

3200 & 5200 Series Bottom Mount Parallel Drive Package for Standard Load 60 Hz Gearmotors

Installation, Maintenance & Parts Manual



DORNER MFG. CORP. P.O. Box 20 • 975 Cottonwood Ave. Hartland, WI 53029-0020 USA INSIDE THE USA TEL: 1-800-397-8664 FAX: 1-800-369-2440 OUTSIDE THE USA TEL: 262-367-7600 FAX: 262-367-5827

For other service manuals visit our website at: www.dorner.com/service manuals.asp

Table of Contents

Introduction	Timing Belt Tensioning	9
Warnings - General Safety		9
Product Description 4		10
Specifications 4	Motor Replacement	10
Installation	Service Parts	12
Required Tools	Bottom Mount Parallel Drive Package	
Mounting	for Industrial Gearmotors	12
Preventive Maintenance and Adjustment	Parallel Shaft Industrial Gearmotors	13
Required Tools9	Return Policy	14

Introduction

IMPORTANT

Some illustrations may show guards removed. DO NOT operate equipment without guards.

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner 3200 Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714, 6871737, 6910571, 6971509, and patent applications in other countries.

Dorner LPZ Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714, 5875883 and patent applications in other countries.

Dorner 5200 Series conveyors have patents pending.

Dorner's Limited Warranty applies.

Dorner reserves the right to make changes at any time without notice or obligation.

Dorner has convenient, pre-configured kits of Key Service Parts for all conveyor products. These time saving kits are easy to order, designed for fast installation, and guarantee you will have what you need when you need it. Key Parts and Kits are marked in the Service Parts section of this manual with the Performance Parts Kits logo.

Warnings - General Safety

A WARNING

The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.

A DANGER



Climbing, sitting, walking or riding on conveyor will cause severe injury.
KEEP OFF CONVEYORS.

A DANGER



DO NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.

A WARNING



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

A WARNING



Gearmotors may be HOT.

DO NOT TOUCH Gearmotors.

A WARNING



Exposed moving parts can cause severe injury.

REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.

A WARNING



Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.

When conveyors are used in conjunction with other equipment or as part of a multiple conveyor system, CHECK FOR POTENTIAL PINCH POINTS and other mechanical hazards before system start-up.

Product Description

Refer to (Figure 1) for typical components.

- 1 Conveyor
- 2 Cover
- 3 Timing Belt
- 4 Timing Belt Tensioner
- 5 Drive Pulley
- 6 Gearmotor
- 7 Mounting Bracket
- 8 Driven Pulley

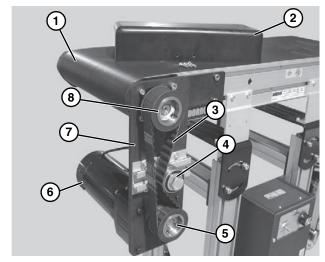
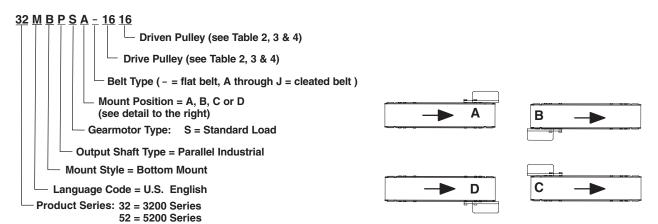


Figure 1

Specifications

Gearmotor Mounting Package Models:

Example:



Dorner Mfg. Corp. 4 851-528 Rev. E

Specifications

Table 1: Gearmotor Specifications

	Single Phase	Three Phase	DC Variable Speed	VFD Variable Speed
Power/ Gear Ratio	hp (kW)	hp (kW)	hp (kW)	hp (kW)
5:1	.08 (.06)	.17 (.13)	.12 (.09)	.17 (.13)
10:1	.17 (.13)	.17 (.13)	.25 (.19)	.17 (.13)
20:1	.33 (.25)	.38 (.28)	.25 (.19)	.38 (.28)
30:1	.33 (.25)	.38 (.28)	.25 (.19)	.38 (.28)
60:1	.33 (.25)	.38 (.28)	.33 (.25)	.38 (.28)
180:1	.33 (.25)	.38 (.28)	N/A	.38 (.28)
Input Voltage	115 VAC	230 VAC	130 VDC	230 VAC
Input Frequency	60 Hz	60 Hz	N/A	10 to 60 Hz
Input Current/ Gear Ratio	FLA	FLA	FLA	FLA
5:1	1.2	1.0	1.0	1.0
10:1	1.9	1.0	1.8	1.0
20:1	4	1.9	1.8	1.9
30:1	4	1.9	1.8	1.9
60:1	4	1.9	2.3	1.9
180:1	4	1.9	N/A	1.9
Motor RPM	1725	1725	2500	1725
Power/Ratio	Totally Enclosed	Fan Cooled	Totally Enclosed Non-Ventilated	Totally Enclosed Fan Cooled

Table 2: Belt Speeds for Fixed Speed Parallel Shaft 60 Hz Gearmotors

Standa	rd Load Gear	motors		Belt	Speed	Deire Buller	Driven
Part Number	RPM	In-lb	N-m	Ft/min	M/min	Drive Pulley	Pulley
62M180PS4vpFn	10	226	25.5	7.6	2.3	16	16
62M180PS4vpFn	10	226	25.5	11.4	3.5	24	16
62M060PS4vpFn	29	237	26.8	22.9	7.0	16	16
32M030PS4vpFn	58	142	16.0	45.8	14.0	16	16
32M020PS4vpFn	86	78	8.8	68.6	20.9	16	16
32M020PS4vpFn	86	78	8.8	103.0	31.4	24	16
32M010PS4vpFn	173	41	4.6	137.3	41.9	16	16
32M010PS4vpFn	173	41	4.6	171.6	52.3	20	16
32M010PS4vpFn	173	41	4.6	205.9	62.8	24	16
32M005PS4vpFn	345	41	4.6	274.6	83.7	16	16
32M005PS4vpFn	345	41	4.6	343.2	104.6	20	16
32M005PS4vpFn	345	41	4.6	411.9	125.6	24	16

(vp) = voltage and phase

11 = 115 V, 1-phase

23 = 208 - 230/460 V, 3-phase

Specifications

Table 3: Belt Speeds for Variable Speed Parallel Shaft VFD Gearmotors

Standard Load Gearmotors				Belt S	Speed	Drive	Driven
Part Number	RPM	In-lb	N-m	Ft/min	M/min	Pulley	Pulley
62M180PS4vpFn	10	226	25.5	1.3–7.6	0.4–2.3	16	16
62M060PS4vpFn	29	237	26.8	3.8–22.9	1.2–7.0	16	16
32M030PS4vpFn	58	142	16.0	7.6–45.8	2.3-14.0	16	16
32M020PS4vpFn	86	78	8.8	11.5–68.6	3.5–20.9	16	16
32M020PS4vpFn	86	78	8.8	17.2–103. 0	5.2-31.4	24	16
32M010PS4vpFn	173	41	4.6	22.9–137. 3	7.0–41.9	16	16
32M010PS4vpFn	173	41	4.6	34.4–205. 9	10.5–62.8	24	16
32M005PS4vpFn	345	41	4.6	45.9–274. 6	14.0–83.7	16	16
32M005PS4vpFn	345	41	4.6	57.3–343. 2	17.5–104. 6	20	16
32M005PS4vpFn	345	41	4.6	68.8–411. 9	21.0–125. 6	24	16

Table 4: Belt Speeds for Variable Speed Parallel Shaft DC Gearmotors

Standard L	Standard Load Gearmotors					Drive	Driven
Part Number	RPM	In-lb	N-m	Ft/min	M/min	Pulley	Pulley
62M180PSD3DEN	14	226	25.5	1.3–11.1	0.4–3.4	16	16
62M180PSD3DEN	14	226	25.5	2.0-16.6	0.6–5.1	24	16
62M060PSD3DEN	42	237	26.8	4.0-33.2	1.2–10.1	16	16
62M030PSD3DEN	83	142	16.0	8.0-66.3	2.4–20.2	16	16
62M020PSD3DEN	125	78	8.8	11.9–99.5	3.6–30.3	16	16
62M020PSD3DEN	125	78	8.8	17.9–149.2	5.5–45.5	24	16
62M010PSD3DEN	250	41	4.6	23.9-199.0	7.3–60.7	16	16
62M010PSD3DEN	250	41	4.6	29.8–248.7	9.1–75.8	20	16
62M010PSD3DEN	250	41	4.6	35.8–298.5	10.9–91.0	24	16

NOTE

For belt speed other than those listed, contact factory for details.

Dorner Mfg. Corp. 6 851-528 Rev. E

Required Tools

- Hex key wrenches: 2 mm, 2.5 mm, 3 mm, 5 mm
- Straight edge
- · Torque wrench

Mounting



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

Installation Component List:

- 1 Bottom Mount Drive Assembly
- 2 Tensioner
- 3 Driven Pulley
- 4 Timing Belt
- 5 M8 Socket Head Screws (2x)
- 6 M6 Socket Head Screws (4x)
- 7 Key
- 8 Drive Pulley
- 9 Cover Screws
- 10 Cover
- 1. Typical components (Figure 2).

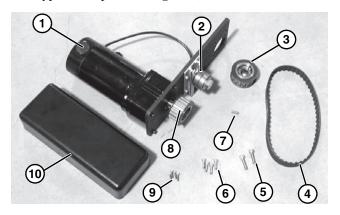


Figure 2

NOTE

Cleated belt mounting package shown, flat belt mounting package similar.

2. Locate drive output shaft (**Figure 3, item 1**). Remove two (2) M8 screws (**Figure 3, item 2**) and four (4) M6 screws (**Figure 3, item 3**) and discard.

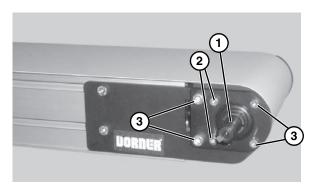


Figure 3

3. Attach bottom mount drive assembly (**Figure 4, item 1**) with two (2) M8 screws (**Figure 4, item 2**) and four (4) M6 screws (**Figure 4, item 3**). Tighten M6 screws to 146 in–lbs (16.5 N–m) and M8 screws to 288 in–lbs (32.5 N–m).

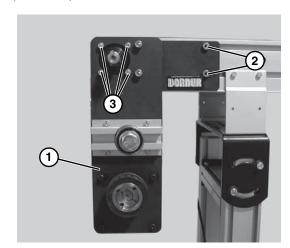


Figure 4



Installation

4. Install key (Figure 5, item 1).

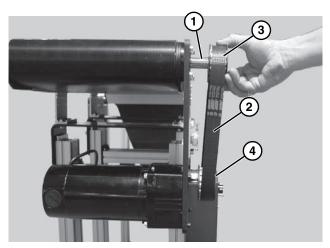


Figure 5

- 5. Wrap timing belt (**Figure 5, item 2**) around driven pulley (**Figure 5, item 3**) and drive pulley (**Figure 5, item 4**). Install driven pulley onto conveyor shaft.
- 6. Using a straight edge (**Figure 6, item 1**), align driven pulley (**Figure 6, item 2**) with drive pulley (**Figure 6, item 3**).

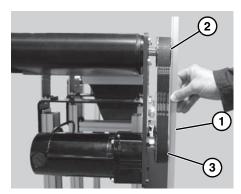


Figure 6

7. Tighten driven pulley taper-lock screws (**Figure 7, item 1**).

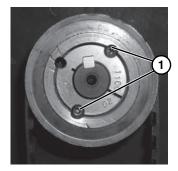


Figure 7

8. Depending on conveyor belt travel (direction A or B), locate timing belt tensioner (**Figure 8, item 1**) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 6 lb (3 Kg) of force at timing belt midpoint (**Figure 8, item 2**). Tighten tensioner screw to 110 in-lb (12 Nm).

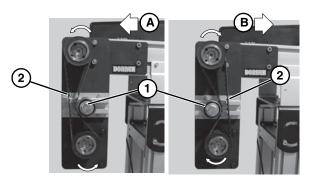


Figure 8

9. Install cover (**Figure 9, item 1**) with four (4) screws (**Figure 9, item 2**). Tighten screws to 35 in-lb (4 Nm).

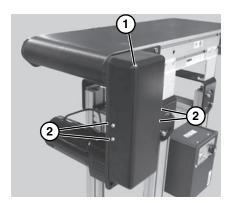


Figure 9

Preventive Maintenance and Adjustment

Required Tools

- Hex key wrenches: 2 mm, 2.5 mm, 3 mm, 5 mm
- Adjustable wrench (for hexagon head screws)
- Straight edge
- Torque wrench

Timing Belt Tensioning

WARNING



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

- 1. Remove four (4) screws (**Figure 9, item 2**) and remove cover (**Figure 9, item 1**).
- 2. Loosen tensioner (Figure 10, item 1).

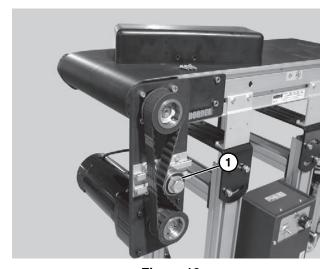


Figure 10

- 3. Depending on conveyor belt travel (direction A or B), locate timing belt tensioner (**Figure 8, item 1**) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 6 lb (3 Kg) of force at timing belt midpoint (**Figure 8, item 2**). Tighten tensioner screw to 110 in-lb (12 Nm).
- 4. Install cover (**Figure 9, item 1**) with four (4) screws (**Figure 9, item 2**). Tighten screws to 35 in-lb (4 Nm).

Timing Belt Replacement

WARNING



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

- 1. Remove four (4) screws (**Figure 9, item 2**) and remove cover (**Figure 9, item 1**).
- 2. Loosen tensioner (**Figure 10, item 1**).
- 3. Remove timing belt (**Figure 11, item 1**).

NOTE

If timing belt does not slide over pulley flange, loosen driven pulley taper-lock screws (Figure 7, item 1) & (Figure 11, item 2) and remove pulley with belt (Figure 11, item 1). For re-installation, see steps 5 thru 7 on page 8.

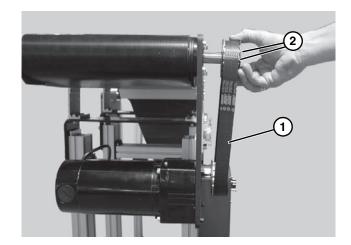


Figure 11

- 4. Install new timing belt.
- 5. Depending on conveyor belt travel (direction A or B), locate timing belt tensioner (**Figure 8, item 1**) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 6 lb (3 Kg) of force at timing belt midpoint (**Figure 8, item 2**). Tighten tensioner screw to 110 in-lb (12 Nm).
- 6. Install cover (**Figure 9, item 1**) with four (4) screws (**Figure 9, item 2**). Tighten screws to 35 in-lb (4 Nm).

Preventive Maintenance and Adjustment

Drive or Driven Pulley Replacement

WARNING



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

- 1. Complete steps 1 through 3 of "Timing Belt Replacement" section on page 9.
- 2. Remove taper-lock screws (**Figure 12**, **item 1**). Insert one (1) of taper lock screws in remaining hole (**Figure 12**, **item 2**). Tighten screw until pulley is loose. Remove pulley and taper hub assembly.

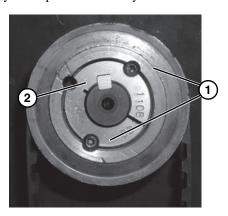


Figure 12

NOTE

If drive pulley (Figure 5, item 4) is replaced, wrap timing belt around drive pulley and complete step 3.

3. Complete steps 5 through 9 of "Installation" section beginning on page 8.

Motor Replacement

WARNING



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

A DANGER



Hazardous voltage will cause severe injury or death.

LOCK OUT POWER BEFORE WIRING.

- 1. For single phase motor, unplug power cord from outlet.
- 2. For three phase and VFD variable speed motor:
 - a. Loosen terminal box screws (Figure 13, item 1) and remove cover (Figure 13, item 2).

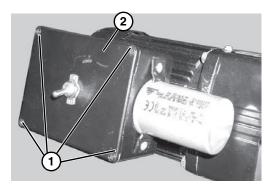


Figure 13

- Record incoming wire colors on red, black and blue leads. Loosen wire nuts and remove incoming wires.
- c. Loosen cord grip and remove cord.

Preventive Maintenance and Adjustment

3. For DC variable speed motor, unplug motor cord at disconnect (**Figure 14**, **item 1**).

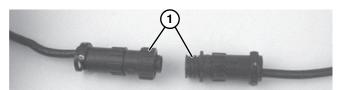


Figure 14

4. Remove the drive pulley see steps 1 and 2 of "Drive or Driven Pulley Replacement" section on page 10.

 Remove four (4) screws (Figure 15, item 1). Detach motor (Figure 15, item 2) from the mounting plate (Figure 15, item 3). Retain motor output shaft key (Figure 15, item 4).

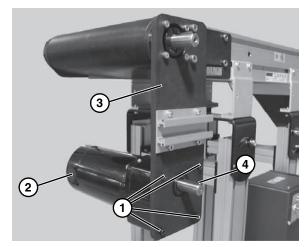


Figure 15

- 6. Install new motor using the four (4) mounting screws (**Figure 15, item 1**).
- 7. Re–install the drive pulley reverse step 2 of "Drive or Driven Pulley Replacement" section on page 10.
- 8. Complete steps 5 through 9 of "Installation" section beginning on page 8.
- 9. Replace wiring:
- For a single phase motor, reverse step 1 on page 10.
- For a three phase or VFD variable speed motor, reverse step 2 on page 10.
- For a DC variable speed motor, reverse step 3 on page 11.

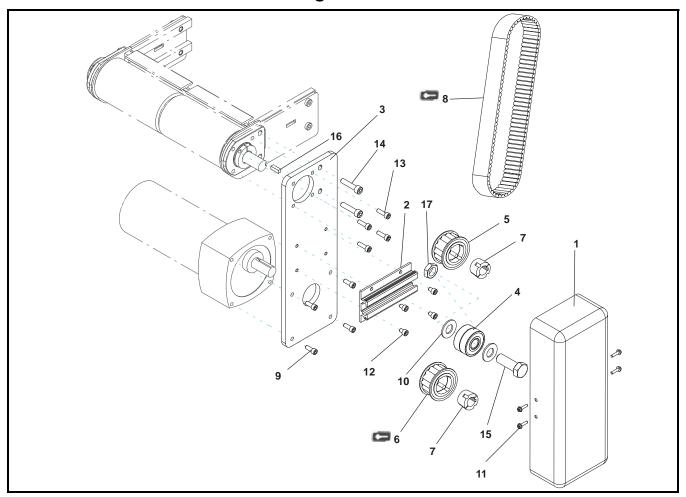
851-528 Rev. E 11 Dorner Mfg. Corp.

Service Parts

NOTE

For replacement parts other than those shown in this section, contact an authorized Dorner Service Center or the factory. Key Service Parts and Kits are identified by the Performance Parts Kits logo . Dorner recommends keeping these parts on hand.

Bottom Mount Parallel Drive Package for Industrial Gearmotors



Item	Part Number	Description
1	300871	Drive Cover
	300349	Drive Cover (Flat Belt)
2	301076	Drive Tensioner Slide
3	301152	Mounting Plate
	301154	Mounting Plate (Flat Belt)
4	301153	Tensioner Bearing Assembly
5	811–133	Driven Pulley, 14 Tooth, Taper Lock TL1108
	811–126	Driven Pulley, 16 Tooth, Taper Lock TL1108

Item	Part Number	Description
6	811–133	Drive Pulley, 14 Tooth, Taper Lock TL1108
	811–126	Drive Pulley, 16 Tooth, Taper Lock TL1108
	811–127	Drive Pulley, 18 Tooth, Taper Lock TL1210
	811–135	Drive Pulley, 20 Tooth, Taper Lock TL1210
	811–136	Drive Pulley, 22 Tooth, Taper Lock TL1610
	811–137	Drive Pulley, 24 Tooth, Taper Lock TL1610
7	811–288	Taper Lock Bushing, 20 MM, TL1108
	811–162	Taper Lock Bushing, 0.75", TL1108
	811–074	Taper Lock Bushing, 0.75", TL1210
	811–167	Taper Lock Bushing, 0.75", TL1610

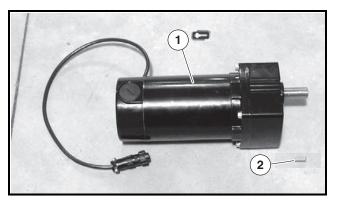
Dorner Mfg. Corp. 12 851-528 Rev. E

Service Parts

Item	Part Number	Description
8 🚍	814-047	Timing Belt, 1.0" W x 21.0" L
	814-048	Timing Belt, 1.0" W x 22.0" L
	814-057	Timing Belt, 1.0" W x 23.0" L
	814-125	Timing Belt, 1.0" W x 25.5" L
	814–059	Timing Belt, 1.0" W x 27.0" L
	814–060	Timing Belt, 1.0" W x 28.0" L
	814-079	Timing Belt, 1.0" W x 30.0" L
9	902–157	Cap Head Screw, 1/4-28 x 0.75"

Item	Part Number	Description
10	911–013	Flat Washer
11	920483M	Flange Socket Head Screw, M4 x 16 mm
12	920608M	Socket Head Screw, M6 x 8 mm
13	920622M	Socket Head Screw, M6 x 22 mm
14	920835M	Socket Head Screw, M8 x 35 mm
15	961645M	Socket Head Screw, M16 x 45 mm
16	980630M	Square Key
17	991610M	Hex Jam Nut, M16

Parallel Shaft Industrial Gearmotors



Item	Part Number	Description
1	62M180PS411FN	Motor, 0.08hp (0.06Kw), 115 Volts, 60 Hz, 1-Phase
	62M180PS411FR	Motor, 0.08hp (0.06Kw), 115 Volts, 60 Hz, 1-Phase with Reversing
	62M180PS423FN	Motor, 0.17hp (0.13Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	62M060PS411FN	Motor, 0.17hp (0.13Kw), 115 Volts, 60 Hz, 1-Phase
	62M060PS411FR	Motor, 0.17hp (0.13Kw), 115 Volts, 60 Hz, 1-Phase with Reversing
	62M060PS423FN	Motor, 0.17hp (0.13Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	32M030PS411FN	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase
	32M030PS411FR	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase with Reversing
	62M030PS423FN	Motor, 0.38hp (0.28Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	32M020PS411FN	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase
	32M020PS411FR	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase with Reversing
	62M020PS423FN	Motor, 0.38hp (0.28Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	32M010PS411FN	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase
	32M010PS411FR	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase with Reversing

Item	Part Number	Description
	62M010PS423FN	Motor, 0.38hp (0.28Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	32M005PS411FN	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase
	32M005PS411FR	Motor, 0.33hp (0.25Kw), 115 Volts, 60 Hz, 1-Phase with Reversing
	62M005PS423FN	Motor, 0.38hp (0.28Kw), 208– 230/460 Volts, 60 Hz, 3-Phase
	62M180PSD3DEN	Motor, 0.12 hp (0.09 Kw), 130 Volts DC
	62M060PSD3DEN	Motor, 0.25 hp (0.19 Kw), 130 Volts DC
	62M030PSD3DEN	Motor, 0.25 hp (0.19 Kw), 130 Volts DC
	62M020PSD3DEN	Motor, 0.25 hp (0.19 Kw), 130 Volts DC
	62M010PSD3DEN	Motor, 0.33 hp (0.25 Kw), 130 Volts DC
	62M180PS423EN	Motor, 0.17 hp (0.13 Kw), 230 Volts, 60 Hz, 3-Phase VFD
	62M060PS423EN	Motor, 0.17 hp (0.13 Kw), 230 Volts, 60 Hz, 3-Phase VFD
	62M030PS423EN	Motor, 0.38 hp (0.28 Kw), 230 Volts, 60 Hz, 3-Phase VFD
	62M020PS423EN	Motor, 0.38 hp (0.28 Kw), 230 Volts, 60 Hz, 3-Phase VFD
	62M010PS423EN	Motor, 0.38 hp (0.28 Kw), 230 Volts, 60 Hz, 3-Phase VFD
	62M005PS423EN	Motor, 0.38 hp (0.28Kw), 230 Volts, 60 Hz, 3-Phase VFD
2	917–078	Key, Square, 0.188" x 0.75" L

Return Policy

Returns must have prior written factory authorization or they will not be accepted. Items that are returned to Dorner without authorization will not be credited nor returned to the original sender. When calling for authorization, please have the following information ready for the Dorner factory representative or your local distributor:

- 1. Name and address of customer.
- 2. Dorner part number(s) of item(s) being returned.
- 3. Reason for return.
- 4. Customer's original order number used when ordering the item(s).
- 5. Dorner or distributor invoice number.

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization number for reference.

There will be a return charge on all new undamaged items returned for credit where Dorner was not at fault. Dorner is not responsible for return freight on such items.

Conveyors and conveyor accessories

Standard catalog conveyors

MPB Series, cleated and specialty belt conveyors

7400 & 7600 Series conveyors

Engineered special products

Drives and accessories

Sanitary stand supports

30%

30%

30%

30%

30%

30%

30%

Parts

Standard stock parts 30% MPB, cleated and specialty belts non-returnable items

Returns will not be accepted after 60 days from original invoice date.

The return charge covers inspection, cleaning, disassembly, disposal and reissuing of components to inventory.

If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Contact Dorner for the name of your local representative. Our Technical Sales, Catalog Sales and Service Teams will gladly help with your questions on Dorner products.

For a copy of Dorner's Warranty, contact factory, distributor, service center or visit our website at www.dorner.com.

For replacement parts, contact an authorized Dorner Service Center or the factory.



Dorner Mfg. Corp. reserves the right to change or discontinue products without notice. All products and services are covered in accordance with our standard warranty. All rights reserved. © Dorner Mfg. Corp. 2008

DORNER MFG. CORP.

975 Cottonwood Ave., PO Box 20 Hartland, WI 53029-0020 USA USA TEL 1-800-397-8664 (USA)

FAX 1-800-369-2440 (USA) Internet: www.dorner.com Outside the USA: TEL 1-262-367-7600 FAX 1-262-367-5827