

2100, 2200 & 6100 Series Center Mount Drive Package for Standard Load 60 Hz Parallel Shaft Gearmotors



Table of Contents

Warnings – General Safety	2	Preventive Maintenance & Adjustment	7
Introduction	2	Required Tools	7
Product Description	3	Timing Belt Tensioning	7
Specifications	3	Timing Belt Replacement	7
Installation	5	Drive or Driven Pulley Replacement	8
Required Tools	5	Gear Motor Replacement	8
Mounting	5	Service Parts	11
		Return Policy	12

Warnings – General Safety

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

		WARNING
Gearmotors may be HOT. DO NOT TOUCH Gearmotors.		

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

		WARNING
Exposed moving parts can cause severe injury. REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.		

		DANGER
Do NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.		

		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.		

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

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 and 2200 Series conveyors are covered by the following patent numbers: 5131529, 5174435, and corresponding patents and patent applications in other countries.

Dorner 6100 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.

Product Description

Refer to Figure 1 for typical components.

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

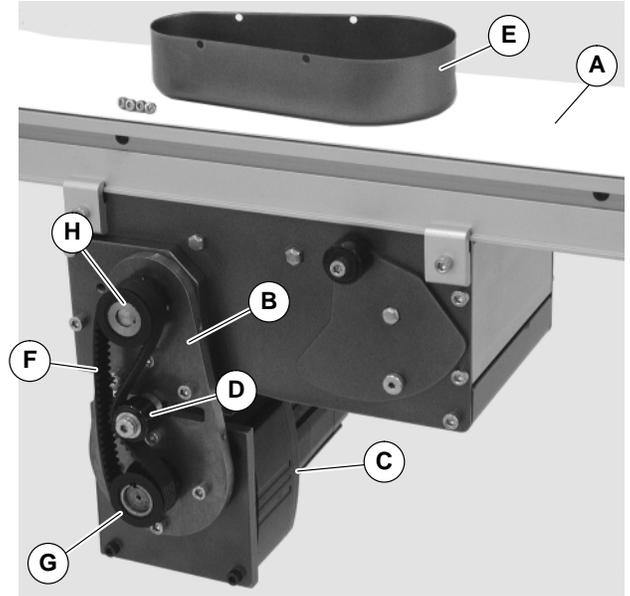


Figure 1

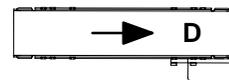
Specifications

Gearmotor Mounting Package Models:

Example:

2 M 1 P S WW A 32 32

- 2 = 2100 & 2200 Series Conveyor
- 6 = 6100 Series Conveyor
- Language Code = US English
- Mount Style: 1 = Type 1, Vertical Mount; 2 = Type 2, Bottom Mount
- Output Shaft Type = Parallel
- Gearmotor Type: S = Standard Load, H = Heavy Load
- Conveyor Width Reference*
- Mount Position = A or D (see detail to the right)
- Drive Pulley (see Tables 2 & 3)
- Driven Pulley (see Tables 2 & 3)



* See "Ordering and Specifications" Catalog for details.

Specifications

Table 1: Table 1: Gearmotor

	Single Phase	Three Phase	DC Variable Speed
Output Power	0.17 hp (0.13 kw)		0.25 hp (0.19 kw)
Input Voltage	115 Volts A.C.	230 Volts A.C.	130 Volts D.C.
Input Frequency	60 Hz		N/A
Input Current	1.9 Amperes	1.2 Amperes	1.8 Amperes
Motor RPM	1725		2500
Gearmotor Ratios	5:1, 10:1, 20:1, 30:1, 60:1, 180:1		
Motor Type	Totally enclosed, Fan-cooled		Totally enclosed, Non-ventilated

Specifications

Table 2: Belt Speeds for Standard Load Fixed Speed Parallel Shaft 60 Hz Gearmotors

Standard Load Gearmotors				Top and Bottom Mount Package		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
62M180PS411F(n)	10	341	38.5	2	0.6	22	32
62M180PS411F(n)	10	341	38.5	3	0.9	32	32
62M060PS4(vp)F(n)	29	270	30.5	6	1.8	19	32
62M060PS4(vp)F(n)	29	270	30.5	10	3.0	32	32
62M030PS4(vp)F(n)	58	135	15.3	20	6.1	32	32
62M020PS411F(n)	86	90	10.2	30	9.1	32	32
62M020PS411F(n)	86	90	10.2	45	13.7	48	32
62M010PS4(vp)F(n)	173	45	5.1	61	18.6	32	32
62M010PS4(vp)F(n)	173	45	5.1	91	27.7	48	32
62M005PS411F(n)	345	25	2.8	121	36.9	32	32
62M005PS411F(n)	345	25	2.8	154	46.9	28	22
62M005PS411F(n)	345	25	2.8	181	55.2	48	28
62M005PS411F(n)	345	25	2.8	208	63.4	48	28
62M005PS411F(n)	345	25	2.8	264	80.5	48	22

(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 3: Belt Speeds for Standard Load Variable Speed Parallel Shaft DC Gearmotors

Standard Load Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
62M180PSD3DEN	14	341	38.5	0.4 – 3.4	0.1 – 1.0	22	32
62M180PSD3DEN	14	341	38.5	0.6 – 4.9	0.2 – 1.5	32	32
62M060PSD3DEN	42	270	30.5	1.0 – 9	0.3 – 2.6	19	32
62M060PSD3DEN	42	270	30.5	1.8 – 15	0.5 – 4.5	32	32
62M030PSD3DEN	83	135	15.3	3.5 – 29	1.1 – 9	32	32
62M020PSD3DEN	125	90	10.2	5.3 – 44	1.6 – 13	32	32
62M010PSD3DEN	250	72	8.1	10 – 88	3.2 – 27	32	32
62M010PSD3DEN	250	72	8.1	18 – 150	5.5 – 46	48	28
62M005PSD3DEN	500	25	2.8	21 – 76	6.4 – 54	32	32
62M005PSD3DEN	500	25	2.8	27 – 224	7.3 – 61	28	22
62M005PSD3DEN	500	25	2.8	31 – 255	9.3 – 78	32	22

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

Required Tools

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

Mounting



NOTE: Type 1 mounting package shown below left (Figure 2.) Type 2 mounting package shown below right (Figure 2.)

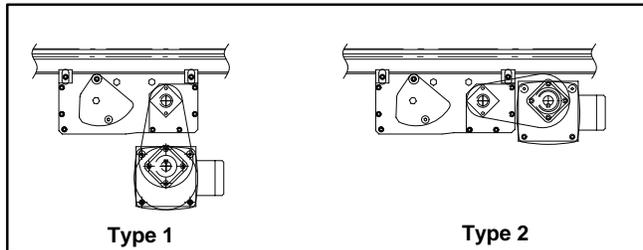


Figure 2

1. Gather components (Figure 3)

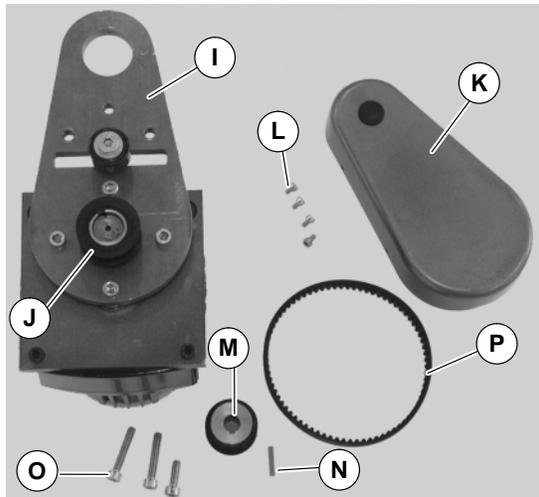


Figure 3

Installation Component List

I	Mount Assembly
J	Drive Pulley
K	Cover
L	M4 Socket Head Screws (4x)
M	Driven Pulley
N	Key
O	M6 Socket Head Screws (3x)
P	Timing Belt

NOTE: Type 1 mounting package shown (Figure 3), Type 2 mounting package similar.

2. Locate drive output shaft (S of Figure 4) and remove two (2) screws (R).

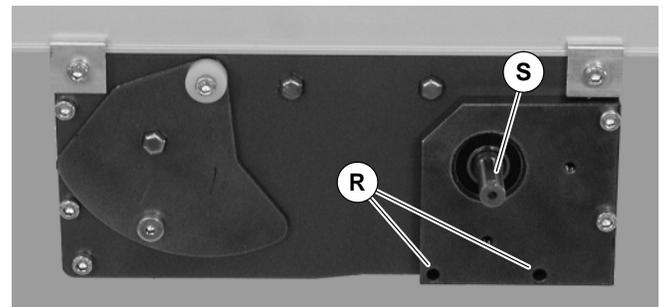


Figure 4

3. Attach mount assembly (I of Figure 5) with screws (O). Install long screws on bottom. Tighten screws to 80 in-lb (9 Nm.).

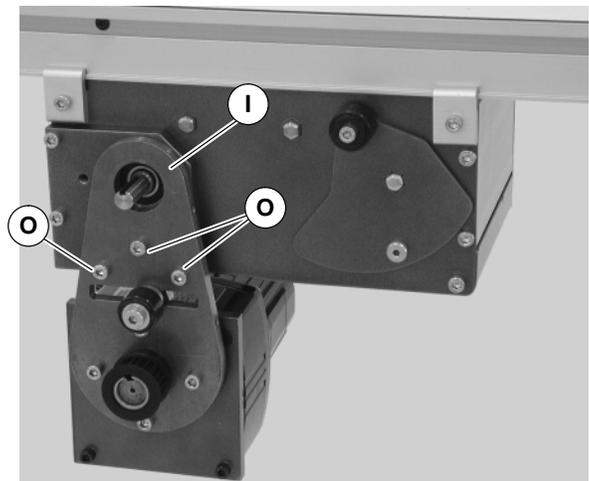


Figure 5

Installation



4. Install key (N of Figure 6).

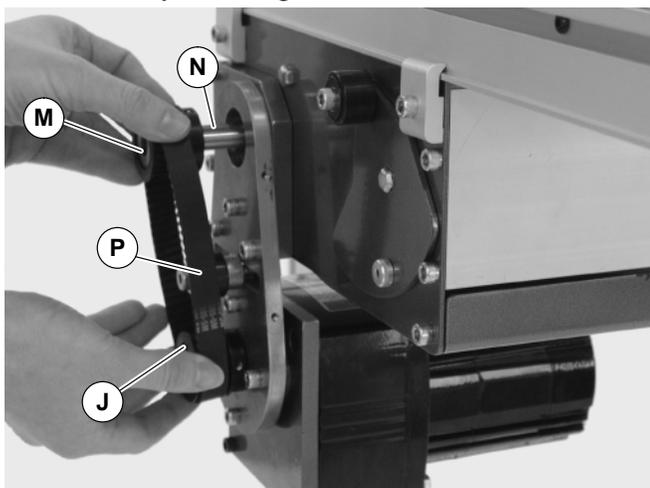


Figure 6

5. Wrap timing belt (P) around driven pulley (M) and drive pulley (J). Install driven pulley (M) onto conveyor shaft.
6. Using a straight edge (T of Figure 7), align driven pulley (M) with drive pulley (J). Tighten driven pulley set screws (U).

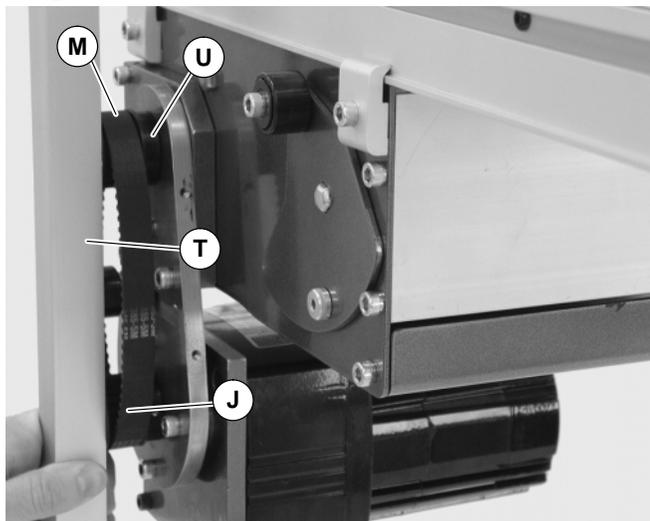


Figure 7

7. Depending on direction of conveyor belt travel (1 or 2 of Figure 8), position belt tensioner (V) as shown. Tension belt to obtain .125" (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point (W). Tighten tensioner screw to 103 in-lb (12 Nm).

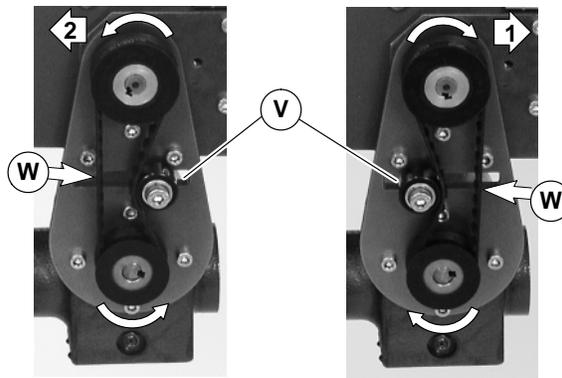


Figure 8

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

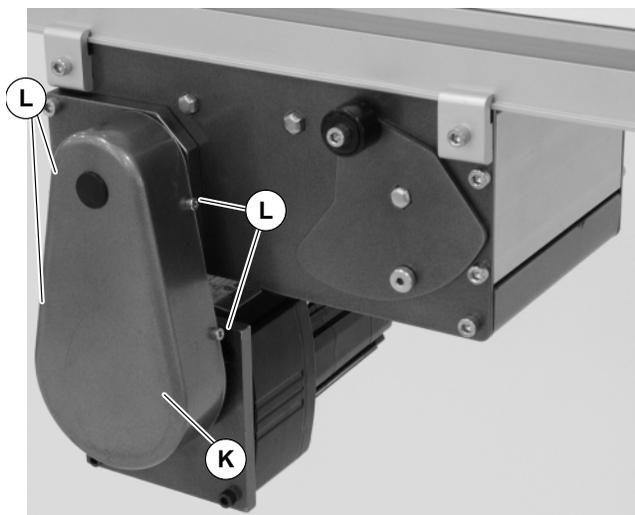


Figure 9

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

Timing Belt Tensioning



1. Remove four (4) screws (L of Figure 10) and remove cover (K).

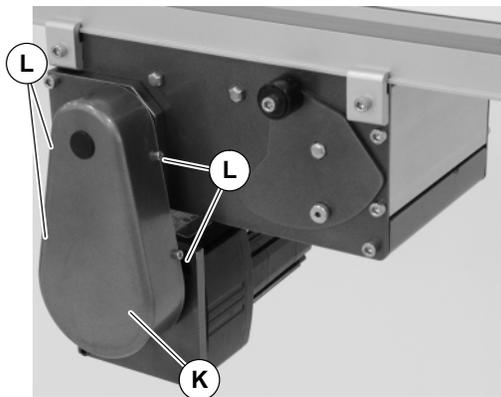


Figure 10

2. Loosen tensioner (V of Figure 11).

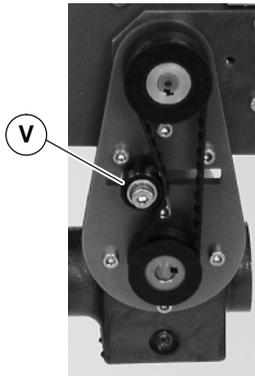


Figure 11

3. Depending on direction of conveyor belt travel (1 or 2 of Figure 12), position belt tensioner (V) as shown. Tension belt to obtain .125" (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point (W). Tighten tensioner screw to 103 in-lb (12 Nm).

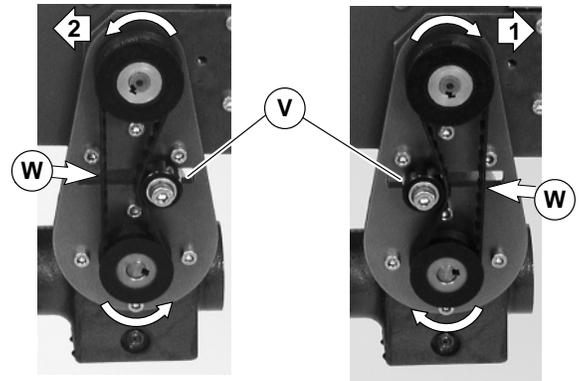


Figure 12

4. Install cover (K of Figure 10) with four (4) screws (L). Tighten screws to 35 in-lb (4 Nm).

Timing Belt Replacement



1. Remove four (4) screws (L of Figure 10) and remove cover (K).
2. Loosen tensioner (V of Figure 11).
3. Remove timing belt (P of Figure 13).

NOTE: If timing belt does not slide over pulley flange, loosen driven pulley set screws (U of Figure 13) and remove pulley (M) with belt (P). For re-installation, see steps 5 and 6 on page 6.

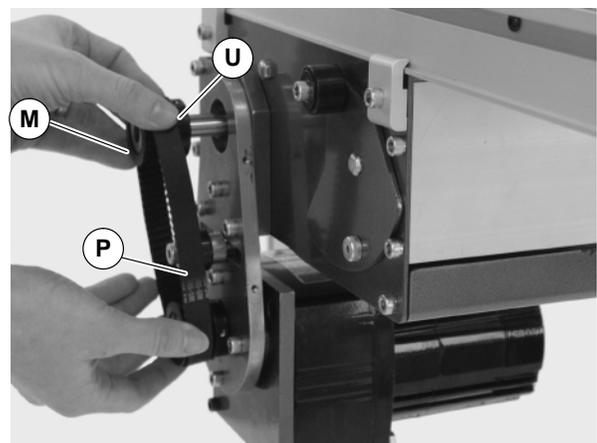


Figure 13

4. Install new timing belt.

Preventive Maintenance and Adjustment

5. Depending on direction of conveyor belt travel (1 or 2 of Figure 14), position belt tensioner (V) as shown. Tension belt to obtain .125" (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point (W). Tighten tensioner screw to 103 in-lb (12 Nm).

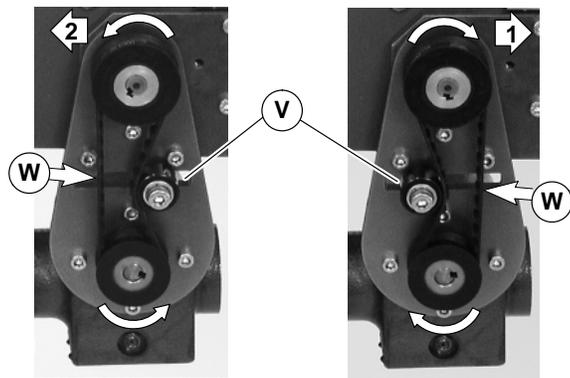


Figure 14

6. Install cover (K of Figure 15) with four (4) screws (L). Tighten screws to 35 in-lb (4 Nm).

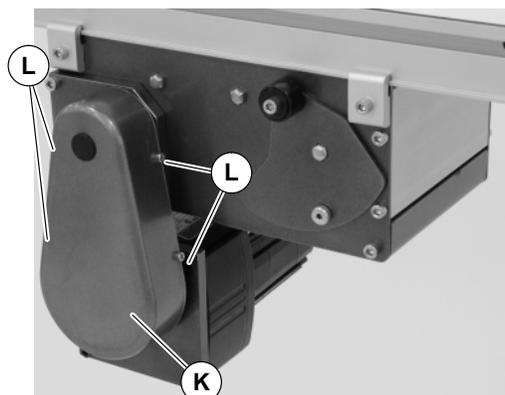


Figure 15

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 7.
2. Loosen set screws and remove drive or driven pulley.

NOTE: If drive pulley (J of Figure 20) is replaced, wrap timing belt around drive pulley and complete step 3.

3. Complete steps 5 through 8 of "Installation" section on page 6.

Gear Motor 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. LOCKOUT POWER BEFORE before wiring.</p>	

1. For single phase motor, unplug power cord from outlet.
2. For three phase motor:
 - a. Loosen terminal box screws (AF of Figure 16) and remove cover (AG).

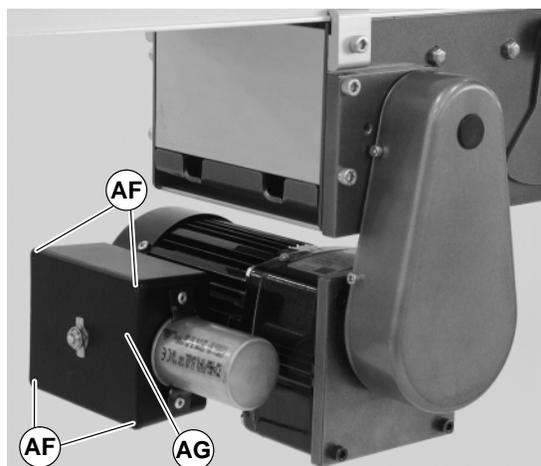


Figure 16

- b. Record incoming wire colors on red, black and blue leads. Loosen wire nuts and remove incoming wires.
- c. Loosen cord grip and remove cord.

Preventive Maintenance and Adjustment

3. For DC variable speed motor, unplug motor cord at disconnect (AH of Figure 17).

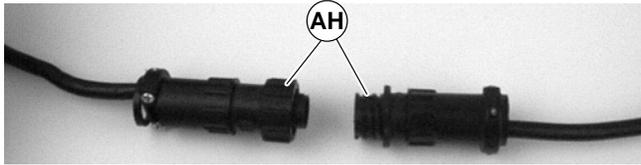


Figure 17

4. Remove four (4) screws (L of Figure 18) and remove cover (K).

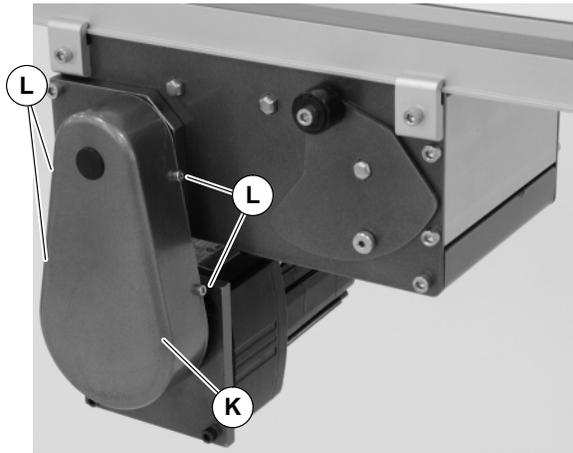


Figure 18

5. Loosen tensioner (V of Figure 19).

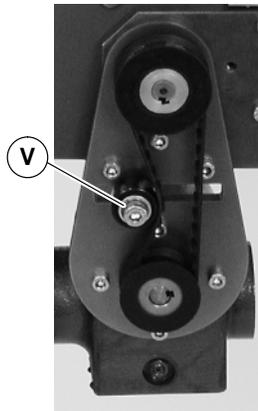


Figure 19

6. Loosen drive pulley set screws (X of Figure 20). Remove drive pulley (J) and timing belt (P).

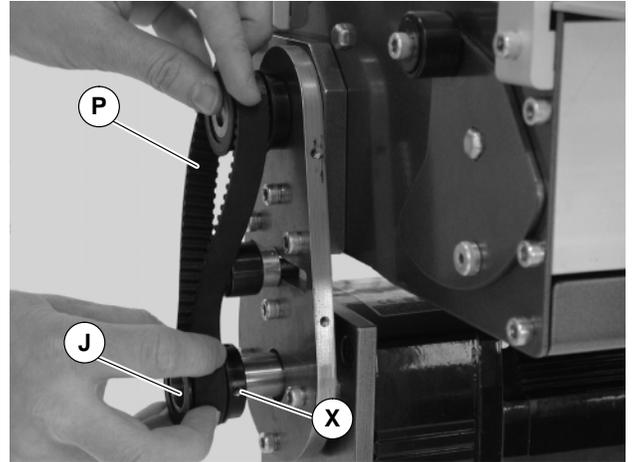


Figure 20

7. Remove four (4) gearmotor mounting screws (Q of Figure 21). Remove gearmotor with adapter plate.

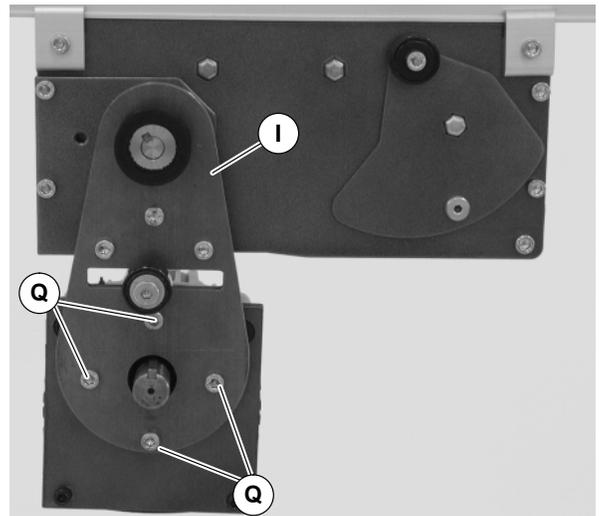


Figure 21

8. Remove four (4) adapter plate screws (AI of Figure 22). Remove adapter plate (AJ).

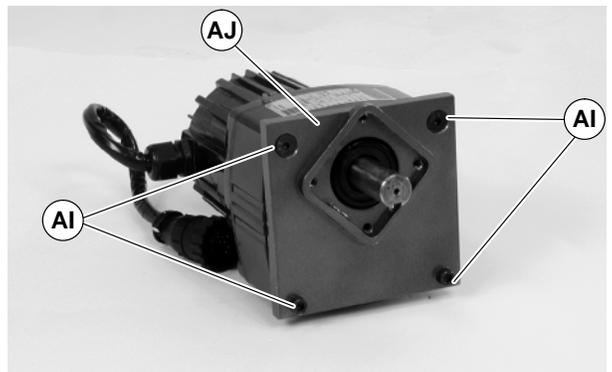


Figure 22

Preventive Maintenance and Adjustment

9. Install new gearmotor to adapter plate (AJ) and mounting bracket (I of Figure 23). Tighten screws (Q of Figure 21) to 103 in-lb (12 Nm).
10. Wrap timing belt (P of Figure 23) around drive pulley (J) and driven pulley (M). Attach drive pulley (J) to drive shaft.

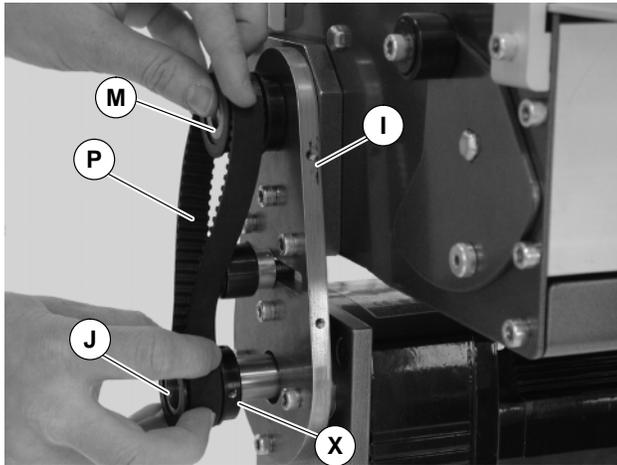


Figure 23

11. Using a straight edge (T of Figure 24), align drive pulley (J) with driven pulley (M). Tighten drive pulley set screws (X).

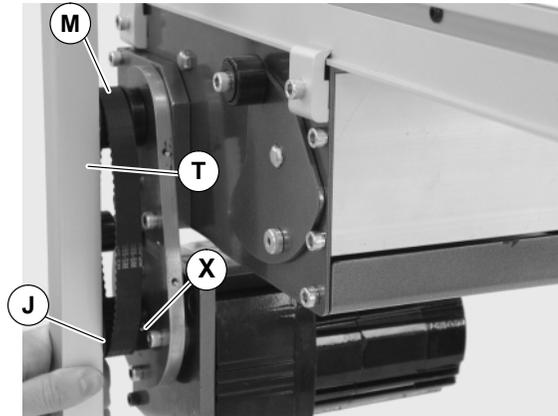


Figure 24

12. Depending on direction of conveyor belt travel (1 or 2 of Figure 8), position belt tensioner (V) as shown.

Tension belt to obtain .125" (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point (W). Tighten tensioner screw to 103 in-lb (12 Nm).

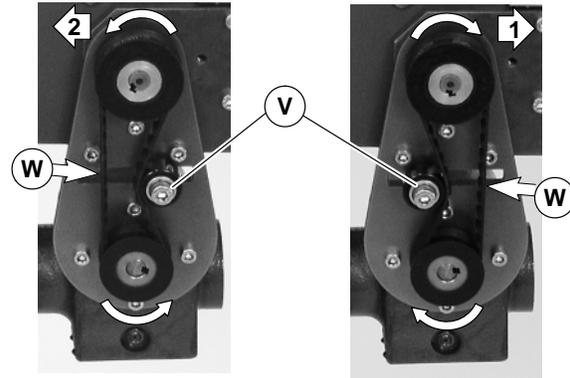


Figure 25

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

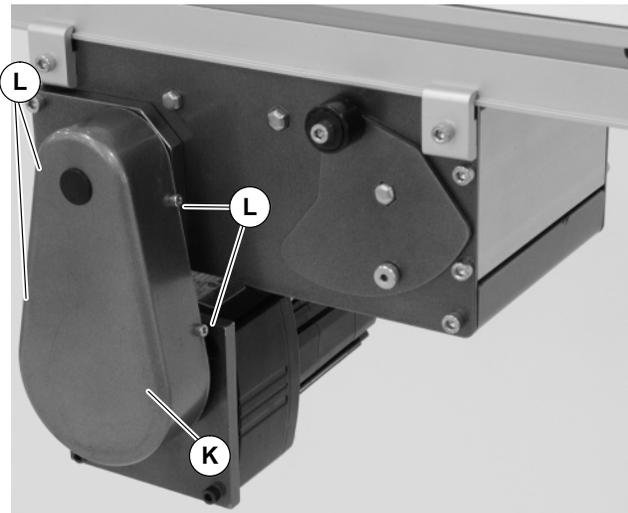


Figure 26

14. Replace wiring:

- For a single phase motor, reverse step 1 on page 8.
- For a three phase motor, reverse step 2, on page 8.
- For a DC variable speed motor, reverse step 3 on page 9.

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

Item	Part Number	Part Description
1	62M180PS411FN	Motor, 0.08hp (0.06Kw), 10 RPM, 115VAC, 60Hz, 1-Phase
	62M180PS411FR	Motor, 0.08hp (0.06Kw), 10 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M060PS411FN	Motor, 0.17hp (0.13Kw), 29 RPM, 115VAC, 60Hz, 1-Phase
	62M060PS411FR	Motor, 0.17hp (0.13Kw), 29 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M060PS423FN	Motor, 0.25hp (0.19Kw), 29 RPM, 230VAC, 60Hz, 3-Phase
	62M030PS411FN	Motor, 0.17hp (0.13Kw), 58 RPM, 115VAC, 60Hz, 1-Phase
	62M030PS411FR	Motor, 0.17hp (0.13Kw), 58 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M030PS423FN	Motor, 0.25hp (0.19Kw), 58 RPM, 230VAC, 60Hz, 3-Phase
	62M020PS411FN	Motor, 0.17hp (0.13Kw), 86 RPM, 230VAC, 60Hz, 1-Phase
	62M020PS411FR	Motor, 0.17hp (0.13Kw), 86 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M010PS411FN	Motor, 0.17hp (0.13Kw), 173 RPM, 115VAC, 60Hz, 1-Phase
	62M010PS411FR	Motor, 0.17hp (0.13Kw), 173 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M010PS423FN	Motor, 0.25hp (0.19Kw), 173 RPM, 230VAC, 60Hz, 3-Phase
	62M005PS411FN	Motor, 0.17hp (0.13Kw), 345 RPM, 230VAC, 60Hz, 1-Phase
	62M005PS411FR	Motor, 0.17hp (0.13Kw), 345 RPM, 115VAC, 60Hz, 1-Phase with reversing switch
	62M180PSD3DEN	Motor, 0.12hp (0.09Kw), 14 RPM, 130VDC
	62M060PSD3DEN	Motor, 0.25hp (0.19Kw), 42 RPM, 130VDC
	62M030PSD3DEN	Motor, 0.25hp (0.19Kw), 83 RPM, 130VDC
	62M020PSD3DEN	Motor, 0.25hp (0.19Kw), 125 RPM, 130VDC
	62M010PSD3DEN	Motor, 0.25hp (0.19Kw), 250 RPM, 130VDC
62M005PSD3DEN	Motor, 0.25hp (0.19Kw), 500 RPM, 130VDC	
2	814-103	Timing Belt, 15mm W x 385mm L
	814-100	Timing Belt, 15mm W x 400mm L
	814-096	Timing Belt, 15mm W x 425mm L
	814-105	Timing Belt, 15mm W x 460mm L

Item	Part Number	Part Description
3	802-046	Tensioner Bearing
4	450365MP	Driven Pulley, 19 Tooth
	450366MP	Driven Pulley, 22 Tooth
	450367MP	Driven Pulley, 28 Tooth
	450368MP	Driven Pulley, 32 Tooth
5	980422M	Square Key, 4 mm x 22 mm (2x)
6	450434	Drive Pulley, 22 Tooth
	450435	Drive Pulley, 28 Tooth
	450436	Drive Pulley, 32 Tooth
	450437	Drive Pulley, 44 Tooth
	450438	Drive Pulley, 48 Tooth
	450439	Drive Pulley, 60 Tooth
7	912-078	Square Key, .188" x .75" Lg

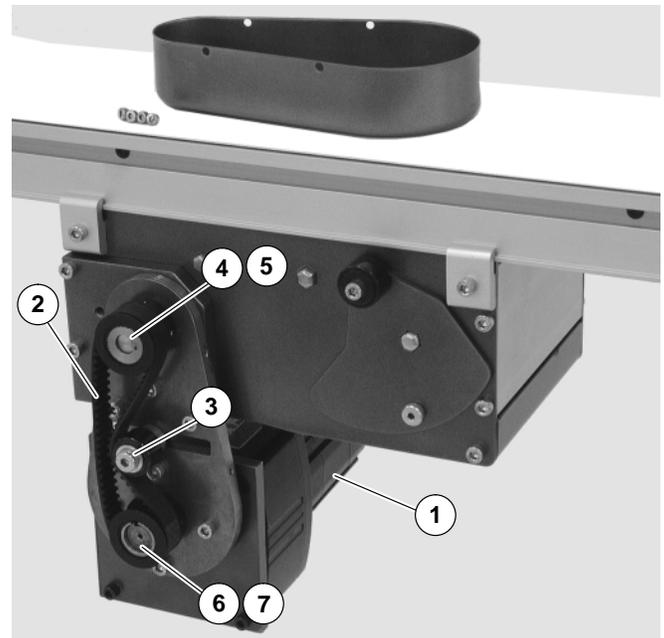


Figure 27

Return Policy

No returns will be accepted without prior written factory authorization. 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. 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.

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 Dorner 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.

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

For a copy of Dorner's Limited Warranty, contact factory, distributor, service center or visit our website @ www.dorner.com

DORNER®

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. 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.dorner.com