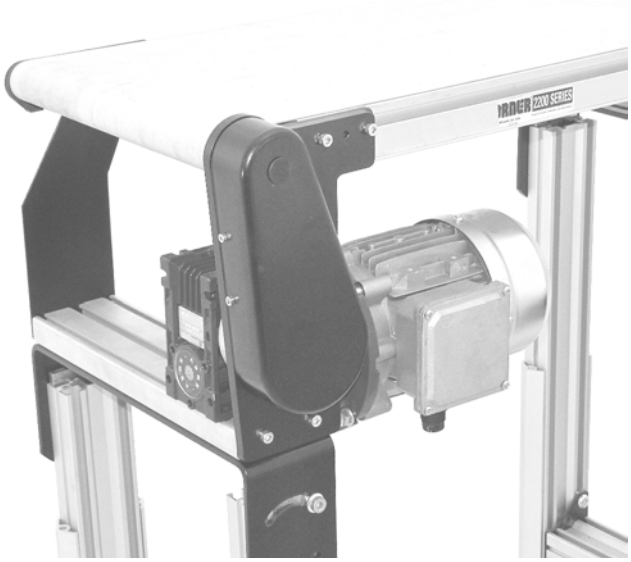
2100, 2200, 2300, 4100, 6200 & MPB Series Bottom Mount Drive Pack. for Heavy Load 90° Industrial Gearmotors

Installation, Maintenance & Parts Manual



Featuring: eDrive™ Technology

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851-279 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 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 2200, 6200 Series conveyors are covered by patent numbers: 6685009, 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 conveyor components.

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

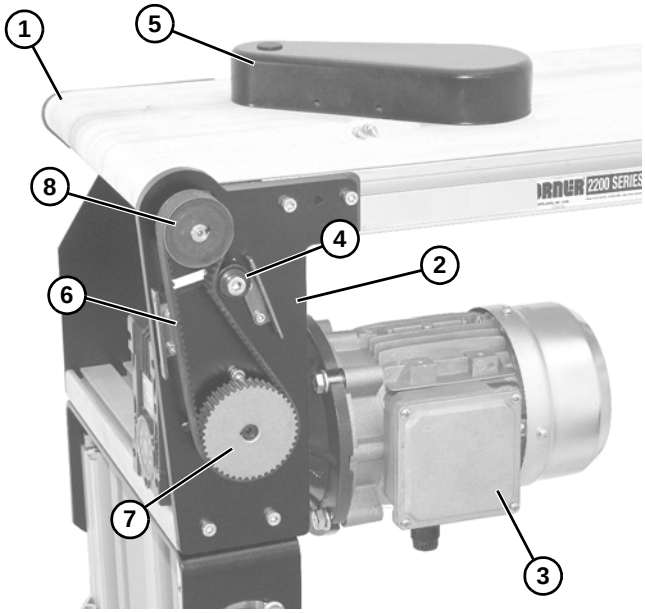
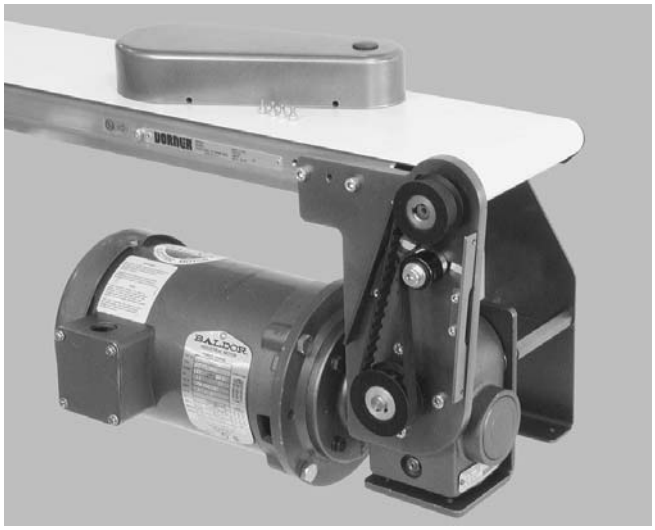


Figure 1

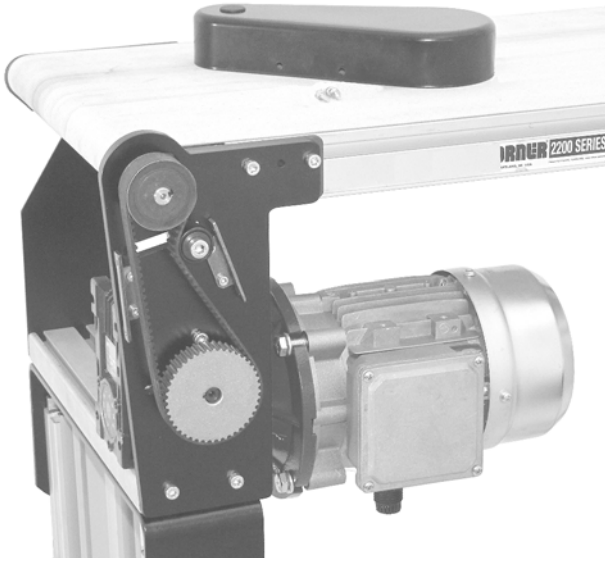
NOTE

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 Packages with eDrive Gearmotors

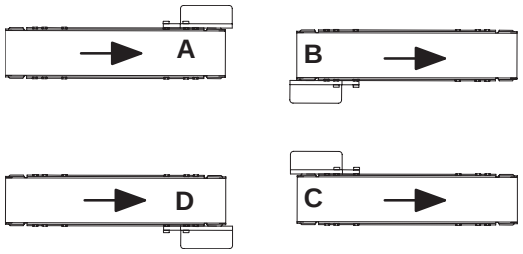
Figure 3

Gearmotor Mounting Package Models:

Example:

2 M B H H WW A – 32 32

- **Driven Pulley (see Table 2 & 3)**
- **Drive Pulley (see Table 2 & 3)**
- **Belt Type (– = flat belt, A through J = cleated belt)**
- **Mount Position = A, B, C or D (see detail to the right)**
- **Conveyor Width Reference***
- **Gearmotor Type: H = Heavy Load, Industrial**
- **Output Shaft Type : E= 90° eDrive Gearmotors**
  H = 90° Old Style Gearmotors Prior to June 2011
- **Mount Style : B= Bottom Mount**
- **Language Code: M = U.S. English**
  U = CE English
- **2 = 2100 Series Conveyor**
  22 = 2200 & 2300 Series Conveyors
  4 = 4100 Series Conveyor
  6 = 6200 Series Conveyor
  2P = MPB Series Conveyor



*** See "Ordering and Specifications" Catalog for details.**

Table 1: Gearmotor Specifications

US Version

	Single Phase	Three Phase	DC Variable Speed	VFD Variable Speed
Output Power	0.50 hp (0.37 kw)			
Input Voltage	115 VAC	208 – 230 / 460 VAC	90 VDC	230 VAC
Input Frequency	60 Hz		N/A	10 – 60 Hz
Input Current	7.4 Amperes	2.1 – 2/ 1 Amperes	5.0 Amperes	1.6 Amperes
Motor RPM	1725		2500	1725
Gearmotor Ratios	5:1, 10:1, 20:1, 40:1, 60:1			
Frame Size	NEMA 56C			
Motor Type	Totally enclosed, Fan-cooled			

CE Version

	Three Phase
Output Power	0.19 kw
Input Voltage	230 / 400 Volts A.C.
Input Frequency	50 Hz
Full Load Amperes	1.2 / 0.7 Amperes
Gearmotor Ratios	5:1, 10:1, 20:1
Protection Ratings	IP55 for Gearmotor and Motor Starter
Frame Size	71B5

Specifications

Table 2: Belt Speeds for Heavy Load Fixed Speed 90° 60 Hz Gearmotors on 2100, 2200 (Gang Drive), 4100 and 6200 Series Conveyors

US Version

Gearmotors					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES4(vp)F(n)	60:1	29	319	36	6	1.7	22	32
32M060ES4(vp)F(n)	60:1	29	319	36	8	2.4	32	32
32M060ES4(vp)F(n)	60:1	29	319	36	12	3.7	48	32
32M040ES4(vp)F(n)	40:1	43	378	42.7	12	3.7	32	32
32M040ES4(vp)F(n)	40:1	43	378	42.7	18	5.5	48	32
32M020ES4(vp)F(n)	20:1	86	285	32.2	25	7.6	32	32
32M020ES4(vp)F(n)	20:1	86	285	32.2	37	11.3	48	32
32M010ES4(vp)F(n)	10:1	173	153	17.3	49	14.9	32	32
32M010ES4(vp)F(n)	10:1	173	153	17.3	74	22.6	48	32
32M005ES4(vp)F(n)	5:1	345	80	9	99	30.2	32	32
32M005ES4(vp)F(n)	5:1	345	80	9	148	45.1	48	32
32M005ES4(vp)F(n)	5:1	345	80	9	169	51.5	48	28
32M005ES4(vp)F(n)	5:1	345	80	9	197	60.0	44	22
32M005ES4(vp)F(n)	5:1	345	80	9	215	65.5	48	22
32M005ES4(vp)F(n)	5:1	345	80	9	249	75.9	48	19

(vp) = voltage and phase:

11 = 115 V, 1-phase

23 = 230V, 3-phase

(n) = reversing capability:

N = no reversing switch

R = with reversing switch (115V, 1 phase only)

CE Version

Gearmotors			Belt Speed		Drive Pulley	Driven Pulley
Part Number	RPM	N-m	Ft/min	M/min		
62(c)050(r)E4(vp)FN	29	50.1	5	1.5	19	32
62(c)050(r)E4(vp)FN	29	50.1	8	2.4	32	32
62(c)050(r)E4(vp)FN	29	50.1	12	3.7	48	32
62(c)050(r)E4(vp)FN	29	50.1	18	5.5	48	22
62(c)015(r)E4(vp)FN	97	19.9	28	8.5	32	32
62(c)015(r)E4(vp)FN	97	19.9	41	12.5	48	32
62(c)015(r)E4(vp)FN	97	19.9	60	18.3	48	22
62(c)005(r)E4(vp)FN	290	7.2	83	25.3	32	32
62(c)005(r)E4(vp)FN	290	7.2	124	37.8	48	32
62(c)005(r)E4(vp)FN	290	7.2	155	47.2	60	32
62(c)005(r)E4(vp)FN	290	7.2	181	55.2	48	22
62(c)005(r)E4(vp)FN	290	7.2	226	68.9	60	22

(c) = electrical configuration

(vp) = voltage and phase

(r) = output shaft orientation

G = CE German

U = CE Great Britain

23 = 230V, 3-phase

43 = 400 V, 3-phase

L = Left Hand

R = Right Hand

Table 3: Belt Speeds for Heavy Load Fixed Speed 90° 60 Hz Gearmotors on 2200 Series Conveyors (Excluding Gang Drive)

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES4(vp)F(n)	60:1	29	319	36	6	1.7	19	32
32M060ES4(vp)F(n)	60:1	29	319	36	10	3.0	28	28
32M040ES4(vp)F(n)	40:1	43	378	42.7	15	4.6	28	28
32M060ES4(vp)F(n)	60:1	29	319	36	16	4.9	44	28
32M040ES4(vp)F(n)	40:1	43	378	42.7	24	7.3	44	28
32M020ES4(vp)F(n)	20:1	86	285	32.2	30	9.1	28	28
32M020ES4(vp)F(n)	20:1	86	285	32.2	48	14.6	44	28
32M010ES4(vp)F(n)	10:1	173	153	17.3	61	18.6	28	28
32M010ES4(vp)F(n)	10:1	173	153	17.3	95	29.0	44	28
32M010ES4(vp)F(n)	10:1	173	153	17.3	104	31.7	48	28
32M005ES4(vp)F(n)	5:1	345	80	9	121	36.9	28	28
32M005ES4(vp)F(n)	5:1	345	80	9	138	42.1	32	28
32M005ES4(vp)F(n)	5:1	345	80	9	176	53.6	32	22
32M005ES4(vp)F(n)	5:1	345	80	9	208	63.4	48	28
32M005ES4(vp)F(n)	5:1	345	80	9	242	73.8	44	22
32M005ES4(vp)F(n)	5:1	345	80	9	264	80.5	48	22

(vp) = voltage and phase:

11 = 115 V, 1-phase

23 = 230V, 3-phase

(n) = reversing capability:

N = no reversing switch

R = with reversing switch (115V, 1 phase only)

Table 4: Belt Speeds for Heavy Load Fixed Speed 90° 60 Hz Gearmotors on MPB Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES4(vp)F(n)	60:1	29	319	36	13	4.0	22	32
32M060ES4(vp)F(n)	60:1	29	319	36	20	6.0	28	28
32M040ES4(vp)F(n)	40:1	43	378	42.7	29	8.9	28	28
32M040ES4(vp)F(n)	40:1	43	378	42.7	44	13.4	48	32
32M020ES4(vp)F(n)	20:1	86	285	32.2	59	17.9	28	28

(vp) = voltage and phase

11 = 115 V, 1-phase

23 = 230V, 3-phase

(n) = reversing capability

N = no reversing switch

R = with reversing switch (115V, 1 phase only)

Specifications

Table 5: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz VFD Gearmotors on 2100, 4100 and 6200 Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES423EN	60:1	29	319	36	0.6–5.6	0.2–1.7	22	32
32M060ES423EN	60:1	29	319	36	0.8–8.2	0.3–2.5	32	32
32M040ES423EN	40:1	43	378	42.7	1.2–12	0.4–3.8	28	28
32M020ES423EN	20:1	86	285	32.2	2.5–25	0.8–7.5	32	32
32M010ES423EN	10:1	173	153	17.3	4.9–49	1.5–15	32	32
32M005ES423EN	5:1	345	80	9	9.9–99	3–30	32	32
32M005ES423EN	5:1	345	80	9	14–148	4.5–45	48	32
32M005ES423EN	5:1	345	80	9	19–197	6–60	44	22
32M005ES423EN	5:1	345	80	9	24–249	7.6–76	48	19

Table 6: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz VFD Gearmotors on 2200 Series Conveyors (Excluding Gang Drive)

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES423EN	60:1	29	319	36	0.6–6	0.2–1.8	19	32
32M060ES423EN	60:1	29	319	36	1–10	0.3–3.1	28	28
32M040ES423EN	40:1	43	378	42.7	1.5–15	0.5–4.6	28	28
32M020ES423EN	20:1	86	285	32.2	3–30	0.9–9.2	28	28
32M010ES423EN	10:1	173	153	17.3	6–60	1.8–18	28	28
32M010ES423EN	10:1	173	153	17.3	10–104	3.2–32	48	28
32M005ES423EN	5:1	345	80	9	12–121	3.7–37	28	28
32M005ES423EN	5:1	345	80	9	26–264	8.1–81	48	22

Table 7: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz VFD Gearmotors on MPB Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060ES423EN	60:1	29	319	36	1.3–13.4	0.4–4.1	22	32
32M060ES423EN	60:1	29	319	36	2–19	0.9–5.9	28	28
32M040ES423EN	40:1	43	378	42.7	2.9–29	0.9–8.9	28	28
32M020ES423EN	20:1	86	285	32.2	5.9–59	1.8–18	28	28
32M010ES423EN	10:1	173	153	17.3	11–117	3.6–36	28	28
32M010ES423EN	10:1	173	153	17.3	17–175	5.4–54	48	32
32M005ES423EN	5:1	345	80	9	23–234	7.1–71	28	28

Table 8: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz DC Gearmotors on 2100, 2200 (Gang Drive), 4100 and 6200 Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060PSD3DEN	60:1	42	270	30.5	1.0–8.2	0.3–2.5	22	32
32M060PSD3DEN	60:1	42	270	30.5	1.4–12	0.4–3.6	32	32
32M040PSD3DEN	40:1	63	215	24.3	2.1–18	0.7–5.4	32	32
32M020PSD3DEN	20:1	125	90	10.2	4.3–36	1.3–11	32	32
32M010PSD3DEN	10:1	250	72	8.1	9–71	2.6–22	32	32
32M005PSD3DEN	5:1	500	25	2.8	17–143	5.2–43	32	32
32M005PSD3DEN	5:1	500	25	2.8	26–214	7.8–65	48	32
32M005PSD3DEN	5:1	500	25	2.8	29–245	9.0–75	48	28

Table 9: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz DC Gearmotors on 2200 Series Conveyors (Excluding Gang Drive)

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060PSD3DEN	60:1	42	270	30.5	1.8–14	0.5–4.5	28	28
32M040PSD3DEN	40:1	63	215	24.3	2.6–22	0.8–6.7	28	28
32M060PSD3DEN	60:1	42	270	30.5	2.8–23	0.8–7	44	28
32M020PSD3DEN	20:1	125	90	10.2	5.3–44	1.6–13	28	28
32M010PSD3DEN	10:1	250	72	8.1	10–88	3.2–27	28	28
32M005PSD3DEN	5:1	500	25	2.8	17–138	5–42	44	28
32M005PSD3DEN	5:1	500	25	2.8	21–176	6.4–54	28	28
32M005PSD3DEN	5:1	500	25	2.8	33–276	10–84	44	28

Table 10: Belt Speeds for Heavy Load Variable Speed 90° 60 Hz DC Gearmotors on MPB Series Conveyors

Gearmotors*					Belt Speed		Drive Pulley	Driven Pulley
Part Number	Gear Ratio	RPM	In-lb	N-m	Ft/min	M/min		
32M060PSD3DEN	60:1	42	270	30.5	2.3–19	0.7–5.9	22	32
32M060PSD3DEN	60:1	42	270	30.5	3.4–28	1–8.6	28	28
32M040PSD3DEN	40:1	63	215	24.3	5.1–42	1.6–12.9	28	28
32M060PSD3DEN	60:1	42	270	30.5	5.3–44	1.6–13	44	28
32M020PSD3DEN	20:1	125	90	10.2	10–85	3–26	28	28
32M020PSD3DEN	20:1	125	90	10.2	15–127	4.7–39	48	32
32M010PSD3DEN	10:1	250	72	8.1	20–170	6–52	28	28
32M010PSD3DEN	10:1	250	72	8.1	31–255	9–77	48	32

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

NOTE

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

Installation

Required Tools

- Hex key wrenches:
  2 mm, 2.5 mm, 3 mm, 5 mm
- 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.

Installation Component List:

1	Drive Assembly
2	M6x12 Socket Head Screws (2x)
3	Plastic Cover
4	M6x18 Socket–Head Screws & Hard Washers (4x)
5	Extrusion
6	Support Plate
7	M6x25 Socket–Head Screws & M6 Nuts (4x)
8	Cover
9	Driven Pulley
10	Timing Belt
11	Drive Pulley
12	Mounting Plate
13	M6x18 Socket Head Screws (4x)
14	Support Plate Spacer
15	Output Shaft

1. Typical components **(Figure 4)**.

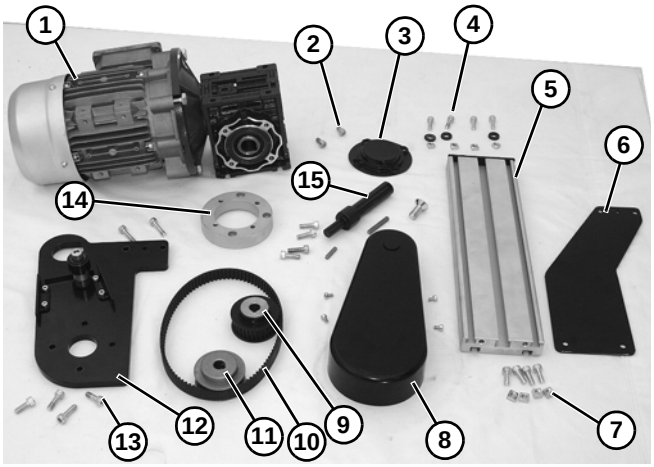


Figure 4

NOTE

*2100, 2200, MPB and 6200 2" & 3" (51mm & 76mm) and 4100 1" through 6" (25mm – 152mm) conveyors do not include **(Figure 4, item** R through W).*

NOTE

*Gearmotor may be operated in positions 1 & 3 **(Figure 5)**.*

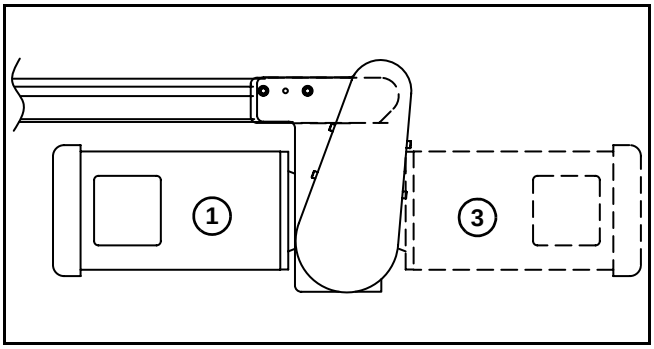


Figure 5

2. If required, change gearmotor position by removing four screws **(Figure 6, item 1)** from bottom mount assembly. Rotate gearmotor to other position and install screws. Tighten screws to 103 in-lb (12 Nm).

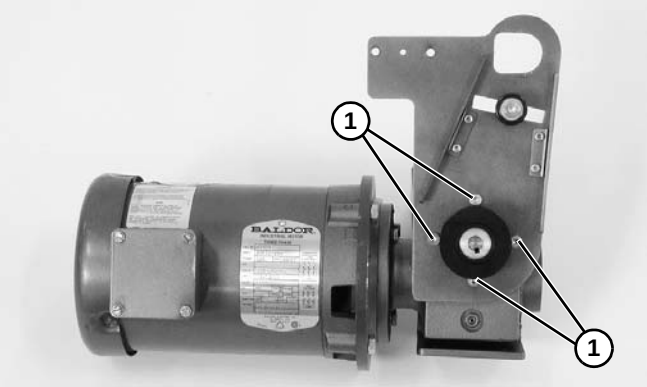
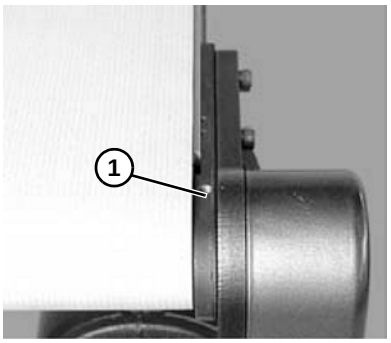


Figure 6

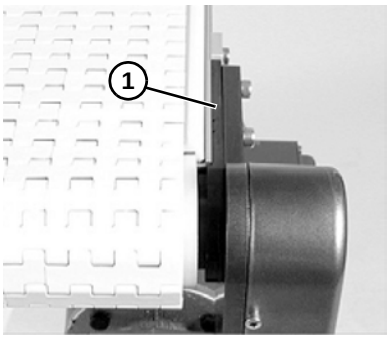
3. For your reference, the following figures show the attachment area of complete mounting packages for the various conveyor series.

- Gearmotor bottom mount assembly is mounted to head plate **(Figure 7, item 1)** and **(Figure 8, item 1)**.



2100 & 2200 Series

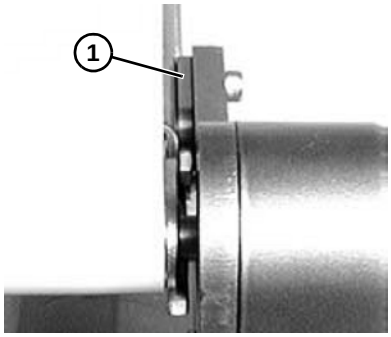
Figure 7



MPB Series

Figure 8

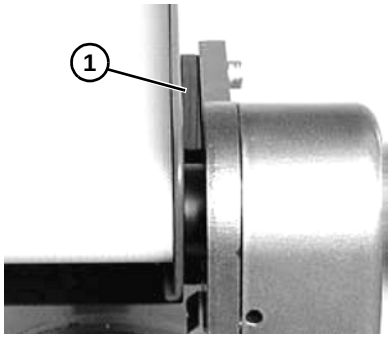
- Gearmotor bottom mount assembly is mounted to drive spacer **(Figure 9, item 1)**.



6200 Series

Figure 9

- Gearmotor bottom mount assembly is mounted to drive adapter plate **(Figure 10, item 1)**.



4100 Series

Figure 10

NOTE

6200 conveyor shown below, other Series similar.

4. Locate drive output shaft **(Figure 11, item 1)** and remove two screws **(Figure 11, item 2)**.

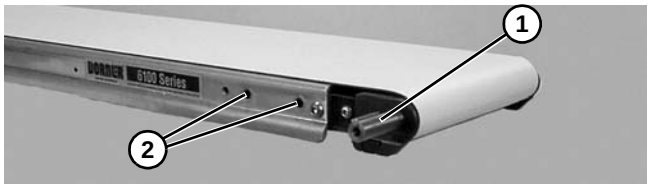


Figure 11

5. On side opposite drive output shaft, remove two screws **(Figure 12, item 1)**.

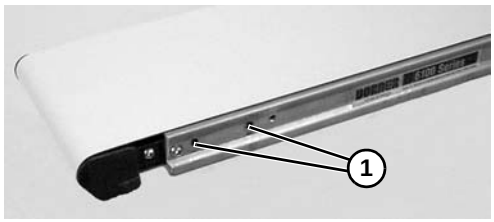


Figure 12

NOTE

*Refer to **Figure 7** through **Figure 10** while doing step 6.*

6. Install spacer **(Figure 13, item 1)** and gearhead/ conveyor support plate **(Figure 13, item 2)** with screws **(Figure 13, item 3)**.

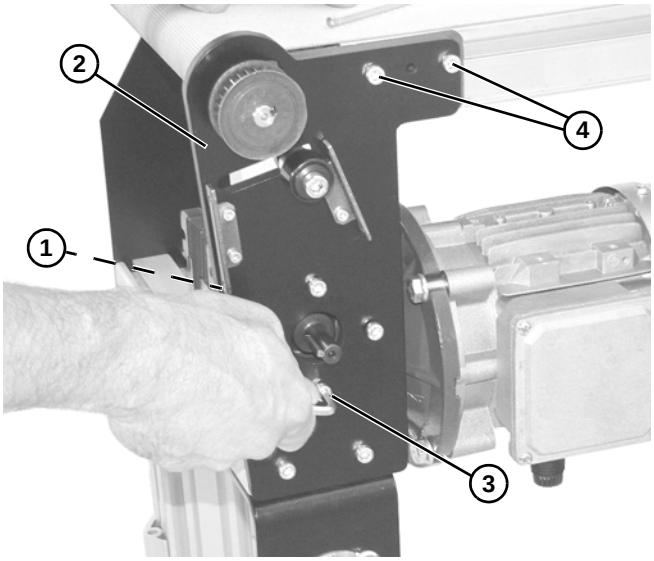


Figure 13

7. Install support plate **(Figure 13, item 2)** with screws **(Figure 13, item 4)**. Tighten screws **(Figure 13, item 3)** and **(Figure 13, item 4)** to 80 in-lb (9 Nm).
8. Install opposite end support plate **(Figure 14, item 1)** with screws **(Figure 14, item 2)**. Tighten screws to 80 in-lb (9 Nm).

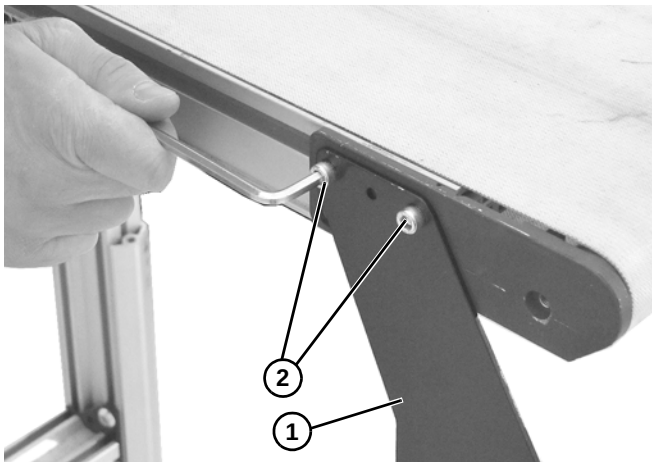


Figure 14

⚠ WARNING

Drive shaft keyway may be sharp.
HANDLE WITH CARE.

9. Install key onto top shaft **(Figure 15, item 1)**.

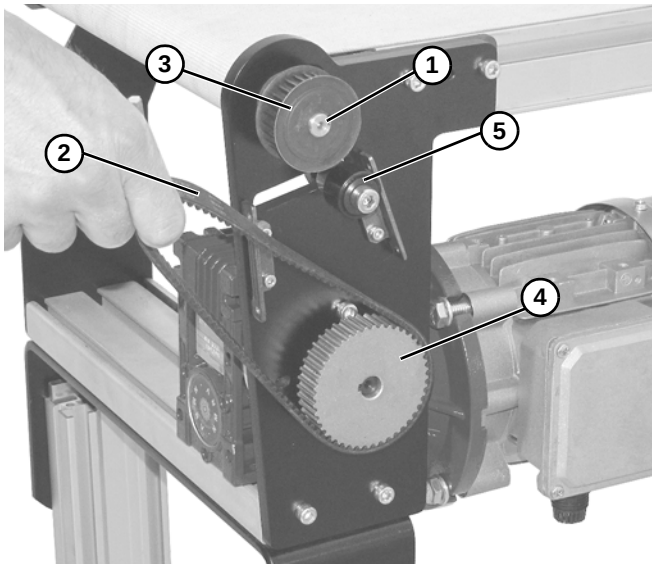


Figure 15

10. Wrap timing belt **(Figure 15, item 2)** around driven pulley **(Figure 15, item 3)** and drive pulley **(Figure 15, item 4)**. Install driven pulley **(Figure 15, item 3)** onto conveyor shaft.
11. Remove cam bearing and spacer **(Figure 15, item 5)**. Place cam bearing and spacer **(Figure 16, item 1)** next to driven pulley **(Figure 16, item 2)**. Ensure flanges of driven pulley are aligned with cam bearing. Tighten driven pulley set screws **(Figure 16, item 3)**. This will allow for proper belt alignment while conveyor is in use. Install cam bearing and spacer **(Figure 16, item 1)**.

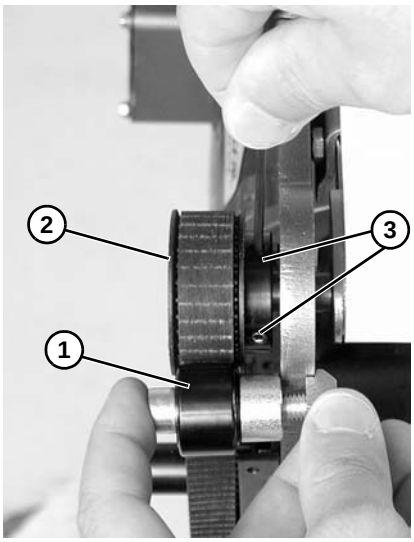


Figure 16

12. Depending on direction of conveyor belt travel **(Figure 17, item 1)** or **(Figure 17, item 2)**, position belt tensioner **(Figure 17, item 3)** as shown. Tension belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point **(Figure 17, item 4)**. Tighten tensioner screw to 103 in-lb (12 Nm).

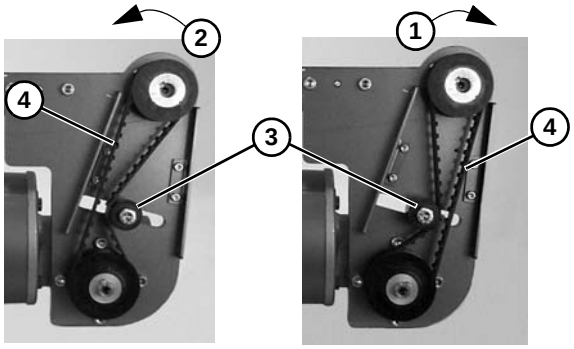


Figure 17

13. Install cover **(Figure 18, item 1)** with four screws **(Figure 18, item 2)**. Tighten to 35 in-lb (4 Nm).

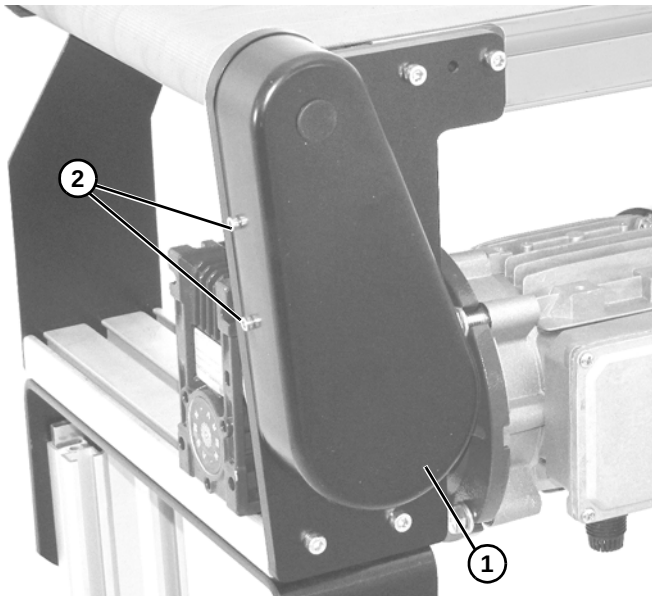


Figure 18

14. Mount assembly to support structure with four hard washers and screws **(Figure 19, item 1)**. Tighten to 80 in-lb (9 Nm).

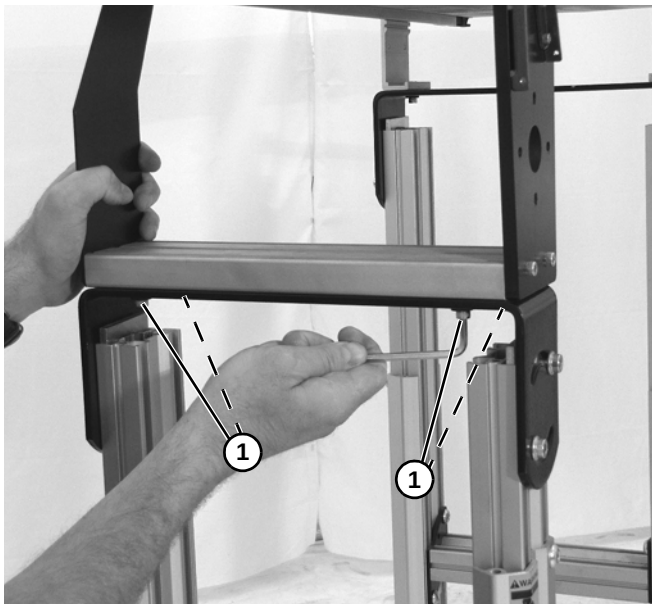


Figure 19

Required Tools

- Hex key wrenches:
  2 mm, 2.5 mm, 3 mm, 5 mm
- Adjustable wrench (for hexagon head screws)
- Torque wrench

Timing Belt Tensioning

⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

1. Remove four (4) screws **(Figure 18, item 2)** and remove cover **(Figure 18, item 1)**.
2. Loosen tensioner **(Figure 20, item 1)**.

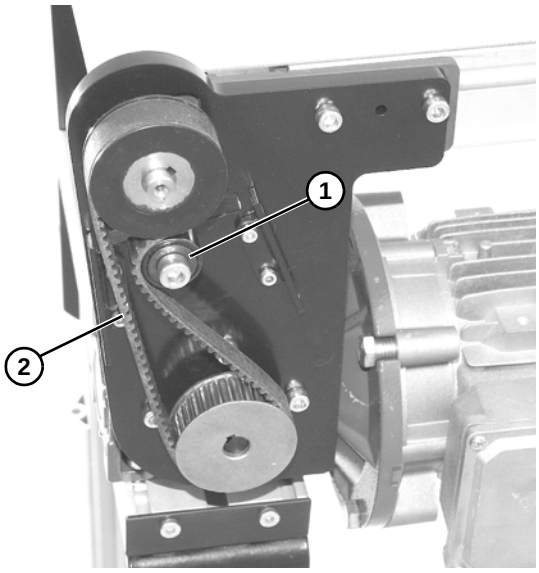


Figure 20

3. Depending on direction of conveyor belt travel **(Figure 17, item 1)** or **(Figure 17, item 2)**, position belt tensioner **(Figure 20, item 1)** as shown. Tension belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point **(Figure 20, item 2)**. Tighten tensioner screw to 103 in-lb (12 Nm).
4. Install cover **(Figure 18, item 1)** with four (4) screws **(Figure 18, 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 18, item 2)** and remove cover **(Figure 18, item 1)**.
2. Loosen tensioner **(Figure 20, item 1)**.
3. Remove timing belt **(Figure 21, item 1)**.

NOTE

*If timing belt does not slide over pulley flange, loosen driven pulley **(Figure 21, item 2)** set screws and remove pulley with belt **(Figure 21, item 1)**. For re-installation, see step 10 and **Figure 15** on page 13.*

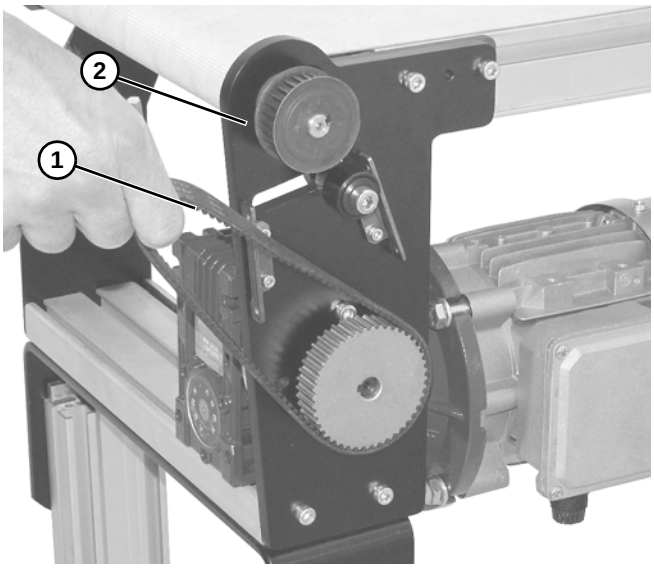


Figure 21

4. Install new timing belt.
5. Depending on direction of conveyor belt travel **(Figure 17, item 1)** or **(Figure 17, item 2)**, position belt tensioner **(Figure 20, item 1)** as shown. Tension belt to obtain 0.125¨ (3 mm) deflection for 1.0 lb (456 grams) of force at belt mid-point **(Figure 20, item 2)**. Tighten tensioner screw to 103 in-lb (12 Nm).
6. Install cover **(Figure 18, item 1)** with four (4) screws **(Figure 18, item 2)**. 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 14.
2. Loosen set screws and remove drive or driven pulley.

NOTE

*If drive pulley **(Figure 25, item 2)** is replaced, wrap timing belt around drive pulley and complete step 3.*

3. Complete steps 11 through 14 of "Installation" section on page 13.

Gear Reducer Replacement

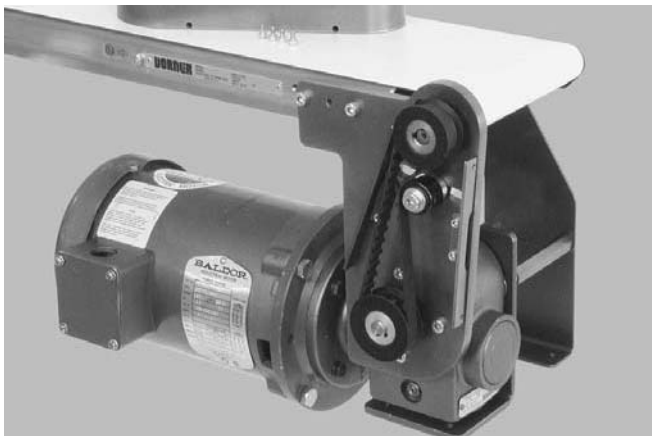
⚠ WARNING

Exposed moving parts can cause severe injury.

LOCK OUT POWER before removing guards or performing maintenance.

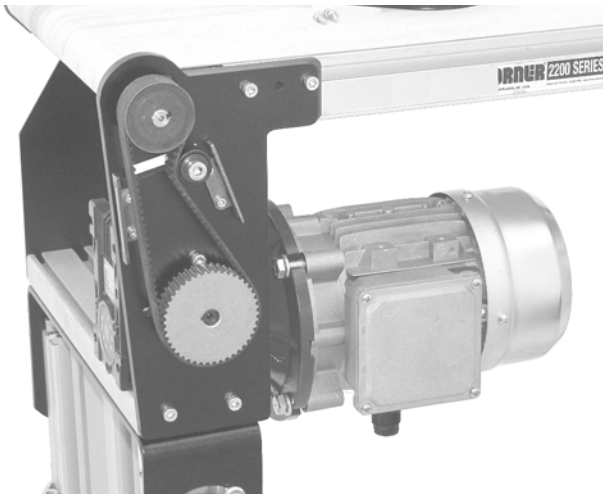
NOTE

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 22



eDrive Gearmotor

Figure 23

1. Remove four (4) screws **(Figure 24, item 2)** and remove cover **(Figure 24, item 1)**.

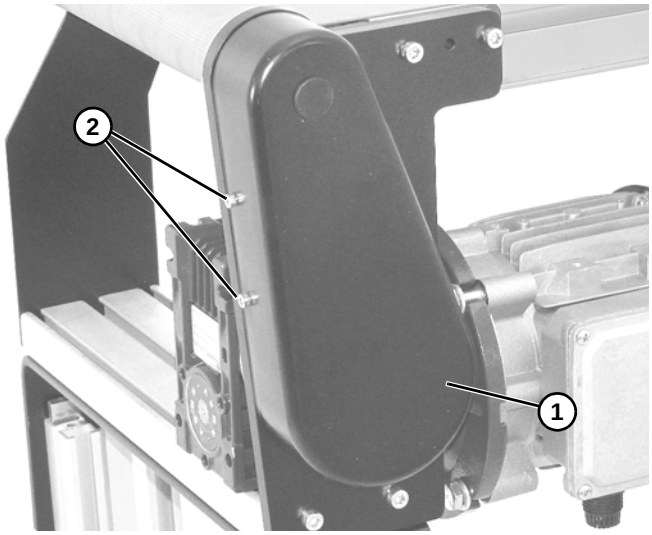


Figure 24

2. Loosen tensioner **(Figure 25, item 1)**.

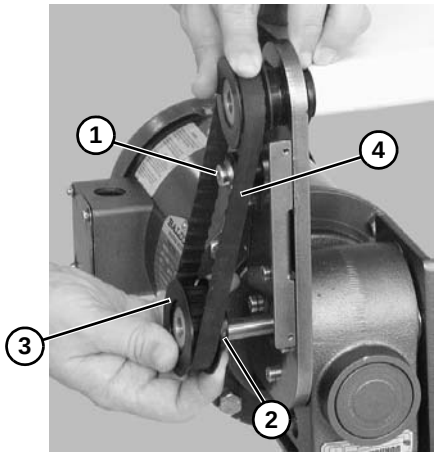


Figure 25

3. Loosen drive pulley set screws **(Figure 25, item 2)**. Remove drive pulley **(Figure 25, item 3)** and timing belt **(Figure 25, item 4)**.

NOTE
Follow proper procedure below depending upon old or new style gearmotor assembly.

For eDrive style gearmotor

1. Remove screws **(Figure 26, item 1)** and gearmotor **(Figure 26, item 2)**.

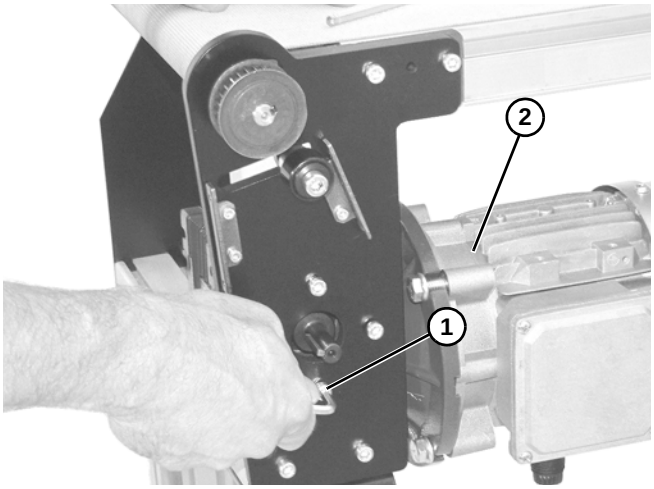


Figure 26

NOTE
*Step 2 and **(Figure 27, item 2)** is required for standard load VFD gearmotors only.*

2. Loosen four (4) socket head screws **(Figure 27, item 1)** and detach spacer **(Figure 27, item 2)** from gear reducer **(Figure 27, item 3)**.

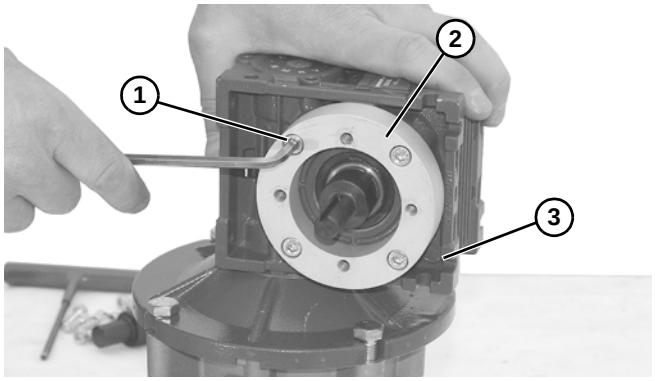


Figure 27

3. Remove four screws **(Figure 28, item 1)**. Detach motor **(Figure 28, item 2)** from gear reducer **(Figure 28, item 3)**. Retain shaft key **(Figure 28, item 4)**.

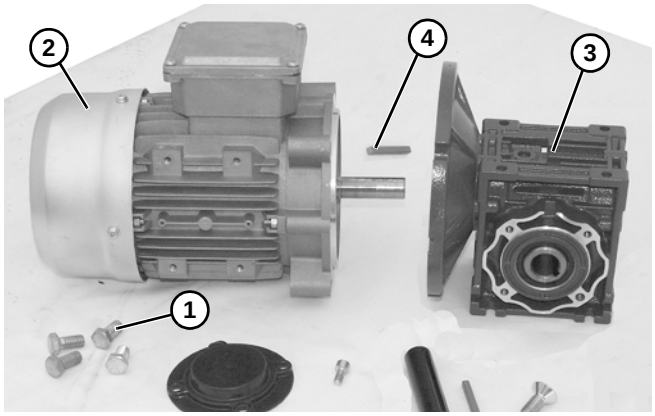


Figure 28

4. Remove two (2) screws **(Figure 29, item 1)** and detach output shaft cover **(Figure 29, item 2)**.

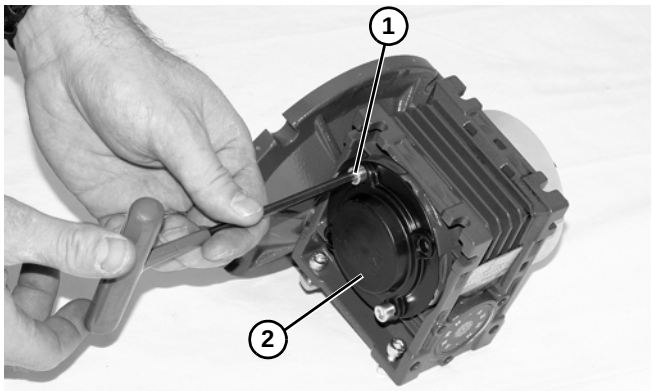


Figure 29

5. Remove gear reducer components:

6. Hold the driveshaft with a wrench **(Figure 30, item 1)** as shown to keep shaft from turning, while removing screw **(Figure 30, item 2)** with hex wrench **(Figure 30, item 3)**.

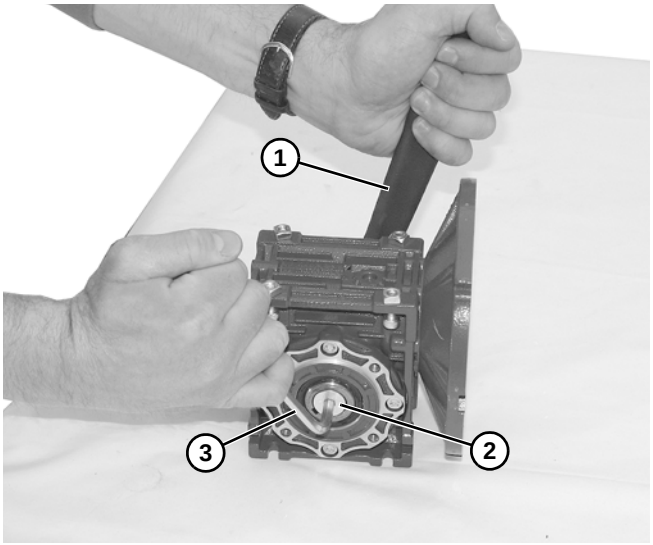


Figure 30

7. Remove driveshaft **(Figure 31, item 1)** and key **(Figure 31, item 2)**.

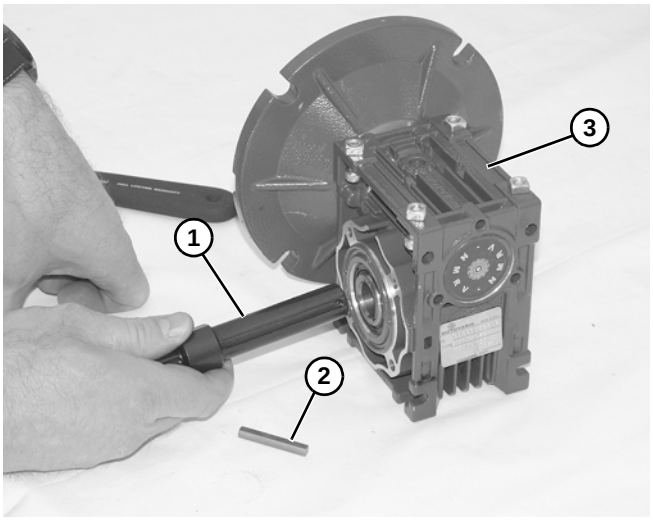


Figure 31

8. Replace gear reducer **(Figure 31, item 3)**.

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

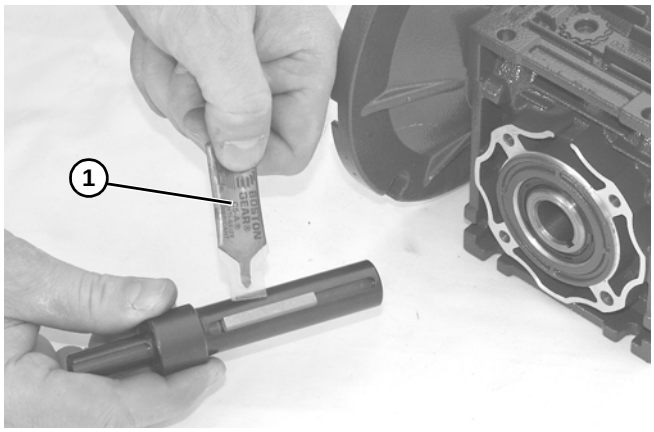


Figure 32

10. 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.

11. Hold the driveshaft with a wrench **(Figure 30, item 2)** as shown to keep shaft from turning, while installing screw with hex wrench **(Figure 30, item 3)**. Tighten screw to 350 in-lb (39.5 Nm).
12. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 28, item 4)** in keyway, slide motor **(Figure 28, item 2)** and gear reducer **(Figure 28, item 3)** together. Install screws **(Figure 28, item 1)** and tighten.
13. Reverse steps 1 through 5 beginning on page 15.
14. Complete installation steps 10 through 14 of "Installation" section on pages 12-13.

For old style gearmotor prior to June 2011

1. Remove screws **(Figure 33, item 1 and 2)** and remove support bracket **(Figure 33, item 3)**, support plate **(Figure 33, item 4)** and spacer **(Figure 33, item 5)**.

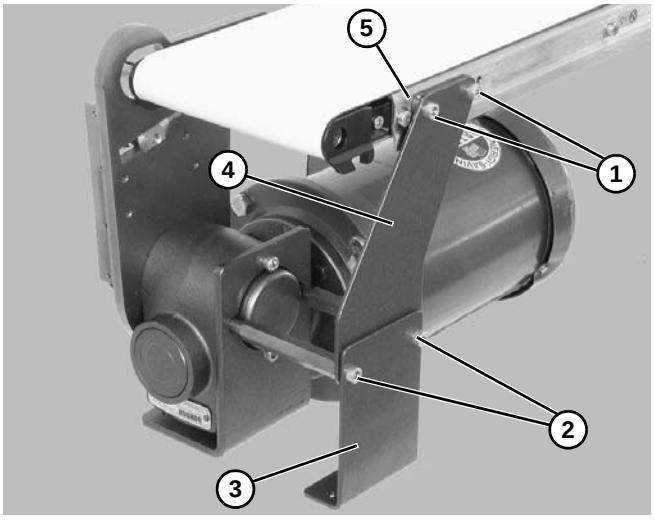


Figure 33

2. Remove hex support posts **(Figure 34, item 1)**.

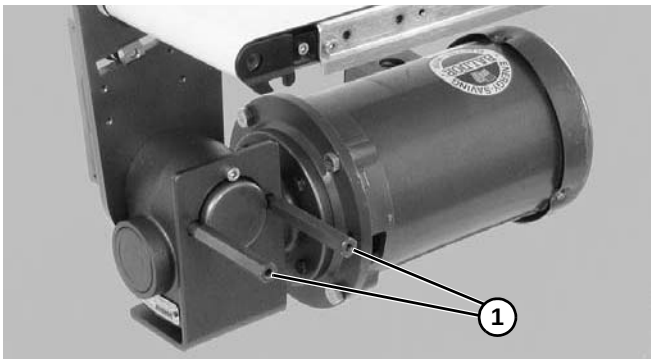


Figure 34

3. Remove two (2) bracket screws **(Figure 35, item 1)** and remove bracket **(Figure 35, item 2)**.

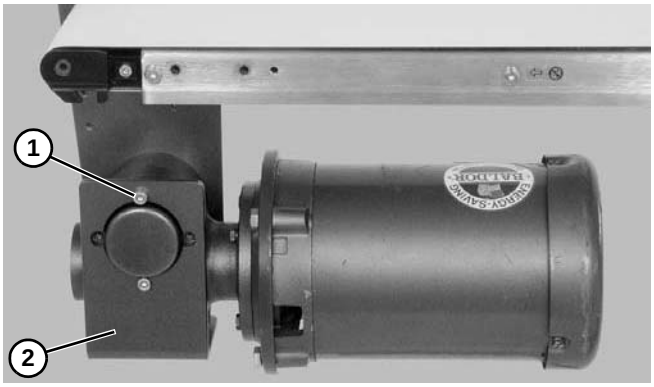


Figure 35

4. Remove four (4) gear reducer mounting screws **(Figure 36, item 1)**. Remove gear reducer and gearmotor assembly.

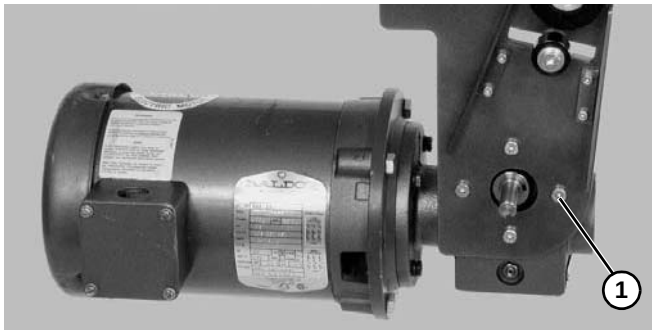


Figure 36

5. Remove four screws **(Figure 37, item 1)**. Detach motor **(Figure 37, item 2)** from gear reducer **(Figure 37, item 3)**. Retain motor output shaft key **(Figure 37, item 4)**.

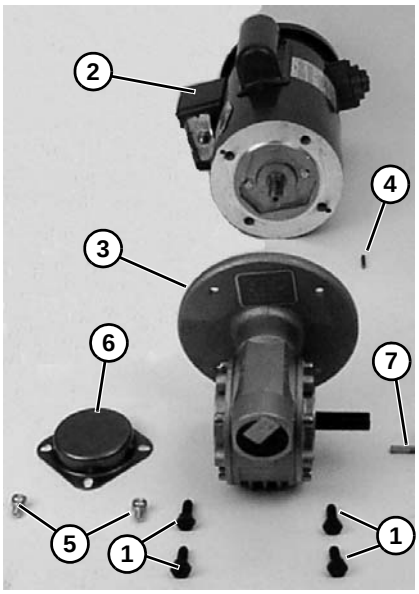


Figure 37

6. Remove two (2) screws **(Figure 37, item 5)** and detach output shaft cover **(Figure 37, item 6)**.
7. Remove gear reducer output shaft key **(Figure 37, item 7)**.

8. Loosen six (6) set screws **(Figure 38, item 1)**. Remove drive shaft **(Figure 38, item 2)** and key **(Figure 38, item 3)**.

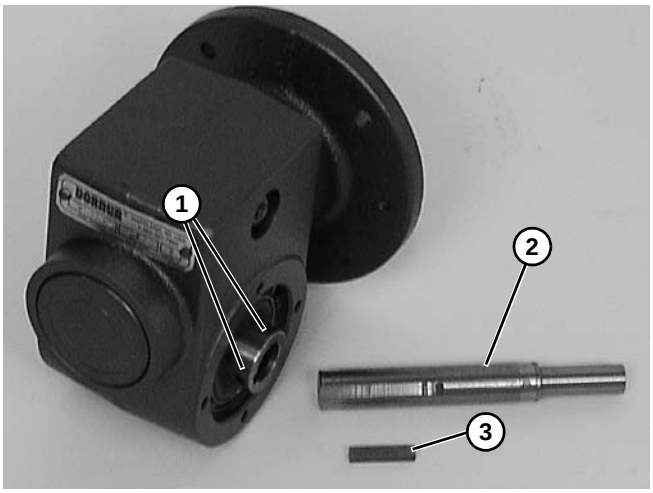


Figure 38

9. Apply anti-seize **(Figure 39, item 1)** to shaft.

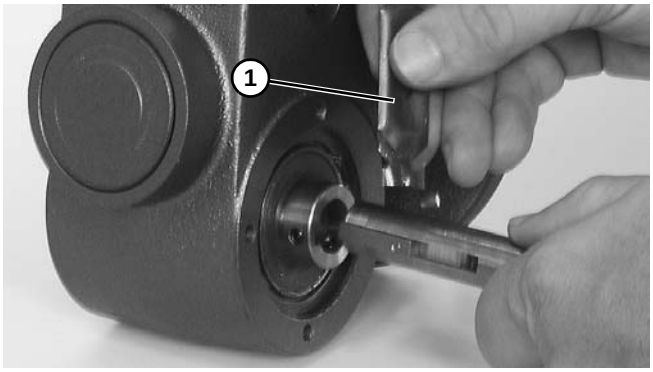


Figure 39

10. Replace the original shaft components into new gear reducer **(Figure 38)**.

IMPORTANT

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

11. Apply anti-seize to motor shaft before assembling to gearbox. With key **(Figure 37, item 4)** in keyway, slide motor **(Figure 37, item 2)** and gear reducer **(Figure 37, item 3)** together. Install screws **(Figure 37, item 1)** and tighten.
12. Reverse steps 1 through 7 beginning on page 15.
13. Complete installation steps 10 through 14 of "Installation" section on pages 12-13.

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 and VFD variable speed motor:
   a. Loosen terminal box screws **(Figure 40, item 1)** and remove cover **(Figure 40, item 2)**.

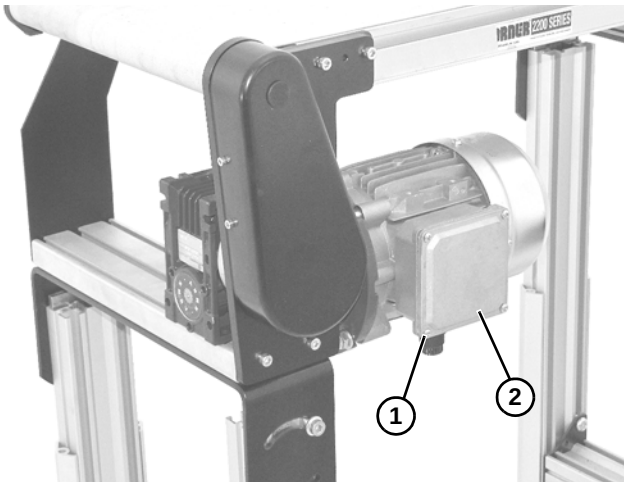


Figure 40

   b. Record wire colors on terminals 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 41, item 1)**.

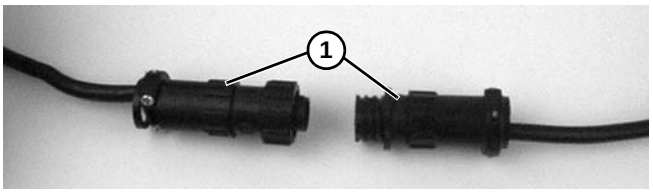


Figure 41

4. Remove four screws **(Figure 42, item 1)**. Detach motor **(Figure 42, item 2)** from gear reducer **(Figure 42, item 3)**. Retain motor output shaft key **(Figure 42, item 4)**.

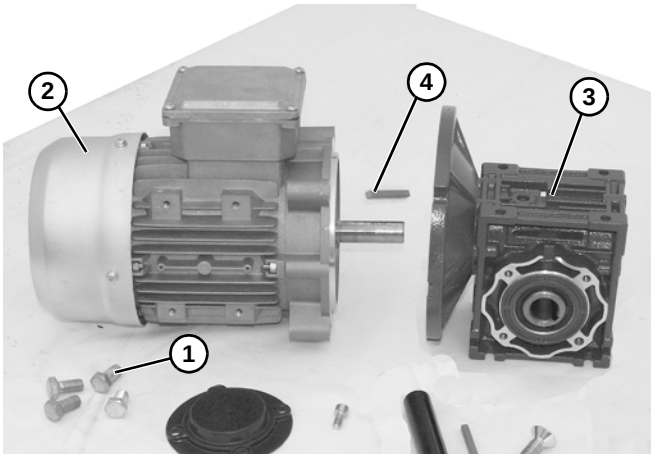


Figure 42

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 43, item 1)** in keyway, slide motor and gear reducer together. Install screws **(Figure 43, item 2)** and tighten.

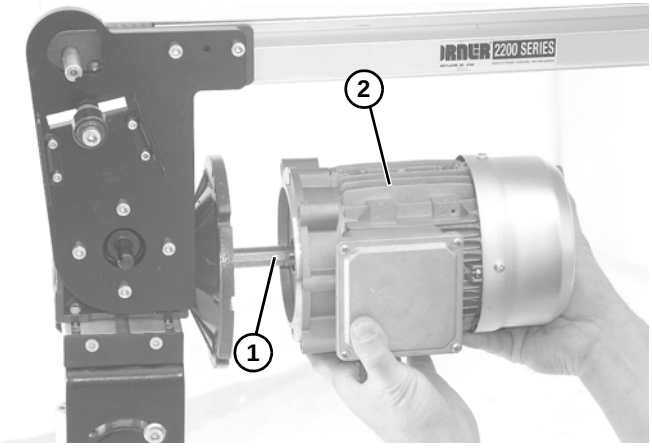


Figure 43

6. Replace wiring:

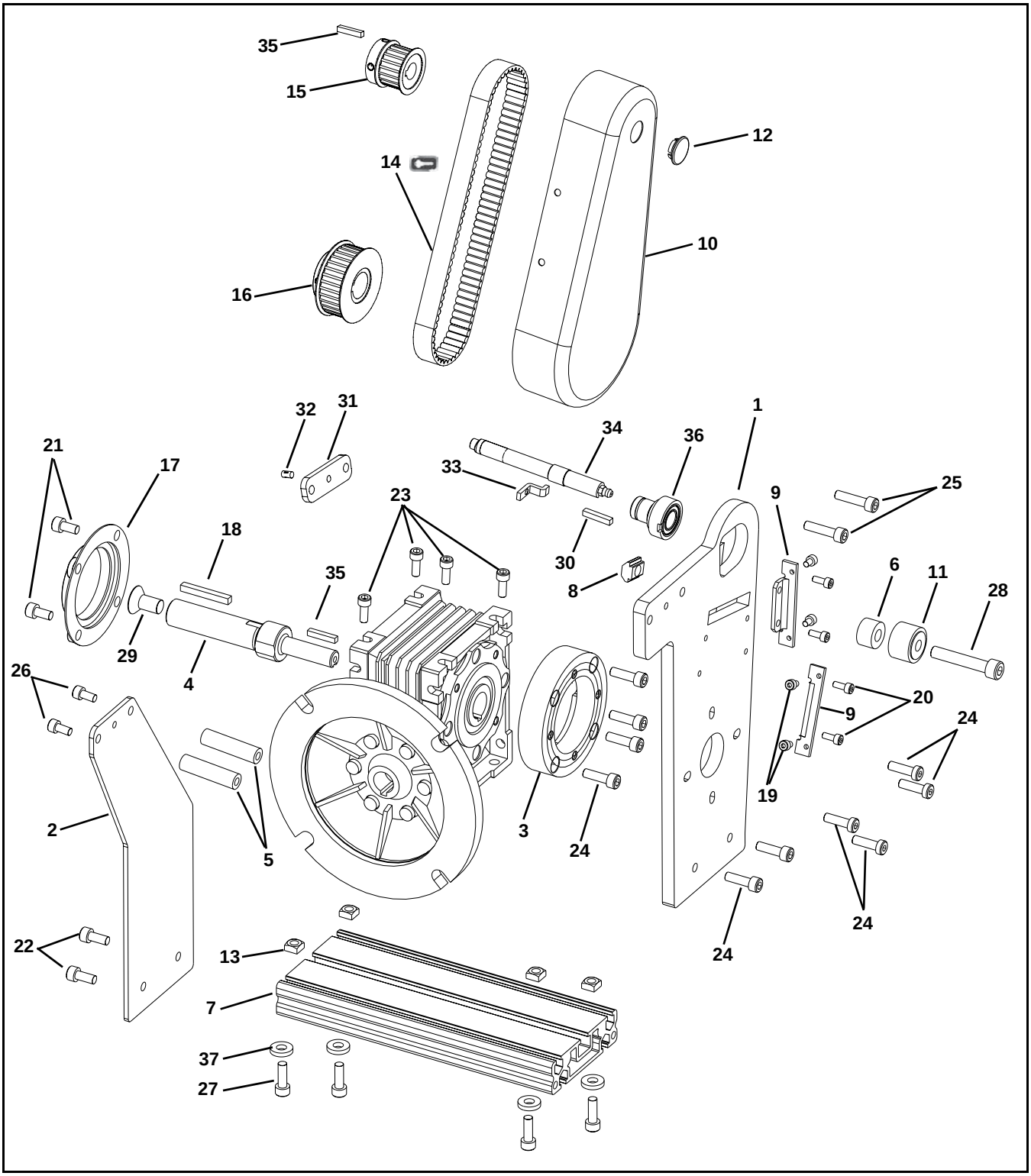
- For a single phase motor, reverse step 1 on page 19.
- For a three phase and VFD variable speed motor, reverse step 2 on page 19.
- For a DC variable speed motor, reverse step 3 on page 20.

Notes

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 Bottom Mount Drive Package

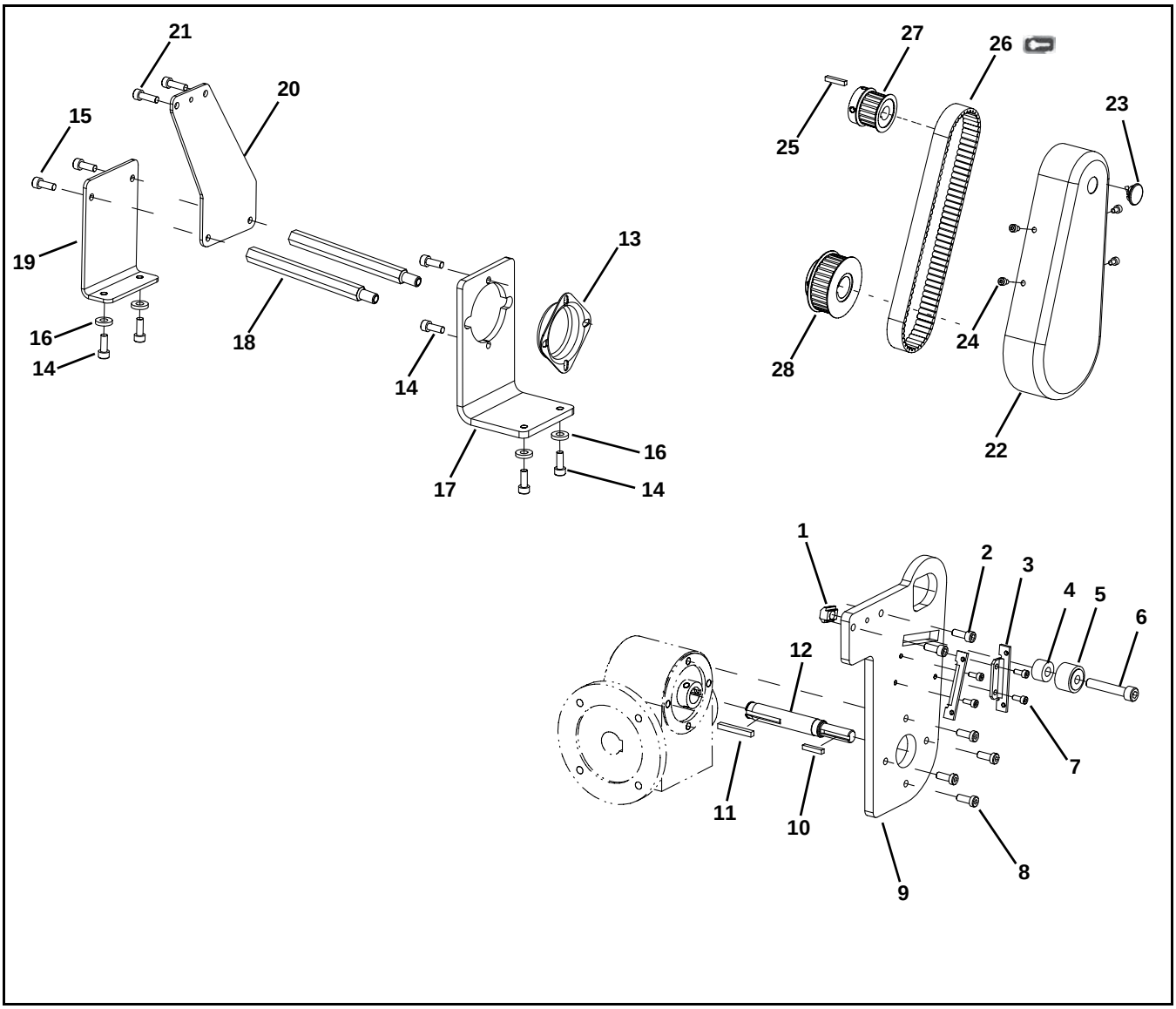


Item	Part Number	Description
1	202279	Mounting Plate
	202278	Mounting Plate (Flush Mount Only)
2	202285	Gearhead/Conveyor Support Plate
	202282	Gearhead/Conveyor Support Plate (Flush Mount Only)
	202281	Gearhead/Conveyor Support Plate (4100 Series)
3	350115	Adapter Extrusion
4	350122	Output Shaft (for E-Drive 56 C Face Gearmotors)
	350136	Output Shaft (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
5	450155	Spacer for 2" (51 mm) Wide Conveyor
	450156	Spacer for 3" (76 mm) Wide Conveyor
	450158M	Spacer for 2" (51 mm) Wide Conveyor (6200 Series)
	450157M	Spacer for 3" (76 mm) Wide Conveyor (6200 Series)
6	450445	Spacer
7	202286-LLLLL	Extrusion
8	202390M	Nut
9	450375	Cover Mounting Bracket
10	450376M	Drive Guard
11	802-046	Bearing
12	807-226	Snap-out Plastic Plug
13	807-920	Nut
	990603M	Nut (Modular Belt Conveyors Only)
14	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
15	450365MP	Driven Pulley, 19 Tooth
	450366MP	Driven Pulley, 22 Tooth
	450367MP	Driven Pulley, 28 Tooth
	450368MP	Driven Pulley, 32 Tooth
16	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
17	807-2016	Plastic Cover
18	912-084	Square Key, 0.188" x 0.150" (for E-Drive 56 C Face Gearmotors)
	980636M	Square Key, 6 mm x 36 mm (for E-Drive IEC 63B5 and IEC 71B5 Gearmotors)
19	920406M	Socket Head Screw, M4-.70 x 6 mm
20	920410M	Socket Head Screw, M4-.70 x 10 mm
21	920612M	Socket Head Screw, M6-1.00 x 12 mm
22	920614M	Socket Head Screw, M6-1.00 x 14 mm
23	920616M	Socket Head Screw, M6-1.00 x 16 mm

Item	Part Number	Description
24	920620M	Socket Head Screw, M6-1.00 x 20 mm
25	920625M	Socket Head Screw, M6-1.00 x 25 mm
26	920620M	Socket Head Screw, M6-1.00 x 20 mm
	920670M	Socket Head Screw, M6-1.00 x 70 mm for 2" (51 mm) Wide Conveyors
	920645M	Socket Head Screw, M6-1.00 x 45 mm for 3" (76 mm) Wide Conveyors
27	920694M	Low Head Cap Screw, M6-1.00 x 20 mm
	920618M	Socket Head Screw, M6-1.00 x 18 mm (4100 Series)
28	920845M	Socket Head Screw, M8-1.25 x 45 mm
29	931020MSS	Flat Head Screw M10-1.50 x 20 mm
30	980422M	Square Key, 4 mm x 22 mm
31	450027M	Drive Spacer (6200 Series)
32	807-952	Groove Pin (6200 Series)
33	43-38-08	Outboard Retaining Clip (4100 Series)
34	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)
35	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)
36	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)
37	605279P	Hard Washer
LLLLL = Part length in inches with two decimal places.		
Length Example: Length = 12.68" LLLLL = 01268		

Service Parts

MPB Series Flat Belt Bottom Mount Drive Package (Old Style Gearmotor Only)

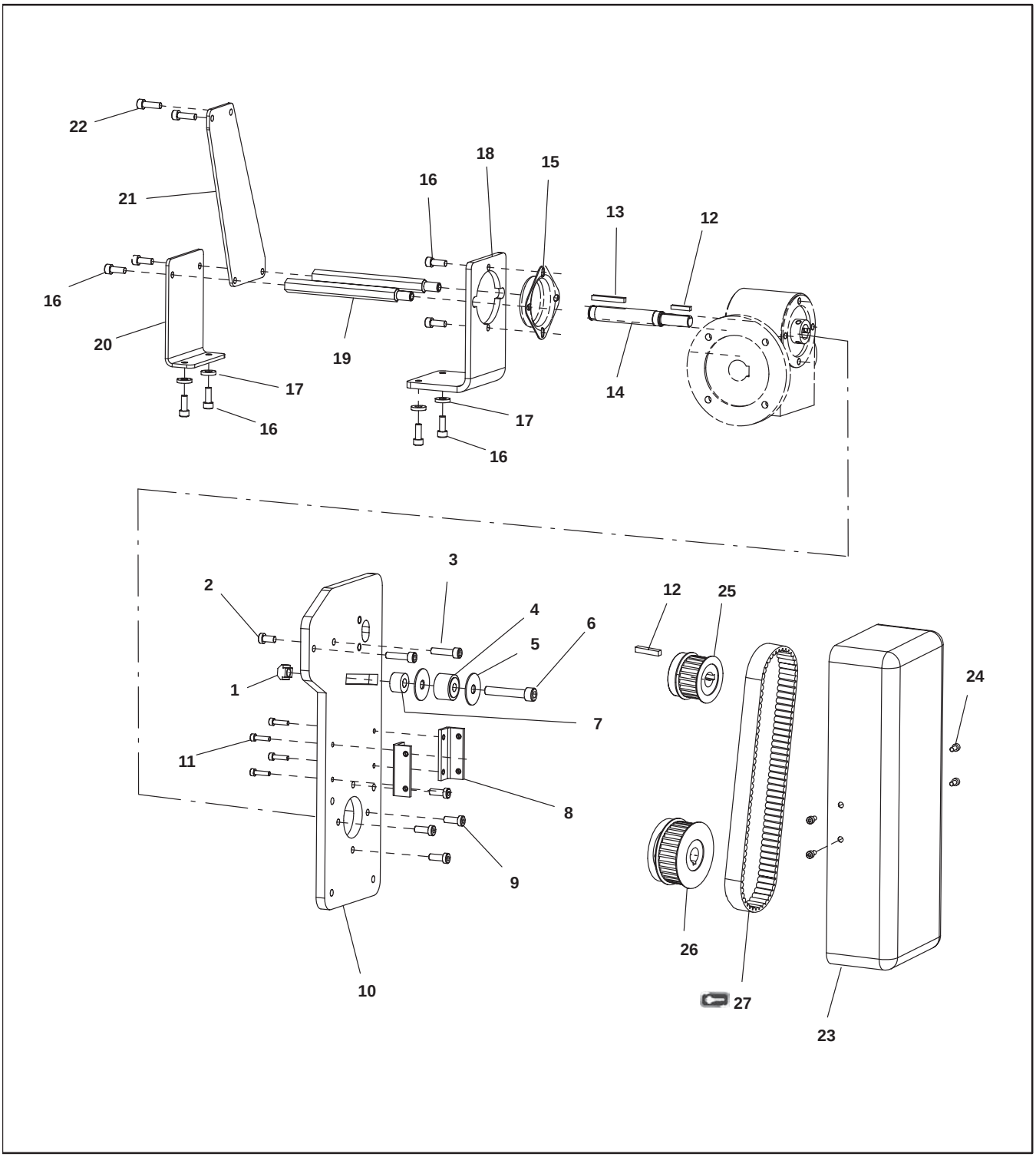


Item	Part Number	Description
1	202390M	Nut
2	920625M	Socket Head Screw M6x25mm
3	450375M	Cover Mounting Bracket
4	450445	Spacer
5	802–046	Bearing
6	920845M	Socket Head Screw M8x45mm
7	920410M	Socket Head Screw M4x10mm
8	920693M	Socket Low Head Screw M6x16mm
9	450443M	Grove Mounting Plate
10	980422M	Square Key 4mm x 22mm
11	912–084	Square Key, 0.188 x 1.5”
12	450444M	Grove Output Shaft 12mm
13	300139	Drive–Bearing Shaft Cover
14	920616M	Socket Head Screw M6x16mm
15	920608M	Socket Head Screw M6x8mm
16	605279P	Hard Washer
17	450441M	Gearhead Support Bracket
18	4533WWM	Gearhead Support Hex Post
19	450440M	End Support Bracket
20	450442M	Gearhead/Conveyor Support Plate

Item	Part Number	Description
21	920620M	Socket Head Screw M6x20mm
22	450376M	Drive Guard
23	807–226	Snap–out Plastic Plug
24	920406M	Socket Head Screw M4x6mm
25	980422M	Square Key 4mm x 22mm
26	814-104	Timing Belt, 15mm W x 450mm L
	814-105	Timing Belt, 15mm W x 460mm L
	814-065	Timing Belt, 15mm W x 475mm L
	814-112	Timing Belt, 15mm W x 495mm L
	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
27	450365MP	Driven Pulley, 19Tooth, 12mm bore
	450366MP	Driven Pulley, 22Tooth, 12mm bore
	450367MP	Driven Pulley, 28Tooth, 12mm bore
	450368MP	Driven Pulley, 32Tooth, 12mm bore
28	450365MP	Drive Pulley, 19Tooth, 12mm bore
	450366MP	Drive Pulley, 22Tooth, 12mm bore
	450367MP	Drive Pulley, 28Tooth, 12mm bore
	450368MP	Drive Pulley, 32Tooth, 12mm bore
	450369MP	Drive Pulley, 44Tooth, 12mm bore
	450370MP	Drive Pulley, 48Tooth, 12mm bore
WW = Conveyor width ref.: 04, 06, 12, 18, 24		

Service Parts

MPB Series Cleated Belt Bottom Mount Drive Package (Old Style Gearmotor Only)

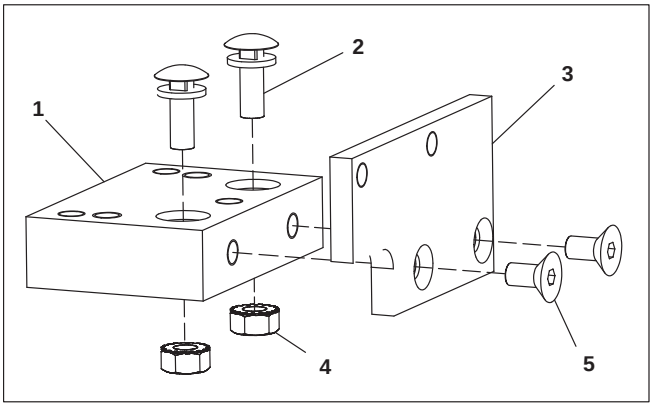


Item	Part Number	Description
1	202390M	Nut
2	920692M	Socket Low Head Screw M6 x 12mm
3	920625M	Socket Head Screw M6x25mm
4	802–046	Bearing
5	807–1133	Washer
6	920845M	Socket Head Screw M8x45mm
7	450445	Spacer
8	243402	Cover Mounting Angle
9	920693M	Socket Low Head Screw M6x16mm
10	243401	Mounting Plate
11	920416M	Socket Head Screw M4x16mm
12	980422M	Square Key 4mm x 22mm
13	912–084	Square Key, 0.188 x 1.5”
14	450444M	Grove Output Shaft 12mm
15	300139	Drive–Bearing Shaft Cover
16	920616M	Socket Head Screw M6x16mm
17	605279P	Hard Washer
18	450441M	Gearhead Support Bracket
19	4533WWM	Gearhead Support Hex Post
20	450440M	End Support Bracket

Item	Part Number	Description
21	243403	Gearhead/Conveyor Support Plate
22	920620M	Socket Head Screw M6x20mm
23	300871M	Drive Cover
24	920408M	Socket Head Screw M4x8mm
25	450367MP	Driven Pulley, 28Tooth, 12mm bore
	450368MP	Driven Pulley, 32Tooth, 12mm bore
26	450366MP	Drive Pulley, 22Tooth, 12mm bore
	450367MP	Driven Pulley, 28Tooth, 12mm bore
	450369MP	Drive Pulley, 44Tooth, 12mm bore
	450370MP	Drive Pulley, 48Tooth, 12mm bore
27	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
WW = Conveyor width ref.: 04, 06, 12, 18, 24		

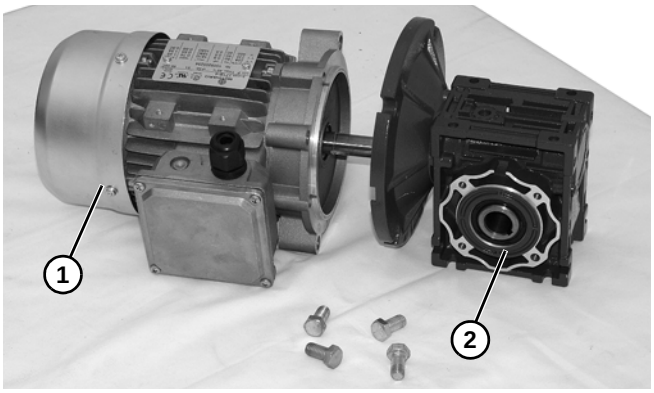
Service Parts

4100 Series Adapter Package



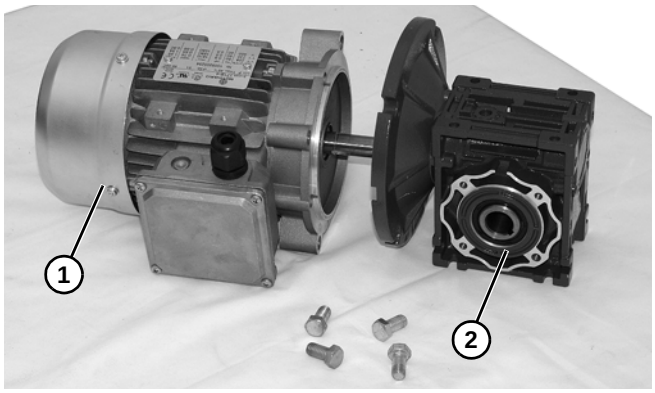
Item	Part No.	Part Description
1	609486	Mounting Block 1” (25mm)
	609487	Mounting Block 2” (51mm)
	609488	Mounting Block 3” (76mm)
	609479	Mounting Block 4” (102mm)
	609480	Mounting Block 5” (127mm)
	609481	Mounting Block 6” (152mm)
	609482	Mounting Block 7” (178mm)
	609483	Mounting Block 8” (203mm)
	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

U.S. Version Gearmotors



Item	Part No.	Part Description
1	62MEH411FN	Motor, 0.5 hp (0.37 Kw) 115/230 Volts, 60 Hz, 1-Phase, non–reversing
	62MHD9DEN	Motor, 0.5 hp (0.37 Kw) 90 Volts DC
	32MES423EN	Motor, 0.5 hp (0.37 Kw) 230V, 10–60Hz, Inverter Duty, 3 Phase
	32MEH423FN	Motor, 0.5 hp (0.37 Kw) 208–230/460 Volts, 60 Hz, 3-Phase
2	32M005ES	Gear Reducer, 5:1, 56C
	32M010ES	Gear Reducer, 10:1, 56C
	32M020ES	Gear Reducer, 20:1, 56C
	32M040ES	Gear Reducer, 40:1, 56C
	32M060ES	Gear Reducer, 60:1, 56C

CE Version Gearmotors



Item	Part No.	Part Description
1	826-342	Motor, 0.19 Kw 230/400 Volts, 50 Hz, 3-Phase
2	820-262	Gear Reducer, 5:1, 71B5 RH
	820-263	Gear Reducer, 5:1, 71B5 LH
	820-264	Gear Reducer, 15:1, 71B5 RH
	820-265	Gear Reducer, 15:1, 71B5 LH
	820-266	Gear Reducer, 50:1, 71B5 RH
	820-267	Gear Reducer, 50:1, 71B5 LH

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.

<table>
<tr><th></th><th colspan="8">Product Type</th></tr>
<tr><th></th><th colspan="7">Standard Products</th><th>Engineered to order parts</th></tr>
<tr><th>Product Line</th><th>Conveyors</th><th>Gearmotors & Mounting Packages</th><th>Support Stands</th><th>Accessories</th><th>Spare Parts (non-belt)</th><th>Spare Belts - Standard Flat Fabric</th><th>Spare Belts - Cleated & Specialty Fabric</th><th>Spare Belts - Plastic Chain</th><th>All equipment and parts</th></tr>
<tr><td>1100</td><td colspan="6" rowspan="14">30% return fee for all products except:
50% return fee for conveyors with modular belt, cleated belt or specialty belts</td><td colspan="2" rowspan="15">non-returnable</td><td rowspan="15">case-by-case</td></tr>
<tr><td>2200</td></tr>
<tr><td>2200 Modular Belt</td></tr>
<tr><td>2200 Precision Move</td></tr>
<tr><td>2300</td></tr>
<tr><td>2300 Modular Belt</td></tr>
<tr><td>3200</td></tr>
<tr><td>3200 LPZ</td></tr>
<tr><td>3200 Precision Move</td></tr>
<tr><td>4100</td></tr>
<tr><td>5200</td></tr>
<tr><td>5300</td></tr>
<tr><td>6200</td></tr>
<tr><td>Controls</td></tr>
<tr><td>7200 / 7300</td><td colspan="6">50% return fee for all products</td></tr>
<tr><td>7350</td><td colspan="9" rowspan="4">non-returnable</td></tr>
<tr><td>7360</td></tr>
<tr><td>7400</td></tr>
<tr><td>7600</td></tr>
</table>

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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