

63M01 & 63M03 2100/4100/6200 Series Gang Drive Mtg. Pkgs. for Standard & Heavy Load 90° 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.

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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 6200 Series conveyors are covered by patent number 5174435 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

Warnings – General Safety



Product Description

Refer to Figure 1 for typical conveyor components.

- A Conveyor
- B Mounting Bracket
- C Gearmotor
- D Coupling
- E Inspection Plug



Figure 1

Specifications

Gang Drive Mounting Package Models:

63M01 = Gang Drive Mounting Package

63M03 = Dual Output Gang Drive Mounting Package

Table 1: Standard Load Gearmotor Specifications

	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					

Table 2: Heavy Load Gearmotor Specifications

	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		
Input Current	7.4 Amperes	7.4 Amperes 2.1 – 2/ 1 Amperes 5.0 Amperes		1.6 Amperes	
Motor RPM	17	725	2500	1725	
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1				
Frame Size	NEMA 56C				
Motor Type	Totally enclosed, Fan-cooled				

Specifications

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

Standard Lo	ad Gearm	otors	Heavy Load Gearmotors				Belt Speed		
Part Number	RPM	In-lb	N-m	Part Number	RPM	In-lb	N-m	Ft/min	M/min
32M060HL4(vp)F(n)	29	226	25.5	32M060HS4(vp)F(n)	29	226	25.5	8	2.4
32M040HL4(vp)F(n)	43	237	26.8	32M040HS4(vp)F(n)	43	237	26.8	12	3.7
32M020HL4(vp)F(n)	86	142	16	32M020HS4(vp)F(n)	86	142	16	25	7.6
32M010HL4(vp)F(n)	173	78	8.8	32M010HS4(vp)F(n)	173	78	8.8	49	14.9
32M005HL4(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)

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

Standard L	oad Gearı	notors		Heavy Load Gearmotors Belt Speed		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	1.4 – 12	0.4 - 3.6
32M040HLD3DEN	63	163	18.4	32M040HSD9DEN	63	215	24.3	2.1 – 18	0.7 – 5.4
32M020HLD3DEN	125	98	11.1	32M020HSD9DEN	125	196	22.1	4.3 - 36	1.3 – 11
32M010HLD3DEN	250	54	6.1	32M010HSD9DEN	250	108	12.2	9.0 – 71	2.6 – 22
32M005HLD3DEN	500	28	3.2	32M005HSD9DEN	500	56	6.3	17 – 143	5.2 – 43

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

	Heavy Load Gear	Belt	Speed		
Part Number	RPM*	In-lb	N-m	Ft/min	M/min
32M060HS423EN	29	198	22.4	0.8 - 8.2	0.3 – 2.5
32M040HS423EN	43	163	18.4	1.2 – 12	0.4 - 3.8
32M020HS423EN	86	98	11.1	2.5 – 25	0.8 – 7.5
32M010HS423EN	173	54	6.1	4.9 – 49	1.5 – 15
32M005HS423EN	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

63M01 Gang Drive Package



Illustration References:

- F Gearmotor Assembly
- G Guard Tube (with inspection plugs installed)
- H Flex Coupling (807-996)
- I Square Key, 5 mm (980540M)
- J Gearmotor Support Assembly
- K Guard Mounting Screws, (4x) M6 x 100 mm, Socket Head
- L M6 Socket Head Screws (2x)
- M Hexagon Shaft 4-ft (1220 mm) (23-24)
- N Shaft Cover 5-ft (1524 mm) (807-967)
- O Bearing Block (450092)
- 1. Gather components (Figure 2)



Figure 2

2. Check bearing support assembly (Figure 3, item L) setup: 2100 (left) and 4100 or 6100 (right).



Figure 3

3. Check gearmotor support assembly (Figure 4, item J) setup: 2100 (left) and 4100 or 6100 (right).



Figure 4



Drive shaft keyway may be sharp. HANDLE WITH CARE.

NOTE

Gearmotor may be operated in positions 1, 2, 3 or 4 (Figure 5). Position 4 may reduce gear reducer oil seal life.



Figure 5

4. Attach flex coupling (Figure 6, item H) to gearmotor shaft. Tighten set screws (U).



Figure 6

- 5. Install key (Figure 6, item I) in gear reducer shaft (P).
- 6. Attach guard tube (G) and gearmotor support assembly (J) to gearmotor assembly (F) with screws (K). Tighten screws (K) to 50 in-lb (5.6 Nm).



NOTE

Mounting holes are not provided. Ensure that gearmotor assembly (Figure 7, item J) and bearing support assembly (L) are parallel and center-line of coupling matches center-line of bearing block (O).

7. Attach gearmotor assembly (Figure 7, item J) and bearing support assembly (L) to mounting surface.



Figure 7

- 8. Measure distance between motor mounting plate (Q) and bearing block (O).
- 9. Cut hex shaft (Figure 2, item M) to measured distance plus 2-1/8" (54 mm).
- 10. Align conveyors between gearmotor support assembly (Figure 8, item J) and bearing support assembly (L).

NOTE

Do not secure the conveyors (Figure 8, item A) to mounting surface.



Figure 8



- 11. Cut shaft cover (Figure 2, item N) into pieces to match each distance (Figure 8) minus 1/16[°] (1.5 mm).
- 12. Remove inspection plugs (Figure 8, item R).
- 13. Remove screws (Figure 9, item T) and remove bearing block (O).
- 14. Slide hex shaft through conveyors (Figure 9, item A) and shaft cover pieces (N) and into flex coupling.



Figure 9

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- 15. Attach bearing block (Figure 9, item O) to bearing support bar (S) with screws (T). Tighten screws (T) to 35 ft-lb (45.5 Nm).
- 16. Tighten coupling set screws (Figure 10, item U). Replace inspection plugs (R).



Figure 10

63M03 Dual Output Gang Drive Package



Illustration References:

- F Gearmotor Assembly
- G Guard Tube (with inspection plugs installed)
- Flex Coupling (807-996) Н
- Square Key, 5 mm (980540M) T
- J Gearmotor Support Assembly
- Κ Guard Mounting Screws, (4x) M6 x 100 mm, Socket Head
- L Bearing Support Assembly (2x)
- Hexagon Shaft 4-ft (1219 mm) (2x) (23-24) Μ
- Ν Shaft Cover - 8-ft (2438 mm) (807-967)
- 0 Bearing Block (2x) (450092)
- V Shaft Cover
- W Socket Head Screw M6 x 90 mm (4x)





2. Check bearing support assembly (Figure 12, item L) setup: 2100 (left) and 4100 or 6200 (right).



Figure 12

3. Check gearmotor support assembly (Figure 13, item J) setup: 2100 (left) and 4100 or 6200 (right).



Figure 13



1. Gather components (Figure 11).

- 4. Install key (Figure 14, item I) in gear reducer shaft (P).
- 5. Attach flex couplings (Figure 14, item H) to gearmotor shaft (P). Tighten set screws (U).



Figure 14

NOTE

Gearmotor may be operated in positions 1, 2, 3 or 4 (Figure 15). Position 4 may reduce gear reducer oil seal life.



Figure 15

6. Attach guard tube (Figure 16, item G) and gearmotor support assembly (J) to gearmotor assembly (F) with screws (K). Tighten screws (K) to 50 in-lb (5.6 Nm).



Figure 16

7. Attach shaft cover (Figure 17, item V) and guard tube (G) with screws (W). Tighten screws (W) to 50 in-lb (5.6 Nm).



Figure 17



8. Attach gearmotor assembly (Figure 18, item J) and bearing support assemblies (L) to mounting surface.



- Figure 18
- 9. Measure distances between motor mounting plate (Q) and bearing block (O) and from shaft cover (V) to bearing block (O).

- 10. Cut hex shafts (Figure 11, item M) to measured distances (Figure 18) plus 2-1/8" (54 mm) on both sides of gearmotor assembly.
- 11. Align conveyors between gearmotor support assembly (Figure 19, item J) and bearing support assembly (L).

NOTE

Do not secure the conveyors (Figure 19, item A) to the mounting surface.









Figure 20

14. Remove four (4) inspection plugs (Figure 20, item R).

15. Slide hex shafts (Figure 21, item M) through conveyors and shaft cover pieces (N) on both sides of gearmotor assembly (F) and into flex couplings.



Figure 21

16. Attach bearing blocks (Figure 22, item O) to bearing support bars (S) with screws (T). Tighten screws (T) to 35 ft-lb (45.5 Nm).



Figure 22

17. Tighten coupling hex shaft set screws (Figure 23, item U). Replace inspection plugs (R).



Figure 23

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

63M01 Gang Drive Package



1. Remove inspection plugs (Figure 24, item R). Jog motor and rotate coupling to align set screws (U) with access hole (Z). Loosen set screw (U). Repeat for second set screw.



Figure 24

2. Remove four (4) screws (Figure 25, item K) and remove gear motor assembly (F).



Figure 25

3. Remove four screws (Figure 26, item X). Detach motor (AA) from gear reducer (AB). Retain shaft key (Y).



Figure 26

- 4. Remove two (2) screws (AJ) and detach output shaft cover (AI).
- $5. \quad \text{Remove gear reducer output shaft key (I)}.$

6. Loosen six (6) set screws (Figure 27, item AC). Remove drive shaft (P) and key (AD).



Figure 27

7. Apply grease (Figure 28, item AE) to shaft.



Figure 28

8. Replace the original shaft components into new gear reducer (see Figure 27).

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 26, item Y) in keyway, slide motor (AA) and gear reducer (AB) together. Install screws (X) and tighten.
- 10. Attach coupling (Figure 26, item H) to gear reducer shaft. Tighten two set screws (U) to 32 in-lb (4.7 Nm).

11. Attach gearmotor support assembly (Figure 29, item J) and guard tube (G) to gearmotor assembly (F). Tighten screws (K) to 103 in-lb (12 Nm).



Figure 29

A WARNING



Exposed moving parts can cause severe injury.

REPLACE INSPECTION PLUGS (Figure 30, item R) BEFORE RUNNING CONVEYOR.

12. Tighten coupling set screws (Figure 30, item U). Replace inspection plugs (R).



Figure 30

63M03 Dual Output Gang Drive Package



LOCK OUT POWER before removing guards or performing maintenance.

1. Remove inspection plugs (Figure 31, item R).



Figure 31



 Jog motor and rotate coupling to align set screws (Figure 32, item U) with access hole (AH). Loosen set screws (U) on both sides of gearmotor assembly (F). Repeat for second set screws.



Figure 32

3. Remove four (4) screws (Figure 33, item T). Remove bearing blocks (O).



Figure 33

4. Remove hex shafts (Figure 34, item M) and shaft cover pieces (N).



Figure 34

5. Remove four (4) screws (Figure 35, item W) and remove guard tube (G). Loosen set screws (U) and remove flex coupling (H).



Figure 35

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6. Remove four (4) screws (Figure 36, item K) and remove guard tube (G) and flex coupling (H). Remove gearmotor assembly (F).



Figure 36

7. Remove four screws (Figure 37, item X). Detach motor (AA) from gear reducer (AB). Retain shaft key (Y).



Figure 37

8. Remove gear reducer output shaft keys (I).

9. Loosen six (6) set screws (Figure 38, item AC). Remove drive shaft (P) and key (AD).



Figure 38 10. Apply grease (Figure 39, item AE) to shaft.



Figure 39

11. Replace the original shaft components into new gear reducer (see Figure 38).

IMPORTANT

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

- 12. With key (Figure 37, item Y) in keyway, slide motor (AA) and gear reducer (AB) together. Install screws (X) and tighten.
- 13. Attach couplings (Figure 37, item H) to gear reducer shaft. Tighten set screws (U) to 32 in-lb (4.7 Nm).
- Complete installation steps on page 9. See "63M03 Dual Output Gang Drive Package" section, steps 7 through 18.

Motor Replacement



- 1. For single phase motor, unplug power cord from outlet.
- 2. For three phase motor:
 - a. Loosen terminal box screws (Figure 40, item AF) and remove cover (AG).



Figure 40

- 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 41, item AH).





4. Remove four screws (Figure 42, item X). Detach motor (AA) from gear reducer (AB). Retain motor output shaft key (Figure 43, item Y).



Figure 42

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 43, item Y) in keyway, slide new motor and gear reducer together. Install screws (X) and tighten.



- Figure 43
- 6. Replace wiring:
- For a single phase motor, reverse step 1 on page 15.
- For a three phase motor, reverse step 1 on page 15.
- For a DC variable speed motor, reverse step 3 on page 15.

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.

63M01 Gang Drive Package



63M03 Dual Output Gang Drive Package



63M01 and 63M03 Motor and Gear Reducer Assembly



Service Parts

-		
ltem	Part Number	Part Description
1	62MS411FN	Motor, 0.25 Hp (0.19 Kw) 115/230 Volts, 60 Hz, 1-Phase
	62MS411FR	Motor, 0.25 Hp (0.19 Kw) 115/230 Volts, 60 Hz, 1-Phase with Reversing
	62MS423	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
	62MH411FN	Motor, 0.5 hp (0.37 Kw) 115/230 Volts, 60 Hz, 1-Phase
	62MH423	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
	32MS423EN	Motor, 0.5 hp (0.37 Kw) 230V, 10– 60Hz, 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

ltem	Part Number	Part Description
3	300139M	Shaft Cover, Drive Bearing
4	23–24SS	Hex Shaft, 4' (1219mm)
5	450092	Block Assembly
D		
6	450093M	Drive Bar, Motor Mount
7	450094M	Drive Bar, Bearing Block
8	450095M	Shaft Cover Euro Bolster
9	450099M	Drive Plate
10	450474	Spacer Tube, Side Drive
11	450444M	Output Shaft, Grove 12mm
12	450470M	Output Shaft, 12mm Double
13	807–967	Flexible Tubing
14	807–996	Flex Coupling 1.5 D x 12mm x 3/8 H
D		
15	807–1147	Plug
16	912–084	Square Key, 0.188" x 1.50"
17	920600M	Socket Head Screw M6 x 100mm
18	920608M	Socket Head Screw M6 x 8mm
19	920690M	Socket Head Screw M6 x 90mm
20	920825M	Socket Head Screw M8 x 25mm
21	921045M	Socket Head Screw M10 x 45mm
22	980416M	Square Key 4mm x 16mm

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
Plastic chain, cleated and specialty belts

30% 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. 2010

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