



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

Installation, Maintenance & Parts Manual



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Introduction

IMPORTANT

<i>Some illustrations may show guards removed. DO NOT operate equipment without guards.</i>

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 5,156,260, 5,156,261, 5,203,447, 5,265,714, 6,871,737, 6,910,571, 6,971,509, 6,298,981 and patent applications in other countries.

Dorner LPZ Series conveyors are covered by patent numbers 5,156,260, 5,156,261, 5,203,447, 5,265,714, 5,875,883 and patent applications in other countries.

Dorner 5200 Series conveyors are covered by patent numbers 7,735,638, 7,874,419, and patent applications in other countries.

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 components.

- | | |
|---|--------------------|
| 1 | Conveyor |
| 2 | Gearmotor Assembly |
| 3 | Spider Web Bushing |
| 4 | Anti-Rotation Pin |
| 5 | Coupling Half |

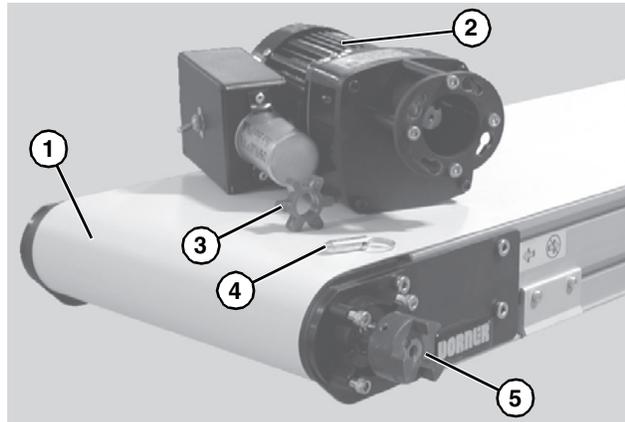


Figure 1

Specifications

Gearmotor Mounting Package Models:

Example:

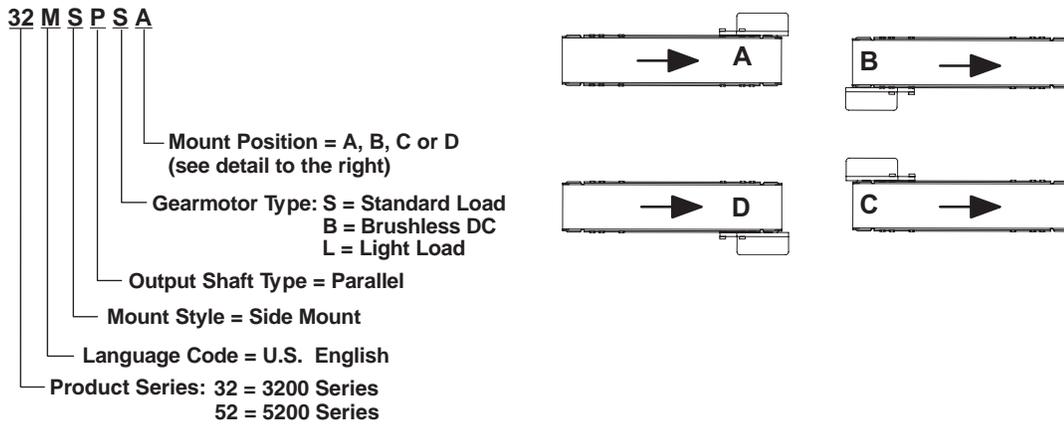


Table 1: Gearmotor Specifications

	Single Phase	Three Phase	DC Variable Speed	VFD Variable Speed	Brushless DC
Power/ Gear Ratio	hp (kW)	hp (kW)	hp (kW)	hp (kW)	hp (kW)
5:1	.08 (.06)	0.17 (0.13)	0.12 (0.09)	0.17 (0.13)	-
10:1	0.17 (0.13)	0.17 (0.13)	0.25 (0.19)	0.17 (0.13)	0.25 (0.19)
20:1	0.33 (0.25)	0.38 (0.28)	0.25 (0.19)	0.38 (0.28)	0.25 (0.19)
30:1	0.33 (0.25)	0.38 (0.28)	0.25 (0.19)	0.38 (0.28)	-
50:1 (Brushless Only)	N/A	N/A	N/A	N/A	0.25 (0.19)
60:1	0.33 (0.25)	0.38 (0.28)	0.33 (0.25)	0.38 (0.28)	-
180:1	0.33 (0.25)	0.38 (0.28)	N/A	0.38 (0.28)	-
Input Voltage	115 VAC	230 VAC	130 VDC	230 VAC	*115/230 VAC
Input Frequency	60 Hz	60 Hz	N/A	10 to 60 Hz	60 Hz

* Controller Inputs

Specifications

Table 1: Gearmotor Specifications Continued

	Single Phase	Three Phase	DC Variable Speed	VFD Variable Speed
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: RPM/Torque for Fixed Speed Parallel Shaft 60 Hz Gearmotors

Standard Load Gearmotors				
Part Number	RPM	In-lb	N-m	
62M180PS4vpFn	10	226	25.5	
62M060PS4vpFn	29	237	26.8	
32M030PS4vpFn	58	142	16.0	
32M020PS4vpFn	86	78	8.8	
32M010PS4vpFn	173	41	4.6	
32M005PS4vpFn	345	41	4.6	

(vp) = voltage and phase

11 = 115 V, 1-phase

23 = 208 – 230/460 V, 3-phase

Table 3: RPM/Torque for Variable Speed Parallel Shaft VFD Gearmotors

Standard Load Gearmotors				
Part Number	RPM	In-lb	N-m	
62M180PS423EN	1.7 - 10	226	25.5	
62M060PS423EN	4.8 - 29	237	26.8	
32M030PS423EN	9.7 - 58	142	16.0	
32M020PS423EN	14.3 - 86	78	8.8	
32M010PS423EN	29.8 - 173	41	4.6	
32M005PS423EN	57.5 - 345	41	4.6	

Table 4: RPM/Torque for Variable Speed Parallel Shaft DC Gearmotors

Standard Load Gearmotors				
Part Number	RPM	In-lb	N-m	
62M180PSD3DEN	1.7 - 14	226	25.5	
62M060PSD3DEN	5 - 42	237	26.8	
62M030PSD3DEN	10 - 83	142	16.0	
62M020PSD3DEN	15 - 125	78	8.8	
62M010PSD3DEN	30 - 250	41	4.6	

Specifications

Table 5: RPM/Torque for Brushless DC Gearmotors

Gearmotors				
Part Number	Gear Ratio	RPM	In-lb	N-m
62M050PSBDDEN	50:1	2-60	240	28
62M020PSBDDEN	20:1	5-150	103	11.7
62M010PSBDDEN	10:1	10-300	52	5.9

Table 6: Conveyor Belt Speed Factor

Series	Ft/revolution	M/revolution
3200	0.803	0.248
5200 / 5300	1.00	0.305

NOTE

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

Belt Speed Calculation:

How to Calculate Belt Speed

1. Determine gearmotor RPM from tables 2-5.
2. Determine conveyor speed factor using table 6. Based on your conveyor type, select the appropriate factor.
3. Calculate belt speed:

Example: Belt Speed = Gearmotor RPM (tables 2-5) x Conveyor Speed Factor (table 6)

3200 Series parallel shaft DC variable speed 20:1 gearmotor with 44 tooth sprocket on gearmotor (Drive) and 28 tooth sprocket on the conveyor output shaft (Driven).

Gearmotor =	62M020PSD3DEN	= 15 - 125 RPM
Speed Factor =	3200 Series	= 0.803 ft/min per RPM
Minimum Belt Speed =	15 x 0.803	= 12 Ft/min
Maximum Belt Speed =	125 x 0.803	= 100 Ft/min

Required Tools

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

Mounting

⚠ WARNING

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

Installation Component List:

1	Gearmotor Assembly
2	Spider Web Bushing
3	Anti-Rotation Pin

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

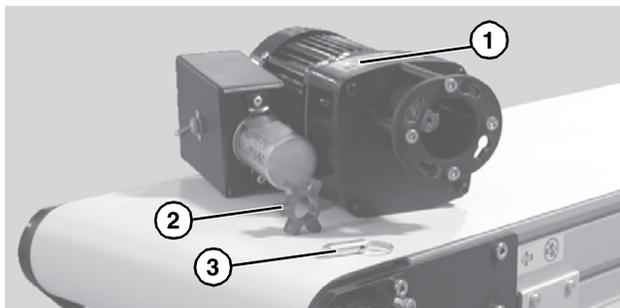


Figure 2

2. Install spider bushing (**Figure 3, item 1**) in three jaw coupling (**Figure 3, item 2**).

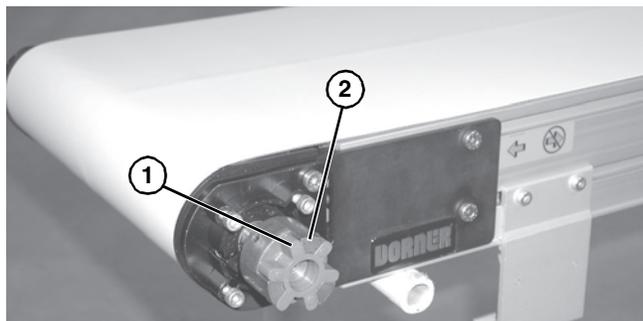


Figure 3

3. Rotate conveyor belt and attached conveyor coupling (**Figure 4, item 1**) to align with gearmotor coupling (**Figure 4, item 2**).

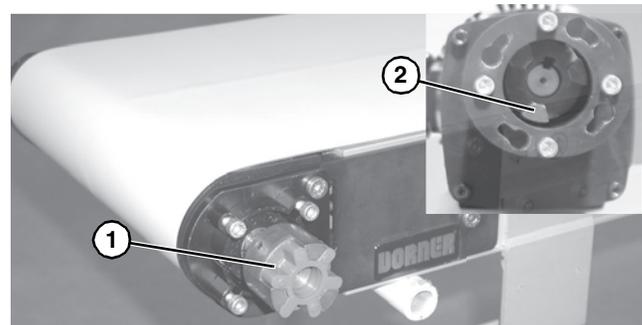


Figure 4

4. Slide mounting screws (**Figure 5, item 1**) through slots (**Figure 5, item 2**) in gearmotor bracket (**Figure 5, item 3**) and rotate gearmotor assembly into desired position.

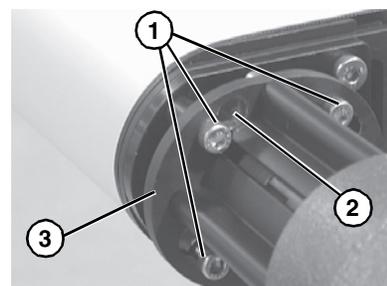


Figure 5

5. Tighten screws (**Figure 6, item 1**) to 146 in-lbs (16.5 N-m) and install anti rotation pin (**Figure 6, item 2**).

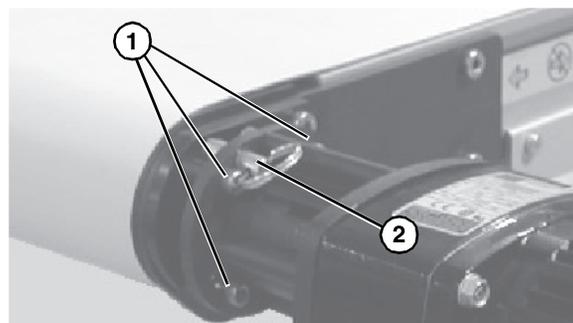


Figure 6

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

Motor Replacement

⚠ WARNING



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

⚠ WARNING



Hazardous voltage will cause severe injury or death.
LOCK OUT POWER BEFORE WIRING.

Single Phase Motor

1. For single phase motor, unplug power cord from outlet.

Three Phase and VFD Motor

1. Loosen terminal box screws (**Figure 7, item 1**) and remove cover (**Figure 7, item 2**).

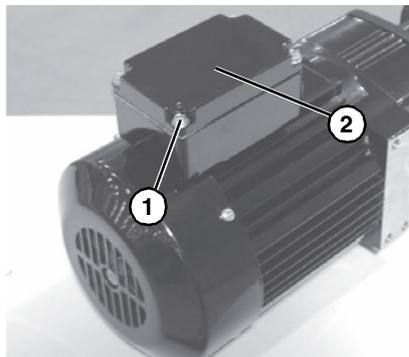


Figure 7

2. Record wire colors on terminals 1, 2 and 3. Loosen wire nuts and remove wires 1, 2 and 3.
3. Loosen cord grip and remove cord.

DC Variable Speed Motor

1. For DC variable speed motor, unplug motor cord at disconnect (**Figure 8, item 1**).

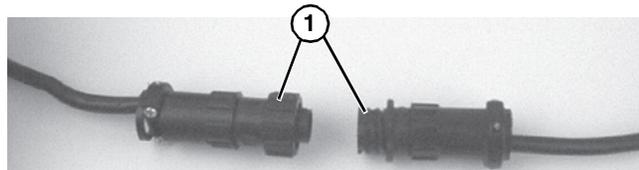


Figure 8

Preventive Maintenance and Adjustment

Brushless Motor

1. Twist covers (**Figure 9, item 1**) apart.

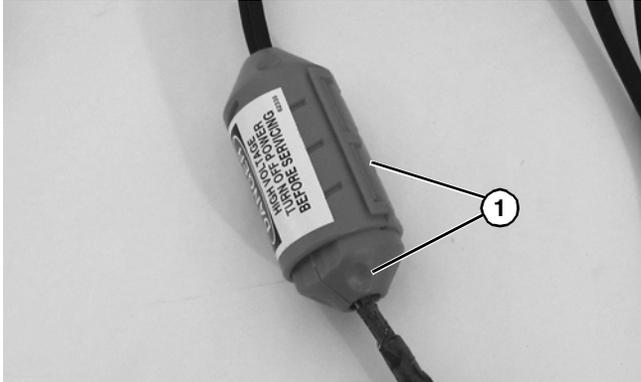


Figure 9

2. Remove outer cord cover (**Figure 10, item 1**) from inner cord cover (**Figure 10, item 2**).

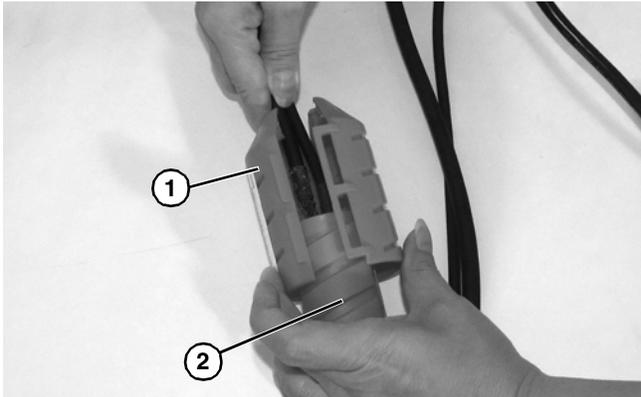


Figure 10

3. Open inner cord cover (**Figure 11, item 1**).

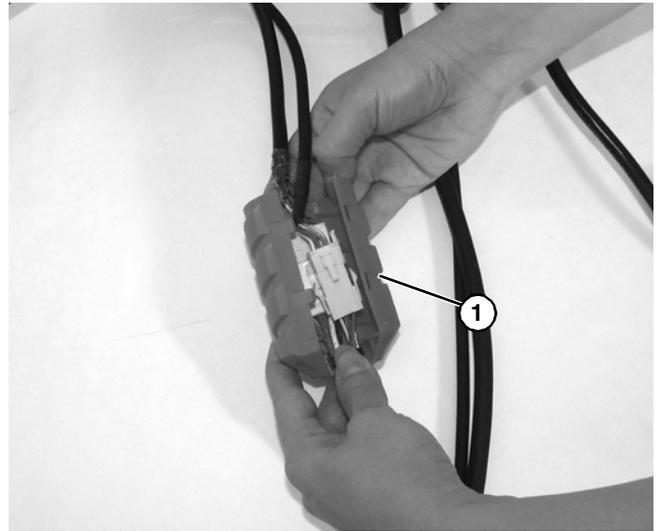


Figure 11

4. Unplug motor cord connectors (**Figure 12, item 1**) and signal cable connectors (**Figure 12, item 2**).

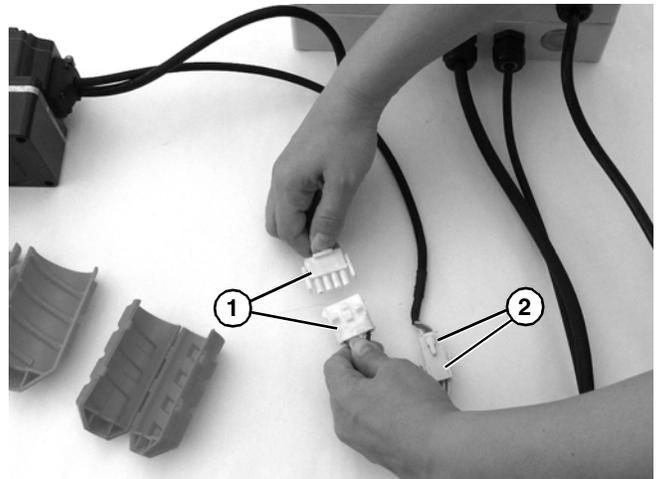


Figure 12

Preventive Maintenance and Adjustment

All Models

⚠ WARNING

Gearmotor can rotate and fall off, causing injury.

Support the gearmotor prior to removing anti rotation pin.

1. Reverse steps 2 thru 5 of the “Mounting” section starting on page 7.
2. Remove four (4) screws (**Figure 13, item 1**) and detach gearmotor coupling guard (**Figure 13, item 2**) and mounting ring (**Figure 13, item 3**).

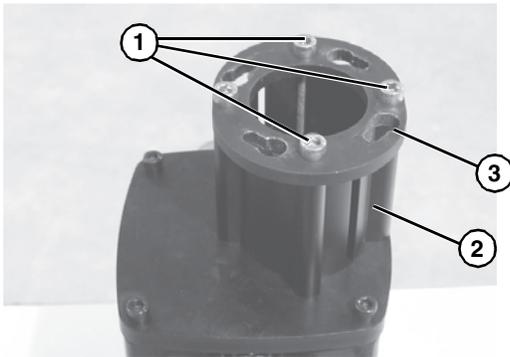


Figure 13

3. Loosen set screw (**Figure 14, item 1**) and remove 3 jaw coupling (**Figure 14, item 2**).

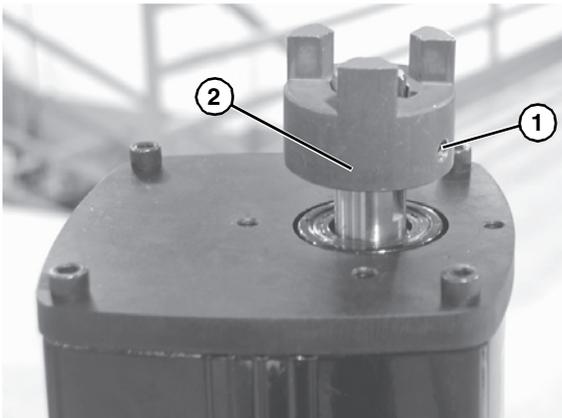


Figure 14

4. Remove four (4) screws (**Figure 15, item 1**) and detach motor (**Figure 15, item 2**).

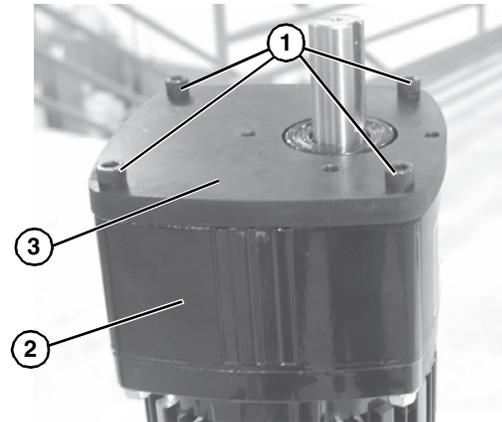


Figure 15

5. Install mounting plate (**Figure 15, item 3**) on new motor with screws (**Figure 15, item 1**) and tighten to 75 in-lbs (8.5 N-m).
6. 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).

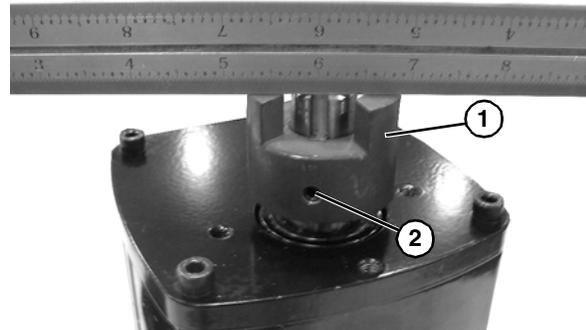


Figure 16

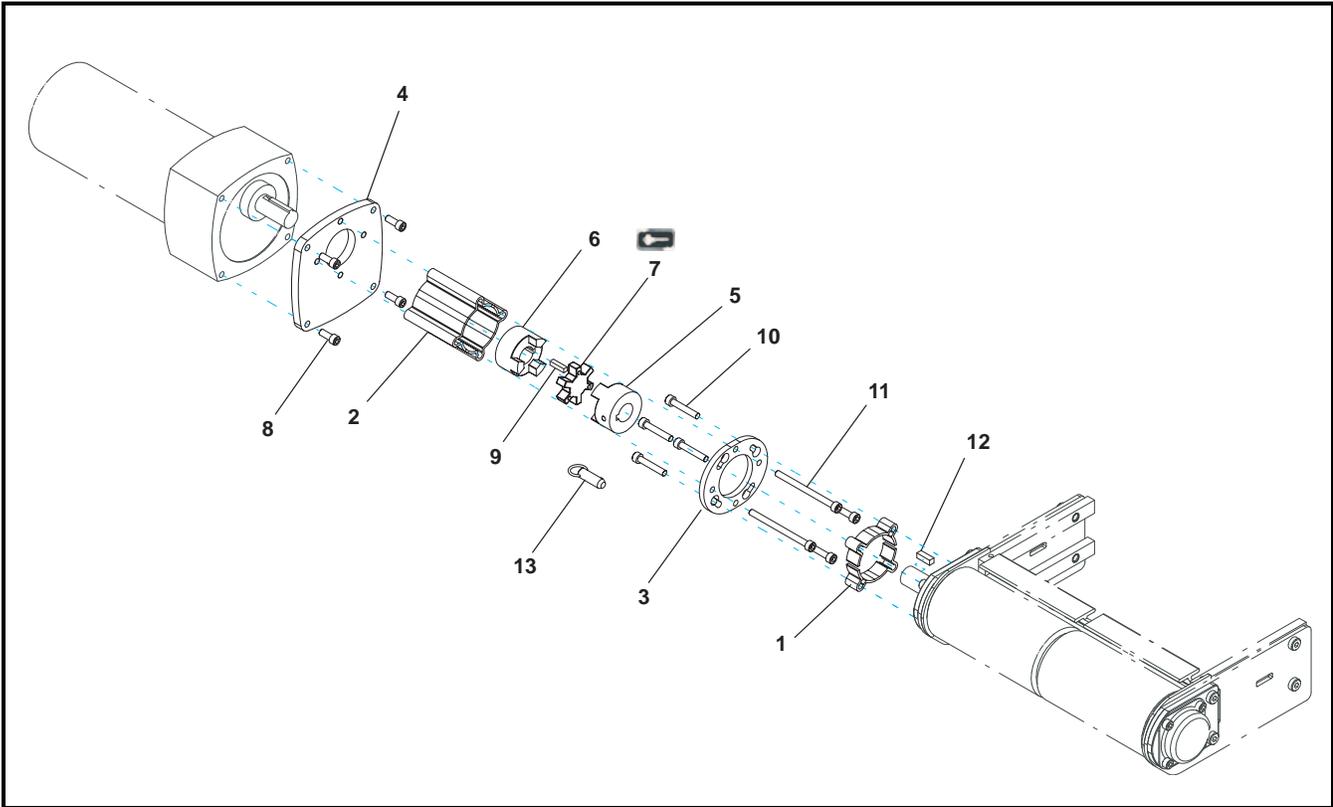
7. Install gearmotor coupling guard (**Figure 13, item 2**) and mounting ring (**Figure 13, item 3**) with four (4) screws (**Figure 13, item 1**) and tighten to 110 in-lbs (12 N-m).
8. Follow steps 2 thru 5 of the “Mounting” section starting on page 7.
9. Replace wiring:
 - For a single phase motor, reverse step 1 in “Single Phase Motor” on page 8.
 - For a three phase motor, reverse steps 1-3, in “Three Phase and VFD Motor” on page 8.
 - For a DC variable speed motor, reverse step 1 on “DC Variable Speed Motor” on page 8.
 - For a brushless motor, reverse steps 1-2 on “Brushless Motor” on page 9.

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.

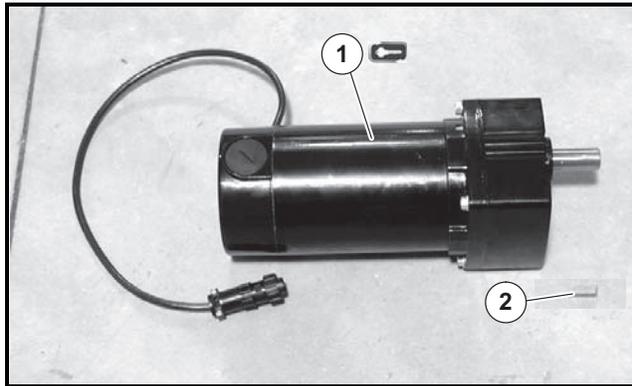
Side Mount Parallel Drive Package for Industrial Gearmotors



Item	Part Number	Description
1	301092	Short Side Drive Guard (x2)
2	301093	Long Side Drive Guard (x2)
3	301094	Side Drive Mounting Ring
4	301096	Parallel Face Motor Mounting Plate
5	807-1140	20mm 3 Jaw Coupling
6	807-1142	3/4" 3 Jaw Coupling
7 	807-1143	3 Jaw Rubber Spider

Item	Part Number	Description
8	902-157	Socket Head Cap Screw, 1/4-28 x 0.75"
9	912-078	Square Key
10	920635M	Socket Head Screw, M6 x 35 mm
11	920680M	Socket Head Screw, M6 x 80 mm
12	980630M	Square Key, Undersize
13	807-1169	Quick Release Pin

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	
	62M050PSBDDEN	Motor, 0.25hp (0.19Kw), 60 RPM, Brushless DC	
	62M020PSBDDEN	Motor, 0.25hp (0.19Kw), 150 RPM, Brushless DC	
	62M010PSBDDEN	Motor, 0.25hp (0.19Kw), 300 RPM, Brushless DC	
	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 (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.

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. 2012

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