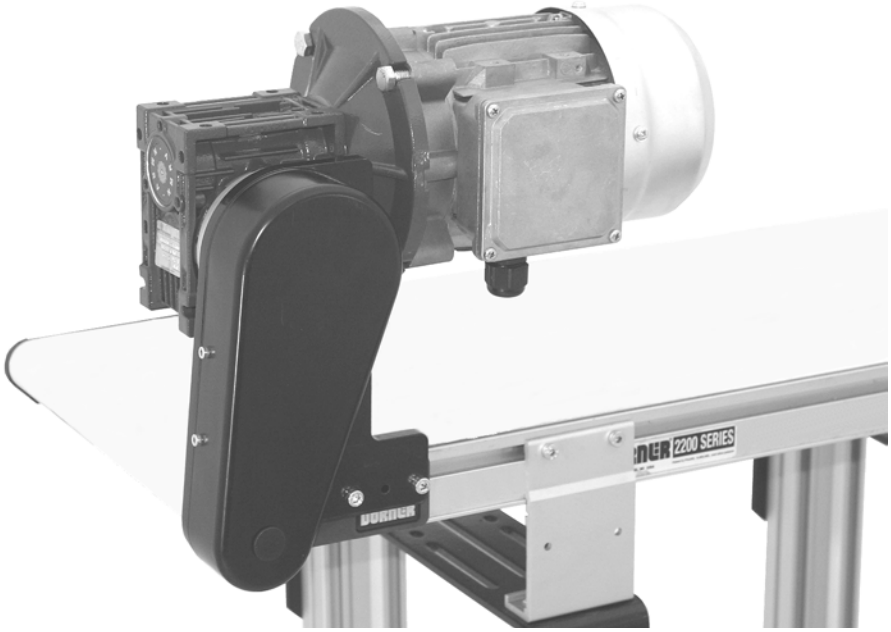
2100, 2200, 2300, 4100, 6200, MPB Series Top Mount Drive Package for Standard Load 90° Industrial Gearmotors

Installation, Maintenance & Parts Manual



Featuring: eDrive™ Technology

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851-257 Rev. K

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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.

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 2200, 6200 & MPB Series conveyors are covered by patent number 5174435, 6109427, 6298981, 6422382 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 .

⚠ 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.

⚠ WARNING

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

⚠ WARNING

Gearmotors may be HOT.

DO NOT TOUCH Gearmotors.

⚠ WARNING

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

⚠ 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

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.

1	Conveyor
2	Mounting Bracket
3	Gearmotor
4	Timing Belt Tensioner
5	Cover
6	Timing Belt
7	Drive Pulley
8	Driven Pulley

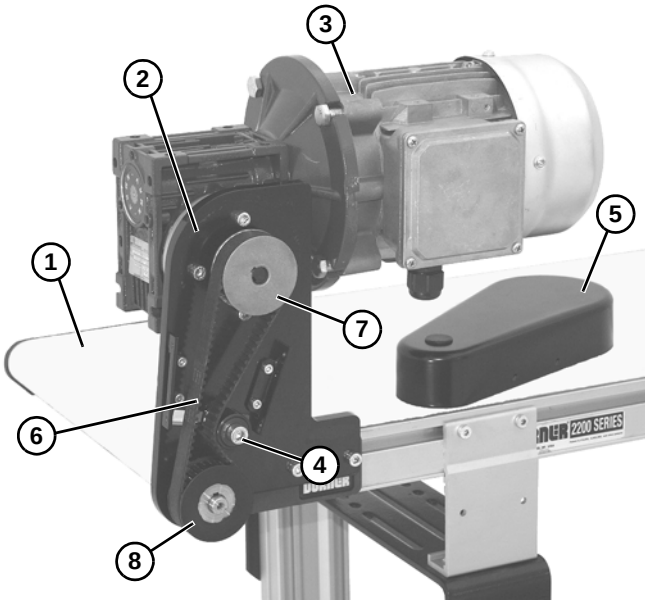


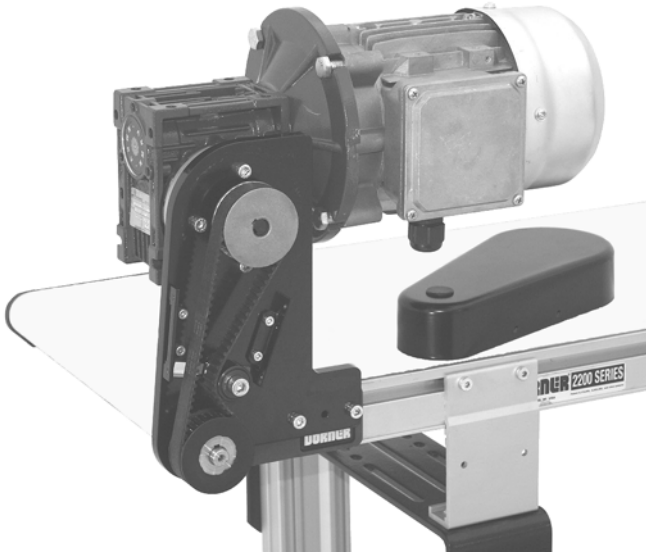
Figure 1

NOTE

The 90° industrial gearhead changed configuration in 2011. See below for configuration details.

Mount Packages with Old Style Gearmotors prior to June 2011

Figure 2



Mount Package with e-Drive Gearmotors

Figure 3

Gearmotor Mounting Package Models:

Example:

* See Ordering and Specifications Catalog for details.

22 M T H S WW A – 32 32

- 32 – Driven Pulley (see Table 2 & 3)
- 32 – Drive Pulley (see Table 2 & 3)
- A – Belt Type: – = flat belt, A through J = cleated belt
- A – Mount Position = A, B, C or D (see detail to the right)
- WW – Conveyor Width Reference*
- S – Gearmotor Type: S = Standard Load, K = Indexing / VFD
- H – Output Shaft Type: E = 90° e-Drive, H = 90° Old-Style Gearmotors prior to June 2011
- T – Mount Style = Top Mount
- M – Language Code: M = U.S. English, U = CE English
- 22 – 2 = 2100 Series Conveyor; 22 = 2200 & 2300 Series Conveyor; 4 = 4100 Series Conveyor; 6 = 6200 Series Conveyor; 2P = MPB Series Conveyor

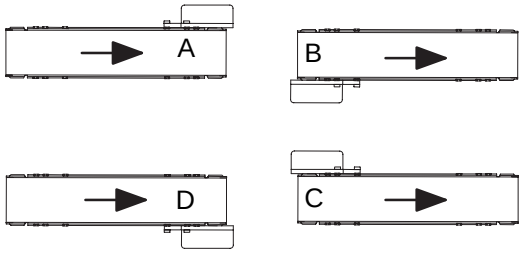


Table 1: Gearmotor Specifications

U.S. Version

	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		

CE Version

	Single Phase	Three Phase	VFD Variable Speed
Output Power	0.18 kw		
Input Voltage	230 Volts A.C.	230/400 Volts A.C.	230 Volts A.C.
Input Frequency	50 Hz		25 to 63 Hz
Input Current	1.6 Amperes	1.4 /0.8 Amperes	1.4 Amperes
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1		
Protection Rating	IP55		
Frame Size	IEC 63 B5		

Specifications

Table 2: Belt Speeds for Standard Load Fixed Speed 90° Gearmotors on 2200 Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
32M060EL4(vp)F(n)	29	226	25.5	6	1.8	19	32
32M060EL4(vp)F(n)	29	226	25.5	10	3.0	28	28
32M060EL4(vp)F(n)	29	226	25.5	16	4.9	44	28
32M040EL4(vp)F(n)	43	237	26.8	15	4.6	28	28
32M040EL4(vp)F(n)	43	237	26.8	24	7.3	44	28
32M020EL4(vp)F(n)	86	142	16.0	30	9.1	28	28
32M020EL4(vp)F(n)	86	142	16.0	48	14.6	44	28
32M010EL4(vp)F(n)	173	78	8.8	61	18.6	28	28
32M010EL4(vp)F(n)	173	78	8.8	95*	29.0*	44	28
32M010EL4(vp)F(n)	173	78	8.8	104*	31.7*	48	28
32M005EL4(vp)F(n)	345	41	4.6	121*	36.9*	28	28
32M005EL4(vp)F(n)	345	41	4.6	138*	42.1*	32	28
32M005EL4(vp)F(n)	345	41	4.6	176*	53.6*	32	22
32M005EL4(vp)F(n)	345	41	4.6	208*	63.4*	48	28
32M005EL4(vp)F(n)	345	41	4.6	242*	73.8*	44	22
32M005EL4(vp)F(n)	345	41	4.6	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

* = Nosebar transfers operate at maximum 77 Ft/min (23.5 M/min) belt speed

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES4(vp)FN	23	26.4	1.5	19	32
62Z060ES4(vp)FN	23	26.4	2.4	28	28
62Z040ES4(vp)FN	35	28.9	3.7	28	28
62Z040ES4(vp)FN	35	28.9	5.8	44	28
62Z020ES4(vp)FN	70	19.4	7.6	28	28
62Z020ES4(vp)FN	70	19.4	11.9	44	28
62Z010ES4(vp)FN	140	10.7	14.9	28	28
62Z010ES4(vp)FN	140	10.7	23.5	44	28
62Z005ES4(vp)FN	280	5.6	29.3	28	28
62Z005ES4(vp)FN	280	5.6	34.1	32	28
62Z005ES4(vp)FN	280	5.6	43.6	32	22
62Z005ES4(vp)FN	280	5.6	51.5	48	28
62Z005ES4(vp)FN	280	5.6	60.0	44	22
62Z005ES4(vp)FN	280	5.6	65.2	48	22
62Z005ES4(vp)FN	280	5.6	81.7	60	22

(vp) = voltage and phase

21 = 230 V, 1-phase

23 = 230 V, 3-phase

43 = 400 V, 3-phase

Table 3: Belt Speeds for Standard Load Variable Speed 90° DC Gearmotors on 2200 Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
32M060ELD3DEN	42	198	22.4	1.8 – 14.0	0.5 – 4.6	28	28
32M060ELD3DEN	42	198	22.4	2.8 – 23.0	0.8 – 7.0	44	28
32M040ELD3DEN	63	163	18.4	2.6 – 22.0	0.8 – 6.7	28	28
32M020ELD3DEN	125	98	11.1	5.3 – 44.0	1.6 – 13.0*	28	28
32M010ELD3DEN	250	54	6.1	10.0 – 88.0*	3.2 – 27.0*	28	28
32M010ELD3DEN	250	54	6.1	17.0 – 138.0*	5.0 – 42.0*	44	28
32M005ELD3DEN	500	28	3.2	21.0 – 176.0*	6.4 – 54.0*	28	28
32M005ELD3DEN	500	28	3.2	33.0 – 276.0*	10.0 – 84.0*	44	28

* = Nosebar transfers operate at maximum 77 Ft/min (23.5 M/min) belt speed

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES423EN	23	26.4	0.7 – 1.9	19	32
62Z060ES423EN	23	26.4	1.2 – 3.1	28	28
62Z060ES423EN	35	28.9	1.9 – 4.7	28	28
62Z060ES423EN	70	19.4	3.7 – 9.4	28	28
62Z060ES423EN	140	10.7	7.5 – 19	28	28
62Z060ES423EN	140	10.7	12 – 30	44	28
62Z060ES423EN	280	5.6	15 – 38	28	28
62Z060ES423EN	280	5.6	23 – 59	44	28
62Z060ES423EN	280	5.6	33 – 82	48	22

Specifications

Table 4: Belt Speeds for Standard Load Fixed Speed 90° Gearmotors on 2100 4100 & 6200 Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors		Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	Ft/min	M/min		
32M060EL4(vp)F(n)	29	6	1.8	19	32
32M060EL4(vp)F(n)	29	10	3.0	28	28
32M060EL4(vp)F(n)	29	16	4.9	44	28
32M040EL4(vp)F(n)	43	15	4.6	28	28
32M040EL4(vp)F(n)	43	24	7.3	44	28
32M020EL4(vp)F(n)	86	30	9.1	28	28
32M020EL4(vp)F(n)	86	48	14.6	44	28
32M010EL4(vp)F(n)	173	61	18.6	28	28
32M010EL4(vp)F(n)	173	95*	29.0*	44	28
32M010EL4(vp)F(n)	173	104*	31.7*	48	28
32M005EL4(vp)F(n)	345	121*	36.9*	28	28
32M005EL4(vp)F(n)	345	138*	42.1*	32	28
32M005EL4(vp)F(n)	345	176*	53.6*	32	22
32M005EL4(vp)F(n)	345	208*	63.4*	48	28
32M005EL4(vp)F(n)	345	242*	73.8*	44	22
32M005EL4(vp)F(n)	345	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

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES4(vp)FN	23	26.4	1.2	19	32
62Z060ES4(vp)FN	23	26.4	2.1	28	28
62Z040ES4(vp)FN	35	28.9	3.0	28	28
62Z040ES4(vp)FN	35	28.9	4.6	48	32
62Z020ES4(vp)FN	70	19.4	6.1	28	28
62Z020ES4(vp)FN	70	19.4	9.1	48	32
62Z010ES4(vp)FN	140	10.7	12.2	28	28
62Z010ES4(vp)FN	140	10.7	18.3	48	32
62Z005ES4(vp)FN	280	5.6	24.4	28	28
62Z005ES4(vp)FN	280	5.6	26.6	48	32
62Z005ES4(vp)FN	280	5.6	45.7	60	32
62Z005ES4(vp)FN	280	5.6	61.6	48	19
62Z005ES4(vp)FN	280	5.6	76.8	60	19

(vp) = voltage and phase

21 = 230 V, 1-phase

23 = 230 V, 3-phase

43 = 400 V, 3-phase

Table 5: Belt Speeds for Standard Load Variable Speed 90° DC Gearmotors on 2100 4100 & 6200 Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
32M060ELD3DEN	42	198	22.4	1.8 – 14.0	0.5 – 4.6	28	28
32M060ELD3DEN	42	198	22.4	2.8 – 23.0	0.8 – 7.0	44	28
32M040ELD3DEN	63	163	18.4	2.6 – 22.0	0.8 – 6.7	28	28
32M020ELD3DEN	125	98	11.1	5.3 – 44.0	1.6 – 13.0*	28	28
32M010ELD3DEN	250	54	6.1	10.0 – 88.0*	3.2 – 27.0*	28	28
32M010ELD3DEN	250	54	6.1	17.0 – 138.0*	5.0 – 42.0*	44	28
32M005ELD3DEN	500	28	3.2	21.0 – 176.0*	6.4 – 54.0*	28	28
32M005ELD3DEN	500	28	3.2	33.0 – 276.0*	10.0 – 84.0*	44	28

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES423EN	23	26.4	0.6 – 1.5	19	32
62Z060ES423EN	23	26.4	1.0 – 2.6	28	28
62Z040ES423EN	35	28.9	1.5 – 3.8	28	28
62Z020ES423EN	70	19.4	3.0 – 7.7	28	28
62Z010ES423EN	140	10.7	6.1 – 15	28	28
62Z005ES423EN	280	5.6	12.2 – 30	28	28
62Z005ES423EN	280	5.6	23 – 57	60	32
62Z005ES423EN	280	5.6	31 – 78	48	19

Table 6: Belt Speeds for Standard Load Fixed Speed 90° Gearmotors on MPB Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
32M060EL4(vp)FN	29	226	25.5	25.5	4.1	22	32
32M060EL4(vp)FN	29	226	25.5	25.5	6.0	28	28
32M040EL4(vp)FN	43	237	26.8	26.8	8.9	28	28
32M040EL4(vp)FN	43	237	26.8	26.8	13.4	48	32
32M020EL4(vp)FN	86	142	16.0	16.0	17.9	28	28

(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

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES4(vp)FN	23	26.5	3.3	22	32
62Z060ES4(vp)FN	23	26.4	4.8	28	28
62Z040ES4(vp)FN	35	28.9	7.4	28	28
62Z020ES4(vp)FN	70	19.4	14.5	28	28

(vp) = voltage and phase

21 = 230 V, 1-phase

23 = 230 V, 3-phase

43 = 400 V, 3-phase

Specifications

Table 7: Belt Speeds for Standard Load Variable Speed 90° DC Gearmotors on MPB Series Conveyors

U.S. Version (60 Hz Gearmotors)

Gearmotors				Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	In-lb	N-m	Ft/min	M/min		
32M060ELD3DEN	42	198	22.4	2.3–19	0.7–5.9	22	32
32M060ELD3DEN	42	198	22.4	3.4–28	1–8.6	22	32
32M060ELD3DEN	42	198	22.4	5.3–44	1.6–13	44	28
32M040ELD3DEN	63	163	18.4	5.1–42	1.6–12.9	28	28
32M020ELD3DEN	125	98	11.1	10–85	3–26	28	28
32M020ELD3DEN	125	98	11.1	15–127	4.7–39	48	32
32M010ELD3DEN	250	54	6.1	20–170*	6–52*	28	28
32M010ELD3DEN	250	54	6.1	31–255*	9–77*	48	32

* = Cleated and Sidewall Cleated belts operate at a maximum of 150 ft/min (45.7 m/min)

CE Version (50 Hz Gearmotors)

Gearmotors			Belt Speed	Drive Pulley	Driven Pulley
Part Number	RPM	N-m	M/min		
62Z060ES423EN	23	26.4	1.7 – 4.2	22	32
62Z060ES423EN	23	26.4	2.4 – 6.1	22	32
62Z040ES423EN	35	28.9	3.6 – 9.1	44	28
62Z020ES423EN	70	19.4	7.2 – 18	28	28
62Z020ES423EN	70	19.4	11 – 27	28	28
62Z020ES423EN	140	10.7	14 – 36	48	32
62Z010ES423EN	140	10.7	22 – 55*	28	28
62Z005ES423EN	280	5.6	29 – 73*	48	32

* = Cleated and Sidewall Cleated belts operate at a maximum of 45.7 m/min

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

⚠ WARNING

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

⚠ WARNING

MPB Series Conveyors are not reversible. Reversing creates pinch points which can cause severe injury.

DO NOT REVERSE MPB SERIES CONVEYORS.

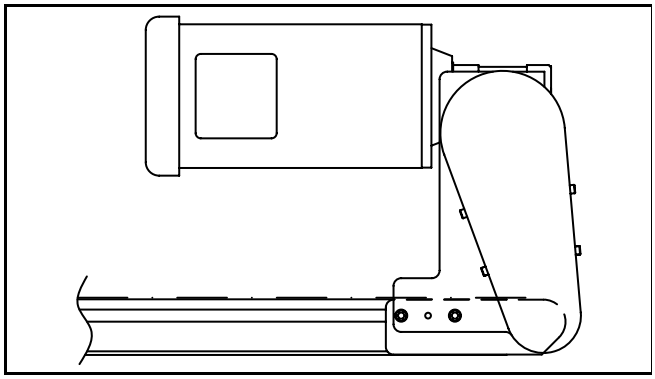
⚠ WARNING

Gearmotors must be mounted as shown in Figure 4, Figure 5 and Figure 6.

Failure to do so creates pinch points which can cause severe injury.

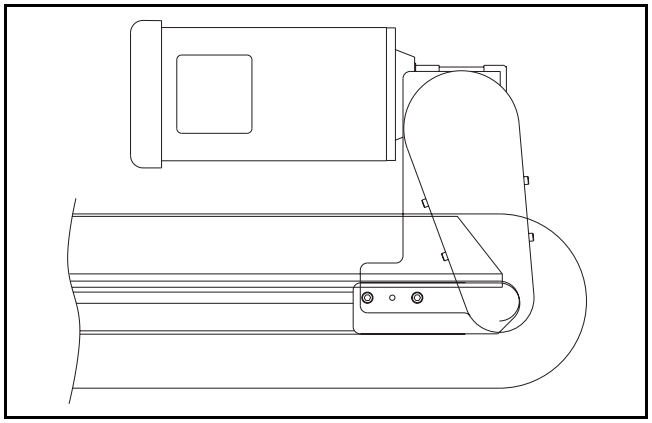
NOTE

*Gearmotor position on Flat Belt conveyors shown in **Figure 4**. Gearmotor position on Cleated Belt **Figure 5** and MPB Series conveyors shown in **Figure 6**.*



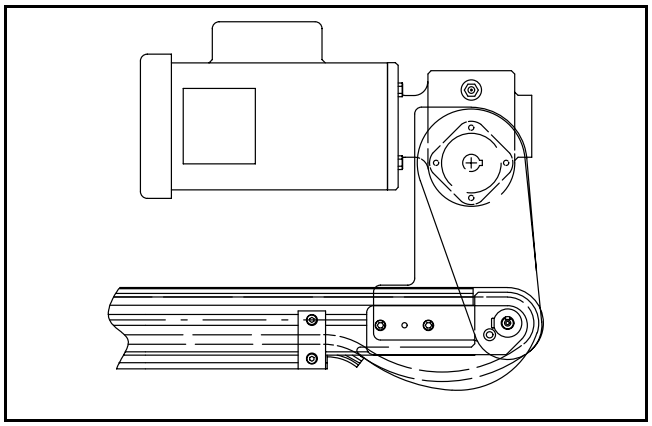
Flat Belt Conveyor

Figure 4



Cleated Belt Conveyor

Figure 5



MPB Series Conveyor

Figure 6

Installation

Installation Component List:

1	Top Mount Assembly
2	Drive Pulley
3	Cover
4	M4 Socket Head Screws (4x)
5	Driven Pulley
6	Key
7	M6 Socket Head Screws (2x)
8	Timing Belt

1. Typical gearmotor components **(Figure 7)**

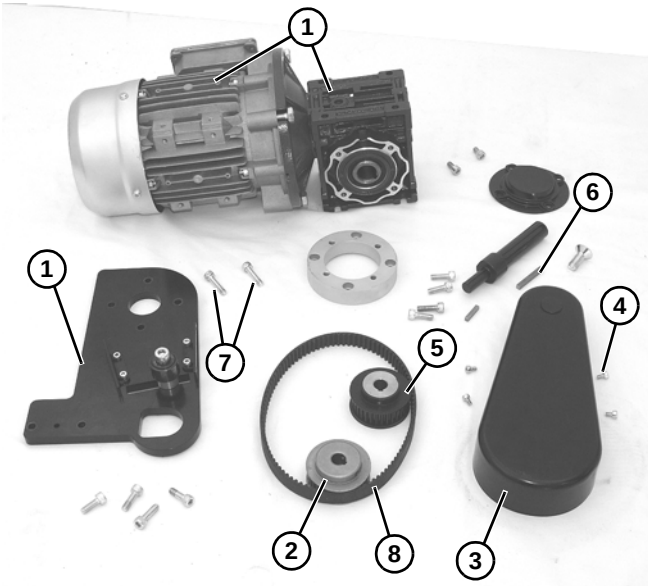


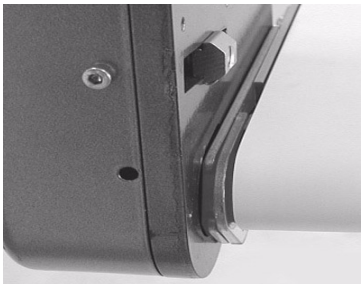
Figure 7

NOTE

*Flat belt mounting package shown above **(Figure 7)**, cleated belt mounting package similar.*

2. For your reference, the following figures show gearmotor mounting configurations for various conveyor series.

- For 2100, 2200, and MPB models, gearmotor and drive plate are mounted to head plate **(Figure 8, item 1)**, **(Figure 9, item 1)**, and **(Figure 10, item 1)**.

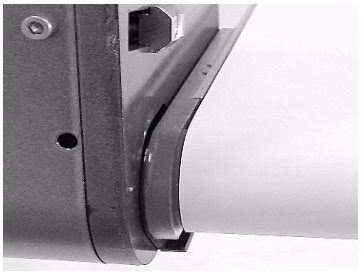


2100 Series

Figure 8

MPB Series

Figure 9



2200 Series

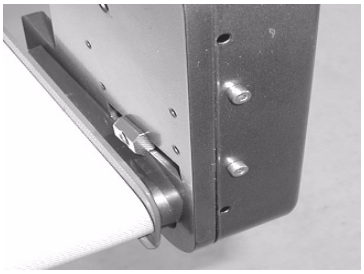
Figure 10

- For 6200 series models, gearmotor is mounted to drive spacer **(Figure 11, item 1)**.

6200 Series

Figure 11

- For 4100 series models, gearmotor is mounted to drive adapter plate **(Figure 12, item 1)**.



4100 Series

Figure 12

NOTE

*Gearmotor may be operated in positions 1, 2 or 3 **(Figure 13)**. Dependent on conveyor belt speed and gearmotor type, position 2 may require a vibration dampening bracket. Order 7018WW for 2200 and MPB conveyors or 7019WW for 2100 and 6200 conveyors. (WW = conveyor width). 4100 conveyors do not require brackets.*

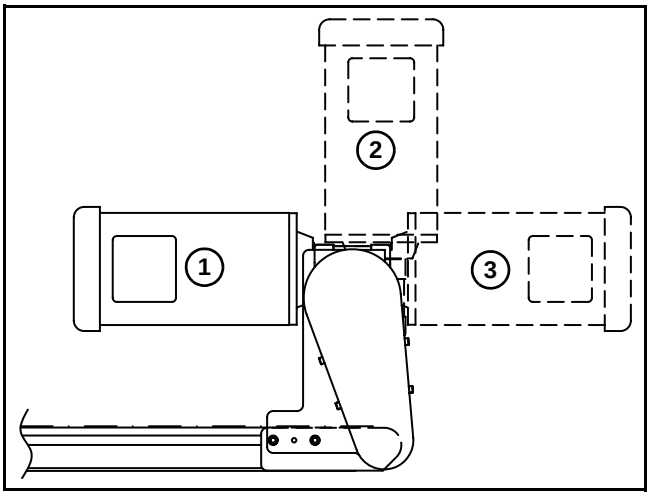


Figure 13

3. If required, change gearmotor position by removing four (4) screws **(Figure 14, item 1)**. Rotate gearmotor to other position and replace screws **(Figure 14, item 1)**. Tighten to 103 in-lb (12 N–m).

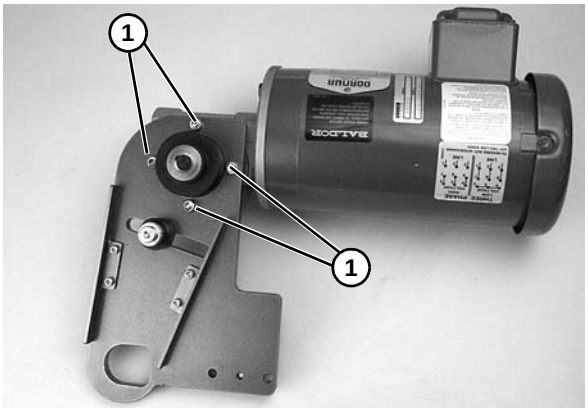


Figure 14

NOTE

6200 conveyor shown, 2100, 2200, 4100 & MPB similar.

4. Locate drive output shaft **(Figure 15, item 1)** and remove two (2) screws **(Figure 15, item 2)**.

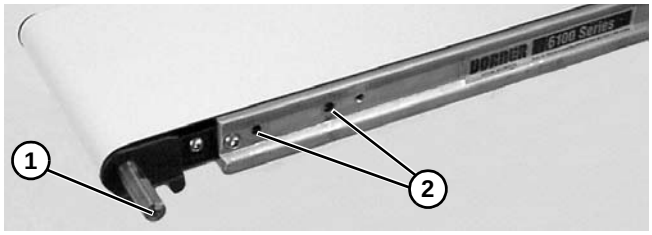


Figure 15

5. Attach mount assembly **(Figure 16, item 1)** with screws **(Figure 16, item 2)**. Tighten to 80 in-lb (9 N–m).

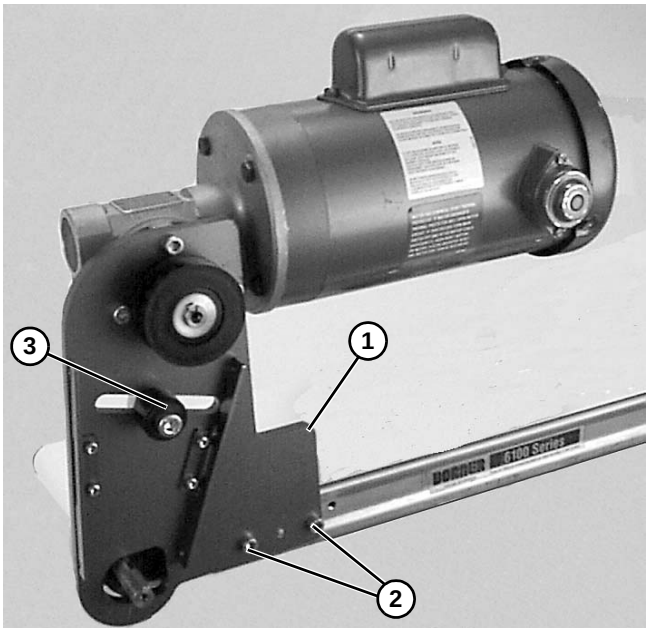


Figure 16

⚠ WARNING

Drive shaft keyway may be sharp.
HANDLE WITH CARE.

6. Install key **(Figure 17, item 1)**.

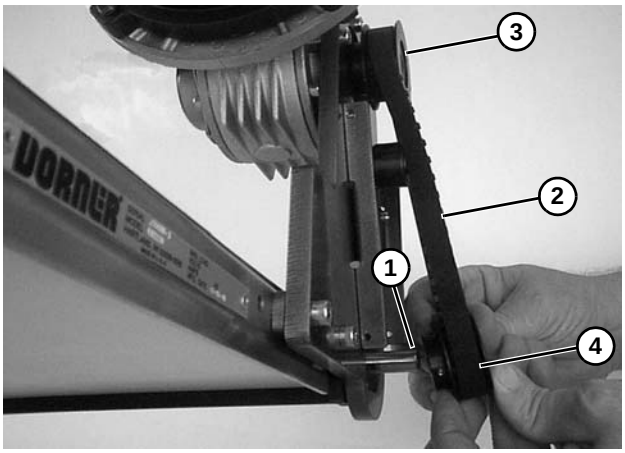


Figure 17

7. Wrap timing belt **(Figure 17, item 2)** around driven pulley **(Figure 17, item 3)** and drive pulley **(Figure 17, item 4)**. Install driven pulley **(Figure 17, item 3)** onto conveyor shaft.
8. Remove cam bearing and spacer **(Figure 16, item 3)**. Place the cam bearing and spacer **(Figure 16, item 3)** next to the driven pulley **(Figure 18, item 1)**. Ensure the flanges of the driven pulley are aligned with the cam bearing. Tighten driven pulley set screws **(Figure 18, item 2)**. This will allow for proper belt alignment while conveyor is in use. Replace cam bearing and spacer **(Figure 18, item 3)**.

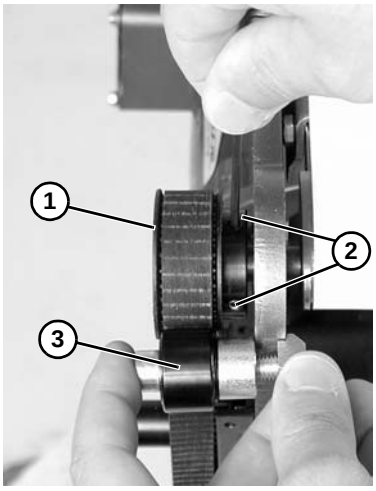


Figure 18

9. Depending on conveyor belt travel (direction 1 or 2 on **Figure 19**), locate timing belt tensioner **(Figure 19, item 3)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 19, item 4)**. Tighten tensioner screw to 103 in-lb (12 N–m).

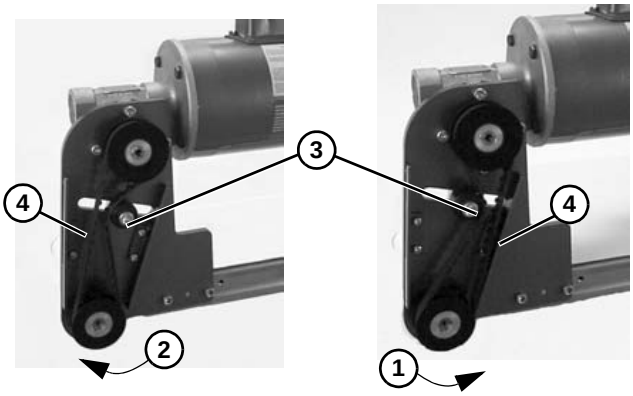


Figure 19

10. Install cover **(Figure 20, item 1)** with four (4) screws **(Figure 20, item 2)**. Tighten to 35 in-lb (4 N–m).

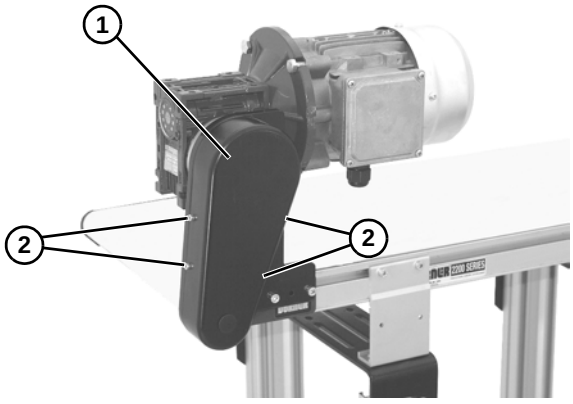


Figure 20

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

⚠ WARNING

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

1. Remove four (4) screws **(Figure 20, item 2)** and remove cover **(Figure 20, item 1)**.
2. Loosen tensioner **(Figure 21, item 1)**.

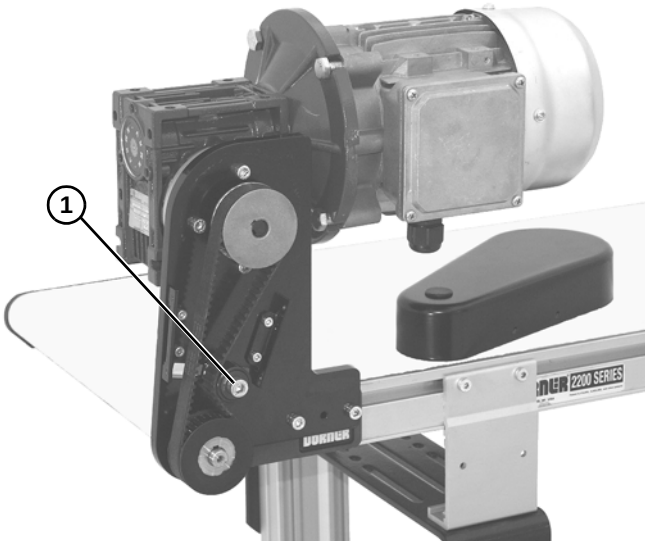


Figure 21

3. Depending on conveyor belt travel (direction 1 or 2 on **Figure 19**), locate timing belt tensioner **(Figure 19, item 3)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 19, item 4)**. Tighten tensioner screw to 103 in-lb (12 Nm).
4. Install cover **(Figure 20, item 1)** with four (4) screws **(Figure 20, item 2)**. Tighten 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 20, item 2)** and remove cover **(Figure 20, item 1)**.
2. Loosen tensioner **(Figure 21, item 1)**.
3. Remove timing belt **(Figure 22, item 1)**.

NOTE

*If timing belt does not slide over pulley flange, loosen driven pulley set screws **(Figure 22, item 2)** and remove pulley with belt **(Figure 22, item 1)**. For re-installation, see steps 7 and 8 on page 14.*

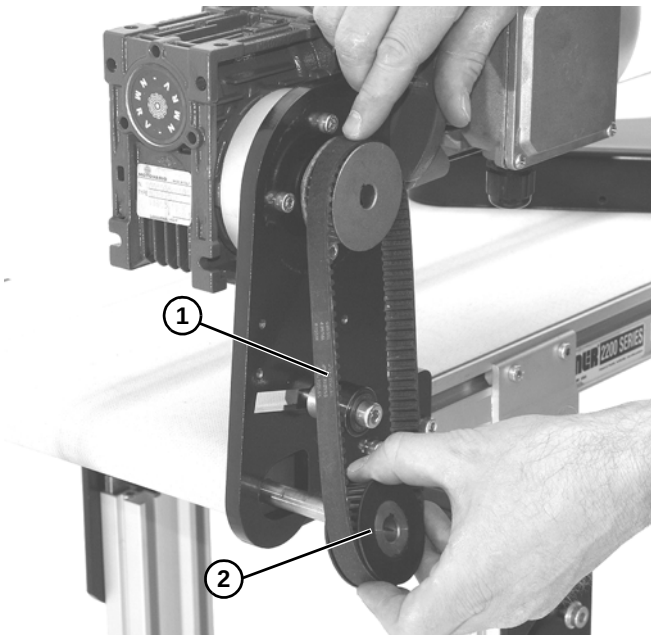


Figure 22

4. Install new timing belt.
5. Depending on conveyor belt travel (direction 1 or 2 on **Figure 19)**, locate timing belt tensioner **(Figure 19, item 3)** as shown. Tension timing belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at timing belt mid-point **(Figure 19, item 4)**. Tighten tensioner screw to 103 in-lb (12 N–m).
6. Install cover **(Figure 20, item 1)** with four (4) screws **(Figure 20, item 1)**. Tighten to 35 in-lb (4 Nm).

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 15.
2. Loosen set screws and remove drive or driven pulley.

NOTE

*If drive pulley **(Figure 25, item 1)** is replaced, wrap timing belt around drive pulley and complete step 3.*

3. Complete steps 7 through 10 of "Installation" section on page 14.

Gear Reducer Replacement

⚠ WARNING

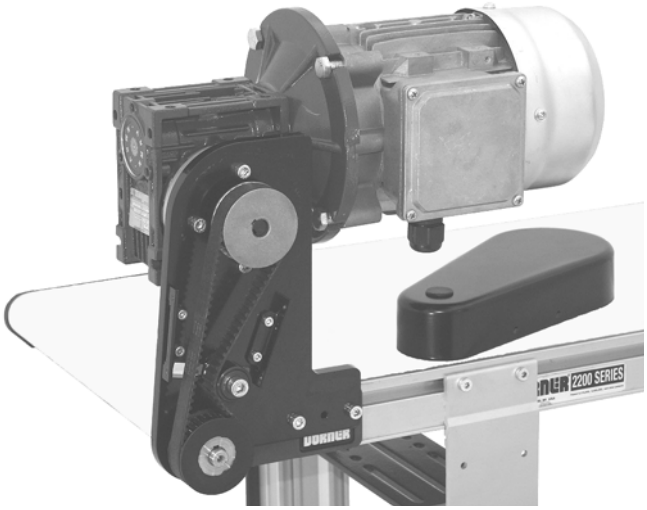
Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.

NOTE

The 90° industrial gearhead changed configuration in 2011. See below for configuration details. See Service Parts section to ensure proper replacement parts are installed.

Old Style Gearmotor prior to June 2011

Figure 23



e-Drive Gearmotor

Figure 24

1. Remove four (4) screws **(Figure 20, item 2)** and remove cover **(Figure 20, item 1)**.
2. Loosen tensioner **(Figure 21, item 1)**.
3. Loosen drive pulley set screws on drive pulley **(Figure 25, item 1)**. Remove drive pulley and timing belt **(Figure 25, item 2)**.

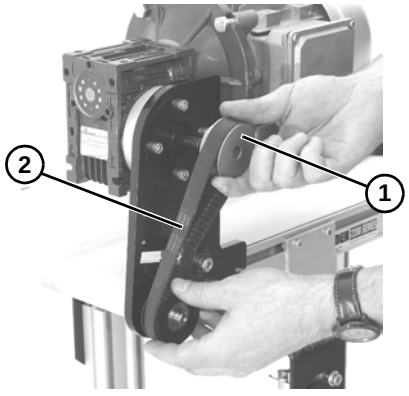


Figure 25

4. Remove four (4) gear reducer mounting screws **(Figure 26, item 1)**. Remove gearmotor.

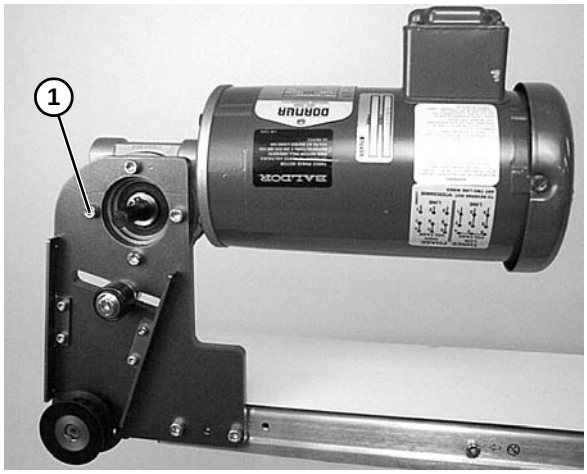


Figure 26

5. Remove four screws **(Figure 27, item 1)**. Detach motor **(Figure 27, item 2)** from gear reducer **(Figure 27, item 3)**. Retain motor output shaft key **(Figure 27, item 4)**.

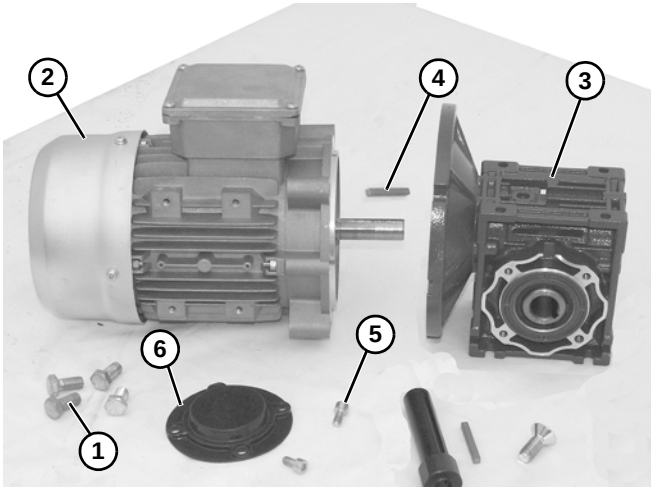


Figure 27

6. Remove two (2) screws **(Figure 27, item 5)** and detach output shaft cover **(Figure 27, item 6)**.

For eDrive style gearmotor

1. Hold the driveshaft with a wrench **(Figure 28, item 1)** as shown to keep shaft from turning, while removing screw **(Figure 28, item 2)** with hex wrench **(Figure 28, item 3)**.

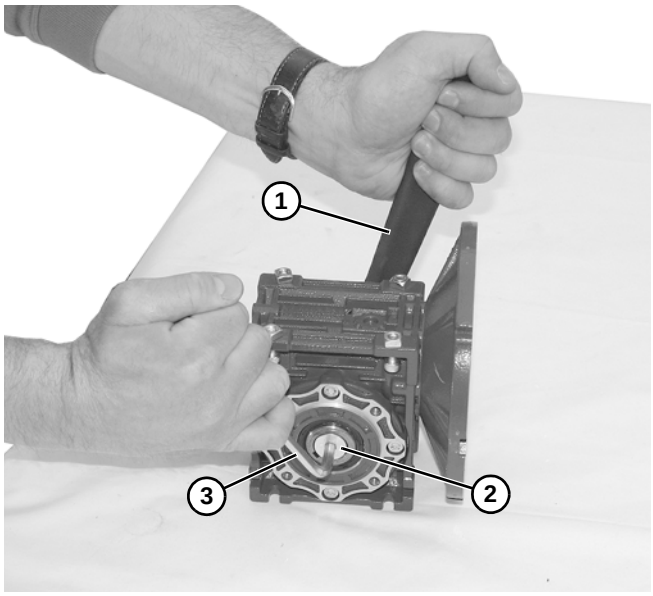


Figure 28

2. Remove driveshaft **(Figure 29, item 1)** and key **(Figure 29, item 2)**.

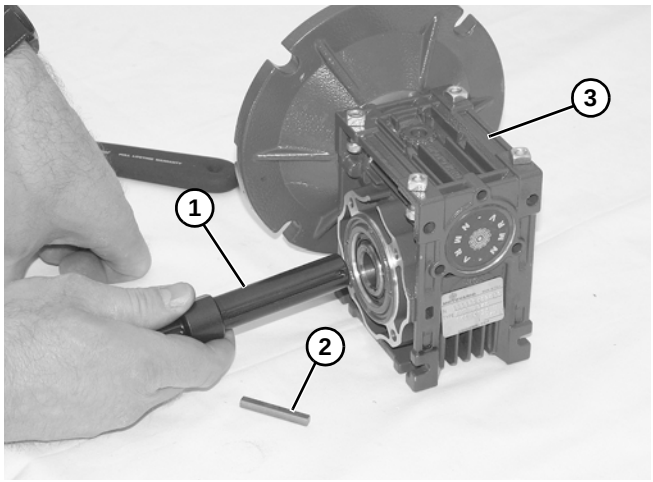


Figure 29

3. Replace gear reducer **(Figure 29, item 3)**.

4. Apply anti-seize **(Figure 30, item 1)** to shaft.

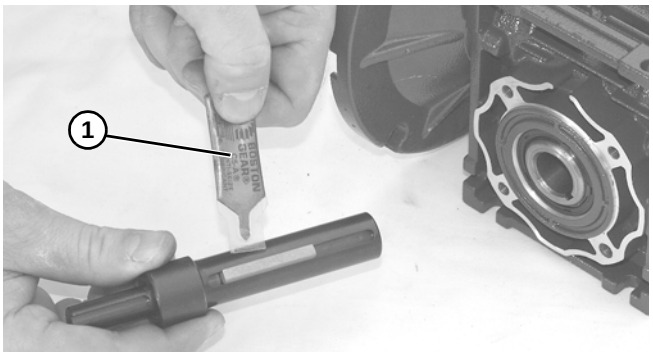


Figure 30

5. Replace the original shaft components into new gear reducer **(Figure 29)**.

IMPORTANT

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

6. Hold the driveshaft with a wrench **(Figure 28, item 1)** as shown to keep shaft from turning, while installing screw with hex wrench **(Figure 28, item 3)**. Tighten screw to 100 in-lb (11.5 Nm) for 42CZ or 350 in-lb (39.5 Nm) for 56C, 63B5 and 71B5.
7. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 27, item 4)** in keyway, slide motor **(Figure 27, item 2)** and gear reducer **(Figure 27, item 3)** together. Install screws **(Figure 27, item 1)** and tighten.
8. Install output shaft cover **(Figure 27, item 6)** and secure with two (2) screws **(Figure 27, item 5)**.
9. Reverse steps 1 through 4 beginning on page 16.

NOTE

*Gearmotor position on Flat Belt conveyors shown in **Figure 4**. Gearmotor position on Cleated Belt and MPB Series conveyors shown in **Figure 5** and **Figure 6** on page 11*

10. Install gearmotor to mounting bracket and tighten screws **(Figure 26, item 1)** to 103 in-lb (12 Nm).

NOTE

*Drive pulley **(Figure 25, item 1)** is removed. Wrap timing belt around drive pulley and complete step 11.*

11. Complete installation steps 7 through 10 of "Installation" section on pages 14.

For old style gearmotor prior to June 2011

1. Loosen six (6) set screws **(Figure 31, item 1)**. Remove drive shaft **(Figure 31, item 2)** and key **(Figure 31, item 3)**.

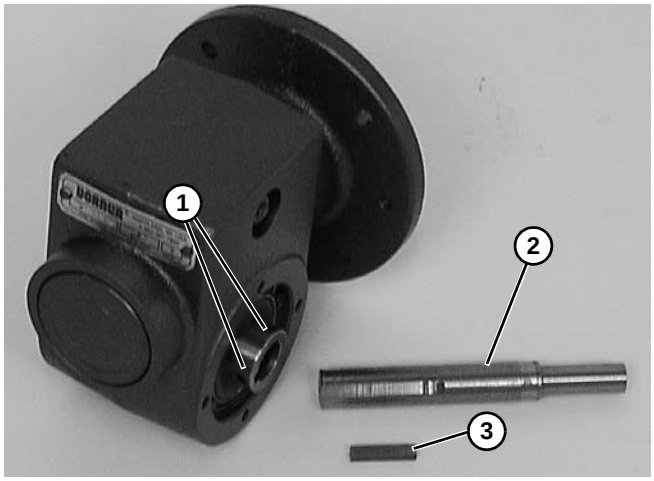


Figure 31

2. Apply anti-seize **(Figure 32, item 1)** to shaft.

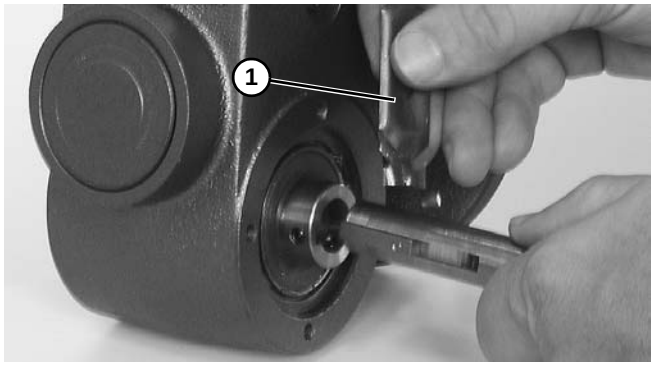


Figure 32

3. Replace the original shaft components into new gear reducer **(Figure 31)**.

IMPORTANT

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

4. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 27, item 4)** in keyway, slide motor **(Figure 27, item 2)** and gear reducer **(Figure 27, item 3)** together. Install screws **(Figure 27, item 1)** and tighten.
5. Install output shaft cover **(Figure 27, item 6)** and secure with two (2) screws **(Figure 27, item 5)**.
6. Reverse steps 1 through 4 beginning on page 16.
7. Complete installation steps 7 through 10 of "Installation" section on pages 14.

Motor Replacement

⚠ WARNING

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

⚠ DANGER

Hazardous voltage will cause severe injury or death. LOCKOUT POWER BEFORE before wiring.

1. For single phase motor, unplug power cord from outlet.
2. For three phase motor:
   a. Loosen terminal box screws **(Figure 33, item 1)** and remove cover **(Figure 33, item 2)**.

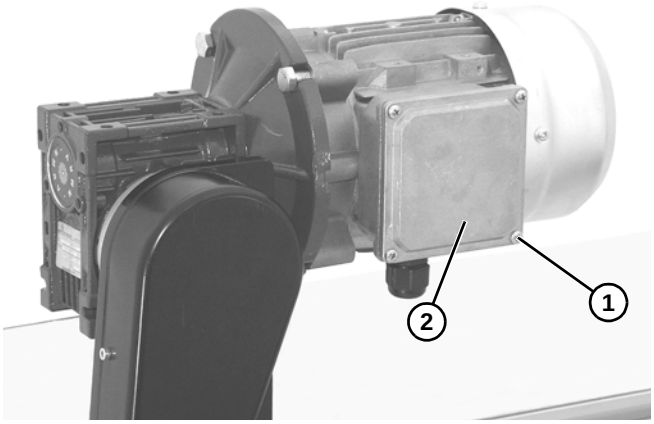


Figure 33

   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 34, item 1)**.

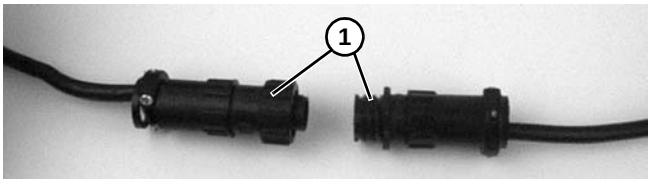


Figure 34

4. Remove four screws **(Figure 35, item 1)**. Detach motor **(Figure 35, item 2)** from gear reducer **(Figure 35, item 3)**. Retain motor output shaft key **(Figure 35, item 4)**.

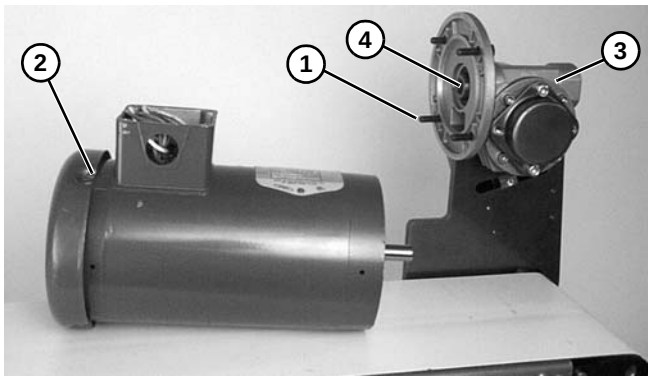


Figure 35

IMPORTANT

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

5. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 36, item 1)** in keyway, slide motor and gear reducer together. Install screws **(Figure 36, item 2)** and tighten.

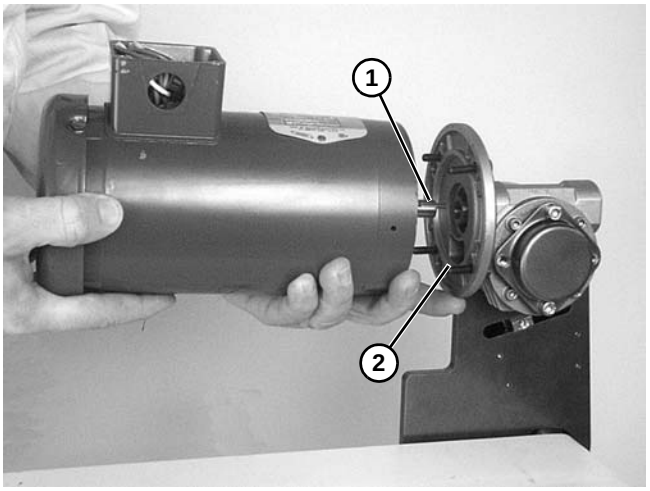


Figure 36

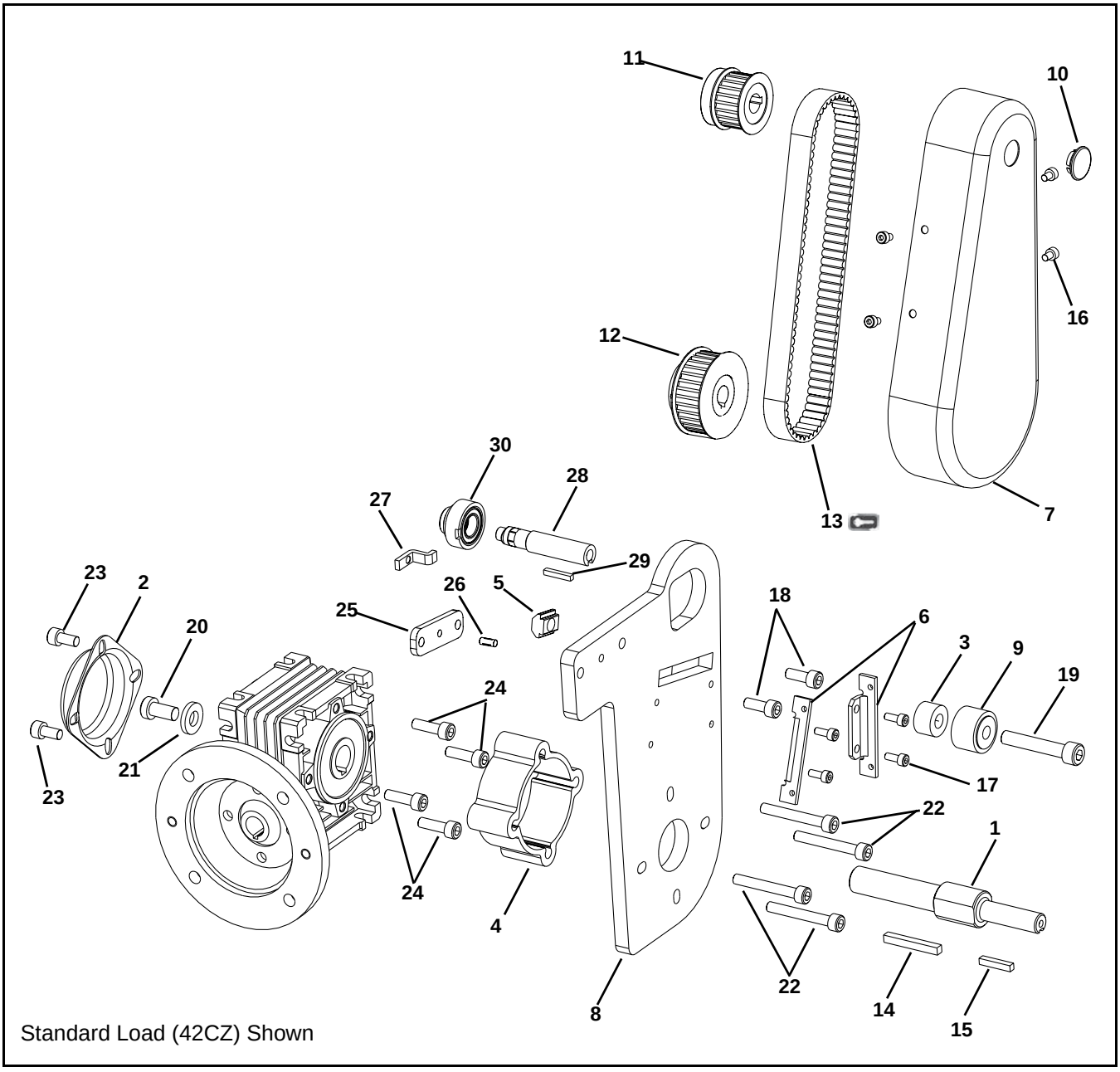
6. Replace wiring:

- For a single phase motor, reverse step 1 on page 19
- For a three phase motor, reverse step 2 on page 19.
- For a DC variable speed motor, reverse step 3 on page 19.

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.

2100, 2200, 2300, 4100, 6200 Series and MPB Series Flat Belt Conveyors Top Mount Drive Package for Standard Load 90° Industrial Gearmotors



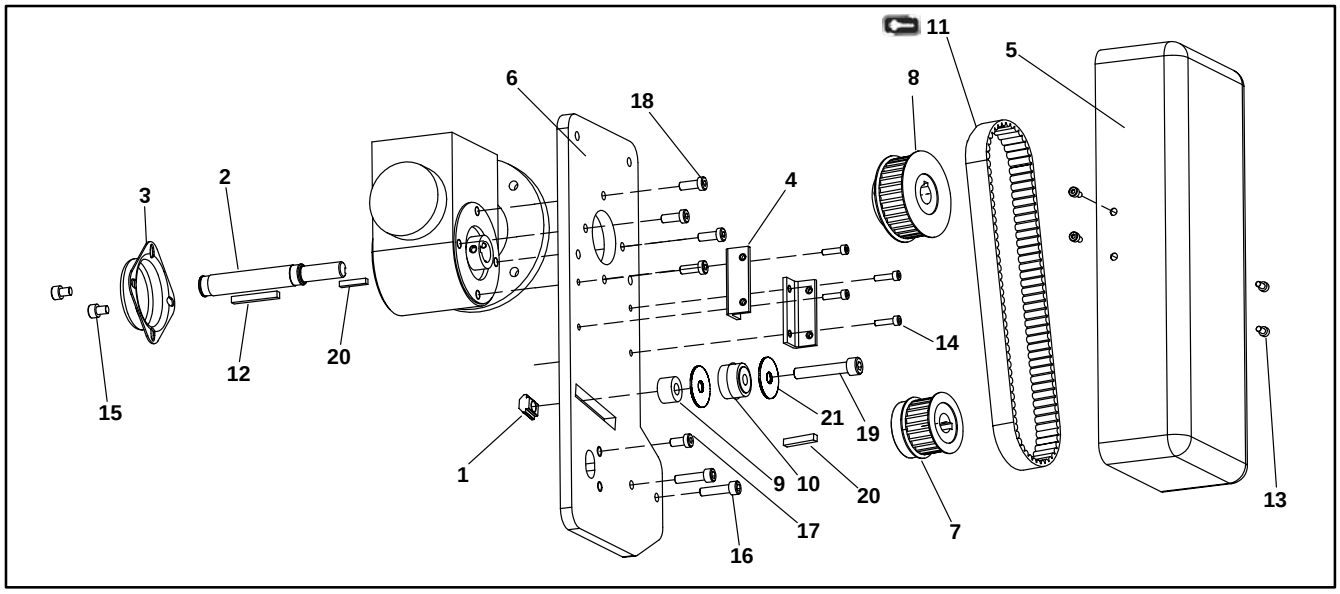
Standard Load (42CZ) Shown

Item	Part Number	Description
1	202272	Drive Shaft (for E-Drive 42CZ C Face Gearmotors)
	350122	Drive Shaft (for E-Drive 56 C Face Gearmotors)
	350136	Drive Shaft (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
2	807-2059	Drive-Bearing Shaft Cover (for E-Drive 42CZ C Face Gearmotors)
	807-2016	Drive-Bearing Shaft Cover (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
	300139	Drive-Bearing Shaft Cover (for Old Style Gearmotors, Prior to June 2011)
3	450445	Spacer
4	202270-00113	Adapter (for E-Drive 42CZ C Face Gearmotors)
	350115	Adapter (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
5	202390M	Nut Follower
6	450375M	Cam Mounting Cover Bracket
7	450376M	Drive Guard
8	450443M	Mounting Plate
	202283	Mounting Plate (Flush Mount Only)
9	802-046	Bearing
10	807-226	Snap-out Plastic Plug
11	450365MP	Driven Pulley, 19 Tooth
	450366MP	Driven Pulley, 22 Tooth
	450367MP	Driven Pulley, 28 Tooth
	450368MP	Driven Pulley, 32 Tooth
	243325	Driven Pulley, 16 Tooth (Flush Mount Only)
12	450365MP	Drive Pulley, 19 Tooth
	450366MP	Drive Pulley, 22 Tooth
	450367MP	Drive Pulley, 28 Tooth
	450368MP	Drive Pulley, 32 Tooth
	450369MP	Drive Pulley, 44 Tooth
	450370MP	Drive Pulley, 48 Tooth
	450371MP	Drive Pulley, 60 Tooth
13	814-104	Timing Belt, 15 mm W x 450 mm L
	814-105	Timing Belt, 15 mm W x 460 mm L
	814-065	Timing Belt, 15 mm W x 475 mm L
	814-112	Timing Belt, 15 mm W x 495 mm L
	814-101	Timing Belt, 15 mm W x 500 mm L
	814-108	Timing Belt, 15 mm W x 520 mm L
	814-064	Timing Belt, 15 mm W x 535 mm L
	814-099	Timing Belt, 15 mm W x 565 mm L
14	912-084	Square Key, 0.188" x 1.50"
	980636M	Square Key, 6 mm x 36 mm (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
15	980422M	Square Key, 4 mm x 22 mm
16	920406M	Socket Head Screw, M4-0.70 x 6 mm
17	920410M	Socket Head Screw, M4-0.70 x 10 mm
	920408M	Socket Head Screw, M4-0.70 x 8 mm (Flush Mount Only)

Item	Part Number	Description
18	920625M	Socket Head Screw, M6-1.00 x 25 mm
	920622M	Socket Head Screw, M6-1.00 x 22 mm (Flush Mount Only)
	920630M	Socket Head Screw, M6-1.00 x 30 mm (6200 Series)
19	920845M	Socket Head Screw, M8-1.25 x 45 mm
	920840M	Socket Head Screw, M8-1.25 x 40 mm (Flush Mount Only)
20	920893M	Low Head Cap Screw, M8-1.25 x 16 mm (for E-Drive 42CZ C Face Gearmotors)
	931020MSS	Flat Head Screw M10-1.50 x 20 mm (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
21	605280P	Washer
22	920694M	Low Head Cap Screw, M6-1.00 x 20 mm (2200 Series)
	920645M	Socket Head Screw, M6-1.00 x 45 mm (Flush Mount Only)
	920645M	Socket Head Screw, M6-1.00 x 45 mm (6200 Series)
23	920612M	Socket Head Screw, M6-1.00 x 12 mm
24	920620M	Socket Head Screw, M6-1.00 x 20 mm (for E-Drive 56 C Face, IEC 63B5 and IEC 71B5 Gearmotors)
25	450027M	Drive Spacer (6200 Series)
26	807-952	Groove Pin (6200 Series)
27	43-38-08	Outboard Retaining Clip (4100 Series)
28	43-38-1-05	Outboard Drive Shaft 1" (25 mm) Wide (4100 Series)
	216202M	Outboard Drive Shaft 2" (51 mm) Wide (4100 Series)
	216203M	Outboard Drive Shaft 3" (76 mm) Wide (4100 Series)
	216204M	Outboard Drive Shaft 4" - 12" (102 mm - 305 mm) Wide (4100 Series)
29	912-053	Square Key, 0.125" x 0.75" for 1" (25 mm) Wide (4100 Series)
	980422M	Square Key, 4 mm x 22 mm for 2" - 12" (51 mm - 305 mm) Wide (4100 Series)
30	43-38-1-11	Retaining Sleeve for 1" (25 mm) Wide (4100 Series)
	43-38-2-18	Retaining Sleeve for 2" - 12" (51 mm - 305 mm) Wide (4100 Series)

Service Parts

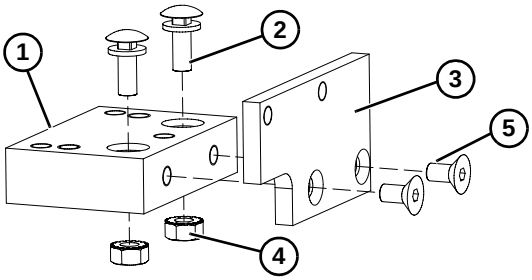
MPB Series Cleated Belt Conveyor Top Mount Drive Package for Standard Load 90° Industrial Gearmotors (Old Style Gearmotor Only)

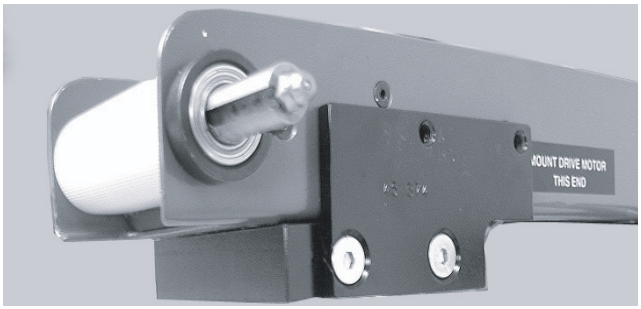


Item	Part Number	Description
1	202390M	Nut Follower Cam
2	450444M	Output Shaft, 12mm
3	300139	Drive Bearing Shaft Cover
4	243402	Mounting Cover Bracket
5	300871M	Drive Guard
6	243401	Mounting Plate
7	450366MP	Driven Pulley, 22Tooth
	450367MP	Driven Pulley, 28Tooth
	450368MP	Driven Pulley, 32Tooth
8	450365MP	Drive Pulley, 19Tooth
	450366MP	Drive Pulley, 22Tooth
	450367MP	Drive Pulley, 28Tooth
	450368MP	Drive Pulley, 32Tooth
	450369MP	Drive Pulley, 44Tooth
	450370MP	Drive Pulley, 48Tooth
	450371MP	Drive Pulley, 60Tooth
9	450445	Spacer
10	802–046	Bearing

Item	Part Number	Description
11	814-101	Timing Belt, 15mm W x 500mm L
	814-108	Timing Belt, 15mm W x 520mm L
	814-064	Timing Belt, 15mm W x 535mm L
	814-099	Timing Belt, 15mm W x 565mm L
	814-109	Timing Belt, 15mm W x 580mm L
	814-115	Timing Belt, 15mm W x 600mm L
	814-110	Timing Belt, 15mm W x 615mm L
12	912–084	Square Key, 0.188” x 1.50”
13	920408M	Socket Head Screw, M4 x 8mm
14	920416M	Socket Head Screw, M4 x 16mm
15	920608M	Socket Head Screw, M6 x 8mm
16	920625M	Socket Head Screw, M6 x 25mm
17	920692M	Stabilization Screw, M6 x 12mm Low Hd
18	920693M	Socket Head Screw, M6 x 16mm
19	920845M	Socket Head Screw, M8 x 45mm
20	980422M	Square Key, 4mm x 22mm
21	807-1133	Washer

4100 Mounting Package



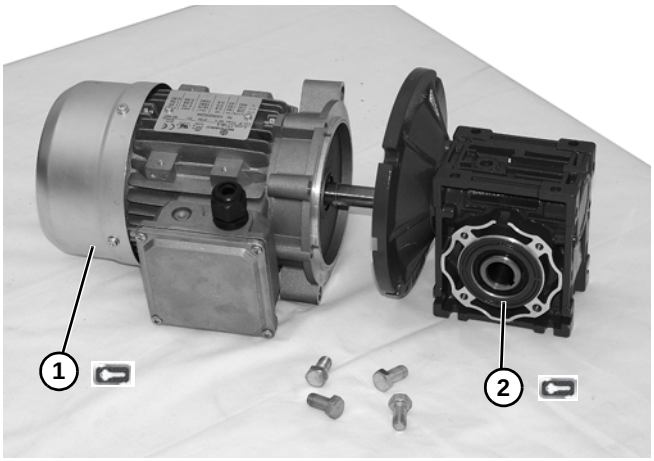


Mounting Package attached to a 4100 series conveyor.

Item	Part Number	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

Service Parts

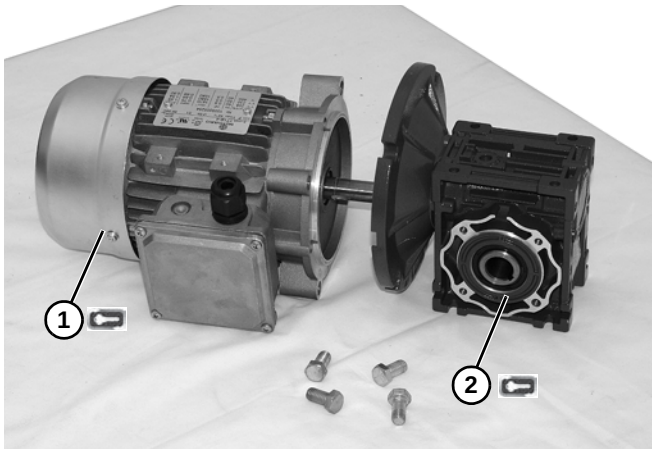
U.S. Version Gearmotors



Item	Part Number	Part Description
1	62MES411FN	Motor, 0.25 hp (0.19 Kw) 115/230 Volts, 60 Hz, 1-Phase
	62MES423FN	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
	32MS423EI*	Motor, 0.25 Hp (0.19 Kw) 230/460 Volts DC, 60 Hz, 3-Phase Variable Frequency/Indexing
2	32M005EL	Gear Reducer, 5:1, 42 CZ
	32M010EL	Gear Reducer, 10:1, 42 CZ
	32M020EL	Gear Reducer, 20:1, 42 CZ
	32M040EL	Gear Reducer, 40:1, 42 CZ
	32M060EL	Gear Reducer, 60:1, 42 CZ
	32M005ES	Gear Reducer, 5:1, 56C (for motors with part numbers ending with EI or EN only)
	32M010ES	Gear Reducer, 10:1, 56C (for motors with part numbers ending with EI or EN only)
	32M020ES	Gear Reducer, 20:1, 56C (for motors with part numbers ending with EI or EN only)
	32M040ES	Gear Reducer, 40:1, 56C (for motors with part numbers ending with EI or EN only)
	32M060ES	Gear Reducer, 60:1, 56C (for motors with part numbers ending with EI or EN only)

*This motor is rated at 1/2 hp when running as a fixed speed motor at 60 hz or when used as an indexing motor. When used as a variable speed motor, the HP rating is reduced to 1/4 hp.

CE Version Gearmotors



Item	Part No.	Part Description
1	826-281	Motor, 0.19 Kw 230 Volts, 1400 RPM 50 Hz, 1-Phase
	825-284	Motor, 0.19 Kw 230/400 Volts, 1400 RPM 50 Hz, 3-Phase
2	62Z005ES	Gear Reducer, 5:1, 63 B5
	62Z010ES	Gear Reducer, 10:1, 63 B5
	62Z020ES	Gear Reducer, 20:1, 63 B5
	62Z040ES	Gear Reducer, 40:1, 63 B5
	62Z060ES	Gear Reducer, 60:1, 63 B5

Notes

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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