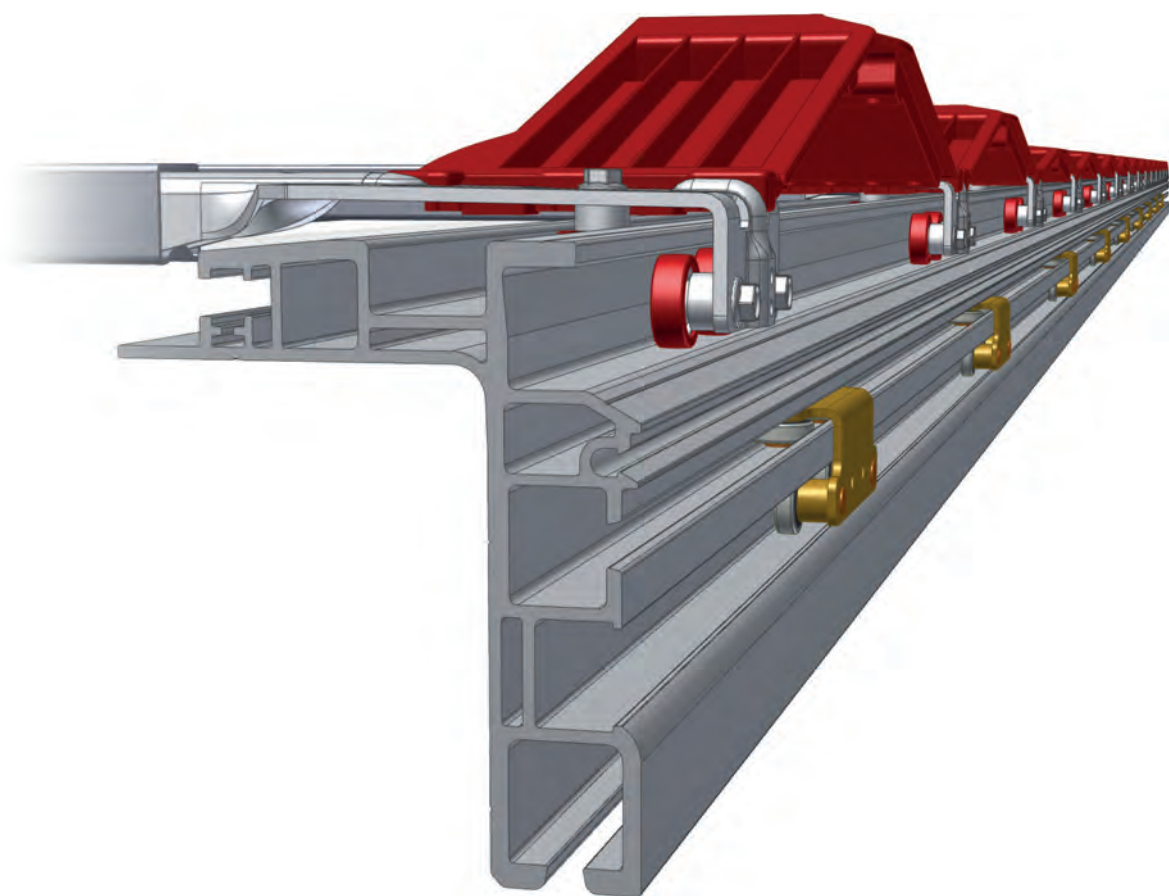


ALTO 150 VS2

Folding canvas structures



1 Instructions for use and conditions for operation of a platform car superstructure with fixed roof and side folding

1.1 Superstructure description

. The platform car superstructure is designed for road traffic vehicles. Its construction and use shall follow the applicable regulations, particularly Act no. 56/2001 Coll. on conditions of operation of vehicles on roads, and Decree no. 341/2014 Coll. of approving of technical capability and technical conditions of operation of vehicles on roads. It can only be operated by persons knowing these regulations and instructed properly about operation of a platform car superstructure.

Platform car superstructures are designed particularly for transport of piece loads, above all piece load, on the platform car loading area. The load shall be laid out on the loading area evenly to prevent overloading of any part of the loading area, and secured so that it cannot be displaced or overturned during its transport. Therefore the superstructure is equipped with anchoring lugs in the aluminium frame of the platform car for fixing of the load. The load is fixed to these anchoring lugs by clamping straps. Location and number of the anchoring lugs is determined by the superstructure manufacturer, based on the applicable regulations

. Weight of the load shall not exceed the permitted loading specified in the vehicle technical certificate. Driving with non-anchored load may cause damage to the superstructure.

The superstructure is equipped with tiltable sidewalls and tiltable rear face to facilitate loading and unloading. The sidewalls are fixed to the corner or central columns by closures. A check of proper closing of the sidewalls and rear face shall always be made before the journey, to prevent any spontaneous opening of the sidewalls during the journey.

. Drive with sidewalls or rear face tilted down is forbidden. In case it is necessary to drive with sidewalls or rear face tilted down, it is possible if these are open and slid out of their hinges.

In case of incorrect use of the structure the supplier of parts for platform car superstructures cannot be responsible for any possible damages caused by non-observance of the applicable regulations.

. Any warranty for this superstructure becomes void in case of incorrect use of the platform car superstructure

1.2 Maintenance of the platform car superstructure

The platform car superstructure does not require any special maintenance. It is important to keep the superstructure clean, wash it by pressure water, particularly during winter season, when chemicals are used on roads and that may impair functionality of the sidewall hinges and locks and cause corrosion of the galvanised components if these are left dirty for a long time

Attention!

Hinges of the sidewalls and their closures shall be treated regularly using preservative lubricants.
Closures of the central columns shall be treated regularly using preservative lubricants.

Due to the fact that all bolted joints of the aluminium platform (clamps PALCOM) are secured by an adhesive against any spontaneous release of the bolts, it is forbidden to retighten these joints during operation. This might cause release of these joints leading to damage of the supporting parts of the superstructure.

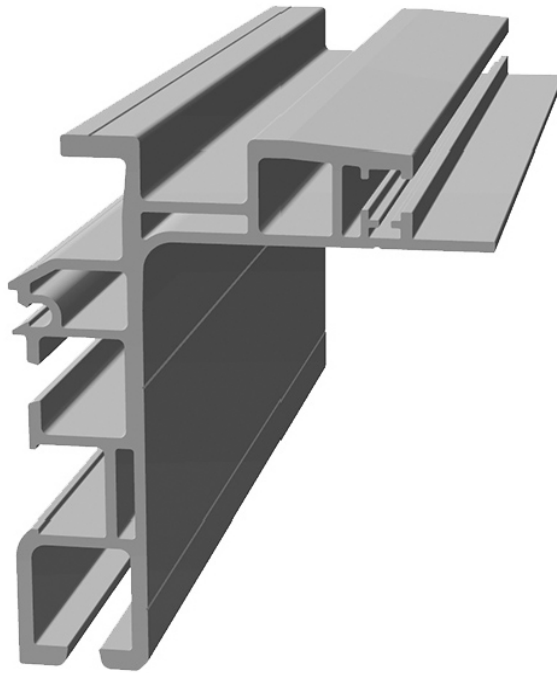
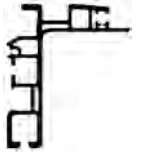
In case of a fault on the supporting parts contact please an authorised service centre or a company that assembled the platform car superstructure. The particular company can repair the superstructure professionally using properly specified spare parts.

Maintenance of the platform car superstructure

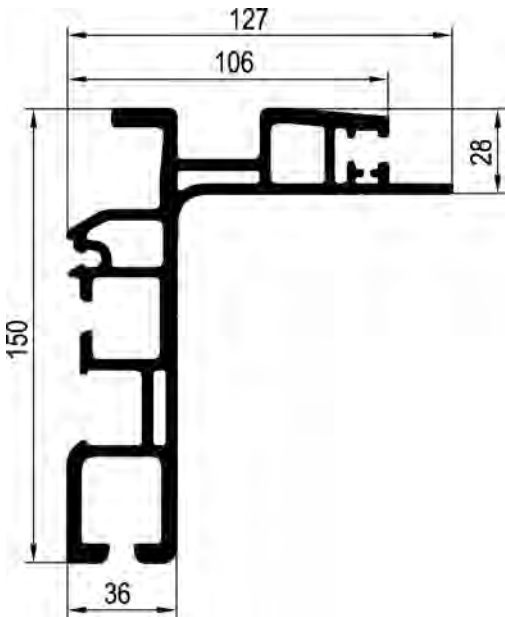
The platform car superstructure consists of a set of components prepared always for the given dimension and design, according to the customer's requirement. The aluminium platform consists of auxiliary profiles, crosspieces and frame profiles connected together by special clamps. The frame profiles are connected in corners and possibly also under central column using special corner and central elements. Such assembled platform forms the platform car structure. This structure consists of corner and central columns that are also supporting components of the roof structure. Sidewalls of aluminium profiles thick 25mm with closures are fixed to the frame using hinges that enable tilting of the sidewalls and face down and their detachment. The sidewalls and rear face are manufactured mostly of one-piece profiles 400mm high. Upon customer's requirements, we can also deliver sidewalls with different heights, e.g. 500 or 600mm. The front face can be delivered with different heights, according to the customer's requirement. Al profiles 100x25mm as supports of the canvas are used on sides of the superstructure, between the columns. The number of profiles can be chosen by the customer.

The roof structure consists of a frame assembled of aluminium profiles 60x30x2mm, fixed to aluminium corner columns using corner assembly sets. Steel brackets with rubber inserts are riveted to this frame; aluminium tubes Ø 35 mm for supporting of the roof canvas are located in these brackets. The canvas is not included in delivery of the company TRANS-TECHNIK

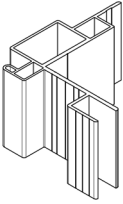
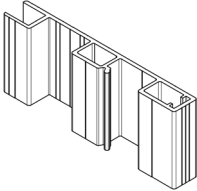

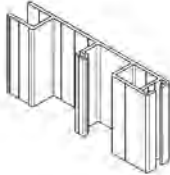
2. LONGITUDINAL GUIDE PROFILE ALTO 150 VS2



$I_x: 511,3 \text{ cm}^4$
 $I_y: 220,0 \text{ cm}^4$
 $\pm 6,2 \text{ kg / m}$

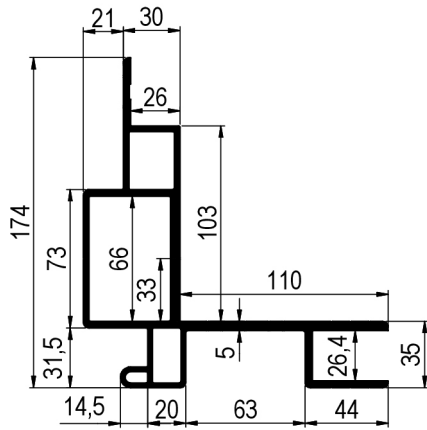
TT-number	Drawing	Produced lengths of the guide profile
<p> 0538 007.073 0538 007.079 0538 007.086 0538 007.098 </p>		<p> $L = 7,3 \text{ m}$ $L = 7,9 \text{ m}$ $L = 8,6 \text{ m}$ $L = 9,8 \text{ m}$ </p>

3. ALUMINIUM CORNER COLUMNS - OVERVIEW

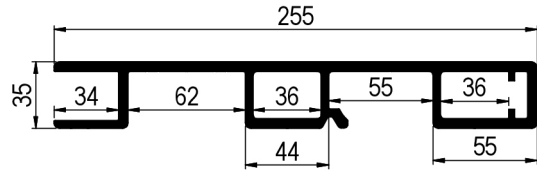
Name	TT-number Al přír./elox-	Drawing	Length mm	Weight
ALUMINIUM CORNER PILLARS BIG	0354 121.000 0354 121.100		3300	21,1 kg / ks
	0354 100.000 0354 100.100		3300	22,7 kg / ks
ALUMINIUM CORNER PILLARS MIDI	0354 420.000 0354 420.100		3200	13,86 kg / ks
	0354 400.000 0354 400.100		3200	15,07 kg / ks

3. 1. ALUMINIUM CORNER PILLARS BIG

3. 1. 1. Drawings, layout of the columns, assembly sets for the frame

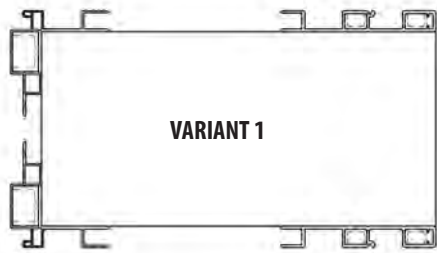


0354 121.000
0354 121.100



0354 100.000
0354 100.100

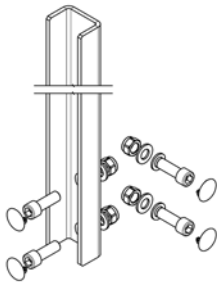
LAYOUT OF THE COLUMNS



VARIANT 1

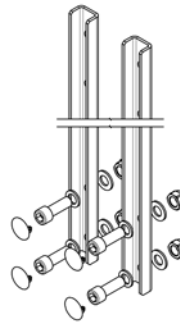


VARIANT 2



0354 120.200

The set includes:
1 pc - stiffener U65 - 750
4 pcs - bolt M14x40, cyl. head
2 pcs - hex. nut M12
4 pcs - washer A15/28, DIN125
4 pcs - washer 15/24, DIN 433
4 pcs - blind caps 22.0-25

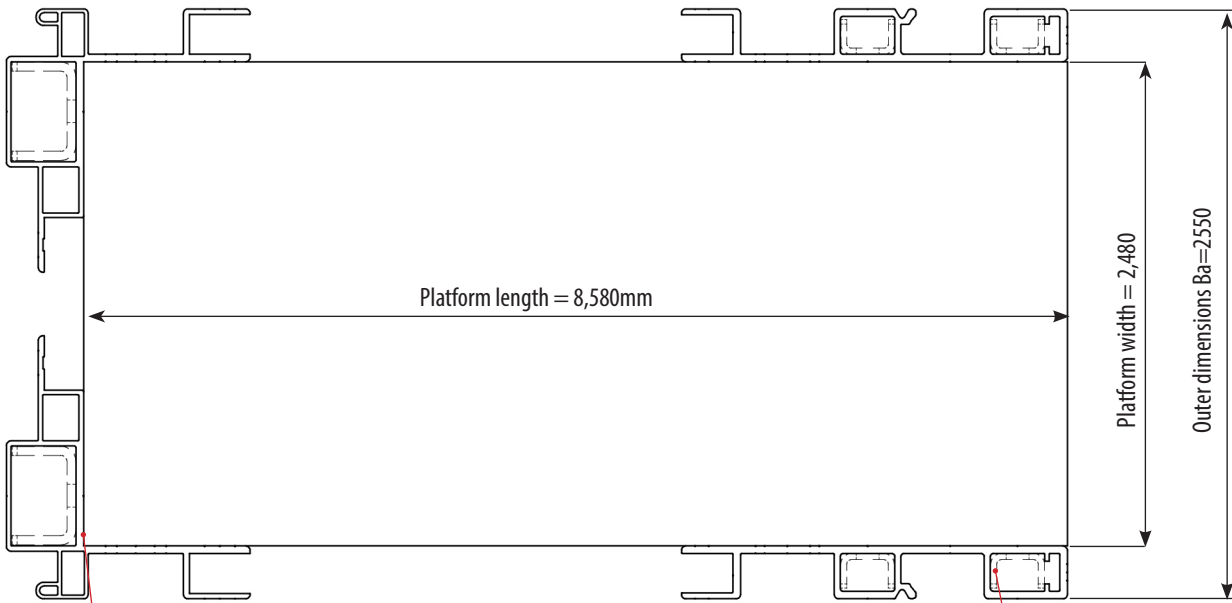


0354 100.200

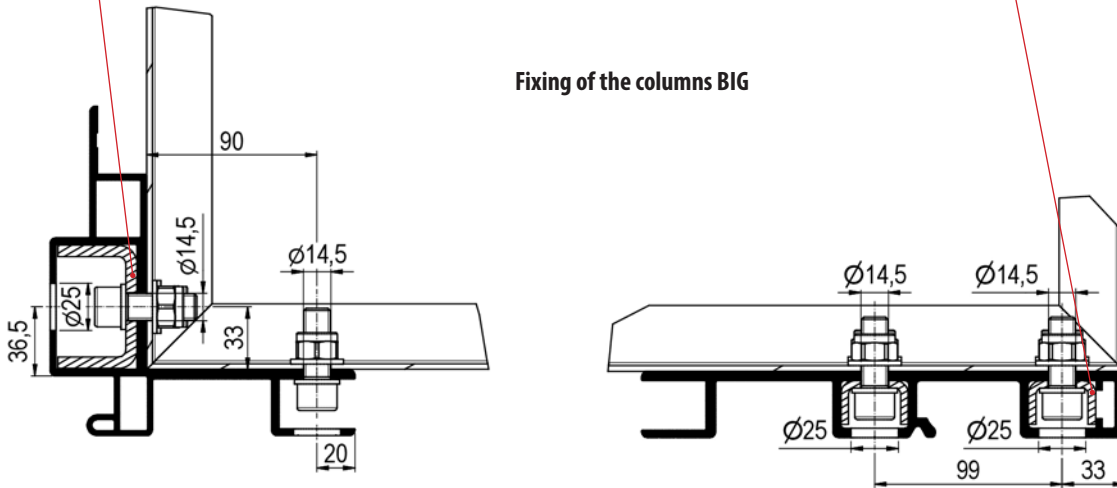
The set includes:
2 pc - stiffener U35 - 750
4 pcs - bolt M14x40, cyl. head
2 pcs - hex. nut M12
4 pcs - washer A15/28, DIN125
4 pcs - washer 15/24, DIN 433
4 pcs - blind caps 22.0-25

TT-number	Name	Material Material	Lenght	Weight kg / pcs
0354 100.000	Aluminium rear pillar 255 x 35 mm		3300	22,7
0354 100.100	Aluminium rear pillar 255 x 35 mm		3300	22,7
0354 121.000	Aluminium front pillar 161 / 174 x 35 mm		3300	21,1
0354 121.100	Aluminium front pillar 161 / 174 x 35 mm		3300	21,1
0354 100.200	Assembly set for the frame - rear pillow	galvanized steel		3,5
0354 120.200	Assembly set for the frame - rear pillow	galvanized steel		5,1

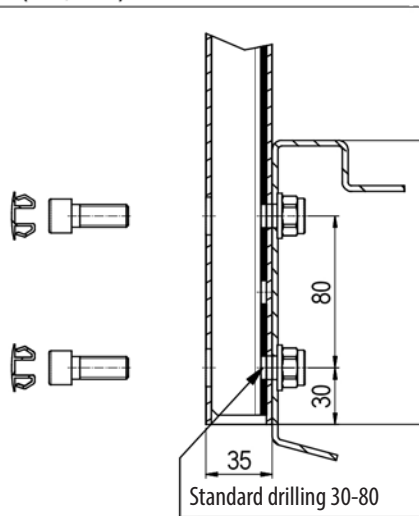
3.1.2. Aluminium corner columns BIG - columns assembly scheme



Fixing of the columns BIG

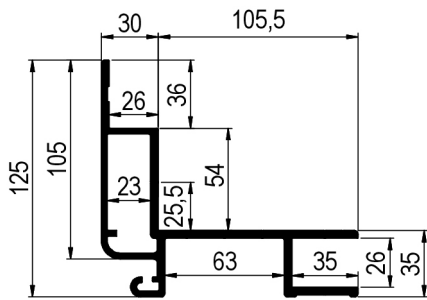


140 (150, 160) - Recommended storage of columns

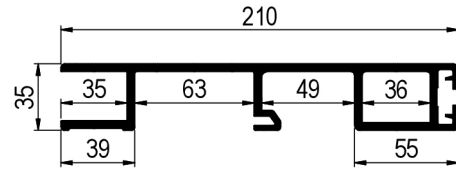


3. 2. ALUMINIUM CORNER PILLARS MIDI

3. 2. 1. Drawings, layout of the columns, assembly sets for the frame

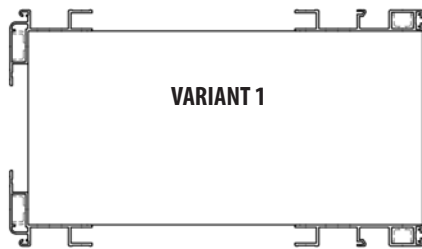


0354 420.000
0354 420.100

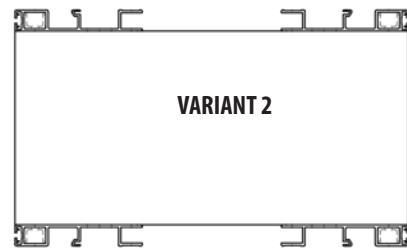


0354 400.000
0354 400.100

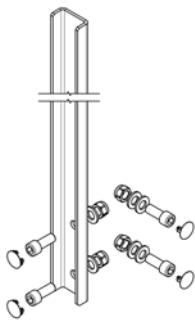
LAYOUT OF THE COLUMNS



VARIANT 1



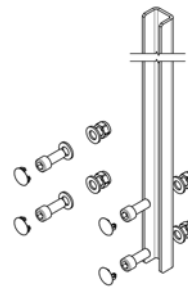
VARIANT 2



0354 420.200

Set includes:

- 1 pc - stiffener
- 4 pcs - bolt M12x30, cyl. head
- 4 pcs - hex. nut M12
- 4 pcs - washer 13, galvanised, DIN 125
- 4 pcs - end caps 18-20



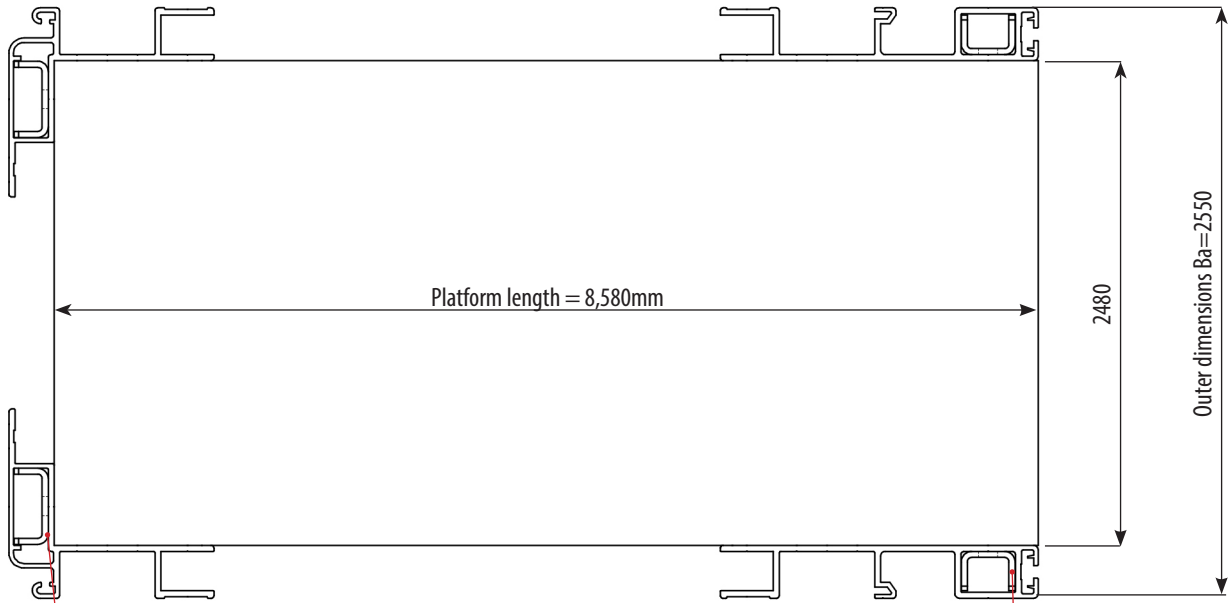
0354 400.200

Set includes:

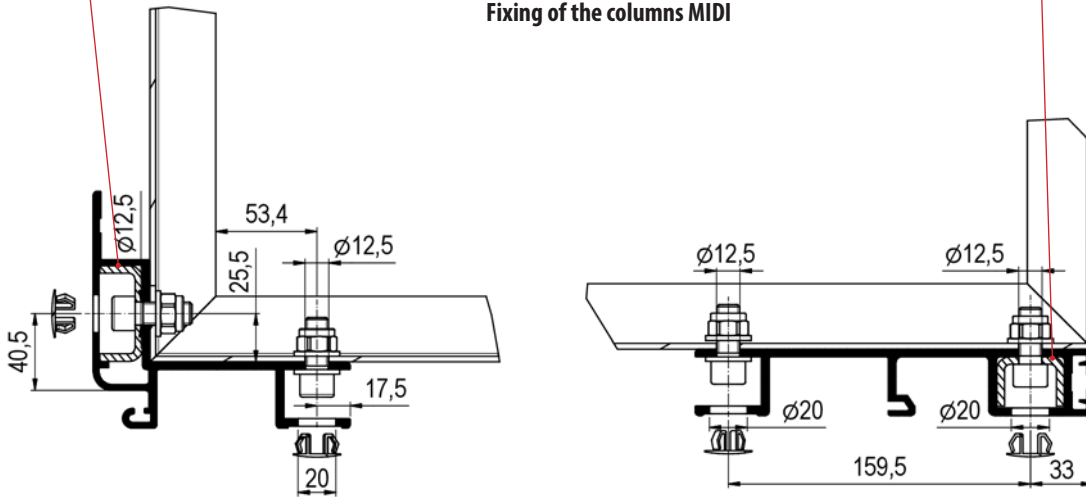
- 1 pc - stiffener
- 4 pcs - bolt M12x30, cyl. head
- 4 pcs - hex. nut M12
- 4 pcs - washer 13, galvanised, DIN 125
- 4 pcs - end caps 18-20

TT-number	Name	Material	Length	Weight kg / pcs
0354 400.000	Aluminium rear pillar		3200	15,07
0354 400.100	Aluminium rear pillar		3200	15,07
0354 420.000	Aluminium front pillar		3200	13,86
0354 420.100	Aluminium front pillar		3200	13,86
0354 400.200	Assembly set for the frame rearS	galvanized steel		1,9
0354 420.200	Assembly set for the frame - front	galvanized steel		2,4

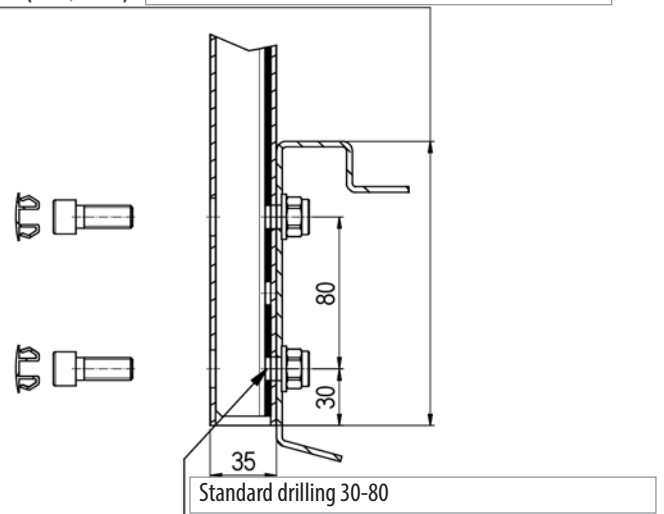
3.2.2. Aluminium corner columns MIDI- columns assembly scheme



Fixing of the columns MIDI

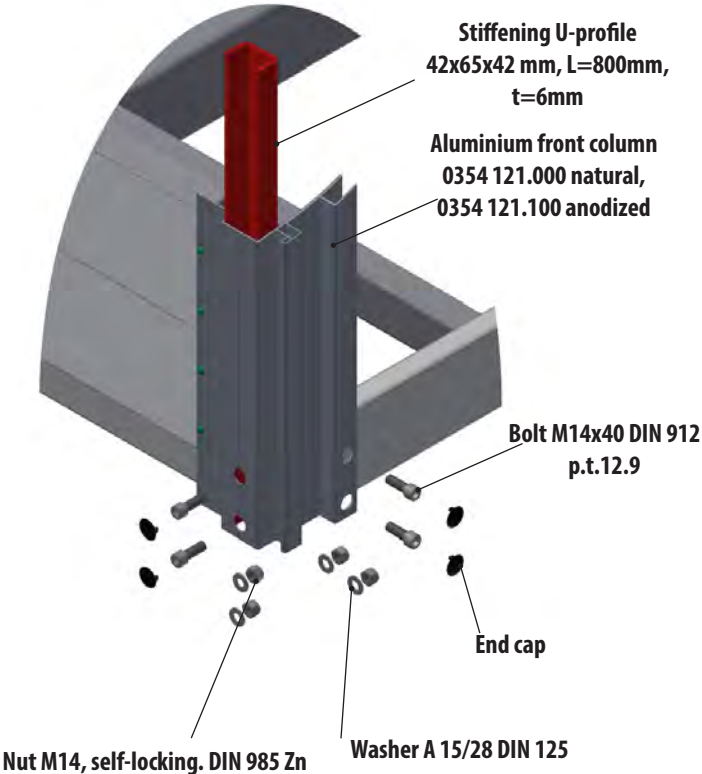


140 (150, 160) - Recommended storage of columns

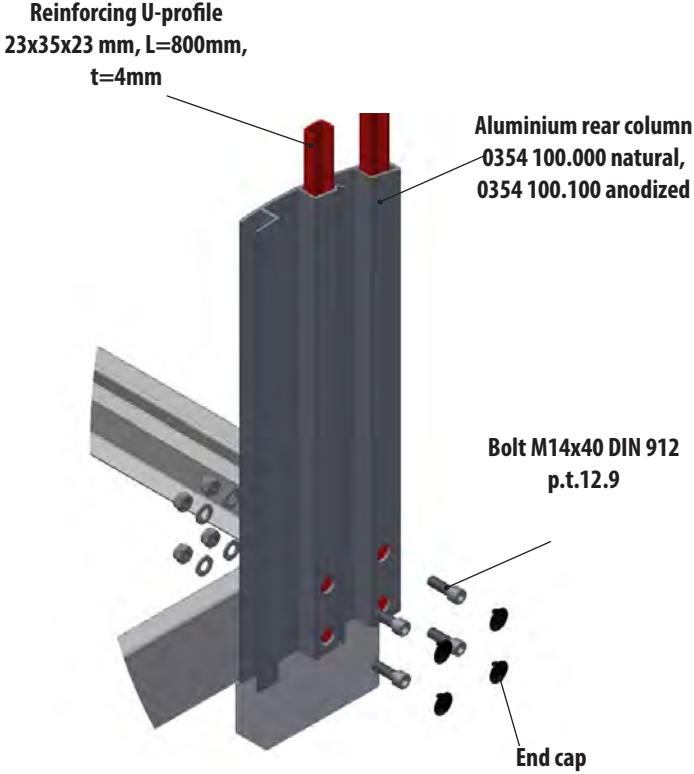


3.3 Installation columns on the platform frame

Installation of the front column on the platform frame

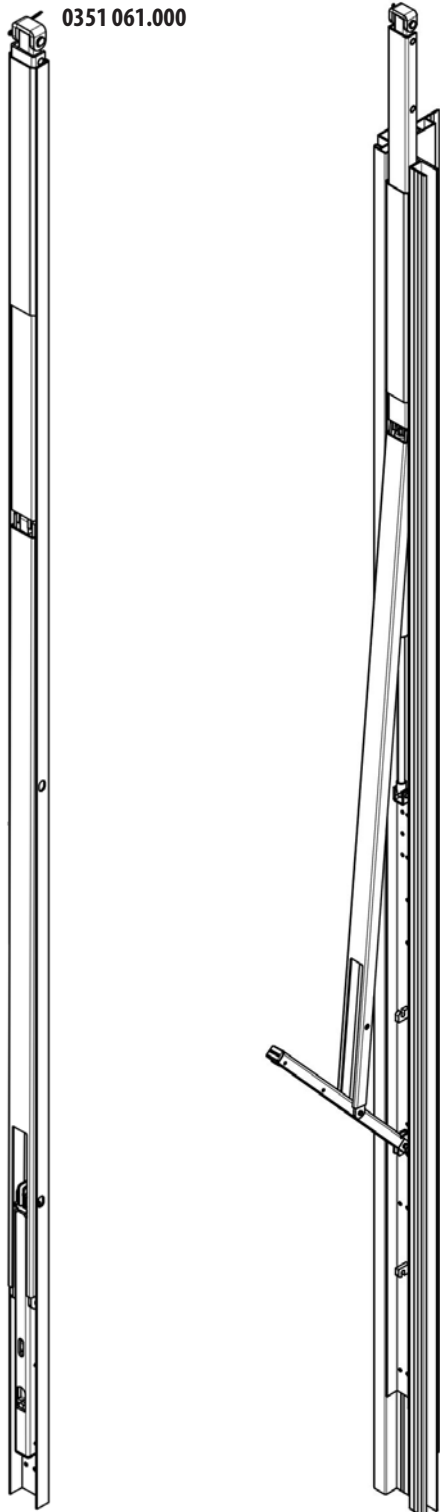


Installation of the rear column on the platform frame



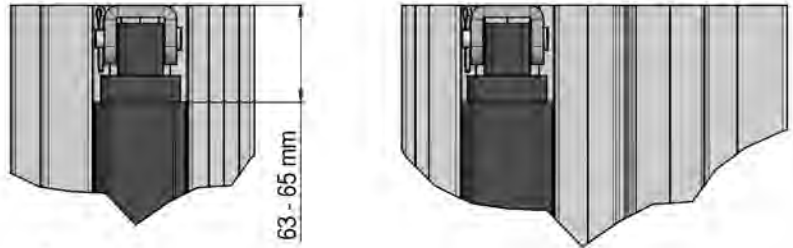
4.1 Lifting DG columns

DG is mechanical lifting system, using its articulated mechanism you can lift smoothly the vehicle roof by up to 400mm.
 Standard length of the column is 2,850mm. The DG column is riveted to the supporting corner column of the superstructure.
 Material / surface - steel / cataphoresis
 Weight: 16.65 kg/pc

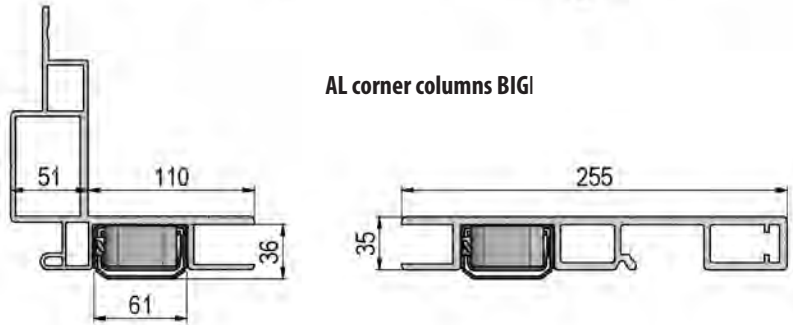


0351 061.100 Gas strut 400 / 900N,ND for the column

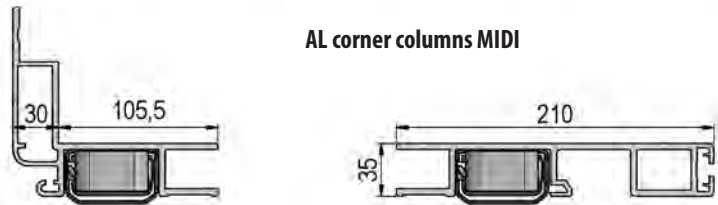
Installation of the lifting DG column into the Al corner column



AL corner columns BIGI



AL corner columns MIDI



Installation for the front column, tilting design - 1 pin only



Installation for the rear column, fixed design - 2 pins

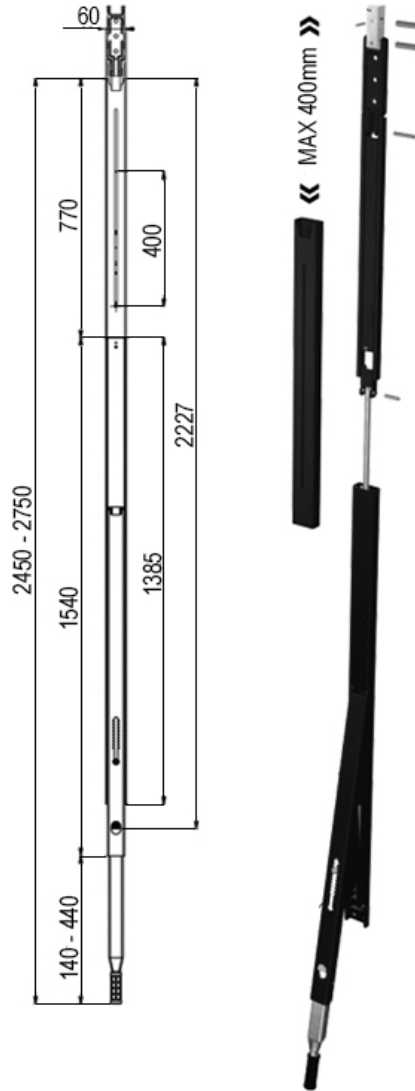


0351 061.100

4.2 COLUMNS HESTAL LIFTMASTER 770

TT number
0351 054.000

Liftmaster 770 is mechanical lifting system, using its articulated mechanism you can lift smoothly the vehicle roof by up to 400mm. Standard length of the column is 2,750mm; if necessary, the length can be modified in 50mm steps up to the minimal length of 2,450mm. Liftmaster 770 is riveted to the supporting corner column of the superstructure. Loading capacity of the column is 250kg.; if 4 columns Liftmaster 770 are used, the maximum permitted loading of the roof is 1,000kg.



During transport, completely lowered roof seats to the column Liftmaster 770 body, so that the articulated mechanism is lightened. The manual lever is secured by a spring against its spontaneous movement.

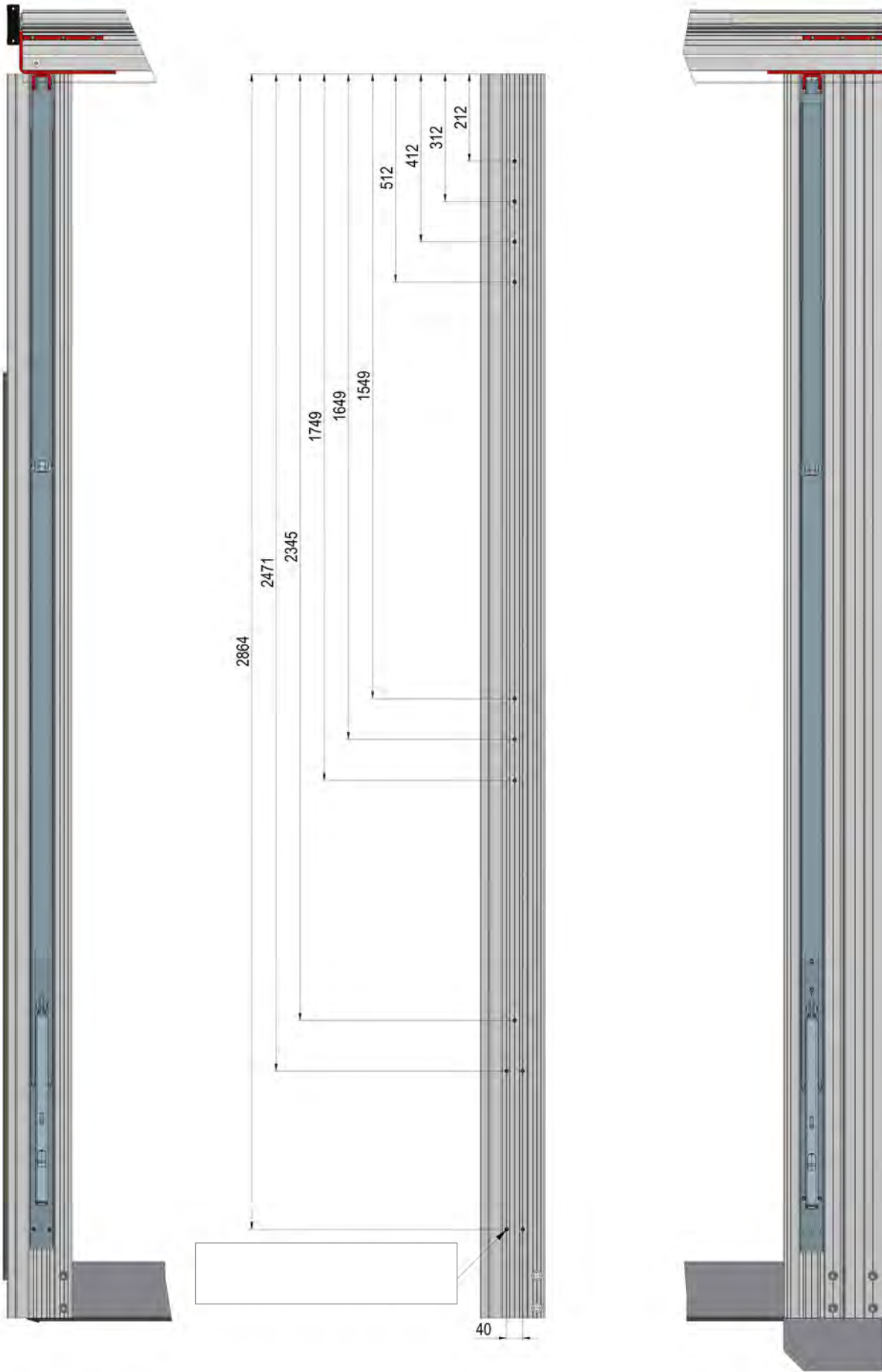
Thanks to sufficient arrestment of the lift, drive is permitted with roof lifted by up to 120 mm.

Roof can be lowered by a lowering pushbutton; speed of the lowering is given by the control force applied on the lever.

Each movement of the lever lifts the roof by 50mm.

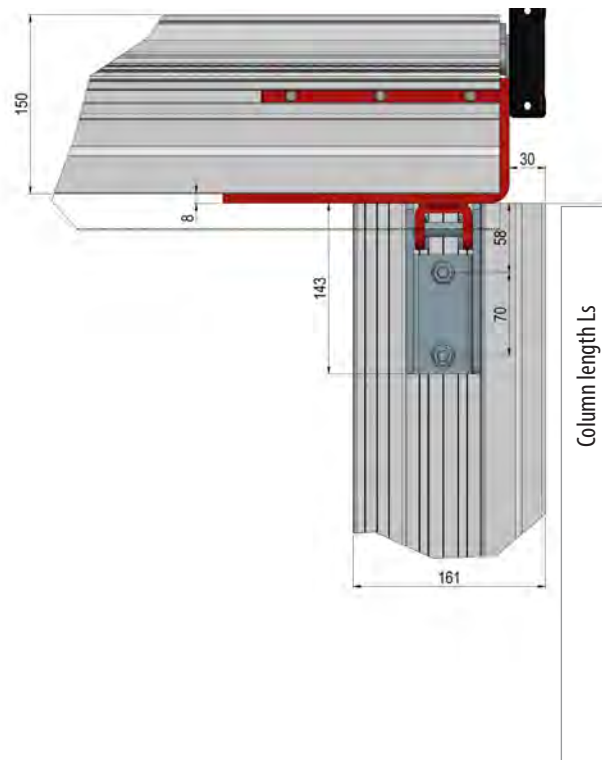
TT-number	Material	Lmax	Material / surface	Weight kg / pcs
0351 054.000	2450	2750	steel/cataphoresis	17,5

4.3 ASSEMBLY DESIGN - DG LIFTING COLUMN

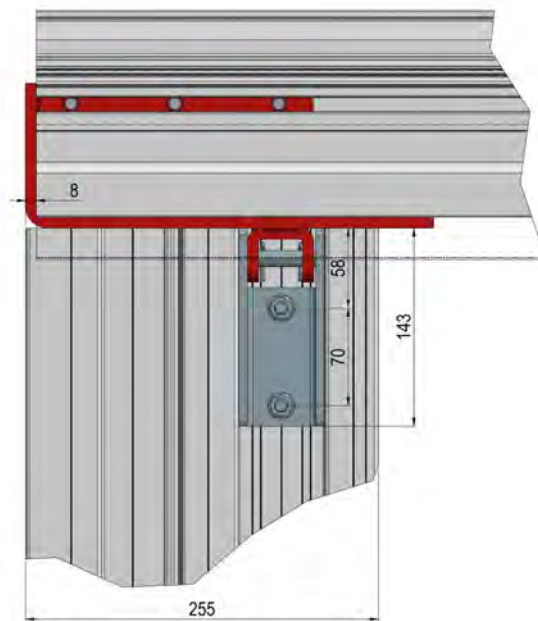


4.4 ASSEMBLY DESIGN - DG LIFTING COLUMN

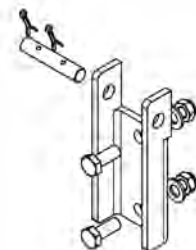
FRONT CORNER COLUMN



REAR CORNER COLUMN



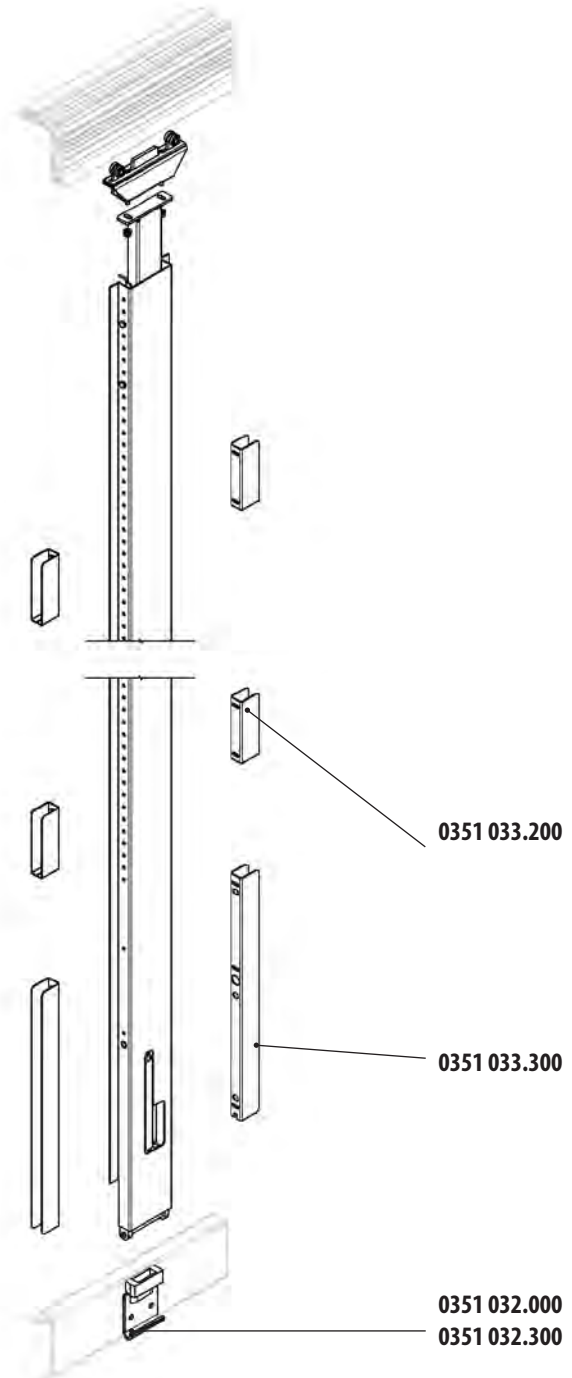
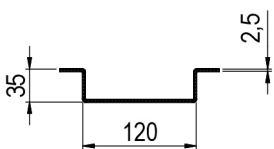
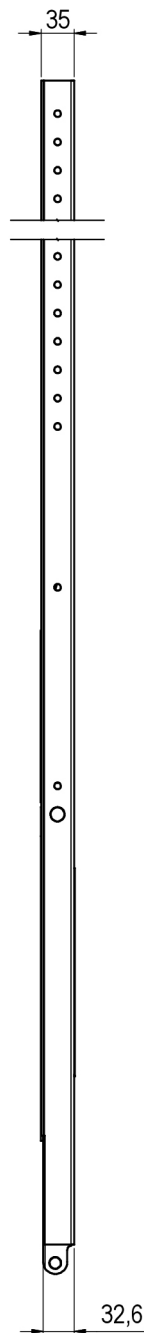
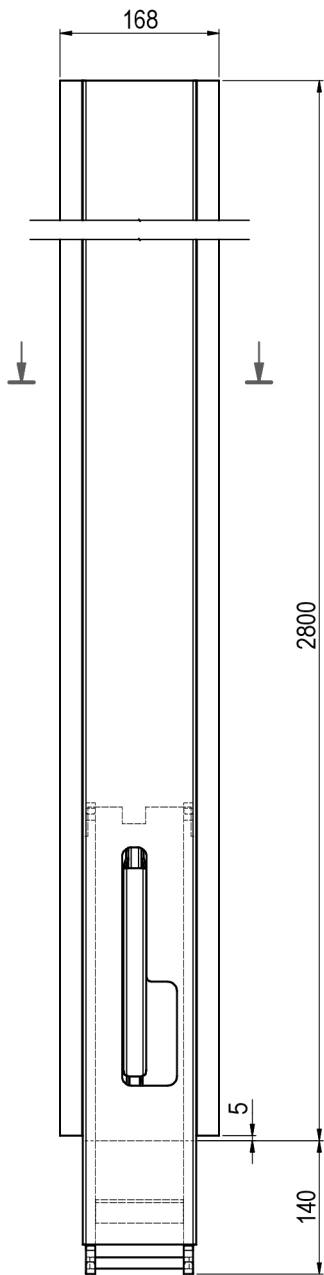
0538 215.000
Counterpiece to the installation
lifting set



5. CENTRAL TILTABLE COLUMNS

5.1. Steel heavy central column DG, H = 2,800mm

5.1.1.



THE POCKET IS NOT INCLUDED IN THE DELIVERY

TT-number	Name	Height column	Material / Surface	Weight kg/pcs
0351 032.001	Central column CS, DG, without pocket	2800	steel / black varnish	21,5
0351 032.200	DG column pocket - welding on		steel	0,82
0351 032.300	DG column pocket - screwing on		galvanised steel	0,80
0351 033.200	Pocket for the under-canvas profile		galvanised steel	0,40
0351 033.300	Pocket for the pyramidal profile		galvanised steel	1,1
0354 106.000	Lug for sidewall closures		galvanised steel	0,30

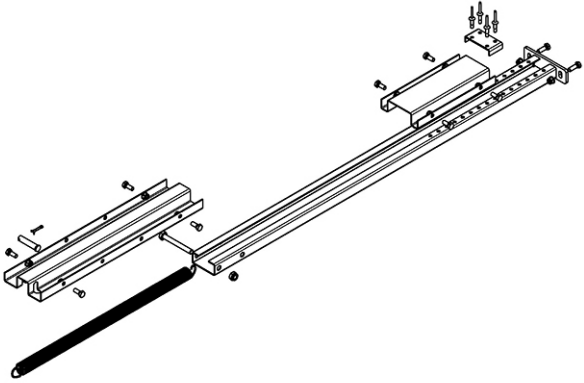
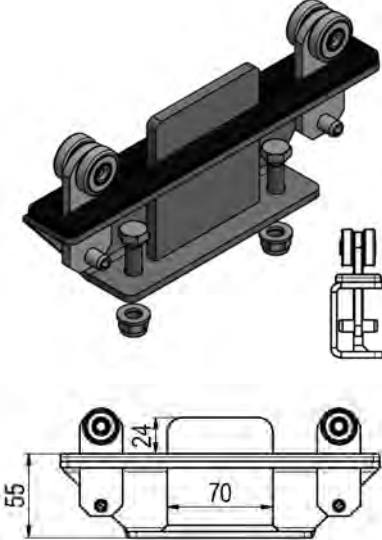
5.2 Steel heavy central DG column - piece list

TT-number	Name	Drawing
0351 032.200	DG column pocket - welding on	
0351 032.300	DG column pocket - screwing on	
0351 033.200	Pocked for the under-canvas profile	
0351 033.300	Pocket for the pyramidal profile	
0354 106.000	Lug for sidewall closures	

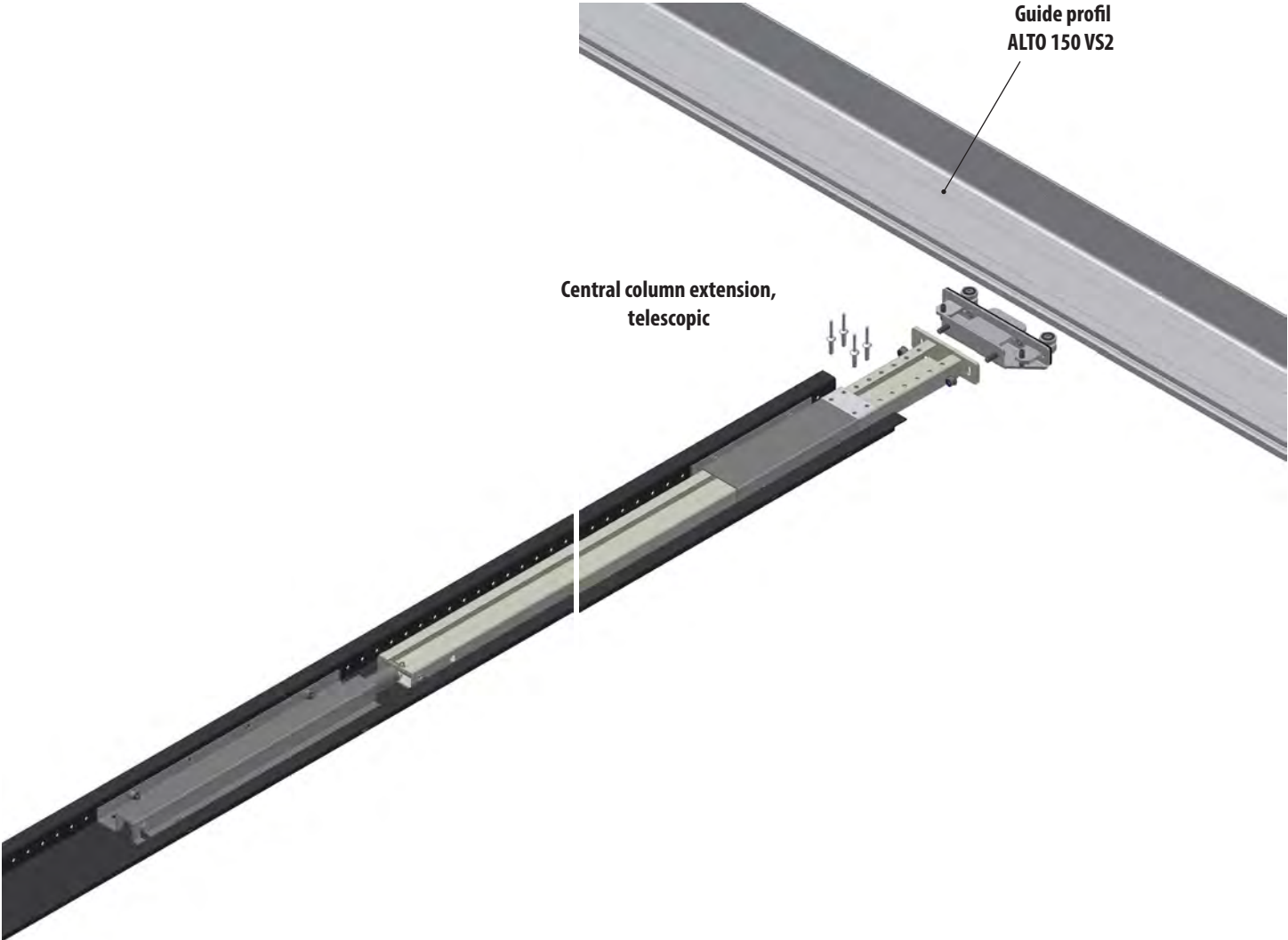
5.3 COLUMN ACCESSORIES - UNIVERSAL PARTS

TT-number	Name	Drawing
0351 041.000	Fixed extension, universal	
0538 504.000	Central column slider, lifting, ALTO 150	

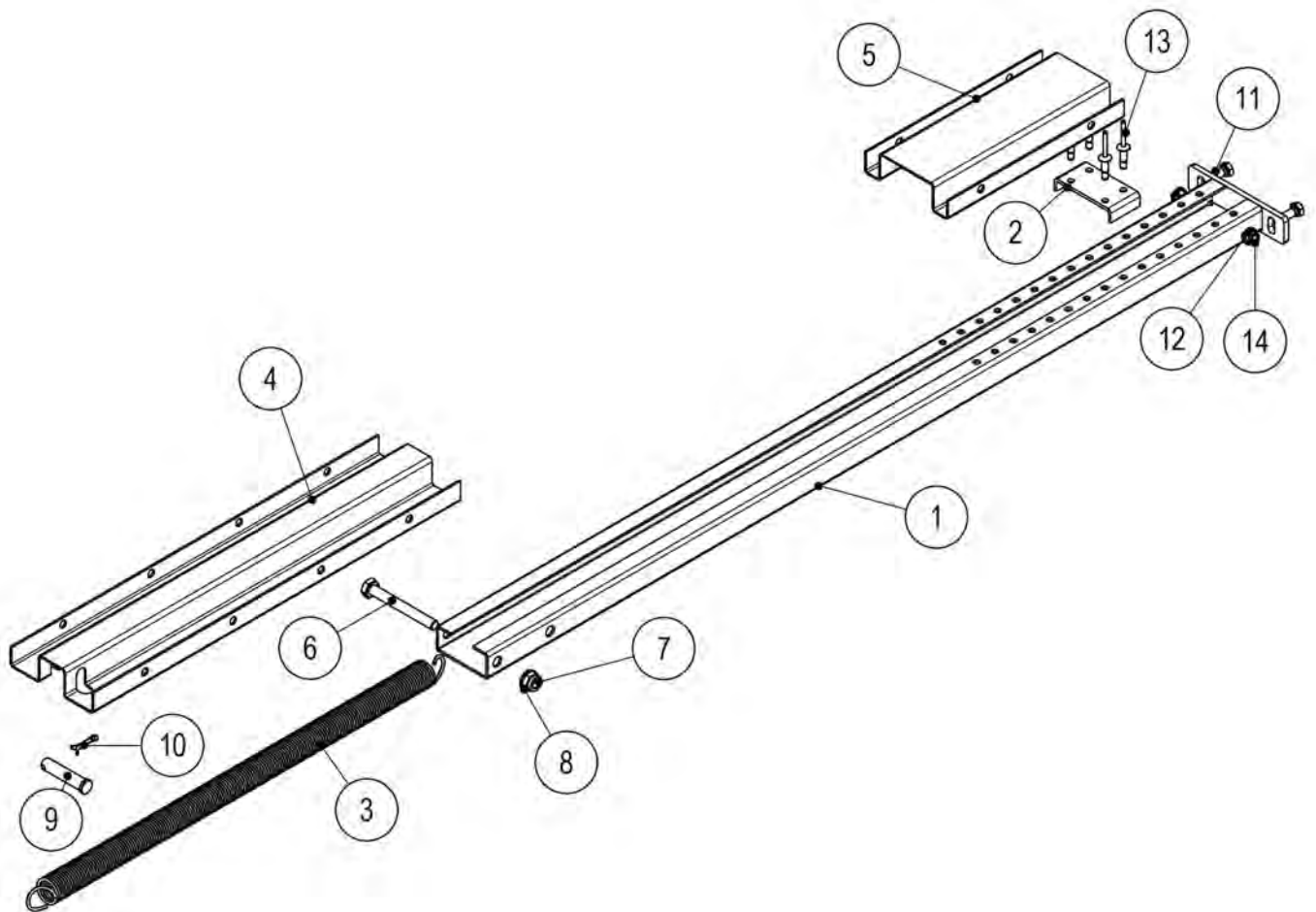
5.4 COLUMN ACCESSORIES

TT-number	Name	Drawing
0351 032.100	Central column extension, telescopic, for the column 0351 032 000	
0538 515.000	Central column slider ALTO 150 VS2	

5.5 INSTALLATION OF THE CENTRAL COLUMN EXTENSION

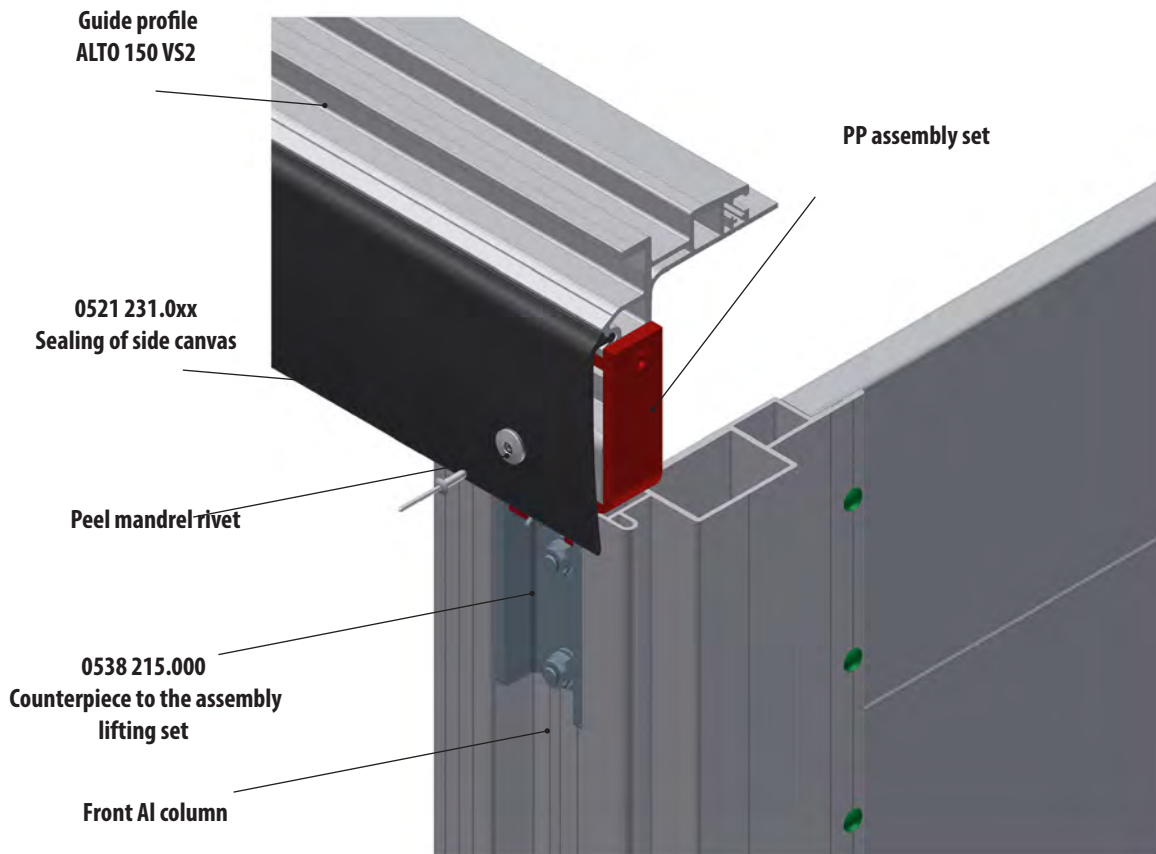
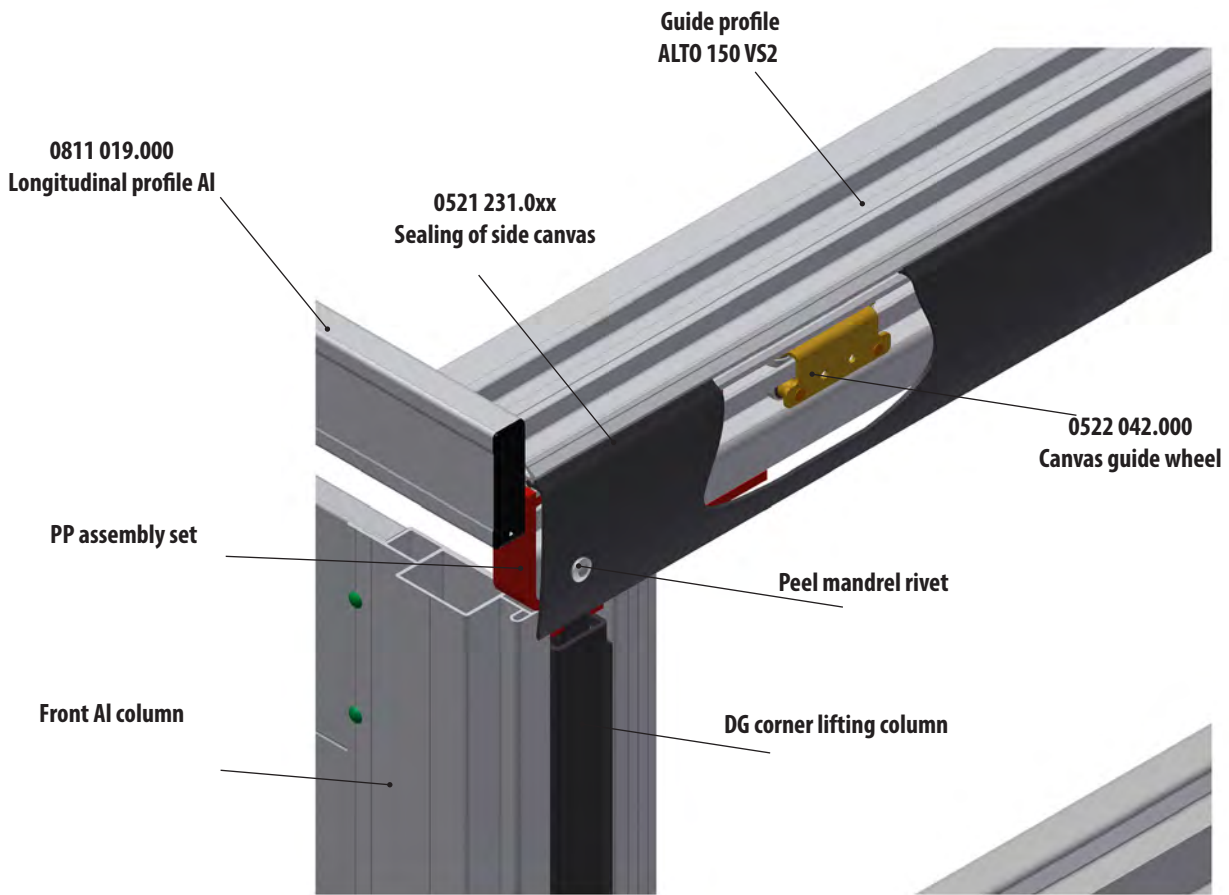


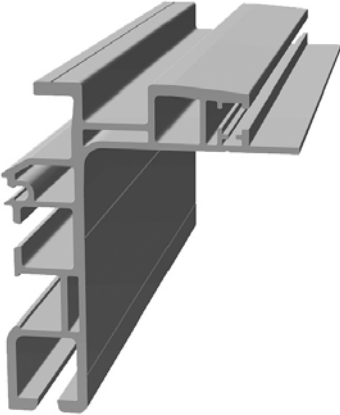
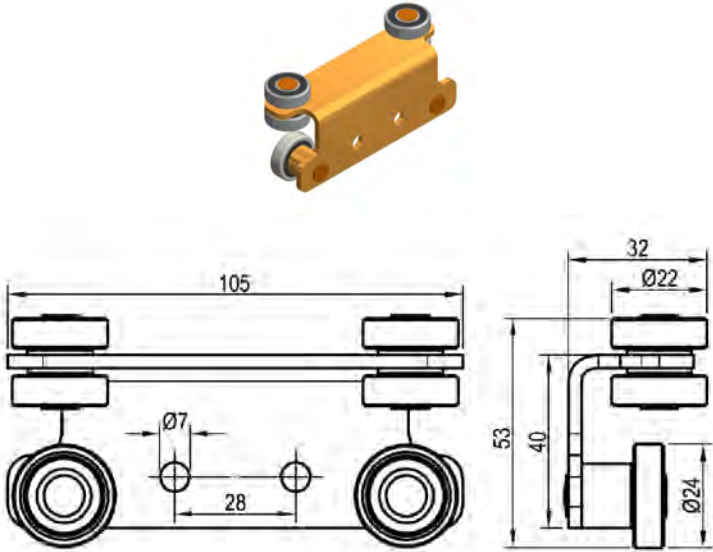
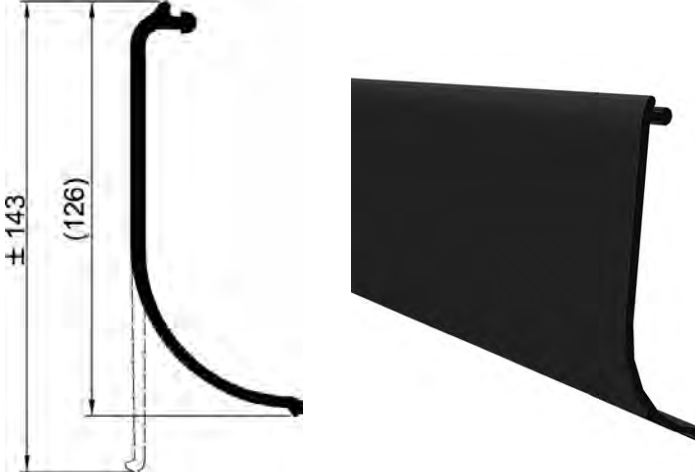
0351 032.100
Central column extension, telescopic, for the column 0351 032 000



TT-number	Name	Qty
1	Telescopic profile	1
2	Stop	1
3	Tension spring	1
4	Spring guide	1
5	Telescopic profile guide	1
6	Bolt M10x85 DIN 931	1
7	Hex. self-locking nut M10, galvanised, DIN 985, ISO 10511	1
8	Round washer 10.5, galvanised, DIN 125, ISO 7090	1
9	Pin with head and hole 12x55	1
10	Cotter ZB 13	1
11	Bolt M8x25, hex. head 8.8, galvanised, DIN 933, ISO 4017	2
12	Hex. self-locking nut M18, galvanised, DIN 985, ISO 10511	2
13	Peel mandrel rivet 6.4x12 St/ST, flat head	4
14	Round washer 8.4, galvanised, DIN 125, ISO 7090	

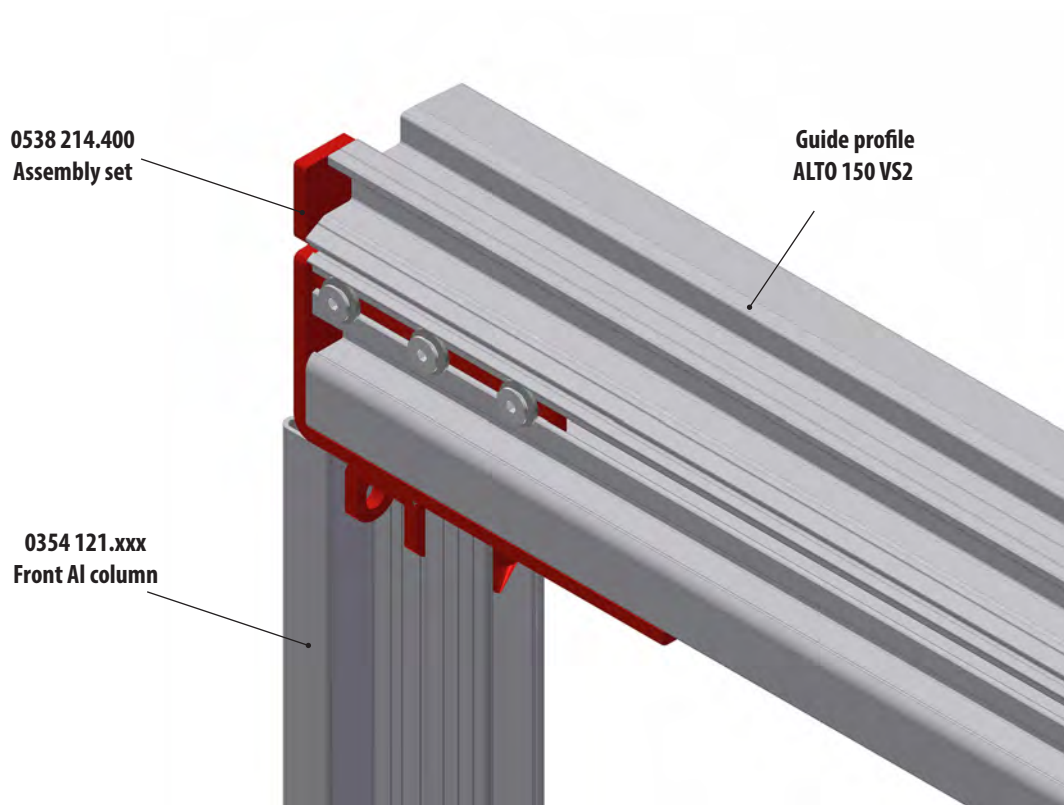
6. ASSEMBLY DESIGN FOR GUIDE PROFILE ALTO 150 VS2



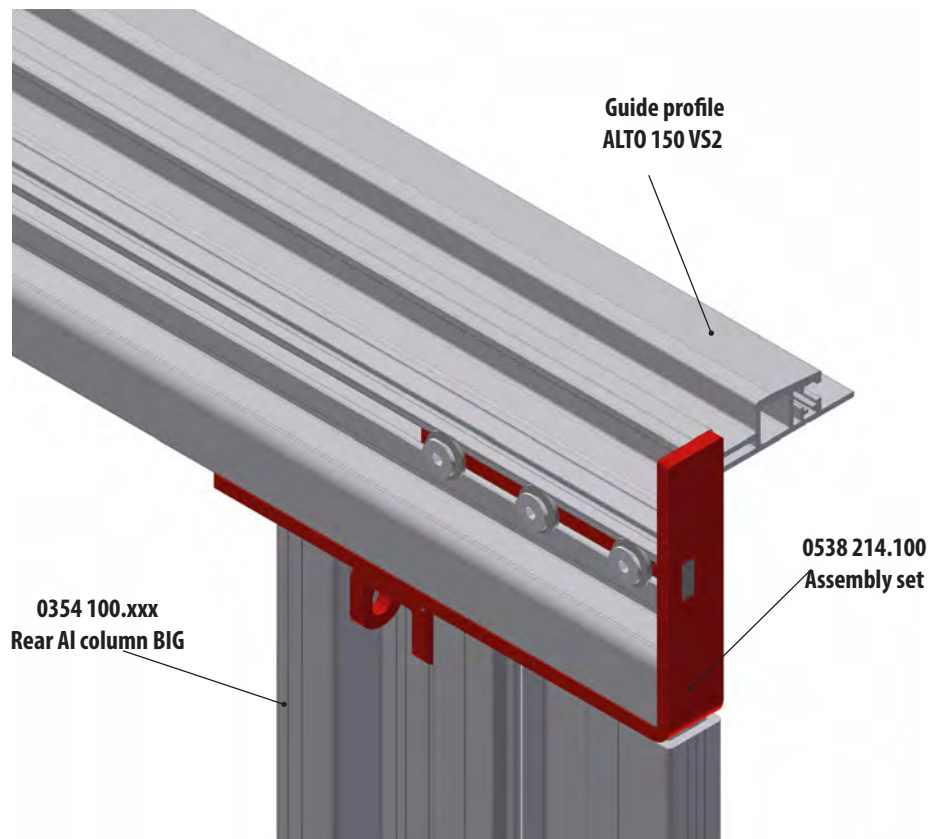
TT-number	Name	Drawing
<p>0538 007.073 0538 007.079 0538 007.086 0538 007.098</p>	<p>Guide profile ALTO 150 VS2 L = 7,3 m L = 7,9 m L = 8,6 m L = 9,8 m</p>	
<p>0522 042.000</p>	<p>Canvas guide wheel</p>	
<p>0521 231.004 0521 231.007 0521 231.009 0521 231.014</p>	<p>Sealing of side canvas L=4,5m L=7m L=9m L=14m</p>	

6.1 ASSEMBLY SETS FOR THE LONGITUDINAL LIFTING GUIDE PROFILE ALTO 150 VS2, FOR AL CORNER COLUMNS

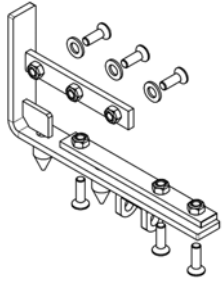
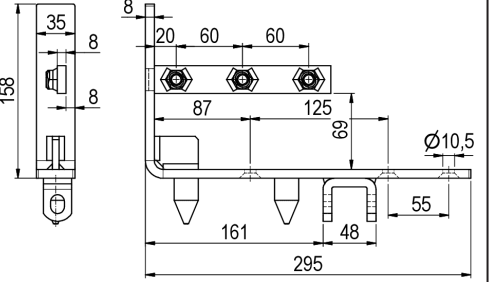
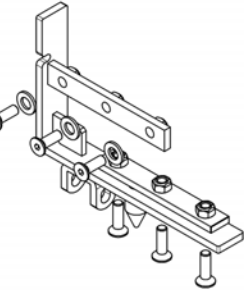
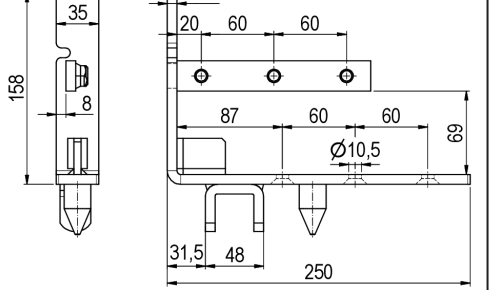
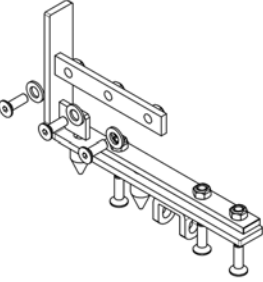
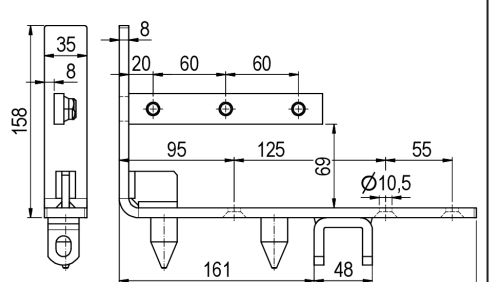
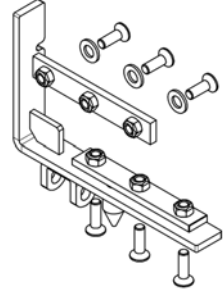
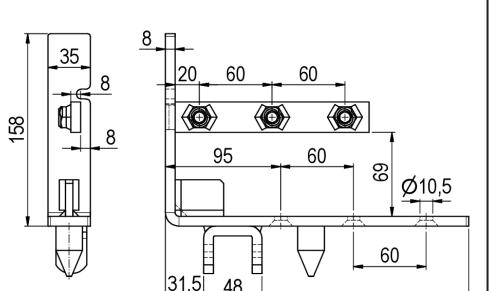
FRONT LIFTING SET



REAR LIFTING SET



6.1.1 ASSEMBLY SETS FOR THE LONGITUDINAL LIFTING GUIDE PROFILE ALTO 150 VS2, FOR AL CORNER COLUMNS BIG

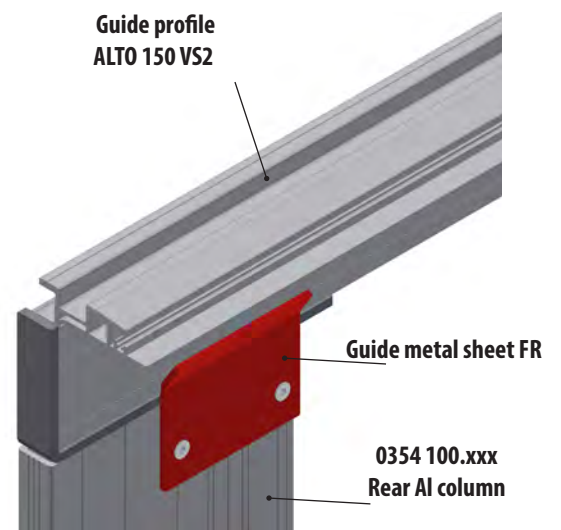
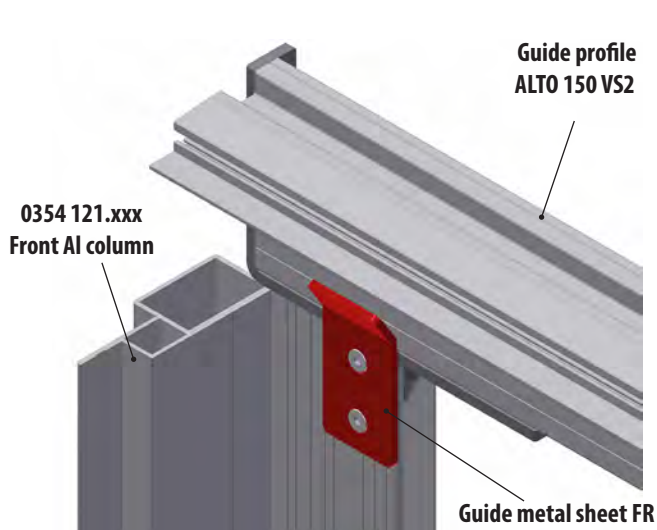
TT-number	Name	Drawing	
<p>0538 214.100</p> <p>The assembly set ALTO RL The set includes:</p> <p>0538 214.102 1 pc - assembly part RL 0538 210.010 1 pc - threaded plate 25x8 - 220, 1904 110.035 3 pcs - bolt M10x35, countersunk head 1904 110.030 3 pcs - bolt M10x30, hex. head 1961 113.000 3 pcs - washer</p>			
<p>0538 214.200</p> <p>The assembly set ALTO FL The set includes:</p> <p>0538 214.202 1 pc - assembly part FL 0538 240.015 1 pc - threaded plate 25x8 - 160 1904 110.035 3 pcs - bolt M10x35, countersunk head 1904 110.030 3 pcs - bolt M10x30, hex. head 1961 113.000 3 pcs - washer 10</p>			
<p>0538 214.300</p> <p>The assembly set ALTO RR The set includes:</p> <p>0538 214.302 1 pc - assembly part RR 0538 210.010 1 pc - threaded plate 25x8 - 220 1904 110.035 3 pcs - bolt M10x35, countersunk head 3 pcs - 1904 110.030 bolt M10x30, hex. head 1961 113.000 3 pcs - washer 10</p>			
<p>0538 214.400</p> <p>The assembly set ALTO RF The set includes:</p> <p>0538 214.402 1 pc - assembly part RF 0538 240.015 1 pc - threaded plate 25x8 - 160 1904 110.035 3 pcs - bolt M10x35, countersunk head 1904 110.030 3 pcs - bolt M10x30, hex. head 1961 113.000 3 pcs - washer 10</p>			

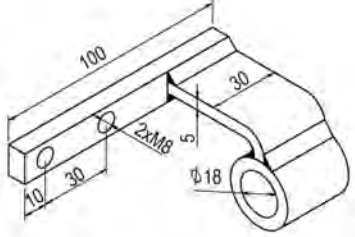
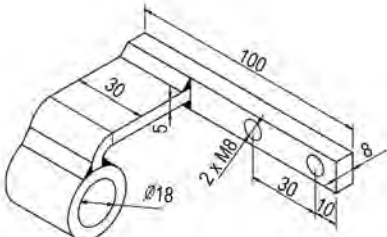
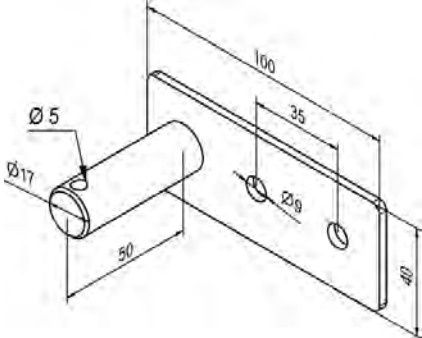
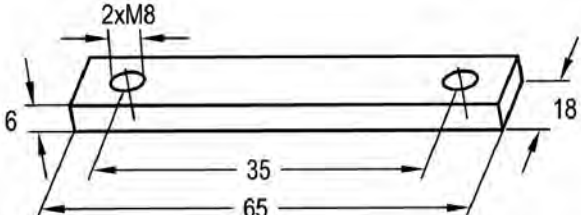
6.1.2 ASSEMBLY SETS FOR THE LIFTING GUIDE PROFILE ALTO / FOR LIFTING COLUMNS LIFTMASTE FOR AL COLUMNS BIGR

TT-number	Name	Drawing
<p>0538 210.100</p> <p>The assembly set ALTO ZL The set includes:</p> <p>0538 210.102 1 pc - assembly part RL 0538 210.010 1 pc - threaded plate 25x8 - 220 1904 110.035 3 pcs - bolt 10x35 1904 110.030 3 pcs - bolt M10x30 1961 113.000 3 pcs - washer 10</p>		
<p>0538 210.200</p> <p>Assembly set ALTO FL The set includes:</p> <p>0538 210.202 1 pc - assembly part FL 0538 240.015 1 pc - threaded plate 25x8 - 160, 1904 110.035 3 pcs - bolt M10x35, countersunk head 1904 110.030 3 pcs - bolt M10x30, hex. head 1962 110.000 3 pcs - washer 10</p>		
<p>0538 210.300</p> <p>Assembly set ALTO RR The set includes:</p> <p>0538 210.302 1 pc - assembly part RR 0538 210.010 1 pc - threaded plate 25x8 - 220 1904 110.035 3 pcs - bolt M10x35, countersunk head 1904 110.030 3 pcs - bolt M10x30, hex. head 1961 113.000 3 pcs - washer 10</p>		
<p>0538 210.400</p> <p>Assembly set ALTO RF The set includes:</p> <p>0538 210.402 1 pc - assembly part RF 0538 210.010 1 pc - threaded plate 25x8 - 160 0538 240.015 3 pcs - bolt M10x35, countersunk head 1904 110.035 3 pcs - bolt M10x30, hex. head 1904 110.030 3 pcs - washer 10</p>		

6.2. PARTS FOR THE LIFTING GUIDE ROFILE ALTO / FOR LIFTING COLUMNS WITH DG GAS STRUT

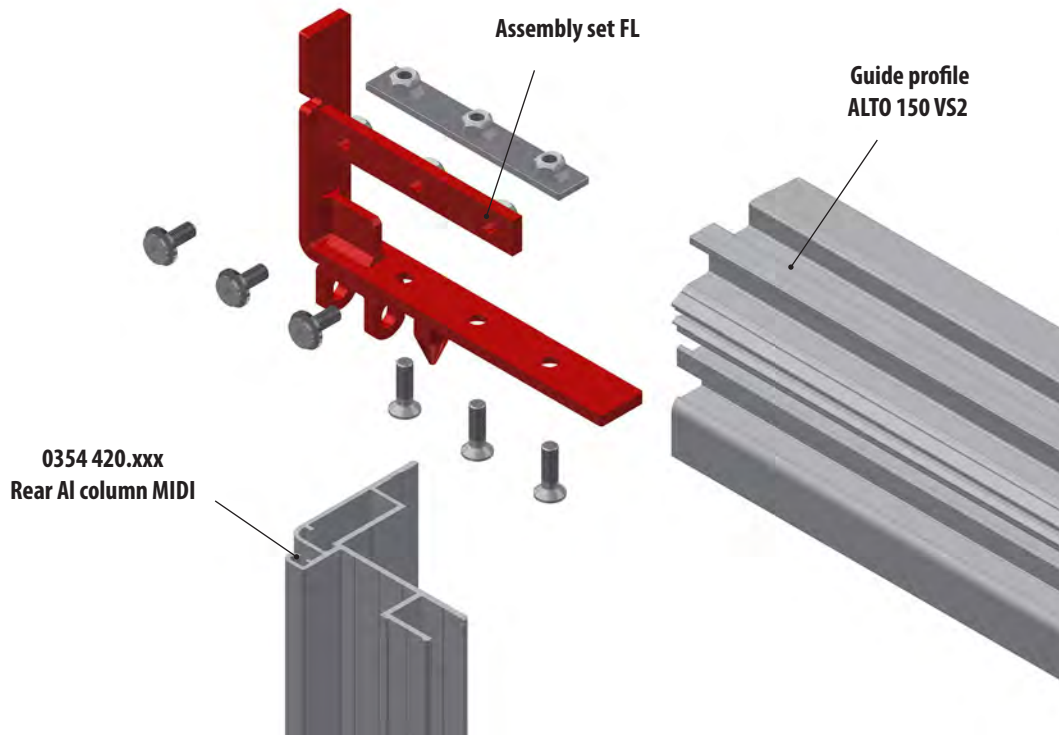
TT-number	Name	Drawing
0538 217.300	Set of guide metal sheets, 4 pcs, FL, FR, RL, RR	
0538 217.301	Guide metal sheet FL-FR, galvanised	
0538 217.302	Guide metal sheet	



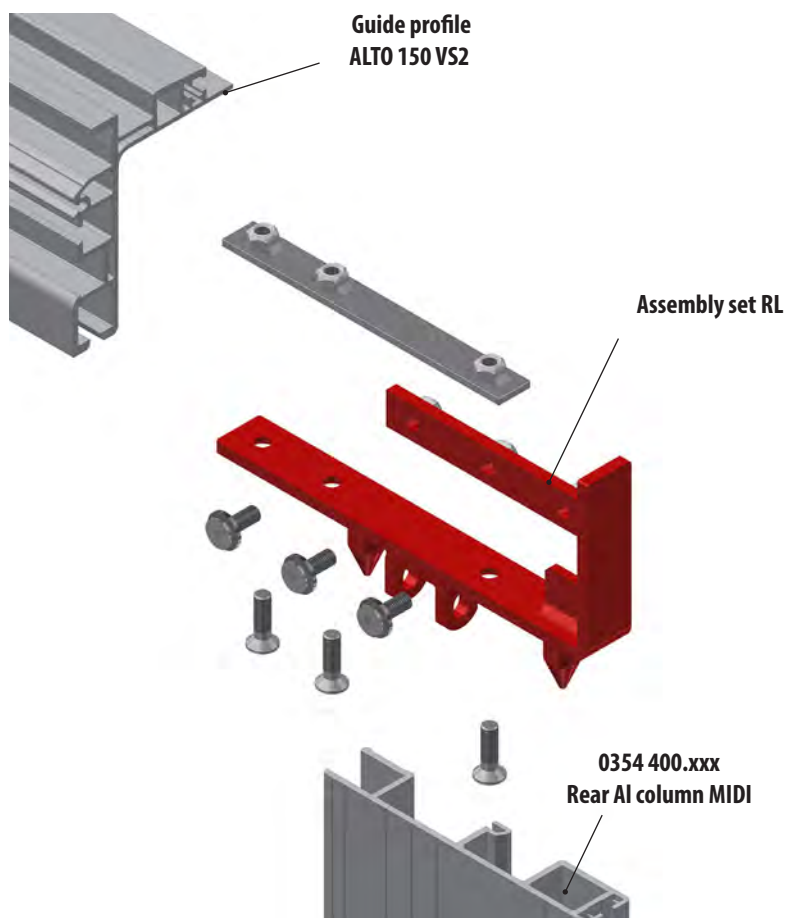
TT-number	Name	Drawing
0538 222.100	Bracket (L) for front face bracing	
0538 222.200	Bracket (R) for front face bracing	
0538 220.000	Bracket pin	
0441 122.000 1901 108.016 1962 108.000	Threaded plate 65 / 35 Bolt M8x16, hex. head Spring washer 8	

6.3 ASSEMBLY SETS FOR THE LONGITUDINAL LIFTING GUIDE PROFILE ALTO 150 VS2, FOR AL CORNER COLUMNS MIDI

FRONT LIFTING SET



REAR LIFTING SET

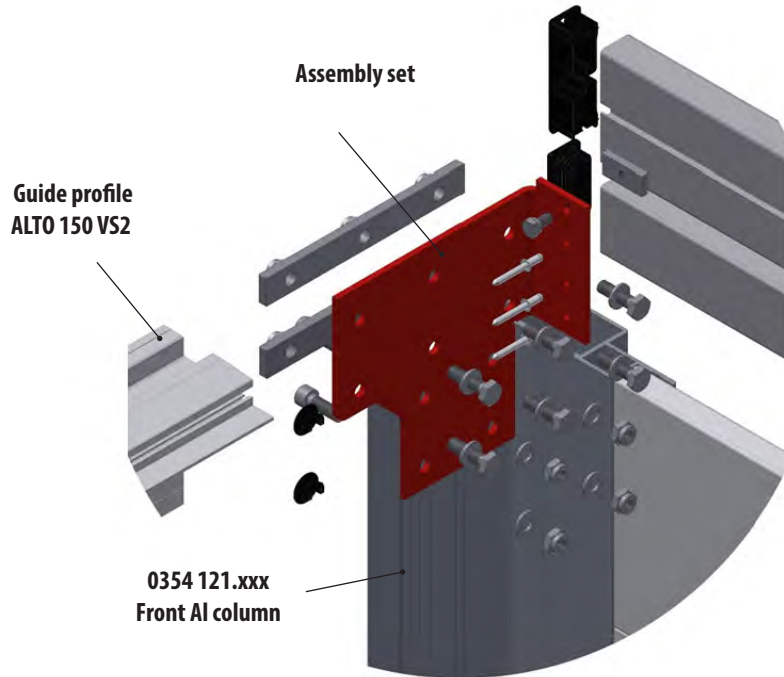


6.3.1 ASSEMBLY SETS FOR THE LIFTING GUIDE PROFILE ALTO / FOR LIFTING COLUMNS WITH DG GAS STRUT FOR AL COLUMNS MIDI

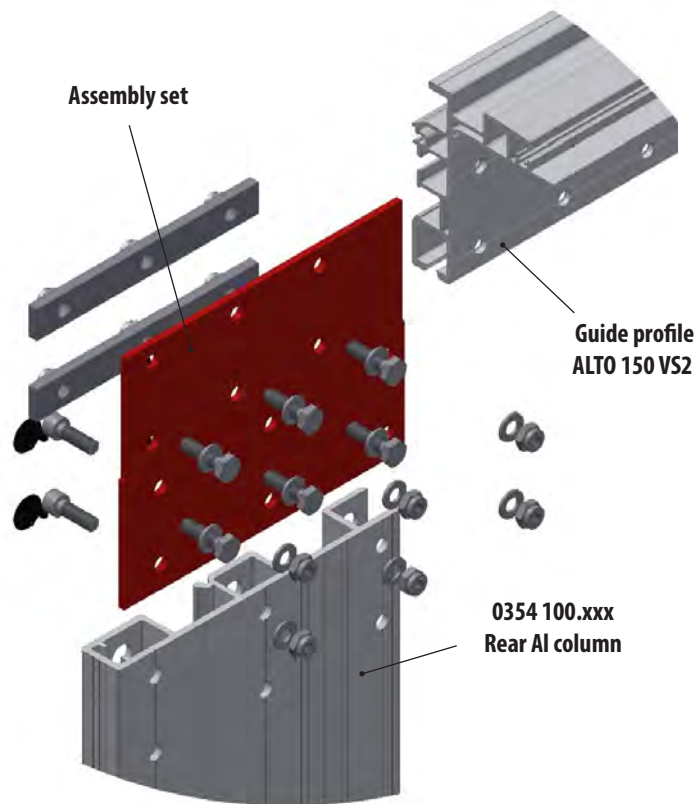
TT-number	Name	Drawing
<p>0538 257.100</p> <p>0538 257.102</p> <p>0538 210.010</p> <p>1904 110.035</p> <p>1904 110.030</p> <p>1961 113.000</p>	<p>The assembly set ALTO RL The set includes:</p> <p>1 pc - assembly part RL 1 pc - threaded plate 25x8 - 220, 3 pcs - bolt M10x35, countersunk head 3 pcs - bolt M10x30, hex. head 3 pcs - washer</p>	
<p>0538 257.200</p> <p>0538 257.202</p> <p>0538 240.015</p> <p>1904 110.035</p> <p>1904 110.030</p> <p>1961 113.000</p>	<p>The assembly set ALTO FL The set includes:</p> <p>1 pc - assembly part FL 1 pc - threaded plate 25x8 - 160 3 pcs - bolt M10x35, countersunk head 3 pcs - bolt M10x30, hex. head 3 pcs - washer 10</p>	
<p>0538 257.300</p> <p>0538 257.302</p> <p>0538 210.010</p> <p>1904 110.035</p> <p>1904 110.030</p> <p>1961 113.000</p>	<p>The assembly set ALTO RR The set includes:</p> <p>1 pc - assembly part RR 1 pc - threaded plate 25x8 - 220 3 pcs - bolt M10x35, countersunk head 3 pcs - bolt M10x30, hex. head 3 pcs - washer 10</p>	
<p>0538 257.400</p> <p>0538 257.202</p> <p>0538 240.015</p> <p>1904 110.035</p> <p>1904 110.030</p> <p>1961 113.000</p>	<p>The assembly set ALTO RF The set includes:</p> <p>1 pc - assembly part RF 1 pc - threaded plate 25x8 - 160 3 pcs - bolt M10x35, countersunk head 3 pcs - bolt M10x30, hex. head 3 pcs - washer 10</p>	

6.4 ASSEMBLY SETS NON LIFTING GUIDE PROFILE ALTO / AL COLUMNS BIG

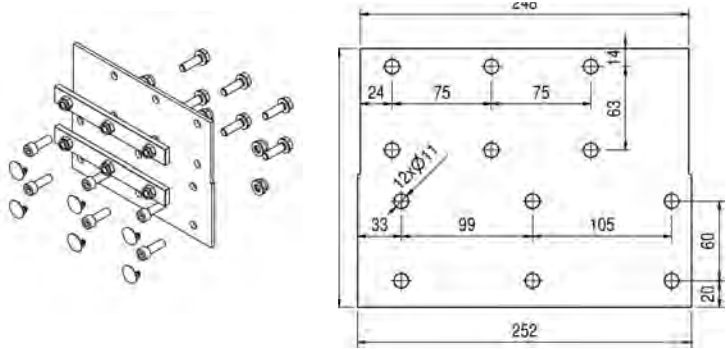
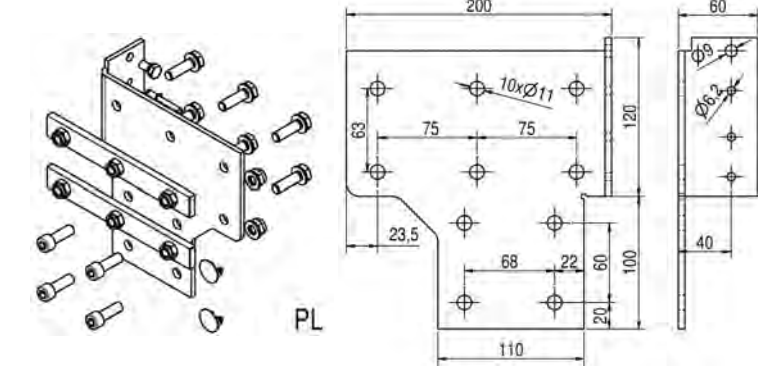
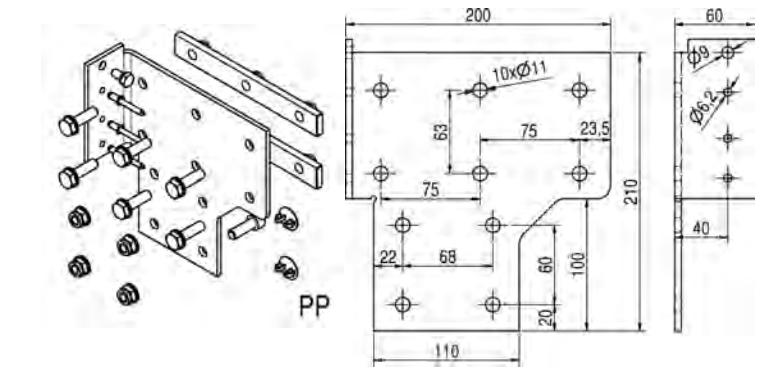
FRONT ASSEMBLY SET NON-LIFTING



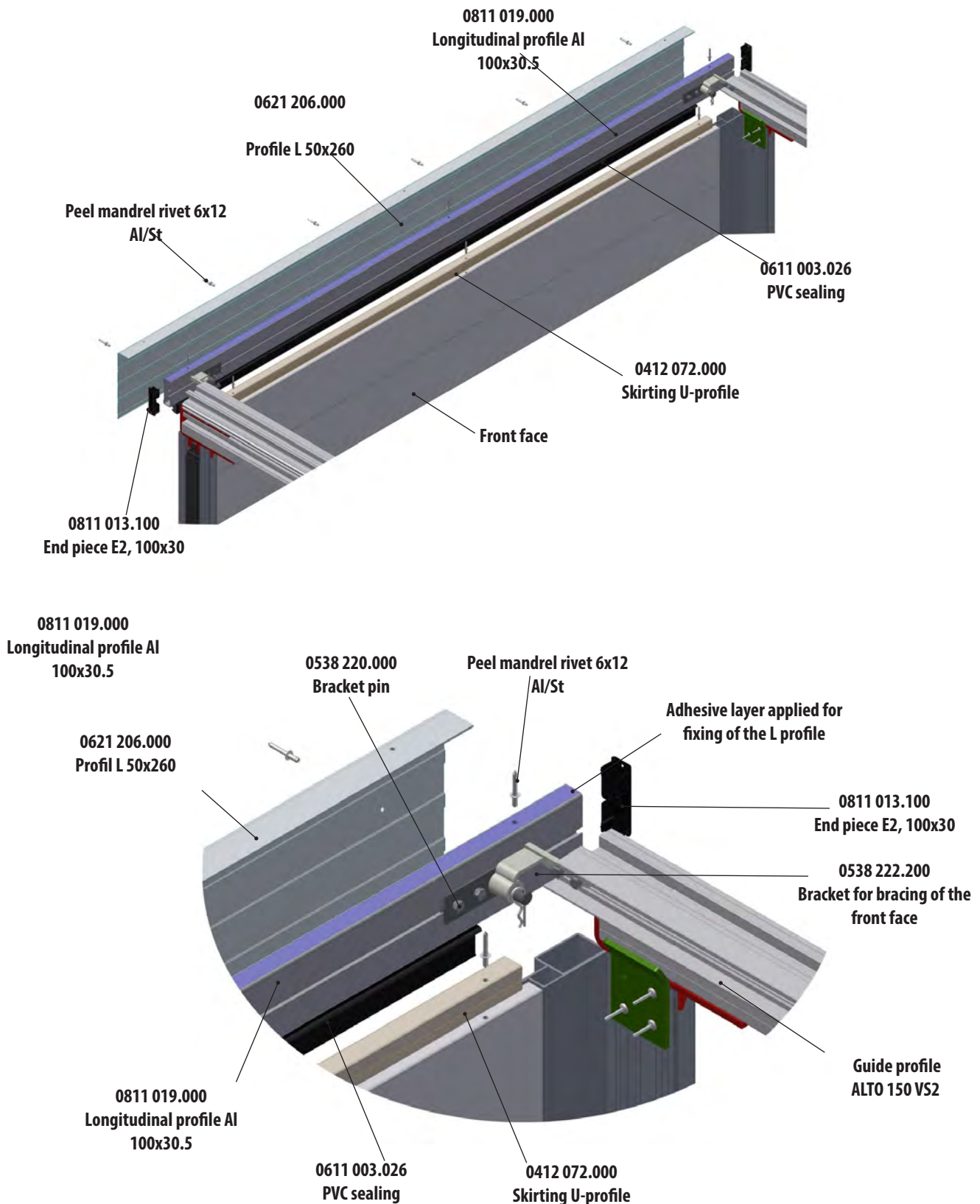
REAR ASSEMBLY SET NON-LIFTING



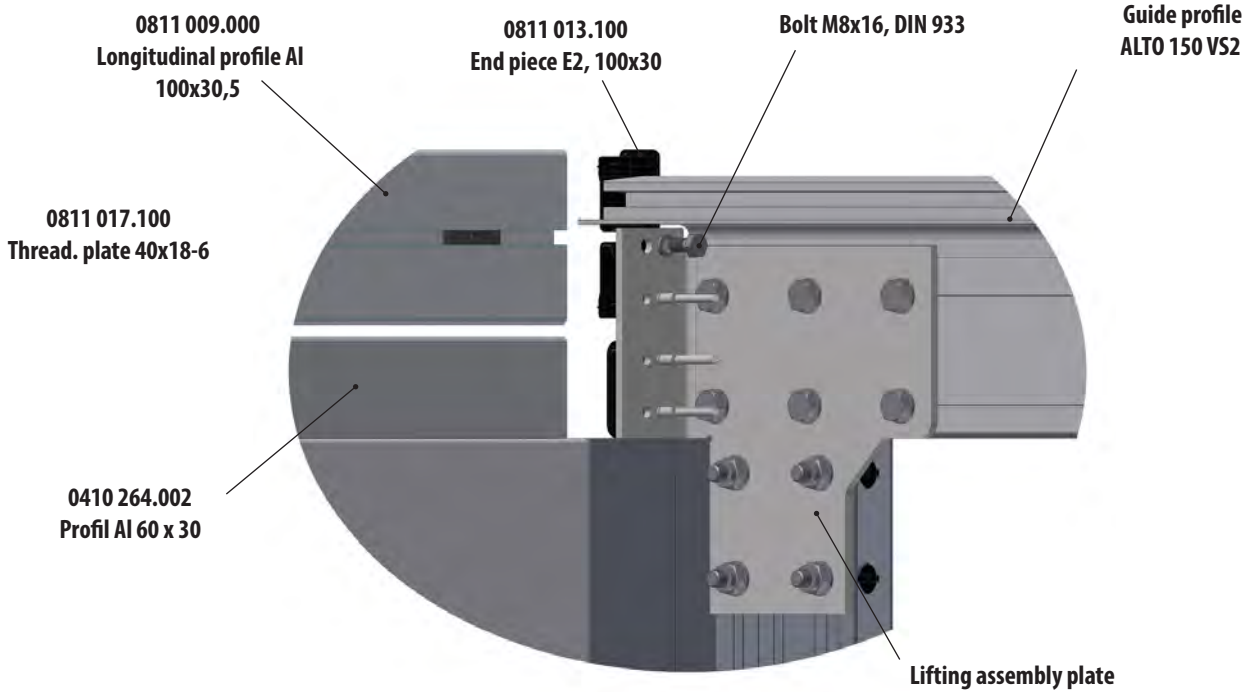
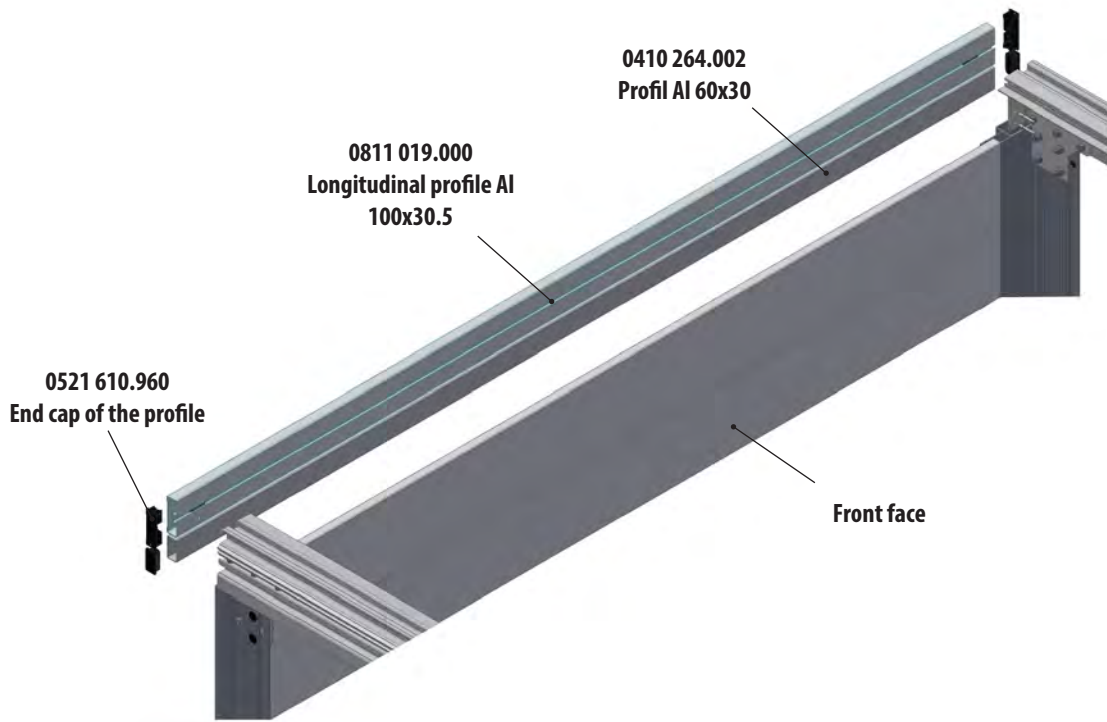
6.4.1 ASSEMBLY SETS FOR THE LIFTING GUIDE PROFILE ALTO / LIFTMASTER/ AL COLUMNS BIG

TT-number	Name	Drawing
<p>0538 204.100</p> <p>0538 254.101</p> <p>0538 202.210</p> <p>1901 110.035</p> <p>1961 110.000</p> <p>1942 110.000</p> <p>1961 110.000</p> <p>2730 225.503</p>	<p>Assembly set ALTO (RL, RR), non-lifting</p> <p>The set includes:</p> <p>1 pc - assembly part ZL</p> <p>2 pcs - threaded plate 25x8x200/75</p> <p>3 pcs - bolt M10x35, hex. head</p> <p>12 pcs - washer 10.5</p> <p>6 pcs - bolt M10x30, slotted head</p> <p>6 pcs - hex. nut M10</p> <p>6 pcs - end caps 18.4</p>	
<p>0538 204.600</p> <p>0538 204.601</p> <p>0538 202.210</p> <p>1901 110.035</p> <p>1942 110.000</p> <p>1961 110.000</p> <p>1931 110.030</p> <p>2730 225.003</p> <p>2111 460.121</p> <p>1901 108.016</p> <p>1962 108.000</p> <p>0811 017.100</p>	<p>Assembly set ALTO FL, non-lifting</p> <p>The set includes:</p> <p>1 pc - assembly plate PL</p> <p>2 pcs - threaded plate 25x8x200</p> <p>6 pcs - bolt M10x35, hex. head</p> <p>4 pcs - hex. nut M10</p> <p>10 pcs - washer 10.5</p> <p>4 pcs - bolt M10x30, slotted head</p> <p>2 pcs - end caps 18.4</p> <p>3 pcs - rivet 6x12 St/St, galvanised</p> <p>1 pc - M8x16, hex.</p> <p>1 pc - washer 8</p> <p>1 pc - threaded plate 40x18-6</p>	
<p>0538 204.800</p> <p>0538 204.801</p> <p>0538 202.210</p> <p>1901 110.035</p> <p>1942 110.000</p> <p>1961 110.000</p> <p>1931 110.030</p> <p>2730 225.003</p> <p>2111 460.121</p> <p>1901 108.016</p> <p>1962 108.000</p> <p>0811 017.100</p>	<p>Assembly set ALTO PP, non-lifting</p> <p>The set includes:</p> <p>1 pc - assembly plate PP</p> <p>2 pcs - threaded plate 25x8x200</p> <p>6 pcs - bolt M10x35, hex. head</p> <p>4 pcs - nut M10</p> <p>10 pcs - washer 10.5</p> <p>4 pcs - bolt M10x3</p> <p>2 pcs - end caps</p> <p>3 pcs - rivet 6x12 St/St, galvanised</p> <p>1 pc - M8x16, hex.</p> <p>1 pc - washer 8</p> <p>1 pc - threaded plate 40x18-6</p>	

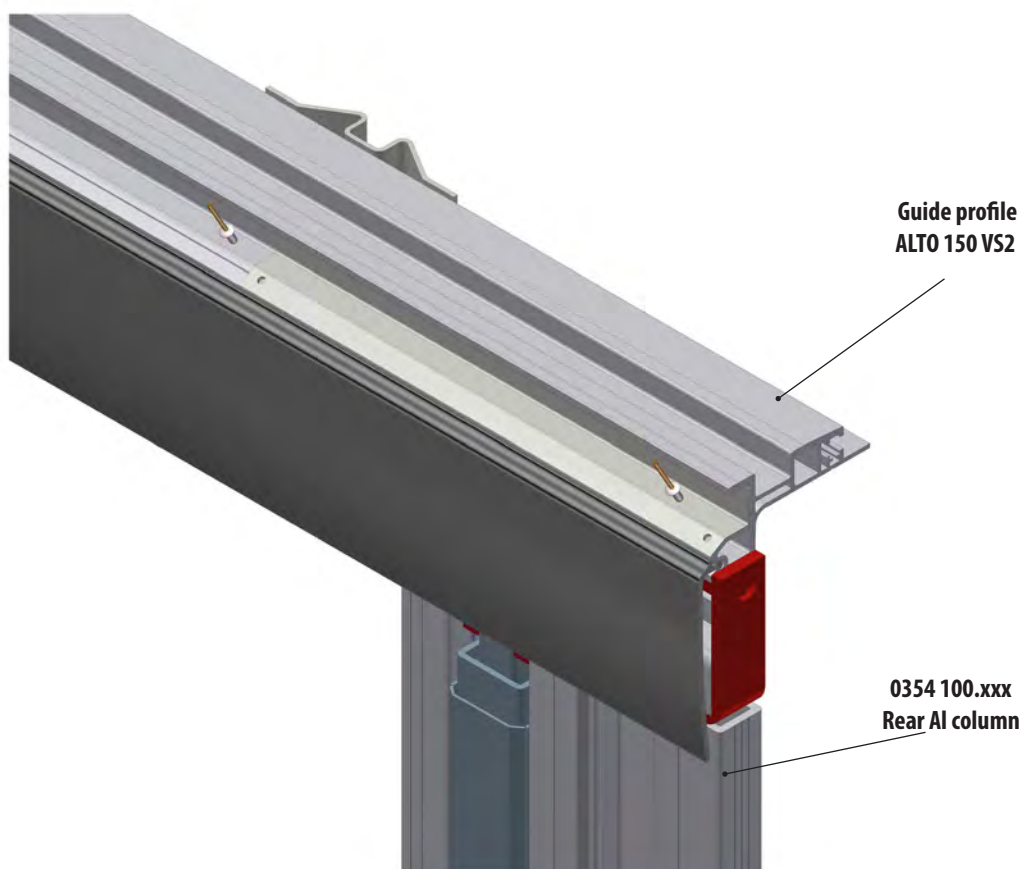
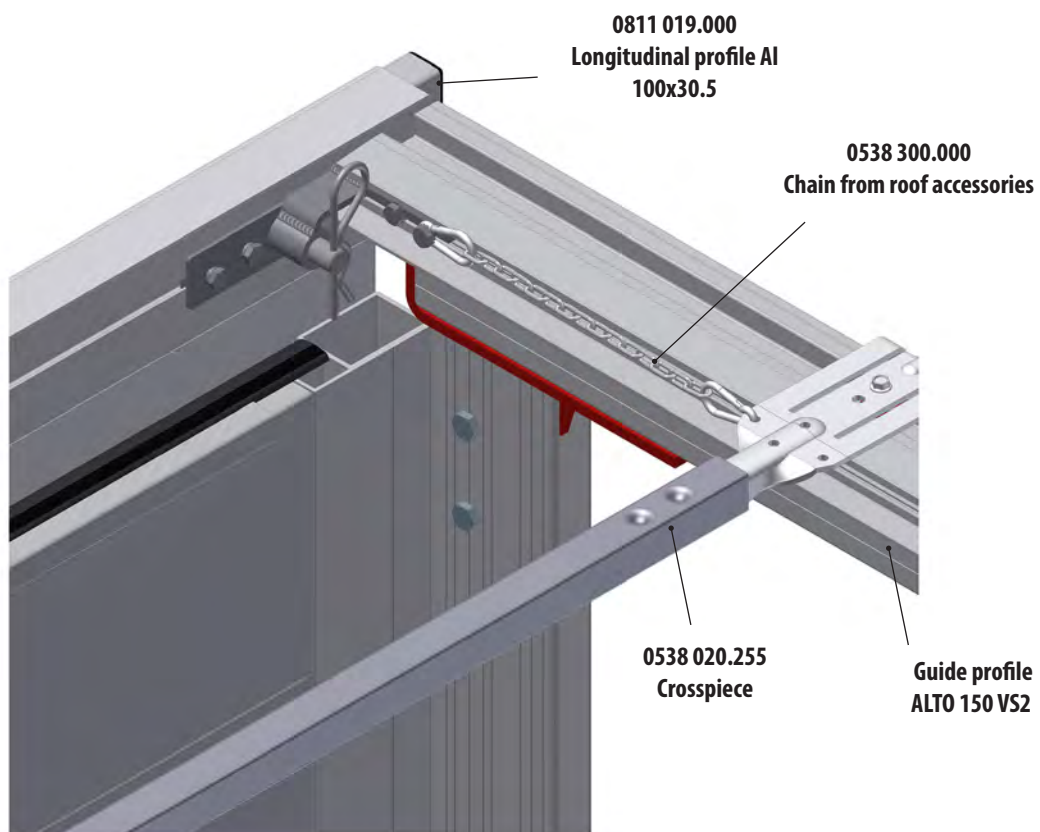
7. 1 BRACING OF THE FRONT FACE WITH LIFTING ROOF



7.2 BRACING OF THE FRONT FACE WITH NON-LIFTING ROOF

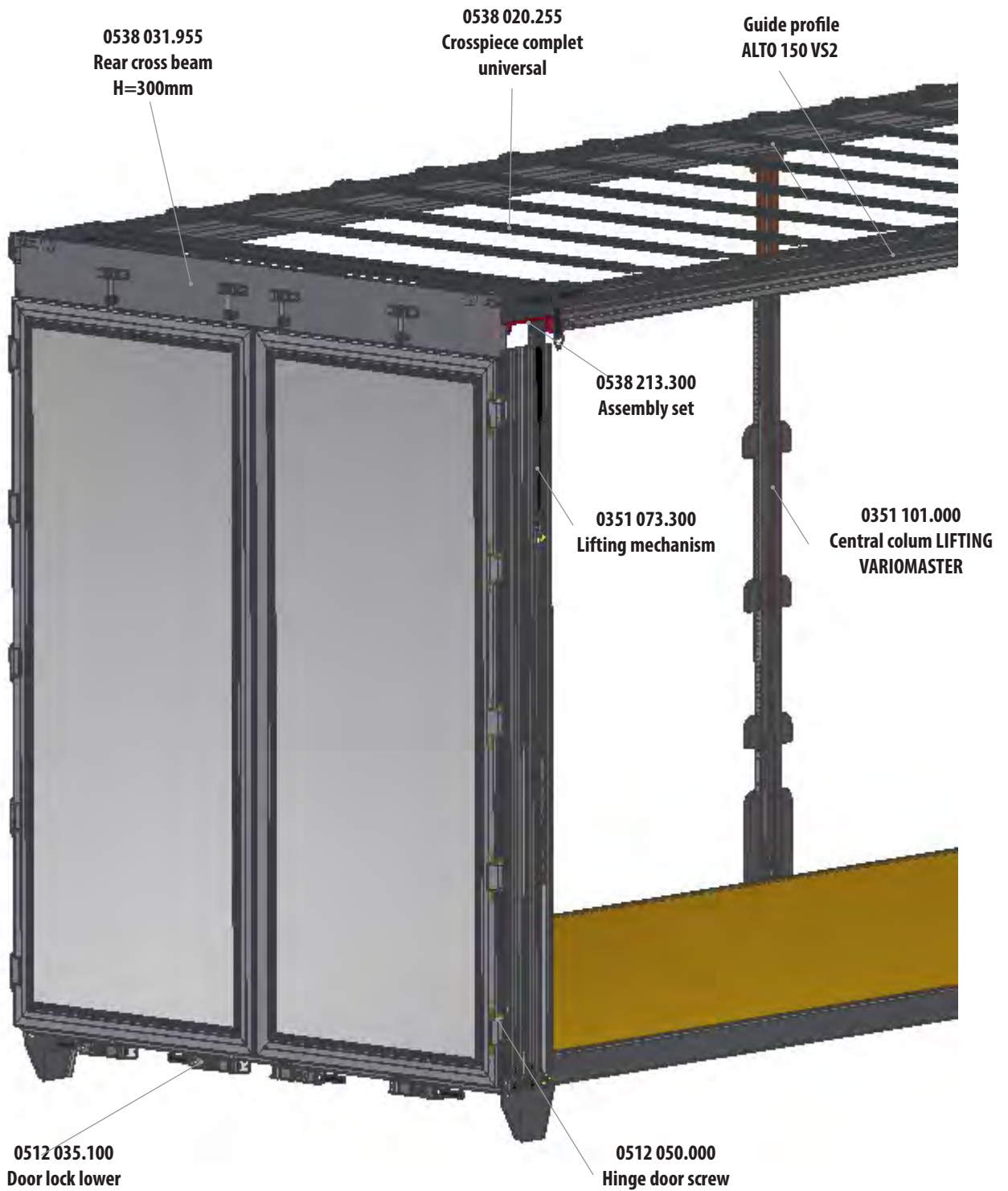


7.3 FIXING OF THE FIRST ROOF CROSSPIECE



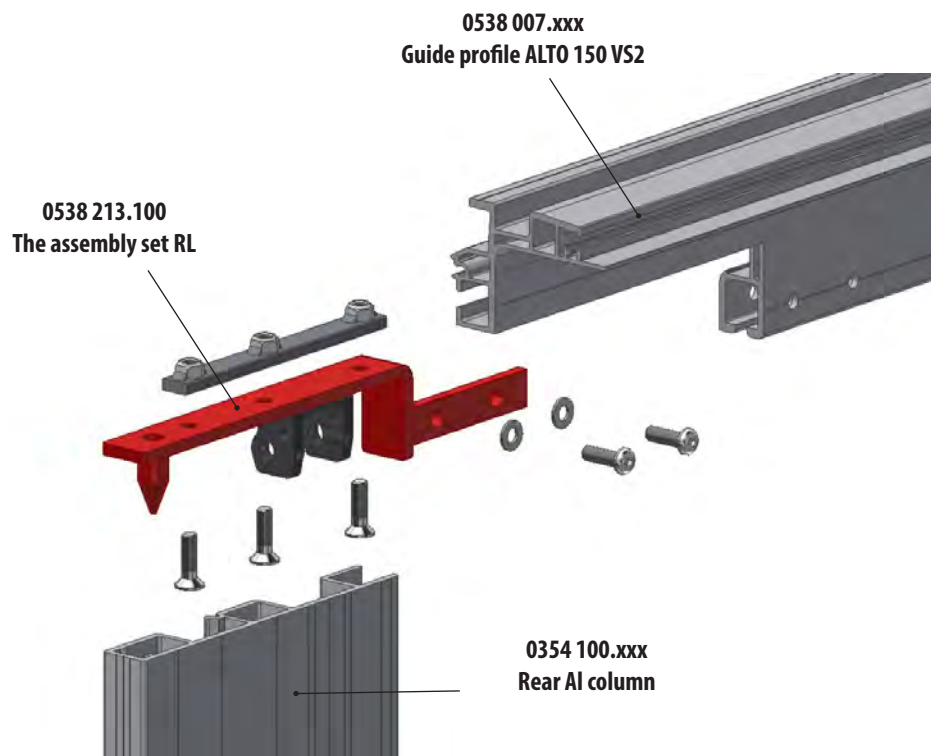
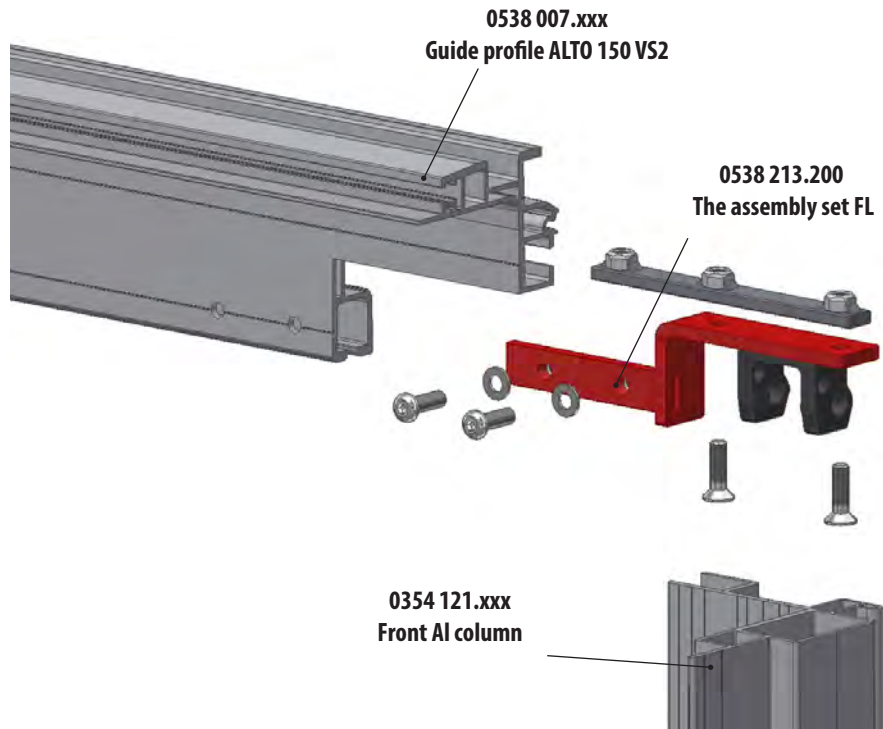
8. Second driving position

The roof is lifting by lifting pillars in corners. The roof is lift by 400 mm to load the goods. Next the roof is lowered and secured in the second position by 50 or 100 mm
Beware of maximum height of 4m vehicles, which are allowed on the road



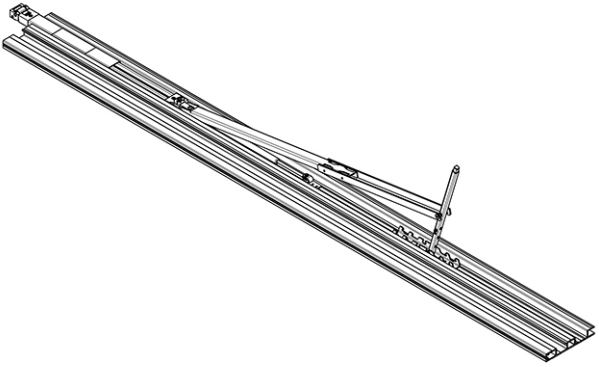
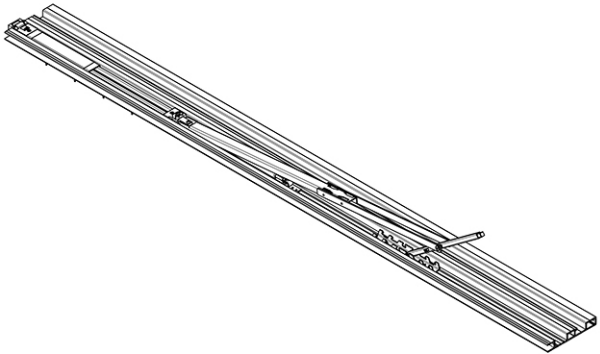
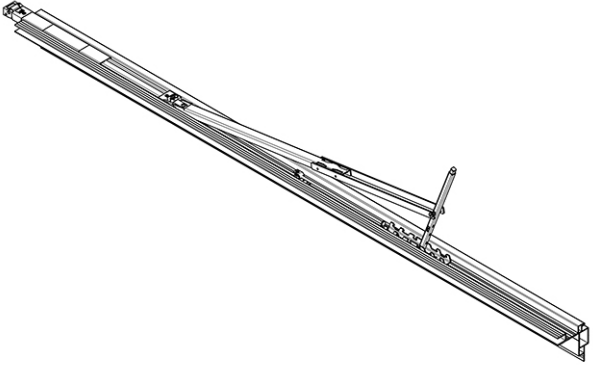
Assembly sets for second driving position

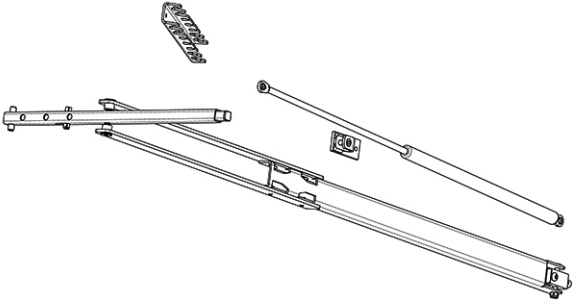
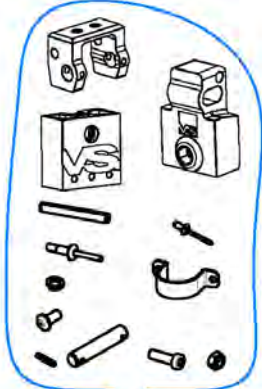
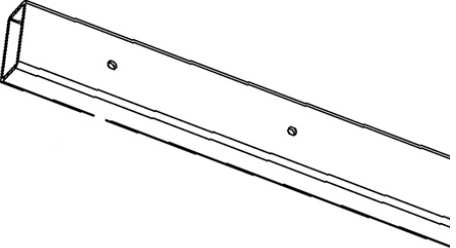

Assembly sets

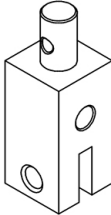
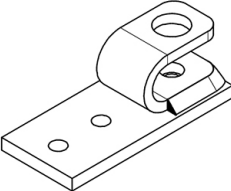
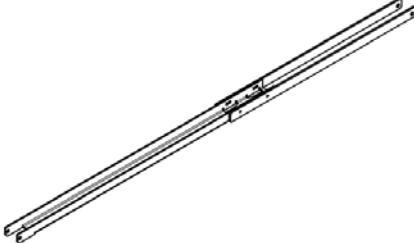
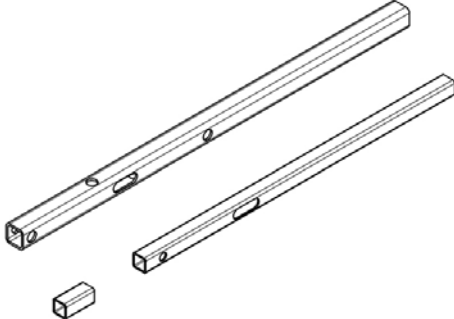
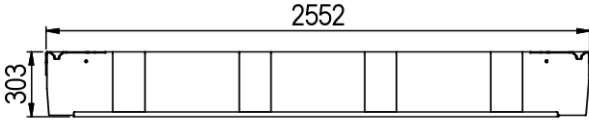


Assembly sets for second driving position

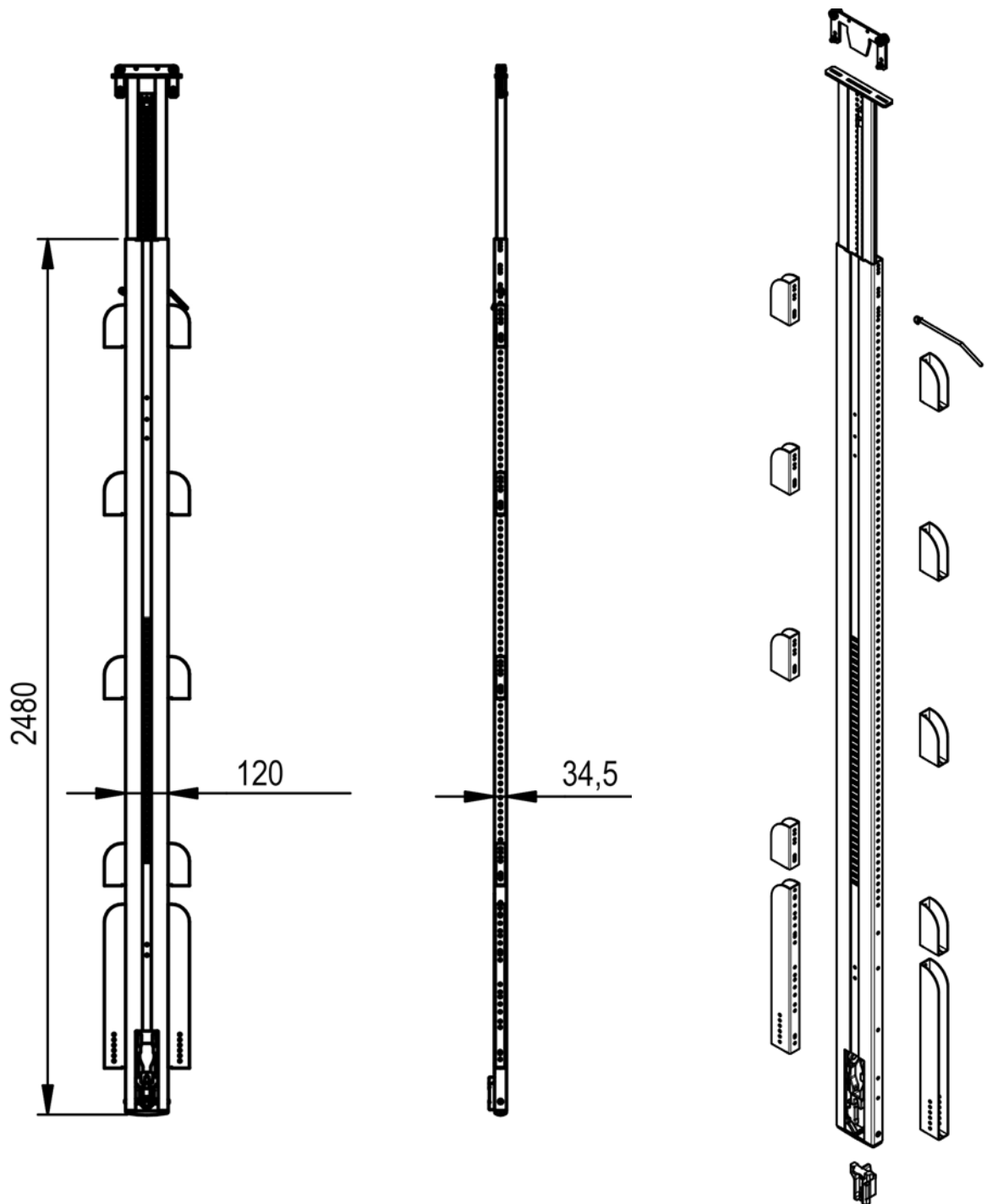
TT-number	Name	Drawing
0538 213.100	The assembly set ALTO 150 - Axes	
0538 213.200	The assembly set ALTO 150 - Axes	
0538 213.300	The assembly set ALTO 150 - Axes	
0538 213.400	The assembly set ALTO 150 - Axes	

TT-number	Name	Drawing
0351 073.100	Lifting mechanism TT + Al column BIG RL	
0351 073.200	Lifting mechanism TT + Al column BIG FL	
0351 073.300	Lifting mechanism TT + Al column BIG RR	
0351 073.400	Lifting mechanism TT + Al column BIG FR	

TT-number	Name	Drawing
0351 073.105	Lifting mechanism TT without parts VERSUS OMEGA	
0351 073.111	The assembly set for profil VERSUS OMEGA	
0351 073.112	Lead 60x30 VERSUS OMEGA	
0351 073.113	Profil VERSUS OMEGA, L=1400mm	




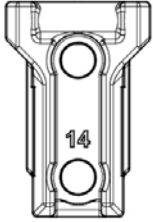
TT-number	Name	Drawing
0351 073.115	Spring connecting part	
0351 073.116	Holder gas spring	
0351 073.117	Central lifting part	
0351 073.118	Holder	
0538 031.955	Rear cross beam 303x2550mm	

CENTAL COLUMN LIFTING VARIOMASTER

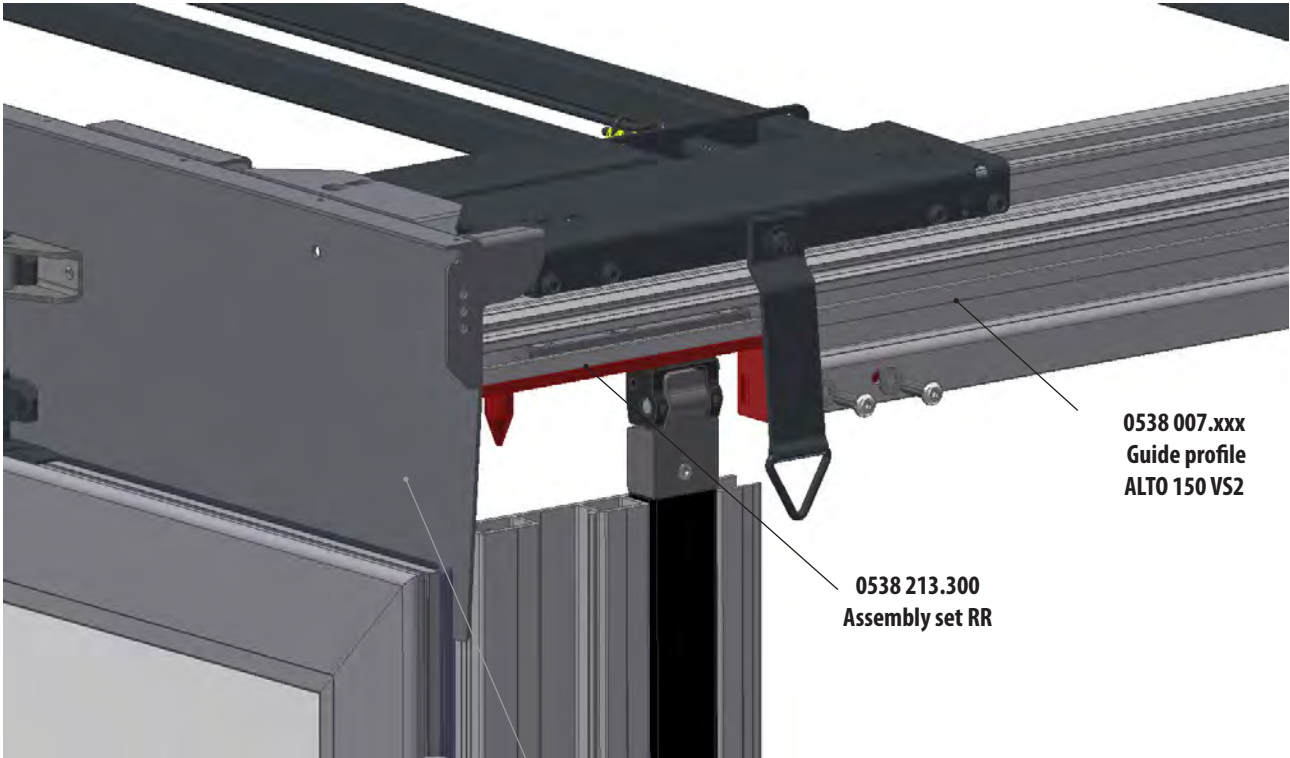


TT-number	Name	Column height	Material / Surface	Weight kg/pcs
0351 101.000	Counter piece „eye“ pillar K VI – set		steel	21,5
0351 102.000	Telescop VARIOMASTER		steel	0,82
0351 106.000	Adjustable stop VARIOMASTER		steel zinc.	0,80
0351 103.000	Pocket VARIOMASTER		steel zinc.	0,30
0351 104.000	Pocket VARIOMASTER		steel zinc.	1,1
0354 105.000	Hinge VARIOMASTER		steel zinc.	0,30

CENTAL COLUMN LIFTING VARIOMASTER

TT-number	Name	Drawing
0351 102.000	Telescop VARIOMASTER	
0351 103.000	Pocket for under tarpaulin profile VARIOMASTER	
0351 104.000	Pocket for under tarpaulin profile VARIOMASTER	
0351 105.000	Column angle VARIOMASTER	

Lifting detail



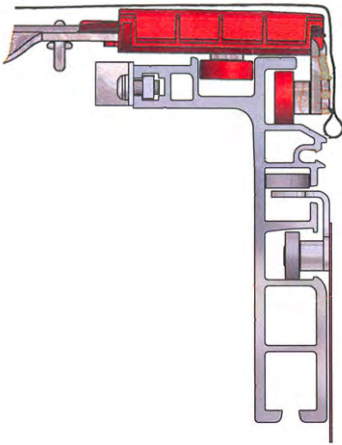
0538 007.xxx
Guide profile
ALTO 150 VS2

0538 213.300
Assembly set RR

0538 031.955
Cross beam
H=300mm

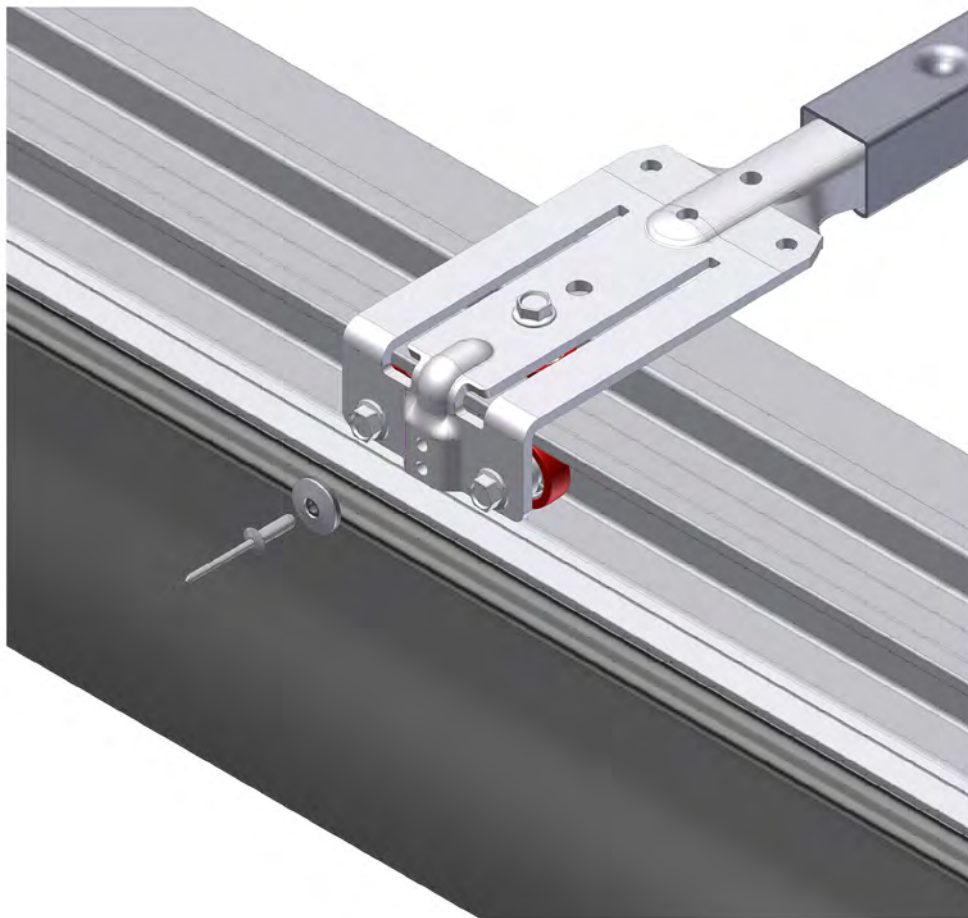
9. ASSEMBLY INSTRUCTIONS FOR FIXING OF ROOF AND SIDE CANVAS

PREPARATION OF ROOF CANVAS

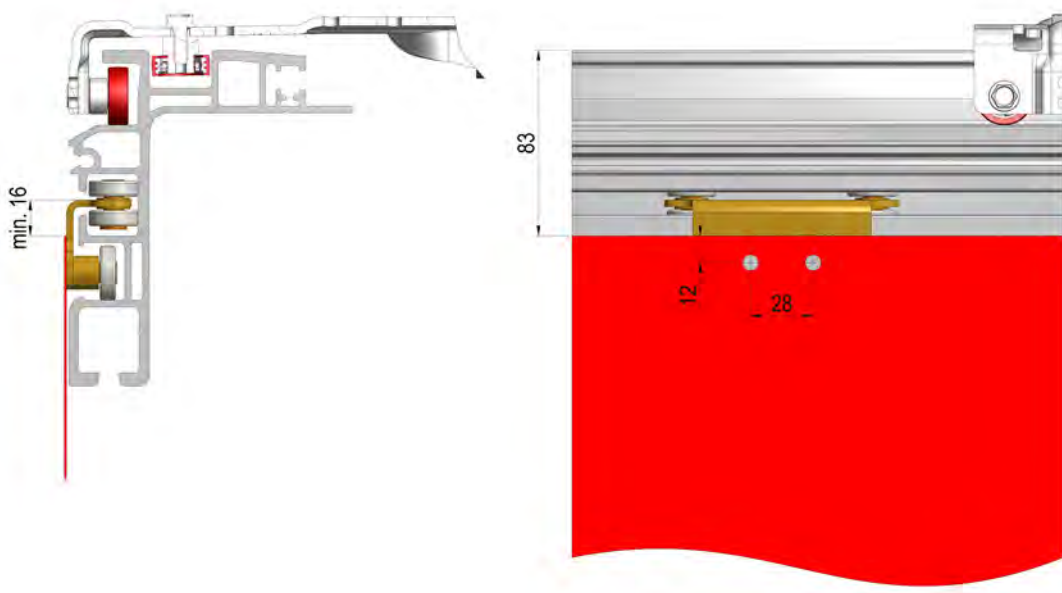
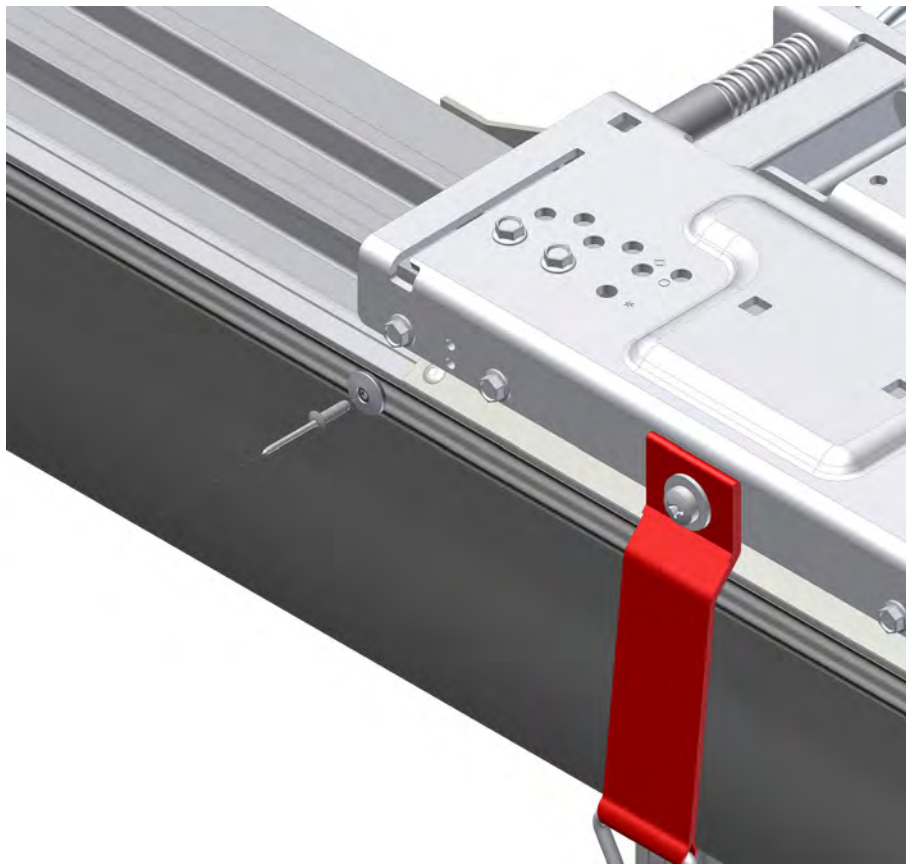


The hole can be used for fixing of the roof canvas to the crosspiece and to the end tiltable part by riveting
The lower hole can be used to mark the place for riveting, then move the canvas upward and rivet on through the upper hole

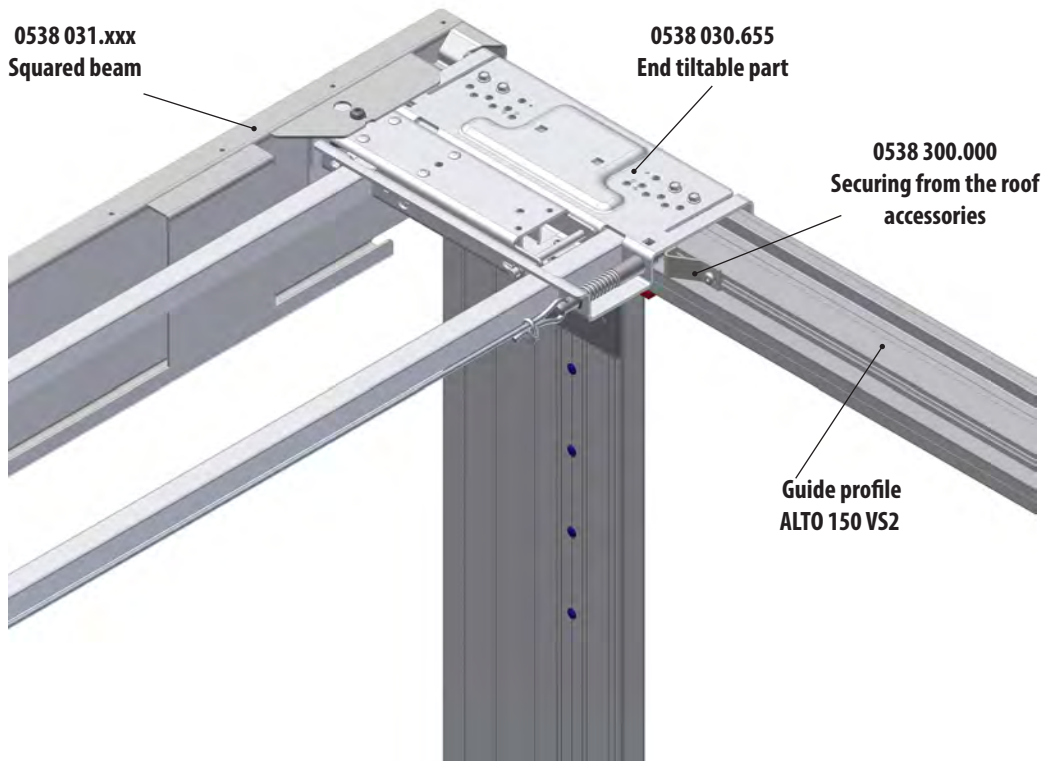
INSTALLATION OF THE ROOF CANVAS TO THE CROSSPIECE



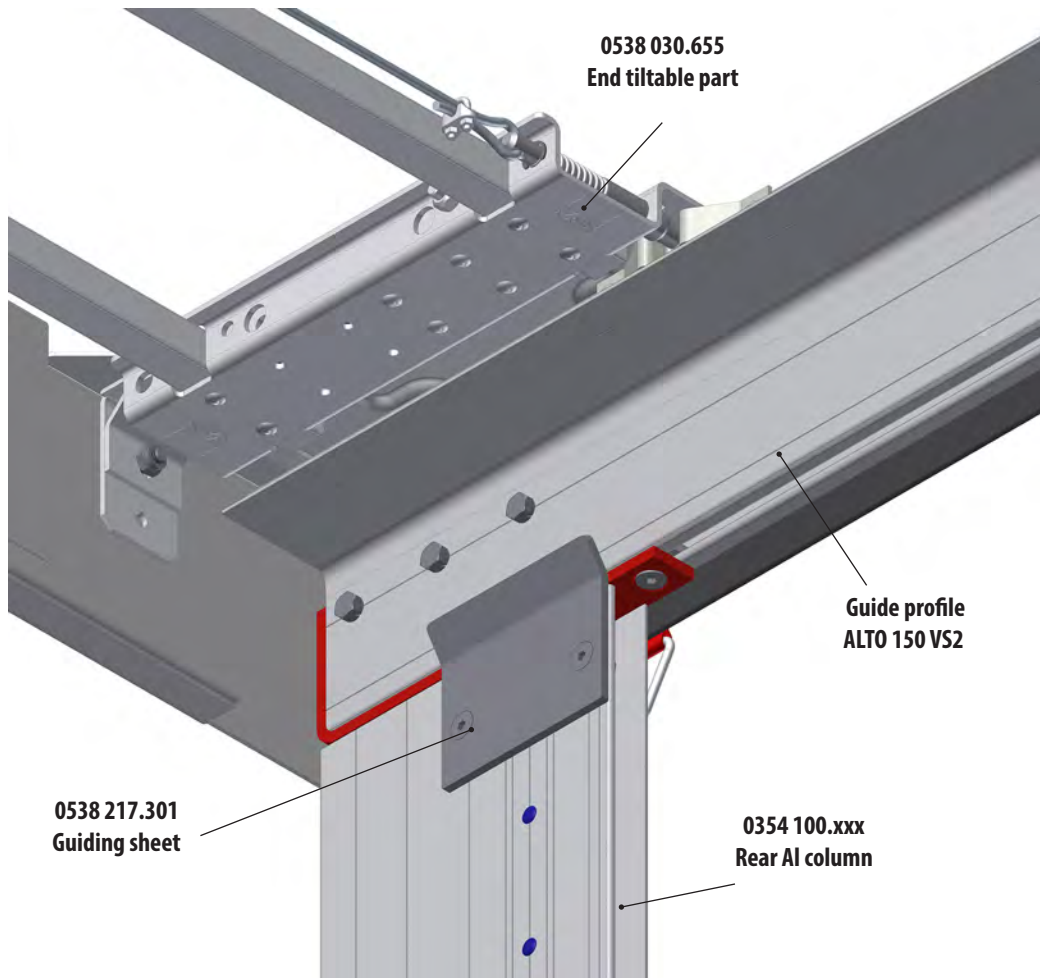
INSTALLATION OF THE ROOF CANVAS TO THE END TILTABLE PART



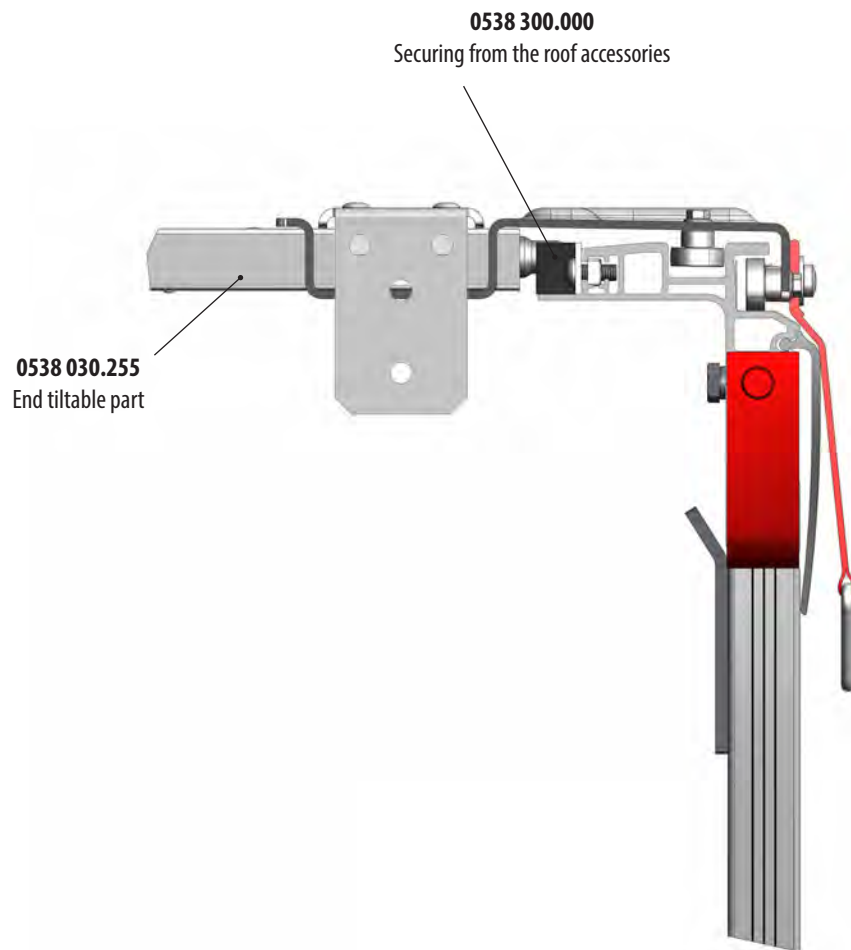
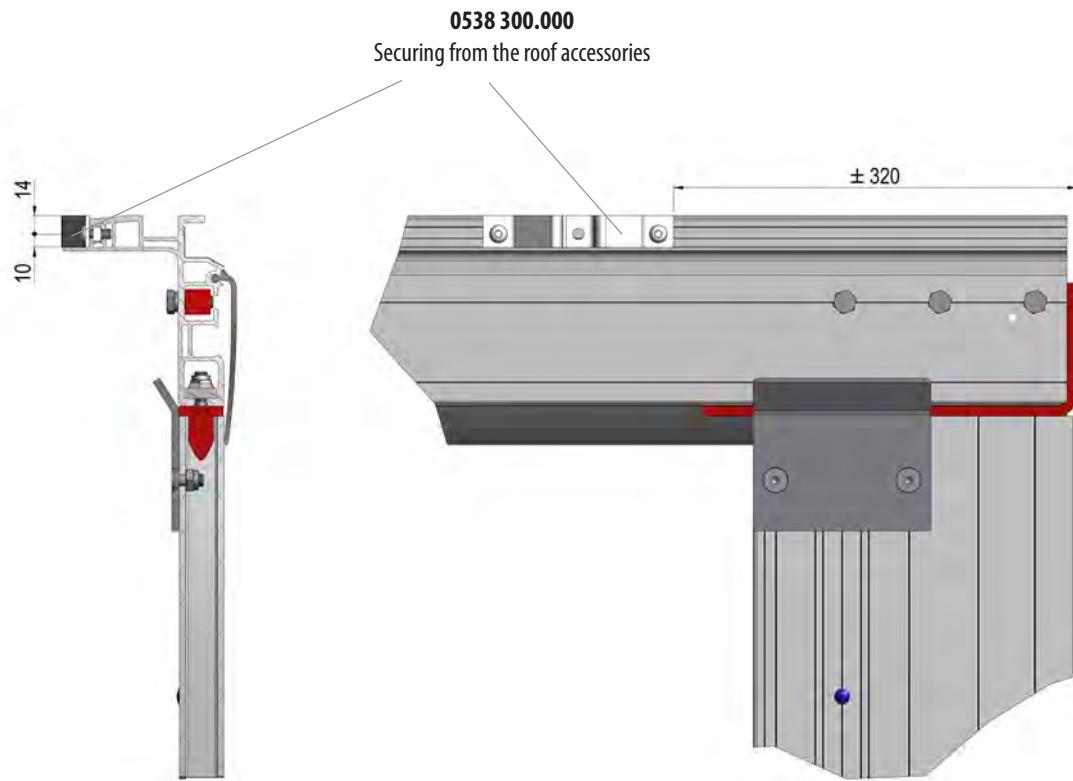
INSTALLATION OF THE END TILTABLE PART



INSTALLATION OF THE END TILTABLE PART



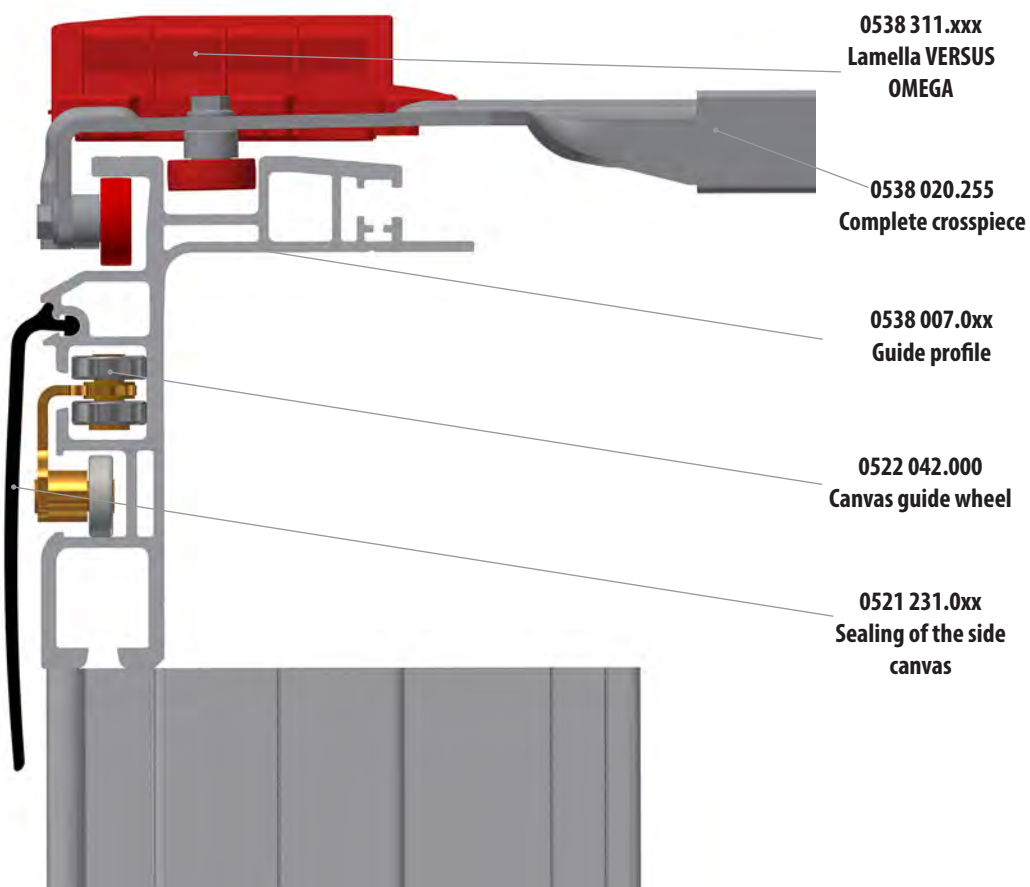
SECURING OF THE END TILTABLE PART



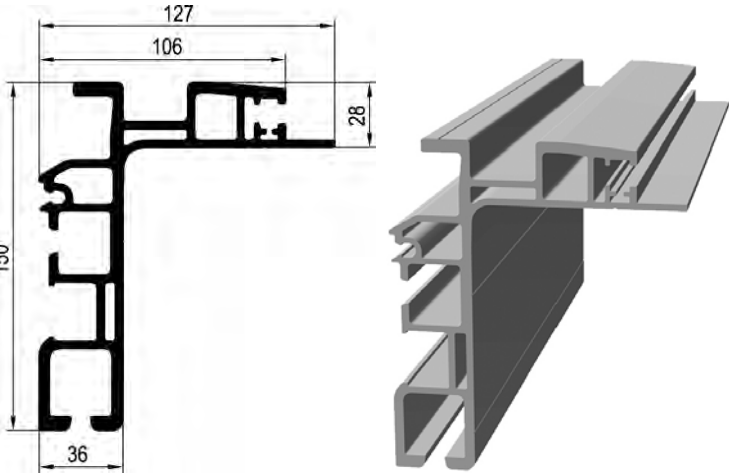
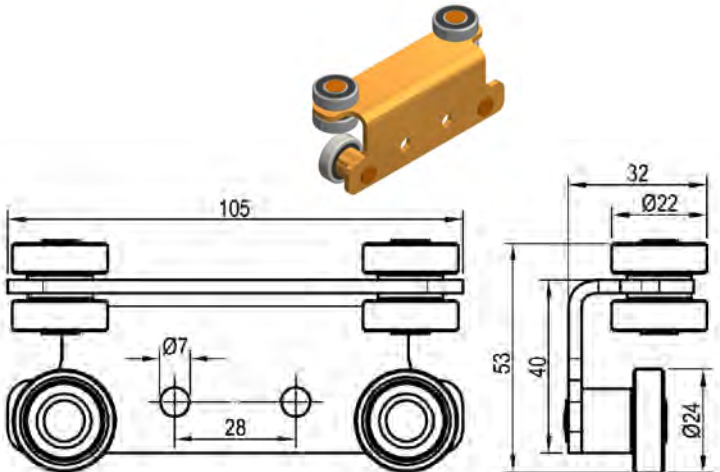
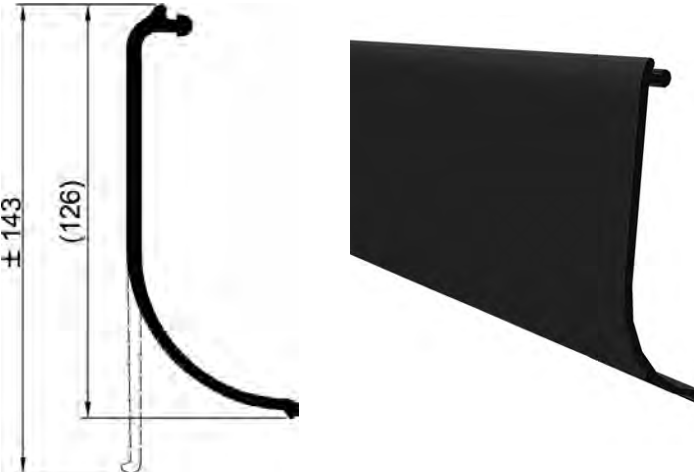
10. ROOF VERSUS OMEGA

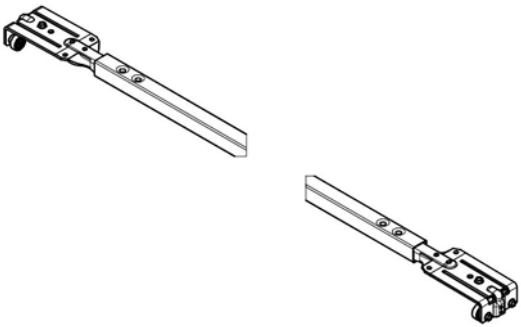
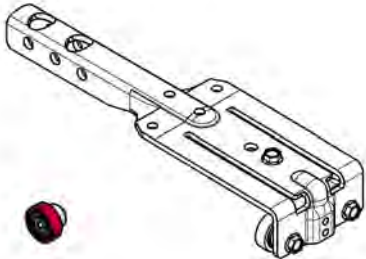
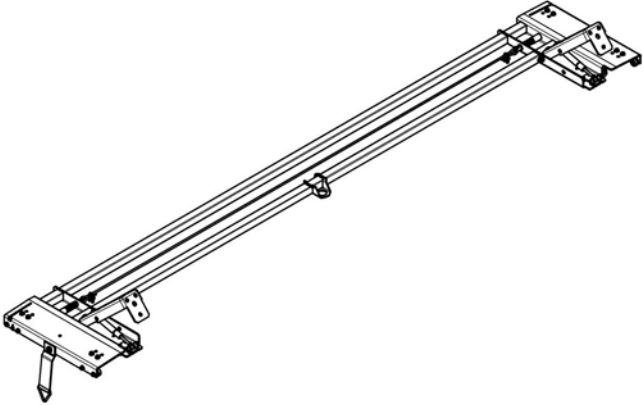
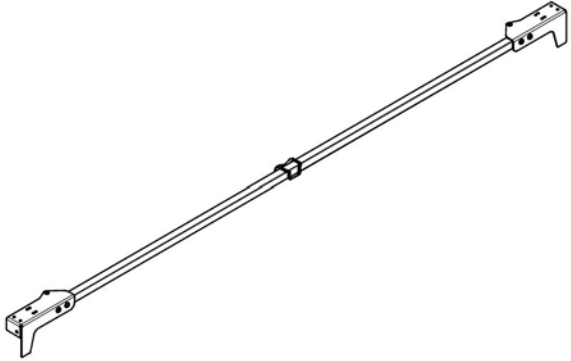


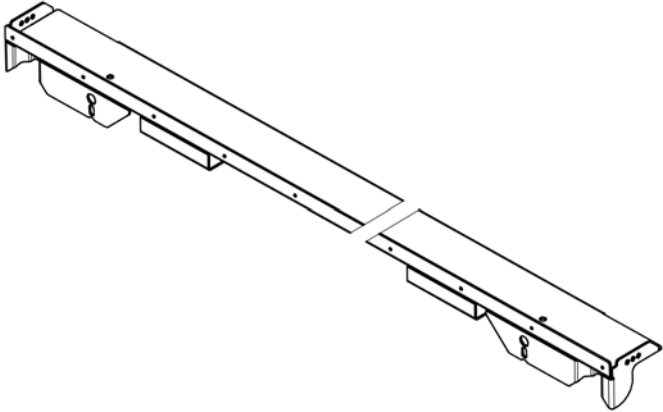
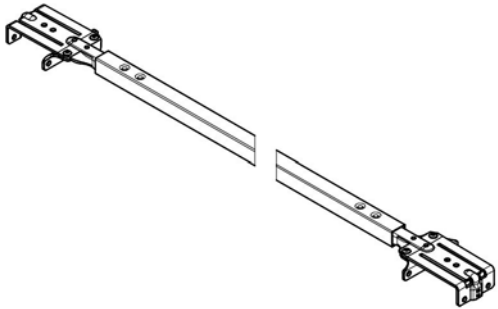
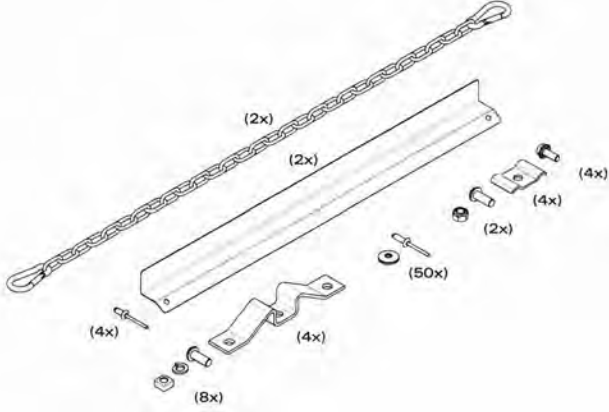
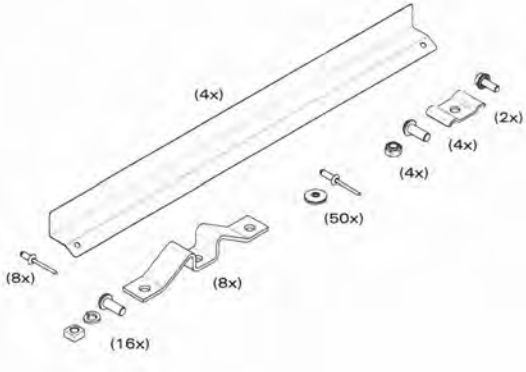
Assembly design for the profile ALTO 150 vs2

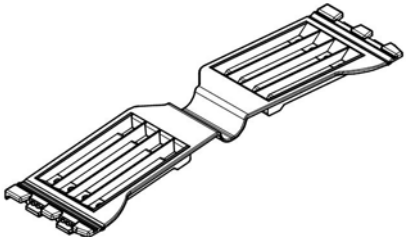

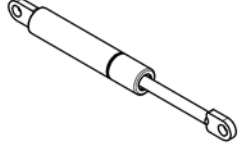


10.1. Parts of roof

TT-number	Name	Drawing
<p>0538 007.073 0538 007.079 0538 007.086 0538 007.098</p>	<p>Guide profile ALTO 150 VS2 L = 7,3 m L = 7,9 m L = 8,6 m L = 9,8 m</p>	
<p>0522 042.000</p>	<p>Canvas guide wheel</p>	
<p>0521 231.004 0521 231.007 0521 231.009 0521 231.014</p>	<p>Sealing of the side canvas L = 4,5m L = 7m L = 9m L = 14m</p>	

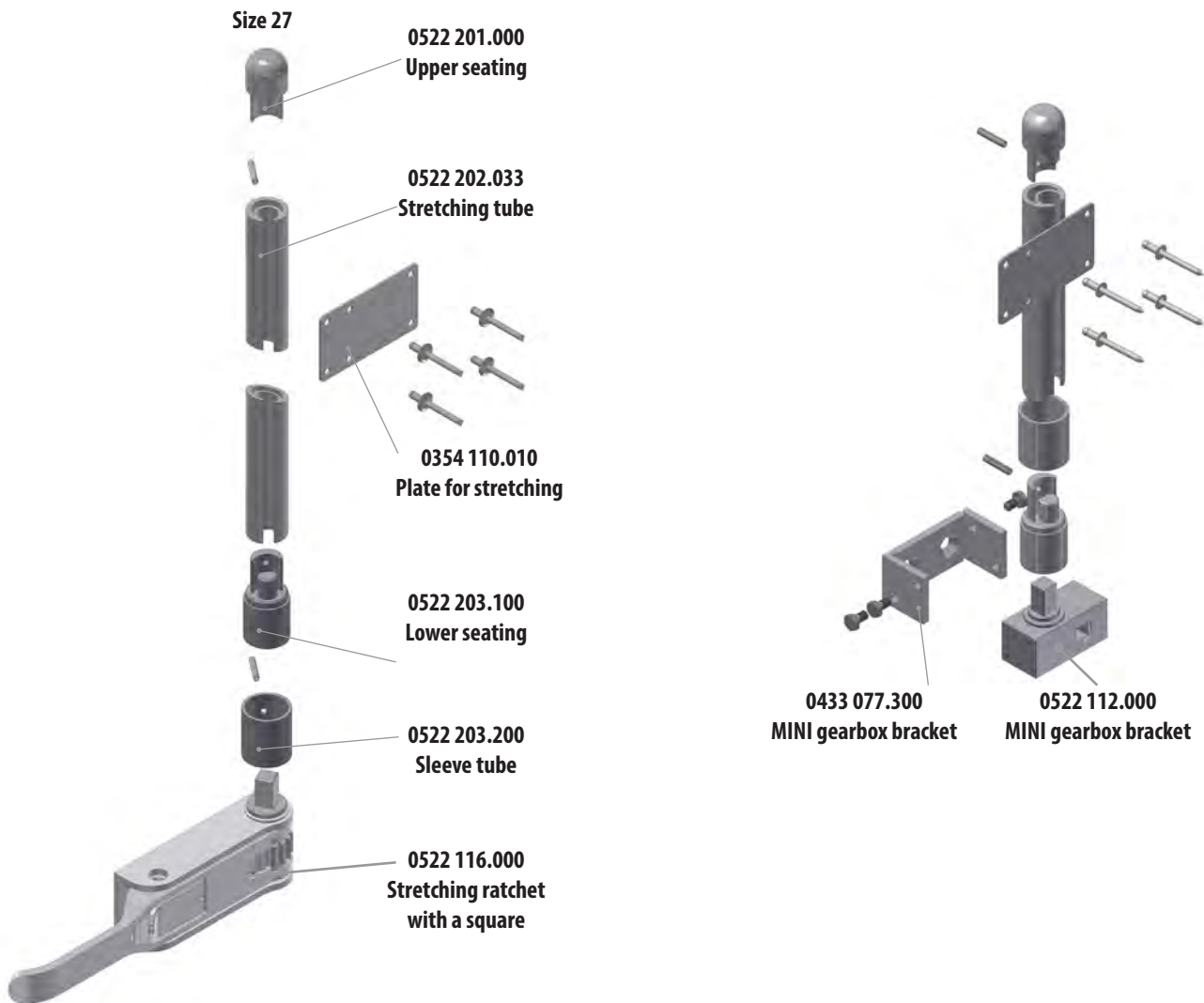
TT-number	Name	Drawing
0538 020.255	Complete universal crosspiece L=2550mm	
0522 021.901 0538 020.911	Crosspiece slider Crosspiece bearing, red plastic	
0538 030.555	End tiltable part, L=2550	
0538 031.655	Tiltable beam 30x30 with side termination	

TT-number	Name	Drawing
<p>0538 031.355 0538 031.455</p>	<p>Tilttable squared beam H=125mm H=175mm</p>	
<p>0538 109.255</p>	<p>Fixed roof crosspiece L=2550mm</p>	
<p>0538 300.000</p>	<p>Roof accessories</p>	
<p>0538 300.300</p>	<p>Accessories of the roof TWIN</p>	

TT-number	Name	Drawing
0538 311.400 0538 311.500 0538 311.600 0538 311.700	Lamella VERSUS OMEGA 400 Lamella VERSUS OMEGA 500 Lamella VERSUS OMEGA 600 Lamella VERSUS OMEGA 700	
0538 800.000	Control rod	
0538 040.000	Gas strut	

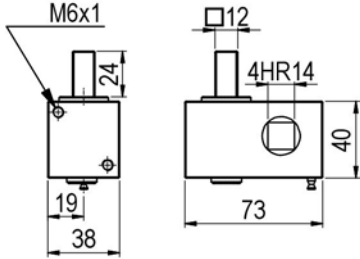
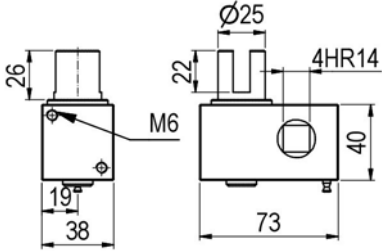
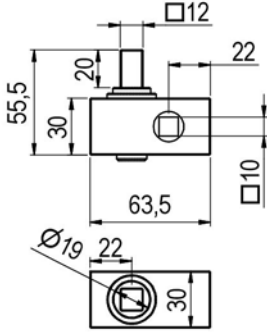
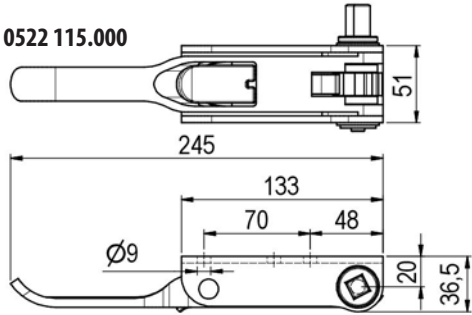
11. Stretching of the canvas

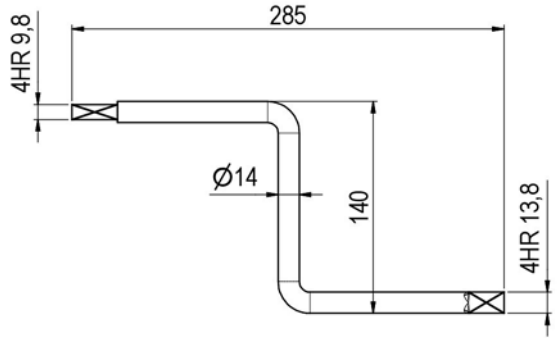
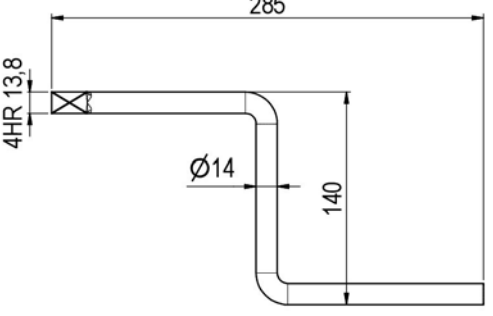
11.1. Stretching of the canvas, parts assembly



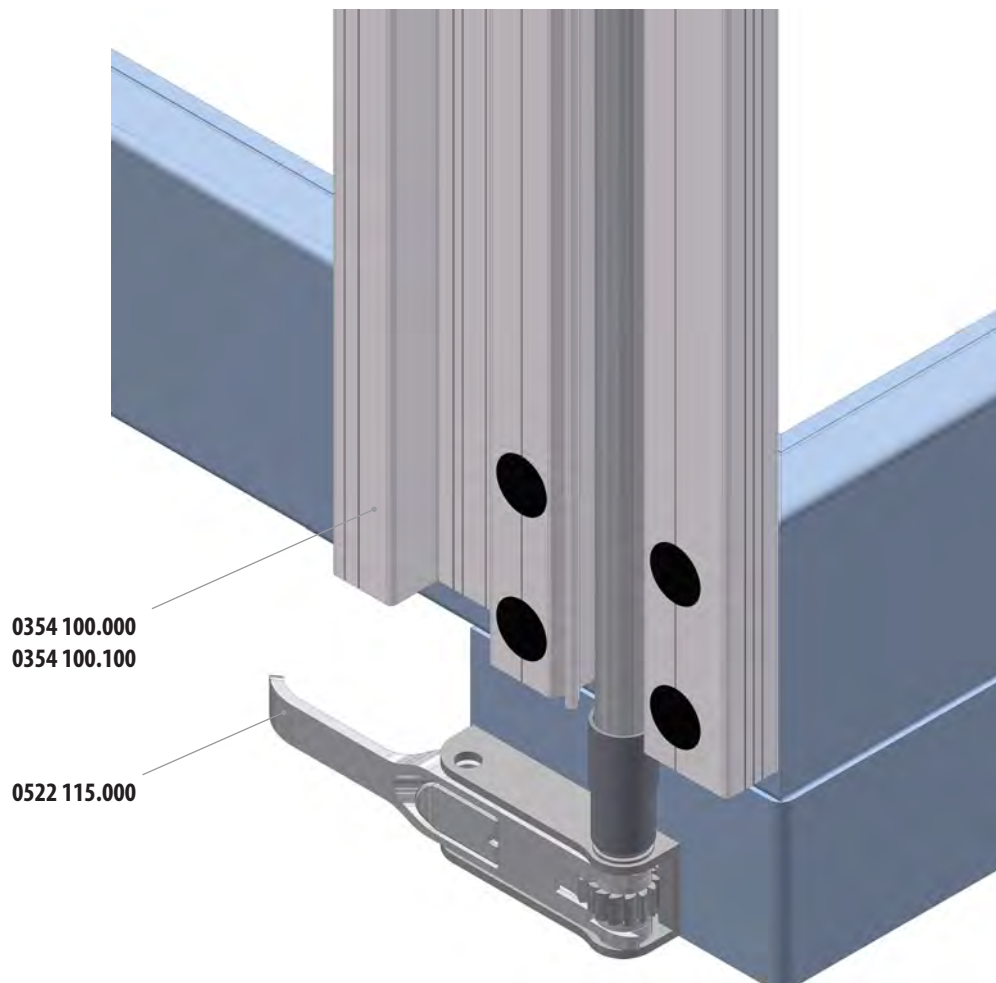
TT-number	Stretching tube size	Title	Materiál	Weight
0522 201.000	27	CS - Upper seating 27	stainless steel	0,10 kg / ks
0522 202.033		CS - Stretching tube 27mm, L=3,300mm	Al přírodní	0,70 kg / m
0522 203.000		CS - Lower seating 27	mosaz	0,10 kg / ks
0522 203.100		CS - Lower seating 27 + pin	stainless steel	0,14 kg / ks
0522 203.200		Sleeve tube for lower seating	galvanised steel	0,10 kg / ks

11.2. Stretching of the canvas

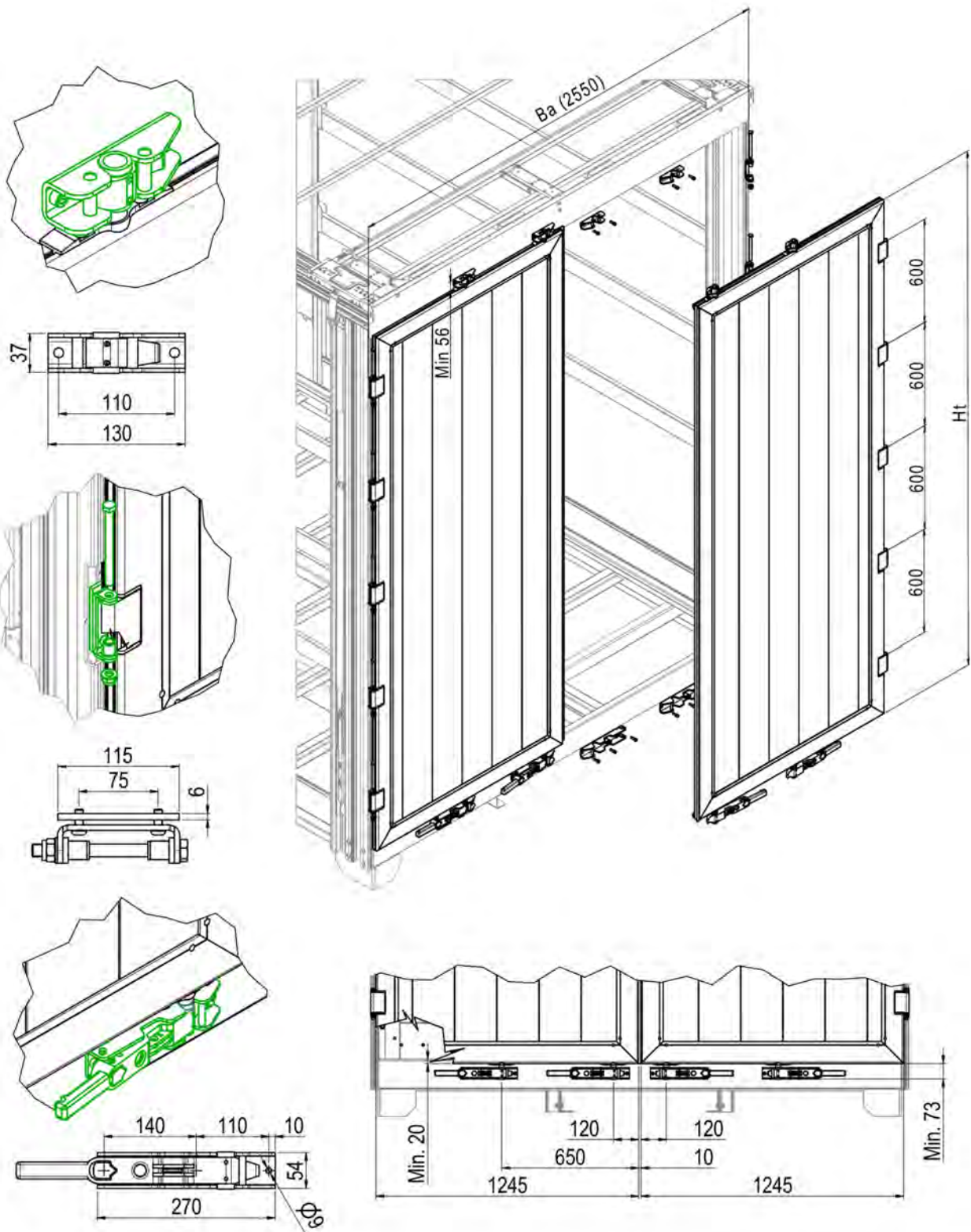
TT-number	Name	Drawing
<p>0522 109.100</p> <p>0522 109.200</p>	<p>Canvas stretching gearbox, LEFT, square</p> <p>Canvas stretching gearbox, RIGHT, square</p>	 <p>0522 109.100</p>
<p>0522 110.100</p> <p>0522 110.200</p>	<p>Canvas stretching gearbox, LEFT, with groove</p> <p>Canvas stretching gearbox, RIGHT, with groove</p>	 <p>0522 110.100</p>
<p>0522 112.000</p>	<p>Stretching gearbox MINI 63x20x30 mm</p>	
<p>0522 115.000</p> <p>0522 116.000</p>	<p>Stretching ratchet with 12mm square piece, front left/rear right</p> <p>Stretching ratchet with 12mm square piece, front right/rear left</p>	 <p>0522 115.000</p>

TT-number	Name	Drawing
0522 105.000	Gearbox crank / for gearbox 0522 109.xxx a 0522 110.xxx	
0522 111.000	Gearbox crank / for gearbox 0522 112.xxx	

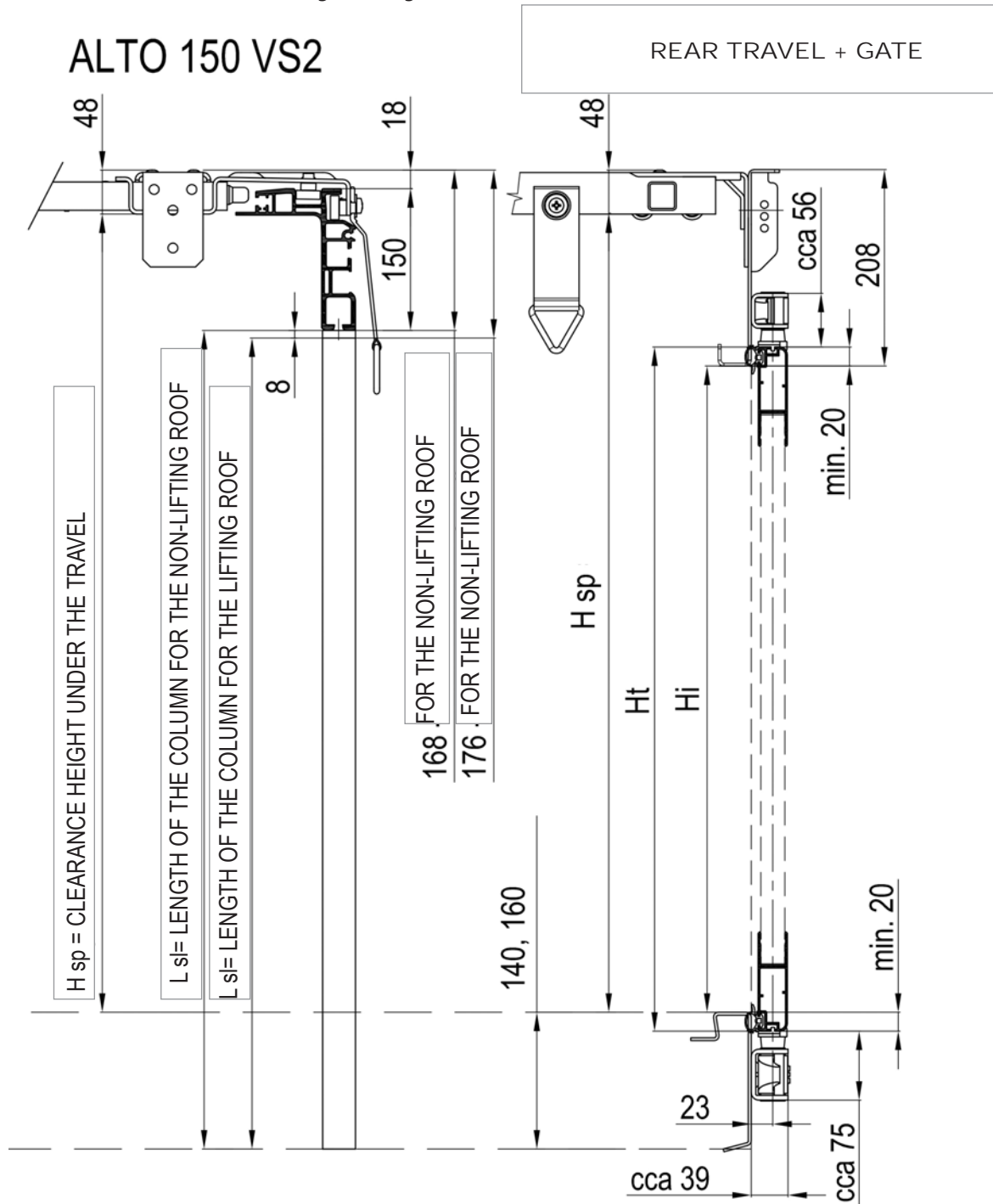
9.3. Stretching ratchet installation



12.1. Double-leaf gate



12.2. Calculation of corner columns lengths and gate dimensions



Length columns calculation

$$\begin{aligned} \text{Lifting ALTO VS2 } L_{sl} &= H_{sp} + 48 - 18 - 150 - 8 + H_{frame} \\ &= H_{sp} - 128 + H \end{aligned}$$

$$\begin{aligned} \text{Non-Lifting ALTO VS2 } L_{sl} &= H_{sp} + 48 - 18 - 150 + H_{frame} \\ &= H_{sp} - 120 + H_{frame} \end{aligned}$$

Calculation Ht :

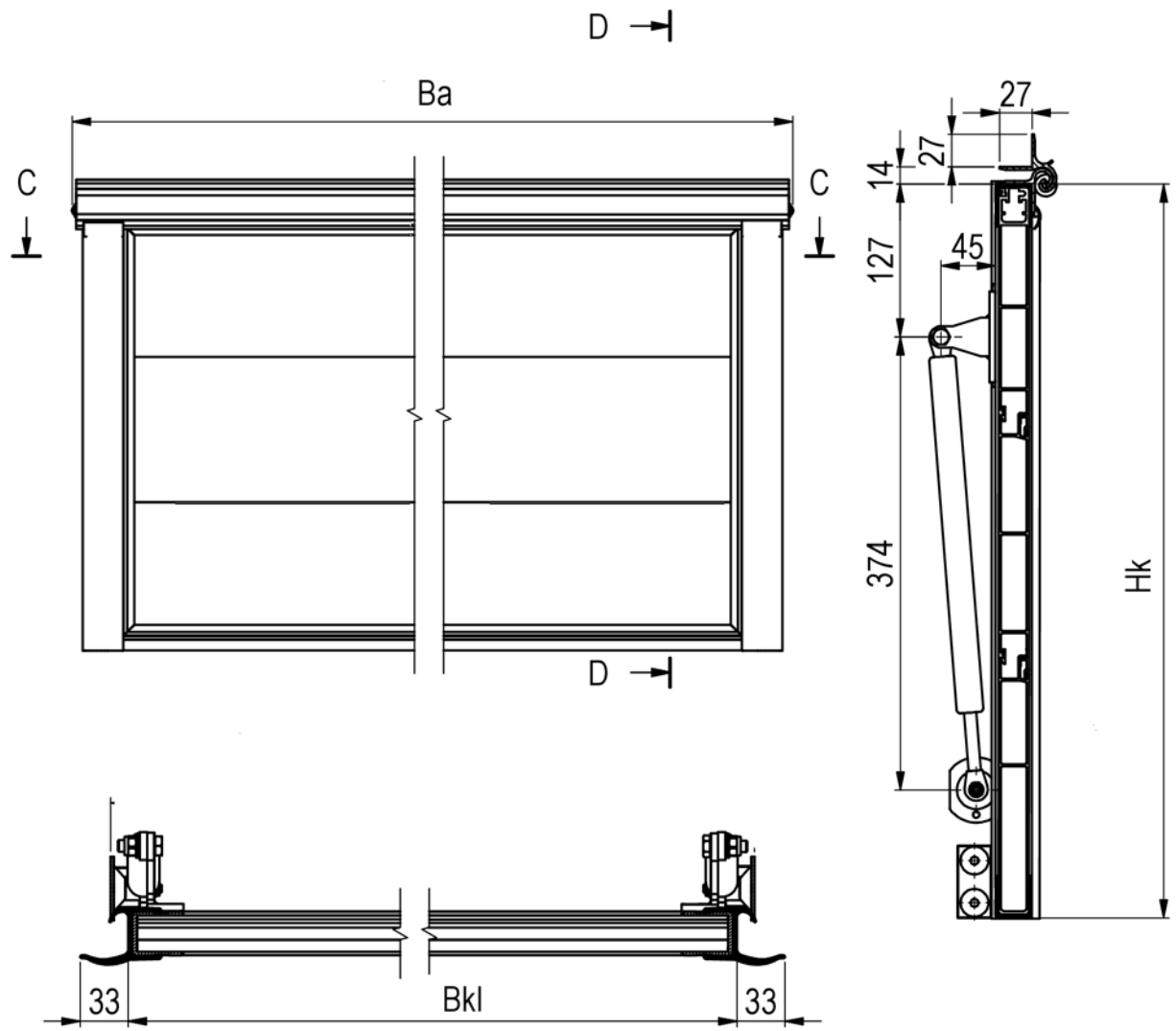
Lifting and Non-Lifting ALTO VS2

$$H_t = H_{sp} + 48 - 208 + 50$$

$$= H_{sp} - 110$$

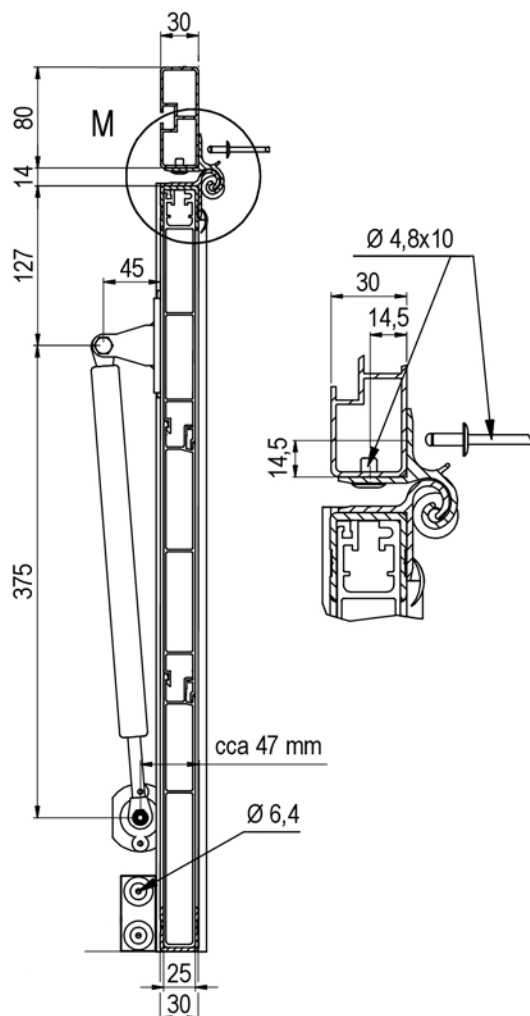
i

12.3. Rear portal with flap

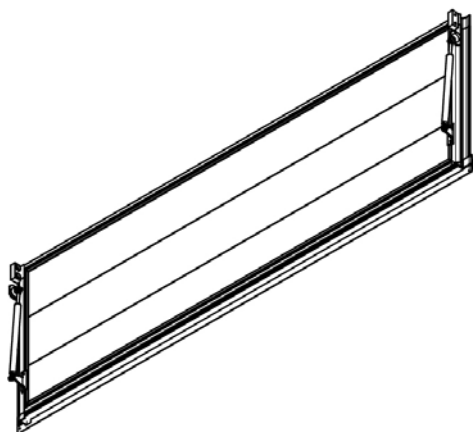


12.4. Rear portal with flap

Assembly with profile **80 x 30mm /60 x 30mm**
recommended for **PENTA CITY, FIXO, FIXO-S, LIGHT PLATFORME**

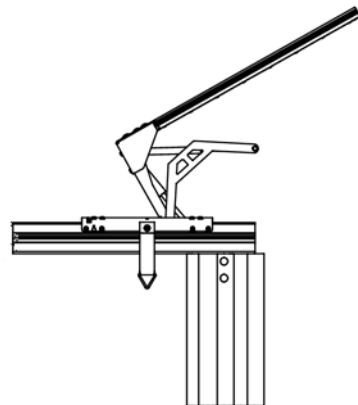
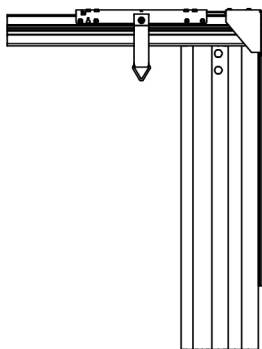
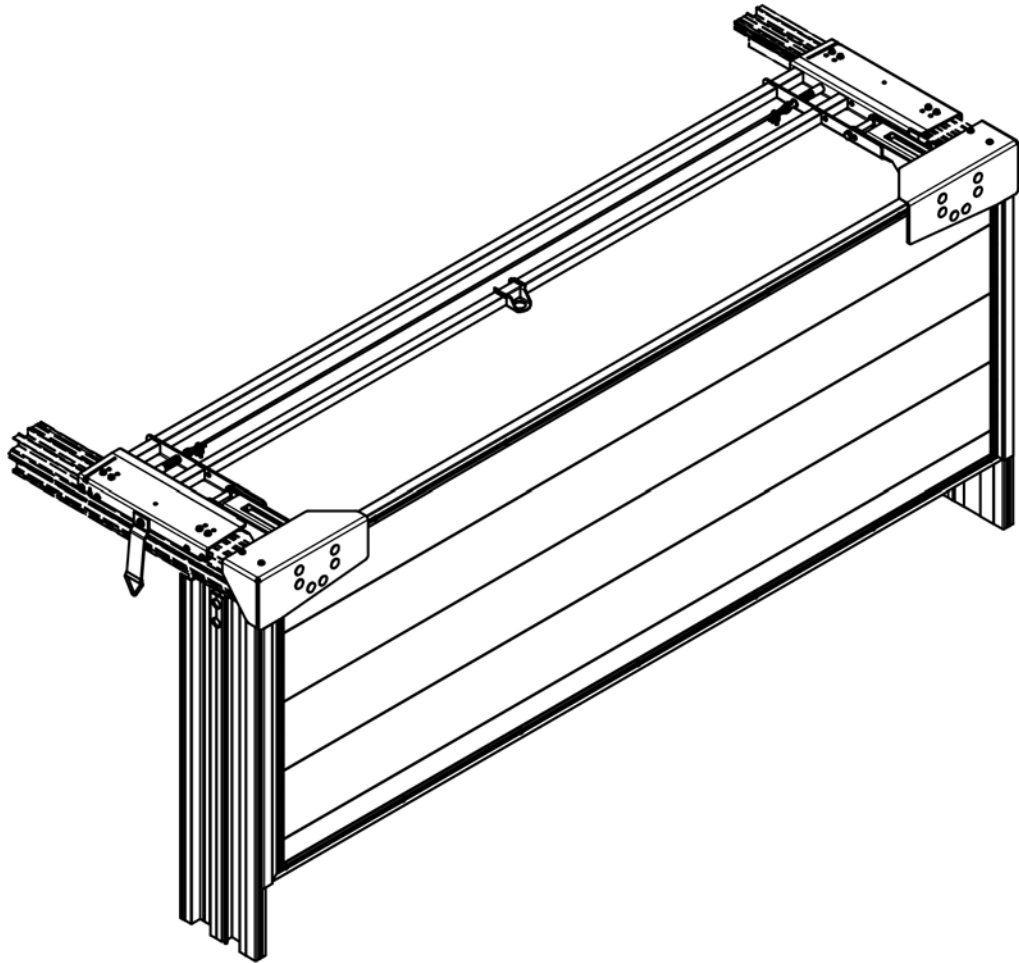


12.5. Rear portal with flap

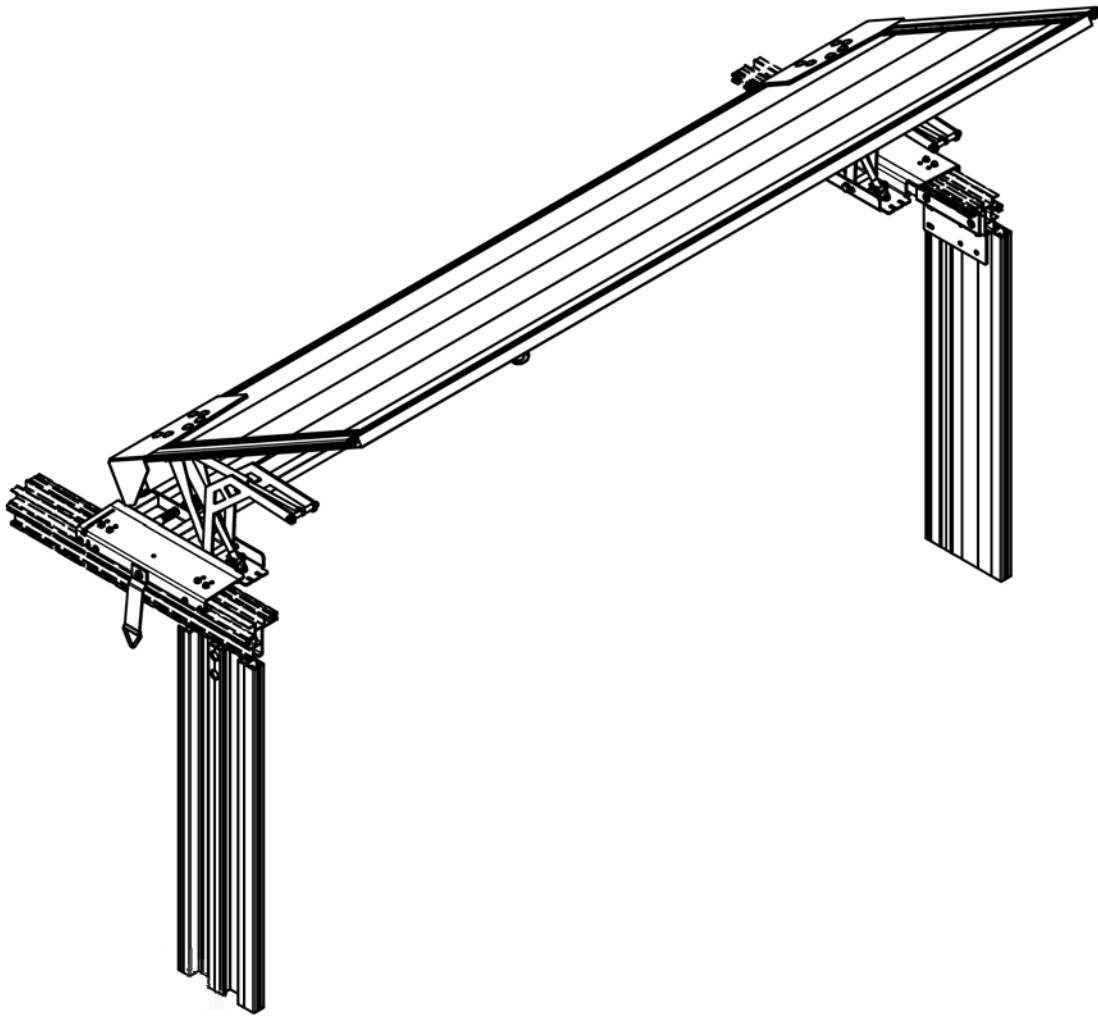


Height flap H mm	Outer width Ba max mm	Width flap (max.šírka) Bkl max mm	TT number/ surface			Streingth gas springs F (N)	Weight kg / pcs
			TT-number natural	TT-number elox	frame elox panel		
500	2100	2010	0561 050.021	0561 050.121	0561 050.221	2 x 260	
	2200	2110	0561 050.022	0561 050.122	0561 050.222	2 x 260	
	2300	2210	0561 050.023	0561 050.123	0561 050.223	2 x 260	
	2400	2310	0561 050.024	0561 050.124	0561 050.224	2 x 260	
	2550	2460	0561 050.025	0561 050.125	0561 050.225	2 x 260	
600	2100	2010	0561 060.021	0561 060.121	0561 060.221	2 x 260	
	2200	2110	0561 060.022	0561 060.122	0561 060.222	2 x 260	
	2300	2210	0561 060.023	0561 060.123	0561 060.223	2 x 260	
	2400	2310	0561 060.024	0561 060.124	0561 060.224	2 x 260	
	2550	2460	0561 060.025	0561 060.125	0561 060.225	2 x 260	

12.6. Rear portal with lifting flap

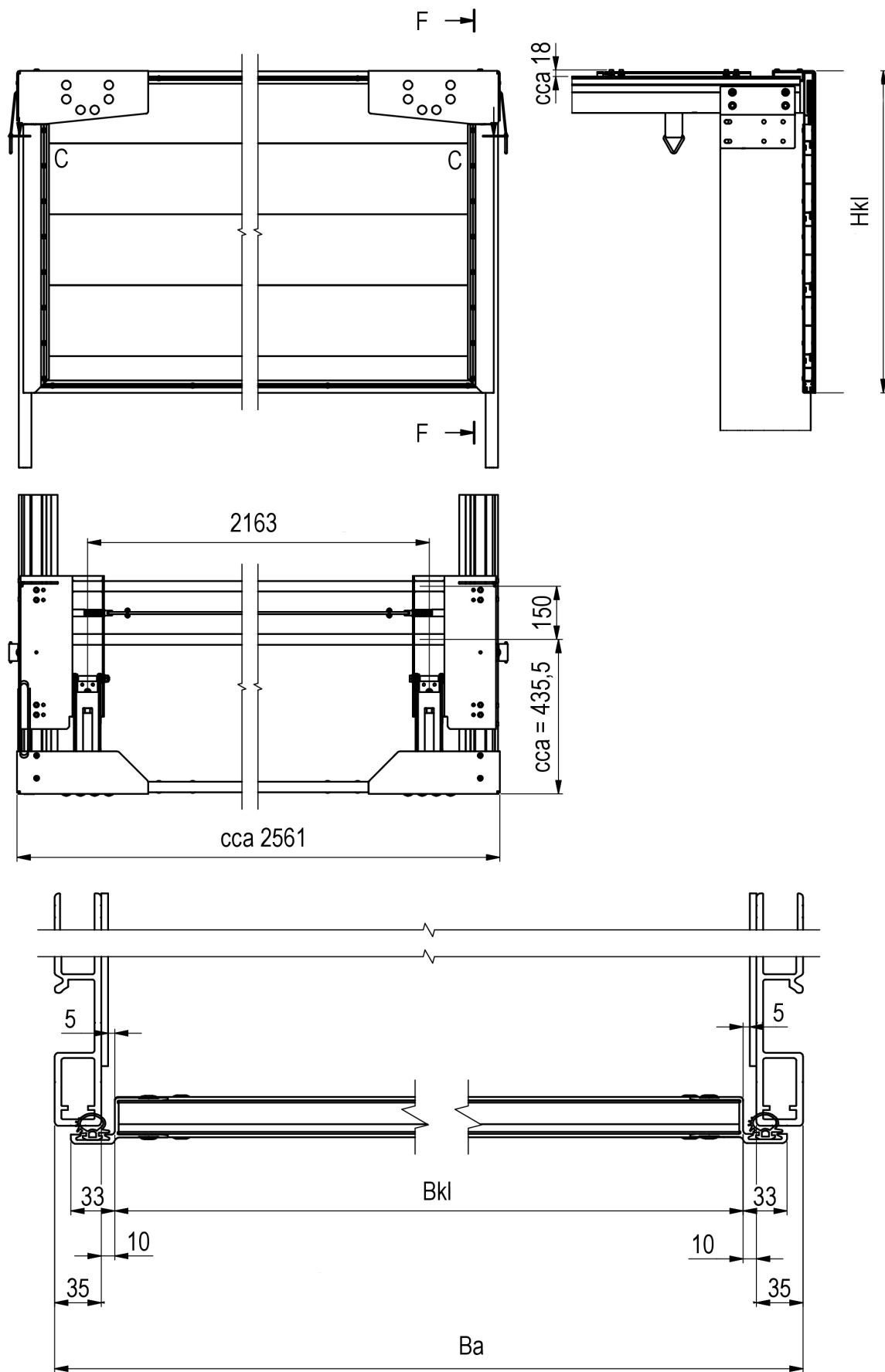


12.7. Rear portal with lifting flap

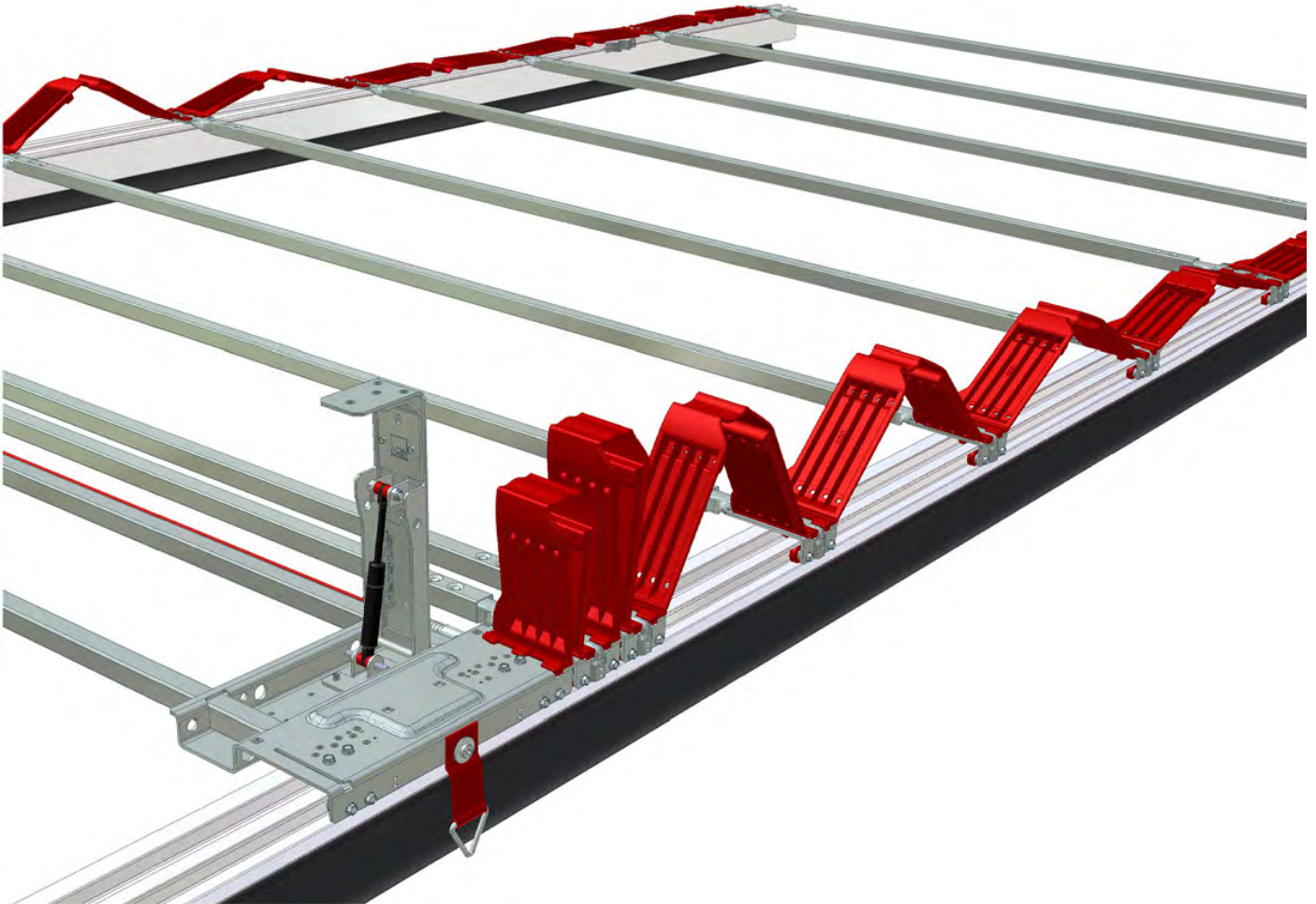


Height	Outer width	Max width	TT-number			Gas strut	Weight
H mm	Ba max mm	Bkl max mm	TT-number natural	TT-number elox	TT-number elox/panel	F (N)	kg / pcs
700	2550	2460	0562 070.026	0561 070.126	0561 070.226	2 x 1000	41,0
800	2550	2460	0562 080.026	0561 080.126	0561 080.226	2 x 1000	45,0
900	2550	2460	0562 090.026	0561 090.126	0561 090.226	2 x 1000	49,0
1000	2550	2460	0562 100.026	0561 100.126	0561 100.226	2 x 1200	53,0

12.8. Rear portal with lifting flap



Instructions for use and conditions of operation of the folding canvas structure Versus OMEGA

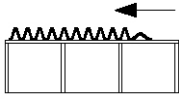


1.1 Description of the structure

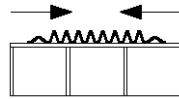
Folding canvas structure type Versus Omega enables easy and fast uncovering of the vehicle. The folding superstructure is usually in the design with folding of sides, with folding roof or fixed non-folding roof.

The roof structure is delivered in the following designs:

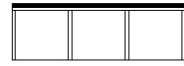
Folding from rear side



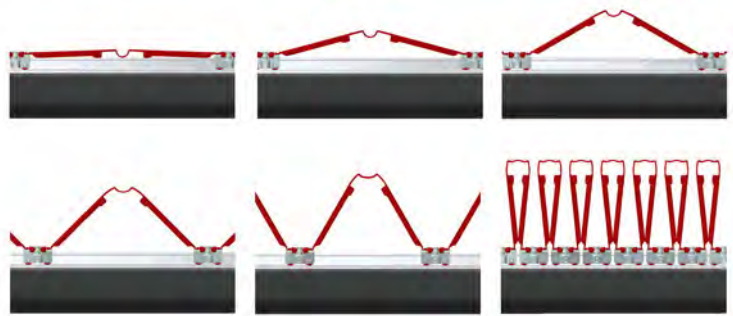
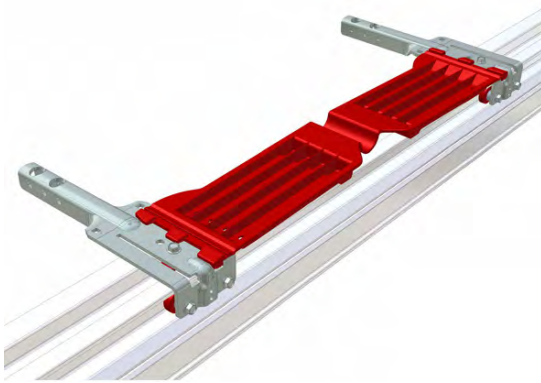
Folding on both sides



Fixed roof

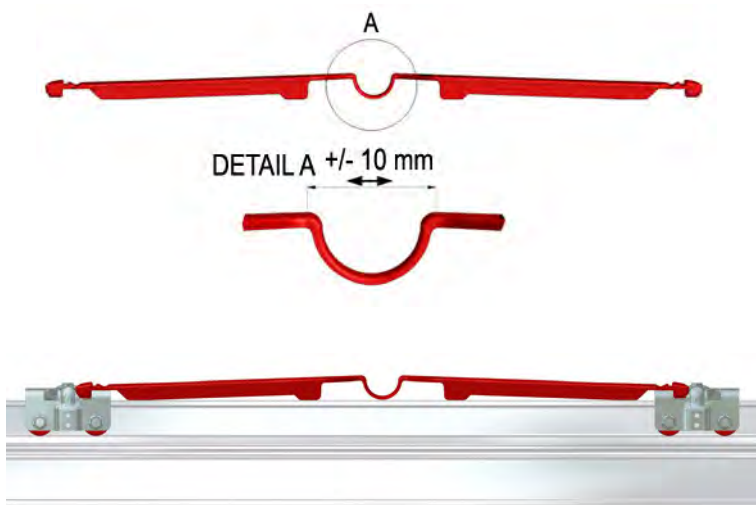


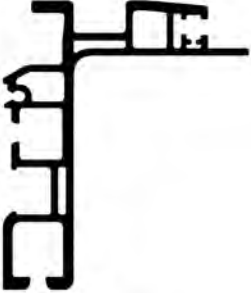

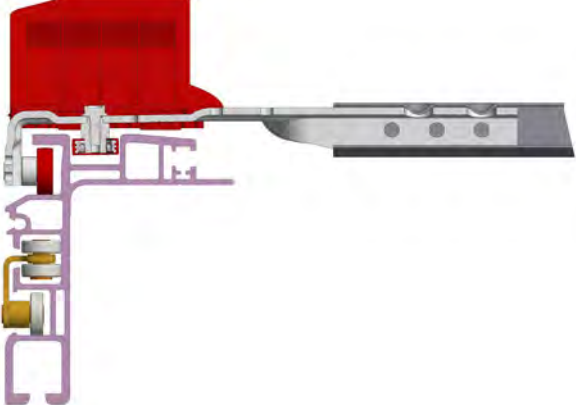
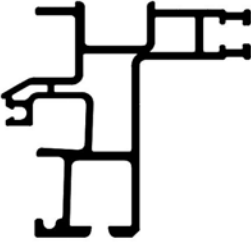

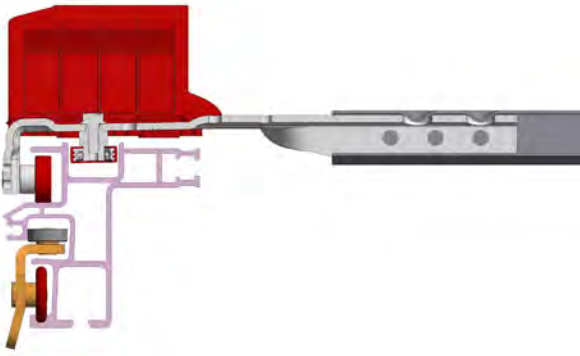
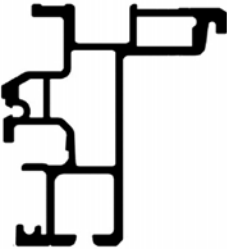

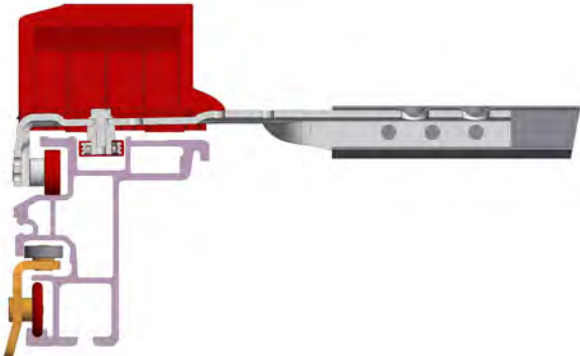
Screwed bearings of the crosspieces and rear travel, together with installed plastic lamellas (between crosspieces) enable easy folding and stretching of the roof structure. This also absorbs the shocks arising from manipulation with the structure.



The plastic lamellas Ω are without central joints and can be bent thanks to their specific shape. The system of lamellas shaped as Ω can be compressed or stretched as necessary. This absorbs all forces with opening or closing of the roof. When the roof is closed, the lamellas are seated on the guide profile. This prevents bending of the lamellas downward or one over the other when opening the roof.

The roof canvas shall be fixed to each roof crosspiece using shackles, usually by five shackles on the first and last three crosspieces. Between these crosspieces, at least three shackles per one crosspiece are recommended.



Types of guide profiles for folding structure Versus Omega	Types of canvas guide wheels	Location of guide wheels, crosspieces and plastic lamellas in the guide profile
<p>ALTO 150 VS2 0538 007.xxx</p> 		
<p>MYCRO TRIKE 0538 011.xxx</p> 		
<p>DUO 120 TRIKE 0538 014.xxx</p> 		

Profile Mycro Trike - use particularly with smaller vehicles

Profile Duo Trike -use particularly with larger vehicles, e.g. with a XL superstructure

Profile Alto VS2 - use particularly for maximal filling of the loading area; suitable also for XL superstructures

1.2 Use and procedure with folding of the roof Versus Omega

All mechanisms for folding of the canvas and their parts Versus Omega are designed for vehicles designed for traffic on roads. The vehicle superstructure shall comply with the applicable regulations (particularly Act no. 56/2001 Coll.) on technical conditions of traffic of road vehicles on roads, decree no. 315/2012 Coll. on approval of technical capability and technical conditions of traffic of vehicles on roads).

The manufacturer neither supplier of the folding structure do not provide any warranty for losses and risks arising from non-observance of the applicable regulations. Folding roof mechanism can only be used if in compliance with the law and safety of traffic on roads. The equipment may only be operated by a person that is familiarised with the folding system Versus Omega.

Procedure with folding of the roof Versus Omega

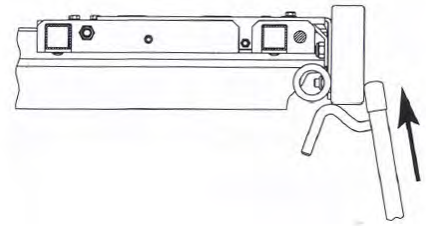
- The roof and side canvas may only be folded if the vehicle is in standstill



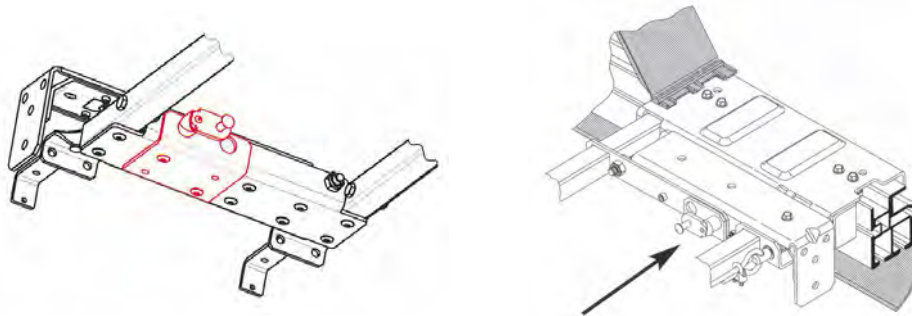
- The side canvas can be folded from the ground after unlocking of the canvas clips and release of the stretching ratchet. The folding roof structure can be unlocked after opening of the rear gate.



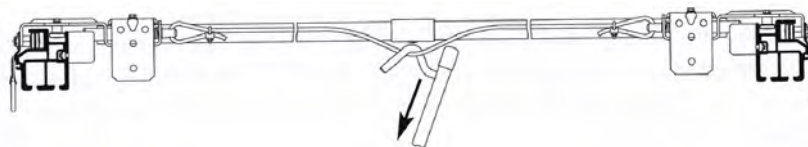
- Folding of the roof structure can be carried out by tilting the rear portal upward using the rod, see the picture.



In case the rear tiltable portal is equipped with a rotary locking mechanism, it is necessary to unlock it before tilting, see the picture.



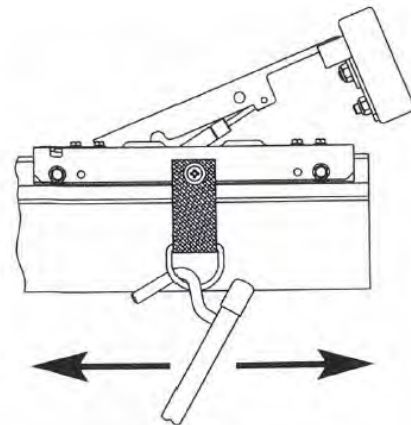
- Using the manipulation rod pull the steel stranded wire under the travel downward. This unlocks the rear travel and enables its linear shift, see the picture



- Folding of the roof without load on the vehicle is possible using the manipulation rod, by pulling the last crosspiece up to the place where the folded position can be secured.



- In case the vehicle is fully loaded, the roof can be folded using the side lug, see the picture. When stretching the folded roof, proceed in reverse order.



- The roof structure can be raised using the lifting mechanism located in the front and rear corner columns. When lifting the roof, unlock the rear gate, release the side canvas, remove side bars and unlock side columns.



- We recommend use always bracing straps between the rear columns to increase safety and lifespan of the super-structure.



Attention!

Remember please that the folding roof in open position shall be secured for safe loading. Otherwise it could stretch spontaneously and this could lead to damage to the structure or load.



Attention!

Before drive, folded roof shall be secured in stretched position; the rear portal shall be tilted down and locked. Further it is necessary to have the rear gate closed and side canvas stretched

1.3 Maintenance and repairs

Regular servicing extends lifespan of folding roofs Versus Omega and enhances comfort with their use. Necessary service depends particularly on high concentrations of dust.

Repairs of folding roofs versus Omega can be carried out without their dismantling.

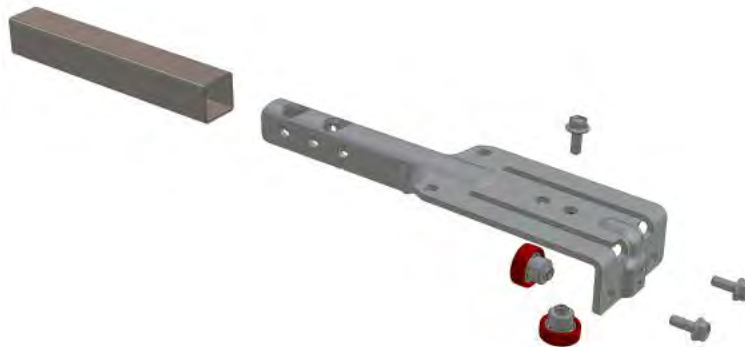
Aluminium guide profiles

Check the guide profiles for damage. Damaged profiles shall be replaced. When checking the structure, pay attention to cleanliness of the guide profile. The surfaces that come into contact with bearings of the crosspieces and canvas guide wheels, shall be without any dirt. Dust and other mechanical dirt shall be thoroughly removed

Bearings and their replacement

Bearings of the folding roof Versus Omega need no lubrication due to their covering.

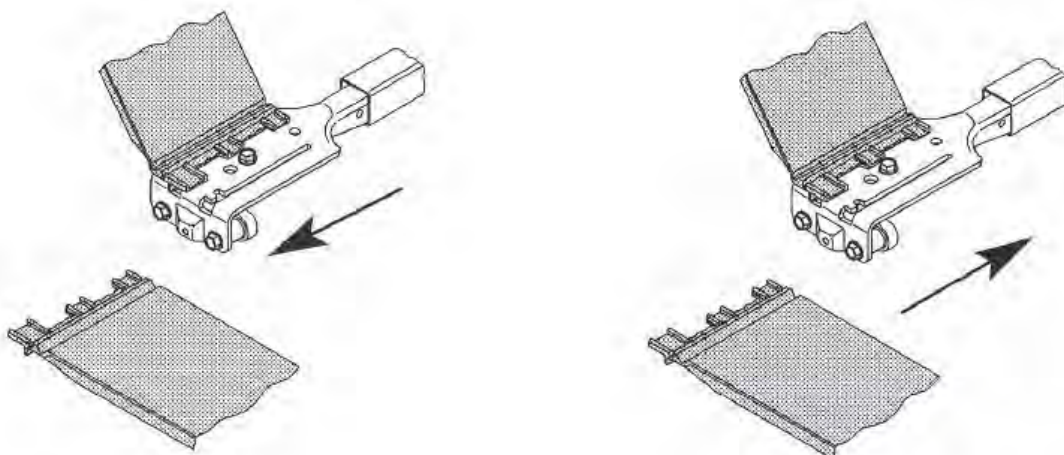
In case of their non-functionality and damage, it is necessary to replace them using an open wrench no. 10 for releasing of the bolts. Apply the same procedure for installation of new bearings, see the picture.



Plastic lamellas

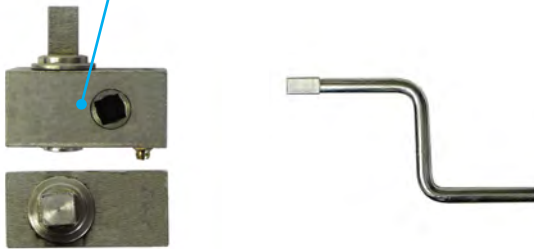
Plastic lamellas are sliding-on types; it is necessary to check them to prevent their mechanical damage during manipulation with them. In case the lamella is damaged, it shall be replaced immediately to prevent any damage to other lamellas when folding the roof.

For replacement of a lamella open the roof, slide the damaged lamella out and slide on a new lamella, see the picture. Before sliding on a new lamella, bend it slightly to one and then to other side in the place of its sliding on. This eliminates its stiffness and causes its softening with first folding of the roof.



Stretching mechanisms

1)) gearbox with crank
it shall be lubricated as necessary (lubricator



2) stretching ratchet
it is recommended to lubricate it around the
pinion



1.4 Warranty and spare parts

Our parts are covered with a 24-month warranty according to the law, i.e. from the delivery date. The warranty covers any faults and failures of our parts and structures. The warranty relates to replacement of parts considered as faulty. The warranty is rejected in case when the purchaser or any third party modifies or repairs the delivered goods without prior consent of our company or in case of improper use or bad maintenance

We recommend to use canvas with specific weight at least 900 g/m² for our superstructures.

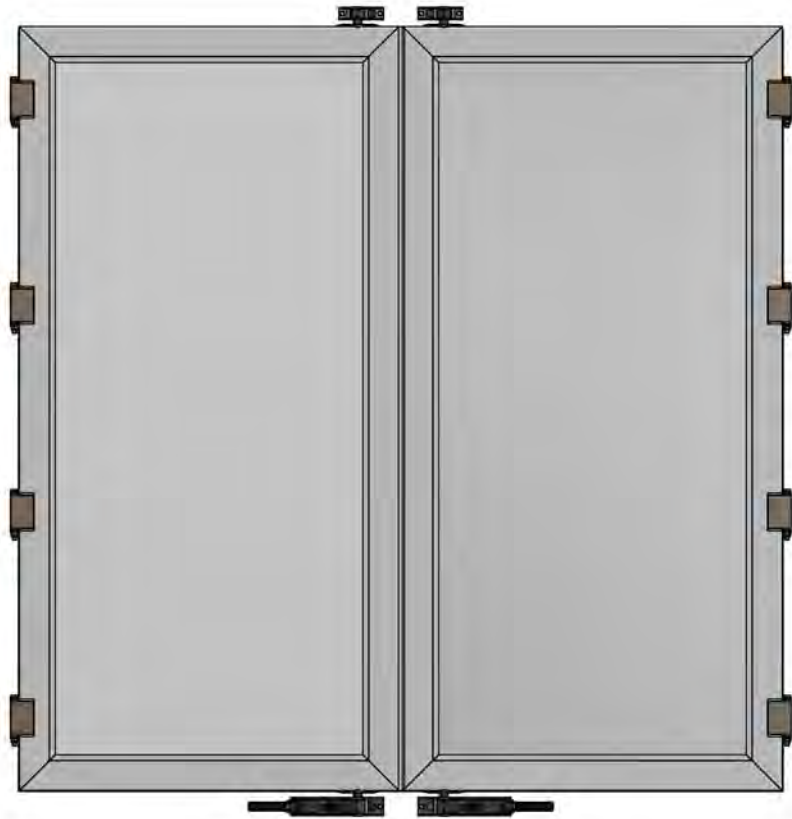
Note

The manufacturer reserves the right to make changes in the technical documentation and in the structure or accessories of Versus Omega. These parts were tested in view of their safety and functionality. Versus Omega is not responsible for any damage or injury caused by use of non-original spare parts and accessories.

Delivery and handover of spare parts and accessories provides:

TRANS-TECHNIK spol. s r.o., Tyršova 1146, 664 42 Modřice

Manual for ordering, installation and use of TT gate



Division of gates, designs and basic dimensions for ordering of gates.

Rear gate can be in the following designs: - double-leaf - double-closure - four-closure
 - four-leaf

- the closures are outer or with flushed closures upon request.
 - gate material: Al natural - Al anodized - Al varnished - Al frame + panel.

Rear gate made of Al profiles with sealing along perimeter and rubber sealing across the centre.

Surface natural and varnished - gate profiles and panels are welded in corners on both sides + Al panels welded from inside (at the top, in the centre and at the bottom).

Designs with anodized surfaces and panels - gate welded in corners from inside. The design with anodized surfaces - the filling panels are welded from inside (at the top, in the centre and at the bottom). The gate panels are glued in the frame profile from outside.

The hinges are made of steel, standardly screwed; also available with welding on or Al riveting (natural or anodized) hinges.

This gate design guarantees high strength, stiffness and therefore long lifespan.

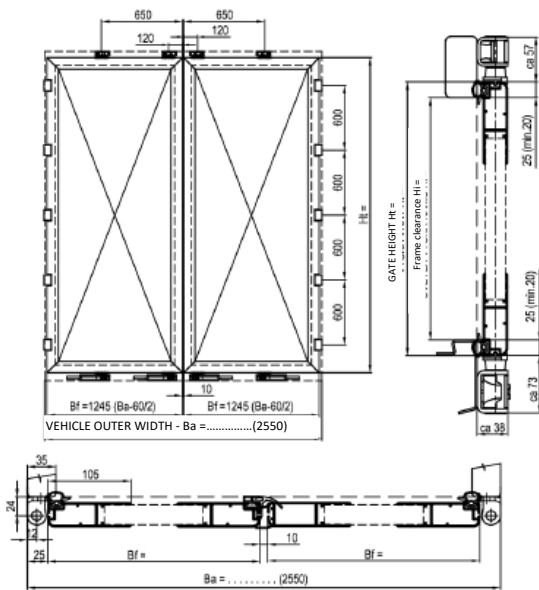
Dimensions for ordering of gates:

When ordering gates, specify dimensions: **Ba x Ht (mm) = (Vehicle outer width x gate height).**

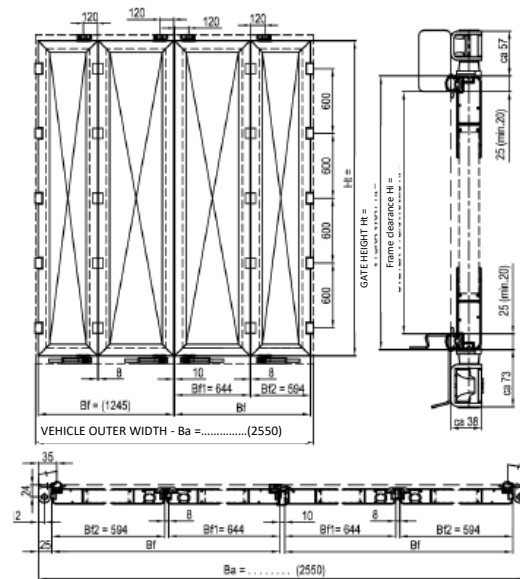
Recommended overlap of the frame and upper portal = 25mm (min. 20mm), see the picture below.

Warning: The gate is provided with a label in its lower corner for easy identification.

**Double-leaf gate
 basic dimensions**



**Four-leaf gate
 basic dimensions**



VEHICLE OUTER WIDTH - Ba =	VNĚJŠÍ ŠÍŘKA VOZIDLA – Ba =
GATE HEIGHT Ht =	VÝŠKA VRAT Ht =
Frame clearance Hi =	SVĚTLÁ VÝŠKA RÁMU Hi =

Gate installation - main principles:

Thickness of the column for installation of a gate min. 35mm (due to function of the sealing).

1. Spacing of the hinges is 600mm. Gate shall be located so that the upper and lower overlap of the frame (portal) is min. 20mm, recommended 25mm.

The hinges (welded on, screwed) shall be located so the hinge outer edge is aligned with the outer edge of the column. The hinge "recess" should face to the superstructure outer dimension. See the picture.

Screwed closure: each hinge is fixed using two M8 bolts, strength 8.8.

Welded on hinges: the weld shall be located in the "recessed" part of the hinge, on its outer side (at the bend).

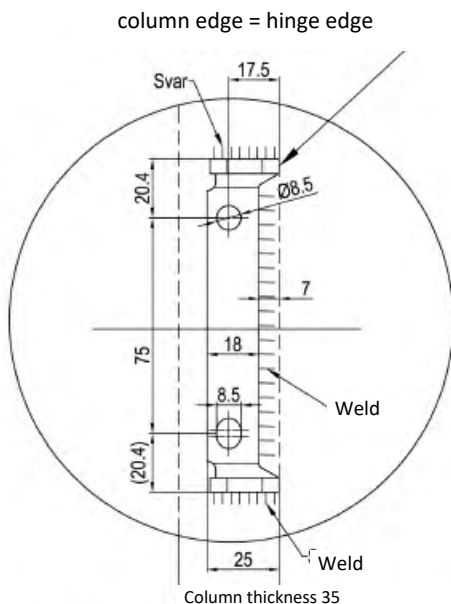
Riveted hinge should be fixed over the column corner by rivets dia. 6,4 x length (acc. to the column wall thickness).

The way of riveting: 1 rivet in the hinge centre, 1 rivet above and under the hinge; applies for each hinge.

ATTENTION!! In case of steel (screwed and welding on) hinges do not tighten the screw M12x140. Tightening - lamping - of the gate joint causes bad causes bad function of the hinge and may lead to sweeping and damage to the sealing.

2. Check the so-called pusher for its damage or knocking off after installation or due to improper use; this component has to protect sealing against sweeping, so sealing of the gate against water in the loading area. The pusher can be installed or replaced easily in case of its loss or damage.

3. We recommend to install a drip mould over each gate to prevent flowing of water from the roof onto the gate.



VEHICLE OUTER WIDTH Ba



Use of gates


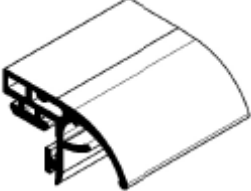
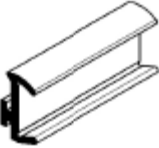


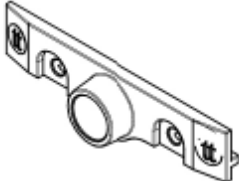

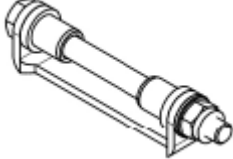
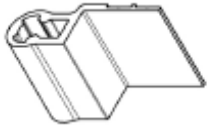


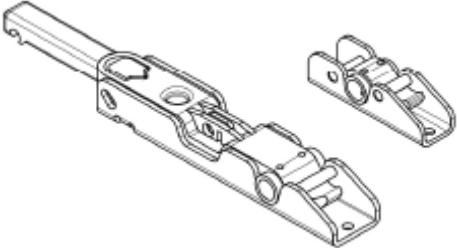
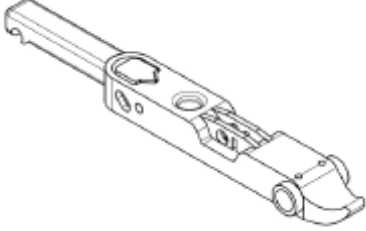
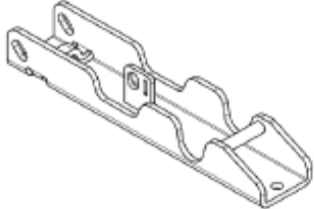

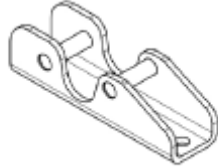

1. **!!! The gate shall be braced diagonally during operation - the journey. !!!!**



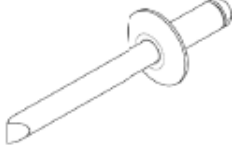
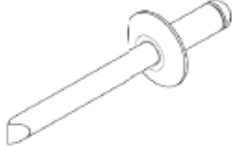


2. **The gate shall be secured i open position using the gate bracket.**
 - do not drive with open gate.
 - . before the journey check whether the upper and lower closures are in closed positions.
 - secure the load against any displacement. The load shall not be in contact with the gate.
 - . Check presence of the gate pusher (located at the gate bottom corner).

Basic spare parts for gates

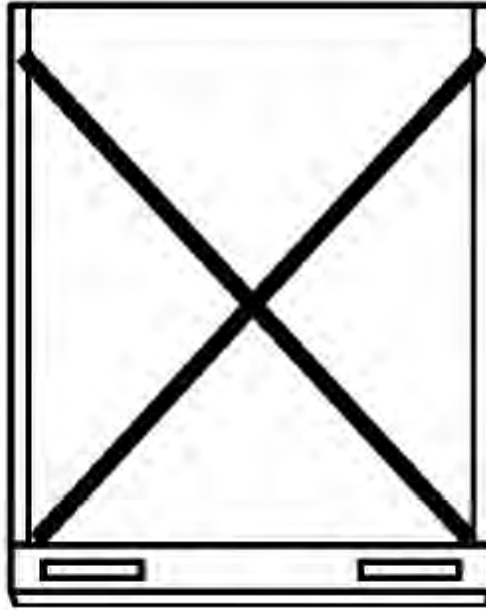
TT-no.	Description	Sketch
0512 026.000	Peripheral sealing	
0512 027.000	Central sealing 2K	
0512 028.000	Central sealing 4K	
0512 032.100	Pusher	
0512 030.000	Hinge 2K sleeve	
0512 034.000	Guide	
0512 050.000	Bolted gate hinge	
0512 053.000	Welding on gate hinge	
0512 019.xxx 0512 020.xxx	Welding on gate hinge Al natural Al anodized	

TT-no.	Description	Sketch
0512 035.000	Gate closure 18mm, complete	
0512 035.110	Lower closure lever	
0512 035.120	Closure lever counterpiece	
0512 035.210	Upper closure finger	
0512 035.220	Upper closure counterpiece	
0512 039.000.	Closure rod 18mm - 3,300mm	

TT-no.	Description	Sketch
0991 041.204	Clamping set, strip, width 35mm	
0911 001.100	Anchoring lug with shackle 750kg, galvanised	
2111 464.165	Rivet 6.4x16 S = 5.5-8.5mm; used in the upper part of the column	
2111 464.181	Rivet 6.4x18 S = 9-12mm Used in the lower part of the column in the chamber with the stiffener	

The gate shall be provided with a label showing information about necessity of bracing

THE GATE SHALL BE BRACED!



REAR DOORS MUST BE FIXED WITH TENSION STRAPS