63M01 2200/4100/6200 Series Gang Drive Mtg. Pkgs. for Standard & Heavy Load 90° Gearmotors

Installation, Maintenance & Parts Manual

Featuring: eDrive™ Technology

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851-030 Rev. H

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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 2100 Series conveyors are covered by the following patent numbers: 5131529, 5174435, and corresponding patents and patent applications in other countries.

Dorner 4100 Series conveyors are covered by patent number 3923148 and corresponding patents and patent applications in other countries.

Dorner 2200 and 6200 Series conveyors are covered by patent number 5174435, 6109427, 6298981, 6422382 and corresponding patents 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 .

⚠ 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	Conveyor
2	Mounting Bracket
3	Gearmotor
4	Coupling

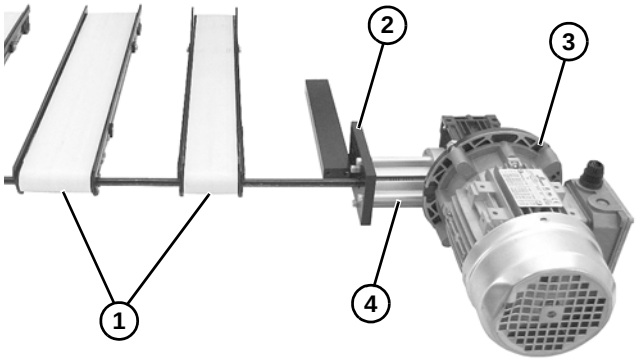


Figure 1

Specifications

Table 1: Standard Load Gearmotor Specifications

U.S. Version

	Single Phase	Three Phase	DC Variable Speed
Output Power	0.25 hp (0.19 kw)		
Input Voltage	115 Volts A.C.	208 to 230/460 Volts A.C.	130 Volts D.C.
Input Frequency	60 Hz		N/A
Input Current	5.0 Amperes	1.2 /0.6 Amperes	2.2 Amperes
Motor RPM	1725		2500
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1		
Frame Size	NEMA 42 CZ		
Motor Type	Totally Enclosed, Fan-cooled		

CE Version

	Single Phase	Three Phase	VFD Variable Speed
Output Power	0.18 kw		
Input Voltage	230 Volts A.C.	230/400 Volts A.C.	230 Volts D.C.
Input Frequency	50 Hz		25 to 63 Hz
Input Current	1.6 Amperes	1.42 /0.8 Amperes	1.4 Amperes
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1		
Protection Rating	IP55		
Frame Size	IEC 63 B5		

Table 2: Heavy Load Gearmotor Specifications

U.S. Version

	Single Phase	Three Phase	DC Variable Speed	VFD Variable Speed
Output Power	0.50 hp (0.37 kw)			
Input Voltage	115 VAC	208– 230 / 460 VAC	90 VDC	230 VAC
Input Frequency	60 Hz		N/A	10 – 60 Hz
Input Current	7.4 Amperes	2.1 – 2/ 1 Amperes	5.0 Amperes	1.6 Amperes
Motor RPM	1725		2500	1725
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1			
Frame Size	NEMA 56C			
Motor Type	Totally enclosed, Fan-cooled			

CE Version

	Three Phase
Output Power	0.19 kw
Input Voltage	230 / 400 Volts A.C.
Input Frequency	50 Hz
Full Load Amperes	1.2 / 0.7 Amperes
Gearmotor Ratios	5:1, 10:1, 20:1
Protection Ratings	IP55 for Gearmotor and Motor Starter

Table 3: Belt Speeds for Fixed Speed 90° Gearmotors

U.S. Version (60 Hz Gearmotors)

Standard Load Gearmotors				Heavy Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060EL4(vp)F(n)	29	226	25.5	32M060HS4(vp)F(n)	29	226	25.5	8	2.4
32M040EL4(vp)F(n)	43	237	26.8	32M040HS4(vp)F(n)	43	237	26.8	12	3.7
32M020EL4(vp)F(n)	86	142	16	32M020HS4(vp)F(n)	86	142	16	25	7.6
32M010EL4(vp)F(n)	173	78	8.8	32M010HS4(vp)F(n)	173	78	8.8	49	14.9
32M005EL4(vp)F(n)	345	41	4.6	32M005HS4(vp)F(n)	345	41	4.6	99	30.2

(vp) = voltage and phase

11 = 115 V, 1-phase

23 = 208 – 230/460 V, 3-phase

(n) = Reversing Capability

N = No reversing switch

R = With reversing switch (115V, 1 phase only)

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed
Part Number	RPM	N-m	M/min
62Z060ES4(vp)FN	23	26.4	2.4
62Z040ES4(vp)FN	35	28.9	3.7
62Z020ES4(vp)FN	70	19.4	7.6
62Z010ES4(vp)FN	140	10.7	14.9
62Z005ES4(vp)FN	280	5.6	29.3

(vp) = voltage and phase

21 = 230 V, 1-phase

23 = 230 V, 3-phase

43 = 400 V, 3-phase

Specifications

Table 4: Belt Speeds for Variable Speed 90° DC Gearmotors

U.S. Version

Standard Load Gearmotors				Heavy Load Gearmotors				Belt Speed	
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060ELD3DEN	42	198	22.4	32M060ESD9DEN	42	198	22.4	1.4 – 12	0.4 – 3.6
32M040ELD3DEN	63	163	18.4	32M040ESD9DEN	63	215	24.3	2.1 – 18	0.7 – 5.4
32M020ELD3DEN	125	98	11.1	32M020ESD9DEN	125	196	22.1	4.3 – 36	1.3 – 11
32M010ELD3DEN	250	54	6.1	32M010ESD9DEN	250	108	12.2	9.0 – 71	2.6 – 22
32M005ELD3DEN	500	28	3.2	32M005ESD9DEN	500	56	6.3	17 – 143	5.2 – 43

CE Version

Gearmotors			Belt Speed
Part Number	RPM @50 Hz	N-m	M/min
62Z060ES423EN	23	26.4	1.2 - 3.1
62Z040ES423EN	35	28.9	1.9 - 4.7
62Z020ES423EN	70	19.4	3.7 - 9.4
62Z010ES423EN	140	10.7	7.5 - 19
62Z005ES423EN	280	5.6	15 - 38

Table 5: Belt Speeds for Variable Speed 90° VFD Gearmotors

Heavy Load Gearmotors				Belt Speed	
Part Number	RPM*	In-lb	N-m	Ft/min	M/min
32M060ES423EN	29	198	22.4	0.8 – 8.2	0.3 – 2.5
32M040ES423EN	43	163	18.4	1.2 – 12	0.4 – 3.8
32M020ES423EN	86	98	11.1	2.5 – 25	0.8 – 7.5
32M010ES423EN	173	54	6.1	4.9 – 49	1.5 – 15
32M005ES423EN	345	28	3.2	9.9 – 99	3 – 30

* = At 60 Hz

NOTE

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

Required Tools

- Hex key wrenches:
  3 mm, 4 mm, 5 mm, 6 mm, 8 mm
- Large flat-blade screwdriver
- Torque wrench

Mounting

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

Illustration References:

1	Gearmotor Assembly
2	Spacer Guard (2x)
3	Flex Coupling
4	Square Key
5	Gearmotor Support Assembly
6	Socket Head Screw, M6-1.00 x 100 mm (4x)
7	Output Shaft
8	Hex Shaft, 4 ft. (1220 mm)
9	Flexible Tubing, 5 ft. (1524 mm)
10	Bearing Support Assembly

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

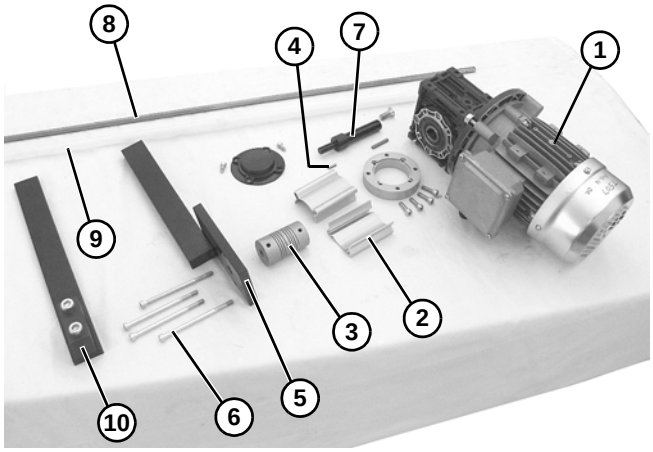


Figure 2

2. Check bearing support assembly **(Figure 3, item 1)** setup: 2200 (left) and 4100 or 6200 (right).

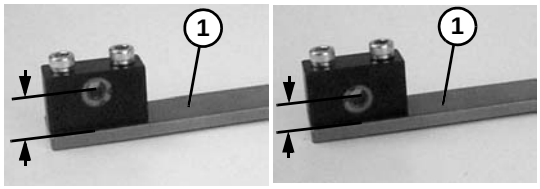


Figure 3

3. Check gearmotor support assembly **(Figure 4, item 1)** setup: 2200 (left) and 4100 or 6200 (right).

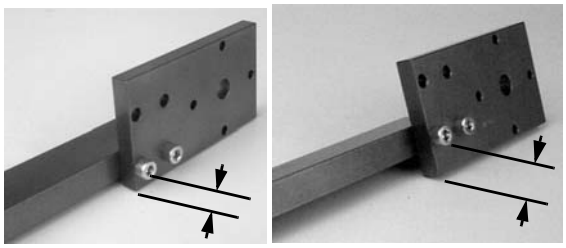


Figure 4

⚠ WARNING

Drive shaft keyway may be sharp.

HANDLE WITH CARE.

NOTE

Gearmotor may be operated in positions 2, 3 or 4 ***(Figure 5)****. Position 4 may reduce gear reducer oil seal life.*

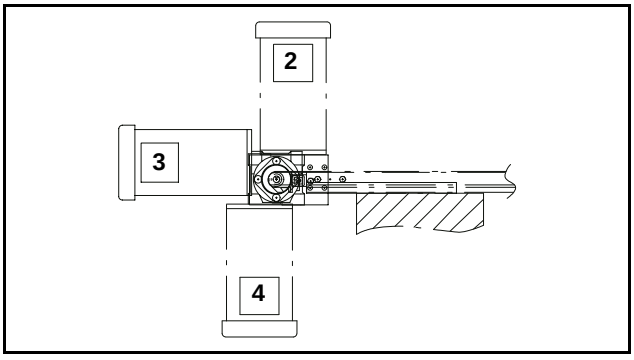


Figure 5

4. Attach spacer **(Figure 6, item 1)** to gear reducer **(Figure 6, item 2)** with four (4) screws **(Figure 6, item 3)**. Tighten screws to 50 in-lb (5.6 Nm).

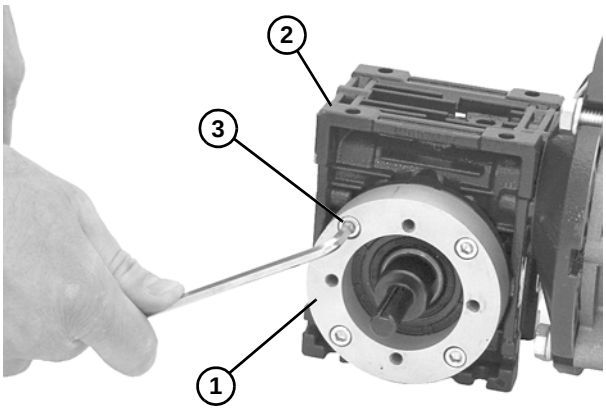


Figure 6

5. Install key **(Figure 7, item 1)** in output shaft **(Figure 7, item 2)**.

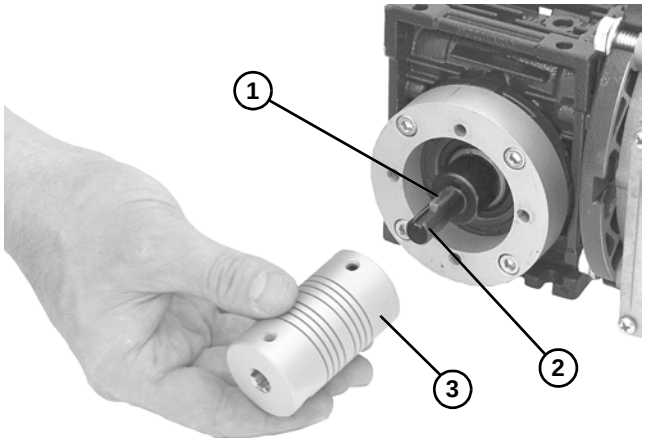


Figure 7

6. Attach flex coupling **(Figure 7, item 3)** to output shaft **(Figure 7, item 2)**.
7. Tighten set screws to 32 in-lb (3.7 Nm) **(Figure 8, item 1)** to secure coupling to output shaft.

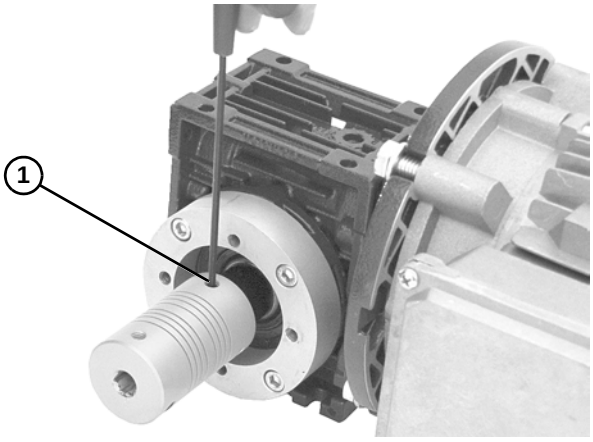


Figure 8

8. Attach guard spacer **(Figure 9, item 1)** and gearmotor support assembly **(Figure 9, item 2)** to gearmotor assembly **(Figure 9, item 3)** with four (4) screws **(Figure 9, item 4)**. Tighten screws to 50 in-lb (5.6 Nm).

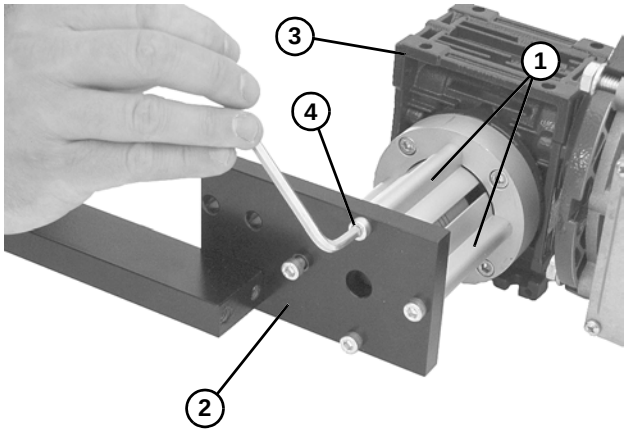


Figure 9

⚠ WARNING

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

To prevent injury, both gearmotor and bearing support assemblies must be anchored to mounting surfaces.

NOTE

*Mounting holes are not provided. Ensure that gearmotor support assembly **(Figure 10, item 1)** and bearing support assembly **(Figure 10, item 2)** are parallel and center-line of coupling matches center-line of bearing block.*

9. Attach gearmotor support assembly **(Figure 10, item 1)** and bearing support assembly **(Figure 10, item 2)** to mounting surface.

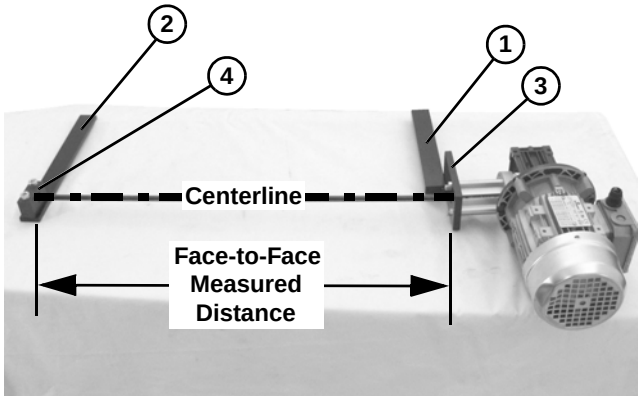


Figure 10

10. Measure distance between motor mounting plate **(Figure 10, item 3)** and bearing block **(Figure 10, item 4)**.
11. Cut hex shaft **(Figure 2, item 8)** to measured distance plus 2-1/8¨ (54 mm).
12. Align conveyors between gearmotor support assembly **(Figure 11, item 1)** and bearing support assembly **(Figure 11, item 2)**.

NOTE

*Do not secure the conveyors **(Figure 11, item 3)** to mounting surface.*

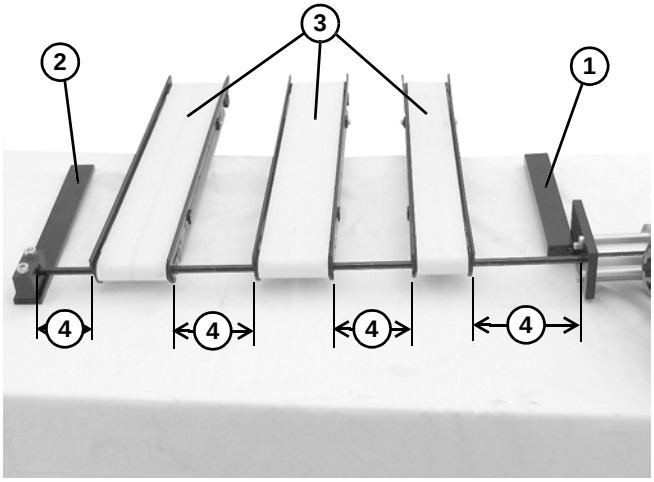


Figure 11

⚠ WARNING

Shaft covers must be installed to help prevent injury from accidental contact with rotating hex shaft. Puchase additional shaft cover (807–967) when reconfiguring conveyor setup.

13. Cut shaft cover **(Figure 2, item 9)** into pieces to match each distance **(Figure 11, item 4)** minus 1/16¨ (1.5 mm).
14. Remove screws **(Figure 12, item 1)** and remove bearing block **(Figure 12, item 2)**.
15. Slide hex shaft through conveyors **(Figure 12, item 3)** and shaft cover pieces **(Figure 12, item 4)** into flex coupling.

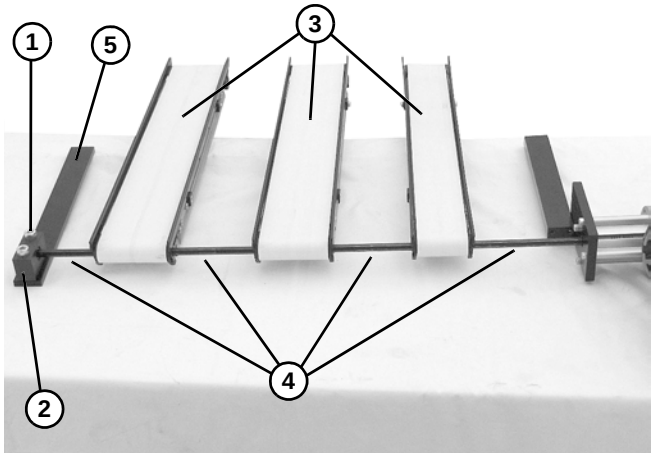


Figure 12

16. Attach bearing block **(Figure 12, item 2)** to bearing support bar **(Figure 12, item 5)** with screws **(Figure 12, item 1)**. Tighten screws to 35 ft-lb (45.5 Nm).
17. Tighten coupling set screws to 32 in-lb (3.7 Nm) **(Figure 13, item 1)**.

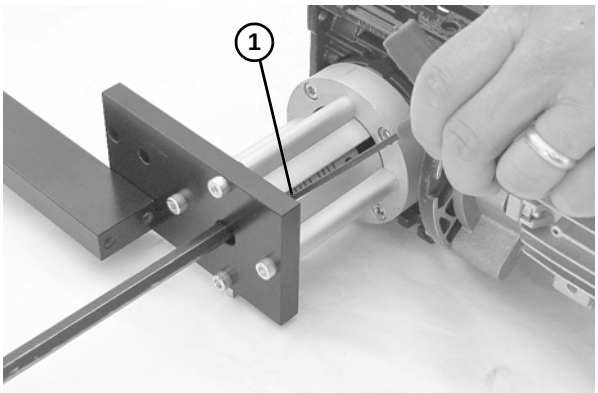


Figure 13

Required Tools

- Hex key wrenches:
  2.5 mm, 3 mm, 5 mm, 6 mm, 8 mm
- Large flat-blade screwdriver
- Adjustable wrench (for hexagon head screws)
- Torque wrench

Gear Reducer Replacement

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

⚠ WARNING

Exposed moving parts can cause severe injury.

KEEP HANDS CLEAR OF DRIVE WHILE JOGGING MOTOR.

1. Remove fan cover **(Figure 17, item 2)** and rotate fan to align set screws **(Figure 14, item 1)** with access slot **(Figure 14, item 2)**. Loosen set screws. Repeat for second set of screws.

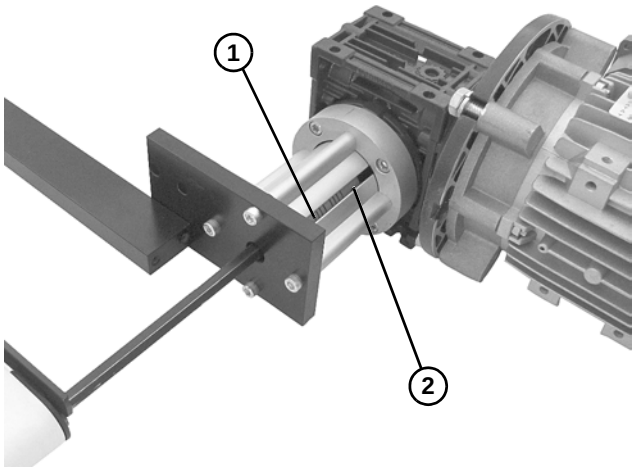


Figure 14

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

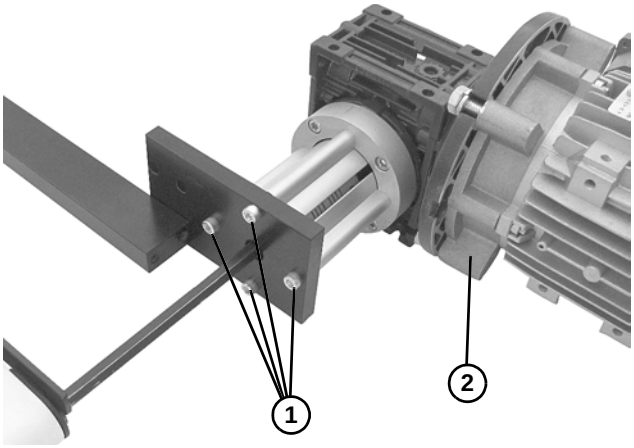


Figure 15

3. Loosen four (4) socket head screws **(Figure 16, item 1)** and detach spacer **(Figure 16, item 2)** from gear reducer **(Figure 16, item 3)**.

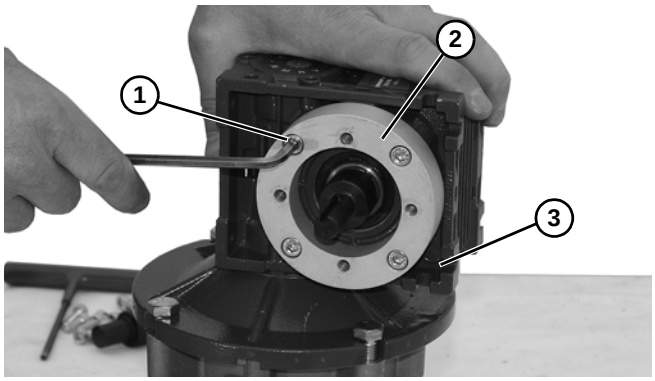


Figure 16

4. Remove four screws **(Figure 17, item 1)**. Detach motor **(Figure 17, item 2)** from gear reducer **(Figure 17, item 3)**. Retain shaft key **(Figure 17, item 4)**.

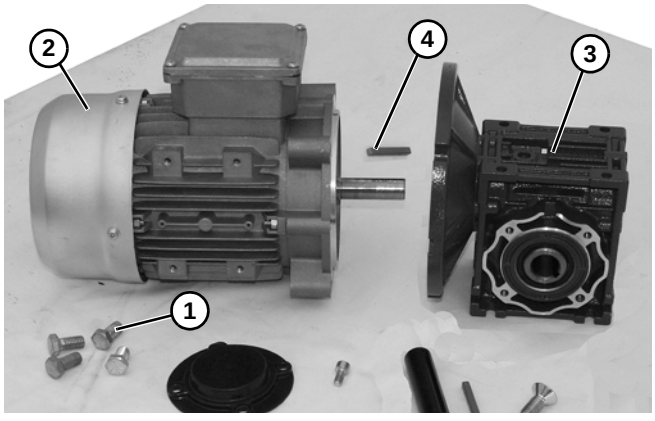


Figure 17

5. Remove two (2) screws **(Figure 18, item 1)** and detach output shaft cover **(Figure 18, item 2)**.

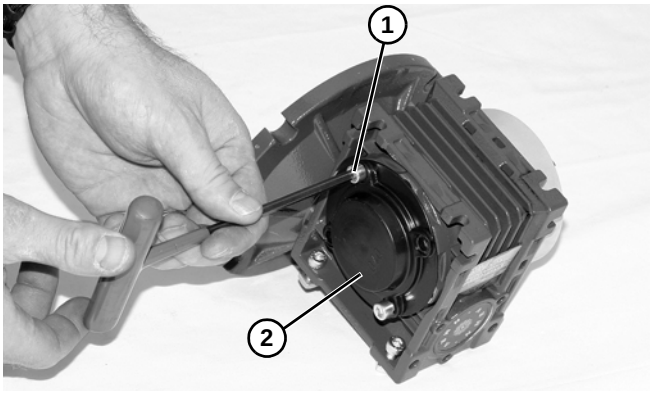


Figure 18

6. Hold the driveshaft with a wrench **(Figure 19, item 1)** as shown to keep shaft from turning, while removing screw **(Figure 19, item 2)** with hex wrench **(Figure 19, item 3)**.

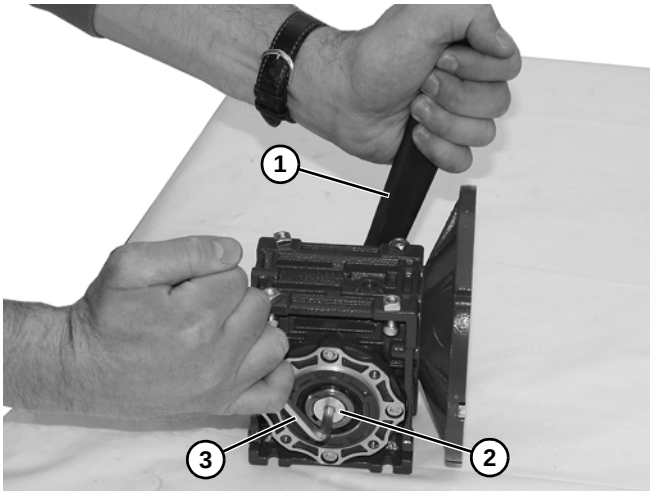


Figure 19

7. Remove driveshaft **(Figure 20, item 1)** and key **(Figure 20, item 2)**.

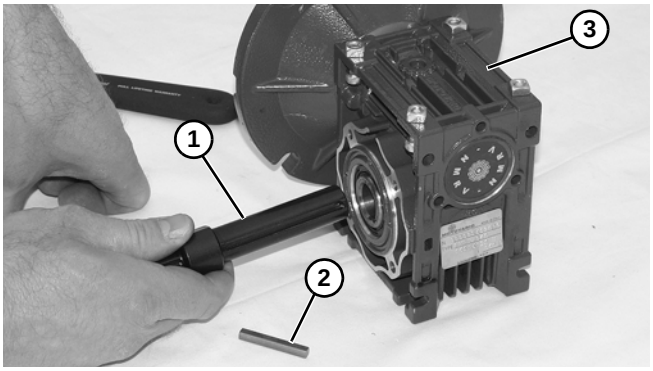


Figure 20

8. Replace gear reducer **(Figure 20, item 3)**.

9. Apply anti-seize **(Figure 21, item 1)** to shaft.

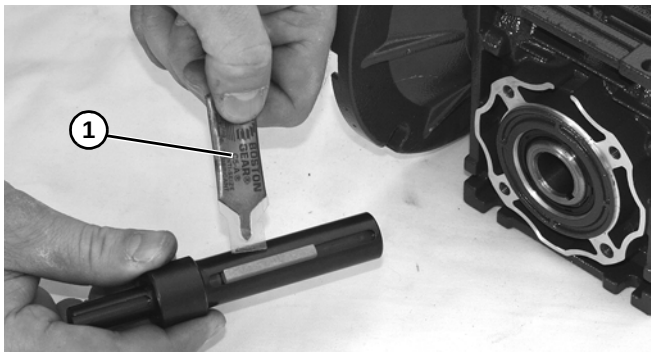


Figure 21

10. Replace the original shaft components into new gear reducer **(Figure 20)**.

IMPORTANT

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

11. Hold the driveshaft with a wrench **(Figure 19, item 1)** as shown to keep shaft from turning, while installing screw with hex wrench **(Figure 19, item 3)**. Tighten screw to 100 in-lb (11.5 Nm) for 42CZ or 350 in-lb (39.5 Nm) for 56C, 63B5 and 71B5.
12. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 17, item 4)** in keyway, slide motor **(Figure 17, item 2)** and gear reducer **(Figure 17, item 3)** together. Install screws **(Figure 17, item 1)** and tighten.
13. Reverse steps 1 through 3 beginning on page 10.

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.

LOCKOUT POWER BEFORE wiring.

1. For single phase motor, unplug power cord from outlet.
2. For three phase motor:
   a. Loosen terminal box screws **(Figure 22, item 1)** and remove cover **(Figure 22, item 2)**.

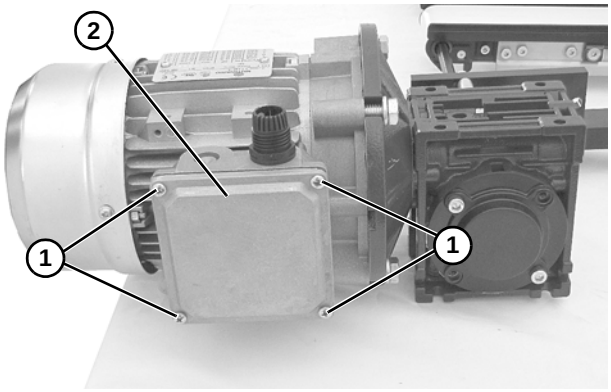


Figure 22

   b. Record wire colors connecting to wires 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 23, item 1)**.

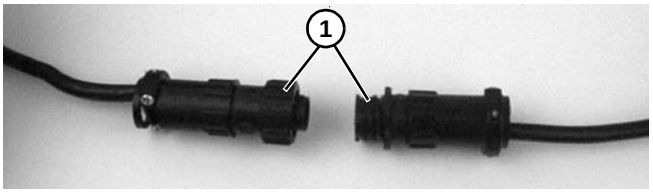


Figure 23

4. Remove four screws **(Figure 24, item 1)**. Detach motor **(Figure 24, item 2)** from gear reducer **(Figure 24, item 3)**. Retain motor output shaft key.

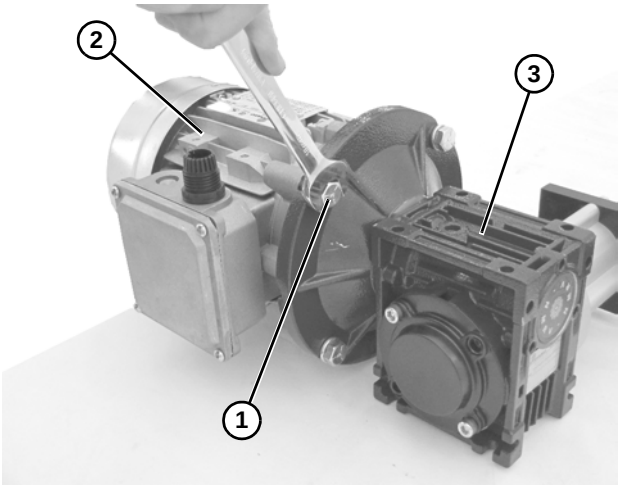


Figure 24

IMPORTANT

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

5. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 25, item 1)** in keyway, slide new motor and gear reducer together. Install screws **(Figure 24, item 1)** and tighten.

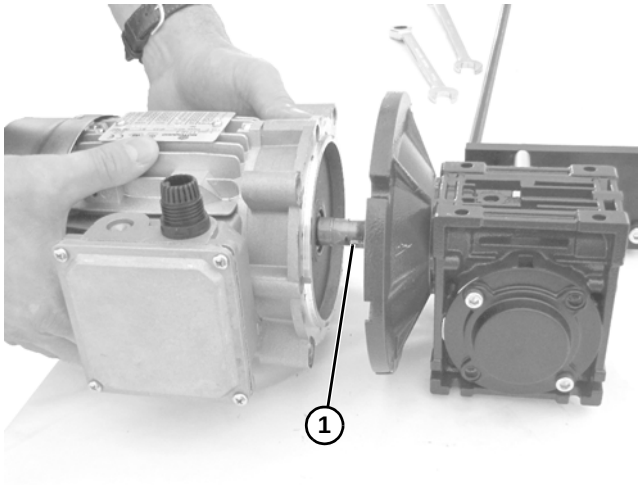


Figure 25

6. Replace wiring:

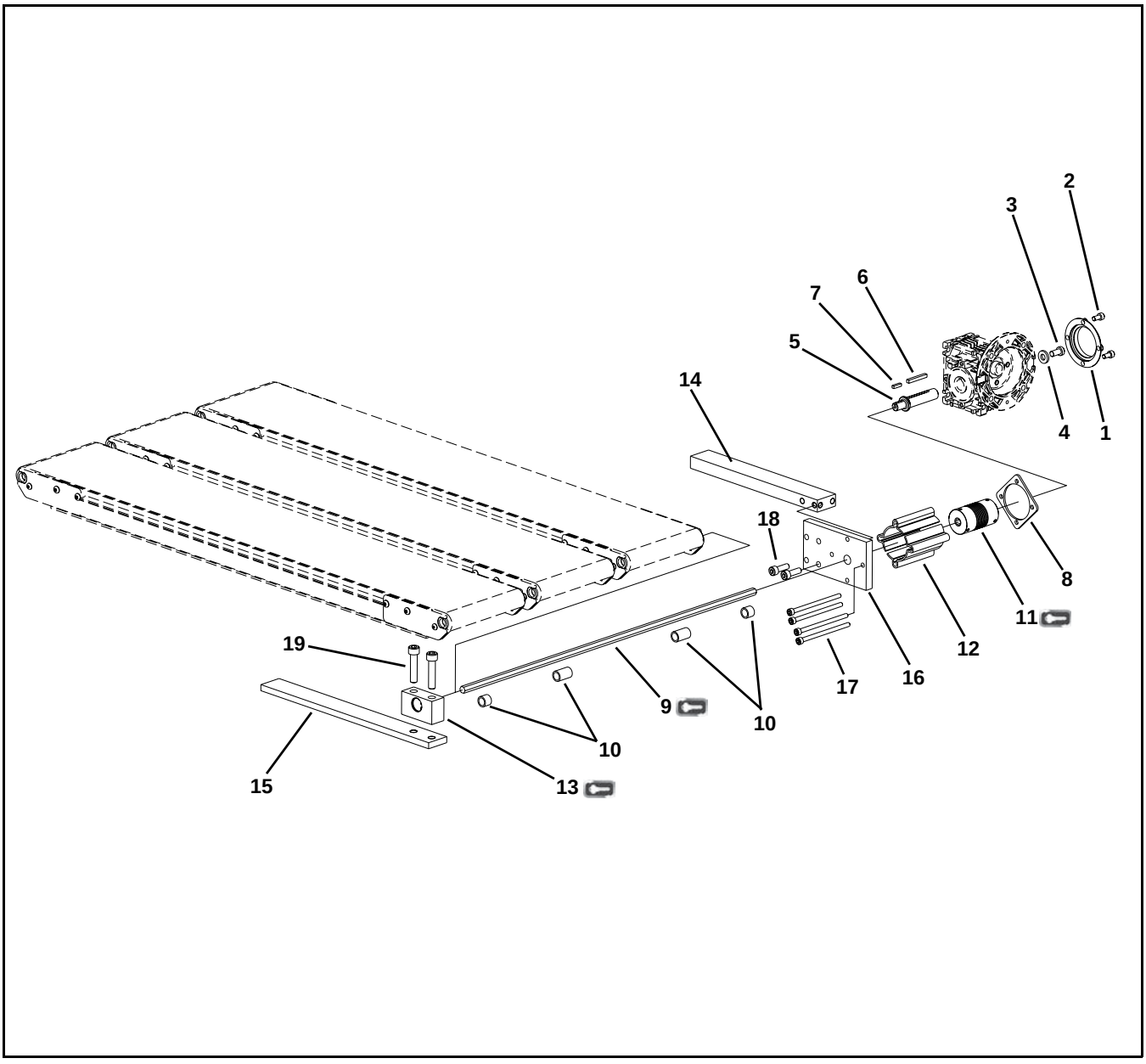
- For a single phase motor, reverse step 1 on page 12.
- For a three phase motor, reverse step 2 on page 12.
- For a DC variable speed motor, reverse step 3 on page 12.

Notes

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.

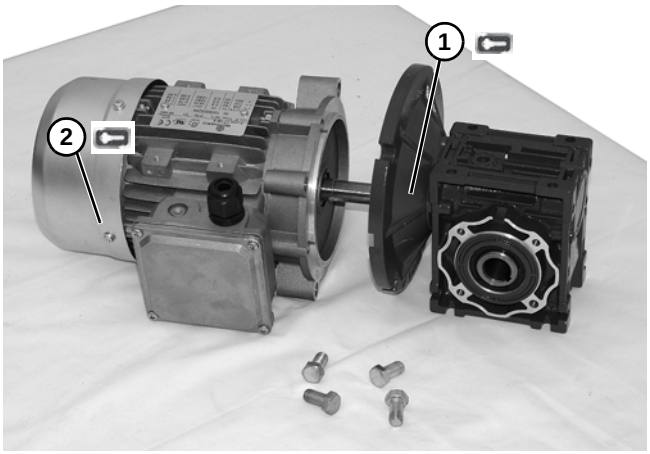
Gang Drive Package



Item	Part Number	Part Description
1	807-2059	Drive-Bearing Shaft Cover (for E-Drive 42CZ C Face Gearmotors)
	807-2016	Drive-Bearing Shaft Cover (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
2	920612M	Socket Head Screw, M6-1.00 x 12 mm
3	920893M	Low Head Cap Screw, M8-1.25 x 16 mm (for E-Drive 42CZ C Face Gearmotors)
	931020MSS	Flat Head Screw, M10-1.50 x 20 mm (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
4	605280P	Washer (for E-Drive 42CZ C Face Gearmotors)
5	202273	Output Shaft (for E-Drive 42CZ C Face Gearmotors)
	350121	Output Shaft (for E-Drive 56 C Face Gearmotors)
	350135	Output Shaft (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
6	912-084	Square Key, 0.188 x 1.50
	980636M	Square Key, 6 mm x 36 mm (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
7	980416M	Square Key, 4 mm x 16 mm
8	400026	Spacer Ring (for E-Drive 42CZ C Face Gearmotors)
	350115	Adapter (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
9	23-24SS	Hex Shaft (4')
10	807-967	Flexible Tubing
11	807-996	Flex Coupling
12	400028	Spacer Guard (x2)
13	450092	Support Block Assembly
14	450093M	Drive Bar, Motor Mount
15	450094M	Drive Bar, Bearing Block
16	450099M	Drive Plate
17	920600M	Socket Head Screw, M6-1.00 x 100 mm
18	920825M	Socket Head Screw, M8-1.25 x 25 mm
19	921045M	Socket Head Screw, M10-.50 x 45 mm

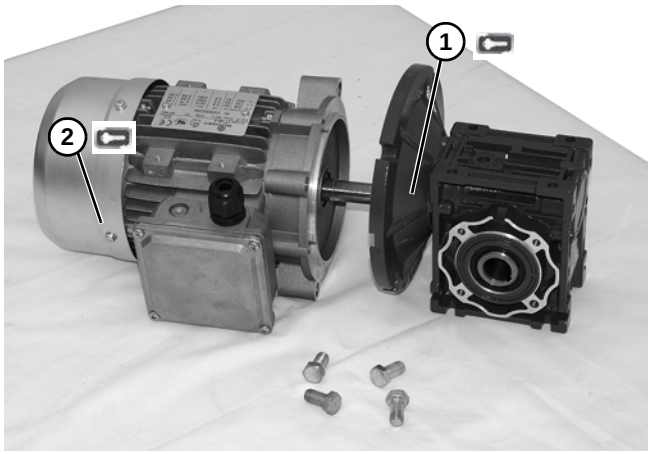
Service Parts

U.S. Version Gearmotors



Item	Part Number	Description
1	62MES411FN	Motor, 0.25 Hp (0.19 Kw) 115/230 Volts, 60 Hz, 1-Phase
	62MES423FN	Motor, 0.25 Hp (0.19 Kw) 208-230/460 Volts, 60 Hz, 3-Phase
	62MSD3DEN	Motor, 0.25 Hp (0.19 Kw) 130 Volts DC
	62MEH411FN	Motor, 0.5 Hp (0.37 Kw) 115/230 Volts, 60 Hz, 1-Phase
	62MEH423FN	Motor, 0.5 Hp (0.37 Kw) 208-230/460 Volts, 60 Hz, 3-Phase
	62MHD9DEN	Motor, 0.5 Hp (0.37 Kw) 90 Volts DC
	32MES423EN	Motor, 0.5 Hp (0.37 Kw) 230 V, 10-60 Hz, Inverter Duty, 3-Phase
2	32M005HL	Gear Reducer, 5:1, 42CZ
	32M010HL	Gear Reducer, 10:1, 42CZ
	32M020HL	Gear Reducer, 20:1, 42CZ
	32M040HL	Gear Reducer, 40:1, 42CZ
	32M060HL	Gear Reducer, 60:1, 42CZ
	32M005HS	Gear Reducer, 5:1, 56C
	32M010HS	Gear Reducer, 10:1, 56C
	32M020HS	Gear Reducer, 20:1, 56C
	32M040HS	Gear Reducer, 40:1, 56C
	32M060HS	Gear Reducer, 60:1, 56C

CE Version Gearmotors



Item	Part Number	Description
1	826-281	Motor, 0.19 Kw 230 Volts, 1400 RPM 50 Hz, 1-Phase
	826-284	Motor, 0.19 Kw 230/400 Volts, 1400 RPM 50 Hz, 3-Phase
	826-342	Motor, 0.19 Kw 230/400 Volts, 50 Hz, 3-Phase
2	62Z005ES	Gear Reducer, 5:1, 63 B5
	62Z010ES	Gear Reducer, 10:1, 63 B5
	62Z020ES	Gear Reducer, 20:1, 63 B5
	62Z040ES	Gear Reducer, 40:1, 63 B5
	62Z060ES	Gear Reducer, 60:1, 63 B5

Notes

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.

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