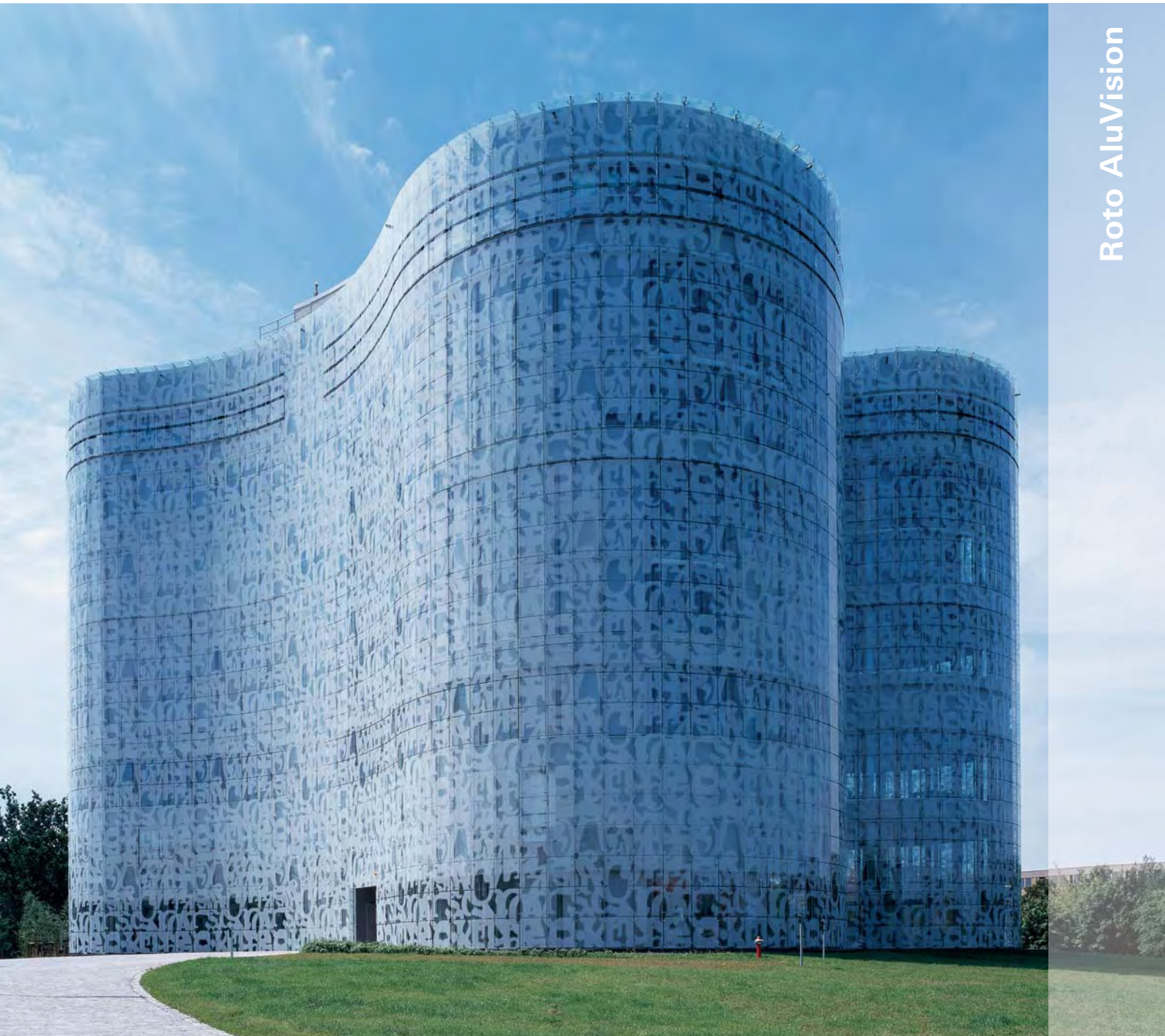


Roto AluVision

Catalogue - Short version



Roto AluVision



Liability exclusion

All specifications in this brochure were compiled carefully and verified. Due to technical progress, whether by means of legislation modification or by lapse of time, the results automatically lead to changes. We therefore hope you shall understand that we cannot be held liable for the correctness and completeness of the contents.

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Imprint

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Picture credits – Page 1: Wicona/Roto

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Tilt&Turn hardware for windows and balcony doors

**Terms of delivery and payment of
Roto Frank AG,
Leinfelden-Echterdingen, Germany.
Valid from the 1st of August 2002**

1. Scope

1.1 The following conditions are valid for all deliveries and services of Roto Frank AG to companies, legal persons under public law and separate estates subject to public law. Buyer's deviating conditions are valid only with our written approval and when we do not explicitly contradict the validity of buyer's purchasing conditions.

1.2 Assertions, assurances and contract changes are effective only in writing.

1.3 The information and illustrations contained in brochures and catalogues are customary within this industry and unobligatory approximate values, unless they were explicitly designated obligatory by us.

2. Prices and terms of payment

2.1 Our quoted prices exclude sales tax.

2.2 Invoices are payable within 10 days according to the date of invoice with 3% cash discount, or within 30 days strictly net. Cash discount deduction is not applicable if the buyer is in arrears with non paid bills.

Bills of exchange and cheques are accepted only prior to written agreement, instead of cash payment, and on condition of their bank acceptance. Bank charges are charged from the due date based on the invoice amount. A guarantee for punctual presentation of bills of exchange and cheques and charges for queries with regard to bills is out of the question.

2.3 In the case of exceeding the time for payment allowed in accordance with paragraph 2.2, we are entitled to charge interest on late payment at the overdraft level that the bank charges us, however at least 8% annually above the respective base rate.

2.4 Should we have undisputedly supplied partly defective goods, the buyer is nevertheless obliged to effect payment for the flawless parts, unless the partial delivery is of no interest to him.

Furthermore, the buyer may only counterbalance a credit if he/she has

established legal findings or undisputed counter-claims.

2.5 If upon conclusion of the contract it becomes apparent that our financial claim is endangered by insolvency of the buyer, we can refuse the service and determine an adequate deadline in which to pay in stages against delivery, or to demand collateral. In the case of the buyer's refusal or a futile expiry of the time-limit, we are entitled to terminate the contract and to demand compensation.

3. Delivery, damages incurred during transit, delivery time, delay, partial-, excess and short deliveries:

3.1 Roof-windows and loft-ladders including accessories are supplied freight paid.

Hardware up to an order value of € 1,500.00 is delivered ex works. Orders exceeding a net goods value of € 1,500.00 are delivered freight paid. Export shipments are despatched "free German border". All other products are delivered ex works. The Incoterms 2000 are valid. We reserve the right to choose the mode of dispatch. The buyer will be charged with all additional costs for differing methods of transport requested by him, as well as for shipment to another address. The same applies for additional costs caused by the buyer (return deliveries, incorrect orders etc.)

3.2 We only supply in Roto packaging units. If an order is placed for less than a packaging unit, the packaging unit is rounded off without further enquiry. Upon a purchase order value under € 200.00 for single dispatch, we reserve the right to charge a low-quantity surcharge of € 20.00.

3.3 Partial deliveries are permitted. These shall be invoiced separately. Excess and short deliveries subject to quantity batch manufacturing and packaging conditions are permissible within a tolerance of 5% of the total order. Subject to the volume, the total price changes.

3.4 All freight paid deliveries are insured within the framework of our transport insurance. An insurance exceeding this is the buyers concern. Damage which has occurred in transit has to be reported in writing to the forwarders immediately on receipt of the goods. Hidden damages must be reported at the latest on the sixth day.

3.5 The delivery date agreed upon begins upon conclusion of the contract, but only

upon receipt of all documents to be provided by the buyer and upon clarification of all details concerning the specifications. We as the supplier, comply with the delivery date if the goods to be delivered have left our premises before the delivery date expires, or if we have informed the buyer that the goods are ready for dispatch.

Subsequent modifications or supplements automatically prolong the delivery date agreed upon. This also applies in cases of unforeseen circumstances beyond our control known as force majeure, industrial disputes or delayed delivery on the part of our supplier.

3.6 The buyer is only entitled to terminate the contract, if we have not complied with the agreed delivery date and has unsuccessfully granted adequate days of grace.

4. Retention of title, release of covenant

4.1 The supplied goods remain our property until the complete payment has been effected from all our demands from our business relationship, and in particular until all bills of exchange that are traded in are honoured. This is valid also in the case of processing our goods which always occurs for us as manufacturers (§ 950 of the German Civil Code: BGB). In the case of processing, combination and mixing with other goods, we acquire co-ownership in accordance with the invoiced value of our goods with these other goods at the time of the processing, combination or mixing. The buyer retains ownership or co-ownership for us.

4.2 The buyer may sell our reserved goods only in the course of normal business proceedings and only as long as he is not in default of payment. It is not allowed to pledge or to transfer the security of these goods. The buyer's claims for the purchase price or for compensation for work from the disposition of the reserved goods are already now assigned to the supplier in the amount of his invoices until all his claims, including bills of exchange, have been paid. The buyer is revocably entitled to collect this claim. In the case of revocation, the buyer shall immediately inform the supplier upon his request of the names of the debtors to which he has assigned his claims.

If the value of all securities which the supplier is entitled to, have exceeded the value of the outstanding amounts to be

secured by more than 20%, the supplier will release a part of the securities of his choice upon the buyer's request.

Upon the buyer's breaches of duty, in particular default of payment, we are entitled to invalidate and terminate the contract from the buyer after a futile deadline; the legal definitions of the dispensability date remain unchanged. The buyer is obliged to deliver. We are entitled to terminate the contract, if application for inauguration of insolvency proceedings for the buyer's property has been started.

5. Warranty

5.1 The condition of the supplied goods depends exclusively on the technical delivery instructions agreed upon. If we have to provide samples, drawings, specifications etc. to the buyer, he accepts the risk of the suitability for the planned intended purpose. Decisive for the contractual status of the goods is the passing of the risk date.

5.2 No liability for defects is assumed for damages occurred because of improper or unsuitable use, faulty assembly or putting into operation by the buyer or third persons, natural wear and tear, improper treatment or maintenance, climatic influences as well as for the results and changes carried out without our consent or repair works carried out by the buyer or third parties. The same applies for mistakes which only reduce the value or suitability of the goods insignificantly.

5.3 The time-limitation of the warranty claims, as long as nothing else has been arranged, is dealt with according to written law. Warranty claims regarding the E-Tec product line (for example electronic contacts, window openers, radio-controlled detectors etc.) become invalid after 12 months.

5.4 If the consignment gives rise to complaints and if it shows visible defects, we have to be informed in writing about these complaints immediately on receipt of the consignment, or in the case of hidden defects, immediately upon their discovery. In the case of a justified complaint reported promptly, we have the right to decide whether to amend the goods delivered or to replace them by supplying a perfect substitute.

Should we be in breach of contract of these obligations or not deliver the goods or service within adequate time, the buyer can set us a reasonable deadline in writing,

within which time we have to comply with our obligations. After missed deadline the buyer can demand a price reduction, cancel the contract or do the necessary repairs himself or have them contracted out to a third party at our cost and risk. A reimbursement of costs is impossible if the expenditures increase, if the goods were transferred on to another location after our delivery, unless this corresponds with the intended purpose of the goods.

6. Other claims, liability

6.1 As far as nothing else results in the following, additional and succeeding claims by the buyer against us are out of the question. This is particularly valid for compensation claims due to breach of contract regarding payment and because of illegal action. We therefore are not liable for damages which were not caused by the supplied goods themselves. We particularly cannot be held liable for the buyer's lost profits or other financial losses.

6.2 Preceding liability restrictions are not valid upon intention, coarse negligence on our legal representatives or senior staff behalf, as well as in the case of non-accidental breach of essential contractual obligations. Except in the case of intentional breach or act of negligence on behalf of our legal representatives or senior staff, we are only liable for the contract-typical, reasonable foreseeable damage.

6.3 Furthermore, the limitation of liability is not valid in cases in which, according to product liability law, one is held liable for persons or damage to privately used property due to the absence of the supplied goods. It is also not valid for injury to life, body or health.

In so far as our liability is excluded or limited, this is valid also for the personal liability of our employees, legal representative and assistants.

7. Return consignments

Goods may only be returned with our prior written authorisation, as long as no warrantee obligation from us exists. We are entitled to deduct expenses for the control of incoming goods, new packaging or surface treatment, if necessary, from the amount of our credit note. We reserve the right to assert claims for major actual damages occurred. The costs for returning the goods will be charged to the consignor.

8. Confidentiality

8.1 Every contracting party keeps all papers secret (including samples, models and data) and knowledge, that he or she obtains from the business relationship, use only for their mutual purposes and treat with the same care as with their own equivalent papers and knowledge to third parties, if the other contracting party designates them as confidential or has an evident interest in the observance of secrecy.

This obligation begins from the first receipt of papers or knowledge and ends 36 months after the conclusion of the business relationship.

8.2 The obligation is not valid for papers and knowledge that are considered common knowledge, or that were already known to the contracting party upon receipt, without him being obliged to secrecy, or were passed on later from a third party that was entitled to transmit, or if the other contracting party develops papers without utilisation of secretive papers or knowledge from the receiving contracting party.

8.3 If a contracting party provides the other party with drawings or technical papers concerning the goods to be supplied or regarding their production, these remain the property of the submitting contracting party.

9. Place of performance of the contract, Place of jurisdiction and Applicable law

9.1 Provided that there is no contradictory information in the order-confirmation, the contract place of performance is our headquarters in Leinfelden-Echterdingen, Germany.

9.2 For all legal disputes Stuttgart, Germany is agreed upon as the place of jurisdiction. We are also entitled to take legal action at the buyer's location.

9.3 German federal republic law is to be applied exclusively on the privity of contract.

The application of the United Nations CISG agreement dated 11.04.1980 dealing with contracts concerning the purchase of goods is out of the question. ("UN Convention on Contracts for the International Sale of Goods", abbreviated: CISG).

Certified: The Roto quality management system

Certified

The certification in accordance with international standard DIN EN ISO 9001 incorporates the architectural hardware technology division.

The certificate certifies that our entire design, production and marketing processes have been systematically planned, documented and realised appropriately. Starting with quality planning to production testing, from development and design through to production and assembly, right up to marketing and customer services. All significant production locations and sales companies in the Roto company group have been certified in accordance with DIN EN ISO 9001.

The certification is an external indication of the high-quality philosophy practised in Roto:

We in Roto have the objective of continuous improvement of our products and services for the benefit of our customers.

We in Roto offer our customers innovative, environmentally compatible and technically pretentious architectural hardware technology.

Roto products are supplied punctually worldwide with constant guaranteed quality.

We in Roto view integrated quality containing all company activities, as the key for long-term company success.

Roto employees are supported in their personal development and challenging work; practising high-quality philosophy in their daily work.



Accredited: The Roto test centre

Accredited

The Roto company-group benefits from their modern test centre at the German Leinfelden headquarters since October 1996. This is at disposal for both our own material and product testing, as well as for finished window tests from Roto market partners.

The Roto test centre is accredited in accordance with DIN EN ISO/IEC 17025 by the German Accreditation Council ('DAR' = Deutscher Akkreditierungsrat). It was confirmed by means of the accreditation from the German Accreditation System GmbH ('DAP' = Deutsches Akkreditierungssystem GmbH), that the Roto test centre has the competence to carry out tests in areas such as mechanical-technological tests of facade elements such as windows, doors and hardware, as well as metallic material tests.

The attainment of the accreditation in accordance with DIN EN ISO/IEC 17025 represents the highest distinction for a test institute in private industry. The preconditions for this are an extensive quality management system, trained personnel, high-quality test rigs and measuring equipment, as well as continuous external monitoring by the accreditation authorities.



Straightforward, well thought-out and aesthetical

Great convenience and noble design in limited spaces

In order to make maximum use of living space, sliding windows and doors are recommended everywhere where inward or outward-opening projecting windows are undesired.

The simple and modular product family AluVision S Duo offers maximum flexibility in sliding elements with its single point locking system.

Gonzalo Rivera, one of Spain's best known designers, unites for the first time in the new AluVision S Duo concept, noble, ergonomic design with emotional aesthetics and novel, future-oriented technology. High-quality materials such as housings made of ALU 6060 and abrasion-resistant nylon sliders guarantee long durability. Zinc diecast and stainless-steel components underline the unique locking system.

AluVision S Duo Standard with manual and automatic function

The convenient automatic function for windows is already preset. By means of a simple changeover, a switch to the manual mode of operation is carried out, which is preferably used on balcony and terrace doors.

Stainless-steel components

The robust profile fixing-components are made of austenitic, rustproof stainless-steel. This guarantees high durability and offers a high level of resistance against environmental influences.

The sliding handle; slide with style

The sliding handle's exclusive design interlinks aesthetics, quality and convenient operation. Conveniently open balcony doors from the inside or the outside. The design is fitting to the AluVision S Duo standard locking system and lends a harmonious picture. The easy installation due to the special fixing system with concealed screw fixings underlines the innovative concept. The designer handle can also be retrofitted as a modular component.

The exterior-handle; lending an elegant design to the exterior

Integrated in the modular AluVision S Duo concept, the patented escutcheon pull-handle combines noble, ergonomic design with innovative technology. The robust and from the exterior invisible screw-fixing enables fast installation.



Lockable for higher security levels: The AluVision S Duo system is also available with integrated lock and key, and with the same attractive aesthetics.



Easy installation and fast adjustment

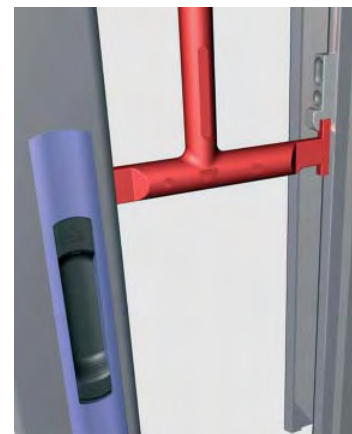
Simply clamp instead of screw-fix: This hardware system facilitates fast and secure installation on the profile. The hook can be adjusted without having to open the window or door. The multi-functional jig for rapid, exact striker positioning is suitable both for conventional as well as for new profiles, and additionally enables easy dismantling of the hardware.

High-quality surface treatment: Roto AluVision S Duo is available in white (RAL 9016), black (RAL 9005), anodised silver and anodised bronze as standard.

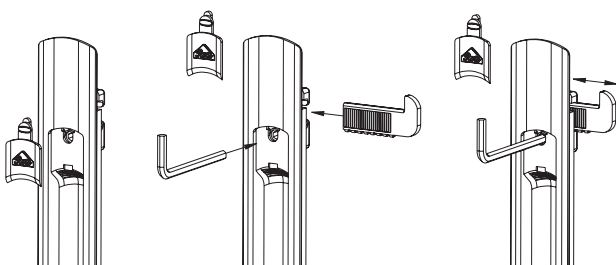


Convenient adjustment and hook regulation

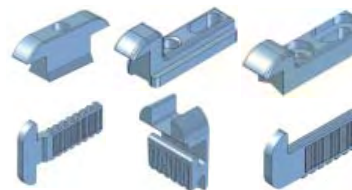
The adjustment of the preassembled Roto AluVision S Duo are carried out with a key; this way the amount of work is clearly reduced. The hook is adjusted and fixed by the two front screws located at the front under the cover cap.



After the Roto AluVision S Duo has been installed, an optional jig is available to precisely fix the position of the striker.

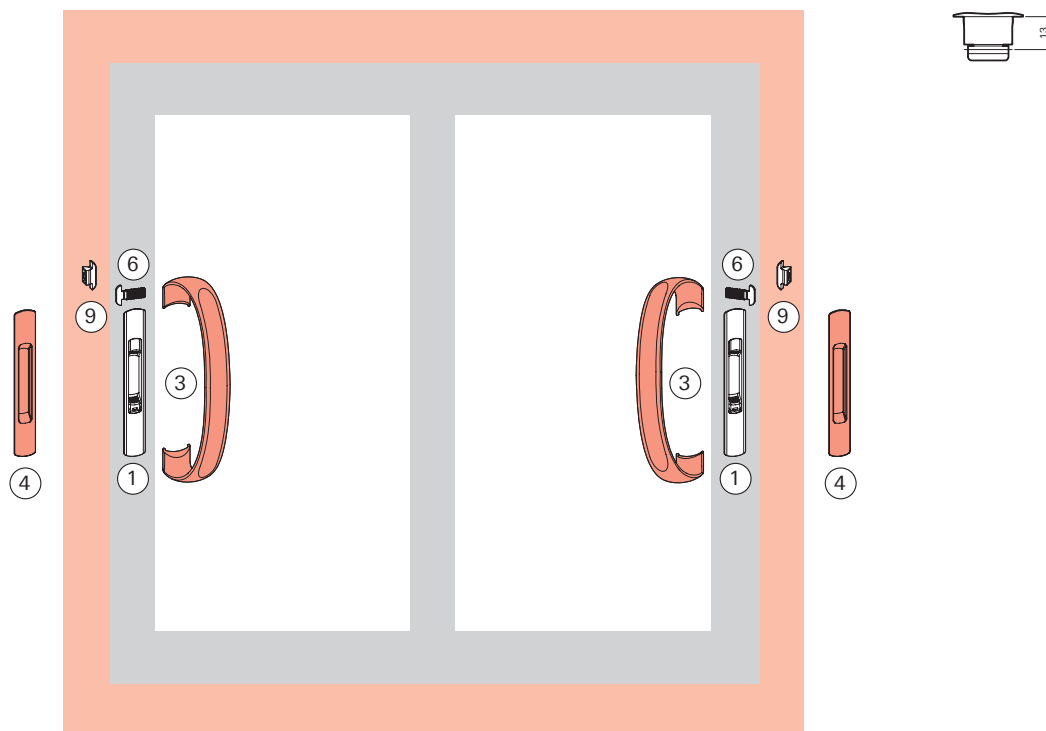


Available for both new as well as conventional profiles: Strikers and hooks.



Duo Standard, clampable – Profile: “Traditional”

AluVision SDuo Standard hardware overview



Locking components

Pos.	Pcs.	Component description	Colour	Mat. no.
1	2	Duo Standard*	R01.1	387 095
			R05.4	387 096
			R06.2	386 894
			R07.2	387 097
			Gold	477 497
			Inox	477 498
			SP COL	493 490
6	2	Hook H001	–	391 851
		H004	–	391 854
		H005	–	392 025
		H006	–	392 026
		H007	–	477 395
		H008	–	493 899
9	2	Striker K002	–	392 028
		K003	–	392 029
		K004	–	392 030
		K005	–	392 031
		K006	–	392 032
		K008	–	451 205
		K009	–	456 948
		K010	–	456 949
		K011	–	456 950
		K015	–	483 988
		K018	–	475 570
		K019	–	475 571

* Customer logo (also with special colour) upon request.

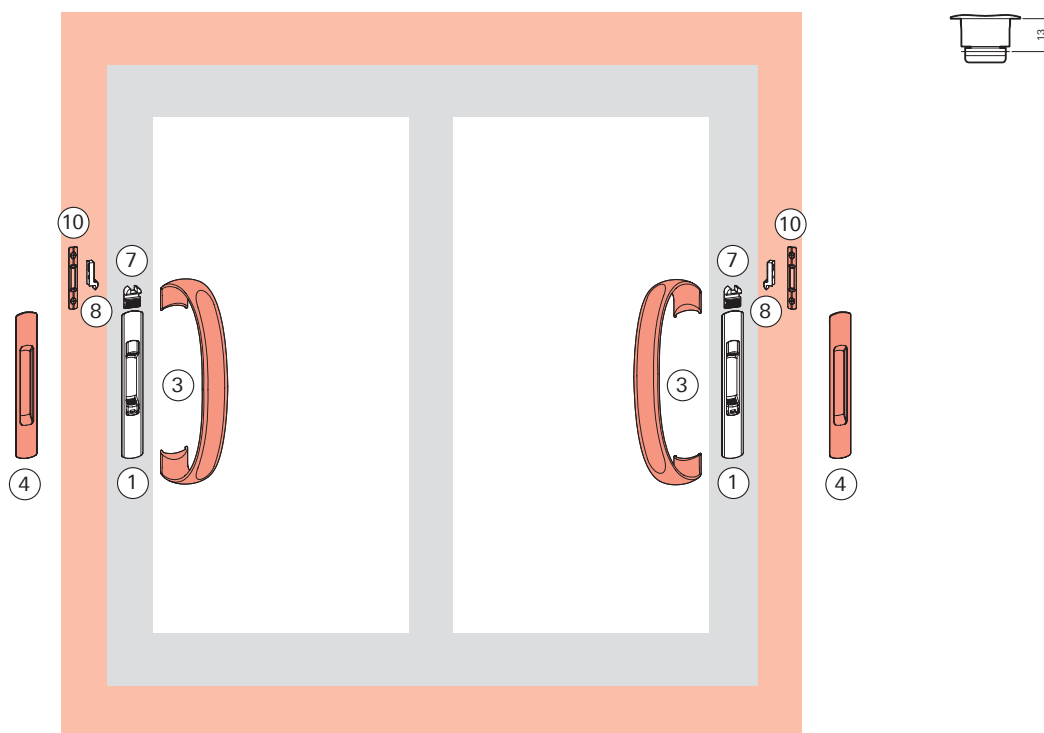
Handles

Pos.	Pcs.	Component description	Colour	Mat. no.
3	1 – 2	Sliding handle	R01.1	470 047
			R05.4	470 048
			R06.2	449 975
			R07.2	449 976
			Gold	477 501
			Inox	477 502
			UNP	494 608
			SP COL	494 812
4	1 – 2	Exterior recessed grip*	R01.1	449 978
			R05.4	449 979
			R06.2	449 977
			R07.2	449 980
			Gold	477 503
			Inox	477 504
			UNP	494 607
			SP COL	494 813

Red areas: optional components.

Duo Standard, clampable – Profile: “Perimeter”

AluVision SDuo Standard hardware overview



Locking components					
Pos.	Pcs.	Component description	Colour	Mat. no.	
1	2	Duo Standard*	R01.1	387 095	
			R05.4	387 096	
			R06.2	386 894	
			R07.2	387 097	
			Gold	477 497	
			Inox	477 498	
			SP COL	493 490	
7	2	Hook H002	–	391 852	
		Hook H003	–	391 853	
8	2	Striker K001	–	392 027	
		K007	–	446 656	
Alternatively:					
10		Striker K017A	–	490 499	
		K017B	–	490 500	

* Customer logo (also with special colour) upon request.

Handles					
Pos.	Pcs.	Component description	Colour	Mat. no.	
3	1 - 2	Sliding handle	R01.1	470 047	
			R05.4	470 048	
			R06.2	449 975	
			R07.2	449 976	
			Gold	477 501	
			Inox	477 502	
			UNP	494 608	
			SP COL	494 812	
4	1 - 2	Exterior recessed grip*	R01.1	449 978	
			R05.4	449 979	
			R06.2	449 977	
			R07.2	449 980	
			Gold	477 503	
			Inox	477 504	
			UNP	494 607	
			SP COL	494 813	

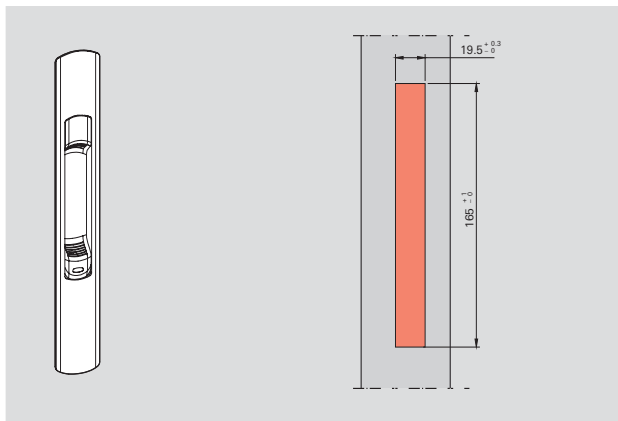
Colour info:

R01.1 = silver
 R05.4 = dark bronze
 R06.2 = jet-black
 R07.2 = traffic white
 UNP = without surface treatment
 SP COL = Special colour

Red areas: optional components.

Handles

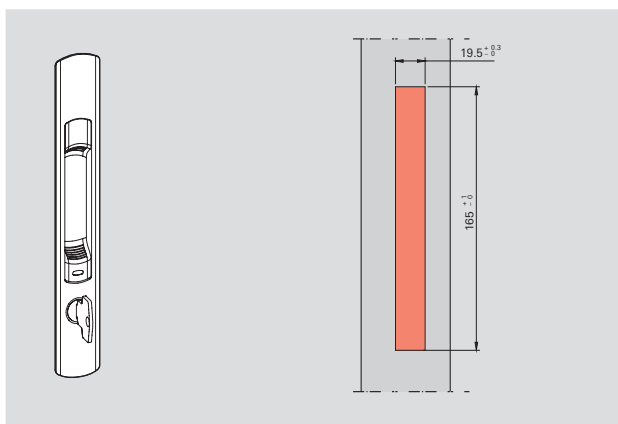
AluVision Duo Finger Pull Standard



Parts lists

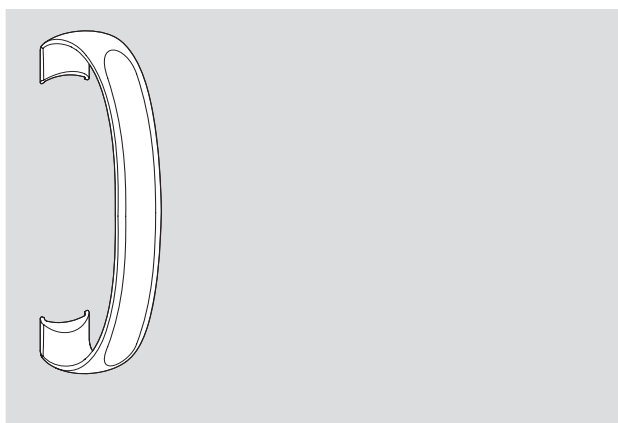
AluVision Duo Standard			
Colour	Component description	Mat. no.	Packunit
R01.1	Coated	387 095	10
R05.4	Coated	387 096	10
R06.2	Coated	386 894	10
R07.2	Coated	387 097	50
Gold	Coated	477 497	10
Inox	Coated	477 498	10
SP.COL.	Coated	493 490	10

AluVision Duo Finger Pull Lockable



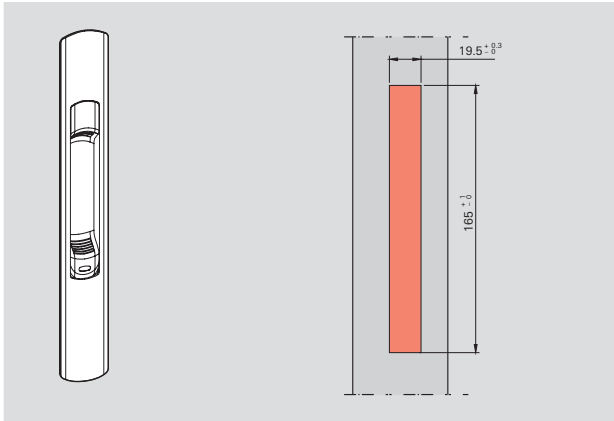
AluVision Duo Lockable			
Colour	Component description	Mat. no.	Packunit
R01.1	Coated	449 932	10
R05.4	Coated	449 933	10
R06.2	Coated	449 929	10
R07.2	Coated	449 934	50
Gold	Coated	477 499	10
Inox	Coated	477 500	10
SP.COL.	Coated	493 492	10

AluVision Duo Pull Handle



AluVision Duo Lockable		
Colour	Component description	Mat. no.
R01.1	Coated	470 047
R05.4	Coated	470 048
R06.2	Coated	449 975
R07.2	Coated	449 976
Gold	Coated	477 501
Inox	Coated	477 502
UNC.	Uncoated	494 608
SP.COL.	Coated	494 812

AluVision Duo Standard B

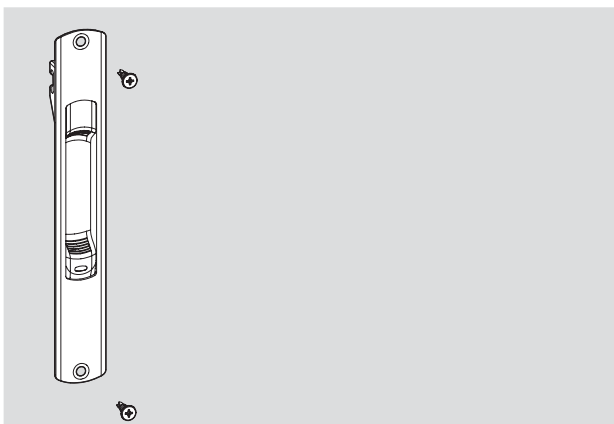


Parts lists

AluVision Duo Standard B

Colour	Component description	Mat. no.	Packunit
R06.4	Coated	485 707	
R07.2	Coated	485 708	

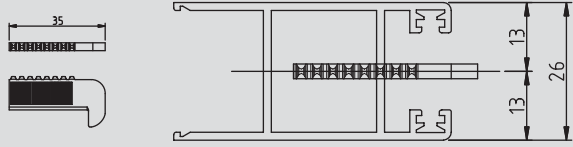
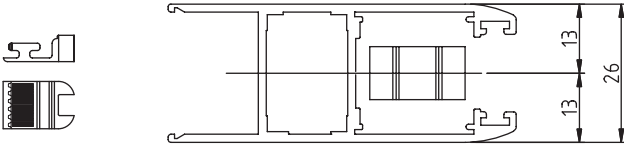
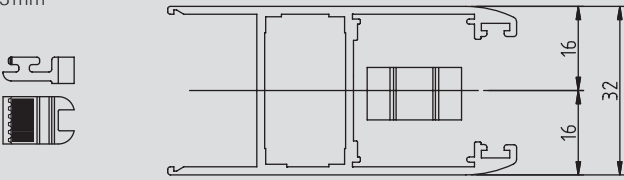
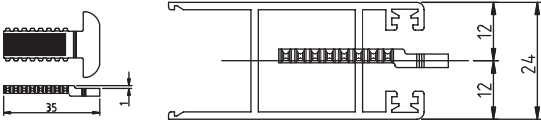
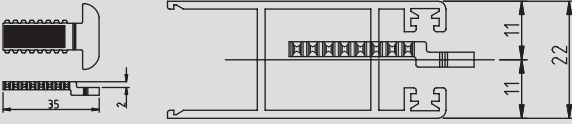
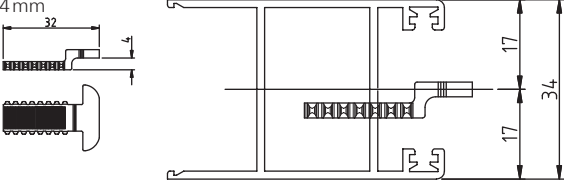
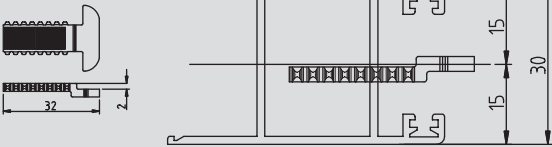
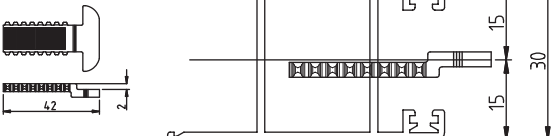
AluVision Duo Standard C



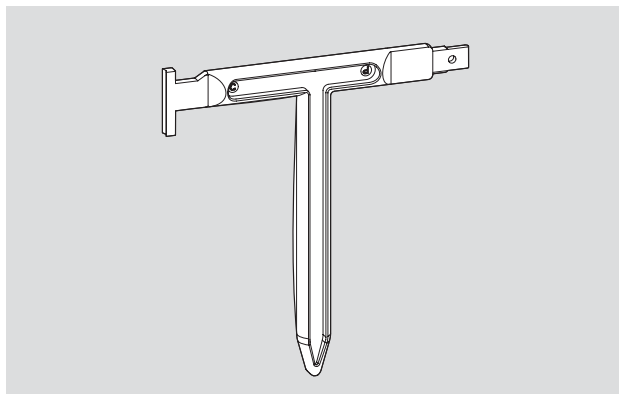
AluVision Duo Standard C (includes 2 screws)

Colour	Component description	Mat. no.	Packunit
R01.2	Coated	492 131	
R07.2	Coated	492 130	

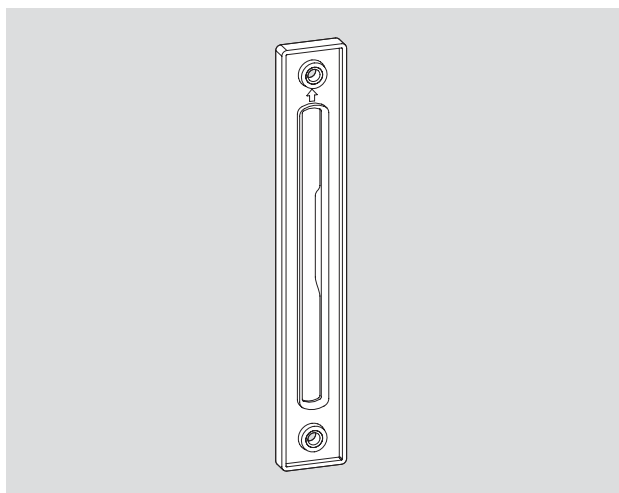
Profile-related parts – hooks

Hooks					
Component description	Profile type	Offset	Profile cross-section	Profile width	Mat. no.
Hook H001	'Traditional'	0 mm		25 – 27 mm	391 851
Hook H002	'Perimeter'	0 mm		22 – 30 mm	391 852
Hook H003	'Perimeter'	3 mm		30 – 36 mm	391 853
Hook H004	'Traditional'	1 mm		23 – 25 mm 27 – 29 mm	391 854
Hook H005	'Traditional'	2 mm		21 – 23 mm 29 – 31 mm	392 025
Hook H006	'Traditional'	4 mm		33 – 35 mm	392 026
Hook H007	'Traditional'	2 mm		21 – 23 mm 29 – 31 mm	477 395
Hook H008	'Traditional'	2 mm		21 – 23 mm 29 – 31 mm	493 899

Jigs



Striker jig	Mat. no.
Striker jig	446 595



Sliding handle jig	Mat. no.
Sliding handle jig	470 386

Intelligent solutions for outward opening windows

Convenient and space saving.

Outward opening "Side-Hung" or "Top-Hung" windows are highly regarded worldwide as they provide several system-related advantages: The sash doesn't protrude into the living area. Due to the slimline profiles, they allow a lot of daylight into rooms.

And during natural wind-created gasket-compression, the windows lock particularly air and water tight. Furthermore Roto AluVision O fenestration technology provides intelligent solutions and high-quality components for convenience and security upon request.

All window formats and window types.

"Top-Hung" outward opening solutions are available from the Roto AluVision O product range with sash weights up to 180 kg. "Side-Hung" outward opening solutions can be implemented with sash weights up to 63 kg. Both window types can be conveniently operated with one hand. Whether slimline windows, small Side-Hung or Top-Hung windows – Roto AluVision has the suitable solution for every application. Roto AluVision offers a large variety of friction hinges in corrosion resistant stainless-steel for the various demands on convenience; these can be installed easily and rapidly and are very durable.

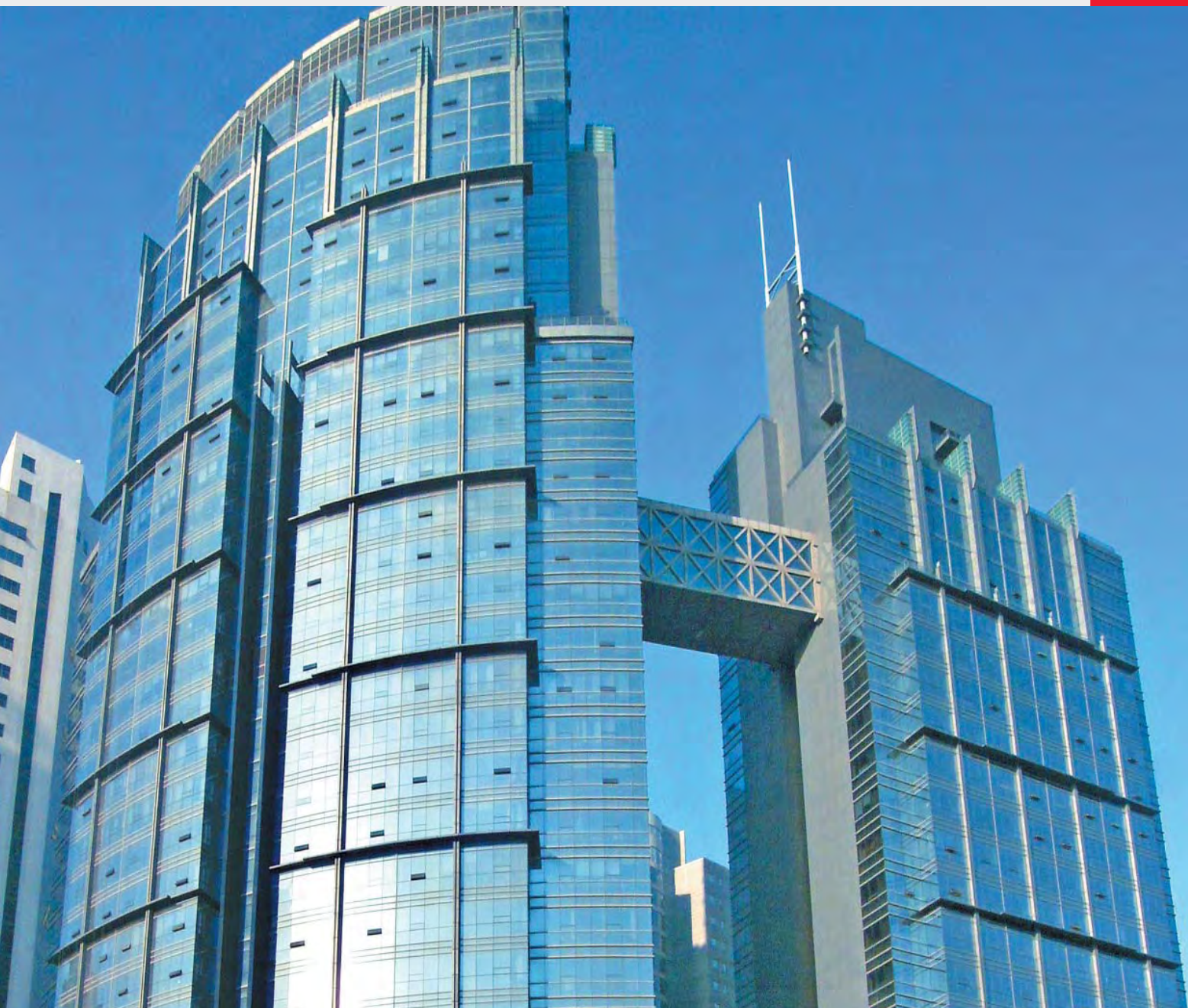
Great variety of central locking options for aluminium windows.

The security demands all over the world are different. Roto for this reason offers security in accordance with the customers' wishes for outward opening windows. This way locking systems with corner drives can be integrated if required, thus ensuring better protection against burglary attempts with additional lateral locking points.

Your advantages at a glance:

- The window sash doesn't protrude into the living area
- Particularly rain and windproof
- Plenty of daylight thanks to the slimline window profiles
- Convenient to open and close
- Selectable security levels as required
- Applicable in many different window formats





Friction hinges

Various sizes and specifications in stainless-steel version.

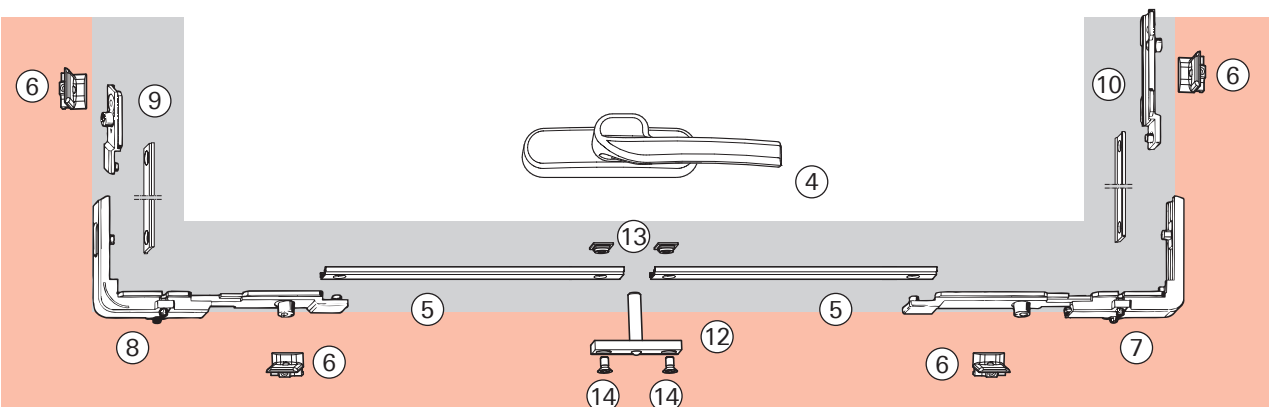
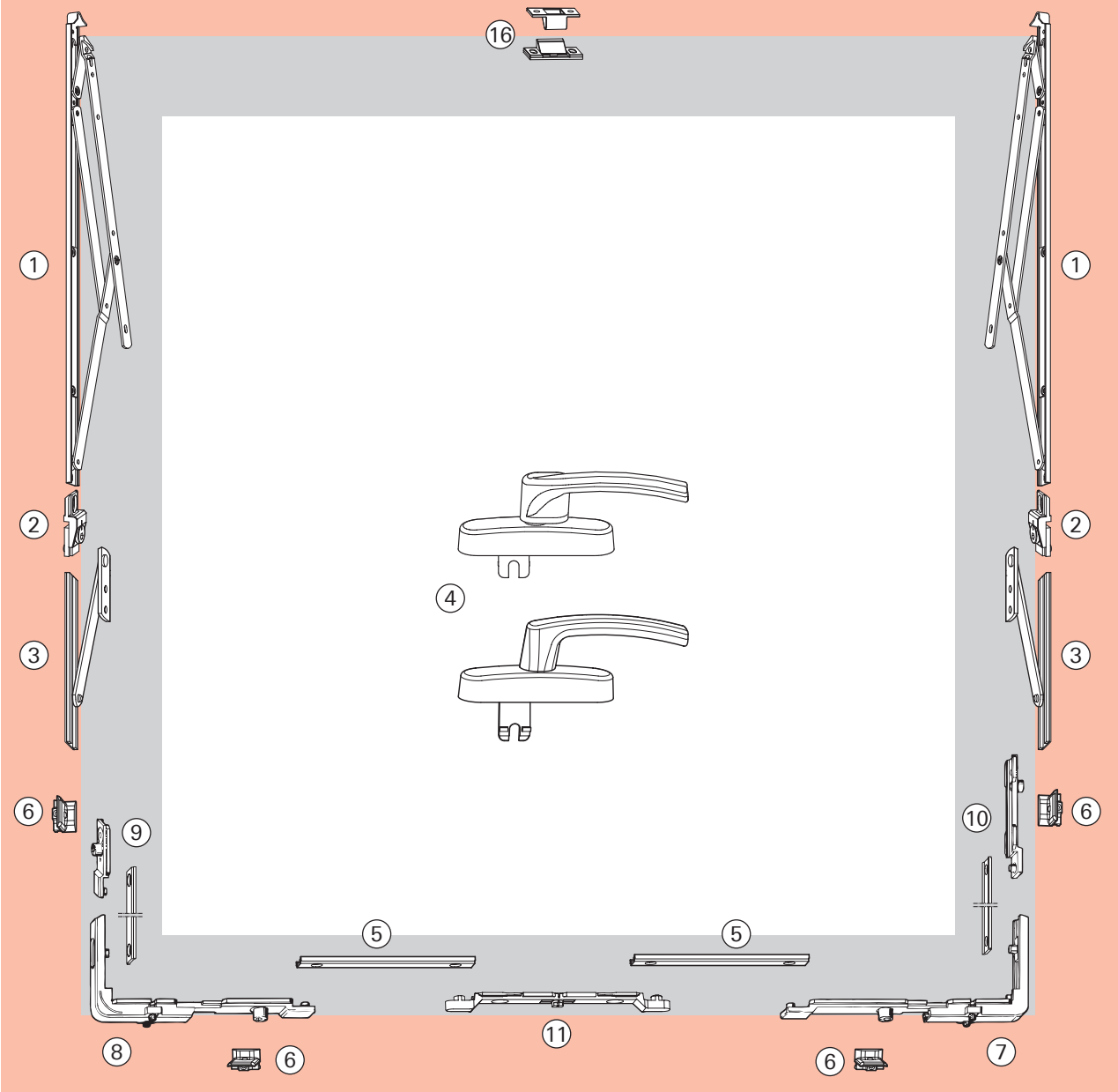


AluVision O Top-Hung solution

Optimal ventilation possibility due to large opening angle

ALU T 540-6 – Geared-handle Friction hinges – Top-Hung

Top-Hung hardware overview



Parts list

Application range

Sash rebate width Profile / weight dependent

Sash rebate height (SRH) 267 – 2500 mm

Sash weight max. 180 kg

1 Top-Hung friction hinge Sterling

Life expectancy = 30,000 cycles – in accordance with the European standard

Application range SRH	Size (°/mm)	Stack height (mm)	Opening angle	Sash weight (max. kg)	Stainless steel quality	Material number
267 – 635	10°/262	16	50°	40	304	477 268
636 – 787	12°/313	16	50°	50	304	477 269
788 – 1090	16°/415	16	50°	65	304	477 270
600 – 1100	16°-1/415	16	30°	100	304	485 601
1091 – 1500	22°/567	16	45°	100	304	478 262
1501 – 2000	22°-1/567	16	20°	100	304	477 271
2000 – 2500	26°/680	16	20°	180	304	477 272

1a Top-Hung friction hinge Storm

Life expectancy = 10,000 cycles – in accordance with US regulations

Application range SRH	Size (°/mm)	Stack height (mm)	Opening angle	Sash weight (max. kg)	Stainless steel quality	Material number
267 – 635	10°/262	16	50°	37	304	477 254
636 – 787	12°/313	16	50°	45	304	477 274
788 – 1090	16°/415	16	50°	55	304	477 265
1091 – 1500	22°/567	16	45°	75	304	477 266
1270 – 2000	26°/680	16	20°	100	304	477 267
Non balanced						
280 – 762	10°/262	16	80°	50	304	485 770
457 – 1120	16°/415	16	60°	55	304	485 771
610 – 1321	22°/567	16	90°	75	304	318 457

2 Friction hinge add-on adjustment device **326 815**

3 Friction restrictor-stay **318 475**

4 RotoLine geared-handle with logo

Colour	Roto colour number	Fork length (mm) in sectional view W/Y	Material number
Silver	R01.5	32 / 9,5	384 083
Jet-black	R06.2 (RAL 9005)	32 / 9,5	385 192
Traffic-white	R07.2 (RAL 9016)	32 / 9,5	384 096
UNP.		32 / 9,5	238 690

RotoLine geared-handle 26 with logo, lockable

Colour	Roto colour number	Fork length (mm) in sectional view W/Y	Material number
Silver	R01.5	26 / 9,5	378 843
Jet-black	R06.2 (RAL 9005)	26 / 9,5	378 844
Traffic-white	R07.2 (RAL 9016)	26 / 9,5	378 916
UNP.		26 / 9,5	238 700

RotoLine cranked geared-handle with logo

Colour	Roto colour number	Fork length (mm) in sectional view W/Y	Material number
Silver	R01.5	32 / 9,5	L 493 977
			R 493 978
Jet-black	R06.2 (RAL 9005)	32 / 9,5	L 493 294
			R 492 893
Traffic-white	R07.2 (RAL 9016)	32 / 9,5	L 493 293
			R 492 892
UNP.		32 / 9,5	L 493 982
			R 493 983

Limit the geared-handle or connecting-rod to 90°!

4a RotoLine geared-handle special fixing **486 160**

4b ALU geared-handle fork

	Fork length (mm) in sectional view W/Y	Material number
Fork # 1	19 / 9,5	490 240
Fork # 2	32 / 9,5	482 309
Fork # 3	37 / 9,5	482 310
Fork # 4	37 / 3,5	482 311
Fork # 5	46 / 9,5	482 312
Fork # 6	46 / 3,5	482 313
Fork # 7	50 / 9,5	482 314
Fork # 8	53 / 9,5	482 315
Fork # 9	53 / 3,5	482 316
Fork # 10	55 / 9,5	482 317
Fork # 11	60 / 9,5	482 318
Fork # 12	67 / 9,5	490 611

5 ALU ECC connecting-rod, 6m **334 665**

6 V.01 striker **212 633**

V.02 striker **212 634**

7 Corner drive **211 995**

8 TF corner drive **211 997**

9 CL connector 33 **212 004**

10 CL connector 67 **212 005**

11 TH connector **482 263**

12 T connector

	T connector length (mm) in sectional view X	Material number
T connector 1	25	482 305
T connector 2	32	482 306
T connector 3	37	482 307
T connector 4	47	482 308

13 Security connector ECC **447 113**

14 Countersunk screw M5x9mm **212 751**

15 Countersunk screw M5x12mm **212 500**

16 Centre-closer **486 367**

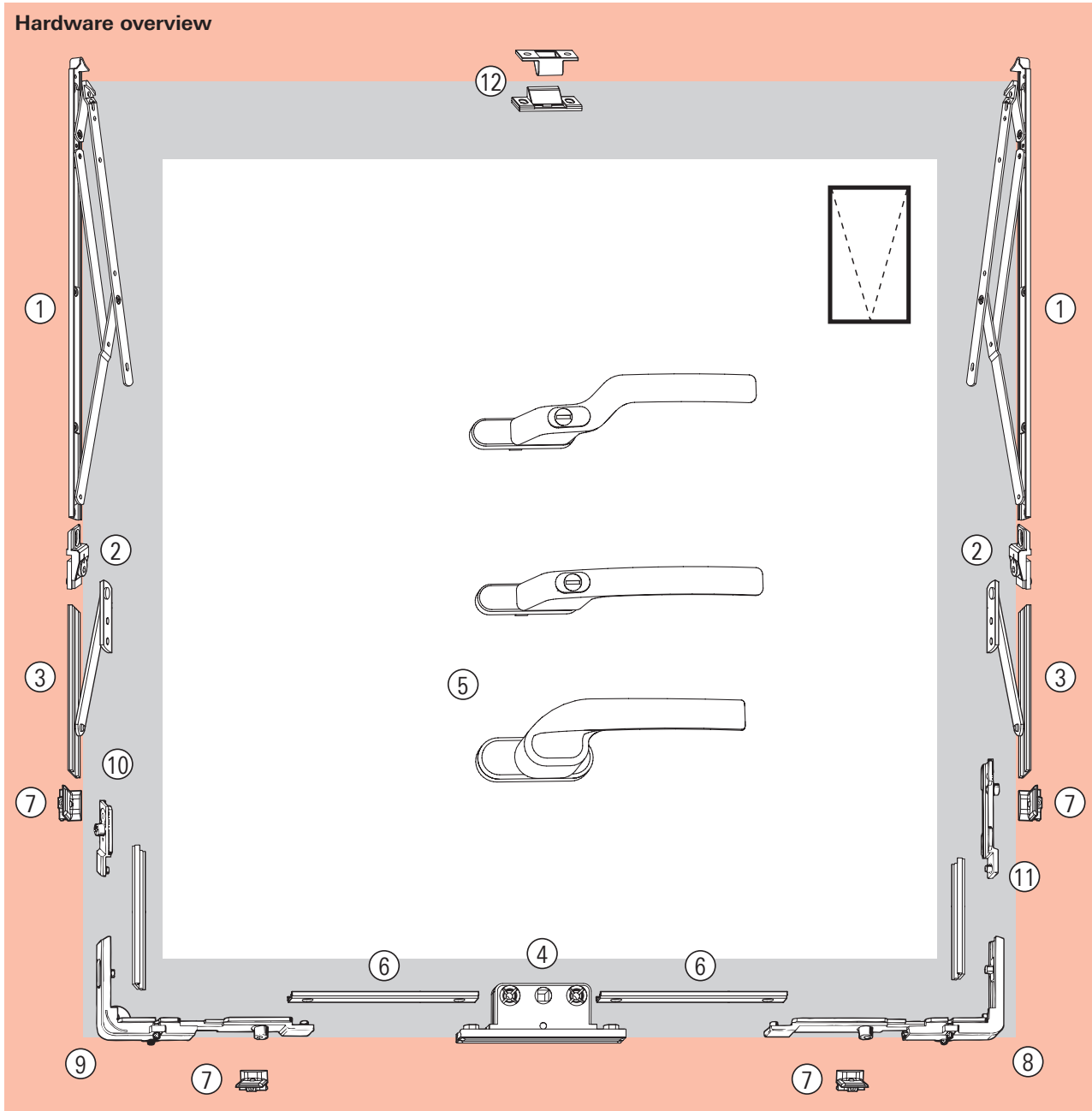
Note: The sizes are derived from the friction hinges' specifications; in some applications also from the profile dimensions.

For handles/geared handles, refer to the chapter "ordering instructions"!

Upon ordering, please also refer to the 'Outward opening' catalogue BK 15 GB.

ALU T 540-6 – Flush encased gearbox Friction hinges – Top-Hung

Hardware overview



Parts list

Application range

Sash rebate width Profile / weight dependent

Sash rebate height (SRH) 267 – 2500 mm

Sash weight max. 180 kg

1 Top-Hung friction hinge Sterling

Life expectancy = 30,000 cycles

Application range SRH	Size (°/mm)	Stack height (mm)	Opening angle	Sash weight (max. kg)	Stainless steel quality	Material number
267 – 635	10°/262	16	50°	40	304	477 268
636 – 787	12°/313	16	50°	50	304	477 269
788 – 1090	16°/415	16	50°	65	304	477 270
600 – 1100	16°–1/567	16	30°	100	304	485 601
1091 – 1500	22°/567	16	45°	100	304	478 262
1501 – 2000	22°–1/567	16	20°	100	304	477 271
2000 – 2500	26°/680	16	20°	180	304	477 272

1a Top-Hung friction hinge Storm

Life expectancy = 10,000 cycles – In accordance with US regulations

Application range SRH	Size (°/mm)	Stack height (mm)	Opening angle	Sash weight (max. kg)	Stainless steel quality	Material number
267 – 635	10°/262	16	50°	37	304	477 254
636 – 787	12°/313	16	50°	45	304	477 274
788 – 1090	16°/415	16	50°	55	304	477 265
1091 – 1500	22°/567	16	45°	75	304	477 266
1270 – 2000	26°/680	16	20°	100	304	477 267
Non balanced						
280 – 762	10°/262	16	80°	50	304	485 770
457 – 1120	16°/415	16	60°	55	304	485 771
610 – 1321	22°/567	16	90°	75	304	318 457

2 Friction hinge add-on adjustment device **326 815**

3 Friction restrictor-stay **318 475**

4 Flush encased reverse-action gearbox

Description	Backset (mm)	Length (mm)	Material number
Flush encased gearbox	22	RA 126	487 491
Flush encased gearbox	30	RA 126	487 493

Flush encased gearbox

Description	Backset (mm)	Length (mm)	Material number
Flush encased gearbox	25	140	487 489
Flush encased gearbox	30	140	487 490

Please note: Punch Ø10 mm holes in the connecting-rod for the flush encased gearbox!

5 Outward opening handle MK3

Colour	Spindle length (mm)	Escutcheon cover (Ø in mm)	Material number
Traffic-white (RAL 9016)	43	16	335 284
Gold	43	16	335 288

Outward opening cranked handle MK2

Colour	Spindle length (mm)	Escutcheon cover (Ø in mm)	Material number
Traffic-white (RAL 9016)	43	16	L 492 102 R 492 103
Chrome-plated	43	16	L 345 790 R 345 792

5a Outward opening cranked RotoLine handle

Colour	Spindle length (mm)	Escutcheon cover (Ø in mm)	Material number
Silver, anodised	43	24	L 375 318 R 375 811
Titanium matt, anodised	43	24	L 375 319 R 375 814
Traffic-white (RAL 9016)	43	24	L 375 320 R 375 816

Outward opening cranked RotoLine handle lockable, SKG-tested

Colour	Spindle length (mm)	Escutcheon cover (Ø in mm)	Material number
Silver, anodised	43	24	L 375 322 R 375 819
Titanium matt, anodised	43	24	L 375 325 R 375 820
Traffic-white (RAL 9016)	43	24	L 375 330 R 375 821

6 ALU ECC connecting-rod, 6m **334 665**

7 V.01 striker **212 633**

V.02 striker **212 634**

8 Corner drive **211 995**

9 TF corner drive **211 997**

10 CL connector 33 **212 004**

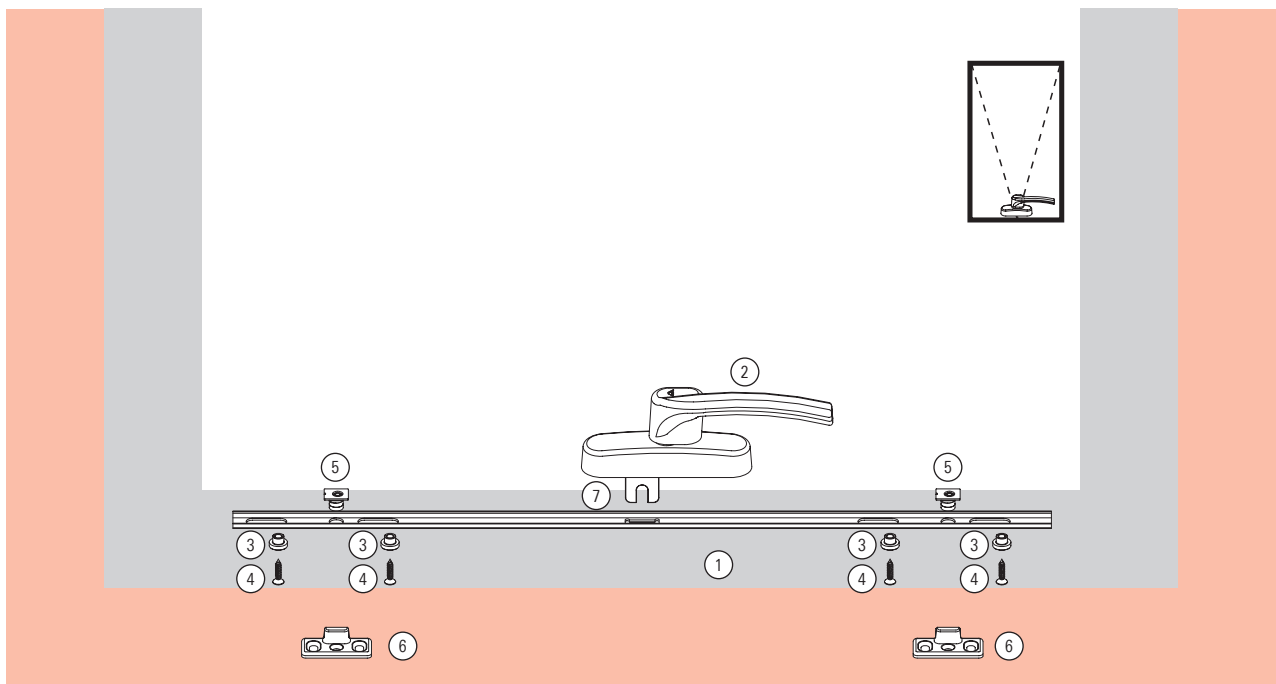
11 CL connector 67 **212 005**

12 Centre-closer **486 367**

Upon ordering, please also refer to the 'Outward opening' catalogue BK 15 GB.

Slider-rod hardware for grooveless profiles

Parts list and hardware overview



Parts list

Application range

Sash rebate width 640 – 940 mm
 Sash rebate height (SRH) max. 1600 mm
 Sash weight..... dependent on hinge side

1 Connecting-rod 586 mm		551 788 ⁽¹⁾
2 RotoLine cranked geared-handle with logo		
Roto colour number	Colour	Material no.
R 01.5	Silver	L 493 977
		R 493 978
R 06.2	Jet-black	L 493 294
		R 492 893
R 07.2	Traffic-white	L 493 293
		R 492 892
	Unpainted	L 493 982
		R 493 983

Connecting-rod locking components bag 551 692

Basic carton contents:

- 3 4 bushes
- 4 4 screws
- 5 2 locking cams

6 Striker 12 mm 482 261

Striker 14 mm 482 262

7 Alu geared-handle fork

Description	Length (mm) in sectional view W/Y	Material no.
Fork #1	19/9.5	490 240
Fork #2	32/9.5	482 309
Fork #3	37/9.5	482 310
Fork #4	37/3.5	482 311
Fork #5	46/9.5	482 312
Fork #6	46/3.5	482 313
Fork #7	50/9.5	482 314
Fork #8	53/9.5	482 315
Fork #9	53/3.5	482 316
Fork #10	55/9.5	482 317
Fork #11	60/9.5	482 318
Fork #12	67/9.5	490 611

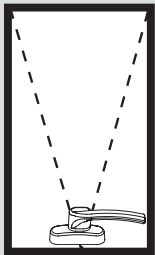
⁽¹⁾ Deviating connecting-rod lengths available upon request.

Ordering information for RotoLine cranked geared-handles / Outward opening cranked MK2 handles

RotoLine cranked geared-handle with logo

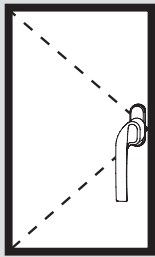
Left hand version

(Geared-handle depicted in the closed position.)

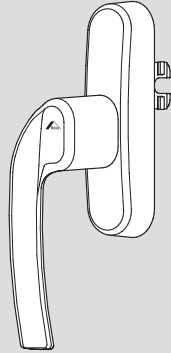


Application

- Projecting
- Outward opening
- Operation from above
- Right-handed operation

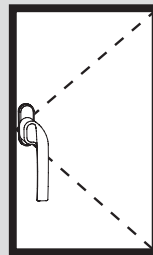


- DIN left-handed Turn-Only sash
- Outward opening
- Operation on the side
- Left-handed operation



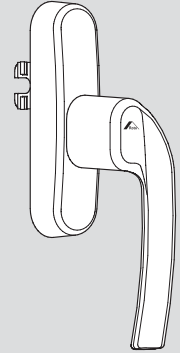
Right hand version

(Geared-handle depicted in the closed position.)



Application

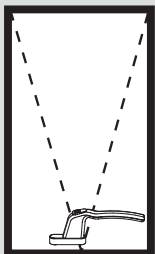
- DIN right-handed Turn-Only sash
- Outward opening
- Operation on the side
- Right-handed operation



Outward opening cranked handle MK2

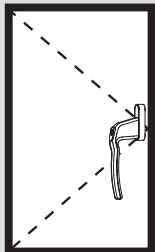
Left hand version

(Geared-handle depicted in the closed position.)

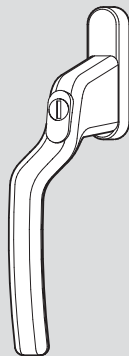


Application

- Projecting
- Outward opening
- Operation from above
- Right-handed operation

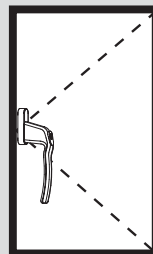


- DIN left-handed Turn-Only sash
- Outward opening
- Operation on the side
- Left-handed operation



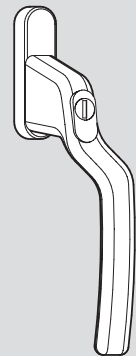
Right hand version

(Geared-handle depicted in the closed position.)



Application

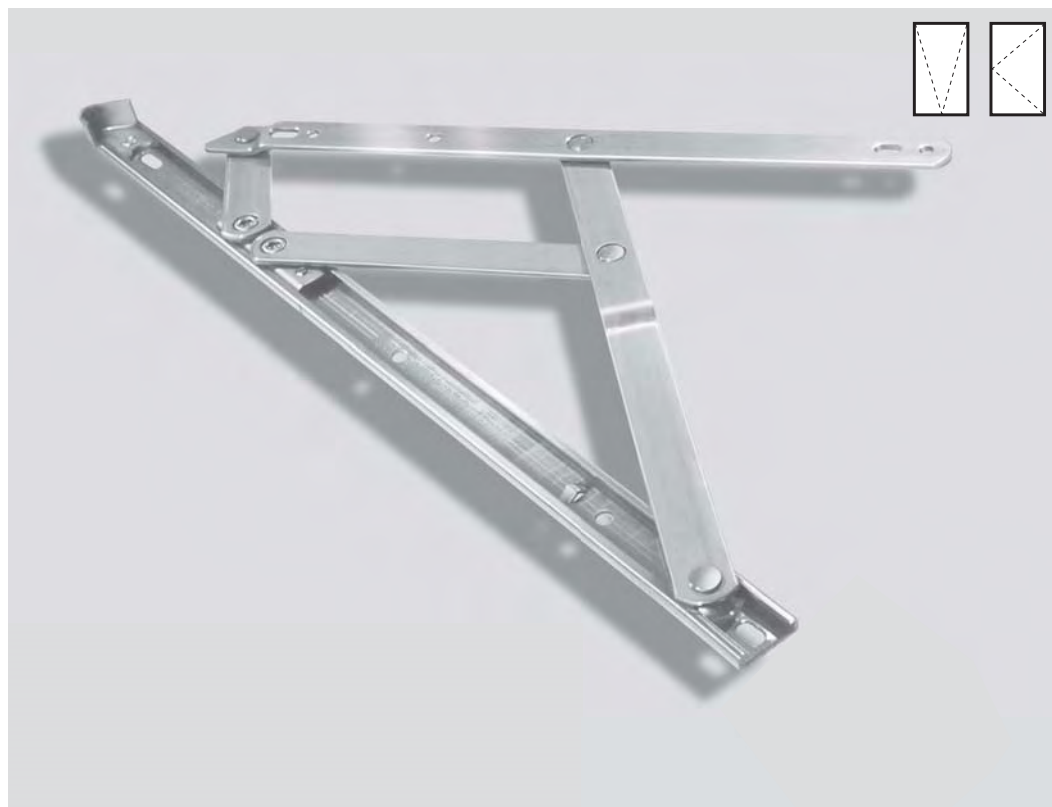
- DIN right-handed Turn-Only sash
- Outward opening
- Operation on the side
- Right-handed operation



Storm friction hinges

Order details

Storm, heavy-duty friction hinges



Part & product specification

The Storm friction hinge range has been designed to exceed the requirements of AAMA 101/I.S. 2-97, specifically gust loading in accordance with AW90 rating. (AAMA = American Architectural Manufacturers Association).

Austenitic (304) Mat. no.	Description	Stack height
477 254	10" Top-Hung friction hinge	16mm
477 274	12" Top-Hung friction hinge	16mm
477 265	16" Top-Hung friction hinge	16mm
477 266	22" Top-Hung friction hinge	16mm
477 267	26" Top-Hung friction hinge	16mm
Non balanced		
485 770	10" Side & Top-Hung friction hinge	16mm
485 771	16" Side & Top-Hung friction hinge	16mm
318 457	22" Top-Hung friction hinge	16mm

- Asymmetric closure design for unrivalled weather sealing
- Suitable for AAMA 101/I.S. tests 2-97 section 4.1 AW90 rating (135 lb/ft² 6.470 Pa)
- Few components (four sizes suit all outward opening windows and projected requirements)
- Easy to fit, with friction adjustment mechanism
- Austenitic (304) stainless steel version
- High load-bearing capacity
- Large Top-Hung sashes need additional, permanent restriction to enable 30° / 45° openings
- Lifespan: 10,000 cycles

Technical details

Sash sizes, weights and operating angles

Friction hinges description	Maximum sash weight	Minimum sash height	Maximum sash height	Maximum sash width	Opening angle (± 2,5°)
10" Top-Hung window	37 kg	267 mm	635 mm	–	50°
12" Top-Hung window	45 kg	636 mm	787 mm	–	50°
16" Top-Hung window	55 kg	788 mm	1090 mm	–	50°
22" Top-Hung window	75 kg	1091 mm	1500 mm	–	45°
26" Top-Hung window	100 kg	1270 mm	2000 mm	–	20°

Non balanced					
10" Top- and Side-Hung window	50 kg	280 mm	762 mm	–	80°
16" Top- and Side-Hung window	63 kg	457 mm	1120 mm	–	90°
22" Top-Hung window	75 kg	610 mm	1321 mm	–	90°

		Minimum sash width			
10" Side-Hung window	38 kg	280 mm	–	660 mm	80°
16" Side-Hung window	47 kg	450 mm	–	838 mm	90°

Positions and clearances

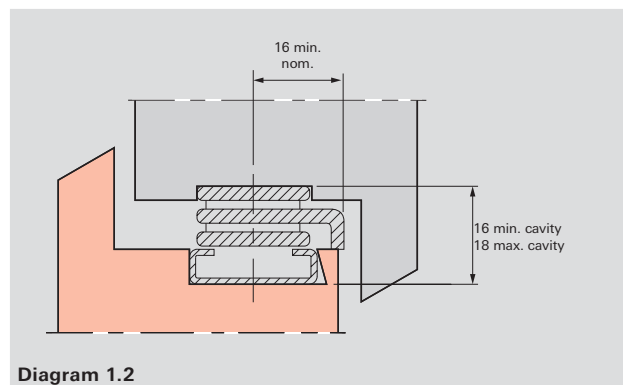
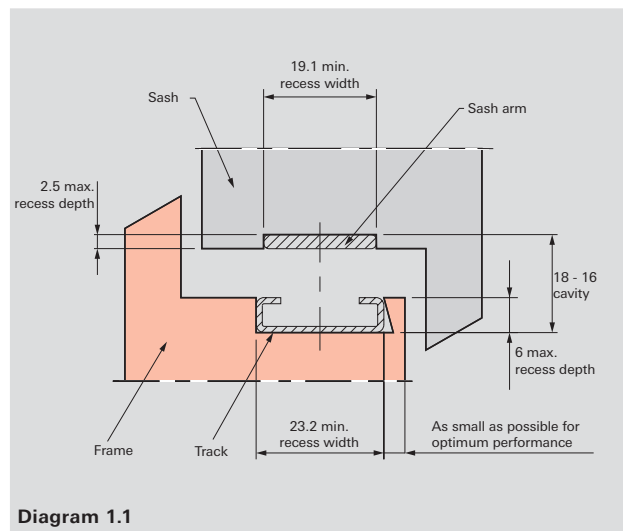
Friction hinges are designed to be fitted between two flat and parallel rigid surfaces that conform to the measurements in diagram 1.1.

The sash and outer frame hinge location recess or upstand for the friction hinges in the sash and frame, if any, must be observed (diagram 1.1).

The end cap of the hinge must be located in the internal corner of the outer frame. All fixing holes and slots must be used to ensure optimum weight transfer and weather sealing.

All dimensions are in millimetres.

Note: additional link form only on the Storm 26" friction hinge (diagram 1.2).



Turn restrictors

Order details

6" and 8" restrictor stays

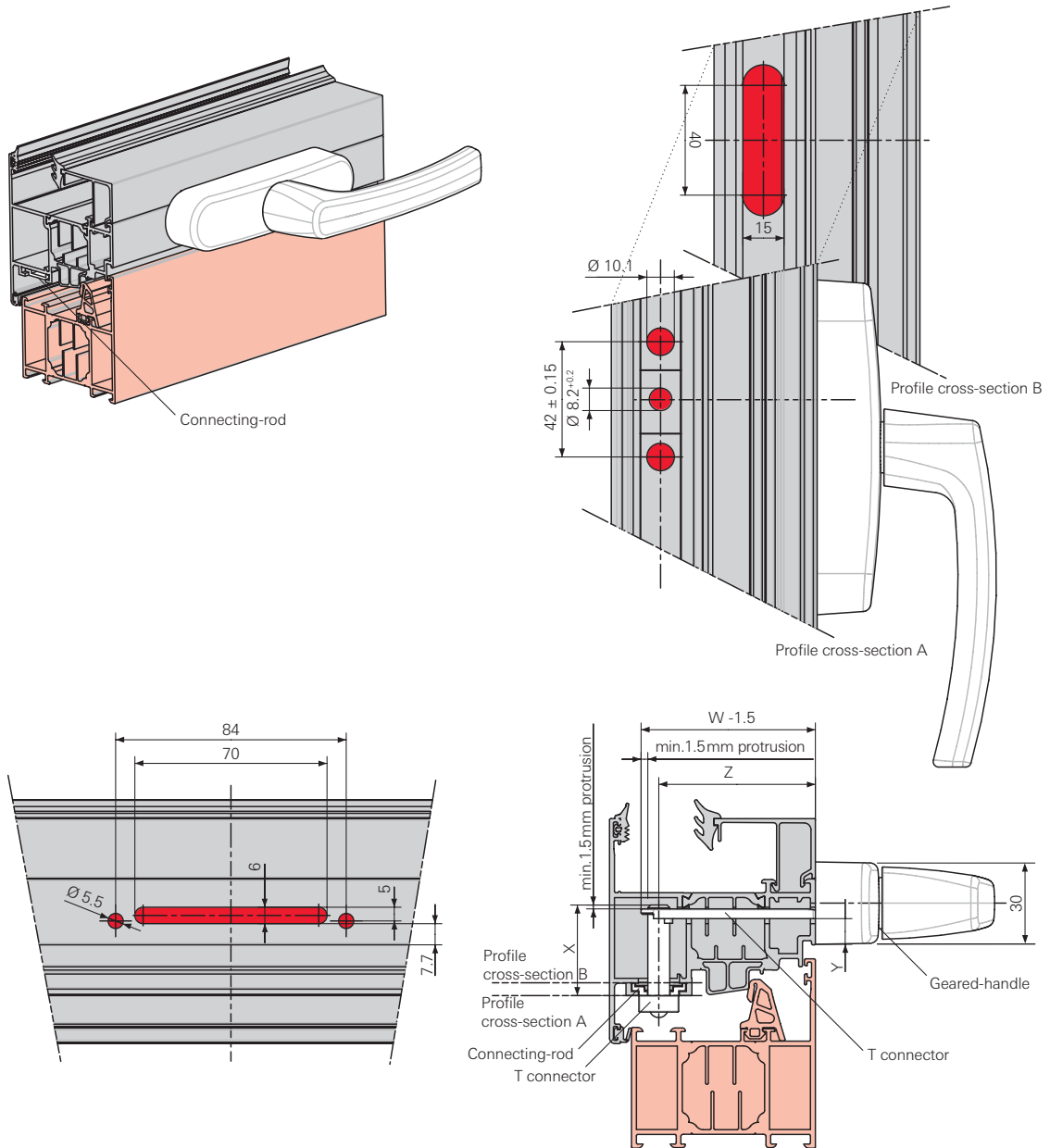


Part & product specification

Ferritic (403) Mat. no.	Description	Stack height
318 474	6" turn restrictor	13 / 18mm
Austenitic (304) Mat. no.	Description	Stack height
318 475	8" turn restrictor	16 / 21mm

- Separate restrictors available in ferritic or austenitic stainless steel, dependant on size
- Easy to fit
- Smooth operation
- Adjustable friction cam / screw in slider

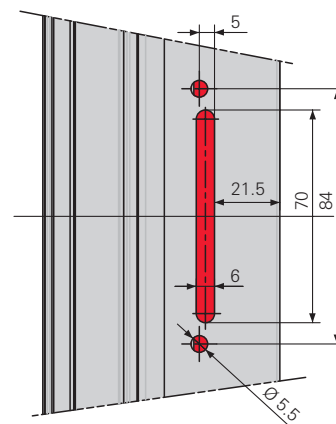
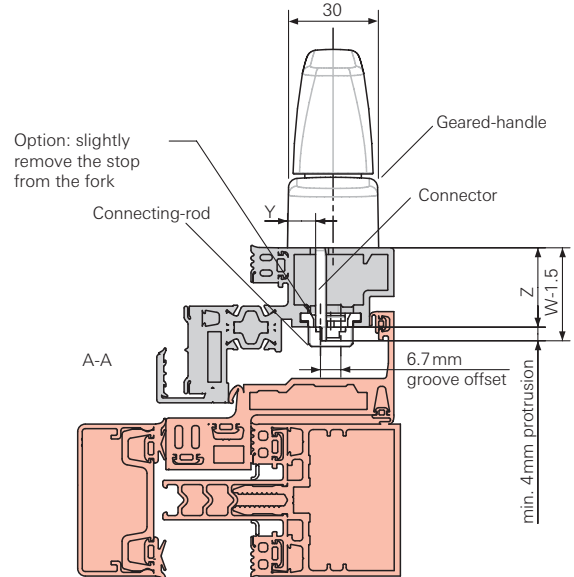
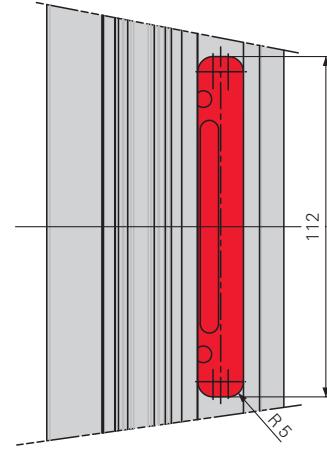
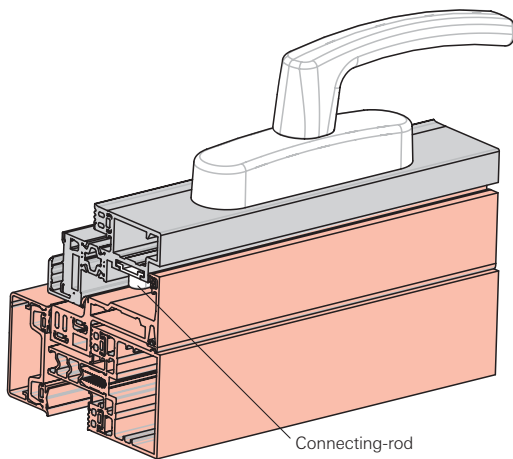
Geared-handles Frontal operation



ALU geared-handle fork		
	Fork length in mm (in sectional view W/Y/Z)	Material number
Fork # 1	19 / 9,5 / 7,5 – 12	430 240
Fork # 2	32 / 9,5 / 20,5 – 25	482 309
Fork # 3	37 / 9,5 / 25,5 – 30	482 310
Fork # 4	37 / 3,5 / 25,5 – 30	482 311
Fork # 5	46 / 9,5 / 34,5 – 39	482 312
Fork # 6	46 / 3,5 / 34,5 – 39	482 313
Fork # 7	50 / 9,5 / 38,5 – 43	482 314
Fork # 8	53 / 9,5 / 41,5 – 46	482 315
Fork # 9	53 / 3,5 / 41,5 – 46	482 316
Fork # 10	55 / 9,5 / 43,5 – 48	482 317
Fork # 11	60 / 9,5 / 48,5 – 53	482 318
Fork # 12	67 / 9,5 / 55,5 – 60	490 611

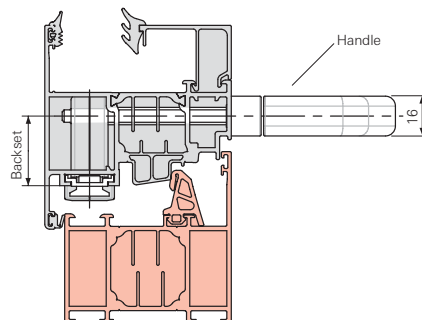
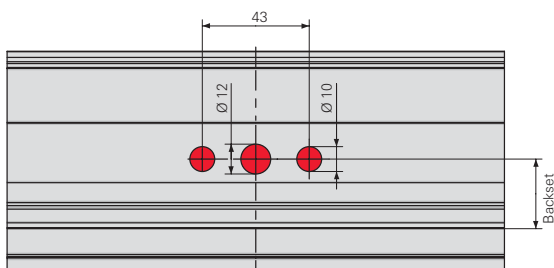
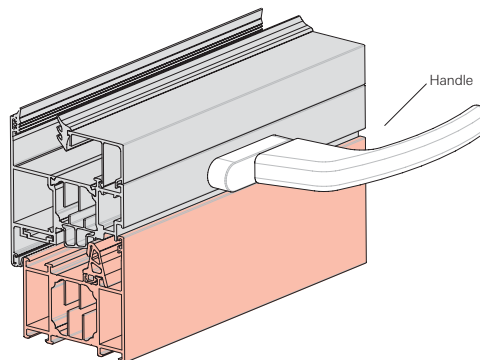
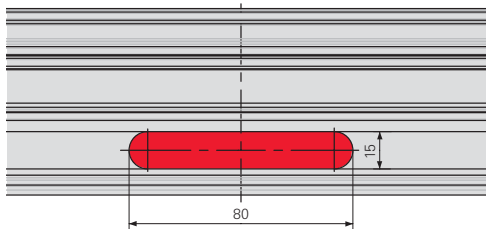
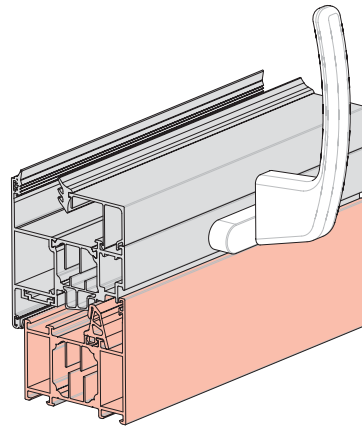
T connector		
	T connector length in mm (in sectional view X)	Material number
T connector 1	25	482 305
T connector 2	32	482 306
T connector 3	37	482 307
T connector 4	47	482 308

Operation from above



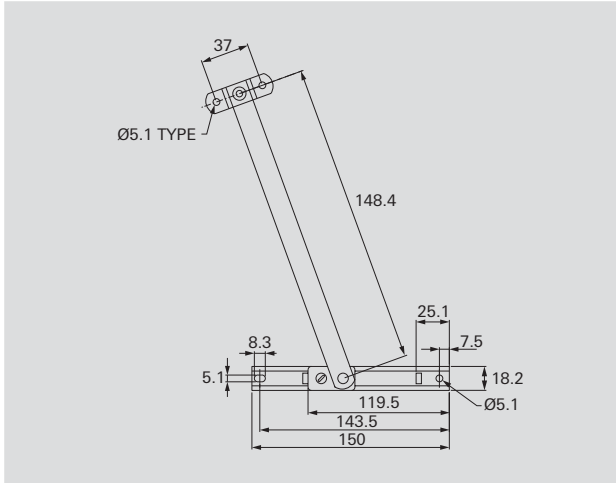
ALU geared-handle fork		
Fork #	Fork length in mm (in sectional view W/Y/Z)	Material number
Fork # 1	19 / 9,5 / 7,5 – 12	430 240
Fork # 2	32 / 9,5 / 20,5 – 25	482 309
Fork # 3	37 / 9,5 / 25,5 – 30	482 310
Fork # 4	37 / 3,5 / 25,5 – 30	482 311
Fork # 5	46 / 9,5 / 34,5 – 39	482 312
Fork # 6	46 / 3,5 / 34,5 – 39	482 313
Fork # 7	50 / 9,5 / 38,5 – 43	482 314
Fork # 8	53 / 9,5 / 41,5 – 46	482 315
Fork # 9	53 / 3,5 / 41,5 – 46	482 316
Fork # 10	55 / 9,5 / 43,5 – 48	482 317
Fork # 11	60 / 9,5 / 48,5 – 53	482 318
Fork # 12	67 / 9,5 / 55,5 – 60	490 611

Standard window handles Frontal operation

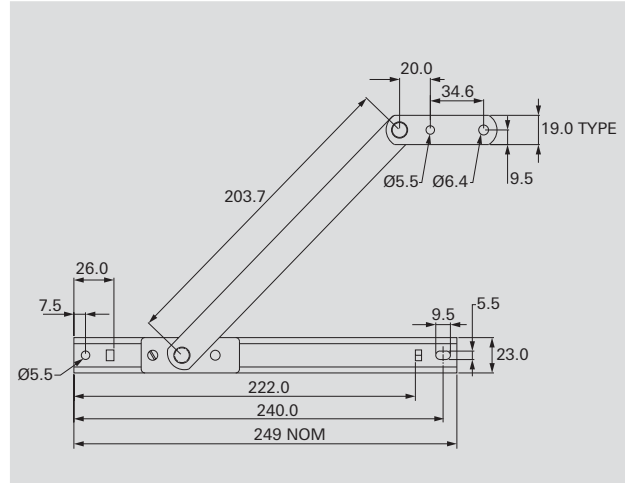


Technical details

6" turn restrictor



8" turn restrictor



Roto AluVision T300

Simply superior – all the Tilt&Turn hardware you need



- | | |
|---|--|
| <ul style="list-style-type: none"> 1 ALU handle 2 Hinge side: Corner hinge/Pivot rest 3 Hinge side: Stay bearing/Stay arm hinge 4 Sash stay | <ul style="list-style-type: none"> 5 Corner drive 6 Tilt lock bolt 7 Anti-jemmy device/Horizontal Tilt&Turn striker |
|---|--|

Just one pre-assembled clamp-strip for all profiles.

For AluVision T300 we have developed a standardised, aesthetically attractive hinge-side for Turn-Only and Tilt&Turn sashes. All components are pre-assembled as standard and can be mounted using just one clamp-strip. This increases installation security and reduces fabrication time. Sash stays and corner hinges, as well as the stay bearings and pivot rests are non-handed. Due to the fact that fewer components are used, AluVision T300 also has less stock holding.

Never was adjustment easier.

Further evidence of the innovative Roto technology is in the new corner drive: The retention is effected without tools by means of an insertable retaining fork. The mishandling-device is already integrated. Furthermore AluVision T300 offers various adjusting possibilities. The lateral adjustment is possible while the sash is still installed and particularly effortless on Turn-Only sashes with the new rebate hinge solution.



Perfect for Turn-Only and Tilt&Turn solutions.

Implement common opening types easily with AluVision T300: Tilt&Turn, Turn-Only and Tilt-Only sashes with sash weights up to 80 kg. Left or right handed sashes. Jigs are reduced to a minimum. The variable clip-fit system enables its secure use in all conventional profiles with frame grooves from 10 to 14 mm. Tried and tested: 2 locking systems to choose from; in line with the Roto modular design principle.

Subject to change.

An overview of the advantages:

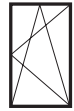
- Use of jigs kept to a minimum
- One clamp-strip for pre-assembled hinge components
- Can be used in all frame grooves from 10 to 14 mm
- Multiple adjusting capabilities
- Straightforward corner drive retention
- Highest flexibility with the 6 mm or 10 mm locking system
- Aesthetically pleasing hinges



New rebate hinge solution

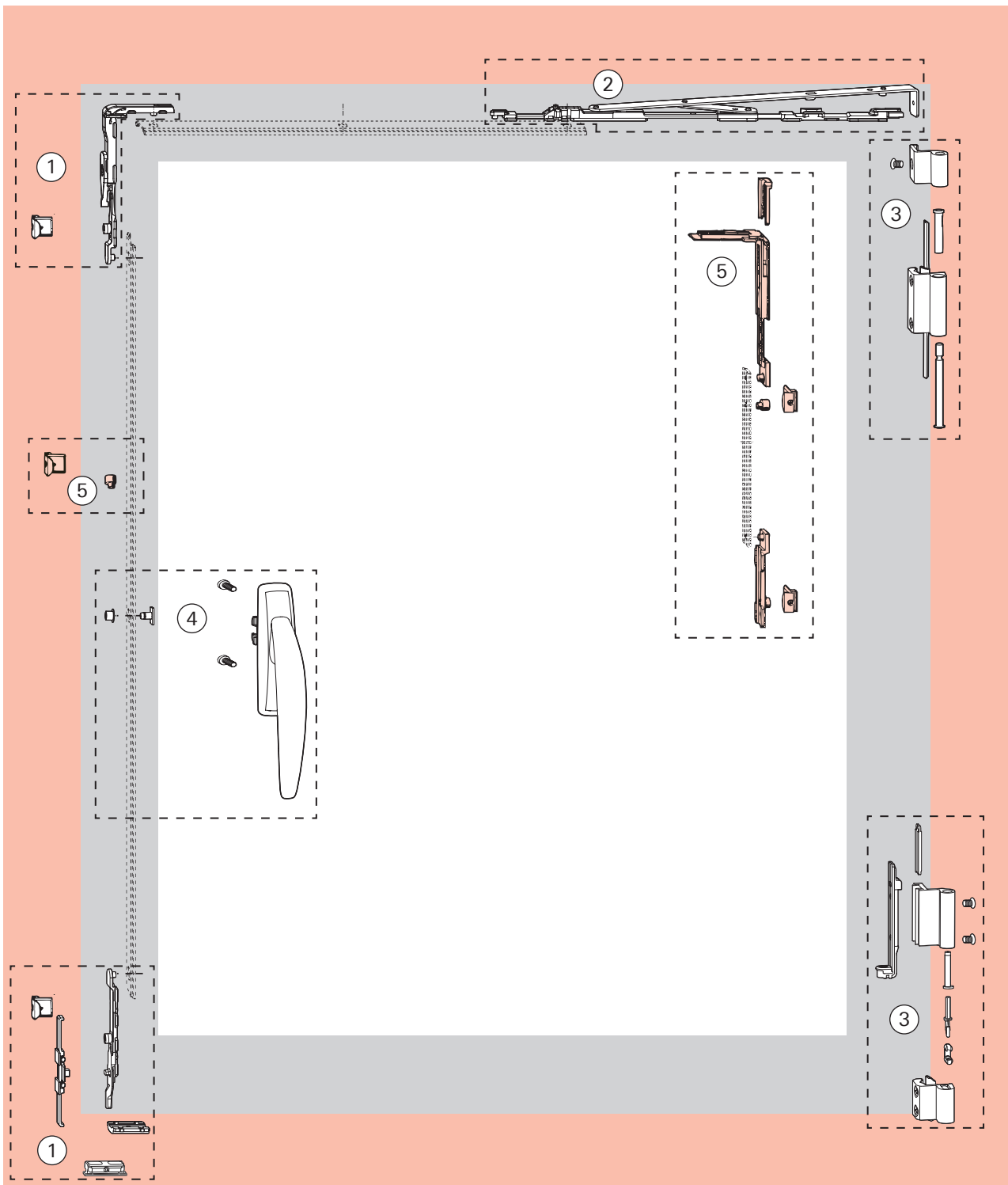
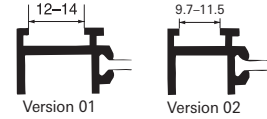
Tilt&Turn hardware, frame groove V.01 / V.02

9.5 mm axis dimension, max. 80 kg sash weight



Tilt&Turn – T&T

Concealed single-handed operation Tilt&Turn hardware, with access-prevention and mishandling-device for profile systems with 3 to 5 mm hinge passage and frame-groove version V.01 resp. V.02. Sash stay adjustable from the front, bearings to be clamped with clamping support-strips, max. sash weight 80 kg. Locking system with 6 mm connecting-rod hole.



Basic sets

'10' basic sets with locking components and sash stays

Set	Pcs.	Component description	Colour	Mat. no.	Pack. unit
1	1	Locking parts V.01	–	486 493	10
		Locking parts V.02	–	486 494	10
2	1	Sash stay 700	–	486 457	10
		Sash stay 390	–	486 458	10

T&T hinge-side set (9.5 mm axis dimension)

Set	Pcs.	Component description	Colour	Mat. no.	Pack. unit
3	1		R01.5	488 297	10
			R06.2	488 298	10
			R07.2	488 299	10
			SPCOL	488 301	10

Unpainted T&T hinge-side set (9.5 mm axis dimension)

Set	Pcs.	Component description	Colour	Mat. no.	Pack. unit
3	1	Hinge-side set incl. small components	UNP	488 300	50

Handles and connectors

Set	Pcs.	Component description	Colour	Mat. no.	Pack. unit
4	1	Connector set	–	490 535	10
		T300 handle	R01.5	486 161	10
			RAL 9005	486 162	10
			RAL 9016	486 163	10
			UNP	486 165	50
			SPCOL	486 164	10

Size-related additional components

Set	Pcs.	Component description	Colour	Mat. no.	Pack. unit
5	1-2	Corner drive CL-set V.01	–	378 071	20
		Corner drive CL-set V.02	–	378 072	20
	1-2	Connector 67	–	490 134	100
	2-6	Striker V.01	–	212 633	100
		Striker V.02	–	490 183	100
	2	CL cam	–	212 767	100

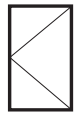
SW SH	390 – 700 mm	701 – 1300 mm
	580 – 1200 mm	
1201 – 1800 mm		
1801 – 2400 mm		

Example: T300-6 in white (RAL 9016)						
SW SH	390 – 700 mm			701 – 1300 mm		
	580 – 1200 mm	Pcs.	Description	Mat. no.	Pcs.	Description
1		Locking parts V.01	486 493	1	Locking parts V.01	486 493
1		Sash stay 390	486 458	1	Sash stay 700	486 457
1		T&T hinge side set	488 299	1	T&T hinge side set	488 299
1		Connector set	490 535	1	Connector set	490 535
	1	T300 handle	486 163	1	T300 handle	486 163
1201 – 1800 mm				Pcs.	Description	Mat. no.
				1	Corner drive CL-set V.01	378 071
				1	Striker V.01	212 633
				1	CL cam	212 767
1801 – 2400 mm				Pcs.	Description	Mat. no.
				2	CL cam	212 767
	2	Striker V.01	212 633			

Red areas: these components are not included in the basic set.

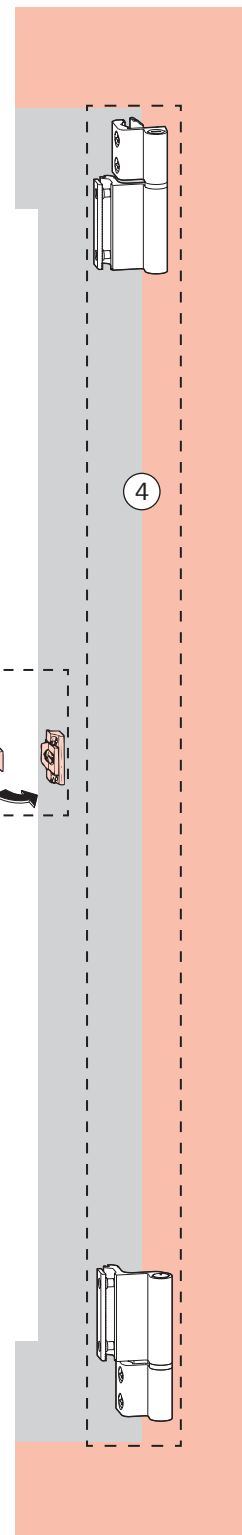
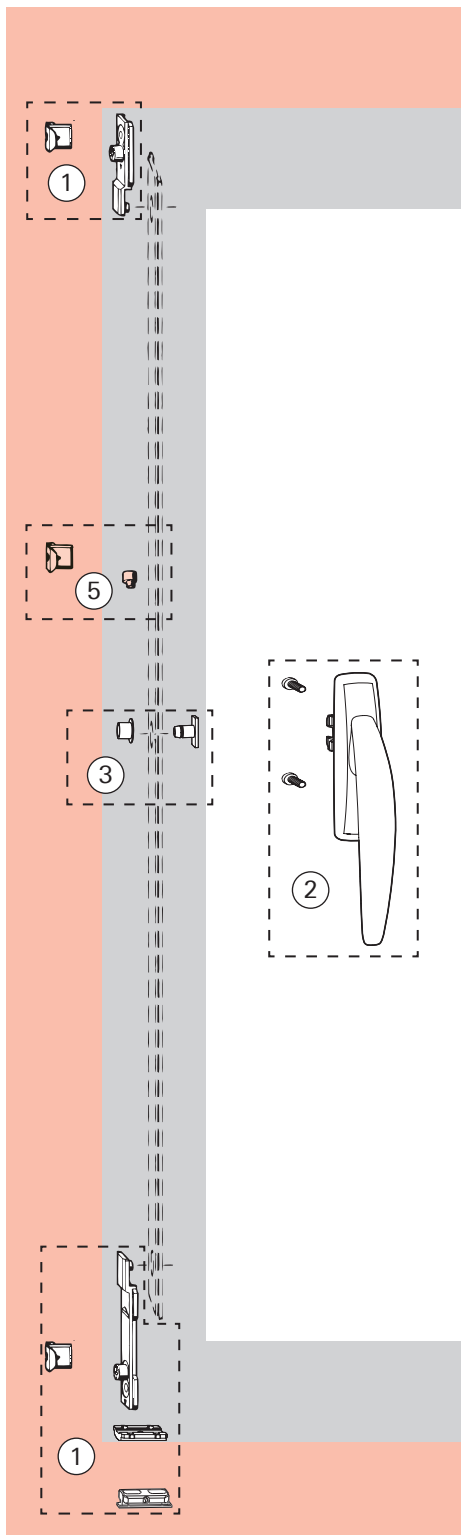
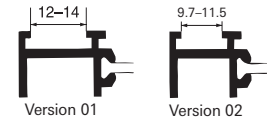
Turn-Only hardware, frame groove V.01 /V.02

Sash weight max. 50 kg



Turn-Only sashes – TU.-ON. Turn-Only sashes with central locking system – TU.-ON. CLS

Concealed Turn-Only hardware for profile systems with 3 to 5 mm hinge passage and frame-groove version V.01 resp. V.02. Sash weight max. 50 kg. Locking system with 6 mm connecting-rod hole.



Basic sets

TU.-ON.

'10' basic sets (without hinge-side)

Set	Frame-groove version	Colour	Mat. no.
1	Locking parts V.01	–	486 528
	Locking parts V.02	–	486 529

Handles and connectors

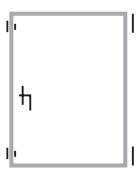
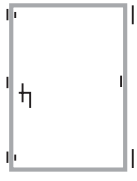
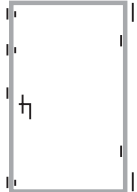
Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
2	1	T300 handle	R01.5	486 161	10
			R06.2	486 162	10
			R07.2	486 163	10
			UNP	486 165	50
		SPCOL	486 164	10	
3	1	Connector set	–	490 535	10

TU.-ON. hinge-side (L/R preassembled)

Set	Pcs.	Description	Colour	Mat. no.	Pack.unit
4	1	Turn-Only hinge side (2 hinges)	R01.5	486 480	10
			R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
		SPCOL	486 484	25	

Height-related additional components

Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
5	1-2	MVR concealed striker closer V.01		212 768	100
		MVR concealed striker closer V.02		208 361	100
	1-2	MVT concealed striker-closer		212 770	100
	3	Striker V.01	–	212 633	100
		Striker V.02	–	490 183	100
	1	CL cam	–	212 767	100

SW SH	370 – 1300 mm
500 – 1200 mm	
1201 – 1800 mm	
1801 – 2250 mm	

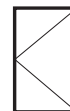
SW SH	370 – 1300 mm
Example: T 300-6 in white (RAL 9016)	
500 – 1200 mm	Pcs. Description Mat. no.
	1 Locking parts V.01 486 528
	1 Turn-Only hinge 486 482
	1 Connector set 490 535
	1 T300 handle 486 163
1201 – 1800 mm	Pcs. Description Mat. no.
	1 Concealed striker closer V.01 212 768
	1 MVT concealed striker-closer 212 770
	1 Striker V.01 212 633
	1 CL cam 212 767
1801 – 2250 mm	Pcs. Description Mat. no.
	1 CL cam 212 767
	1 MVR concealed striker closer V.01 212 768
	1 MVT concealed striker-closer 212 770
	1 Striker V.01 212 633

Red areas: these components are not included in the basic set.

Note: The stated dimensions are intended as suggestions for the application of the central locking system. The actual application depends on the profile and specific application.

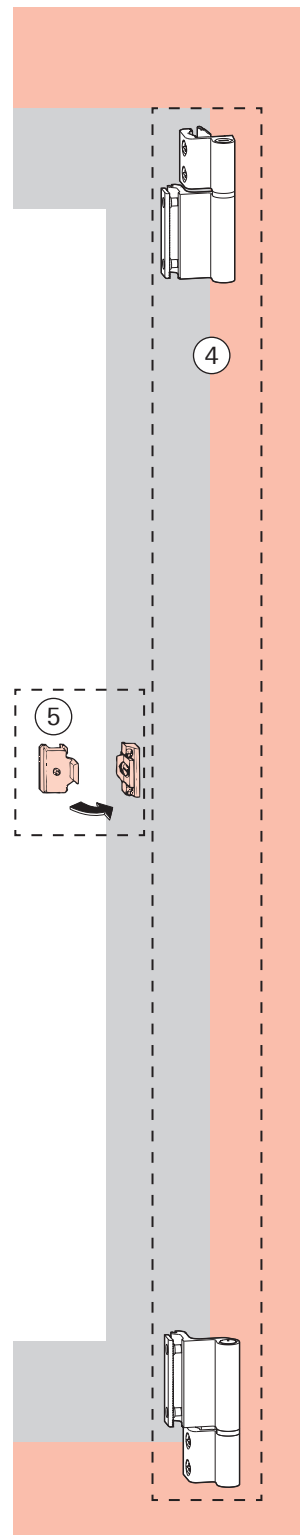
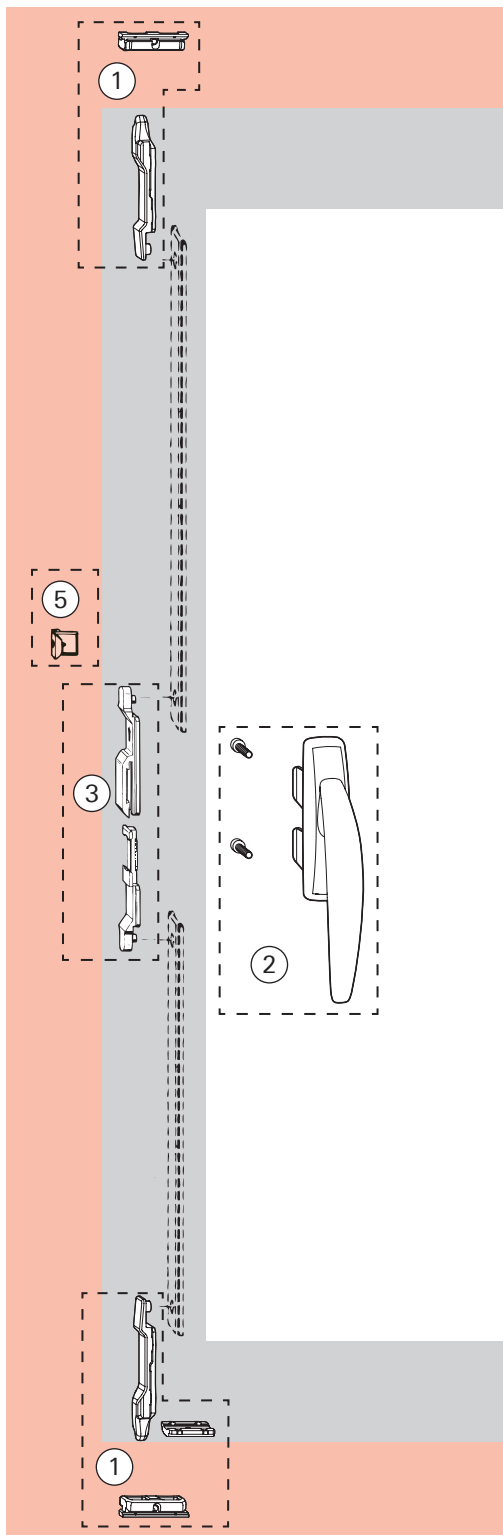
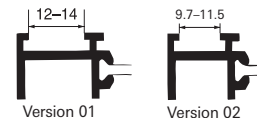
Turn-Only hardware, frame groove V.01 / V.02

Sash weight max. 50 kg



Turn-Only sash with reverse-action handle – TU-ON.-R-A.

Concealed Turn-Only hardware with reverse-action handle for profile systems with minimum 3 to 5 mm hinge passage and frame-groove version V.01 resp. V.02. Sash weight max. 50 kg. Locking system with 6 mm connecting-rod hole.



Basic set

TU-ON.-R-A. for T300 reverse action handles '10' basic sets (without hinge-side)					
Set		with shootbolt-rod VS / multi-ported striker VB		Mat. no.	
1	VS – VB			486 532	
Reverse-action handles and connectors					
Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
2	1	T300 Reverse-action handle	R01.5	486 277	10
			R06.2	490 162	10
			R07.2	490 163	10
			UNP	490 164	50
		SP:COL	490 235	10	
3	1	Reverse-action connector set		486 272	10
TU.-ON. hinge-side (L/R preassembled)					
Set	Pcs.	Description	Colour	Mat. no.	Pack.unit
4	1	Turn-Only hinge side (2 hinges)	R01.5	486 480	10
			R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
			SP:COL	486 484	25

Height-related additional components

Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
5	1-2	MVR concealed striker closerV.01		212 768	100
		MVR concealed striker closerV.02		208 361	100
	1-2	MVT concealed striker-closer		212 770	100
	1-2	Striker V.01	–	212 633	100
		Striker V.02	–	490 183	100

Alternative Turn-Only hinges

Turn-Only hinges (not depicted)					
Set	Pcs.	Description	Colour	Mat. no.	Pack.unit
4a	1	Turn-Only hinge EU left	R01.5	456 858	50
			R06.2	456 854	50
			R07.2	456 856	50
1	1	Turn-Only hinge EU right	R01.5	456 859	50
			R06.2	456 855	50
			R07.2	456 857	50

Red areas: these components are not included in the basic set.

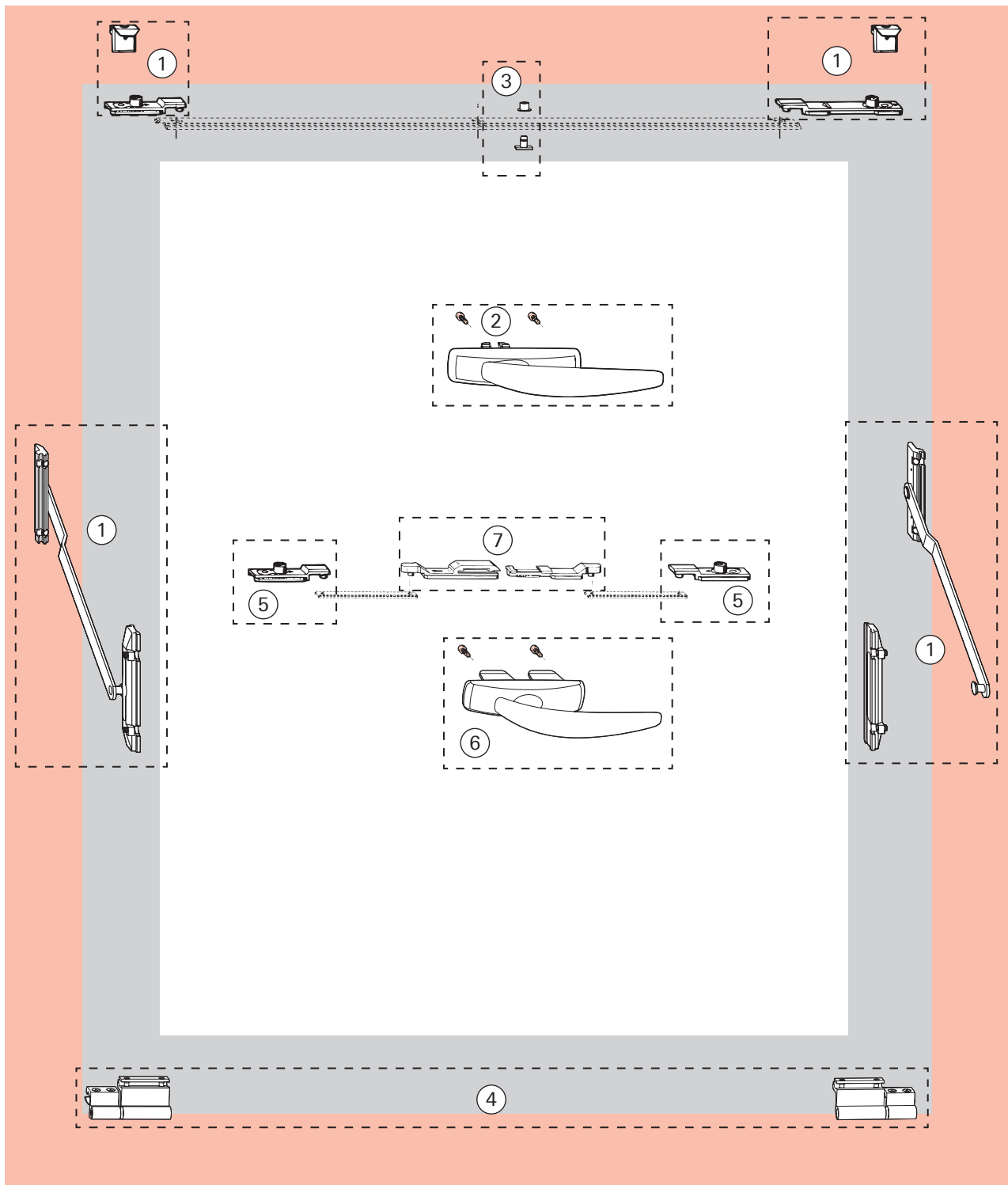
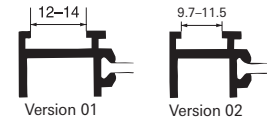
Tilt-Only hardware, frame groove V.01 / V.02

Sash weight max. 70 kg



Tilt-Only sash with geared-handle – TI.ON. / with reverse-action handle – TI.ON.-R-A.

Concealed Tilt-Only hardware for profile systems with minimum 3 to 5 mm hinge passage and frame-groove version V.01 resp. V.02. Locking sides TI.ON. and TI.ON.-R-A. can be combined with the T300 hinge-sides. Maximum sash weight 70 kg. Locking system with 6 mm connecting-rod hole.



Basic sets

TI.-ON.

'10' basic sets (without hinge-side)

Set	Frame-groove version	Colour	Mat. no.
1	V.01	–	490 538
	V.02	–	490 539

Handles and connectors

Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
2	1	T300 handle	R01.5	486 161	10
			R06.2	486 162	10
			R07.2	486 163	10
			UNP	486 165	50
			SPCOL	486 164	10
3	1	Connector set	–	490 535	10

TU.-ON. hinge-side (L/R preassembled)

Set	Pcs.	Description	Colour	Mat. no.	Pack.unit
4	1	Turn-Only hinge	R01.5	486 480	10
		(2 hinges)	R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
			SPCOL	486 484	25

TI.-ON.-R.-A. for T300 reverse action handles

'10' basic sets (without hinge-side)

Set	Frame-groove version	Colour	Mat. no.
5	V.01	–	490 543
	V.02	–	490 544

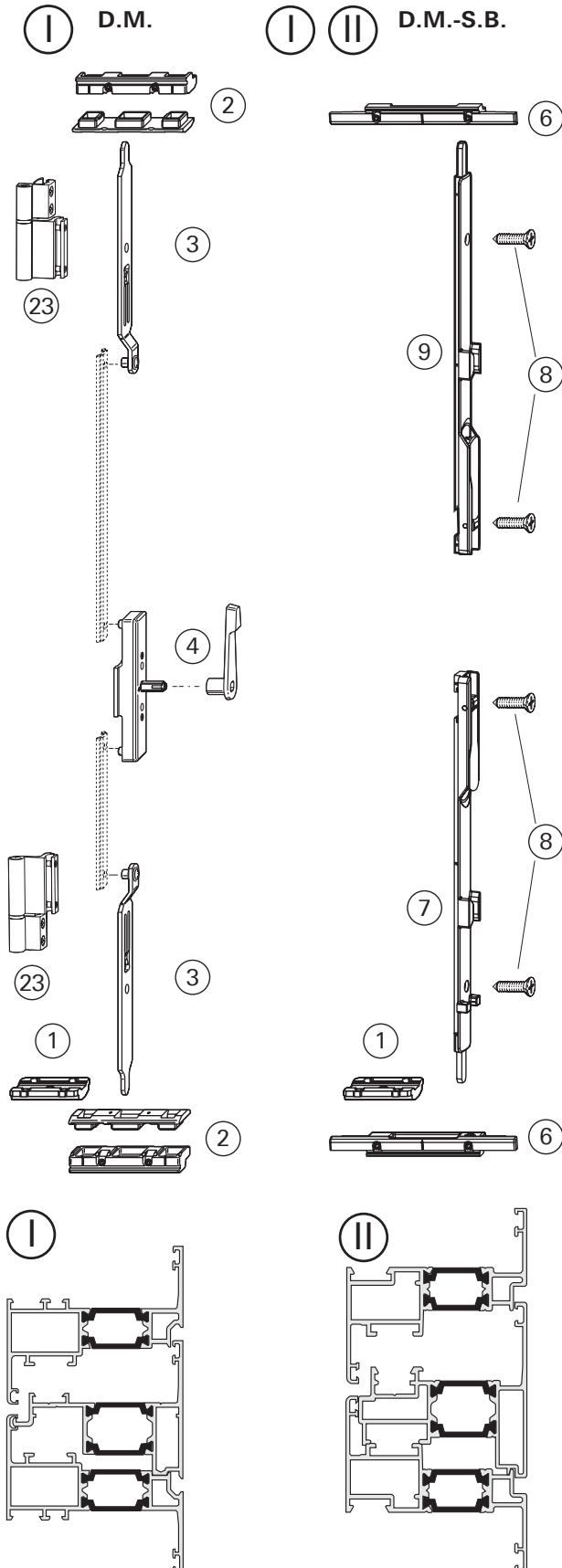
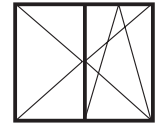
Handles and connectors

Set	Pcs.	Component description	Colour	Mat. no.	Pack.unit
6	1	T300 Reverse-action handle	R01.5	486 277	10
			R06.2	490 162	10
			R07.2	490 163	10
			UNP	490 164	10
			SPCOL	490 235	10
7	1	Reverse-action connector set		486 272	10

TU.-ON. hinge-side (L/R preassembled)

Set	Pcs.	Description	Colour	Mat. no.	Pack.unit
4	1	Turn-Only hinge	R01.5	486 480	10
		(2 hinges)	R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
			SPCOL	486 484	25

Lever Operated Espagnolette Concealed (D.M.), Finger Shootbolt (D.M.-S.B.)



Hardware overview D.M./D.M.-S.B.

Concealed dummy-mullion hardware (sash with floating mullion) in the versions D.M. (concealed lever-operated espagnolette for dummy mullion), D.M.-S.B. (dummy mullion – shootbolt) and D.M.-SL. (dummy mullion – slider). Compatible with T&T / TU.-ON. / TU.-ON.-R-A. hardware and the hinge sides TU.-ON. and TU.-ON.-V. D.M.-S.M./D.M.-SL. only compatible with floating mullion profiles with double-C-groove.

D.M. basic set

Concealed lever-operated espagnolette (D.M.)

'10' basic set

Description	Mat. no.
D.M. basic set VS.1/VB.5/6	212 200

TU.-ON. hinge-side (L/R preassembled)

Pos.	Pcs.	Description	Colour	Mat. no.	Pack. unit
23	1	Turn-Only hinge	R01.5	486 480	10
		(2 hinges)	R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
			SPCOL	486 484	25

D.M.-S.B. basic set

Finger shootbolt (D.M.-S.B.)

'10' basic set

Description	Mat. no.
D.M.-S.B.-basic set	301 544

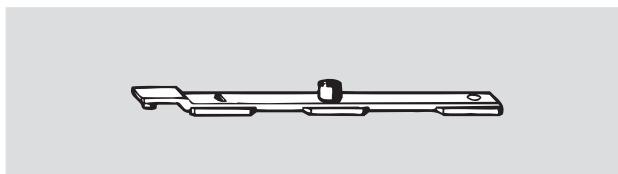
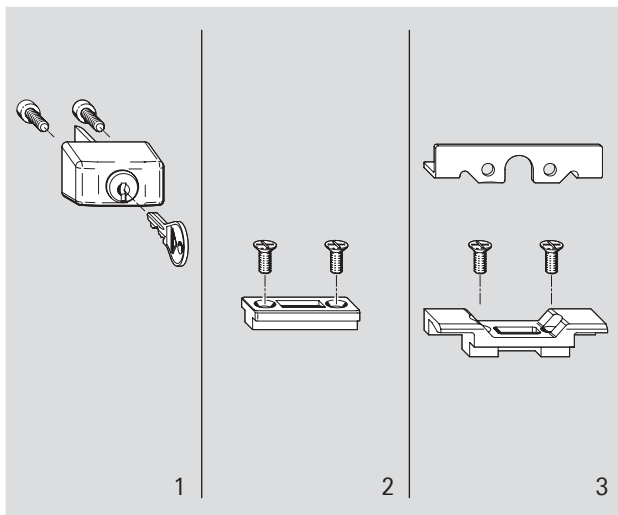
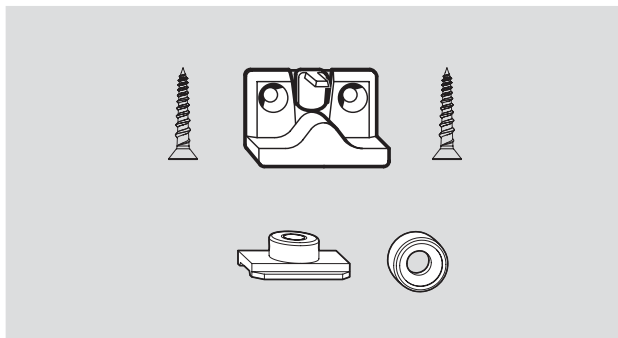
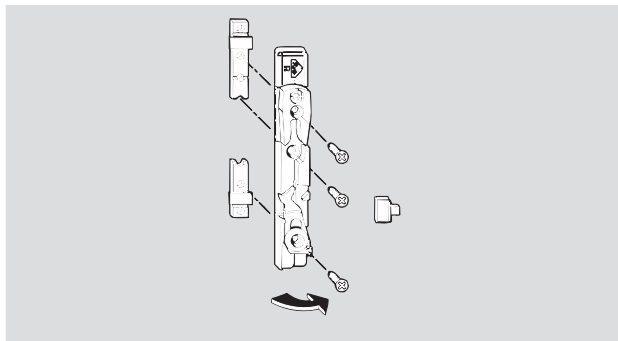
TU.-ON. hinge-side (L/R preassembled)

Pos.	Pcs.	Description	Colour	Mat. no.	Pack. unit
23	1	Turn-Only hinge	R01.5	486 480	10
		(2 hinges)	R06.2	486 481	10
			R07.2	486 482	10
			UNP	486 483	25
			SPCOL	486 484	25

Accessories

Night-vent & child safety lock

Component illustrations



Parts lists

Night-vent with packer

Locking cam & 3 pcs. 3.9x22 mm countersunk tapping-screws

Component description		Mat. no.	Pack. unit
Night-vent set	DIN left-hand	212 782	10
	DIN right-hand	208 290	10

The Roto night-vent improves the benefits of T&T windows by enabling draught-free continuous ventilation.

Night-vent

Component description		Mat. no.	Pack. unit
Night-vent set	Alu T300-10	334 666	10
	Alu T300-6 (not depicted)	281 659	10

By turning the window handle 45° downwards (on Tilt&Turn from the tilting position) or 45° upwards (on Turn-Only from the turning position), the sash is retracted 7mm away from the frame.

Child safety lock with cylinder locking

Pos.	Component description	Colour	Mat. no.	Pack. unit
1	Child safety lock with cylinder locking	R01.1	212 774	20
		R01.5	377 996	20
	1 key	R05.4	212 775	20
	2 flat-headed screws	R07.1	212 776	20
R07.2		208 645	20	
SPCOL		212 777	20	
2	Locking plate		212 778	10
	with 2 pcs. M5x16mm countersunk screws			
	Key		208 248	10

Additional parts bag for anti-jemmy version (instead of 212778)

3	Locking block, locking plate		213 076	10
	with 2 pcs. M5x16mm countersunk screws			

When the child safety lock is locked, the sash can only be tilted. The turn-modus is blocked.

	Packer 1 mm		208 230	10
	for 22 mm chamber dimension (not depicted)			

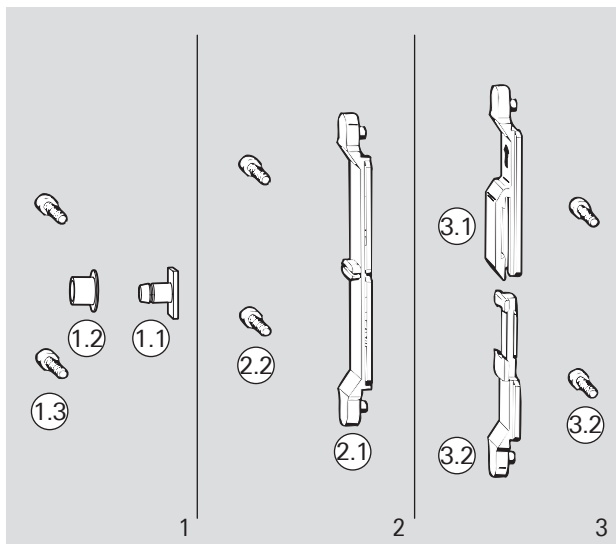
T300-6 central locking system connector

Component description		Mat. no.	Pack. unit
CL cam		212 140	100

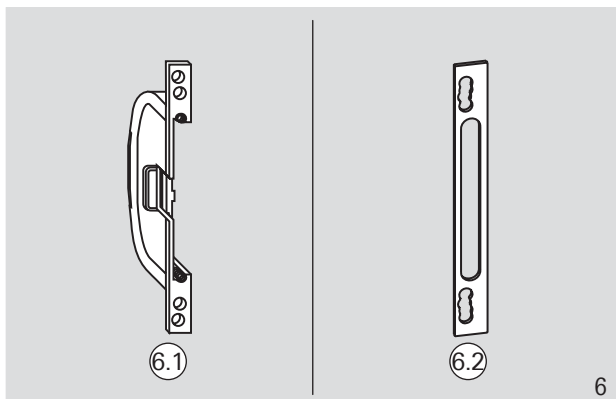
Accessories

Connector sets and accessories

Alu T300-6 illustrations



Accessory illustrations



Parts lists

Connector set Alu T300-6 for geared-handles (ill. 1)

Pos.	Pcs.	Component description	Mat. no.	Pack. unit
1	1	Connector set	490 535	10

Individual components: insertable connector and 2 screws

1.1	1	Insertable connector	451 180	100
1.2	1	Bush	451 179	100
1.3	2	Flat-headed screw M5x12	212 500	100

Connector set Alu T300-6 for geared-handles (ill. 2)

Pos.	Pcs.	Component description	Mat. no.	Pack. unit
2	1	T-connector set	490 536	10

Individual components: T-connector and 2 screws

2.1	1	T-connector	490 195	100
2.2	2	Flat-headed screw M5x12	212 500	100

Connector set Alu T300-6 for reverse-action handles (ill. 3)

Pos.	Pcs.	Description	Mat. no.	Pack. unit
3	1	Reverse-action handle connector-set	486 272	10

Individual components: 2 connectors and 2 screws

3.1	1	Top connector	212 000	100
3.2	1	Bottom connector	212 001	100
3.3	2	Flat-headed screw M5x12	212 500	100

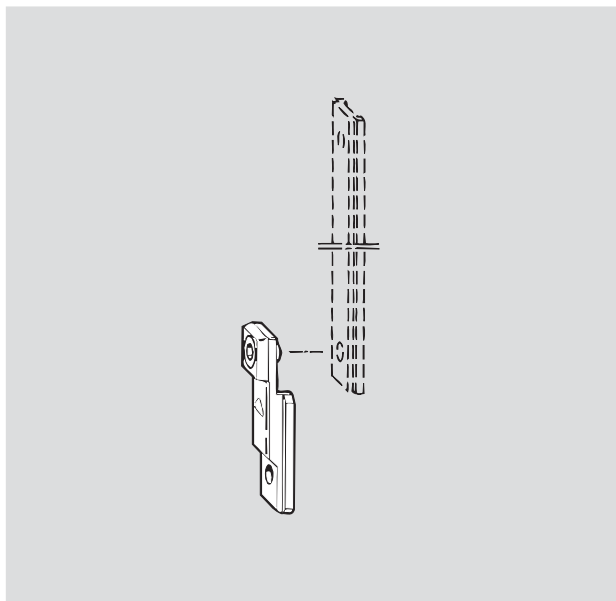
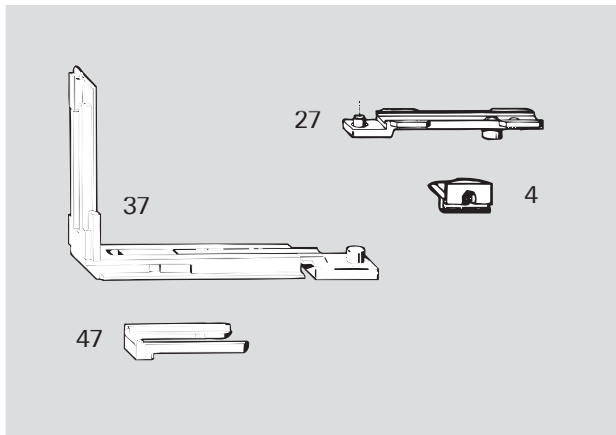
Accessories bulk packaging (ill. 6)

Pos.	Pcs.	Component description	Size	Mat. no.	Pack. unit
6.1	1	Mishandling device with frame strikerplate	26	213 806	100
w/o. S			32	213 807	100
w/o. S	2	Flat-headed screw M5x16		212 678	100
6.2	2	Geared-handle support		331 937	100

Accessories

CL corner drive & coupler component

Component illustrations



Parts lists

Corner drive CL-set Alu T300-6

Component description		Mat. no.	Pack.unit
CL corner drive set	V.01	378 071	20
CL corner drive set	V.02	378 072	20

consists of:

Pos.	Pcs.	Component description	Mat. no.	Pack.unit
37	1	CL corner drive	378 133	100
47	1	Alignment fork	212 636	100
27	1	CL connector 67	212 005	100
4	1	Striker V.01	212 633	100
		Striker V.02	490 183	100

Alu T 300-6 coupler component, to be installed if:

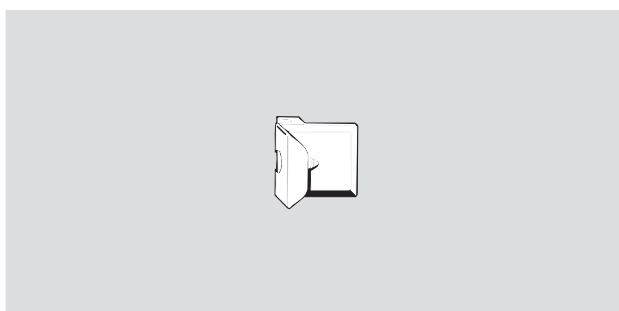
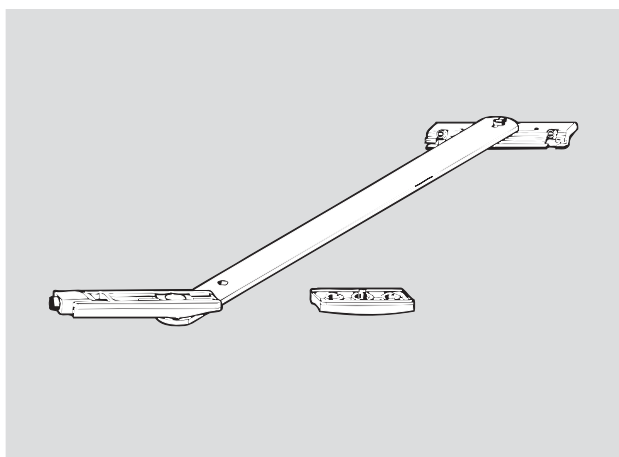
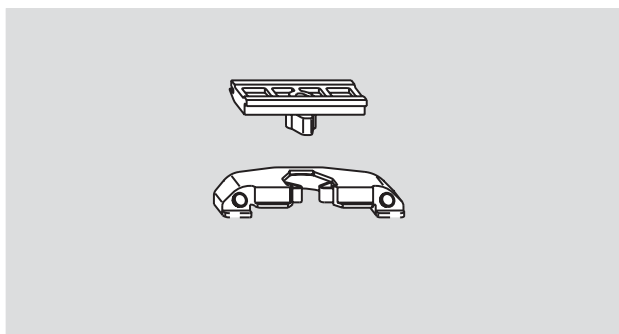
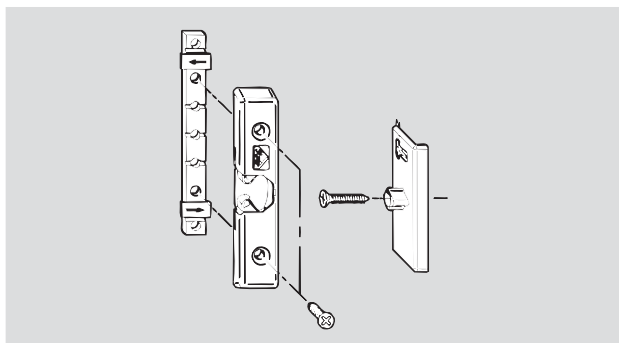
bottom horizontal CL corner drive **and**
continuous connecting-rod is used.

Component description		Mat. no.	Pack.unit
CL coupler component		212 139	100

Accessories

Bullet catch, turn-restrictor & 8mm striker

Component illustrations



Parts lists

Bullet catch with housing, cam, packer and
3 pcs. 3.9x25mm countersunk tapping-screws

Component description	Mat. no.	Pack.unit
Bullet catch set	208 249	20

The bullet catch holds the active sash (window/door) in the closed position, without locking it.

Bullet catch

Component description	Mat. no.	Pack.unit
Bullet catch set	334 667	10

To be used horizontally on the bottom.

Turn-restrictor with brake & stop

(2 countersunk screws M5x12mm only V.00)

Component description		Mat. no.	Pack.unit	
Turn-restrictor	Clampable	V.01	212 151	10
		V.02	212 152	10
	Surface-mounted	V.00	212 150	10

In the turn-modus, the opening angle of the window sash is limited by the turn-restrictor.

Application is recommended,

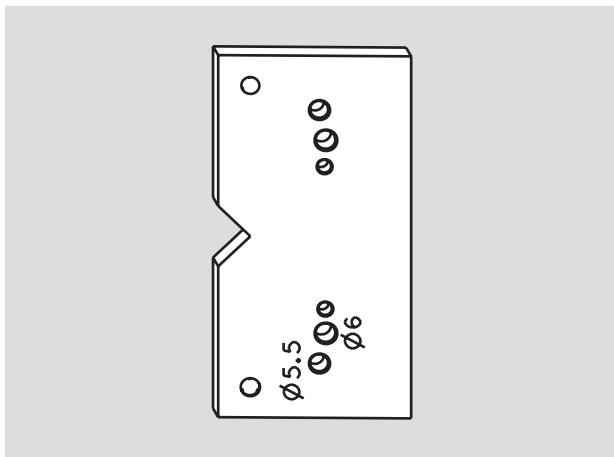
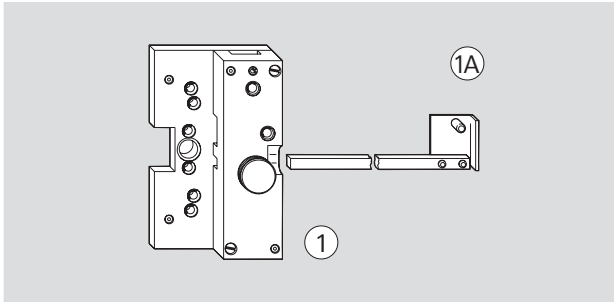
if the sash is pressed adversatively or uncontrolled (i.e. by wind) up against window reveals or aluminium support profiles in such a way that the hardware and/or profiles can be damaged or destroyed. The brake must be adjusted after installation.

Striker V.01 with only 8mm overall height,
to be used on disadvantageous sash turning curves.

Component description		Mat. no.	Pack.unit
Striker	V.01/8mm	212 760	100
Striker	V.02/8mm	351 123	100

Jigs

Component illustrations



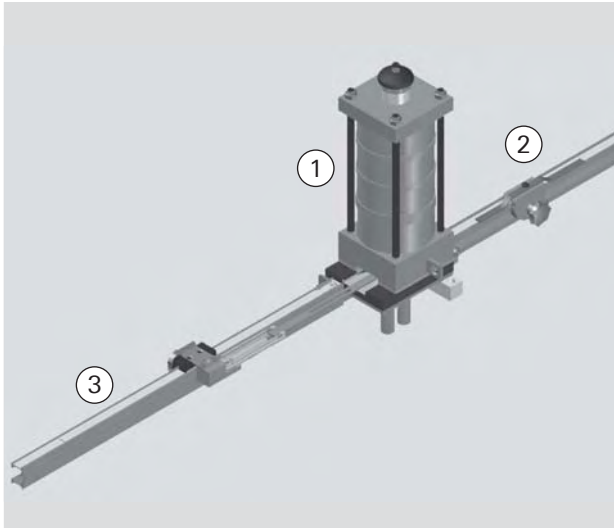
Parts lists

Jigs			
Pos.	Component description	Mat. no.	Pack. unit
1	Jig for handle, connecting-rod & child safety lock	212 544	1
1A	Jig for \varnothing 6mm connecting-rod	212 573	1

Jig		
Component description	Mat. no.	-20
Jig for geared-handles	333 473	1

Croppers

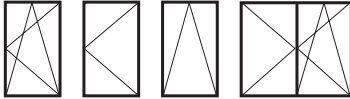
Component illustrations



Parts lists

Croppers		
Component description	Mat. no.	Pack. unit
'Comfort' cropper PS4 G Ø10mm	350 309	1
'Comfort' cropper PS4 G Ø6mm	350 310	1
Standard linear ruler	350 314	1
Linear ruler for sash stay 370/390	383 867	1
Pneumatic cropper for cropping and hole-stamping the connecting-rods.		

General advice



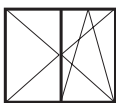
Terms / Application range

S.O.	■ Overlap	21.5mm	–	22mm
CL	■ Clearance	11.5mm	–	12mm
	■ Hardware axis	9.5mm	–	10mm



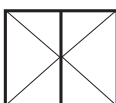
Terms / Application range

SW	■ Sash-width T&T	390mm	–	1600mm
SW	■ Sash-width TU.-ON.	370mm	–	1400mm
SW	■ Sash-width TI.-ON.	500mm	–	1600mm
SH	■ Sash-height T&T	580mm	–	2400mm
SH	■ Sash-height TU.-ON.	500mm	–	2250mm
SH	■ Sash-height TI.-ON.	370mm	–	1300mm
SW_{max.}	■ max. T&T sash-weight			80kg
SW_{max.}	■ max. TU.-ON. sash-weight			50 / 80kg
SW_{max.}	■ max. TI.-ON. sash-weight			70kg



Terms / Application range

SW	■ Sash-width TU.-ON.	370mm	–	1400mm
SW	■ Sash-width T&T	390mm	–	1600mm
SH	■ Sash height	580mm	–	2400mm



Terms / Application range

SW	■ Sash-width TU.-ON.	370mm	–	1400mm
SH	■ Sash height	500mm	–	2400mm

Hardware functional safety

In order to warrant continuous hardware functional safety, the following is to be adhered:

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

Product liability regulations

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

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

Profile corners must be right-angled and free of burr and adhesive.

The window is to be tested after installation for functionality.

It is imperative to observe the "notes on safety" and the "installation advice".

The parts lists include all profile related versions of the AluVision hardware system. Technical details, special groove and clearance version information available upon request.

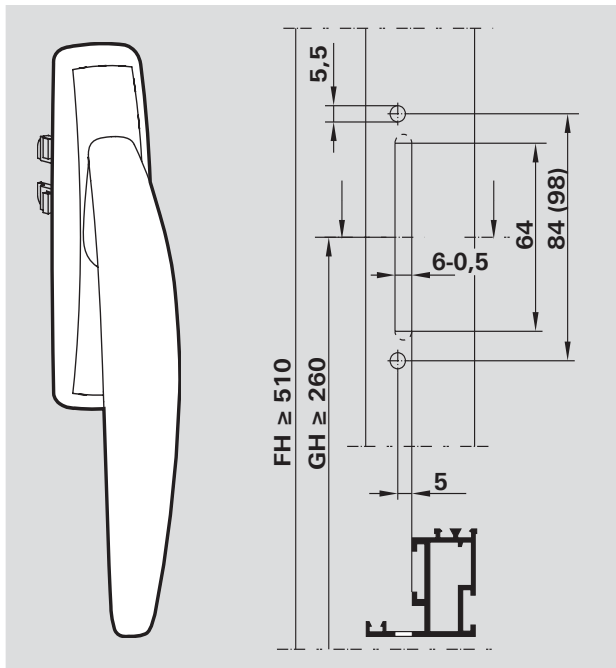
Product liability – Liability exclusion

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

Handles

Handles

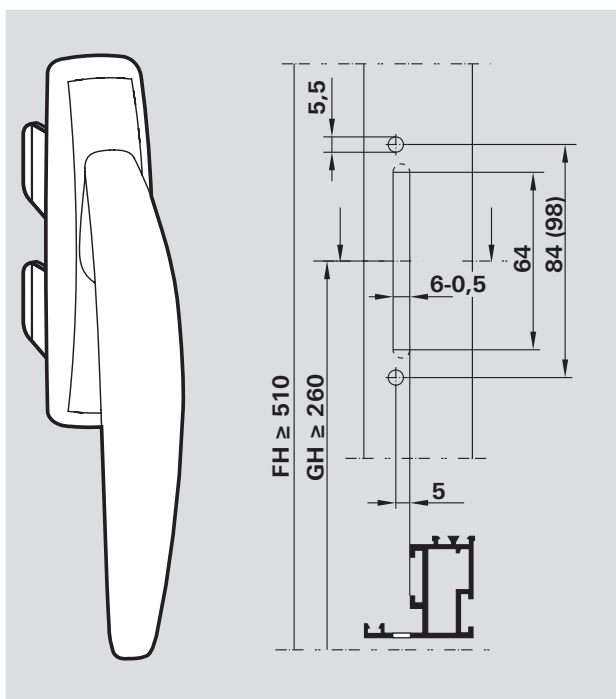
AluVision T300 geared-handle



Parts lists

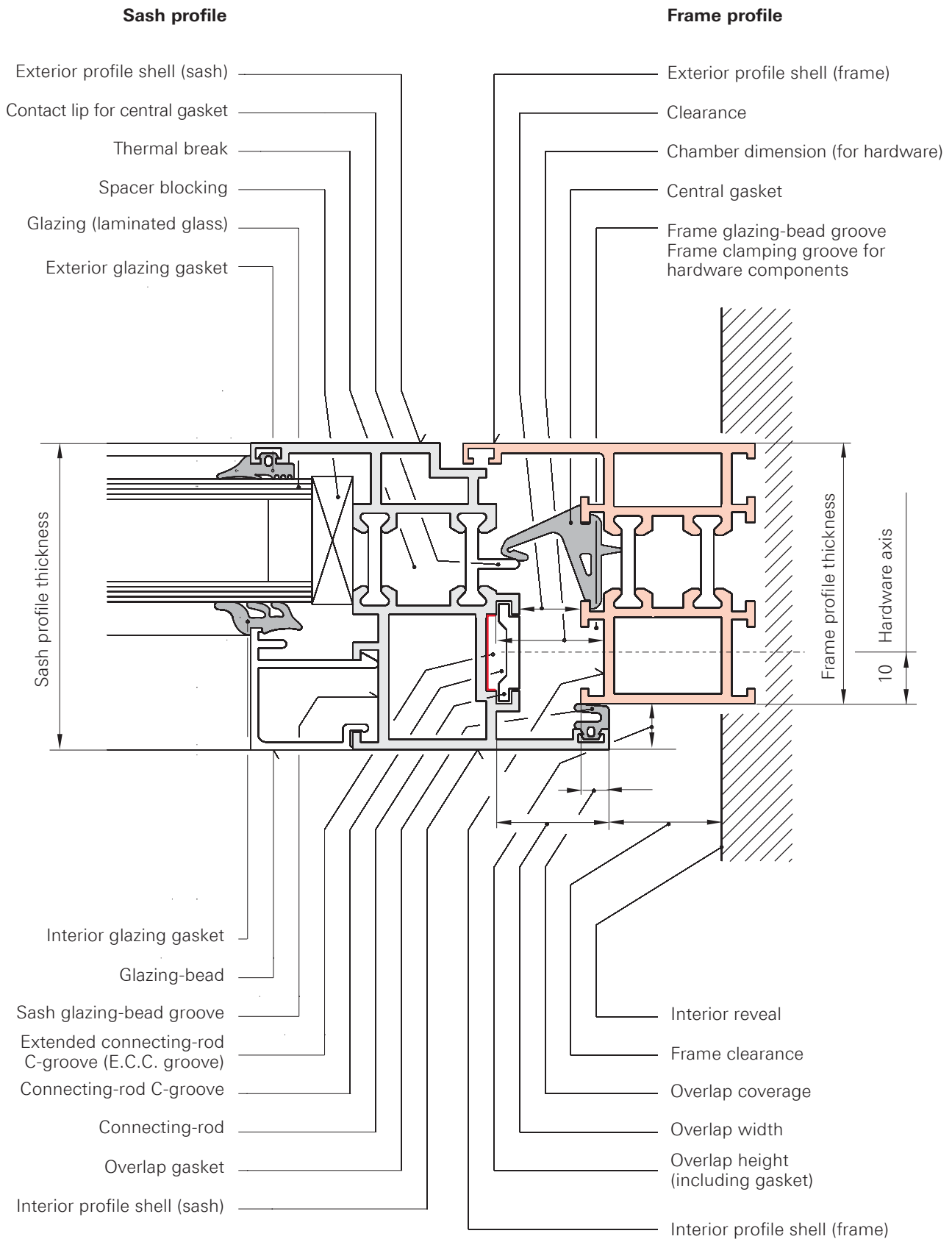
T300 handle			
Colour	Component description	Mat. no.	Packunit
R01.5	Coated	486 161	10
R06.2	Coated	486 162	10
R07.2	Coated	486 163	10
UNP	-	486 165	50
SPCOL	Coated	486 164	10

AluVision T300 reverse-action handle



T300 reverse-action handle			
Colour	Component description	Mat. no.	Packunit
R01.5	Coated	486 277	10
R06.2	Coated	490 162	10
R07.2	Coated	490 163	10
UNP	-	490 164	50
SPCOL	Coated	490 235	10

Aluminium window profile terminology



Application diagrams

Tilt&Turn and Turn-Only hardware 80 kg



80 kg

Limitation of sash formats

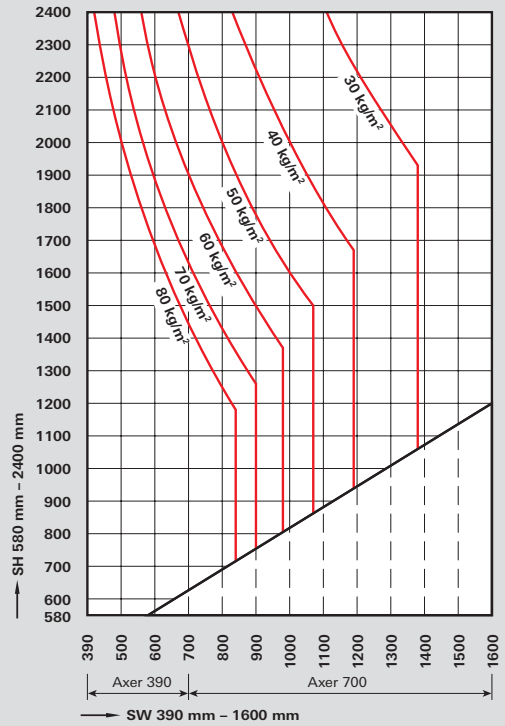
ALU T300 T&T

SW – Sash width 390 mm – 1600 mm
SH – Sash height 580 mm – 2400 mm
S.kg-max. – Max. sash weight 80 kg

ALU T300 TU.-ON.-V

SW – Sash width 370 mm – 1600 mm
SH – Sash height 500 mm – 2400 mm
S.kg-max. – Max. sash weight 80 kg

The information in the application diagram refers to the glass weight in kg/m².



Turn-Only hardware 50 kg



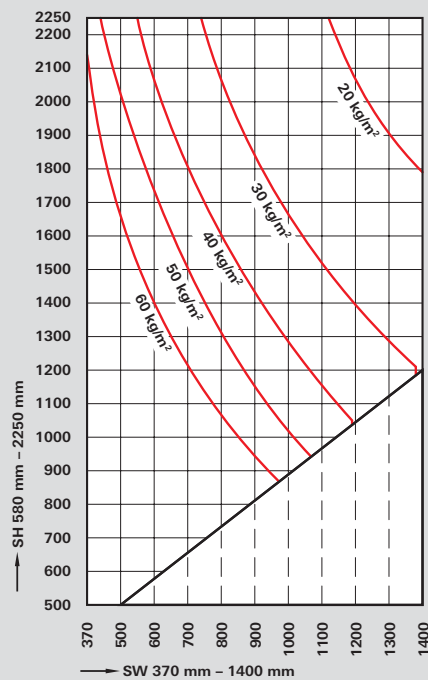
50 kg

Limitation of sash formats

ALU T300 TU.-ON.

SW – Sash width 370 mm – 1400 mm
SH – Sash height 500 mm – 2250 mm
S.kg-max. – Max. sash weight 50 kg

The information in the application diagram refers to the glass weight in kg/m².



Tilt-Only hardware 70 kg



70 kg

Limitation of sash formats

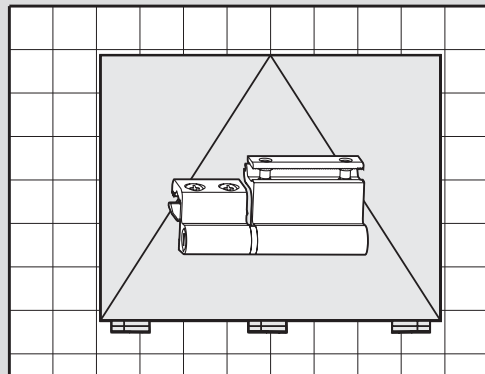
ALU T300 TI.-ON.

SW – Sash width 500 mm – 1600 mm

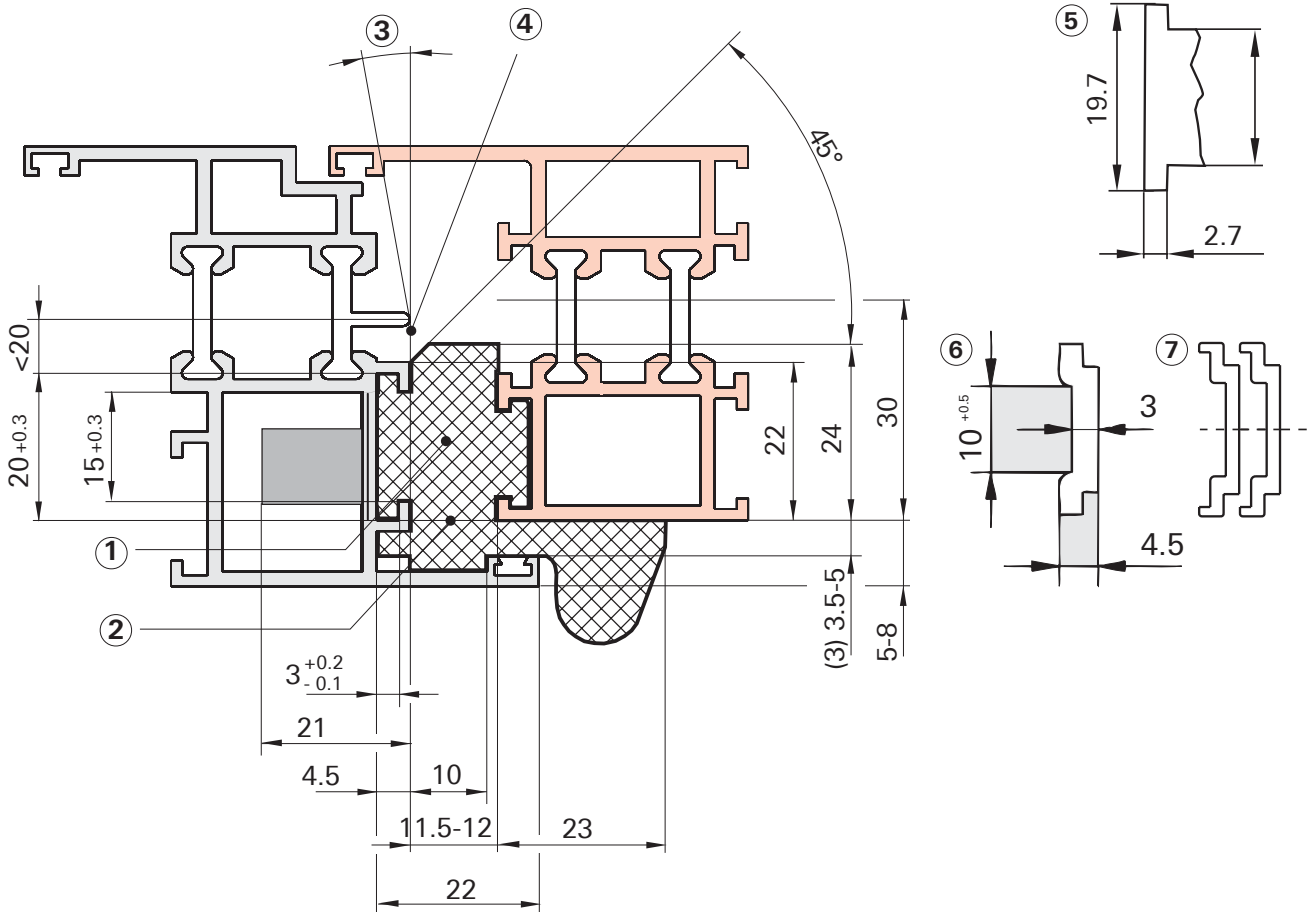
SH – Sash height 370 mm – 1300 mm

S.kg-max. – Max. sash weight 70 kg

The information in the application diagram refers to the glass weight in kg/m².

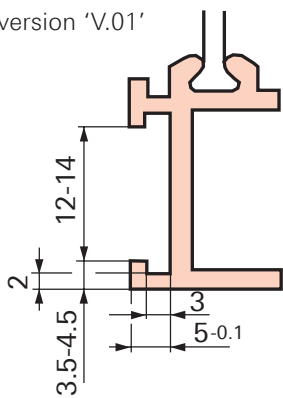


Required space:
frame / sash

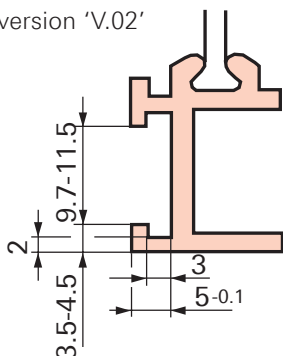


Frame groove

Groove version 'V.01'



Groove version 'V.02'



Required space
Flush encased gearbox

Alu T300 required space
(Standard hardware)

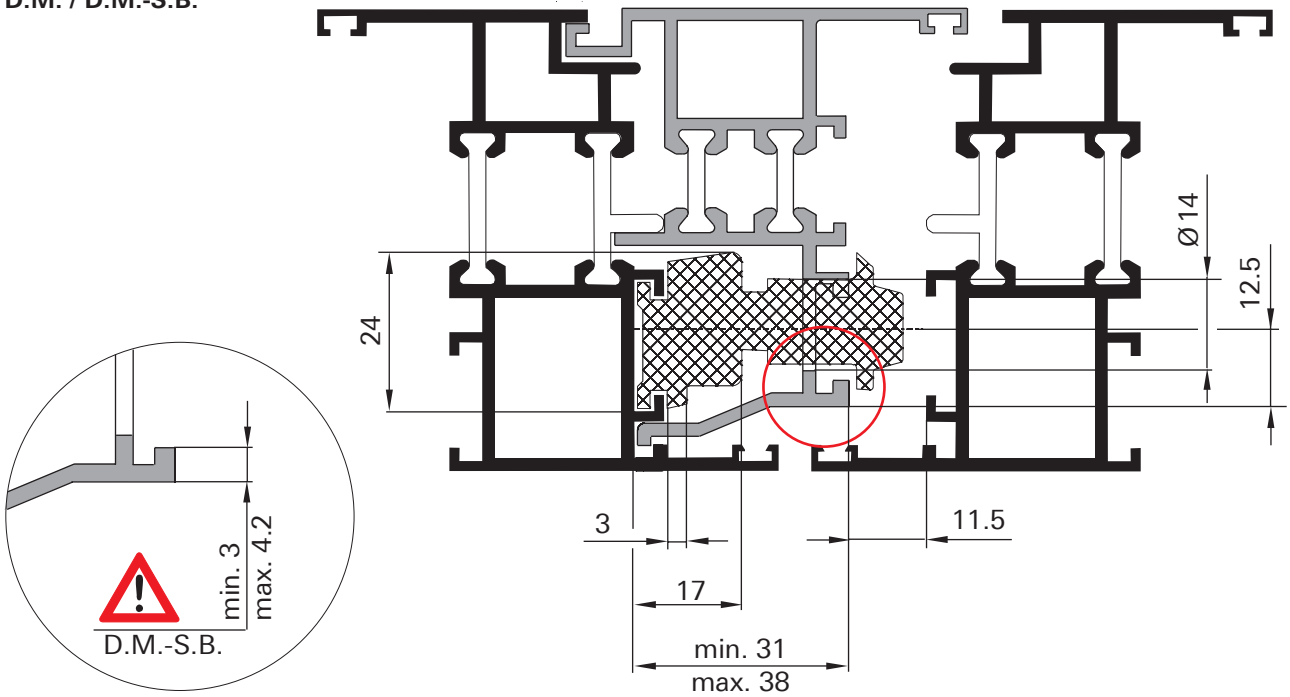
- ① Space requirements. The thick outlines are important contact areas for the Roto ALU hardware system.
- ② It is imperative to adhere to the sash-frame alignment!
- ③ 12° on sash widths of 340 mm, 9° on sash widths of 500 mm with a profile thickness of maximum 100 mm.
- ④ No gasket lip from the central gasket etc. may extend beyond the connecting-rod C-groove plane.
- ⑤ Maximal dimensions of the hardware components even after colour coating – these must slide easily in the connecting-rod C-groove.
- ⑥ Commercially available Alu T300-6 connecting-rod profile (provided by the client).
- ⑦ Alu T300-10 specific connecting-rod profile.

Upon deviating dimensions, please consult with Roto!
All dimensions in mm.

Required space:

2-sashed windows without fixed centre-post profile (floating mullion)

D.M. / D.M.-S.B.



Roto AluVision T540

Fulfilling the highest requirements for Tilt&Turn windows

Perfect for all opening types and window shapes in facades.

Roto AluVision T540 is the high-quality all-rounder. Whenever maximum security, ease of operation and durability is demanded, the AluVision T540 hardware system is first choice: for nearly all conceivable window shapes, sizes and opening types. Every hardware version can be realised: Tilt&Turn, Tilt-Only or French windows and Tilt-First with sash weights of up to maximum 130 kg. It's even possible to upgrade Turn-Only sashes to 300 kg.



Technology with maximum ultimate security.

As a pioneer of innovative fenestration technologies, Roto sets high standards – also in security. High-quality locking cams secure the sash up to BRG3 (“WK3”) in accordance with DIN EN 1627–1630. Roto offers a suitable lockable Alu security handle to go with this.

Hinge sides for heavy sashes

Special project solutions often demand large and heavy sashes – This is no problem for Roto AluVision T540. Here you find Turn-Only sashes up to 300 kg as well as Tilt&Turn sashes up to 200 kg as tested series-production solutions – this is unique on to the market. Our hardware system not only

facilitates large glazing areas, but also the use of heavy safety glass.

Tilt&Turn stay bearing and hinge with preassembled clamp-strips reduce the installation time and expense



Your advantages at a glance:

- Appealing aesthetics as the bearings are flush with the sash, no visible screws
- Convenient automatic E-Tec Drive ventilation can be integrated
- Extensive range of accessories available such as security strikers or turn-restrictors
- Time saving thanks to preassembled clamping support-strips
- Less components due to preassembled stay bearing pin and pin retention
- For sashes up to 300 kg

Roto AluVision T600

The top model for large aluminium windows

Ultimate functionality. Perfect aesthetics.

Large window sizes, aesthetical shapes, slimline profile views; the requirements in the project sector are increasing. Requirements that AluVision T600 fulfil: a fully concealed hinge-side, that is to say, no visible hinges from the outside that need to be colour-matched – nothing detracts from the window's aesthetics. All components are fully integrated in the window frame and sash. Moreover: the large opening; a 100° opening angle makes it possible.



Lots of space for additional security.

Concealed hardware and outstanding burglary protection – not a contradiction with the top model Roto AluVision T600. By integrating it into the modular T540 locking system, a high level of security can be achieved (up to BRG2 in accordance with DIN EN 1627-1630). The small compact pivot rests provide a lot of space for additional security components and warrants increased anti-jimmy protection.

Roto AluVision T600 easily carries sash weights of up to 130 kg.

Conventional aluminium window with visible hinges



Large sashes or soundproofed glass surfaces are aesthetically beautiful, but they are also heavy. Sash weights of over 100 kg are not uncommon. Unobtrusive hardware is therefore in demand for these "elegant heavyweights". The solution: Roto AluVision T600 – the completely concealed hardware system for large and heavy aluminium windows up to 130 kg. Your advantage: only one additional special component (also invisible from the outside), is enough to achieve the highest weight stability in conjunction with the standard hardware.

Aluminium window with Roto AluVision T600 and concealed hinges



Convenience, security and design

AluVision S 6080 for Fold&Slide doors

The system opens up rooms in a particularly elegant and efficient manner. As all door elements are folded in a space-saving manner, and slid over to the side. Every room can be opened up to its full width; ideal for generous access to terraces or conservatories as well as conference, guest and business rooms.

An additional plus in security: Thanks to the thermally broken section AluVision S 6080 has no disturbing threshold. As a result, indoor or outdoor access is no longer a tripping hazard – an advantage, particularly in buildings used by elderly or disabled people.

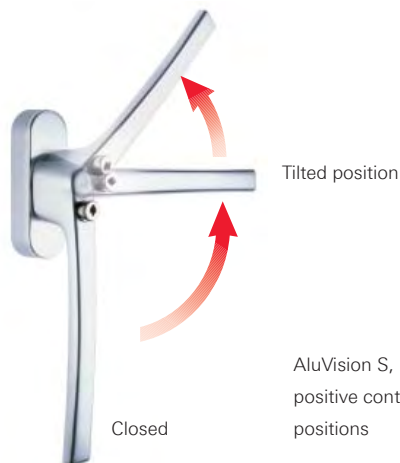
And of course optimal room ventilation has been considered; an integrated Tilt&Turn sash that can be used independently of the Fold&Slide sashes makes this possible. In daily use this sash serves as e.g. the active door leaf in the bistro around the corner – with all advantages.



AluVision S 6080 with integrated Tilt&Turn sash



Design diversity: Powder-coated hinges in silver, white and medium bronze



Tilted position

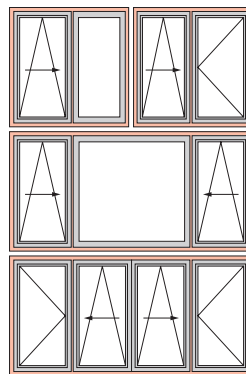
Closed

AluVision S, handle with integrated positive control; opening and locked positions

Space advantage with AluVision S 4150

Inward opening windows have a disadvantage: They take up a lot of space. The PC for example has to be pushed aside to ventilate, in the restaurant it's the table arrangement that needs to be moved. You can spare your customers this trouble.

With the efficient AluVision S 4150 S and the convenient AluVision S 4150 Z with positive control, even large windows and balcony doors can easily and conveniently be tilted and slid over to the side in a space-saving manner with only one hand. A simple and practical solution.



The great selection of AluVision S Tilt&Slide windows and balcony doors





Convenient, efficient
and with visible
space advantages:
Roto AluVision
S 4150. The letter
“S” stands for
“Slide”.

Subject to change.

Roto AluVision Export

KB 100-0 GB ■ July 2009 ■ 59



Tilt&Slide hardware with snapper catch, max. sash weight 150 kg

Roto AluVision S4150 S hardware overview

Hardware type

Tilt&Slide hardware with snapper catch and central locking system. Max. sash weight 150 kg.

Further details

Refer to the Roto AluVision S4150 S installation instructions

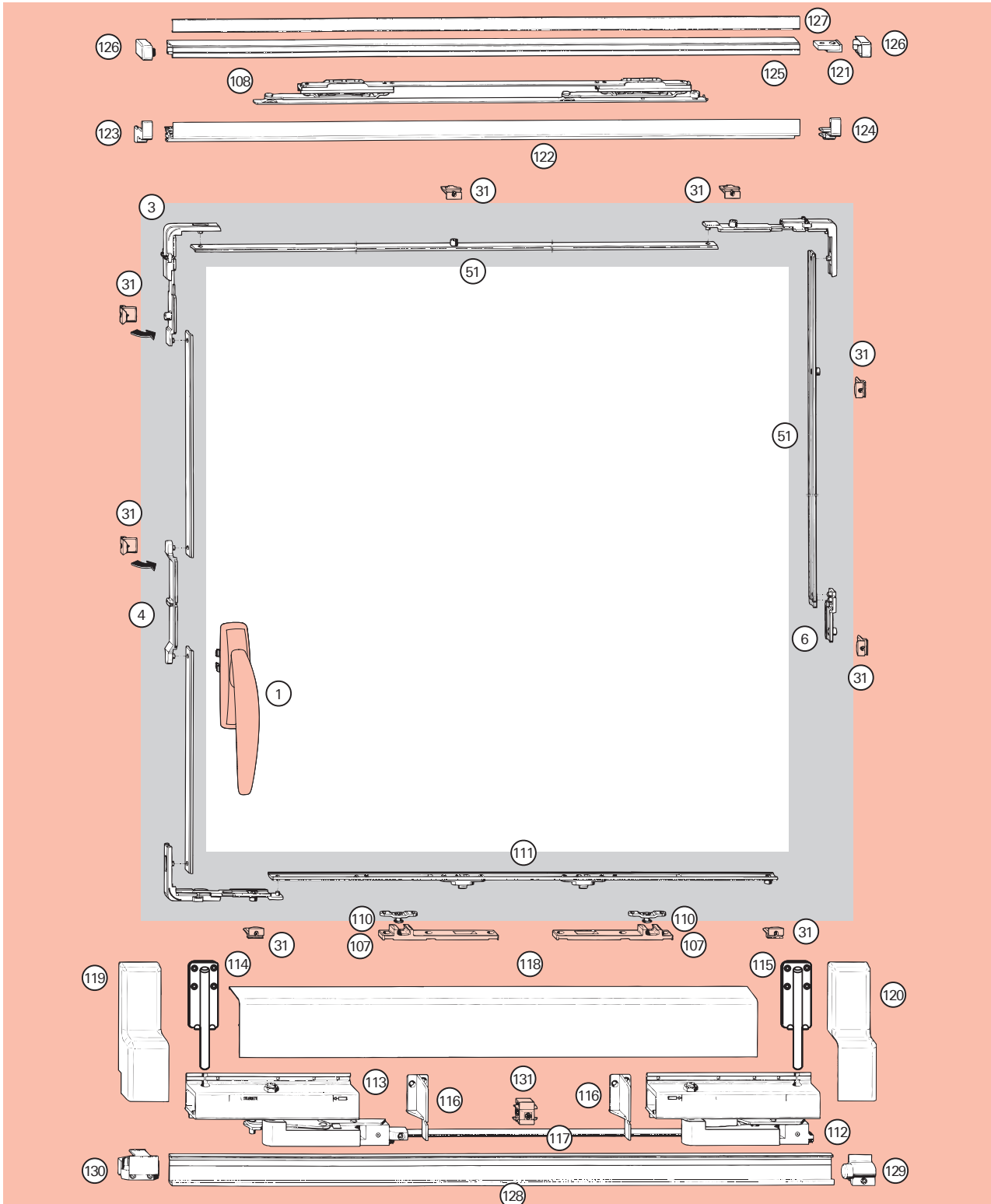
Application range

SW – Sash Width 630 – 1680 mm

SH – Sash Height 930 – 2330 mm

Illustration

Complete hardware set with RotoLine geared-handle depicted as a left-handed version.



"1" basic set AluVision S4150 S

Version	Mat. no.
RH	216 639
LH	216 640

Basic-set parts-list

Pos.	Pcs.	Component description
3	3	Corner drive
4	1	T-connector
6	1	CL connector 33
51	2	CL cam
110	2	Anti-jemmy device
112	1	Trailing bogie
113	1	Leading bogie
114	1	Reinforcement bracket - left
115	1	Reinforcement bracket - right
116	2	Cover support bracket
N.D.	12	Screw 3.9x45 mm
N.D.	4	Blind rivet nut M5
N.D.	4	Countersunk screw M5x20 mm

Scissors-slider set + link gear with snapper catch

SW*	Mat. no.
630 – 930 Size 1	216 633
931 – 1280 Size 2	216 634
1281 – 1680 Size 3	216 635

Parts list; scissors-slider set + link gear with snapper catch

Pos.	Pcs.	Component description
108	1	Scissors-slider
111	1	Link gear with snapper catch
110	2	Anti-jemmy device + 10 pcs. 4.8 x 25mm screws

Handles

Pos.	Pcs.	Component description	Colour	Mat. no.	Pack. unit
1	1	RotoLine geared-handle	R01.1	238 671	10
			R01.5	377 474	10
			R05.4	377 478	10
			R07.2	377 477	10
			R01.5	486 161	10
1	1	T300 handle	RAL 9005	486 162	10
			RAL 9016	486 163	10
			UNP	486 165	50
			SPCOL	486 164	10

Colour info:

UNP = without surface treatment
R01.1 = silver
R01.5 = silver
R05.4 = dark bronze
R07.2 = traffic white

Note! Please consider the discount rate for Roto AluVision S4150.

Red areas: these components are not included in the sets.

Track set

SW*	Frame width	Colour	Mat. no.
630 – 930	1930	R01.1	216 607
		R05.4	216 608
		R07.2	216 609
931 – 1080	2230	R01.1	216 614
		R05.4	216 615
		R07.2	216 616
1081 – 1280	2630	R01.1	216 618
		R05.4	216 619
		R07.2	216 620
1281 – 1480	3030	R01.1	216 622
		R05.4	216 623
		R07.2	216 624
1481 – 1680	3430*	R01.1	216 626
		R05.4	216 627
		R07.2	216 628

* Support-block included (Pos. 131)

Parts list: track set

Pos.	Pcs.	Component description
117	1	Connecting rod
118	1	Cover profile
119	1	Cover cap for reinforcement bracket, left
120	1	Cover cap for reinforcement bracket, right
121	1	Top buffer stop
122	1	Stay-connecting profile
123	1	End cap for stay-connecting profile, left
124	1	End cap for stay-connecting profile, right
125	1	Guide track
126	2	End caps for guide track
127	1	PVC cover-strip
128	1	Roller track
129	1	Bottom buffer stop with rubber-buffer
130	1	Guide block
N.D.	40	Screw 3.9x45 mm
N.D.	15	Screw 3.9x9.5 mm

Additional components

Pos.	Pcs.	Component description	Mat. no.	Pack. unit
31	8	Striker	V.01	212 633 100
			V.02	212 634 100
107	2	Guide striker, profile related	VH.1	216 505 2
			VH.2	216 506 2
			VH.3	216 507 2
			VH.4	216 508 2
			VH.5	216 509 2
			VH.6	216 510 2
			VH.7	216 511 2
			VH.8	216 512 2
			VH.9	216 513 2
			VH.10	241 036 2

Special profile lengths

Special profile lengths				
Pos.	Version	Length in mm	Colour	Mat. no.
117	Connector	3600	–	217 057
118	Cover profile	5970	R01.1	217 048
			R05.4	217 049
			R07.2	217 050
			UNP	217 202
122	Stay-connecting profile	5970	R01.1	217 124
			R05.4	217 125
			R07.2	217 126
			UNP	217 199
125	Guide track	6070	UNP	217 140
127	PVC cover-strip	6070	R01.1	217 166
			R05.4	217 167
			R07.2	217 165
128	Roller track	6070	R01.1	217 016
			R05.4	217 017
			UNP	217 200

For technical reasons the individual parts can only be supplied in the stated colours.

Not available ex-stock.

Lead-time upon request.

Misc. small components pack for the completion of the track sets				
Pos.	Pcs.	Component description	Colour	Mat. no.
–	1	Misc. small components pack	R01.1	216 610
			R05.4	216 611
			R07.2	216 612

Misc. small components pack for the completion of the track sets				
Pos.	Pcs.	Component description	Colour	Mat. no.
119	1	Cover cap for reinforcement bracket, left		
120	1	Cover cap for reinforcement bracket, left		
121	1	Top buffer stop		
123	1	End cap for stay-connecting profile, left		
124	1	End cap for stay-connecting profile, light		
126	2	End caps for guide track		
129	1	Bottom buffer stop with rubber-buffer		
130	1	Guide block		
o.Abb.	40	Screw 3.9x45 mm		
N.D.	15	Screw 3.9x9.5 mm		

Possible combinations and application ranges

General design description

Roto AluVision S6080

One-handed-operation central locking system concealed in the sash-rebate.

Optional top or bottom running doors, and inward or outward opening. The roller tracks and guide tracks are silver anodised and the elements are colour-coordinated with cover strips. Hinges and support-brackets are powder-coated.

Standard colours: White R07.2

Medium bronze R05.3

Silver R01.1

Tilt&Turn or Turn-Only sash as the access sash. All components are retro-adjustable.

Additional possibilities:

Roto security components, MVS.

Application range:

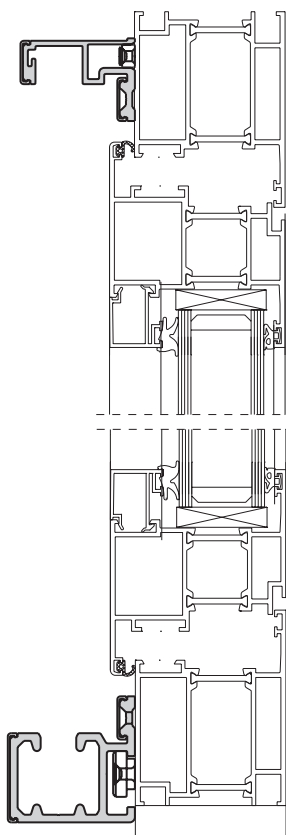
Sash width: min. 480 mm – max. 1230 mm
(access-sash on the frame side)

Sash width: min. 480 mm – max. 930 mm
(folding-sash)

Sash height: min. 630 mm – max. 2430 mm

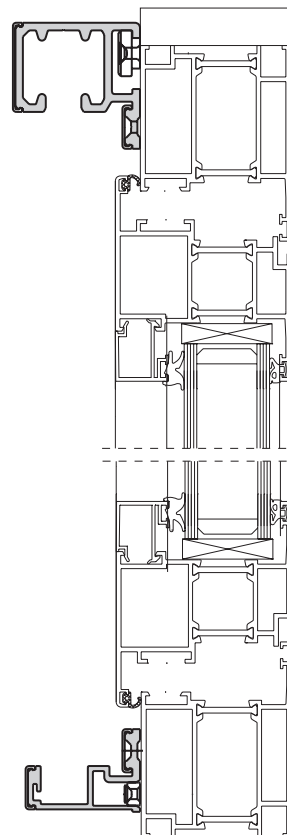
Sash weight: max. 80 kg

Roller track length: max. 6 m



1. Combination possibility

Bottom running
Guide track on the top,
Standard roller track on the bottom.



2. Combination possibility

Top running
Standard roller track on the top,
Guide track on the bottom.

Schematic overview

Schematic overview

DIN right-handed depicted (viewed from the inside).
A mirror image of each diagram can also be implemented.

Schematic description:

1st digit = Quantity of total sashes

2nd digit = Quantity of sashes that open to the left

3rd digit = Quantity of sashes that open to the right

A – F: Description of the profile cross sections

As, Cs etc.: Profile cross section of A & C as a mirror image

DIAGRAM 330

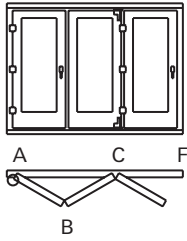


DIAGRAM 321

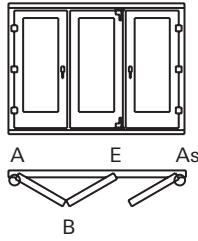


DIAGRAM 532

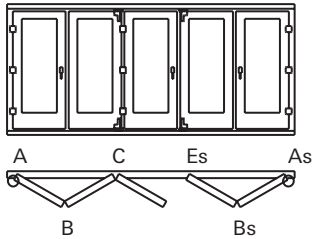


DIAGRAM 541

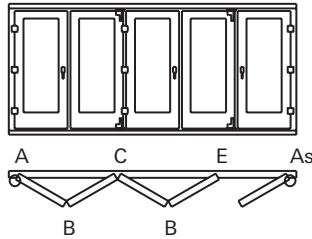


DIAGRAM 550

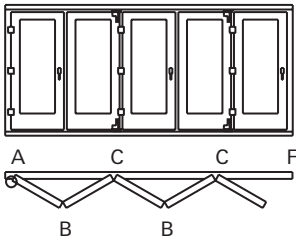


DIAGRAM 633

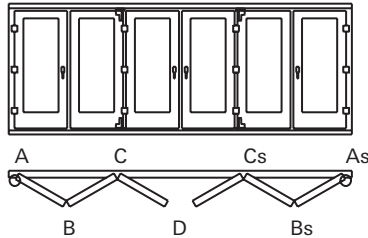


DIAGRAM 651

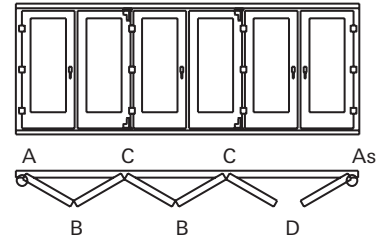


DIAGRAM 743

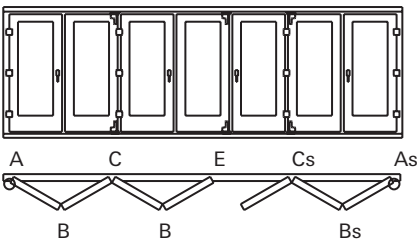


DIAGRAM 761

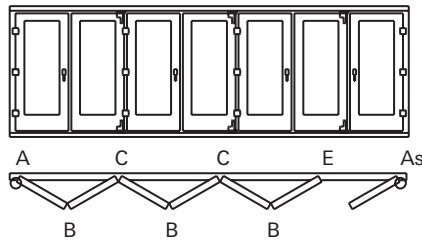


DIAGRAM 770

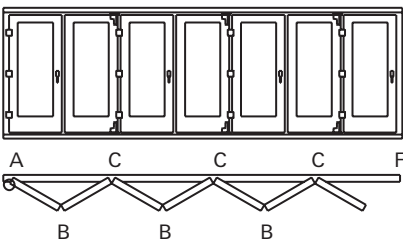
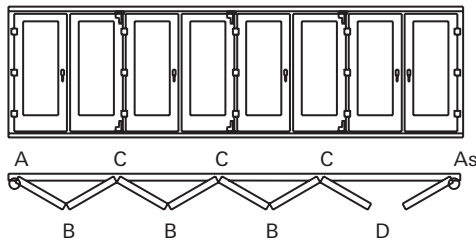


DIAGRAM 871





The basis of simple security

Roto DoorBase – mortise locks, metal frame locks, and rim locks

Whether internal doors, garden gates or garden doors: there are many doors, which are supposed to be closed, but which do not require multi-point locking security.

With DoorBase, we offer the most diverse locks for these diverse applications. The wealth of variants guarantees a suitable lock for the correct application. High quality materials are a common factor, typical of all Roto products.

Locks for metal or PVC main entrance doors



Roto DoorLine - hinges for Aluminium doors

Roto door hinges are the first choice when you place value on safety, design, and convenience concerning your main entrance door.

Design:

Roto DoorLine door hinges enhance the aesthetic value of any main entrance door. The colour of the door hinges can be chosen from an extensive colour range.

Energy saving:

Roto DoorLine door hinges ensure doors close exactly – and that saves valuable heating energy!

Convenience:

Roto DoorLine door hinges provide simple installation and remain maintenance free for many years.

Security:

The more value you place on your main entrance door's security, the more important it is to have a door hinge that forms part of that security concept. For example, through the patented hinge side rebate safety device, preventing jemmying the door, and through the fixing with special screws and additional steel pins.



Roto DoorPlus – profile cylinders, electrical openers, lever-handle sets and floor door-gaskets

The DoorPlus product range from Roto completes your door with those components that represent the daily contact points after the door installation, to increase the ease of operation or to noticeably improve the sound and heat insulation of the door. The combination of Roto Door multi-point locking with components from the DoorPlus product range guarantees perfect and maintenance-free compatibility of all elements for many years.



Lever-handle sets:

The contoured design of the lever handle sets are available in different colours, for different door thicknesses and with a non-moveable exterior handle.

Profile cylinders:

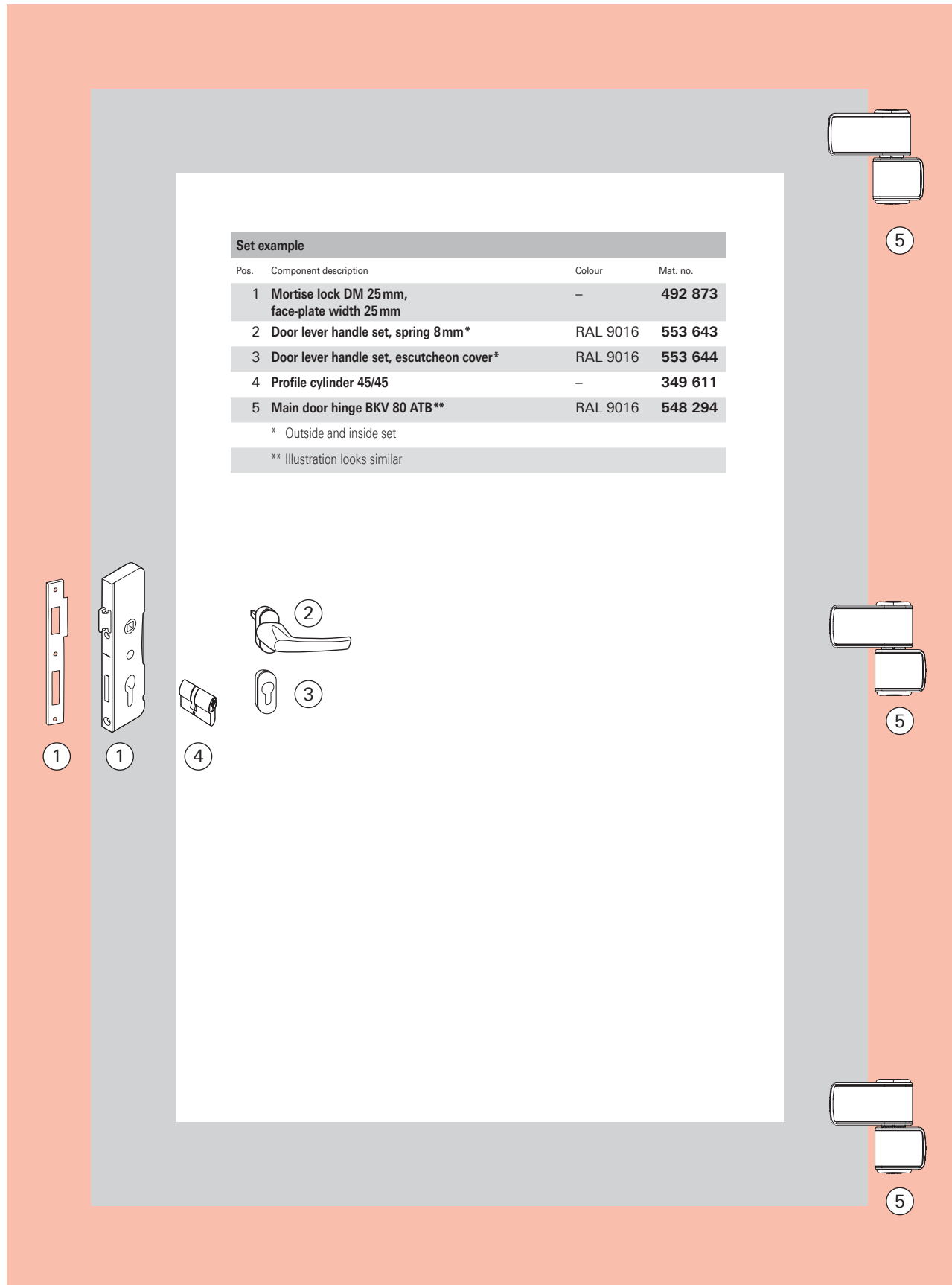
High quality 6 pin system, either with classical key entry from both sides or with knob cylinder that replaces key-operation with a turn-knob on the inside.

Electrical openers:

Electronic door openers for timber, aluminium, and PVC doors, optionally with locking pin and manual unlocking.



DoorBase



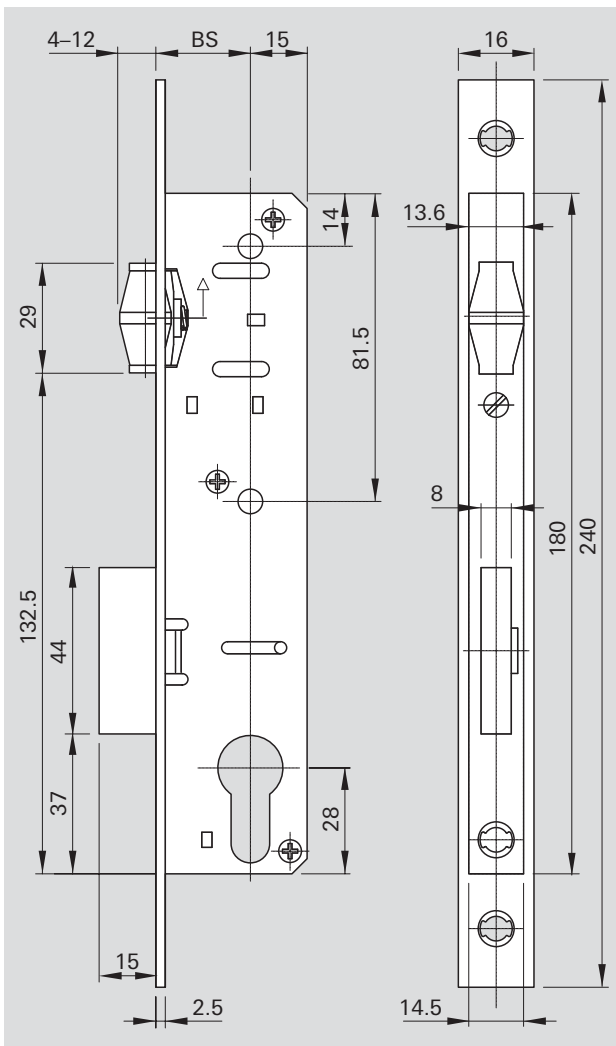
Set example			
Pos.	Component description	Colour	Mat. no.
1	Mortise lock DM 25 mm, face-plate width 25 mm	–	492 873
2	Door lever handle set, spring 8 mm*	RAL 9016	553 643
3	Door lever handle set, escutcheon cover*	RAL 9016	553 644
4	Profile cylinder 45/45	–	349 611
5	Main door hinge BKV 80 ATB**	RAL 9016	548 294
* Outside and inside set			
** Illustration looks similar			

DoorBase

Portal lock with rolling-latch



Face-plate 22/2,5						
BS	HD	⌀	F-plate length	SF	Material number	PQ
25	92	8	240	SL	451244	25
30	92	8	240	SL	451275	20
35	92	8	240	SL	451276	20



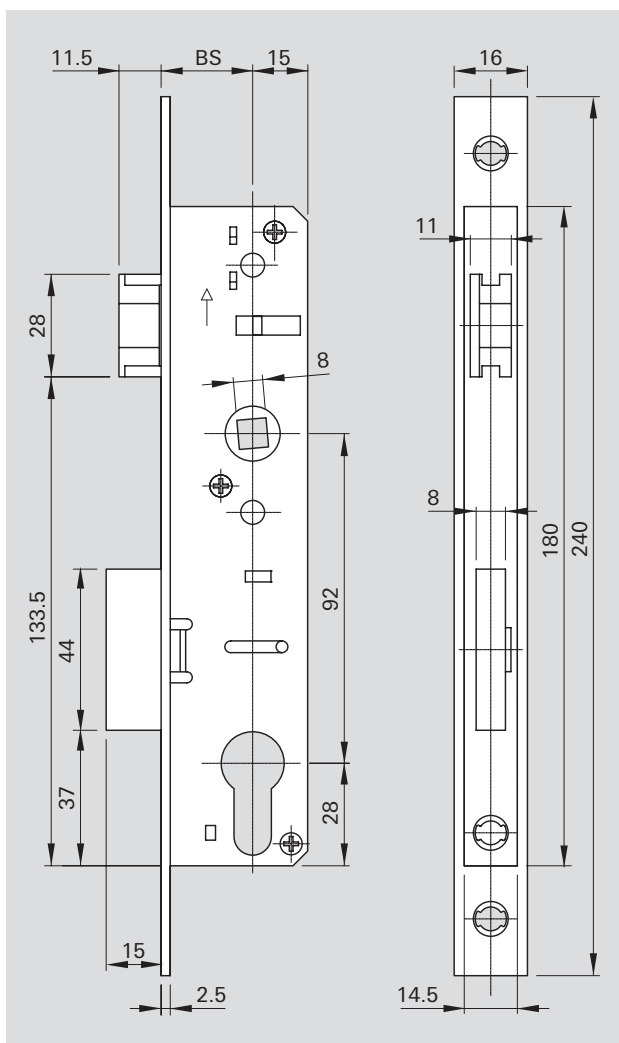
DoorBase

Portal lock



Face-plate 24/2,5

BS	HD	⊕	F-plate length	SF	Material number	PQ
25	92	8	240	Inox	492 873	25
30	92	8	240	Inox	553 382	20
35	92	8	240	Inox	553 883	20



Face-plate 22/2,5

BS	HD	⊕	F-plate length	SF	Material number	PQ
25	92	8	240	Inox	494 636	25

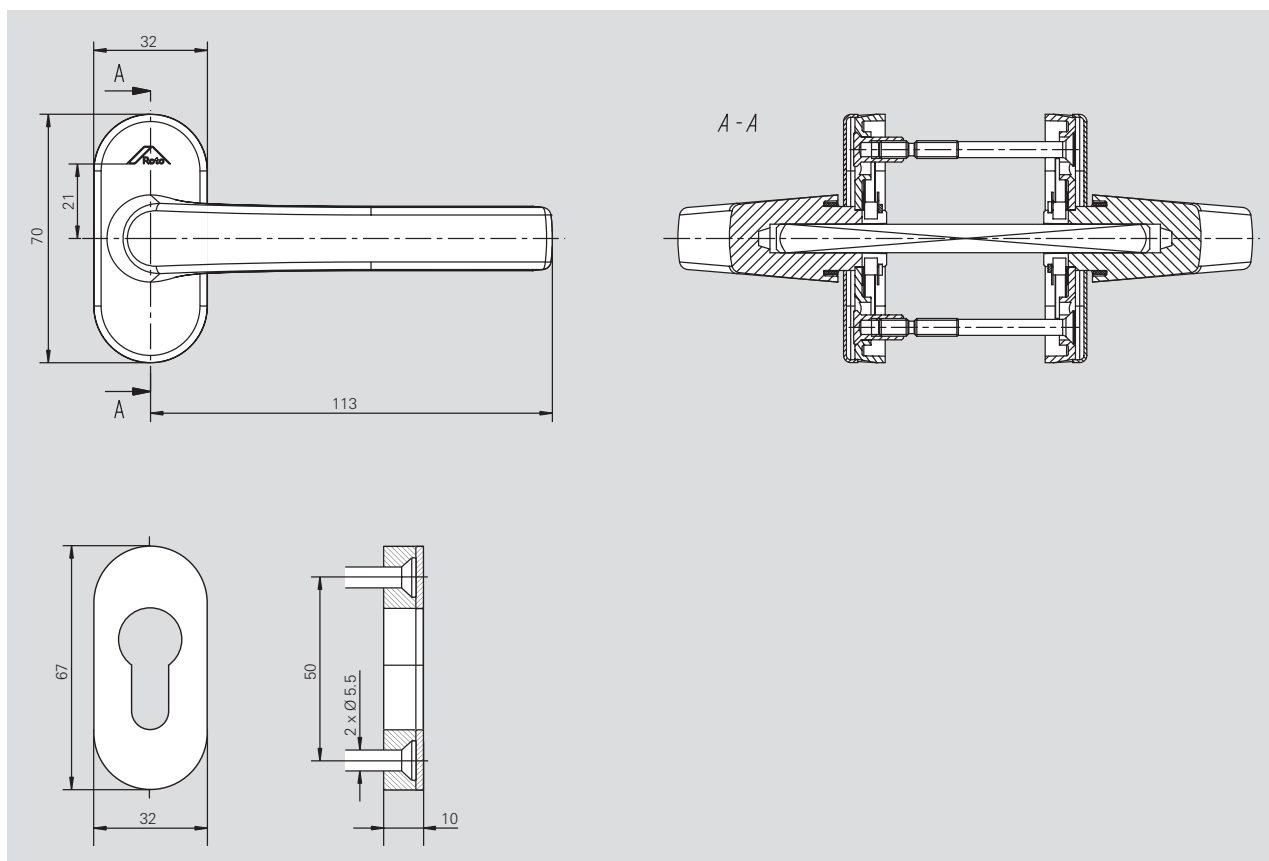
DoorPlus

Lever-handle set



Lever handle sets		
Component description	Colour	Mat. no.
Door lever handle set, spring 8 mm *	RAL 9016	553 643
	RAL 9005	553 875
	RAL 9006	553 877
	RAL 9010	553 879
	UNC.	553 927
Door lever handle set, escutcheon cover *	RAL 9016	553 644
	RAL 9005	553 876
	RAL 9006	553 878
	RAL 9010	553 880
	UNC.	553 928

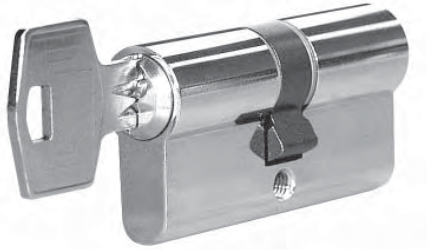
* Outside and inside set



DoorPlus

Standard profile cylinders

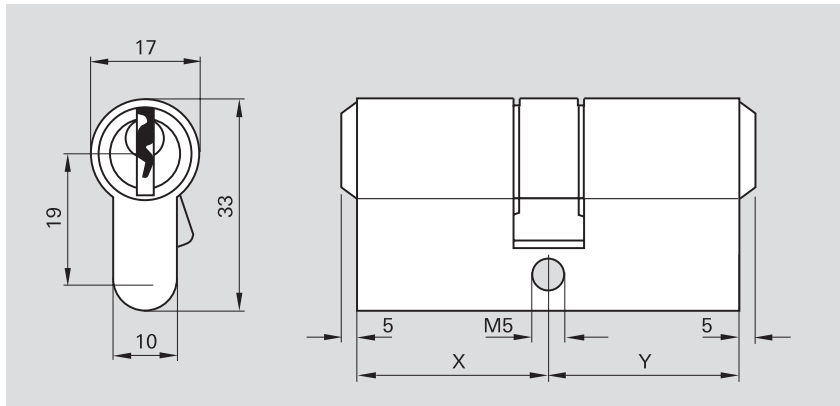
Keyed Different (KD)



Nickel-plated	
Size X / Y in mm	Mat. no.
31 / 31	349 514
35 / 35	349 572
35 / 40	349 573

Product description:

- 6 pin system with 240,000 combinations
- Cylinder in accordance with EN1303 (locking security: Grade 5)
- Supplied with 3 keys
- Key with large key knob
- M5x60mm installation screw enclosed
- Packaging units: 1, 24 resp. 96 pieces



Standard knob cylinders

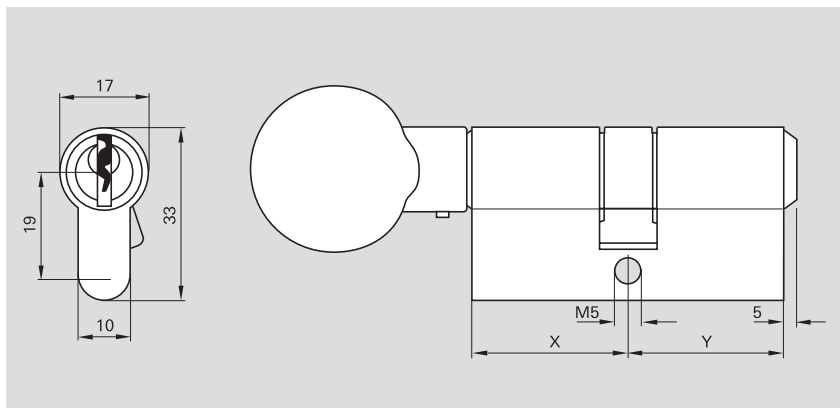
Keyed Different (KD)



Nickel-plated	
Size X / Y in mm	Mat. no.
45 / 35	450 978

Product description:

- 6 pin system with 240,000 combinations
- Cylinder in accordance with EN1303 (locking security: Grade 5)
- Supplied with 3 keys
- Key with large key knob
- M5x60mm installation screw enclosed
- Packaging units: 1, 24 resp. 96 pieces



DoorLine

Door Hinges

The all-rounder for aluminium doors BKV 80 ATB

- The optimum 3D hinge for all common aluminium door profile systems up to 120 kg
- As-delivered condition, pre-assembled in zero position DIN L/R, sold in packs of 6
- Linear adjustment with no optical change to the hinge body
- Modular design, combination of different hinge and accessory modules



Hinge BKV 80 ATB

Material description	Colour	Mat. no.
80ATB 62,5 LS 20,5/42	RAL 9016	548 290
80ATB 62,5 LS 20,5/42	RAL 9006	548 291
80ATB 62,5 RS 20,5/42	RAL 9016	548 294
80ATB 62,5 RS 20,5/42	RAL 9006	548 295
80ATB 78 LS 20,5/57,5	RAL 9016	548 306
80ATB 78 LS 20,5/57,5	RAL 9006	548 307
80ATB 78 RS 20,5/57,5	RAL 9016	548 310
80ATB 78 RS 20,5/57,5	RAL 9006	548 311
80ATB 84 LS 42/42	RAL 9016	548 314
80ATB 84 LS 42/42	RAL 9006	548 315
80ATB 84 RS 42/42	RAL 9016	548 318
80ATB 84 RS 42/42	RAL 9006	548 319

BKV 120 ATB

The 3-part alternative

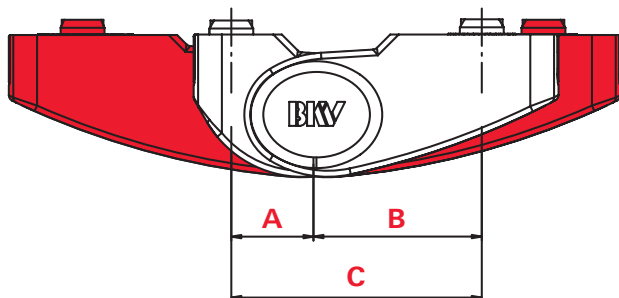
- The hinge for heavily used aluminium doors up to 160 kg
- CE certified (EC Declaration of Conformity 1309-CPD-0077)
- Other product features see BKV 80 ATB



Hinge BKV 120 ATB

Material description	Colour	Mat. no.
120ATB 62,5 LS 20,5/42	RAL 9016	548 386
120ATB 62,5 LS 20,5/42	RAL 9006	548 387
120ATB 62,5 LS 20,5/42	RAL 8077	548 388
120ATB 62,5 RS 20,5/42	RAL 9016	548 390
120ATB 62,5 RS 20,5/42	RAL 9006	548 391
120ATB 78 LS 20,5/57,5	RAL 9016	548 402
120ATB 78 LS 20,5/57,5	RAL 9006	548 403
120ATB 78 RS 20,5/57,5	RAL 9016	548 406
120ATB 78 RS 20,5/57,5	RAL 9006	548 407
120ATB 84 LS 42/42	RAL 9016	548 410
120ATB 84 LS 42/42	RAL 9006	548 411
120ATB 84 LS 42/42	RAL 9016	548 414
120ATB 84 LS 42/42	RAL 9006	548 415

Variants: BKV 80 / 120 ATB



“Important note: Roto door hinges are appropriate only for Roto-approved profile settings. Both sketches and installation instructions are not supposed to be transferred to any other profile setting, even if the geometric conditions are similar. Further information upon request.”

A	B	C
20.5	42.0	62.5
20.5	47.0	67.5
20.5	57.5	78.0



Testing according to EN 1935

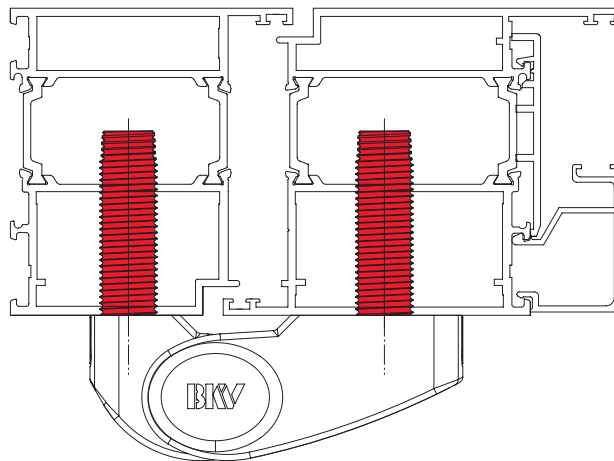
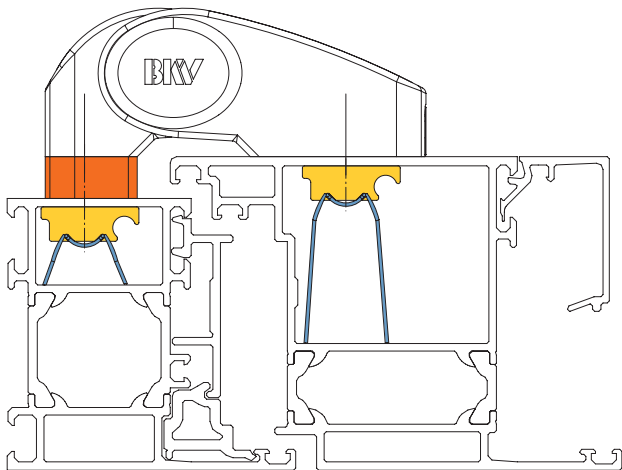
Subject to change.

Roto AluVision Export

KB 100-0 GB ■ July 2009 ■ 73



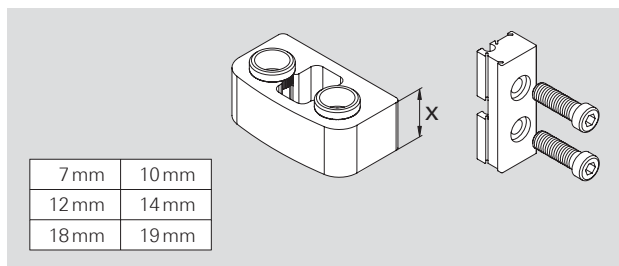
Door hinge accessories



Spacers

- A classic in fastening technology
- Great stability thanks to special aluminium alloy

Spacer for surface-offset sections

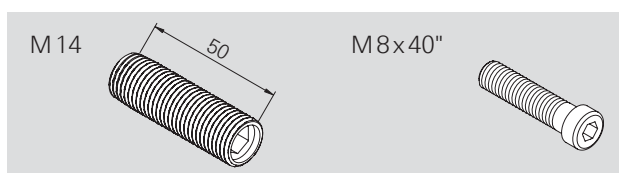


Fixing sets

Material description	Mat. no.
Acces. set 80ATB, 48p. HPL 23,4 + 96 screws	551 296
Ra 89NN-SR II16,5-19	548 848
Acces. set 120ATB, 48p. HPL 8,25 + 96 screws	548 485
Acces. set 120ATB, 48p. HPL 8,25 + 96 screws	548 485
Acces. set 120ATB, 48p. HPL 21,5 + 96 screws	548 486
Acces. set 80ATB, 48p. HPL 15,5 + 96 screws	548 945
Acces. set 120ATB, 48p.. HPL 15,5 + 96 screws	548 946
Stainless spring H-PL 120 ATB, Niro-Set, 200 St.	548 487
Spacer for surface - offset section ATB 40x22x7	548 488
Spacer for surface - offset section ATB 40x22x7	548 489
Spacer for surface - offset section ATB 40x22x10	548 492
Spacer for surface - offset section ATB 40x22x10	548 493
Screw 80/120 ATB M8x50 galv. 48 p.	548 513
Metal adjusting key 80/120 ATB, verz. blau	547 206
Locking pin, Ø 5x45mm, 1.4104	550 222

LINKDRILL I

- High-quality and economic application
- Suitable for almost all conventionally insulated systems
- No deformation of section walls



Linkdrill I

Material description	Mat. no.
M 14x50 + Screw M8x40, 48 p.	548 515
M14 x50 galv. + slidd nut , 48p.	548 516

Door hinge standard



Standard hinge	
Material description	Mat. no.
BKV 20/62,5 2-tlg. o. H-PL E6/C-0 6St.	546 391
BKV 20/62,5 2-tlg. o. H-PL RAL 9016 6St.	546 389
dark bronze	u. R.
blank	u. R.
Acces. set H-PL+Spring 6Set	545 510

Maintenance instructions for functional and security relevant components

For durability:

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

The conditions for the function and smooth operation of the hardware is the compliance with our regulations concerning sash size and sash weight, as well as our product liability guidelines. Function and condition of the hardware is to be checked in accordance with the following criteria:

- Smooth operation
- Hardware fixing
- Hardware wear and tear
- Hardware damage

Smooth operation

The hardware's smooth operation can be checked via the window handle. The locking and unlocking torque of the window handle is specified in accordance with DIN 18055 (German Industrial Norm) with a maximum value of 10 Newton metres. The inspection can be carried out with a torque wrench.

The smooth operation can be improved by means of **grease/oil** or by adjusting the hardware. Roto Tilt&Turn hardware is designed with 2D/3D adjusting possibilities. Incorrect and/or inappropriate retro-adjustments to the hardware can result in the windows not fulfilling their function anymore.

Hardware fixing

The window's function and its operational safety depend on the solid fixing of the hardware. Stability and location of the individual screws in the aluminium are to be checked.

Should it be revealed, that for example screws are loose or that screw heads have broken off, tighten or replace these immediately.

Hardware wear and tear

In order to avoid wear and tear, all operation-relevant hardware components are to be **lubricated/oiled** in accordance with our information.

Hardware damage

Damaged hardware components are to be replaced, especially if it concerns supporting hardware components.

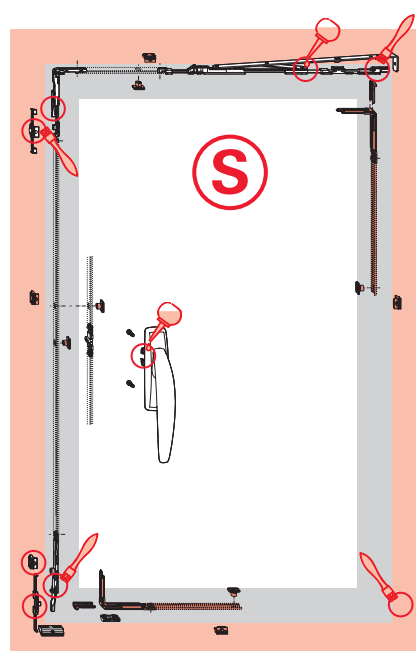
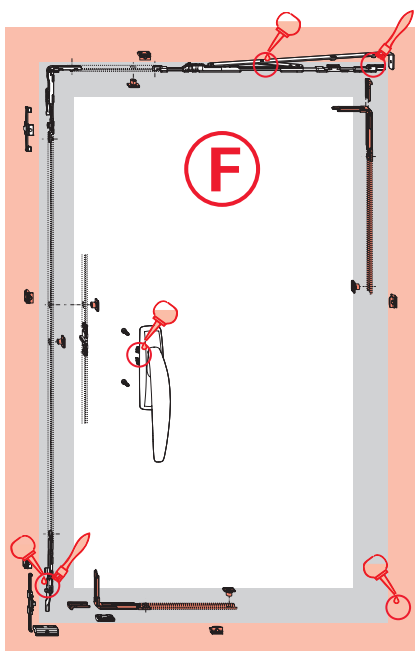
No legal claims can be derived from these recommendations, the application is to be conveyed for each concrete individual case. Roto Frank AG recommends window-fabricators to make **maintenance agreements with their end users**.

Maintenance and care intervals

By means of regular greasing and oiling* (at least once a year) all operation-relevant components **F** in the sash and frame, you maintain the smooth operation of your Roto hardware and you protect against premature wear and tear.

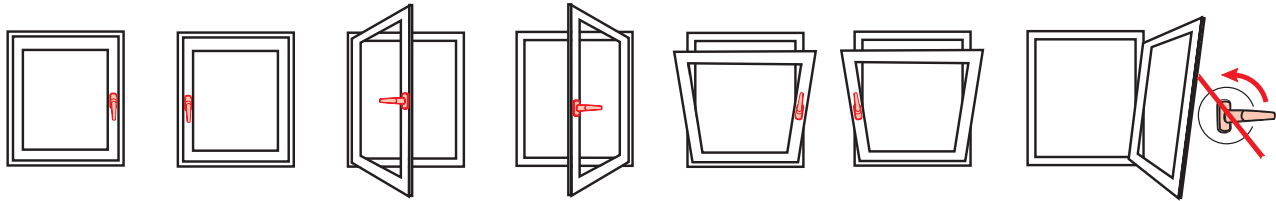
The **S** components are subject to particular care and attention for security reasons. These are to be examined at least once a year for stability and wear & tear, and to be greased/oiled* annually! In addition the individual screws are to be checked. Possible loosened screws or broken off screw heads are to be tightened or replaced immediately.

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



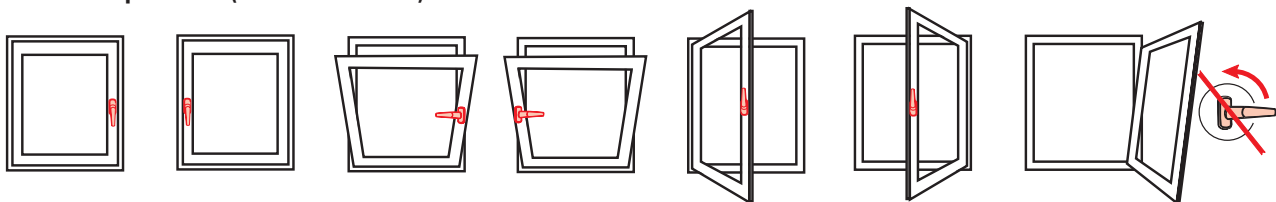
Operating and safety instructions for aluminium windows and balcony doors

Tilt&Turn operation (Turn before Tilt)



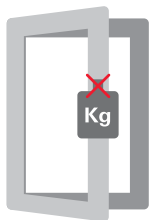
Avoid mishandling

Tilt-First operation (Tilt before Turn)

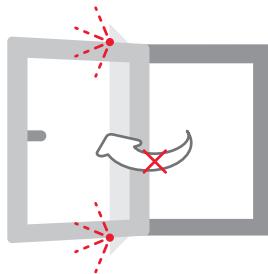


Avoid mishandling

In order to preserve the long **operativeness** of your window and to guarantee **security**, it is imperative to observe the directives listed below.



The window sash may not be burdened with additional weight.



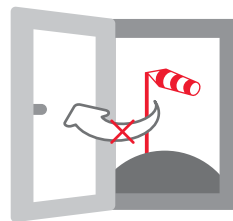
Do not allow the sash to hit or press up against the window reveal.



Do not place any objects between the sash and frame.



Where small children or mentally handicapped persons have access to the window, the sash is to be safeguarded against turning, for example with a child-safety lock (inhibits turn-modus, permits tilt-modus) or key-lockable handle.



Do not leave sashes open in the turn-modus during strong winds.



Caution! A slamming sash can lead to injuries. While closing, do not grasp between the sash and frame.

Colour descriptions for hinge sides cover caps, handles and accessories

Colour descriptions		Surface finish
R01.5	silver	Coated
R05.4	dark bronze	Coated
R06.2	jet-black (RAL 9005)	Coated
R07.1	pure white (RAL 9010)	Coated
R07.2	traffic-white (RAL 9016)	Coated

All visible hardware components are coated, painted/powder-coated, or anodised. The brown tone R05.4 corresponds to the same colour tone in coating as anodising. The black tone R06.2 is the same colour tone coated or anodised.

All RAL colour tones are available as coating upon special request. (Catalogue description: "SP.COL" = special colours. Price upon request).

Abbreviations used in this catalogue		
Abbreviation	Explanation	German abbreviation
"1"	single component packaging	(1er)
"10"	components packaged in tens	(10er)
C.H.-S.	Central Hinge Superior	(MB-V)
C.L.	Centre Lock / Cam	(MV)
D.M.	Dummy Mullion (without fixed centre post)	(ST)
D.M.-S.B.	Dummy-mullion with shootbolts	(ST-K)
D.M.-SL.	Dummy-mullion with slider	(ST-R)
D.M.-S.M.	Dummy-mullion surface-mounted	(ST-A)
ill.	illustration	(Abb.)
L	Left-handed version (viewed from inside)	(L)
Mat.no.	Material number (order reference)	(Mat.Nr.)
M.D.	Mishandling Device	(SP./Sperre)
Pack.unit	Packaging quantity	(VPE)
Pcs.	Pieces	(St.)
Pos.	Position	(Pos.)
R	Right-handed version (viewed from inside)	(R)
S	Superior (enhanced adjustment)	(V)
SH	sash height	(FH)
S.kg-max.	Maximum Sash Weight	(FGmax)
SP.COL.	Special Colour	(SF)
SW	sash width	(FB)
TI.-ON.	Tilt-Only	(K)
TI.-ON.-R-A.	Tilt-Only with reverse action handle	(KS)
T&T	Tilt&Turn (Turn-First)	(DK)
T&T-S	Tilt&Turn (Turn-First) Superior	(DK-V)
TU.-ON.	Turn-Only	(D)
TU.-ON. H./C.H.	Turn-Only hinge / Corner Hinge	(DE)
TU.-ON.-R.-A.	Turn-Only with reverse action handle	(DS)
UNP.	Unpainted	(roh)
u. r.	upon request	(a. A.)
V.01	Frame groove version no. 1	(V.01)
V.02	Frame groove version no. 2	(V.02)
VdS	German association of property insurers	(VdS)
w/o	without	(o.)
w	with	(m.)

Special anodisations / special colours

1. Provided that apart from the standard colours (R01.5, R06.2 und R07.2), special colours in accordance with the RAL colour chart are requested, the following arrangement applies:

The visible AluVision components are dispatched in processed unpainted condition to an anodising plant named by the customer. After the colouring is completed, the components are to be returned to us for assembly. Arising freight costs are payable by the buyer. The costs for the anodisation or colouring, as well as the risk for colour matching are assumed by the buyer.

2. The following net surcharges apply for cost of special anodisation or special colouring processes that we carry out.



Creates inner values

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Window and door technology

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BKWK/B&N/K Dated: July 2009. (Translation: paul@prunty.de)
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Roto International

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