

# Installation, Maintenance & Parts Manual

# 7200/7300 Series Bottom Mount Drive Package for Standard Load Parallel Shaft Sanitary Gearmotors





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# Warnings – General Safety



# 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's Limited Warranty applies.

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 .

Dorner 7200 and 7300 Series conveyors are covered by patent number 5174435, 6109427 and corresponding patents and patent applications in other countries.

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

# **Product Description**

Refer to Figure 1 for typical components (7300 Series with heavy duty sprocket kit shown).

	Typical Components
A	Conveyor
В	Mounting Bracket
С	Gearmotor
D	Timing Chain Tensioner
E	Cover
F	Timing Chain
G	Drive Sprocket
н	Driven Sprocket
Ι	Motor Control



Figure 1

## **Specifications**

#### **Gearmotor Mounting Package Models:**





\* See "Ordering and Specifications" Catalog for details.

#### **Table 1: Gearmotor Specifications**

	Single-Phase	Three-Phase	VFD Variable Speed			
Output Power		0.12 hp (0.09 kw)				
Input Voltage	115 Volts A.C.	230 Volts A.C.	230 Volts A.C.			
Input Frequency	60 Hz	50/60 Hz	25 to 63 Hz			
Full Load Amperes	1.5 Amperes	0.5 Amperes				
Gearmotor Ratios		9:1 and 30:1				
Protection Ratings	IP65 for Gearmotor, IP55 for Motor Starter					

# **Specifications**

### Table 2: Standard Load Fixed Speed Parallel Shaft 60 Hz Gearmotors

Ge	Conveyor Belt Speed		Belt Drive		Chain Drive				
Part Number	RPM	In-lb	N-m	ft/min	M/min	Drive Pulley	Driven Pulley	Drive Pulley	Driven Pulley
62M030PY4(vp)FN	50	77	8.7	12	3.7	22	32	-	-
62M030PY4(vp)FN	50	77	8.7	21	6.4	-	-	12	10
62M030PY4(vp)FN	50	77	8.7	26	7.9	32	22	-	-
62M030PY4(vp)FN	50	77	8.7	32	9.8	-	-	18	10
62M030PY4(vp)FN	50	77	8.7	38	11.6	48	22	-	-
62M009PY4(vp)FN	167	26	2.8	58	17.7	32	32	-	-
62M009PY4(vp)FN	167	26	2.8	70	21.3	-	-	12	10
62M009PY4(vp)FN	167	26	2.8	94	28.7	-	-	16	10
62M009PY4(vp)FN	167	26	2.8	100	30.5	48	28	-	-
62M009PY4(vp)FN	167	26	2.8	117	35.7	-	-	20	10
62M009PY4(vp)FN	167	26	2.8	148	45.1	48	19	-	_

(vp) = voltage and phase

11 = 115 V, Single-phase

23 = 230 V, Three-phase

#### Table 3: Standard Load Variable Speed Parallel Shaft VFD Gearmotors

Ge	Gearmotor					Timing Belt		Timing Chain	
Part Number	RPM	In-lb	N-m	ft/min	M/min	Drive Pulley	Driven Pulley	Drive Pulley	Driven Pulley
62M030PY423EN	50	109	12.3	2.0 – 12	0.6 – 3.7	22	32	-	-
62M030PY423EN	50	109	12.3	4.3 – 26	1.3 – 7.9	32	22	-	-
62M030PY423EN	50	109	12.3	3.5 – 21	1.1 – 6.4	-	-	12	10
62M030PY423EN	50	109	12.3	5.3 – 32	1.6 – 9.8	-	-	18	10
62M030PY423EN	50	109	12.3	6.3 – 38	1.9 – 11.6	48	22	-	-
62M009PY423EN	167	37	4.2	9.7 – 58	2.9 – 17.7	32	32	-	-
62M009PY423EN	167	37	4.2	11.7 – 70	3.6 – 21.3	-	-	12	10
62M009PY423EN	167	37	4.2	13.3 – 80	4.1 – 24.4	44	32	-	-
62M009PY423EN	167	37	4.2	15.7 – 94	4.8 – 28.7	-	-	16	10
62M009PY423EN	167	37	4.2	16.7 – 100	5.1 – 30.5	48	28	-	-
62M009PY423EN	167	37	4.2	19.5 – 117	5.9 – 35.7	-	-	20	10
62M009PY423EN	167	37	4.2	24.7 – 148	7.5 – 45.1	48	19	-	_

\* At 60 Hz

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



# WARNING

Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.

#### **Required Tools**

- Wrenches (for hexagon head fasteners) 7 mm, 10 mm
- Hex key wrenches (for set screws) 2.5 mm, 3 mm
- Straight edge
- Torque wrench

### **Drive Package Mounting**

- A– Mounting a timing belt drive package.
- B Mounting a timing chain drive package.

### A – Mounting a Timing Belt Drive Package

**1.** Typical components (Figure 2)

**NOTE:** Figure 2 shows a 7200 Series mounting package with a timing belt and three-phase Motor Starter. Single-phase Motor Starter or VFD Controller similar. 7300 Series mounting package similar.

#### Illustration References

- J Mounting Plate/Gearmotor Assembly
- K Drive Pulley
- L Driven Pulley
- M Key (from conveyor assembly)
- N M6 x 30 mm, Hexagon Head Screws (2 x) (7200) M6 x 65 mm, Hexagon Head Screws (2 x) (7300)
- O Timing Belt
- P Cover
- Q Accessory Mounting Clips (2x)
- R M6 x 20 mm, Hexagon Head Screws (2x)
- S Typical Motor Starter



Figure 2

**2.** Locate conveyor input shaft (T of Figure 3) and remove two (2) screws (U).



Figure 3

**NOTE:** For a 7300 Series mounting package, install two 1.758" (44.7mm) long spacers (V of Figure 4) (shipped loose) between mounting plate/gearmotor assembly (J) and conveyor. On a 7200 Series (shown), the two 0.438" (11.1mm) long spacers (V) are attached to the mounting plate/gearmotor assembly.

**3.** Attach mounting plate/gearmotor assembly (J) with screws (N). Tighten to 92 in-lb (10.4 Nm).



Figure 4



NOTE: Figures 6 and 7 show timing belt installation on a 7200 Series conveyor. Installation on a 7300 Series conveyor is similar.

**4.** Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner (W of Figure 5) as shown. Do not tighten tensioner screw.





**5.** Install key (M of Figure 6) on conveyor input shaft (T).



Figure 6

- **6.** Wrap timing belt (O) around driven pulley (L) and drive pulley (K). Install driven pulley (L) onto conveyor input shaft (T) and key (M).
- 7. Using a straight edge (Y of Figure 7), align driven pulley (L) with drive pulley (K). Tighten driven pulley set screws (X).





**8.** Tension timing belt to obtain 0.125" (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point (Z of Figure 5). Tighten tensioner screw to 92 in-lb (10.4 Nm).

#### NOTE: Do not over-tighten screws (AA of Figure 8).

9. Install cover (P of Figure 8) and tighten four screws (AA) to 35 in-lb (4 Nm).



Figure 8

NOTE: Figure 9 shows a 7300 Series drive mounting package with a timing chain and single-phase motor starter. Three-phase motor starter or VFD controller is similar. 7200 Series drive mounting package is similar.



Figure 9

2. Locate conveyor input shaft (T of Figure 3) and remove two screws (U).

NOTE: For a 7300 Series mounting package, install two 1.758" (44.7mm) long spacers (V of Figures 9 and 10) (shipped loose) between mounting plate/gearmotor assembly (J) and conveyor. On a 7200 Series (shown), two 0.438" (11.1mm) long spacers (V) are attached to the mounting plate/gearmotor assembly.

**3.** Install mounting plate/gearmotor assembly (J) and spacers (see Note) with two screws (N). Tighten screws to 92 in-lb (10.4 Nm).



#### **1.** Typical components (Figure 9)

Figure 10

**B** – Mounting a Timing Chain Drive Package



# WARNING

Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.

#### Illustration References

- Mounting Plate/Gearmotor Assembly J
- Μ Key (from conveyor assembly)
- Ν M6 x 30 mm, Hexagon Head Screws (2 x) (7200) M6 x 65 mm, Hexagon Head Screws (2 x) (7300)
- Р Cover
- Q Accessory Mounting Clips (2x)
- R M6 x 20 mm, Hexagon Head Screws (2x)
- S Typical Motor Starter
- V Spacer (2x) (7300)
- AB Drive Sprocket
- AC Driven Sprocket
- AD Timing Chain



NOTE: Figures 11 through 15 show timing chain installation on a 7200 Series conveyor. Installation on a 7300 Series conveyor is similar.

4. Install key (M of Figure 11) on drive spindle (AE).



Figure 11

**NOTE:** Depending on sprocket sizes, it may be necessary to remove drive sprocket (AB of Figure 11) by loosen two set screws (AE) to install chain and sprockets.

**5.** Depending on conveyor belt travel (direction 1 or 2 of Figure 12), locate timing chain tensioner (AF) as shown. Do not tighten tensioner screw.



Figure 12

**6.** Install timing chain (AD of Figure 13) over sprockets (AB and AC). Install timing chain and sprockets on conveyor input shaft (T) and gearmotor output shaft (AG). Do not tighten sprocket set screws.



Figure 13

**IMPORTANT:** Make sure center of timing chain (AD of Figure 14) aligns with center of chain tensioner (AF). If necessary, loosen two set screws (AE) to move drive sprocket (AB) in or out. Tighten set screws. Also, if necessary, loosen two set screws (AH) to move driven sprocket (AC) in or out. Tighten set screws.



Figure 14

NOTE: Do not over-tension chain (AD). Only tension chain until slack is removed.

**7.** Slide chain tensioner (AF) to take up chain slack. Tighten chain tensioner screw to 92 in-lb (10.4 Nm).

#### NOTE: Do not over-tighten screws (AA of Figure 15).

**8.** Install cover (P of Figure 15) and tighten four screws (AA) to 35 in-lb (4 Nm).



Figure 15

#### Motor Starter Mounting

**NOTE:** Single-phase Motor Starter shown, Three-phase Starter similar. For VFD controller mounting, see accessory instructions.

**1.** Attach two accessory mounting clips (Q of Figure 16) to motor starter (S) with two M6 x 20mm hex head cap screws (R). Do not tighten screws.



Figure 16

2. Attach motor starter (S of Figure 17) with clips to conveyor. Tighten screws (R) to 92 in-lb (10.4 Nm).



Figure 17

#### Wiring

Single-phase Motor Starter

**NOTE:** Power cord must be plugged into a GFI outlet. No additional wiring is required.

#### **Three-phase Motor Starter**



**NOTE:** 230 volt three-phase manual motor starters must be wired in accordance with applicable electrical codes.

**1.** Loosen cover screws (AI of Figure 18). Remove cover.



Figure 18

NOTE: Line cord must be 0.28<sup>°</sup> (7 mm) minimum to 0.47<sup>°</sup> (12 mm) maximum in diameter.

2. Insert line cord through grip (AJ) and tighten nut.

**3.** For correct three-phase motor shaft rotation, connect line phase sequence L1, L2 & L3 to terminals as shown (Figure 19).



Figure 19



**NOTE:** The motor ground wire is also attached to left terminal marked  $\stackrel{\perp}{=}$  (Figure 19).

- 4. Attach ground wire to lower left terminal marked  $\frac{1}{2}$  (see Figure 19).
- 5. Install cover and tighten screws (AI of Figure 18).

#### **VFD Controllers**

**NOTE:** Refer to VFD Controller Set-up, Operation & Maintenance Manual.



**NOTE:** The motor ground wire is also attached to left terminal marked  $\doteq$  (Figure 19).

- 6. Attach ground wire to lower left terminal marked = (see Figure 19).
- **7.** Replace starter cover and tighten screws (AI of Figure 18).

#### **VFD Controllers**

**NOTE:** Refer to VFD Controller Set-up, Operation & Maintenance Manual.

# **Preventive Maintenance & Adjustment**

### **Required Tools**

• Wrenches (for hexagon head fasteners)

7 mm, 10 mm

• Hex key wrenches (for set screws)

2.5 mm, 3 mm

- Straight edge
- Torque wrench

### **Timing Belt or Chain Replacement**



Replace timing belt or chain following instructions:

- A Timing Belt Replacement
- B Timing Chain Replacement

#### A – Timing Belt Replacement

**1.** Loosen four screws (AA of Figure 20) and remove cover (P).



Figure 20

2. Loosen tensioner (W of Figure 21).



**3.** Remove timing belt (O).

**NOTE:** If timing belt does not slide over pulley flange, loosen two driven pulley set screws (X of Figure 7) and remove driven pulley with belt. For installation, see steps 6 and 7 on page 6.

- 4. Install new timing belt.
- 5. Depending on conveyor belt travel (direction 1 or 2 of Figure 22), locate timing belt tensioner (W) as shown. Tension timing belt to obtain 0.125" (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point (Z). Tighten tensioner screw to 92 in-lb (10.4 Nm).



Figure 22

#### NOTE: Do not over-tighten screws (AA of Figure 20).

6. Install cover (P of Figure 20) and tighten four screws (AA) to 35 in-lb (4 Nm).

### B – Timing Chain Replacement

**1.** Loosen four screws (AA of Figure 23) and remove cover (P).

## **Preventive Maintenance & Adjustment**



**2.** Loosen timing chain tensioner screw (AK of Figure 24).



- 3. Loosen four set screws (AE) and (AH).
- **4.** Remove timing chain (AD) and sprockets (AB and AC) from conveyor input shaft and gearmotor output shaft. Make sure to retain sprocket keys.
- **5.** Depending on conveyor belt travel (direction 1 or 2 of Figure 25), locate timing chain tensioner (AF) as shown. Do not tighten tensioner screw.



NOTE: Make sure sprocket keys are installed on conveyor input shaft (T of Figure 26) and gearmotor output shaft (AG).

6. Install new timing chain (AD) over sprockets (AB and AC). Install timing chain and sprockets on conveyor input shaft (T) and gearmotor output shaft (AG). Do not tighten sprocket set screws.



Figure 26

**IMPORTANT:** Make sure center of timing chain (AD of Figure 24) aligns with center of chain tensioner (AF). If necessary, loosen two set screws (AE) to move drive sprocket (AB) in or out. Tighten set screws. Also, if necessary, loosen two set screws (AH) to move driven sprocket (AC) in or out. Tighten set screws.

**NOTE:** Do not overtension chain (AD). Only tension chain until slack is removed.

**7.** Slide chain tensioner (AF) to take up chain slack. Tighten chain tensioner screw (AK of Figure 24) to 92 in-lb (10.4 Nm).

#### NOTE: Do not over-tighten screws (AA of Figure 23).

**8.** Install cover (P of Figure 23) and tighten four screws (AA) to 35 in-lb (4 Nm).

7200/7300 Series Bottom Mount Drive Package for Standard Load Parallel Shaft Sanitary Gearmotors IMPM Dorner Mfg. Corp. **13** 851-573 Rev. A

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.

7200 Series Drive Mounting Components



	Item	Part Number	Description
	1	450028P	Cover, Clear
	2	807–968	Hex Flange Head Screw M58x10mm
	3	960510MSS	Hex Head Cap Screw M58x10mm
	4	450181MSS	Cover Mounting Bracket SS
	5	960625MSS	Hex Head Cap Screw M6–1.0x25mm
	6	911–201	Flat Washer 1/4" SS
-	7	802-123	Bearing (2x)
	8	801–116	Nylon Bearing
	9	450178MSS	Slide Bar, Tensioner
	10	639971MSS	Drop-In T-Bar
	11	960630MSS	Hex Head Cap Screw M6-1.0x30mm
	12	807–998	Grooved Pin SS
	13	456029	Drive Mounting Plate Spacer SS
	14	450179MSS	Drive Mounting Plate
	15	960516MSS	Hex Head Cap Screw M58x16mm
	16	62M009PY411	Gearmotor, 115V Single Phase, 167 RPM
		62M030PY411	Gearmotor, 115V Single Phase, 50 RPM
		62M009PY423	Gearmotor, 230V Three Phase, 167 RPM
		62M030PY423	Gearmotor, 230V Three Phase, 50 RPM
	17	911–120	Lock Washer, 5/16"
	18	960890MSS	Hex Head Cap Screw M8-1.25x90mm
	19	450101	Driven Pulley, 19 Tooth, 12mm Bore
		450102	Driven Pulley, 22 Tooth, 12mm Bore
		450103	Driven Pulley, 28 Tooth, 12mm Bore
		450104	Driven Pulley, 32 Tooth, 12mm Bore
	20	980422MSS	Square Key, 4x22mm
	21	826–318	Square Key, 6x25mm
	22	450391M	Drive Pulley, 22 Tooth, 18mm Bore
		450393M	Drive Pulley, 32 Tooth, 18mm Bore
		450394M	Drive Pulley, 44 Tooth, 18mm Bore
		450395M	Drive Pulley, 48 Tooth, 18mm Bore
7	23	See Timing Belt Table	Timing Belt, 15mm

I	24	456048	Chain Tensioner
	25	960635MSS	Hex Head Cap Screw M6-1.0x35mm
	26	450182SS	Drive Spacer SS
	27	811-296	Driven Sprocket, 10 Tooth, 12mm Bore
	28	811-302	Drive Sprocket, 12 Tooth, 18mm Bore
		811–304	Drive Sprocket, 16 Tooth, 18mm Bore
		811-305	Drive Sprocket, 18 Tooth, 18mm Bore
		811-306	Drive Sprocket, 20 Tooth, 18mm Bore
IJ	29	See Timing Chain Table0	Timing Chain, #40
	30	450272P	Rotation Label CW
		450273P	Rotation Label CCW
		-	

Item 23: Standard Timing Belts								
Pulley	Teeth	Belt	Part					
Drive Pulley	Driven Pulley	Length	Number					
22	32	460 mm	814–105					
32	22	450 mm	814–104					
32	32	475 mm	814–065					
44	32	520 mm	814–108					
48	19	500 mm	814–101					
48	22	500 mm	814–101					
48	28	535 mm	814–064					

П	Item 29: Standard Timing Chains								
	Sprocke	et Teeth	Pitch	Part					
	Drive Sprocket	Driven Sprocket	Length	Number					
	22	32	35	456050					
	32	22	37	456052					
	32	32	39	456053					
	44	32	39	456053					

#### 7300 Series Drive Mounting Components



Item	Part Number	Description
1	450028P	Cover, Clear
2	807–968	Hex Flange Head Screw M58x10mm
3	960510MSS	Hex Head Cap Screw M58x10mm
4	450181MSS	Cover Mounting Bracket SS
5	960625MSS	Hex Head Cap Screw M6-1.0x25mm
6	911–201	Flat Washer 1/4" SS
7	802–123	Bearing (2x)
8	801–116	Nylon Bearing
9	450178MSS	Slide Bar, Tensioner
10	639971MSS	Drop-In T-Bar
11	960665MSS	Hex Head Cap Screw M6-1.0x65mm
12	457850	Drive Mounting Plate Spacer SS
13	701472	Drive Mounting Plate
14	960516MSS	Hex Head Cap Screw M58x16mm
15	62M009PY411	Gearmotor, 115V Single Phase, 167 RPM
	62M030PY411	Gearmotor, 115V Single Phase, 50 RPM
	62M009PY423	Gearmotor, 230V Three Phase, 167 RPM
	62M030PY423	Gearmotor, 230V Three Phase, 50 RPM
16	911–120	Lock Washer, 5/16"
17	960890MSS	Hex Head Cap Screw M8-1.25x90mm
18	450101	Driven Pulley, 19 Tooth, 12mm Bore
	450102	Driven Pulley, 22 Tooth, 12mm Bore
	450103	Driven Pulley, 28 Tooth, 12mm Bore
	450104	Driven Pulley, 32 Tooth, 12mm Bore
19	980422MSS	Square Key, 4x22mm
20	826–318	Square Key, 6x25mm
21	450391M	Drive Pulley, 22 Tooth, 18mm Bore
	450393M	Drive Pulley, 32 Tooth, 18mm Bore
	450394M	Drive Pulley, 44 Tooth, 18mm Bore
	450395M	Drive Pulley, 48 Tooth, 18mm Bore
22	See Timing Belt Table	Timing Belt, 15mm

23	456048	Chain Tensioner
24	960635MSS	Hex Head Cap Screw M6-1.0x35mm
25	450182SS	Drive Spacer SS
26	811-296	Driven Sprocket, 10 Tooth, 12mm Bore
27	811-302	Drive Sprocket, 12 Tooth, 18mm Bore
	811-304	Drive Sprocket, 16 Tooth, 18mm Bore
	811-305	Drive Sprocket, 18 Tooth, 18mm Bore
	811-306	Drive Sprocket, 20 Tooth, 18mm Bore
28	See Timing Belt Table	Timing Chain, #40 x 35 Pitch Length
29	450272P	Rotation Label CW
	450273P	Rotation Label CCW
	24 25 26 27 28	24 960635MSS   25 450182SS   26 811–296   27 811–302   811–304 811–305   811–306 28   28 See Timing Belt Table   29 450272P

Item 22: Standard Timing Belts							
	Pulley Teeth		Belt	Part			
	Drive Pulley	Driven Pulley	Length	Number			
	22	32	460 mm	814–105			
	32	22	450 mm	814–104			
	32	32	475 mm	814–065			
	44	32	520 mm	814–108			
	48	19	500 mm	814–101			
	48	22	500 mm	814–101			
	48	28	535 mm	814–064			

Item 28: Standard Timing Chains						
Sprocket Teeth		Pitch	Part			
Drive Sprocket	Driven Sprocket	Length	Number			
22	32	35	456050			
32	22	37	456052			

## **Return Policy**

No returns will be accepted without prior written factory authorization. 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. 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 to reference.

There will be a 15% restocking charge on all new items returned for credit where Dorner was not at fault. These will not be accepted after 60 days from original invoice date. The restocking charge covers inspection, cleaning, disassembly, and reissuing 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. Feel free to contact Dorner for the name of your local representative. Our technical sales and service staff will gladly help with your questions on Dorner products.

For a copy of Dorner's Limited Warranty, contact factory, distributor, service center or visit our website @ 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. <sup>©</sup>Dorner Mfg. Corp. 2000

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Printed in U.S.A.