



2100, 2200, 4100, 6200 and MPB Series Top Mount Drive Package for Light 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 2100 Series conveyors are covered by the following patent numbers: 5131529, 5174435, and corresponding patents and patent applications in other countries.

Dorner 2200 and MPB Series conveyors are covered by patent number 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 6685009, 5174435, 6109427 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.

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.

DANGER



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

WARNING



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

WARNING



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

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 startup.

WARNING



MPB Series Conveyors are not reversible. Reversing creates pinch points which can cause severe injury.
DO NOT REVERSE MPB SERIES CONVEYORS.

Product Description

Refer to Figure 1 for typical components.

A	Conveyor
B	Mounting Bracket
C	Gearmotor
D	Belt Tensioner
E	Cover
F	Timing Belt
G	Drive Pulley
H	Driven Pulley

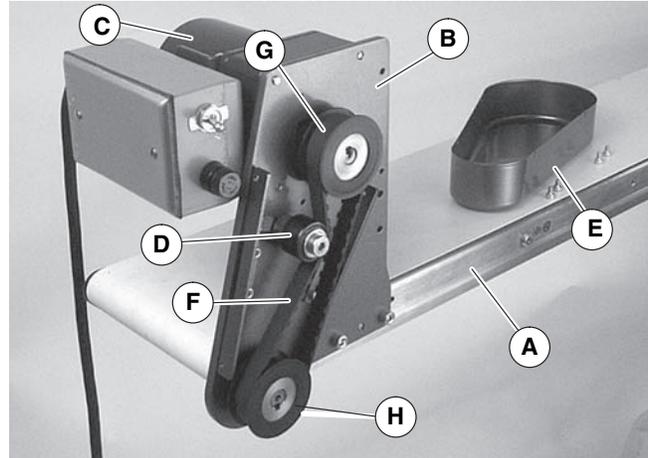


Figure 1

Specifications

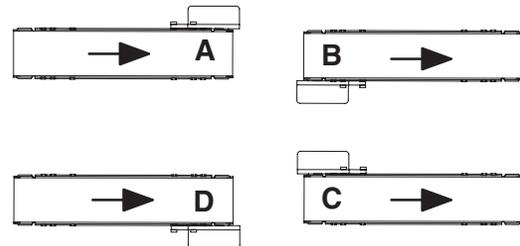
Gearmotor Mounting Package Models:

Example:

2 M T P L WW A - 32 32

- 2 = 2100 Series Conveyor
- 22 = 2200 Series Conveyor
- 4 = 4100 Series Conveyor
- 6 = 6200 Series Conveyor
- 2P = MPB Series Conveyor
- M = Mount Style = Top Mount
- T = Gearmotor Type: L = Fixed Speed, V = Variable Speed
- P = Output Shaft Type = Parallel Shaft
- L = Gearmotor Type: L = Fixed Speed, V = Variable Speed
- WW = Conveyor Width Reference*
- A = Mount Position = A, B, C or D (see detail to the right)
- 32 = Drive Pulley (see Belt Speed Tables)
- 32 = Driven Pulley (see Belt Speed Tables)

Belt Type: - = flat belt, A through J = cleated belt



* See "Ordering and Specifications" Catalog for details.

Table 1: Gearmotor Specifications

	Single Phase	DC Variable Speed
Output Power	0.03 hp (0.025 kw)	0.06 hp (0.04 kw)
Input Voltage	115 Volts A.C.	130 Volts D.C.
Input Frequency	60 Hz	N/A
Full Load Amperes	0.49 Amperes	0.48 Amperes
Gearmotor Ratios	15:1 and 36:1	18:1 and 60:1

Specifications

Table 2: Belt Speeds for Light Load Fixed Speed Parallel Shaft 60 Hz Gearmotors on 2100, 2200 Gang Drive, 4100 and 6200 Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M036PL4FN	36:1	42	36	4.1	8	2.4	22	32
62M036PL4FN	36:1	42	36	4.1	12	3.7	32	32
62M036PL4FN	36:1	42	36	4.1	17	5.2	32	22
62M036PL4FN	36:1	42	36	4.1	24	7.3	44	22
62M015PL4FN	15:1	100	15	1.7	29	8.8	32	32
62M015PL4FN	15:1	100	15	1.7	41	12.5	32	22

* 115V, 1 phase, non-reversing

Table 3: Belt Speeds for Light Load Fixed Speed Parallel Shaft 60 Hz Gearmotors on 2200 Series Conveyors (Excluding Gang Drive)

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M036PL4FN	36:1	42	36	4.1	13	4.0	28	32
62M036PL4FN	36:1	42	36	4.1	15	4.6	28	28
62M036PL4FN	36:1	42	36	4.1	21	6.4	32	22
62M036PL4FN	36:1	42	36	4.1	29	8.8	44	22
62M015PL4FN	15:1	100	15	1.7	35	10.7	28	28
62M015PL4FN	15:1	100	15	1.7	55	16.8	44	28

* 115V, 1 phase, non-reversing

Table 4: Belt Speeds for Standard Load Fixed Speed Parallel Shaft 60 Hz Gearmotors on MPD Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M036PL4FN	36:1	42	36	4.1	25	7.5	28	32
62M036PL4FN	36:1	42	36	4.1	28	8.6	28	28
62M036PL4FN	36:1	42	36	4.1	45	13.6	44	28
62M036PL4FN	36:1	42	36	4.1	57	17.3	44	22

* 115V, 1 phase, non-reversing

Table 5: Belt Speeds for Light Load Variable Speed Parallel Shaft DC Gearmotors on 2100, 4100 and 6200 Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M060PLD3DEN	60:1	42	65	7.4	1.0–8.2	.3–2.5	22	32
62M060PLD3DEN	60:1	42	65	7.4	1.4–12	.4–3.6	32	32
62M018PLD3DEN	18:1	139	21	2.4	4.8–40	1.5–12	32	32
62M018PLD3DEN	18:1	139	21	2.4	7–58	2.1–18	32	22

* 130VDC

Specifications

Table 6: Belt Speeds for Standard Load Variable Speed Parallel Shaft DC Gearmotors on 2200 Series Conveyors (Excluding Gang Drive)

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M060PLD3DEN	60:1	42	65	7.4	1.8-14	.5-4.5	28	28
62M060PLD3DEN	60:1	42	65	7.4	2.8-23	.8-7	44	28
62M018PLD3DEN	18:1	139	21	2.4	6-49	1.8-15	28	28
62M018PLD3DEN	18:1	139	21	2.4	9-77	2.8-23	44	28

* 130VDC

Table 7: Belt Speeds for Standard Load Variable Speed Parallel Shaft DC Gearmotors on MPB Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
62M060PLD3DEN	60:1	42	65	7.4	2.3-19	.7-5.9	22	32
62M060PLD3DEN	60:1	42	65	7.4	3.4-28	1-8.6	28	28
62M060PLD3DEN	60:1	42	65	7.4	5.3-44	1.6-13	44	28
62M018PLD3DEN	18:1	139	21	2.4	11-94	3.5-28	28	28
62M018PLD3DEN	18:1	139	21	2.4	16-148	5-45	44	28

* 130VDC

NOTE

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

Required Tools

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

Installation Component List:

I	Top Mount Assembly
J	Driven Pulley
K	Cover
L	M4 Socket Head Screws (4x)
M	Timing Belt
N	Key
O	M6 Socket Head Screws (2x)

Mounting

⚠ WARNING

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

⚠ WARNING

<p>MPB Series Conveyors are not reversible. Reversing creates pinch points which can cause severe injury.</p> <p>DO NOT REVERSE MPB SERIES CONVEYORS.</p>

1. Typical components (Figure 2)

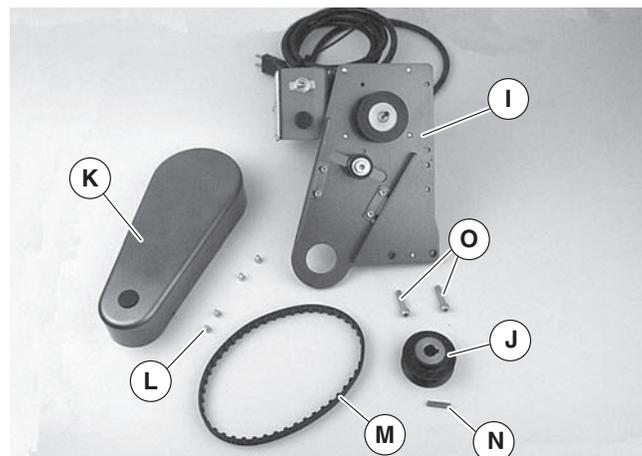


Figure 2

NOTE
<p><i>6200 conveyor shown, other Series similar.</i></p>

2. Locate drive output shaft (Figure 3, item P) and remove two screws (Q).

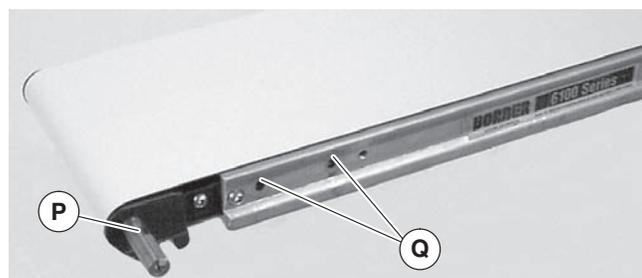
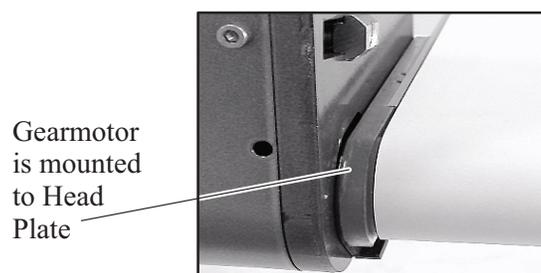


Figure 3

3. For your reference, the following five figures show the attachment area of complete mounting packages for various conveyor series.

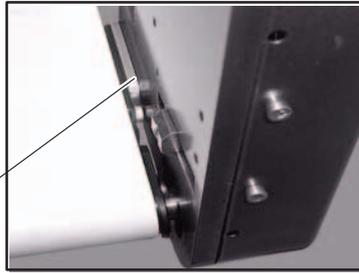


2200 Series

Figure 4

Installation

Gearmotor is mounted to Drive Spacer



6100 Series

Figure 5

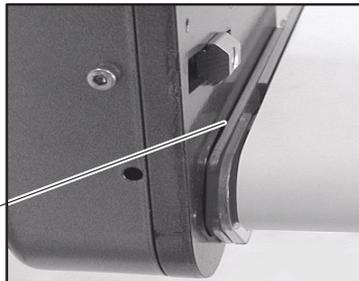
Gearmotor is mounted to Drive Adapter Plate



4100 Series

Figure 6

Gearmotor is mounted to Head Plate



2100 Series

Figure 7

Gearmotor is mounted to Head Plate



MPB Series

Figure 8

- Attach mount assembly (Figure 9, item I) with two screws (O). Tighten screws to 80 in-lb (9 Nm).

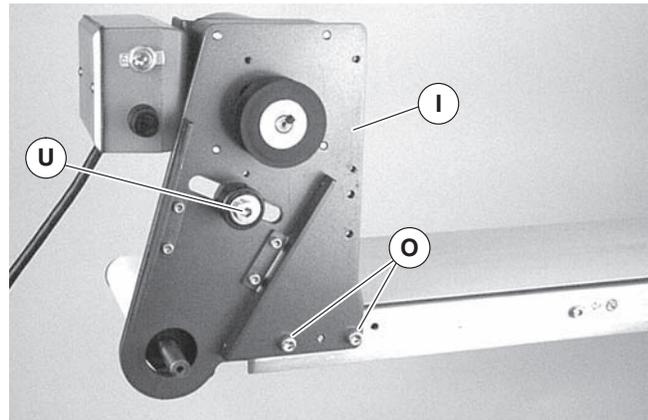


Figure 9

⚠ WARNING



**Drive shaft keyway may be sharp.
HANDLE WITH CARE.**

- Install key (Figure 10, item N).

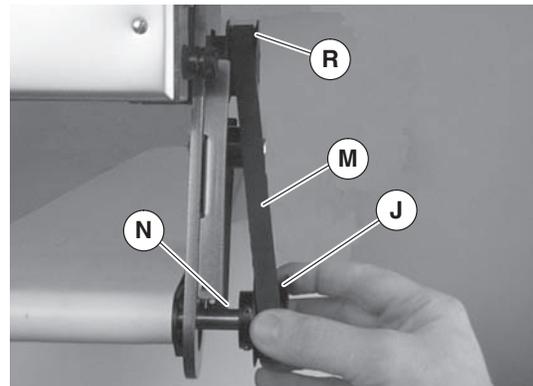


Figure 10

6. Wrap timing belt (M) around driven pulley (J) and drive pulley (R). Install driven pulley (J) onto conveyor shaft.
7. Remove cam bearing and spacer (Figure 9, item U). Place the cam bearing and spacer (Figure 11, item U) next to the driven pulley (M). Ensure the flanges of the driven pulley are aligned with the cam bearing. Tighten set screws on driven pulley (J). This will allow for proper belt alignment while conveyor is in use. Install cam bearing and spacer (U).

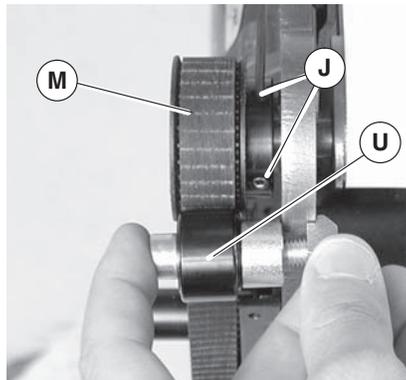


Figure 11

8. Depending on direction of conveyor belt travel (1 or 2 of Figure 12), position timing belt tensioner (U) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 1 lb (456 grams) of force at timing belt mid-point (V). Tighten tensioner screw to 106 in-lb (12 Nm).

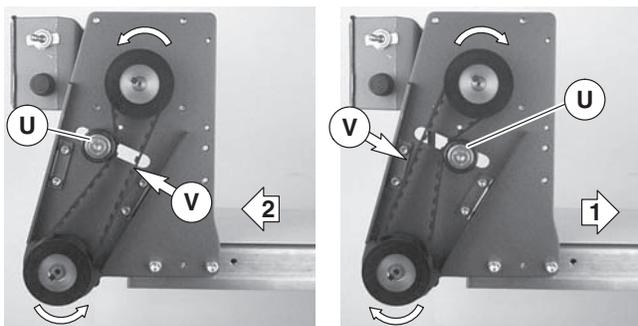


Figure 12

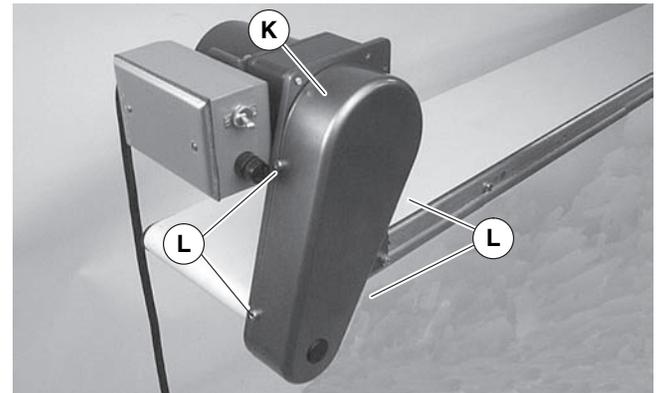


Figure 13

Preventive Maintenance and Adjustment

Required Tools

- Hex key wrenches:
2.5 mm, 3 mm, 5 mm
- Screwdriver (for terminal box screws)
- Torque wrench

Timing Belt Tensioning

⚠ WARNING

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

1. Remove four screws (Figure 14, item L) and remove cover (K).

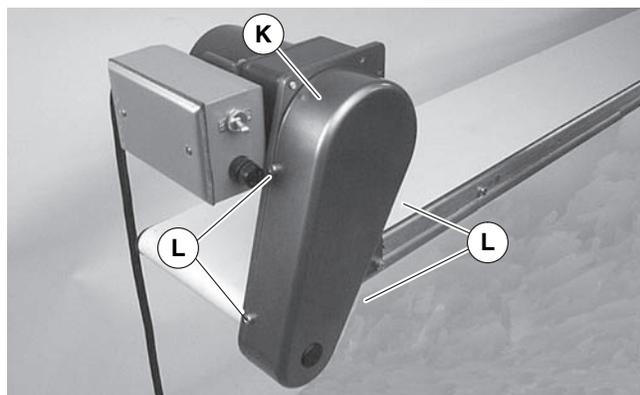


Figure 14

2. Loosen tensioner (Figure 15, item U).

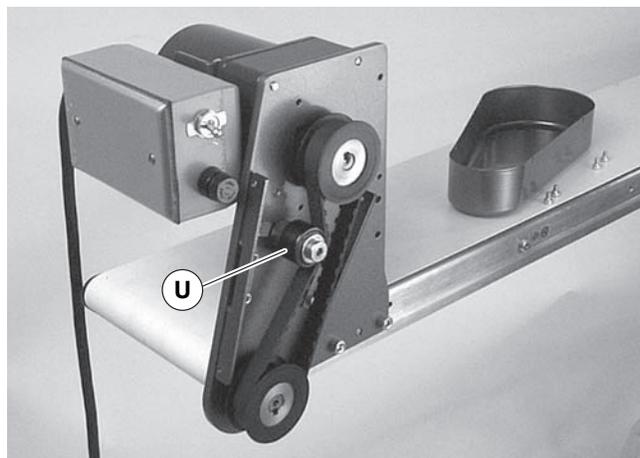


Figure 15

3. Depending on direction of conveyor belt travel (1 or 2 of Figure 16), position timing belt tensioner (U) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 1 lb (456) grams of force at timing belt mid-point (V). Tighten tensioner screw to 106 in-lb (12 Nm).

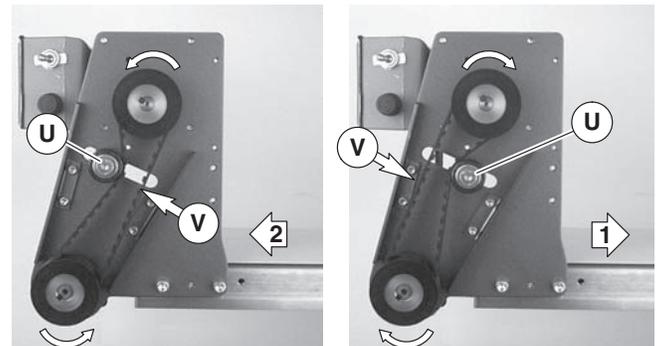


Figure 16

4. Install cover (Figure 14, item K) with four (4) screws (L). Tighten screws to 35 in-lb (4 Nm).

Timing Belt Replacement

⚠ WARNING

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

1. Remove four (4) screws (Figure 14, item L) and remove cover (K).
2. Loosen tensioner (Figure 15, item U).
3. Remove timing belt (Figure 17, item M).

NOTE

If timing belt does not slide over pulley flange, loosen driven pulley set screws (Figure 17, item T) and remove pulley with belt. For re-installation, see steps 6 through 9 on page 9.

Preventive Maintenance and Adjustment

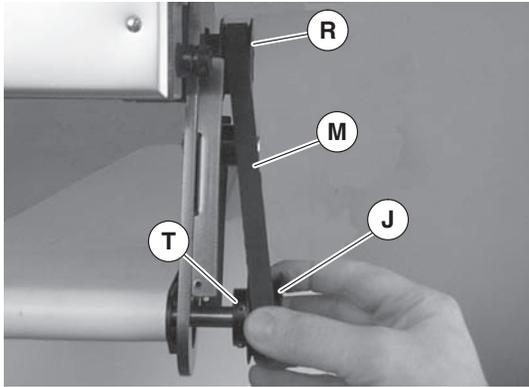


Figure 17

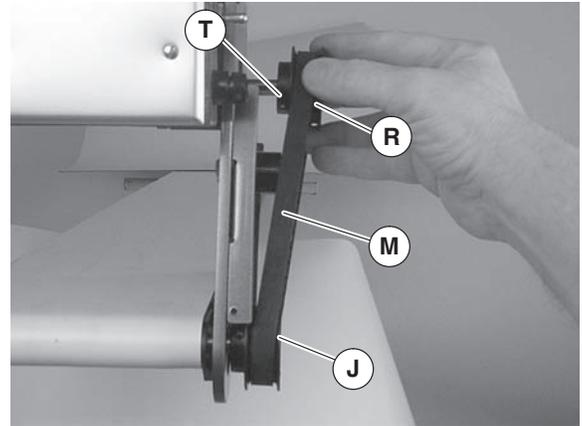


Figure 18

4. Install new timing belt.
5. Depending on direction of conveyor belt travel (1 or 2 of Figure 16), position timing belt tensioner (U) as shown. Tension timing belt to obtain 1/8" (3 mm) deflection for 1 lb (456 grams) of force at timing belt mid-point (V). Tighten tensioner screw to 106 in-lb (12 Nm).
6. Install cover (Figure 14, item K) with four (4) screws (L). Tighten screws to 35 in-lb (4 Nm).

3. Complete steps 6 through 9 of "Installation" section on page 9.

Drive or Driven Pulley Replacement

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

1. Complete steps 1 through 3 of "Timing Belt Replacement" section on page 10.
2. Loosen set screws and remove drive or driven pulley.

NOTE
<p><i>If drive pulley (Figure 18, item R) is replaced, wrap timing belt around drive pulley and complete step 3.</i></p>

Gearmotor Replacement

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

⚠ DANGER
<p>Hazardous voltage will cause severe injury or death. LOCK OUT POWER BEFORE WIRING.</p>

1. For single phase motor, unplug power cord from outlet.
2. For DC variable speed motor, unplug motor cord at disconnect (Figure 19, item W).

Preventive Maintenance and Adjustment

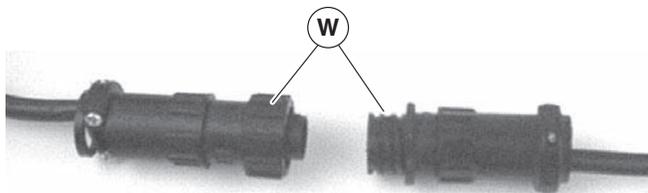


Figure 19

3. Remove four (4) screws (Figure 14, item L) and remove cover (K).
4. Loosen tensioner (Figure 15, item U).
5. Remove timing belt (Figure 20, item M).

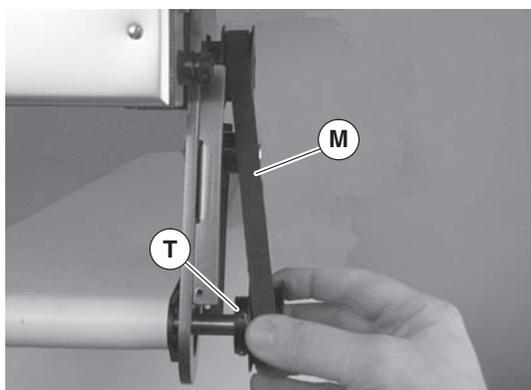


Figure 20

NOTE

If timing belt does not slide over pulley flange, loosen driven pulley set screws (Figure 20, item T) and remove pulley with belt (M). For re-installation, see steps 6 through 9 on page 9.

6. Loosen two (2) set screws (Figure 21, item T). Remove drive pulley (R).

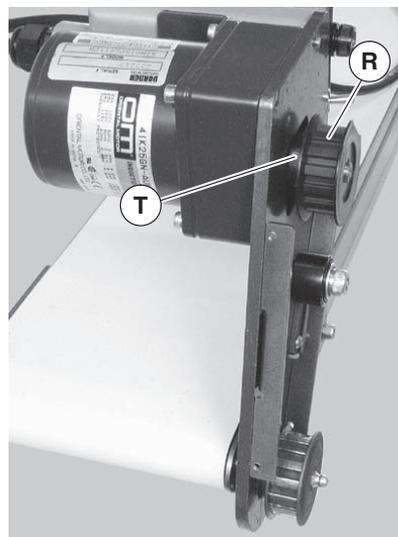


Figure 21

7. Remove four (4) screws (X) and detach gearmotor.

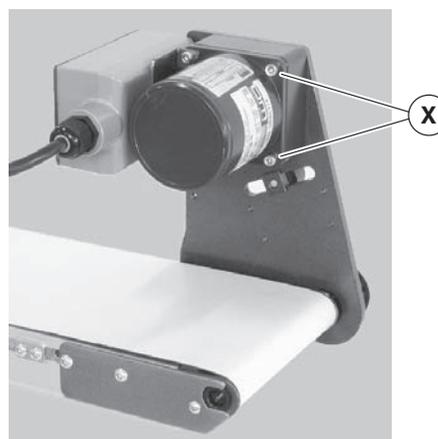


Figure 22

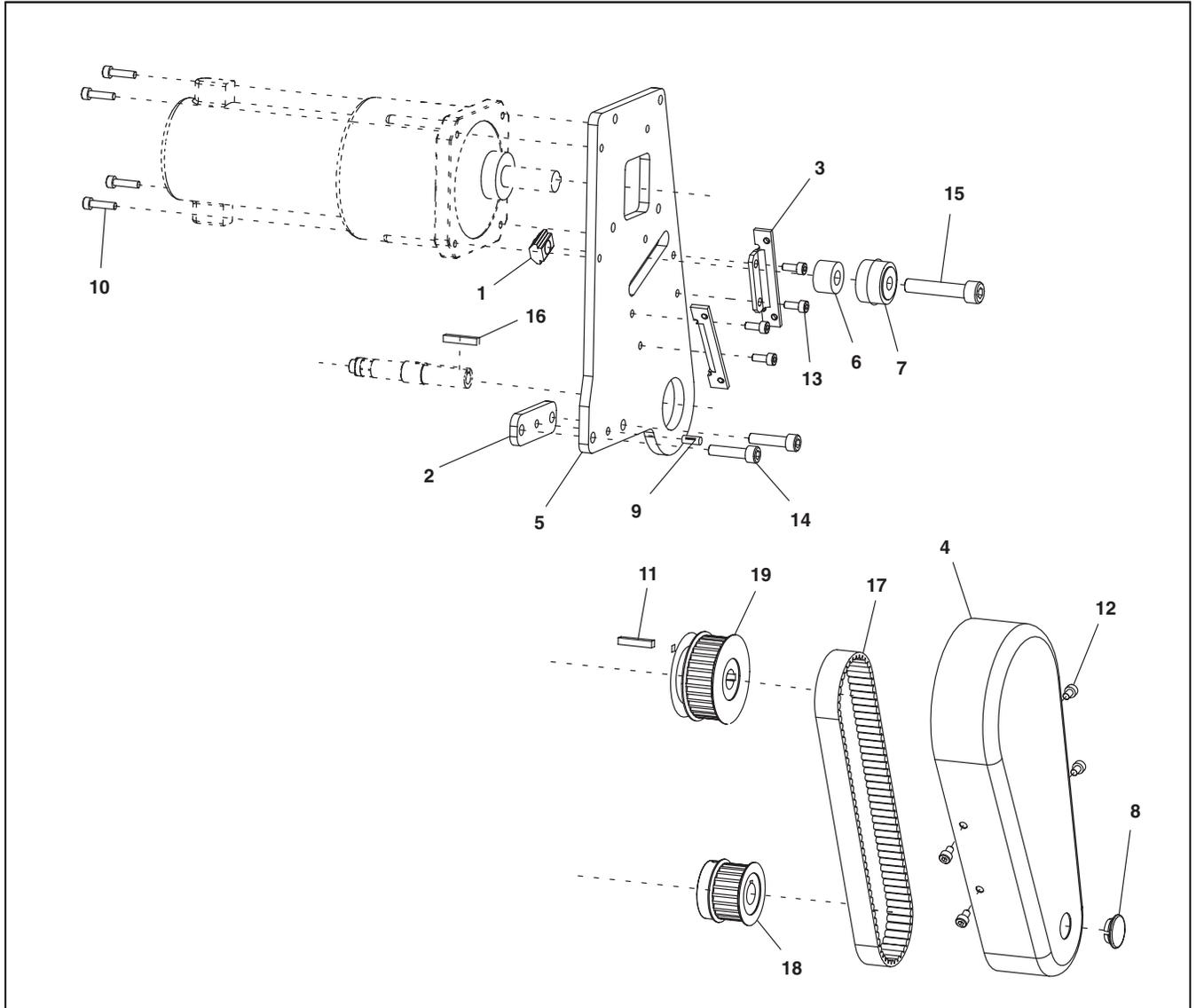
8. Mount new gearmotor with four (4) screws (X). Tighten to 45 in-lb (5 Nm).
9. Replace drive pulley (Figure 21, item R) and tighten set screws (T).
10. Complete steps 6 through 9 of “Installation” section on page 9.
11. Replace wiring:
 - For a single phase motor, reverse step 1 on page 11.
 - For DC variable speed motor, reverse step 2 on page 11.

Service Parts

NOTE

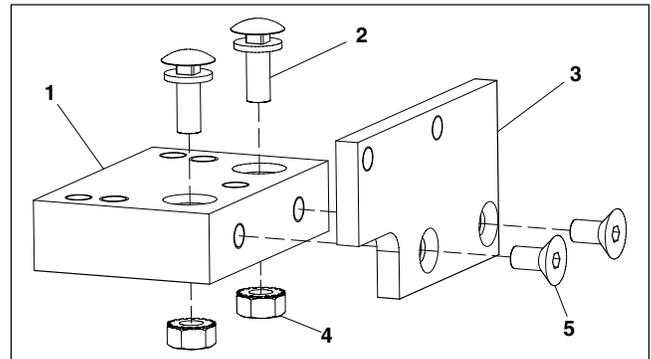
For replacement parts other than those shown in this section, contact an authorized *Dorner Service Center* or the factory.

2100, 2200, 4100, 6200 and MPB Series Top Mount Drive Package



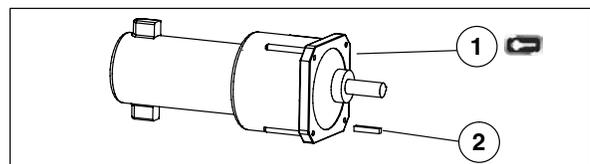
Item	Part Number	Description
1	202390M	Nut, Cam Follower
2	450027M	Drive Spacer (2100, 6200 Only)
	450377M	Drive Spacer (4100 Only)
3	450375M	Cover Mounting Bracket
4	450376M	Drive Guard
5	450026M	Light Duty Motor Mount Plate
6	450445	Spacer, Cam Follower (Fixed Speed Gearmotors only)
	450195	Spacer, Cam Follower (Variable Speed Gearmotors only)
7	802-046	Bearing
8	807-226	Snap-out Plastic Plug
9	807-952	Groove Pin (2100, 4100, 6200 Only)
10	920545M	Socket Head Screw M5x45mm – 15:1 Gearhead (Fixed Speed Gearmotor Only)
	920555M	Socket Head Screw M5x55mm – 36:1 Gearhead (Fixed Speed Gearmotor Only)
	920416M	Socket Head Cap Screw M4x16mm (Variable Speed Gearmotor Only)
11	980422M	Square Key, 0.4mm x 22mm (Fixed Speed Gearmotor Only)
	912-084	Square Key, 0.125" x 0.75" (Variable Speed Gearmotor Only)
12	920406M	Socket Head Screw M4 x 6mm
13	920408M	Socket Head Screw M4 x 8mm
14	920625M	Socket Head Screw M6 x 25mm (2100)
	920622M	Socket Head Screw M6 x 22mm (2200)
	920618M	Socket Head Screw M6 x 18mm(4100)
	920630M	Socket Head Screw M6 x 30mm (6200)
15	920840M	Socket Head Screw M8 x 40mm
16	980422M	Square Key 4mm x 22mm
	912-084	Square Key, 0.125" x 0.75"(1" Wide Conveyor – 4100 Only)
17	814-105	Timing Belt, 15mm W x 460mm L
	814-065	Timing Belt, 15mm W x 475mm L
	814-101	Timing Belt, 15mm W x 500mm L
	814-108	Timing Belt, 15mm W x 520mm L
18	450366MP	Driven Pulley, 22Tooth, 12mm bore
	450367MP	Driven Pulley, 28Tooth, 12mm bore
	450368MP	Driven Pulley,32Tooth, 12mm bore
19	450384MP	Drive Pulley, 22Tooth, 10mm bore
	450385MP	Drive Pulley, 28Tooth, 10mm bore
	450386MP	Drive Pulley, 32Tooth, 10mm bore
	450387MP	Drive Pulley, 44Tooth, 10mm bore
	450556P	Drive Pulley, 22Tooth, 0.5" bore
	450556P	Drive Pulley, 28Tooth, 0.5" bore
	450556P	Drive Pulley, 32Tooth, 0.5" bore
	450556P	Drive Pulley, 44Tooth, 0.5" bore

4100 Series Adapter Package



Item	Part Number	Description
1	609486	Mounting Block 1" (25mm)
	609487	Mounting Block 2" (51mm)
	609488	Mounting Block 3" (76mm)
	609479	Mounting Block 4" (102mm)
	609480	Mounting Block 5" (127mm)
	609481	Mounting Block 6" (152mm)
	609482	Mounting Block 7" (178mm)
	609483	Mounting Block 8" (203mm)
	609484	Mounting Block 10" (254mm)
	609485	Mounting Block 12" (305mm)
2	613602P	Bolt & Flat Washer Assembly
3	450374	Drive Adapter Plate
4	910-126	Hex Nut with Lock Washer
5	930612M	Flat Head Screw, M6 x 12mm

Gearmotors



Item	Part Number	Part Description	
1	62M036PL411FN	Gearmotor, 0.03 hp, 115 Volts, 42 RPM, 60 Hz, 1-Phase, 36:1	
	62M015PL411FN	Gearmotor, 0.03 hp, 115 Volts, 100 RPM, 60 Hz, 1-Phase, 15:1	
	62M060PLD3DEN	Gearmotor, 0.06 hp, 130 Volts, 42 RPM, DC, 60:1	
	62M018PLD3DEN	Gearmotor, 0.06 hp, 130 Volts, 139 RPM, DC, 18:1	
	62M036PL423FN	Gearmotor, 0.03 hp, 230 Volts, 42 RPM, 60 Hz, 3-Phase, 36:1	
	62M015PL423FN	Gearmotor, 0.03 hp, 230 Volts, 100 RPM, 60 Hz, 3-Phase, 15:1	
	62M036PL423EN	Gearmotor, 0.03 hp, 230 Volts, 7-42 RPM, 60 Hz, 3-Phase, 36:1	
	62M015PL423EN	Gearmotor, 0.03 hp, 230 Volts, 17-100 RPM, 60 Hz, 3-Phase, 15:1	
	2	980422M	Key, 4mm x 22mm, 10mm Bore
		912-052	Key, 1/8" x 5/8", 1/2" Bore

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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