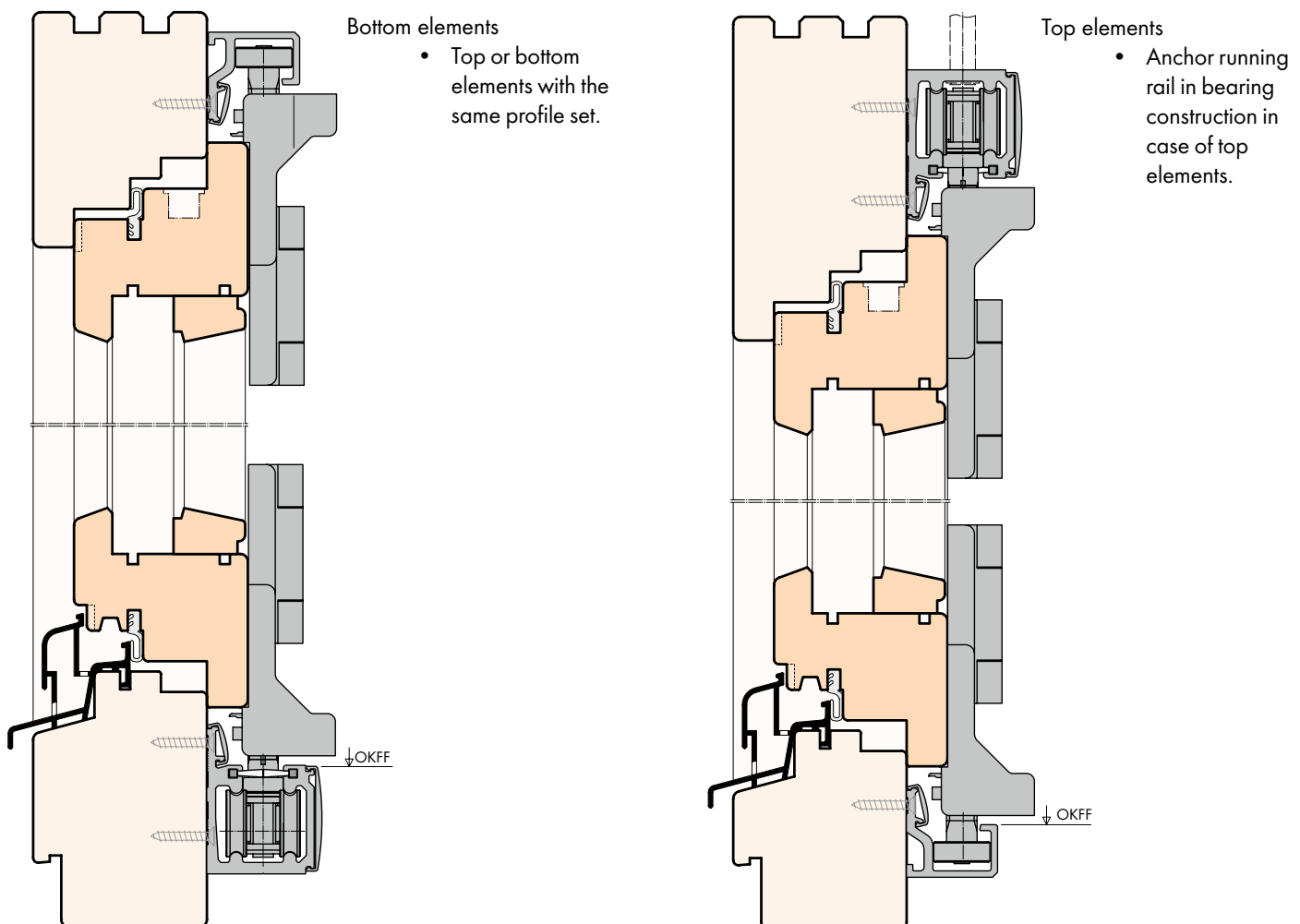


Fig. 2: Vertical cross-sections timber elements top / bottom running

6.2.3 Table of intersection points

Scheme	Required number of intersection points according to the schemes					
	Intersection points					
	A	B	C	D	E	F
220	1	1	-	1	-	-
321	2	1	-	1	-	-
330	1	1	1	-	1	-
431	2	1	1	-	-	1
440	1	2	1	1	-	-
541	2	2	1	1	-	-
550	1	2	2	-	1	-
532	2	2	-	1	-	-
651	2	2	2	-	-	1
660	1	3	2	1	-	-
633	2	2	2	-	-	1
761	2	3	2	1	-	-
770	1	3	3	-	1	-
743	2	3	2	1	-	-

A profile set is necessary for all top or bottom running schemes. See pages: 95 - 105

6.2.4 Hardware FS PLUS - intersection point A hinge side FAVORIT - timber elements 12 mm airgap

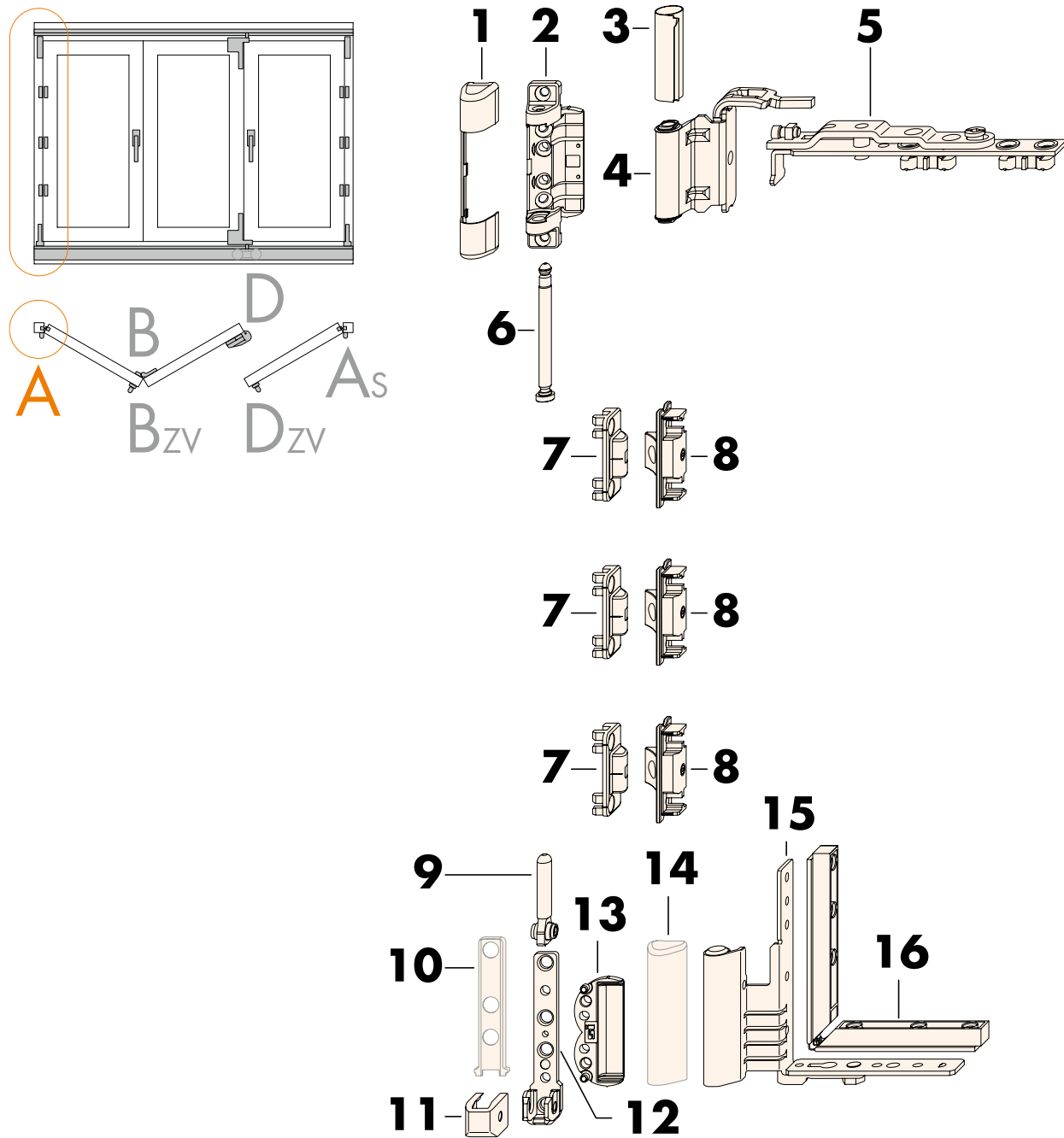


Fig. 3: Diagram of hardware FS PLUS - intersection point A, hinge side FAVORIT - timber elements 12 mm airgap

Overview of set intersection point A, hinge side FAVORIT - timber elements 12 mm airgap

No.	Material description	Material number	...Colour number			
			Base...	silver	RAL 9003 white	RAL 8022 brown
1	Cover cap S	FKSL0010-	L2401_	00201_	01201_	03101_
2	Top hinge DH 130 kg		see Profile data sheet TITAN, FBSL02			
3	Cover cap W	FKWB0020-	L2401_	00201_	01201_	03101_
4	Stay hinge DH		see Profile data sheet TITAN, FBWB			
5	Stay 7 DF	707340				
6	Top hinge pin Ø 6	FBSB0010-	10001_			
7	Frame part MV		see Profile data sheet TITAN, ZRZM01			
8	Sash part MV		see Profile data sheet TITAN, ZFMV01			
9	Bottom hinge pin Ø 7 ¹	FBLB0060-	10001_			
10	Cover cap EL O	FKEO0010-	L2401_	00201_	01201_	03101_
11	Cover cap EL U ¹	FKEU0010-	L2401_	00201_	01201_	03101_
12	Bottom hinge		see Profile data sheet TITAN,			
13	Filling piece H		see Profile data sheet TITAN,			
14	Cover cap rebate corner hinge right	FKFE0011-	L2401_	00201_	01201_	03101_
	Cover cap rebate corner hinge left*	FKFE0012-	L2401_	00201_	01201_	03101_
15	Rebate corner hinge H		see Profile data sheet TITAN, FBFE01			
16	Distance piece H		see Profile data sheet TITAN, FBDS			

Frame part MV and sash part MV

Sash rebate height up to 1000 mm 1 piece each

Sash rebate height 1001 to 1500 mm 2 pieces each

Sash rebate height 1601 to 2400 mm 3 pieces each

6.2.5 Hardware FS PLUS - intersection point A hinge side FAVORIT - PVC elements 12 mm chamber dimension

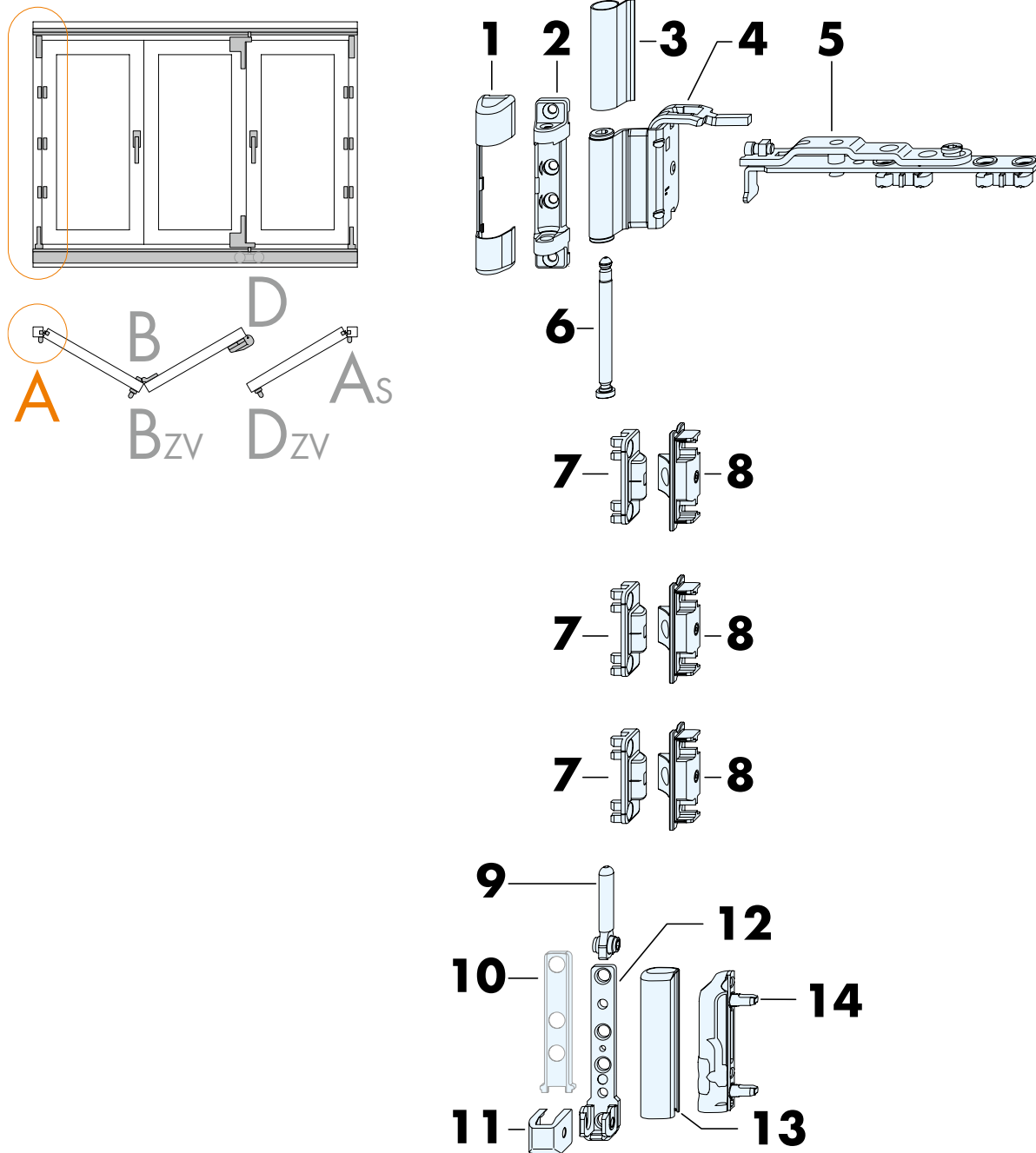


Fig. 4: Diagram of hardware FS PLUS - intersection point A, hinge side FAVORIT - PVC elements 12 mm chamber dimension

Overview of set intersection point A, hinge side FAVORIT - PVC elements 12 mm chamber dimension

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
1	Cover cap S	FKSL0010-				
2	Top hinge DH 130 kg		see Profile data sheet TITAN, FBSL02			
3	Cover cap W PVC	FKWB0010-				
4	Stay hinge DH		see Profile data sheet TITAN, FBWB			
5	Stay 7 DF	707340				
6	Top hinge pin Ø 6	FBSB0010--	10001_			
7	Frame part MV		see Profile data sheet TITAN, ZRZM01			
8	Sash part MV		see Profile data sheet TITAN, ZFMV01			
9	Bottom hinge pin Ø 7 ¹	FBLB0060-	10001_			
10	Cover cap EL O	FKEO0010-	10001_			
11	Cover cap EL U ¹	FKEU0010-	52501_	50201_	51201_	53101_
12	Bottom hinge		see Profile data sheet TITAN, FBEL01			
13	Cover cap EB	FKEB0011-	52501_	50201_	51201_	53101_
14	Corner hinge PVC		see Profile data sheet TITAN, TBEB61			

Frame part MV and sash part MV

Sash rebate height up to 1000 mm 1 piece each

Sash rebate height 1001 to 1500 mm 2 pieces each

Sash rebate height 1601 to 2400 mm 3 pieces each

6.2.6 Hardware FS PLUS - intersection point A hinge side TITAN - timber elements 12 mm airgap

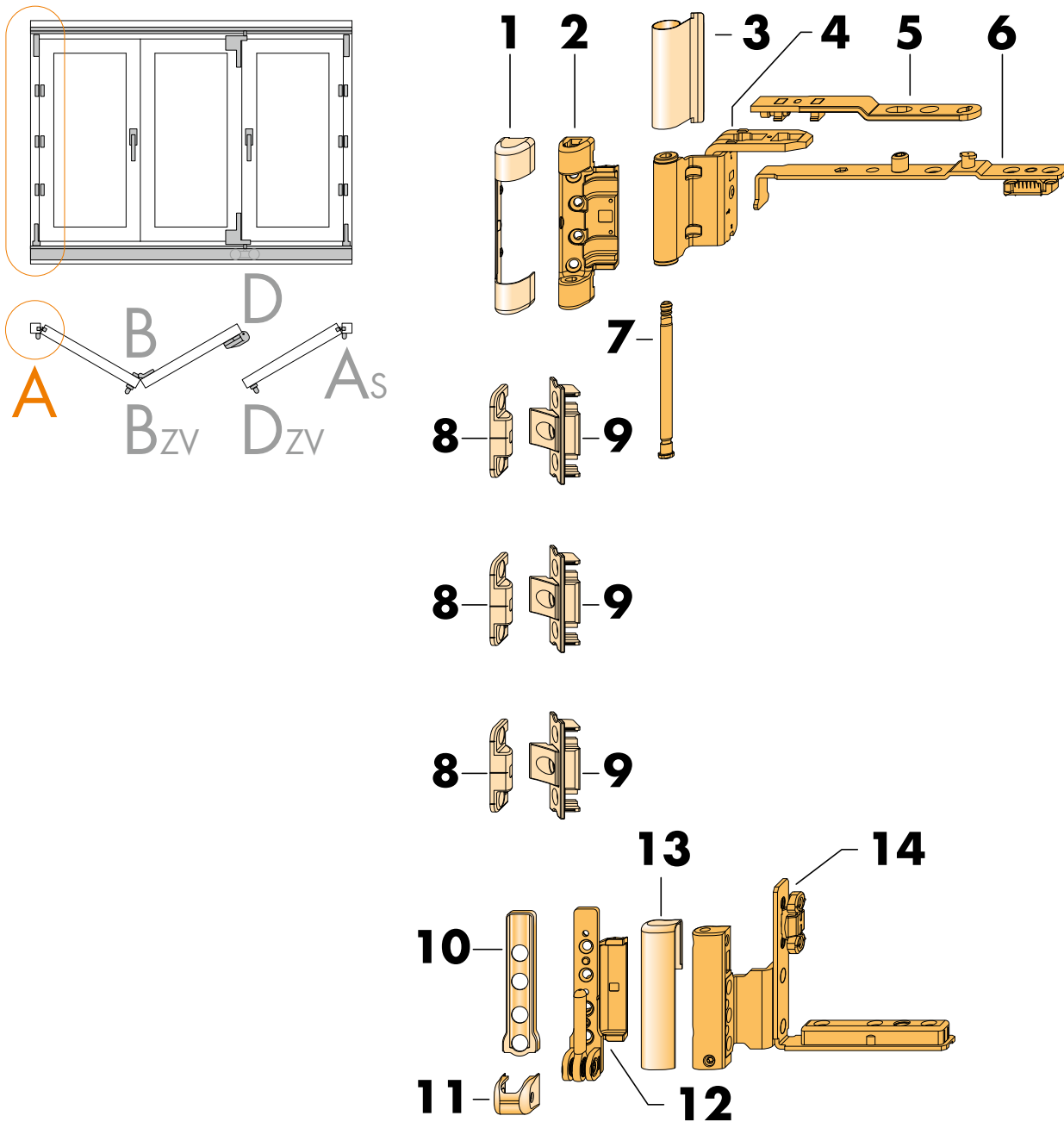


Fig. 5: Diagram of hardware FS PLUS - intersection point A, hinge side TITAN - timber elements 12 mm airgap

Overview of set intersection point A, hinge side TITAN - timber elements 12 mm airgap

No.	Material description	Material number	...Colour number			
			Base...	silver	RAL 9003 white	RAL 8022 brown
1	Cover cap S	TKSL0020-	L2401_	00201_	01201_	03101_
2	Top hinge 130 kg		see Profile data sheet TITAN, TBSL62			
3	Cover cap W H	TKWB7010-	L2401_	00201_	01201_	03101_
4	Stay hinge DH		see Profile data sheet TITAN, TBWB61			
5	Stay arm DF	TSAD0010-	10001_			
6	Stay sash part DF/MN	TSSD0020-	10001_			
7	Top hinge pin Poly	TBSB6020-	10001_			
8	Frame part MV		see Profile data sheet TITAN, ZRZM01			
9	Sash part MV		see Profile data sheet TITAN, ZFMV01			
10	Cover cap EL O MB	TKEO0010-	L2401_	00201_	01201_	03101_
11	Cover cap EL U ^l	TKEU0010-	L2401_	00201_	01201_	03101_
12	Bottom hinge		see Profile data sheet TITAN, TBEL02			
13	Cover cap rebate corner hinge right	TKFE7011-	L2401_	00201_	01201_	03101_
	Cover cap rebate corner hinge left*	TKFE7012-	L2401_	00201_	01201_	03101_
14	Rebate corner hinge H		see Profile data sheet TITAN, TBFE02			

Frame part MV and sash part MV

Sash rebate height up to 1000 mm 1 piece each

Sash rebate height 1001 to 1500 mm 2 pieces each

Sash rebate height 1601 to 2400 mm 3 pieces each

6.2.7 Hardware FS PLUS - intersection point A hinge side TITAN - PVC elements 12 mm chamber dimension

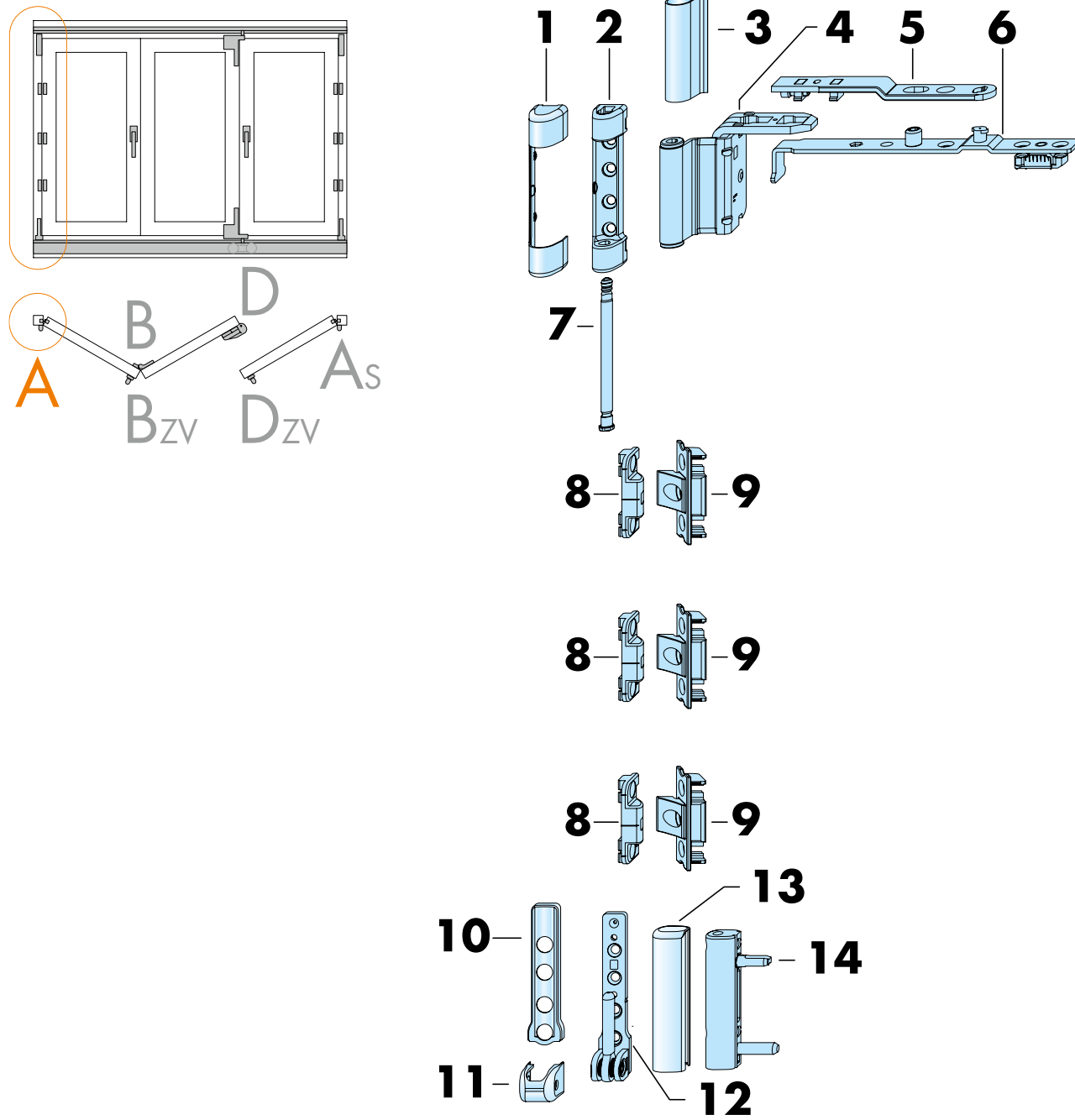


Fig. 6: Diagram of hardware FS PLUS - intersection point A, hinge side TITAN - PVC elements 12 mm chamber dimension

Overview of set intersection point A, hinge side TITAN - PVC elements 12 mm chamber dimension

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
1	Cover cap S	TKSL0020-	L2401_	00201_	01201_	03101_
2	Top hinge DH 130 kg		see Profile data sheet TITAN, FBSL02			
3	Cover cap W PVC	TKWB0010-	L2401_	00201_	01201_	03101_
4	Stay hinge DH		see Profile data sheet TITAN, FBWB			
5	Stay arm DF	TSAD0010-				
6	Stay sash part DF/MN	TSSD0020-				
6	Top hinge pin Ø 6	TBSB0010--		10001_		
7	Frame part MV		see Profile data sheet TITAN, ZRZM01			
8	Sash part MV		see Profile data sheet TITAN, ZFMV01			
9	Bottom hinge pin Ø 7 ¹	TBLB0060-		10001_		
10	Cover cap EL O MB	TKEO0010-	L2401_	00201_	01201_	03101_
11	Cover cap EL U ¹	TKEU0010-	L2401_	00201_	01201_	03101_
12	Bottom hinge 130 kg	-	see Profile data sheet TITAN, TBEL02			
13	Cover cap EB	TKEB0020-	L2401_	00201_	01201_	03101_
14	Corner hinge PVC 100 kg		see Profile data sheet TITAN, TBEB62			

Frame part MV and sash part MV

Sash rebate height up to 1000 mm 1 piece each

Sash rebate height 1001 to 1500 mm 2 pieces each

Sash rebate height 1601 to 2400 mm 3 pieces each

6.2.8 Hardware FS PLUS - intersection point A hinge side - FS - inside timber/ PVC elements

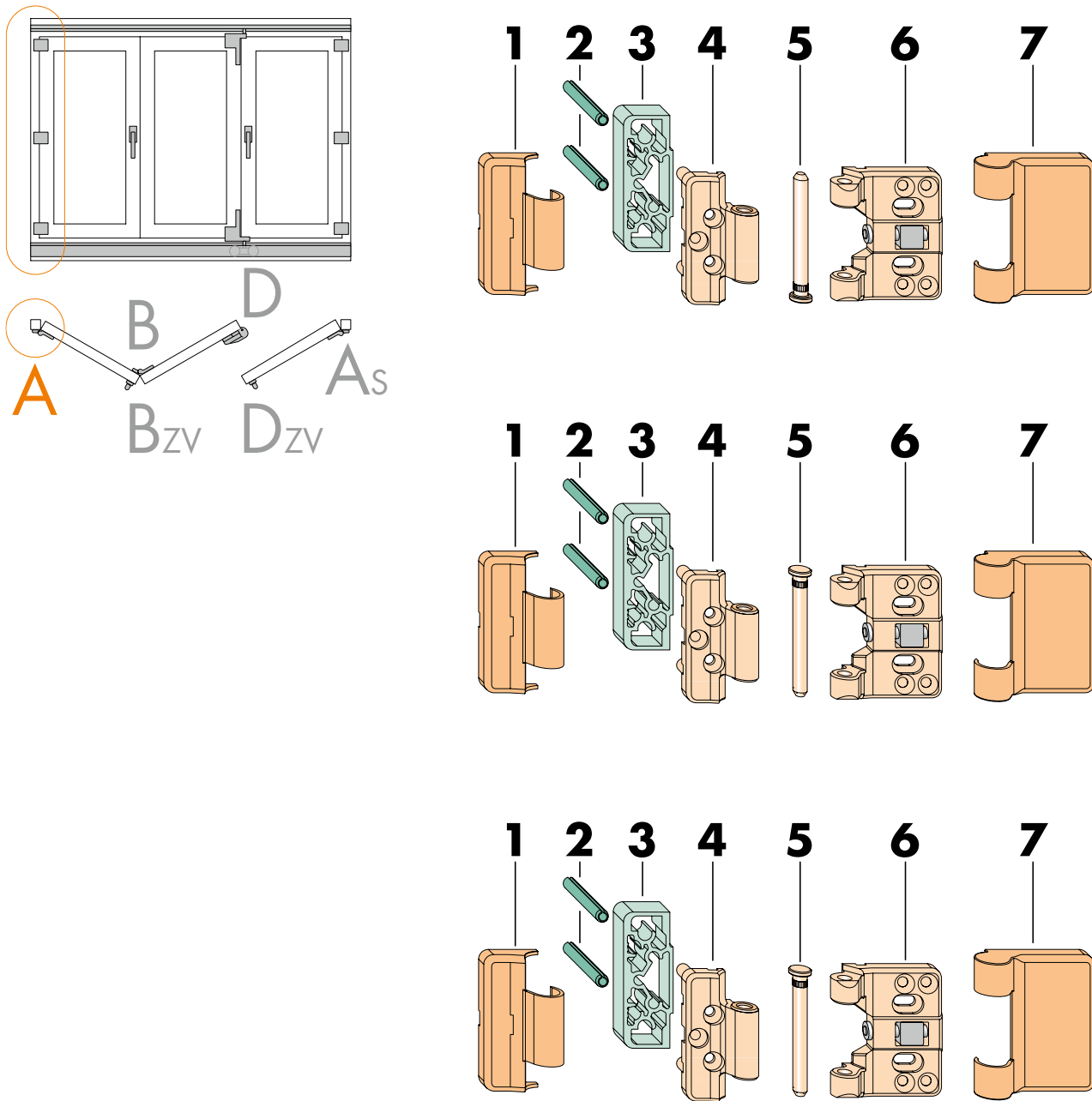
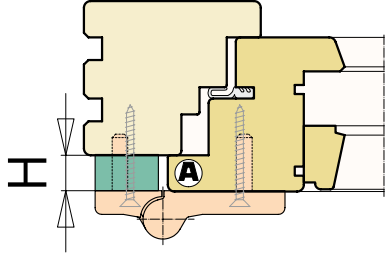


Fig. 7: Diagram of hardware - intersection point A hinge side - FS - inside timber/ PVC elements

Overview of set - intersection point A hinge side - FS - inside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	...Colour number			
				silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/38 TS <i>consisting of:</i>		PMFG0030-	10001_			
4	Sash hinge, wide 38 TS						
5	Hinge pin TS						
6	Sash hinge, narrow 17 TS						
	Bag cover caps sash hinge 17/38 <i>consisting of:</i>		PMAG0010-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 17						
7	Cover cap FB, wide 38						
2	Dowel pin Ø 6.8 x 50 <i>required for size 19 - 22</i>		KDNA0180-	00001_			
3	Distance piece FS  H = size in mm	13		-	826379	-	-
		14		852965	826416	-	-
		15		852972	826454	-	-
		16		852989	826492	-	-
		17		852996	826539	-	-
		18		853009	826577	-	-
		19		853016	826614	-	-
		20		853023	826652	-	-
		21		853030	826690	-	-
		22		853047	826737	-	-

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.9 Hardware FS PLUS - intersection point A hinge side - FS - outside timber/ PVC elements

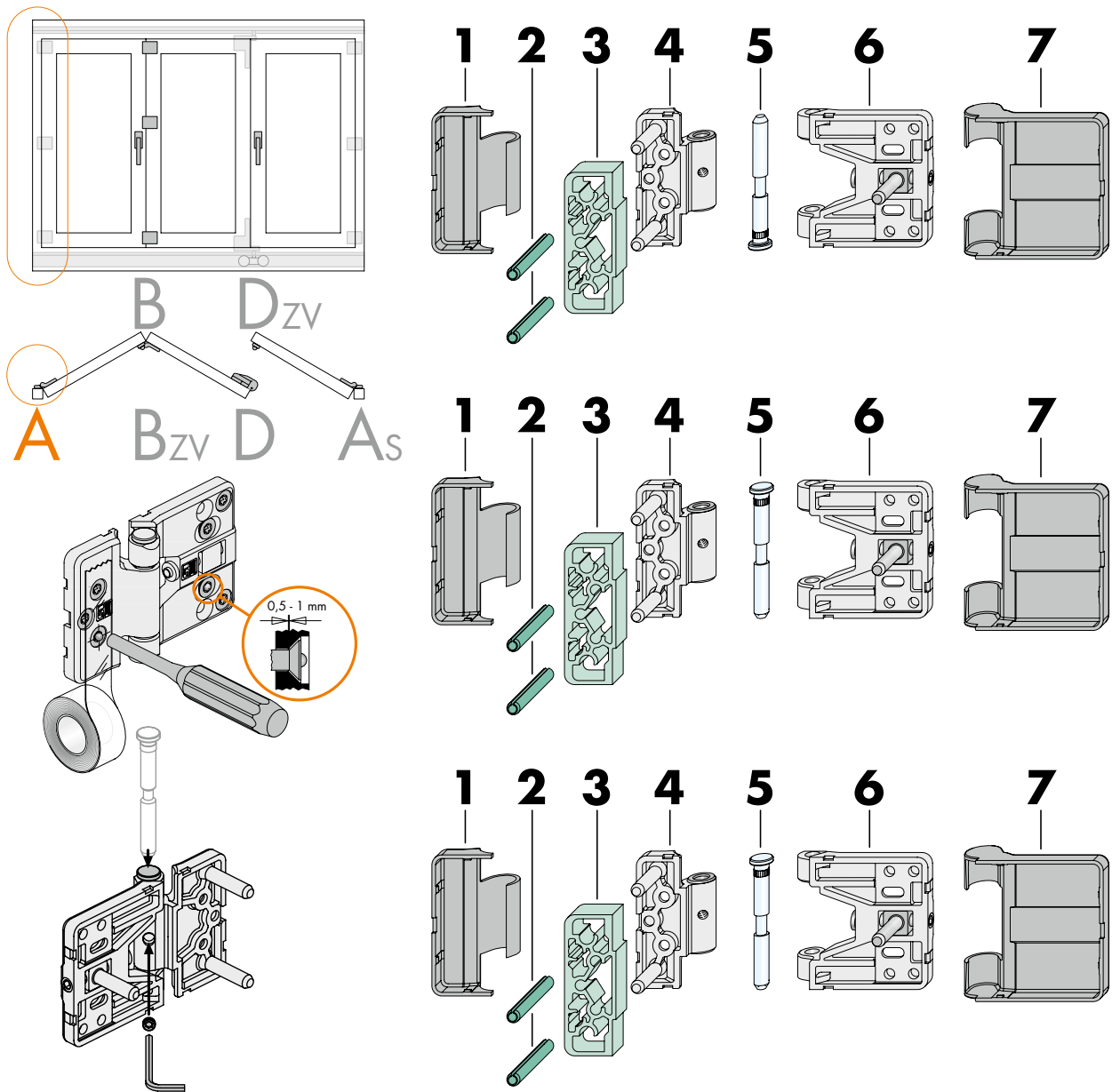
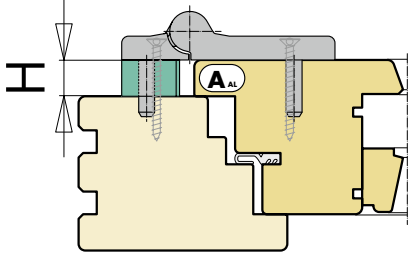


Fig. 8: Diagram of hardware - intersection point A hinge side - FS - outside timber/ PVC elements

Overview of set - intersection point A hinge side - FS - outside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/48 TS <i>consisting of:</i>		PMFG0040-	10001_			
4	Sash hinge, wide 48 TS						
5	Hinge pin TS						
6	Sash hinge, narrow 17 TS						
	Bag of accessories FS PORTAL AL <i>consisting of:</i>						
	CSK head screw 5 x 45 Tx 25						
	Ball 3.5						
	Grub screw M 6 x 4 A2						
	Bag of cover caps sash hinge 17/48 <i>consisting of:</i>		PMAG0050-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 17						
7	Cover cap FB, wide 48						
2	Dowel pin Ø 6.8 x 50 <i>required for size 19 - 22</i>		KDNA0180-	00001_			
3	Distance piece FS  H = size in mm	13		-	826379	-	-
		14		852965	826416	-	-
		15		852972	826454	-	-
		16		852989	826492	-	-
		17		852996	826539	-	-
		18		853009	826577	-	-
		19		853016	826614	-	-
		20		853023	826652	-	-
		21		853030	826690	-	-
		22		853047	826737	-	-

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.10 Hardware FS PLUS - intersection point B hinges - FS 17/38 - inside timber/ PVC elements

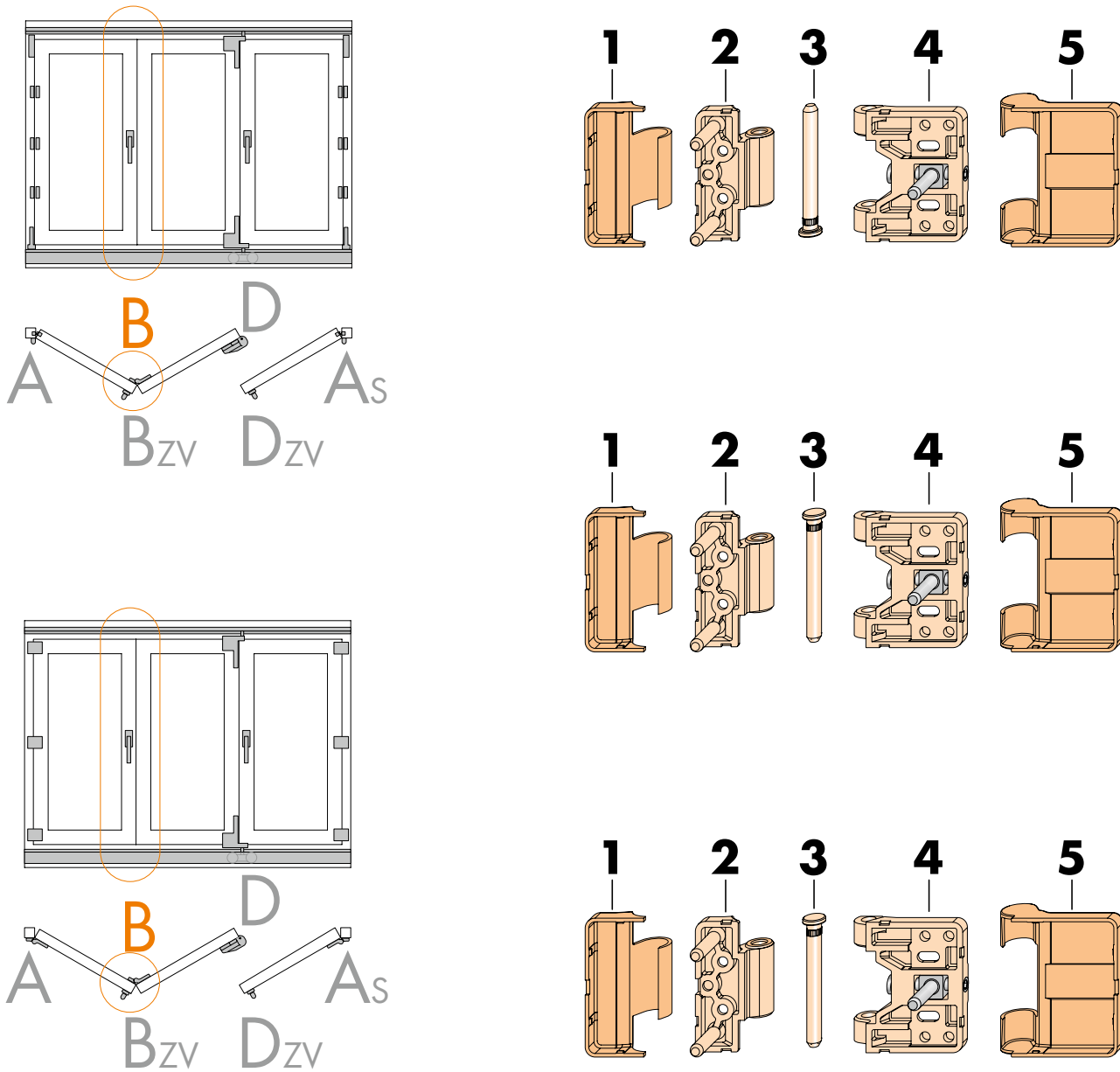


Fig. 9: Overview of hardware - intersection point B hinges - FS 17/38 - inside timber/ PVC elements

Overview of set - intersection point B hinges - FS 17/38 - inside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/38 TS <i>consisting of:</i>		PMFG0030-	10001_			
2	Sash hinge, narrow 17 TS						
3	Hinge pin TS						
4	Sash hinge, wide 38 TS						
	Bag cover caps sash hinge 17/38 <i>consisting of:</i>		PMAG0010-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 17						
5	Cover cap FB, wide 38						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.11 Hardware FS PLUS - intersection point B hinges - FS 17/48 - inside timber/ PVC elements

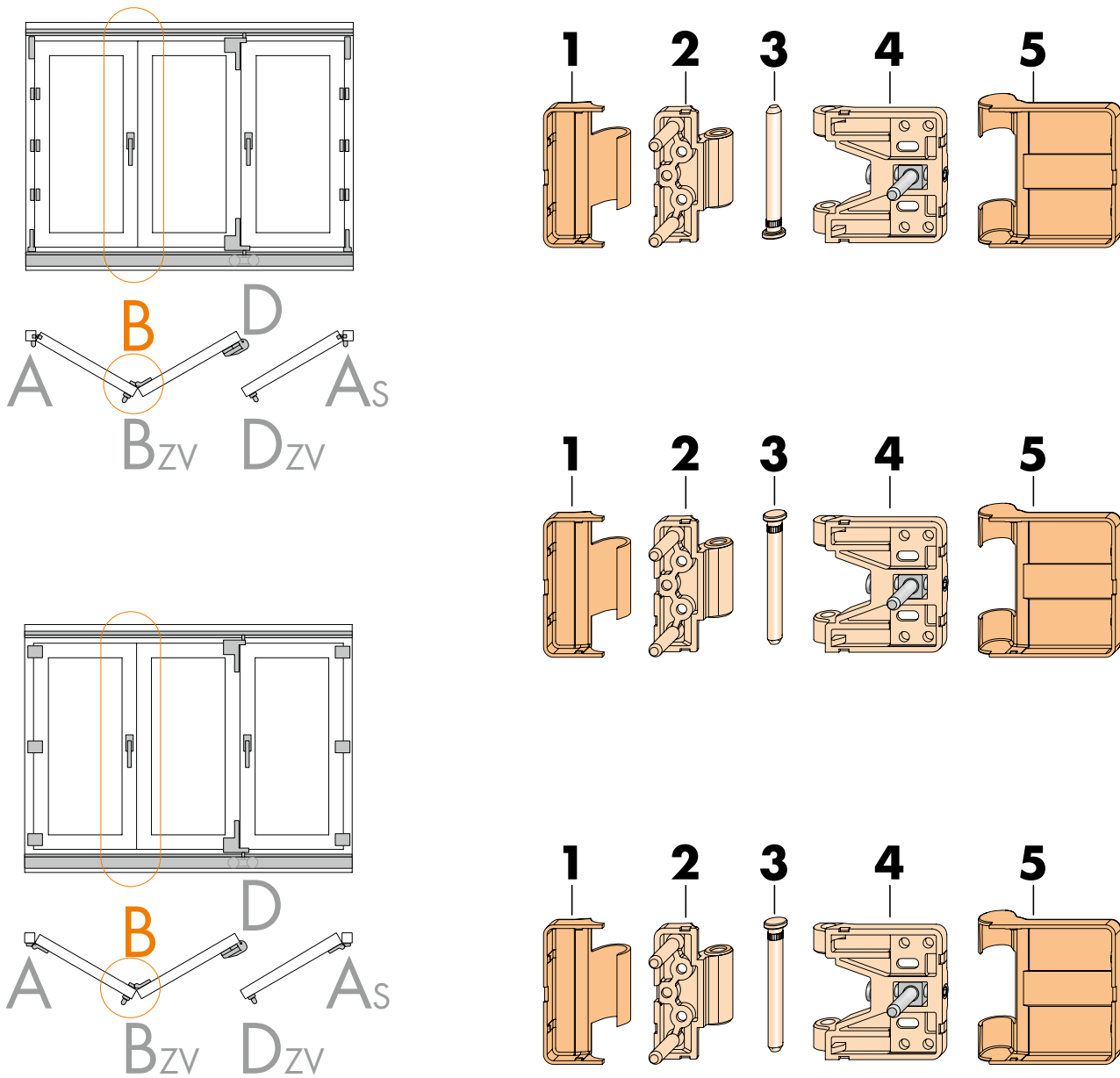


Fig. 10: Overview of hardware - intersection point B hinges - FS 17/48 - inside timber/ PVC elements

Overview of set - intersection point B hinges - FS 17/48 - inside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/48 TS <i>consisting of:</i>		PMFG4000-	10001_			
2	Sash hinge, narrow 17 TS						
3	Hinge pin TS						
4	Sash hinge, wide 48 TS						
	Bag of cover caps sash hinge 17/48 <i>consisting of:</i>		PMAG0050-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 17						
5	Cover cap FB, wide 48						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.12 Hardware FS PLUS - intersection point B hinges - FS 27/48 - inside timber/ PVC elements

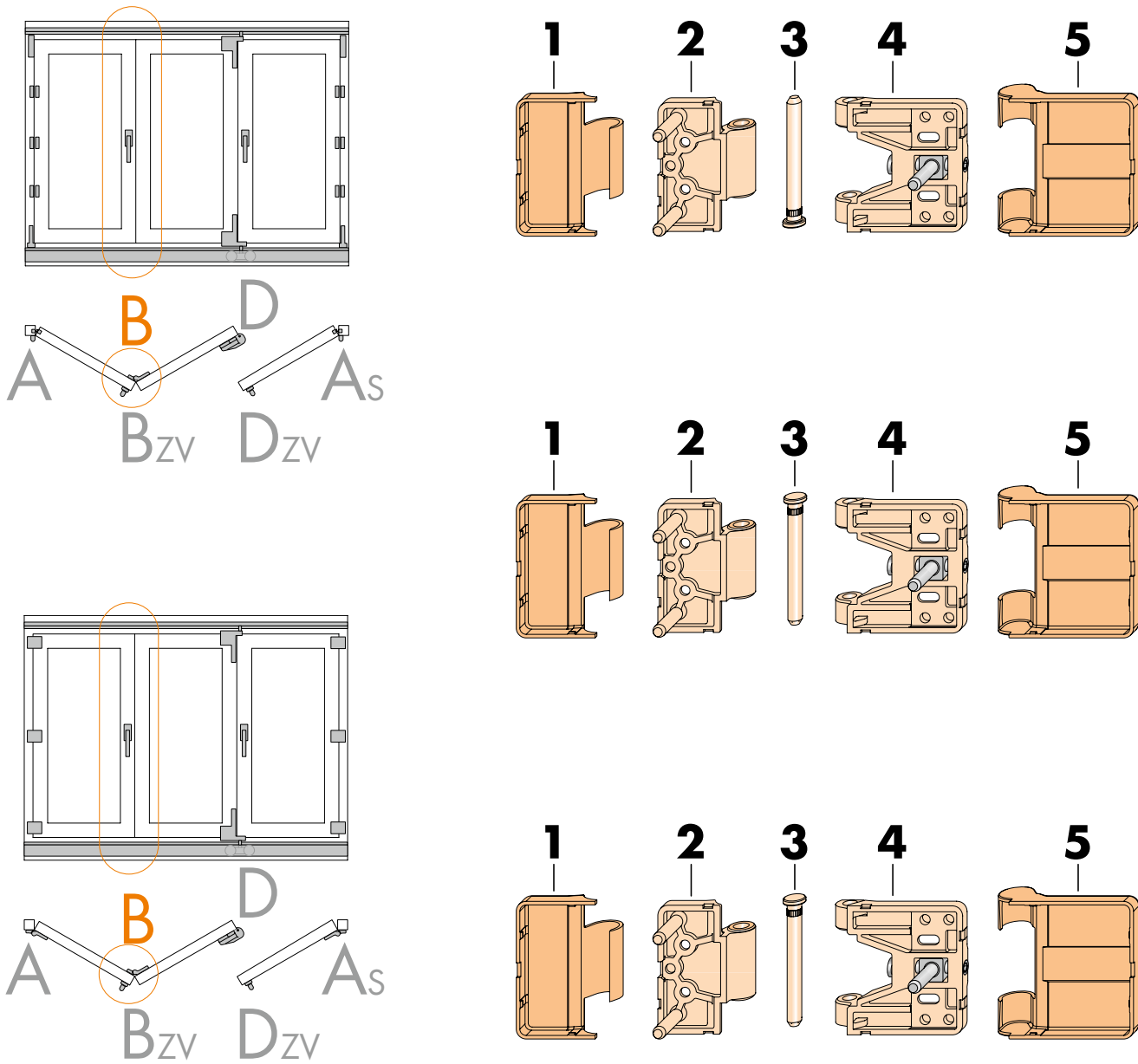


Fig. 11: Overview of hardware - intersection point B hinges - FS 27/48 - inside timber/ PVC elements

Overview of set - intersection point B hinges - FS 27/48 - inside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>		PMFG4020-	10001_			
2	Sash hinge, narrow 27 TS						
3	Hinge pin TS						
4	Sash hinge, wide 48 TS						
	Bag of cover caps sash hinge 27/48 <i>consisting of:</i>		PMAG0020-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 27						
5	Cover cap FB, wide 48						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.13 Hardware FS PLUS - intersection point B hinges - FS 27/48 - outside timber/ PVC elements

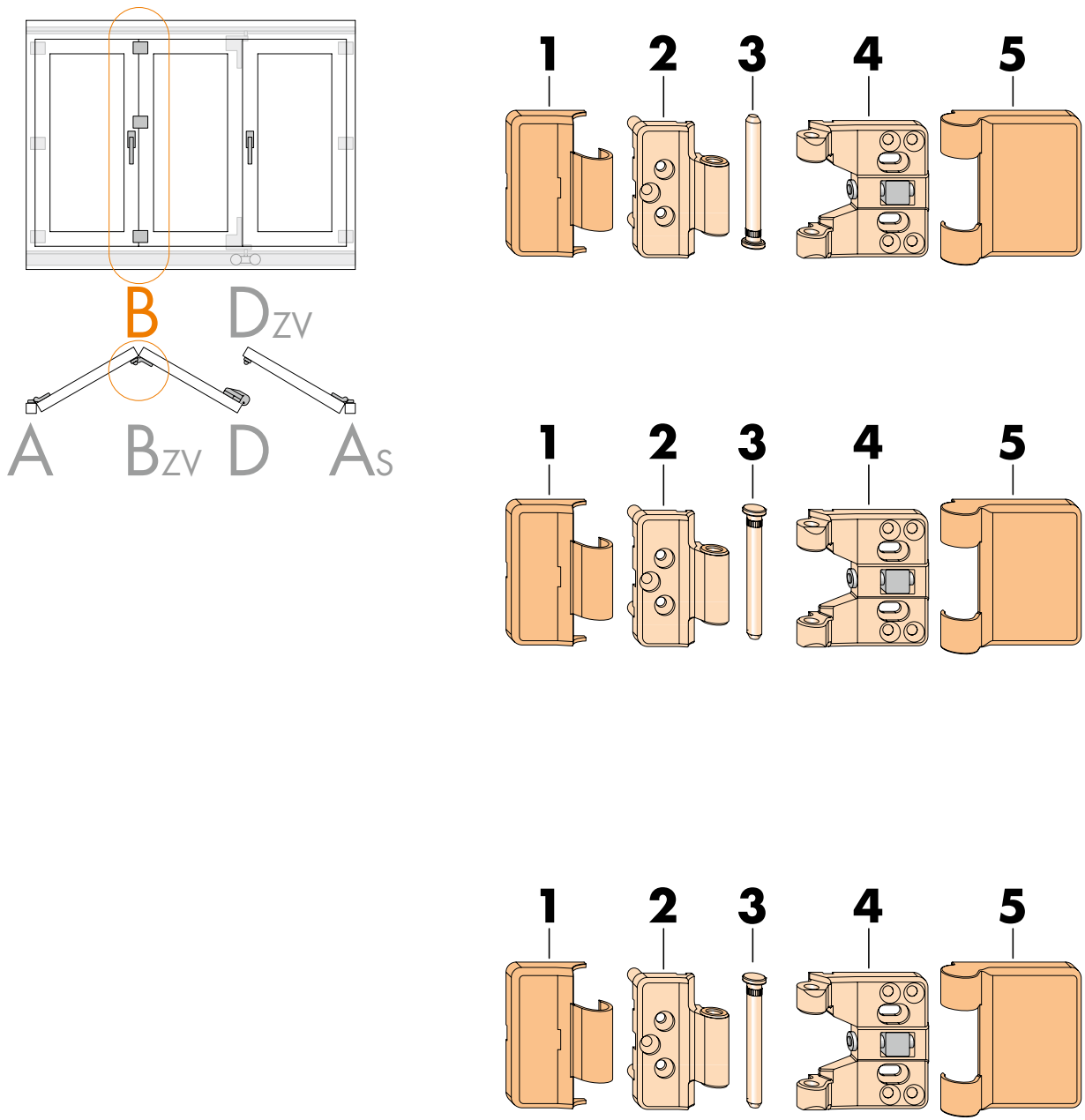


Fig. 12: Overview of hardware - intersection point B hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point B hinges - FS - outside timber/ PVC elements

No.	Material description	Size	Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>		PMFG4020-	10001_			
2	Sash hinge, narrow 27 TS						
3	Hinge pin TS						
4	Sash hinge, wide 48 TS						
	Bag of cover caps sash hinge 27/48 <i>consisting of:</i>		PMAG0020-	02501_	00201_	01201_	03101_
1	Cover cap FB, narrow 27						
5	Cover cap FB, wide 48						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.14 Hardware FS PLUS - intersection point B - central locking gear FAVORIT - inside

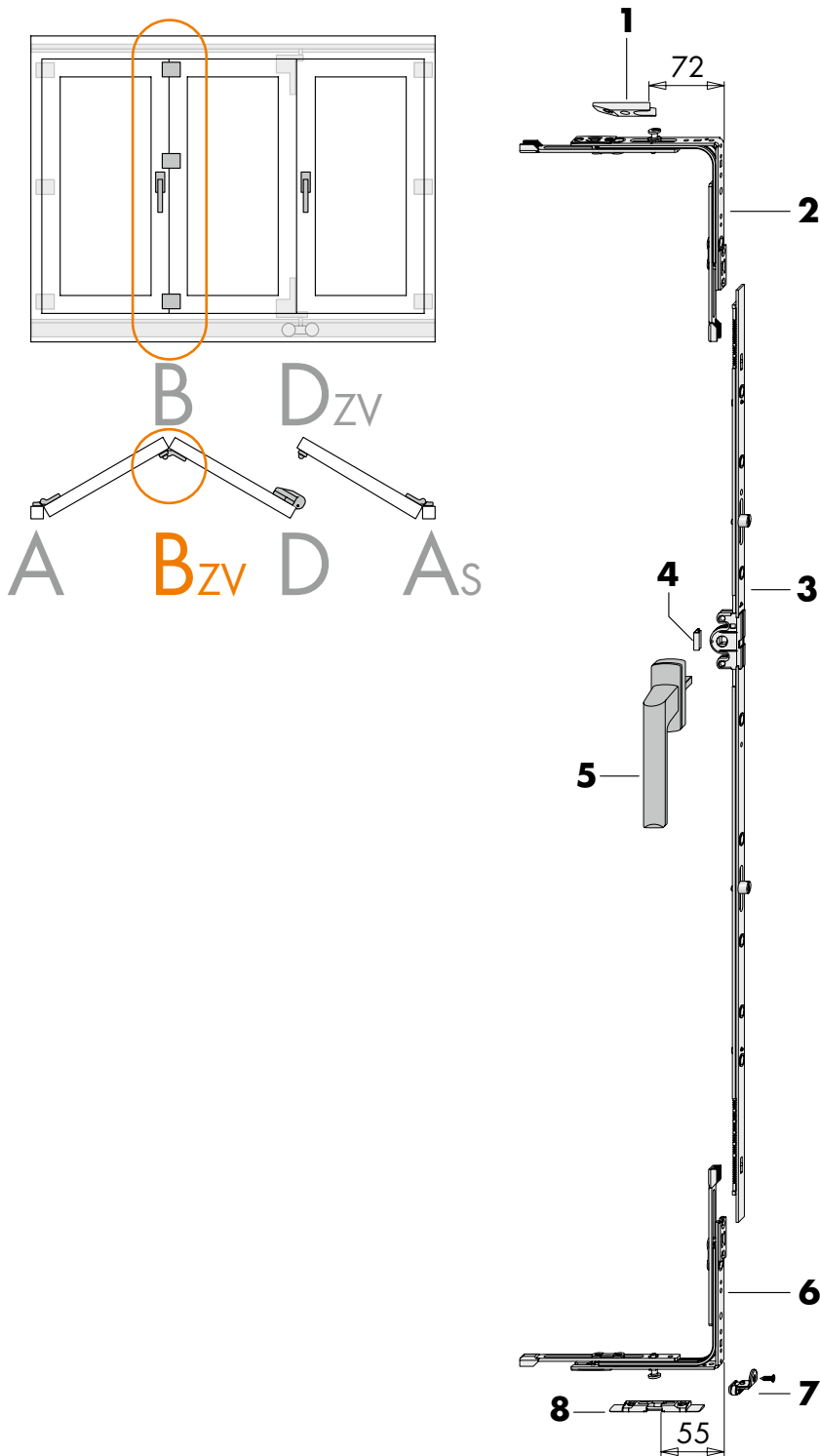


Fig. 13: Overview of hardware intersection point B, central locking gear FAVORIT - inside

Overview of set intersection point B, central locking gear FAVORIT - inside

No.	Material description	Material number			
		Backset	FFH	Handle position	
1	Striker plate				See profile data sheets TITAN
2	Corner drive VS S-ES				FEUL0090-10001_-
3	Gear 15 FAV size 60/G300	15	601 - 800	300	FGKK4030-10001_
	Gear 15 FAV size 80/G400 1V	15	801 - 1000	400	FGKK4050-10001_
	Gear 15 FAV size 100/G500 1V	15	1001 - 1200	500	FGKK4060-10001_
	Gear 15 FAV size 120/G600 1V	15	1201 - 1400	600	FGKK4070-10001_
	Gear 15 FAV size 140/G700 2V	15	1401 - 1600	700	FGKK4200-10001_
	Gear 15 FAV size 160/G700 2V 70	15	1601 - 1800	700	FGKK4090-10001_
	Gear 15 FAV size 180/G1000 2V	15	1801 - 2000	1000	FGKK4220-10001_
	Gear 15 FAV size 200/G1000 3V	15	2001 - 2400	1000	FGKK4230-10001_
4	Limitation piece				800768
5	Handle Si-line / Handle Globe				See from page 105 81
6	Corner drive VS S-ES				FEUL0090-10001_-
7	Sash height				See profile data sheets TITAN
8	Tilt lock bearing				See profile data sheets TITAN

6.2.15 Hardware FS PLUS - intersection point B - central locking gear TITAN AF - inside

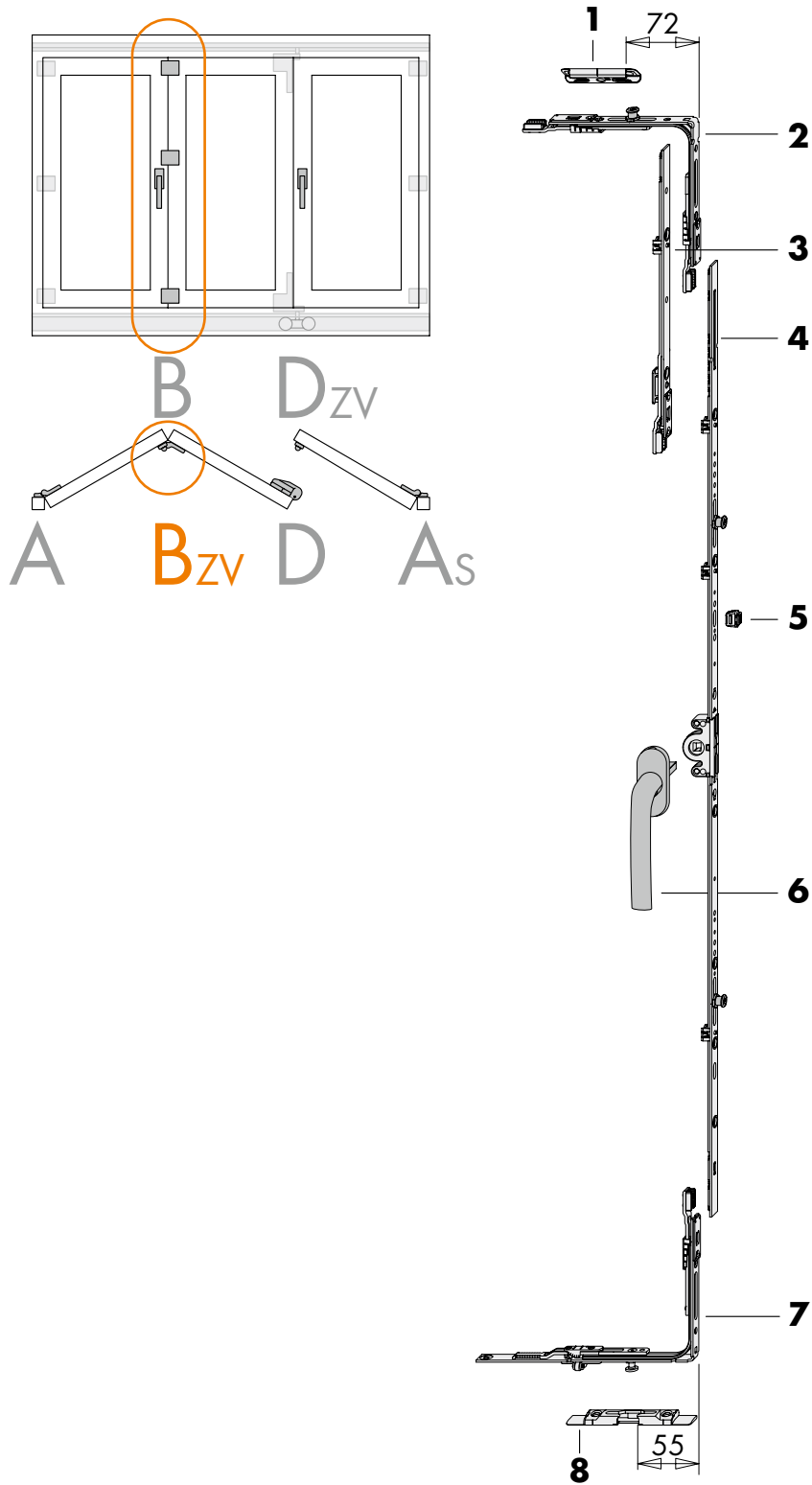


Fig. 14: Overview of hardware intersection point B, central locking gear TITAN AF - inside

Overview of set intersection point B, central locking gear TITAN AF - inside

No.	Material description	Backset	FFH		Handle position	Material number
1	Striker plate					See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS					TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400			TESC2030-10001_
4	Gear 15 AF size 60/G300	15	601 - 800	300		TGKK4030-10001_
	Gear 15 AF size 80/G400 1RS	15	801 - 1000	400		TGKK4050-10001_
	Gear 15 AF size 100/G500 1RS	15	1001 - 1200	500		TGKK4060-10001_
	Gear 15 AF size 120/G600 1RS	15	1201 - 1400	600		TGKK4070-10001_
	Gear 15 AF size 140/G700 2RS	15	1401 - 1600	700		TGKK4080-10001_
	Gear 15 AF size 160/G700 2RS	15	1601 - 1800	700		TGKK4090-10001_
	Gear 15 AF size 180/G1000 2RS	15	1801 - 2000	1000		TGKK4100-10001_
	Gear 15 AF size 200/G1000 3RS	15	2001 - 2400*	1000		TGKK4110-10001_
5	Travel restrictor					TFHB0020-09901_
6	Handle Si-line / Handle Globe					See from page 105 81
7	Corner drive AF VSU/K+ 1S					TEUL5010-10001_-
8	Tilt lock bearing					See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.16 Hardware FS PLUS - intersection point B - central locking gear TITAN AF - outside

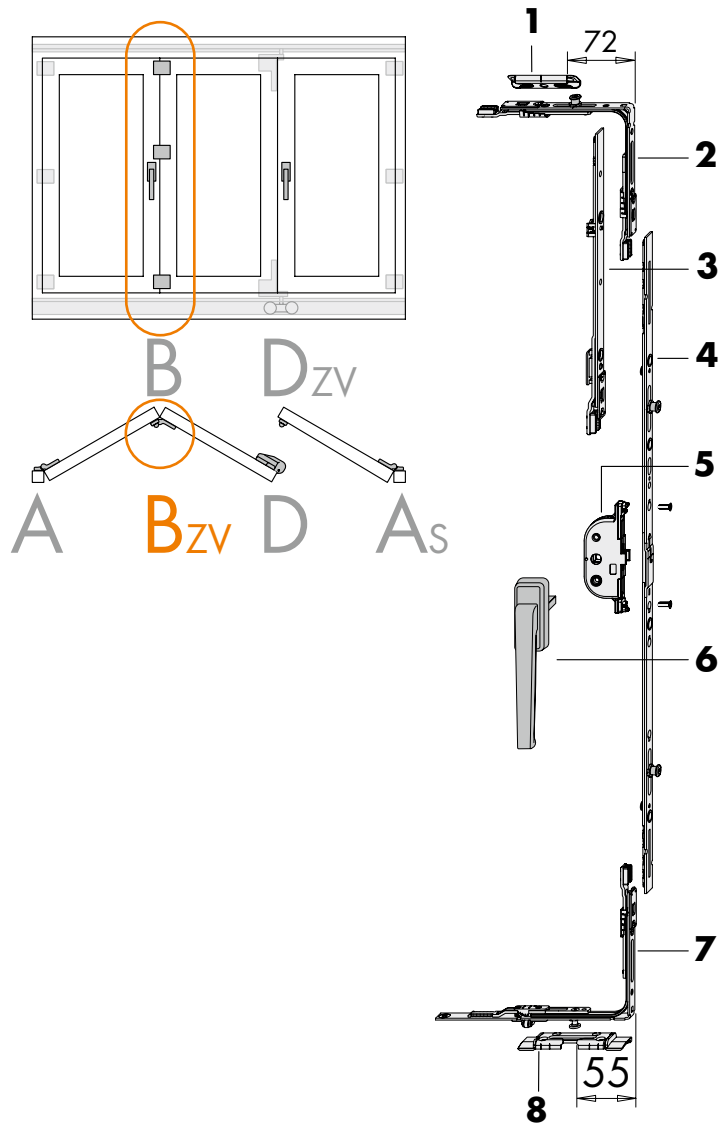


Fig. 15: Overview of hardware intersection point B, central locking gear TITAN AF - outside

Overview of set intersection point B, central locking gear TITAN AF - outside

No.	Material description	Backset	FFH		Handle position	Material number
1	Striker plate					See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS					TEUL4110-10001_
3	Locking bolt AF VSO RSA 11		2200 - 2400			TESC2030-10001_
4	Gear OS-AF size 80/G400 1RS		801 - 1000	400		TGKK0550-10001_
	Gear OS-AF size 100/G500 1RS		1001 - 1200	500		TGKK0560-10001_
	Gear OS-AF size 120/G600 1RS		1201 - 1400	600		TGKK0570-10001_
	Gear OS-AF size 140/G700 1RS		1401 - 1600	700		TGKK0580-10001_
	Gear OS-AF size 160/G700 2RS 70		1601 - 1800	700		TGKK0750-10001_
	Gear OS-AF size 180/G1000 2RS 70		1801 - 2000	1000		TGKK0620-10001_
	Gear OS-AF size 200/G1000 3RS 70		2001 - 2400*	1000		TGKK0630-10001_
5	Gear set 30 M5	30				TMSL4300-10001_
	Gear set 35 M5	35				TMSL4350-10001_
	Gear set 40 M5	40				TMSL4400-10001_
	Gear set 45 M5	45				TMSL4450-10001_
	Gear set 50 M5	50				TMSL4500-10001_
	Gear set 55 M5	55				TMSL4550-10001_
6	Handle Si-line / Handle Globe					See from page 105
7	Corner drive AF VSU/K+ 1S					TEUL5010-10001_
8	Tilt lock bearing					See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.17 Hardware FS PLUS - intersection point C hinges - FS 17/38 - inside timber elements

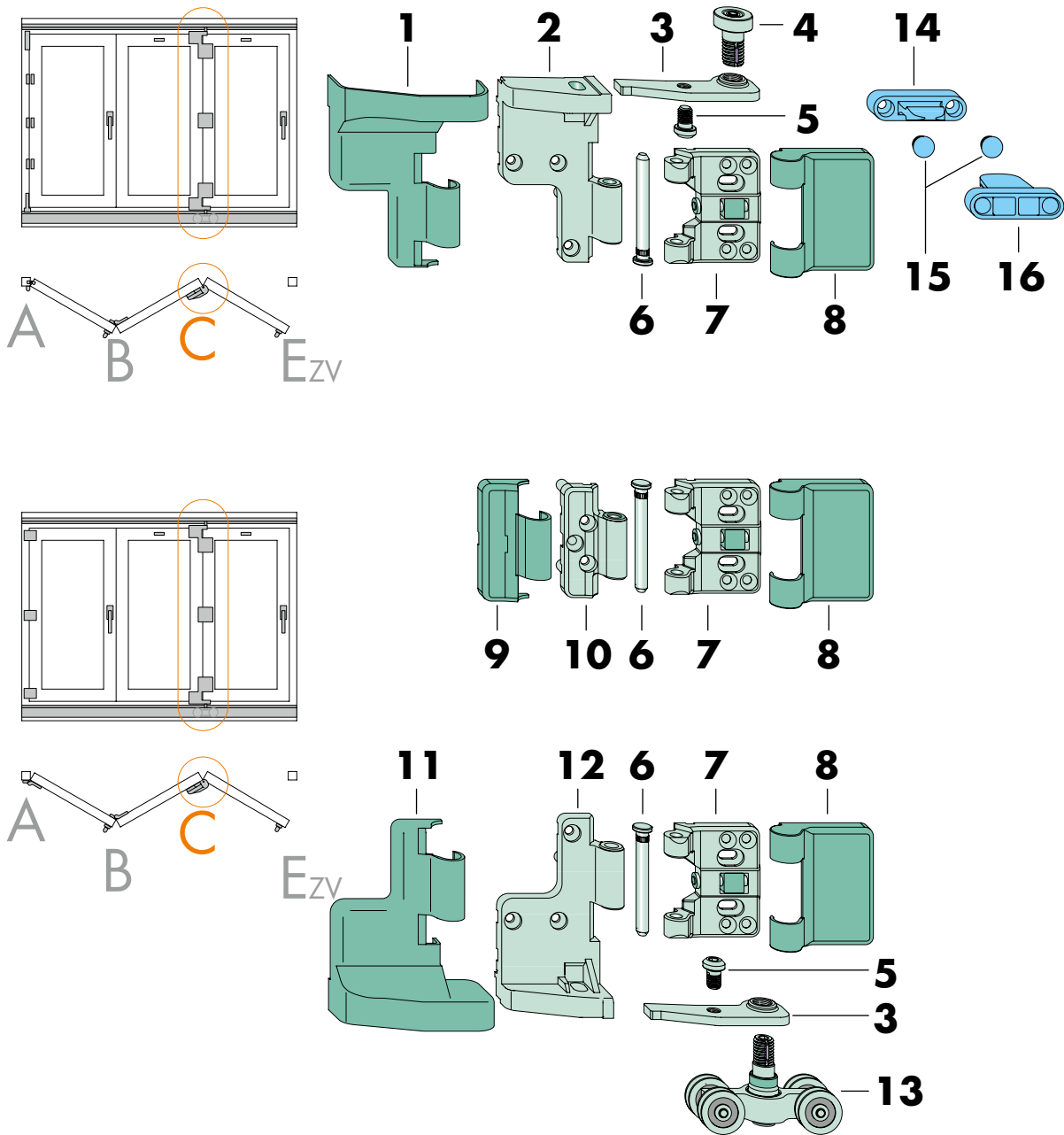


Fig. 16: Overview of hardware - intersection point C hinges - FS 17/38 - inside timber elements

Overview of set - intersection point C hinges - FS 17/38 - inside timber elements

No.	Material description	Material number			
		Base...	...Colour number		
		silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels D FS PLUS <i>consisting of:</i>	PMLG0130-	10001_		
2	Bottom hinge D, right TS				
3	Supporting plate TS				
4	Guide PLUS				
5	Cheese head screw M 8 x 16				
6	Hinge pin TS				
7	Sash hinge, wide 38 TS				
10	Sash hinge, narrow 17 TS				
12	Bottom hinge D, left TS				
13	Bogie wheels PLUS				
	Bag of cover caps bogie wheels D FS <i>consisting of:</i>	PMAG0040-	02501_	00201_	01201_ 03101_
1	Cover cap ED, right				
8	Cover cap FB, wide 38				
9	Cover cap FB, narrow 17				
11	Cover cap ED, left				
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_
14	Supporting piece F				
15	Bag closing cap				
16	Supporting piece D				

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.18 Hardware FS PLUS - intersection point C hinges - FS 17/38 - inside PVC elements

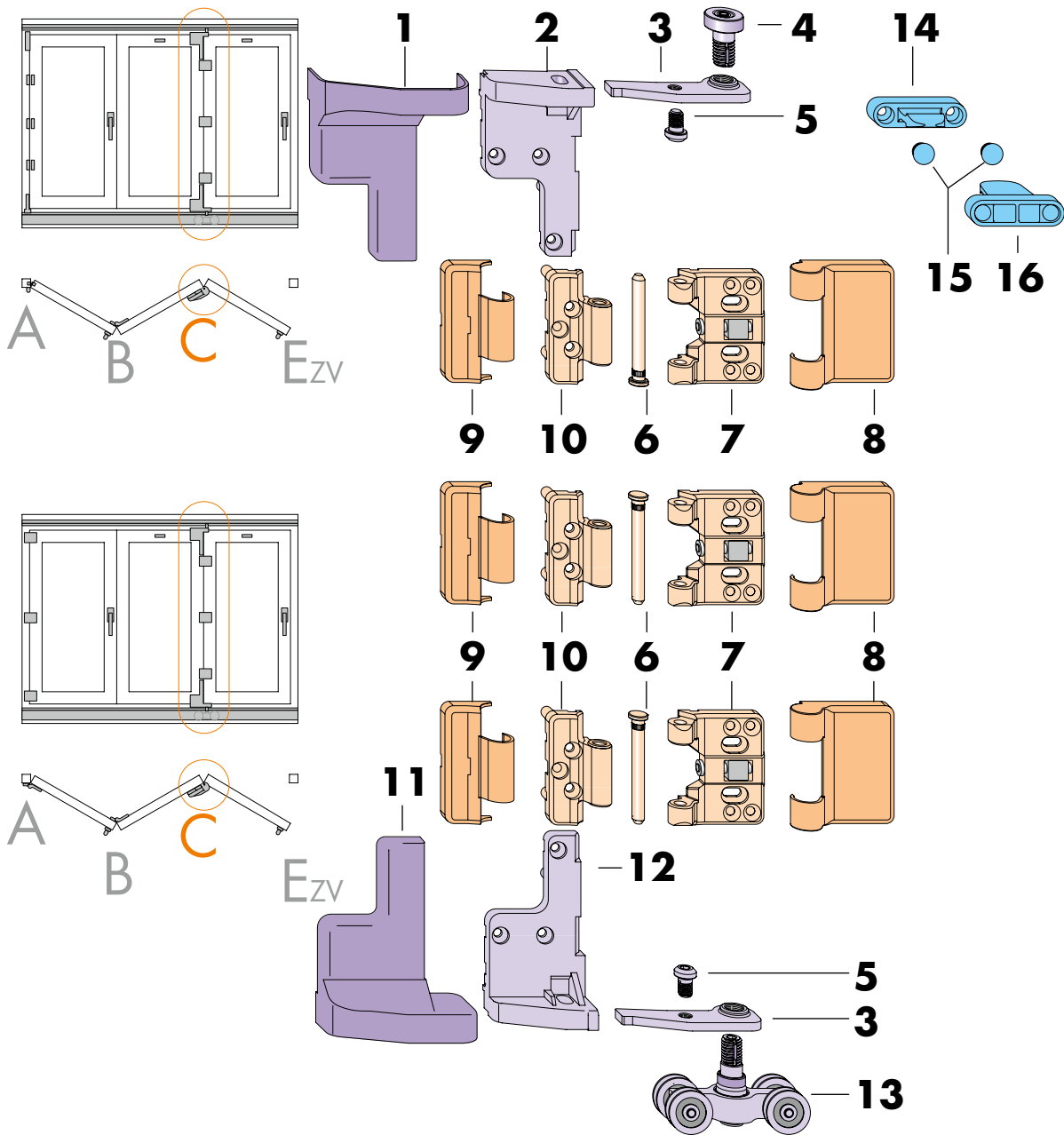


Fig. 17: Overview of hardware - intersection point B hinges - FS 27/48 - outside PVC elements

Overview of set - intersection point C hinges - FS 17/38 - inside PVC elements

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/38 TS <i>consisting of:</i>	PMFG0030-	10001_			
10	Sash hinge, narrow 17 TS					
6	Hinge pin TS					
7	Sash hinge, wide 38 TS					
	Bag cover caps sash hinge 17/38 <i>consisting of:</i>	PMAG0010-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0110-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.19 Hardware FS PLUS - intersection point C hinges - FS 27/48 - inside PVC elements

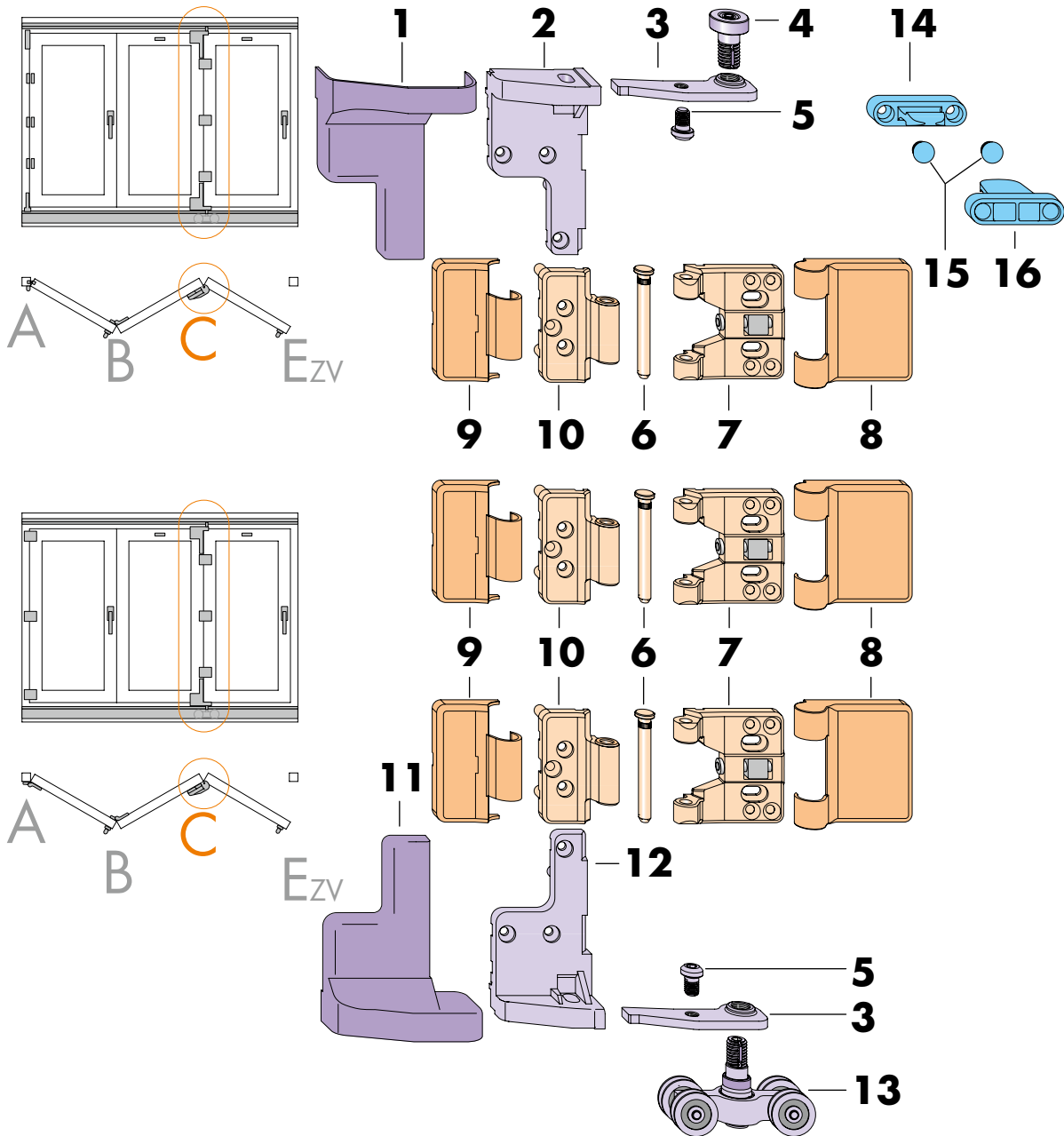


Fig. 18: Overview of hardware - intersection point B hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 27/48 - inside PVC elements

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>	PMFG0030-	10001_			
10	Sash hinge, narrow 27 TS					
6	Hinge pin TS					
7	Sash hinge, wide 48 TS					
	Bag cover caps sash hinge 27/48 <i>consisting of:</i>	PMAG0010-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 48					
9	Cover cap FB, narrow 27					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0110-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.20 Hardware FS - intersection point C hinges - FS 17/38 - inside timber elements barrier-free

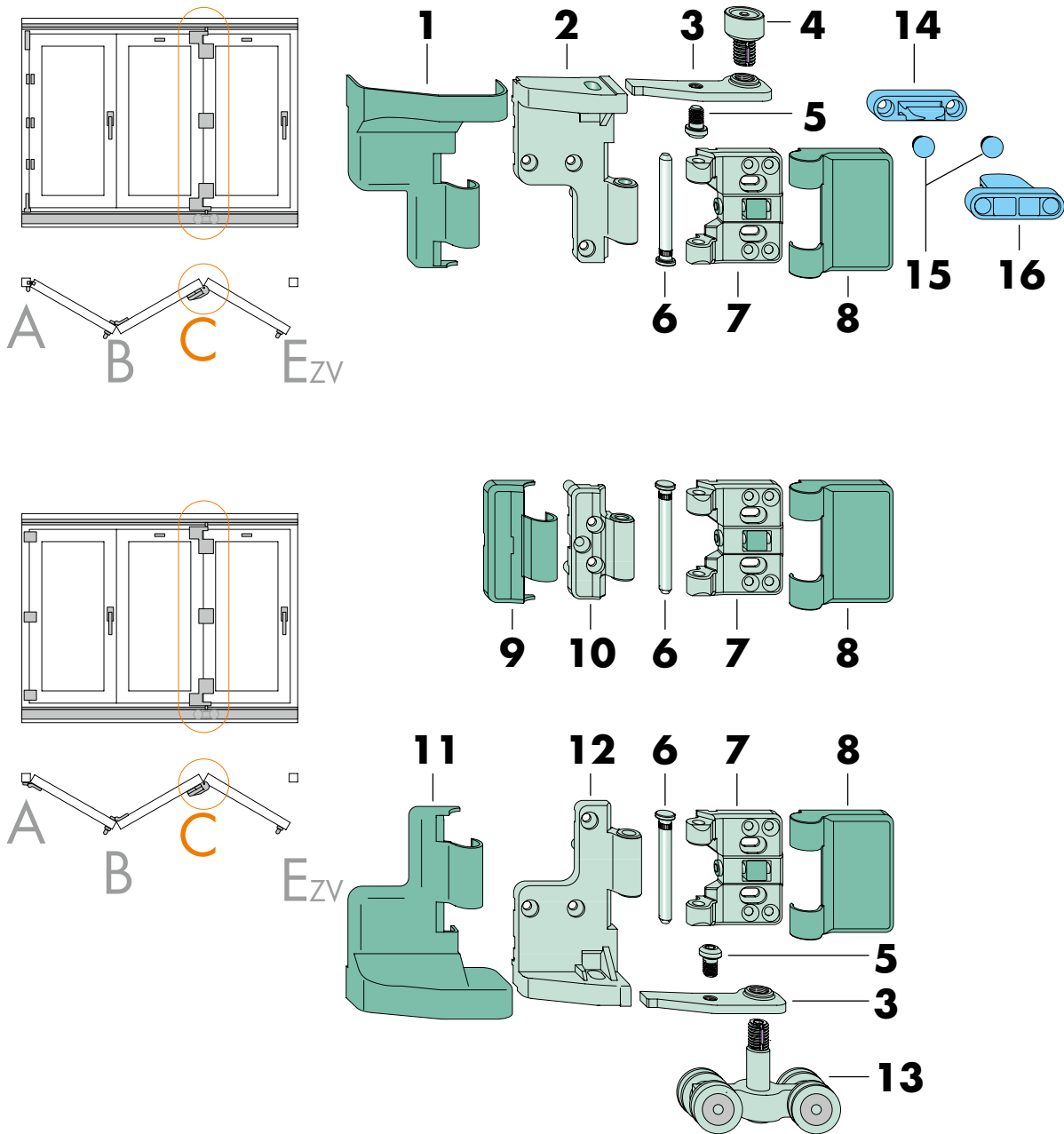


Fig. 19: Overview of hardware - intersection point B hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 17/38 - inside timber elements barrier-free

No.	Material description	Material number				
		Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels D FS PLUS <i>consisting of:</i>	PMLG0040-	10001_			
2	Bottom hinge D, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
6	Hinge pin TS					
7	Sash hinge, wide 38 TS					
10	Sash hinge, narrow 17 TS					
12	Bottom hinge D, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels D FS <i>consisting of:</i>	PMAG0040-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.21 Hardware FS PLUS - intersection point C hinges - FS 17/38 - inside timber elements barrier-free

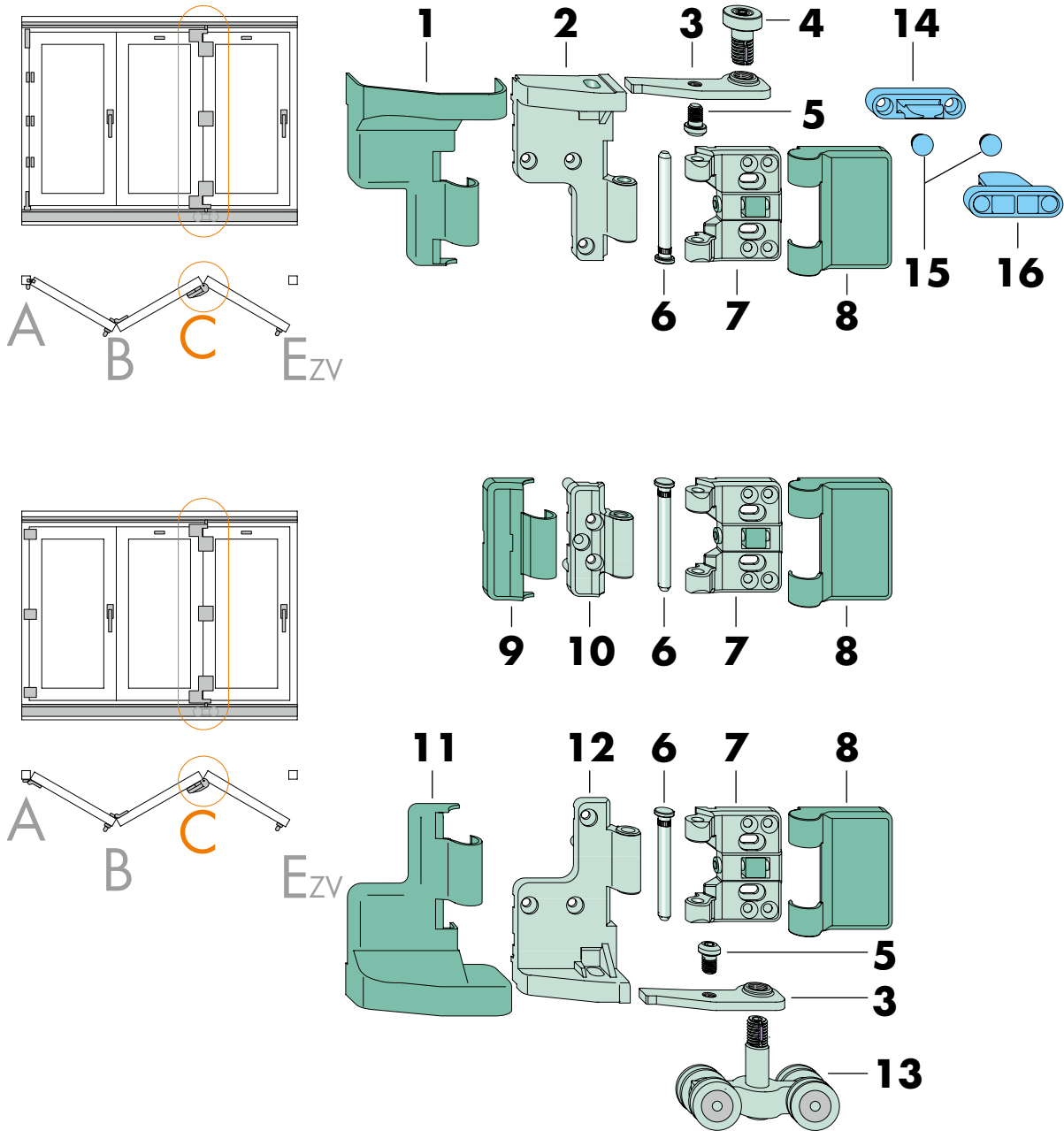


Fig. 20: Overview of hardware - intersection point B hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 17/38 - inside timber elements barrier-free

No.	Material description	Material number				
		Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels D FS PLUS <i>consisting of:</i>	PMLG0160-	10001_			
2	Bottom hinge D, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
6	Hinge pin TS					
7	Sash hinge, wide 38 TS					
10	Sash hinge, narrow 17 TS					
12	Bottom hinge D, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels D FS <i>consisting of:</i>	PMAG0040-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

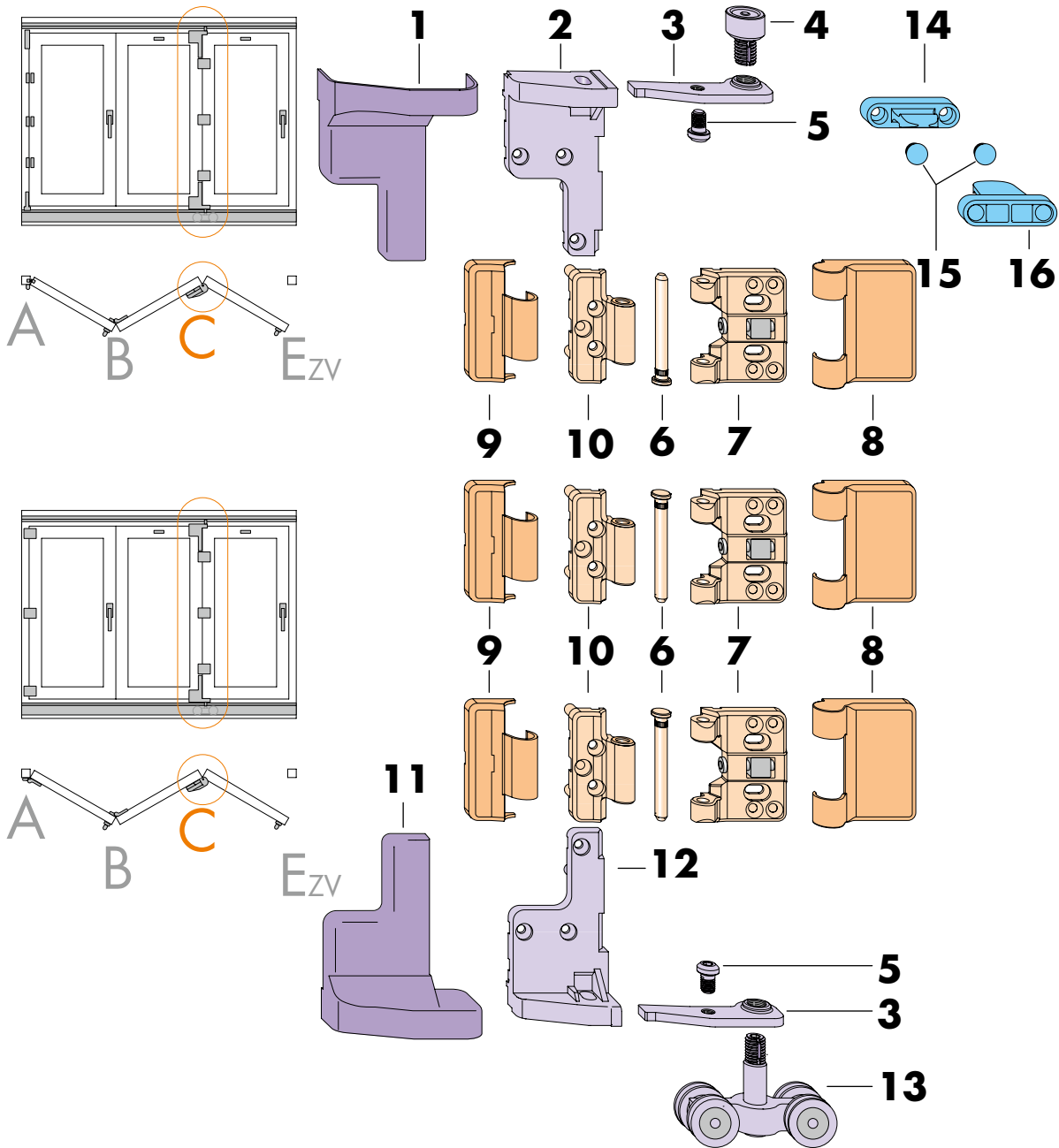


Fig. 21: Overview of hardware - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 17/38 - inside PVC elements barrier-free

No.	Material description	Material number				
		Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/38 TS <i>consisting of:</i>	PMFG0030-	10001_			
10	Sash hinge, narrow 17 TS					
6	Hinge pin TS					
7	Sash hinge, wide 38 TS					
	Bag cover caps sash hinge 17/38 <i>consisting of:</i>	PMAG0010-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0110-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.23 Hardware FS PLUS - intersection point C hinges - FS 17/38 - inside PVC elements barrier-free

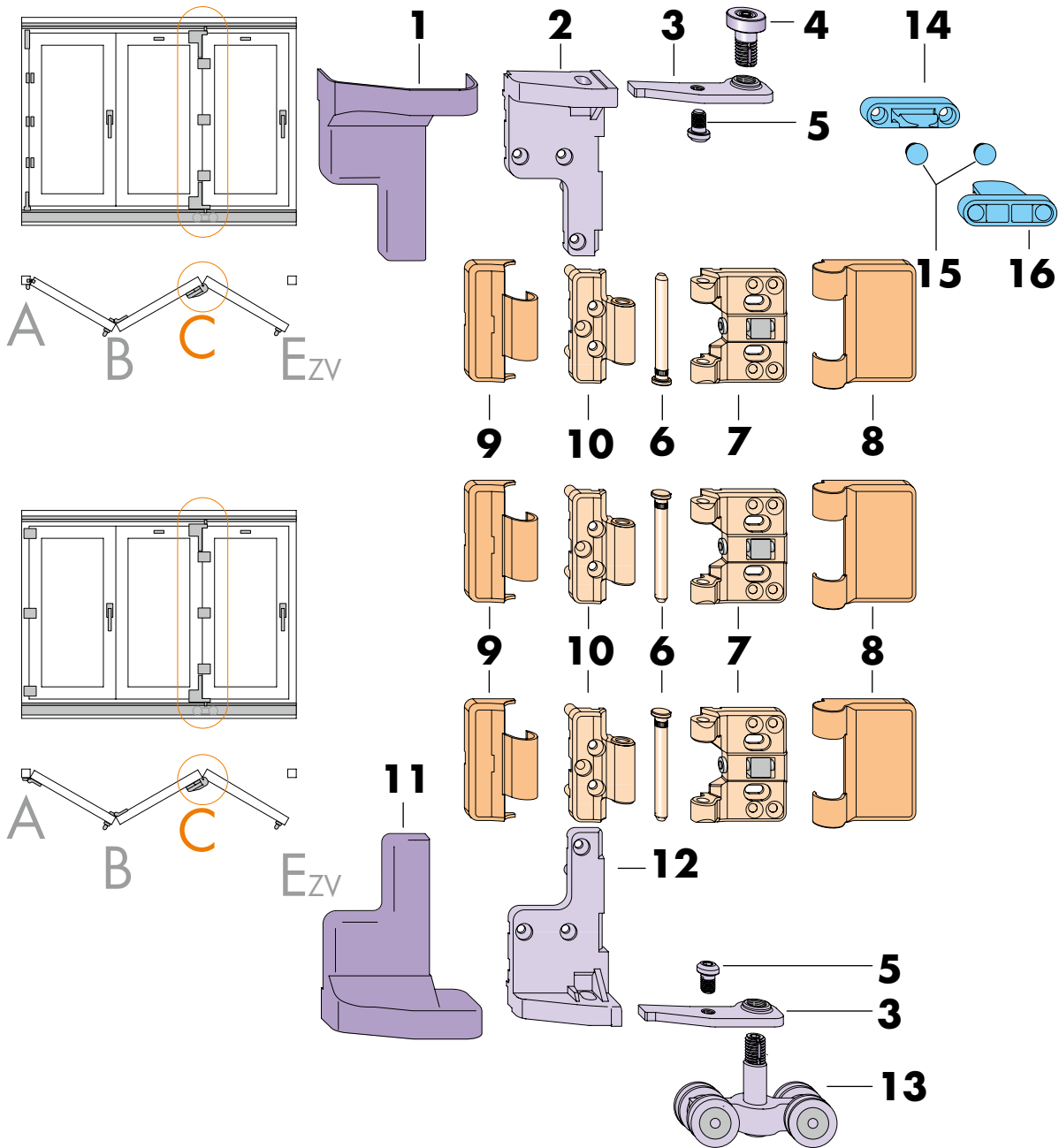


Fig. 22: Overview of hardware - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 17/38 - inside PVC elements barrier-free

No.	Material description	Material number				
		Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 17/38 TS <i>consisting of:</i>	PMFG0030-	10001_			
10	Sash hinge, narrow 17 TS					
6	Hinge pin TS					
7	Sash hinge, wide 38 TS					
	Bag cover caps sash hinge 17/38 <i>consisting of:</i>	PMAG0010-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0170-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.24 Hardware FS - intersection point C hinges - FS 27/48 - inside PVC elements barrier-free

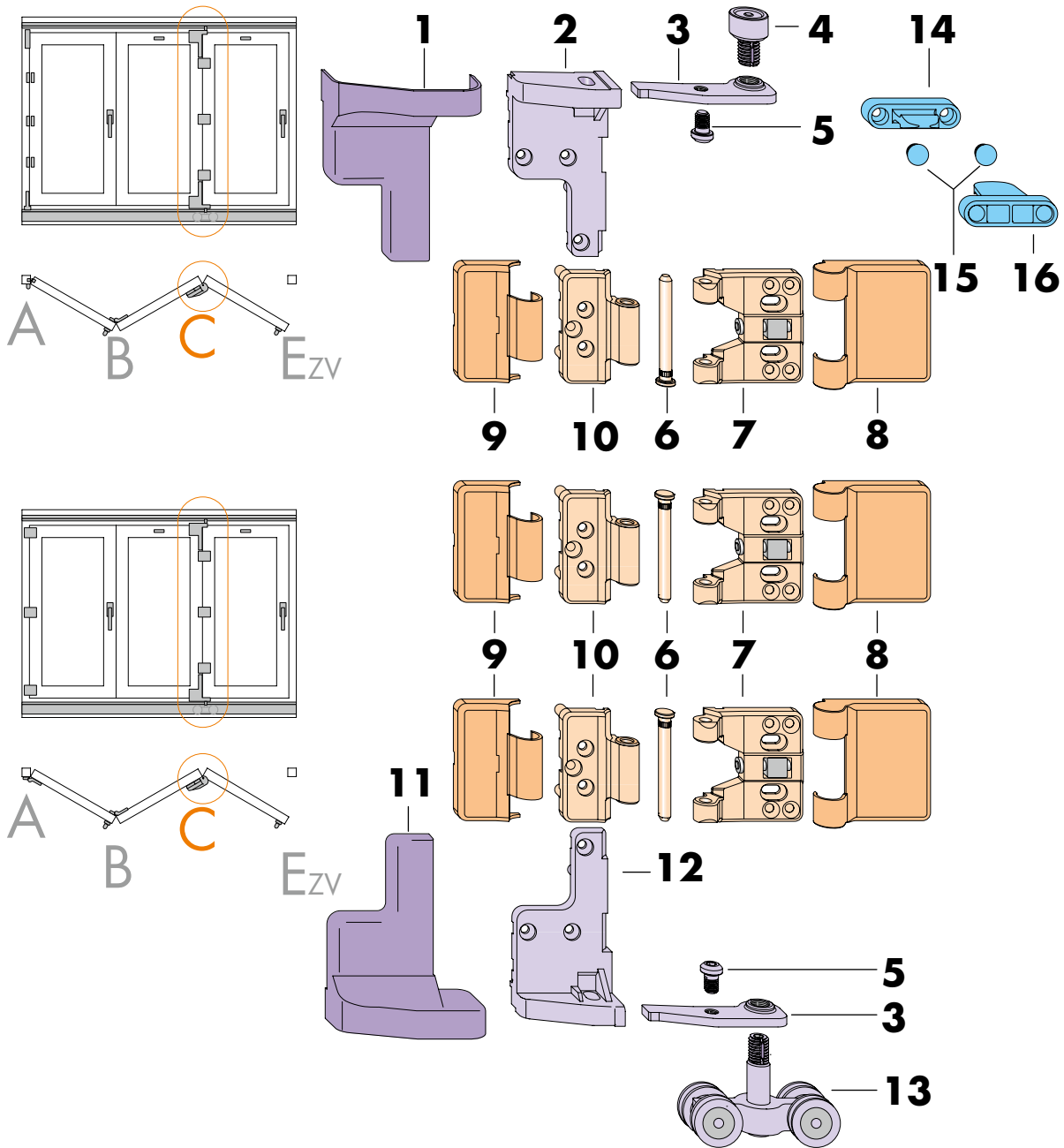


Fig. 23: Overview of hardware - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 27/48 - inside PVC elements barrier-free

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>	PMFG4020-	10001_			
10	Sash hinge, narrow 27 TS					
6	Hinge pin TS					
7	Sash hinge, wide 48 TS					
	Bag cover caps sash hinge 27/48 <i>consisting of:</i>	PMAG0020-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 48					
9	Cover cap FB, narrow 28					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0110-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.25 Hardware FS PLUS - intersection point C hinges - FS 27/48 - inside timber elements barrier-free

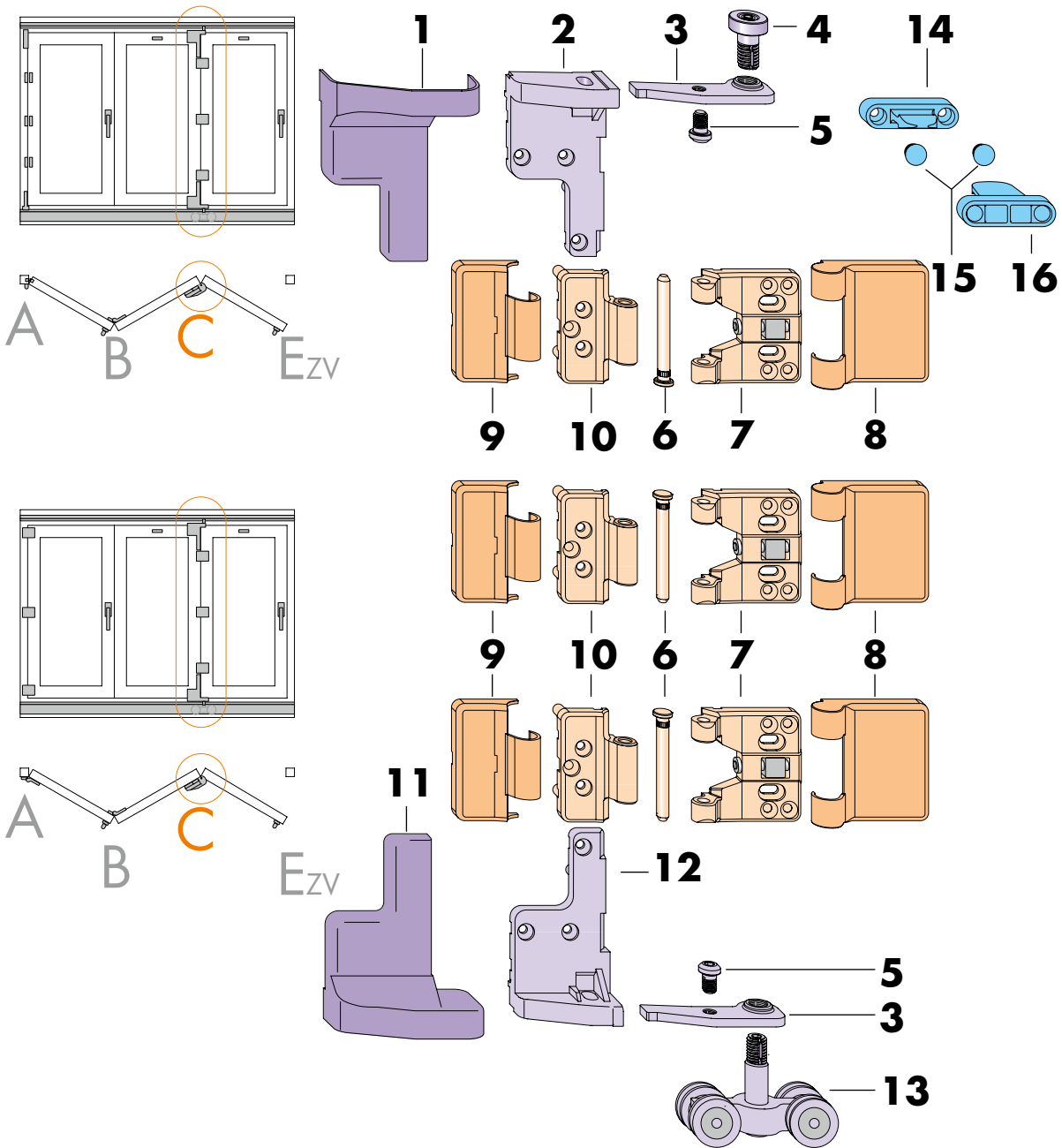


Fig. 24: Overview of hardware - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 27/48 - inside PVC elements barrier-free

No.	Material description	Material number				
		Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>	PMFG0030-	10001_			
10	Sash hinge, narrow 27 TS					
6	Hinge pin TS					
7	Sash hinge, wide 48 TS					
	Bag cover caps sash hinge 27/48 <i>consisting of:</i>	PMAG0010-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 48					
9	Cover cap FB, narrow 28					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0170-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.26 Hardware FS PLUS - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

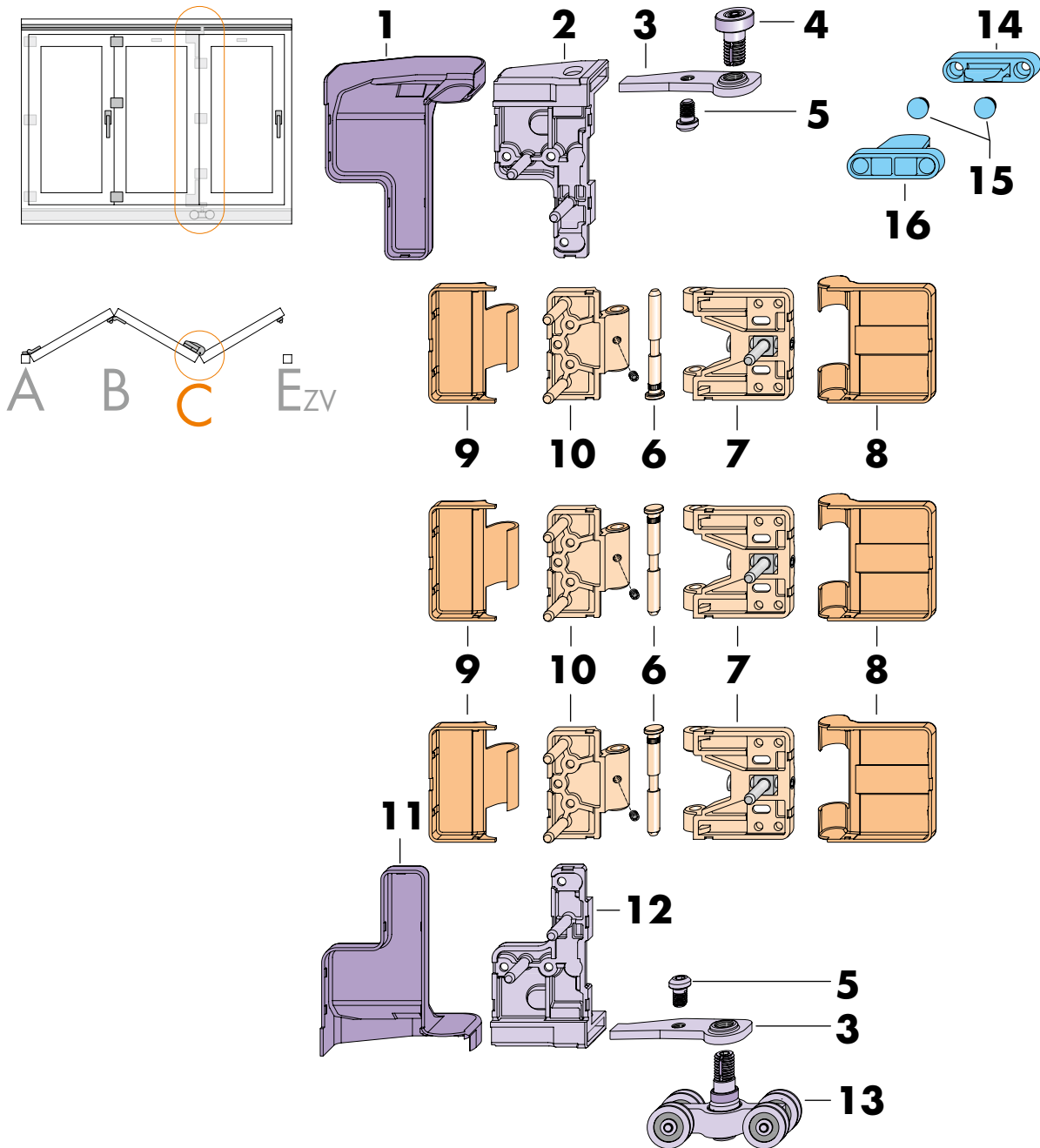


Fig. 25: Overview of hardware - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

Overview of set - intersection point C hinges - FS 27/48 - outside timber/ PVC elements

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton sash hinge FS 27/48 TS <i>consisting of:</i>	PMFG0050-	10001_			
10	Sash hinge, narrow 27 TS					
6	Hinge pin TS					
7	Sash hinge, wide 48 TS					
	Ball 3.5					
	Grub screw M 6 x 4 A2					
	Bag cover caps sash hinge 27/48 <i>consisting of:</i>	PMAG0050-	02501_	00201_	01101_	03101_
8	Cover cap FB, wide 48					
9	Cover cap FB, narrow 27					
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0150-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
11	Cover cap ED, left					
	Bag supporting piece FS <i>consisting of:</i>	PMZG0020-	02101_	00201_	01101_	
14	Supporting piece F					
15	Bag closing cap					
16	Supporting piece D					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.27 Hardware FS PLUS - intersection point D - inside timber/PVC elements

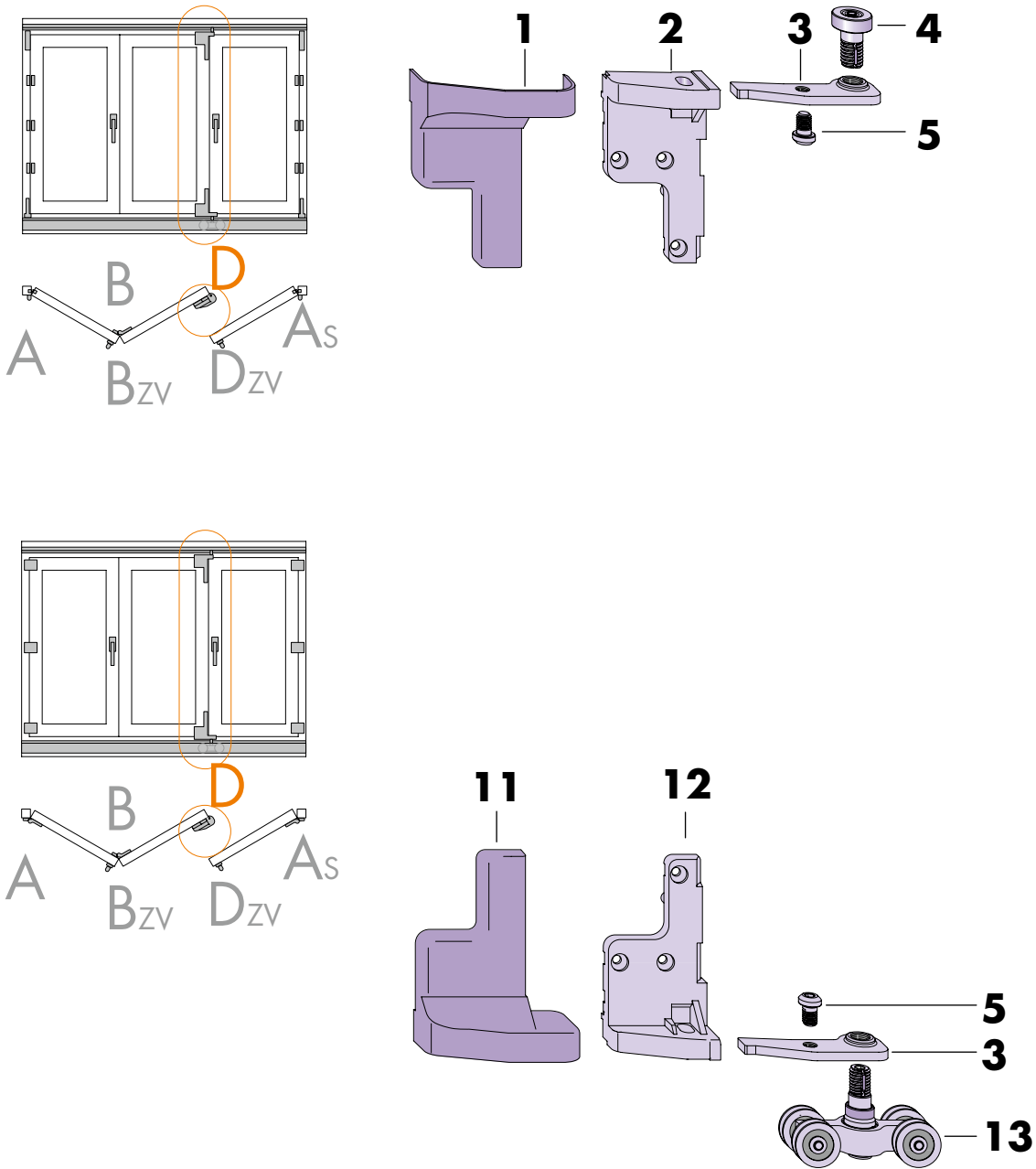


Fig. 26: Overview of hardware - intersection point D - inside timber/ PVC elements

Overview of set - intersection point D hinges - FS 17/38 - inside timber /PVC elements

No.	Material description	Material number				
		Base...	...Colour number			
			silver	RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels FS PLUS <i>consisting of:</i>	PMLG0110-	10001_			
2	Bottom hinge, right TS					
3	Supporting plate TS					
4	Guide PLUS					
5	Cheese head screw M 8 x 16					
12	Bottom hinge, left TS					
13	Bogie wheels PLUS					
	Bag of cover caps bogie wheels FS <i>consisting of:</i>	PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right					
8	Cover cap FB, wide 38					
9	Cover cap FB, narrow 17					
11	Cover cap ED, left					

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.28 Hardware FS - intersection point D - inside timber/PVC elements barrier-free

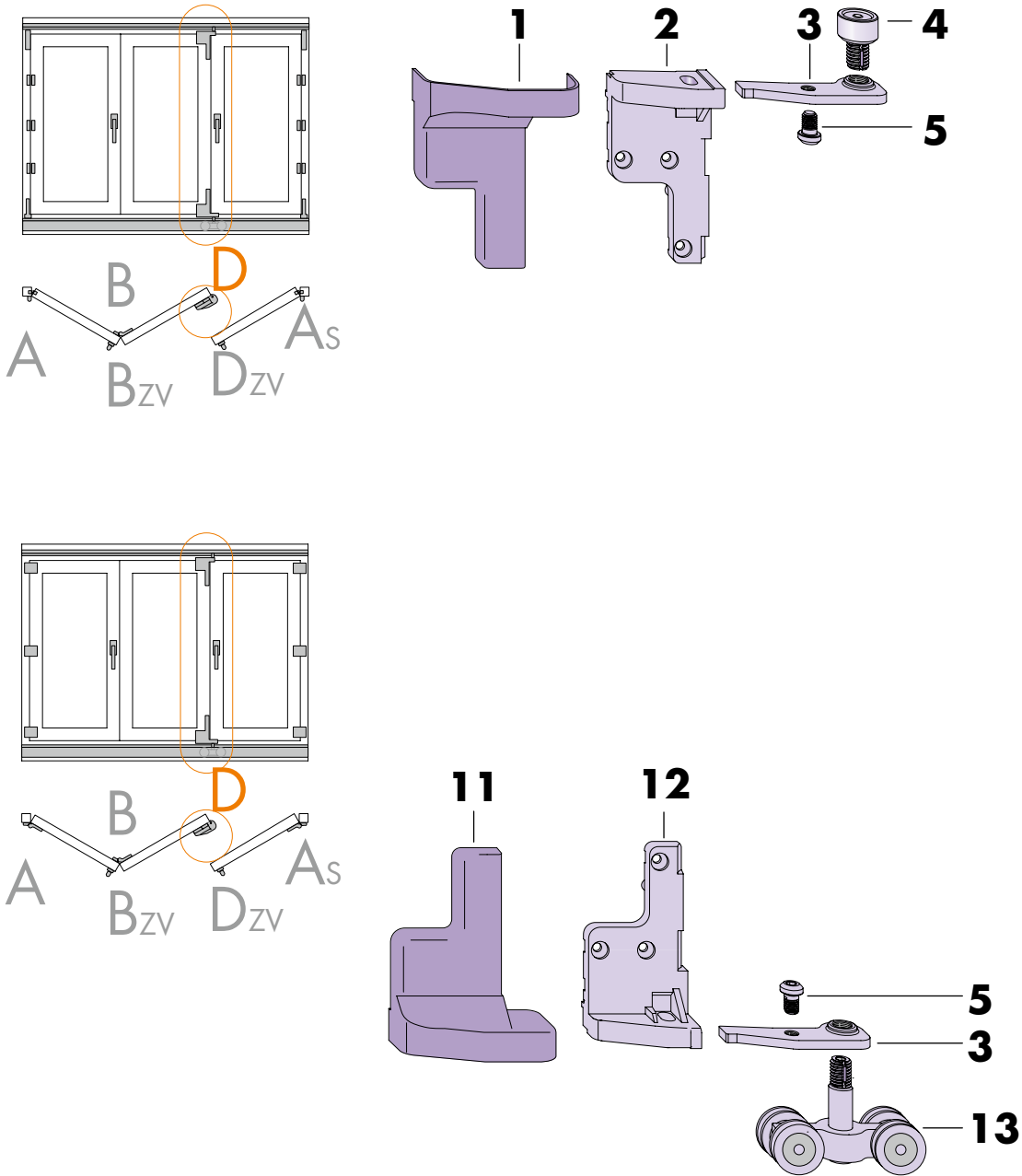


Fig. 27: Overview of hardware - intersection point D - inside timber/ PVC elements barrier-free

Overview of set - intersection point D - inside timber /PVC elements barrier-free

No.	Material description		Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels FS PLUS <i>consisting of:</i>		PMLG0050-	10001_			
2	Bottom hinge, right TS						
3	Supporting plate TS						
4	Guide PLUS						
5	Cheese head screw M 8 x 16						
12	Bottom hinge, left TS						
13	Bogie wheels PLUS						
	Bag of cover caps bogie wheels FS <i>consisting of:</i>		PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right						
11	Cover cap ED, left						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.29 Hardware FS PLUS - intersection point D - inside timber/PVC elements barrier-free

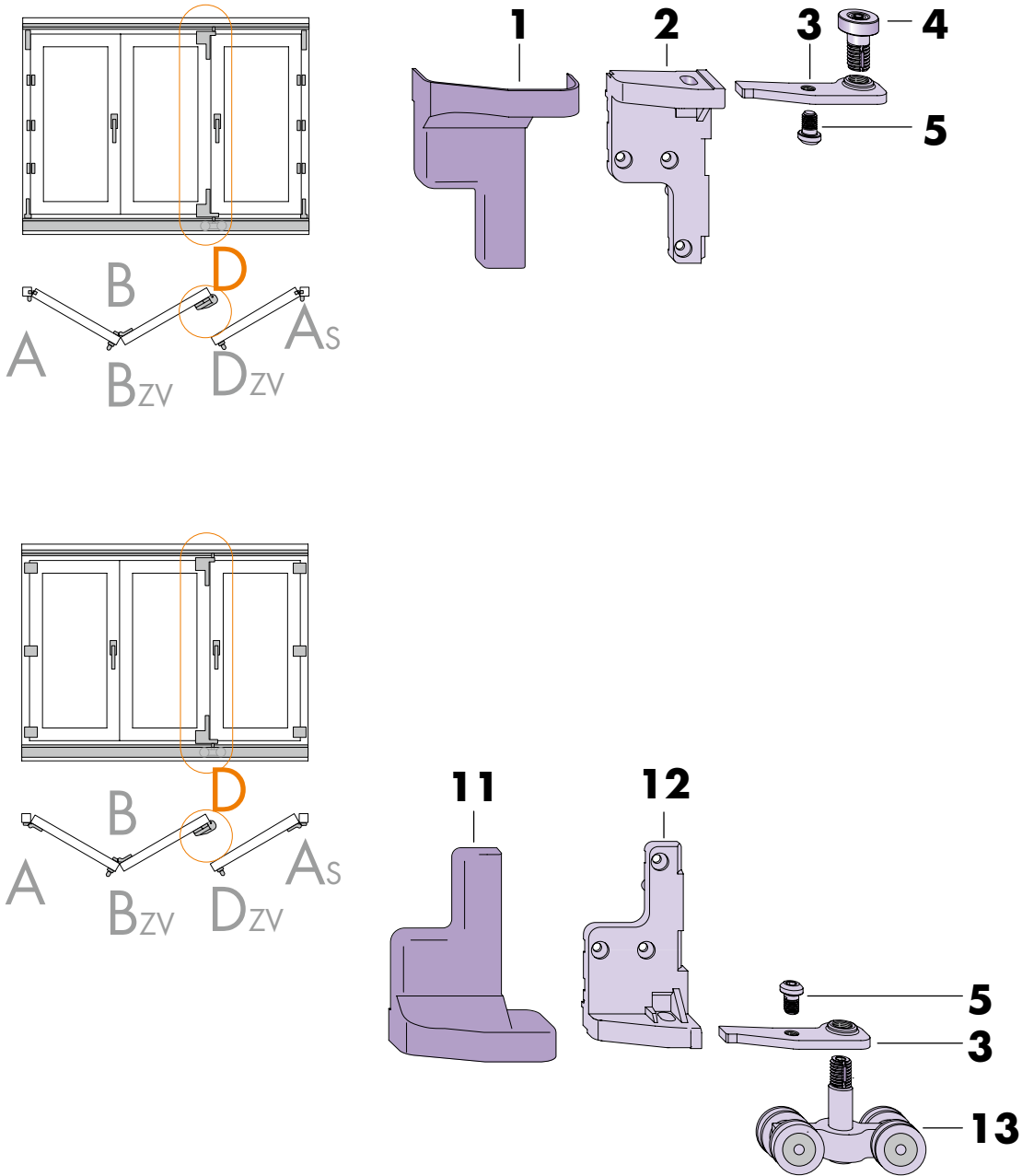


Fig. 28: Overview of hardware - intersection point D - inside timber/ PVC elements barrier-free

Overview of set - intersection point D - timber - PVC - inside PVC elements barrier-free

No.	Material description		Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels FS PLUS <i>consisting of:</i>		PMLG0170-	10001_			
2	Bottom hinge, right TS						
3	Supporting plate TS						
4	Guide PLUS						
5	Cheese head screw M 8 x 16						
12	Bottom hinge, left TS						
13	Bogie wheels PLUS						
	Bag of cover caps bogie wheels FS <i>consisting of:</i>		PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right						
11	Cover cap ED, left						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.30 Hardware FS PLUS - intersection point D - outside timber elements

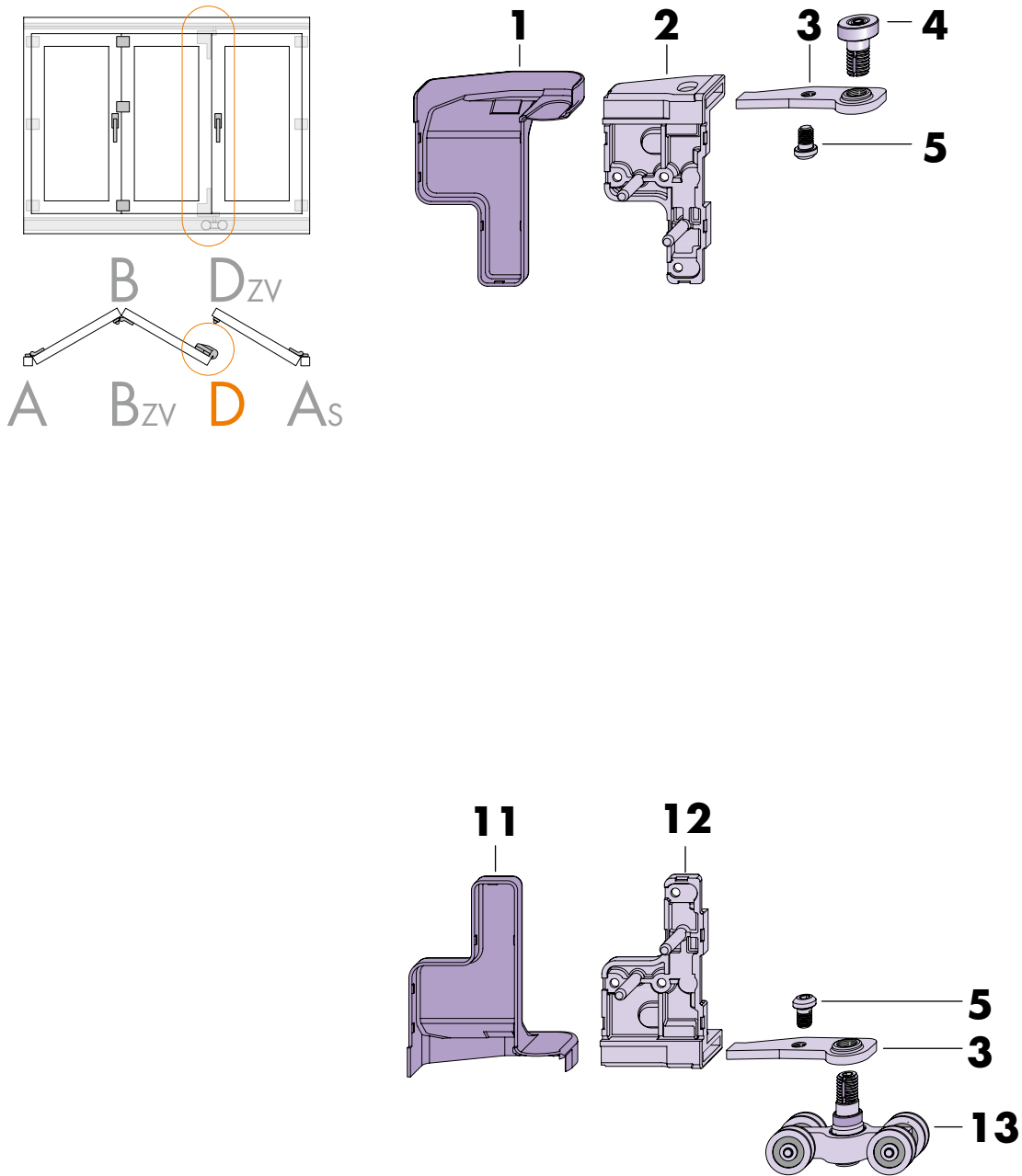


Fig. 29: Overview of hardware - intersection point D - outside timber/ PVC elements

Overview of set - intersection point D - outside timber/ PVC elements

No.	Material description		Material number				
			Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown	medium bronze
	Carton bogie wheels FS PLUS <i>consisting of:</i>		PMLG0150-	10001_			
2	Bottom hinge, right TS						
3	Supporting plate TS						
4	Guide PLUS						
5	Cheese head screw M 8 x 16						
12	Bottom hinge, left TS						
13	Bogie wheels PLUS						
	Bag of cover caps bogie wheels FS <i>consisting of:</i>		PMAG0030-	02501_	00201_	01201_	03101_
1	Cover cap ED, right						
8	Cover cap FB, wide 38						
9	Cover cap FB, narrow 17						
11	Cover cap ED, left						

Sash hinges FS

Sash rebate height up to 1500 mm 2 sash hinges each

Sash rebate height 1501 mm to 2400 mm 3 sash hinges each

6.2.31 Hardware FS PLUS - intersection point D - central locking gear FAVORIT - inside

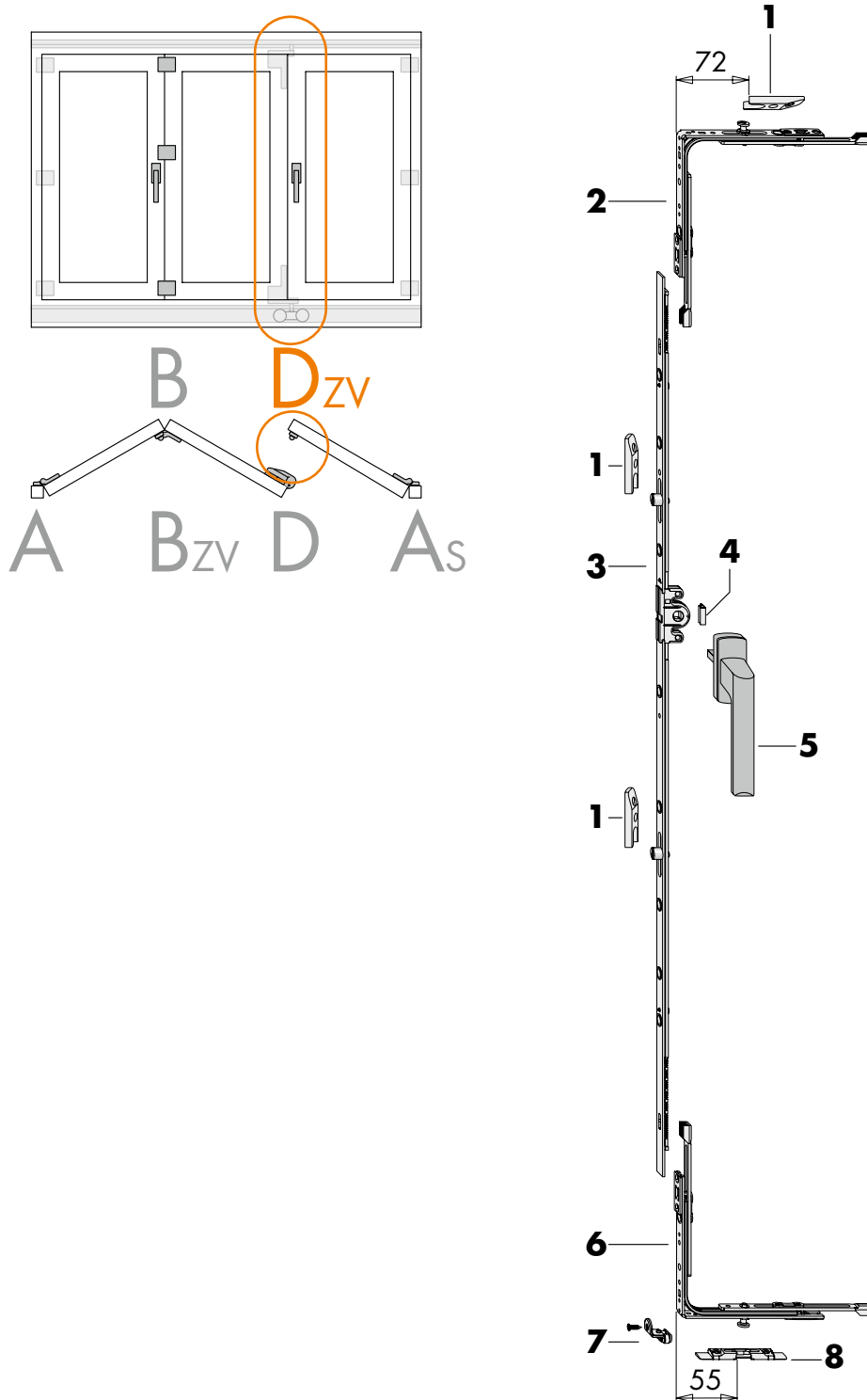


Fig. 30: Overview of hardware intersection point D - central locking gear FAVORIT - inside

Overview of set intersection point D, central locking gear FAVORIT - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive VS S-ES				FEUL0090-10001_-
3	Gear 15 FAV size 60/G300	15	601 - 800	300	FGKK4030-10001_
	Gear 15 FAV size 80/G400 1V	15	801 - 1000	400	FGKK4030-10001_
	Gear 15 FAV size 100/G500 1V	15	1001 - 1200	500	FGKK4060-10001_
	Gear 15 FAV size 120/G600 1V	15	1201 - 1400	600	FGKK4070-10001_
	Gear 15 FAV size 140/G700 2V	15	1401 - 1600	700	FGKK4200-10001_
	Gear 15 FAV size 160/G700 2V 70	15	1601 - 1800	700	FGKK4090-10001_
	Gear 15 FAV size 180/G1000 2V	15	1801 - 2000	1000	FGKK4220-10001_
	Gear 15 FAV size 200/G1000 3V	15	2001 - 2400	1000	FGKK4230-10001_
4	Limitation piece				800768
5	Handle Si-line / Handle Globe				See from page 105
6	Corner drive VS S-ES				FEUL0090-10001_-
7	Sash height				See profile data sheets TITAN
8	Tilt lock bearing				See profile data sheets TITAN

6.2.32 Hardware FS PLUS - intersection point D - central locking gear TITAN AF - inside

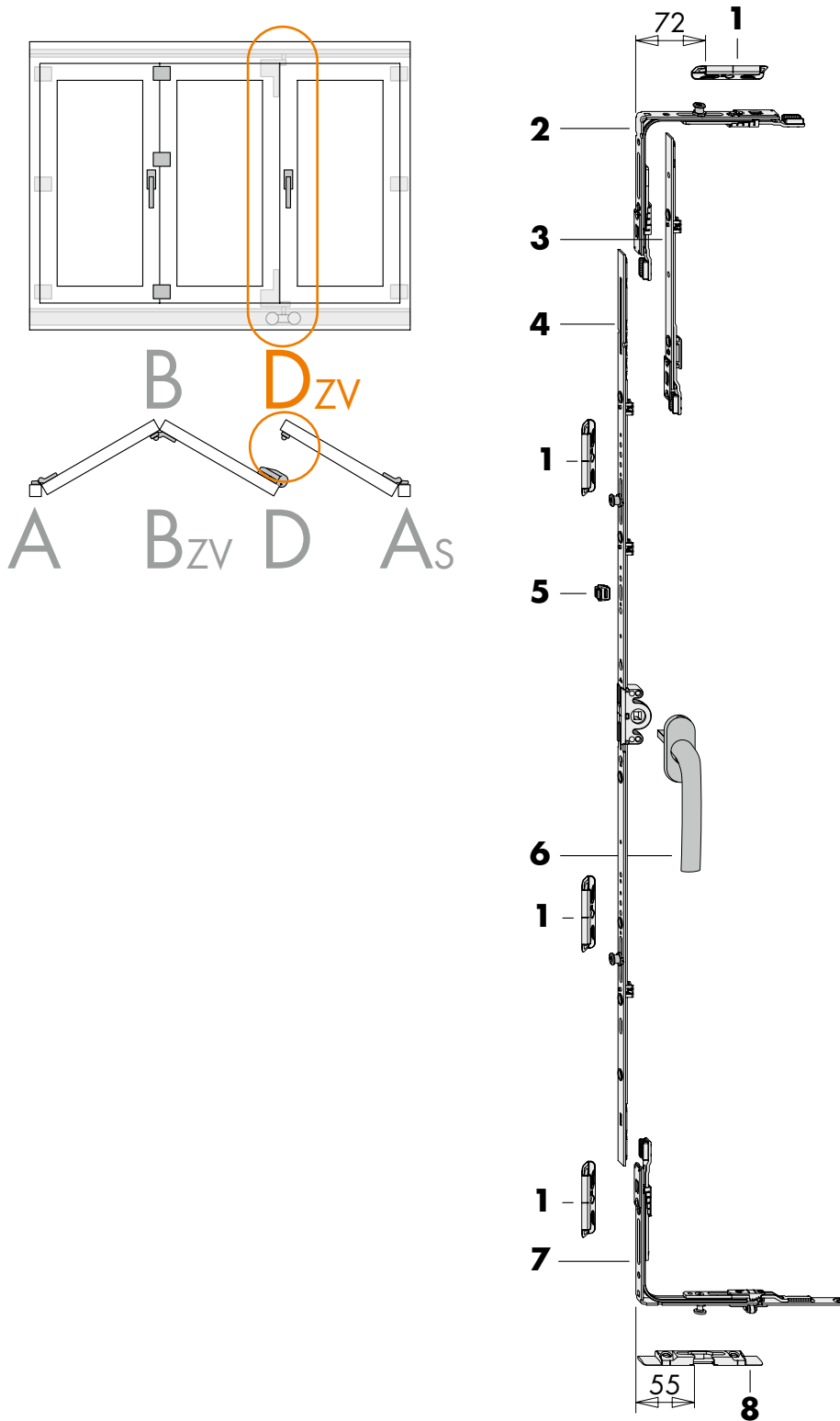


Fig. 31: Overview of hardware intersection point D, central locking gear TITAN AF - inside

Overview of set intersection point D, central locking gear TITAN AF - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear 15 AF size 60/G300	15	601 - 800	300	TGKK4030-10001_
	Gear 15 AF size 80/G400 1RS	15	801 - 1000	400	TGKK4050-10001_
	Gear 15 AF size 100/G500 1RS	15	1001 - 1200	500	TGKK4060-10001_
	Gear 15 AF size 120/G600 1RS	15	1201 - 1400	600	TGKK4070-10001_
	Gear 15 AF size 140/G700 2RS	15	1401 - 1600	700	TGKK4080-10001_
	Gear 15 AF size 160/G700 2RS	15	1601 - 1800	700	TGKK4090-10001_
	Gear 15 AF size 180/G1000 2RS	15	1801 - 2000	1000	TGKK4100-10001_
	Gear 15 AF size 200/G1000 3RS	15	2001 - 2400*	1000	TGKK4110-10001_
5	Travel restrictor				TFHB0020-09901_
6	Handle Si-line / Handle Globe				See from page 105
7	Corner drive AF VSU/K+ 1S				TEUL5010-10001_-
8	Tilt lock bearing				See profile data sheets TITAN

6.2.33 Hardware FS PLUS - intersection point D - central locking gear TITAN AF - outside

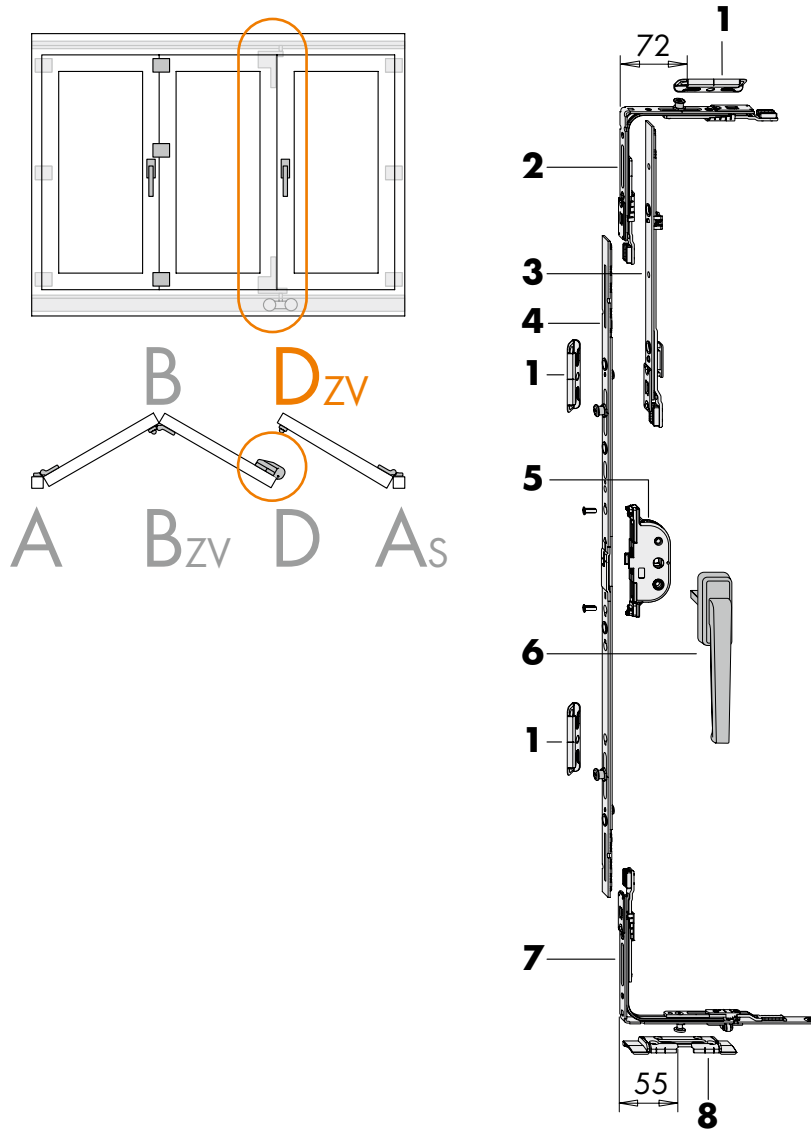


Fig. 32: Diagram of hardware intersection point D, central locking gear TITAN AF - outside

Overview of set intersection point D, central locking gear TITAN AF - outside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear OS-AF size 80/G400 1RS		801 - 1000	400	TGKK0550-10001_
	Gear OS-AF size 100/G500 1RS		1001 - 1200	500	TGKK0560-10001_
	Gear OS-AF size 120/G600 1RS		1201 - 1400	600	TGKK0570-10001_
	Gear OS-AF size 140/G700 1RS		1401 - 1600	700	TGKK0580-10001_
	Gear OS-AF size 160/G700 2RS 70		1601 - 1800	700	TGKK0750-10001_
	Gear OS-AF size 180/G1000 2RS 70		1801 - 2000	1000	TGKK0620-10001_
	Gear OS-AF size 200/G1000 3RS 70		2001 - 2400*	1000	TGKK0630-10001_
5	Gear set 30 M5	30			TMSL4300-10001_
	Gear set 35 M5	35			TMSL4350-10001_
	Gear set 40 M5	40			TMSL4400-10001_
	Gear set 45 M5	45			TMSL4450-10001_
	Gear set 50 M5	50			TMSL4500-10001_
	Gear set 55 M5	55			TMSL4550-10001_
6	Handle Si-line / Handle Globe				See from page 105
7	Corner drive AF VSU/K+ 1S				TEUL5010-10001_-
8	Tilt lock bearing				See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.34 Hardware FS PLUS - intersection point E - central locking gear FAVORIT - inside

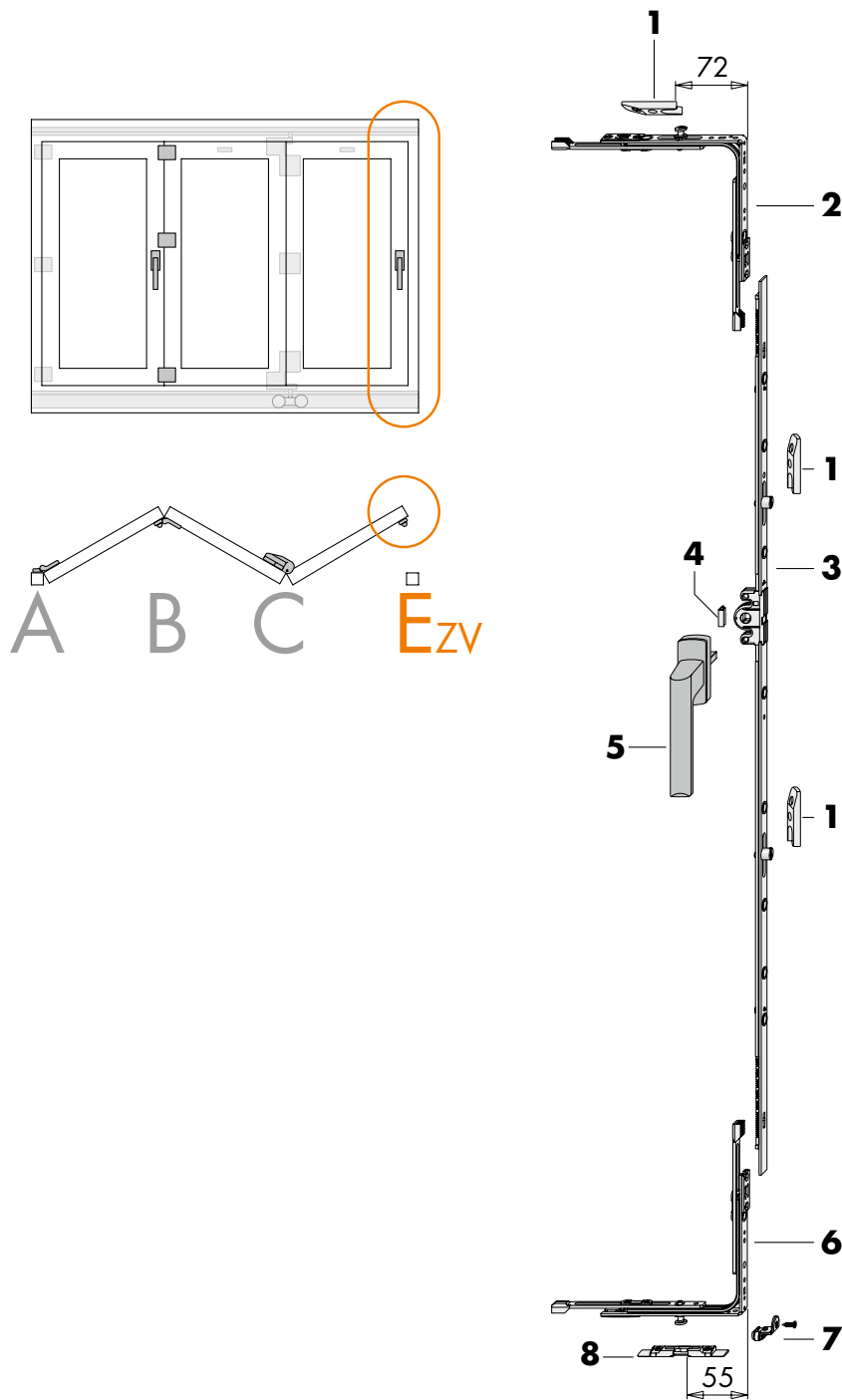


Fig. 33: Overview of hardware intersection point E - central locking gear FAVORIT - inside

Overview of set intersection point E, central locking gear FAVORIT - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive VS S-ES				FEUL0090-10001_-
3	Gear 15 FAV size 60/G300	15	601 - 800	300	FGKK4030-10001_
	Gear 15 FAV size 80/G400 1V	15	801 - 1000	400	FGKK4030-10001_
	Gear 15 FAV size 100/G500 1V	15	1001 - 1200	500	FGKK4060-10001_
	Gear 15 FAV size 120/G600 1V	15	1201 - 1400	600	FGKK4070-10001_
	Gear 15 FAV size 140/G700 2V	15	1401 - 1600	700	FGKK4200-10001_
	Gear 15 FAV size 160/G700 2V 70	15	1601 - 1800	700	FGKK4090-10001_
	Gear 15 FAV size 180/G1000 2V	15	1801 - 2000	1000	FGKK4220-10001_
	Gear 15 FAV size 200/G1000 3V	15	2001 - 2400	1000	FGKK4230-10001_
4	Limitation piece				800768
5	Handle Si-line / Handle Globe				See from page 105
6	Corner drive VS S-ES				FEUL0090-10001_-
7	Sash height				See profile data sheets TITAN
8	Tilt lock bearing				See profile data sheets TITAN

6.2.35 Hardware FS PLUS - intersection point E - central locking gear TITAN AF - inside

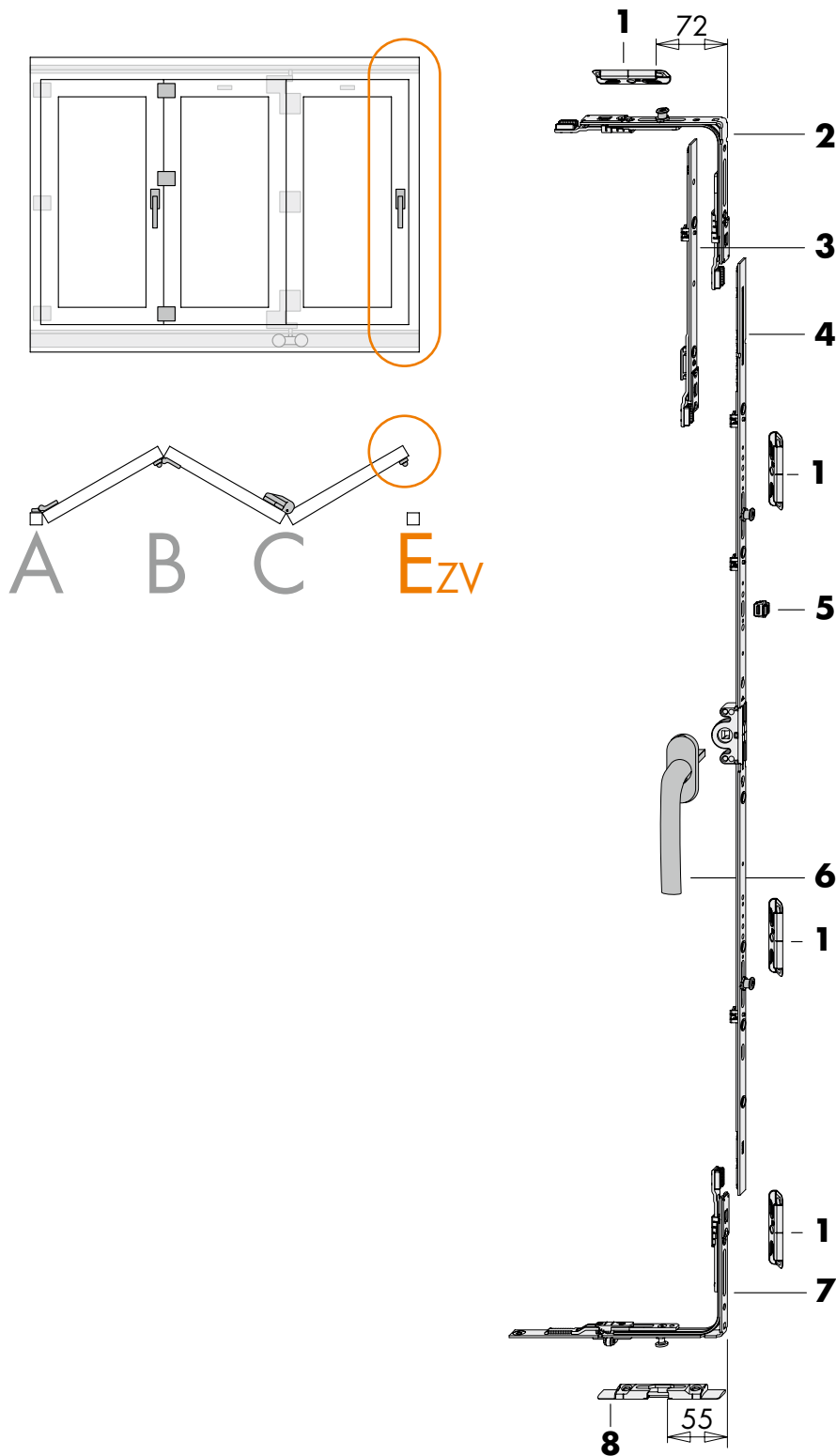


Fig. 34: Overview of hardware intersection point E, central locking gear TITAN AF - inside

Overview of set intersection point E, central locking gear TITAN AF - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear 15 AF size 60/G300	15	601 - 800	300	TGKK4030-10001_
	Gear 15 AF size 80/G400 1RS	15	801 - 1000	400	TGKK4050-10001_
	Gear 15 AF size 100/G500 1RS	15	1001 - 1200	500	TGKK4060-10001_
	Gear 15 AF size 120/G600 1RS	15	1201 - 1400	600	TGKK4070-10001_
	Gear 15 AF size 140/G700 2RS	15	1401 - 1600	700	TGKK4080-10001_
	Gear 15 AF size 160/G700 2RS	15	1601 - 1800	700	TGKK4090-10001_
	Gear 15 AF size 180/G1000 2RS	15	1801 - 2000	1000	TGKK4100-10001_
	Gear 15 AF size 200/G1000 3RS	15	2001 - 2400*	1000	TGKK4110-10001_
5	Travel restrictor				TFHB0020-09901_
6	Handle Si-line / Handle Globe				See from page 105
7	Corner drive AF VSU/K+ 1S				TEUL5010-10001_-
8	Tilt lock bearing				See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.36 Hardware FS PLUS - intersection point E - central locking gear TITAN AF - outside

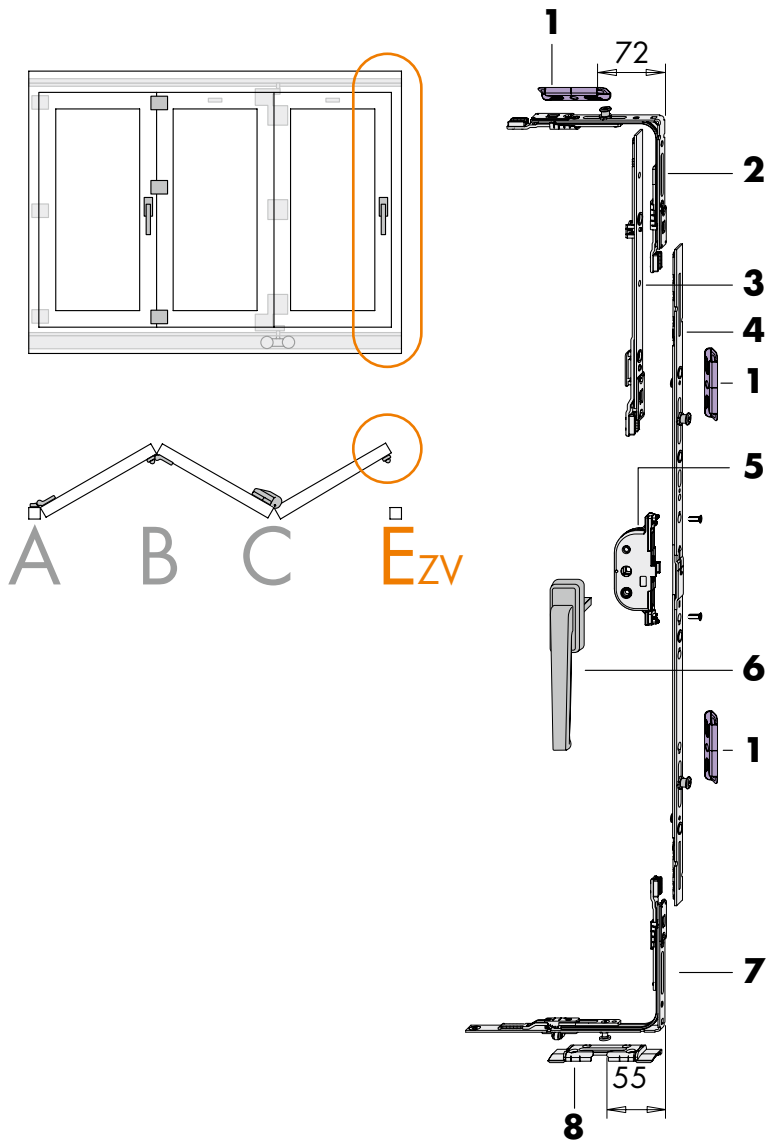


Fig. 35: Overview of hardware intersection point E, central locking gear TITAN AF - outside

Overview of set intersection point E, central locking gear TITAN AF - outside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear OS-AF size 80/G400 1RS		801 - 1000	400	TGKK0550-10001_
	Gear OS-AF size 100/G500 1RS		1001 - 1200	500	TGKK0560-10001_
	Gear OS-AF size 120/G600 1RS		1201 - 1400	600	TGKK0570-10001_
	Gear OS-AF size 140/G700 1RS		1401 - 1600	700	TGKK0580-10001_
	Gear OS-AF size 160/G700 2RS 70		1601 - 1800	700	TGKK0750-10001_
	Gear OS-AF size 180/G1000 2RS 70		1801 - 2000	1000	TGKK0620-10001_
	Gear OS-AF size 200/G1000 3RS 70		2001 - 2400*	1000	TGKK0630-10001_
5	Gear set 30 M5	30			TMSL4300-10001_
	Gear set 35 M5	35			TMSL4350-10001_
	Gear set 40 M5	40			TMSL4400-10001_
	Gear set 45 M5	45			TMSL4450-10001_
	Gear set 50 M5	50			TMSL4500-10001_
	Gear set 55 M5	55			TMSL4550-10001_
6	Handle Si-line / Handle Globe				See from page 105
7	Corner drive AF VSU/K+ 1S				TEUL5010-10001_-
8	Tilt lock bearing				See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.37 Hardware FS PLUS - intersection point F - central locking gear FAVORIT - inside

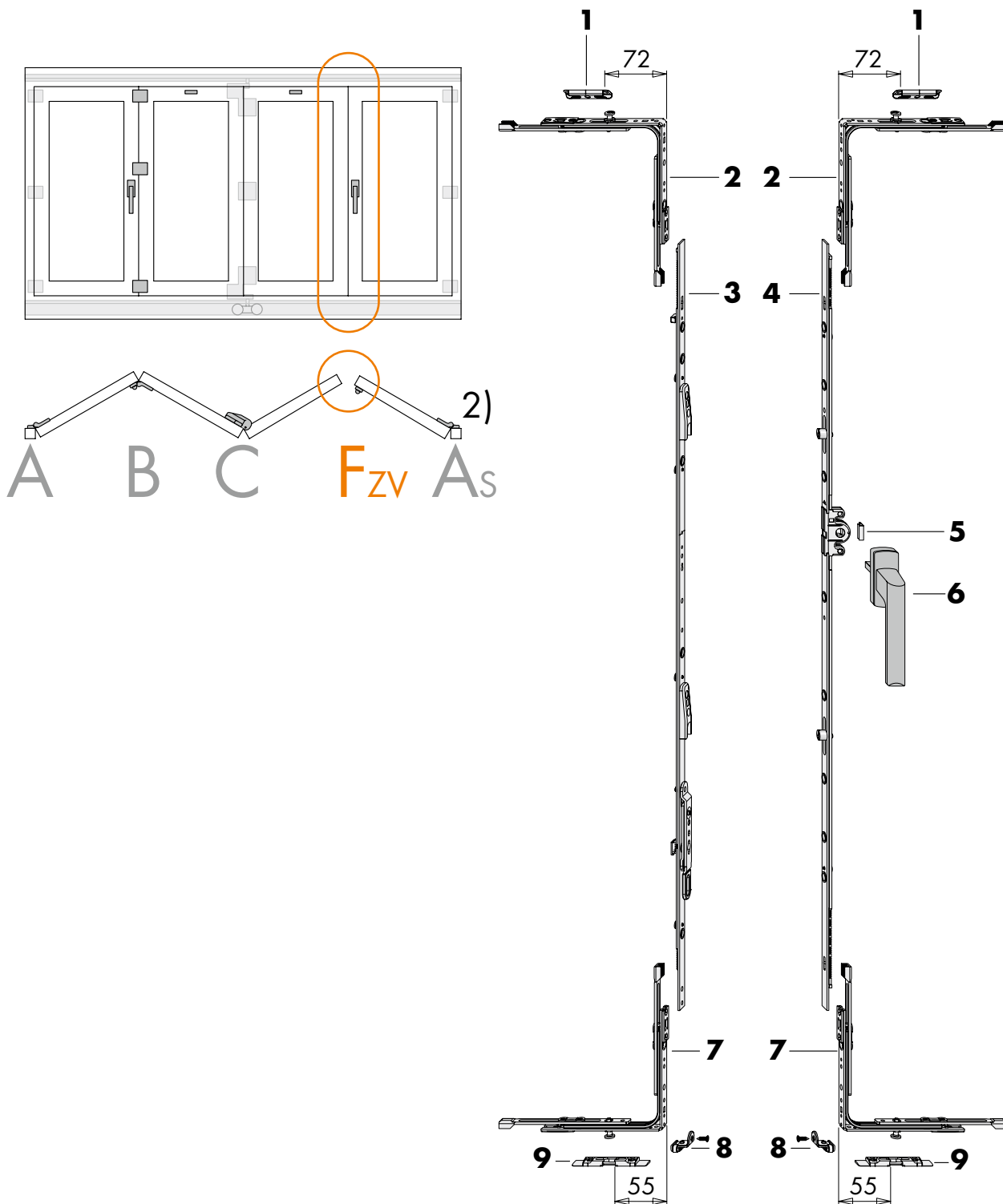


Fig. 36: Overview of hardware intersection point F, central locking gear FAVORIT - inside

Overview of set intersection point F, central locking gear FAVORIT - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive VS S-ES				FEUL0090-10001_-
3	Gear secondary sash 1 6 FAV size 60/G300		601 - 800		FGKS4030-10001_
	Gear secondary sash 1 6 FAV size 80/G400 1SB		801 - 1000		FGKS4050-10001_
	Gear secondary sash 1 6 FAV size 100/G500 1SB		1001 - 1200		FGKS4060-10001_
	Gear secondary sash 1 6 FAV size 120/G600 1SB		1201 - 1400		FGKS4070-10001_
	Gear secondary sash 1 6 FAV size 140/G700 1SB		1401 - 1600		FGKS4290-10001_
	Gear secondary sash 1 6 FAV size 160/G700 1SB		1601 - 1800		FGKS4330-10001_
	Gear secondary sash 1 6 FAV size 180/G1000 2SB		1801 - 2000		FGKS4100-10001_
	Gear secondary sash 1 6 FAV size 200/G1000 2SB		2001 - 2400		FGKS4280-10001_
4	Gear 15 FAV size 60/G300	15	601 - 800	300	FGKK4030-10001_
	Gear 15 FAV size 80/G400 1V	15	801 - 1000	400	FGKK4030-10001_
	Gear 15 FAV size 100/G500 1V	15	1001 - 1200	500	FGKK4060-10001_
	Gear 15 FAV size 120/G600 1V	15	1201 - 1400	600	FGKK4070-10001_
	Gear 15 FAV size 140/G700 2V	15	1401 - 1600	700	FGKK4200-10001_
	Gear 15 FAV size 160/G700 2V 70	15	1601 - 1800	700	FGKK4090-10001_
	Gear 15 FAV size 180/G1000 2V	15	1801 - 2000	1000	FGKK4220-10001_
	Gear 15 FAV size 200/G1000 3V	15	2001 - 2400	1000	FGKK4230-10001_
5	Limitation piece				800768
6	Handle Si-line / Handle Globe				See from page 105
7	Corner drive VS S-ES				FEUL0090-10001_-
8	Sash height				See profile data sheets TITAN
9	Tilt lock bearing				See profile data sheets TITAN

6.2.38 Hardware FS PLUS - intersection point F - central locking gear TITAN AF - inside

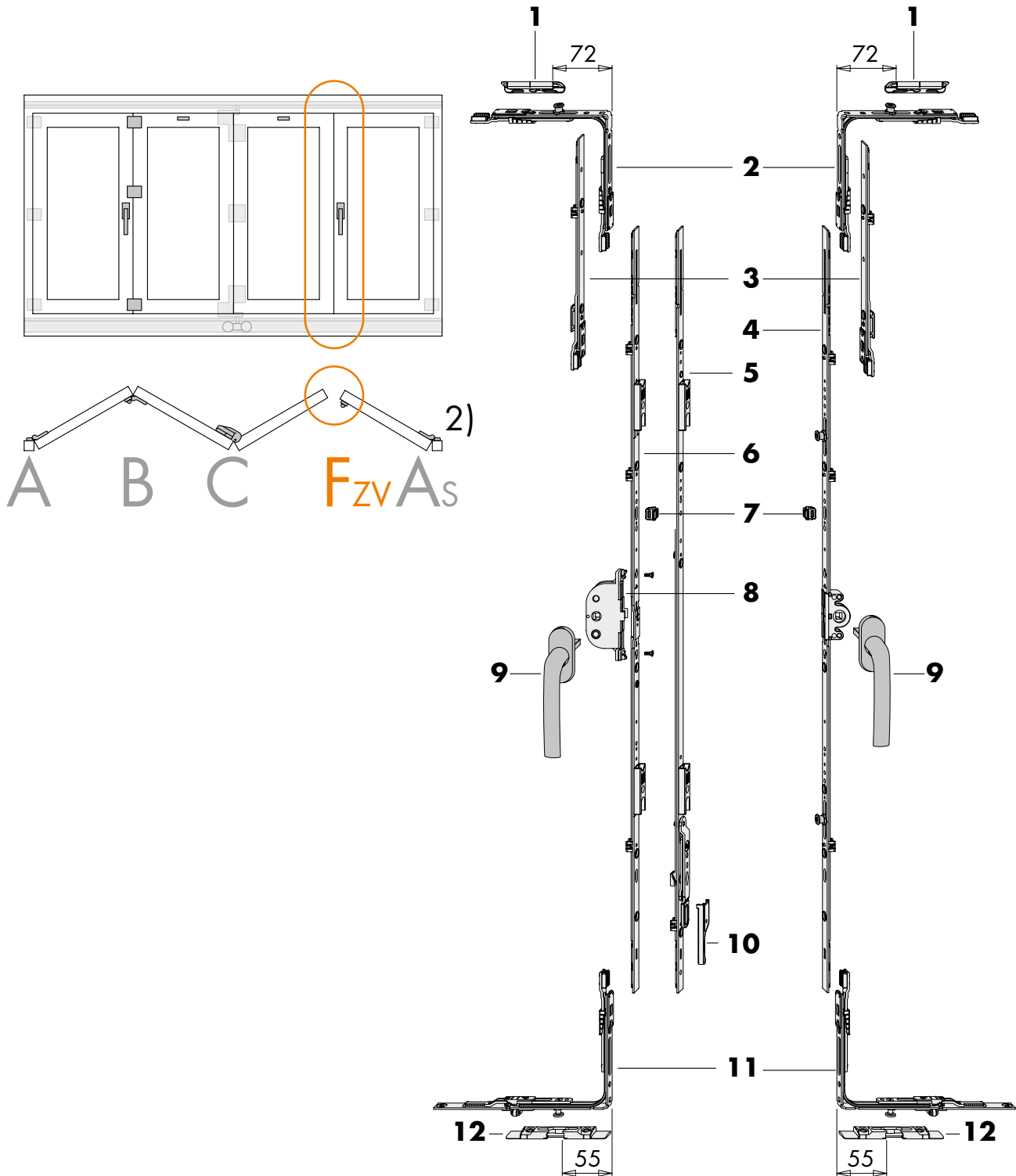


Fig. 37: Overview of hardware intersection point F, central locking gear TITAN AF - inside

Overview of set intersection point F, central locking gear TITAN AF - inside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_-
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear 15 AF size 60/G300	15	601 - 800	300	TGKK4030-10001_
	Gear 15 AF size 80/G400 1RS	15	801 - 1000	400	TGKK4050-10001_
	Gear 15 AF size 100/G500 1RS	15	1001 - 1200	500	TGKK4060-10001_
	Gear 15 AF size 120/G600 1RS	15	1201 - 1400	600	TGKK4070-10001_
	Gear 15 AF size 140/G700 2RS	15	1401 - 1600	700	TGKK4080-10001_
	Gear 15 AF size 160/G700 2RS	15	1601 - 1800	700	TGKK4090-10001_
	Gear 15 AF size 180/G1000 2RS	15	1801 - 2000	1000	TGKK4100-10001_
	Gear 15 AF size 200/G1000 3RS	15	2001 - 2400*	1000	TGKK4110-10001_
5	Gear secondary sash 16 size 60		601 - 800		TGKS4030-10001_
	Gear secondary sash 16 size 80/G400 1RS		801 - 1000		TGKS4050-10001_
	Gear secondary sash 16 size 100/G500 1RS		1001 - 1200		TGKS4060-10001_
	Gear secondary sash 16 size 120/G600 1RS		1201 - 1400		TGKS4070-10001_
	Gear secondary sash 16 size 140/G700 2RS		1401 - 1600		TGKS4080-10001_
	Gear secondary sash 16 size 160/G700 2RS		1601 - 1800		TGKS4090-10001_
	Gear secondary sash 16 size 180/G1000 2RS		1801 - 2000		TGKS4100-10001_
	Gear secondary sash 16 size 200/G1000 3RS		2001 - 2400*		TGKS4110-10001_
6	Gear OS-AF size 60/G300		601 - 800		TGKK0650-10001_
	Gear OS-AF size 80/G400 1RS		801 - 1000		TGKK0660-10001_
	Gear OS-AF size 100/G500 1RS		1001 - 1200		TGKK0670-10001_
	Gear OS-AF size 120/G600 1RS		1201 - 1400		TGKK0680-10001_
	Gear OS-AF size 140/G700 2RS		1401 - 1600		TGKK0760-10001_
	Gear OS-AF size 160/G700 2RS		1601 - 1800		TGKK0770-10001_
	Gear OS-AF size 180/G1000 2RS		1801 - 2000		TGKK0720-10001_
	Gear OS-AF size 200/G1000 3RS		2001 - 2400*		TGKK0730-10001_
7	Travel restrictor				TFHB0020-09901_
8	Gear set 30 M5	30			TMSL4300-10001_
	Gear set 35 M5	35			TMSL4350-10001_
	Gear set 40 M5	40			TMSL4400-10001_
	Gear set 45 M5	45			TMSL4450-10001_
	Gear set 50 M5	50			TMSL4500-10001_
	Gear set 55 M5	55			TMSL4550-10001_
9	Handle Si-line / Handle Globe				See from page 105
10	Handle VL secondary sash right				THVL0011-10001_
	Handle VL secondary sash left				THVL0012-10001_
11	Corner drive AF VSU/K+ 1S				TEUL5010-10001_-
12	Tilt lock bearing				See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.39 Hardware FS PLUS - intersection point F - central locking gear TITAN AF - outside

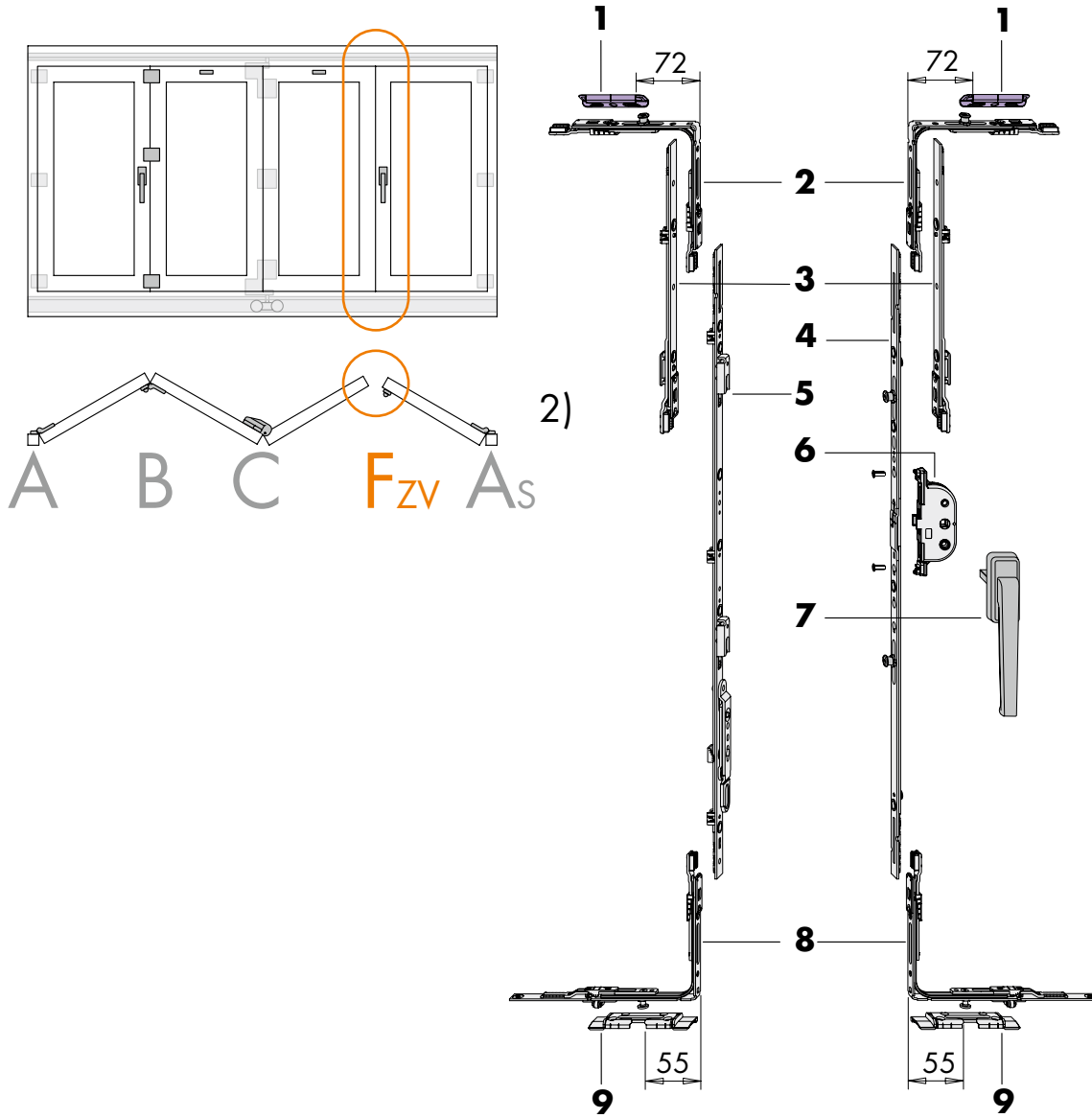


Fig. 38: Diagram of hardware intersection point F, central locking gear TITAN AF - outside

Overview of set intersection point F, central locking gear TITAN AF - outside

No.	Material description	Backset	FFH	Handle position	Material number
1	Striker plate				See profile data sheets TITAN
2	Corner drive AF VSO/K+ DF 1RS				TEUL4110-10001_
3	Locking bolt AF VSO RSA 11		2200 - 2400		TESC2030-10001_
4	Gear OS-AF size 80/G400 1RS		801 - 1000	400	TGKK0550-10001_
	Gear OS-AF size 100/G500 1RS		1001 - 1200	500	TGKK0560-10001_
	Gear OS-AF size 120/G600 1RS		1201 - 1400	600	TGKK0570-10001_
	Gear OS-AF size 140/G700 1RS		1401 - 1600	700	TGKK0580-10001_
	Gear OS-AF size 160/G700 2RS 70		1601 - 1800	700	TGKK0750-10001_
	Gear OS-AF size 180/G1000 2RS 70		1801 - 2000	1000	TGKK0620-10001_
	Gear OS-AF size 200/G1000 3RS 70		2001 - 2400*	1000	TGKK0630-10001_
5	Gear secondary sash 16 size 80/G400 1RS		801 - 1000		TGKS4050-10001_
	Gear secondary sash 16 size 100/G500 1RS		1001 - 1200		TGKS4060-10001_
	Gear secondary sash 16 size 120/G600 1RS		1201 - 1400		TGKS4070-10001_
	Gear secondary sash 16 size 140/G700 2RS		1401 - 1600		TGKS4080-10001_
	Gear secondary sash 16 size 160/G700 2RS		1601 - 1800		TGKS4090-10001_
	Gear secondary sash 16 size 180/G1000 2RS		1801 - 2000		TGKS4100-10001_
	Gear secondary sash 16 size 200/G1000 3RS		2001 - 2400*		TGKS4110-10001_
6	Gear set 30 M5	30			TMSL4300-10001_
	Gear set 35 M5	35			TMSL4350-10001_
	Gear set 40 M5	40			TMSL4400-10001_
	Gear set 45 M5	45			TMSL4450-10001_
	Gear set 50 M5	50			TMSL4500-10001_
	Gear set 55 M5	55			TMSL4550-10001_
7	Handle Si-line / Handle Globe				See from page 105
8	Corner drive AF VSU/K+ 1S				TEUL5010-10001_
9	Tilt lock bearing				See profile data sheets TITAN

* Sash rebate height 2200 - 2400 only with additional locking bolt AF VSO RSA 11

6.2.40 Hardware FS PLUS - profile set - inside or outside

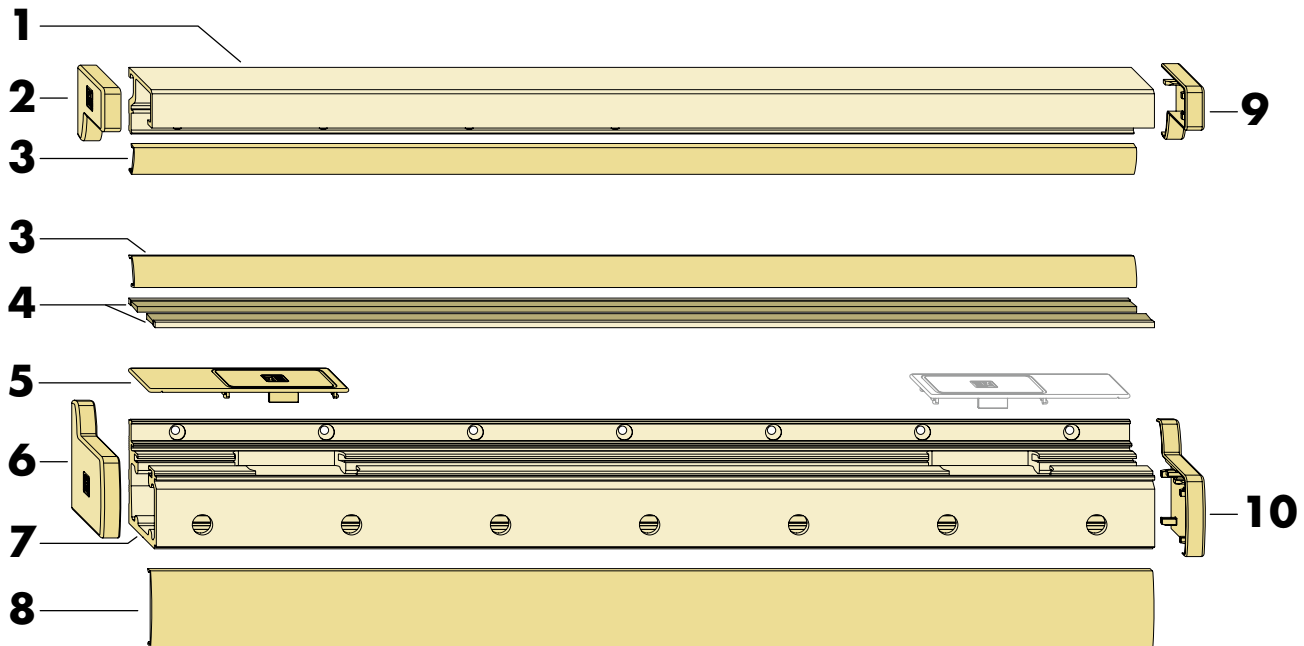


Fig. 39: Diagram of hardware profile set - inside or outside

Overview of set FS PLUS profile set - inside or outside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	RAL 9003 white	RAL 8022 brown
	Profile set FS PLUS	250	2500	- 2500	PMPG0100-	52501_	50201_	51201_
		350	3500	2501 - 3500	PMPG0110-	52501_	50201_	51201_
		450	4500	3501 - 4500	PMPG0120-	52501_	50201_	51201_
	consists of:	670	6700	4501 - 6500	PMPG0130-	52501_	50201_	51201_
1	Guiding rail PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
2	End cap F FS left							
3	Cover rail PLUS F	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
4	Sealing brush FS PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
5	Cover cap L FS							
6	End cap L FS left							

Overview of set FS PLUS profile set - inside or outside

No.	Material description	Size	Length	RAB	Material number			
					Base...	...Colour number silver	RAL 9003 white	RAL 8022 brown
7	Running rail PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
8	Cover rail PLUS L	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 6500				
9	End cap F FS right							
10	End cap L FS right							

6.2.41 Hardware FS PLUS - profile set - inside or outside

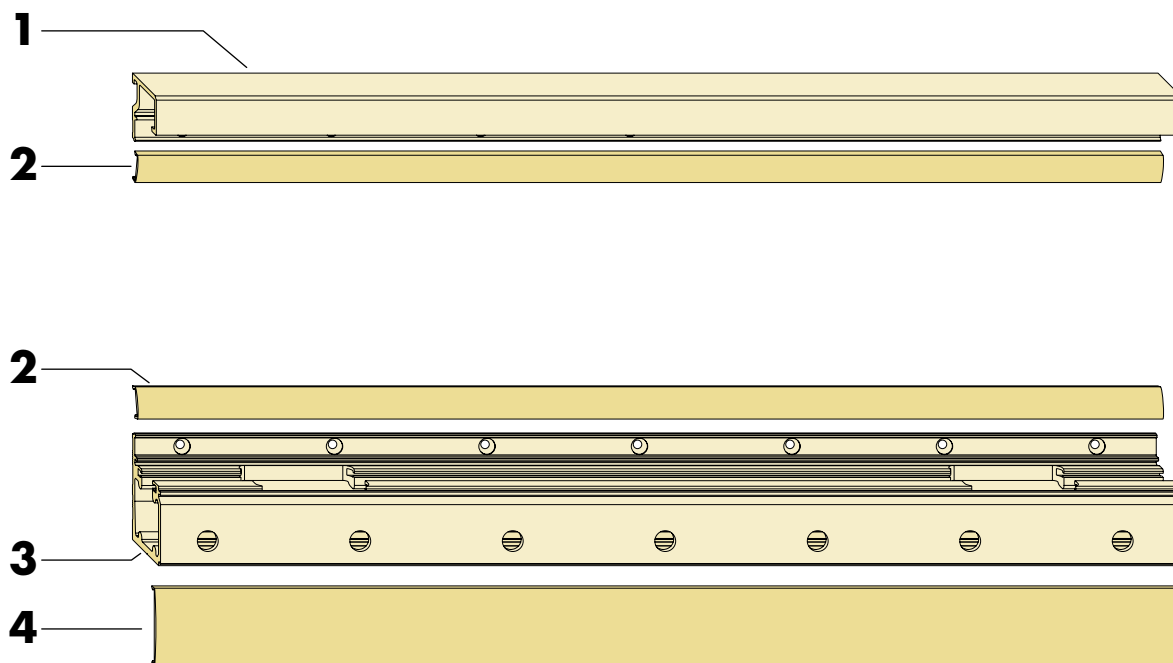


Fig. 40: Diagram of hardware profile set - inside or outside

Overview of set FS PLUS profile set - inside or outside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown
	Profile set FS PLUS	250	2500	- 2500	PMPG0200-	52501_	50201_	51201_
		350	3500	2501 - 3500	PMPG0210-	52501_	50201_	51201_
		450	4500	3501 - 4500	PMPG0220-	52501_	50201_	51201_
	consists of:	670	6700	4501 - 6500	PMPG0230-	52501_	50201_	51201_
1	Guiding rail PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
2	Cover rail PLUS F	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
3	Running rail PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
4	Cover rail PLUS L	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				

6.2.42 Hardware FS PLUS - cover caps for profile set - inside or outside

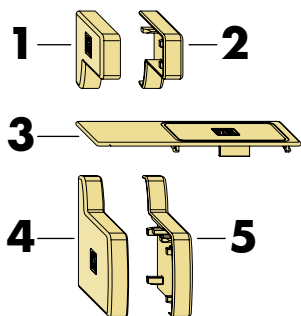


Fig. 41: Diagram of hardware cover caps for profile set - inside or outside

Cover caps for FS PLUS profile set - inside or outside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	...Colour number RAL 9003 white	RAL 8022 brown
	Bag of cover caps - FS PLUS consists of:				PMAG0060-	02501_	00201_	01201_
1	End cap F FS left							
2	End cap F FS right							
3	Cover cap L FS							
4	End cap L FS left							
5	End cap L FS right							

6.2.43 Hardware FS PLUS - sealing brush for profile set - inside

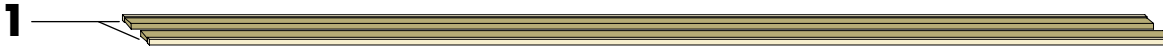


Fig. 42: Diagram of hardware cover caps for profile set - inside

Overview of set FS PLUS profile set - inside

No.	Material description	Size	Length		Material number
1	Sealing brush FS PLUS	670	6700		PPDG0020-09901_
		9M	9000		PPDG0030-09901_
		14M	14000		PPDG0040-09901_

6.2.44 Hardware FS PLUS - profile set barrier-free - inside

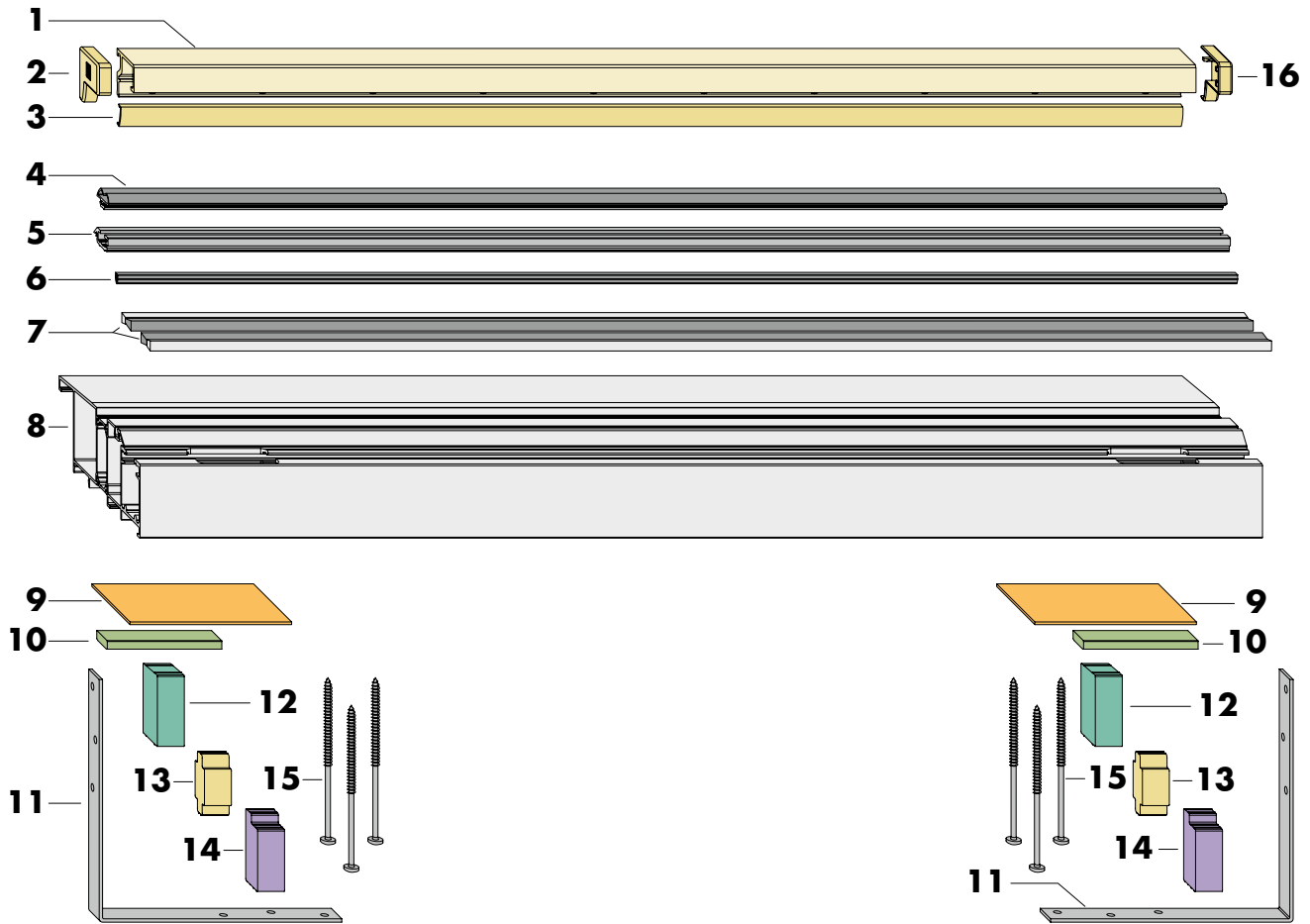


Fig. 43: Diagram of hardware FS PLUS profile set barrier-free - inside

Overview of set FS PLUS profile set barrier-free - inside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	...Colour number RAL 9003 white	dark bronze
	Profile set FS PLUS	250	2500	- 2500	PMBG0110-	52501_	50201_	51201_
		350	3500	2501 - 3500	PMBG0110-	52501_	50201_	51201_
		450	4500	3501 - 4500	PMBG0110-	52501_	50201_	51201_
	consists of:	670	6700	4501 - 6500	PMBG0110-	52501_	50201_	51201_
1	Guiding rail PLUS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
2	End cap PLUS F Li							
3	Cover rail PLUS F	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				

Overview of set FS PLUS profile set barrier-free - inside

No.	Material description	Size	Length	RAB	Material number			
					Base...	...Colour number		
						silver	RAL 9003 white	dark bronze
4	Seal FS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
5	Sealing strip FS							
6	Infill strip	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
7	Brush seal	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 6500				
8	Threshold FS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 6500				
	Carton frame corner connection FS consists of:				PMRG0010-	00001_		
9	Sealing plate FS							
10	Sealing part FS							
11	Corner angle FS							
12	Supporting part FS 1							
13	Supporting part FS 3							
14	Supporting part FS 2							
15	Clamping screws D 6 x 130							

6.2.45 Hardware FS - profile set barrier-free - inside (old)

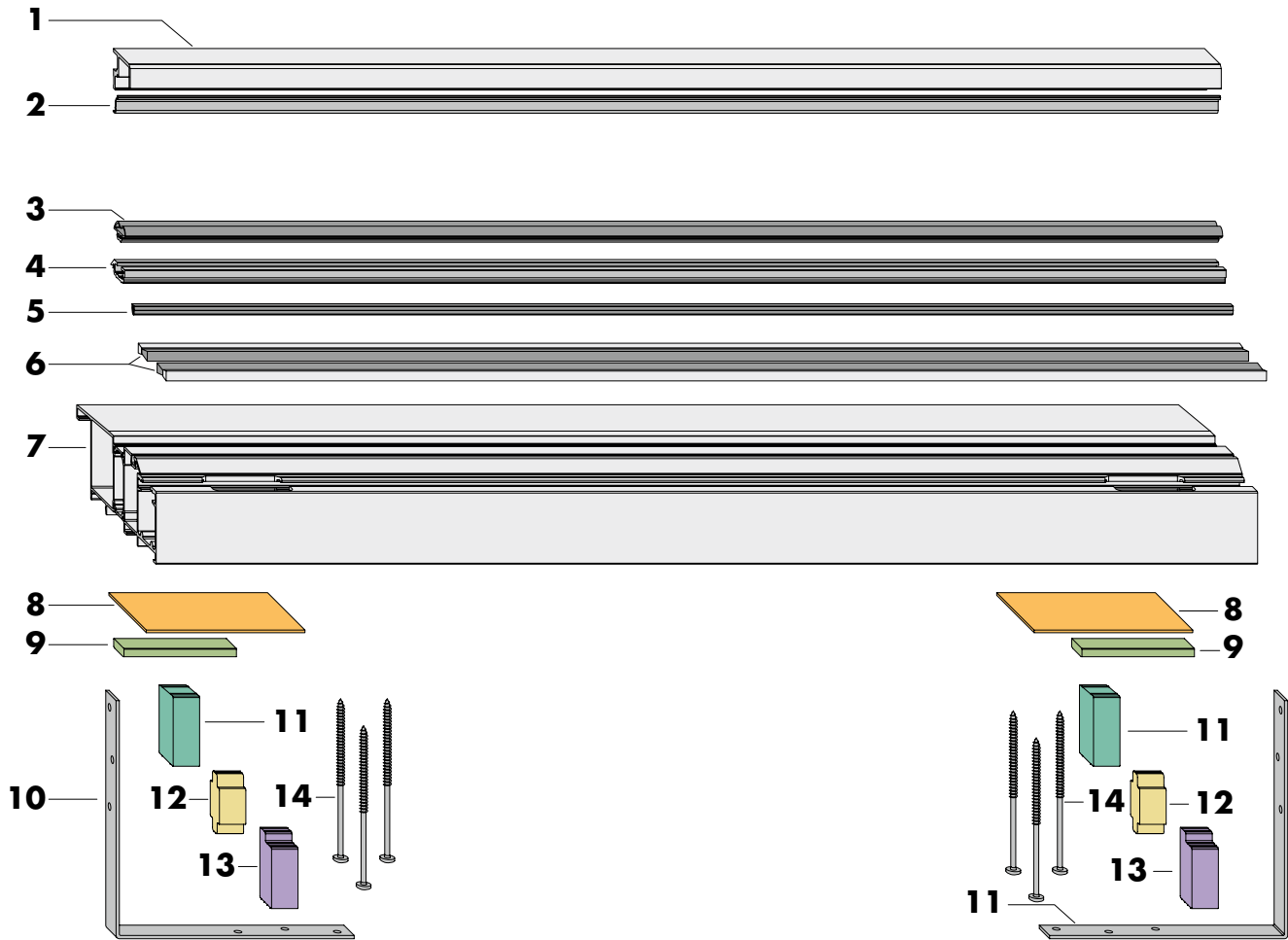


Fig. 44: Diagram of hardware profile set barrier-free - inside (old)

Overview of set FS profile set barrier-free - inside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	...Colour number RAL 9003 white	dark bronze
	Profile set FS	250	2500	- 2500	PMBG0010-	52501_	-	-
		350	3500	2501 - 3500	PMBG0020-	52501_	-	-
		450	4500	3501 - 4500	PMBG0030-	52501_	-	-
	consists of:	670	6700	4501 - 6500	PMBG0040-	52501_	-	-
1	Guiding rail	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
2	Cover rail F	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				

Overview of set FS profile set barrier-free - inside

No.	Material description	Size	Length	RAB	Material number			
					Base...	silver	...Colour number RAL 9003 white	dark bronze
3	Seal FS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
4	Sealing strip FS							
5	Infill strip	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 - 6500				
6	Brush seal	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 6500				
7	Threshold FS	250	2500	- 2500				
		350	3500	2501 - 3500				
		450	4500	3501 - 4500				
		670	6700	4501 6500				
	Carton frame corner connection FS consists of:				PMRG0010-	00001_		
8	Sealing plate FS							
9	Sealing part FS							
10	Corner angle FS							
11	Supporting part FS 1							
12	Supporting part FS 3							
13	Supporting part FS 2							
14	Clamping screws D 6 x 130				844953			

6.2.46 Hardware FS - profile set barrier-free - single parts

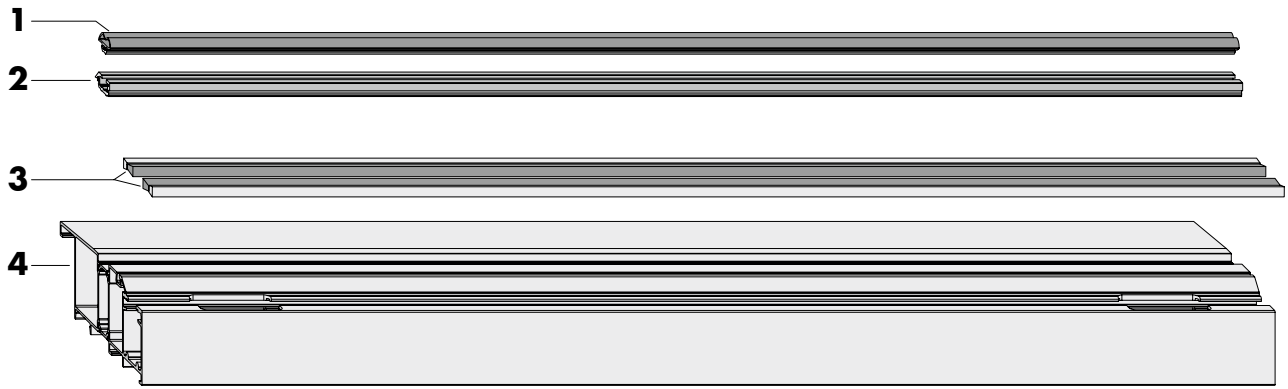


Fig. 45: Diagram of hardware profile set barrier-free - inside single parts

Overview of set FS PLUS profile set barrier-free - inside single parts

No.	Material description	Size	Length		Material number
3	Seal FS	670	6700	-	PDPG0010-09901_
4	Sealing strip FS	670	6700		PPDG0010-02301_
6	Brush seal	670	6700		PPDG0020-09901_
7	Threshold FS	250	2500	- 2500	PPBG0010-52401_
		350	3500	2501 - 3500	PPBG0020-52401_
		450	4500	3501 - 4500	PPBG0030-52401_
		670	6700	4501 6500	PPBG0040-52401_

CATALOGUE PORTAL

6. 3. Accessories PORTAL FS PLUS

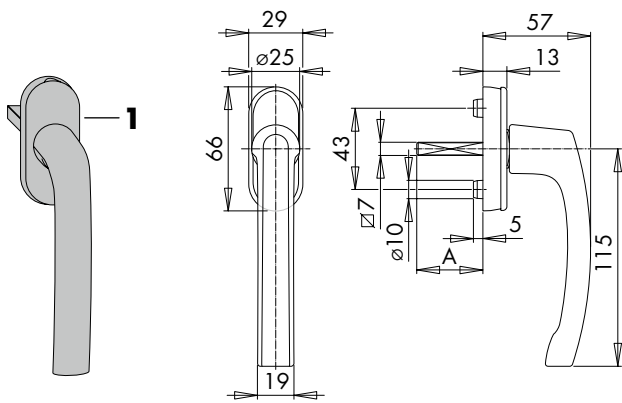
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Technische und farbliche Änderungen vorbehalten.

6.3.1 Handle Globe



Dimension A = spindle length

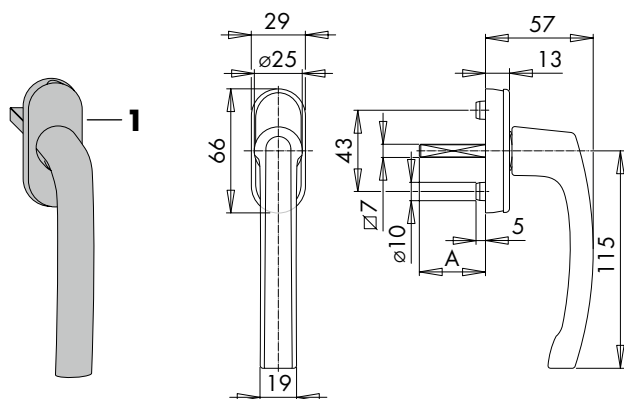
Lug diameter 12 mm and alternative spindle lengths available upon request

Fig. 46: Figure Handle Globe

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	100 pieces
1	Handle Globe 31	31	RAL 9016 traffic white	ZHGS0010-00401_	ZHGS0010-00406_
			EV 1 silver	ZHGS0010-02401_	ZHGS0010-02406_
			F 3 matt gold	ZHGS0010-0I201_	ZHGS0010-0I206_
	Handle Globe 35	35	RAL 9016 traffic white	ZHGS0020-00401_	ZHGS0020-00406_
			RAL 8022 black brown	ZHGS0020-01201_	ZHGS0020-01206_
			EV 1 silver	ZHGS0020-02401_	ZHGS0020-02406_
			F 9 aluminium-steel colours	ZHGS0020-0H401_	ZHGS0020-0H406_
			F 3 matt gold	ZHGS0020-0I201_	ZHGS0020-0I206_
			F 4 bronze	ZHGS0020-0K601_	ZHGS0020-0K606_
	Handle Globe 40	40	RAL 9016 traffic white	ZHGS1000-00401_	ZHGS1000-00406_
			RAL 8022 black brown	ZHGS1000-01201_	ZHGS1000-01206_
			EV 1 silver	ZHGS1000-02401_	ZHGS1000-02406_
			F 9 aluminium-steel colours	ZHGS1000-0H401_	ZHGS1000-0H406_
			F 4 bronze	ZHGS1000-0K601_	ZHGS1000-0K606_

6.3.2 Handle Globe SEC



Impedes the distortion of the square spindle and therefore prevents the window gear from being pushed from the outside.

Dimension A = spindle length

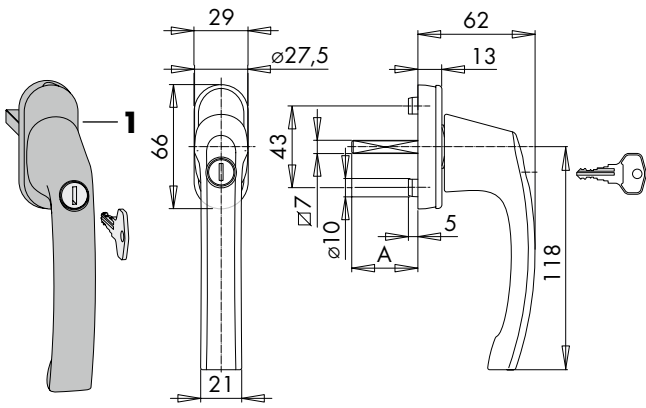
Lug diameter 12 mm and alternative spindle lengths available upon request

Fig. 47: Figure Handle Globe SEC

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe SEC	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	100 pieces
1	Handle Globe SEC 25	25	RAL 9016 traffic white	ZHGS0100-00401_	ZHGS0100-00406_
			RAL 8022 black brown	ZHGS0100-01201_	ZHGS0100-01206_
			F 9 aluminium-steel colours	ZHGS0100-0H401_	ZHGS0100-0H406_
			F 4 bronze	ZHGS0100-0K601_	ZHGS0100-0K606_
	Handle Globe SEC 31	31	RAL 9016 traffic white	ZHGS0050-00401_	ZHGS0050-00406_
			EV 1 silver	ZHGS0050-02401_	ZHGS0050-02406_
			F 9 aluminium-steel colours	ZHGS0050-0H401_	ZHGS0050-0H406_
			F 3 matt gold	-	ZHGS0050-0I206_
	Handle Globe SEC 35	35	RAL 9016 traffic white	ZHGS0060-00401_	ZHGS0060-00406_
			RAL 8022 black brown	ZHGS0060-01201_	ZHGS0060-01206_
			EV 1 silver	ZHGS0060-02401_	ZHGS0060-02406_
			F 9 aluminium-steel colours	ZHGS0060-0H401_	ZHGS0060-0H406_
			F 3 matt gold	ZHGS0060-0I201_	ZHGS0060-0I206_
			F 4 bronze	ZHGS0060-0K601_	ZHGS0060-0K606_
	Handle Globe SEC 40	40	RAL 9016 traffic white	ZHGS0110-00401_	ZHGS0060-00406_
			RAL 8022 black brown	ZHGS0110-01201_	ZHGS0110-01206_
EV 1 silver			ZHGS0110-02401_	ZHGS0110-02406_	
F 9 aluminium-steel colours			ZHGS0110-0H401_	ZHGS0110-0H406_	
F 3 matt gold			ZHGS0110-0I201_	ZHGS0110-0I206_	
F 4 bronze			ZHGS0110-0K601_	ZHGS0110-0K606_	

6.3.3 Handle Globe lockable



Lockable with push cylinder

Handle Globe ABS40: 40 Nm resistance to turning and breaking off

Handle Globe ABS100: 100 Nm resistance to turning and breaking off in accordance with DIN EN 1627

Dimension A = spindle length

Lug diameter 12 mm and alternative spindle lengths available upon request

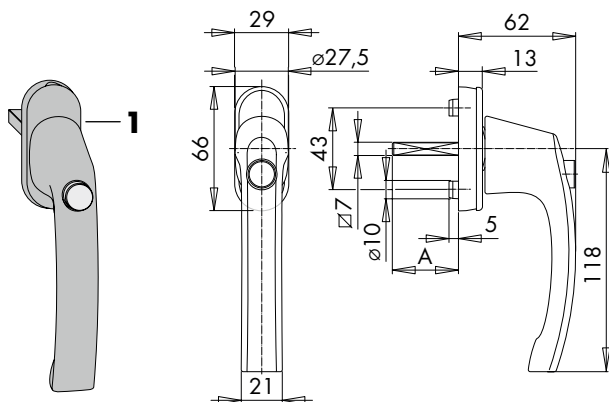
Fig. 48: Figure Handle Globe lockable

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe ABS...	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Globe ABS40 31	31	EV 1 silver	ZHGA0010-02401_	ZHGA0010-02402_
	Handle Globe ABS40 35	35	RAL 9016 traffic white	ZHGA0020-00401_	ZHGA0020-00402_
			RAL 8022 black brown	ZHGA0020-01201_	ZHGA0020-01202_
			EV 1 silver	-	ZHGA0020-02402_
			F 9 aluminium-steel colours	ZHGA0020-0H401_	ZHGA0020-0H402_
			F 4 bronze	ZHGA0020-0K401_	ZHGA0020-0K402_
	Handle Globe ABS40 40	40	RAL 9016 traffic white	ZHGA0070-00401_	ZHGA0070-00402_
			RAL 8022 black brown	ZHGA0070-01201_	ZHGA0070-01202_
			EV 1 silver	ZHGA0070-02401_	ZHGA0070-02402_
F 9 aluminium-steel colours			ZHGA0070-0H401_	ZHGA0070-0H402_	

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Globe ABS100 31	31	EV 1 silver	ZHGA0030-02401_	ZHGA0030-02402_
	Handle Globe ABS100 40	40	EV 1 silver	ZHGA0090-02401_	ZHGA0090-02402_

6.3.4 Handle Globe DKN



lockable with pressure key (DKN)

Impedes the distortion of the square spindle and therefore prevents the window gear from being pushed from the outside.

Dimension A = spindle length

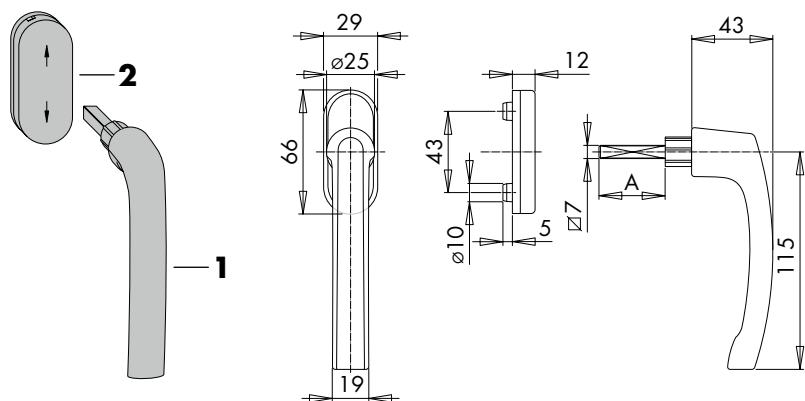
Lug diameter 12 mm and alternative spindle lengths available upon request

Fig. 49: Figure Handle Globe DKN

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe DKN (lockable with pressure key)	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Globe DKN 35	35	RAL 9016 traffic white	ZHGD0020-00401_	ZHGD0020-00402_
	EV 1 silver		ZHGD0020-02401_	ZHGD0020-02402_	
1	Handle Globe DKN 40	40	RAL 9016 traffic white	ZHGD0030-00401_	ZHGD0030-00402_
			RAL 8022 black brown	ZHGD0030-01201_	ZHGD0030-01202_
			EV 1 silver	ZHGD0030-02401_	ZHGD0030-02402_
			F 9 aluminium-steel colours	ZHGD0030-0H401_	ZHGD0030-0H402_

6.3.5 Handle Globe removable



Dimension A = spindle length

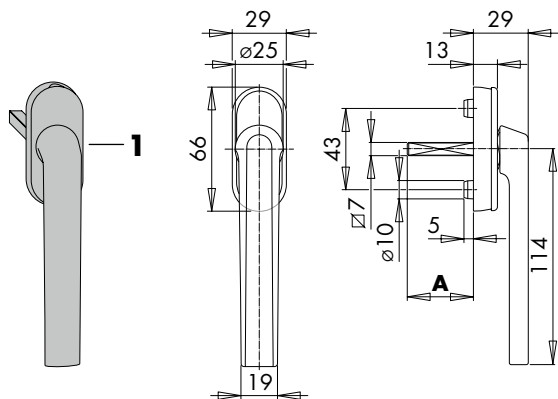
Lug diameter 12 mm and alternative spindle lengths available upon request

Fig. 50: Figure Handle Globe removable

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe removable 45	1	2	2	2	1	3	3	3	3	3	3	4	4	4
2	Rose Globe ..	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Globe removable 45	45	RAL 9016 traffic white	ZHGN0010-00401_	ZHGN0010-00402_
2	Rose Globe ..		RAL 9016 traffic white	ZHGR0030-00401_	ZHGR0030-00402_
			F 9 aluminium-steel colours	ZHGR0030-0H401_	ZHGR0030-0H402_

6.3.6 Handle Globe flat



Dimension A = spindle length

Fig. 51: Figure Handle Globe flat

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Globe flat 35	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	100 pieces
1	Handle Globe flat 35	35	RAL 9016 traffic white	ZHGF0040-00401_	ZHGF0040-00406_

6.3.7 Handle Globe TL/PZ

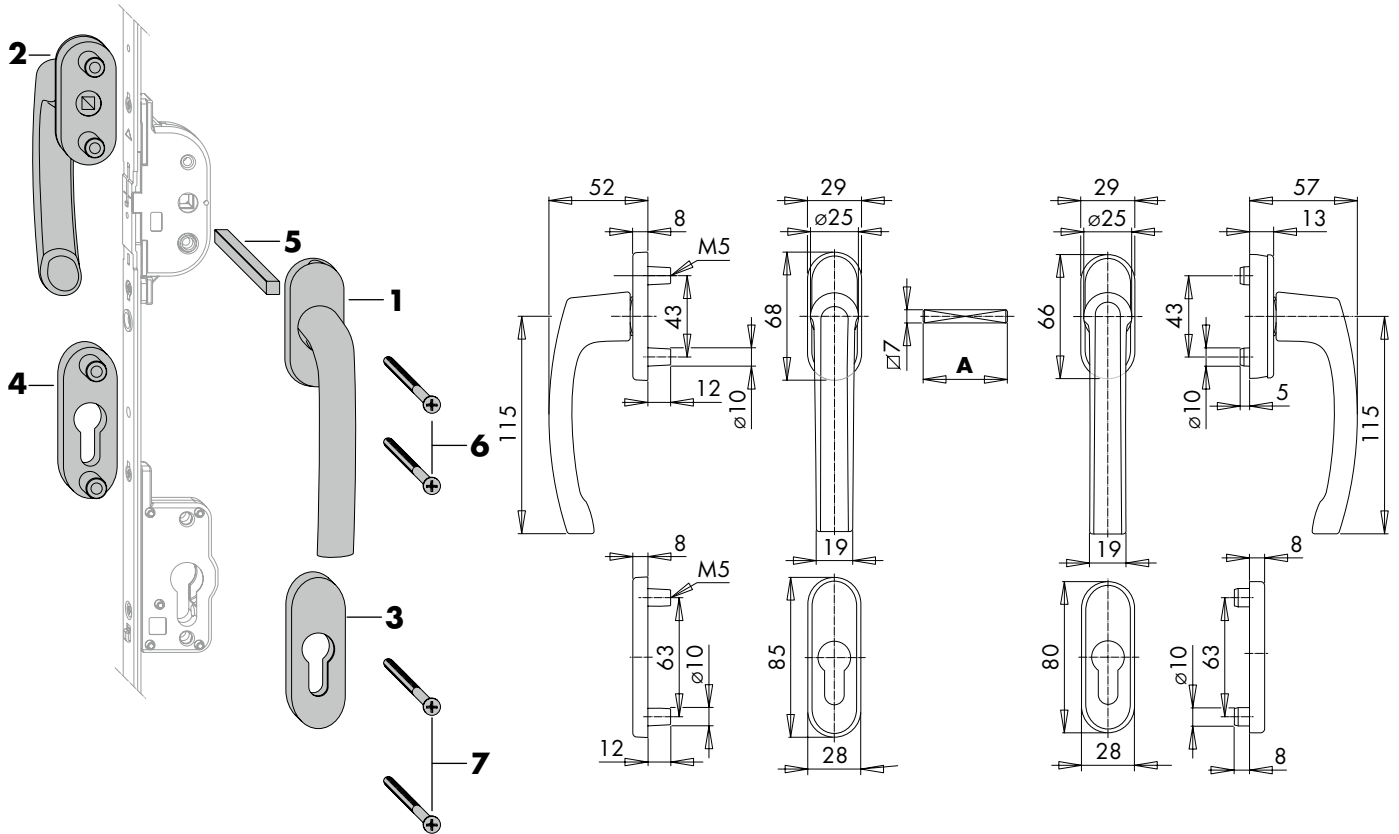


Fig. 52: Figure Handle Globe TL/PZ

Dimension A = spindle length

Suitable for standard profile cylinders

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1 - 4	Handle Globe TL/PZ	1	2	2	2	1	3	3	3	3	3	3	4	4	4
5 - 7	Accessories TL/PZ	1	2	2	2	1	3	3	3	3	3	4	4	4	

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1 - 4	Handle Globe TL/PZ		RAL 9016 traffic white	ZHGP0010-00401_	ZHGP0010-00402_
			EV 1 silver	-	ZHGP0010-02402_
			F 9 aluminium-steel colours	ZHGP0010-0H401_	ZHGP0010-0H402_
			F 4 bronze	ZHGP0010-0K601_	ZHGP0010-0K602_
5 - 7	Accessories TL/PZ PD 55-64	115	Titanium silver	ZMZP0030-10001_	-
	Accessories TL/PZ PD 65-74	125	Titanium silver	ZMZP0020-10001_	-
	Accessories TL/PZ PD 75-84	135	Titanium silver	ZMZP0010-10001_	-
	Accessories TL/PZ PD 85-94	145	Titanium silver	ZMZP0040-10001_	-

6.3.8 Handle Globe TL/PZ outside flat

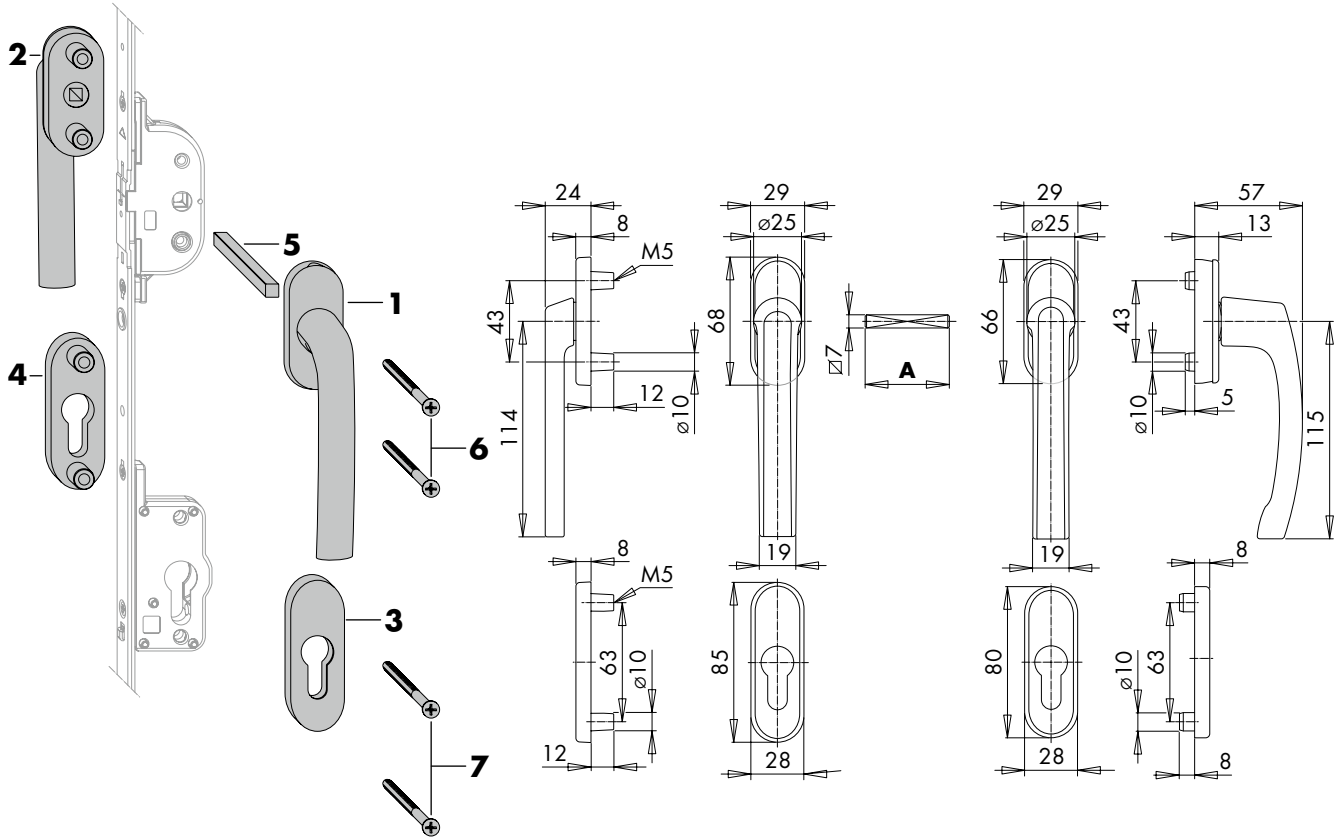


Fig. 53: Figure Handle Globe TL/PZ outside flat

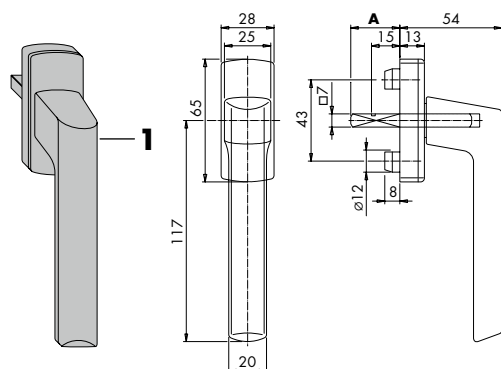
Dimension A = spindle length

Suitable for standard profile cylinders

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1 - 4	Handle Globe outside flat	1	2	2	2	1	3	3	3	3	3	3	4	4	4
5 - 7	Accessories TL/PZ	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1 - 4	Handle Globe TL/PZ outside flat		RAL 9016 traffic white	ZHGP0020-00401_	ZHGP0020-00402_
			EV 1 silver	-	ZHGP0020-02402_
			F 9 aluminium-steel colours	ZHGP0020-0H401_	ZHGP0020-0H402_
			F 4 bronze	ZHGP0020-0K601_	ZHGP0020-0K602_
5 - 7	Accessories TL/PZ PD 55-64	115	Titanium silver	ZMZP0030-10001_	-
	Accessories TL/PZ PD 65-74	125	Titanium silver	ZMZP0020-10001_	-
	Accessories TL/PZ PD 75-84	135	Titanium silver	ZMZP0010-10001_	-
	Accessories TL/PZ PD 85-94	145	Titanium silver	ZMZP0040-10001_	-

6.3.9 Handle Si-line



Dimension A = spindle length
Lug diameter 12 mm

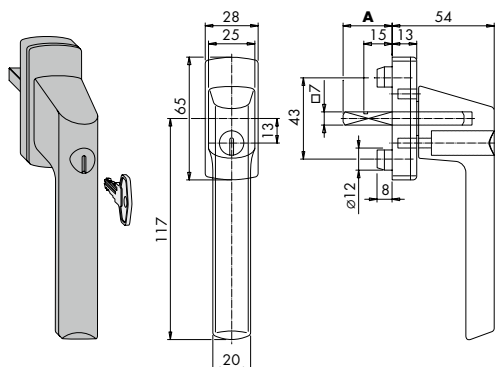
Fig. 54: Figure Handle Si-line

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Si-line	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10/100 piece
1	Handle Globe Si-line 26	26	RAL 9016 traffic white	872130	259078*
			EV 1 silver	872123	259061
	Handle Globe Si-line 31	31	RAL 9003 signal white	844052	234990
			RAL 8019 grey brown	844069	235003
			EV 1 silver	864715	252314
			EV 2 champagne	869024	239070
			Titan matt bright	848647	238981
			Si-gold matt	848654	238998
	Handle Globe Si-line 35	35	RAL 9003 signal white	853856	243947
			RAL 8019 grey brown	853863	243954
			RAL 8022 black brown	895986	307250
			EV 1 silver	869055	256473
			EV 2 champagne	869352	256756
			Titan matt bright	869079	256497
	Handle Globe Si-line 40	40	RAL 9003 signal white	868973	256374
			RAL 8019 grey brown	ZHSS3210-01101_	ZHSS3210-01106_
			Titan matt bright	ZHSS3210-03401_	ZHSS3210-03406_
	Handle Globe Si-line 45	45	RAL 9003 signal white	ZHSS0030-00201_	ZHSS0030-00206_
			EV 1 silver	ZHSS0030-02401_	ZHSS0030-02406_

* 7 Packaging unit 10 piece

6.3.10 Handle Si-line lockable



Lockable with push cylinder

Handle Si-line lockable: 100 Nm resistance to turning and breaking off in accordance with DIN EN 1627

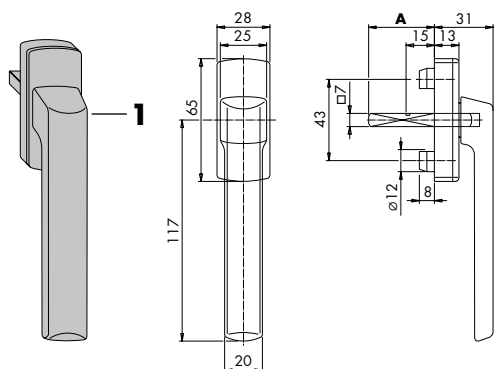
Dimension A = spindle length

Fig. 55: Figure Handle Si-line lockable

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	handle Si-line lockable	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Si-line ABS 26	26	RAL 9016 traffic white	ZHSA3000-00401_	ZHGS3000-00402_
	Handle Si-line ABS 31	31	RAL 9003 signal white	852392	242629
			RAL 8019 grey brown	-	242636
			EV 1 silver	868249	255902
			EV 2 champagne	861783	249734
			Titan matt bright	861776	249727
			Si-gold matt	861790	249741
	Handle Si-line ABS 35	35	RAL 9003 signal white	862575	250471
			RAL 8019 grey brown	862582	250488
			EV 1 silver	880647	268360
Titan matt bright			900567	316740	
Handle Si-line ABS 40	40	Titan matt bright	ZHSA3020-03401_	ZHSA3020-03402_	

6.3.11 Handle Si-line flat



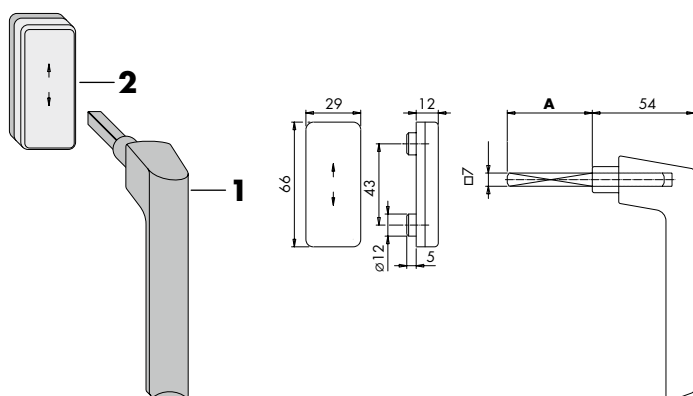
Dimension A = spindle length
Lug diameter 12 mm

Fig. 56: Figure Handle Si-line flat

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Si-line flat	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle Si-line flat	35	RAL 9003 signal white	892473	300510
			RAL 8019 grey brown	892480	300527
			EV 1 silver	892428	300466

6.3.12 Handle Si-line removable



Dimension A = spindle length

Lug diameter 12 mm

Fig. 57: Figure Handle Si-line removable

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle Si-line removable	1	2	2	2	1	3	3	3	3	3	3	4	4	4
2	Rose Si-line ..	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	25/10 piece
1	Handle Si-line removable	45	RAL 9003 signal white	ZHAN0010-00201_	ZHAN0010-00204_
2	Rose Si-line ..		RAL 9003 signal white	862605	250495
			RAL 8019 grey brown	869833	257418
			EV 1 silver	869826	257401
			RAL 9005 jet black	ZHSR0010-52301_	ZHSR0010-52302_

Handle Si-line removable: Packaging unit 25 piece

Rose Si-line ..: Packaging unit 10 piece

6.3.13 Handle Si-line TL/PZ

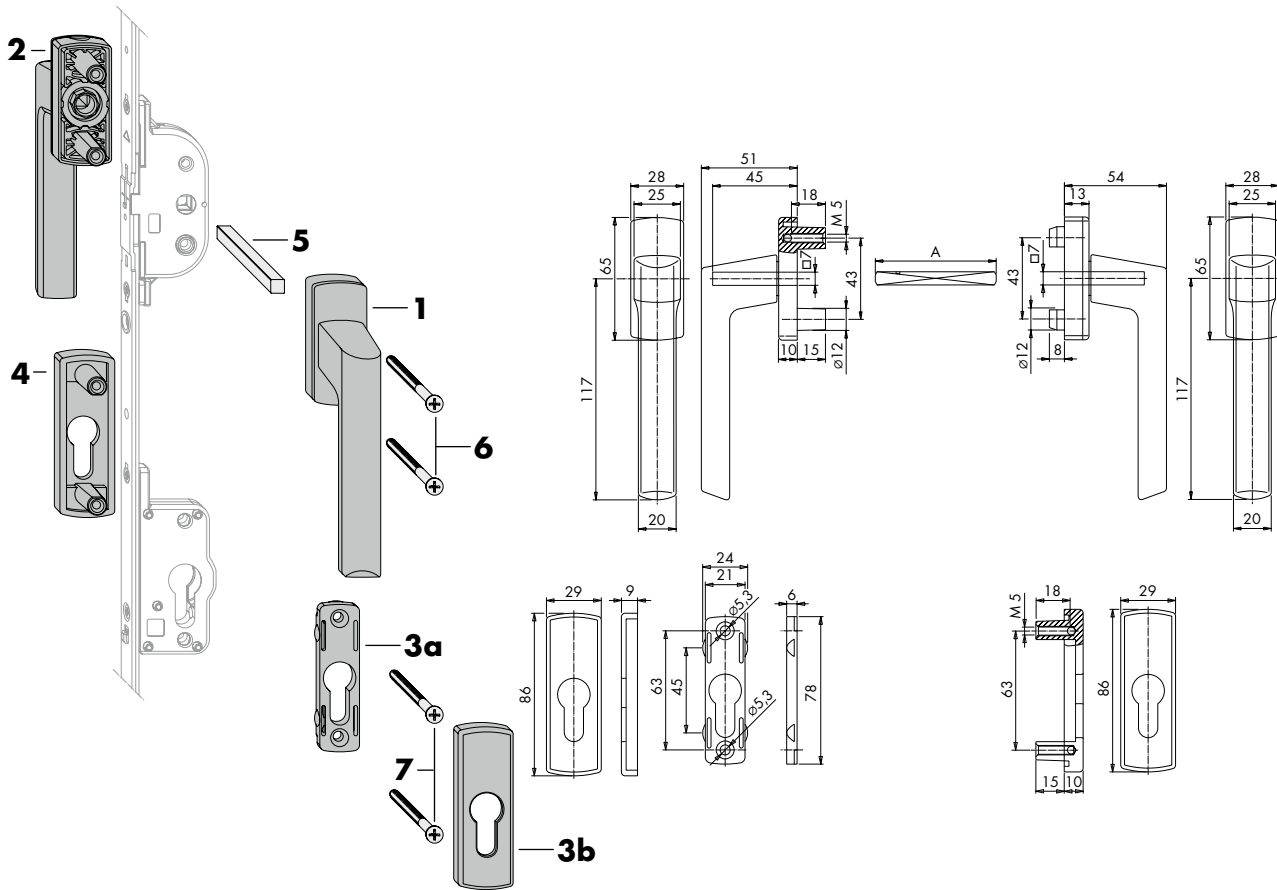


Fig. 58: Figure Handle Si-line TL/PZ

Dimension A = spindle length

Lug diameter 12 mm

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Bag of handles Si-line TL/PZ	1	2	2	2	1	3	3	3	3	3	3	4	4	4
5-7	Accessories TL/PZ ...	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Bag of handles Si-line TL/PZ		RAL 9003 signal white	871423	258538
			RAL 8019 grey brown	871430	258545
			Si-silver	871379	258484
			Titan matt bright	871393	258507
			Si-gold matt	871416	258521
5-7	Accessories TL/PZ PD 55-64	115	Titanium silver	ZMZP0030-10001_	-
	Accessories TL/PZ PD 65-74	125	Titanium silver	ZMZP0020-10001_	-
	Accessories TL/PZ PD 75-84	135	Titanium silver	ZMZP0010-10001_	-
	Accessories TL/PZ PD 85-94	145	Titanium silver	ZMZP0040-10001_	-

6.3.14 Handle Si-line TL/PZ outside flat

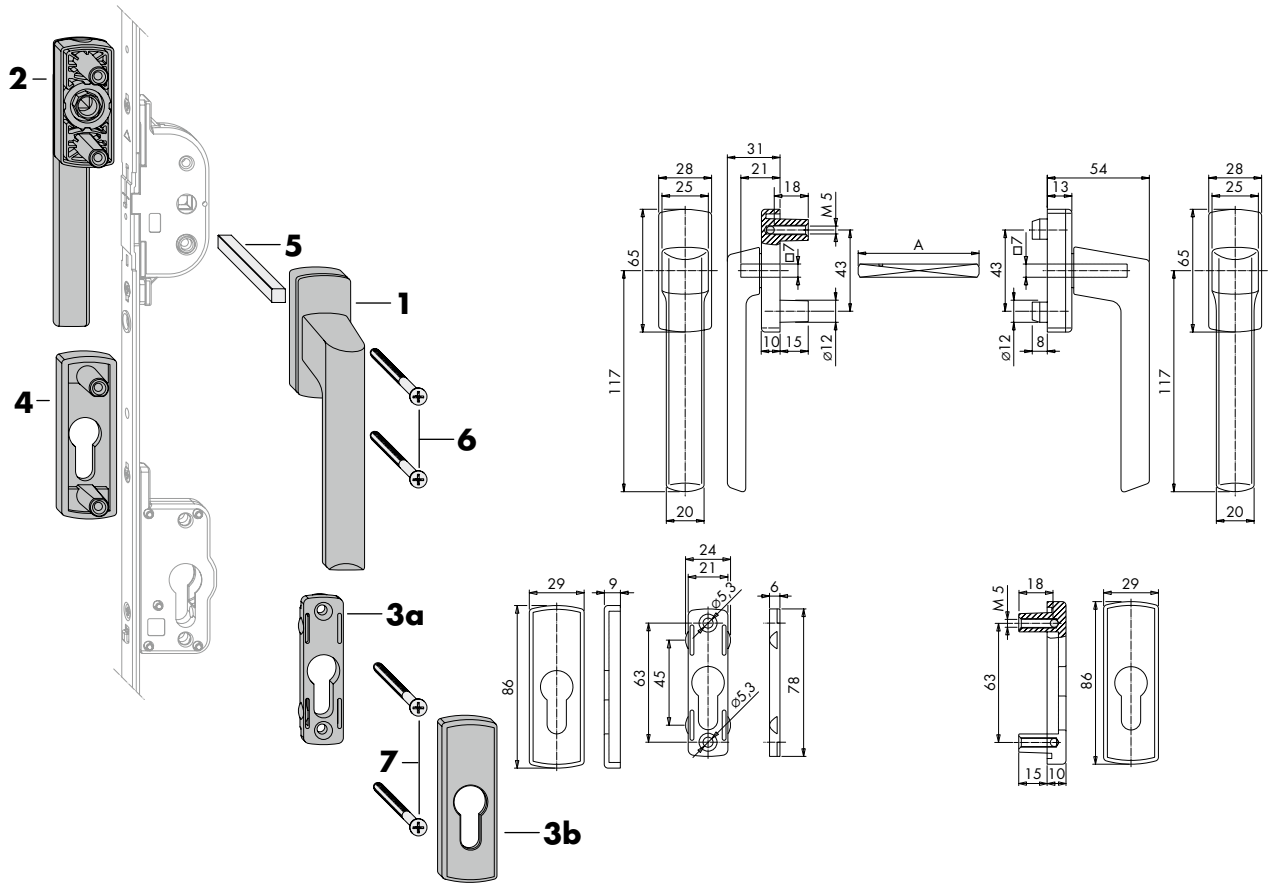


Fig. 59: Figure Handle Si-line TL/PZ flat

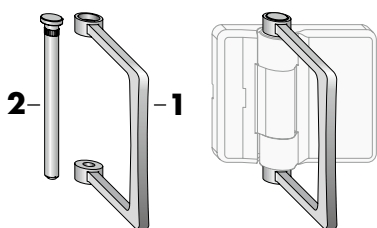
Dimension A = spindle length

Lug diameter 12 mm

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Bag of handles Si-line TL/PZ flat	1	2	2	2	1	3	3	3	3	3	3	4	4	4
5-7	Accessories TL/PZ ...	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Bag of handles Si-line TL/PZ flat		RAL 9003 signal white	870488	257944
			RAL 8019 grey brown	870495	257951
			EV 1 silver	870433	257890
			Titan matt bright	870457	257913
			Si-gold matt	870471	257937
5-7	Accessories TL/PZ PD 55-64	115	Titanium silver	ZMZP0030-10001_	-
	Accessories TL/PZ PD 65-74	125	Titanium silver	ZMZP0020-10001_	-
	Accessories TL/PZ PD 75-84	135	Titanium silver	ZMZP0010-10001_	-
	Accessories TL/PZ PD 85-94	145	Titanium silver	ZMZP0040-10001_	-

6.3.15 Bar handle



The bar handle can only be used with sash hinges FS 17/38, 17/48, 27/48

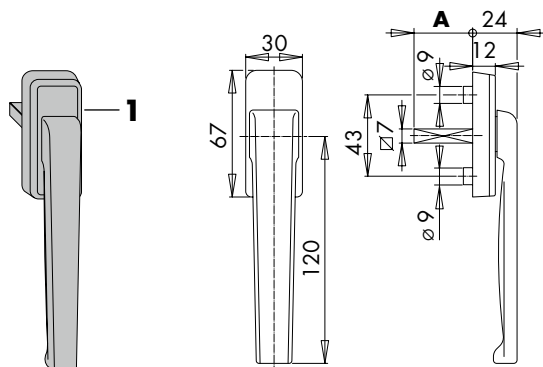
Fig. 60: Figure Bar handle

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1, 2	Bar handle	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Colour	Material number	
			1 pieces	
1, 2	Bar handle	RAL 9016 traffic white	PMHG0010-00401_	
		RAL 8019 grey brown	PMHG0010-01101_	
		Si-silver	PMHG0010-02501_	
		Mill finish	PMHG0010-50001_	

Mill finish = uncoated

6.3.16 Handle PORTAL FS flat



Dimension A = spindle length

Fig. 61: Figure Handle PORTAL FS flat

		handles													
No.	Material description	Quantity for scheme													
		220	321	330	431	440	541	550	532	651	660	633	761	770	743
1	Handle PORTAL FS flat	1	2	2	2	1	3	3	3	3	3	3	4	4	4

No.	Material description	Dimension A	Colour	Material number	
				1 pieces	10 pieces
1	Handle PORTAL FS flat	50	white	PHIG0010-50201_	PHIG0010-50202_
			RAL 8022 black brown	PHIG0010-51201_	PHIG0010-51202_
			RAL 8019 grey brown	PHIG0010-51101_	PHIG0010-51102_
			EV 1 silver	PHIG0010-52401_	PHIG0010-52402_
			C 33 medium bronze	PHIG0010-53001_	PHIG0010-53002_
			Si-gold matt	PHIG0010-53701_	PHIG0010-53701_

6.3.17 AEROCONTROL

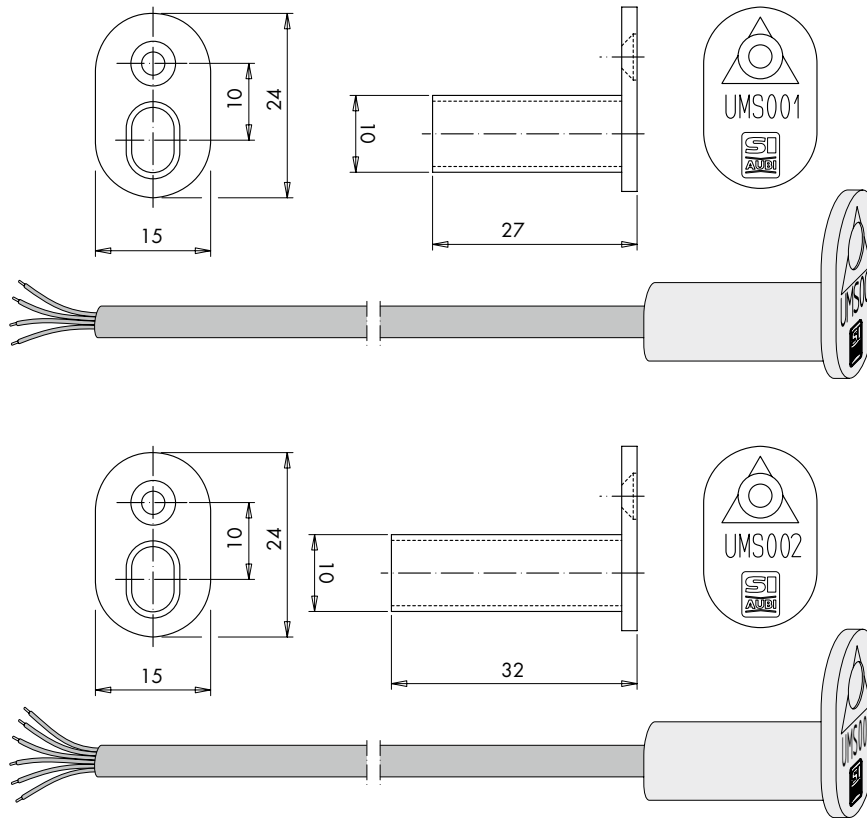


Fig. 62: Figure of AEROCONTROL magnetic switch

AEROCONTROL magnetic switch +					
No.	Material description	Colour	Cable length	Packaging unit	Material number
1	VDS-UEBW.4P. magnetic switch UMS 001	white	6000 mm	1	899526
		white	6000 mm	25	315101
		white	10000 mm	1	899601
		white	10000 mm	25	315187
		silver	6000 mm	1	899533
		silver	6000 mm	25	315118
2	VDS-UEB.6P. magnetic switch UMS 002	white	6000 mm	1	894415
		white	6000 mm	25	303993
		silver	6000 mm	1	899496
		silver	6000 mm	25	315071
3	VDS-UEBW.6P. magnetic switch UMS 003	white	6000 mm	1	899564
		white	6000 mm	25	315149
		white	10000 mm	25	315194
		silver	6000 mm	1	899571
		silver	6000 mm	25	315156

6.3.18 Accessories individual parts

6.3.18.1 Sleeve nut M 5



Fig. 63: Figure of sleeve nut M 5

Sleeve nut M 5			
No.	Material description	Packaging unit	Material number
1	Sleeve nut M 5 for fixing the handle Si-line	1	800287

6.3.18.2 Key 2W 145

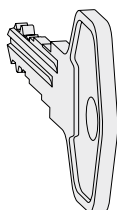


Fig. 64: Figure of key 2W 145

Key 2W 145			
No.	Material description	Packaging unit	Material number
1	Key 2W 145 For Si-line handles that are lockable in the grip	1	892510

6.3.18.3 Distance piece

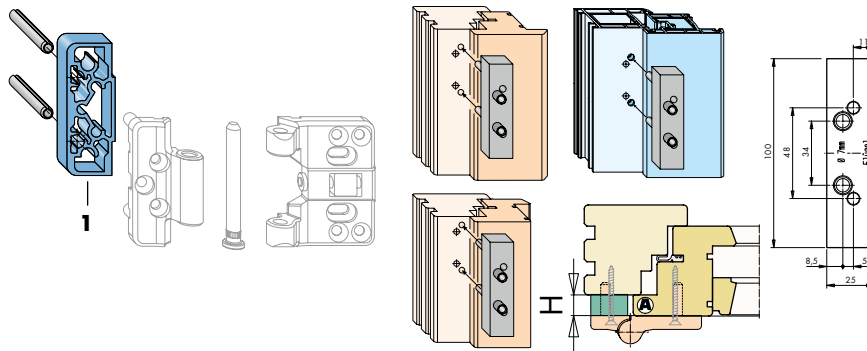


Fig. 65: Figure distance piece / jig for bolt

Distance piece							
No.	Material description			Packaging unit	Material number		
		Size	Dimension H		EV 1 silver	RAL 9003 signal white	RAL 8019 grey brown
1	Distance piece	8	8	1 100	PDZG0110-52401_ PDZG0110-52406_	-	-
	• Only fits with sash hinge 17	13	13	1	-	826379	826386
	• With timber elements, do not overfold > 90°	14	14	1	852965	826416	826423
	• Can also be used with a sash providing access (same optics)	15	15	1	852972	826454	826461
	• 2 bolts must be used for distance piece size 19 - 22!	16	16	1	852989	826492	826508
		17	17	1	852996	826539	826546
		18	18	1	853009	826577	826584
		19	19	1	853016	826614	826621
		20	20	1	853023	826652	826669
		21	21	1	853030	826690	826706
		22	22	1	853047	826737	826744
	Bolt ISO 8752-A2 Ø 6.8 x 50			1	KDNA0180-00001_		
	Jig 644/Dist. pce-FS-001 for bolt			1	154069		

6.3.18.4 Supporting plate A0089

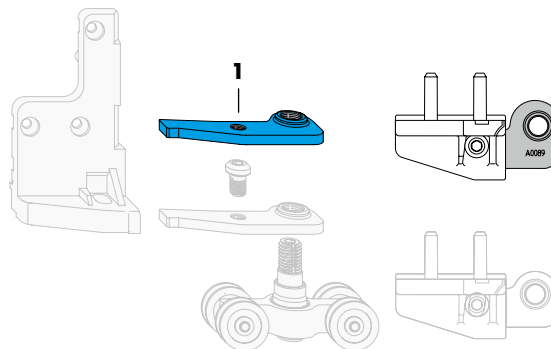


Fig. 66: Figure of supporting plate A0089

Supporting plate A0089			
No.	Material description	Packaging unit	Material number
1	Supporting plate FS barrier-free A0089 For rebate heights 19 to 24 mm	1	PLZG0030-10001_

6.3.18.5 Packer E

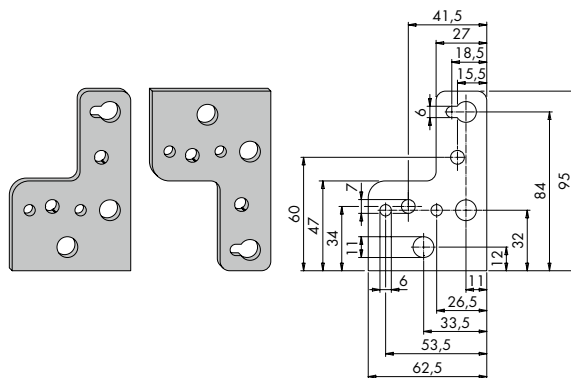


Fig. 67: Figure of packer E

Packer E					
No.	Material description	Packaging unit	Material number		
			EV 1 silver	RAL 9003 signal white	RAL 8019 grey brown
1	Packer E • Packer E 3 mm thick for bottom hinge and bottom hinge D	1	895603	800775	800799

6.3.18.6 Packer FB

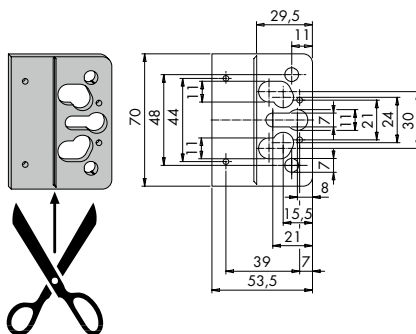


Fig. 68: Figure of packer FB

Packer FB					
No.	Material description	Packaging unit	Material number		
			EV 1 silver	RAL 9003 signal white	RAL 8019 grey brown
1	Packer FB • Packer FB 3 mm thick for sash hinges 17/38 • after detachment at the predetermined breaking point also suitable for sash hinge 17	1	861219	800782	800805

6.3.18.7 Sash hinge FS-RS

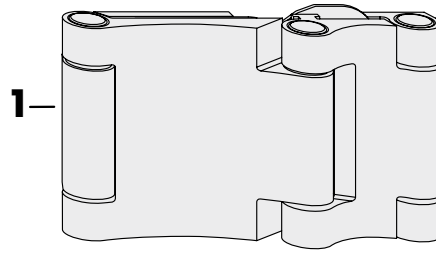
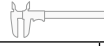
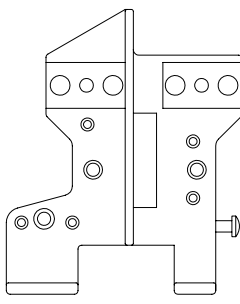
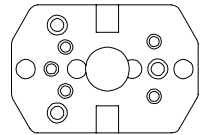
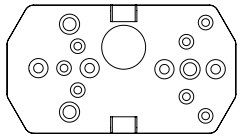
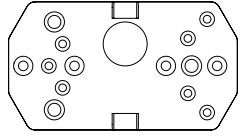
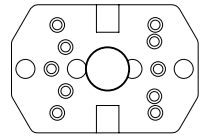

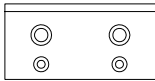


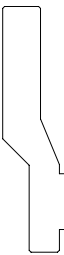
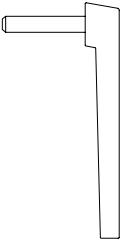



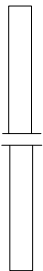
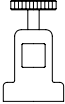
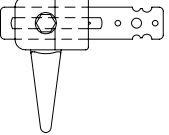
Fig. 69: Figure of sash hinge FS-RS


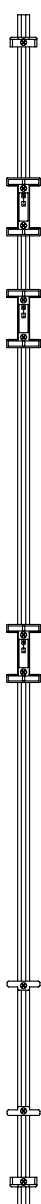
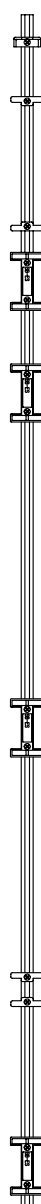

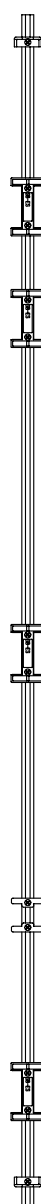


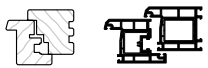

Sash hinge FS-RS				
No.	Material description	Packaging unit	Material number	
			EV 1 silver	RAL 9003 signal white
1	Sash hinge FS-RS	1	PMFG0020-52501_	PMFG0020-50201_
	<ul style="list-style-type: none"> • Makes it possible to clean the outside surface of the pane from inside • suitable for timber and PVC elements • For use and installation, see assembly instructions H48.FS-1007EN-00 AA FS PORTAL SASH HINGE FS-RS (CLEANING) • For operation, it is essential to adhere to the operating instructions H47.FS-0001EN-00 BA SASH HINGE FS-RS (CLEANING POSITION)! • for sash rebate height 840 to 1400 mm 2 piece required for each intersection point B • for sash rebate height 1401 to 2360 mm 3 piece required for each intersection point B 			

6.3.19 Jigs

Jigs (drilling and milling jigs) 			
	Material description	Tool	Material number
Basic equipment			
	<p>Jig EB 644-1 17/38</p> <p>for bottom hinge</p> <ul style="list-style-type: none"> Required: 2 piece 	<p>Drill: Ø7.0 Ø4.2</p>	PAHG0070-52101_
	<p>Jig EB 644-2 17/38</p> <p>for sash hinge 17/38</p> <ul style="list-style-type: none"> Required: 1 piece .. 6 pieces 	<p>Drill: Ø7.0 Ø4.2</p>	PAHG0060-52101_
	<p>Jig EB 644-2 17/48</p> <p>for sash hinge 17/48</p> <ul style="list-style-type: none"> Required: 1 piece .. 6 pieces 	<p>Drill: Ø7.0 Ø4.2</p>	PAHG0010-52101_
	<p>Jig EB 644-2 27/48</p> <p>for sash hinge 27/48</p> <ul style="list-style-type: none"> Required: 1 piece .. 6 pieces 	<p>Drill: Ø7.0 Ø4.2</p>	PAHG0020-52101_
	<p>Jig EB 644-2 1RS</p> <p>for sash hinge RS</p> <ul style="list-style-type: none"> Required: 3 piece 	<p>Drill: Ø4.0 timber Ø4.2 PVC</p>	PAHG0030-52101_

Jigs (drilling and milling jigs) 			
	Material description	Tool	Material number
	<p>Jig EB 644-3</p> <p>For supporting piece FS</p> <ul style="list-style-type: none"> • Required: 1 piece 	Drill: Ø4.2	143087
	<p>Jig FS distance piece</p> <p>for distance pieces</p> <ul style="list-style-type: none"> • Required: 1 piece 	Drill: Ø6.5	154069
	<p>Jig FS-BS REV timber</p> <p>for drilling mounting holes vertical framing timber</p> <ul style="list-style-type: none"> • Required: 1 piece 	Drill: Ø3.5	PAHG0050-0D301_
	<p>Jig REV threshold FS</p> <p>as stop for vertical framing timber</p> <ul style="list-style-type: none"> • Required: 3 piece 	Drill: Ø4.0 timber Ø4.2 PVC	PAHG0040-0D301_
	<p>Jig EB 644-4</p> <p>for drill centring on guiding and running rails</p> <ul style="list-style-type: none"> • Required: 1 piece 	Drill: Ø3.5	143094

Jigs (drilling and milling jigs) 			
	Material description	Tool	Material number
	Adjusting rod for EB 644-1 and 644-2... • Required: 2 piece		143117
	Stop for adjusting rod • Required: 2 piece		143100
	Clamping device for EB 644-1 and 644-2... • Required: 12 piece		139202
Without illustration:	Countersunk screw M 5 x 16 for fixing the clamping device • Required: 24 piece		801147

Jigs (drilling and milling jigs) 			
	Material description	Tool	Material number
Additional jigs 2			
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>1</p>  </div> <div style="text-align: center;"> <p>2</p>  </div> <div style="text-align: center;"> <p>3</p>  </div> <div style="text-align: center;"> <p>4</p>  </div> </div>	<p>1 Striker jig EL 643-2 timber VS</p> 	<p>for striker plates and distance pieces on the locking side for timber elements</p> <p>Size range: Sash rebate height 1691 to 2360 mm</p>	<p>PAEL0010-52401_</p>
	<p>2 Striker jig EL 643-2 timber BS</p> 	<p>for striker plates and distance pieces on the locking side for timber elements</p> <p>Size range: Sash rebate height 1691 to 2360 mm</p>	<p>PAEL0020-52401_</p>
	<p>3 Striker jig EL 643-2 timber and PVC</p> 	<p>for striker plates and locking pieces top and bottom crosswise for timber and PVC elements</p> <p>Size range: Sash rebate width 770 to 2000 mm</p>	<p>PAEL4000-52401_</p>
	<p>4 Striker jig EL 643-2 PVC</p> 	<p>for striker plates and distance pieces on the locking and hinge side for PVC elements</p> <p>Size range: Sash rebate height 1691 to 2360 mm</p>	<p>PAEL4010-52401_</p>

6.3.20.1 Adjustment instructions

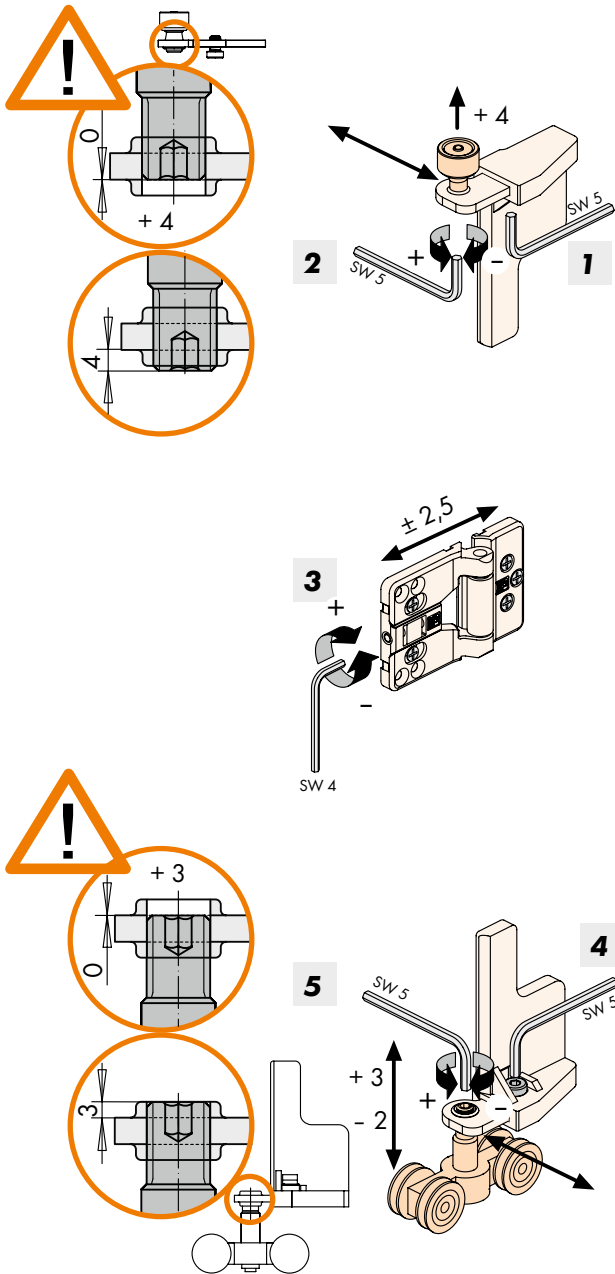


Fig. 70: Figure Adjustment instructions

1. Sash pressure adjustment of the bottom hinge top

- Loosen cheese head screw M 8 x 12 on bottom hinge using Allen key SW 5.
- Press sash firmly into place.
- Tighten cheese head screw M 8 x 12 using Allen key SW 5.

2. Height of guides after adjustment

- Adjust the height of the guide on the self-locking threaded bolt of the guide using Allen key SW 5.



The maximum elevating adjustment may not be exceeded.

3. Adjusting the gap width on the sash hinges

- › Release sash hinges successively, adjust and then re-mount them.
- Release fixing screws slightly.
- Adjust the horizontal gap width of the sash with Allen key SW 4.
- Re-tighten fixing screws.

4. Sash pressure adjustment of the bottom hinge bottom

- Loosen cheese head screw M 8 x 12 on bottom hinge using Allen key SW 5.
- Press sash firmly into place.
- Tighten cheese head screw M 8 x 12 using Allen key SW 5.

5. Adjusting the height of the sash on the bogie wheels



The maximum elevating adjustment may not be exceeded.

- Adjust the height of the sash on the self-locking threaded bolt of the bogie wheels using Allen key SW 5.

Adjustment options for FAVORIT-/TITAN iP components

Side adjustment of the top stay and bottom hinge

Pressure setting of the top stay

Pressure and elevating adjustment of the rebate corner hinge

Sash pressure adjustment via eccentric locking cam

See maintenance instructions FAVORIT Si-line / TITAN AF-Timber.

6.3.20.2 Notes on scheme 220, 440 and 660

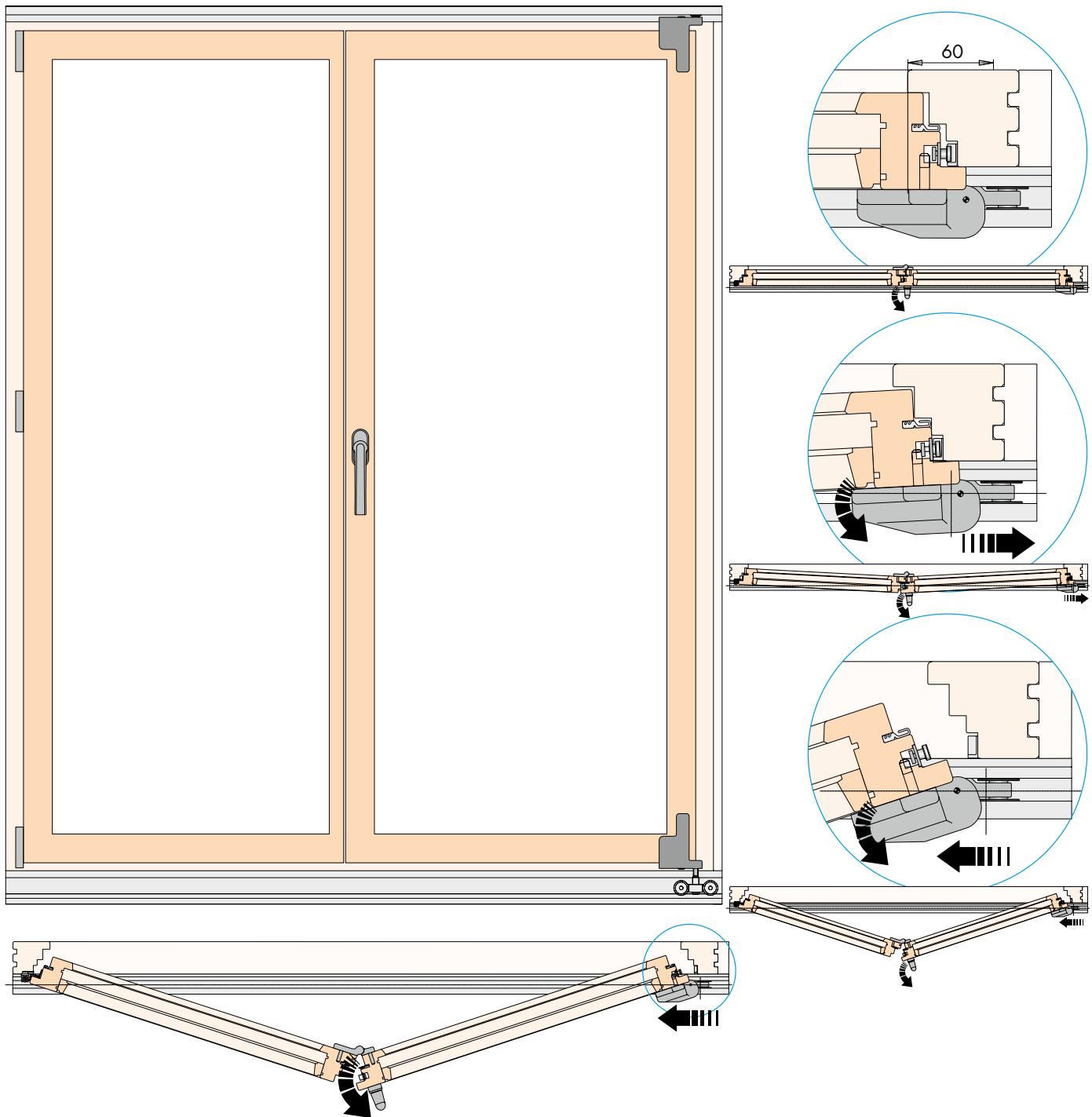


Fig. 71: Figure Notes on scheme 220, 440 and 660

When opening, two, four and six-sash fold and slide elements initially move a few millimetres contrary to the opening direction due to the pivot.

With the SIEGENIA solution for fold and slide elements scheme 220, 440 and 660, the time-consuming reworking of the front vertical rebate is omitted. The system-dependent 12 mm airgap can be retained. The FS bottom hinges at intersection point D_{220} are inwardly offset by 12 mm. The intersection point B is executed as a mirror image to enable the locking part to be constructed with standard central locking gear components.

SIEGENIA®

brings spaces to life

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Great Britain Phone: +44 2476 622000

Hungary Phone: +36 76 500810

Italy Phone: +39 02 9353601

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