

ROSTA MOTORBASES

Self-Tensioning Motor Mount for Belt Drives



without slippage
self-adjusting
maintenance-free

ROSTA 



Technology

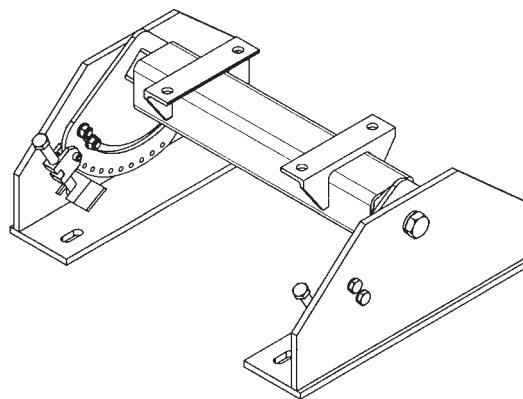
ROSTA Tensioning Motorbase Type MB for Belt Drives

The ROSTA elastic tensioning motorbase type MB, with the rubber suspension unit as swivel mounting, compensates continuously for all stretching, hopping, fluttering and excessive pull when starting, thanks to its preloaded suspension system with high self-damping. The standardized ROSTA tensioning motorbase is the ideal tensioning answer for all belt drives from 0.75 up to 110 kW power rating.

Belt drives, in particular V-belt drives with one or more belts, transmit the required torque to the driven equipment only if the belt tension is optimum. Consequently all such drives need a device for adjusting the motor position or a belt tensioner to compensate for normal belt stretch (with V-belts up to 3% to 5% of total length).

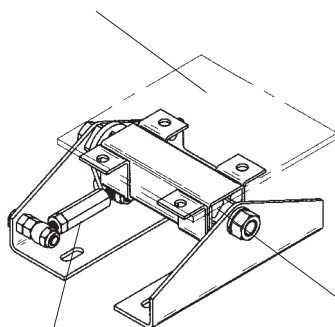
Failure to adjust the tension leads to serious loss of power in torque transmission, overheating of belts due to excessive slip, hopping or wobbling, screeching belts, excessive "wear" of the pulleys and eventually premature failure. Purely mechanical, rigid adjusting devices like motor slides with screw adjustment or belt tensioners with adjusting slots, are intended only for occasional compensation of the belt stretching. They do not provide continuous retensioning of the belts or reduction of the excessive starting torques when pulling heavy equipment into operation. They also need frequent adjustments and maintenance, which requires the drive be shut down.

ROSTA Tensioning Motorbases Type MB 70



MB 27

for motor plate, which has to be supplied by the customer, can be fixed by means of two clamps BR 27 (included in consignment)



adjustable pretensioning device for the ROSTA rubber suspension

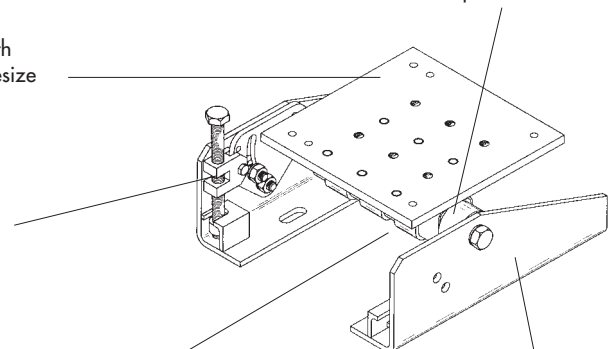
standardized motor plate with bores according to the framesize of the motor

adjustable pretensioning device for the ROSTA rubber suspension

ROSTA torsion spring for the continuous compensation of the belt slack; also an ideal overload device at high start-up torques

MB 50

glide bearing compensating all possible cardanic motions at the start-up of the drive



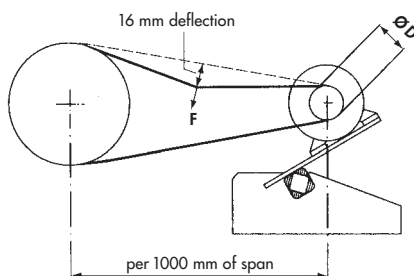
side supports with slot-bores



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Belt Tensioning

The ROSTA tensioning motorbase tightens the belt exactly according to the force recommended by the belt supplier by using the mechanical preloading device. The experienced test forces recommended for the most common V-belt cross sections are listed in the table on the right. This simplified preloading chart is adequate for most applications.



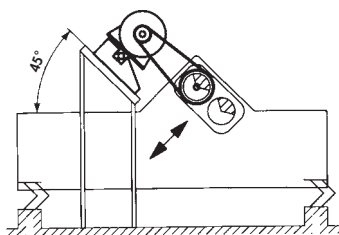
Tensile-Control-Forces for V-Belts

(Examples for most usual V-belts)

Belt types	Ø D (Small pulley) in mm	Control force* in N
SPZ (10 N)	56 – 95 100 – 140	12 – 15 17 – 20
SPA (13 N)	100 – 132 140 – 200	25 – 27 30 – 35
SPB (16 N)	160 – 224 236 – 315	45 – 50 60 – 65
SPC (22 N)	224 – 355 375 – 560	80 – 90 100 – 120
10 x 6 (Z)	56 – 100	12 – 15
13 x 8 (A)	80 – 140	12 – 15
17 x 11 (B)	125 – 200	25 – 30
22 x 14 (C)	200 – 400	55 – 60
32 x 20 (D)	355 – 600	90 – 105

* Tensile control force for V-belts. By ideal belt pretension a deflection of 16 mm per 1000 mm center distance shall occur. (By shorter or longer span, the value 16 mm has to be interpolated.)

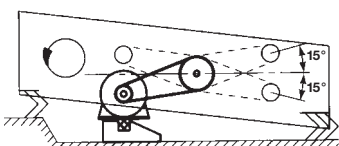
Usual Positioning of the ROSTA Motorbase in Screen Applications



Linear Motion Screen
"Low Head" Types

1. "Overhead" Configuration

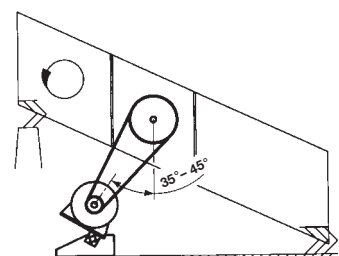
Base plate "center mounted" on ROSTA unit. Plate position horizontal on base. Installation of the base 45° inclined (aligned to vibrator).



Circular Motion Screen
"Ripl. Flow" Types

2. "Along-Side" Configuration

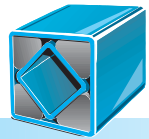
Base plate "center mounted" on ROSTA unit. Plate position horizontal on base. Drive shaft min. 15° above or below the driven eccentric shaft.



Circular Motion Screen
"Ripl. Flow" Types

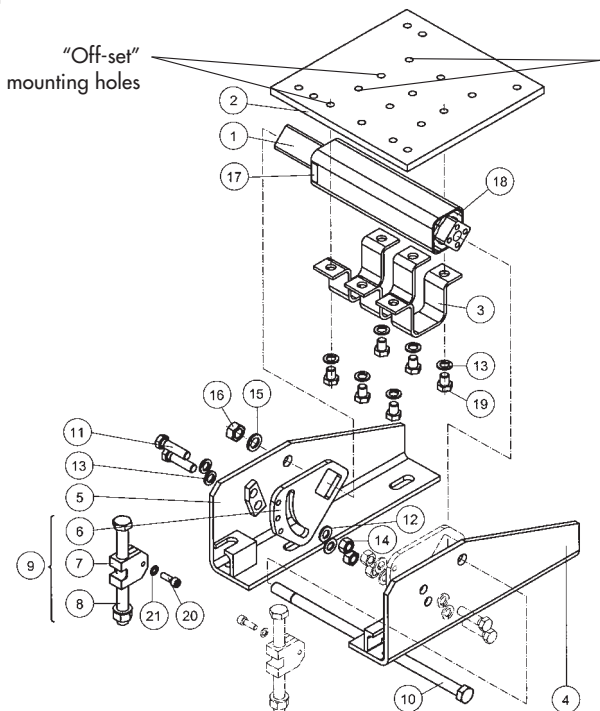
3. "Foot-Mounting" Configuration

Base plate "off-set mounted". Plate position inclined. Mounting position of motorbase approx. 35–45° removed out of vertical (Avoids jumping out of belts by passing resonance frequency of spring mounts).



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Installation Guidelines for ROSTA Motorbases Type MB 50



Important!
The glide bearing has to be on the same side than the drive pulley

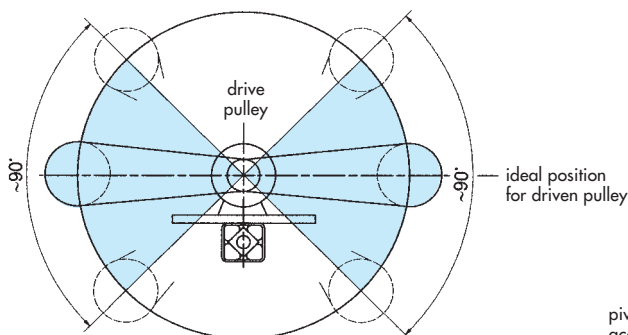
- 1 ROSTA rubber suspension
- 2 Base plate
- 3 Clamp type BR 50
- 4 Side support right
- 5 Side support left
- 6 Friction plate
- 7 Adjusting block
- 8 Jacking bolt M 20 x 1.5
- 9 Pretensioning device
- 10 Hex. shaft M 20
- 11 Hex. screw M 16
- 12 Washer M 16
- 13 Spring washer M 16
- 14 Hex. nut M 16
- 15 Spring washer M 20
- 16 Hex. nut M 20
- 17 Tension scale
- 18 Glide bearing
- 19 Hex. screw M 16
- 20 Hex. set bolt M 10
- 21 Spring washer M 10

Positioning of the Drive Motor on ROSTA Motorbase

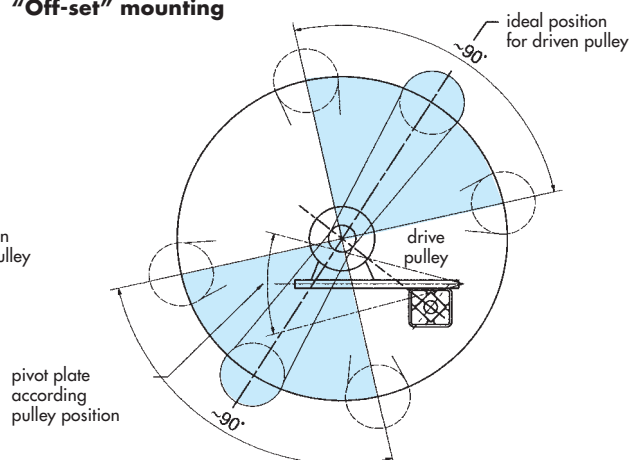
The ideal angular positioning of the drive motor on the base is an important factor to utilize the full compensation-arc of the pretensioned ROSTA-element; i.e. the resulting lever-arm between element center-axis and motorshaft shall be sufficiently dimensioned, in order to compensate the max. possible belt elongation without additional re-

tensioning of the base. The two sketches below, are presenting the ideal positioning of the motor on the elastic base (ideal position blue marked). Each motorplate (pos. 2) is equipped with threaded bores for its **"Center"** and/or **"Off-set"** mounting.

"Center" mounting



"Off-set" mounting



If the driven pulley is laterally positioned to the drive pulley (and/or $\pm 45^\circ$ below or above the center line), is the **"Center"** mounting of the plate with motor recommendable.

If the driven pulley is above or below the drive pulley located (see working angles on sketch), then the **"Off-set"** mounting of the plate and motor is recommended. In addition, find the ideal plate inclination towards driven pulley in varying block (7) fixation on friction plate (6).



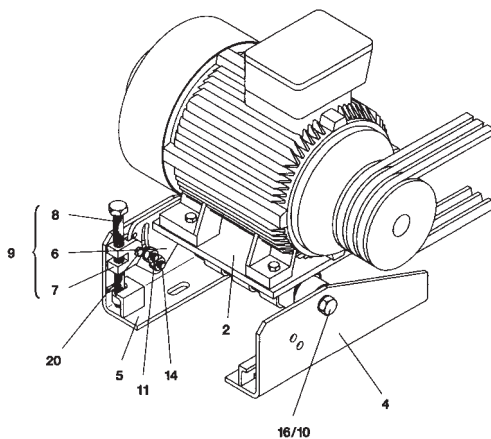
Technology

Motorbase Type MB 50

Fitting Instructions

Caution: Place motor on base plate (2) only after bolting adjusting block (7) to friction plate (6).

1. Bolt side supports (4) and (5) of motorbase on your machine part. Check whether the alignment of the base plate (2) corresponds to the optimum working position (see page 4), otherwise align with jacking bolt (8) or select a different tensioning position on friction plate (6).
2. Bolt motor to base plate. **The drive pulley must be placed on the glide bearing side of the motorbase.**

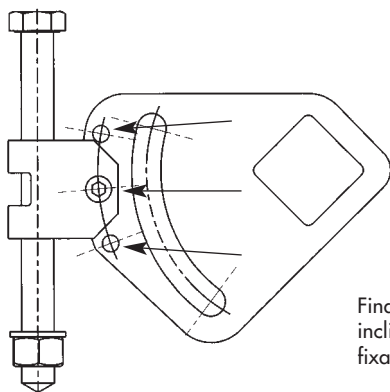


3. Turn jacking bolt M 20 (8) clockwise to raise the motor and place the belt(s) on the drive pulley.
4. Turn jacking bolt M 20 (8) counter-clockwise to tension the belt(s). Check the belt tension with the data specified by the belt manufacturer or according to the test force table on page 3.
5. Tighten all locking bolts M 16 (11) of the friction plate after the tensioning process; tightening torque of nuts (14) = 200 Nm.
6. Tighten nuts M 20 (16) for central hex. shaft (10), tightening torque = 360 Nm.
7. In principle, the adjusting block (7) with jacking bolt (8) could then be removed by loosening the hex. set bolt M 10 (20) (as protection from possible corrosion and dirt).
8. Fasten the belt guards.

Retensioning

ROSTA motorbases are **automatically retensioning** drive mountings for friction belt drives. Regular retensioning is therefore unnecessary. It is only recommended in the case of very long center distances between driving and driven pulley to check the test pressure on the belts and retension occasionally if necessary.

Pretensioning Device MB 50/70



Find your ideal baseplate (2) inclination in adjusting block (7) fixation on friction plate (6).

The pretensioning device of the ROSTA-motorbase type MB 50/70 is effecting a motion of rotation on the inner profile of the ROSTA-element; this rotation is giving the required pretension effect on the belts and does compensate their elongation. In turning the threaded spindle, the belt tension will be increased or decreased. On the friction plates of both pretensioning devices, there are several positions for the fixation of the adjusting block with spindle. In varying these position, the change of plate-inclination can be effected, in order to get the most compensation effective working angle between drive pulley and driven pulley.

Internal Glide Bearing on MB 50/70



Internal glide bearing (18) has to be placed on pulley-side of motor.

The motorbases type MB 50 and MB 70 are equipped with a cardanic glide bearing between housing and inner profile. This bearing compensates the radial tensile forces of the belts and is keeping the two components in parallel position, even by extremely high tension forces. This fibre reinforced plastic bearing **has to be positioned** on the pulley-side of the belt drive! (Please check by the assembling of the motorbase!). If this bearing would be installed on the fan-side of the motor, a misalignment of the pulleys would occur, due to the lack of parallelism.



Product Range



ROSTA Motorbase Type MB 27

Page 98

The ideal standardized motorbase for smaller belt drives with electric motors from 0.75 to 4.0 kW (frame size dimensions 90 S/L to 112 M). This base is delivered completely assembled but without motor-plate, which has to be supplied by the customer. Thanks to its extremely compact overall dimensions, the type MB 27 can be installed everywhere without any major design changes. Therefore, the MB 27 is an ideal alternative to obsolete, non-automatic tension rails. The pretensioning device with its left and right-hand thread gives a big positioning range offering an optimum adaptation of the working angle to the driven pulley. All steel parts are painted with a blue primer.

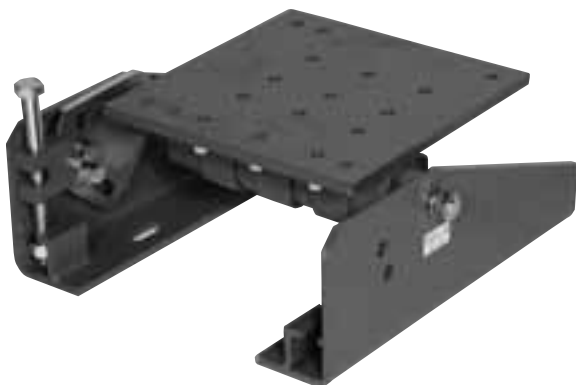


ROSTA Motorbase Type MB 38

Page 99

The new ROSTA motorbase Type MB 38 for motor frame sizes from 132 S to 160 L (3 to 18.5 kW) is now available on the drive component market – compact, operator-friendly, ready for immediate installation and cost-effective. Its new features are, above all, the price, the ready-to-install design and the simplest-possible installation procedure with the new pre-tensioning device.

With the new **horizontal** aligned finethread adjusting spindle, both the pre-tension and the necessary inclination of the motor plate can be simply adjusted. The ready-to-use construction, the belt track adaptation and the fast clamping system make the MB 38 absolutely revolutionary and extremely user-friendly in comparison with alternative and predecessor models! The frequently occurring “outside applications” in screen drives, crushers and air conditioning systems have been taken into account through the galvanisation of the components.



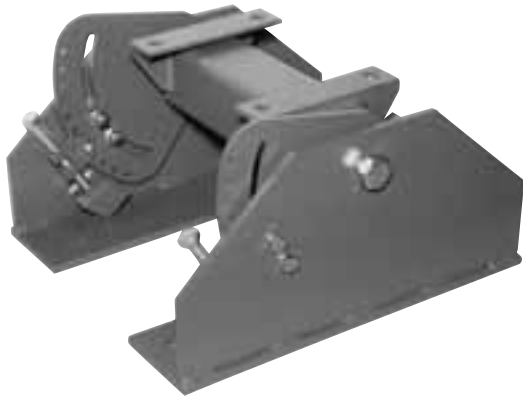
ROSTA Motorbase Type MB 50

Pages 100–103

The type MB 50 is the most universal self-tensioning base for all friction belt drives with 5.5 to 45 kW electric motors (frame size dimensions 132 S to 225 M). This standardized base is available with 5 different rubber suspension lengths, according to the relevant motor power. The motorbase is supplied in different assembling kits which gives to potential users the possibility to purchase e.g. only the ROSTA rubber suspension unit with the pretensioning device and to integrate these units into any existing machine frames. There is no need to purchase the not required side supports, too (see assembling kit information on pages 101–103). The standardized base plate can be installed on the rubber spring either “**center**” or “**off-set**” according to the position of the driven pulley (see positioning of base on page 94). The pretensioning device can be attached in 3 different positions allowing to incline the base plate according to the ideal working angle. The belt pretension can be continuously settled equivalent to the belt size and quantity. The ROSTA motorbase type MB 50 is supplied disassembled in different kits; all steel parts are painted with a blue primer.



Product Range

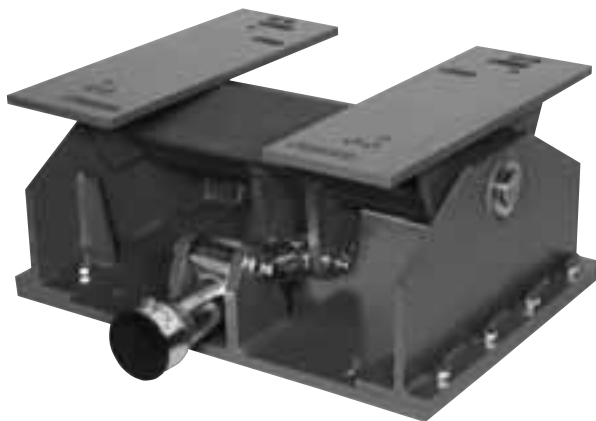


ROSTA Motorbase Type MB 70

Pages 104–105

The ideal standardized motorbase for Heavy Duty belt drives with electric motors from 37 to 110 kW (frame 250 M to 315 S). These motorbase is available in three different lengths, according to the relevant motor size. The motorbase type MB 70 is supplied as assembling kit (see pages 104/105). The assembling kit is not including a motorplate with threaded fixation bores for the frame fixation. For serie supplies, ROSTA can also provide the required plates. The pretensioning device can be attached in 11 different positions, allowing to incline the base plate according to the ideal working angle. The belt pretension can be continuously settled, equivalent to the belt size and quantity. The motorbase type MB 70 is supplied disassembled in kit. All steel parts are painted with a blue primer.

ROSTA Motorbase Type MB 100



The great success obtained with the elastic and maintenance-free suspension of drive motors for friction belt drives with power levels from 0.5 kW to 110 kW has encouraged us in our efforts to also develop an automatic motorbase for drives that are even more powerful. Many stone crushers and slide chutes in the mining industry as well as, for example, chippers and splinter cutters in the production of chipboard are driven by belt drives with motor powers up to 250 kW. With these large machines, the problem with the identification of the ideal belt tension is identical to that with smaller units – without an automatic compensation of the belt extension, the drives will only transfer the full torque to the machine immediately after the re-tensioning service. Without automatic re-tensioning mountings, this essential service will generate maintenance outlays of several hours per installation and year.

ROSTA AG has first prototypes for an elastic motorbase for drives with performance up to 250 kW in field operation. Once again, a device with a threaded spindle has been chosen for the simple setting of the belt tension, which is completely sufficient to provide the very large pre-tensioning torques. The desired belt tension can be conveniently adjusted by means of generously dimensioned re-tensioning ratchets.

As with all other ROSTA motorbases, the large MB 100 is

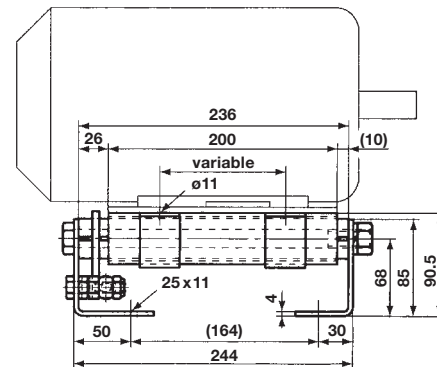
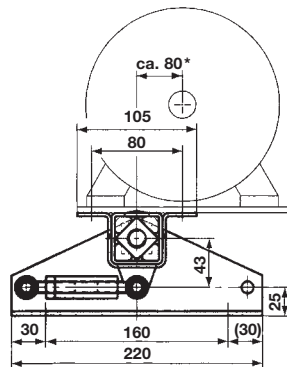
- slip-free
- overload-proof
- self re-tensioning
- maintenance-free
- low stress on the belts
- cost efficient



Motorbase

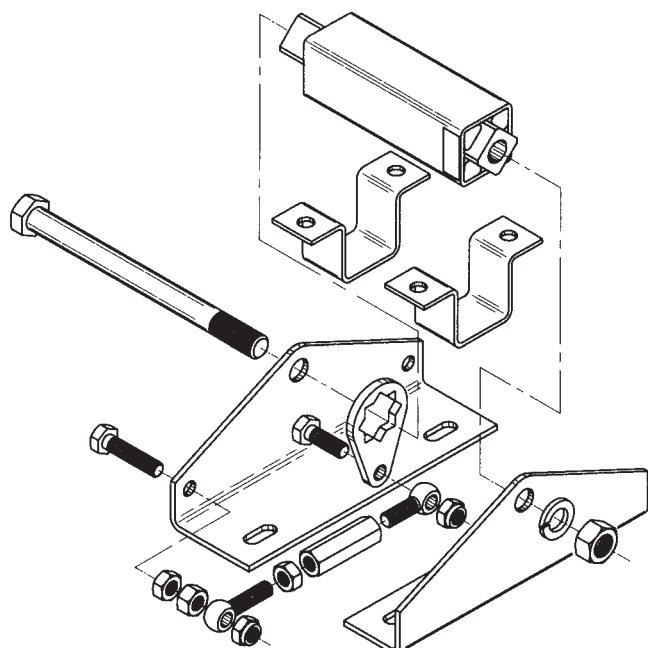
Type MB 27

**Selection of base dimension:
according to relevant motor
frame size**



Art. No.	Motorbase Type	Frame size	1000 min ⁻¹ kW	1500 min ⁻¹ kW	3000 min ⁻¹ kW	Weight in kg
13 000 210	MB 27 x 80	D 90S/L	0.75–1.1	1.1–1.5	1.5–2.2	3.88
13 000 211	MB 27 x 120	D 100L	1.5	2.2–3.0	3.0	3.92
13 000 212	MB 27 x 200	D 112M	2.2	4.0	4.0	4.00

* The motor plate, which has to be added by the customer, should be installed off-center in order to provide the best possible lever motion; we recommend an off-center shifting of approx. 80 mm for all three types MB 27.



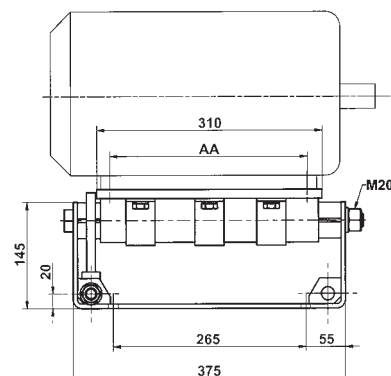
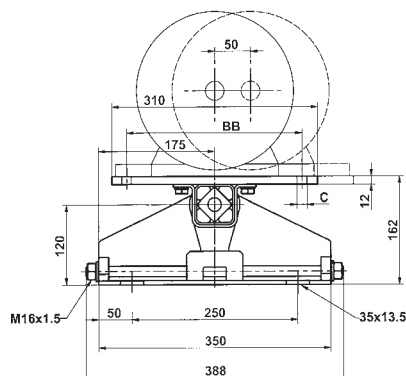
The drawing on the left shows the construction of the ROSTA Motorbase MB 27. Contrary to the large type MB 50 and MB 70, the MB 27 Motorbase is delivered completely assembled, but without motor plate.

The outer dimension is the same for all three base sizes. The rubber suspension units of the MB 27x 80 and MB 27x 120 types are divided into two sections, but assembled in a common housing.

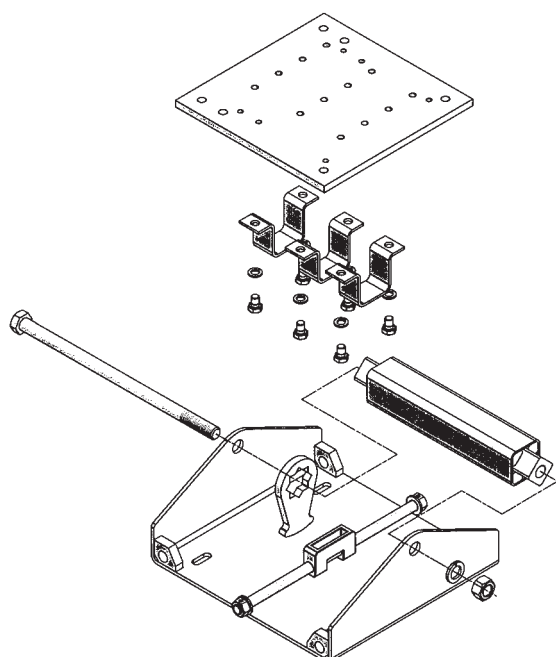


Motorbase

Type MB 38



Art. No.	Type	Motor Frame size	1000 min ⁻¹ kW	1500 min ⁻¹ kW	3000 min ⁻¹ kW	AA	BB	C	Weight in kg
02000301	MB 38 x 300	D 132S	3	5.5	5.5-7.5	140	216	M10	26
		D 132M	4-5.5	7.5	-	178	216	M10	
		D 160M	7.5	11	11-15	210	254	Ø13	
		D 160L	11	15	18.5	254	254	Ø13	



The self-tensioning ROSTA Motorbase type MB 38

- without slippage
- overload proof
- belt protecting
- vibration dampening
- maintenance-free
- cost efficient

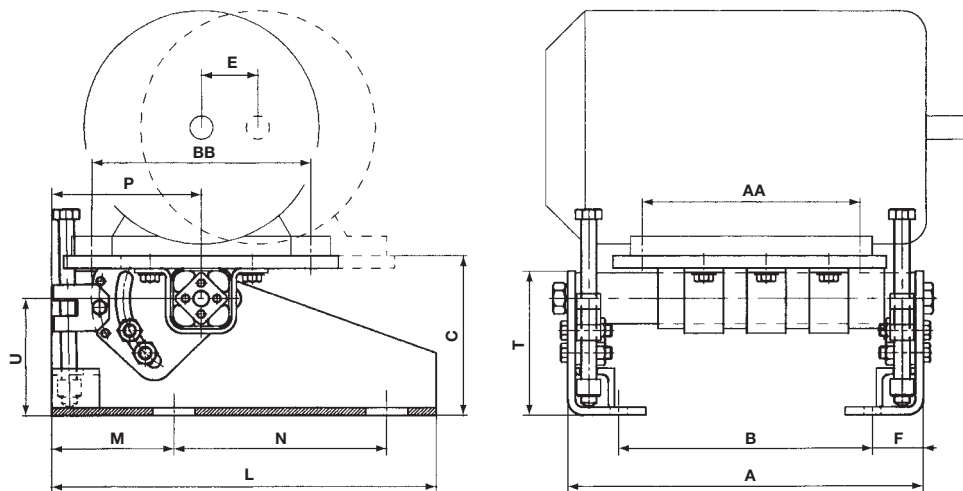
for all friction-belt transmissions.



Motorbase

Type MB 50

Selection of base dimension:
according to relevant
motor frame size



Motorbase Type	Frame size	1000 min ⁻¹ kW	1500 min ⁻¹ kW	3000 min ⁻¹ kW	AA	BB
MB 50 x 160	D 132S	3	5.5	5.5-7.5	140	216
	D 132M	4-5.5	7.5	-	178	216
MB 50 x 200	D 160M	7.5	11	11-15	210	254
	D 160L	11	15	18.5	254	254
MB 50 x 270	D 180M	-	18.5	22	241	279
	D 180L	15	22	-	279	279
MB 50 x 400	D 200L	18.5-22	30	30-37	305	318
MB 50 x 500	D 225S	-	37	-	286	356
	D 225M	30	45	45	311	356

Overall Dimensions

(Details see pages 101 – 103 "Assembling Kits")

Motorbase Type	Dimensions in mm										
	A	B	C	E*	F	L	M	N	P	T	U
MB 50 x 160	355	225	204	43	65	490	155	272	190	185	150
MB 50 x 200	455	325	204	45	65	490	155	272	190	185	150
MB 50 x 270	455	325	204	72	65	490	155	272	190	185	150
MB 50 x 400	555	425	204	72	65	490	155	272	190	185	150
MB 50 x 500	605	475	204	72	65	490	155	272	190	185	150






*The base plates have two rows of bracket fixation-holes, in order to allow "center" and "off-set" mounting on the ROSTA spring device = dimension E.

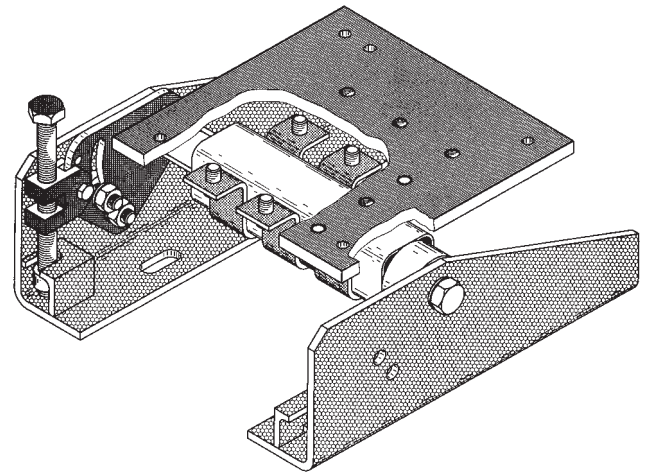


Assembling Kits

Type MB 50

Assembling Kits

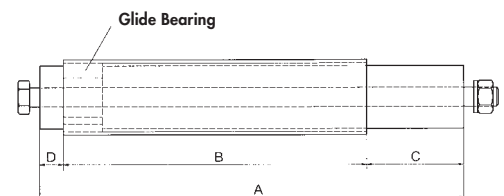
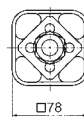
- I  ROSTA rubber suspension with glide bearing
- II  Pretensioning device
- III  Side supports
- IV  Base plate
- V  Clamp



Motorbase Type	Kit No.	Quantity pcs.	Art. No.	Type	Motorbase Kit No.	Quantity pcs.	Art. No.
MB 50 x 160	I	1	13 020 506	MB 50 x 400	I	1	13 020 509
	II	1	13 040 501		II	2	13 040 501
	III	1	13 530 501		III	1	13 530 501
		1	13 530 502			1	13 530 502
	IV	1	13 010 501		IV	1	13 010 504
	V	2	01 500 007	V	4	01 500 007	
MB 50 x 200	I	1	13 020 507	MB 50 x 500	I	1	13 020 510
	II	1	13 040 501		II	2	13 040 501
	III	1	13 530 501		III	1	13 530 501
		1	13 530 502			1	13 530 502
	IV	1	13 010 502		IV	1	13 010 505
	V	2	01 500 007	V	5	01 500 007	
MB 50 x 270	I	1	13 020 508				
	II	1	13 040 501				
	III	1	13 530 501				
		1	13 530 502				
	IV	1	13 010 503				
	V	3	01 500 007				

ROSTA Rubber Suspension with Glide Bearing MB 50

Kit I



Art. No.	Motorbase Type	Dimensions in mm				Weight in kg
		A	B	C	D	
13 020 506	MB 50 x 160	335	243	68	24	4.9
13 020 507	MB 50 x 200	435	258	153	24	5.8
13 020 508	MB 50 x 270	435	311	100	24	6.3
13 020 509	MB 50 x 400	535	438	73	24	8.3
13 020 510	MB 50 x 500	585	536	25	24	9.6

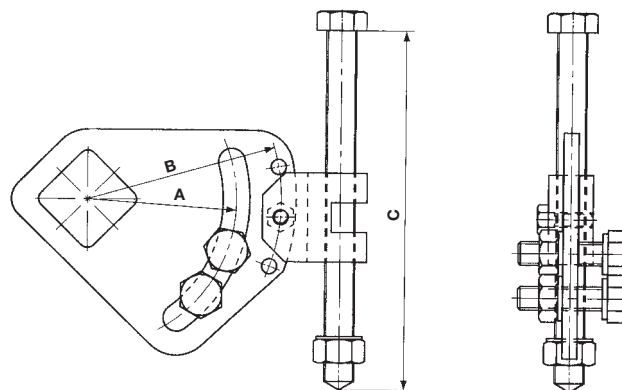


Assembling Kits

Type MB 50

Pretensioning Device to MB 50

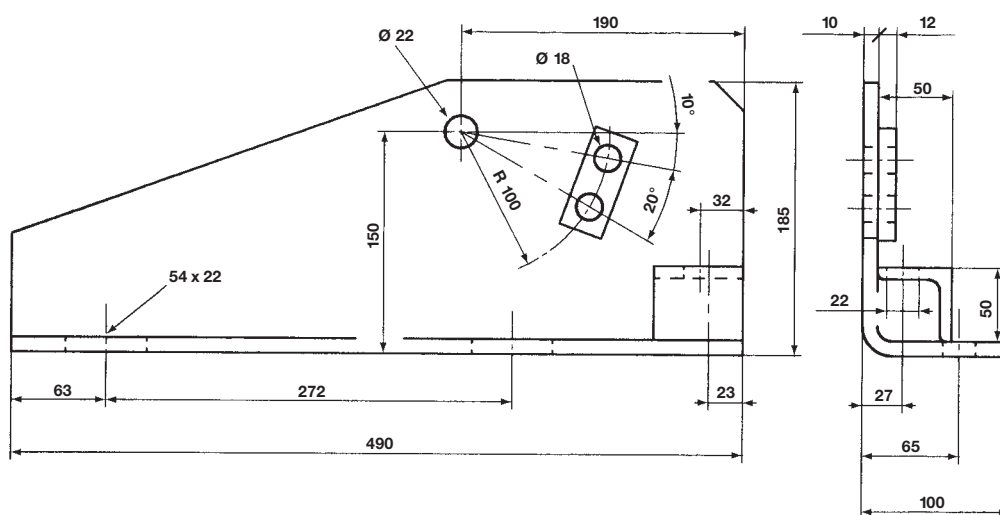
Kit II



Art. No.	Marking	Dimensions in mm			Weight in kg
		A	B	C	
13 040 501	Pretensioning Device to MB 50	100	130	220	2.72

Side Support to MB 50

Kit III



Art. No.	Marking	Details according drawing	Weight in kg
13 530 501	Side Support to MB 50 right	Details according drawing	9.34
13 530 502	Side Support to MB 50 left	Details mirror inverted to drawing	9.34

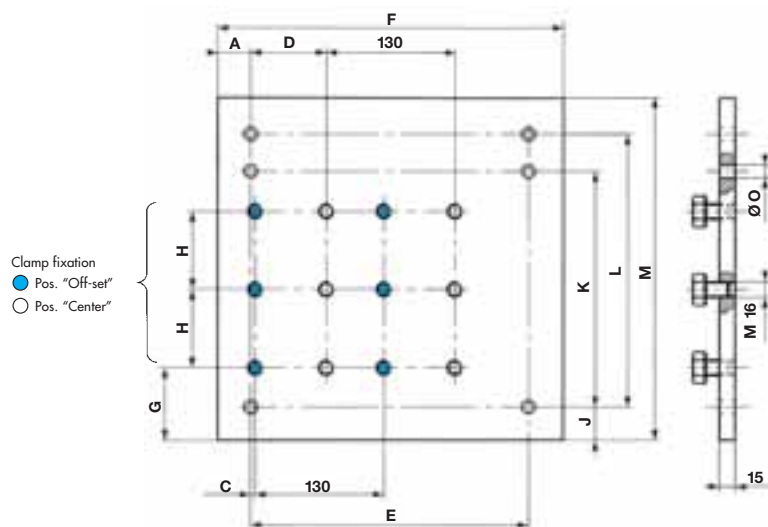


Assembling Kits

Type MB 50

Base Plate to MB 50

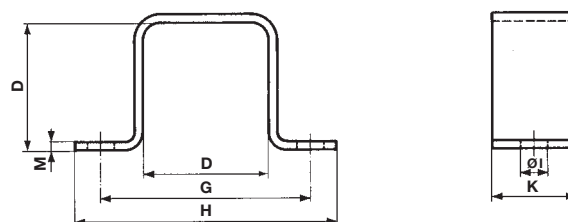
Kit IV



Art. No.	Motorbase Type	Dimensions in mm												Weight in kg
		A	C	D	E	F	G	H	J	K	L	M	ØO	
13 010 501	MB 50 x 160	26	0	43	216	270	64	120	24	140	178	230	M10	7.8
13 010 502	MB 50 x 200	28	17	62	254	310	69	130	29	210	254	310	13	12.1
13 010 503	MB 50 x 270	35.5	2.5	74.5	279	350	74	80	34	241	279	350	13	15.4
13 010 504	MB 50 x 400	43.5	22	94	318	405	85	55	34	267	305	375	18	19.1
13 010 505	MB 50 x 500	54.5	41	113	356	465	54	74	39	286	311	420	18	24.5

Clamps Type BR

Kit V



Art. No.	Marking	Dimensions in mm						Weight in kg
		D	G	H	ØI	K	M	
01 500 007	Clamp BR 50	78	130	170	18	50	6	0.66

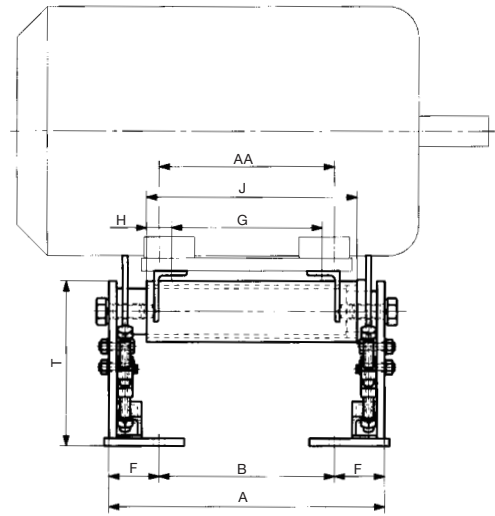
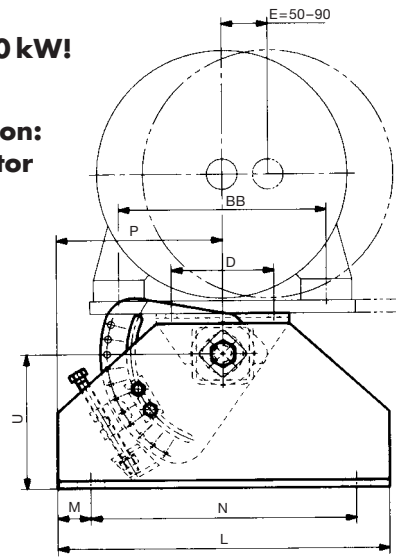


Motorbase

Type MB 70

**Heavy duty motorbase
for belt drives of max. 110 kW!**

**Selection of base dimension:
according to relevant motor
frame size**



Motorbase Type	Frame size	1000 min ⁻¹ kW	1500 min ⁻¹ kW	3000 min ⁻¹ * kW	AA	BB
MB 70 x 400	D 250M	37	55	55	349	406
MB 70 x 550	D 280S	45	75	75	368	457
	D 280M	55	90	90	419	457
MB 70 x 650	D 315S	75	110	110	406	508

* Due to the relatively low torque momentum, we recommend to install 2-pole motors on the next smaller MB 70 size – or eventually on the type MB 50. The motor plate, which has to be added by the customer, should be installed off-center (dimension E=50–90 mm) in order to provide the best possible lever motion by different positions of the driven pulley.

Overall Dimensions

(Details see drawing ROSTA assembling kits MB 70, page 105)

Motorbase Type	Dimensions in mm												
	A	B	D	F	G	H	J	L	M	N	P	T	U
MB 70 x 400	550	350	200	100	300	50	420	650	65	520	325	325	265
MB 70 x 550	700	500	200	100	360	95	570	650	65	520	325	325	265
MB 70 x 650	800	600	200	100	380	135	670	650	65	520	325	325	265

Torque Values of the ROSTA Motorbases

Motorbase Type	Torque in Nm on rubber suspension by pretension of:					
	5°	10°	15°	20°	25°	30°
MB 70 x 400	250	765	1315	2160	3175	4750
MB 70 x 550	345	1050	1800	2970	4365	6530
MB 70 x 650	405	1240	2135	3510	5160	7720

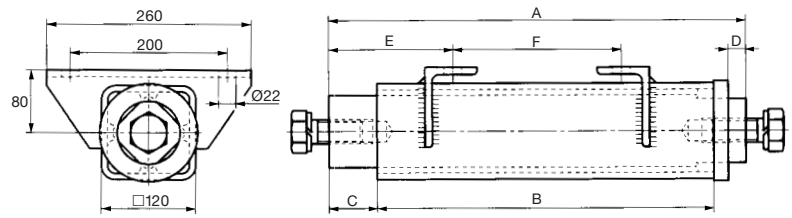


Assembling Kits

Type MB 70

ROSTA Rubber Suspension Unit to MB 70 with Cardanic Bush

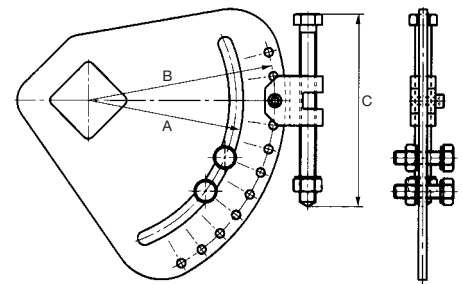
Kit I



Art. No.	Motorbase Type	A	B	C	D	E	F	Weight in kg
13 020 701	MB 70 x 400	520	420	60	22	110	300	38.4
13 020 702	MB 70 x 550	670	570	60	22	155	360	49.4
13 020 703	MB 70 x 650	770	670	60	22	195	380	56.0

Pretensioning Device to MB 70

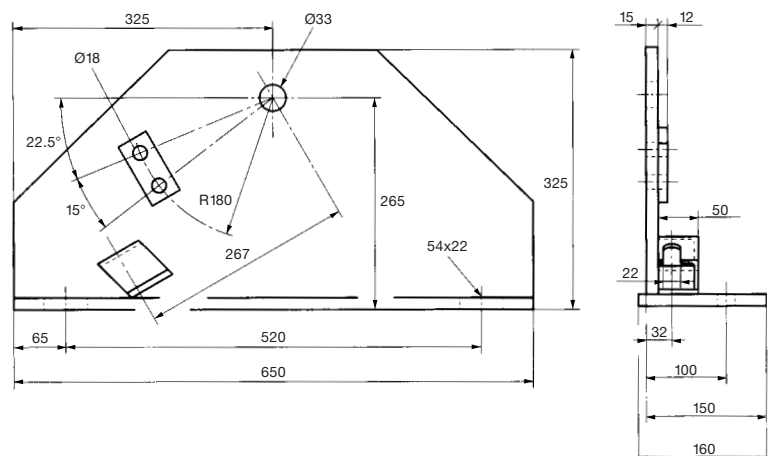
Kit II (always two units per MB 70)



Art. No.	Marking	A	B	C	Weight in kg
13 040 701	Pretensioning device to MB 70	180	227	220	6.53

Side Support to MB 70

Kit III (always 1 left and 1 right support per MB 70)



Art. No.	Marking	Weight in kg
13 530 701	Side support to MB 70 right	33.15
13 530 702	Side support to MB 70 left	33.15



Applications



MB 50 for belt drive on circular motion screen



MB 70 with variable speed drive for crusher



MB 50 on punching press



MB 50 with drive motor for exciter



MB 50 with drives for roller mills



MB 70 with drive for marble saw



Applications



MB on screen drive



MB 70 motor mount in crusher



MB motor mount on dewatering screen



Elastic suspension of chipper-drive with MB 100



MB mount of screen drive



MB mounts of drives on asphalt screen