

3200 Series Side Mount 90° Drive Package for Heavy Load Gearmotors

Installation, Maintenance & Parts Manual



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Table of Contents

Introduction	2
Warnings - General Safety	3
Product Description	4
Specifications	4
Gearmotor Mounting Package Models:	4
Table 1: 60 Hz Gearmotor Specifications	5
Table 2: Belt Speeds for Fixed Speed	
90° 60 Hz Gearmotors	5
Table 3: Belt Speeds for Fixed Speed	
90° 60 Hz VFD Gearmotors	5
Table 4: 50 Hz Gearmotor Specifications	6
Table 5: Belt Speeds for Fixed Speed	
90° 50 Hz Gearmotors	6
Table 6: Belt Speeds for VFD Variable Speed	
90° 50 Hz Gearmotors	6
Installation	7

Required Tools	7
Mounting	
Preventive Maintenance and Adjustment	
Required Tools	9
Gear Reducer Replacement	9
Motor Replacement	
Notes	
Service Parts	
3200 Series Side Mount Drive Package	
for Heavy Load 60 Hz 90° Gearmotors	13
3200 Series Side Mount Drive Package	
for Heavy Load 50 Hz 90° Gearmotors	
Heavy Load 90° Gearmotors	15
60 Hz Gearmotors	
50 Hz Gearmotors	
Return Policy	

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.

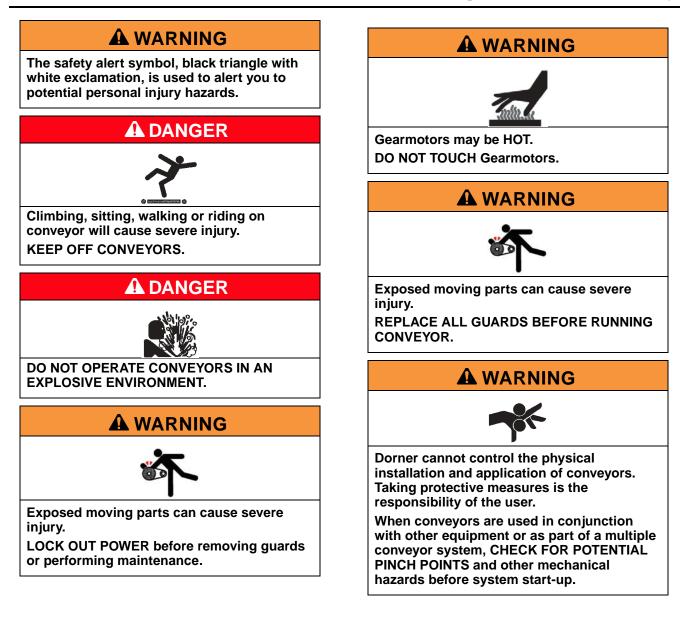
Dorner 3200 Series conveyors have patents pending.

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 related to be a section of the sect

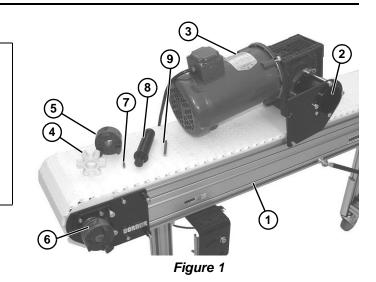
Warnings - General Safety



Product Description

Refer to Figure 1 for typical conveyor components.

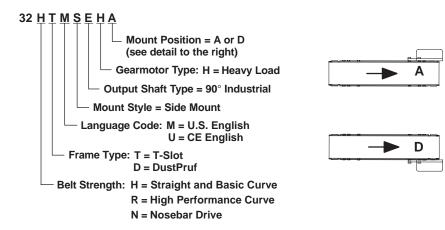
- 1 Conveyor
- 2 Gearmotor Mounting Package
- 3 Gearmotor Assembly
- 4 Spider Web Bushing
- 5 Shaft Coupling Half, Three Jaw
- 6 Coupling Half, Three Jaw
- 7 Key, Coupling
- 8 Shaft
- 9 Key, Shaft



Specifications

Gearmotor Mounting Package Models:

Example:



Specifications

Table 1: 60 Hz Gearmotor Specifications

ltem			Heavy Load Gearmotor			
nem	Single- Phase	Three Phase VFD Variable Speed		DC Variable Speed		
Output Power	0.5 hp (0.37 kw)	0.5 hp (0.37 k	w) - 2.0 hp (1.5 Kw)	0.5 hp (0.37 kw) - 0.75 hp (0.56 Kw)		
Input Voltage	115VAC	208 - 230/460 VAC	230/460 VAC	90VDC		
Input Frequency	60Hz		6 - 60Hz	N/A		
Input Current (Amperes)	8	2 - 6.2 for 230V & 1 - 3.1 for 460V	1.6 - 5 for 230V & 0.8 - 2.5 for 460V	5 - 7.5		
Gearmotor Ratios		7.5:1, 10:1, 15:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1				
Frame Size	56C	56C 56C for 0.5 hp - 1 hp & 145TC for 1.5 hp - 2 hp 56C				
Motor Type		Totally enclosed, Fan cooled				

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

	Heavy	Heavy Load Gearmotors			Standard Belts	Belt Speed for High Strength Belts	
Part Number	RPM	In-lb	N-m	Ft/min	M/min	Ft/min	M/min
32M100EH4(vp)FN	17	913	103	17	5.2	21	6.4
32M080EH4(vp)FN	22	833	94	22	6.7	28	8.5
32M060EH4(vp)FN	29	679	76	29	8.8	36	11.0
32M050EH423FN	38	1205	136	38	11.6	48	14.6
32M040EH423FN	43	1023	115	43	13.1	54	16.4
32M030EH423FN	58	1216	137	58	17.7	73	22.2
32M025EH423FN	70	1068	121	70	21.3	88	26.8
32M020EH423FN	86	1183	134	86	26.2	108	32.9
32M015EH423FN	115	909	103	115	35.1	145	44.2
32M010EH423FN	173	636	72	173	52.7	218	66.4
32M008EH423FN	230	482	54	230	70.1	290	88.3

(vp) = voltage and phase

11 = 115 V, 1-phase

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

Table 3: Belt Speeds for Fixed Speed 90° 60 Hz VFD Gearmotors

	Heavy	Load Gear	motors	Belt Speed for	Standard Belts	Belt Speed for Hi	gh Strength Belts
Part Number	RPM	In-lb	N-m	Ft/min	M/min	Ft/min	M/min
32M100EH423EN	17	913	103	1.7 - 17.0	0.5 - 5.2	2.1 - 21.5	0.1- 1.5
32M080EH423EN	22	833	94	2.2 - 22.0	0.7 - 6.7	2.7 - 27.8	0.8 - 8.4
32M060EH423EN	29	679	76	2.9 - 29.0	0.9 - 8.8	3.6 - 36.0	1.0 - 11.1
32M050EH423EN	38	1205	136	3.8 - 38.0	1.2 - 11.6	4.8 - 48.0	1.4 - 14.6
32M040EH423EN	43	1023	115	4.3 - 43.0	1.3 - 13.1	5.4 - 54.3	1.6 - 16.5
32M030EH423EN	58	1216	137	5.8 - 58.0	1.8 - 17.7	7.3 - 73.0	2.2 - 22.3
32M025EH423EN	70	1068	121	7.0 - 70.0	2.1 - 21.3	8.8 - 83.4	2.6 - 26.9
32M020EH423EN	86	1183	134	8.6 - 86.0	2.6 - 26.2	10.8 - 108.7	3.2 - 33.1
32M015EH423EN	115	909	103	11.5 - 115.0	3.5 - 35.1	14.5 - 145.3	4.4 - 44.2
32M010EH423EN	176	636	72	17.3 - 173.0	5.3 - 52.7	22.2 - 222.5	6.7 - 67.8
32M008EH423EN	330	482	54	33.0 - 330.0	10.5 - 100.6	41.7 - 417.2	12.7 - 127.1

Specifications

Table 4: 50 Hz Gearmotor Specifications

ltem	Heavy Load Gearmotor					
item	Three Phase	VFD Variable Speed				
Output Power	0.37 to 1.5 kw	0.37 to 1.5 kw				
Input Voltage	230 / 400 V	230 / 400 V				
Input Frequency	50 Hz	25 to 63 Hz				
Input Current (Amps)	see tables 6 & 7					
Gearmotor Ratios	7.5:1, 10:1, 15:1, 20:1, 30:1, 40:1, 50:1, 80:1, 100:1					
Frame Size	90B5, 90B5, 90B5, 90B5, 90B5, 80B5, 80B5, 71B5, 71B5					
Motor Type		Totally enclosed, Fan cooled				

Table 5: Belt Speeds for Fixed Speed 90° 50 Hz Gearmotors

Part Number	Ratio	RPM	M/min Standard Belts	M/min High Strength Belts	Kw	Amps	N-m
52Z100EH423FN	100	14	4.3	5.3	0.37	2.1/1.2	129
52Z080EH423FN	80	17.5	5.3	6.7	0.37	2.1/1.2	115
52Z050EH423FN	50	28	8.5	10.7	0.55	2.6/1.5	124
52Z040EH423FN	40	35	10.7	13.4	0.55	2.6/1.5	105
52Z030EH423FN	30	47	14.2	18.1	1.1	4.7/2.7	167
52Z020EH423FN	20	70	21.3	26.9	1.1	4.7/2.7	122
52Z015EH423FN	15	93	28.4	35.8	1.5	6.1/3.5	127
52Z010EH423FN	10	140	42.7	53.9	1.5	6.1/3.5	89
52Z008EH423FN	7.5	187	56.9	72.0	1.5	6.1/3.5	68

Table 6: Belt Speeds for VFD Variable Speed 90° 50 Hz Gearmotors

Part Number	Ratio	RPM	M/min Standard Belts	M/min High Strength Belts	Kw	Amps	N-m
52Z100HH423EN	100	7 to 18	2 to 5	2 to 7	0.37	2.1/1.2	129
52Z080HH423EN	80	9 to 22	3 to 7	3 to 8	0.37	2.1/1.2	115
52Z050HH423EN	50	14 to 35	4 to 11	5 to 13	0.55	2.6/1.5	124
52Z040HH423EN	40	18 to 44	5 to 13	6 to 16	0.55	2.6/1.5	105
52Z030HH423EN	30	23 to 59	7 to 18	8 to 22	1.1	4.7/2.7	167
52Z020HH423EN	20	35 to 88	11 to 27	13 to 33	1.1	4.7/2.7	122
52Z015HH423EN	15	47 to 118	14 to 36	18 to 45	1.5	6.1/3.5	127
52Z010HH423EN	10	70 to 176	21 to 54	26 to 67	1.5	6.1/3.5	89
52Z008HH423EN	7.5	93 to 235	28 to 72	35 to 90	1.5	6.1/3.5	68

NOTE

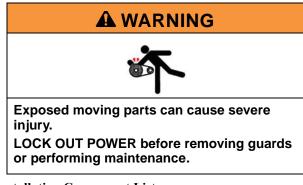
For belt speed other than those listed, contact factory for details.

Installation

Required Tools

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

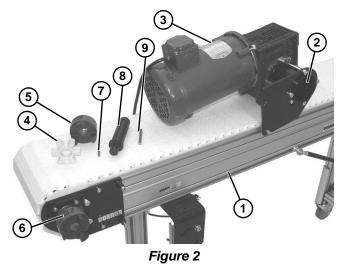
Mounting



Installation Component List:

1 Conveyor

- 2 Gearmotor Mounting Package
- 3 Gearmotor Assembly
- 4 Spider Web Bushing
- 5 Shaft Coupling Half, Three Jaw
- 6 Coupling Half, Three Jaw
- 7 Key, Coupling
- 8 Shaft
- 9 Key, Shaft
- 1. Typical components (Figure 2).



NOTE

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

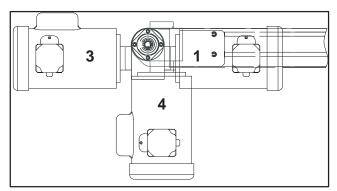


Figure 3

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

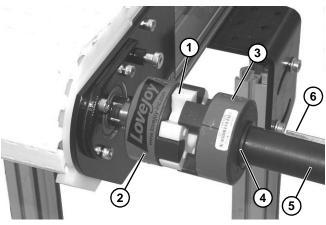


Figure 4

- 3. Verify that three jaw coupling half (Figure 4, item 3) is flush with and against flange (Figure 4, item 4) of shaft (Figure 4, item 5). Loosen set screw on coupling half and push onto shaft until flush, if necessary.
- Making sure key (Figure 4, item 6) is installed in slot in gear reducer output shaft assembly (Figure 4, item 5), install output shaft into gearmotor assembly. Raise gearmotor assembly and install three jaw coupling end of output shaft onto three jaw coupling (Figure 4, item 2).

Installation

NOTE

Be sure four spacers on mounting screws (Figure 5, item 2) are in place next to conveyor before installing gearmotor.

 Slide and pivot gearmotor and gearmotor mounting bracket (Figure 5, item 1) onto four mounting screws (Figure 5, item 2) (through slots in gearmotor bracket).

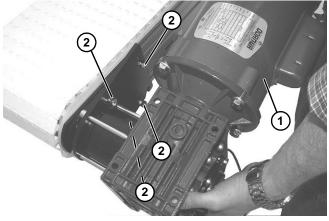


Figure 5

6. Tighten four mounting screws (Figure 5, item 2).

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



Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

Gearmotor can rotate and fall off, causing injury.

Support the gearmotor prior to removal.

1. Loosen the four (4) mounting screws (Figure 6, item 1).

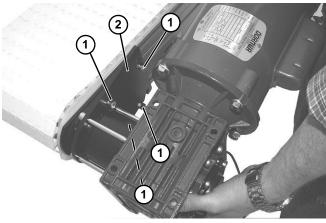


Figure 6

2. Rotate gearmotor assembly and remove gearmotor mounting bracket (Figure 6, item 2) and entire gearmotor assembly from conveyor.

3. Remove gear reducer output shaft assembly (Figure 7, item 1), and key (Figure 7, item 2) from coupler housing (Figure 7, item 3).

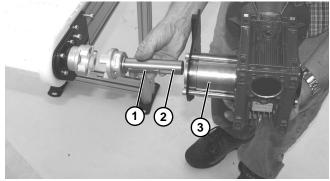


Figure 7

Remove the four (4) coupler housing screws (Figure 8, item 1) and remove the mounting bracket and coupler housing (Figure 8, item 2) as an assembly.

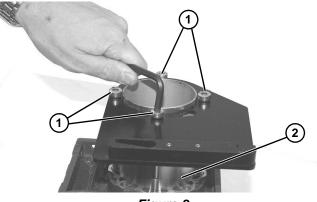


Figure 8

 Remove four screws (Figure 9, item 1). Detach motor (Figure 9, item 2) from gear reducer (Figure 9, item 3), making note of position of switch (Figure 9, item 4) for reassembly. Retain motor output shaft key (Figure 9, item 5).

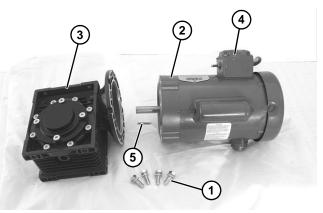


Figure 9

Preventive Maintenance and Adjustment

 Inspect gear reducer output shaft assembly for wear or damage. If necessary, loosen set screw (Figure 10, item 1) and remove 3 jaw coupling (Figure 10, item 2) from gear reducer output shaft (Figure 10, item 3).

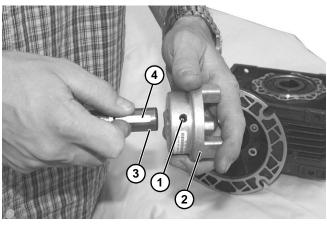


Figure 10

 Remove and retain key (Figure 10, item 4) from shaft. Install new components for shaft reverse of removal. Tighten set screw (Figure 10, item 1) to 35 in-lb (4 N-m).

NOTE

If replacing the 3 jaw coupling on conveyor or output shaft, the coupling hub surface (Figure 10, item 1) should be flush to both output shaft (Figure 10, item 2).

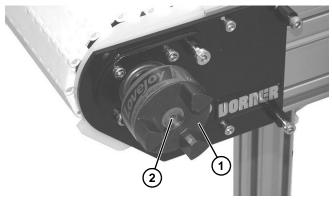


Figure 11

IMPORTANT

Be extremely careful when coupling motor to gear reducer. Avoid misalignment and forcing the connection causing possible permanent gear reducer seal damage. With key (Figure 12, item 1) in keyway, slide motor (Figure 12, item 2) and gear reducer (Figure 12, item 3) together, noting where position of switch (Figure 12, item 4) will be during installation on conveyor.

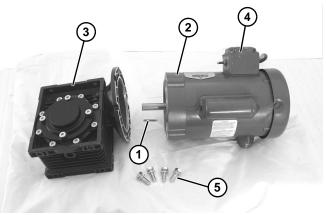


Figure 12

- 9. Install screws (Figure 12, item 5) and tighten to 65 inlbs (7.3 N-m).
- Install coupler housing (Figure 13, item 1) to gear reducer (Figure 13, item 2) and tighten screws (Figure 13, item 3).

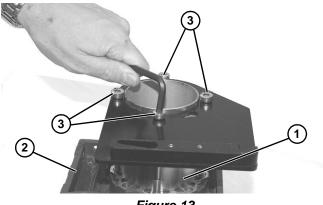


Figure 13

11. Complete steps 2 through 6 of "Mounting" section beginning on page 7.

Preventive Maintenance and Adjustment

Motor Replacement



- For three phase and VFD variable speed motor:
 - a. Loosen terminal box screws (Figure 14, item 1) and remove cover (Figure 14, item 2).

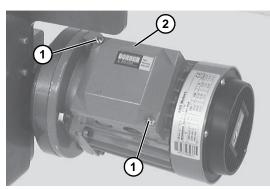


Figure 14

- 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 15, item 1).

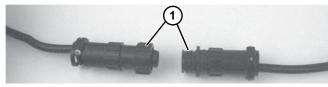


Figure 15

 Remove four (4) screws (Figure 16, item 1). Detach motor (Figure 16, item 2) from gear reducer (Figure 16, item 3). Retain motor output shaft key (Figure 16, item 4).

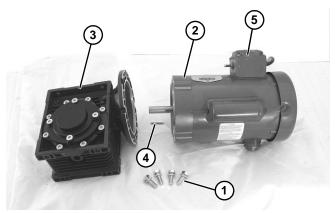


Figure 16

IMPORTANT

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

- With key (Figure 16, item 4) in keyway, slide motor (Figure 16, item 2) and gear reducer (Figure 16, item 3) together, noting where position of switch (Figure 16, item 5) will be during installation on conveyor.
- 6. Install screws (Figure 16, item 1) and tighten to 65 inlbs (7.3 N-m).
- 7. Replace wiring:
- For a single phase motor, reverse step 1.
- For a three phase or VFD variable speed motor, reverse step 2.
- For a DC variable speed motor, reverse step 3.

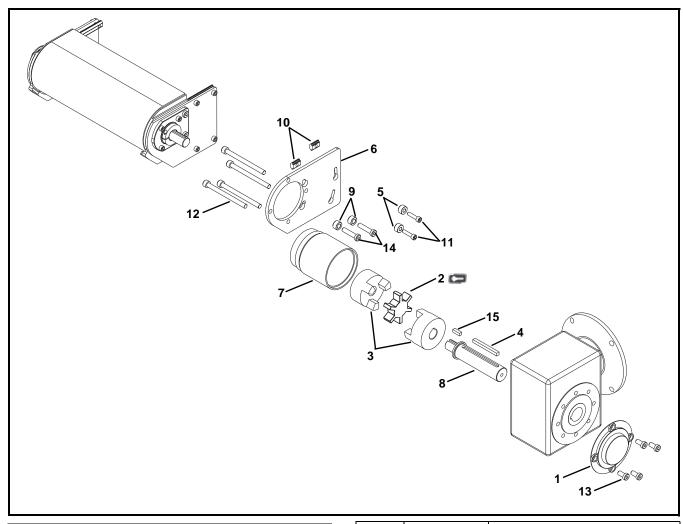
Notes

Service Parts

3200 Series Side Mount Drive Package for Heavy Load 60 Hz 90° 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.



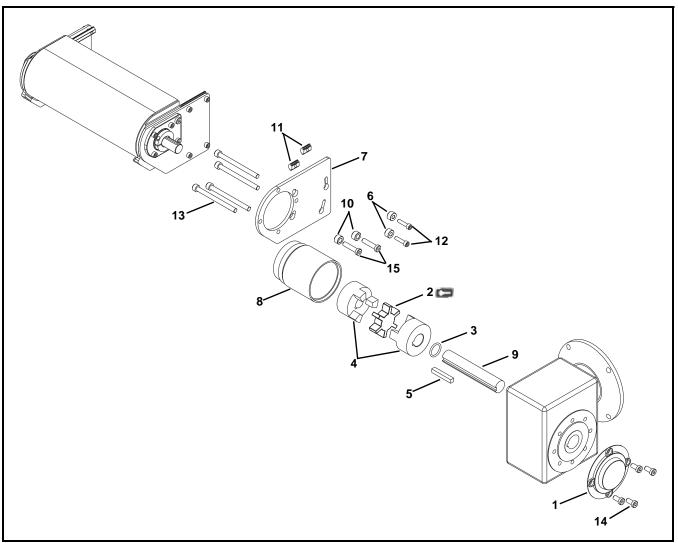
Item	Part Number	Description
1	807-1167	Gearhead Cover
2	807-1328	3 Jaw Rubber Spider
3	807-1683	3 Jaw Coupling
4	912-111	Square Key
5	350551	Standoff Spacer
6	350552	Mount Plate for Standard Belts
	350550	Mount Plate for High Strength Belts
	351047	Mount Plate for Nose Bar Tail
7	352312	Mount Tube

Item	Part Number	Description
8	352313	Output Shaft
9	450195	Cam Spacer
10	639971M	Drop-In Tee Bar for T-Slot Frames Only
11	920630M	Socket Head Screw, M6-1.00 x 30 mm for T-Slot Frame
	807-1944	Self-Drilling Hex Head Screw, 1/4-20 x 1.50" for Smart Slot Frames
12	9208100M	Socket Head Screw, M8-1.25 x 100 mm
13	950816M	Low Head Cap Screw, M8-1.25 x 16 mm
14	950835M	Low Head Cap Screw, M8-1.25 x 35 mm
15	980618M	Square Key, 6 mm x 18 mm

3200 Series Side Mount 90° Drive Package for Heavy Load Gearmotors

Service Parts

3200 Series Side Mount Drive Package for Heavy Load 50 Hz 90° Gearmotors

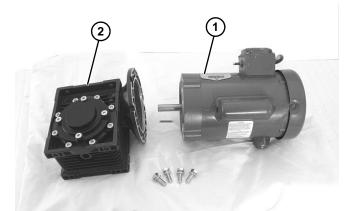


Item	Part Number	Description
1	807-1167	Gearhead Cover
2	807-1328	3 Jaw Rubber Spider
3	807-1588	O-Ring
4	807-1683	3 Jaw Coupling, 20 mm
	807-2239	3 Jaw Coupling, 25 mm
5	980850M	Square Key
6	350551	Standoff Spacer
7	350552	Mount Plate for Standard Belts
	350550	Mount Plate for High Strength Belts
	351047	Mount Plate for Nose Bar Tail

Item	Part Number	Description
8	352312	Mount Tube
9	350321	Output Shaft
10	450195	Cam Spacer
11	639971M	Drop-In Tee Bar for T-Slot Frames Only
12	920630M	Socket Head Screw, M6-1.00 x 30 mm for T-Slot Frames
	807-1944	Self-Drilling Hex Head Screw, 1/4-20 x 1.50" for Smart Slot Frames
13	9208100M	Socket Head Screw, M8-1.25 x 100 mm
14	950816M	Low Head Cap Screw, M8-1.25 x 16 mm
15	950835M	Low Head Cap Screw, M8-1.25 x 35 mm

Service Parts

Heavy Load 90° Gearmotors



60 Hz Gearmotors

Item	Part No.	Description					
1 🖸	62MH411FN	Motor, 0.5hp (0.37Kw), 115 Volts, 60 Hz, 1-Phase					
	62MH411FR	Motor, 0.5hp (0.37Kw), 115 Volts, 60 Hz, 1-Phase with Reversing Motor, 0.5hp (0.37Kw), 208-230/460 Volts, 60 Hz, 3-Phase					
	62MH423						
	32MS423EN	Motor, 0.5hp (0.37Kw), 230/460 Volts, 3-Phase VFD					
	62MHD9DEN	Motor, 0.5hp (0.37Kw), 90 Volts DC					
	32MHD9DEN	Motor, 0.75hp (0.56Kw), 90 Volts DC					
	32MHH423FN10	Motor, 1.0hp (0.75Kw), 208-230/460 Volts, 60 Hz, 3-Phase					
	32MHH423EN10	Motor, 1.0hp (0.75Kw), 230/460 Volts, 60 Hz, 3-Phase VFD					
	32MHH423FN15	Motor, 1.5hp (1.1Kw), 208-230/460 Volts, 60 Hz, 3-Phase					
	32MHH423EN15	Motor, 1.5hp (1.1Kw), 230/460 Volts, 60 Hz, 3-Phase VFD					
	32MHH423FN20	Motor, 2.0hp (1.5Kw), 208-230/460 Volts, 60 Hz, 3-Phase					
	32MHH423EN20	Motor, 2.0hp (1.5Kw), 230/460 Volts, 60 Hz, 3-Phase VFD					
2 🗂	32M008HH	Gear Reducer 7.5:1 NEMA 140TC					
	32M010HH	Gear Reducer 10:1 NEMA 140TC					
	32M015HH	Gear Reducer 15:1 NEMA 140TC					
	32M020HH	Gear Reducer 20:1 NEMA 140TC					
	32M025HH	Gear Reducer 25:1 NEMA 140TC					
	32M030HH	Gear Reducer 30:1 NEMA 140TC					
	32M040HH	Gear Reducer 40:1 NEMA 56C					
	32M050HH	Gear Reducer 50:1 NEMA 56C					
	32M060HH	Gear Reducer 60:1 NEMA 56C					
	32M080HH	Gear Reducer 80:1 NEMA 56C					
	32M100HH	Gear Reducer 100:1 NEMA 56C					

50 Hz Gearmotors

Item	Part No.	Description					
1	826-285	MTR,.37KW,1400R 230/400V 50 3P					
	826-286	MTR,.55KW,1400R 230/400V 50 3P					
	826-287	MTR,1.1KW,1400R 230/400V 50 3P					
	826-556	MTR,1.5KW,1450R 230/400V 50 3P					
2 🖸	52Z100HH	Gear Reducer,100:1, 71B5					
	52Z080HH	Gear Reducer,80:1, 71B5					
	52Z050HH	Gear Reducer,50:1, 80B5					
	52Z040HH	Gear Reducer,40:1, 80B5					
	52Z030HH	Gear Reducer,30:1, 90B5					
	52Z020HH	Gear Reducer,20:1, 90B5					
	52Z015HH	Gear Reducer,15:1, 90B5					
	52Z010HH	Gear Reducer, 10:1, 90B5					
	52Z008HH	Gear Reducer,7.5:1, 90B5					

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.

	Product Type								
	Standard Products							Engineered to order parts	
Product Line	Conveyors	Gearmotors & Mounting Packages	Support Stands	Accessories	Spare Parts (non-belt)	Spare Belts - Standard Flat Fabric	Spare Belts - Cleated & Specialty Fabric	Spare Belts - Plastic Chain	All equipment and parts
1100									
2200									
2200 Modular Belt									
2200 Precision Move									
2300									
2300 Modular Belt									
3200	30% return fee for all products except:								
3200 LPZ		30% return fee for all products except: 50% return fee for conveyors with modular belt, cleated belt or specialty belts non-returnable							case-by-case
3200 Precision Move									
4100									
5200									
5300									
6200									
Controls									
7200 / 7300	50% return fee for all products								
7350							•		•
7360	non-returnable								
7400									
7600									

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.



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DORNER MFG. CORP.

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