



# **3200 & 5200 Series Side Mount 90° Drive Package for Light & Standard Load 60 Hz Gearmotors**

## **Installation, Maintenance & Parts Manual**



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## 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

### **WARNING**

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

### **DANGER**



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

### **DANGER**



**DO NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.**

### **WARNING**



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

### **WARNING**



Gearmotors may be **HOT**.  
**DO NOT TOUCH** Gearmotors.

### **WARNING**



Exposed moving parts can cause severe injury.  
**REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.**

### **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 conveyor components.

- 1

2

3

4

5

6
- Conveyor

Gearmotor Mounting Package

Gearmotor Assembly

Spider Web Bushing

Anti-Rotation Pin

Coupling Half

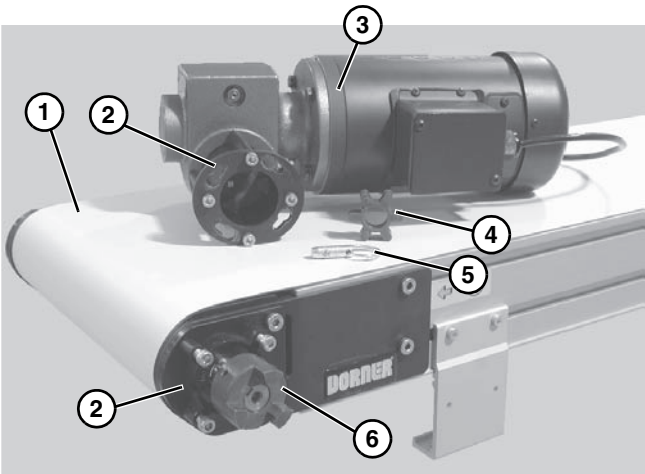


Figure 1

# Specifications

## Gearmotor Mounting Package Models:

Example:

32

M

S

H

S

A

Mount Position = A, B, C or D  
(see detail to the right)

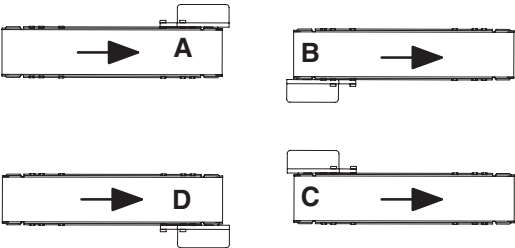
Gearmotor Type: S = Standard Load  
L = Light Load

Output Shaft Type = 90° Industrial

Mount Style = Side Mount

Language Code = U.S. English

Product Series: 32 = 3200 Series  
52 = 5200 Series



## Table 1: Gearmotor Specifications

Item	Light Load Gearmotor			Standard Load Gearmotor			
	Single-Phase	Three Phase	DC Variable Speed	Single-Phase	Three Phase	VFD Variable Speed	DC Variable Speed
Output Power	0.25 hp (0.19 kw)			0.5 hp (0.37 kw)			
Input Voltage	115VAC	208 – 230/460 VAC	130VDC	115VAC	208 – 230/460 VAC	230 VAC	90VDC
Input Frequency	60Hz		N/A	60Hz		10 – 60Hz	N/A
Input Current (Amperes)	5.0	1.2/0.6	2.2	7.4	2.1 – 2/1	1.6	5.0
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1			5:1, 10:1, 20:1, 40:1, 60:1			
Frame Size	NEMA 42CZ			NEMA 56C			
Motor Type	Totally enclosed, Fan cooled			Totally enclosed, Fan cooled			

# Specifications

**Table 2: Belt Speeds for Fixed Speed 90° 60 Hz Gearmotors**

Light Load Gearmotors				Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HL4(vp)FN	29	226	25.5	32M060HS4(vp)FN	29	226	25.5	23	7.0
32M040HL4(vp)FN	43	237	26.8	32M040HS4(vp)FN	43	247	27.9	34	10.4
32M020HL4(vp)FN	86	142	16	32M020HS4(vp)FN	86	248	27.9	69	21.0
32M010HL4(vp)FN	173	78	8.8	32M010HS4(vp)FN	173	156	17.6	137	41.8
N/A	N/A	N/A	N/A	32M005HS4(vp)FN	345	81	9.1	275	83.8

(vp) = voltage and phase

23 = 208 – 230/460 V, 3-phase

11 = 115 V, 1-phase

**Table 3: Belt Speeds for Variable Speed 90° DC Gearmotors**

Light Load Gearmotors				Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HLD3DEN	42	198	22.4	32M060HSD9DEN	42	198	22.4	4.0 – 33	1.2 – 10
32M040HLD3DEN	63	163	18.4	32M040HSD9DEN	63	215	24.3	6.0 – 50	1.8 – 15
32M020HLD3DEN	125	98	11.1	32M020HSD9DEN	125	196	22.1	12 – 100	3.6 – 30
32M010HLD3DEN	250	54	6.1	32M010HSD9DEN	250	108	12.2	24 – 200	7.3 – 61
N/A	N/A	N/A	N/A	32M005HSD9DEN	500	56	6.3	48 – 398	15– 121

**Table 4: Belt Speeds for Fixed Speed 90° VFD Gearmotors**

Light Load Gearmotors				Standard Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HL423EN	29	226	25.5	32M060HS423EN	29	226	25.5	2.3 – 22.9	0.7 – 7.0
32M040HL423EN	43	237	26.8	32M040HS423EN	43	247	27.9	3.4 – 34.3	1.0 – 10.5
32M020HL423EN	86	142	16	32M020HS423EN	86	248	27.9	6.9 – 68.6	2.1 – 20.9
32M010HL423EN	173	78	8.8	32M010HS423EN	173	156	17.6	13.7 – 137.3	4.2 – 41.9
32M005HL423EN	345	41	4.6	32M005HS423EN	345	81	9.1	27.5 – 274.6	8.4 – 83.7

## NOTE

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

# Installation

## Required Tools

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

## Mounting

### ⚠ WARNING

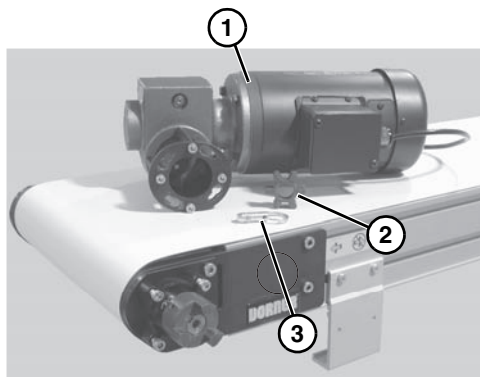


Exposed moving parts can cause severe injury.  
**LOCK OUT POWER** before removing guards or performing maintenance.

### Installation Component List:

- |   |                    |
|---|--------------------|
| 1 | Gearmotor Assembly |
| 2 | Spider Web Bushing |
| 3 | Anti-rotation pin  |

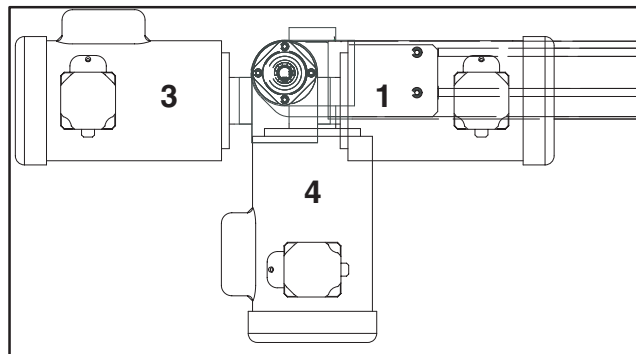
1. Typical components (**Figure 2**).



**Figure 2**

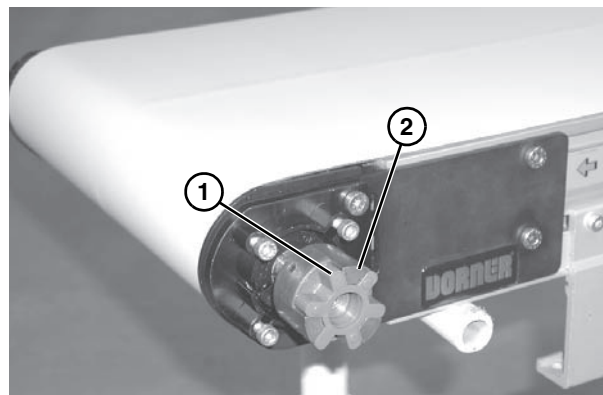
### NOTE

*Gearmotor may be operated in positions 1, 3 or 4 (**Figure 3**).*



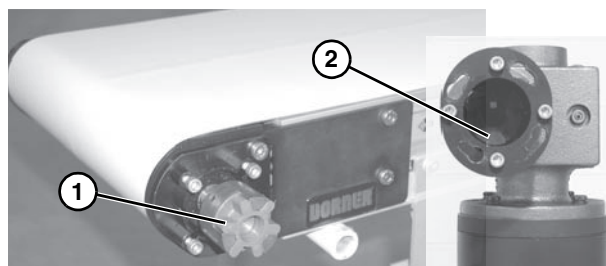
**Figure 3**

2. Install spider bushing (**Figure 4**, item 1) in three jaw coupling (**Figure 4**, item 2).



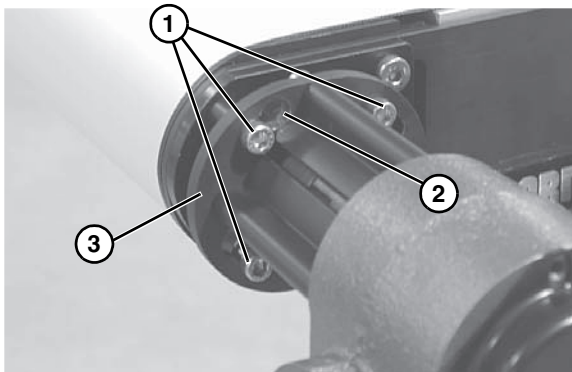
**Figure 4**

3. Rotate conveyor belt and attached conveyor coupling (**Figure 5**, item 1) to align with gearmotor coupling (**Figure 5**, item 2).



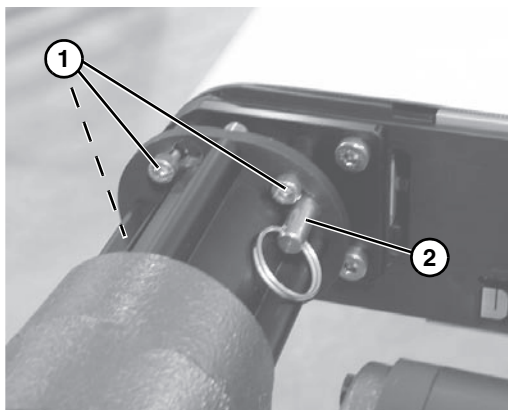
**Figure 5**

- Slide mounting screws (**Figure 6, item 1**) through slots (**Figure 6, item 2**) in gearmotor bracket (**Figure 6, item 3**). Rotate gearmotor assembly into desired position.



**Figure 6**

- Tighten screws (**Figure 7, item 1**) to 146 in-lbs (16.5 N-m) and install anti rotation pin (**Figure 7, item 2**).



**Figure 7**

# 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

## Gear Reducer Replacement

### ⚠ WARNING



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

1. Remove two (2) screws (Figure 8, item 1) and remove drive shaft cover (Figure 8, item 2).

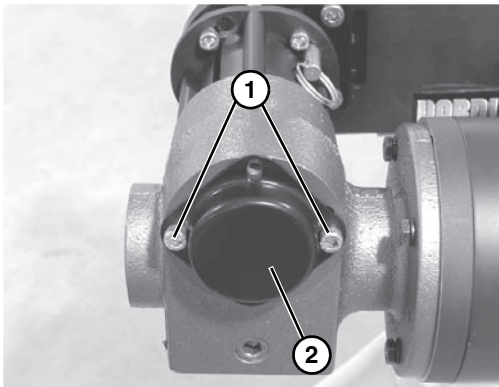


Figure 8

### ⚠ WARNING

Gearmotor can rotate and fall off, causing injury.  
**Support the gearmotor** prior to removing anti rotation pin.

2. Loosen the four (4) coupling lock screws (Figure 9, item 1), remove anti rotation pin (Figure 9, item 2). Rotate and remove gearmotor assembly.

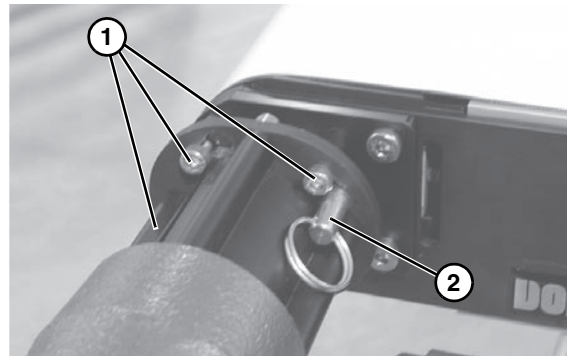


Figure 9

3. Remove the four (4) gearmotor coupling guard screws (Figure 10, item 1) and remove the gearmotor coupling guard (Figure 10, item 2) and mounting ring (Figure 10, item 3).

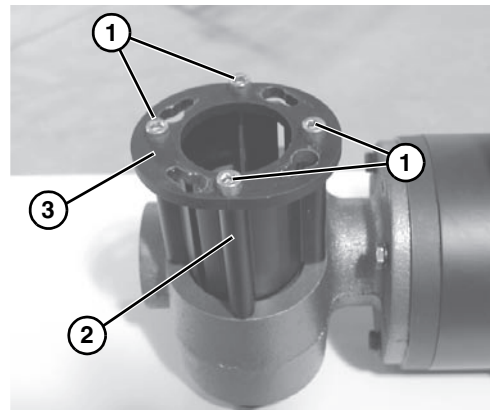


Figure 10

4. Remove four screws (Figure 11, item 1). Detach motor (Figure 11, item 2) from gear reducer (Figure 11, item 3). Retain motor output shaft key (Figure 11, item 4).

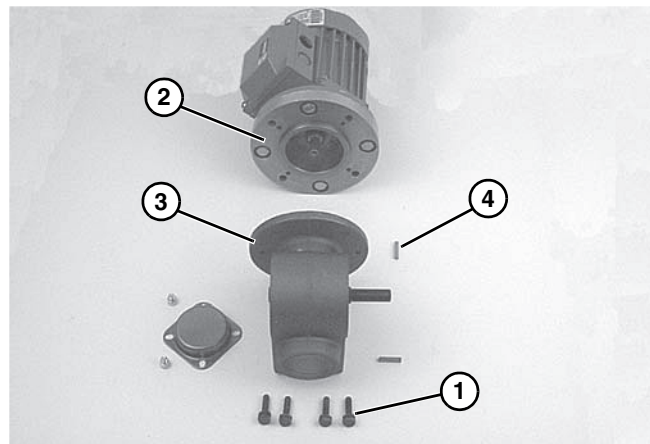
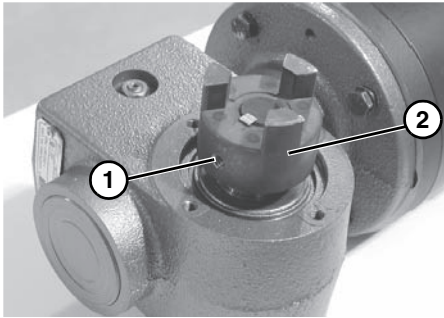


Figure 11

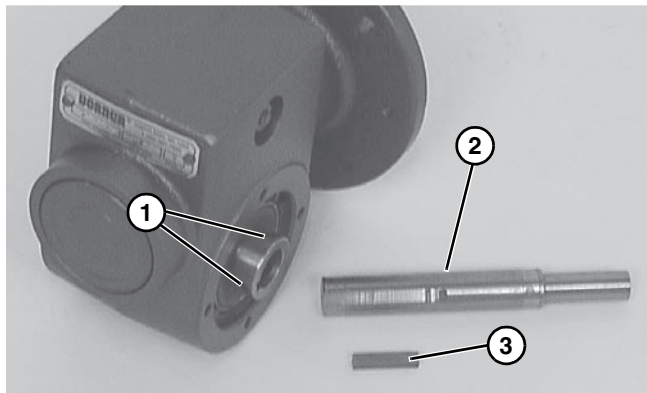
# Preventive Maintenance and Adjustment

5. Loosen set screw (**Figure 12, item 1**) and remove 3 jaw coupling (**Figure 12, item 2**).



**Figure 12**

6. Loosen set screws (**Figure 13, item 1**) and remove gear reducer output shaft (**Figure 13, item 2**) and key (**Figure 13, item 3**).



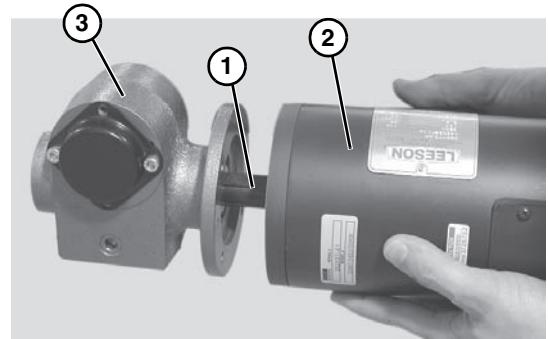
**Figure 13**

7. Insert the new shaft (**Figure 13, item 2**) and key (**Figure 13, item 3**) into new gear reducer. Tighten set screws (**Figure 13, item 1**) to 35 in-lb (4 N-m).
8. Install cover (**Figure 8, item 2**) and tighten two (2) screws (**Figure 8, item 1**) to 50 in-lbs (5.6 N-m).

## IMPORTANT

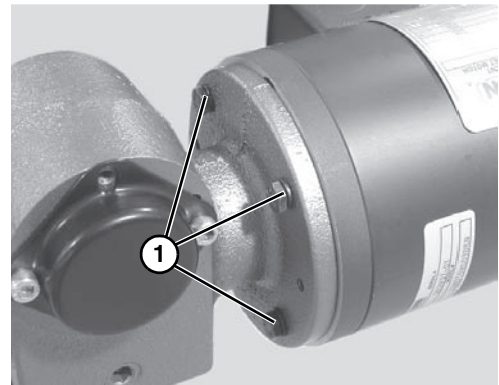
*Be extremely careful when coupling motor to gear reducer. Avoid misalignment and forcing the connection causing possible permanent gear reducer seal damage.*

9. With key (**Figure 14, item 1**) in keyway, slide motor (**Figure 14, item 2**) and gear reducer (**Figure 14, item 3**) together.



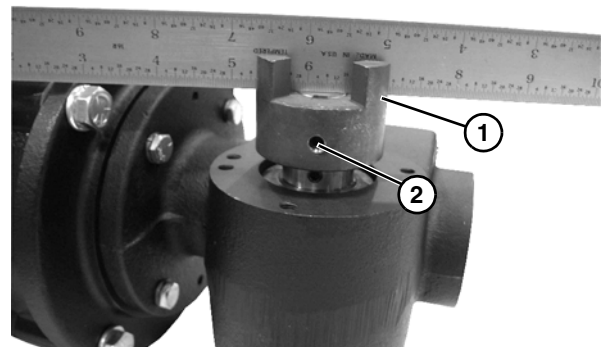
**Figure 14**

10. Install screws (**Figure 15, item 1**) and tighten to 65 in-lbs (7.3 N-m).



**Figure 15**

11. Install 3 jaw coupling (**Figure 16, item 1**) so that the shaft is even with the coupling, and tighten set screw (**Figure 16, item 2**) to 45 in-lbs (5 N-m).



**Figure 16**

12. Install gearmotor coupling guard (**Figure 10, item 2**) and mounting ring (**Figure 10, item 3**) to gearmotor, and tighten screws (**Figure 10, item 1**) to 110 in-lb (12 N-m).
13. Complete steps 2 through 5 of "Mounting" section beginning on page 6.

# Preventive Maintenance and Adjustment

## Motor Replacement

### ⚠ WARNING



Exposed moving parts can cause severe injury.

**LOCK OUT POWER** before removing guards or performing maintenance.

### ⚠ 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 17, item 1) and remove cover (Figure 17, item 2).

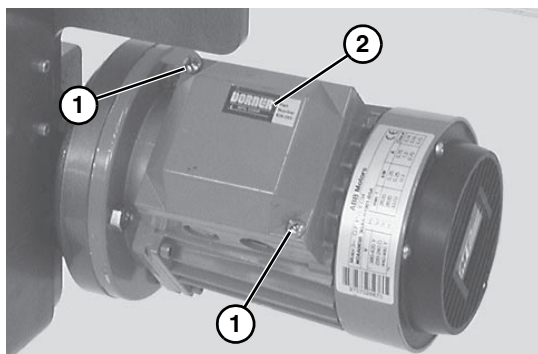


Figure 17

- b. Record wire colors on terminals 1, 2 and 3. Loosen wire nuts and remove wires 1, 2 and 3.
  - c. Loosen cord grip and remove cord.
3. For DC variable speed motor, unplug motor cord at disconnect (Figure 18, item 1).

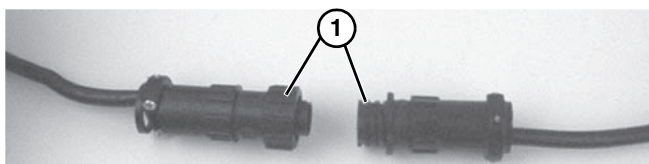


Figure 18

4. Remove four (4) screws (Figure 19, item 1). Detach motor (Figure 19, item 2) from gear reducer (Figure 19, item 3). Retain motor output shaft key (Figure 20, item 1).

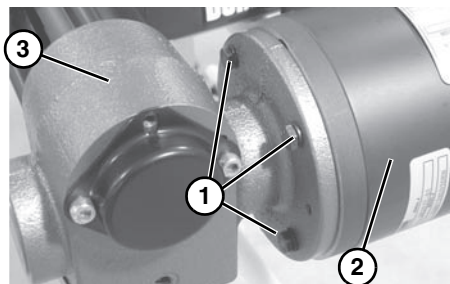


Figure 19

### IMPORTANT

*Be extremely careful when coupling motor to gear reducer. Avoid misalignment and forcing the connection causing possible permanent gear reducer seal damage.*

5. With key (Figure 20, item 1) in keyway, slide motor (Figure 20, item 2) and gear reducer (Figure 20, item 3) together.

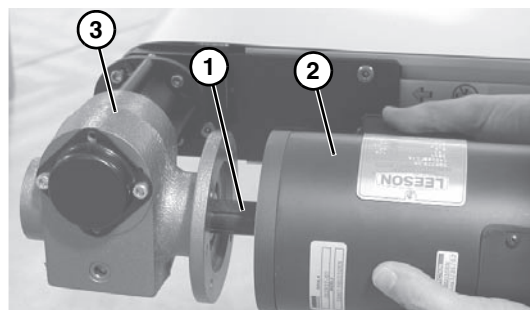


Figure 20

6. Install screws (Figure 21, item 1) and tighten to 65 in-lbs (7.3 N-m).

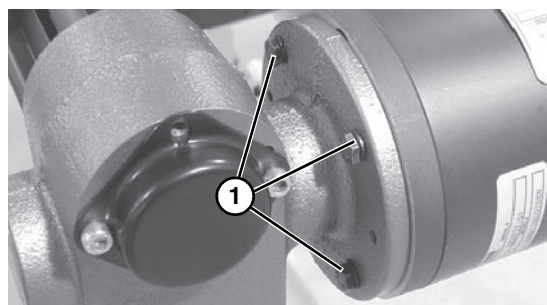


Figure 21


7. Replace wiring:
  - For a single phase motor, reverse step 1 on this page.
  - For a three phase or VFD variable speed motor, reverse step 2 on this page.
  - For a DC variable speed motor, reverse step 3 on this page.

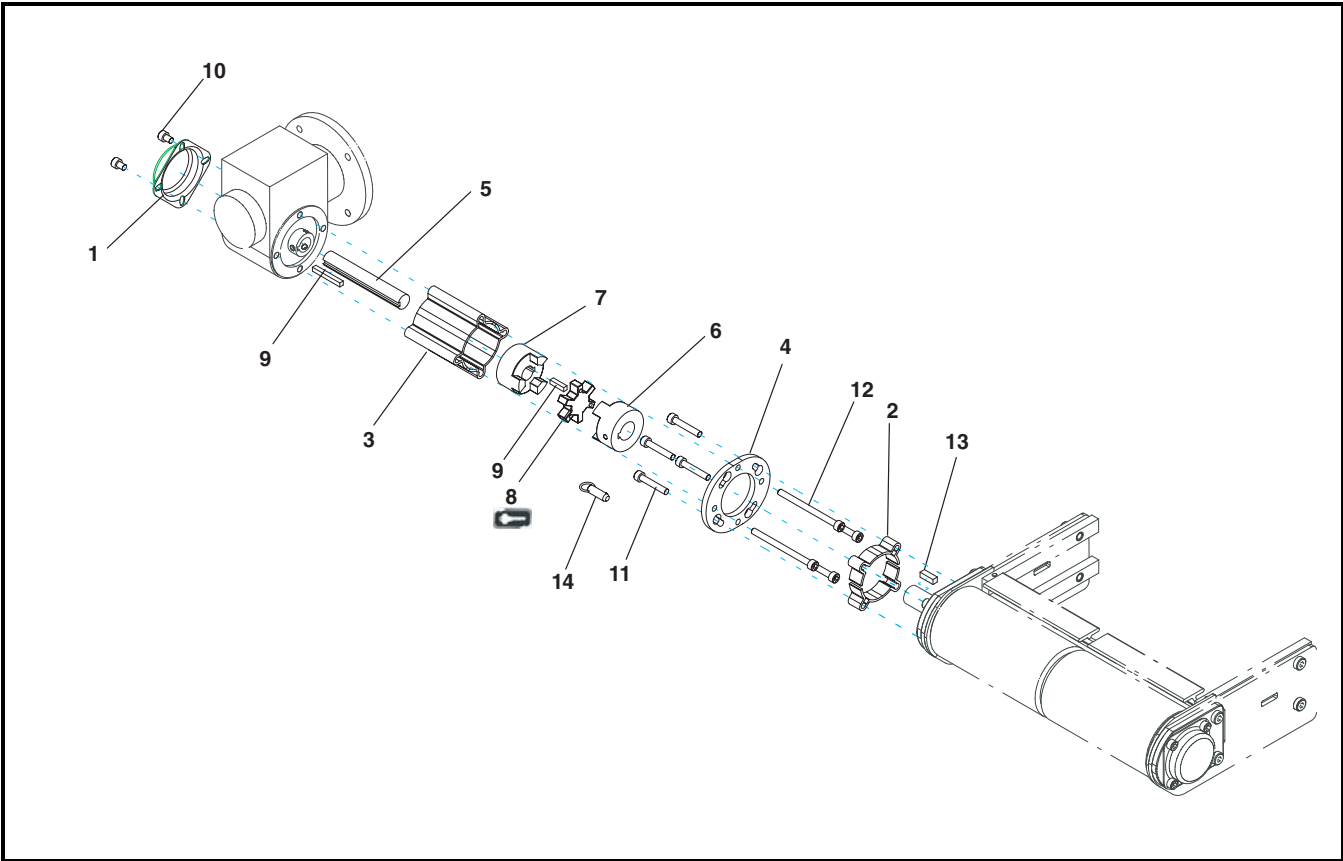


# Service Parts


## Side Mount Drive Package for 90° Industrial Gearmotors

### NOTE

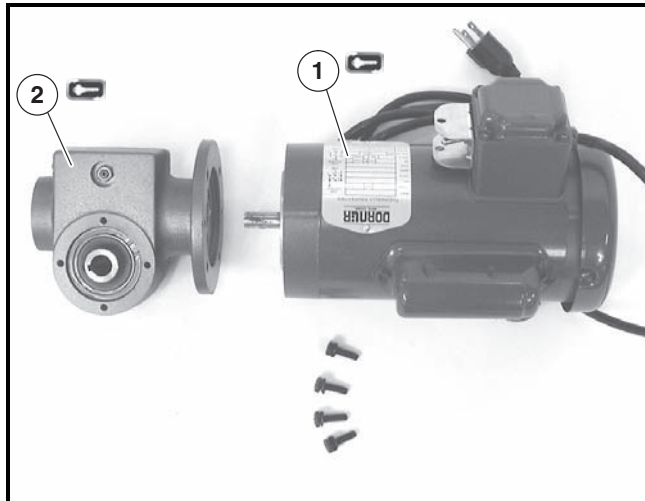
For replacement parts other than those shown in this section, contact an authorized Dorner Service Center or the factory. Key Service Parts and Kits are identified by the Performance Parts Kits logo . Dorner recommends keeping these parts on hand.



Item	Part Number	Description
1	300139	Bearing Shaft Cover
2	301092	Short Side Drive Guard (x2)
3	301093	Long Side Drive Guard (x2)
4	301094	Drive Side Mounting Ring
5	301095	5/8" Side Drive Shaft
6	807-1140	20mm 3 Jaw Coupling
7	807-1141	5/8" 3 Jaw Coupling

Item	Part Number	Description
8 	807-1143	3 Jaw Rubber Spider
9	912-084	Square Key
10	920608M	Socket Head Screw, M6 x 8 mm
11	920635M	Socket Head Screw, M6 x 35 mm
12	920680M	Socket Head Screw, M6 x 80 mm
13	980630M	Square Key
14	807-1169	Quick Release Pin

## 90° Industrial Gearmotors



Item	Part No.	Description
1	62MS411FN	Motor, 0.25hp (0.19Kw), 115/230 Volts, 60 Hz, 1-Phase
	62MS411FR	Motor, 0.25hp (0.19Kw), 115/230 Volts, 60 Hz, 1-Phase with Reversing
	62MS423	Motor, 0.25hp (0.19Kw), 208-230/460 Volts, 60 Hz, 3-Phase
	22MSD3DEN	Motor, 0.25hp (0.19Kw), 130 VDC
	62MH411FN	Motor, 0.5hp (0.37Kw), 115/230 Volts, 60Hz, 1-Phase
	62MH423	Motor, 0.5hp (0.37Kw) 208-230/460 Volts, 60Hz, 3 Phase
	62MHD9DEN	Motor, 0.5hp (0.37Kw), 90 VDC
	32MS423EN	Motor, 0.5hp (0.37Kw), 230 Volts, 3 Phase Inverter Duty
	32MHD9DEN	Motor, 0.75 hp, (0.56Kw), 90 VDC
2	32M005HL	Gear Reducer, 5:1, NEMA 42CZ
	32M010HL	Gear Reducer, 10:1, NEMA 42CZ
	32M020HL	Gear Reducer, 20:1, NEMA 42CZ
	32M040HL	Gear Reducer, 40:1, NEMA 42CZ
	32M060HL	Gear Reducer, 60:1, NEMA 42CZ
	32M005HS	Gear Reducer, 5:1, NEMA 56C
	32M010HS	Gear Reducer, 10:1, NEMA 56C
	32M020HS	Gear Reducer, 20:1, NEMA 56C
	32M040HS	Gear Reducer, 40:1, NEMA 56C
	32M060HS	Gear Reducer, 60:1, NEMA 56C
	32M010HH	Gear Reducer, 10:1, 140 TC

# 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 (if available, part serial number).

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization (RMA) number for reference. RMA will automatically close 30 days after being issued. To get credit, items must be new and undamaged. There will be a return charge on all items returned for credit, where Dorner was not at fault. It is the customer's responsibility to prevent damage during return shipping. Damaged or modified items will not be accepted. The customer is responsible for return freight.

## Conveyors and conveyor accessories

Standard catalog conveyors	30%
MPB, 7200, 7300 Series, cleated and specialty belt	50%
AquaGard & AquaPruf Series conveyors	non-returnable items
Engineered to order products	case by case
Drives and accessories	30%
Sanitary stand supports	non-returnable items

## Parts

Standard stock parts	30%
Plastic chain, 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 Customer Service Team 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](http://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. 2010

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