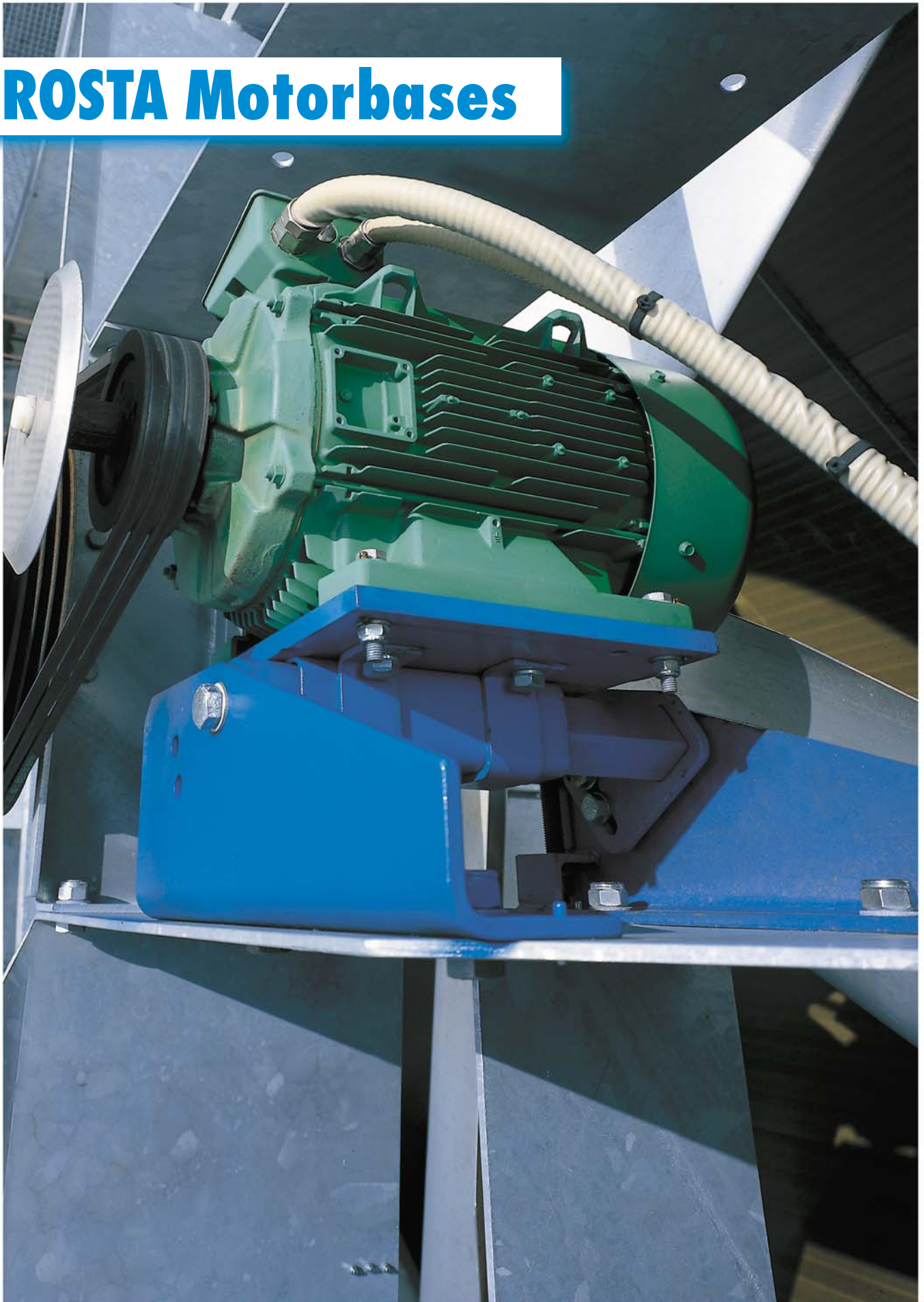


ROSTA Motorbases





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 about 0.75 to 45 kW (**Heavy duty motorbases to suit 110 kW belt drives are also available!**) 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 4 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.

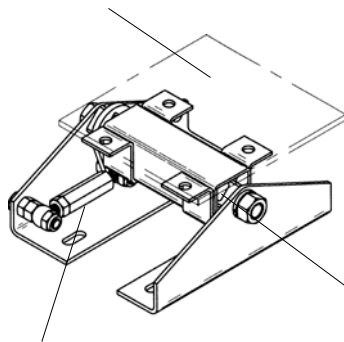
ROSTA Tensioning Motorbases Type MB

- self-adjusting
- maintenance-free
- overload-proof
- non-slip
- dampen harmful vibrations
- extend belt drive

for all multiple V-belt drives

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

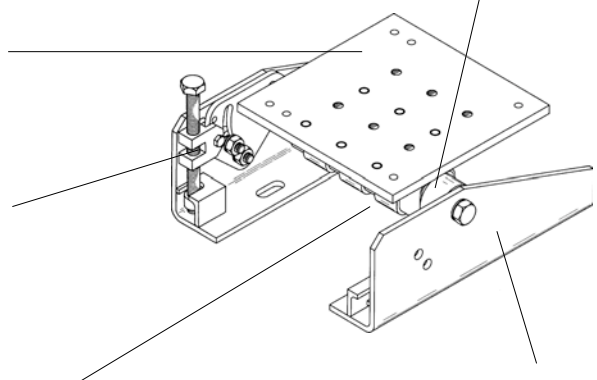
MB 50

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

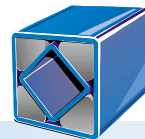
standardized motor plate with bores according to the framesize of the motor

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



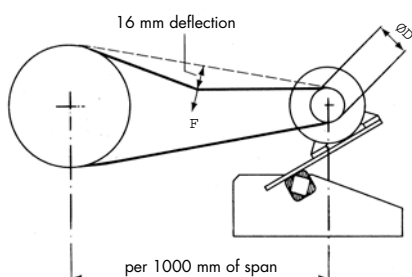
side supports with slot-bores



Technology

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 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.



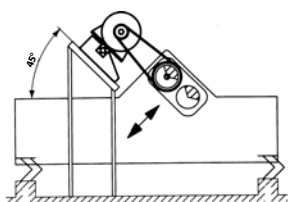
Tensile-Control-Forces for V-belts

(Examples for most usual V-belts)

Belttypes	Ø Small Pulley in mm	Control Force* in N
SPZ (10N)	56– 95 100–140	12– 15 17– 20
SPA (13N)	100–132 140–200	25– 27 30– 35
SPB (16N)	160–224 236–315	45– 50 60– 65
SPC (22N)	224–355 375–560	80– 90 100–120
10x 6 (Z)	56–100	12– 15
13x 8 (A)	80–140	12– 15
17x11 (B)	125–200	25– 30
22x14 (C)	200–400	55– 60
32x20 (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.)

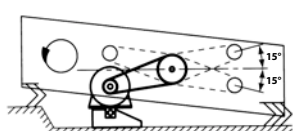
Usual Positioning of the ROSTA Motorbase in Screen Applications



Linear Motion Screen
"Low Head" Types

1. "Overhead" Configuration

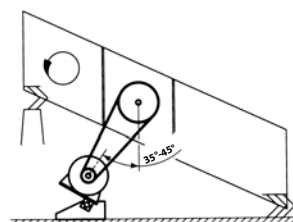
Base plate "center mounted" on ROSTA unit. Plate position horizontal on base. Installation of the base 45° inclined (aligned to vibrator).



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).



Product Range

ROSTA Motorbase Type MB 50 (MB 70) Pages 87-90 and 91-92

The type MB 50 is the most universal self-tensioning base for all friction belt drives with 5.5 to 45 kW (**Heavy duty motorbases to suit 110 kW belt drives are also available!**) electric motors (frame size dimensions D 132 S to D 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 page 88). 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 87). 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.



ROSTA Motorbase Type MB 27 Page 93

The ideal standardized motorbase for smaller belt drives with electric motors from 0.75 to 4.0 kW (frame size dimensions D90 to D112M). 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 adaption of the working angle to the driven pulley. All steel parts are painted with a blue primer.



ROSTA Rubber Suspension Unit Type DK-S Page 96

Elastic self-tensioning motorbases can be fabricated for smaller belt drives in using ROSTA rubber suspension units type DK-S and base plates manufactured by the customer. This self-made system is suited for highspeed belt drives from about 0.25 to 7.5 kW. The rubber suspension units type DK-S with their round outer housing and appropriate friction brackets allow the individual positioning and preloading of the motorbase plate. The base plate is assembled into the ROSTA elements by inserting the square bar into the elements.

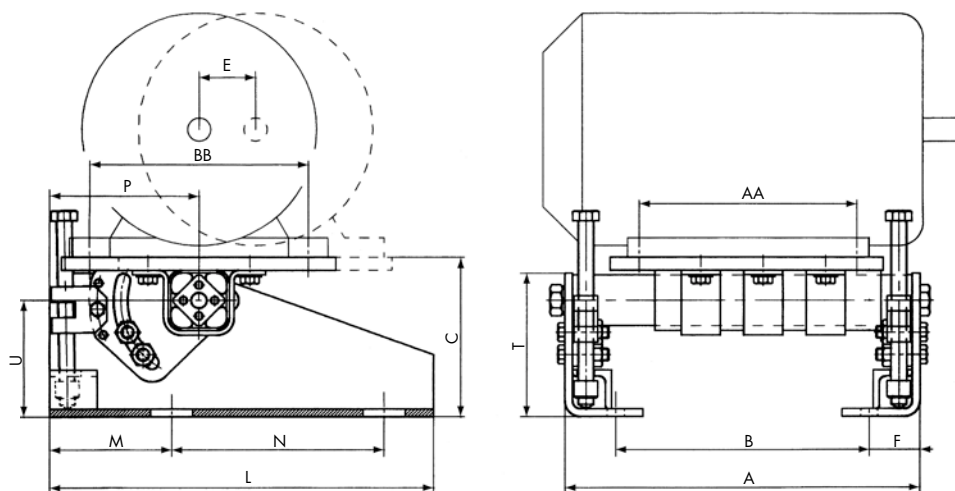




Motorbase

Type MB 50

**Selection of Base Dimension:
according to relevant
motor frame size**



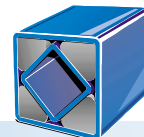
Motorbase Type	NEMA Motor	1200 RPM HP	1800 RPM HP	Dimensions in inches	
				AA	BB
MB 50 x 160	213T	3.0	5.0 – 7.5	5.5	8.5
	213T	5.0	7.5 – 10.0	7.0	8.5
MB 50 x 200	254T	7.5	15.0	8.25	10.0
	256T	10.0	15.0 – 20.0	10.0	10.0
MB 50 x 270	284T	15.0	25.0	9.5	11.0
	286T	20.0	30.0	11.0	11.0
MB 50 x 400	324T	25.0	40.0	10.5	12.5
	326T	30.0	50.0	12.0	12.5
MB 50 x 500	364T	40.0	60.0	11.25	14.0
	365T	50.0	70.0	12.25	14.0

Overall Dimensions

(Details see pages 88 – 90 «Assembling Kits»)

Motorbase Type	Dimensions in mm										
	A	B	C	E*	F	L	M	N	P	T	U
MB 50x160	355	225	204	43	65	490	155	272	190	185	150
MB 50x200	455	325	204	45	65	490	155	272	190	185	150
MB 50x270	455	325	204	72	65	490	155	272	190	185	150
MB 50x400	555	425	204	72	65	490	155	272	190	185	150
MB 50x500	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.

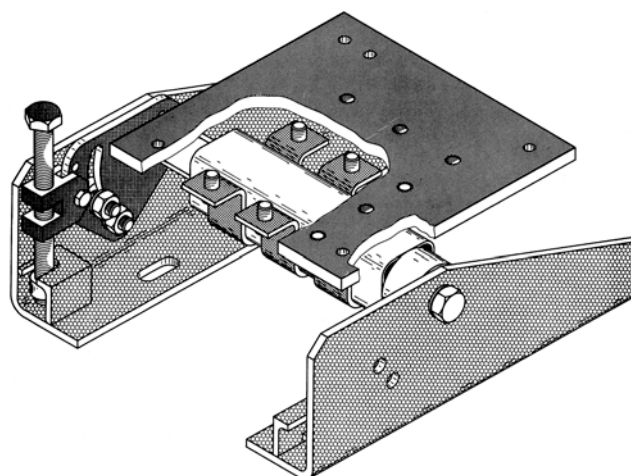


Assembling Kits

Type MB 50

Assembling Kits

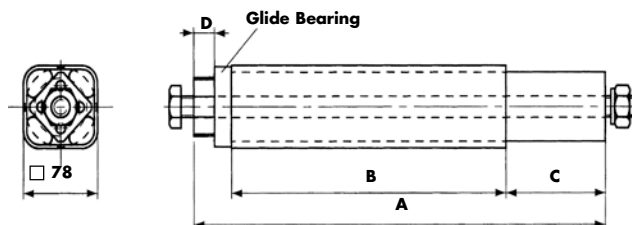
- I  ROSTA Rubber Suspension with Glide Bearing
- II  Pretensioning Device
- III  Side Supports
- IV  Base plate
- V  Clamp



Motorbase Type	Kit N°	Quantity pcs.	Art. N°	Motorbase Type	Kit N°	Quantity pcs.	Art. N°		
MB 50x160	I	1	13020501	MB 50x400	I	1	13020504		
	II	1	13040501		II	2	13040501		
	III	1	right		13530501	III	1	right	13530501
		1	left		13530502	IV	1	left	13530502
	IV	1	13010501		IV	1	13010504		
V	2	01500007	V	4	01500007				
MB 50x200	I	1	13020502	MB 50x500	I	1	13020505		
	II	1	13040501		II	2	13040501		
	III	1	right		13530501	III	1	right	13530501
		1	left		13530502	IV	1	left	13530502
	IV	1	13010502		IV	1	13010505		
V	2	01500007	V	5	01500007				
MB 50x270	I	1	13020503						
	II	1	13040501						
	III	1	right	13530501					
		1	left	13530502					
	IV	1	13010503						
V	3	01500007							

ROSTA Rubber Suspension with Glide Bearing

Kit I



Art. N°	Motorbase Type	Dimensions in mm				Weight in kg
		A	B	C	D	
13020501	MB 50x160	335	225	68	2	4.9
13020502	MB 50x200	435	240	153	2	5.8
13020503	MB 50x270	435	290	103	2	6.3
13020504	MB 50x400	535	420	73	24	8.3
13020505	MB 50x500	585	518	25	24	9.6

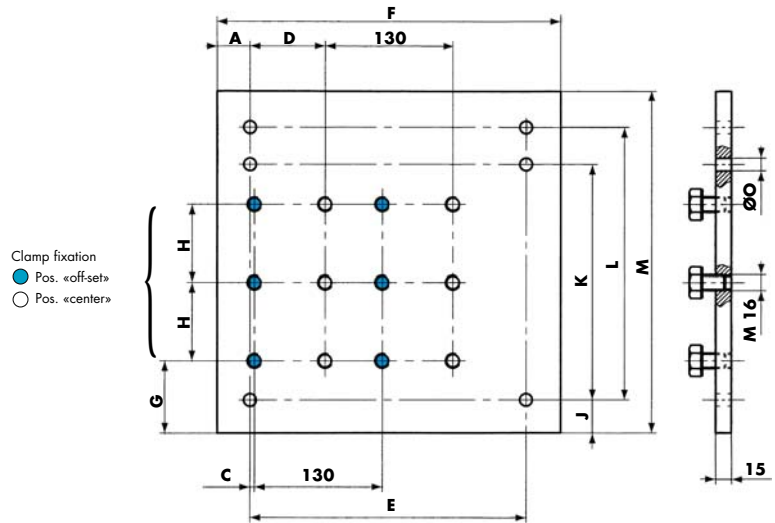


Assembling Kits

Type MB 50

Base Plate to MB 50

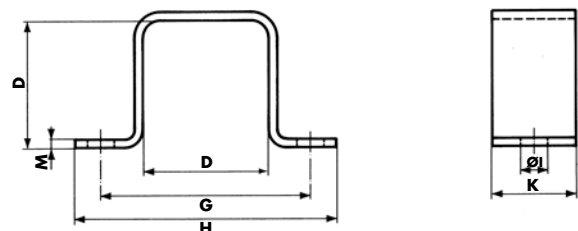
Kit IV



Art. N°	Motorbase Type	Dimensions in inches													Weight in lbs
		A	C	D	E	F	G	H	J	K	L	M	ØO	S	
13010501	MB 50 x 160	1.02	0	1.69	8.50	10.63	2.52	4.72	0.94	5.50	7.00	9.06	.375	1.81	17.2
13010502	MB 50 x 200	1.10	0.67	2.44	10.00	12.20	2.72	5.12	1.14	8.25	10.00	12.20	.55	2.20	26.7
13010503	MB 50 x 270	1.40	0.10	2.93	11.00	13.78	2.91	3.15	1.34	9.50	11.00	13.78	.55	2.40	34.0
13010504	MB 50 x 400	1.71	0.87	3.70	12.50	15.94	3.35	2.17	1.34	10.50	12.00	14.76	.68	2.83	42.1
13010505	MB 50 x 500	2.15	1.61	4.45	14.00	18.31	2.13	2.91	1.54	11.25	12.25	16.54	.68	1.61	54.0

Clamps Type BR

Kit V



Art. N°	Marking	Dimensions in mm						Weight in kg
		D	G	H	ØI	K	M	
01500007	Clamp BR 50	78	130	170	18	50	6	0.66

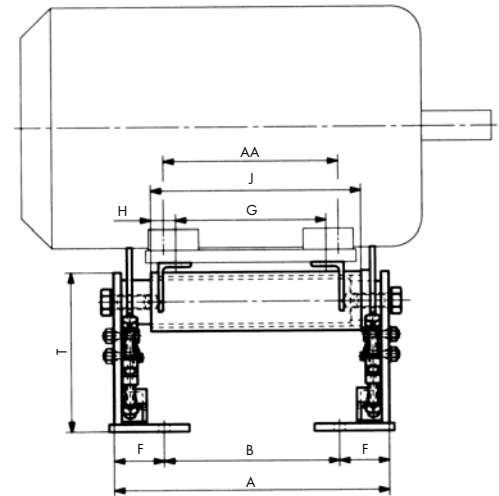
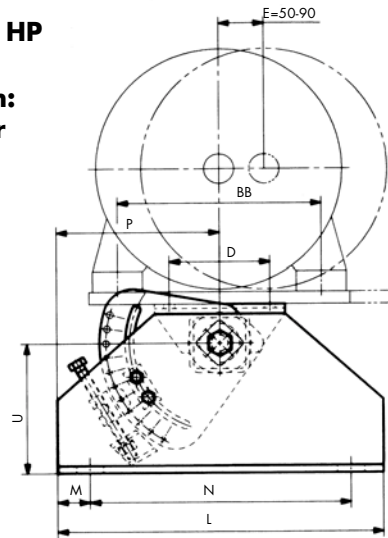


Motorbase

Type MB 70

**Heavy Duty Motorbase
for Belt Drives of max. 150 HP**

**Selection of Base Dimension:
according to relevant motor
frame size**



Motorbase Type	NEMA Motor	1200 RPM HP	1800 RPM HP	(inches) AA	(inches) BB
MB 70 x 400	404T	60	100	12.25	16.00
MB 70 x 550	405T	75	125	13.75	16.00
	444T	100	150	14.50	18.00
MB 70 x 650	445T	125	–	16.50	18.00

* 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 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)

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 ft.-lbs on rubber suspension by pretension of:					
	5°	10°	15°	20°	25°	30°
MB 70 x 400	181.2	554.4	952.9	1565.2	2300.7	3442.0
MB 70 x 550	250.0	760.9	1304.4	2152.2	3163.0	4731.9
MB 70 x 650	293.5	898.6	1547.1	2543.5	3739.1	5594.2

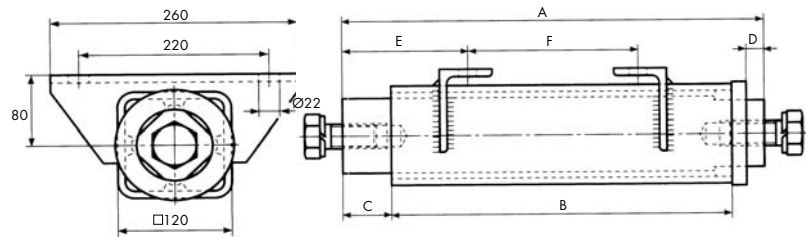


Assembling Kits

Type MB 70

ROSTA Rubber Suspension Unit to MB 70 with Cardanic Bush

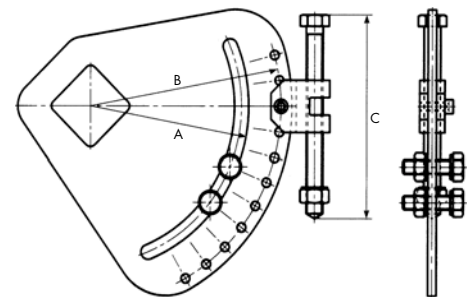
Kit I



Art. No	Motorbase Type	A	B	C	D	E	F	Weight in kg
13020701	MB 70x400	520	420	60	22	110	300	38.4
13020702	MB 70x550	670	570	60	22	155	360	49.4
13020703	MB 70x650	770	670	60	22	195	380	56.0

Pretensioning Device to MB 70

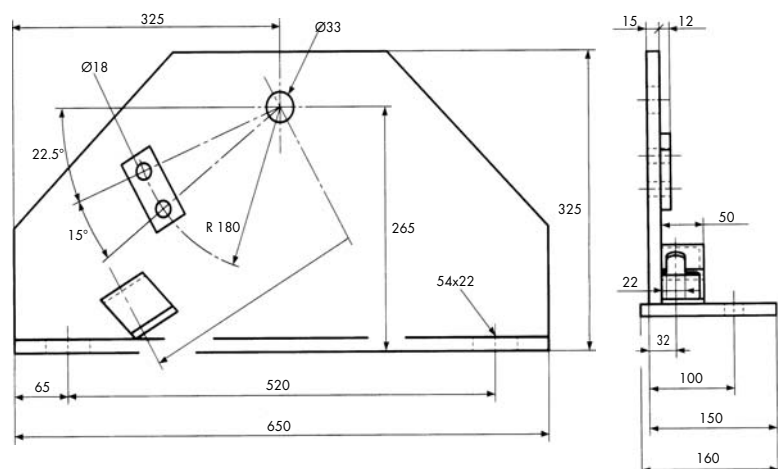
Kit II (always two units per MB 70)



Art. No	Marking	A	B	C	Weight in kg
13040701	Pretensioning Device to MB 70	180	227	220	6.53

Side Support to MB 70

Kit III



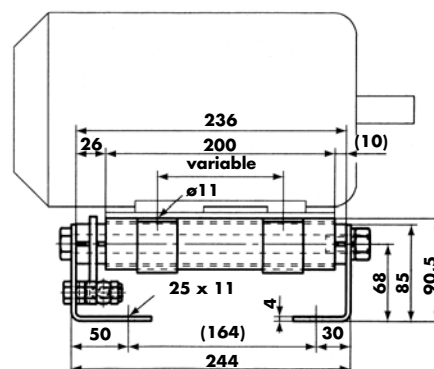
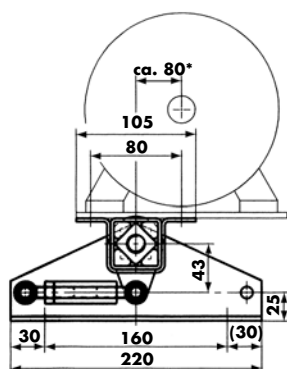
Art. No	Marking	Weight in kg
13530701	Side Support to MB 70 right	33.15
13530702	Side Support to MB 70 left	33.15



Motorbase

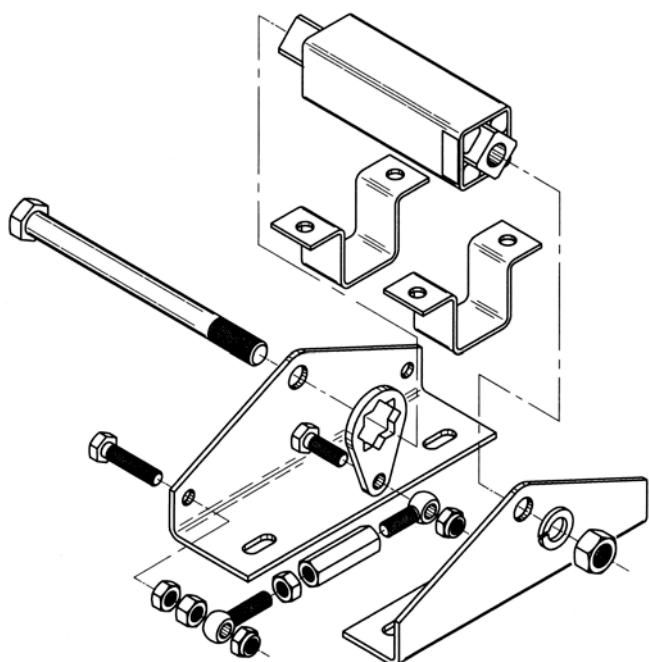
Type MB 27

**Selection of Base Dimension:
according to relevant motor
frame size**



Art. No	Motorbase Type	NEMA Motor	1200 RPM HP	1800 RPM HP	Weight in kg
13000210	MB 27 x 80	143T 145T	0.75 1.0	1.0 1.5–2.0	3.88
13000211	MB 27 x 120	182T 184T	1.5 2.0	3.0 5.0	3.92
13000212	MB 27 x 120	213T 215T	3.0 5.0	5.0–7.5	4.00

* The motor plate 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 motor base MB 27. Contrary to the large type MB 50 and MB 70, the MB 27 motor base is delivered completely assembled, but without motor plate.

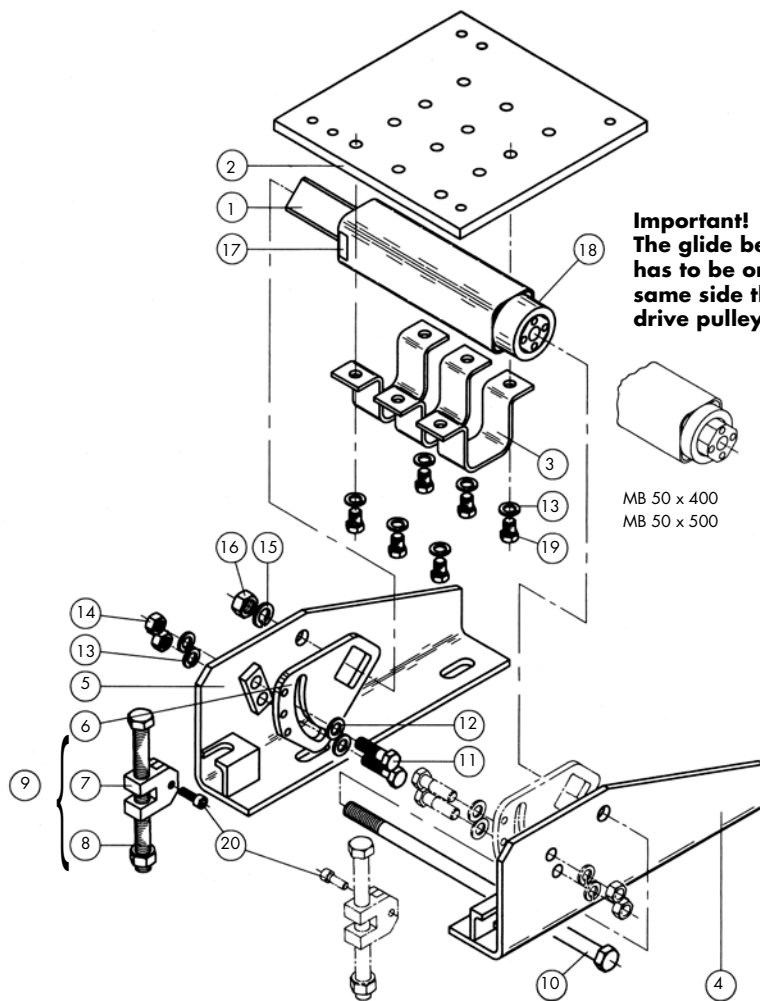
In order to facilitate the installation and the handling of the pretensioning device it may be rotated by 180°.

The outer dimension is the same for all three base sizes. The rubber suspension units of the MB 27x80 and MB 27x120 types are divided into two sections, but assembled in a common housing.



Motorbase

Type MB 50



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

MB 50 x 400
MB 50 x 500

- 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 20
- 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

Preliminary Assembly: ROSTA Motorbase Type MB 50

The ROSTA motorbase is supplied as a component kit (kits I to V, see page 88) and can be assembled in a few operations as shown in the exploded drawing above.

Important

Motorbases of sizes MB 50x160, MB 50x200 and MB 50x270 have only **one** pretensioning device (9). Motorbases MB 50x400 and MB 50x500 are provided with **two** pretensioning devices (see page 88).

Tool

- 2 fork wrenches sw 30 mm
 - 2 fork wrenches sw 24 mm
 - 1 socket spanner (Allen key) sw 8 mm
- (sw = width across flats)

Assembly

Place pretensioning device (9) on square socket on fan side; with types MB 50x400 and MB 50x500 place **second** pretensioning device (9) on protruding square on pulley side (18). Fit the two side supports (4) and (5) both sides on the rubber suspension unit (1) with the central M 20 hex. shaft (10). Insert the end of jacking bolt (8) of the pretensioning device in the slot provided on the side support. Place the 2 hex. screws M 16 (11) through the circular arc slot of the friction plate (6) and side support (5) and tighten nuts M 16 (14) slightly. Set ideal working angle of base plate (2) as shown on page 85 by inserting and tightening hex. set bolt M 10 (20) of adjusting block (7) through the corresponding hole in friction plate (6). Fit base plate (2) with clamps BR 50 (3) either **"centrally or laterally"** on rubber suspension unit (1). Pretension jacking bolt (8) of pretensioning device (9) slightly in the direction of subsequent tensioning of the motorbase. The **MB 50** is then ready to accept the motor for final assembly. Fitting instructions, retensioning and changing the belt are described on page 93.



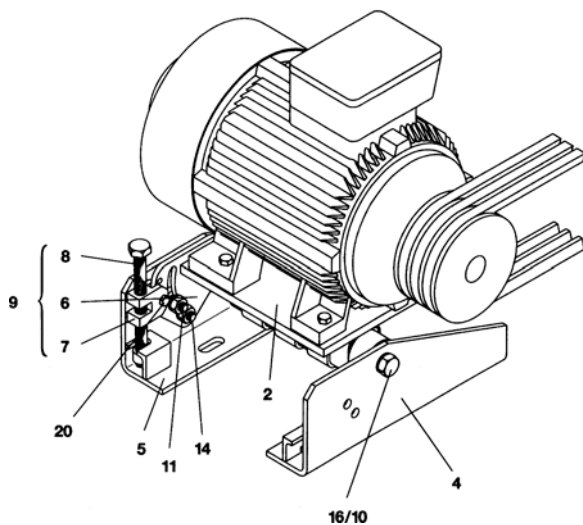
Motorbase

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 to part of machine supplied by customer. Check whether the alignment of the base plate (2) corresponds to the optimum working position (see page 85), 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.



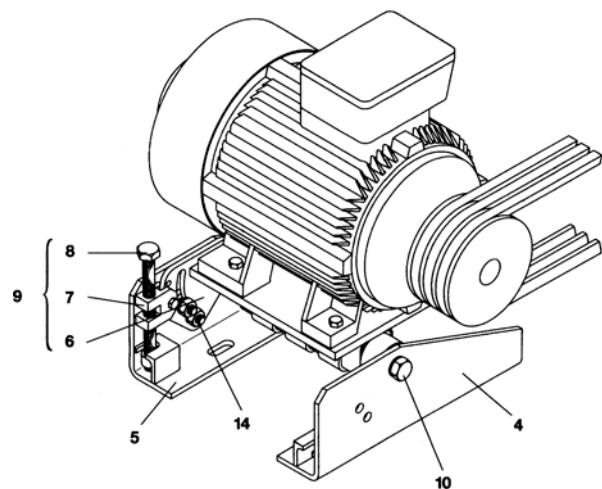
4. Turn jacking bolt M 20 (8) counter-clockwise to tension the belt(s). Check the belt tension with the data specified by the belt manufacturer or according to the test force table on page 85.
5. Tighten all locking bolts M 16 (11) of the friction plate after the tensioning process; tightening torque 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.

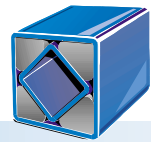
Retensioning

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.

Changing the belts

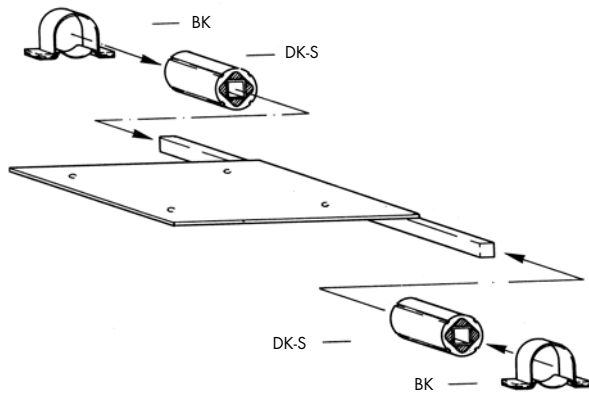
1. Remove the belt guards.
2. Fit the adjusting block (7) if necessary, bolt with jacking bolt (8) and friction plate (6).
3. Release nuts on central hex. shaft M 20 (10) and release all nuts M 16 (14) of connection between friction plate (6) and side support (5), so that the base plate is free and can be swivelled (raised) via the rubber mounting by means of pretensioning device (9).
4. Turn the jacking bolt (8) clockwise to raise the motor before exchanging the belt(s).
5. Turn jacking bolt (8) back counter-clockwise to tension the belt(s). Check the belt tension – as described in point 4 of the fitting instructions. Then proceed according to points 5 to 8 of the fitting instructions.





Motorbase

Tensioning Motorbases with ROSTA Rubber Suspension Units Type DK-S for Base Plates made by the Customer

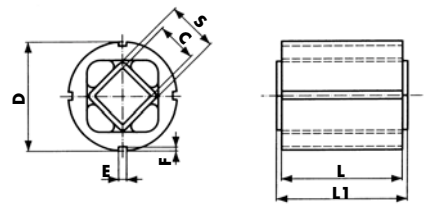
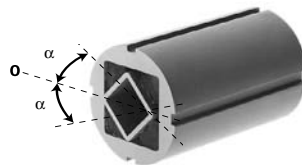


The units type DK-S offer an ideal low-cost design of a motorbase for smaller belt drives where the mechanical components can be made in-house. The motorbase plate, with welded on square section, has a rubber suspension unit type DK-S mounted on both sides. The friction brackets type BK secure the unit and allow for easy positioning of the motorbase. The belt drive is pretensioned by using a hook wrench in the four grooves of the unit housing type DK-S. Check the belt tension using the instructions on page 85, then tighten the brackets.

The unit sizes are selected according to the motor rating table below. Two ROSTA units are used for each motorbase. (Additional unit sizes can be selected on page 20 of this catalogue.)

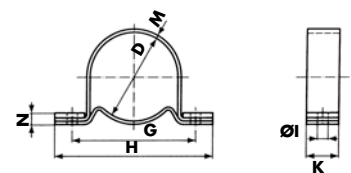
When units types DK-S 27x100, DK-S 45x100 and DK-S 50x120 are used, two brackets type BK are required for each element. Only one bracket is required for units with shorter lengths.

ROSTA Rubber Suspension Type DK-S



Art. N°	Type	Motor-power HP	Dimensions in mm							Torque in ft.-lbs by α			Weight in lbs
			L	L ₁ _{0.3}	C	D	E	F	S	10°	20°	30°	
01081007	DK-S 18 x 30	0.33	30	35	12 ^{+0.25} ₀	45 ^{+0.4} ₀	5	2.5	18	3.32	8.11	15.18	0.29
01081008	DK-S 18 x 50	0.75	50	55	12 ^{+0.25} ₀	45 ^{+0.4} ₀	5	2.5	18	5.53	13.49	25.35	0.44
01081011	DK-S 27 x 60	1.00	60	65	22 ^{+0.25} ₀	62 ^{+0.5} ₀	6	3	27	11.79	29.70	63.01	0.88
01081012	DK-S 27 x 100	1.50	100	105	22 ^{+0.25} ₀	62 ^{+0.5} ₀	6	3	27	19.68	49.53	105.02	1.46
01081013	DK-S 38 x 60	2.00	60	70	30 ^{+0.25} ₀	80 ^{+0.6} ₀	7	3.5	38	22.40	57.49	119.39	1.59
01081014	DK-S 38 x 80	3.00	80	90	30 ^{+0.25} ₀	80 ^{+0.6} ₀	7	3.5	38	29.85	76.65	159.19	2.07
01081016	DK-S 45 x 80	4.00	80	90	35 ^{+0.25} ₀	95 ^{+0.8} ₀	8	4	45	45.99	117.92	235.84	2.98
01081017	DK-S 45 x 100	5.00	100	110	35 ^{+0.25} ₀	95 ^{+0.8} ₀	8	4	45	57.49	147.40	294.80	3.64
01081019	DK-S 50 x 120	7.50	120	130	40 ^{+0.25} ₀	108 ⁺¹ ₀	8	4	50	92.86	252.05	552.75	5.62
01081019	DK-S 50 x 120	10.00	120	130	40 ^{+0.25} ₀	108 ⁺¹ ₀	8	4	50	92.86	252.05	552.75	5.62

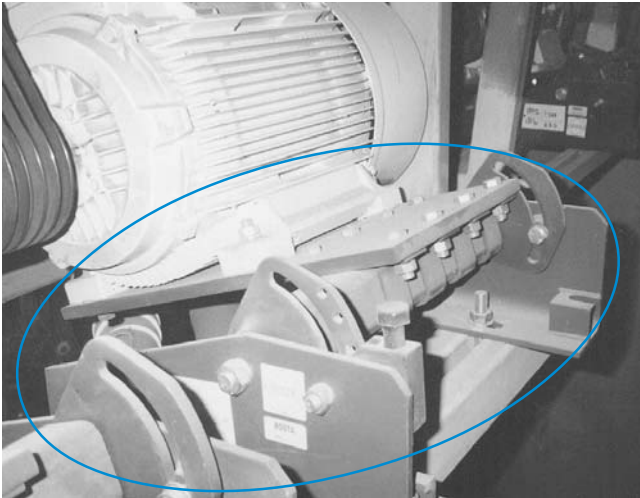
Clamp Type BK



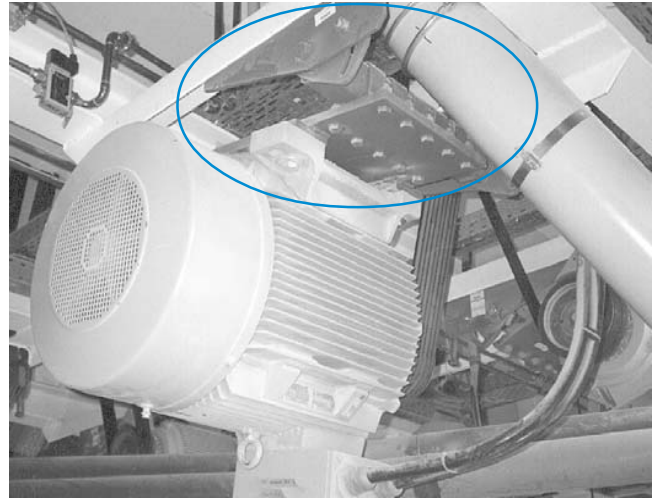
Art. N°	Type	Dimensions in mm							Weight in kg
		D	G	H	ØI	K	M	N	
01520003	BK 18	45	68	90	8.5	30	2	8	0.14
01520004	BK 27	62	92	125	10.5	35	2.5	10	0.29
01520005	BK 38	80	115	150	12.5	40	3	11	0.45
01520006	BK 45	95	130	165	12.5	45	3.5	13	0.68
01520007	BK 50	108	152	195	16.5	50	4	15	0.93



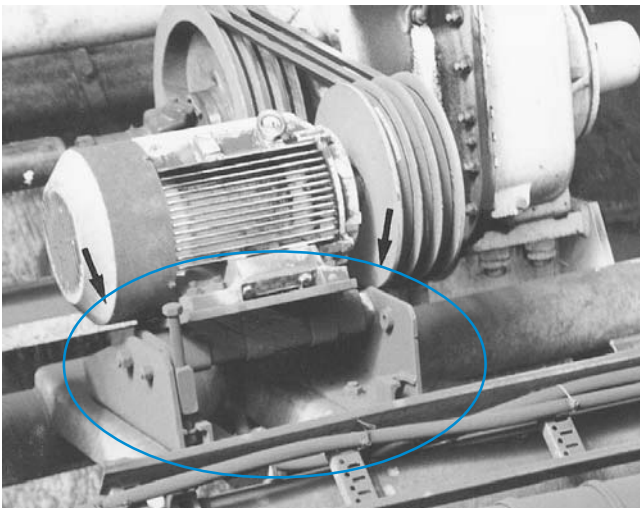
Installations



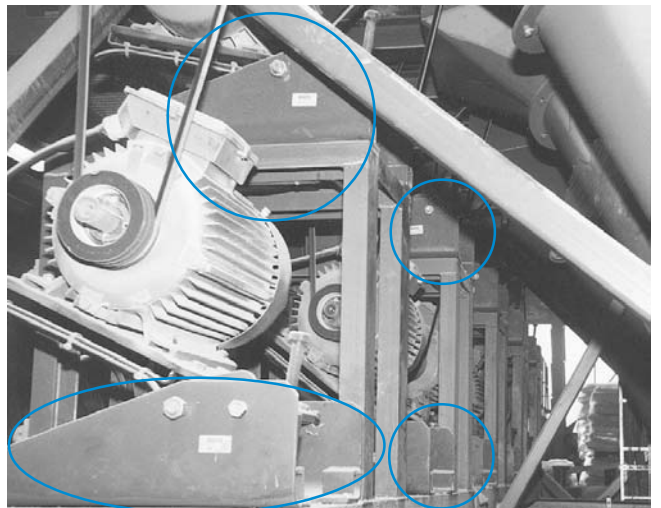
Drive for eccentric press on MB 50



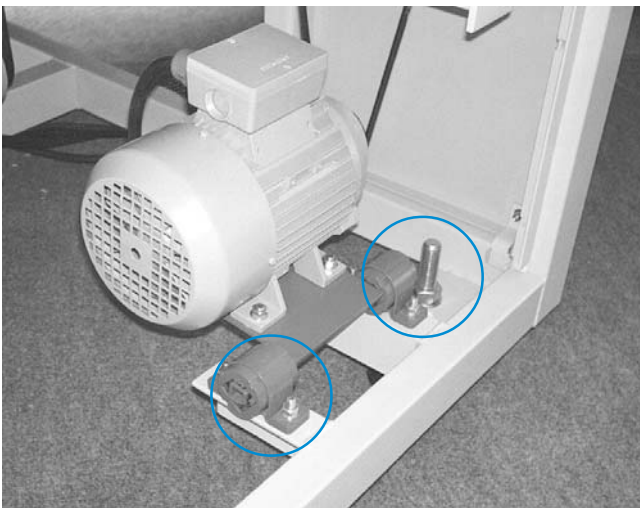
37 kW motor to flour-mill on MB 50 (hanging installation)



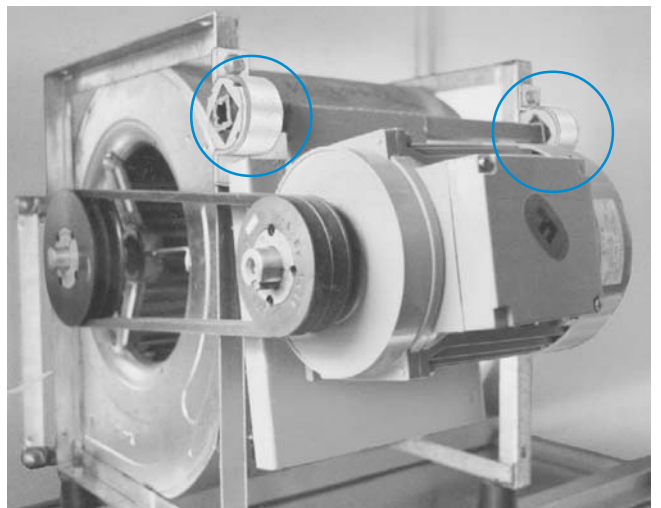
Drive to exciter in linear „Low Head“ screen on MB 50



Drive motors to hammer-mills on MB 50



Motorbase with rubber suspensions type DK-S in roller conveyor



Motorbase for radial fan drive on DK-S units.