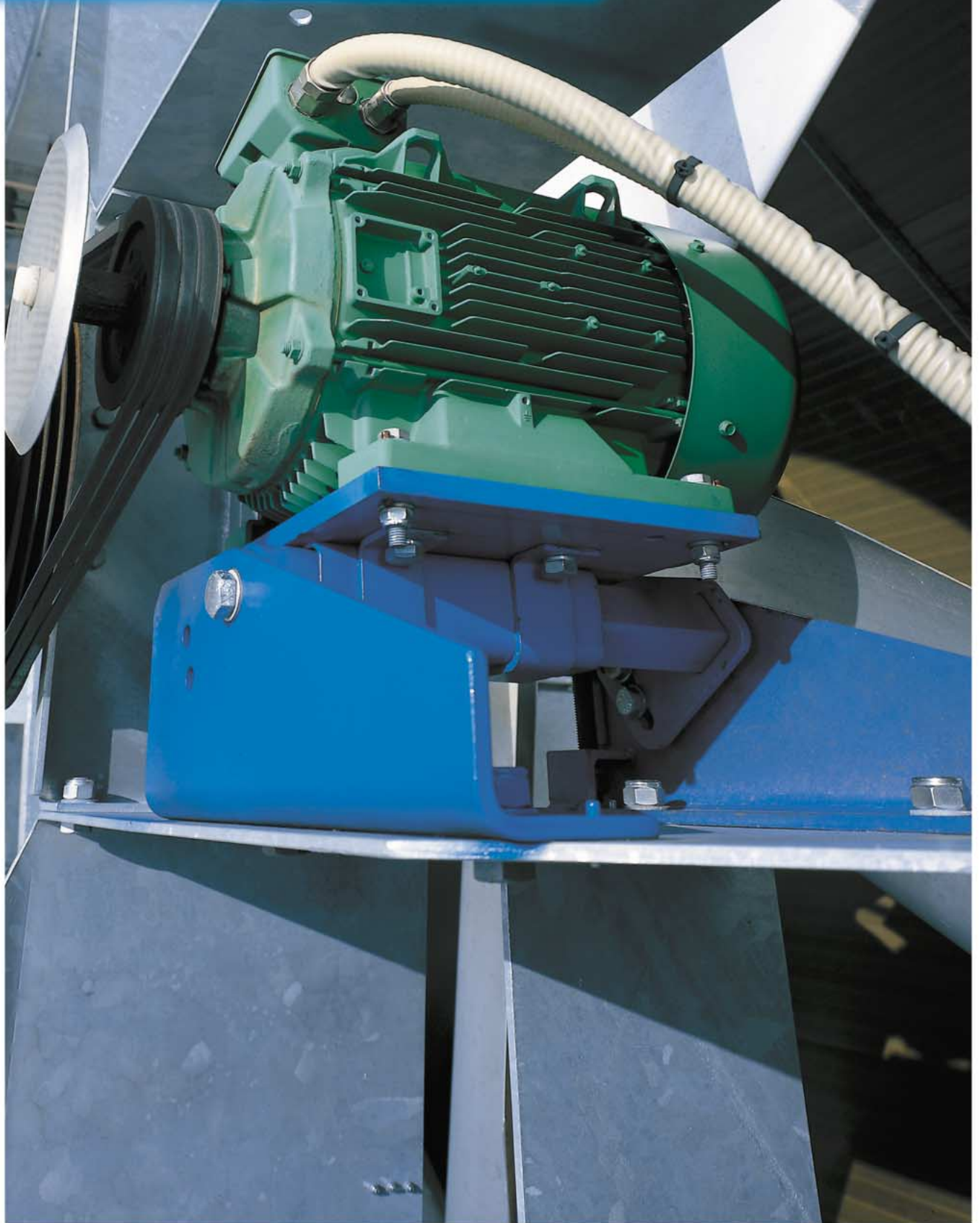


# ROSTA Motorbases





## 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 HP (**Heavy duty motorbases to suit 125 HP 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 screeching. 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.

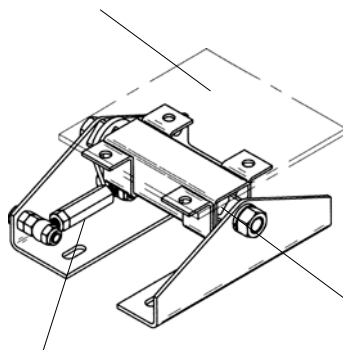
### ROSTA Tensioning Motorbases Type MB

- 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

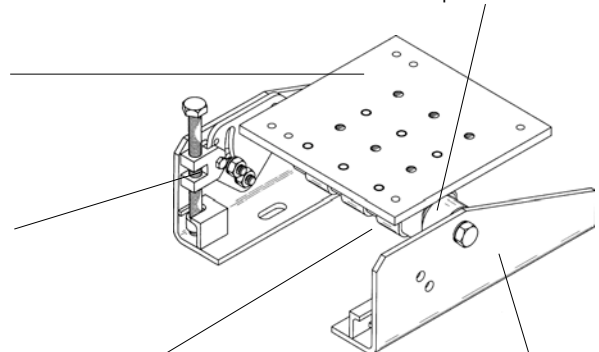
standardized motor plate with bores according to the framesize of the motor

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



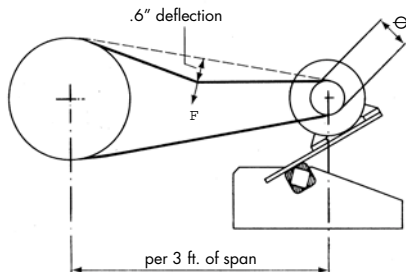
side supports with slot-bores



## 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.



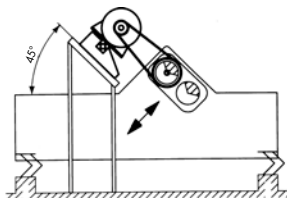
### Tensile-Control-Forces for V-belts

(Examples for most usual V-belts)

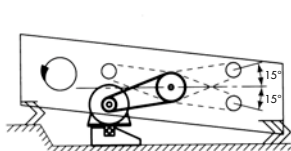
Belt Section	Ø Small Pulley Diameter (inches)	Testforce F* in lbs.
SPZ (10N)	2.20 – 3.75 3.94 – 5.50	2.25 – 3.38 3.38 – 4.50
SPA (13N)	3.94 – 5.20 5.50 – 7.87	4.50 – 6.08 6.30 – 7.88
SPB (16N)	6.30 – 8.82 9.29 – 12.40	7.88 – 11.25 11.25 – 14.62
SPC (22N)	8.82 – 14.00 14.75 – 22.00	13.50 – 20.25 20.25 – 27.00
<b>13x8 (A)</b>	3.15 – 5.50	2.25 – 3.38
<b>17x11 (B)</b>	4.92 – 7.87	4.50 – 6.75
<b>22x14 (C)</b>	7.87 – 15.75	9.00 – 13.50
<b>32x19 (D)</b>	14.00 – 23.60	15.75 – 23.63

\* force required to deflect belt .6" per 3 ft. of span. By shorter or longer span, the value of .6" has to be interpolated.

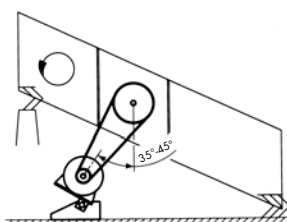
## Usual Positioning of the ROSTA Motorbase in Screen Applications



Linear Motion Screen  
«Low Head» Types



Circular Motion Screen  
«Ripl. Flow» Types



Circular Motion Screen  
«Ripl. Flow» 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).

### 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.

### 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 Pages 85-88 and 89-90 MB 70



The type MB 50 is the most universal self-tensioning base for all friction belt drives with 3.0 to 75HP (**Heavy duty motorbases to suit 125 HP belt drives are also available!**) electric motors (frame size dimensions 213 T to 365 T). 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 86). 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 85). 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 91



The ideal standardized motorbase for smaller belt drives with electric motors from 0.75 to 5.0 HP (frame size dimensions 143 T to 184 T). 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 94



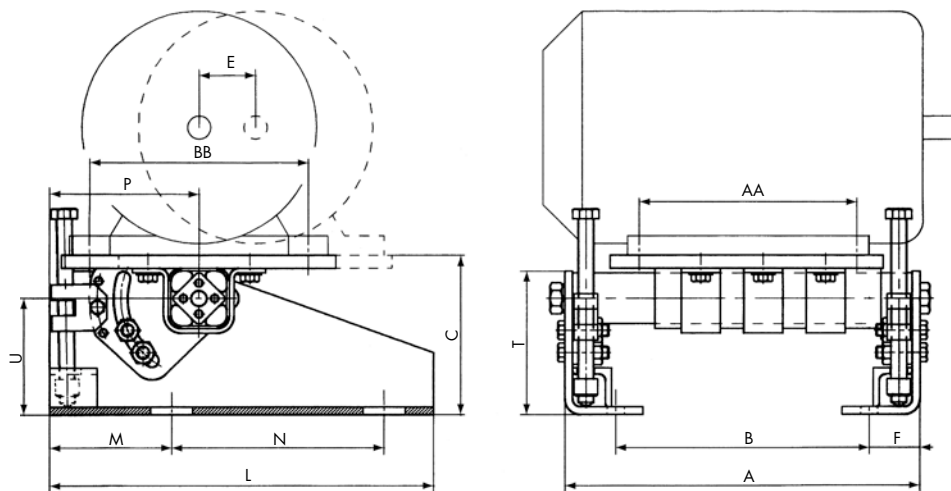
Elastic self-tensioning motorbases can be fabricated for smaller belt drives in using ROSTA rubber suspension units type DK-S and base plates manufactured by the customer. This self-made system is suited for highspeed belt drives from about 0.33 to 10.0 HP. The rubber suspension units type DK-S with 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



UPC #	Motorbase Type	NEMA Motor	1200 RPM HP	1800 RPM HP	(inches) AA	(inches) BB
63 018	MB 50x160	213T	3.0	5.0-7.5	5.51	8.50
		215T	5.0	7.5-10.0	7.01	8.50
63 019	MB 50x200	254T	7.5	15.0	8.27	10.00
		256T	10.0	15.0-20.0	10.00	10.00
63 020	MB 50x270	284T	15.0	25.0	9.49	10.98
		286T	20.0	30.0	10.98	10.98
63 021	MB 50x400	324T	25.0	40.0	10.50	12.52
		326T	30.0	50.0	12.00	12.52
63 022	MB 50x500	364T	40.0	60.0	11.26	14.02
		365T	50.0	75.0	12.24	14.02

### Overall Dimensions

(Details see pages 86 – 88 «Assembling Kits»)

Motorbase Type	Dimensions in inches										
	A	B	C	E*	F	L	M	N	P	T	U
MB 50x160	13.98	8.86	8.07	1.69	2.56	19.29	6.10	10.71	7.48	7.28	5.91
MB 50x200	17.91	12.80	8.07	1.77	2.56	19.29	6.10	10.71	7.48	7.28	5.91
MB 50x270	17.91	12.80	8.07	2.83	2.56	19.29	6.10	10.71	7.48	7.28	5.91
MB 50x400	21.85	16.73	8.07	2.83	2.56	19.29	6.10	10.71	7.48	7.28	5.91
MB 50x500	23.81	18.70	8.07	2.83	2.56	19.29	6.10	10.71	7.48	7.28	5.91

\* 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

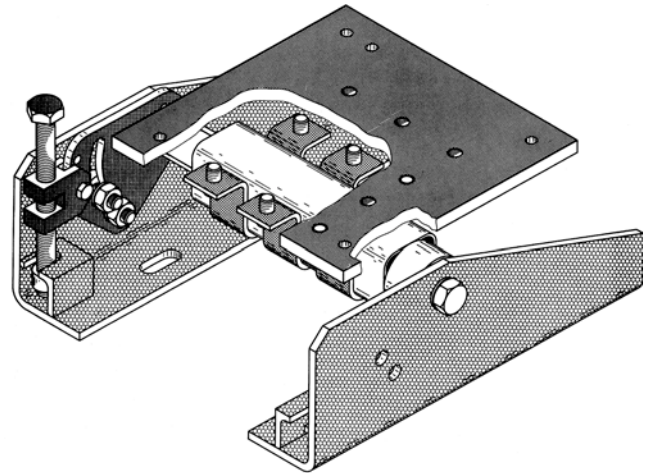


## Assembling Kits

## Type MB 50

### Assembling Kits

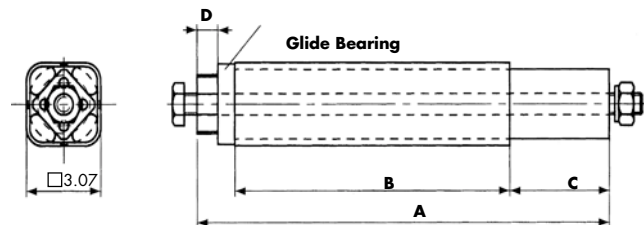
- I ROSTA Rubber Suspension with Glide Bearing
- II Pretensioning Device
- III Side Supports
- IV Base plate
- V Clamp



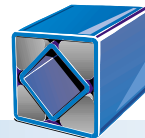
Motorbase Type	Kit No.	Quantity pcs.	UPC #	Motorbase Type	Kit No.	Quantity pcs.	UPC #		
MB 50x160	I	1	63 028	MB 50x400	I	1	63 031		
	II	1	57 857		II	2	57 857		
	III	1	right		57 711	III	1	right	57 711
		1	left		57 712	III	1	left	57 712
	IV	1	63 023		IV	1	63 026		
V	2	25 006	V	4	25 006				
MB 50x200	I	1	63 029	MB 50x500	I	1	63 032		
	II	1	57 857		II	2	57 857		
	III	1	right		57 711	III	1	right	57 711
		1	left		57 712	III	1	left	57 712
	IV	1	63 024		IV	1	63 027		
V	2	25 006	V	5	25 006				
MB 50x270	I	1	63 030						
	II	1	57 857						
	III	1	right	57 711					
		1	left	57 712					
	IV	1	63 025						
V	3	25 006							

### ROSTA Rubber Suspension with Glide Bearing

Kit I



UPC #	Motorbase Type	Dimensions in inches				Weight in lbs.
		A	B	C	D	
63 028	MB 50x160	13.19	8.86	2.68	0.08	10.80
63 029	MB 50x200	17.13	9.45	6.02	0.08	12.79
63 030	MB 50x270	17.13	11.42	4.06	0.08	13.89
63 031	MB 50x400	21.06	16.54	2.87	0.94	18.30
63 032	MB 50x500	23.03	20.39	0.98	0.94	21.16

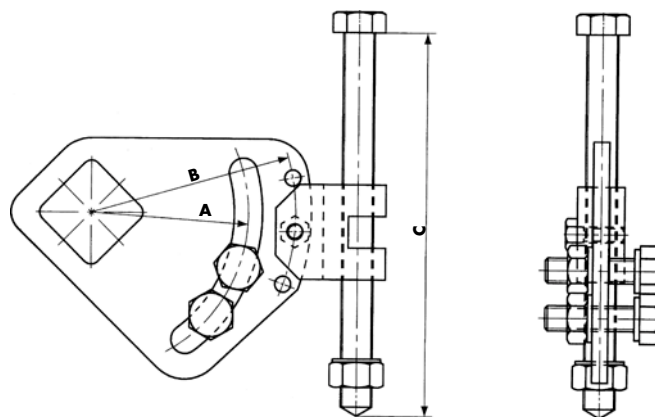


## Assembling Kits

## Type MB 50

### Pretensioning Device to MB 50

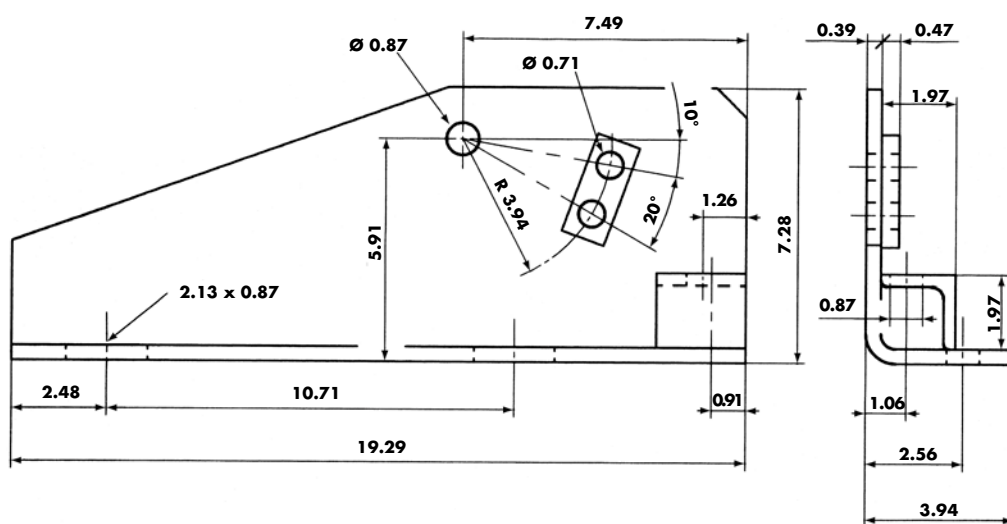
Kit II



UPC #	Marking	Dimensions in inches			Weight in lbs.
		A	B	C	
57 857	Pretensioning Device to MB 50	3.94	5.12	8.66	6.00

### Side Support to MB 50

Kit III



UPC #	Marking	Dimensions in inches		Weight in lbs.
		Details according drawing		
57 711	Side Support to MB 50 right	Details according drawing		20.59
57 712	Side Support to MB 50 left	Details mirror inverted to drawing		20.59

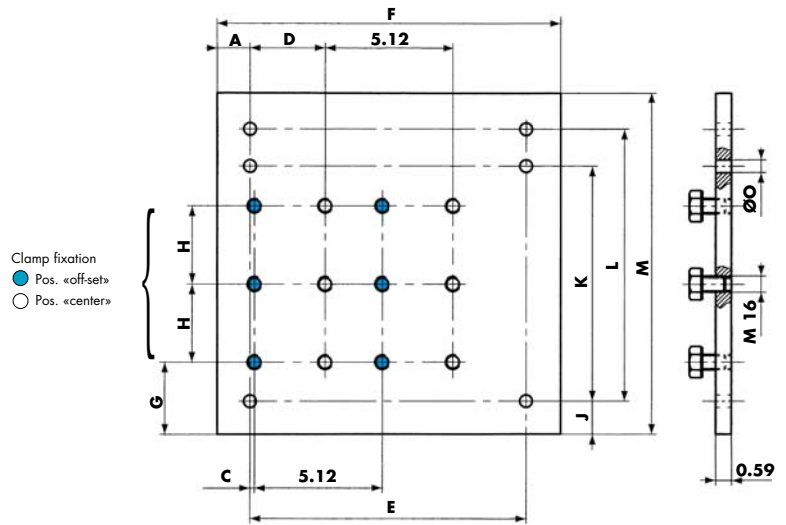


## Assembling Kits

## Type MB 50

### Base Plate to MB 50

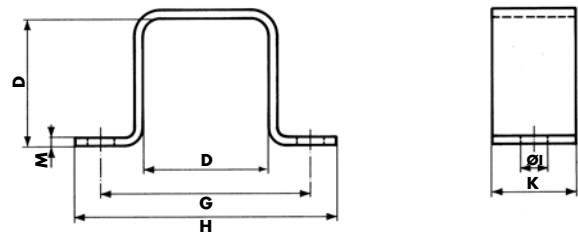
Kit IV



UPC #	Motorbase Type	Dimensions in inches											Ø O	Weight in lbs.
		A	C	D	E	F	G	H	J	K	L	M		
63 023	MB 50x160	1.02	0	1.69	8.50	10.63	2.52	4.72	0.94	5.51	7.01	9.06	.38	17.20
63 024	MB 50x200	1.10	0.67	2.44	10.00	12.20	2.72	5.12	1.14	8.27	10.00	12.20	.55	26.68
63 025	MB 50x270	1.40	0.10	2.93	10.98	13.78	2.91	3.15	1.34	9.49	10.98	13.78	.55	33.95
63 026	MB 50x400	1.71	0.87	3.70	12.52	16.94	3.35	2.17	1.34	10.51	12.01	14.76	.68	42.11
63 027	MB 50x500	2.15	1.61	4.45	14.02	18.31	2.13	2.91	1.54	11.26	12.24	16.54	.68	54.01

### Clamps Type BR

Kit V



UPC #	Marking	D	Dimensions in inches			Ø I	K	M	Weight in lbs.
			G	H					
25 006	Clamp BR 50	3.07	5.12	6.69	0.71	1.97	0.24	1.46	



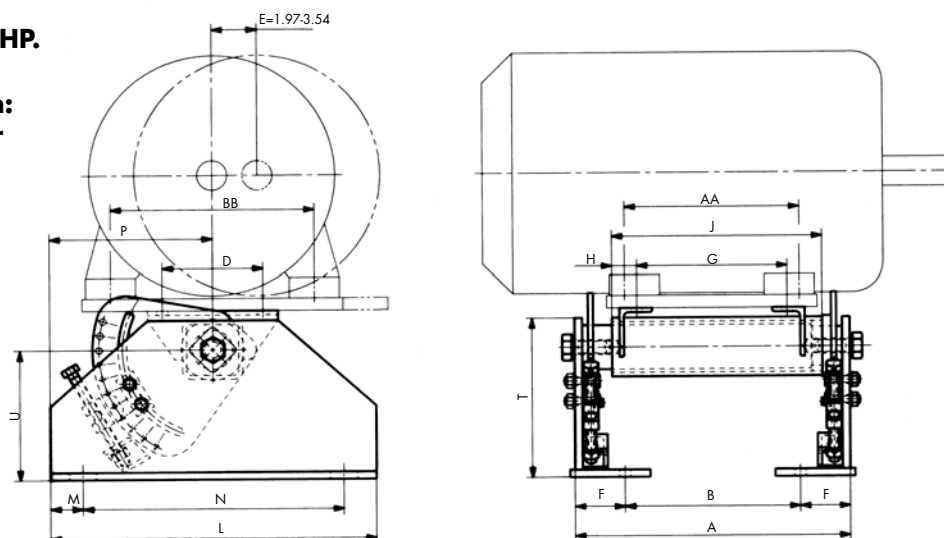


## Motorbase

## Type MB 70

**Heavy Duty Motorbase  
for Belt Drives of max. 125 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 70x400	404 T	60	100	12.25	16.00
MB 70x550	405 T 444 T	75 100	125 150	13.75 14.50	16.00 18.00
MB 70x650	445 T	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, which has to be added by the customer, should be installed off-center (dimension E = 1.97 – 3.54 inches) in order to provide the best possible lever motion by different positions of the driven pulley. (See catalogue ROSTA Motorbases page 85.)

### Overall Dimensions

(Details see drawing ROSTA assembling kits MB 70)

Motorbase Type	Dimensions in inches												
	A	B	D	F	G	H	J	L	M	N	P	T	U
MB 70x400	21.65	13.78	7.87	3.94	11.81	1.97	16.54	25.59	2.56	20.47	12.80	12.80	10.43
MB 70x550	27.56	19.69	7.87	3.94	14.17	3.74	22.44	25.59	2.56	20.47	12.80	12.80	10.43
MB 70x650	31.50	23.62	7.87	3.94	14.96	5.31	26.38	25.59	2.56	20.47	12.80	12.80	10.43

### 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 70x400	181.2	554.4	952.9	1565.2	2300.7	3442.0
MB 70x550	250.0	760.9	1304.4	2152.2	3163.0	4731.9
MB 70x650	293.5	898.6	1547.1	2543.5	3739.1	5594.2

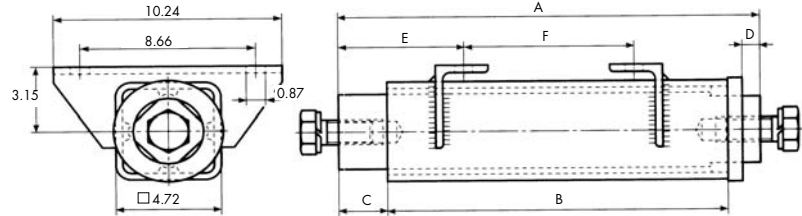


## Assembling Kits

## Type MB 70

### ROSTA Rubber Suspension Unit to MB 70 with Cardanic Bush

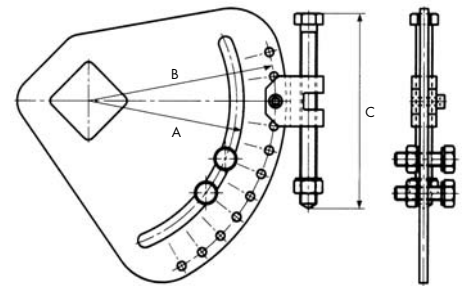
Kit I



UPC #	Motorbase Type	A	B	C	D	E	F	Weight in lbs.
63 473	MB 70x400	20.47	16.54	2.36	0.87	4.33	11.81	84.66
63 474	MB 70x550	26.38	22.44	2.36	0.87	6.10	14.17	108.91
63 475	MB 70x650	30.31	26.38	2.36	0.87	7.68	14.96	123.46

### Pretensioning Device to MB 70

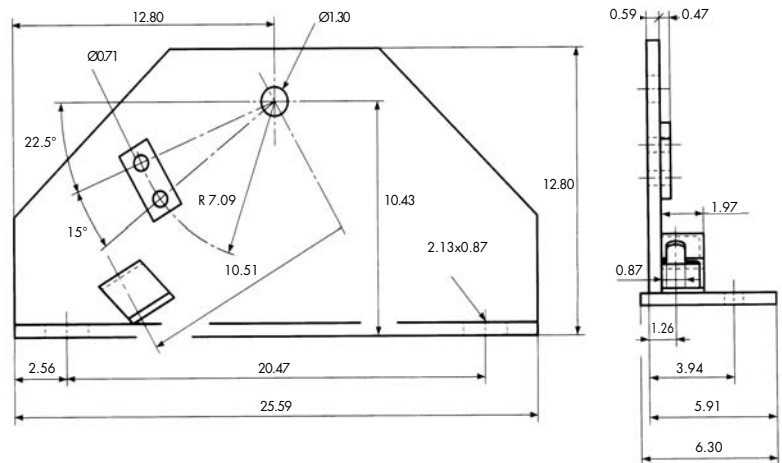
Kit II (always two units per MB 70)



UPC #	Marking	A	B	C	Weight in lbs.
63 476	Pretensioning Device to MB 70	7.09	8.94	8.66	14.40

### Side Support to MB 70

Kit III



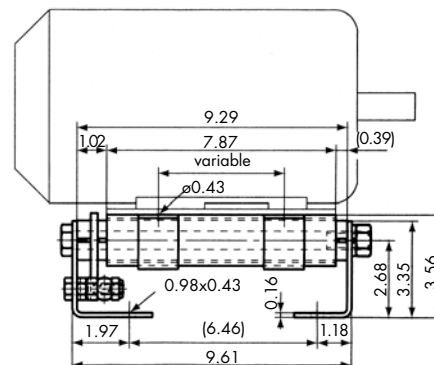
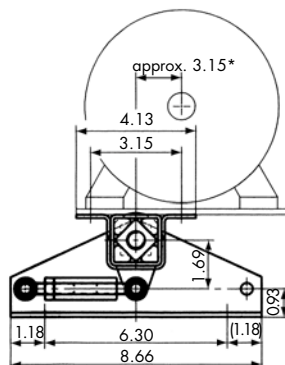
UPC #	Marking	Dimensions in inches	Weight in lbs.
63 477	Side Support to MB 70 right	Details mirror inverted to drawing	73.08
63 478	Side Support to MB 70 left	Details according drawing	73.08



## Motorbase

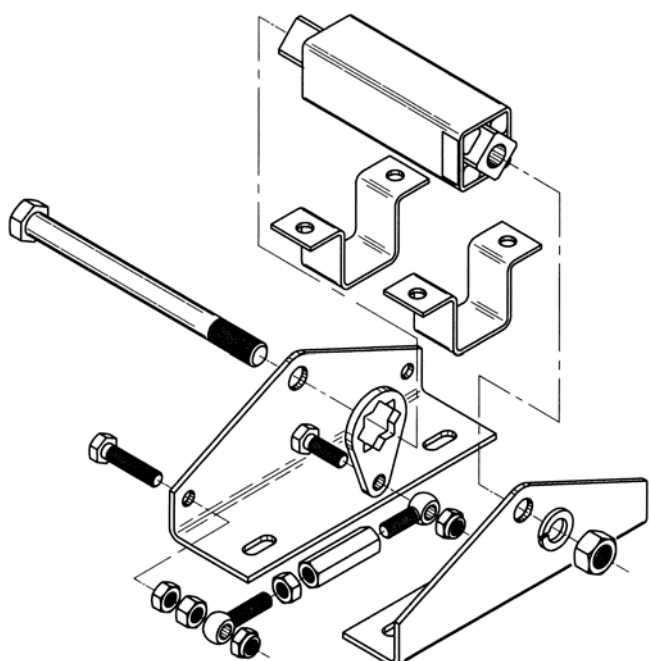
## Type MB 27

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



UPC #	Motorbase Type	NEMA Motor	1200 RPM HP	1800 RPM HP	Weight in lbs.
63 340	MB 27x 80	143T/145T	0.75 – 1.5	1.0 – 2.0	8.55
63 342	MB 27x120	182T	1.0 – 1.5	2.0 – 3.0	8.64
63 346	MB 27x200	184T	1.5 – 2.0	3.0 – 5.0	8.82

\* 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. 3.15 inches 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.

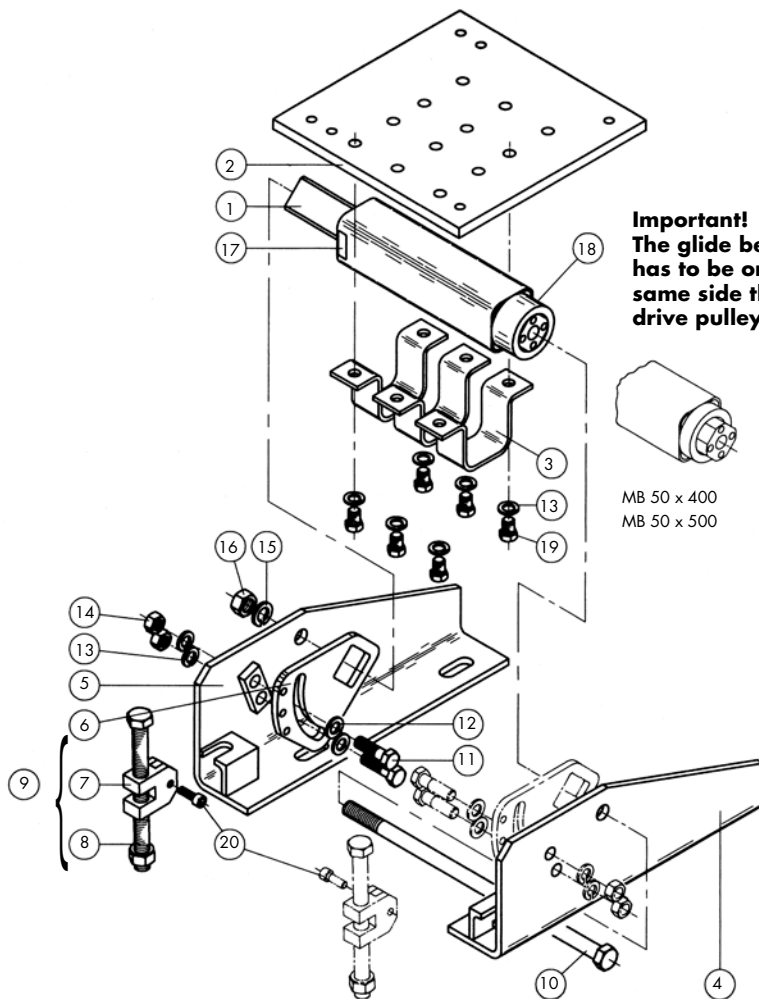
In order to facilitate the installation and the handling of the pretensioning device it may be rotated by 180°.

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 86) 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 86).

#### 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 83 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.



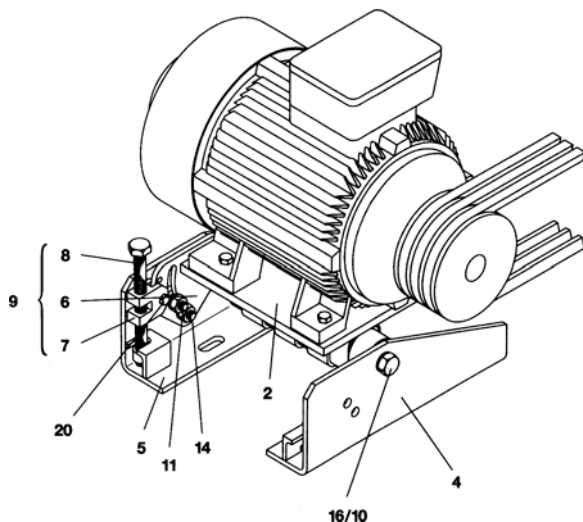
## Motorbase

## 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 83 ), 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 motor-base.**
3. Turn jacking bolt M 20 (8) clockwise to raise the motor and place the belt(s) on the drive pulley.



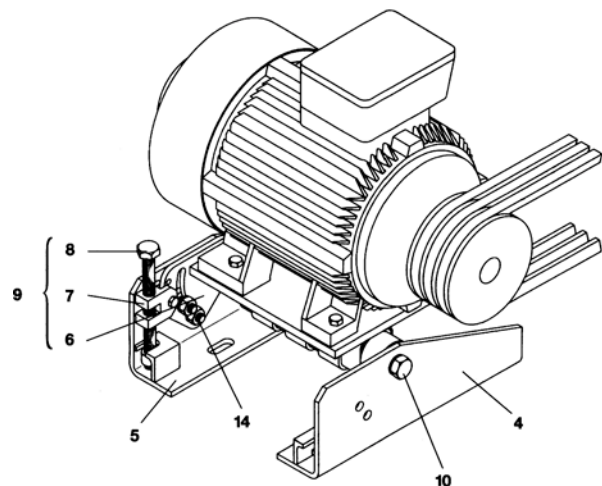
4. Turn jacking bolt M 20 (8) counter-clockwise to tension the belt(s). Check the belt tension with the data specified by the belt manufacturer or according to the test force table on page 83.
5. Tighten all locking bolts M 16 (11) of the friction plate after the tensioning process; tightening torque of nuts (14) = 148 ft.-lbs.
6. Tighten nuts M 20 (16) for central hex. shaft (10), tightening torque = 265 ft.-lbs.
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

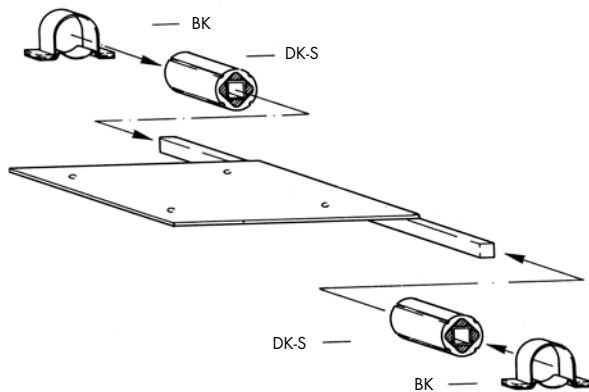
1. Remove the belt guards.
2. Fit the adjusting block (7) if necessary, bolt with jacking bolt (8) and friction plate (6).
3. Release nuts on central hex. shaft M 20 (10) and release all nuts M 16 (14) of connection between friction plate (6) and side support (5), so that the base plate is free and can 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

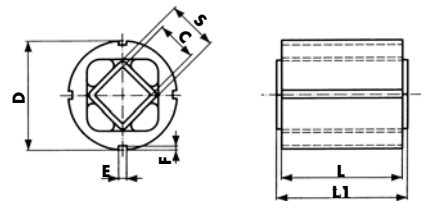
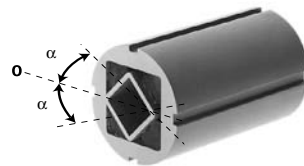


The units type DK-S offer an ideal low-cost design of a motorbase for smaller belt drives where the mechanical components can be made in-house. The motorbase plate, with welded on square section, has a rubber suspension unit type DK-S mounted on both sides. The friction brackets type BK secure the unit 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.)

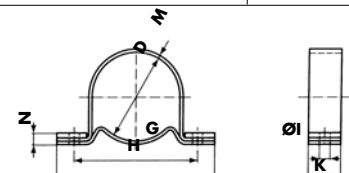
When units types DK-S 27x100, DK-S 45x100 and DK-S 50x120 are used, two brackets type BK are required for each element. Only one bracket is required for units with shorter lengths.

### ROSTA Rubber Suspension Type DK-S



UPC #	Type	Motor-power in HP	Dimensions in inches							Torque in ft.-lbs. by $\alpha$			Weight in lbs.
			L	L1	C	D	E	F	S	10°	20°	30°	
25 101	DK-S 18x 30	0.33	1.18	1.38	0.47	1.77	0.20	0.10	0.71	3.32	8.11	15.18	0.29
25 102	DK-S 18x 50	0.75	1.97	2.17	0.47	1.77	0.24	0.10	0.71	5.53	13.49	25.35	0.44
25 105	DK-S 27x 60	1.00	2.38	2.56	0.87	2.44	0.24	0.12	1.06	11.79	29.70	63.01	0.88
25 106	DK-S 27x100	1.50	3.94	4.13	0.87	2.44	0.24	0.12	1.06	19.68	49.53	105.02	1.46
25 107	DK-S 38x 60	2.00	2.38	2.76	1.18	3.15	0.28	0.14	1.50	22.40	57.49	119.39	1.59
25 108	DK-S 38x 80	3.00	3.15	3.54	1.18	3.15	0.28	0.14	1.50	29.85	76.65	159.19	2.07
25 110	DK-S 45x 80	4.00	3.15	3.54	1.38	3.74	0.31	0.16	1.77	45.99	117.92	235.84	2.97
25 111	DK-S 45x100	5.00	3.94	4.33	1.38	3.74	0.31	0.16	1.77	57.49	147.40	294.80	3.64
46 321	DK-S 50x120	7.50	4.72	5.12	1.57	4.25	0.31	0.16	1.97	92.86	252.05	552.75	5.62
46 321	DK-S 50x120	10.00	4.72	5.12	1.57	4.25	0.31	0.16	1.97	92.86	252.05	552.75	5.62

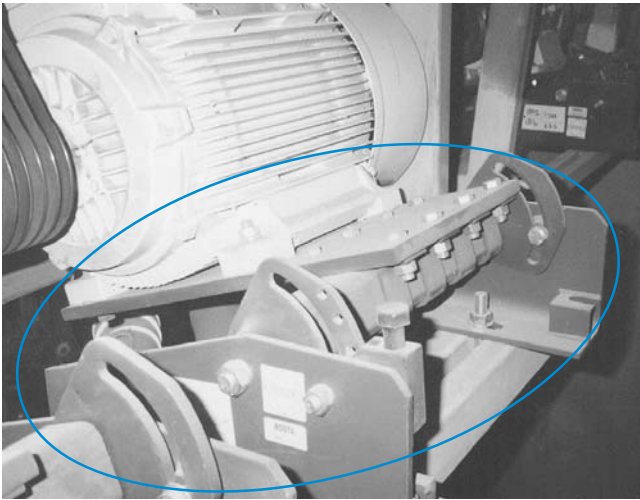
### Clamp Type BK



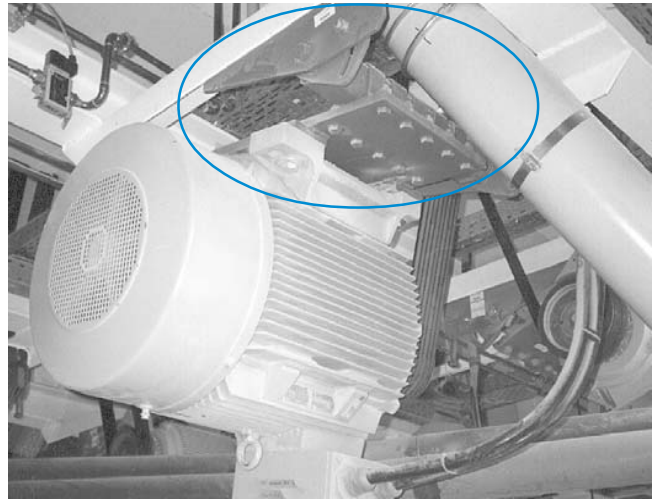
UPC #	Type	Dimensions in inches							Weight in lbs.
		D	G	H	I	K	M	N	
25 115	BK 18	1.77	2.68	3.54	0.33	1.18	0.08	0.31	0.31
25 116	BK 27	2.44	3.62	4.92	0.41	1.38	0.10	0.39	0.64
25 117	BK 38	3.15	4.53	5.91	0.49	1.57	0.12	0.43	0.99
24 451	BK 45	3.74	5.12	6.50	0.49	1.77	0.14	0.51	1.50
46 315	BK 50	4.25	5.98	7.68	0.65	1.97	0.16	0.59	2.05



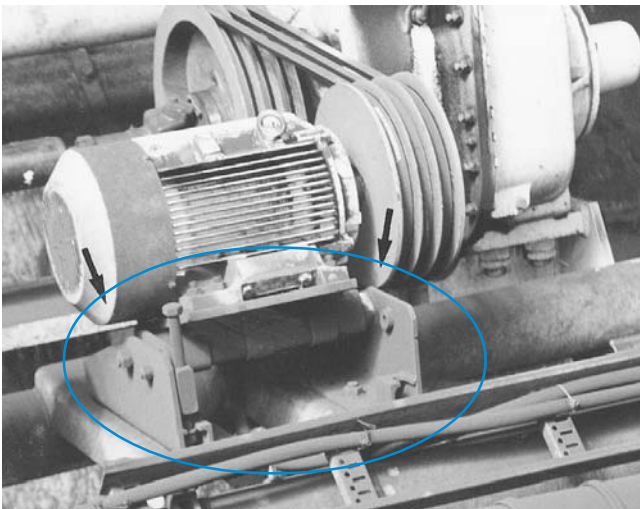
## Installations



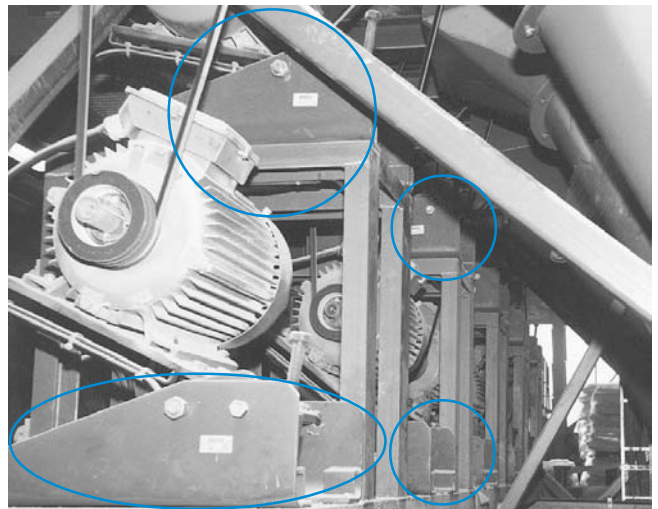
Drive for eccentric press on MB 50



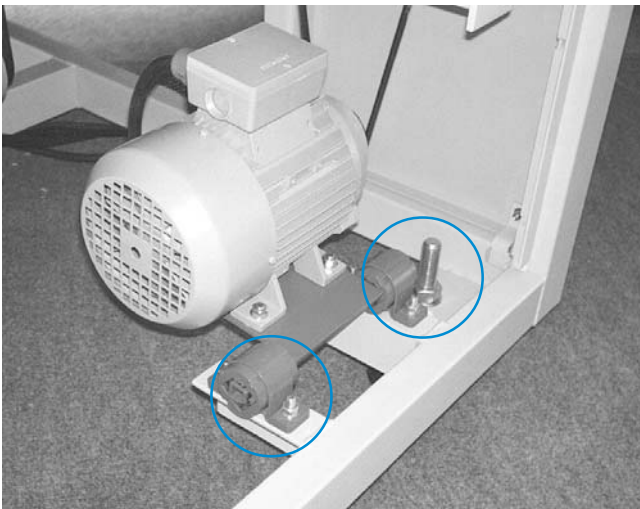
50HP motor to flour-mill on MB 50 (hanging installation)



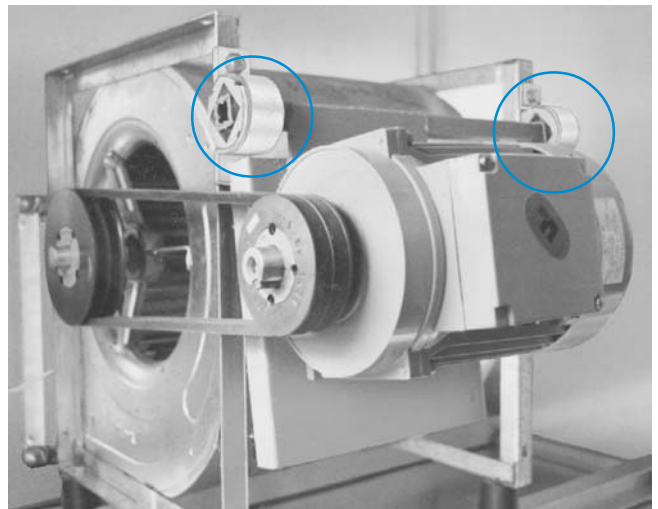
Drive to exciter in linear «Low Head» screen on MB 50



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.