

3100 & LPZ Series Bottom Mount Drive Package for Light & Standard Load 50 Hz Gearmotors

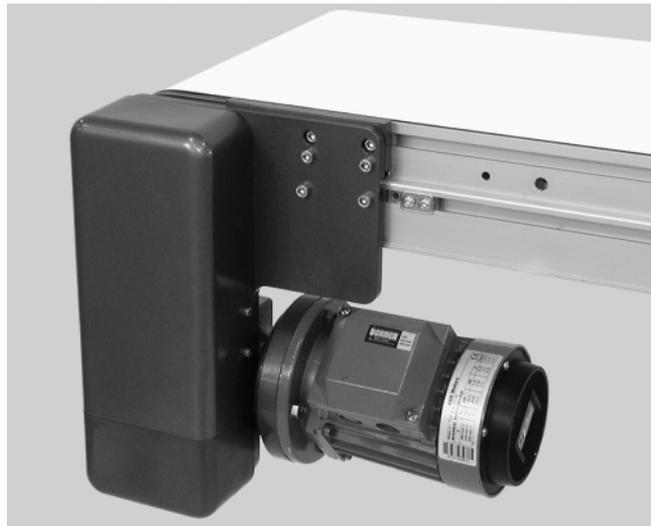


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Warnings – General Safety

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

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

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

		WARNING
<p>Exposed moving parts can cause severe injury. REPLACE ALL GUARDS BEFORE RUNNING CONVEYOR.</p>		

		DANGER
<p>Do NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.</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>Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.</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 3100 Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714 and patent applications in other countries.

Dorner LPZ Series conveyors are covered by patent numbers 5156260, 5156261, 5203447, 5265714, 5875883 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

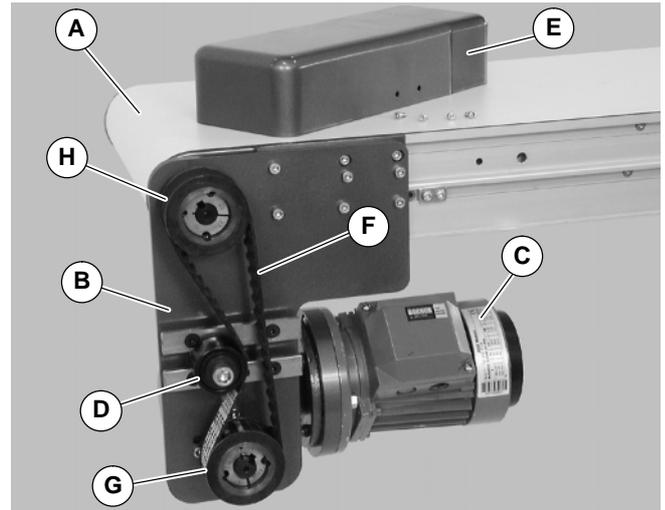


Figure 1

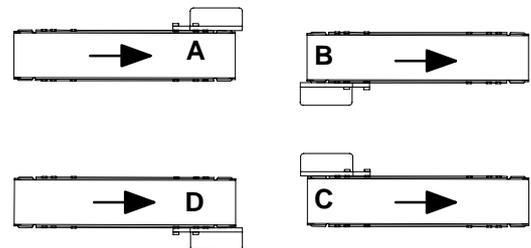
Specifications

Gearmotor Mounting Package Models:

Example:

3 U B H L WW A - 16 16

- 3 — Language Code = CE English
- U — Mount Style = Bottom Mount
- B — Output Shaft Type = 90°
- H — Gearmotor Type: L = Light Load, S = Standard Load
- L — Conveyor Width Reference*
- WW — Mount Position = A, B, C or D (see detail to the right)
- A — Belt Type: -- = flat belt, A through J = cleated belt
- 16 — Drive Pulley (see Table 2 & 3)
- 16 — Driven Pulley (see Table 2 & 3)



* See "Ordering and Specifications" Catalog for details.

Table 1: Gearmotor Specifications

Item	Light Load Gearmotor			Standard Load Gearmotor		
	Single Phase	Three Phase	VFD Variable Speed	Single Phase	Three Phase	VFD Variable Speed
Output Power	0.18 kw			0.37 kw		
Input Voltage	230 VAC	230/400 VAC	230 VAC	230 VAC	230/400 VAC	230 VAC
Input Frequency	50 Hz		25 to 63 Hz	50 Hz		25 to 63 Hz
Input Current	1.6 Amperes	1.4/0.8 Amperes	1.4 Amperes	2.6 Amperes	2.1/1.2 Amperes	2.1 Amperes
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1			5:1, 10:1, 20:1, 40:1, 60:1		
Protection Rating	IP55			IP55		
Frame Size	IEC 63 B5			IEC 71 B5		

Specifications

Table 2: Belt Speeds for Fixed Speed 90° 50 Hz Gearmotors

Light Load Gearmotors			Standard Load Gearmotors			Belt Speed M/min	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	Part Number	RPM	N-m			
62Z060HS4(vp)FN	23	26.4	32Z060HS4(vp)FN	23	26.8	5.8	16	16
62Z040HS4(vp)FN	35	28.9	32Z040HS4(vp)FN	35	29.4	8.5	16	16
62Z040HS4(vp)FN	35	28.9	32Z040HS4(vp)FN	35	29.4	12.8	24	16
62Z020HS4(vp)FN	70	19.4	32Z020HS4(vp)FN	70	29.9	17.1	16	16
62Z020HS4(vp)FN	70	19.4	32Z020HS4(vp)FN	70	29.4	25.6	24	16
62Z010HS4(vp)FN	140	10.7	32Z010HS4(vp)FN	140	21.5	33.8	16	16
62Z010HS4(vp)FN	140	10.7	32Z010HS4(vp)FN	140	21.5	42.4	20	16
62Z010HS4(vp)FN	140	10.7	32Z010HS4(vp)FN	140	21.5	50.9	24	16
62Z005HS4(vp)FN	280	5.6	32Z005HS4(vp)FN	280	11.2	68.0	16	16
62Z005HS4(vp)FN	280	5.6	32Z005HS4(vp)FN	280	11.2	85.0	20	16
62Z005HS4(vp)FN	280	5.6	32Z005HS4(vp)FN	280	11.2	101.8	24	16
62Z005HS4(vp)FN	280	5.6	32Z005HS4(vp)FN	280	11.2	116.4	24	16

(vp) = voltage and phase
 21 = 230 V, 1-phase
 23 = 230 V, 3-phase
 43 = 400 V, 3-phase

Table 3: Belt Speeds for Variable Speed 90° 50 Hz Gearmotors

Light Load Gearmotors			Standard Load Gearmotors			Belt Speed M/min	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	Part Number	RPM	N-m			
62Z060HS423EN	23	26.4	32Z060HS423EN	23	26.8	2.8–7.1	16	16
62Z040HS423EN	35	28.9	32Z040HS423EN	35	29.4	4.2–11	16	16
62Z040HS423EN	35	28.9	32Z040HS423EN	35	29.4	6.4–16	24	16
62Z020HS423EN	70	19.4	32Z020HS423EN	70	29.9	8.5–21	16	16
62Z020HS423EN	70	19.4	32Z020HS423EN	70	29.9	12.7–32	24	16
62Z010HS423EN	140	10.7	32Z010HS423EN	140	21.5	17–43	16	16
62Z010HS423EN	140	10.7	32Z010HS423EN	140	21.5	21–54	20	16
62Z010HS423EN	140	10.7	32Z010HS423EN	140	21.5	25–64	24	16
62Z005HS423EN	280	5.6	32Z005HS423EN	280	11.2	34–86	16	16
62Z005HS423EN	280	5.6	32Z005HS423EN	280	11.2	42–107	20	16
62Z005HS423EN	280	5.6	32Z005HS423EN	280	11.2	51–128	24	16

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



Installation Component List

I	Bottom Mount Assembly
J	Drive Pulley
K	Cover
L	M4 Socket Head Screws (4x)
M	Driven Pulley
N	Key
O	M6 Socket Head Screws (6x)
P	Timing Belt

1. Typical components (Figure 2)

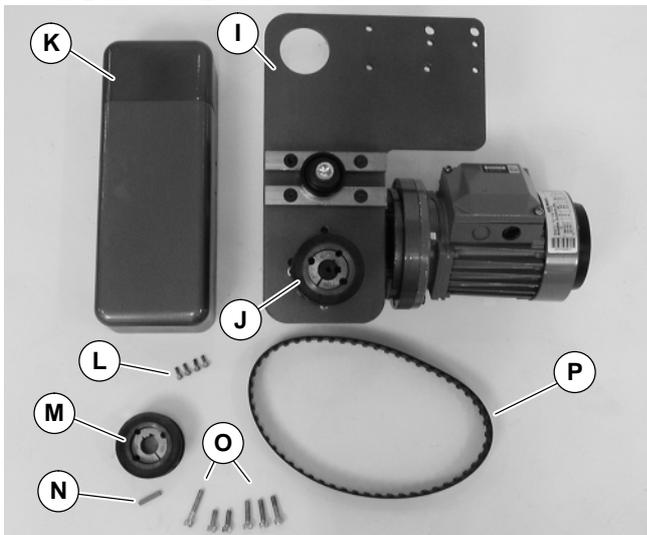


Figure 2

NOTE: Flat belt mounting package shown, cleated belt mounting package similar.

NOTE: Gearmotor position on Flat Belt conveyor shown below left, Figure 3. Gearmotor position on Cleated Belt conveyor shown below right, Figure 3.

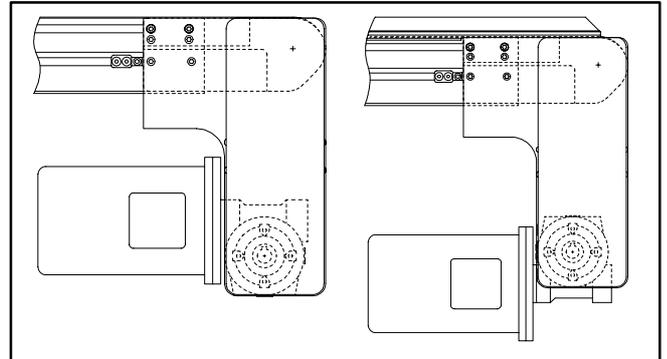


Figure 3

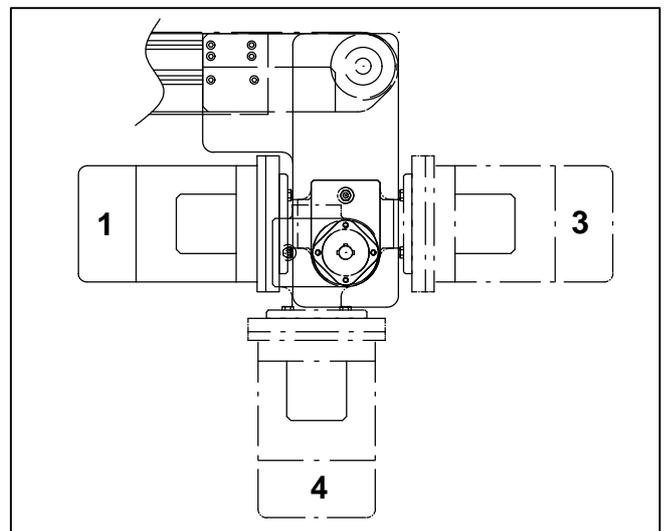


Figure 4

NOTE: Gearmotor may be operated in positions 1, 3 or 4 (Figure 4).

Installation

2. If required, change gearmotor position by removing four (4) screws (Q of Figure 5). Rotate gearmotor to other position and replace screws (Q). Tighten to 12 Nm.

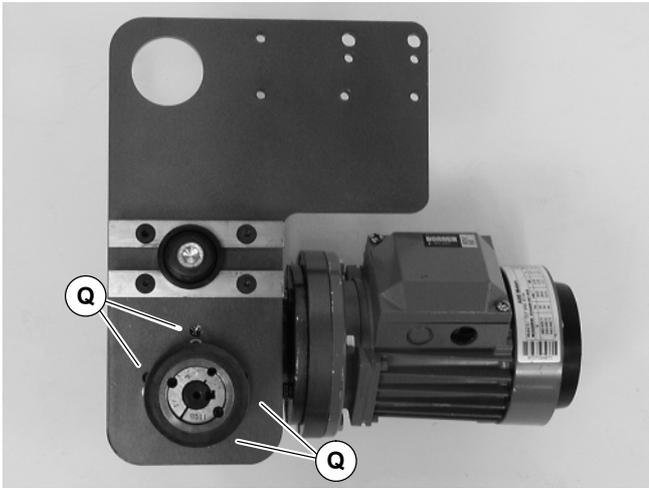


Figure 5

3. Locate drive output shaft (R of Figure 6) and remove screws (S).

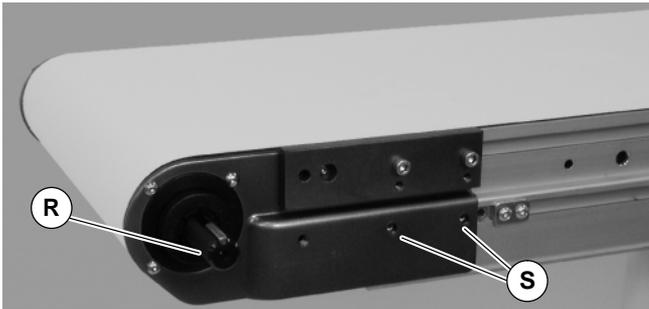


Figure 6

4. Attach mount assembly (I of Figure 7) with screws (O). Install medium length screws on bottom, long screw upper left, short screws upper right. Tighten screws to 9 Nm.

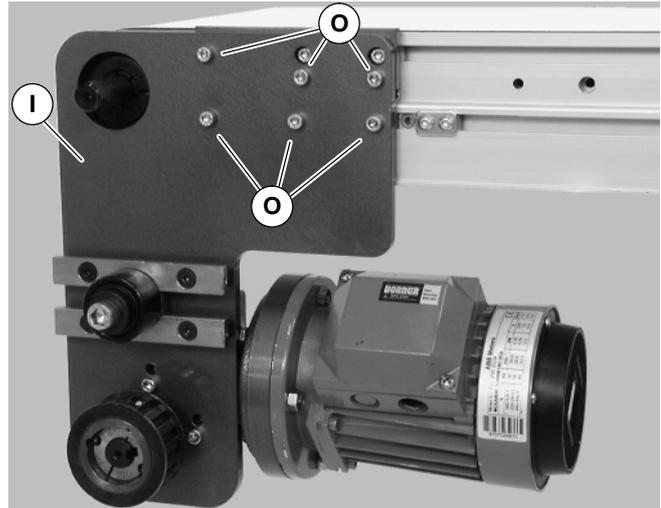


Figure 7



5. Install key (N of Figure 8).

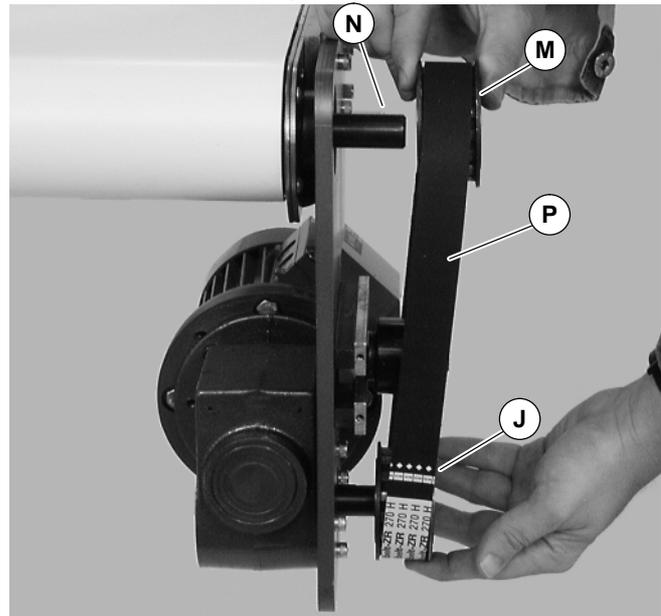


Figure 8

6. Wrap timing belt (P) around driven pulley (M) and drive pulley (J). Install driven pulley (M) onto conveyor shaft.

- Using a straight edge (T of Figure 9), align driven pulley (M) with drive pulley (J). Tighten driven pulley taper-lock screws (U).

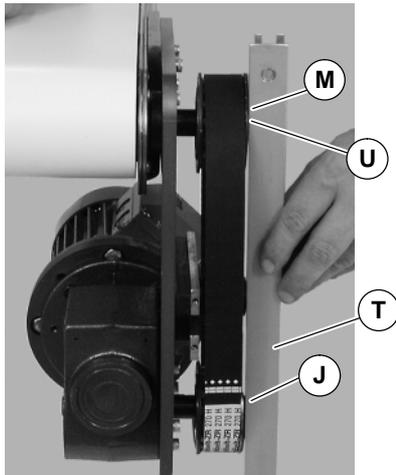


Figure 9

- Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner (V of Figure 10) as shown. Tension timing belt to obtain 3 mm deflection for 3 kilograms of force at timing belt mid-point (W). Tighten tensioner screw to 12 Nm.

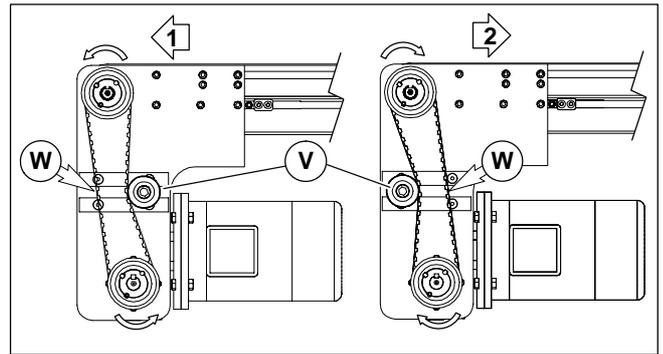


Figure 10

- Install cover (K of Figure 11) with four (4) screws (L). Tighten screws to 4 Nm.

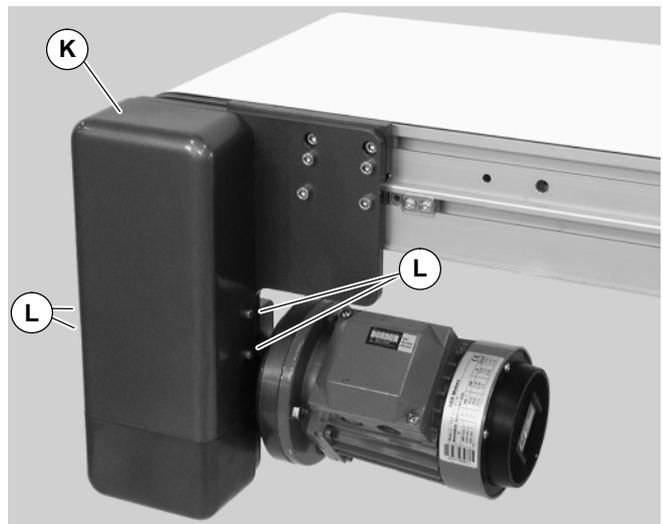


Figure 11

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 11) and remove cover (K).
2. Loosen tensioner (V of Figure 12).

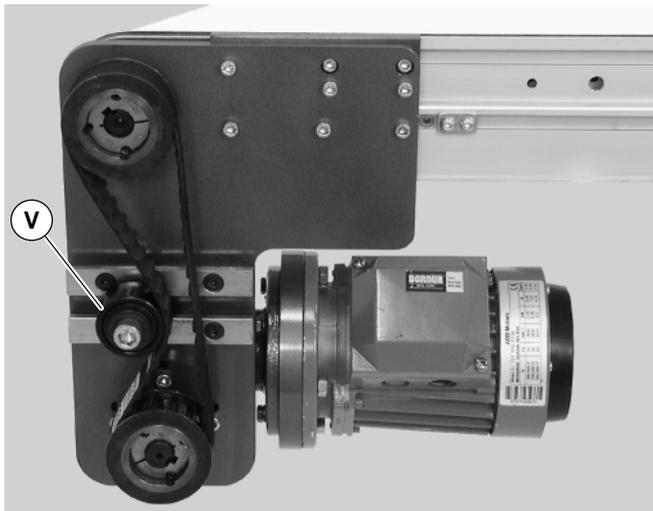


Figure 12

3. Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner (V of Figure 10) as shown. Tension timing belt to obtain 3 mm deflection for 3 kilograms of force at timing belt mid-point (W). Tighten tensioner screw to 12 Nm.
4. Install cover (K of Figure 11) with four (4) screws (L). Tighten screws to 4 Nm.

Timing Belt Replacement



1. Remove four (4) screws (L of Figure 11) and remove cover (K).
2. Loosen tensioner (V of Figure 12).
3. Remove timing belt (P of Figure 13).

NOTE: If timing belt does not slide over pulley flange, loosen driven pulley taper-lock screws (U of Figure 13) and remove pulley with belt (P). For re-installation, see steps 6 and 7 on beginning on page 6.

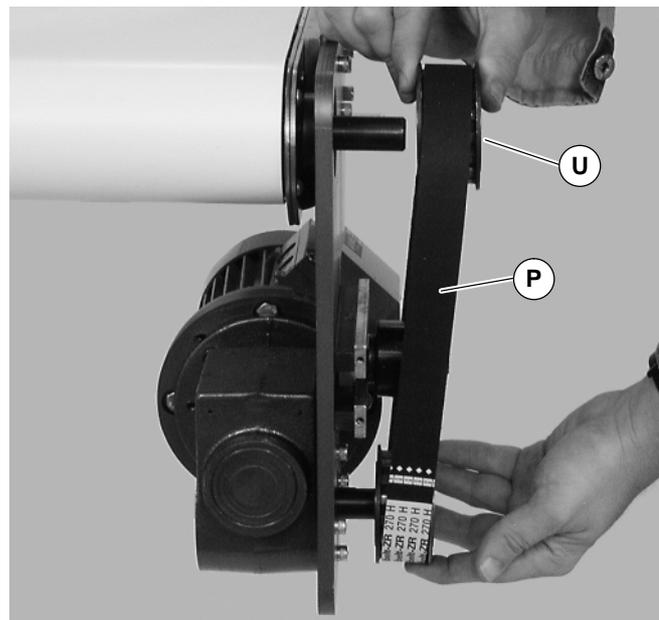


Figure 13

4. Install new timing belt.
5. Depending on conveyor belt travel (direction 1 or 2), locate timing belt tensioner (V of Figure 10) as shown. Tension timing belt to obtain 3 mm deflection for 3 kilograms of force at timing belt mid-point (W). Tighten tensioner screw to 12 Nm.
6. Install cover (K of Figure 11) with four (4) screws (L). Tighten screws to 4 Nm.

Preventive Maintenance and Adjustment

Drive or Driven Pulley Replacement



WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

1. Complete steps 1 through 3 of “Timing Belt Replacement” section on page 8.
2. Loosen taper-lock screws and remove drive or driven pulley.

NOTE: If drive pulley (J of Figure 14) is replaced, wrap timing belt around drive pulley and complete step 3.

3. Complete steps 6 through 9 of “Installation” section beginning on page 6.

Gear Reducer Replacement



WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

NOTE: The gear reducer and output shaft are permanently fixed with Loctite® Adhesive. Both components must be replaced. See “Service Parts” Section for part numbers.

1. Remove four (4) screws (L of Figure 11) and remove cover (K).
2. Loosen tensioner (V of Figure 12).
3. Loosen drive pulley taper-lock screws (X of Figure 14). Remove drive pulley (J) and timing belt (P).

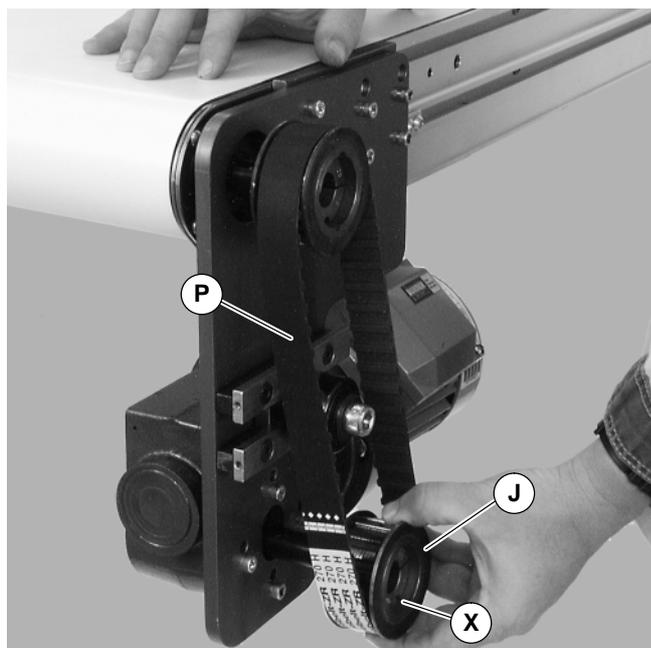


Figure 14

4. Remove four (4) gear reducer mounting screws (Q of Figure 15). Remove gearmotor.

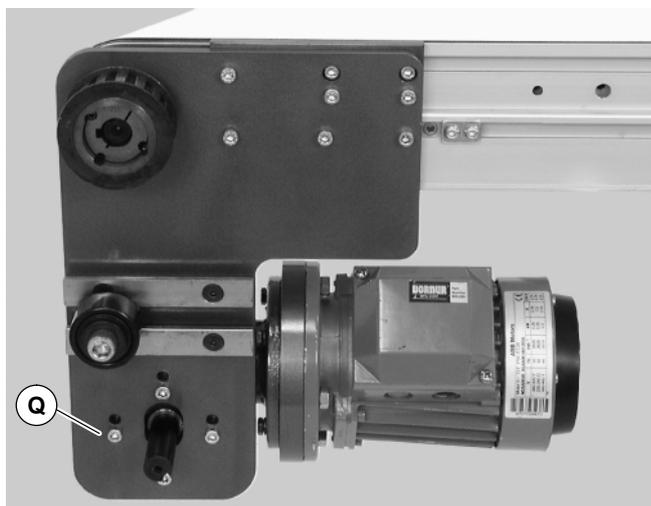


Figure 15

Preventive Maintenance and Adjustment

5. Remove four screws (Y of Figure 16). Detach motor with adapter flange (Z) from gear reducer (AA). Retain motor output shaft key (AB).

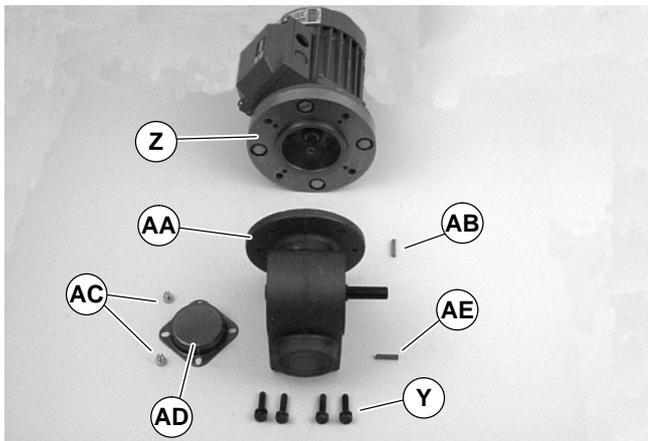


Figure 16

6. Remove two (2) screws (AC) and detach output shaft cover (AD).
7. Remove gear reducer output shaft key (AE).
8. Apply Loctite[®] 680 Adhesive (AI of Figure 17) to new shaft.

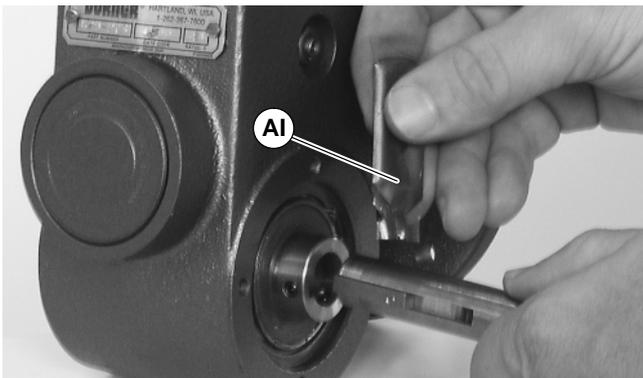


Figure 17

9. Insert the new shaft with adhesive (AG of Figure 18) and key (AH) into new gear reducer. Tighten set screws (AF) to 3 Nm.

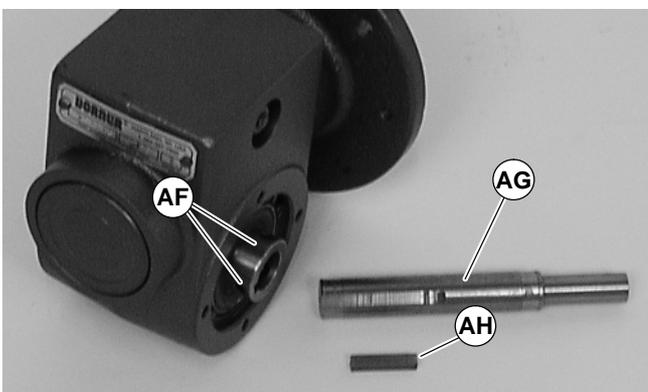


Figure 18

NOTE: Allow Loctite[®] Adhesive to cure for one (1) hour prior to starting conveyor.

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

10. With key (AB of Figure 16) in keyway, slide motor with adapter flange (Z) and gear reducer (AA) together. Install screws (Y) and tighten.

NOTE: Gearmotor position on Flat Belt conveyor shown, left on Figure 19. Gearmotor position on Cleated Belt conveyor shown, right on Figure 19.

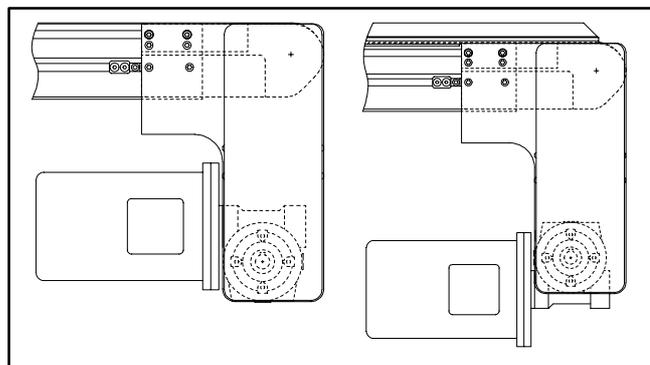


Figure 19

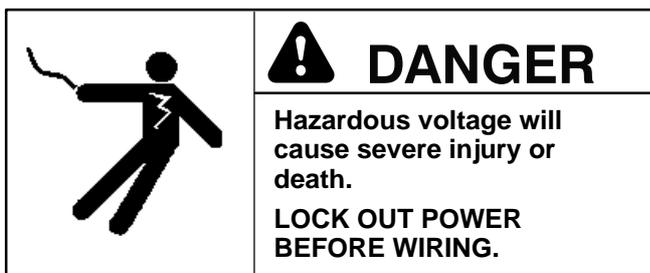
11. Install gearmotor to mounting bracket and tighten screws (Q of Figure 15) to 12 Nm.

NOTE: Drive pulley (J of Figure 14) is removed. Wrap timing belt around drive pulley and complete step 12.

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

Preventive Maintenance and Adjustment

Motor Replacement



1. For single phase motor:

- a. Loosen terminal box screws (AJ of Figure 20) and remove cover (AK).

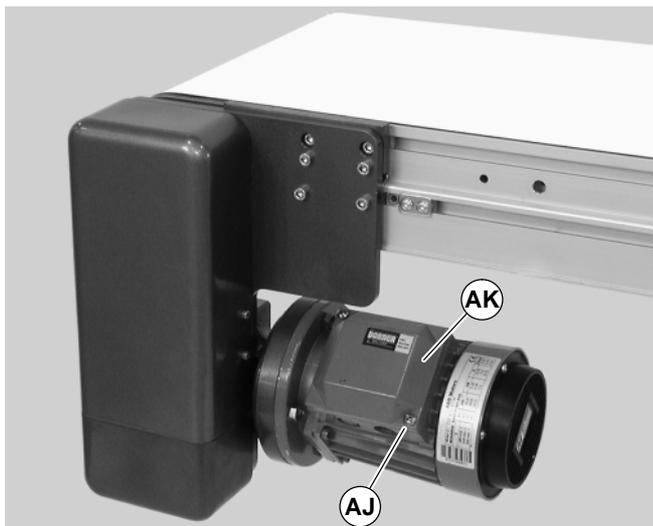


Figure 20

- b. Record wire colors on terminals 2, 6 and ground (\perp) (Figure 21). Loosen terminals 2, 6 and ground and remove wires.

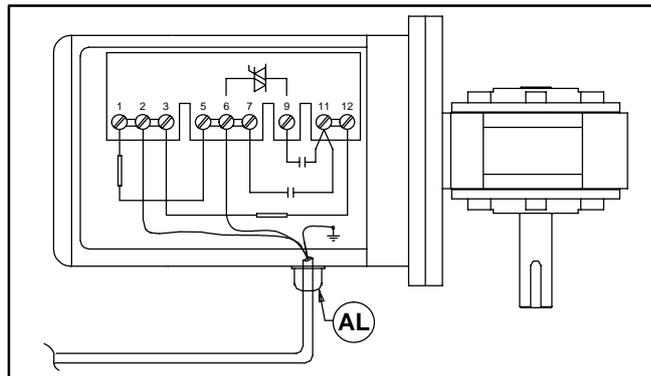


Figure 21

- c. Loosen cord grip (AL of Figure 21) and remove cord.

2. For three phase and VFD variable speed motor:

- a. Loosen terminal box screws (AJ of Figure 20) and remove cover (AK).
- b. Record wire colors on terminals U1, V1, W1 & PE (Figure 22). Loosen terminals U1, V1, W1 & PE and remove wires.

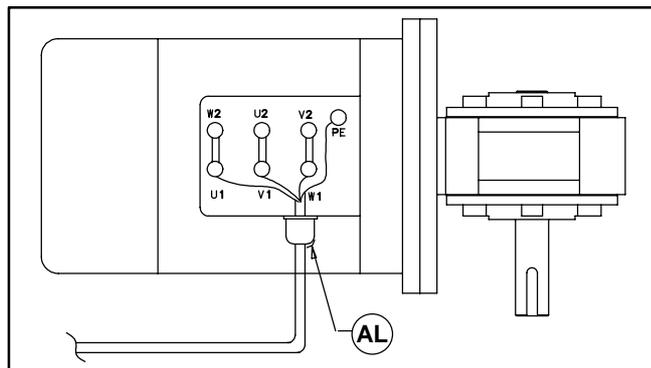


Figure 22

- c. Loosen cord grip (AL of Figure 22) and remove cord.

Preventive Maintenance and Adjustment

3. Remove four (4) screws (Y of Figure 23). Detach motor with adapter flange (Z) from gear reducer (AA). Retain motor output shaft key (AB).

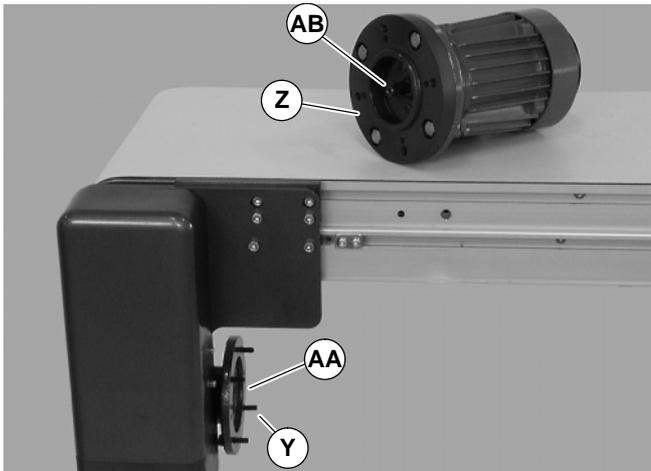


Figure 23

4. Remove four (4) screws and nuts (AM of Figure 24). Remove adapter flange (AN).

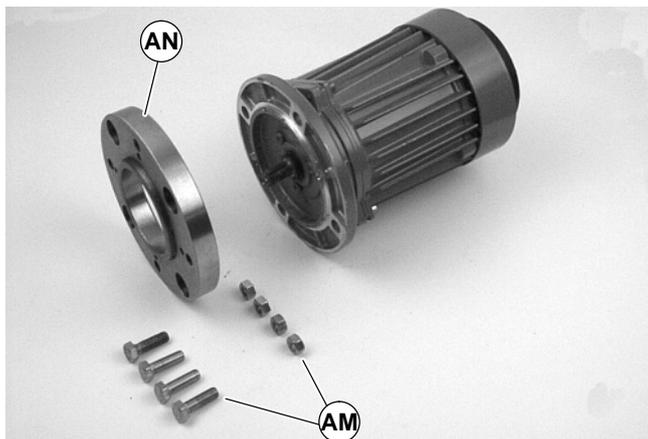


Figure 24

5. Install adapter flange (AN) on new motor. Install screws and nuts (AM) and tighten.

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

6. With key (AB of Figure 25) in keyway, slide motor with adapter flange (Z) and gear reducer together. Install screws (Y) and tighten.

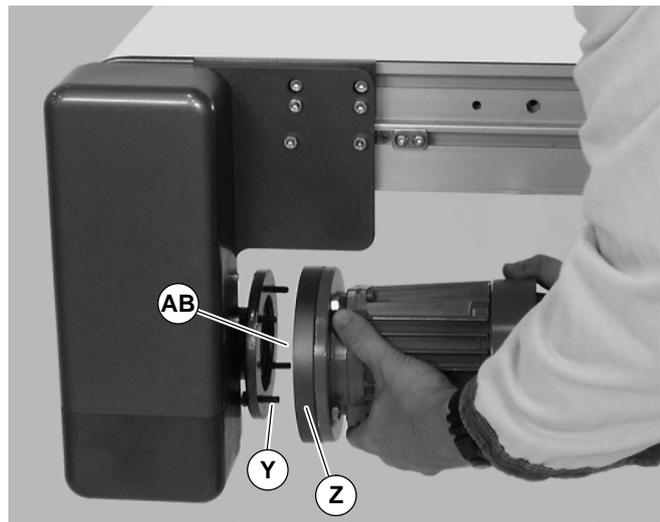


Figure 25

7. Replace wiring:

- For a single phase motor, reverse step 1 on page 11.
- For a three phase or VFD variable speed motor, reverse step 2 on page 11.

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

Item	Part No.	Part Description
1	826-281	Motor, 0.19 Kw 230 Volts, 1400 RPM 50 Hz, 1-Phase
	826-282	Motor, 0.37 Kw 230 Volts, 1400 RPM 50 Hz, 1-Phase
	826-284	Motor, 0.19 Kw 230/400 Volts, 1400 RPM 50 Hz, 3-Phase
	826-285	Motor, 0.37 Kw 230/400 Volts, 1400 RPM 50 Hz, 3-Phase
2	62Z005HS	Gear Reducer, 5:1, 63 B5
	62Z010HS	Gear Reducer, 10:1, 63 B5
	62Z020HS	Gear Reducer, 20:1, 63 B5
	62Z040HS	Gear Reducer, 40:1, 63 B5
	62Z060HS	Gear Reducer, 60:1, 63 B5
	32Z005HS	Gear Reducer, 5:1, 71 B5
	32Z010HS	Gear Reducer, 10:1, 71 B5
	32Z020HS	Gear Reducer, 20:1, 71 B5
	32Z040HS	Gear Reducer, 40:1, 71 B5
	32Z060HS	Gear Reducer, 60:1, 71 B5
3	814-059	Timing Belt, 1.0" W x 27.0" L
	814-060	Timing Belt, 1.0" W x 28.0" L
4	802-059	Tensioner Bearing
5	811-123	Driven Pulley, 14 Tooth, Taper Lock TL1108
	811-126	Driven Pulley, 16 Tooth, Taper Lock TL1108
6	980018M	Pulley Key, 6 mm x 18 mm (2x)
7	811-126	Drive Pulley, 16 Tooth, Taper Lock TL1108
	811-127	Drive Pulley, 18 Tooth, Taper Lock TL1210
	300049M	Drive Pulley, 19 Tooth
	811-135	Drive Pulley, 20 Tooth, Taper Lock TL1210
	811-136	Drive Pulley, 22 Tooth, Taper Lock TL1610
	811-137	Drive Pulley, 24 Tooth, Taper Lock TL1610
8	300988	Gear Reducer Shaft
9	912-084	Gear Reducer Key, Square, 0.188" x 1.5" L
10	811-204	Taper Lock Bushing, TL1108
	811-205	Taper Lock Bushing, TL1210
	811-206	Taper Lock Bushing, TL1610

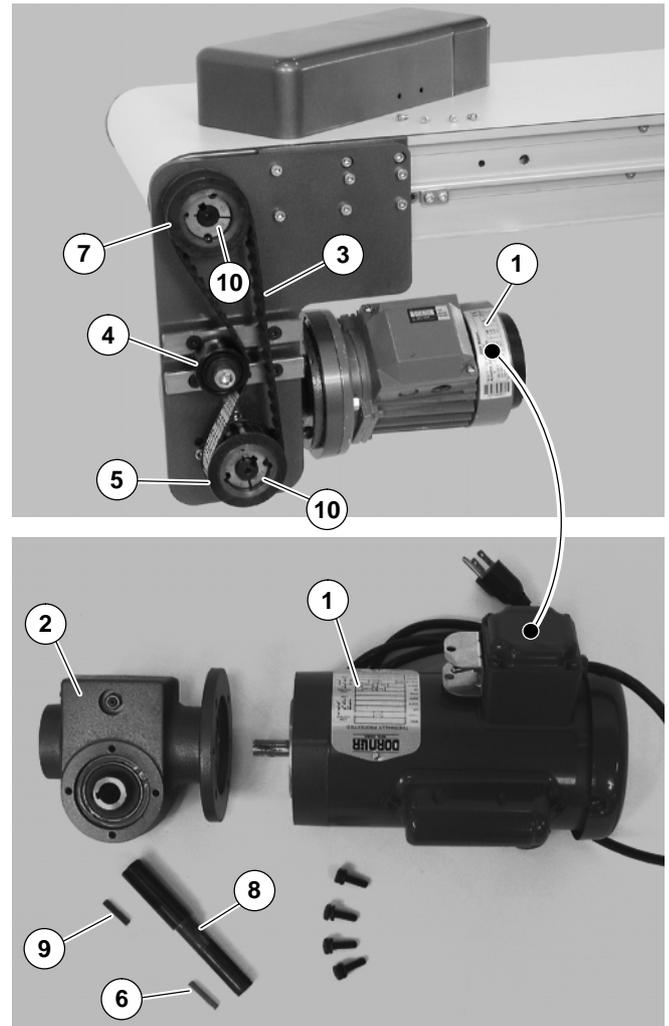


Figure 26

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 at 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

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