ROLBLOC

4

ROLBLOC
ROLBLOC SYSTEM

4.1

KEY BENEFITS

- For heavy loads and dirty environment
- Up to 15 t per carriage
- High compensation for a simple mounting
- Guide rails with different surface treatment
- Guide rollers in stainless steel version

NX

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 in respect of 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 reduces the superficial stress and the effects of the dust between the surfaces.

CARRIAGE BL2 .., BL4 ..

Rolbloc carriages BL2 ... and BL4 ... are composed by a body in burnished steel on which are mounted two or four roller guides equipped with 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.

ROLBLOC BL2..DS WITH DISCHARGE SYSTEM

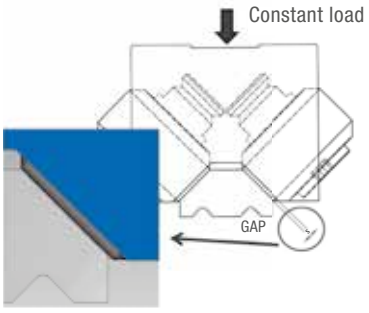
Rolbloc carriages BL2 ... DS have a special block profile with a profiled surface close at the rail GU...M or MT. The space S is set so that during normal operation there is no contact between the block and the rail and the carriage moves on its rollers. When the load goes over the normal value the deflection of the rollers reduces the space S since there is direct contact between the rail and the block. In this way the system is protected versus extremely and or uncontrolled loads. When the extra load is removed the system returns in its normal position thanks to the rollers' elasticity.

Rolbloc in DS version is a simple and effective solution in the following applications:

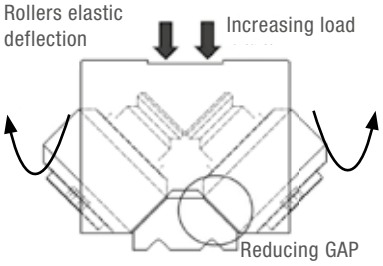
- Systems that have to be blocked in a position. The blocking system, i.e. a hydraulic cylinder or a bolt used as tie beam, can push directly the carriage against the rail without component damage risk.
- Systems where high stiffness support is required in a static operation. When the block is pushed in contact with the rail the system stiffness increases and stability is given versus deformation and vibrations
- Systems that have to stand shocks and extra load that could compromise the roller resistance. This allows to select the component size on the normal load during the operation and not on the pick-force.

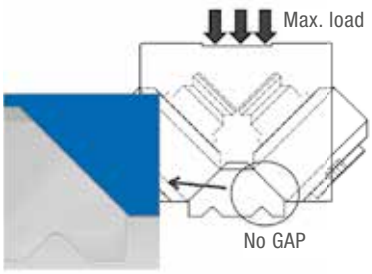
HOW IT WORKS

The carriage is realized with a special design that provides a gap between carriage body and rail.



When a heavy load is applied, the rollers are free to flex until the carriage body leans on the guide, discharging on it all the load that otherwise would break the rollers. After removing the load the carriage is again able to move regularly on the rail.



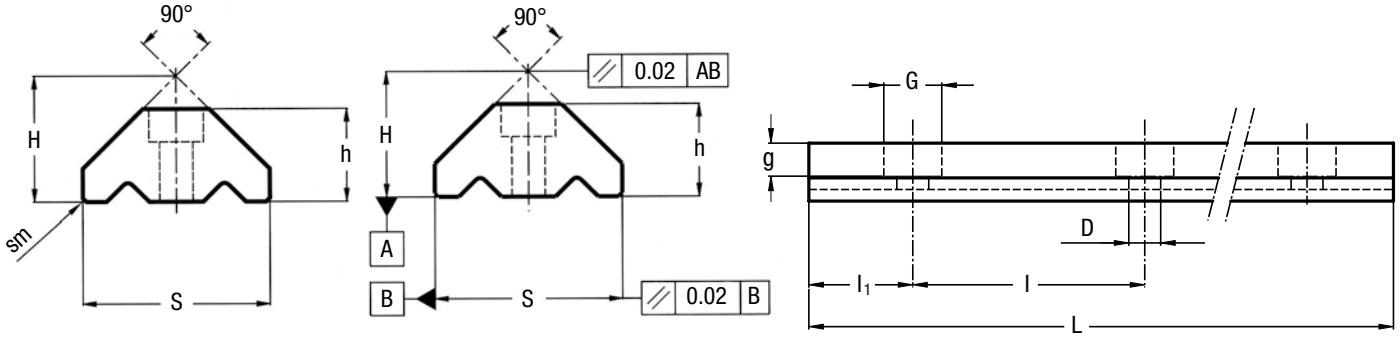


GUIDE RAILS GU ... M, GU ... MT

Rail in steel, ground raceways.

GU 62 MT
GU 80 MT

GU 62 M
GU 80 M



Type	Dimensions (mm)									Weight [2] (kg/m)
	H ± 0.05	h ± 0.05	S ± 0.05	D + 0.1	G	g	sm	l	l_1	
GU 62 MT	43.5	32.5	63.5	11	18	11	2 x 45°	120	30	11.80
GU 80 MT	56.7	41.5	81.5	13.5	20	13	2 x 45°	120	30	20.30

Max. length in single element L = 6000 mm.
Longer rails are made by juxtaposing several elements with ground end.

1) Weight without holes

Type	Dimensions (mm)								Weight [2] (kg/m)
	H ± 0.05	h ± 0.05	S ± 0.05	D + 0.1	G	g	l	l_1	
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 = 4020 mm.
Longer rails are made by juxtaposing several elements with ground end.

2) Weight without holes

RAILS FINISHING

- Drawn, induction hardened and sandblasted tracks (MT)
- Drawn, induction hardened and ground (M)
- Induction hardening on raceways only
- Holes according to catalogue (SB)
- Finishes to drawing (NZ)
- Without holes (NF)

OPTIONAL FEATURES

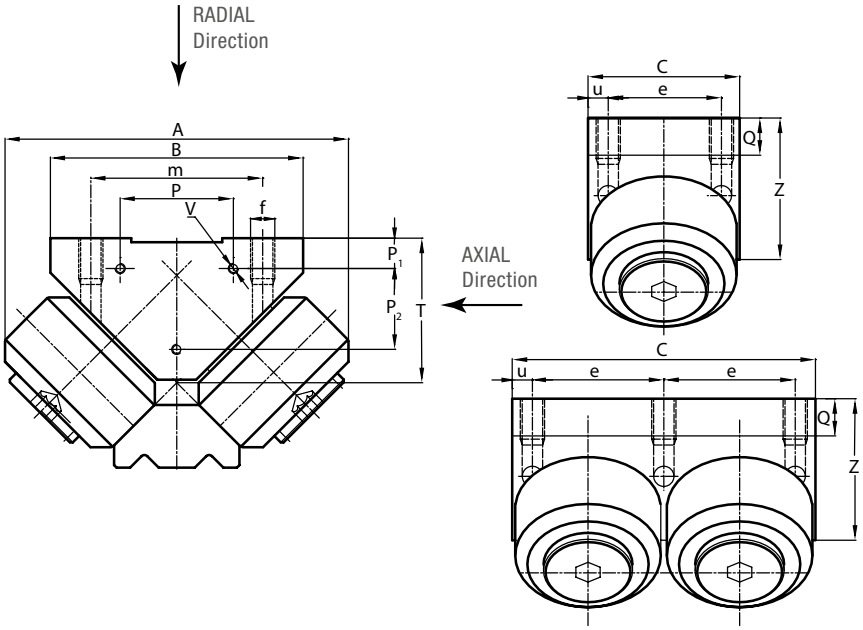
- Ground one end: side of the first hole (1R), side of the last hole (2R)
- Ground both ends (RR)
- Chemical nickel-plating (NW)

Example of standard designation: GU 62 MT 4300 SB

ROLBLOC
CARRIAGES BL

Carriage with burnished body.

Available in stainless steel version. NX



BL 2 ... two guide rollers block

BL 4 ... four guide rollers block

Type	Dimensions (mm)														Weight (kg)
	A	B [1]	C	P	P_1	P_2	V	m	e	u	f	Q	T	Z	
BL 252	136	90	56	54	14	16	M4 x 7	70	40	8	M8	12	43	47	2.4
BL 452	136	90	112	54	14	16	M4 x 7	70	48	8	M8	12	43	47	4.8
BL 275	170	125	76	56	15	40	M5 x 8	85	56	10	M12	17.1	71.5	70	6.5
BL 475	170	125	152	56	15	40	M5 x 8	85	66	10	M12	17.1	71.5	70	13
BL 2115	243	170	125	80	15	70	M5 x 10	120	95	15	M14	22	99.8	93	21.6
BL 4115	243	170	250	80	15	70	M5 x 10	120	110	15	M14	22	99.8	93	43.2

1) Tolerance +/- 0.05 for all dimensions

Type	Dynamic load (N)	Limit loads (N)		Life coefficients	
	C_w [2]	Radial F_r [3]	Axial F_a [4]	X	Y
BL 252	59000	16800	8400	1	1
BL 452	118000	33600	16800	1	1
BL 275	99000	44200	22100	1	1
BL 475	198000	88400	44200	1	1
BL 2115	275000	78600	39300	1	1
BL 4115	550000	157200	78600	1	1

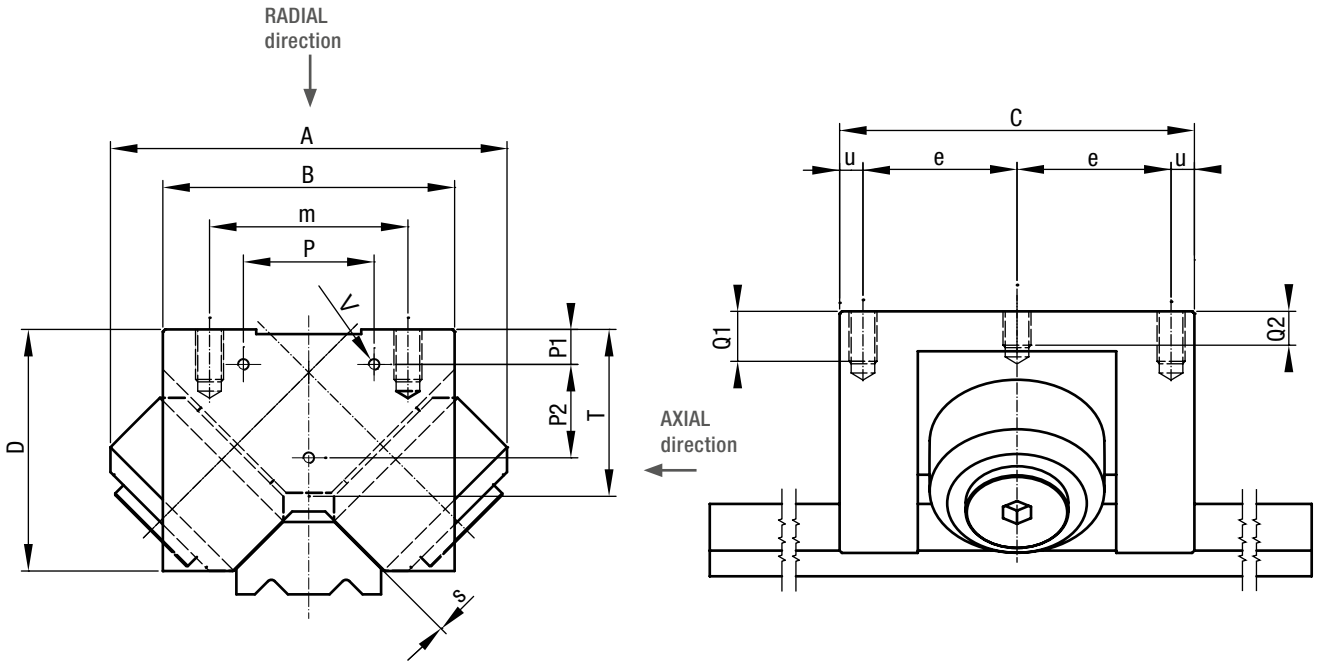
2) C_w basic load for 100 km, load perpendicular to the roller side fixing surface
3) Loads perpendicular to the roller side fixing surface
4) Loads parallel to the roller side fixing surface

- 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, not available for dimension BL ... 115). Internal rolling elements in standard bearing steel
- Pressure angle α for loads checking calculation: 45°
- Standard seals: material NBR, RS type

NEW Carriages BL 2215 and BL 2280 can be supplied on request, for limit radial loads up to 540000 N.

CARRIAGES BL ... DS WITH DISCHARGE SYSTEM

Available in stainless steel version. NX



Type	Dimensions (mm)														Weight (kg)
	A	B	C	P	P1	P2	V	m	e	u	f	Q1	Q2	T	
BL 252 DS	136	90	112	54	14	16	M4 x 7	70	48	8	M8	16	12	43	4.8
BL 275 DS	170	125	152	56	15	40	M5 x 8	85	66	10	M12	20	15	71.5	13

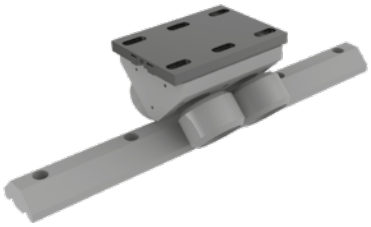
Type	Dynamic load (N)	Limit loads (N)		Life coefficients	
	C_w 1)	Radial F_r 2)	Axial F_a 3)	X	Y
BL 252 DS	59000	16800	8400	1	1
BL 275 DS	99000	44200	22100	1	1

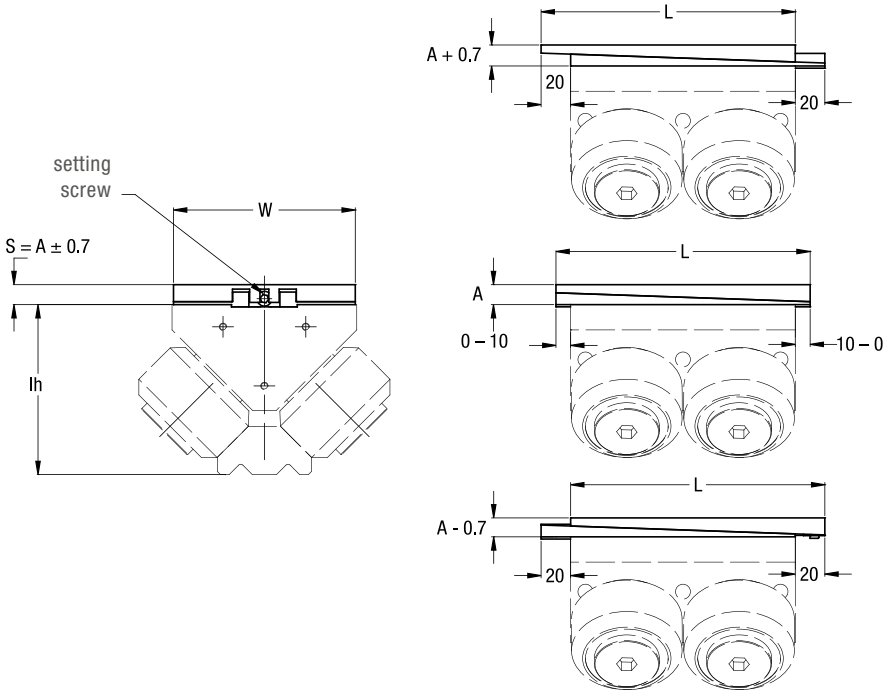
1) C_w basic load for 100 km, load perpendicular to the roller side fixing surface
2) Loads perpendicular to the roller side fixing surface
3) Loads parallel to the roller side fixing surface

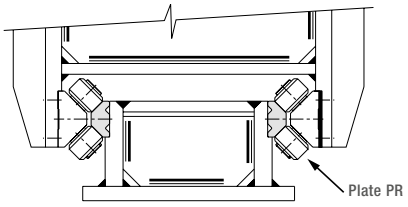
- On request, the guide rollers can be supplied in stainless steel (suffix NX) and with Viton seals for operating temperatures up to 120°C (suffix V, not available for dimension BL ... 115). Internal rolling elements in standard bearing steel
- Pressure angle α (for loads checking calculation): 45°
- Standard seals: material NBR, RS type

ROLBLOC
ADJUSTMENT PLATES PR

Adjustment plates for BL carriages.







A typical example of Rolbloc system assembly, with opposing parallel guides is shown. For optimal assembly, it is recommended to use adjustment plates PR on one side

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	BL 452, BL 252 DS
PR 275	96	123	13.5	1	BL 275
PR 475	172	123	13.5	1.9	BL 475, BL 275 DS
PR 2115	145	168	17	2.9	BL 2115
PR 4115	270	168	17	5.7	BL 4115

The adjusting plates allow to easily set the proper preload during the mounting on the machine by acting on the dimension lh.

The two steel plates are placed between the carriage Rolbloc and the mounting surface. Setting is done by the setting screw before the final tightening of the screws used to mount the Rolbloc.

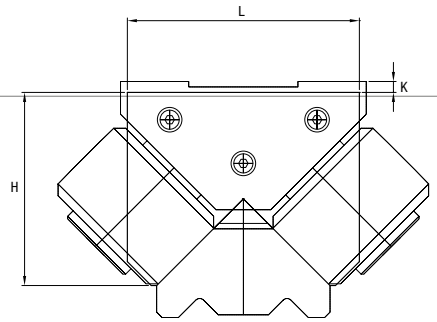
Dimension W of the plates is 2 mm lower than Rolbloc central body.

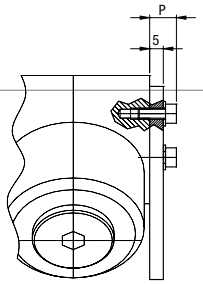
Use the Rolbloc side as a reference for the positioning.

When the plates are set in the mid position (thickness A) they can be shifted 10 mm from the block centreline. The allowed dislpacement can be reduced with setting to zero for the minimum or maximum regulation. Consider 10 mm of space beyond the plate length on each side (20 mm over the block length) to use the full thickness setting capability +/- 0,7 mm.

WIPERS RPT

Material: Plastic (polyzene), color: green

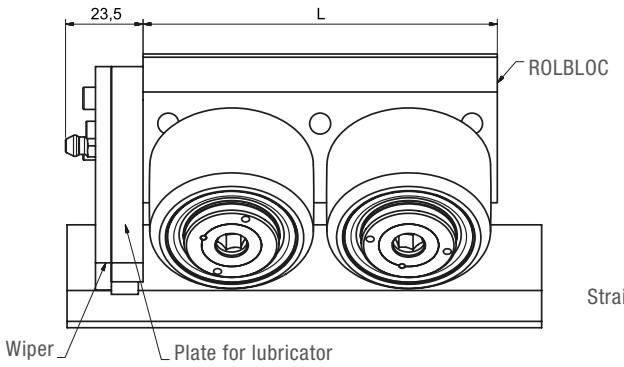


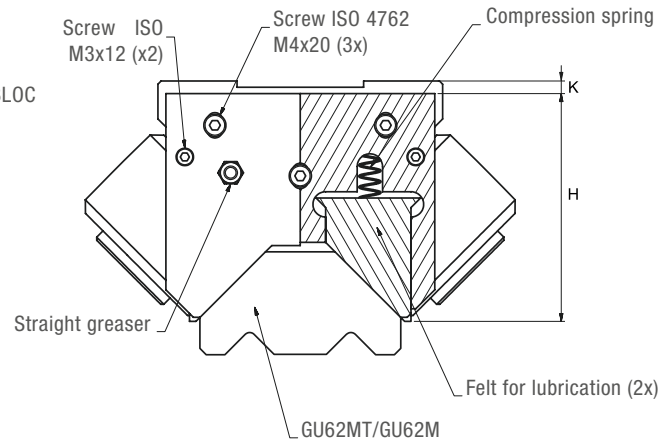


Type	Dimensions (mm)				Combination
	L	H	K	P	
RPT 52	85	70.75	4 ± 1.5	9.8	BL 252, BL 452
RPT 75	120	99.25	4 ± 2	11	BL 275, BL 475
RPT 115	165	135.55	5 ± 2	11	BL 2115, BL 4115

LUBL LUBRICATION SYSTEM FOR ROLBLOC

Material:
Plastic (polyzene), color: green and aluminum

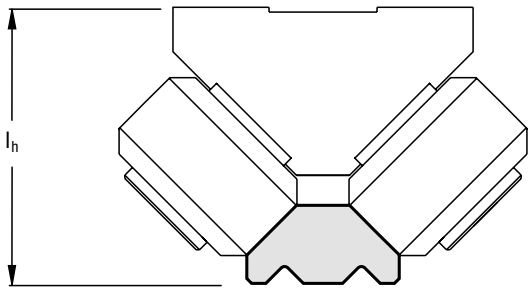




Type	Dimensions (mm)			Combination
	L	H	K	
LUBL 52	85	72	4 ± 1.5	BL 252, BL 452
LUBL 75	120	105.5	4 ± 1.5	BL 275, BL 475
LUBL 115	165	135.5	4 ± 1.5	BL 2115, BL 4115

ROLBLOC
GUIDE / CARRIAGE COMBINATIONS

4.3



Guide	Type	Carriage					
		l_h (mm)					
		BL 252 / DS	BL 452	BL 275 / DS	BL 475	BL 2115	BL 4115
	GU 62 MT	86.5	86.5	115	115	–	–
	GU 62 M	85	85	113.5	113.5	–	–
	GU 80 MT	–	–	–	–	156.5	156.5
	GU 80 M	–	–	–	–	155	155

MOUNTING EXAMPLE

Palletising equipment
Rolbloc
V-Line
Multi-Motion-Line