

2100, 2200, 4100, 6200 and MPB Series Top Mount Drive Package for Light Load 60 Hz Gearmotors

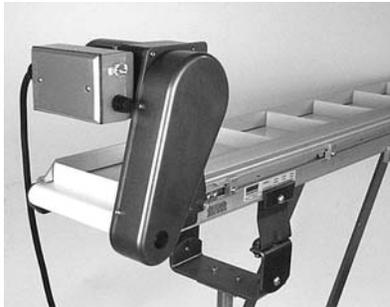


Table of Contents

Warnings – General Safety	2	Preventative Maintenance & Adjustment	9
Introduction	2	Required Tools	9
Product Description	3	Timing Belt Tensioning	9
Specifications	3	Timing Belt Replacement	9
Installation	6	Drive or Driven Pulley Replacement	10
Required Tools	6	Gearmotor Replacement	10
Mounting	6	Service Parts	13
		Return Policy	14

Warnings – General Safety

	WARNING	
<p>The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.</p>		

	DANGER
<p>Climbing, sitting, walking or riding on conveyor will cause severe injury. KEEP OFF CONVEYORS.</p>	

	DANGER
<p>DO NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.</p>	

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

	WARNING
<p>Gearmotors may be HOT. DO NOT TOUCH Gearmotors.</p>	

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

	WARNING
<p>Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.</p> <p>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.</p>	

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

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 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.

Product Description

Refer to Figure 1 for typical components.

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

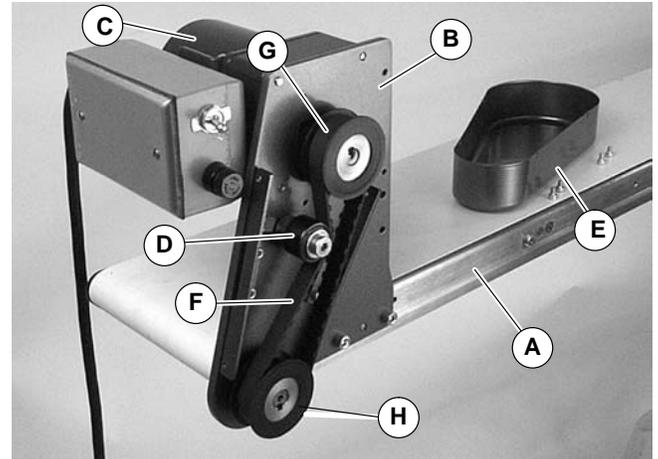


Figure 1

Specifications

Gearmotor Mounting Package Models:

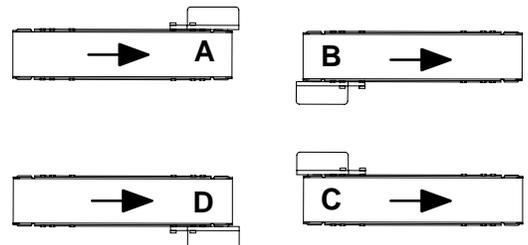
Example:

2 M T P L W W A - 32 32

- 2 = 2100 Series Conveyor
- M = Mount Style = Top Mount
- T = Output Shaft Type = Parallel Shaft
- P = Gearmotor Type: L = Fixed Speed, V = Variable Speed
- L = Gearmotor Type: L = Fixed Speed, V = Variable Speed
- W = Conveyor Width Reference*
- W = 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

Language Code = U.S. English



* 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

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

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

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

* 115V, 1 phase, non-reversing

Specifications

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

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

* 130VDC

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

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

* 130VDC

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

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

* 130VDC

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

Installation

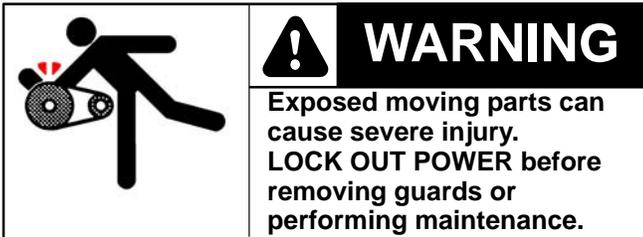
Required Tools

- 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



1. Typical components (Figure 2)

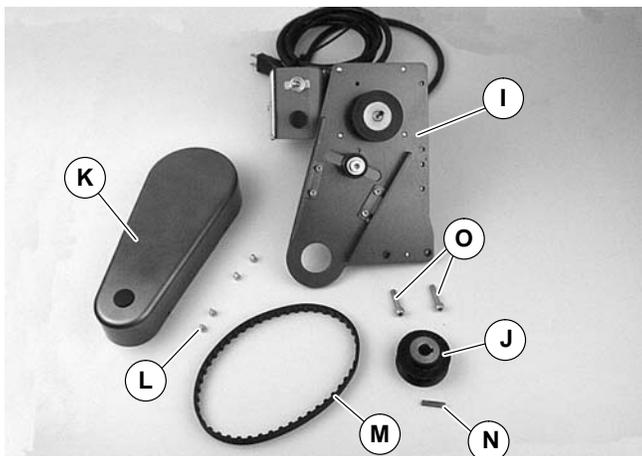


Figure 2

NOTE: 6200 conveyor shown, other Series similar.

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

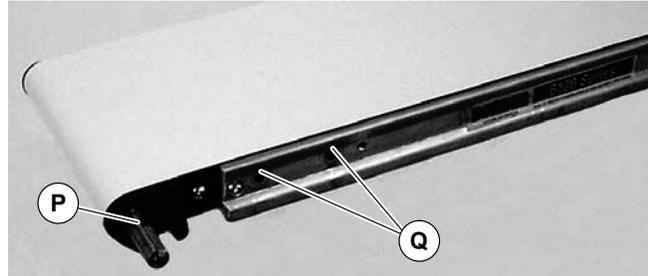


Figure 3

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

Figure 4 – 2200 Series
Gearmotor is mounted to Head Plate

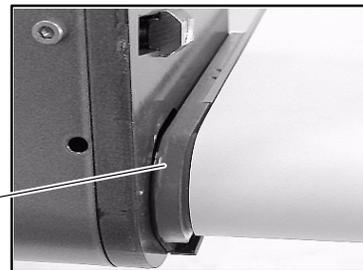


Figure 5 – 6100 Series
Gearmotor is mounted to Drive Spacer

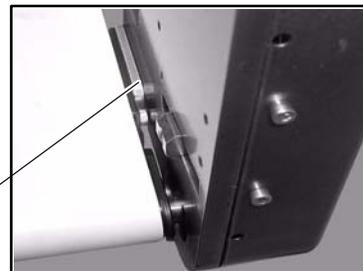


Figure 6 – 4100 Series
Gearmotor is mounted to Drive Adapter Plate

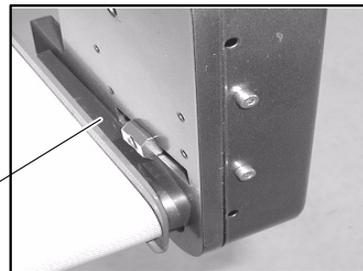


Figure 7 – 2100 Series
Gearmotor
is mounted
to Head
Plate

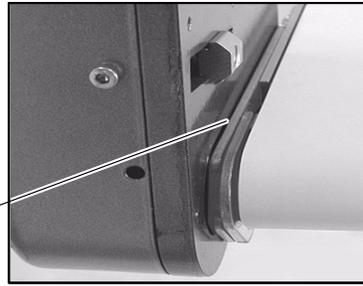


Figure 8 – MPB Series
Gearmotor
is mounted
to Head
Plate



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

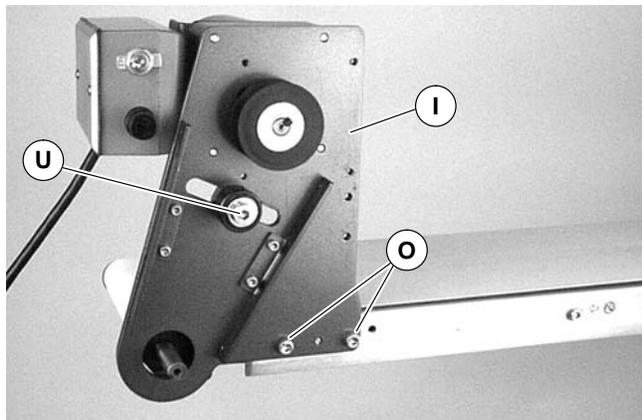


Figure 9



5. Install key (N of Figure 10).

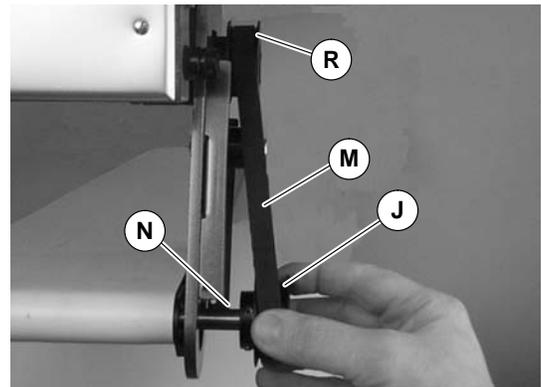


Figure 10

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 (U of Figure 9). Place the cam bearing and spacer (U of Figure 11) 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).

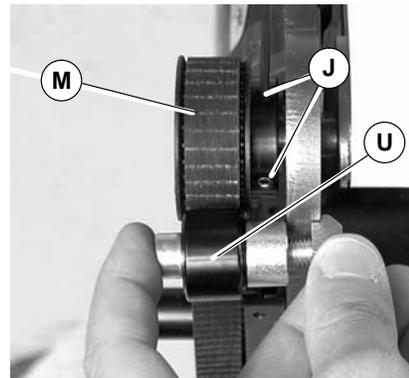


Figure 11

Installation

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).

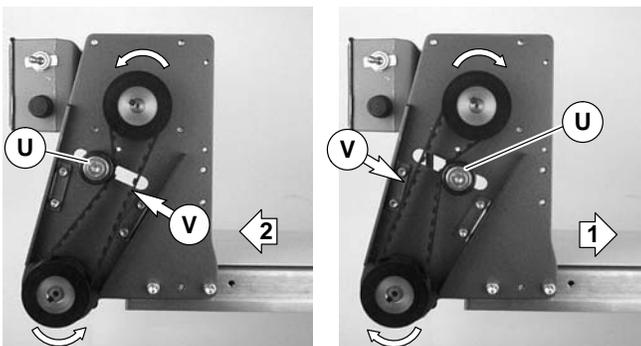


Figure 12

9. Install cover (K of Figure 13) with four (4) screws (L). Tighten to 35 in-lb (4 Nm).

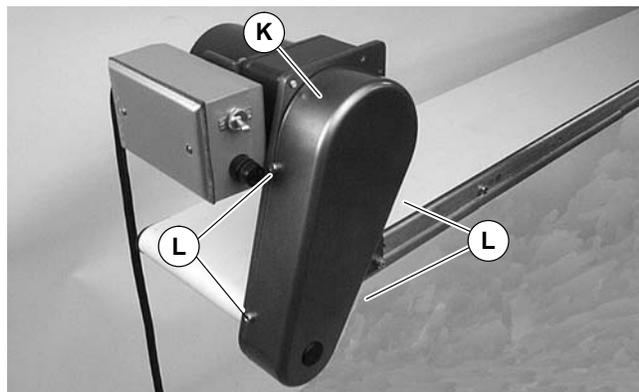


Figure 13

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



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

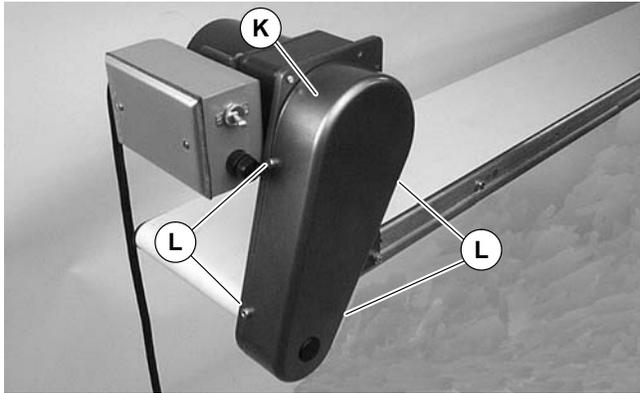


Figure 14

2. Loosen tensioner (U of Figure 15).

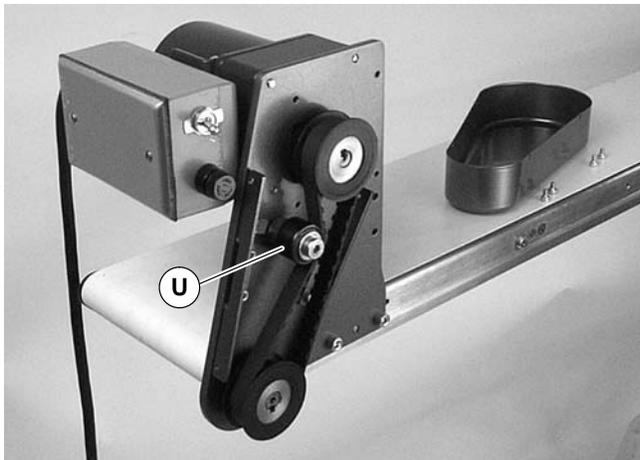


Figure 15

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).

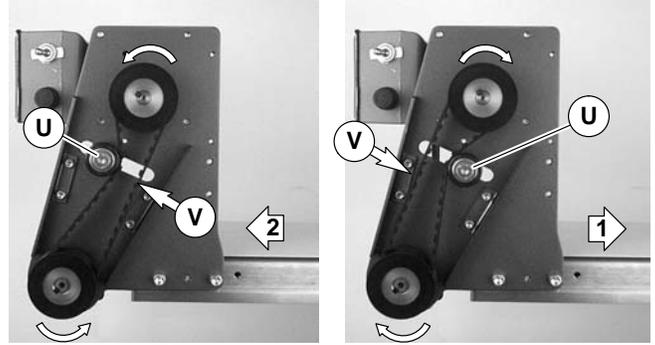


Figure 16

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

Timing Belt Replacement



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

Preventive Maintenance and Adjustment

NOTE: If timing belt does not slide over pulley flange, loosen driven pulley set screws (T of Figure 17) and remove pulley with belt. For re-installation, see steps 6 through 9 on page 7.

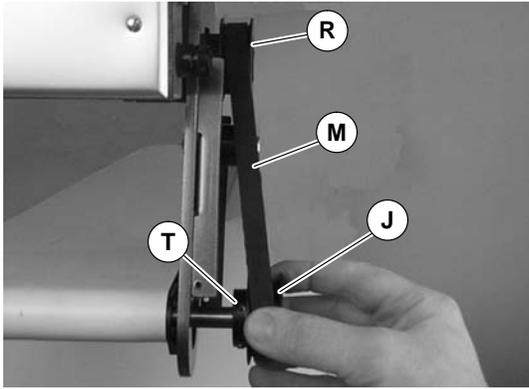


Figure 17

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 (K of Figure 14) with four (4) screws (L). Tighten screws to 35 in-lb (4 Nm).

Drive or Driven Pulley Replacement

		<h3>WARNING</h3>
	<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 9.
2. Loosen set screws and remove drive or driven pulley.

NOTE: If drive pulley (R of Figure 18) is replaced, wrap timing belt around drive pulley and complete step 3.

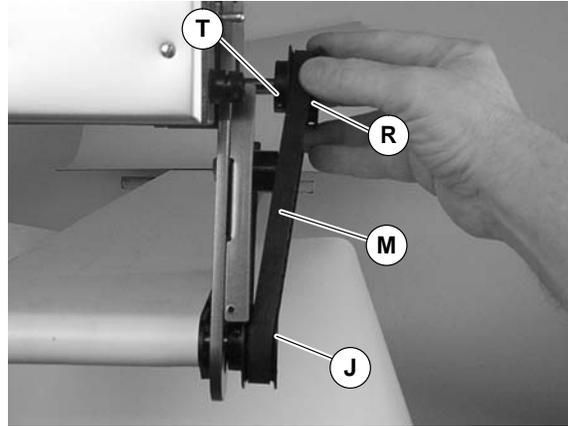


Figure 18

3. Complete steps 6 through 9 of "Installation" section on page 7.

Gearmotor Replacement

		<h3>WARNING</h3>
	<p>Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.</p>	

		<h3>DANGER</h3>
	<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 (W of Figure 19).

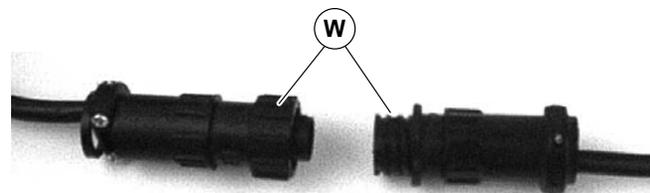


Figure 19

3. Remove four (4) screws (L of Figure 14) and remove cover (K).

Preventive Maintenance and Adjustment

4. Loosen tensioner (U of Figure 15).
5. Remove timing belt (M of Figure 20).

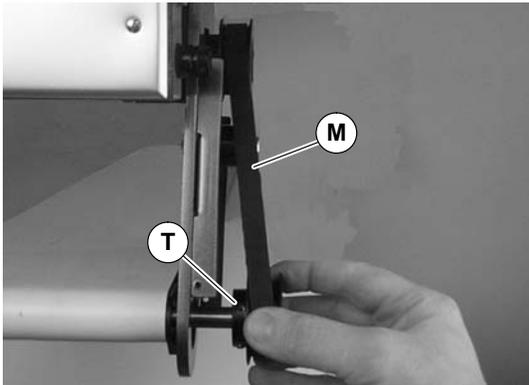


Figure 20

NOTE: If timing belt does not slide over pulley flange, loosen driven pulley set screws (T of Figure 20) and remove pulley with belt (M). For re-installation, see steps 6 through 9 on page 7.

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

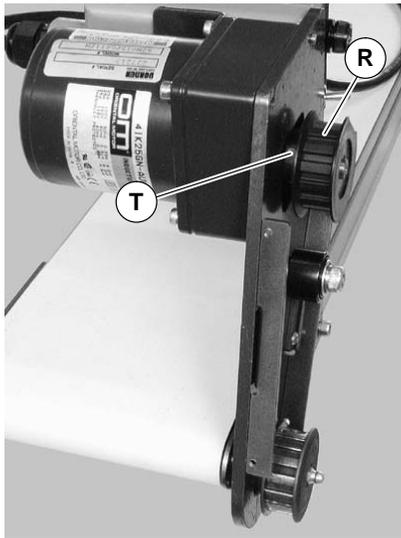


Figure 21

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

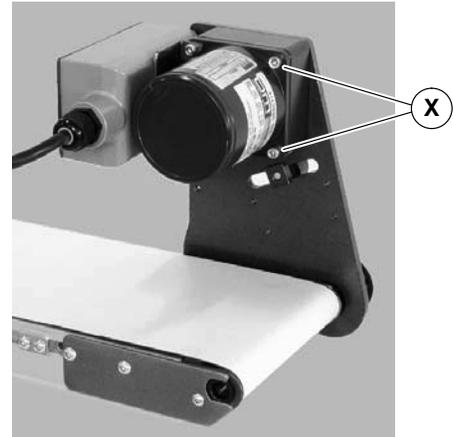


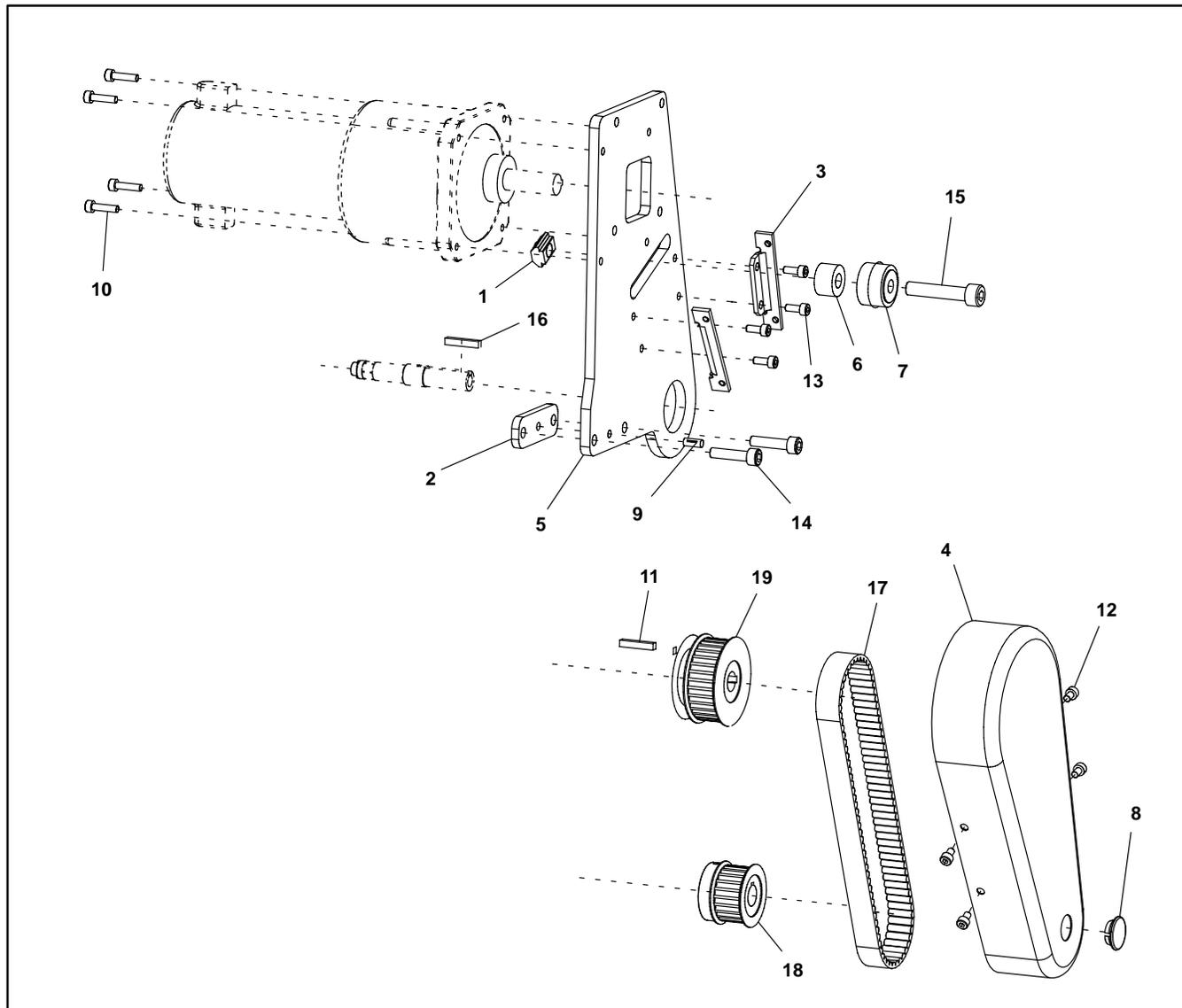
Figure 22

8. Mount new gearmotor with four (4) screws (X). Tighten to 45 in-lb (5 Nm).
9. Replace drive pulley (R of Figure 21) and tighten set screws (T).
10. Complete steps 6 through 9 of “Installation” section on page 7.
11. Replace wiring:
 - For a single phase motor, reverse step 1 on page 10.
 - For DC variable speed motor, reverse step 2 on page 10.

Service Parts

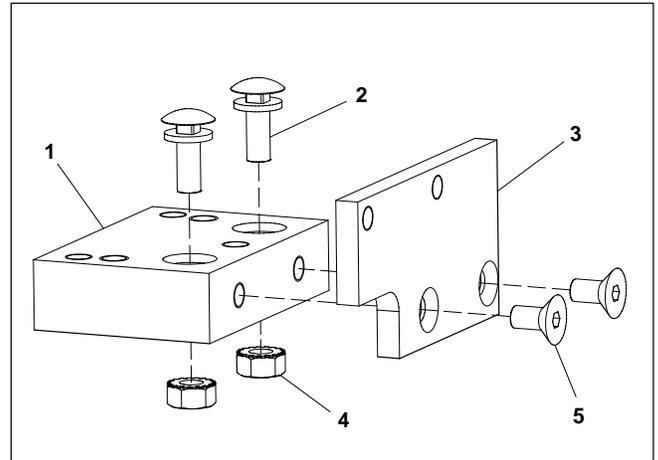
NOTE: For replacement parts other than those shown in this section, contact an authorized Dorner Service Center or the factory.

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



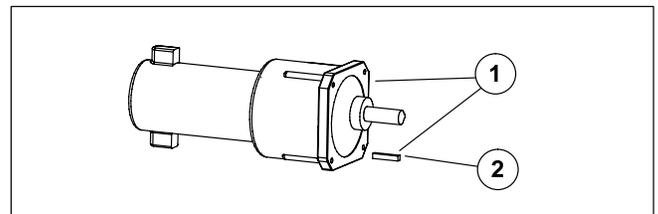
Item	Part Number	Description
1	202390M	Nut, Cam Follower
2	450027M	Drive Spacer (2100, 6200 Only)
	450377M	Drive Spacer (4100 Only)
3	450375M	Cover Mounting Bracket
4	450376M	Drive Guard
5	450026M	Light Duty Motor Mount Plate
6	450445	Spacer, Cam Follower
7	802-046	Bearing
8	807-226	Snap-out Plastic 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 .4mm x 22mm (Fixed Speed Gearmotor Only)
	912-084	Square Key .125" x .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 .125" x .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 No.	Part 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 No.	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
2	980422M	Key, 4mm x 22mm, 10mm Bore
	912-052	Key, 1/8" x 5/8", 1/2" Bore

Return Policy

No returns will be accepted without prior written factory authorization. When calling for authorization, please have the following information ready for the Dornier Factory representative or your local distributor:

1. Name and address of customer.
2. Item(s) being returned.
3. Reason for return.
4. Customer's original order number used when ordering the item(s).
5. Dornier or distributor invoice number.

A representative will discuss action to be taken on the Returned items and provide a Returned Goods Authorization Number to reference.

There will be a 15% restocking charge on all new items returned for credit where Dornier was not at fault. These will not be accepted after 60 days from original invoice date. The restocking charge covers inspection, cleaning, disassembly, and reissuing 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.

Dornier has representatives throughout the world. Feel free to contact Dornier for the name of your local representative. Our technical sales and service staff will gladly help with your questions on Dornier products.

For a copy of Dornier's Limited Warranty, contact factory, distributor, service center or visit our website at www.dornier.com

DORNER[®]

Dornier 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. ©Dornier Mfg. Corp. 2000

DORNER MFG. CORP.

975 Cottonwood Ave. PO Box 20
Hartland, WI 53029-0020 USA

USA

TEL 1-800-397-8664 (USA)

FAX 1-800-369-2440 (USA)

Outside the USA:

TEL 1-262-367-7600, FAX 1-262-367-5827

DORNER

Arnold-Sommerfeld-Ring 2
D-52499 Baesweiler

Germany

TEL (02401) 80 52 90

FAX (02401) 80 52 93

Internet: www.dornier.com