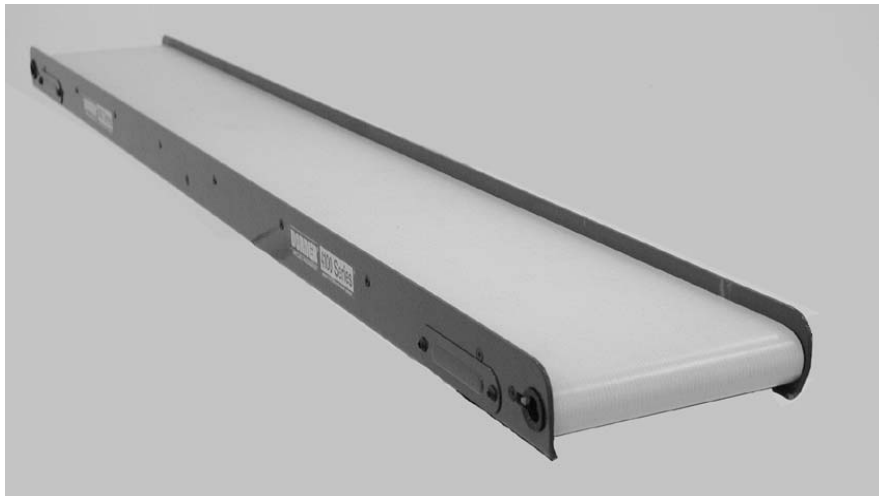




# 4100 Series End Drive Conveyors

## Installation, Maintenance & Parts Manual



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## Introduction

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### 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's Limited Warranty applies.

Dorner MPB & 2200 series conveyors are covered by Patent Numbers 5,174,435, 6,298,981 and corresponding patents and patent applications in other countries.

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 .

## 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



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



Loosening stand height or angle adjustment screws may cause conveyor sections to drop down, causing severe injury.

**SUPPORT CONVEYOR SECTIONS PRIOR TO LOOSENING STAND HEIGHT OR ANGLE ADJUSTMENT SCREWS.**

# Product Description

Refer to Figure 1 for typical conveyor components.

|   |                            |
|---|----------------------------|
| A | Conveyor                   |
| B | Gearmotor Mounting Package |
| C | Gearmotor                  |
| D | Guiding & Accessories      |
| E | Mounting Brackets          |
| F | Support Stand              |
| G | Variable Speed Controller  |
| H | Drive End                  |
| I | Idler/Tension End          |

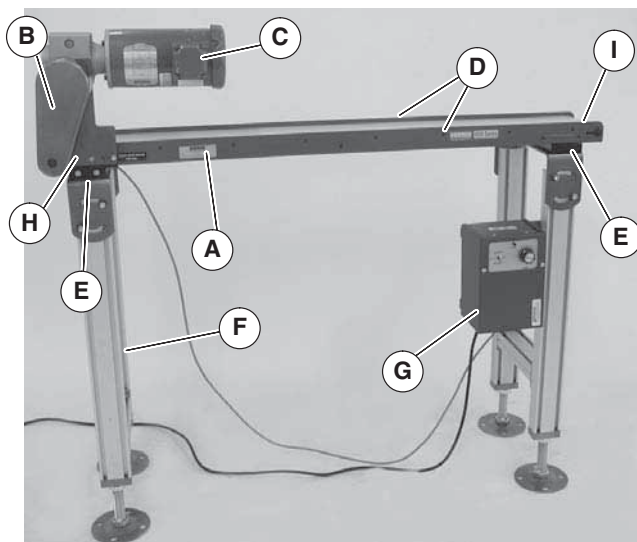


Figure 1

## Specifications

### Models:

#### 4100 Series End Drive Conveyor

4100 WW LL A PP BB  
— Belt Type\*  
— Conveyor Profile\*  
— Mount Position (A or D)\*  
— Conveyor Length Reference  
— Conveyor Width Reference  
— 4100 Series Conveyor

\* See Ordering and Specifications Catalog for details.

### Conveyor Supports:

#### Maximum Distances:

J = 18" (457 mm)\*\*

K = 6 ft (1829 mm)

L = 18" (457 mm)

\*\* For Heavy Load Bottom Mount Package, mount support under gear head.

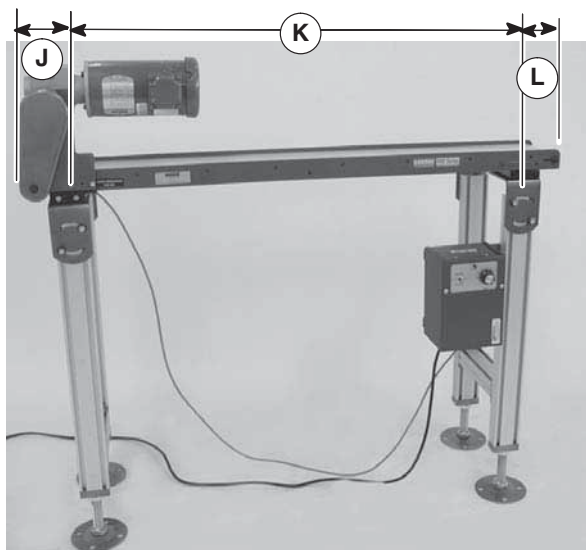


Figure 2

## Specifications:

| Conveyor Width Reference ( <u>WW</u> )     | 01                                   | 02                  | 03                  | 04                  | 06                  | 08                   | 12                   |
|--|--------------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
| Conveyor Belt Width                        | 0.75"<br>(19mm)                      | 1.75"<br>(44mm)     | 2.75"<br>(70mm)     | 3.75"<br>(95mm)     | 6"<br>(152mm)       | 8"<br>(203mm)        | 12"<br>(305mm)       |
| Maximum Conveyor Load*<br>(See NOTE Below) | 25 lbs<br>(12 kg)                    | 30 lbs<br>(14 kg)   | 35 lbs<br>(16 kg)   | 42 lbs<br>(19 kg)   | 60 lbs<br>(27 kg)   | 70 lbs<br>(32 kg)    | 80 lbs<br>(36 kg)    |
| Conveyor Start-up Torque*                  | 3 in-lb<br>(.3 Nm)                   | 4 in-lb<br>(0.5 Nm) | 5 in-lb<br>(0.6 Nm) | 6 in-lb<br>(0.7 Nm) | 8 in-lb<br>(0.9 Nm) | 10 in-lb<br>(1.1 Nm) | 14 in-lb<br>(1.4 Nm) |
| Belt Travel                                | 3.4" (86mm) per revolution of pulley |                     |                     |                     |                     |                      |                      |
| Maximum Belt Speed*                        | 235 feet/minute (72 meters/minute)   |                     |                     |                     |                     |                      |                      |

| Conveyor Length Reference ( <u>LL</u> ) | 02         | 03         | 04           | 05           | 06          |
|---|------------|------------|--------------|--------------|-------------|
| Conveyor Length                         | 2' (610mm) | 3' (914mm) | 4' (1,219mm) | 5' (1,524mm) | 6' (1829mm) |

\* See Ordering and Specifications Catalog for details.

### NOTE

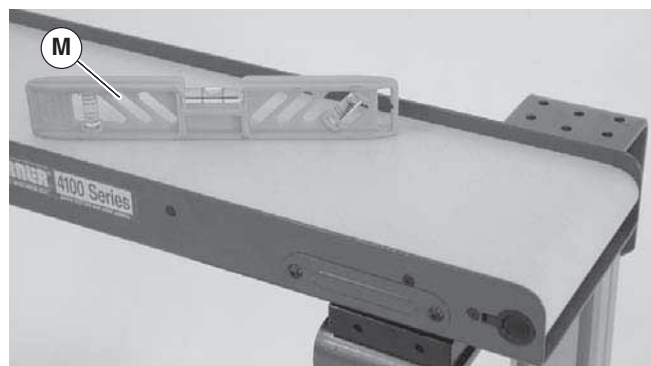
Maximum conveyor loads based on:

- Non-accumulating product
- Product moving towards gearmotor
- Conveyor being mounted horizontal

# Installation

### NOTE

Conveyor **MUST** be mounted straight, flat and level within confines of conveyor. Use a level (Figure 3, item M) for setup.



**Figure 3**

## Recommended Installation Sequence

- Install support stands (see accessory instructions)
- Attach conveyor to stands
- Mount gearmotor mounting package (see accessory instructions)
- Attach guides/accessories (see "Service Parts" section, page 20 through page 27)

# Preventive Maintenance and Adjustment

## Required tools

### Standard Tools

- Hex-key wrenches:  
5/64", 3/32" (2x), 3/16", 5/32", 1/8", 7/64"
- Arbor press
- Manual grease gun
- Adjustable wrench

### Special Tools

- 4500 Tool Kit for 4100 Series Conveyor

### Checklist

- Keep service parts on hand (see "Service Parts" section for recommendations)
- Keep supply of belt cleaner (part #625619)
- Clean entire conveyor and knurled pulley while disassembled
- Replace worn or damaged parts

## Lubrication

### Pulley Bearings

#### ⚠ WARNING



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

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

#### NOTE

*Lubricate pulley bearings every 750 hours or more frequently, depending on operating conditions. When lubricating pulley bearings, use a conventional hand grease gun with a maximum of one pump per application. Do not over-lubricate. Do not use a power grease gun.*

#### NOTE

*Lubricate bearings using Dornier red grease 14oz. cartridge (829-002) or 14oz. can (829-003)*

### 1" (25mm) – 2" (51mm) Wide Pulley Bearings

No lubrication is required. Replace pulley when bearings are worn.

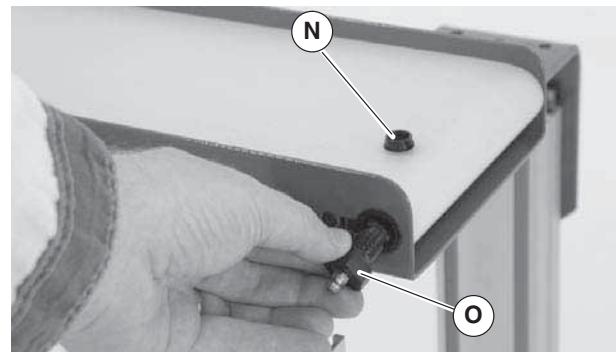
### Non-Drive Position – 3" (76mm) and Wider Conveyors

1. Remove plastic plug (Figure 4, item N).



**Figure 4**

2. Install greasing adapter (45-12, part of tool kit 4500) (Figure 5, item O). Make sure the adapter shoulder is seated against the conveyor frame.



**Figure 5**

3. Lubricate bearing using Dornier Red Grease 14oz. cartridge (829-002) or 14oz. can (829-003). Use a conventional hand grease gun with a maximum of one pump per application. Do not over-lubricate. Do not use a power grease gun.
4. Grease adapter (O) can be left attached, or removed and replaced with plastic plug (Figure 4, item N).

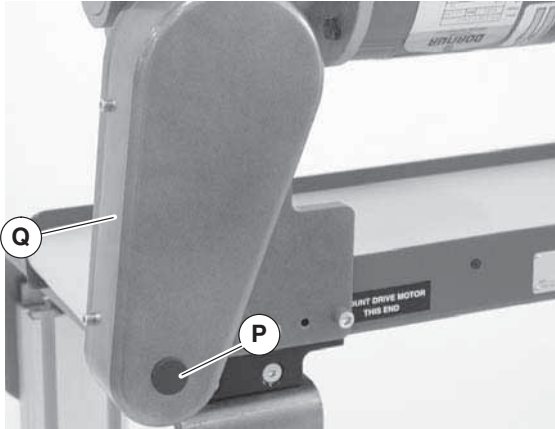
### Drive Position - 3" (70mm) and Wider Conveyors

#### Conveyors with Top or Bottom Mounting Package

1. Remove plug (Figure 6, item P) from belt guard (Q).

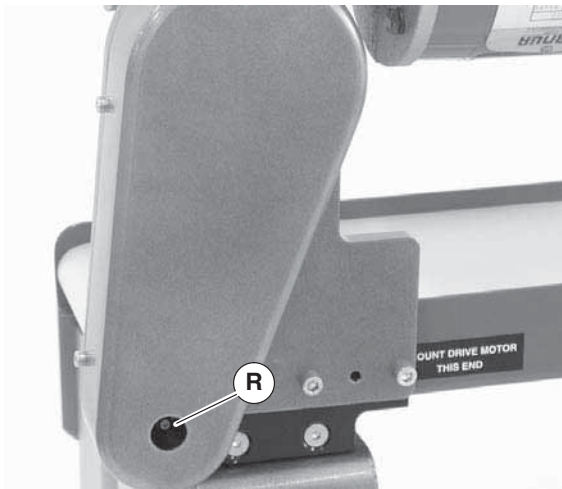


# Preventive Maintenance and Adjustment



**Figure 6**

2. Lubricate pulley bearing through outboard drive shaft grease fitting (Figure 7, item R).

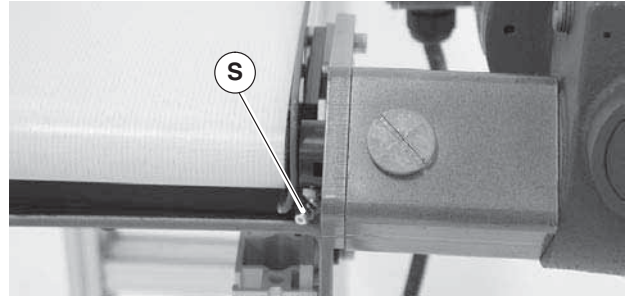


**Figure 7**

3. When lubricating pulley bearings for first time, outboard retaining sleeve must be filled with grease before bearings will get any lubrication. Use a maximum of two pumps. Do not over-lubricate.
4. When lubricating pulley bearings anytime after initial lubrication, use a maximum of one pump per application. Do not over-lubricate.
5. Replace plug (Figure 6, item P).

## Conveyors with Side Mounting Package

1. Locate the drive shaft grease fitting (Figure 8, item S). Lubricate pulley bearings through the grease fitting.

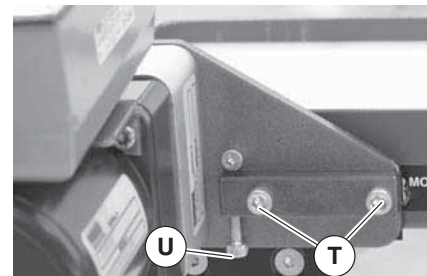


**Figure 8**

2. When lubricating pulley bearings for the first time, outboard retaining sleeve must be filled with grease before the bearings will get any lubrication. Use a maximum of two pumps. Do not over-lubricate.
3. When lubricating pulley bearings anytime after initial lubrication, use a maximum of one pump per application. Do not over-lubricate.

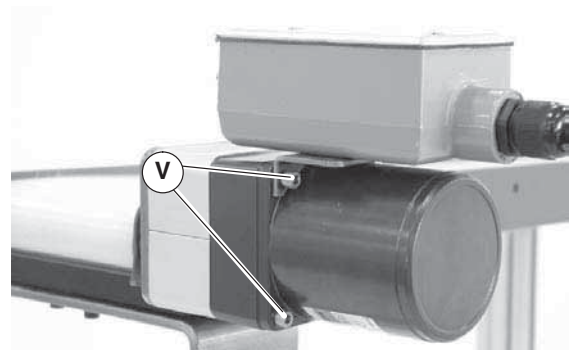
## Conveyors with Side Mounting Light Load Gearmotor Package

1. Loosen two (2) mounting package mounting screws (Figure 9, item T).



**Figure 9**

2. Loosen timing belt tension screw (U).
3. Remove (4) motor mounting screws (V). Remove gearmotor and timing belt



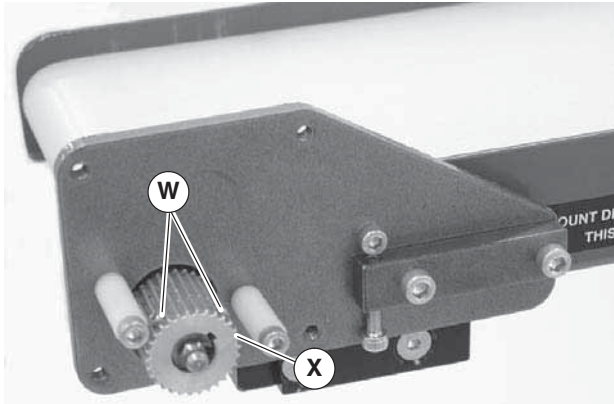
**Figure 10**

4. Loosen (2) set screws (Figure 11, item W) on timing belt pulley (X).

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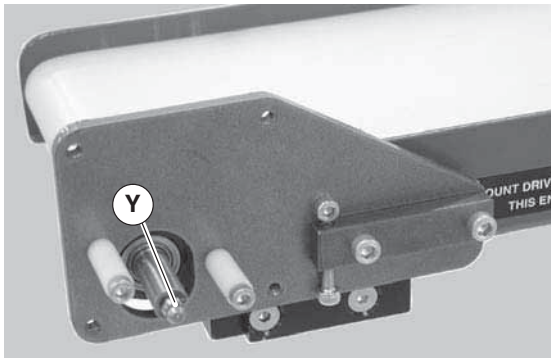
# Preventive Maintenance and Adjustment

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**Figure 11**

5. Remove timing belt pulley (X).



**Figure 12**

6. Lubricate pulley bearing on drive side through drive shaft grease fitting (Figure 12, item Y).
7. When lubricating pulley bearings for first time, outboard retaining sleeve must be filled with grease before bearings will get any lubrication. Use a maximum of two pumps. Do not over-lubricate.
8. When lubricating pulley bearings anytime after initial lubrication, use a maximum of one pump per application. Do not over-lubricate.
9. Reinstall side mount drive package by following steps 4 through 1 in reverse order.

## Maintaining Conveyor Belt

### Troubleshooting

Inspect conveyor belt for:

- Surface cuts or wear
- Stalling or slipping
- Tracking problems;
- Worn edges;
- Stretching or breaking;
- Belts that walk to one side;
- Non-uniform movement of conveyor belt;
- Lines or rough edges on belt;

Surface cuts or wear indicates:

- Sharp or heavy parts impacting belt
- Jammed parts
- Improperly installed bottom wipers (if installed)
- Accumulated dirt in wipers (if installed)
- Foreign material inside the conveyor
- Improperly positioned accessories
- Bolt-on guiding is pinching belt

Stalling or slipping indicates:

- Excessive load on belt
- Conveyor belt or drive timing belt are not properly tensioned
- Worn knurl or impacted dirt on drive pulley
- Intermittent jamming or drive train problems

Tracking problems indicate:

- Pulleys not installed correctly
- Frame misalignment
- Twisted or damaged conveyor frame
- Jammed part

Worn edges indicate:

- Dirt accumulating on pulleys
- Belt tracking incorrectly

Belts that walk to one side indicate:

- Twisted or damaged conveyor frame;
- Dirt accumulating on outside diameter of pulleys;
- Side load on belt;
- Improper load/unload of parts on conveyor;

Non-uniform movement indicates:

- Belt slippage due to inadequate conveyor belt or timing belt tension.
- Belt slippage due to excessive load on conveyor belt.
- Intermittent jam or drive train problems.



# Preventive Maintenance and Adjustment

Lines or rough edges on belt could indicate:

- Jammed part;
- Accumulated dirt in wipers;
- Foreign material inside conveyor;
- Improper position of accessories.

## NOTE

Visit [www.dorner.com](http://www.dorner.com) for complete list of troubleshooting solutions.

## Cleaning

### IMPORTANT

Do not use belt cleaners that contain alcohol, acetone, Methyl Ethyl Ketone (MEK) or other harsh chemicals.

Use Dorner Belt Cleaner (part #625619). Mild soap and water may also be used. Do not soak the belt.

For /05 woven polyester and /06 black anti-static belts, use a bristled brush to improve cleaning.

## Conveyor Belt Replacement

### ⚠ WARNING



Exposed moving parts can cause severe injury.

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

## Conveyor Belt Removal

1. Remove tension pin assemblies. See “Tension Pin Removal” section on page 10.
2. If equipped, remove outboard drive shaft. See “Outboard Drive Shaft Removal” section on page 11.
3. Remove drive/idler pulley. See “Pulley Removal” section on page 13.
4. Remove screws (Figure 13, item Z) on both sides of conveyor and remove bed plate (AB).

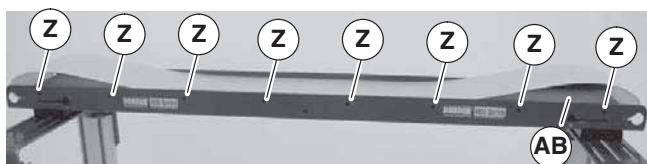


Figure 13

5. Remove belt (Figure 14, item AA) from bed plate (AB).

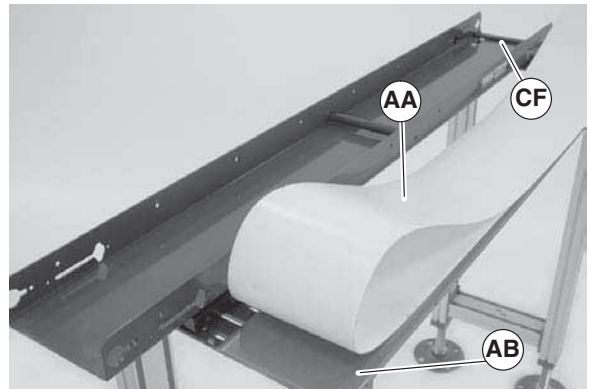


Figure 14

## Conveyor Belt Installation

1. Insert belt (Figure 14, item AA) inside frame. Orient belt so belt splice leading finger (Figure 15, item AD) points in direction of travel (AE) and trailing finger (AC) is as shown. Belt must run toward bottom wiper (Figure 14, item CF).

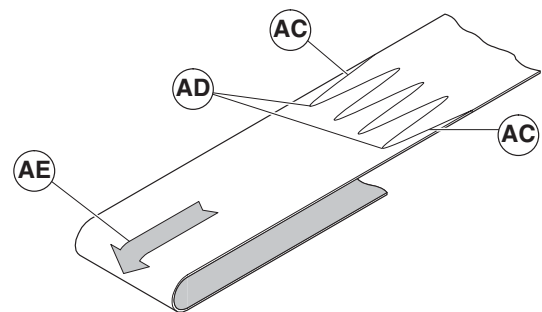


Figure 15

2. Insert bedplate (Figure 14, item AB) inside belt loop.
3. Attach bedplate (Figure 14, item AB) to conveyor frame with screws (Figure 13, item Z). Tighten screws to 14 in-lbs.
4. Install drive/idler pulleys. See “Pulley Installation” section on page 14.
5. Install tension pins. See “Tension Pin Installation” section on page 10.

# Preventive Maintenance and Adjustment

## Conveyor Belt Tensioning

### ⚠ WARNING



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

### Tension Pin Removal

1.
  - a. Remove screws (Figure 16, item AF) and tension pin covers (AG) on both sides of conveyor.

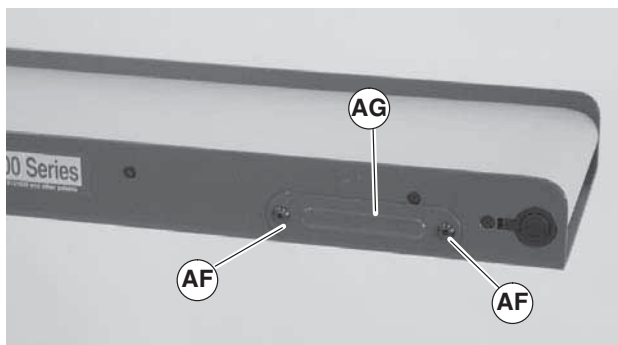


Figure 16

- b. If tension pins are located on drive side, remove gearmotor mount. Remove screws (Figure 17, item AI) and mounting plate (AH).

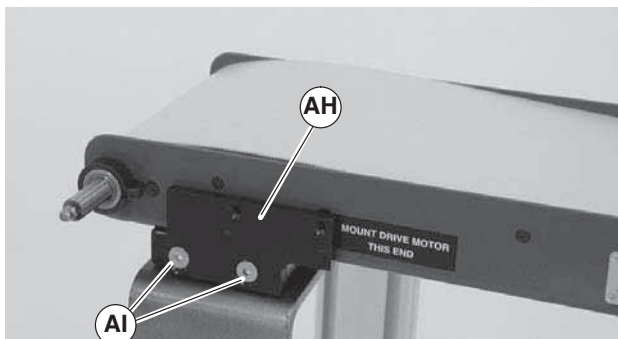


Figure 17

2. Using two (2) hex key wrenches, loosen but do not remove screw (Figure 18, item AJ). Back the screw out approximately 3/16".

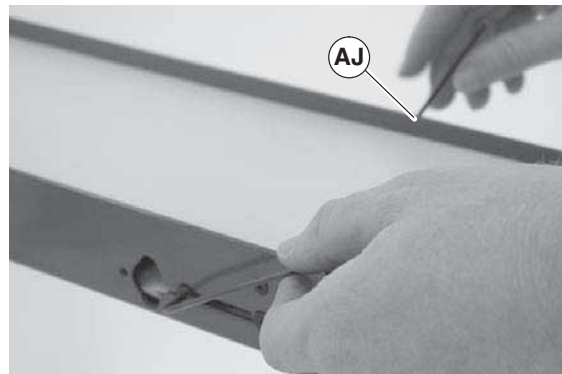


Figure 18

3. Push on loose screw (Figure 18, item AJ) to engage shaft flats with conveyor countersink holes (AO) on slot. Loosen other screw (Figure 19, item AK).

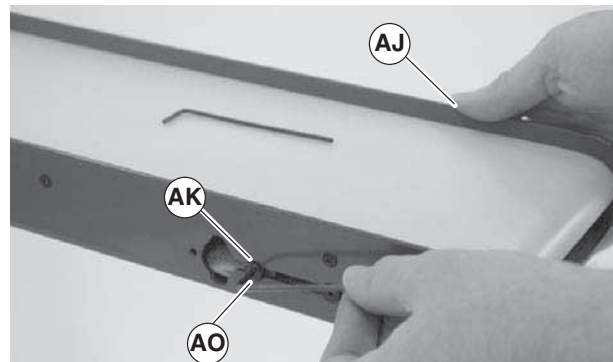


Figure 19

4. Slide tension pin assembly (Figure 20, item AL) along slot (AN) to hole in frame (AM). Remove tension pin assembly (AL) through hole.

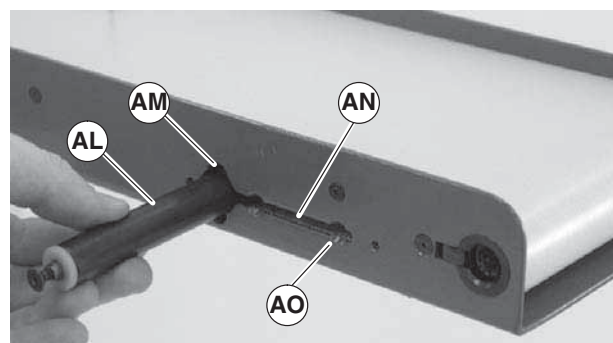


Figure 20

### Tension Pin Installation

#### NOTE

Belt tension can be applied in three different settings (Figure 21, item A, B or C) for tension adjustment.

Minimum Tension (A) – Factory-set tension. Used for new

# Preventive Maintenance and Adjustment

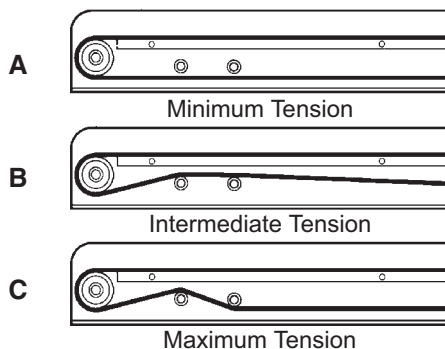
conveyor belts. Both tension pin assemblies are installed above return belt.

Intermediate Tension (B) - Install both tension pin assemblies under return belt.

Maximum Tension (C) - Install tension pin assembly under return belt and secure through countersink holes closest to end of frame. Install second tension pin assembly above return belt and secure in other countersink holes.

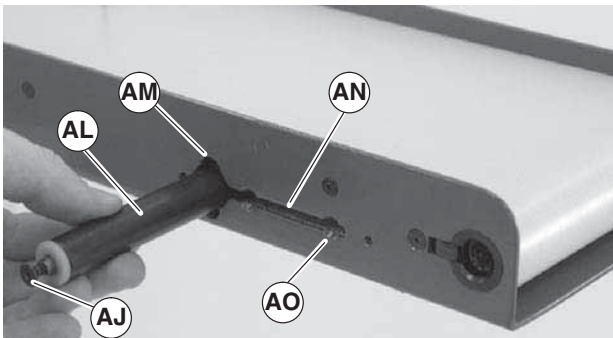
## NOTE

*Tension pin assemblies are found at bottom wiper end of conveyor. Additional tension can be achieved by installing a second set of tension pins on opposite end of conveyor.*



**Figure 21**

1. Locate tension versus conveyor belt as required for tension setting (Figure 21, item A, B, or C). Insert tension pin assembly (Figure 22, item AL) into conveyor frame through hole (AM).



**Figure 22**

2. Slide assembly (AL) along slot (AN) until screws (AJ) line up with countersink holes (AO) on slot.
3. Reverse steps 1 through 3 of "Tension Pin Removal" section. Make sure that screws are properly seated in countersink holes.

## Outboard Drive Shaft Replacement

### ⚠ WARNING

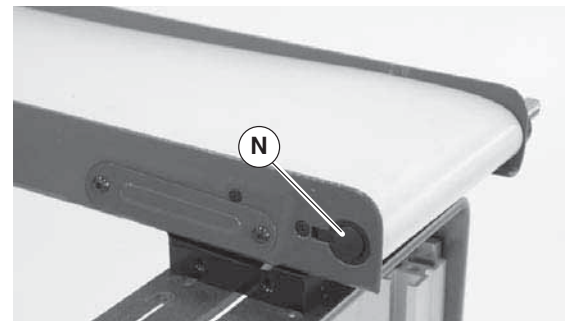


Exposed moving parts can cause severe injury.

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

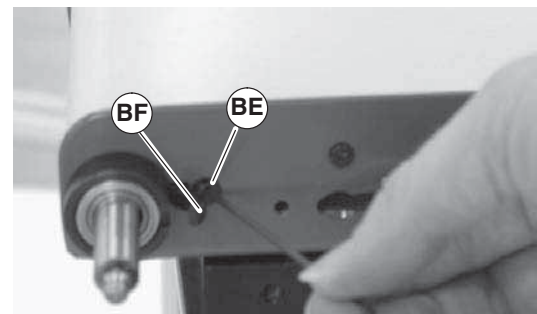
## Outboard Drive Shaft Removal

1. Remove plastic plug (Figure 23, item N)



**Figure 23**

2. Loosen but do not remove screw (Figure 24, item BE). Push until pulley retaining sleeve clip (BF) pushes out.



**Figure 24**

3. Remove retaining clip (BF) and screw (BE).
4. Insert small end of hex key wrench extension tool (Figure 25, item AP) (25-08, part of tool kit 4500) into pulley end opposite outboard drive shaft.
5. Loosen and remove wave washer (Figure 25, item AU), flat washer (AV) and pulley screw (AW) with hex key wrench extension tool (AP).

# Preventive Maintenance and Adjustment

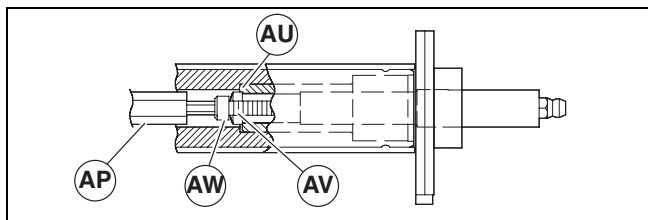


Figure 25

## ⚠ WARNING



**Drive shaft keyway may be sharp.  
HANDLE WITH CARE.**

6. Pull outboard drive shaft (Figure 26, item AQ) and outboard bearing retaining sleeve (AR) from drive pulley.



Figure 26

7. Push outboard drive shaft (AQ) through outboard bearing retaining sleeve (AR).

## Outboard Drive Shaft Installation

### NOTE

*Hex bore is off center on pulleys for conveyors measuring 5" (127 mm) and wider. Locate drive shaft or hex bore side. Drive pulley may have to be turned around.*

## ⚠ WARNING



**Drive shaft keyway may be sharp.  
HANDLE WITH CARE.**

1. Install outboard drive shaft (Figure 27, item AQ) and outboard bearing retaining sleeve (AR).



Figure 27

2. Place pulley screw (Figure 28, item AW), wave washer (AU) and flat washer (AV) onto small end of hex key wrench extension tool (Figure 28, item AP) (25–08).

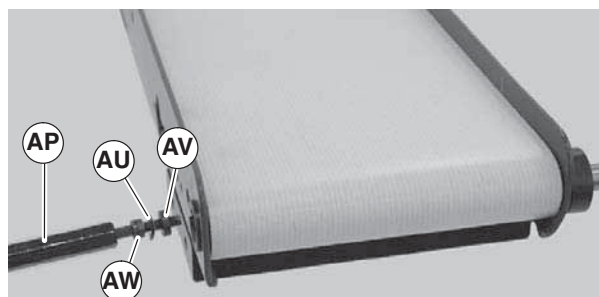


Figure 28

3. Insert small end of hex key wrench extension tool (Figure 29, item AP) into pulley end opposite the outboard drive shaft (AQ) and tighten pulley screw (AW) to 20 in/lb. Back off screw exactly 1/2 turn (180°).

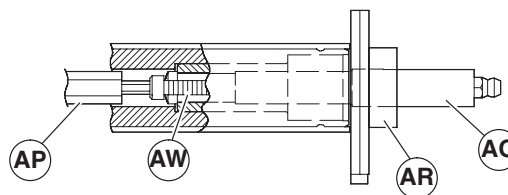


Figure 29

### NOTE

*Failure to back off pulley screw 1/2 turn will cause premature failure of screw.*

4. Align slot (AX) in outboard bearing retaining sleeve (AR) with slot (AY) in conveyor frame.



# Preventive Maintenance and Adjustment

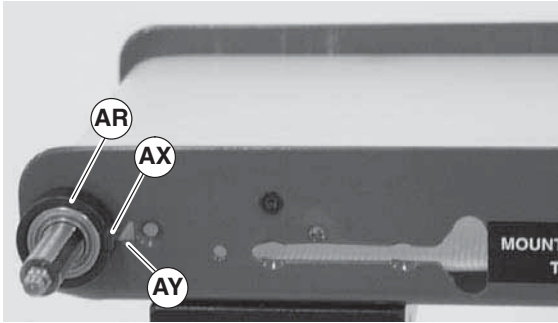


Figure 30

5. Insert retaining sleeve clip (BF) into slot (AY). Tighten with screw (BE).

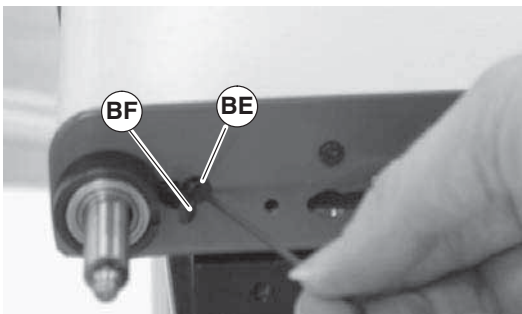


Figure 31

6. Replace plastic plug (Figure 23, item N).

## Pulley Replacement

### ⚠ WARNING



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

### NOTE

*If equipped, Outboard Drive Shaft must be removed in order to remove drive pulley. See "Outboard Drive Shaft Removal" section on page 11.*

## Pulley Removal

1. Remove screws (Figure 32, item AF) and tension pin cover (AG) and plastic plug (N).

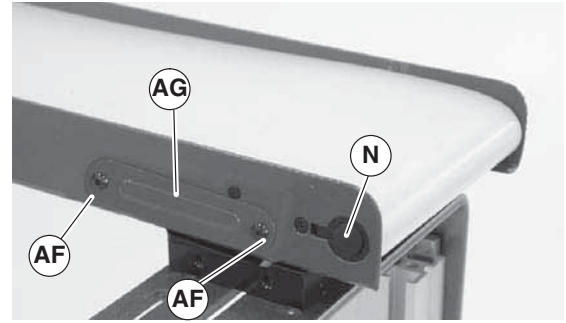


Figure 32

2. Remove tension pin assemblies. See "Tension Pin Removal" section on page 10.
3. Loosen but do not remove screw (Figure 33, item AZ). Push until pulley retaining sleeve clip (BA) pushes out.

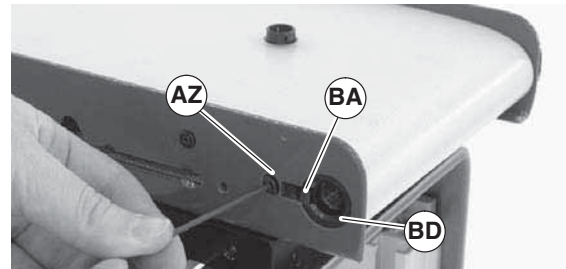


Figure 33

4. Remove retaining clip (BA) and screw (AZ).
5. Position bearing anvil/sleeve removal tool (Figure 34, item BB) (25-09, part of tool kit 4500) over retaining sleeve (Figure 33, item BD).

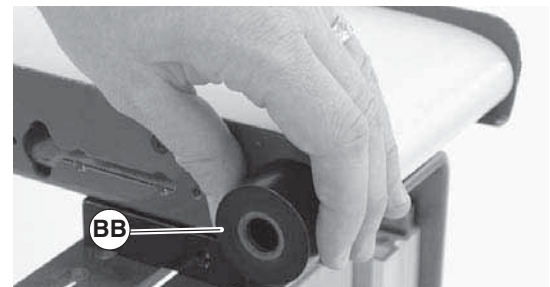


Figure 34

6. Insert bolt (Figure 35, item BC) (906-278, part of tool kit 4500) into retaining sleeve (Figure 33, item BD).

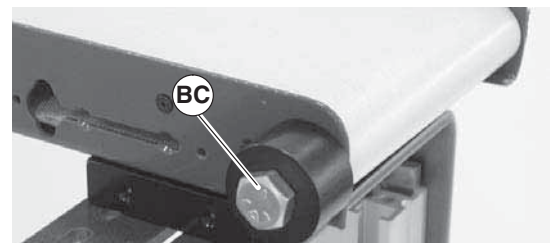
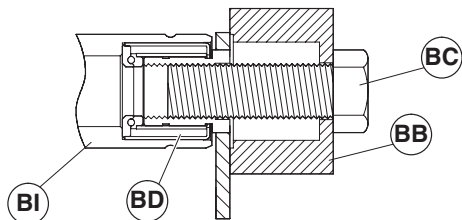


Figure 35

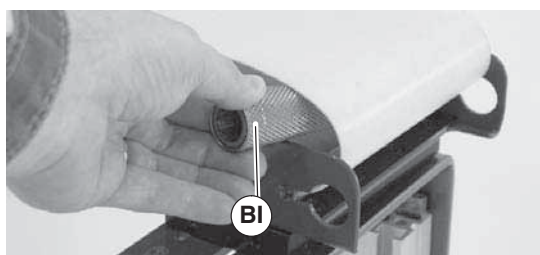
# Preventive Maintenance and Adjustment

- Turn bolt (BC) until retaining sleeve (Figure 36, item BD) separates from pulley (BI). Remove retaining sleeve (BD).



**Figure 36**

- Repeat steps 3 through 7 for retaining sleeve on opposite side of conveyor.
- Remove pulley (Figure 37, item BI).



**Figure 37**

## Pulley Installation

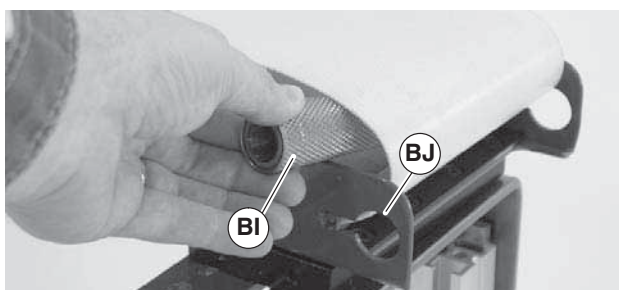
### 1" (25mm) – 3" (76mm) Wide Pulleys

#### ⚠ WARNING



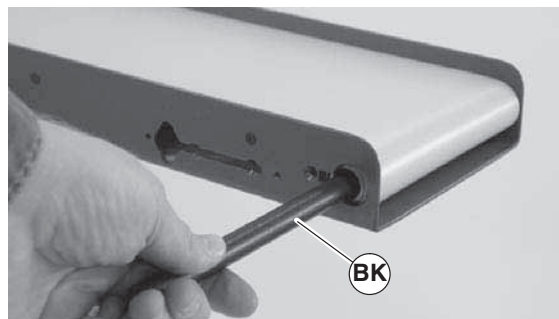
**Exposed moving parts can cause severe injury.**  
**LOCK OUT POWER** before removing guards or performing maintenance.

- Insert pulley (Figure 38, item BI) inside belt loop.



**Figure 38**

- Insert sleeve arbor tool (Figure 39, item BK) (45-02, part of tool kit 4500).



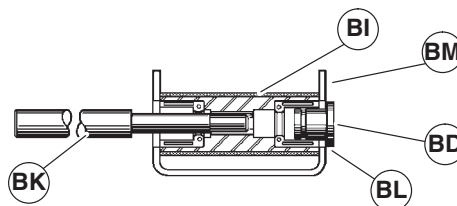
**Figure 39**

- Using sleeve arbor tool (BK) as a lever, align pulley bore (BI) with holes in conveyor frame (BJ).

### IMPORTANT

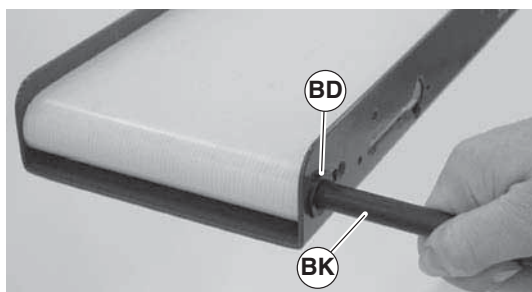
*Do not hit retaining sleeve (Figure 40, item BD) with hammer or any other tool when installing. Inspect frame bore for damage or out of roundness if retaining sleeve does not slide easily into place. Frames with worn holes should be replaced.*

- Insert retaining sleeve (Figure 40, item BD) into pulley (BI). Push in until inside surface of retaining sleeve (BL) touches outside of frame (BM). Do not push shoulder of retaining sleeve into frame opening.



**Figure 40**

- Remove the sleeve arbor tool (Figure 41, item BK) and insert it into opposite side through retaining sleeve (BD).

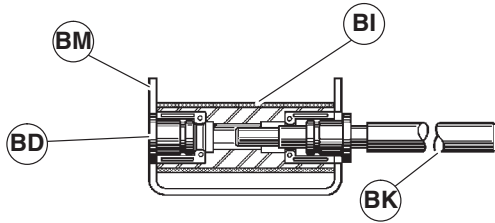


**Figure 41**

- Using sleeve arbor tool (BK) as a lever, align pulley bore with conveyor frame opening.
- Insert retaining sleeve (Figure 42, item BD) into pulley (BI) until flush with conveyor frame (BM).

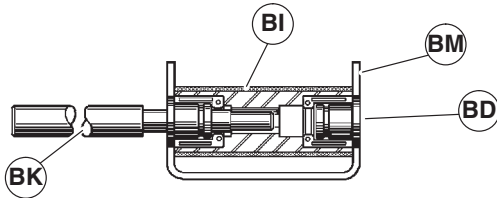


# Preventive Maintenance and Adjustment



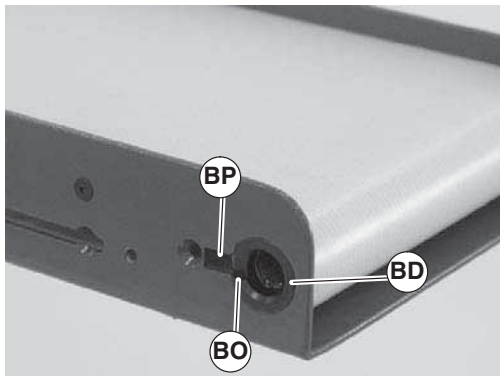
**Figure 42**

8. Insert sleeve arbor tool (Figure 43, item BK) into opposite side of conveyor.



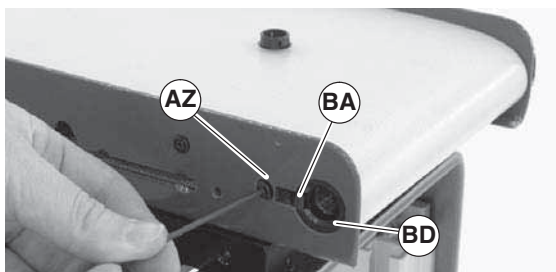
**Figure 43**

9. Using sleeve arbor tool (BK) as a lever, push the retaining sleeve (BD) fully in.
10. Align slot (Figure 44, item BO) in retaining sleeve (BD) with slot in conveyor frame (BP).



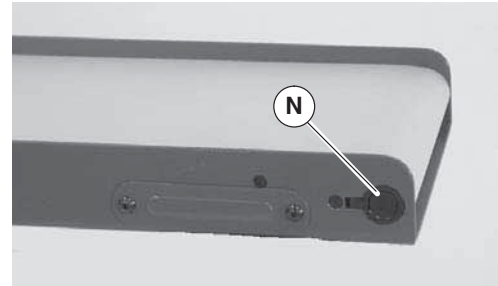
**Figure 44**

11. Insert retaining sleeve clip (Figure 45, item BA) into slot and tighten with screw (AZ).



**Figure 45**

12. Install plastic plug (Figure 46, item N).



**Figure 46**

13. Repeat steps 10 through 12 on opposite side of conveyor.

## 4" (95 mm) – 12" (305 mm) Wide Pulleys

### ⚠ WARNING



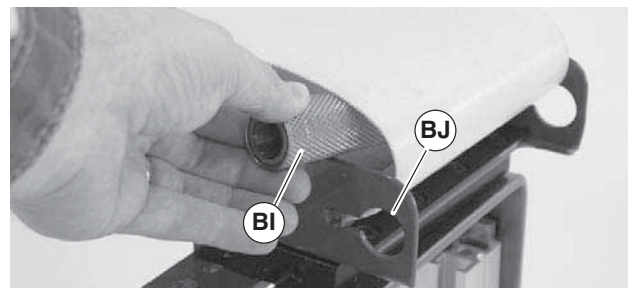
**Exposed moving parts can cause severe injury.**

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

### NOTE

*Hex bore is off center on pulleys 5" (127mm) and wider. When pulley is used with a top or bottom mounting package, hex bore must be located towards drive side. On conveyors equipped with motion monitor sensor switch (or when installing sensor switch), hex bore must be located towards switch side of conveyor.*

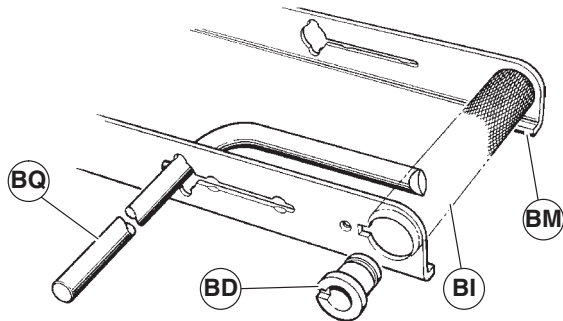
1. Insert pulley (Figure 47, item BI) inside belt loop.



**Figure 47**

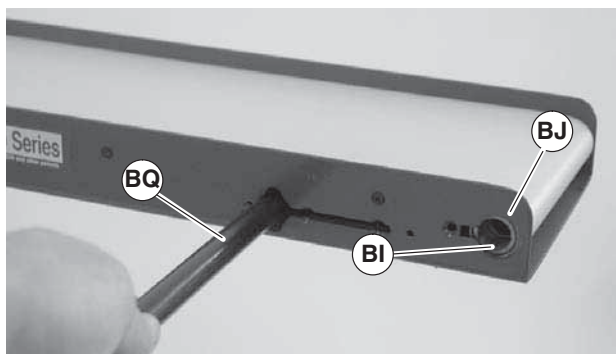
2. Insert pulley installation tool (Figure 48, item BQ) (25-07, part of tool kit 4500) into conveyor frame.

# Preventive Maintenance and Adjustment



**Figure 48**

3. Using pulley installation tool (Figure 49, item BQ) as a lever, align pulley bore (BI) with hole (BJ) in conveyor frame.

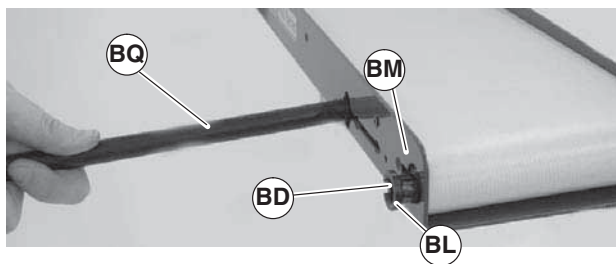


**Figure 49**

## IMPORTANT

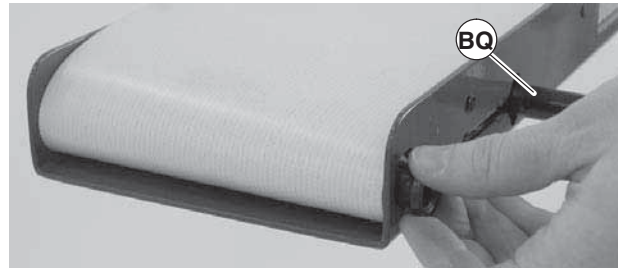
*Do not hit retaining sleeve (Figure 50, item BD) with hammer or any other tool when installing. Inspect frame bore for damage or out of roundness if retaining sleeve does not slide easily into place. Frames with worn holes should be replaced.*

4. Insert retaining sleeve (Figure 50, item BD) into pulley. Push in until inside surface of retaining sleeve shoulder (BL) touches outside of frame (BM). Do not push shoulder of retaining sleeve into frame opening.



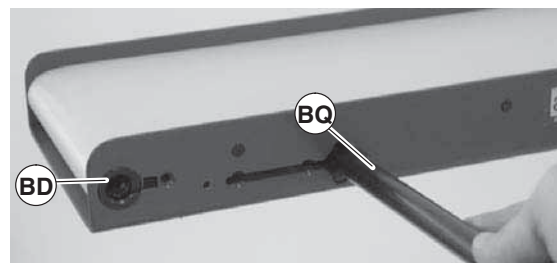
**Figure 50**

5. Insert pulley installation tool (Figure 51, item BQ) into opposite side of conveyor.



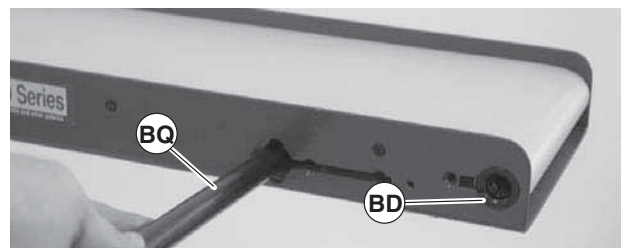
**Figure 51**

6. Using pulley installation tool (BQ) as a lever, align pulley bore with conveyor frame opening. Insert retaining sleeve (Figure 52, item BD) into pulley until flush with conveyor frame.



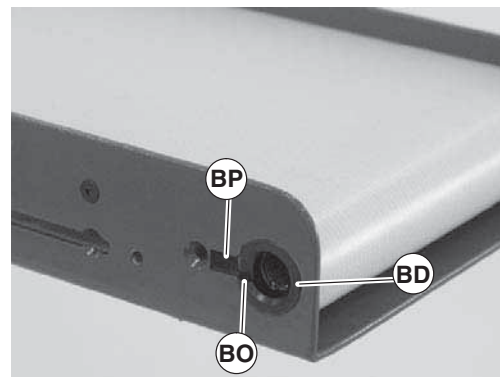
**Figure 52**

7. Insert pulley installation tool (Figure 53, item BQ) into opposite side of conveyor and push retaining sleeve (BD) into pulley until flush with conveyor frame.



**Figure 53**

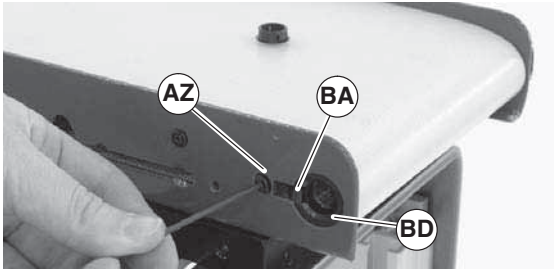
8. Align slot (Figure 54, item BO) in retaining sleeve (BD) with slot in conveyor frame (BP).



**Figure 54**

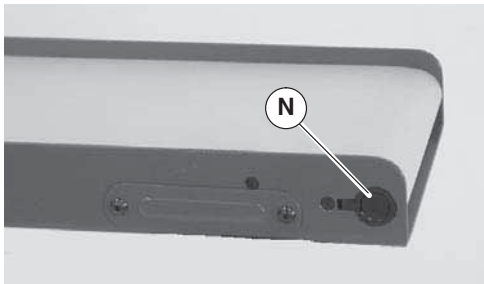
# Preventive Maintenance and Adjustment

9. Insert retaining sleeve clip (Figure 55, item BA) into slot and tighten with screw (AZ).



**Figure 55**

10. Install plastic plug (Figure 56, item N).



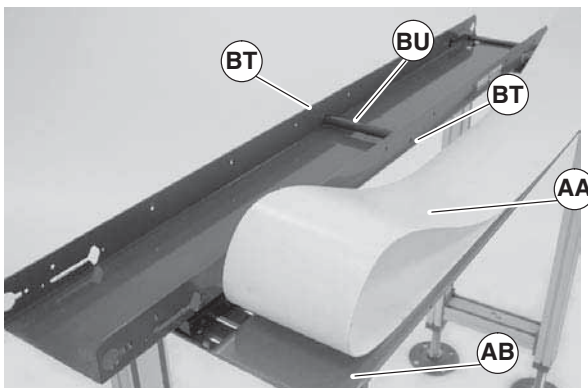
**Figure 56**

11. Repeat steps 8 through 10 on opposite side of conveyor.

## Return Belt Roller Replacement

### Removal

1. Remove conveyor belt. See “Conveyor Belt Removal” section on page 9.
2. Remove screws (Figure 57, item BT) on both sides of conveyor.



**Figure 57**

3. Remove return belt roller assembly (BU).

### Installation

1. Align holes in ends of return belt roller (BU) with countersink holes (Figure 57).

2. Install screws (BT). Ensure screws are centered in countersink hole.
3. Refer to “Conveyor Belt Replacement – Installation” section.

## Pulley Bearing Replacement

### IMPORTANT

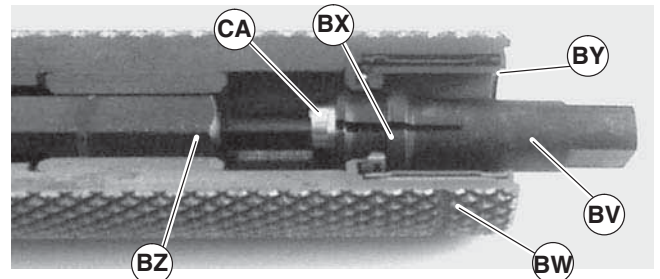
*Once removed, do not re-use bearings.*

### Bearing Removal

#### NOTE

*Bearings in 1” (25mm) to 2” (51mm) wide conveyors cannot be replaced. See “Service Parts” section page 20 to page 27.*

1. Insert bearing removal tool (Figure 58, item BV)(25-05, part of tool kit 4500) into the pulley (BW) until shoulder (BX) seats against bottom of bearing (BY).

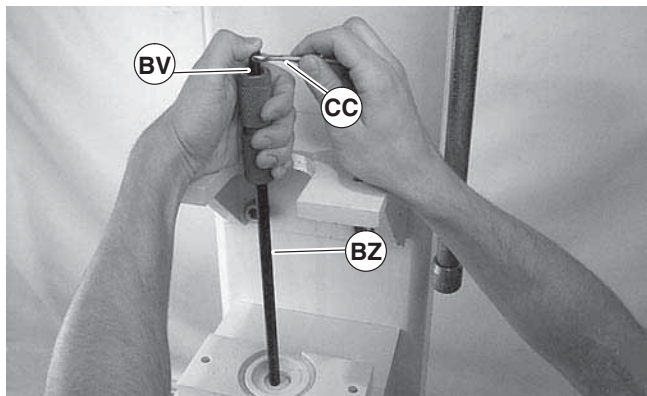


**Figure 58**

2. While holding bearing removal tool (BV) in position, insert extension tool (BZ)(25-08, part of tool kit 4500) into opposite end of pulley (BW). Rotate bearing removal tool (BV) to engage hex tip of extension tool (BZ) into screw (CA).
3. While maintaining extension tool (Figure 59, item BZ) position, use a wrench (CC) to rotate bearing removal tool (BV) to expand flare.

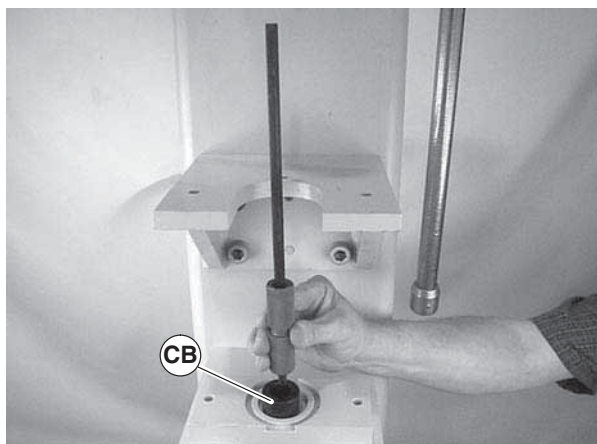


# Preventive Maintenance and Adjustment



**Figure 59**

4. Orient bearing anvil/sleeve removal tool (25-09, part of tool kit 4500) (Figure 60, item CB) with cavity facing up and place pulley onto tool.

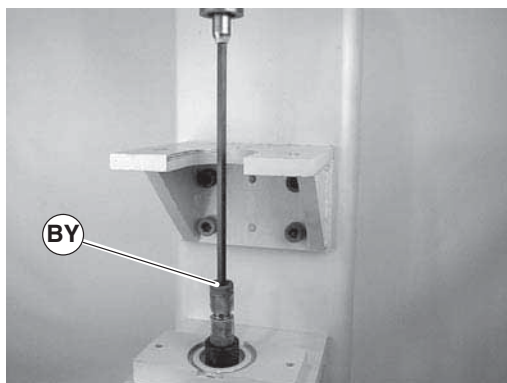


**Figure 60**

## NOTE

*If a severely worn bearing breaks apart during removal, pulley must be replaced.*

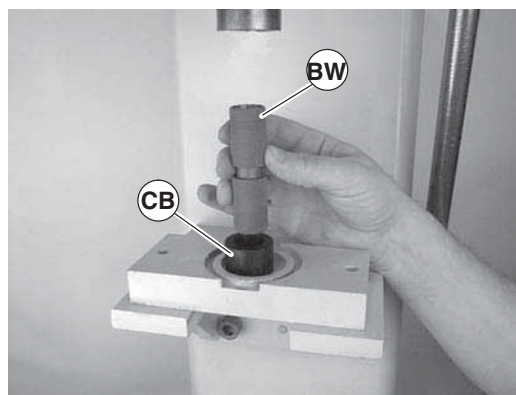
5. Press bearing (BY) out of pulley.



**Figure 61**

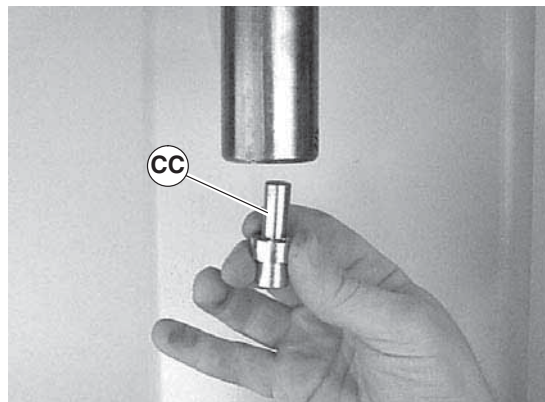
## Bearing Installation

1. Orient bearing anvil/sleeve removal tool (Figure 62, item CB)(25-09) with cavity facing up and place pulley (BW) onto tool.



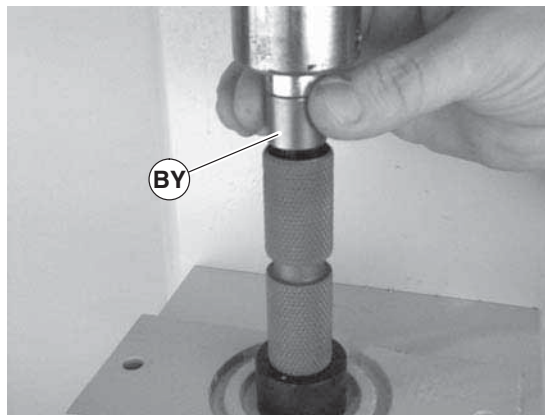
**Figure 62**

2. Install bearing insertion tool (Figure 63, item CC)(25-10, part of tool kit 4500) into arbor press or similar device.



**Figure 63**

3. Place and hold bearing (BY) onto tool (CC).



**Figure 64**

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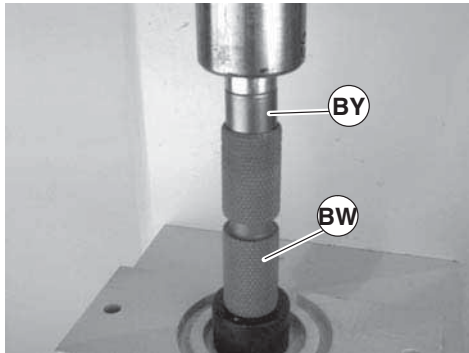
## Preventive Maintenance and Adjustment

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|                  |
|------------------|
| <b>IMPORTANT</b> |
|------------------|

|  |
|--|
| <i>Bearing and pulley alignment is critical.</i> |
|--|

4. Press bearing (Figure 65, item BY) into pulley (BW) until seated.




**Figure 65**

### Tension Pin Bearing Replacement

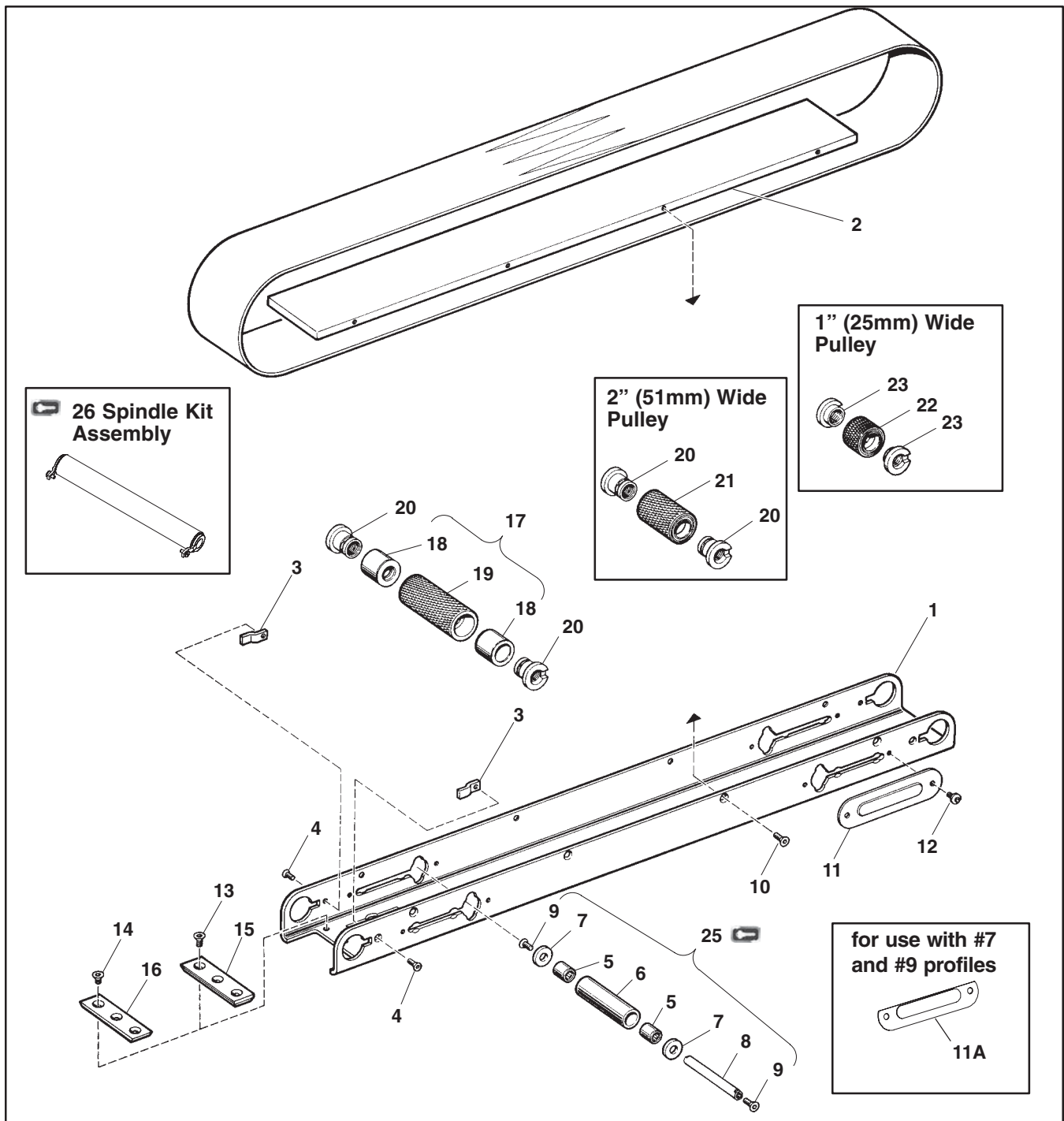
1. Insert 3/16" diameter rod through tension pin tube
2. Lightly tap bearing out opposite end.
3. Carefully press a new bearing (802-021) into the tension pin tube.

## Service Parts

|             |
|-------------|
| <b>NOTE</b> |
|-------------|

*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.*

## 4100 Series Conveyor Assembly

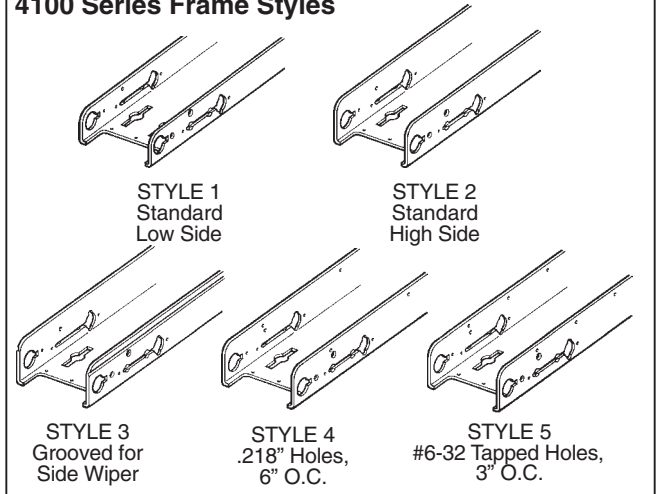




| Item   | Part Number     | Description  |
|--|-----------------|--|
| 1  | See Chart Below | Conveyor Frame   |
| 2  | See Chart Below | Bedplate   |
| 3  | 41-08           | Retainer Clip  |
| 4  | 903-037         | Flat Head Cap Screw, #6-32 x .38"  |
| 5  | 802-021         | Tension Pin Bearing  |
| 6  | 41-W-15         | Tension Pin Tube   |
| 7  | 41-18           | Thrust Washer  |
| 8  | 41-W-19         | Tension Pin Shaft  |
| 9  | 903-059         | Flat Head Cap Screw, #8-32 x .38"  |
| 10   | 903-060         | Flat Head Screw, #8-32 x .38" (#6 Head)  |
| 11   | 41B22           | Tension Pin Cover (Black Paint)  |
| 11A  | 667991B         | Tension Pin Cover (Black Paint)  |
| 12   | 901-104         | Button Head Cap Screw, #10-32 x .25"   |
| 13   | 903-105         | Flat Head Cap Screw, #10-32 x .31"   |
| 14   | 903-102         | Flat Head Cap Screw, #10-32 x .19"   |
| 15   | 41-W-50         | Bottom Wiper, .22" Thick   |
| 16   | 41-W-51         | Bottom Bar, .11" Thick (Used with belt types /04, /06 and all Clipper® Splice Belts) |
| 17   | 21-W-34         | Spindle assembly (Includes Items 18 and 19) for 03 - 12 Width Conveyors              |
| 18   | 21-33           | Radial Thrust Bearing  |
| 19   | 21-W-28         | Spindle for 03 - 12 Width Conveyors  |
| 20   | 41-35           | Spindle Retaining Sleeve for 02 - 12 Width Conveyors                                 |
| 21   | 21-2-34         | Spindle for 02 Width Conveyors   |
| 22   | 41-31           | Spindle for 01 Width Conveyors   |
| 23   | 41-32           | Spindle Retaining Sleeve for 01 Width Conveyors                                      |
| 24   | 807-784         | Plastic Plug (Not Shown)   |
| 25   | 41-W-21         | Tension Pin Assembly (Includes Items 5 through 9)                                    |
| 26   | 4100-01         | Spindle Kit Assembly (Includes Items 3, 4, 22, 23 and 24) for 01 Width Conveyors     |
|  | 4100-02         | Spindle Kit Assembly (Includes Items 3, 4, 20, 21 and 24) for 02 Width Conveyors     |
|  | 4100-03         | Spindle Kit Assembly (Includes Items 3, 4, 17, 20 and 24) for 03 Width Conveyors     |
|  | 4100-04         | Spindle Kit Assembly (Includes Items 3, 4, 17, 20 and 24) for 04 Width Conveyors     |
|  | 4100-06         | Spindle Kit Assembly (Includes Items 3, 4, 17, 20 and 24) for 06 Width Conveyors     |
|  | 4100-08         | Spindle Kit Assembly (Includes Items 3, 4, 17, 20 and 24) for 08 Width Conveyors     |
|  | 4100-12         | Spindle Kit Assembly (Includes Items 3, 4, 17, 20 and 24) for 12 Width Conveyors     |
| W = Conveyor width in inches: 1, 2, 3, 4, 6, 8, 12 |                 |  |

| Item 1: Conveyor Frame (Black Paint)                      |             |
|---|-------------|
| Length  | Part Number |
| 2' (610mm)  | 41BWW02-E   |
| 3' (914mm)  | 41BWW03-E   |
| 4' (1219mm)   | 41BWW04-E   |
| 5' (1524mm)   | 41BWW05-E   |
| 6' (1829mm)   | 41BWW06-E   |
| WW = Conveyor width reference: 01, 02, 03, 04, 06, 08, 12 |             |
| E = Frame style reference: 1, 2, 3, 4, 5                  |             |

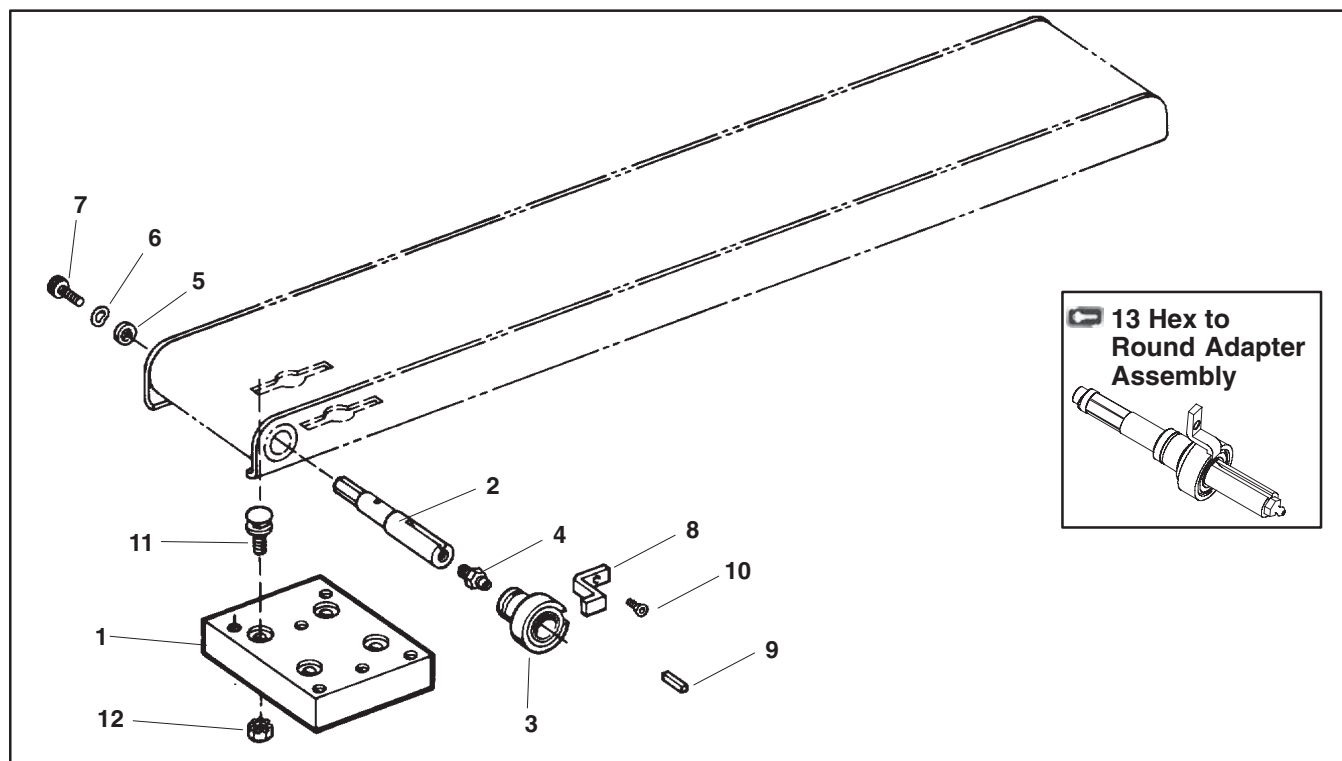
## 4100 Series Frame Styles



| Item 2: Bedplate  |             |
|---|-------------|
| Length  | Part Number |
| 2' (610mm)  | 41-WW02     |
| 3' (914mm)  | 41-WW03     |
| 4' (1219mm)   | 41-WW04     |
| 5' (1524mm)   | 41-WW05     |
| 6' (1829mm)   | 41-WW06     |
| WW = Conveyor width reference: 01, 02, 03, 04, 06, 08, 12 |             |

# Service Parts

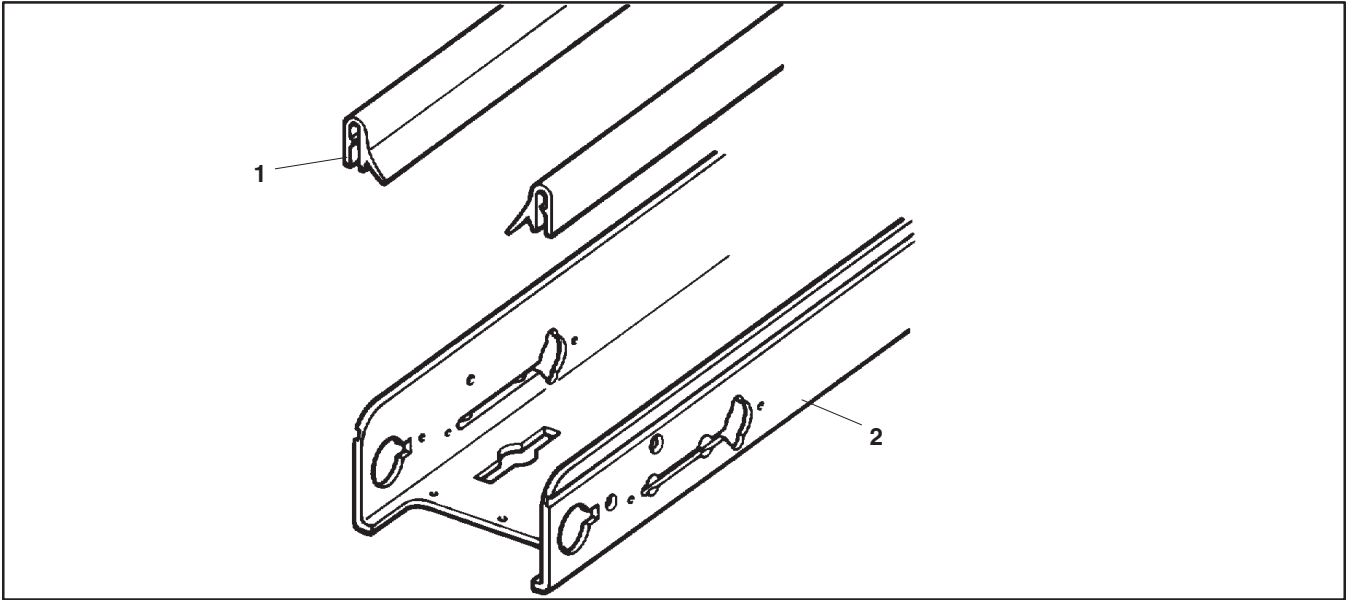
## Mounting Blocks and Outboard Drive Shaft



| Item | Part Number | Description  |
|------|-------------|--|
| 1    | 609486      | Mounting Block for 01 Width Conveyors                      |
|      | 609487      | Mounting Block for 02 Width Conveyors                      |
|      | 609488      | Mounting Block for 03 Width Conveyors                      |
|      | 609479      | Mounting Block for 04 Width Conveyors                      |
|      | 609481      | Mounting Block for 06 Width Conveyors                      |
|      | 609483      | Mounting Block for 08 Width Conveyors                      |
|      | 609485      | Mounting Block for 12 Width Conveyors                      |
| 2    | 43-38-1-05  | .5" Dia. Outboard Drive Shaft for 01 Width Conveyors       |
|      | 43-38-2-12  | .5" Dia. Outboard Drive Shaft for 02 Width Conveyors       |
|      | 43-38-3-15  | .5" Dia. Outboard Drive Shaft for 03 Width Conveyors       |
|      | 43-38-4-16  | .5" Dia. Outboard Drive Shaft for 04 - 12 Width Conveyors  |
|      | 216202M     | 12mm Dia. Outboard Drive Shaft for 02 Width Conveyors      |
|      | 216203M     | 12mm Dia. Outboard Drive Shaft for 03 Width Conveyors      |
|      | 216204M     | 12mm Dia. Outboard Drive Shaft for 04 - 12 Width Conveyors |
| 3    | 43-38-1-11  | Bearing Retaining Sleeve for 01 Width Conveyors            |
|      | 43-38-2-18  | Bearing Retaining Sleeve for 02 - 12 Width Conveyors       |

| Item | Part Number | Description   |
|------|-------------|---|
| 4    | 810-138     | Grease Fitting, 1/4-28  |
|      | 810-292     | Grease Fitting, M6  |
| 5    | 43-38-06    | Flat Hard Washer  |
| 6    | 807-247     | Curved Spring Washer  |
| 7    | 902-902     | Socket Head Cap Screw, #10-32 x .63"  |
| 8    | 43-38-08    | Retaining Sleeve Retainer Clip  |
| 9    | 912-052     | Square Key, 1/8" x 5/8"   |
|      | 980422M     | Square Key, 4mm x 22mm  |
| 10   | 903-037     | Flat Head Cap Screw, #6-32 x .38"   |
| 11   | 613602P     | Bolt-Flat Washer Assembly   |
| 12   | 910-126     | Hex Nut with Lock Washer  |
| 13   | 43-38-01    | Hex to Round Adapter Assembly (Includes Items 2, 3 and 8) for 01 Width Conveyors      |
|      | 43-38-02    | Hex to Round Adapter Assembly (Includes Items 2, 3 and 8) for 02 Width Conveyors      |
|      | 43-38-03    | Hex to Round Adapter Assembly (Includes Items 2, 3 and 8) for 03 Width Conveyors      |
|      | 43-38-04    | Hex to Round Adapter Assembly (Includes Items 2, 3 and 8) for 04 - 12 Width Conveyors |

-03 Side Wiper

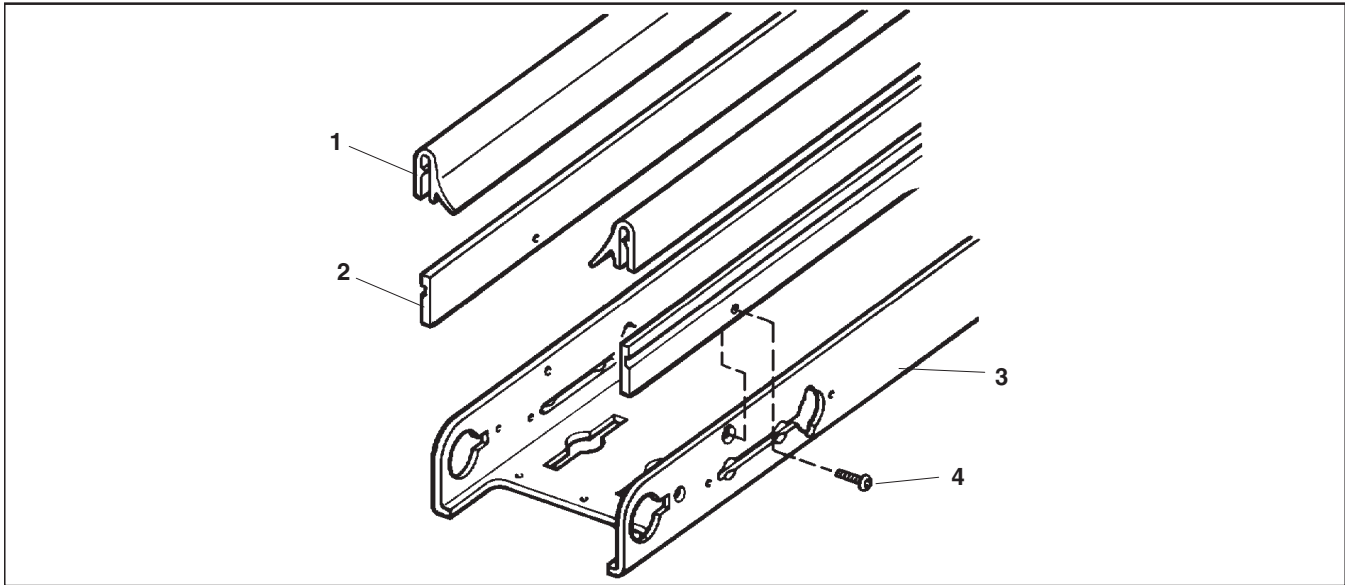


| Item | Part Number | Description               |
|------|-------------|---------------------------|
| 1    | 21-02-03    | Side Wiper 2' (610mm) Lg  |
|      | 21-03-03    | Side Wiper 3' (914mm) Lg  |
|      | 21-04-03    | Side Wiper 4' (1219mm) Lg |
|      | 21-05-03    | Side Wiper 5' (1524mm) Lg |
|      | 21-06-03    | Side Wiper 6' (1829mm) Lg |

| Item | Part Number | Description                |
|------|-------------|----------------------------|
| 2    | 41BWW02-3   | Conveyor Frame 2' (610mm)  |
|      | 41BWW03-3   | Conveyor Frame 3' (914mm)  |
|      | 41BWW04-3   | Conveyor Frame 4' (1219mm) |
|      | 41BWW05-3   | Conveyor Frame 5' (1524mm) |
|      | 41BWW06-3   | Conveyor Frame 6' (1829mm) |

# Service Parts

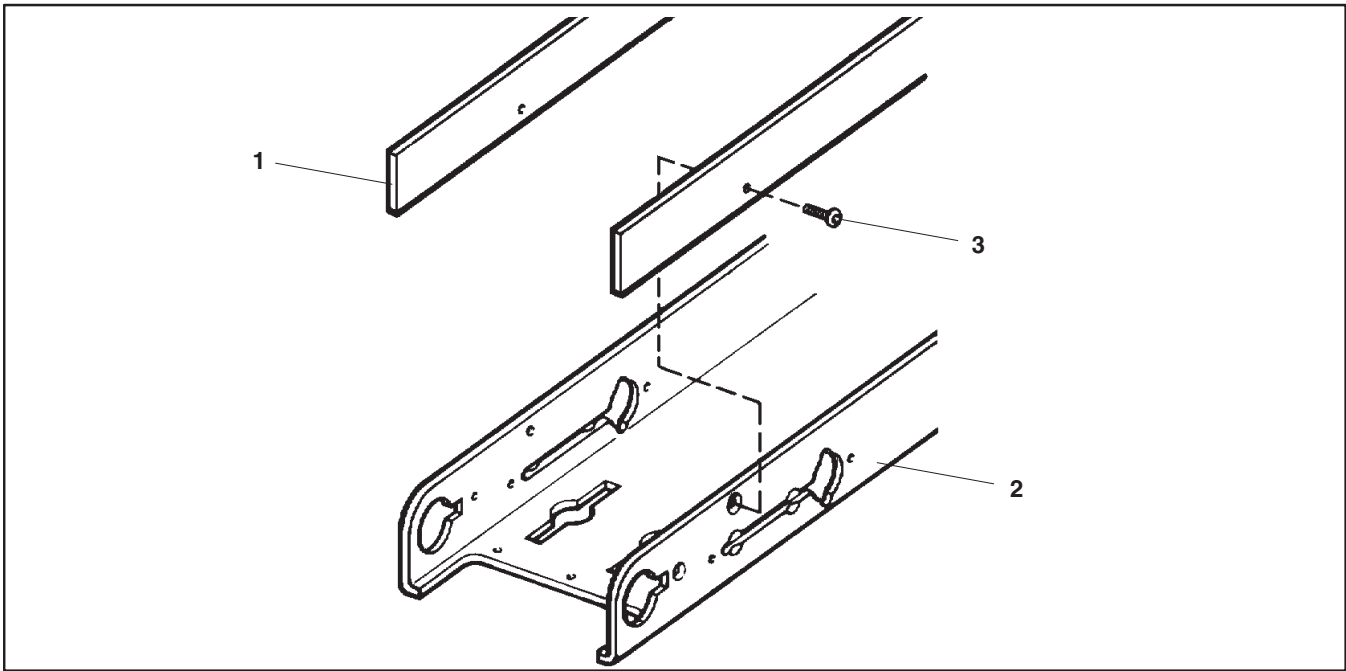
## -07 Low Side to Side Wiper



| Item | Part Number | Description                   |
|------|-------------|-------------------------------|
| 1    | 21-02-03    | Side Wiper 2' (610mm) Lg      |
|      | 21-03-03    | Side Wiper 3' (914mm) Lg      |
|      | 21-04-03    | Side Wiper 4' (1219mm) Lg     |
|      | 21-05-03    | Side Wiper 5' (1524mm) Lg     |
|      | 21-06-03    | Side Wiper 6' (1829mm) Lg     |
| 2    | 41-02-07    | Low to Side Wiper 2' (610mm)  |
|      | 41-03-07    | Low to Side Wiper 3' (914mm)  |
|      | 41-04-07    | Low to Side Wiper 4' (1219mm) |
|      | 41-05-07    | Low to Side Wiper 5' (1524mm) |
|      | 41-06-07    | Low to Side Wiper 6' (1829mm) |

| Item | Part Number | Description                       |
|------|-------------|-----------------------------------|
| 3    | 41BWW02-1   | Conveyor Frame 2' (610mm)         |
|      | 41BWW03-1   | Conveyor Frame 3' (914mm)         |
|      | 41BWW04-1   | Conveyor Frame 4' (1219mm)        |
|      | 41BWW05-1   | Conveyor Frame 5' (1524mm)        |
|      | 41BWW06-1   | Conveyor Frame 6' (1829mm)        |
| 4    | 901-062     | Button Head Cap Screw #8-32 x .5" |

-09 Low to High Side

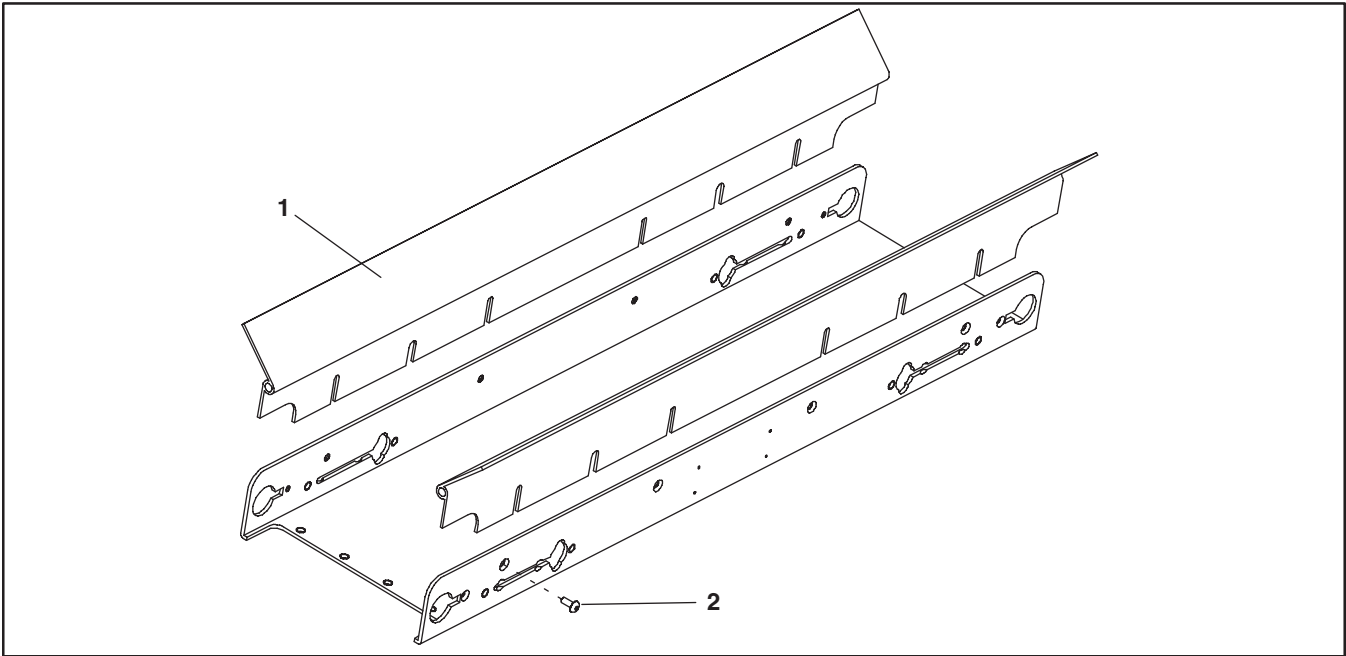


| Item | Part Number | Description                        |
|------|-------------|------------------------------------|
| 1    | 41-02-09    | Low to High Side Wiper 2' (610mm)  |
|      | 41-03-09    | Low to High Side Wiper 3' (914mm)  |
|      | 41-04-09    | Low to High Side Wiper 4' (1219mm) |
|      | 41-05-09    | Low to High Side Wiper 5' (1524mm) |
|      | 41-06-09    | Low to High Side Wiper 6' (1829mm) |

| Item | Part Number | Description                       |
|------|-------------|-----------------------------------|
| 2    | 41BWW02-1   | Conveyor Frame 2' (610mm)         |
|      | 41BWW03-1   | Conveyor Frame 3' (914mm)         |
|      | 41BWW04-1   | Conveyor Frame 4' (1219mm)        |
|      | 41BWW05-1   | Conveyor Frame 5' (1524mm)        |
|      | 41BWW06-1   | Conveyor Frame 6' (1829mm)        |
| 3    | 901-062     | Button Head Cap Screw #8-32 x .5" |

# Service Parts

## Hinged Side Guide

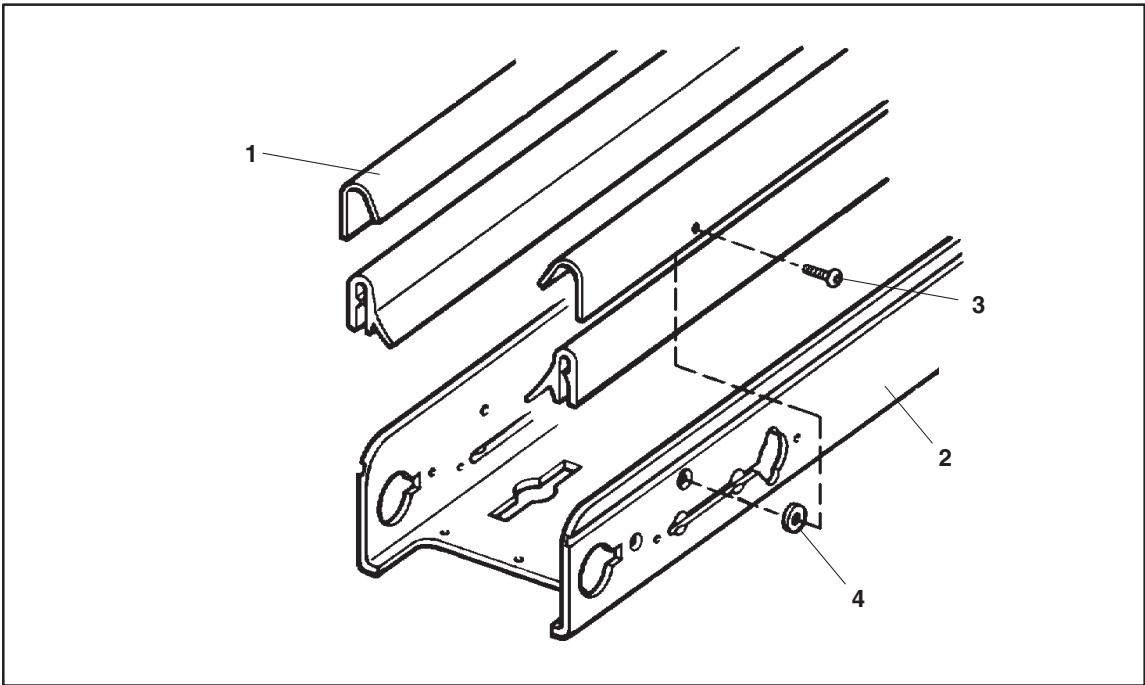


| Item | Part Number | Description                    |
|------|-------------|--------------------------------|
| 1    | 462532      | Hinge Guide 3.5" x 2' (610mm)  |
|      | 462533      | Hinge Guide 3.5" x 3' (914mm)  |
|      | 462534      | Hinge Guide 3.5" x 4' (1219mm) |

| Item | Part Number | Description                        |
|------|-------------|------------------------------------|
| 2    | 901-059     | Button Head Cap Screw #8-32 x .38" |



Abrasion Shield



| Item | Part Number | Description                 |
|------|-------------|-----------------------------|
| 1    | 669307      | Abrasion Shield 2' (610mm)  |
|      | 669308      | Abrasion Shield 3' (914mm)  |
|      | 669309      | Abrasion Shield 4' (1219mm) |
| 2    | 41BWW02-3   | Conveyor Frame 2' (610mm)   |
|      | 41BWW03-3   | Conveyor Frame 3' (914mm)   |
|      | 41BWW04-3   | Conveyor Frame 4' (1219mm)  |

| Item | Part Number | Description                       |
|------|-------------|-----------------------------------|
| 3    | 901-062     | Button Head Cap Screw #8-32 x .5" |
| 4    | 901-004     | Flat Washer #8                    |

Conveyor Belt Part Number Configuration

Flat Belt Conveyor Model Number

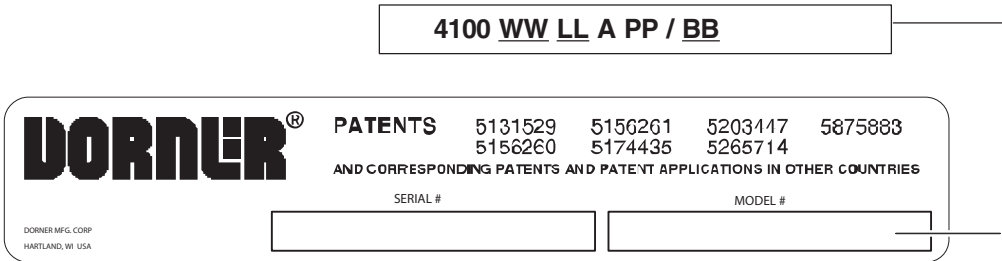


Figure 66

Flat Belt Part Number Configuration

Refer to Dorner patent plate (Figure 66). From the model number, determine conveyor width (“WW”), length (“LL”) and belt type (“BB”). Use data to configure belt part number as indicated below.

41 - WW LL / BB

41 - (Fill In) /

# 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.

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

There will be a return charge on all new undamaged items returned for credit where Dorner was not at fault. Dorner is not responsible for return freight on such items.

|  |                      |     |
|--|----------------------|-----|
| Conveyors and conveyor accessories               |                      |     |
| Standard catalog conveyors                       |                      | 30% |
| MPB Series, cleated and specialty belt conveyors |                      | 50% |
| 7400 & 7600 Series conveyors                     | non-returnable items |     |
| Engineered special products                      | case by case         |     |
| Drives and accessories                           |                      | 30% |
| Sanitary stand supports                          | non-returnable items |     |

|                                  |                      |     |
|----------------------------------|----------------------|-----|
| Parts                            |                      |     |
| Standard stock parts             |                      | 30% |
| MPB, 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 Technical Sales, Catalog Sales and Service Teams 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](http://www.dorner.com).

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



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