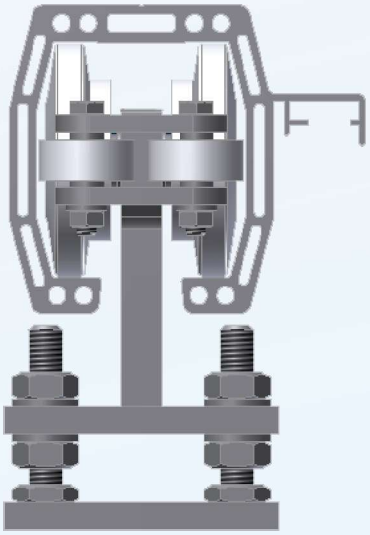
The best Choice in Aluminium

The ATTAS® - cantilever - system also available in Aluminium



Automatische Tür und Tor Antriebs Systeme

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The ATTAS® - Aluminiumgatesystem

The ATTAS® - Aluminiumgatesystem is made of rod pressed aluminium profiles that are specially developed for the requirements of cantilever sliding gates. Additionally you would get fitted End Plates made of aluminium and, depending on the size, the necessary sliding roller.

Basis for the development of an aluminiumprofile were the years of experience in the steelgate business. This experiences now were implemented in our lightweight but also strong aluminiumprofiles. That‘s why the aluminiumgatesystem is based on the components of the steelgatesystem. So, in need, it‘s possible to change parts with our steelgatesystem.

In the sector of the treads our Aluminium profiles have a high Wall thickness, so that there is no waer of the profile, even if you are using a maximum gateweight.

In the more than 25 years of experience the form of our Profiles have been constantly improved so that our Profilesystem ATTAS® reaches the highest quality possible. So today we can claim the roller surfaces, and the quality of aluminium has improved. In particular the guidance of the secluded bottom flank is highly stabile, which is torsion resitant, which provides an easy moving gate; also taken into to account for is extra weight from passengers this is accomodated without difficulty, thus not damaging or distorting the profile. It is precisely this special manner of how our profiles have been moulded, they are turned towards the inside which interlocks allowing larger gates to be built with a passage clearance width of 14 meters. It ‘s this method which allows a profile to be built without having to have an extremely thick gate wall. These advantages should be taken into consideration when comparing with competitors.

However, the thickness of the profile wall is chosen so that when required the gate can directly be built in without the use of a bottom railing support . Should you want to hear more on this method please inform us and we will send further information. ATTAS® generally recommends production of the gatebody including the bottom railing support then placing it on the profile afterwards. This recommendation is based on statistics.

The sliding roller components are made of a weldment, partially made from solid finegrained-steel, from ST52 and from stainless steel. The larger sliding rollers are Polyamide 6 (PA6) showing a high resistance to tears and breakage, PA6 keeps holds of little water, and responds only slighly to heat expansion. The high tenacity and impact strength of this material makes it perfect for the use in cantilever sliding gates.

The mounting of the slide or support rollers is done by using extremly large ball bearings and partially done by using large roller bearings, and are built so that they are dustproof.

Through the combination of these components, bound together with end bearings resulting in the extrem mobility of the whole system, which positivly effects the hands on operation and the convenient adaptation of size on our gates motor.

Interference that can come from the side such as strong winds, shearing forces, or through a delay when the gate is partially in the sun has been compensated by the stabile inner crossing rollers. In addition this function is backed up with wider rollers in which their interior and exterior flanks are also used to guide and assist. So it is possible, that by minimum air permeable gates the upper rails may not be needed. ATTAS® suggests production of the gates including the upper railing for extra durability as a safety precaution, thus avoiding potential gale winds and other weather factors.

Our Aluminiumprofiles are for many metal construction and gatebuilding companys the best solution, because sufficient knowledge is available. You may choose from different forms of profiles: rods, bars, and by special order, measured and cut to your needs. Aluminiumprofiles can be processed without difficulty and extra precautions are not necessary as long as you follow a few productional instructions. The ATTAS® Aluminiumprofiles for cantilever sliding gates in comparison to other products provides an optimal price-performance ratio.

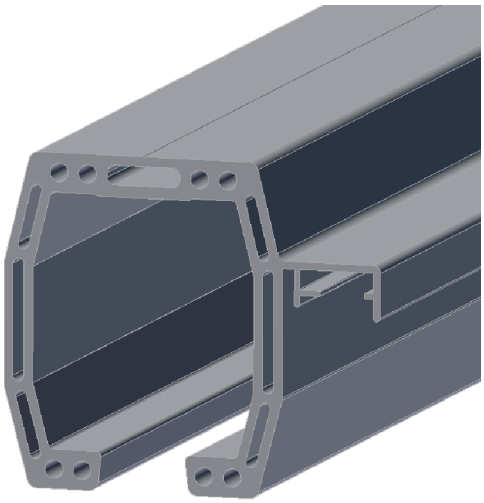
The construction of the Endplates with integrated supporting roles are for the discharge at the end position. They will be secured with stainless steel bolts, wich are included in the delivery.

It is recommended, that the the gatebody is made of aluminium. You can connect the gatebody and the profiles with bolt connections. On the following pages you can have a look a all the static calculations.

It also is possible to connect the aluminium profiles with gatebodys made of steel. Because of the corrosion problems between aluminium ans steel you need a anticorrosion stiring, to guarantee a galvanic isolation. Because of the differently Expansion of steel an Aluminium we do not recommend to connect this two materials, but it is possible.

Cantilever aluminiumprofiles come in 2 different sizes

- Made in the highest quality of aluminium
- Torsion-resistant hollow chamber system
- Very well application of force because of stable treads



Dimensions : Profile Height x Width x Strength

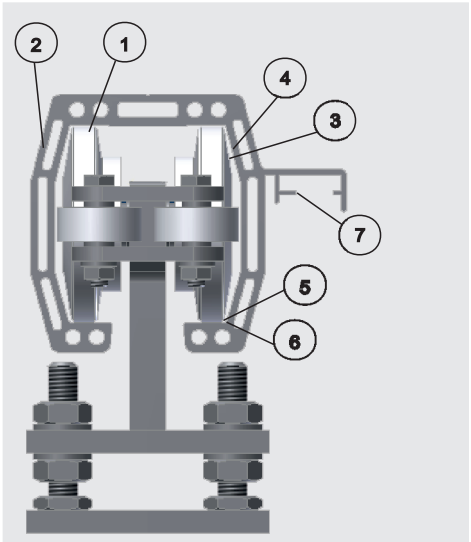
LRP 90A max. 8,0 m passage clearance width
90 x 77 x 8 mm

FST 140A max. 7,5 m passage clearance width
(Coming soon)

Inbuilt Pickup for plastic racks

The profile has an outrigger on the side⑦, where the plastic racks can be inserted.

In order to prevent that the are moved, they are secured by a fixing plate.



Material Description

The Alumiumprofile is made of an alloy according to the Standard EN 755-9.

Material	AL Mg Si 0,5 F22
Number of binding material	3.3206
International alloy register	EN AW 6060 T5
Tolerances to	DIN EN 12 020-2
Anodized on request in	E6/EV1 with 15 my

The contours of the wheel support ① and the sliding roller profile ② are designe to rotate so that a jamming or ascension of the wheel is not possible

It is ensured that the bevel ③ and ④ are fitted to the the pertinent radii ⑤ and ⑥

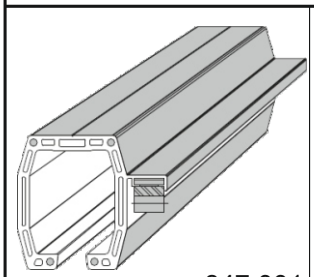
The light mobility of the ATTAS profile technic is largely due to the support castors made from Polyamide and the exactness of the sliding rolled profiles.

The resistance of Polyamide PA6 and the ballbearing hardness of the profiles raw materials HX420 / Hx380 LAD have been demonstrated and well proven.

The used material AlMgSi 0,5 F 22 is mostly used by the manufacturing of weather-resistant outdoors used products like for example windows, gates, doors or fences.

Cantilever Aluminium Sliding Gates System FST 90A, FST 90A-S

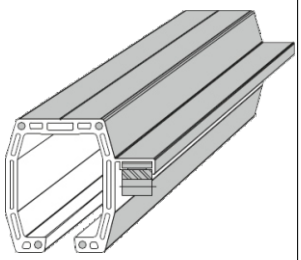
Price on request



Sliding roller profiles Type: LPR 75

Sliding roller profile LRP 90A, constructed to EN AW 6060, rod pressed profiles 90 x 77 x 8 mm, Weight 4,564 kg/meter, Al Mg Si 0,5 F 22, **Bare** ; Tolerances to DIN EN 1220-2
Lengths on stock: 0/+10 mm

847 001	Storage length : 4.900 mm	22,36 kg/bar
847 002	Storage length : 5.500 mm	25,10 kg/bar
847 003	Storage length : 6.100 mm	27,84 kg/bar
847 004	Storage length : 8.200 mm	37,42 kg/bar



Sliding roller profiles Type: LPR 75

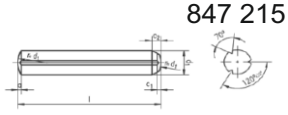
Sliding roller profile LRP 90A, constructed to EN AW 6060, rod pressed profiles 90 x 77 x 8 mm, Weight 4,564 kg/meter, Al Mg Si 0,5 F 22, **Anodized in E6/EV1 15my,**
Tolerances to DIN EN 1220-2
Lengths on stock: 0/+10 mm
Only suitable for bolt connection to the gatebody

847 010	Storage length : 4.900 mm	22,36 kg/bar
847 011	Storage length : 5.500 mm	25,10 kg/bar
847 012	Storage length : 6.100 mm	27,84 kg/bar

Longer profiles are technical impossible at the moment

Compilation by passage clearance width

847 001	Passage clearance width 3,5 m ; lenghth of profile: 4.900 mm
847 002	Passage clearance width 4,0 m ; lenghth of profile: 5.500 mm
847 003	Passage clearance width 4,5 m ; lenghth of profile: 6.100 mm
847 004	Passage clearance width 6,0 m ; lenghth of profile: 8.200 mm
2 x 847 001 + 847 215	Passage clearance width 7,0 m ; lenghth of profile: 2 x 4.900 mm + 1 Set of connection pins
2 x 847 002 + 847 215	Passage clearance width 8,0 m ; lenghth of profile: 2 x 5.500 mm + 1 Set of connection pins



847 215 Set with connection pins for fit connection of 2 profiles.
Set includes:
4 pieces of connection pins to DIN 1473 (ISO 8740)
Dimensions: 5 x 50 mm, stainless steel A2

847 020 Price per one meter profile **(only bare profiles)**

847 090 Extra costs for custom cuts

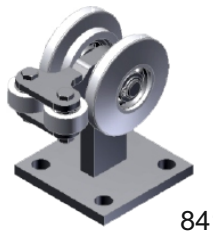
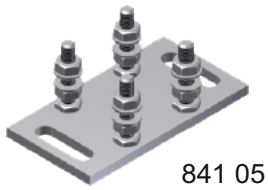
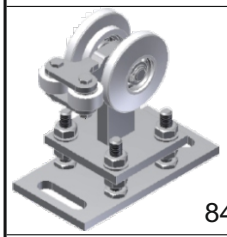
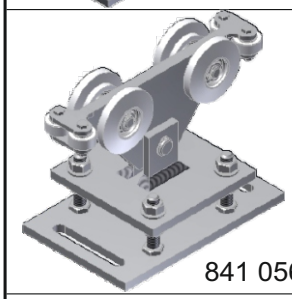
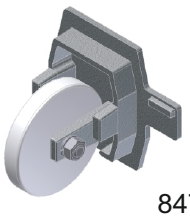
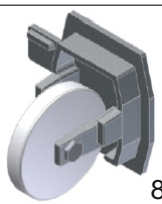
Prices are subject to changes, Value-added-tax not included: Delivery from storage facility in Waiblingen, freight and packaging charges are extra.

Discount on bulk orders upon inquiry.

Rights to technical changes reserved.

Cantilever Aluminium Sliding Gates System FST 90A, FST 90A-S

Price on request

 841 050	Sliding roller Type: LRB 90A/75 - 2Q for max. gatebody weight 250 kp, Seated bearing Polyamide-sliding and crossing rollers. Steel parts are galvanized Without the height-adjustable floor plate 1,1 kg	
 841 051	Height-adjustable floor plate Type: LRB 90A/75 - G for max. gatebody weight 250 kp, Steel parts are galvanized, 80 x 150 mm 0,9 kg	
 841 052	Sliding roller Type: LRB 90A/75 - QG for max. gatebody weight 250 kp, Seated bearing Polyamide-sliding and crossing rollers. Steel parts are galvanized Includes the height-adjustable floor plate 2,0 kg	
 841 055	Sliding roller Type: LRB 90A/75/S - 4Q for max. gatebody weight 450 kp, Seated bearing Polyamide-sliding and crossing rollers. Steel parts are galvanized Without the height-adjustable floor plate 3,0 kg	
 841 056	Sliding roller Type: LRB 90A/75/S - 4Q for max. gatebody weight 450 kp, Seated bearing Polyamide-sliding and crossing rollers. Steel parts are galvanized 6,5 kg Includes the height-adjustable floor plate (140 x 215 mm)	
 847 200	End-plate with supporting rollers Type: KD 90L designed as a profile fitting, Molded aluminium Part with supporting rollers Delivery includes 2 pieces of Inbus-bolts (M6 x 16 A2) for bolting the plate **left model** (seen from the top) 0,25 kg	
 847 201	End-plate with supporting rollers Type: KD 90R Have a look at Article No. 847 200 **right model** (seen from the top) 0,25 kg	

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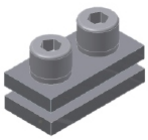
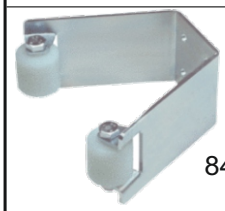
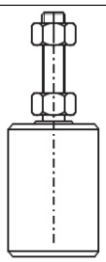
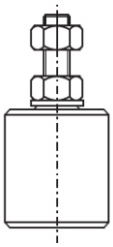
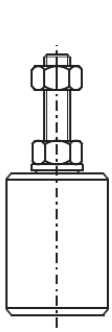
Cantilever Aluminium Sliding Gates System FST 90A, FST 90A-S

Price on request

 250 212	Plastic Rack The profile has an outrigger on the side, where the plastic racks can be inserted. Module 4 ; max. gatebody weight 500 kg Lenght 490 mm 0,14 kg	
 847 212	Fixing plate for Plastic Racks Have to get insert in the outrigger of the profile. Stainless Steel. 2 Pieces are necessary, 1 in front and 1 on the backside. 0,1 kg	
 841 040	Overrunning Shoe Type: ALS 75 welded steel construction, Inox V2A, 3 mm to help relieve with a lateral locking of the gate‘s endpoints 1,15 kg	
 841 041	Arrival Cradle Type: ELG 75/ 95 / 90A steel construcion with polyamide rollers PA6, 4 mm Inox Steel V2A 1,05 kg	
 805 117 805 128	Upper guidance roller Type: OFR 30/40 Polyamide Roller Ø 30 x 40 SK-Screws M 14 x 75 mm with nuts and flat washer additionally finger prtoect housing, galvanized 0,15 kg	
 805 114	Upper guidance roller Type: OFR 40/44-E Polyamide Roller Ø 40 x 44 SK-Screws M 16 x 80 mm with nuts and flat washer INOX Stainless steel version 0,25 kg	
  805 118 805 129	Upper guidance roller Type: OFR 40/60 Polyamide Roller Ø 40 x 60 SK-Screws M 16 x 100 mm with nuts and flat washer Additionally finger protect housing, galvanized 0,25 kg	

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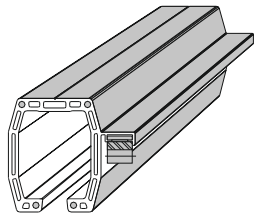
Cantilever Aluminium Sliding Gates
System FST 90A, FST 90A-S
Set-samples and prices

Price on request



passage clearance width up to	Aluminium-profiles	Sliding-rollers	Endplates	Upper guidance roller	Overrunning-shoe	Arrval-cradle	Additional Equipment	
3,5 m	LRP 90 A Length 4,9 m	2xLRB75-QG	1xKD90L 1xKD90R	2xOFR 30/40 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 03
4,0 m	LRP 90 A Length 5,5 m	2xLRB75-QG	1xKD90L 1xKD90R	2xOFR 30/40 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 04
4,5 m	LRP 90 A Length 6,1 m	2xLRB75-QG	1xKD90L 1xKD90R	2xOFR 40/60 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 05
6,0 m	LRP 90 A Length 8,2 m	2xLRB75/S-4Q	1xKD90L 1xKD90R	2xOFR 40/60 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 06
7,0 m	LRP 90 A Length 2 x 4,9m	2xLRB75/S-4Q	1xKD90L 1xKD90R	2xOFR 40/60 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	1 x connection pins Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 07
8,0 m	LRP 90 A Length 2 x 5,5m	2xLRB75/S-4Q	1xKD90L 1xKD90R	2xOFR 40/60 FK incl Fingerprotect housing	2 x ALS75	1 x ELG 75	1 x connection pins Engine, Racks and fixing plates for Racks. If manually actuated is recommended.	Art.No.: S 847 08

Prices are subject to changes, Value-added-tax not included.
Delivery from storage facility in Waiblingen, freight an packaging charges are extra.

Quantitydiscount by inquiry

Rights to technical changes reserved.

Specifics on our charts

When looking at the survey on “Construction Size”, you can take the profile size that is needed for your gate depending on the width of the passage clearance.

In the chart “System Measurements” you then find out which raw materials to be distributed for the gate wings, this done only after the width of the clearance has been found.

Please keep to the staggering measurements on the distance of the sliding rollers “B” on the chart “Construction and Foundation Measures” this is of upmost importancy when constructing the gate.

Our foundation plans ar made so that the upper edges of the foundation lay lower that the unfinished flooring (this enables extra space for tiles or other floor covering). The difference in space between the upper edge and unfinished flooring is generally taken from the specification recommendation from the foundations frame work U-NP and from the Steelform (DIN 1026).

For the foundation (quality of concrete is B25, and reinfored builders steel R221), the ground must be proofed by the foreman before building can begin. Because of adverse conditiones such as one-sided ground work it is important that the land at least be in accordance with the specifications DIN 1054, Tab. 4 (solidly mounted and mixed grained). Otherwise the piece of land must be dug up and substituted by either condensed gravel (machine made) or lean concrete.

Special foundation plans including how to execute the foundation basket are on hand at our offices, please ask and we shall be more than happy to assist you.

The specifications in our charts are based on statistic evaluations and many years of experience. Our firm will also provide individual proof statistics for a design that is extra-ordinary or for a gateway that deviates from our norm for a slight fee.

Corresponding to regulations for power operated windows, doors, and gates DIN EN 12 424, 12 445, 12 453, 12 604, 12 635 or EN 418 (mechanical regulations) the principles that the crush- and shearing points must reach to a height of 2,50 m so that safety is ensured, or that when through contact from persons the gate wing comes to an immediate stop. The gate lengths shown in the charts take into account an interval of 100 mm for the placement of a safety contact railing. In accordance with the new standards on characteristics which no longer go by just the type or method they also take into consideration the area of operation. These regulations are therefore applicable for all power operated gates either for private use or business use.

A suitable motor with the appropriate safety arrangements can be ordered and mailed upon request.

For the planning and execution of a gate project we would be more than happy to assist, and consult your company with our technical and skilled knowledge.

Please be aware that we reserve all rights that service any advancement in our technology to make technical changes as required.

We reserve the right to make technical changes that service advancement

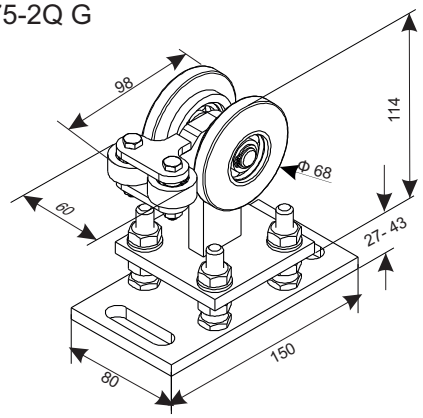
Planned Construction Size

Construction Series LRP 90A
light-weigth to medium-weigth model

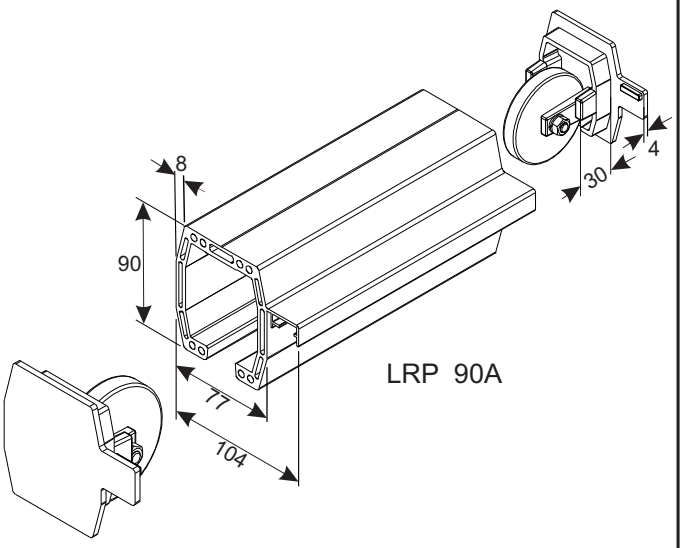
passage clearance width (m)	4,5	6,0	8,0	13,0	20,0
FST 90					
FST 90/S					

FST 90

LRB 75-2Q G



KD90SL

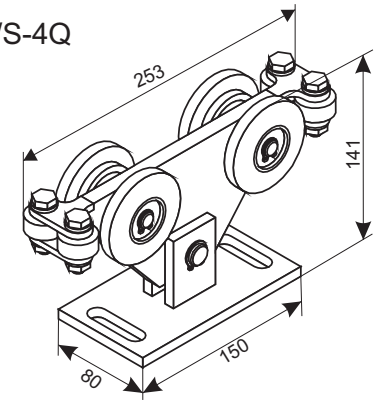


LRP 90A

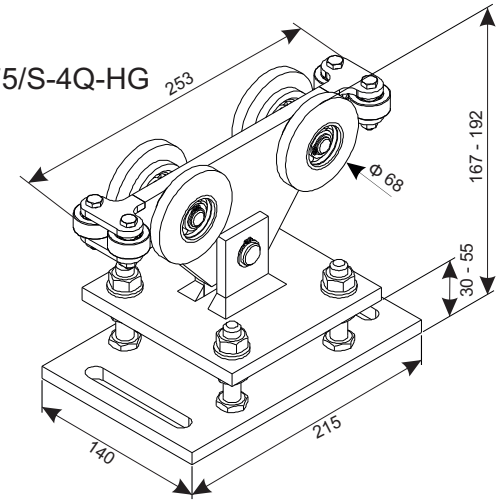
KD90SR

FST 90/S

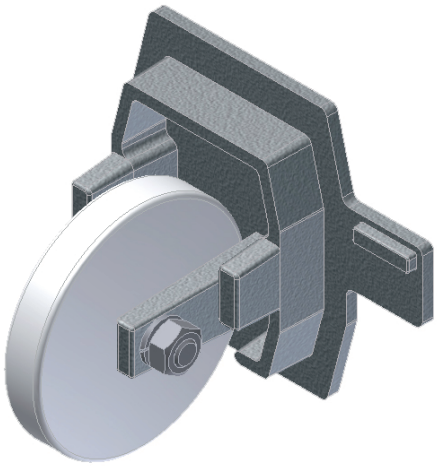
LRB 75/S-4Q



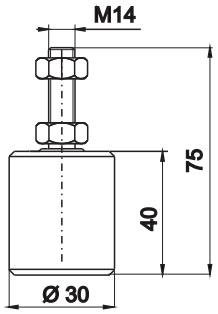
LRB 75/S-4Q-HG



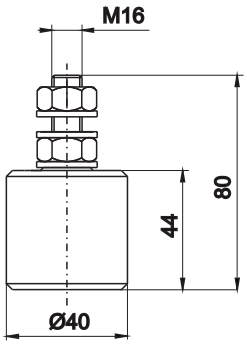
Equipment parts
End plate, Upper guidance rollers



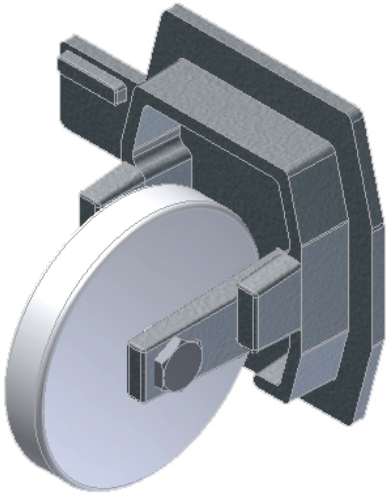
KD 90S
left model



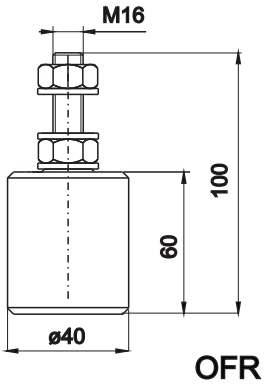
OFR 30/40



OFR 40/44-E



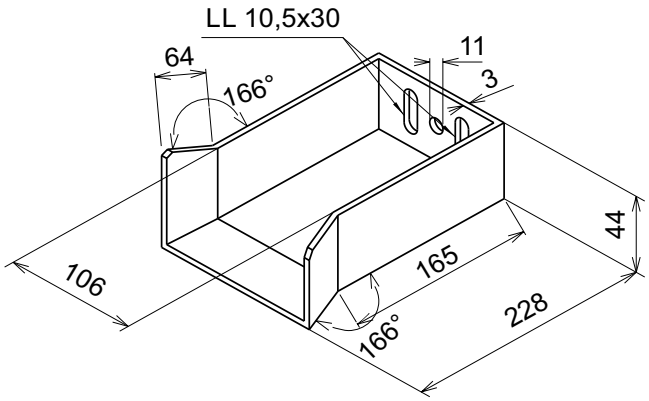
KD 90S
right model



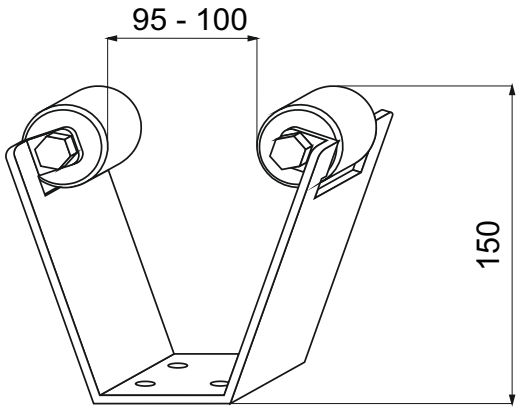
OFR 40/60

Equipment parts
Overrunning shoe, Arrival cradle

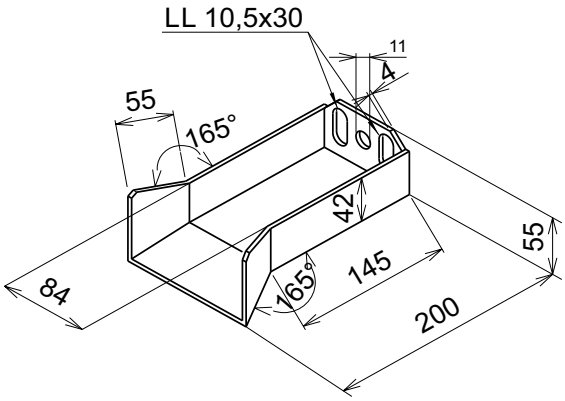
ALS 90A / 95



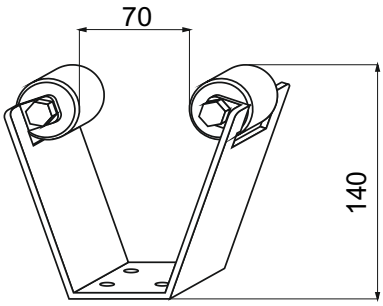
ELG 90A / 95 / 115



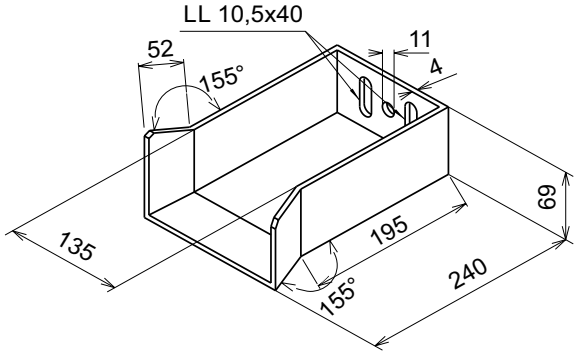
ALS 75
(optional useable,
see catalogue Steelprofiles)



ELG 75
(optional useable,
see catalogue Steelprofiles)



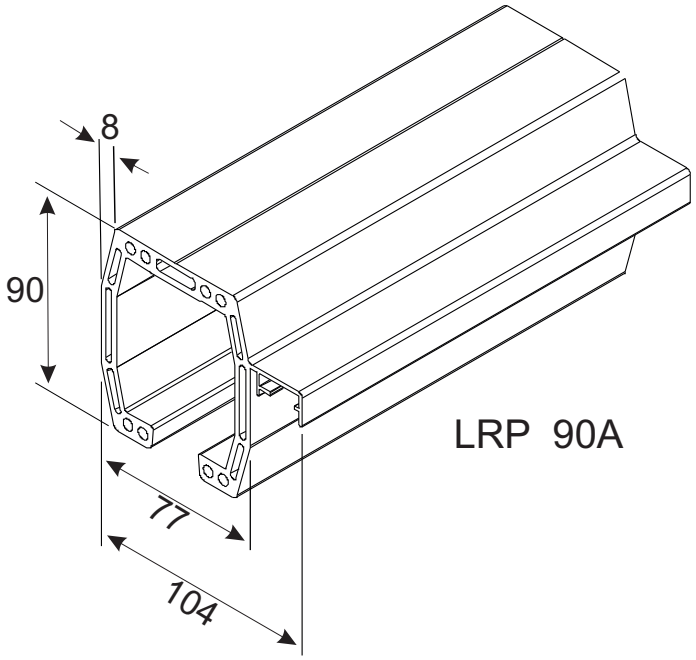
ALS 115
(optional useable,
see catalogue Steelprofiles)



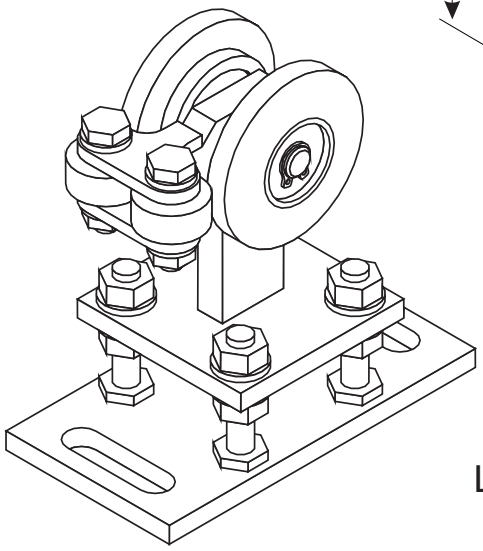
Cantilever Aluminium-Gatesystem

FST 90A light weigth model

width of passenge clearance max. 6,0 m



LRP 90A



LRB 75-2Q G

Standard safety measures

1. Maximum gatebody weigth = 250 kg

2. Tracking force per roller component = 4.120 N
   Type: LRB 75-2Q(G) for steel gatebody

   Tracking force per roller component = 2.000 N
   Type: LRB 75-2Q(G) for aluminium gatebody

3. Wind velocity per roller component = 2.200 N
   (Wrought iron railing compound)

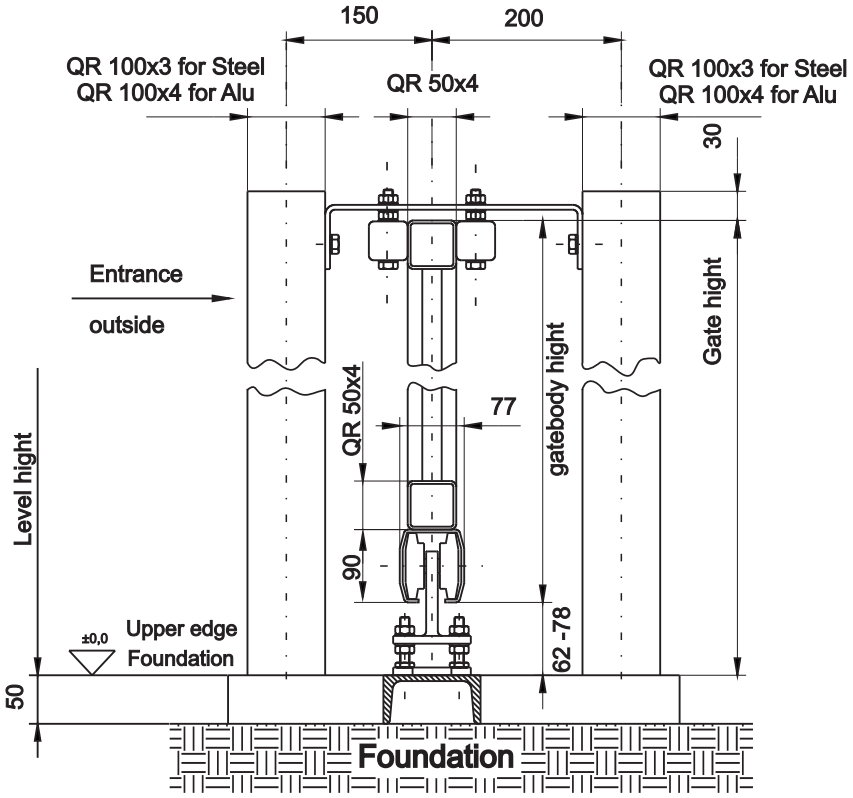
The wind velocity is determined by standard DIN EN 12424 and 12444 grade 2
In the grade 2 lays a difference in pressure of 450 N/m² (450 Pa).
Our statistic calculations are based on partially open wrought iron railing, maximum passenge clearance and a total gate height of 2,0 m.
According to standard DIN 12444 is by high gale winds the extra straom on the gate not perceived (statically calculated).

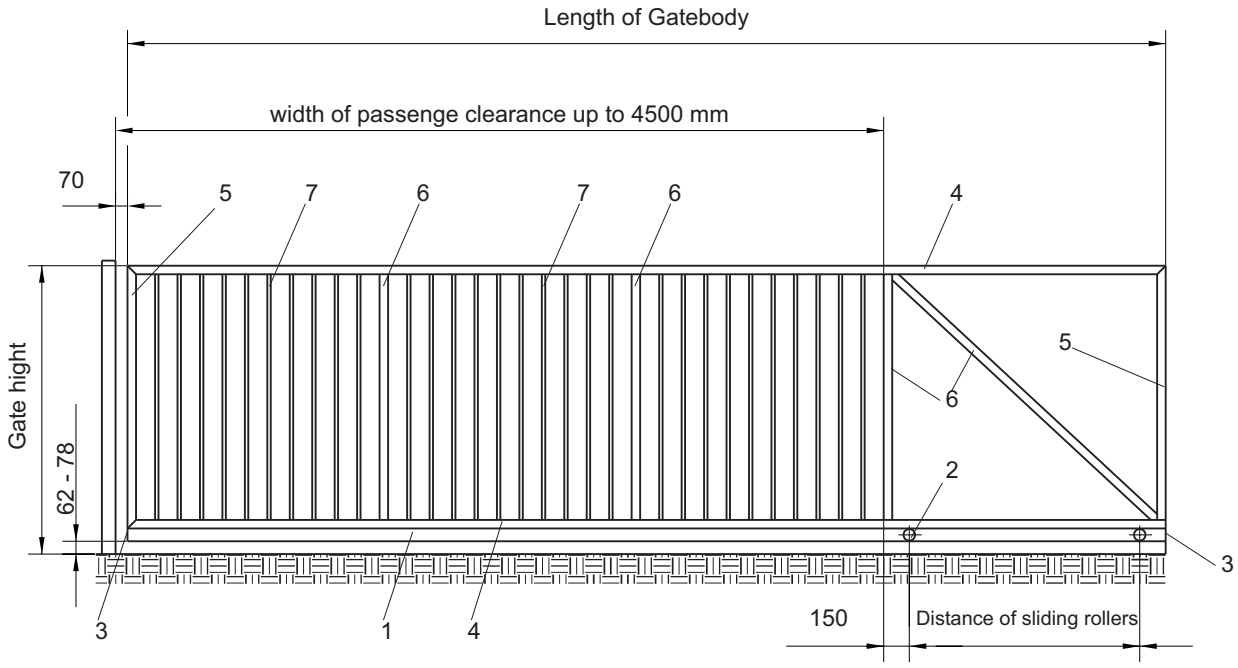
Cantilever Aluminium-Gatesystem

System dimensions FST 90A

width of passenge clearance max. 4,5 m

Medium-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





1. Sliding roller profile	LRP	90A
2. Sliding roller	LRB	75 -2QG
3. End plate	KD	90S

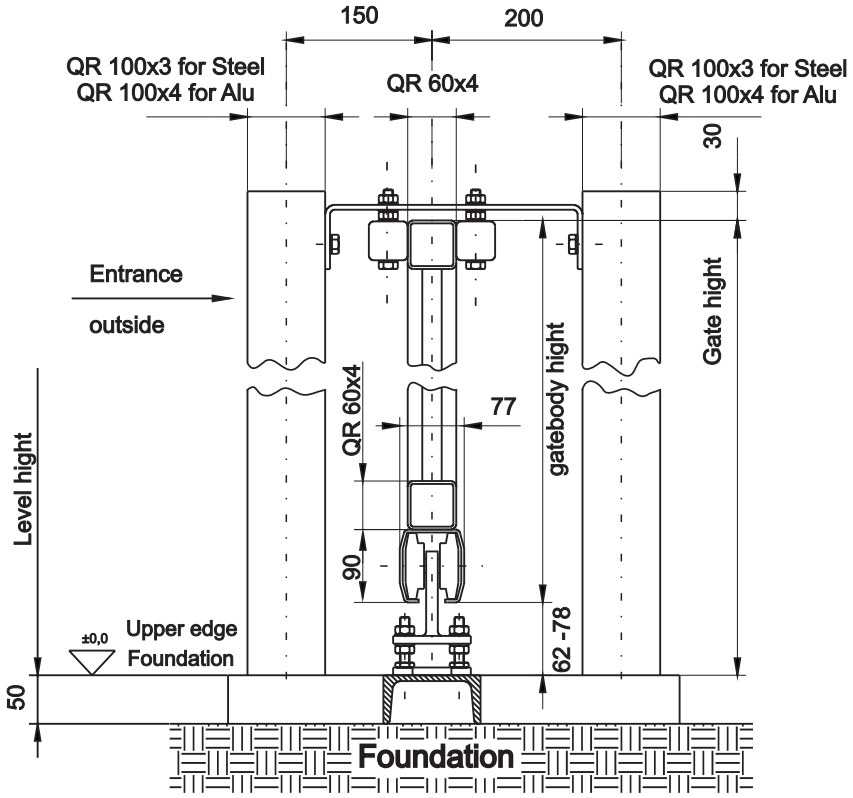
4. Top- and Under-chord	QR 50 x 4,0 mm
5. Outer rods	QR 50 x 4,0 mm
6. Inner rods	QR 50 x 4,0 mm
7. Filling rods	QR 20 x 1,5 mm

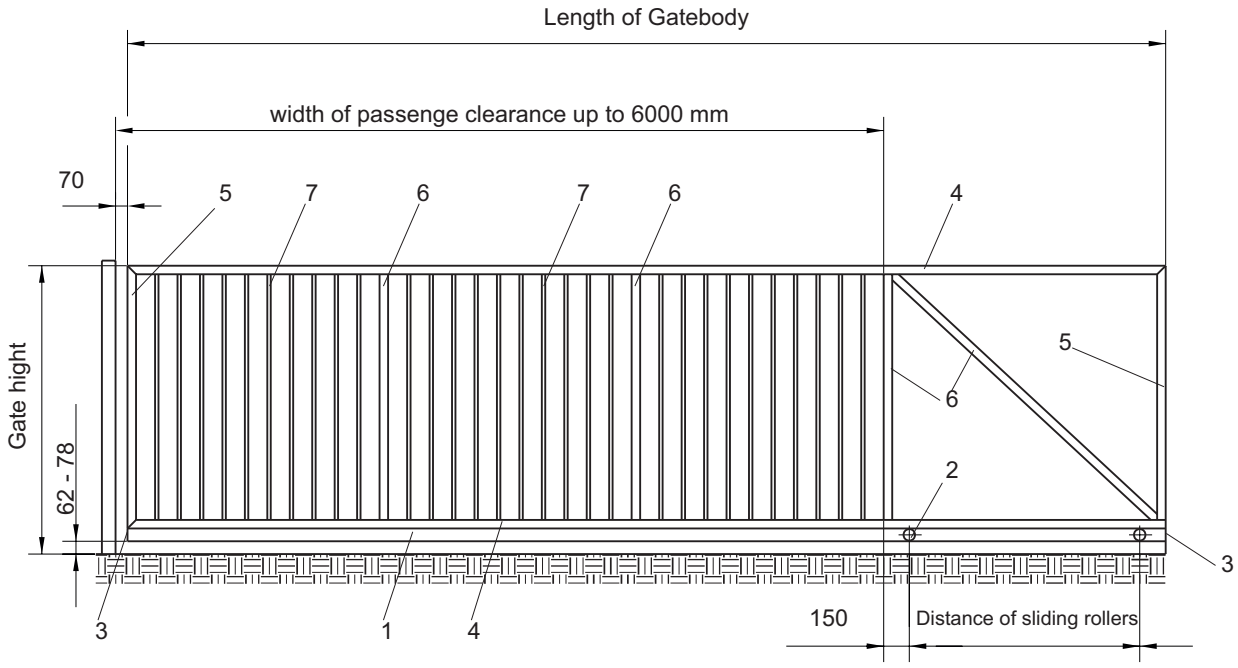
Cantilever Aluminium-Gatesystem

System dimensions FST 90A

width of passenge clearance max. 6,0 m

Light-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





1. Sliding roller profile	LRP	90A
2. Sliding roller	LRB	75 -2QG
3. End plate	KD	90S

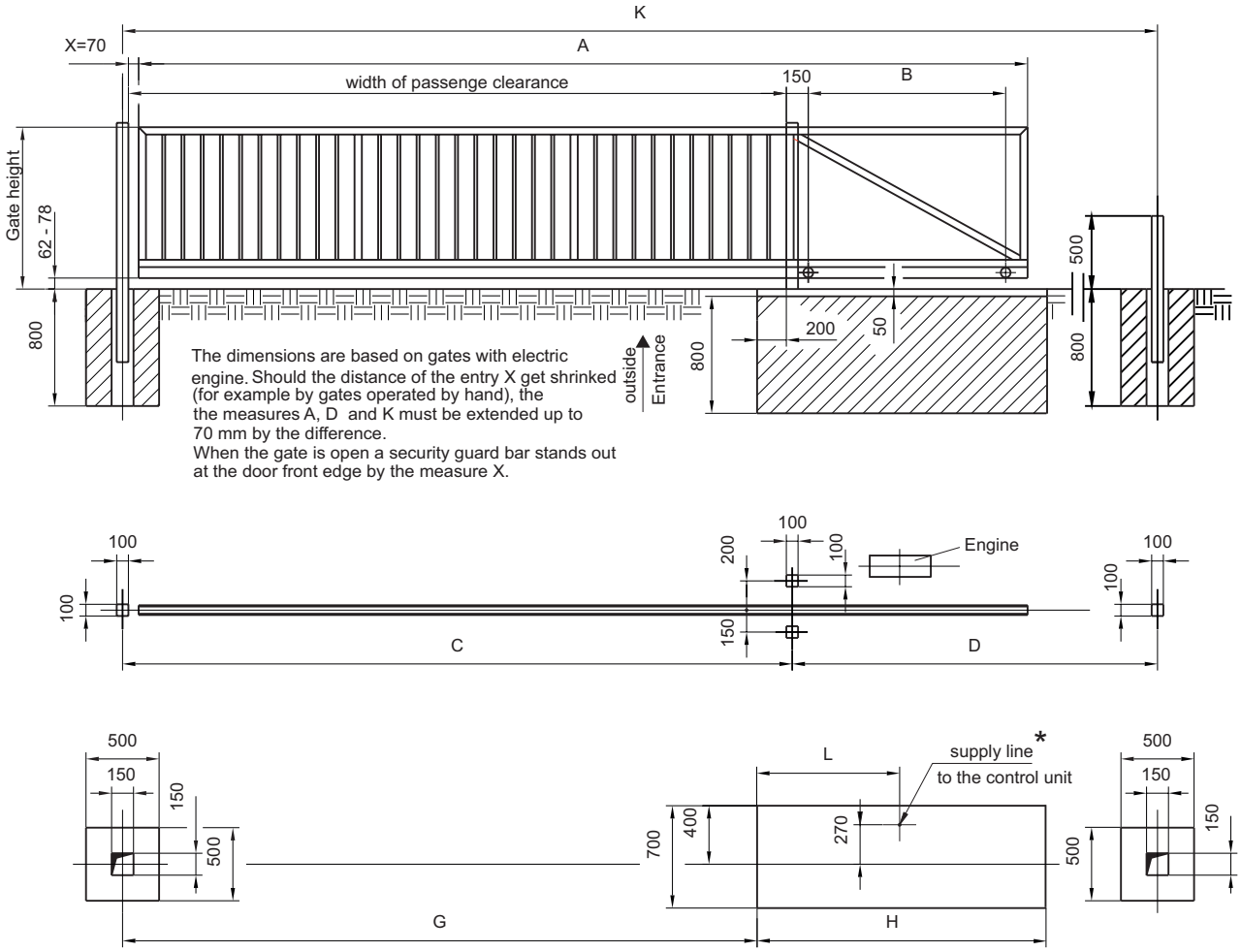
4. Top- and Under-chord	QR 60 x 4,0 mm
5. Outer rods	QR 60 x 4,0 mm
6. Inner rods	QR 60 x 4,0 mm
7. Filling rods	QR 20 x 1,5 mm

Cantilever Aluminium-Gatesystem

FST 90A Construction- and foundation dimensions

width of passenge clearance max. 4,5 m, Construction entirely in aluminum

medium model, Standard — Wind velocity 450 N/m² to standard DIN EN 12424



Measures / width of passenge clearance	A	B	C	D	G	H	K	L *
2,0m	2.808	578	2.100	2.858	1.850	1.178	4.958	600
2,5m	3.408	678	2.600	3.458	2.350	1.278	6.058	600
3,0m	4.108	878	3.100	4.158	2.850	1.478	7.258	600
3,5m	4.908	1.178	3.600	4.958	3.350	1.778	8.558	625
4,0m	5.508	1.278	4.100	5.558	3.850	1.878	9.658	625
4,5m	6.108	1.378	4.600	6.158	4.350	1.978	10.758	650

Indeed length of profile = A less 2x material thickness of end plates (here 2 x 4 mm)

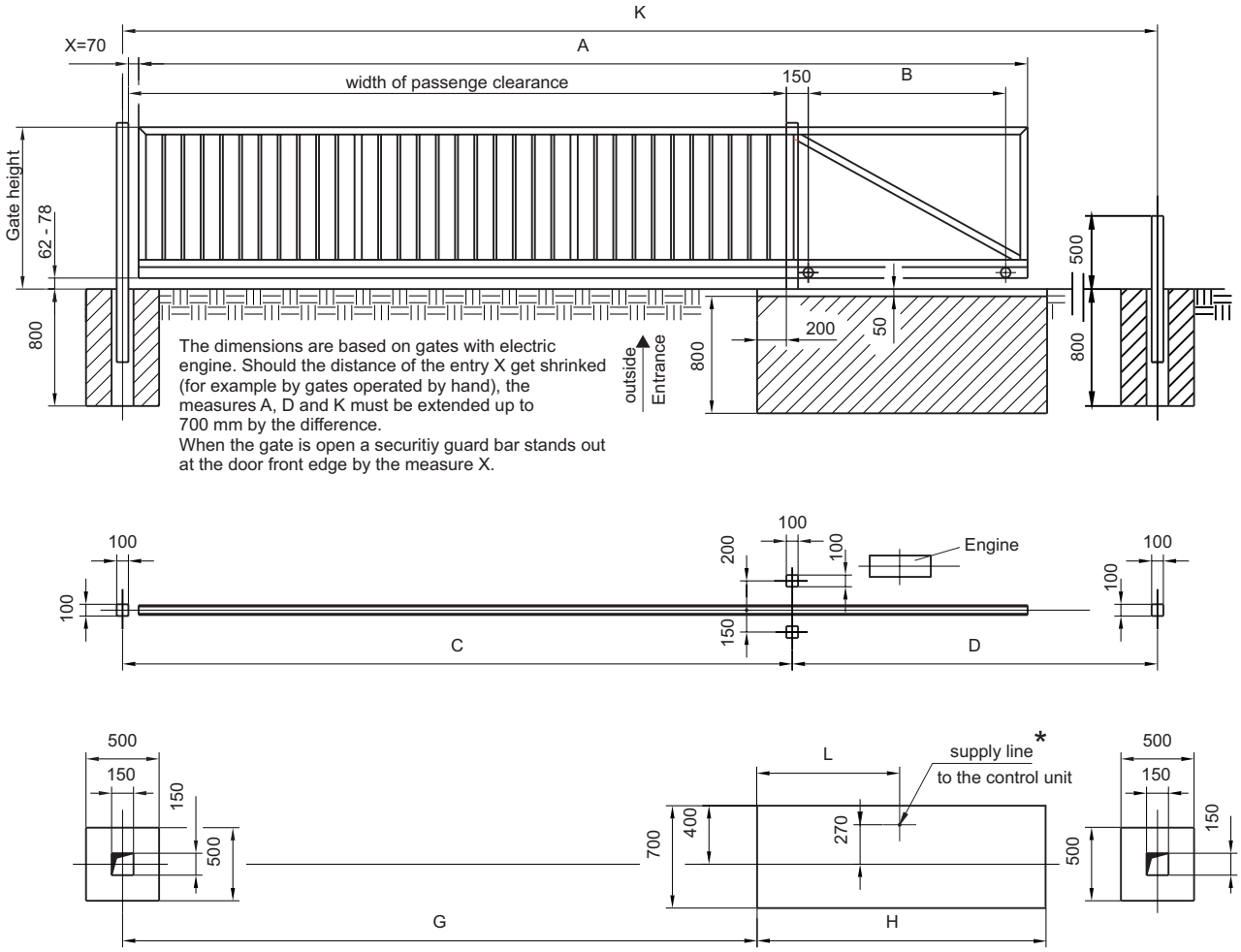
* may vary depending on wich electric engine is used.

Cantilever Aluminium-Gatesystem

FST 90A Construction- and foundation dimensions

width of passenge clearance max. 6,0 m, Construction entirely in aluminum

light-weight model, Standard — Wind velocity 450 N/m² to standard DIN EN 12424



Measures / width of passenge clearance	A	B	C	D	G	H	K	L *
5,0m	6.808	1.578	5.100	6.858	4.850	2.178	11.958	650
5,5m	7.508	1.778	5.600	7.558	5.350	2.378	13.158	650
6,0m	8.208	1.978	6.100	8.258	5.850	2.578	14.358	680

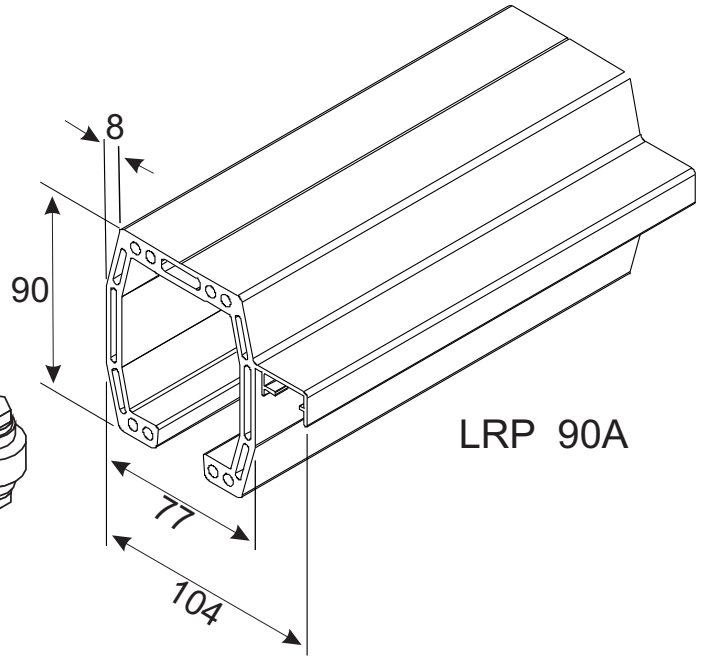
Indeed length of profile = A less 2x material thickness of end plates (here 2 x 4 mm)

* may vary depending on wich electric engine is used.

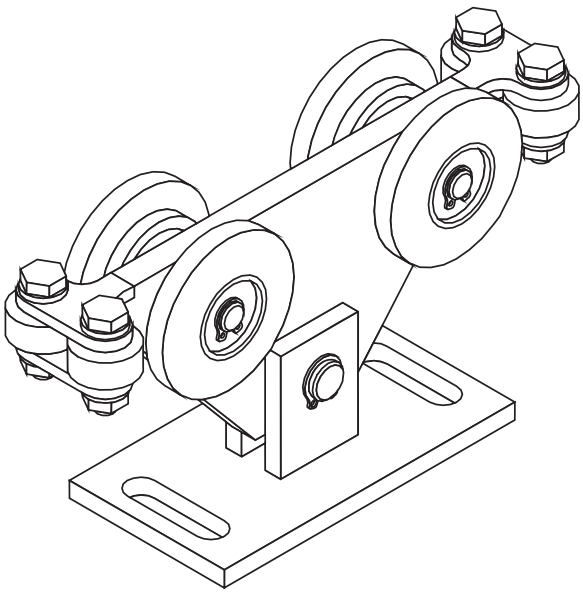
Cantilever Aluminium-Gatesystem

FST 90A/S normal model

width of passenge clearance max. 8,0 m



LRP 90A



LRB 75/S-4Q und 75/S-4QHG

Standard safety measures

1. Maximum gatebody weigth = 450 kg

2. Tracking force per roller component = 9.600 N
   Type: LRB 75-2Q(G) for steel gatebody

   Tracking force per roller component = 4.200 N
   Type: LRB 75-2Q(G) for aluminium gatebody

3. Wind velocity per roller component = 4.500 N
   (Wrought iron railing compound)

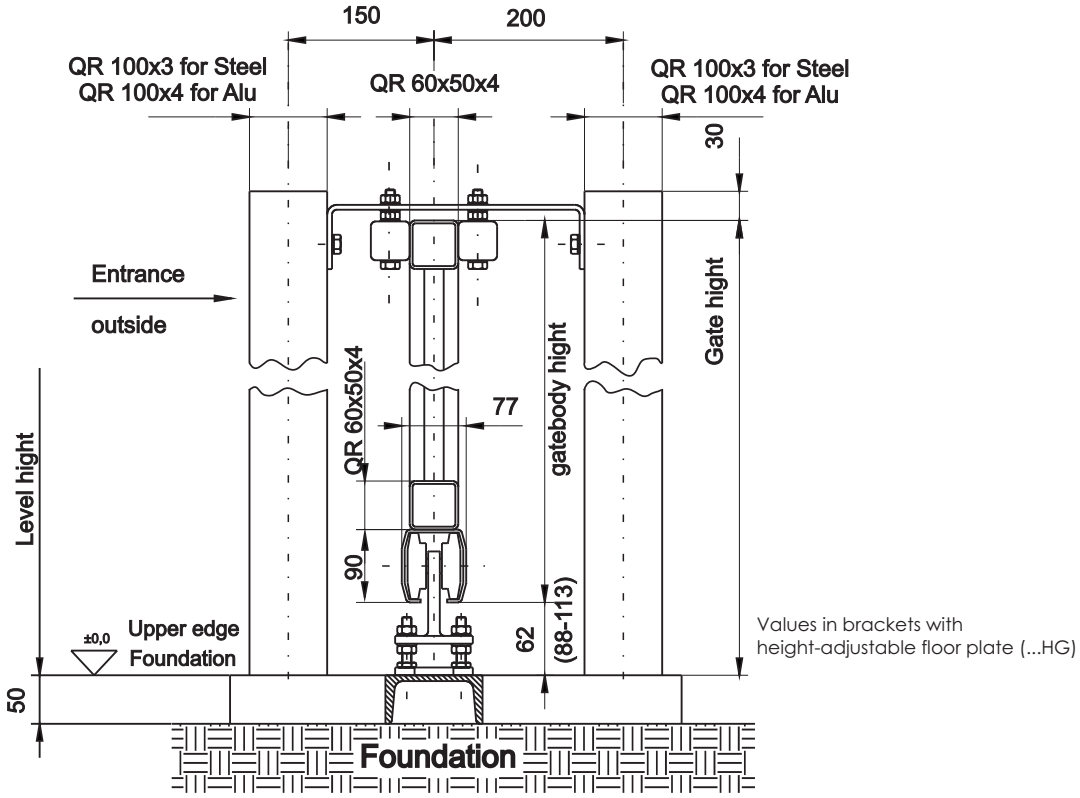
The wind velocity is determined by standard DIN EN 12424 and 12444 grade 2
In the grade 2 lays a difference in pressure of 450 N/m² (450 Pa).
Our statistic calculations are based on partially open wrought iron railing, maximum passenge clearance and a total gate height of 2,0 m.
According to standard DIN 12444 is by high gale winds the extra straom on the gate not perceived (statically calculated).

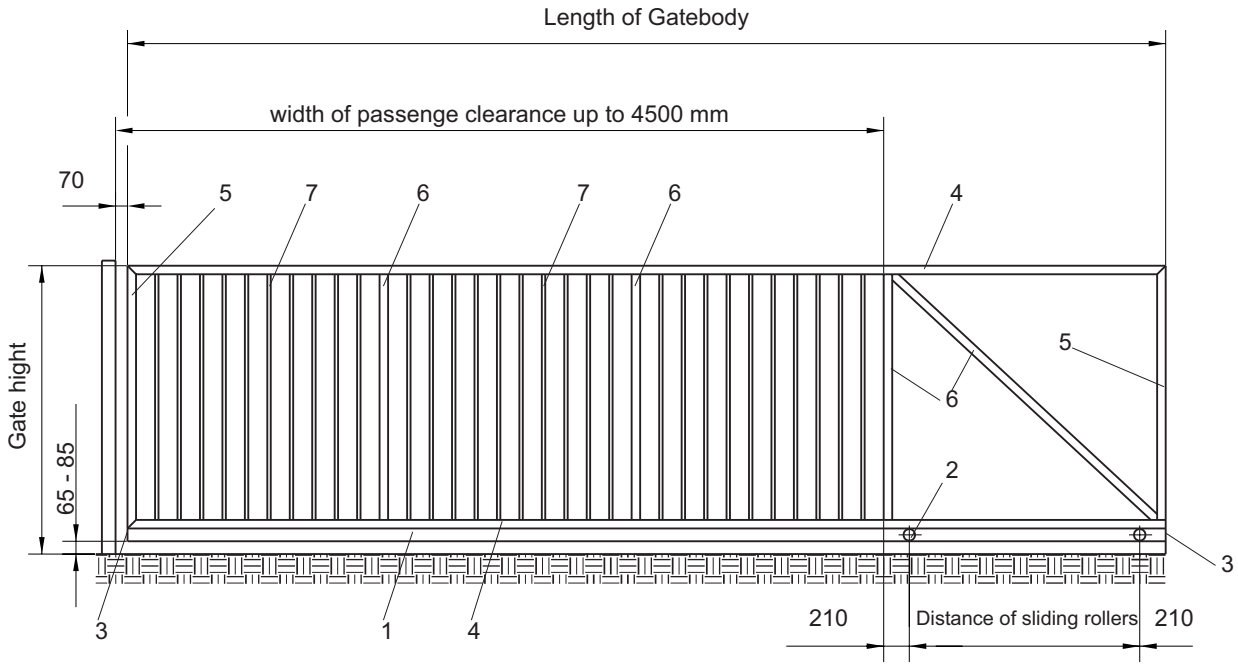
Cantilever Aluminium-Gatesystem

System dimensions FST 90A/S

width of passenge clearance max. 4,5 m

Medium-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





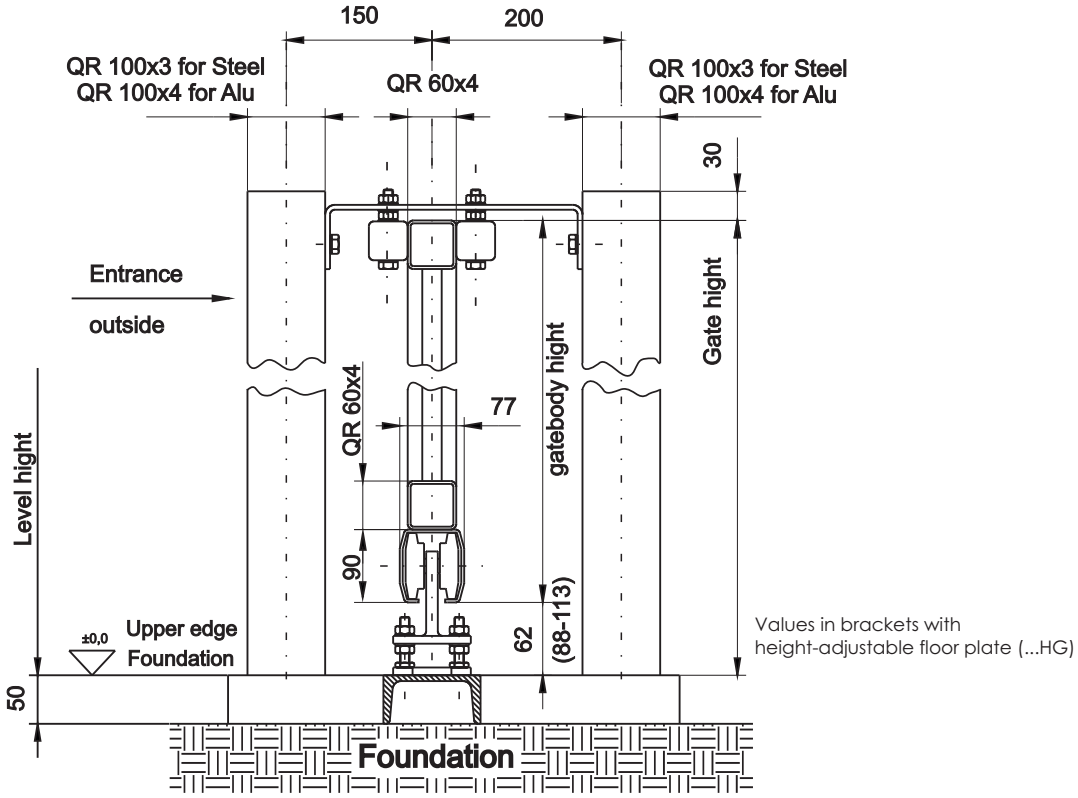
1. Sliding roller profile	LRP	90A	4. Top- and Under-chord	QR 50 x 4,0 mm
2. Sliding roller	LRB	75/S-4Q	5. Outer rods	QR 50 x 4,0 mm
	alternative	.... HG	6. Inner rods	QR 50 x 4,0 mm
3. End plate	KD	90S	7. Filling rods	QR 20 x 1,5 mm

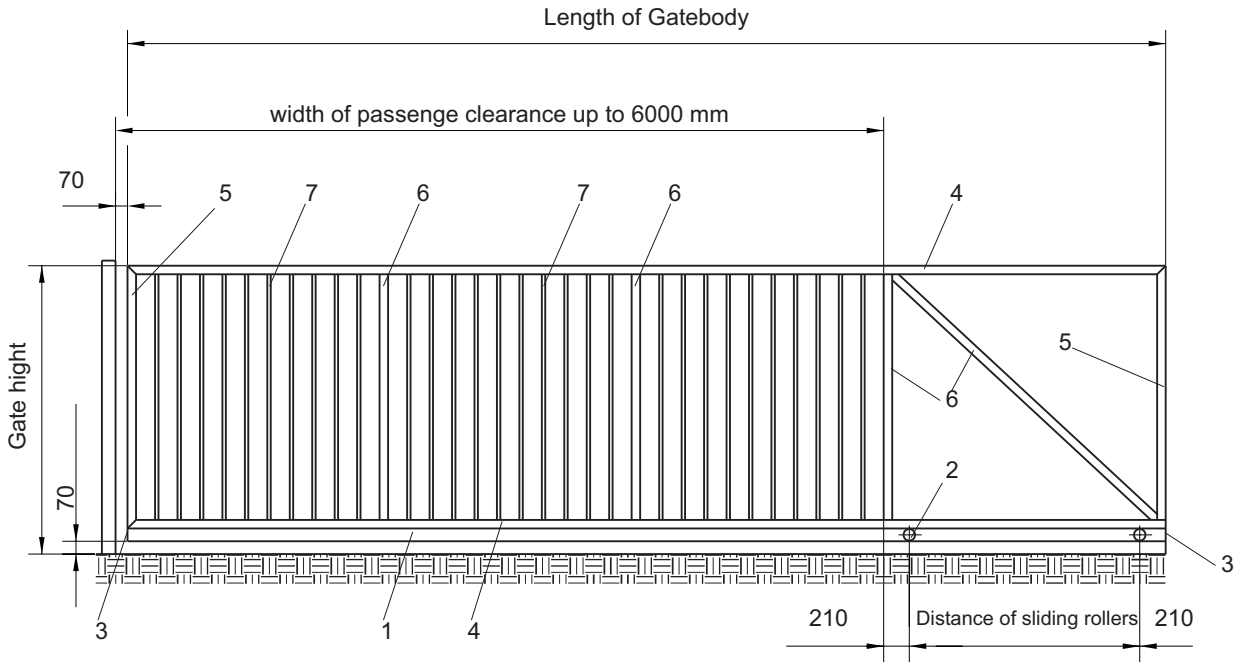
Cantilever Aluminium-Gatesystem

System dimensions FST 90A/S

width of passenge clearance max. 6,0 m

Medium-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





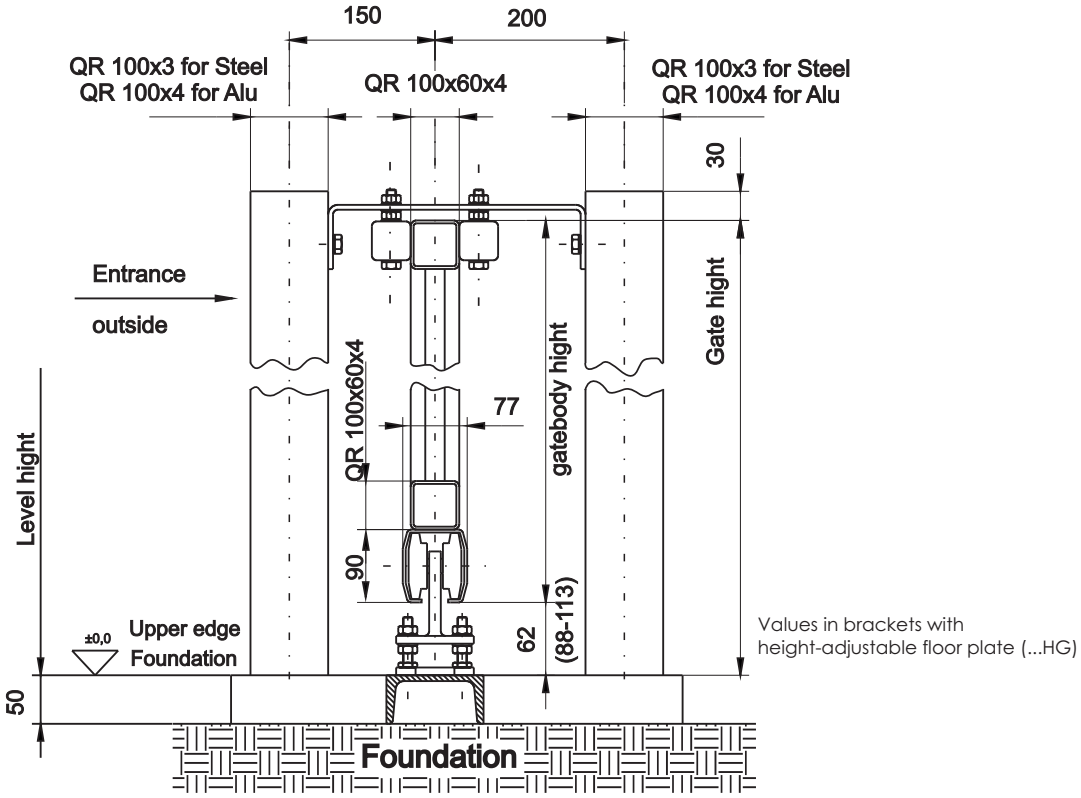
1. Sliding roller profile	LRP	90A	4. Top- and Under-chord	QR 60 x 4,0 mm
2. Sliding roller	LRB	75/S-4Q	5. Outer rods	QR 60 x 4,0 mm
	alternative	.... HG	6. Inner rods	QR 60 x 4,0 mm
3. End plate	KD	90S	7. Filling rods	QR 20 x 1,5 mm

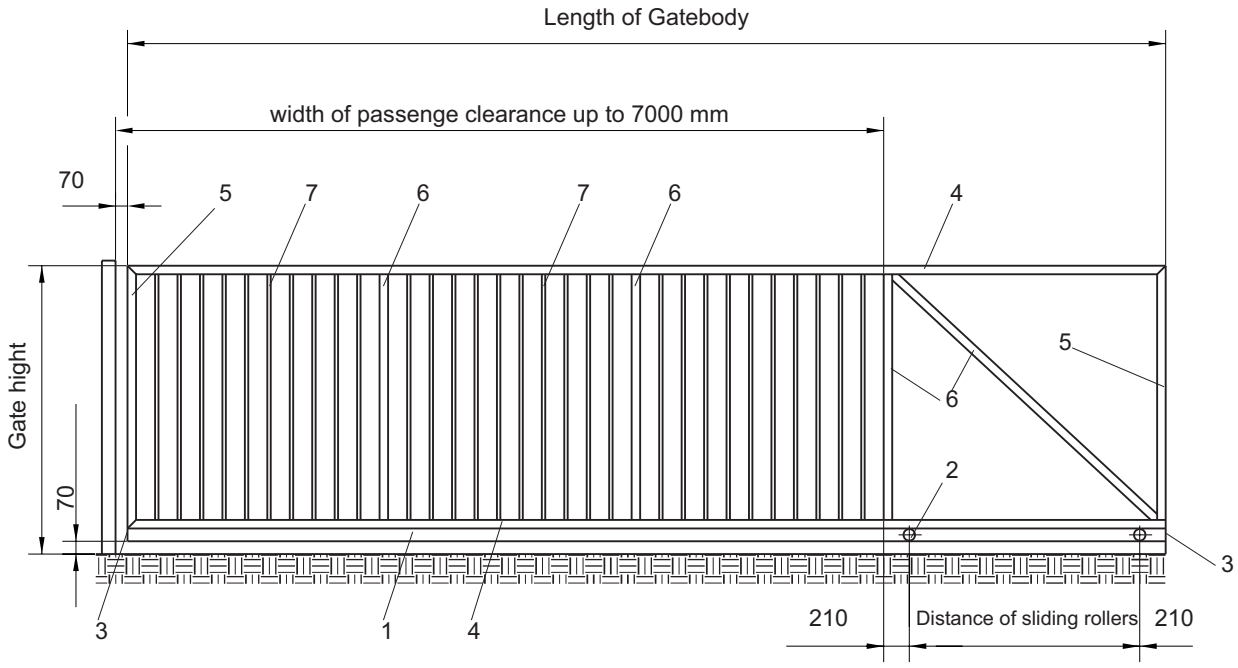
Cantilever Aluminium-Gatesystem

System dimensions FST 90A/S

width of passenge clearance max. 7,0 m

Medium-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





1. Sliding roller profile	LRP	90A
2. Sliding roller	LRB	75/S-4Q
	alternative	.... HG
3. End plate	KD	90S

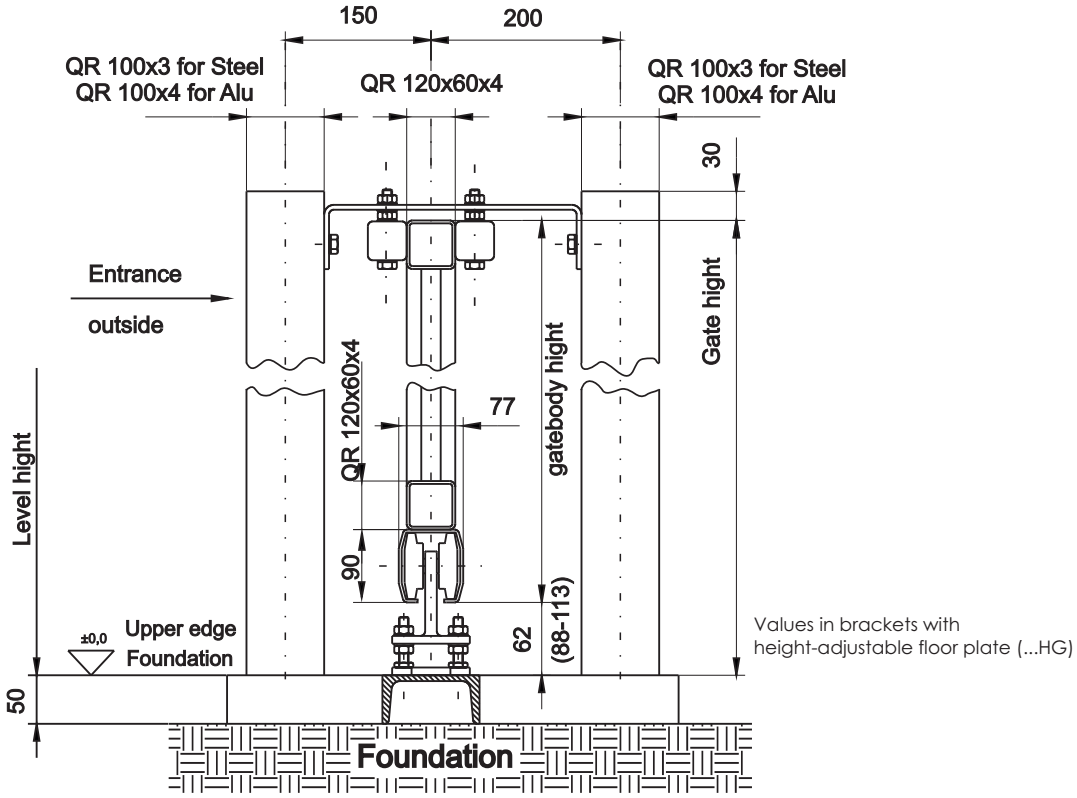
4. Top- and Under-chord	QR 100 x 60 x 4,0 mm
5. Outer rods	QR 100 x 60 x 4,0 mm
6. Inner rods	QR 100 x 60 x 4,0 mm
7. Filling rods	QR 20 x 1,5 mm

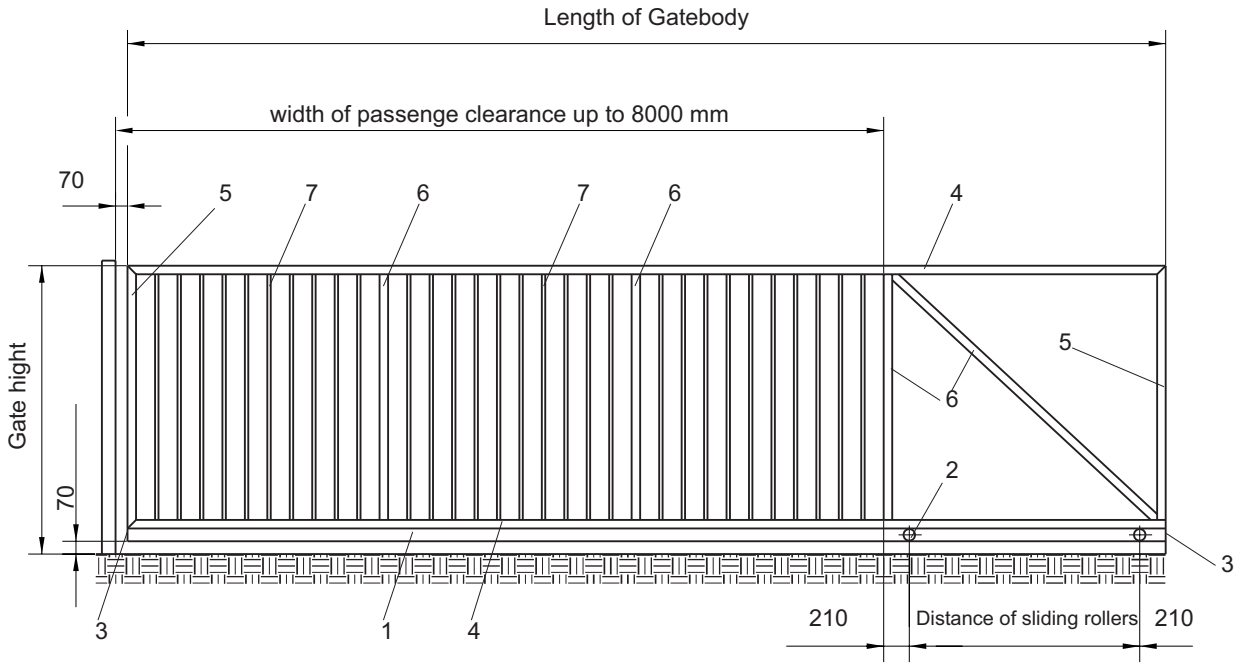
Cantilever Aluminium-Gatesystem

System dimensions FST 90A/S

width of passenge clearance max. 8,0 m

Medium-weigth model
Wind velocity 450 N/m²
To standard DIN EN 12424





1. Sliding roller profile	LRP	90A
2. Sliding roller	LRB	75/S-4Q
	alternative	.... HG
3. End plate	KD	90S

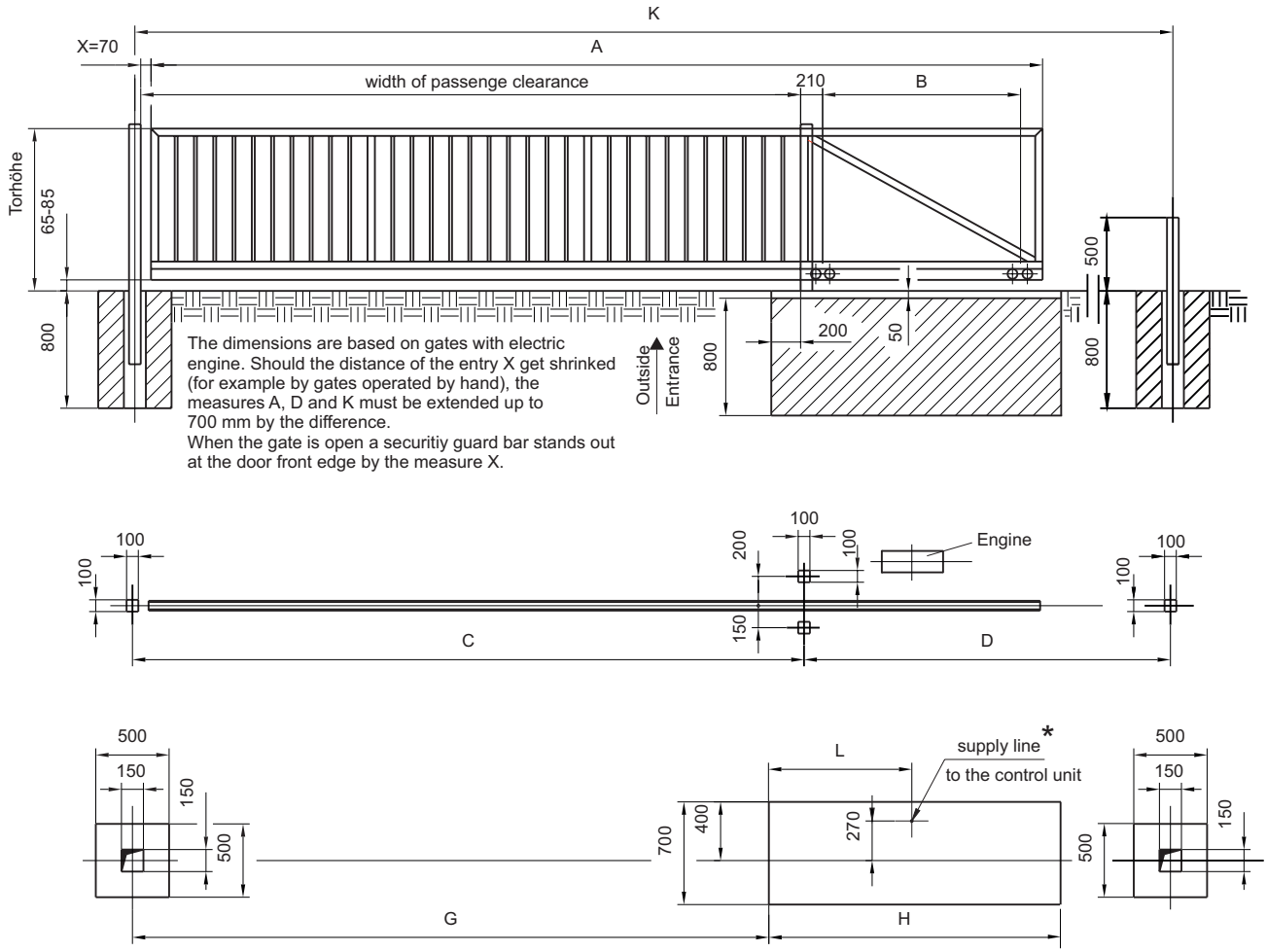
4. Top- and Under-chord	QR 120 x 60 x 4,0 mm
5. Outer rods	QR 120 x 60 x 4,0 mm
6. Inner rods	QR 120 x 60 x 4,0 mm
7. Filling rods	QR 20 x 1,5 mm

Cantilever Aluminium-Gatesystem

FST 90A/S Construction- and foundation dimensions

width of passenge clearance max. 6,0 m, Construction entirely in aluminum

medium-weight model, Standard — Wind velocity 450 N/m² to standard DIN EN 12424



Measures / width of passenge clearance	A	B	C	D	G	H	K	L *
2,5 m	3.408	558	2.600	3.458	2.350	1.278	6.058	600
3,0 m	4.108	758	3.100	4.158	2.850	1.478	7.258	600
3,5 m	4.908	1.058	3.600	4.958	3.350	1.778	8.558	600
4,0 m	5.508	1.158	4.100	5.558	3.850	1.878	9.658	630
4,5 m	6.108	1.258	4.600	6.158	4.350	1.978	10.758	630
5,0 m	6.808	1.458	5.100	6.858	4.850	2.178	11.958	650
5,5 m	7.508	1.658	5.600	7.558	5.350	2.378	13.158	650
6,0 m	8.208	1.858	6.100	8.258	5.850	2.578	14.358	670

Indeed length of profile = A less 2x material thickness of end plates (here 2 x 4 mm)

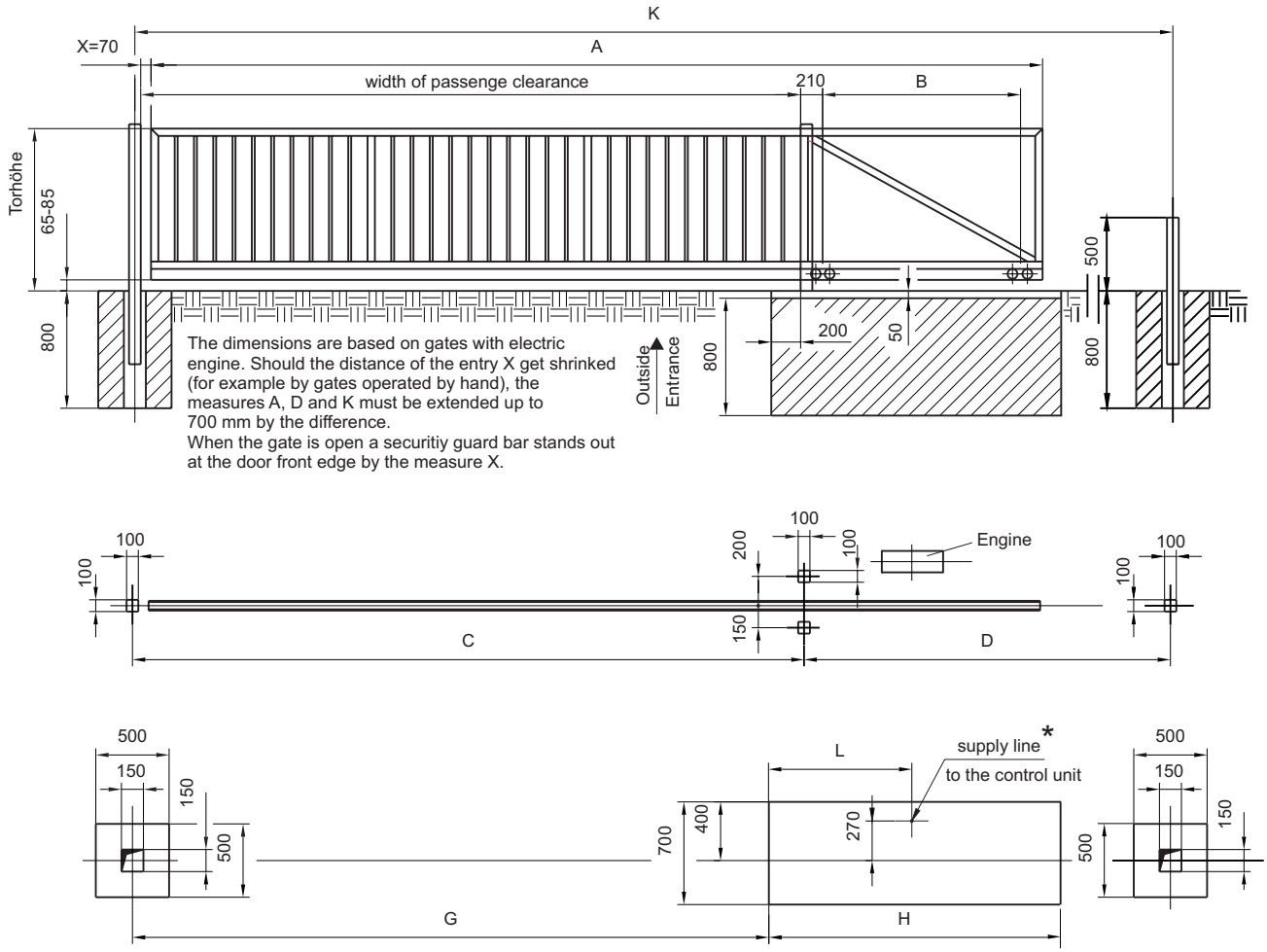
* may vary depending on wich electric engine is used.

Cantilever Aluminium-Gatesystem

FST 90A/S Construction- and foundation dimensions

width of passenge clearance max. 8,0 m, Construction entirely in aluminum

Medium-weight model, Standard — Wind velocity 450 N/m² to standard DIN EN 12424



Measures / width of passenge clearance	A	B	C	D	G	H	K	L *
6,0 m	8.208	1.858	6.100	8.258	5.850	2.578	14.358	670
6,5 m	8.908	2.058	6.600	8.958	6.350	2.778	15.558	670
7,0 m	9.608	2.258	7.100	9.658	6.850	2.978	16.758	700
7,5 m	10.408	2.558	7.600	10.458	7.350	3.278	18.058	700
8,0 m	11.008	2.658	8.100	11.058	7.850	3.378	19.158	700
8,5 m**	11.608	2.758	8.600	11.658	8.350	3.478	20.258	700

** by a width of passenge clearance of 8,5 m there is allowed a light weight gatebody only, Wind velocity maximum 300N/m². Please consult us in advance.

Indeed length of profile = A less 2x material thickness of end plates (here 2 x 4 mm)

* may vary depending on wich electric engine is used.

Width of the under-chord - Gatebody bias

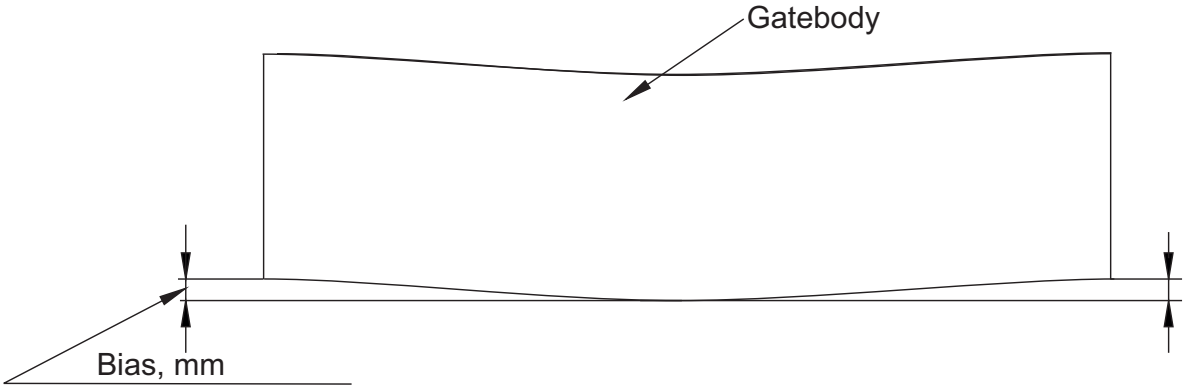
FST 90 A und 90 A/S

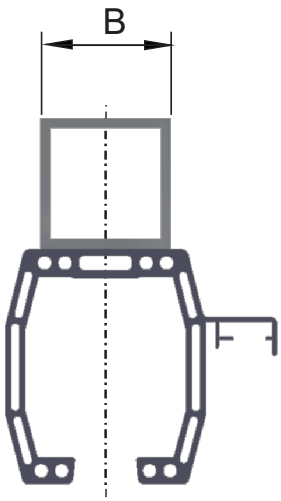
Because of the high own-weight of the gatebody, the gatebody hang down shortly before the end position, in which it is relieved (convex deformation). These can be minimized by a concave bias during the manufacturing process.

Approximate values for the bias:

Type	max. passenge clearance width	max. deflection of the gatebody in mm	Bias in mm
FST 90A	4,50	25	13
FST 90A	6,00	50	25
FST 90A/S	4,50	25	13
FST 90A/S	6,00	50	25
FST 90A/S	7,50	50	25
FST 90A/S	8,00	46	25

The deflection can be reduced significant by a bigger model of the under-chord. To reduce the necessary bias, we recommend to use the next respective size of the under-chord.





The in the processing guidelines (based on the static proof) listed width of the under-cord “B” have to be complied exactly.

The lateral, vertical underholm profile flanks stabalize the treads of the supporting rollers.

Type	FST 90A	FST 90A/S
B, mm	50	60

Sliding roller profiles - mechanical joints

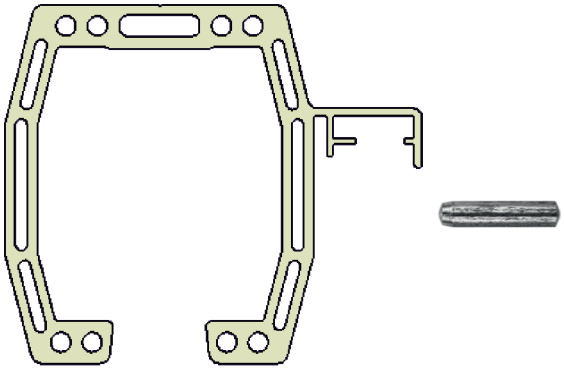
FST 90A and 90A/S

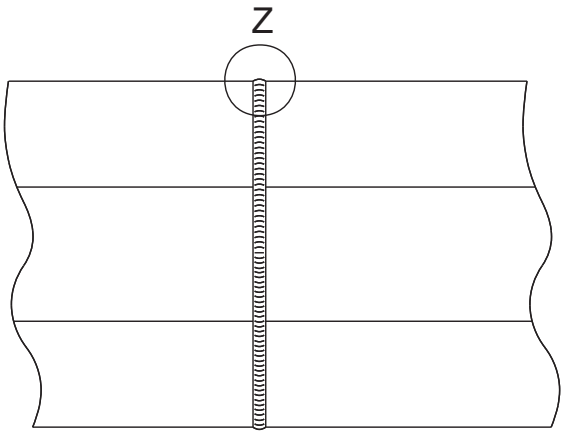
For an optimum mobility, two profiles only should be connected with each other, when there is no further option.

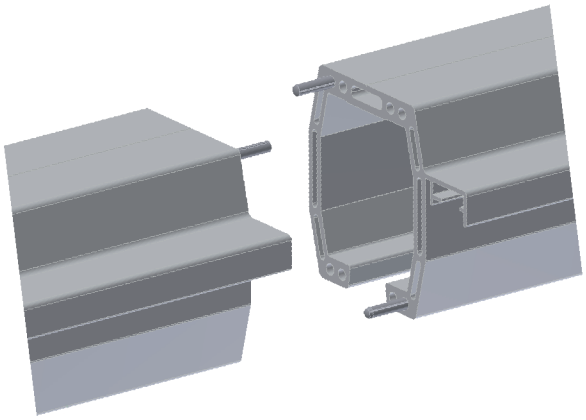
The Connection is done by 4 pieces of connection pins (made of stainless steel) and by addiotionally welding at the outter cladding.

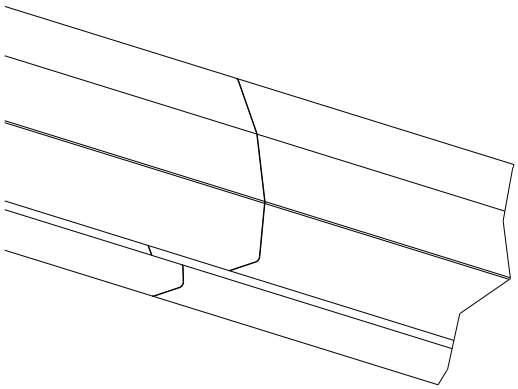
The connection pins have to be hammered in evenly for 2/3 of their total length in each profile. We recommend to put in the connection pins diagonally in the profiles that have to be connected. The two profiles that have to be connected with each other now are hammered togehther with a plastic- or wooden hammer. An additional piece of hardwood protects the profile while hammering.

To avoid a separation of profile pieces, we recommend to welding profiles at the outside. By Gates with a width of passage clearance till 5 m it‘s sufficiend to have a welding seam on the top and on the bottom.









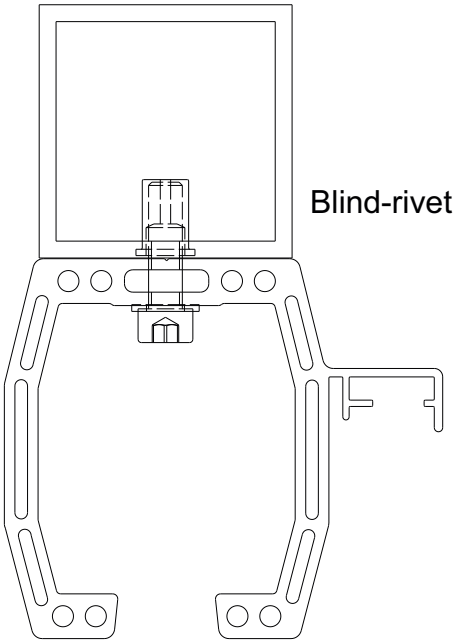
Gate frame connection - Bolted connection
FST 90A und 90 A/S

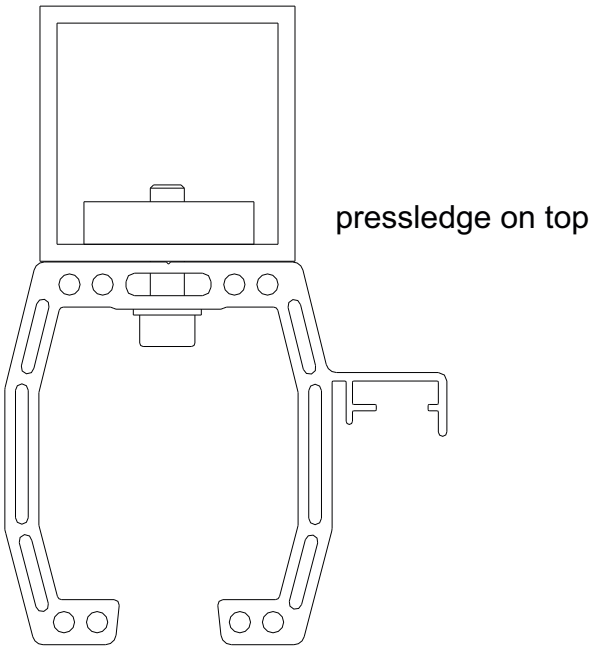
The sliding roller profile and the gatebody also can be connected by a bolted connection.
From a width of passage clearance of 6,0 m, we recommend a steel-pressledge with a wall thickness of 5 mm or a Aluminium-pressledge with a wall thickness of 10 mm over the entire length of the gate (see drawing)

Because the most weight is in front or in the end of the gate, we recommend to place two pressledges at this positions (20% of the entire gatelength minimum eacht pressledge) if a pressledge along the entire length of the gate is not made.

Alternative it‘s possible to connect the sliding roller profile and the gatebody with blind-rivet nuts in the under-chord. This is only possible until a width passenge clearance of 6,0 m.

Until a width passenge clearance of 5,0 m it‘s also possible to connect them with self-cutting screws. This is only possible with self-cutting screws with a diameter of 6,3 mm and a continuous pressledge at the under-chord.





Blind-rivet nuts made of stainless steel A2 should be secured against twisting by knurling or Loctite.
We recommend for example riveting Nuts to Würth-Stanard W-942 1, Size: M8.

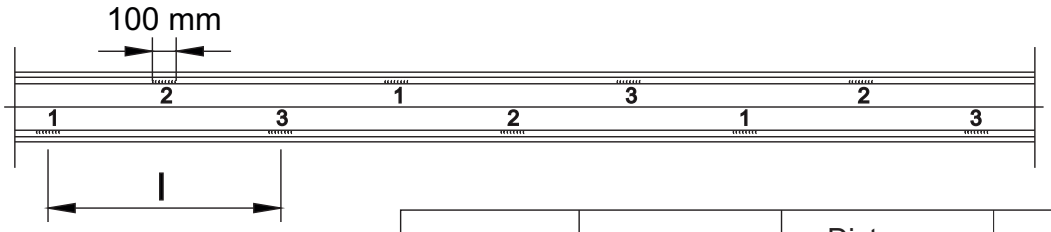
Type	Screws	Strength of bias Pv, kN	Pressledge alternative steel zinc coated St 50	Pressledge alternative Aluminium, AlMgSi0,5 F22
FST 90A	M 8 x 25	30	FL 40 x 5	FL 40 x 10
FST 90A/S	M 8 x 30	50	FL 50 x 6	FL 50 x 10

Hexagon socket screw DIN 912 (ISO 4762) A2 with grommet M8 to Standard DIN 134 A2
Distance between the screws l = 300mm

Gate frame connection - Welded connection
FST 90A und 90 A/S

If the connection should be done by welding, it‘s recommended to connect the sliding roller profile and the gatebody with welding seams of 50 mm length and Interruptions with the length of “l“.

To avoid a buckling of the sliding roller profile, the following sequences have to be considered during the welding: 1-1-1..., 2-2-2..., 3-3-3... and so on (see drawing).



Type	width passage clearance	Distance between the seams l, mm	Thickness of the seams a, mm
FST 90 A FST 90 A/S	≤ 5,0 m	≤ 500	3
FST 90 A FST 90 A/S	≥ 5,0 m	≤ 500	4

All welding seams have to be proofed about a correctly transition between the base materials.

By welding of Aluminium the parameters of the Welding machine manufacturer have to be considered.

We recommend a alternating current welding or a direct current welding.

Because of the corrosion resistance, care about the cleanliness should be taken while the processing and the welding. The processing of the Aluminium should be made separated from the processing of the steel.

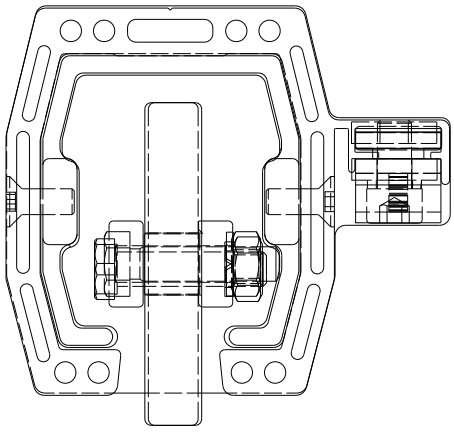
End-plate with Supporting rollers - Construction details
FST 90A and 90A/S

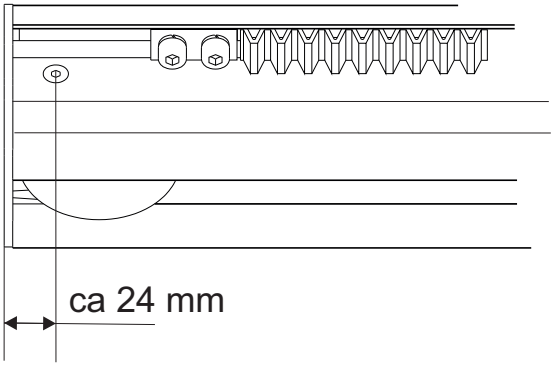
The End-plates (KD) are made as molded aluminium parts and so they are suitable for our Sliding roller profile (LRP). Inside the end-plates there is a supporting roller integrated, wich is supporting the gate in the end positions.

The End-plates also covers the outrigger on the side , where the plastic racks can be inserted. The racks must still be secured by Fixing plates for plastic racks.

We have a right ans a left model of the end-plates. It depends on the outrigger on the side, where the plastic racks can be inserted, wich model you have to use (seen from the top).

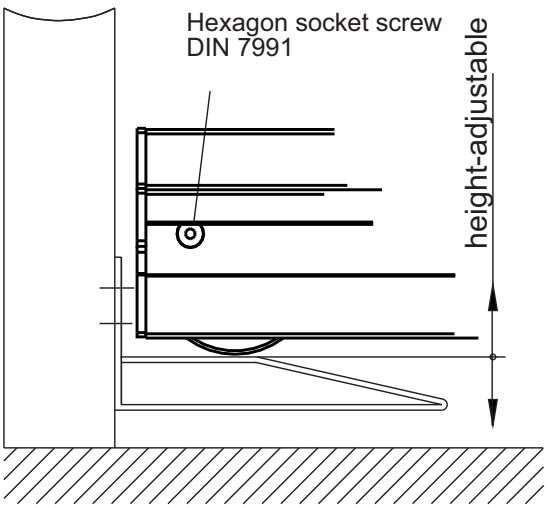
The fit in and srewing of the KD into the LRP has to be done as shown on the drawings. To fix the end-plates in the profile there are included 2 Hexagon socket screws (M6 x 16) made of stainless steel A2 (standard DIN 7991 ; ISO 10642) for each end-plate.





The supporting roller is running on a height-adjustable overrunning schoe at the end position. By that the extern strain, wich lies on the sliding roller profiles can be reduced and the convex deformation of the gatebody can be minimized.

Because of the way how the end-plates are constructed, you don‘t have to remove the sliding roller profile for assemblying them.



Plastic racks - Construction details

FST 90A and 90A/S

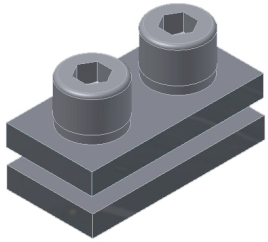
The racks (Module 4) have to be inserted into the outrigger before mounting the end-plates. You have to be careful that the contacts between the racks are without deficits, the racks have to be pulled together stengthly.

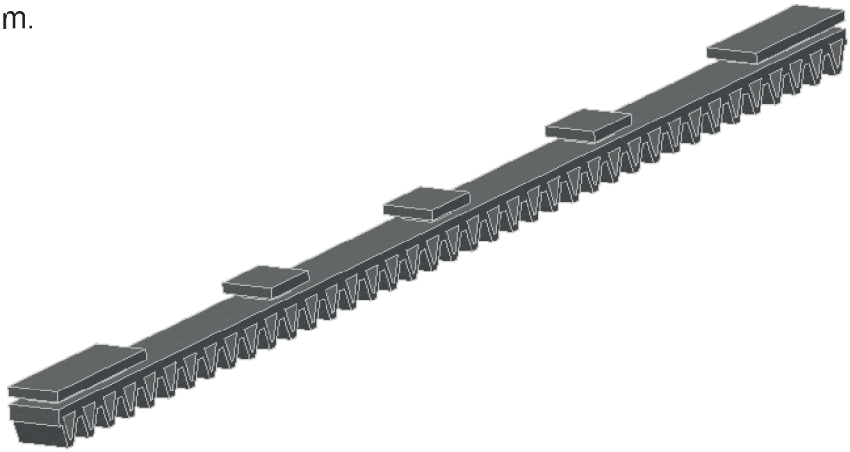
The necessary total length of the racks have to be the width passenge clearance plus one rack.

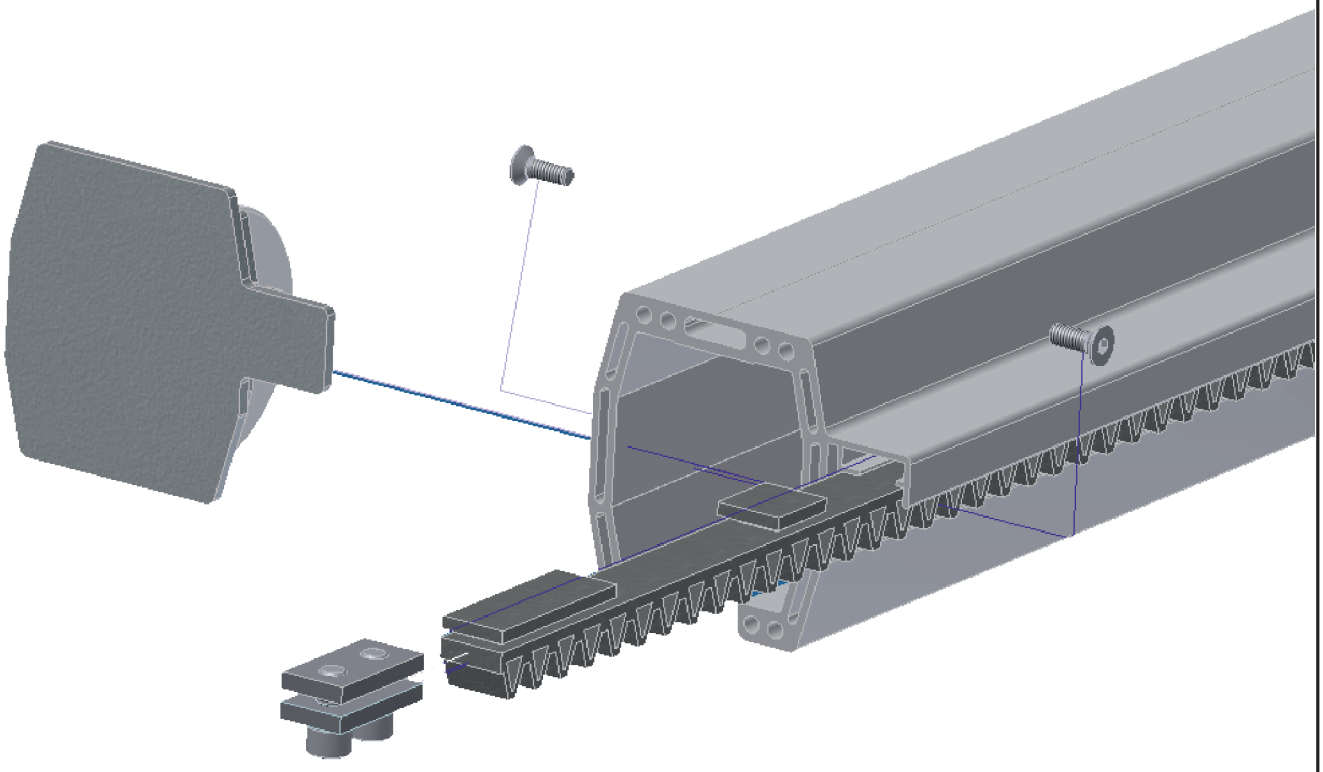
The racks are getting secured in the outrigger by rack fixing plates made of stainless steel. The Screws of the fixing plates have to be tightened strong.

The front beginning of the racks have to be at the position of the gate engine.

Each rack has a length of 490 mm.







Upper guidance roller - Construction details
FST 90A and 90A/S

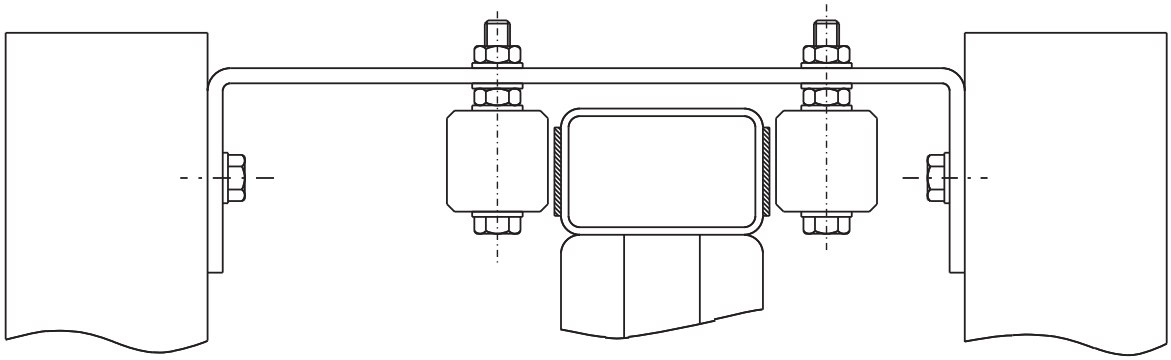
2 pieces of the upper guidance rollers, arranged in pairs, guarantee the stability of the wohle gate in the height.

1. The cantilever gates are getting equipt with the upper guidance rollers, wich are running directly on the flanks of the upper-chord.

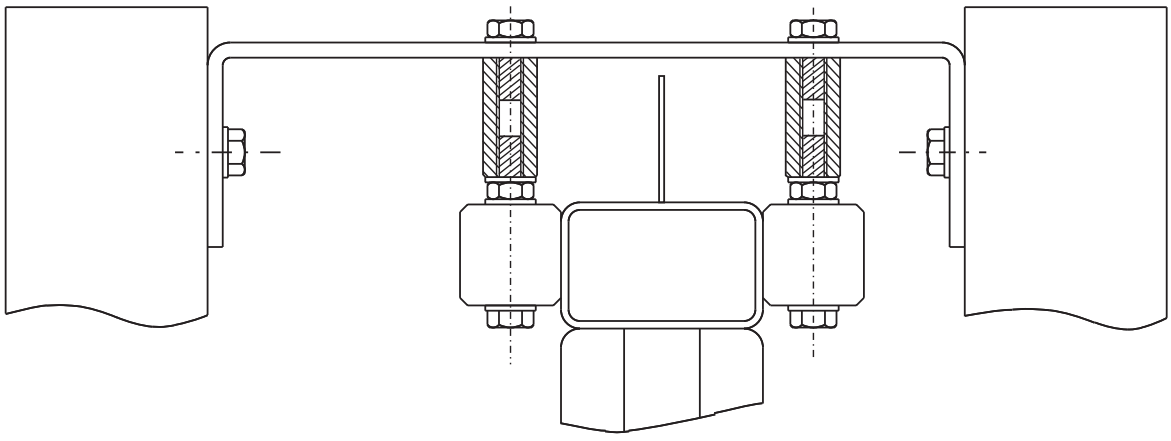
2. Cantilever gates, wich are lacquered or powder coated are getting equipt with additional untreated treads for the upper guidance rollers.
   One opportunity for example is to install Aluminium-flat profiles 30 x 3 mm on both sides of the entire length of the upper-chord with countersunk rivets.
   By that a damaging of the surface coating is avoided and you'll have a permanent good looking gatesystem.

3. If a spike bar is installed, the height of the upper guidance rollers have to be extended by the height of the spike bar.

lacquered



with Spike bar



Spacer sleeves have to be constructed by customer