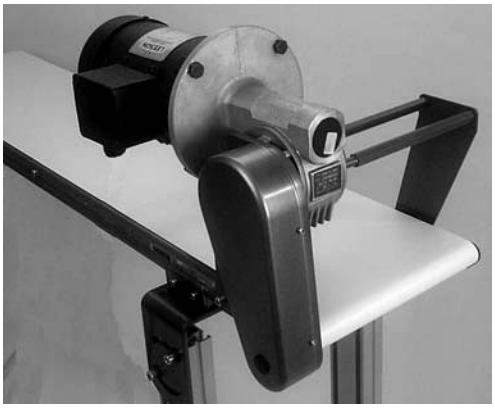
DORNER®

# Installation, Maintenance & Parts Manual

## 2100, 2200, 4100, 6200 and MPB Series Top Mount Drive Package for Heavy Load 90° Industrial 60 Hz Gearmotors



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# Warnings – General Safety

**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**

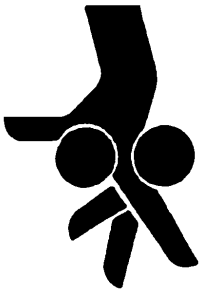
**Gearmotors may be HOT.**

**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.**

# Introduction

**IMPORTANT: Some illustrations may show guards removed. Do NOT operate equipment without guards.**

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner 2100 Series conveyors are covered by the following patent numbers: 5131529, 5174435, and corresponding patents and patent applications in other countries.

Dorner 2200 and MPB Series conveyors are covered by patent number 5174435 and corresponding patents and patent applications in other countries.

Dorner 4100 Series conveyors are covered by patent number 3923148 and corresponding patents and patent applications in other countries.

Dorner 6200 Series conveyors are covered by patent numbers: 6685009, 5174435, 6109427 and corresponding patents and patent applications in other countries.

Dorner's Limited Warranty applies.

Dorner reserves the right to make changes at any time without notice or obligation.

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 .

# Product Description

Refer to Figure 1 for typical components.

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

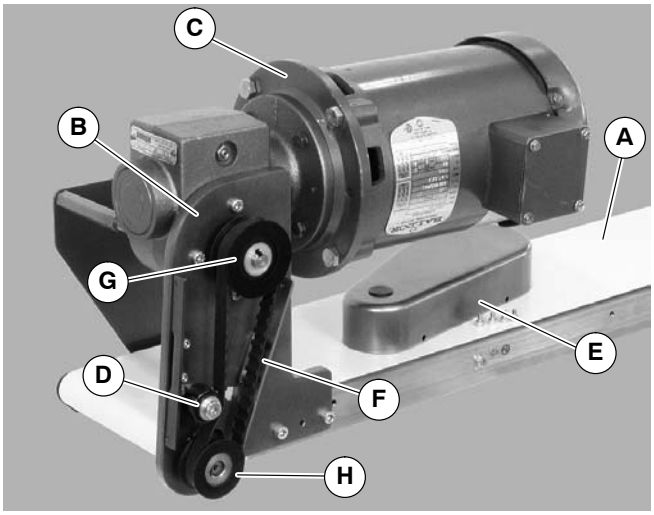



***Figure 1***

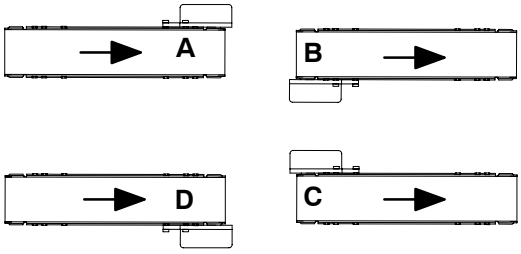
# Specifications

## Gearmotor Mounting Package Models:

### Example:

**2 M T 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 : H= 90° Industrial**
- **Mount Style : T= Top Mount**
- **Language Code: M = U.S. English**
- **2 = 2100 Series Conveyor**
  **22 = 2200 Series Conveyor**
  **4 = 4100 Series Conveyor**
  **6 = 6200 Series Conveyor**
  **2P = MPB Series Conveyor**




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

## Table 1: Gearmotor Specifications

| | 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 | | | |

# Specifications

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 6 | 1.7 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 22 | 32 |
| 8 | 2.4 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 32 | 32 |
| 12 | 3.7 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 48 | 32 |
| 12 | 3.7 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 32 | 32 |
| 18 | 5.5 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 48 | 32 |
| 25 | 7.6 | 32M020HS4(vp)F(n) | 20:1 | 86 | 90 | 10.2 | 32 | 32 |
| 37 | 11.3 | 32M020HS4(vp)F(n) | 20:1 | 86 | 90 | 10.2 | 48 | 32 |
| 49 | 14.9 | 32M010HS4(vp)F(n) | 10:1 | 173 | 45 | 5.1 | 32 | 32 |
| 74 | 22.6 | 32M010HS4(vp)F(n) | 10:1 | 173 | 45 | 5.1 | 48 | 32 |
| 99 | 30.2 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 32 | 32 |
| 148 | 45.1 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 48 | 32 |
| 169 | 51.5 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 48 | 28 |
| 197 | 60.0 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 44 | 22 |
| 215 | 65.5 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 48 | 22 |
| 249 | 75.9 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 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)

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

| Belt Speed | | Gearmotors * | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 6 | 1.7 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 19 | 32 |
| 10 | 3.0 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 28 | 28 |
| 15 | 4.6 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 28 | 28 |
| 16 | 4.9 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 44 | 28 |
| 24 | 7.3 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 44 | 28 |
| 30 | 9.1 | 32M020HS4(vp)F(n) | 20:1 | 86 | 90 | 10.2 | 28 | 28 |
| 48 | 14.6 | 32M020HS4(vp)F(n) | 20:1 | 86 | 90 | 10.2 | 44 | 28 |
| 61 | 18.6 | 32M010HS4(vp)F(n) | 10:1 | 173 | 45 | 5.1 | 28 | 28 |
| 95 | 29.0 | 32M010HS4(vp)F(n) | 10:1 | 173 | 45 | 5.1 | 44 | 28 |
| 104 | 31.7 | 32M010HS4(vp)F(n) | 10:1 | 173 | 45 | 5.1 | 48 | 28 |
| 121 | 36.9 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 28 | 28 |
| 138 | 42.1 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 32 | 28 |
| 176 | 53.6 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 32 | 22 |
| 208 | 63.4 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 48 | 28 |
| 242 | 73.8 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 44 | 22 |
| 264 | 80.5 | 32M005HS4(vp)F(n) | 5:1 | 345 | 25 | 2.8 | 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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 13 | 4.0 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 22 | 32 |
| 20 | 6.0 | 32M060HS4(vp)F(n) | 60:1 | 29 | 270 | 30.5 | 28 | 28 |
| 29 | 8.9 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 28 | 28 |
| 44 | 13.4 | 32M040HS4(vp)F(n) | 40:1 | 43 | 247 | 27.9 | 48 | 32 |
| 59 | 17.9 | 32M020HS4(vp)F(n) | 20:1 | 86 | 90 | 10.2 | 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)

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM* | In-lb* | N-m* | | |
| .6–5.6 | .2–1.7 | 32M060HS423EN | 60:1 | 29 | 226 | 35.5 | 22 | 32 |
| .8–8.2 | .3–2.5 | 32M060HS423EN | 60:1 | 29 | 226 | 35.5 | 32 | 32 |
| 1.2–12 | .4–3.8 | 32M040HS423EN | 40:1 | 43 | 247 | 27.9 | 28 | 28 |
| 2.5–25 | .8–7.5 | 32M020HS423EN | 20:1 | 86 | 248 | 27.9 | 32 | 32 |
| 4.9–49 | 1.5–15 | 32M010HS423EN | 10:1 | 173 | 156 | 17.6 | 32 | 32 |
| 9.9–99 | 3–30 | 32M005HS423EN | 5:1 | 345 | 81 | 9.1 | 32 | 32 |
| 14–148 | 4.5–45 | 32M005HS423EN | 5:1 | 345 | 81 | 9.1 | 48 | 32 |
| 19–197 | 6–60 | 32M005HS423EN | 5:1 | 345 | 58 | 6.5 | 44 | 22 |
| 24–249 | 7.6–76 | 32M005HS423EN | 5:1 | 345 | 58 | 6.5 | 48 | 19 |

***** At 60 Hz

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

| Belt Speed | | Gearmotors * | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM* | In-lb* | N-m* | | |
| .6–6 | .2–1.8 | 32M060HS423EN | 60:1 | 29 | 270 | 30.5 | 19 | 32 |
| 1–10 | .3–3.1 | 32M060HS423EN | 60:1 | 29 | 270 | 30.5 | 28 | 28 |
| 1.5–15 | .5–4.6 | 32M040HS423EN | 40:1 | 43 | 247 | 27.9 | 28 | 28 |
| 3–30 | .9–9.2 | 32M020HS423EN | 20:1 | 86 | 167 | 18.9 | 28 | 28 |
| 6–60 | 1.8–18 | 32M010HS423EN | 10:1 | 173 | 115 | 13 | 28 | 28 |
| 10–104 | 3.2–32 | 32M010HS423EN | 10:1 | 173 | 115 | 13 | 48 | 28 |
| 12–121 | 3.7–37 | 32M005HS423EN | 5:1 | 345 | 58 | 6.5 | 28 | 28 |
| 26–264 | 8.1–81 | 32M005HS423EN | 5:1 | 345 | 58 | 6.5 | 48 | 22 |

***** At 60 Hz

# Specifications

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM* | In-lb* | N-m* | | |
| 1.3–13.4 | .4–4.1 | 32M060HS423EN | 60:1 | 29 | 270 | 30.5 | 22 | 32 |
| 2–19 | .9–5.9 | 32M060HS423EN | 60:1 | 29 | 270 | 30.5 | 28 | 28 |
| 2.9–29 | .9–8.9 | 32M040HS423EN | 40:1 | 43 | 247 | 27.9 | 28 | 28 |
| 5.9–59 | 1.8–18 | 32M020HS423EN | 20:1 | 86 | 167 | 18.9 | 28 | 28 |
| 11–117 | 3.6–36 | 32M010HS423EN | 10:1 | 173 | 115 | 13 | 28 | 28 |
| 17–175 | 5.4–54 | 32M010HS423EN | 10:1 | 173 | 115 | 13 | 48 | 32 |
| 23–234 | 7.1–71 | 32M005HS423EN | 5:1 | 345 | 58 | 6.5 | 28 | 28 |

* At 60 Hz

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 1.0–8.2 | .3–2.5 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 22 | 32 |
| 1.4–12 | .4–3.6 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 32 | 32 |
| 2.1–18 | .7–5.4 | 32M040PSD3DEN | 40:1 | 63 | 215 | 24.3 | 32 | 32 |
| 4.3–36 | 1.3–11 | 32M020PSD3DEN | 20:1 | 125 | 90 | 10.2 | 32 | 32 |
| 9–71 | 2.6–22 | 32M010PSD3DEN | 10:1 | 250 | 72 | 8.1 | 32 | 32 |
| 17–143 | 5.2–43 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 32 | 32 |
| 26–214 | 7.8–65 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 48 | 32 |
| 29–245 | 9.0–75 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 48 | 28 |

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 1.8–14 | .5–4.5 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 28 | 28 |
| 2.6–22 | .8–6.7 | 32M040PSD3DEN | 40:1 | 63 | 215 | 24.3 | 28 | 28 |
| 2.8–23 | .8–7 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 44 | 28 |
| 5.3–44 | 1.6–13 | 32M020PSD3DEN | 20:1 | 125 | 90 | 10.2 | 28 | 28 |
| 10–88 | 3.2–27 | 32M010PSD3DEN | 10:1 | 250 | 72 | 8.1 | 28 | 28 |
| 17–138 | 5–42 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 44 | 28 |
| 21–176 | 6.4–54 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 28 | 28 |
| 33–276 | 10–84 | 32M005PSD3DEN | 5:1 | 500 | 25 | 2.8 | 44 | 28 |

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

| Belt Speed | | Gearmotors | | | | | Drive Pulley | Driven Pulley |
|---|---|---|---|---|---|---|---|---|
| Ft/min | M/min | Part Number | Gear Ratio | RPM | In-lb | N-m | | |
| 2.3–19 | .7–5.9 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 22 | 32 |
| 3.4–28 | 1–8.6 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 28 | 28 |
| 5.1–42 | 1.6–12.9 | 32M040PSD3DEN | 40:1 | 63 | 215 | 24.3 | 28 | 28 |
| 5.3–44 | 1.6–13 | 32M060PSD3DEN | 60:1 | 42 | 270 | 30.5 | 44 | 28 |
| 10–85 | 3–26 | 32M020PSD3DEN | 20:1 | 125 | 90 | 10.2 | 28 | 28 |
| 15–127 | 4.7–39 | 32M020PSD3DEN | 20:1 | 125 | 90 | 10.2 | 48 | 32 |
| 20–170 | 6–52 | 32M010PSD3DEN | 10:1 | 250 | 72 | 8.1 | 28 | 28 |
| 31–255 | 9–77 | 32M010PSD3DEN | 10:1 | 250 | 72 | 8.1 | 48 | 32 |

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

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

## Required Tools

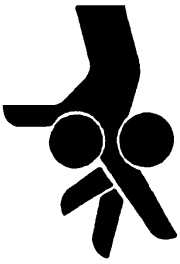
- Hex key wrenches:
  2 mm, 2.5 mm, 3 mm, 5 mm
- Torque wrench

## 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**

| | |
|---|---|
| I | Top Mount Assembly |
| J | Drive Pulley |
| K | Cover |
| L | M4 Socket Head Screws (4x) |
| M | Driven Pulley |
| N | Key |
| O | M6 Socket Head Screws (2x) |
| P | Timing Belt |
| Q | Support Plate Spacer |
| R | Support Plate |
| S | M6 Hex–Post Screws (2x) |
| T | Hex Posts (2x) |
| U | M6 Support Plate Screws (2x) |
| V | Support Tubes (2x, for 2" & 3" conveyors only) |

**1.** Typical components (Figure 2)

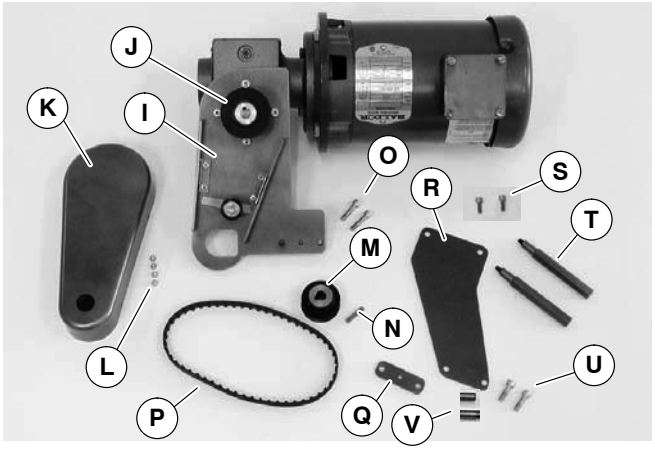



*Figure 2*

**NOTE: Support Plate Spacer (Q of Figure 2) required for 2" & 3" wide conveyors only.**

**NOTE: 4100 conveyors do not include items Q through U of Figure 2.**

**NOTE: Gearmotor may be operated in positions 1, 2 or 3 (Figure 3).**

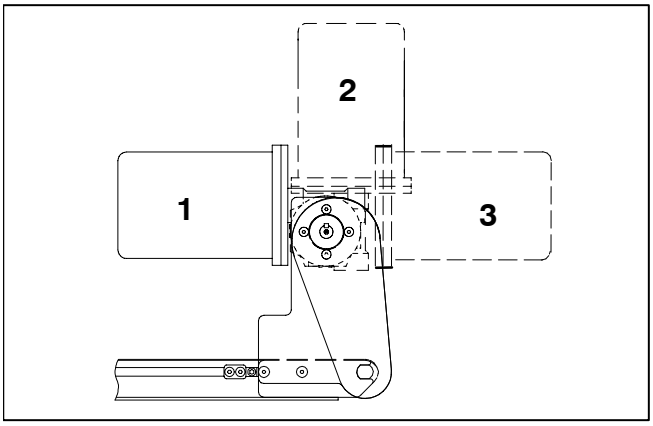



*Figure 3*

**2.** If required, change gearmotor position by removing four (4) screws (W of Figure 4). Rotate gearmotor to other position and replace screws (W). Tighten to 103 in-lb (12 Nm).

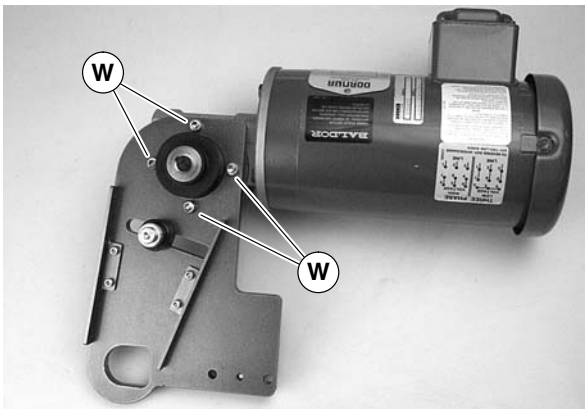



*Figure 4*

**NOTE: 6200 conveyor shown, other Series similar.**

3. Locate drive output shaft (X of Figure 5) and remove two (2) screws (Y).

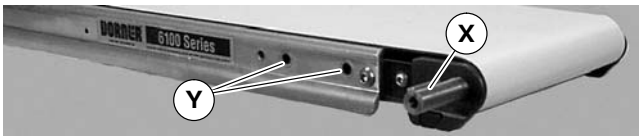



*Figure 5*

*Figure 6 – 2200 Series* Gearmotor is mounted to Head Plate

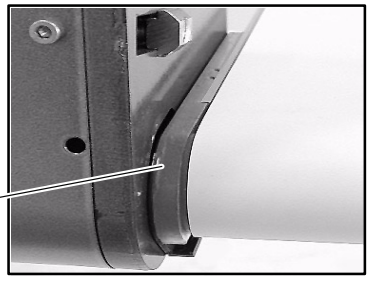


*Figure 7 – 6200 Series* Gearmotor is mounted to Drive Spacer

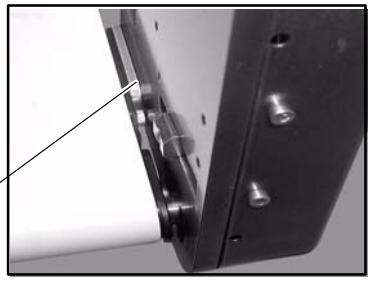


*Figure 8 – 4100 Series* Gearmotor is mounted to Drive Adapter Plate

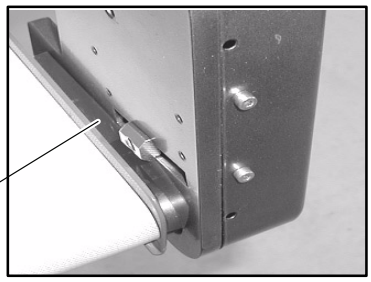


*Figure 9 – 2100 Series* Gearmotor is mounted to Head Plate

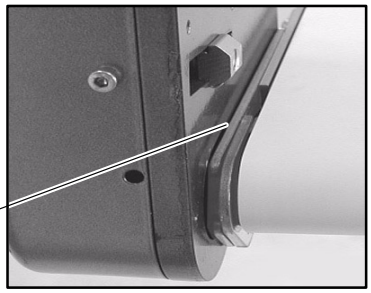
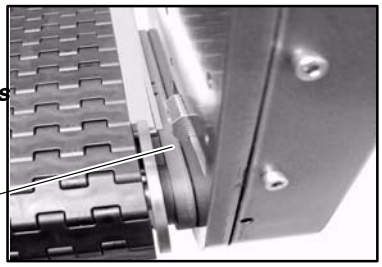


*Figure 10 – MPB Series* Gearmotor is mounted to Head Plate



4. Attach mount assembly (I of Figure 11) with screws (O). Tighten to 80 in-lb (9 Nm). For 4100 conveyors, proceed to step 7.

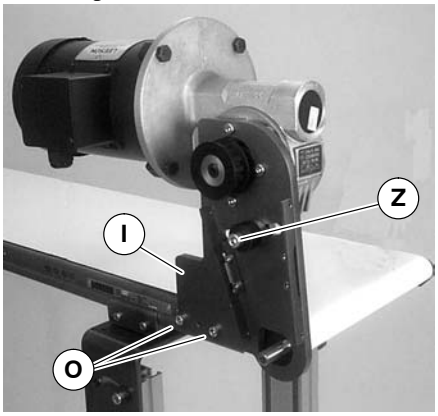



*Figure 11*

5. On side opposite drive output shaft, remove two screws (AA of Figure 12).

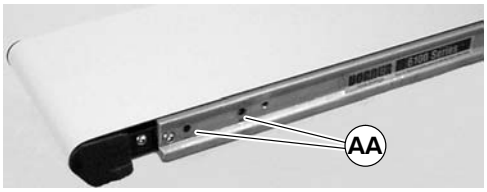



*Figure 12*

### For 2" & 3" Wide Conveyors

**6a.** Install hex posts (T of Figure 13). Attach wide end of support plate (R) to hex posts with screws (S). Attach narrow end of support plate to conveyor, using spacers (V) and screws (U). Tighten screws to 80 in-lb (9 Nm).

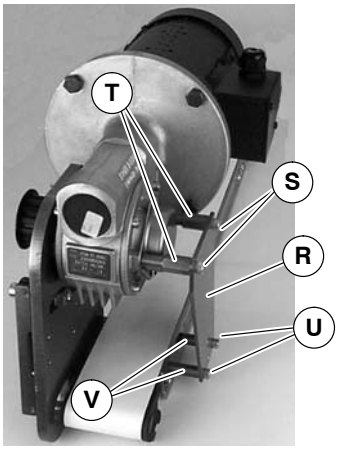



*Figure 13*

### For 4"-and-Wider Conveyors

**6b.** Install hex posts (T of Figure 14). Attach wide end of support plate (R) to hex posts with screws (S). Attach narrow end of support plate to conveyor, using spacer (Q) and screws (U). Tighten screws to 80 in-lb (9 Nm).

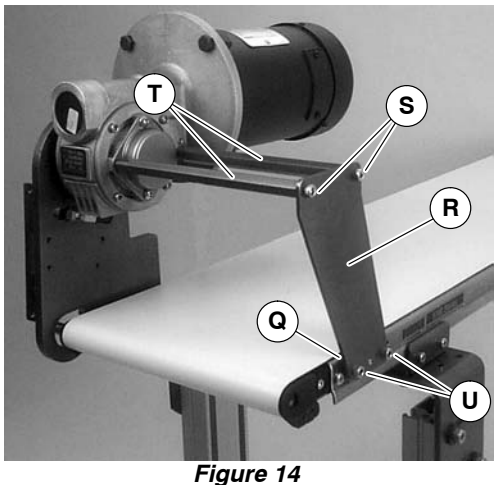



*Figure 14*


**7.** Install key (N of Figure 15).

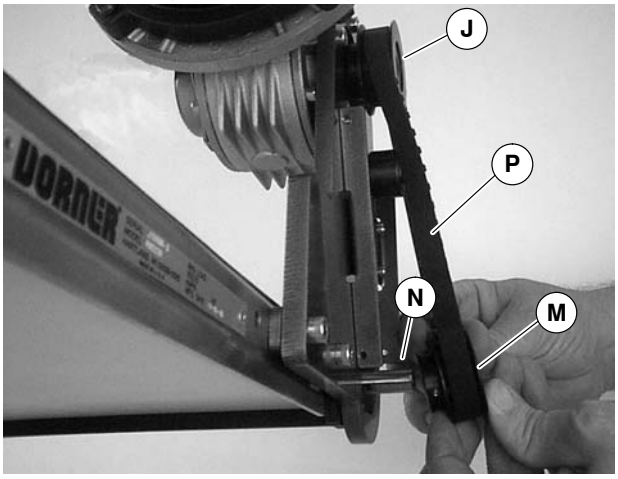



*Figure 15*

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

**9.** Remove cam bearing and spacer (Z of Figure 11). Place the cam bearing and spacer (Z of Figure 16) next to the driven pulley (M). Ensure the flanges of the driven pulley are aligned with the cam bearing. Tighten driven pulley set screws (AB). This will allow for proper belt alignment while conveyor is in use. Install cam bearing and spacer (Z).

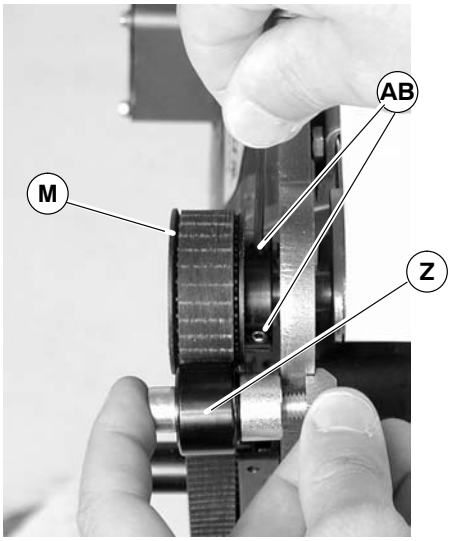



*Figure 16*

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

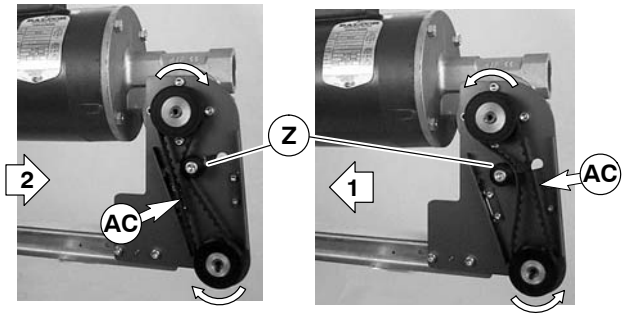



*Figure 17*

**11.** Install cover (K of Figure 18) with four screws (L). Tighten to 35 in-lb (4 Nm).

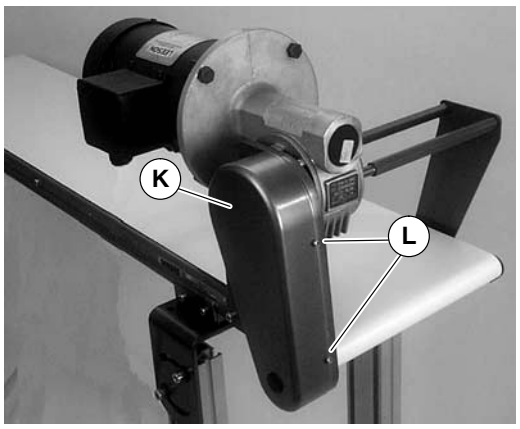



*Figure 18*

# Preventive Maintenance and Adjustment

## 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 screws (L of Figure 18) and remove cover (K).

**2.** Loosen tensioner (Z of Figure 19).

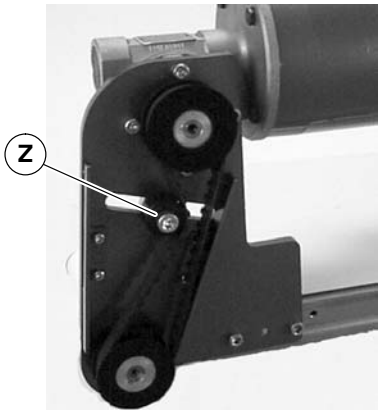



*Figure 19*

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

4. Install cover (K of Figure 18) with four screws (L). 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 screws (L of Figure 18) and remove cover (K).
2. Loosen tensioner (Z of Figure 19).
3. Remove timing belt (P of Figure 20).

**NOTE: If timing belt does not slide over pulley flange, loosen driven pulley set screws (AB of Figure 20) and remove pulley with belt (P). For re-installation, see steps 8 and 9 beginning on page 10.**

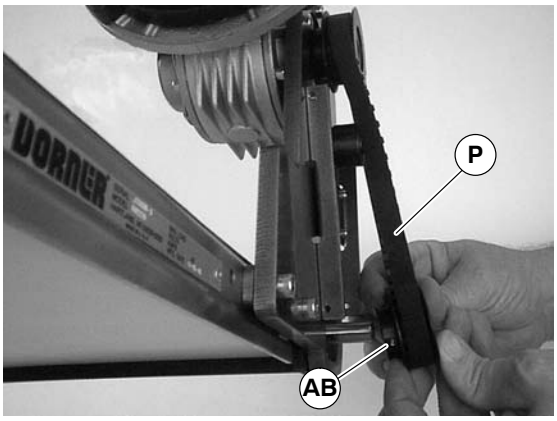



*Figure 20*

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

**NOTE: If drive pulley (J of Figure 21) is replaced, wrap timing belt around drive pulley and complete step 3.**

3. Complete steps 8 through 11 of "Installation" section beginning on page 9.

## Gear Reducer Replacement

**WARNING**

**Exposed moving parts can cause severe injury.**

**LOCK OUT POWER before removing guards or performing maintenance.**

1. Remove four screws (L of Figure 18) and remove cover (K).
2. Loosen tensioner (Z of Figure 19).
3. Loosen drive pulley set screws (AD of Figure 21). Remove drive pulley (J) and timing belt (P).

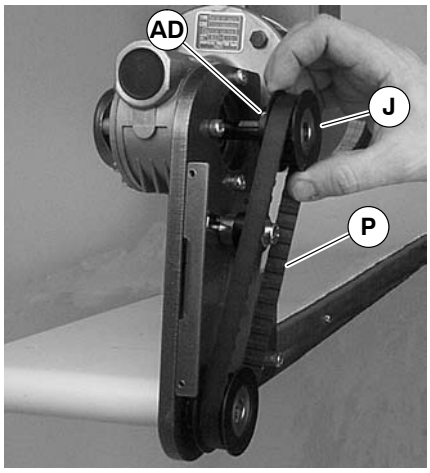



*Figure 21*

4. Remove screws (S & U of Figure 22) and remove support plate (R) and spacer (Q). Remove hex posts (T).

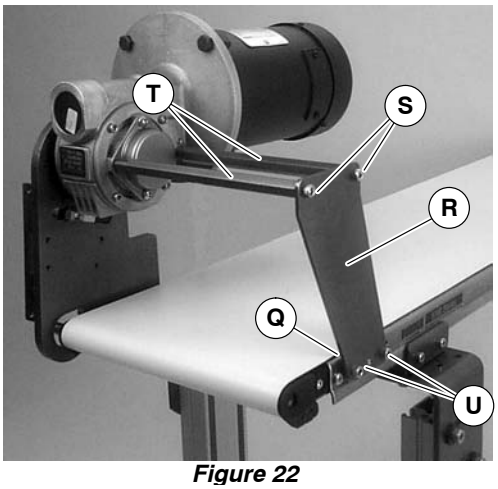



*Figure 22*

5. Remove four (4) gear reducer mounting screws (AE of Figure 23). Remove gearmotor.


*Figure 23*

6. Remove four screws (AF of Figure 24). Detach motor (AG) from gear reducer (AH). Retain motor output shaft key (AI).

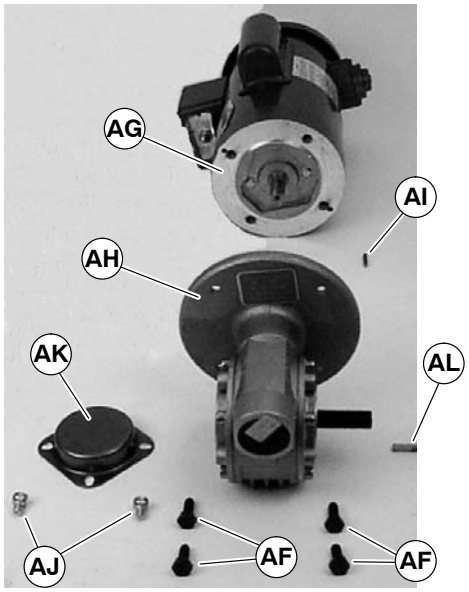



*Figure 24*

7. Remove two (2) screws (AJ) and detach output shaft cover (AK).
8. Remove gear reducer output shaft key (AL).
9. Loosen six (6) set screws (AM of Figure 25). Remove drive shaft (AN) and key (AO).

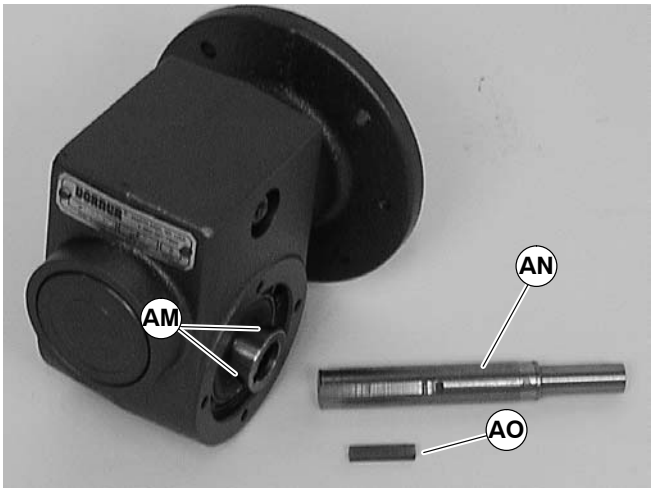



*Figure 25*

**10.** Apply grease (AP of Figure 26) to shaft.

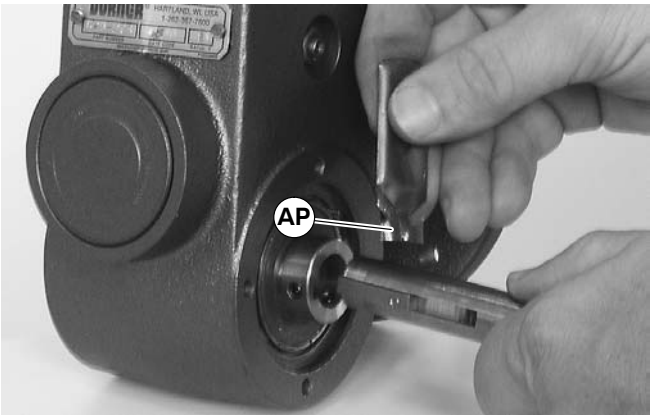



*Figure 26*

**11.** Replace the original shaft components into new gear reducer (see Figure 25).

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

**12.** With key (AI of Figure 24) in keyway, slide motor (AG) and gear reducer (AH) together. Install screws (AF) and tighten.

**13.** Reverse steps 4 and 5 on page 13.

**NOTE: Drive pulley (J of Figure 21) is removed. Wrap timing belt around drive pulley and complete step 14.**

**14.** Complete steps 8 through 11 of "Installation" section on page 9.

## 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**. Remove terminal box screws (AQ of Figure 27) and remove cover (AR).

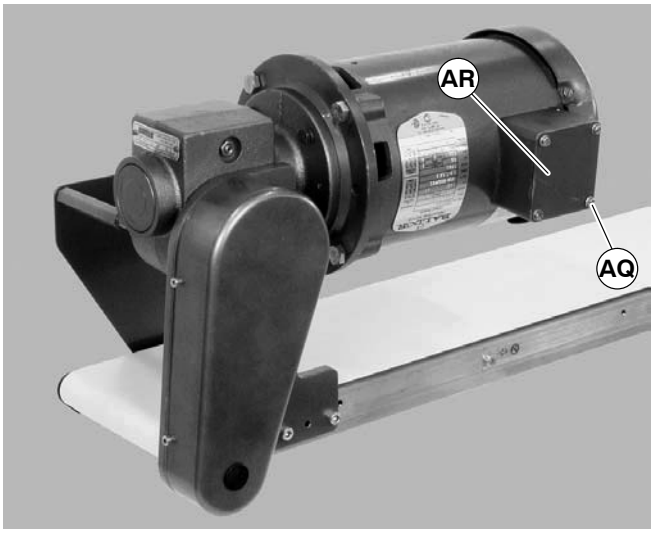



*Figure 27*

**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 (AS of Figure 28).

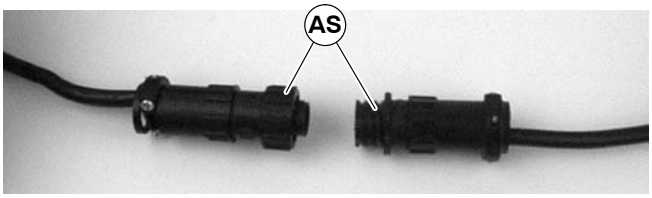



*Figure 28*

4. Remove four screws (AF of Figure 29). Detach motor (AG) from gear reducer (AH). Retain motor output shaft key (AI).

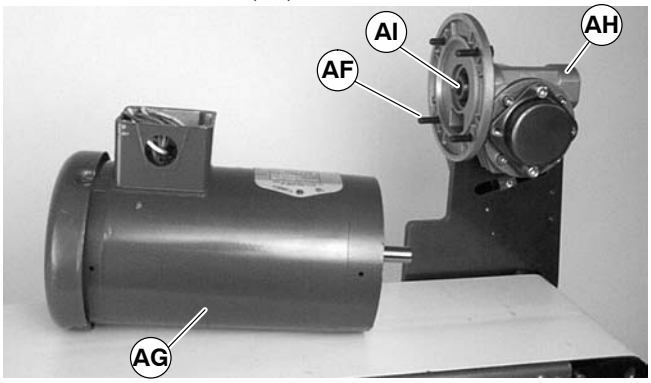



*Figure 29*

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

5. With key (AI of Figure 30) in keyway, slide motor and gear reducer together. Install screws (AF) and tighten.

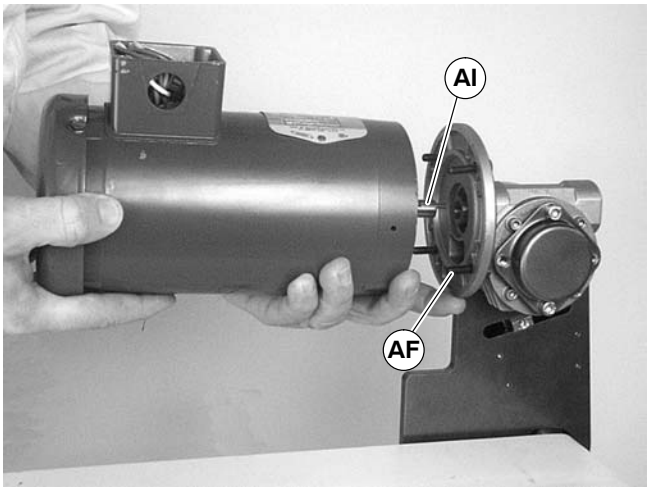



*Figure 30*

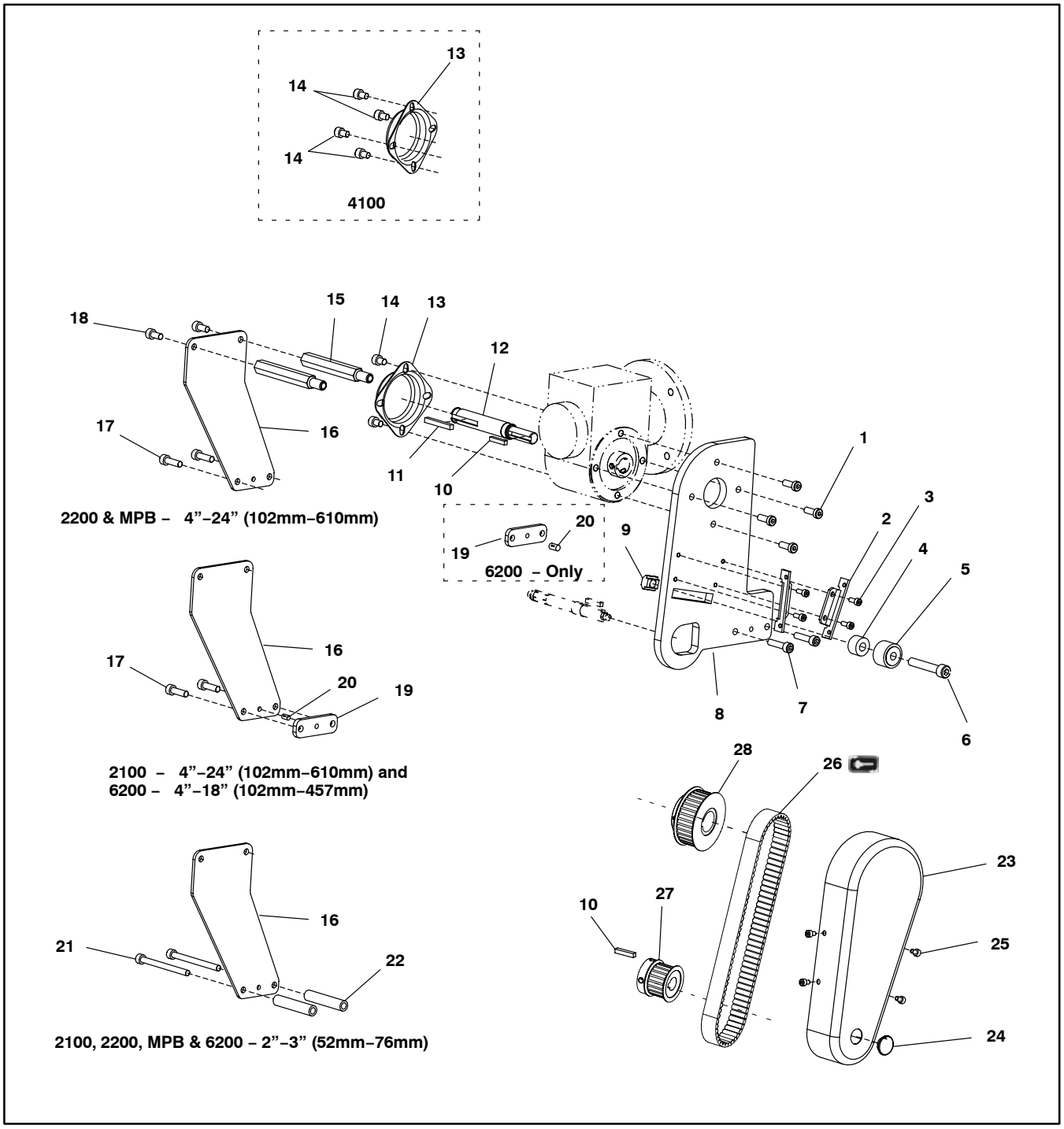
6. Replace wiring:

- For a single phase motor, reverse step 1 on page 14.
- For a three phase and VFD variable speed motor, reverse step 2, on page 14.
- For a DC variable speed motor, reverse step 3 on this page.

# Service Parts

**NOTE: For replacement parts other than those shown on this page, 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.**

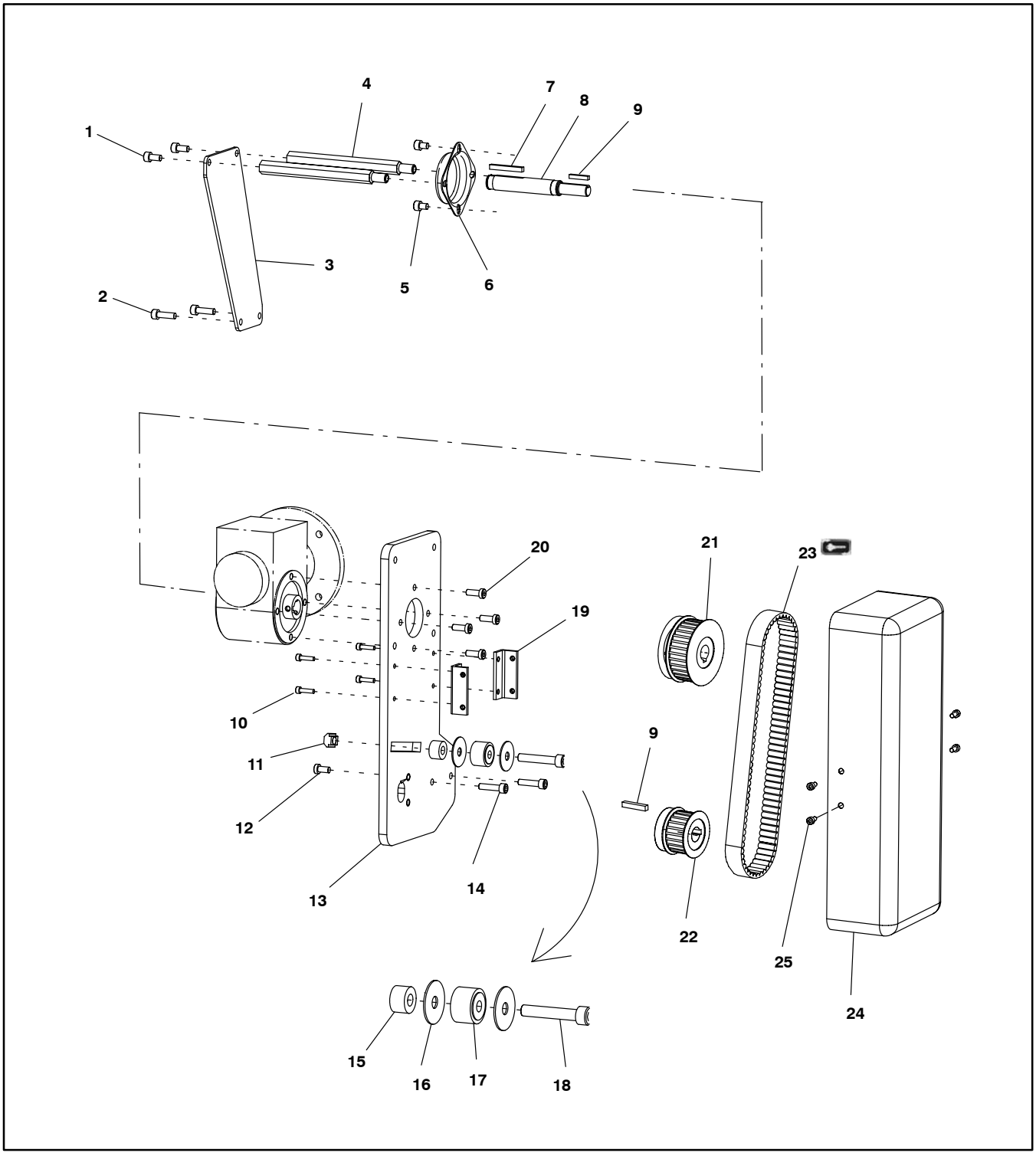
**2100, 2200, 4100, 6200 Series (All) and MPB Series (Flat Belt) Top Mount Drive Package**



| Item | Part Number | Description |
|---|---|---|
| 1 | 920693M | Socket Low Head Screw M6x16mm |
| 2 | 450375M | Cover Mounting Bracket |
| 3 | 920410M | Socket Head Screw M4x10mm |
| 4 | 450445 | Spacer |
| 5 | 802–046 | Bearing |
| 6 | 920845M | Socket Head Screw M8x45mm |
| 7 | 920625M | Socket Head Screw M6x25mm (2100, 2200 & MPB) |
| | 920616M | Socket Head Screw M6x16mm (4100) |
| | 920630M | Socket Head Screw M6x30mm (6200) |
| 8 | 450443M | Grove Mounting Plate |
| 9 | 202390M | Nut |
| 10 | 980422M | Square Key 4mm x 22mm |
| 11 | 912–084 | Square Key .188 x 1.5” |
| 12 | 450444M | Grove Output Shaft 12mm |
| 13 | 300139M | Drive–Bearing Shaft Cover |
| 14 | 920608M | Socket Head Screw M6x8mm |
| 15 | 453304M | Gearhead Support Hex Post – 2” – 4” (51mm – 102mm) Wide Conveyor |
| | 4533WWM | Gearhead Support Hex Post – 5” (127mm) and Wide Conveyor |
| 16 | 450442M | Gearhead/Conveyor Support Plate |
| 17 | 920620M | Socket Head Screw M6x20mm |
| 18 | 920612M | Socket Head Screw M6x12mm |
| 19 | 450027M | Drive Spacer [2100 – 4”–24” (102mm – 610mm) and 6200 (2x)] |
| 20 | 807–952 | Grooved Pin [2100 – 4”–24” (102mm – 610mm) and 6200 (2x)] |
| 21 | 920670M | Socket Head Screw M6x70mm – 2” (51mm) Wide Conveyor Only |
| | 920645M | Socket Head Screw M6x70mm – 3” (76mm) Wide Conveyor Only |
| 22 | 450158M | Drive Spacer – 2” (51mm) Wide Conveyor Only (2100 & 6200) |
| | 450155 | Drive Spacer – 2” (51mm) Wide Conveyor Only (2200 & MPB) |
| | 450157M | Drive Spacer – 3” (76mm) Wide Conveyor Only (2100 & 6200) |
| | 450156 | Drive Spacer – 3” (76mm) Wide Conveyor Only (2200 & MPB) |
| 23 | 450376M | Drive Guard |
| 24 | 807–226 | Snap–out Plastic Plug |
| 25 | 920406M | Socket Head Screw M4x6mm |
| 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.: 05, 06, ,08, 10, 12, 18, 21, 24 | | |

# Service Parts

**MPB Series Cleated Belt Top Mount Drive Package**

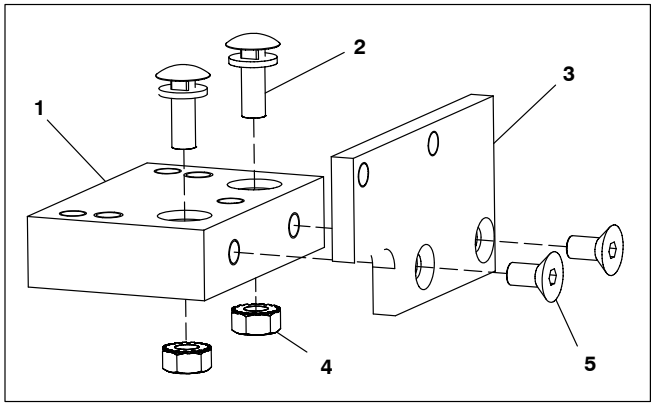


| Item | Part Number | Description |
|---|---|---|
| 1 | 920612M | Socket Head Screw M6 x 12mm |
| 2 | 920620M | Socket Head Screw M6 x 20mm |
| 3 | 243403 | Gearhead/Conveyor Support Plate |
| 4 | 4533WWM | Gearhead Support Hex Post |
| 5 | 920608M | Socket Head Screw M6x8mm |
| 6 | 300139M | Drive Bearing Shaft Cover |
| 7 | 912–084 | Square Key .188 x 1.5” |
| 8 | 450444M | Grove Output Shaft 12mm |
| 9 | 980422M | Square Key 4mm x 22mm |
| 10 | 920416M | Socket Head Screw M4 x 16mm |
| 11 | 202390M | Nut |
| 12 | 920692M | Stabilization Screw M6 x 12mm Low Hd |
| 13 | 243401 | Mounting Plate |
| 14 | 920625M | Socket Head Screw M6 x 25mm |
| 15 | 450445 | Spacer |
| 16 | 807–1133 | Washer |
| 17 | 802–046 | Bearing |
| 18 | 920845M | Socket Head Screw M8 x 45mm |
| 19 | 243402 | Cover Mounting Angle |
| 20 | 920693M | Socket Low Head Screw M6 x 16mm |
| 21 | 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 |
| 22 | 450365MP | Driven Pulley, 19Tooth, 12mm bore |
| | 450366MP | Driven Pulley, 22Tooth, 12mm bore |
| | 450367MP | Driven Pulley, 28Tooth, 12mm bore |
| | 450368MP | Driven Pulley, 32Tooth, 12mm bore |
| 23 | 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 |
| 24 | 300871M | Drive Cover |
| 25 | 920408M | Socket Head Screw M4 x 8mm |

WW = Conveyor width ref.: 04, 06, ,08, 10, 12, 18, 21, 24

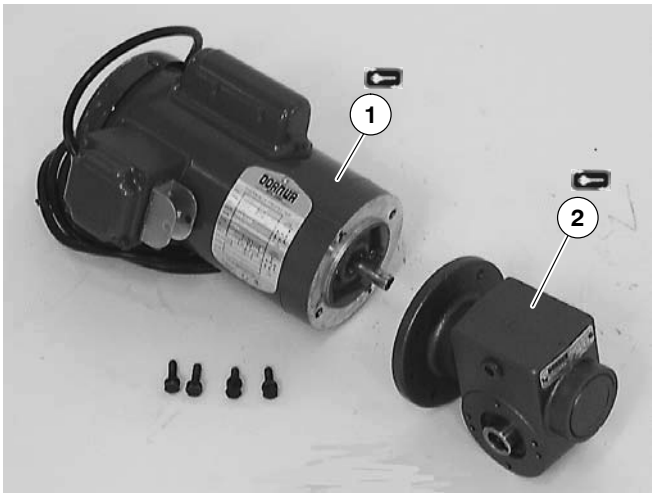
# Service Parts

### 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 |

### Gear Motor




| Item | Part No. | Part Description |
|---|---|---|
| 1 | 62MH411FN | Motor, 0.5 hp (0.37 Kw) 115/230 Volts, 60 Hz, 1-Phase, non–reversing |
| | 62MH411FR | Motor, 0.5 hp (0.37 Kw) 115/230 Volts, 60 Hz, 1-Phase, reversing |
| | 62MHD9DEN | Motor, 0.5 hp (0.37 Kw) 90 Volts DC |
| | 32MS423EN | Motor, 0.5 hp (0.37 Kw) 230V, 10– 60Hz, Inverter Duty, 3 Phase |
| | 62MH423 | Motor, 0.5 hp (0.37 Kw)208–230/460 Volts, 60 Hz, 3-Phase |
| 2 | 32M005HS | Gear Reducer, 5:1, 56C |
| | 32M010HS | Gear Reducer, 10:1, 56C |
| | 32M020HS | Gear Reducer, 20:1, 56C |
| | 32M040HS | Gear Reducer, 40:1, 56C |
| | 32M060HS | Gear Reducer, 60:1, 56C |

# Notes

# Return Policy

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

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

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

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

If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

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

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

**For replacement parts, contact an authorized Dorner Service Center or the factory.**

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