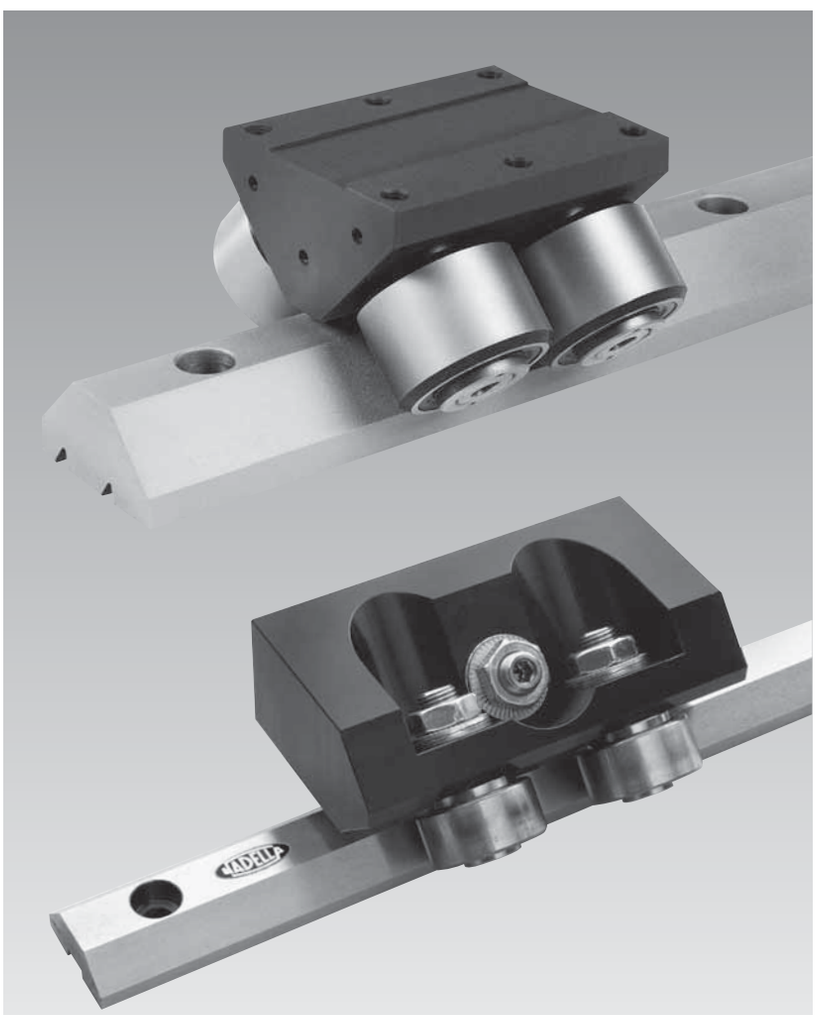
Rolbloc

Rolbloc System



NADELLA

Rolbloc system

The carriages based on Rolbloc's system are recommended for applications with heavy loads, high frequency of work and aggressive environment (dust, abrasive).
For the profiled guide rollers, the contact beween the rollers and the rail takes place on the ground raceways, which are inclined respect the rotation axis of the guide roller. Due to this inclination angle in the contact area there is a dragging proportional to the dimension of the contact area and to the value of the inclination angle. In the ROLBLOC system the rotation axes of the roller guides are parallel to the raceways of the rail, with the following pure rolling. The pure rolling recudes the superficial stress and the effects of the dust between the surfaces.

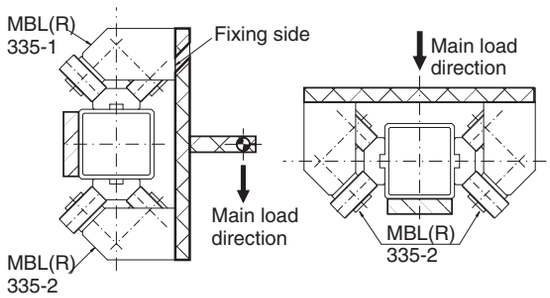
Technical features

ROLBLOC carriages **BL2..** and **BL4..** are composed by a body in burnished steel on which are mounted two or four roller guides equipped wi th tapered rollers (similar to flat roller guides type PK..C). The final part of the code (that can be 52, 75 or 115) shows the external diameter of the roller guides.

MBL carriages are composed by an alluminium body provided, on one side, with four threaded screws that allow the direct mounting on the fixing plate. Besides, in order to facilitate the aligning, there are also two pin screws. The body is equipped with guide rollers with a double row angular contact ball bearing.
On the body are mounted three guide rollers according to the following combinations:

- **MBL 335-1:** three concentric guide rollers, of which one on the fixing side;
- **MBL 335-2:** three concentric guide rollers, of which two on the fixing side;
- **MBLR 335-1:** three concentric guide rollers, of which one on the fixing side;
- **MBLR 335-2:** three concentric guide rollers, of which two on the fixing side.

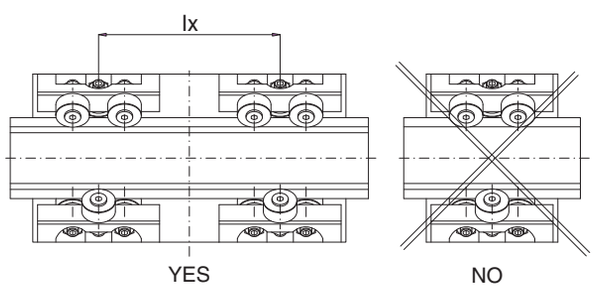
MBL 335-.. carriages are dissymmetrical components. In order to fully utilize the load capacity of the carriages it is necessary to consider the main load direction and than put the two coupled guide rollers in that direction.



MBL components are checked with the same method used for ROLBLOC BL, but it is very important to consider the exact bearing ratings that must be correct for the load direction. When the axial load (perpendicular to the fixing side of the carriage, or parallel to the fixing side of the rail) is in the direction of the two coupled guide rollers, as for the sketch above, you must use the coefficient with the suffix 2 (F_{a2}, Y_2), otherwise with the suffix 1 (F_{a1}, Y_1).

Mounting instructions

For the mounting of the carriages BL or MBL, with two, three and four guide rollers, are necessary at least two carriages on every rail. A slider realised with only two carriages for rail is not steady (see sketch below).



Pay the maximum attention during the setting of the eccentricity of the eccentric guide rollers in order to avoid excessive preloads that can reduce the lifetime of the system. Setting the eccentric guide rollers by rotating the stud anticlockwise (respect the head side of the guide roller).

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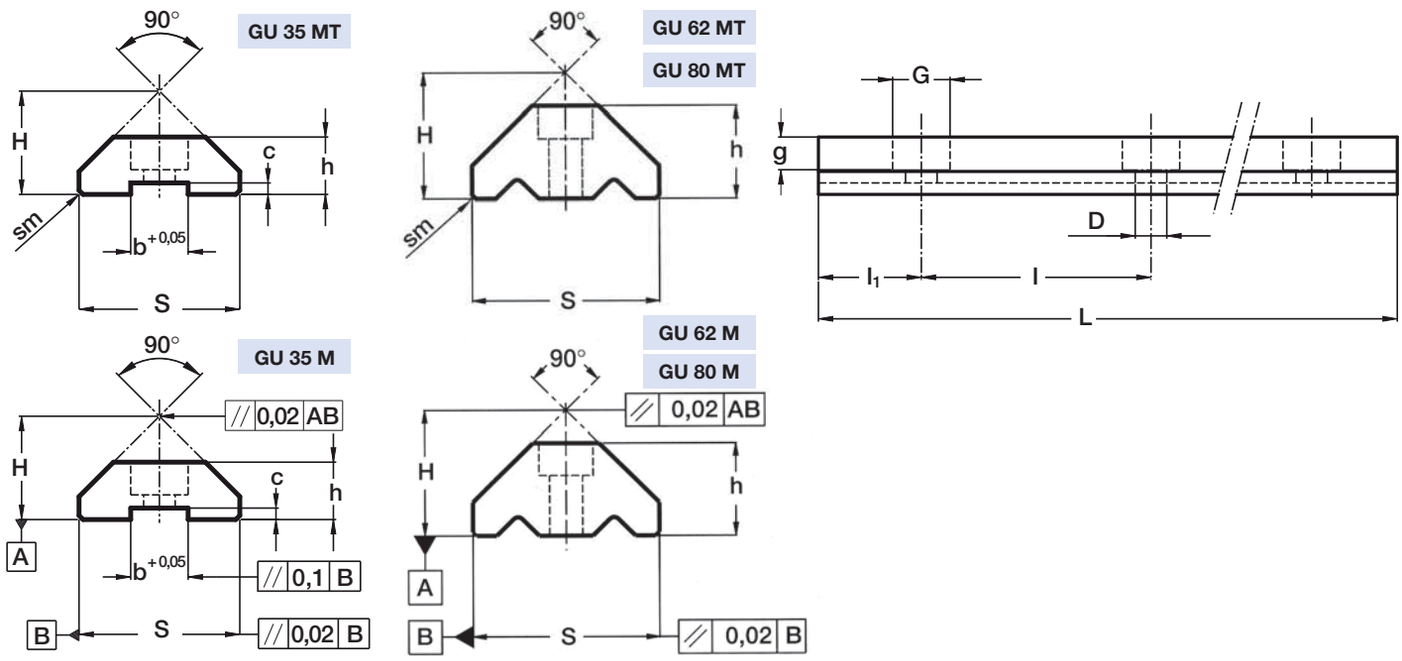
Guide rails GU..M, GU..MT



The **longitudinal slot** of rail GU 35 permits using reference elements SAG for guide positioning.

Type	Dimensions (mm)											Weight (kg/m) (2)
	H ± 0.05	h ± 0.05	S ± 0.05	D + 0.1	G	g	b + 0.05	c ± 0.05	sm	l	l_1	
GU 35 MT	23.9	15.7	35.5	6.6	11	6.8	10	3.8	1x45°	90	30	3.35
GU 62 MT	43.5	32.5	63.5	11	18	11	–	–	2x45°	120	30	11.80
GU 80 MT (3)	56.7	41.5	81.5	13.5	20	13	–	–	2x45°	120	30	20.30
max length in single element L = 6 000 mm (1)												

Type	Dimensions (mm)										Weight (kg/m) (2)
	H ± 0.05	h ± 0.05	S ± 0.05	D + 0.1	G	g	b + 0.05	c ± 0.05	l	l_1	
GU 35 M	23	15	35	6.6	11	6.8	10	3.3	90	30	3.2
GU 62 M	42	31	62	11	18	11	–	–	120	30	10.9
GU 80 M	55.2	40	80	13.5	20	13	–	–	120	30	20
max length in single element L = 4 020 mm (1)											

(1) Longer rails are supplied in sections with ground butt joints - (2) Weight without holes - (3) Max length in single element 5 000 mm for GU 80 MT

Rails finishing

- drawn, induction hardened and sandblasted tracks (**MT**);
- drawn, induction hardened and ground (**M**)
- induction hardening on raceways only

Hole layout

- holes according to catalogue (**SB**)
- finishes to drawing (**NZ**)
- without holes (**NF**)

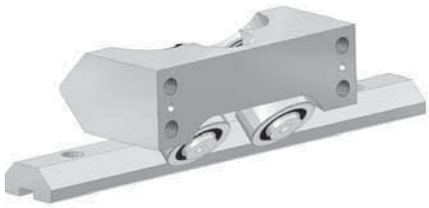
Optional features

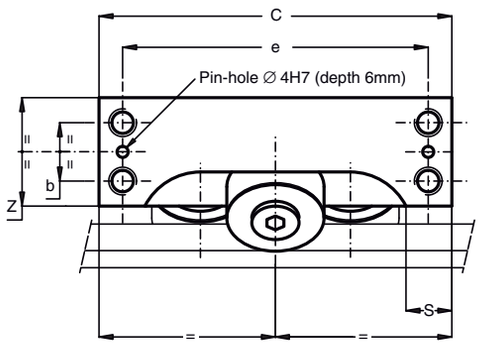
- ground one end (**R**)
- ground both ends (**RR**)
- chemical Nickel-plating **(NW**)

Example of standard designation: **GU 62 MT 4300 SB**

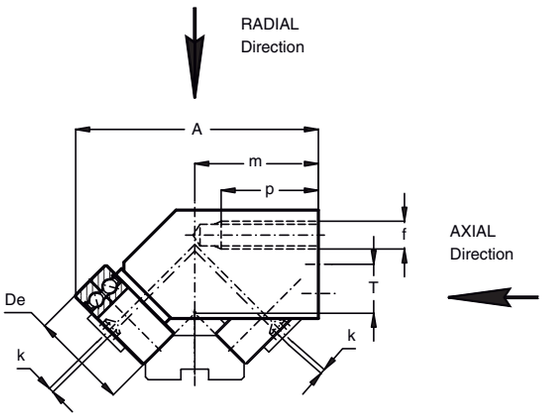
See page 17 for standard codification

Carriages MBL

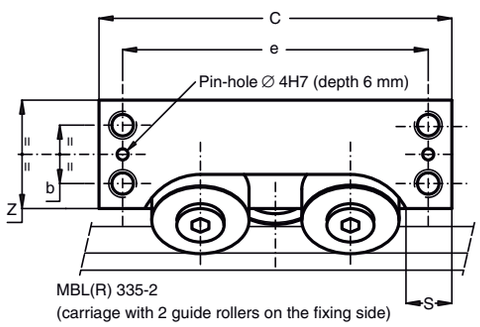




MBL(R) 335-1 (carriage with 1 guide roller on he fixing side)



MBL(R) 335-... (carriage with three guide rollers)



MBL(R) 335-2
(carriage with 2 guide rollers on the fixing side)

Type		Dimensions (mm)												Weight (kg)
concentric	eccentric	A	C	S	m	e	b	p	f	k (2)	T	Z	De	
MBL 335-1	**MBLR 335-1**	87.5	127	16.5	44.5	110	21	35	M10	0.75	17.6	39	35	0.94
MBL 335-2	**MBLR 335-2**													

Type		Dynamic load (N)	Limit loads (N)			Life coefficients		
		C_w (3)	radial F_r	axial F_a		X	Y	
				F_{a1} (5)	F_{a2} (6)		Y_1 (5)	Y_2 (6)
MBL 335-1	**MBLR 335-1**	14 500	7 000	3 500	7 000	1	1	0
MBL 335-2	**MBLR 335-2**							

1) Standard shields metallic ZZ
2) Maximum value of eccentricity for carriages MBLR, where all the guide rollers are eccentric
3) Cw basic load for 100 km, radial load
4) Pressure angle α for load calculation: 45°
5) Bearing ratings you must use when the axial load is in the direction of the side with one guide roller only
6) Bearing ratings you must use when the axial load is in the direction of the side with two guide rollers

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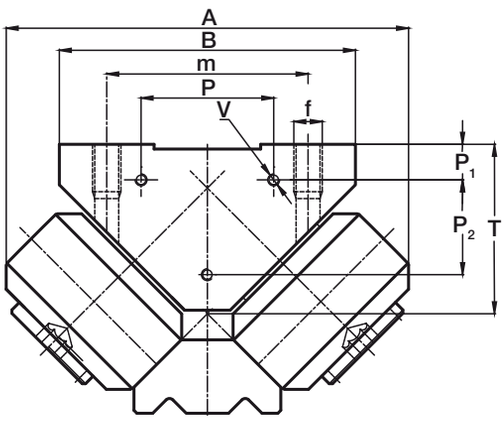
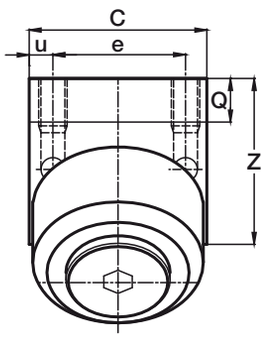
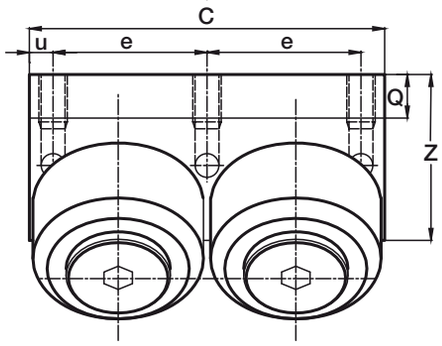
Carriages BL





BL 2... two guide rollers block



BL 4... four guide rollers block

Type	Dimensions (mm)														Weight (kg)
	A	B	C	P	P_1	P_2	V	m	e	u	f	Q	T	Z	
BL 2 52	136	90	56	54	14	16	M4x 7	70	40	8	M 8	12	43	47	2.4
BL 4 520	136	90	112	54	14	16	M4x 7	70	48	8	M 8	12	43	47	4.8
BL 2 75	170	125	76	56	15	40	M5x 8	85	56	10	M 12	17.1	71.5	70	6.5
BL 4 750	170	125	152	56	15	40	M5x 8	85	66	10	M 12	17.1	71.5	70	13
BL 2 115	243	170	125	80	15	70	M5x10	120	95	15	M 14	22	99.8	93	21.6
BL 4 115	243	170	250	80	15	70	M5x10	120	110	15	M 14	22	99.8	93	43.2

Type	Dynamic load (N)	Limit loads (N)		Life coefficients	
	C_w (3)	Radial F_r (4)	Axial F_a (5)	X	Y
BL 2 52	59 000	16 800	8 400	1	1
BL 4 52	118 000	33 600	16 800	1	1
BL 2 75	96 300	44 200	22 100	1	1
BL 4 75	192 600	88 400	44 200	1	1
BL 2 115	264 500	78 600	39 300	1	1
BL 4 115	529 000	157 200	78 600	1	1

1) Standard seals: material NBR, RS type
2) On request, the guide rollers can be supplied in stainless steel (suffix **NX**) and with Viton seals for operating temperatures up to 120°C (suffix **V**, up to dimension BL.... 75 included). Internal rolling elements in standard bearing steel
3) C_w basic load for 100 km, load perpendicular to the roller side fixing surface
4) Loads perpendicular to the roller side fixing surface
5) Loads parallel to the roller side fixing surface
6) Pressure angle α for loads checking calculation: 45°

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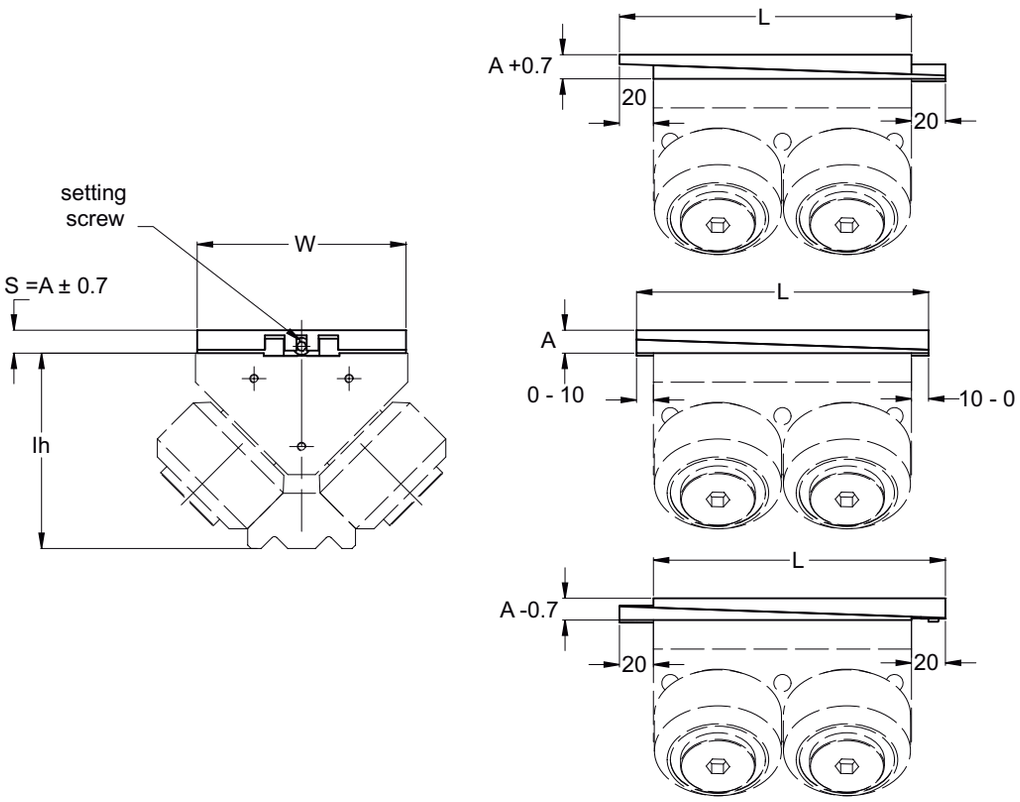
Adjustment plates PR



Type	Dimensions (mm)			Weight (kg)	Combination with ROLBLOC carriages
	L	W	A		
PR 252	76	88	13.5	0.5	**BL 252**
PR 452	132	88	13.5	1.0	**BL 452**
PR 275	96	123	13.5	1.0	**BL 275**
PR 475	172	123	13.5	1.9	**BL 475**
PR 2115	145	168	17	2.9	**BL 2115**
PR 4115	270	168	17	5.7	**BL 4115**

The adjusting plates allows to easily set the proper component preload during the mounting on the machine.
The two steel plates are placed in between the standard ROLBLOC and the mounting surface. Setting is done by the setting screw before the final tightening of the screws used to mount the ROLBLOC.
Dimension W of plates is 2 mm lower than the block of ROLBLOC. Use the ROLBLOC side are reference for the block position.
When the plates are set in the mid position (thickness 13.5 mm) they can be shifted 10 mm from the block centreline. The possible shift is reduced with the regulation since it become null at the end of allowed setting, minimum or maximum height. Consider 10 mm of space over the plate length on each side (20 mm over the block length) to use the full thickness setting capability +/- 0,7 mm

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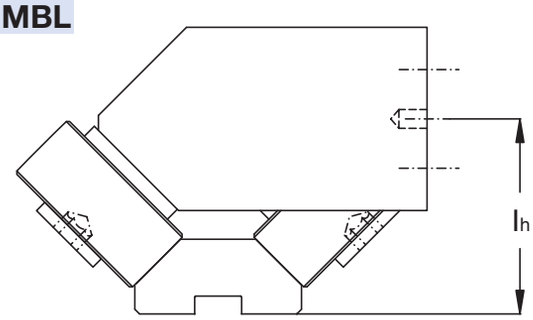
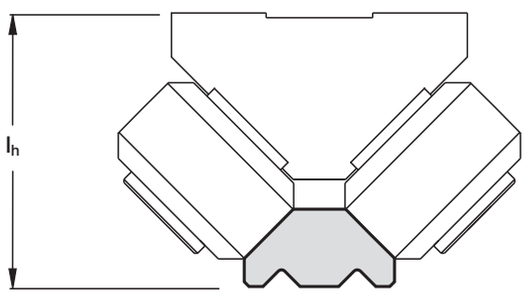
Guide/carriage combinations

MBL

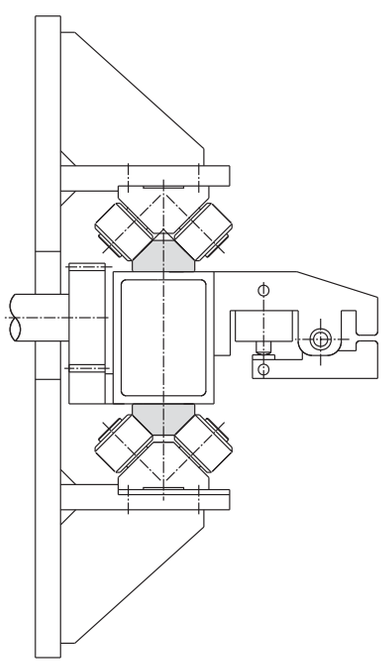


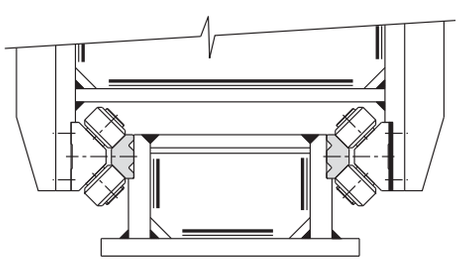
BL



Carriage / Guide	l_h (mm)						
	MBL / MBLR	**BL 2 52**	**BL 4 52**	**BL 2 75**	**BL 4 75**	**BL 2 115**	**BL 4 115**
GU 35 MT	41.5	–	–	–	–	–	–
GU 35 MT	40.6	–	–	–	–	–	–
GU 62 MT	–	86.5	86.5	115	115	–	–
GU 62 MT	–	85	85	113.5	113.5	–	–
GU 80 MT	–	–	–	–	–	156.5	156.5
GU 80 M	–	–	–	–	–	155	155

Mounting examples





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Mounting example

Palletising equipment
Rolbloc
V-Line
Multi-Motion-Line