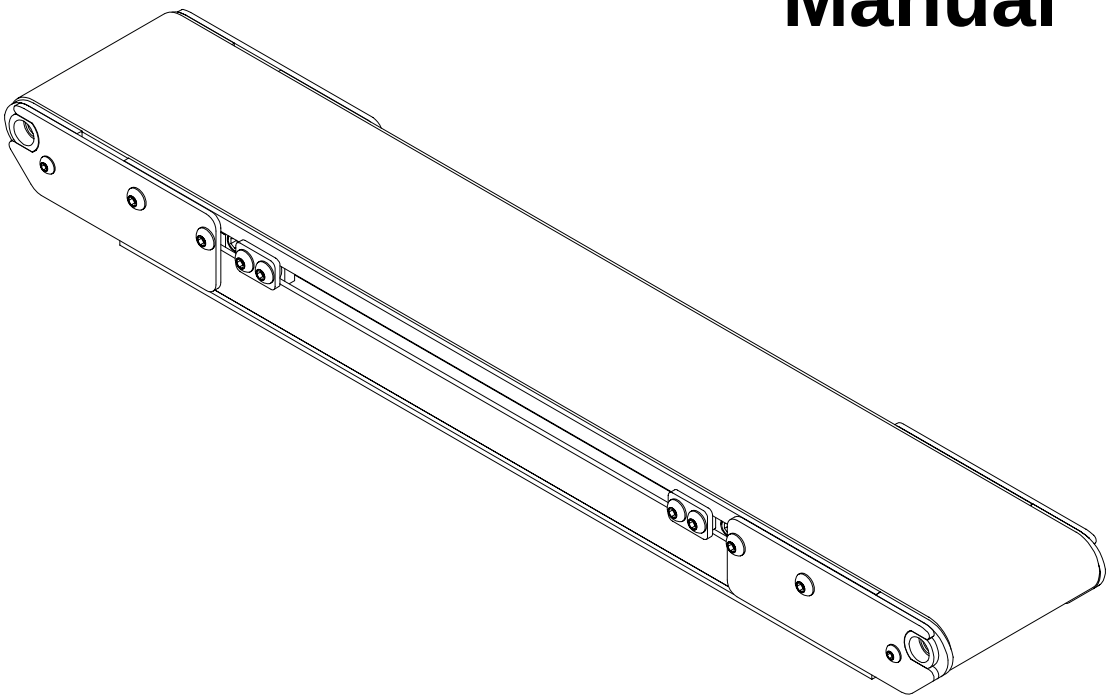
DORNER®

2100 Series
Belt Conveyors

Parts, Assembly & Maintenance Manual



851-043 Rev. J

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WARNING

- **The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.**
- **Standing on a conveyor or transporting people is prohibited.**
- **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. Because Dorner Mfg. Corp. cannot control the physical installation and applications of multiple conveyor systems, taking protective measures is the responsibility of the user.**
- **Operating Dorner conveyors in an explosive environment is prohibited.**
- **NEVER operate equipment without guards or other protective devices properly secured in place. In addition, to prevent injury, make sure all electrical and pneumatic power sources have been disconnected and locked-out before you perform any maintenance, make any adjustments or replace any components.**
- **Some right angle electric motors may operate at an elevated temperature which may cause people to be startled if they accidentally touch the motor housing.**
- **Before proceeding to loosen hardware that locks-in the selected stand height, be sure that all related Conveyor sections are securely supported to prevent them from moving suddenly and dropping-down which may pinch or strike you, causing serious personal injury.**

Foreword

By following the maintenance and adjustment instructions in this manual, you will prolong the life of your conveyor and maintain its maximum efficiency.

When ordering replacement parts, always give the model and serial number. These numbers are on the nameplate label (Figure 1), located on conveyor side rail. Record the numbers below for ready reference.

Model Number _____

(Fill In)

Serial Number _____

(Fill In)

For pictorial clarity, some illustrations in this manual may show guards or other protective devices open or removed. Under no circumstances should the conveyor be operated without these devices securely in place.

NOTE:

All technical data in this publication is based on the product information available at time of printing. Dorner reserves the right to make changes at any time without notice or obligation to install those changes on units previously delivered.

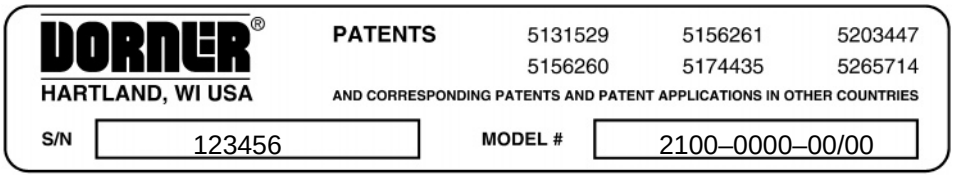


Figure 1: Typical Model & Order Number Nameplate Label PZ01

Installation Instructions

Introduction

2100 series domestic flat belt conveyors are engineered, designed and manufactured to meet a variety of material handling applications.

All conveyors feature an aluminum extruded alloy frame, T-slots for convenient mounting of pre-engineered accessories and drive packages designed for dependable and low maintenance operation.

To compliment the features and functions of 2100 series domestic flat-belt conveyors, any conveyor can be combined with standard aluminum support stands or steel support stands. Both types of stands are available with fixed or swivel casters.

General Instructions for All Conveyors

1. Using appropriate lifting means, carefully remove the conveyor assembly or section from the shipping container and place it in its correct operating position and direction.
2. Use Dorner stands and compatible mounting hardware or mounting provided by the user to securely mount the conveyor. Refer to Support Stands Parts, Assembly & Maintenance Manual for appropriate mounting details.
3. The conveyor must be mounted straight, flat and level, within the confines of the conveyor. Use a straight edge and a level for initial set up (Figure 2).

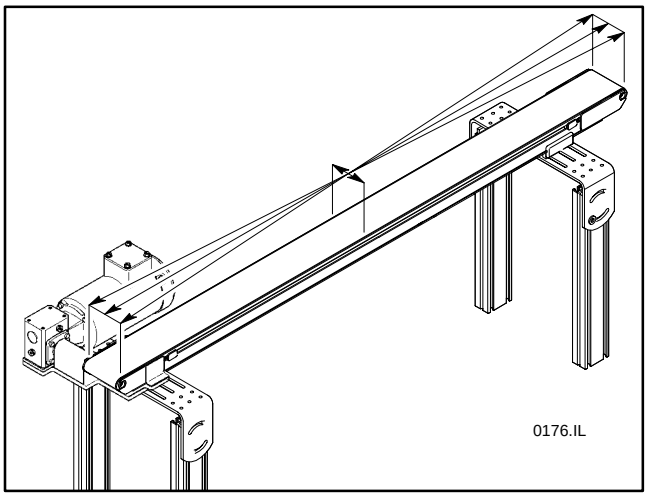


Figure 2: Conveyor Alignment Reference Detail (Side End Drive Illustrated)

IMPORTANT:
Do not bend or twist the conveyor frame when mounting the conveyor.

4. Refer to Mount Installation Instructions included with the gearmotor mounting package to attach the gearmotor. For maximum load carrying, locate the gearmotor so that the product, being conveyed, moves toward the drive (or so that the conveyor belt is pulled towards the drive). In addition, some gearmotors may require some customer-provided electrical wiring. Follow all applicable local electrical codes and the wiring diagrams, supplied with the gearmotors. The wiring diagram for a three-phase gearmotor is located inside the terminal box which is attached to the gearmotor. The wiring diagram for a variable speed gearmotor is located inside the control box.

NOTE:
Dorner recommends that the end drive gearmotor package is mounted to the non-tensioning end of the conveyor.

5. **All low side conveyors without optional guiding**, have factory installed belt tracking guides (A of Figure 3) installed on both ends of conveyor. The guide is a 3.5″ (89 mm) long piece of formed plastic which snaps onto the portion of the conveyor sidewall (B) above the T-slot channel.
   a. ***To remove the guide*** from the conveyor sidewall, apply a slight outward and downward finger-pressure on one of the top corners of the guide and gradually peel it off the portion of the conveyor sidewall (B).
   b. ***To install the guide*** onto the conveyor sidewall, first place the lower lip (C), of the guide, against the upper edge of the conveyor sidewall T-slot channel. Then, apply inward and upward pressure to completely snap it into place.

NOTE:
Be sure to save the belt tracking guides (A of Figure 3) for start-up after belt cleaning or replacement.

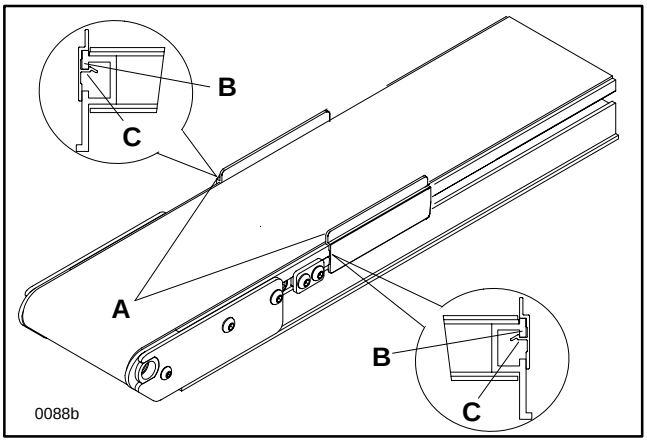


Figure 3: Conveyor Low Side Belt Tracking Guide Installation Detail

Center Drive Conveyors - 13 to 24 ft (3,962 to 7,315 mm) Long

Conveyors, measuring 13 to 24 ft (3,962 to 7,315 mm) long, consist of two sections. These conveyors are split for shipping. Use the following instructions for re-assembly:

1. Position connecting hardware, (E of Figure 4) and mounting brackets with return rollers (I) in proper locations.
2. Place the section (J), with the drive unit (F) attached, into position on the stands. The conveyor belt should be over the top of the return rollers.
3. If the bottom wiper/guard was installed on the second section (D), it must be removed before installing the section. The bottom wiper/guard must be outside of the belt. Refer to step 5 and Figure 9 of "Belt Removal for Conveyor Only (No Stands or Gearmotor Mounting Package)" topic on page 8.
4. Unroll the belt (H of Figure 4) and slip it over outside of second section (D).
5. Place the second section (D) into position on the stand mounting brackets with return rollers (I). Push the lower return run of the belt up into the conveyor frame when lowering the section onto the stand to prevent pinching the belt.
6. Fasten the two sections together by centering and tightening the connecting hardware (E) (Items 33, 41 and 42 on page 25).
7. Secure to the stands.
8. Assembled connection (K of Figure 4) should appear as shown in Figure 4. With the connecting hardware (E) and the center stand clamp mount (L) centered at the split between the two sections.
9. **On center-driven conveyors only**, the pneumatic belt take-up system will tighten the belt when air pressure is applied. The pressure gauge is set at the factory for start-up tensioning pressure. Do not use excessive pressure.
10. Take-up extra belt slack. Refer to "Conveyor Belt Tension for End Drive Conveyors or Conveyor Belt Slack Take-up for Center Drive Conveyors", page 14, and set the conveyor belt tension.
11. Proceed to the following "Start-up & Preliminary Belt Tracking Check" section on this page.

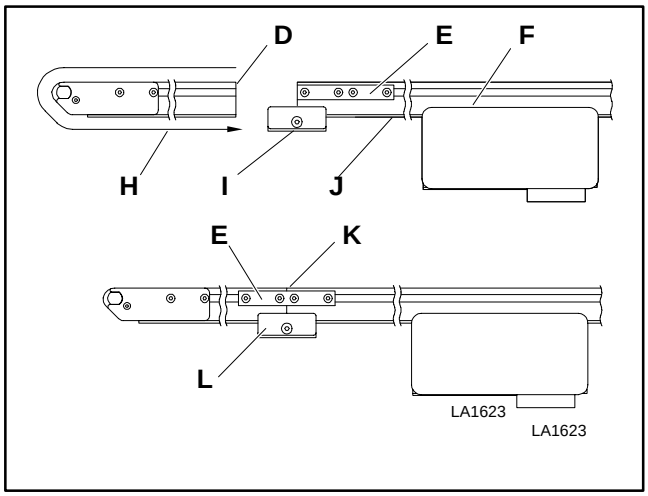


Figure 4: Conveyor Alignment Reference Detail (Side End Drive Illustrated)

Start-up & Preliminary Belt Tracking Check

IMPORTANT:

Stop the conveyor immediately if the belt does not track properly. Refer to "Conveyor Belt Tracking Adjustment" topic on page 14.

1. Make sure the conveyor belt tension is set properly. Refer to "Conveyor Belt Tension for End Drive Conveyors or Conveyor Belt Slack Take-up for Center Drive Conveyors" topic beginning on page 14.
2. Install the belt tracking guides on both ends of low side conveyors, if not already installed. Refer to Figure 3 on page 4.
3. Energize the power to the conveyor drive motor and, on center-driven conveyors only, turn on the supply air to the take-up cylinder. Then, proceed as follows:
   a. ***On fixed speed conveyors,*** jog the conveyor on and off in very short cycles, a maximum of 6 starts per minute. Observe the belt tracking on both ends. Gradually increase the run cycle.
   b. ***On variable speed conveyors***, set the control at its lowest speed. Run the conveyor and observe the belt tracking at both ends. Gradually increase the speed (cycle time).

IMPORTANT:

Stop the conveyor immediately if the belt does not track properly. Refer to "Conveyor Belt Tracking" topic beginning on page 14. In addition, long conveyors may require a person at each end to observe the belt tracking and a person to control the drive.

4. Make tracking adjustments following information under the "Conveyor Belt Tracking" topic on page 14.

Lubrication

WARNING

To prevent injury, make sure all electrical power sources have been disconnected and locked-out before you perform any maintenance, make any adjustments or replace any components.

Spindle Bearings

NOTE:

When lubricating spindle bearings, use a conventional hand grease gun, with a maximum of one pump per application, unless otherwise specified. *Do not over-lubricate.* To prevent damage to the bearing, do not use a power grease gun. This creates pressure that may unseat the bearing. In addition, 2″ (44 mm) wide conveyors use shielded ball bearings and do not require lubrication.

Use Dorner Red Grease 14 oz. cartridge, part number 829-002, or 14 oz. can, part number 829-003. Lubricate spindle bearings every 750 hours or more frequently, depending on operating conditions.

All non-driven positions have a plastic plug (A of Figure 5) installed into the ends of the spindle retaining sleeves (B). Use a small flat screwdriver to remove this plug.

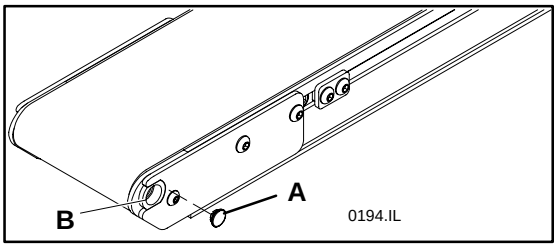


Figure 5

Non-driven Positions - 3″ (70 mm) & Wider Conveyors

1. Install Dorner greasing adapter part number 200046 (C of Figure 6).

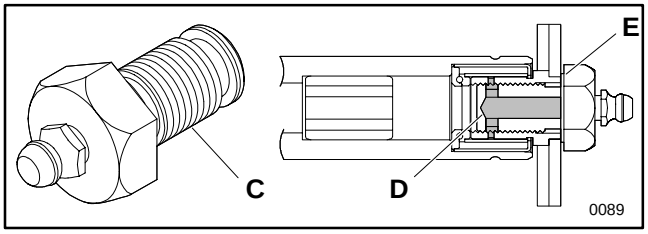


Figure 6

2. Make sure the adapter shoulder (E) is seated against the conveyor tail plate. Proper seating assures alignment of the internal lubrication passages (D).
3. When lubrication is finished, the grease adapter (C) can be left in place or can be replaced with the plastic plug (A of Figure 5).

Driven Positions - 3″ (70 mm) & Wider Conveyors

Conveyors with Side Mounting Package★ - Figure 7

1. Remove the coupling guard (L of Figure 7) to access the drive shaft (G) and flex coupling (H).
2. After removing screws (F), slide the gearmotor (J)/flex coupling (H)/hex drive shaft (G) assembly from the conveyor.
3. Lubricate the spindle bearing on the drive side in one of the following ways.
   a. Install greasing adapter part number 200046 (C of Figure 6).
   b. Install a permanent optional greasing retaining sleeve (K of Figure 7), part number 200398. This retaining sleeve has a 90° grease fitting and allows access to the grease fitting without removing the hex drive shaft (G). Install the retaining sleeve (K) with grease fitting down to allow clearance for the coupling guard (L).
4. Make sure the adapter/retaining sleeve shoulder (E of Figure 6) is seated against the conveyor tail plate. Proper seating assures alignment of the internal lubrication passages (D).
5. When lubrication is finished, remove the greasing adapter (C), if installed, and reverse preceding steps 1 and 2.

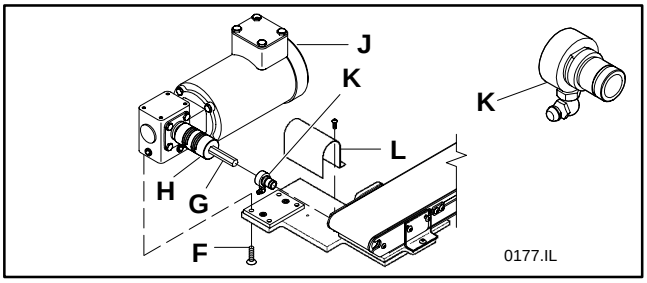


Figure 7

Conveyors with Top or Bottom Mounting Package★ - Figure 8

1. Lubricate the spindle bearing on the drive side through the outboard drive shaft grease fitting (M of Figure 8).
2. Remove the cap (N) from the drive belt guard. It is not necessary to remove the guard.

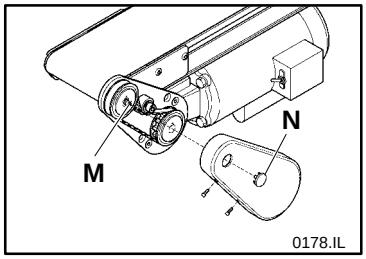


Figure 8

3. When lubricating the spindle bearings, **for the first time only,** the outboard shaft assembly must be filled with grease before the bearings will get any lubrication. Use a maximum of two pumps. **Do not over-lubricate.**
4. When lubricating any of the spindle bearings anytime after the initial lubrication, use a maximum of one pump per application. **Do not over-lubricate.**
5. Replace the cap (N) removed in step 2.

★- End Drive Mounting Packages are Illustrated. Lubrication principles apply to End Drive and Center Drive conveyors.

Center Drive Spindles

Permanent grease fittings are provided for the center drive take-up spindle assembly (consisting of items 15, 16 and 17, on page 28). To lubricate the sleeve bearings on the drive spindle (item 19) and the idler spindle (item 17), install Dorner greasing adapter, part number 200046 (C of Figure 6).

NOTE:

When lubricating the sleeves, for the first time only, use a maximum of two pumps. Any time after the initial time, use a maximum of one pump. Do not over-lubricate.

Conveyor Belts

Inspection

Inspect the conveyor belt for:

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

Problem Identification

Belts that walk to one side indicate:

- Belt tracking incorrectly. Refer to “Conveyor Belt Tracking” topic beginning on page 14.
- Twisted or damaged conveyor frame
- Dirt accumulating on the outside diameter of the spindles
- Side load on belt.

Non-uniform movement indicates:

NOTE:

When a problem is identified, be sure to perform the necessary corrective maintenance.

- Excessive load on conveyor belt
- Intermittent jam or drive train problems
- Conveyor belt or drive timing belt, when applicable, are not properly tensioned

Lines or rough edges on belt could indicate:

- Belt tracking incorrectly. Refer to “Conveyor Belt Tracking” topic on page 14.
- Jammed part
- Accumulated dirt in wipers
- Foreign material inside the conveyor
- Improperly positioned accessories

NOTE:

Refer to Troubleshooting Guide on page 21.

Cleaning

IMPORTANT:

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

For most conveyor belts, use Dorner Belt Cleaner, part number 625619, or equivalent. Mild soap and water may also be used. Do not soak the belt.

Due to the texture of woven polyester and black anti-static belts, use a small semi-stiff bristled brush, similar to a vegetable brush, to improve cleaning.

Oil-filled Gear Reducers

Use Dorner gear oil (part number 605625, or equivalent) and top off as specified by the manufacturer.

Conveyor Repair Preparations

Tools

Use Dorner Tool Kit Part Number 2500 for proper maintenance. Follow instructions accompanying the tool kit. Refer to page 22 for Parts List and Illustration.

Checklist

To avoid costly delays in repair, use the following checklist:

- Have complete spindle assemblies, replacement belts, return rollers, drive components, gearmotors and fasteners in stock and ready for use.
- Inspect the entire conveyor while it is disassembled.
- Thoroughly clean the conveyor inside and outside during repair. Remove any impacted dirt from the knurls on the outside diameter of the spindle.
- Replace all worn and damaged parts.
- Check all bearings for smooth operation.
- To minimize downtime when multiple conveyors of the same size are used, stock a complete conveyor that can be exchanged for the damaged conveyor. The damaged conveyor can then be repaired as needed.

Conveyor Belt Replacement Procedure

Belt Removal for Conveyor Only (No Stands or Gearmotor Mounting Package)

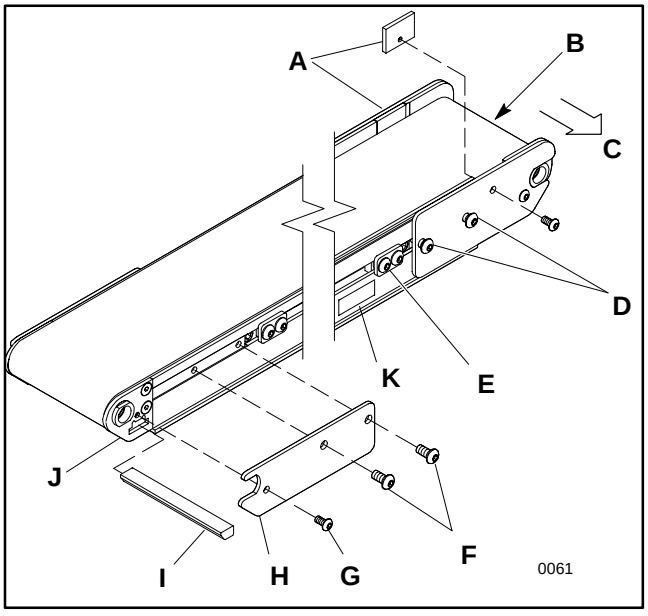


Figure 9

1. If you are working on a high-side conveyor, remove filler plates (A of Figure 9).
2. If engaged, loosen the belt tracking cam assemblies (E) on both sides of the tensioning end (B), identified with a label (K), and slide toward middle of conveyor.
3. Loosen the tail cover plate screws (D) on both sides at the tensioning end.
4. Position the tensioning end (B) of conveyor by pushing it back into the conveyor frame using the heel of your hand. This loosens the belt sufficiently for removal.
5. Find the bottom wiper (I) at the discharge end of the conveyor. Remove the tail cover plate screws (F and G) on one side of the conveyor. Remove the tail cover plate (H) and slide out the bottom wiper (I) through hole in spindle plate (J).
6. Remove the old belt by sliding it sideways (C) from the conveyor.

Belt Removal for All End Drive Conveyors

NOTE:

For maximum load carrying, the gearmotor is usually mounted so that the conveyor belt is pulled towards the drive. The wiper is always on the same end as the belt is traveling towards. If the drive package is installed as a pusher, the wiper will be on other end of the conveyor.

End drive conveyors usually have a support stand on each end, on conveyors up to 6 ft (1,830 mm) in length. Units over 6 ft (1,830 mm) may have three (3) or more support stands. Stand attachment is as shown in Figure 10. Additional stands would usually be attached in the same way as (M of Figure 10).

WARNING

To prevent injury, make sure all electrical power sources have been disconnected and locked-out before you perform any maintenance, make any adjustments or replace any components.

In addition, the weight of the gearmotor is all on one end of the conveyor. This could cause the conveyor to tip off the stands when the mounting clamps are removed. Be sure to provide some form of support (L of Figure 10) underneath the gearmotor while the belt is being changed.

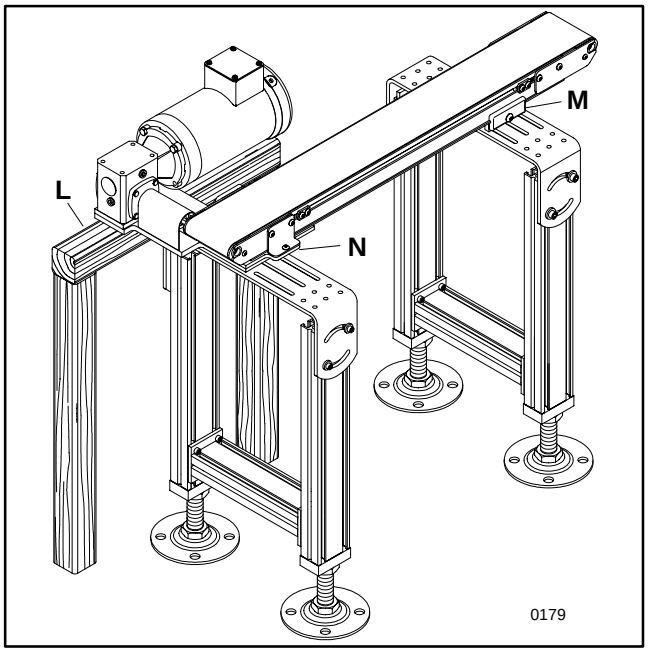


Figure 10

1. Disconnect and lockout the electrical power source.
2. To facilitate re-assembly, mark critical locations on conveyor frame and remove guiding, controls, stops and other attached accessories which would interfere with belt removal.
3. Follow steps 1 through 4 under the "Belt Removal for Conveyor Only (No Stands or Gearmotor Mounting Package)" topic on page 8.
4. On the drive package end of the conveyor, remove the three screws (P of Figure 11) that secure the drive mounting bracket (N).
5. Remove the tail cover plate screws (G and F of Figure 9) on the side opposite the gear motor.

NOTE:

The two (2) screws (F of Figure 9) are the same screws as the two of the three (2 of the 3) screws (P of Figure 11), when wiper is on same end of conveyor as the drive motor.

6. Then, remove the tail cover plate (H of Figure 11) and slide out the bottom wiper (I) through hole in spindle plate (J).
7. Remove the old belt from the drive end of the conveyor by sliding it sideways (C) from between the conveyor and motor support plate.
8. Re-connect and secure the drive mounting bracket (N), between the motor mounting plate and tail cover plate, after the old conveyor belt has been removed and before proceeding to the disconnect the conveyor in any other support stand area.
9. Loosen the screw securing the mounting clamp plate (M of Figure 10) on each side of the conveyor at all stand locations other than directly below the gearmotor mounting package. The clamp attachment screws only need to be loosened far enough to allow the lip of the conveyor side rail to clear the clamp plate, when the conveyor is raised-up.

WARNING

To prevent injury from the support stand tipping-over when the conveyor is uncoupled, be sure to anchor the stand to the floor or otherwise properly stabilize the stand before it is detached from the conveyor.

10. With the clamps loosened, lift and properly support the conveyor section while sliding the old conveyor belt sideways (C of Figure 11) from between the conveyor and adapting plate (Q).
11. Repeat step 10 for all stand areas, other than at the drive package end.

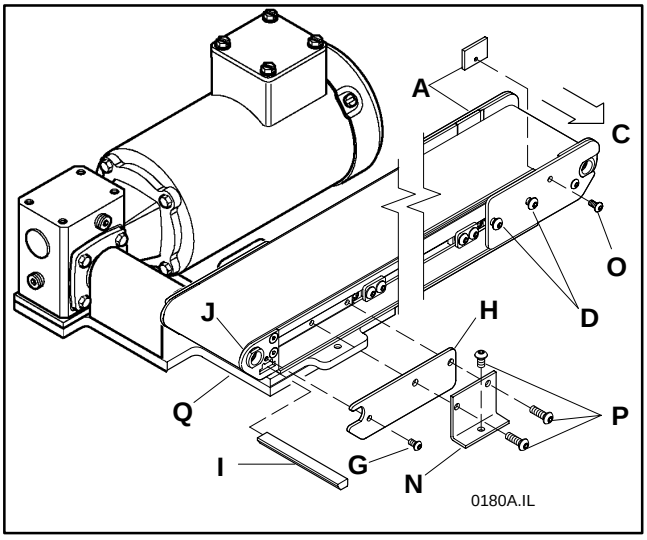


Figure 11

Belt Replacement for All End Drive Conveyors

1. Orient the replacement belt so the belt splice leading fingers (S of Figure 12) point in the direction of belt travel (R), towards the bottom wiper end (T) of the conveyor, and that the outside fingers (U) are positioned as shown.

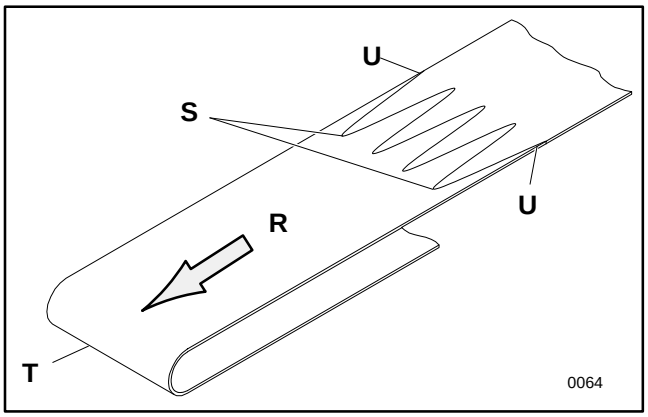


Figure 12: Replacement Belt Orientation Detail

2. Begin new conveyor belt installation on the same end of the conveyor from which the old belt was last removed. Slide the new belt sideways onto the conveyor frame assembly, from the non-drive side. Once into position, the conveyor can be lowered into contact with the clamp blocks while being careful not to pinch the conveyor belt. With the conveyor in position, fully tighten the screws (M of Figure 10) securing the mounting clamp plates to the clamp blocks.
3. Re-install bottom wiper (I of Figure 11) by inserting it through the hole in the spindle plate (J). Then, replace and re-secure the tail cover plate screws (F & G of Figure 9).
4. Secure the tail cover plate (H of Figure 11) to the spindle plate (J) with screw (G).
   Make sure the spindle plates are tightly seated against the conveyor frame on both sides.
5. Reassemble the drive mounting bracket (N of Figure 11) with the three screws (P).
6. Be sure that all the previously loosened or removed hardware (F, G, P & O) is replaced and tightly secured, except the tail cover plate screws (D) on the tensioning end of the conveyor.
7. Refer to “Conveyor Belt Tension for End Drive Conveyors or Conveyor Belt Slack Take-up for Center Drive Conveyors”, page 14, and set the conveyor belt tension.
8. If you are working on a high-side conveyor, replace filler plates (A of Figure 11).
9. Replace guiding, controls, stops and other attached accessories referring to the positions previously marked.
10. Re-connect the electrical power source.
11. Refer to the “Start-up & Preliminary Belt Tracking Check” section on page 5.

Belt Removal for Center Drive Conveyors Only

Removal of Mounting Packages

WARNING

To prevent injury, make sure all electrical and pneumatic power sources have been disconnected before you perform any maintenance, adjustments or replace any components.

Disconnect all pneumatic and electrical power sources.

To facilitate re-assembly, mark critical locations on conveyor frame and remove guiding, controls, stops and other attached accessories which will interfere with belt removal.

To change the conveyor belt on the center drive conveyor, the center drive module and conveyor belt must be separated from the conveyor frame.

The first step in this process is to remove the drive mounting package from the center drive module. Refer to the appropriate mounting package removal instructions.

Side Mounting Package

1. Remove the flat head screws (A of Figure 13) securing motor mount bracket (B) to spacer block (C) located on bottom of the center drive module. Spacer block can be left attached to the center drive module.
2. Slide the whole drive assembly (D) off of the center drive module and set aside.
3. Continue with "Removal of Center Drive Module & Conveyor Belt" subtopic.

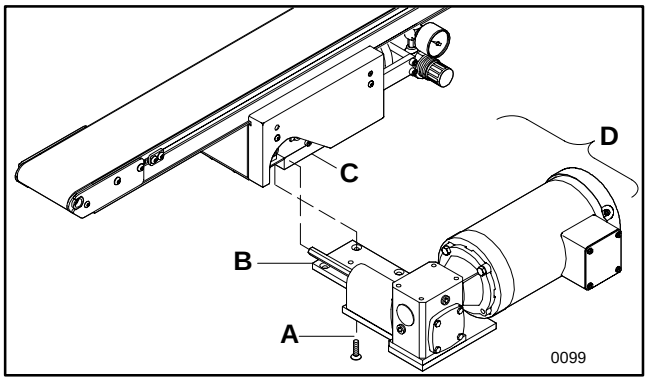


Figure 13

Bottom Mounting Package

1. Remove the screws (E of Figure 14) securing the belt guard (L) to the back guard plate (G). Remove the belt guard (L).
2. Loosen the cap screw (J) securing the tensioning bearing assembly (I) to the back guard plate (G). This will allow enough slack in the timing belt (K) for removal. Remove the timing belt.
3. Remove the outboard drive shaft assembly with timing belt pulley (F). Refer to "Removal" subtopic under the "Outboard Drive Shaft Replacement" topic, beginning on page 16.

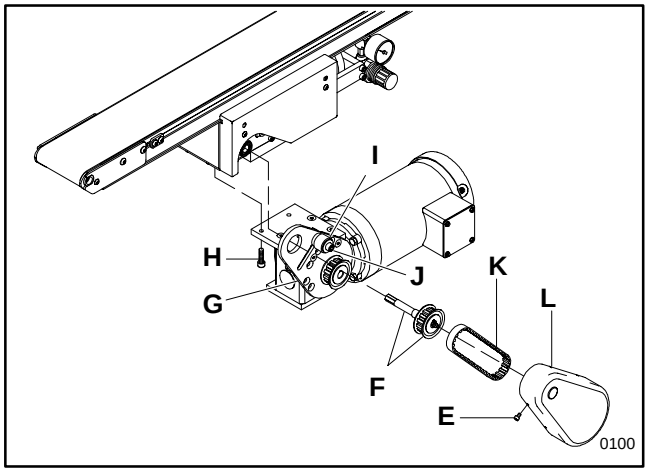


Figure 14

4. Remove socket head screws (H of Figure 14) and slide the remaining drive assembly components from the center drive module and set aside.

Removal of Center Drive Module & Conveyor Belt

1. Remove the button head cap screws (M of Figure 15) securing the side covers (N) to the center drive module. Remove the side covers.

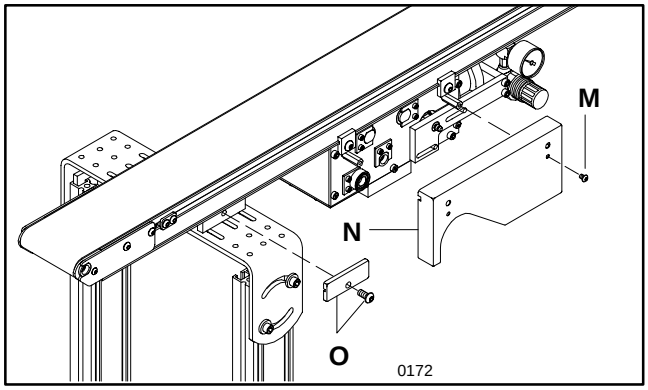


Figure 15

2. Follow steps 1 through 5 as described under the Belt Removal for Conveyor Only (No Stands or Gearmotor Mounting Package) topic on page 8.
3. Remove the screws and mounting clamps (O of Figure 15), from both sides of the conveyor, on the tension end and center support stands.
4. Lift up on the conveyor frame and slide the conveyor belt out and off the frame, in the support stand areas.
5. Go to the end opposite the tension end and repeat steps 3 and 4. Reattach conveyor frame to all support stands.

6. Remove the center drive module with belt by loosening the drive clamp plates (P of Figure 16). Only loosen the screws far enough for conveyor frame to clear the channel in the clamp plate. Remove the center drive module.

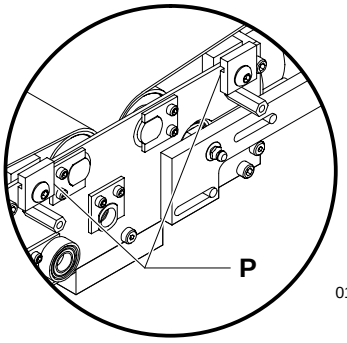


Figure 16: Clamp Plate Removal Detail

Belt Removal from Center Drive Module

1. Remove the idler assembly (R of Figure 17) closest to the tension end (U) of the center drive module.
   a. Remove the shaft retaining clips (S) from both ends of the idler shaft.
   b. Remove the shaft and spacers.
   c. Lift the idler pulley (R) out of the center drive module.

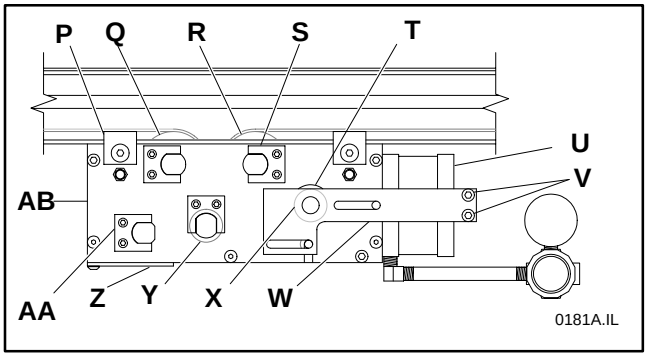


Figure 17

2. Remove the screws (V), securing the side take-up plate (W), from one side of the center drive module.
3. Remove the take-up spindle (X) through the opening (T) in the side plate. The take-up shaft and retaining sleeves can remain seated inside take-up spindle (X).
4. Remove the bottom cover plate (Z), located at the drive end of the center drive module, secured with two button head cap screws.
5. Remove the button head cap screws securing the shaft retaining clips (AA) on both sides of the drive spindle.

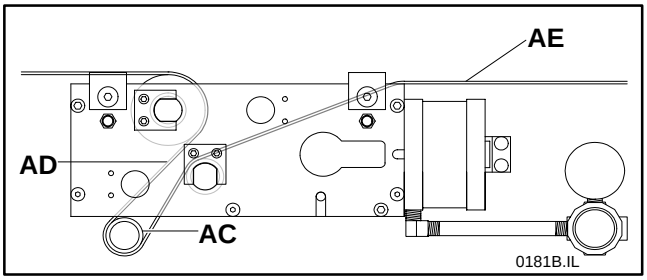


Figure 18

6. Remove the retaining sleeves from both sides of the drive spindle (AC of Figure 18). Refer to "Spindle Removal Procedure" topic on page 17. Push the slack belt (AD) wrapped around the drive spindle so that both the belt and the drive spindle protrude through the bottom cover plate opening. Slide the drive spindle out the side of the belt.
7. Lift the old belt (AE) from the center drive module.

Replacement of Conveyor Belt and Center Drive Module

Conveyor Belt Replacement

1. Orient the replacement belt so the belt splice leading fingers (S of Figure 12) point in the direction of belt travel (R), towards the bottom wiper end (T) of the conveyor, and that the outside fingers (U) are positioned as shown.
2. Make a loop in the new conveyor belt and insert the loop between the remaining idler assembly (Q of Figure 17) and the smooth spindle (Y), located at the drive end (AB) of the center drive module.

   Insert enough belt so that the loop is exposed through the bottom plate opening and will allow the drive spindle (AC of Figure 18) to be inserted from the side.
3. Insert the drive spindle assembly (AC) into the looped belt and align with the proper holes in the side plates.

   The hex bore is off center on spindles for conveyors measuring 5″ (127 mm) or wider. Make sure the spindle is installed with the hex bore closest to the drive side of the center drive module. (See "Installation" subtopic under the "Outboard Drive Shaft Replacement" topic on page 16.)
4. Reinstall the outboard shaft retaining sleeve and the retaining sleeve through the side plates and into the drive spindle assembly (AC of Figure 18).

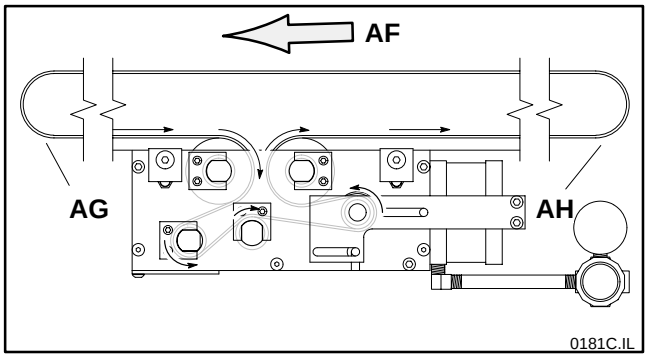


Figure 19: Belt Flow Diagram (Refer to "NOTE" following this illustration)

5. Slide the take-up spindle (X of Figure 17) through the slotted opening (T) in the side plate making sure that the conveyor belt will wrap around the spindle. Refer to Figure 19. Seat the end of the retaining sleeve into the mounted side take-up plate. Make sure that the flat spot on the retaining sleeve goes onto the flat spot on the take-up plate.
6. Locate the side take-up plate (W of Figure 17) on the exposed dowel pins and take-up spindle retaining sleeve. Again, make sure that the flats on the retaining sleeve and the take-up plate match-up to allow for free movement. Secure in place with the two socket head cap screws (V).
7. Press both idler spacers into the side plates just far enough so they are flush with the inside of the center drive module.
8. Drop the idler pulley (R) into the center drive module with the belt in between it and the take-up spindle. Refer to Figure 19.
9. Line up the idler pulley (R of Figure 17) with the spacers and reinstall the shaft through the spacers and the pulley. Secure in place with retaining clips (S).
10. Reinstall and tighten all shaft retaining clips.
11. Reinstall the bottom cover plate (Z) and secure in place with two button head cap screws.

Re-installation of Center Drive Module with Conveyor Belt

1. Reinstall the center drive module to the conveyor frame. Move the center drive module clamps (P of Figure 16) back into position and tighten the screws to secure the center drive module to the conveyor frame. Make sure that the center drive module is mounted parallel to the conveyor frame.

NOTE:

Referring to Figure 19, and in consideration of the direction of belt travel (AF), the tensioning end of center drive module must be positioned on the same end as tensioning end of the conveyor (AH) which is opposite the wiper end (AG). Tension end of the center drive is also identified by a label (AI of Figure 20).

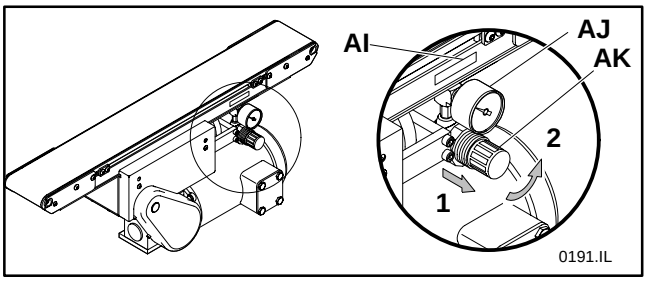


Figure 20

2. Remove the screws and mounting clamps (O of Figure 15 on page 11) from both sides of the conveyor on the discharge end.
3. Lift up on the conveyor frame and slide the conveyor belt between the frame and the return rollers on the stands.
4. Reattach the discharge end support stand.
5. Then go to the tension end and center support stands and repeat steps 2 and 3. Reattach conveyor frame to all support stands.
6. Reinstall the bottom wiper on the discharge end. Refer to "Belt Replacement for All End Drive Conveyors" topic beginning on page 10 and follow steps 3 and 4.
7. Replace the center drive module side covers. Refer to "Removal of Center Drive Module & Conveyor Belt" topic beginning on page 11. Refer to Figure 15 and step 1.

8. Refer to the "Removal of Mounting Packages" subtopic on page 11 and reverse the instructions for removal of the appropriate Side Mounting or Bottom Mounting Package.
9. Return to "Belt Replacement for All End Drive Conveyors" topic and follow steps 7, 8 & 9 on page 10.
10. Re-connect all pneumatic and electrical power sources.
11. The air pressure was set and locked for start-up tensioning pressure. To change air pressure, pull out on knob (AK of Figure 20) and turn counter-clockwise to increase the air pressure as required to convey the load without stalling. **Do not use excessive air pressure.**
12. Refer to the "Start-up & Preliminary Belt Tracking Check" section on page 5.

Conveyor Belt Tension for End Drive Conveyors or Conveyor Belt Slack Take-up for Center Drive Conveyors

The following procedure is used to tension the conveyor belt on all End Drive Conveyors. It is also used to take-up conveyor belt slack and achieve proper overall conveyor length on Center Drive Conveyors.

To adjust belt tension/slack:

1. Locate the tension end (B of Figure 21) of the conveyor, identified with a label (F).

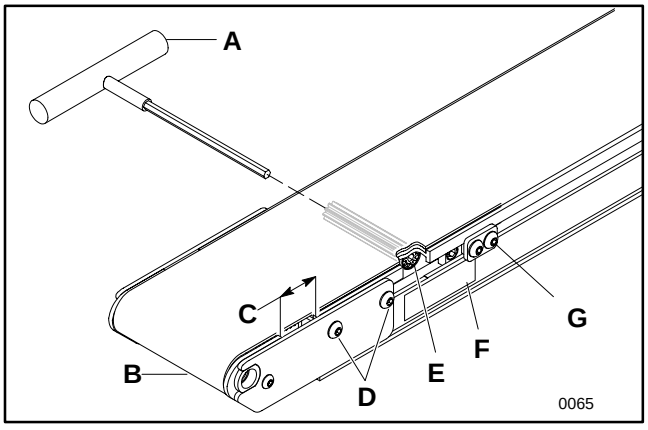


Figure 21

2. If engaged, loosen and slide belt tracking cam assemblies (G) towards the center of the conveyor on both sides of the tension end (B).
3. Loosen tail cover plate screws (D) on both sides of the tension end (B).
4. Insert a 3/16″ hex key wrench (A) into either end of the pinion (E).
5. Rotate the pinion (E) to extend the tensioning end until the gap (C), between the spindle plate and the conveyor frame, measures 1.19″ (30 mm) for a new end-driven belt or any center driven belt, or as required to stop the drive spindle slippage.
6. Refer to the Troubleshooting Guide on page 21 for additional belt slippage information.

NOTE:
Over-tensioning adds unnecessary loading to the spindle bearings.

7. While holding the pinion (E) in the tensioned position, tighten the cover plate screws (D) on both sides of the conveyor. Torque screws to approximately 18 in/lb (2.03 Nm).
8. If you are working on a high side conveyor, replace the filler plates. Refer to Figure 9 under the "Belt Removal for Conveyor Only (No Stands or Gearmotor Mounting Package)" on page 8.
9. Position the belt tracking cam against the slide bar while making sure groove is correctly oriented (see Figure 22 on page 15.
10. Refer to the "Start-up & Preliminary Belt Tracking Check" section on page 5.

Conveyor Belt Tracking

Make sure the belt is properly tensioned and that the conveyor is straight and level in all directions within the confines of the conveyor.

This conveyor is equipped with an articular linkage which allows the pulley to be positioned at a slight angle to facilitate belt tracking.

If you are working on a low side conveyor, re-install the belt tracking guide assemblies following the details on page NO TAG.

Check both ends of the conveyor for proper belt tracking. The belt should track centered between the tail plates on both ends of the conveyor. Conveyor belt tracking should always be adjusted on the discharge end of conveyor first. Then, check the tracking on the opposite (infeed) end of the conveyor and readjust, if necessary.

Before proceeding to adjust the belt tracking, make sure the cover plate screws (D of Figure 22), on both sides of the conveyor, are tightly secured. Then, adjust belt tracking as follows:

1. Loosen (but do not remove) the two (2) cam clamping plate screws (H) on both sides of the conveyor discharge.
2. Slide both belt tracking cam assemblies (G of Figure 21 or 22) as far as they can be toward the end of the conveyor.
3. The belt tracking cam (I of Figure 22) must be set to the low point at the point of contact as illustrated. The slot (J), in the belt tracking cam, should be horizontal and pointing towards the end of the conveyor.
4. Tighten the two (2) cam clamping plate screws (H), on both sides of the conveyor.

5. **Only loosen the two tail cover plate screws (D of Figure 21 or 22) on the side of the conveyor that the belt is tracking toward.**

6. With the conveyor running, use the 3/16″ hex key wrench (A of Figure 21) to slowly rotate the belt tracking cam (I of Figure 22). Rotate the cam in small increments, in either direction to cause the belt to track away from the conveyor side, until the belt tracks in the center of the conveyor. Always allow the conveyor belt to make several revolutions between adjustments.

IMPORTANT:

Rotate belt tracking cam very slowly and in small increments, to prevent the belt from moving beyond the desired centered position.

7. While holding the belt tracking cam (I) in position, tighten the tail cover plate clamp screws (D) and re-check the belt tracking.

8. Recheck belt tracking, on opposite end of the conveyor, and adjust if needed.

NOTE:

Carefully feel the conveyor ends for hot spots and belt edge wear which would indicate that the conveyor belt is rubbing against the conveyor frame and thus tracking improperly. Repeat the tracking adjustment, if necessary.

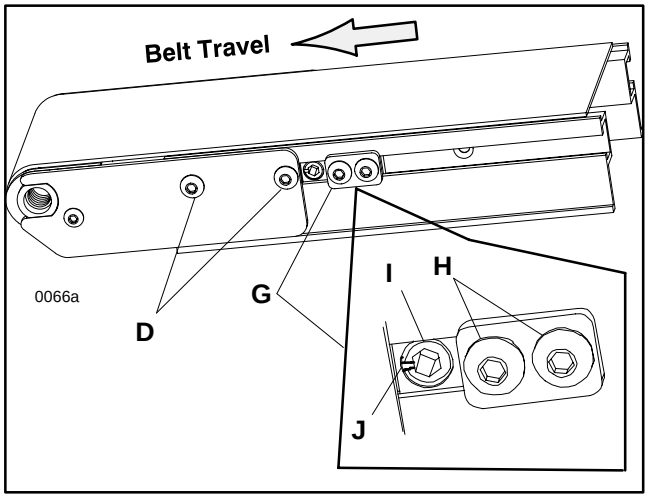


Figure 22

Outboard Drive Shaft Replacement

Removal

Removal of the outboard drive shaft (C of Figure 23 and M of Figure 24) requires use of Dorner hex key wrench extension tool (A of Figure 23 and L of Figure 24).

For replacement of hex key wrench extension tool use part number ☆25-08 for conveyors 2″ (44 mm) to 12″ (305 mm) wide, or part number ◇25-08A for conveyors wider than 12″ (305 mm).

Type 1 Outboard Drive Shaft

1. Insert the small end (B of Figure 23) of hex key wrench extension tool (A) into the spindle (H) end opposite the outboard drive shaft assembly (C) and remove special spindle screw (D) and washers (E and F).
2. Pull the outboard drive shaft assembly (C) out from the outboard bearing retaining sleeve (G).

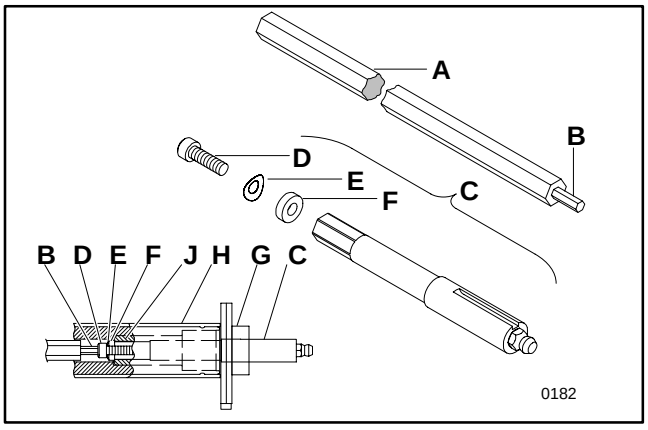


Figure 23: Type 1 for 2 to 12″ (44 to 305 mm) Wide Conveyors

Type 2 Outboard Drive Shaft

3. Remove the outboard drive shaft assembly (M of Figure 24) by inserting the blunt end (K) of the hex key wrench extension tool (L) into the spindle (Q) end opposite the outboard drive shaft assembly (M).
4. While pushing in the spring loaded plunger (N) with the hex key wrench extension tool (L), pull out the outboard drive shaft assembly (M).

Installation

For outboard drive shaft assembly (C of Figure 23 and M of Figure 24) installation, the spindle (H of Figure 23 and Q of Figure 24) may have to be turned around in the conveyor frame. The hex bore (J of Figure 23 and R of Figure 24) is off center on spindles for conveyors measuring 5″ (127 mm) and wider. If necessary, remove the spindle following the "Spindle Removal Procedure" on page 17, turn it around, and replace it following the "Spindle Replacement Procedure" on page 18.

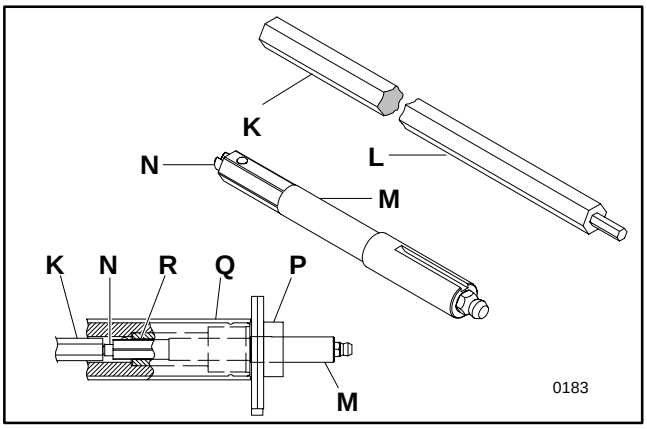


Figure 24: Type 2 for 15 to 25″ (381 to 610 mm) Wide Conveyors

Conveyor Width	Insert Shaft at Spindle End
2″ (44 mm) to 4″ (95 mm)	Either
5″ (127 mm) and wider	Closest to hex bore

Install the outboard bearing retaining sleeve in the desired drive location. Be sure the spindle hex bore (J of Figure 23 and R of Figure 24) is properly located as indicated in the previous chart.

Type 1 Outboard Drive Shaft

1. Push the outboard drive shaft assembly (C of Figure 23) into the outboard bearing retaining sleeve (G).
2. Place the curved spring washer (E), then the flat hard washer (F) onto the special spindle screw (D). Turn the screw/washer set into the outboard drive shaft assembly (C) using the small end (B) of hex key wrench extension tool (A). Tighten the screw until it is just seated in the shaft [20 in/lb (2.26 Nm) maximum] which fully compresses the spring washer. Then, back off the screw 1/2 turn (180°).

NOTE:
Replace the screw after it has been removed and replaced several times.

Type 2 Outboard Drive Shaft

1. Insert the blunt end (K of Figure 24) of the hex key wrench extension tool (L) into the end of the spindle (Q) opposite the outboard bearing retaining sleeve (P).
2. Exert inward pressure on the hex key wrench extension tool (L) to release the spring loaded plunger (N), at the same time push inward on the outboard drive shaft assembly (M) until it is fully seated.
3. The hex key wrench extension tool (L) may now be removed. Make sure outboard drive shaft assembly (M) is locked in position by pulling outward on the assembly.

☆ - Part of Tool Kit, Part Number 2500. See page 22.

◇- Shipped with conveyors wider than 12″ (305 mm).

Spindle Removal Procedure

1. Remove conveyor belt. Refer to the "Conveyor Belt Replacement Procedure" topic beginning on page 8 for your type of gearmotor mounting package.
2. Remove the tail cover plate screws (A of Figure 25) and tail cover plates (B) on both sides of the conveyor.

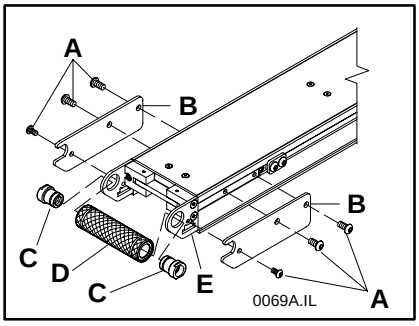


Figure 25

3. Remove the retaining sleeves (C) and spindle (D). If retaining sleeves are frozen, continue with steps 4 - 9.
4. All non-driven positions have a plastic plug (F of Figure 26) installed into the ends of the spindle retaining sleeves (G). Use a small flat screwdriver to remove this plug.

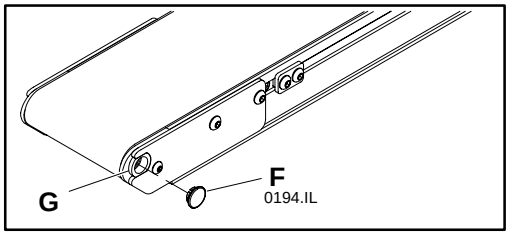


Figure 26

5. Position the bearing anvil/sleeve removal tool (M of Figure 27), part number ☆25-09, over the retaining sleeve (C of Figure 25 or J of Figure 27).

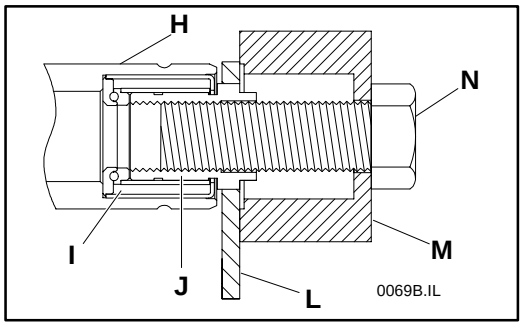


Figure 27

6. Insert the special threaded bolt (N of Figure 27), part number ☆906-278, through the bearing anvil/sleeve removal tool (M) and into the retaining sleeve (J).
7. Tighten the bolt (N) until the retaining sleeve (J) is free of the tail spindle plate (L).
8. Remove the retaining sleeve (J) from the bolt (N) and repeat for the other side.
9. Take spindle (H) out of the conveyor frame.

Spindle Bearing Replacement

Bearings in the spindles on the 2″ (44 mm) wide conveyor cannot be replaced. If the bearings are worn, the entire spindle must be replaced. Refer to Spindle Assembly chart on page 25 for the correct part number for your conveyor.

Bearings in spindles on the 3″ (70 mm) and wider conveyors can be removed with Dorner Bearing Removal Tool (A of Figure 28), part number ☆25-05.

Removal

Use procedure below to remove spindle bearings:

1. Make sure that the flair (C) on the bearing removal tool is completely closed. If it is slightly open it may not fit into the bearing (F of Figure 29). Use the hex key wrench extension tool (D), either part number ☆25-08 or ◇25-08A and loosen the tapered screw (B of Figure 28) while compressing the flair (C) inward to make sure that the tool is completely closed.

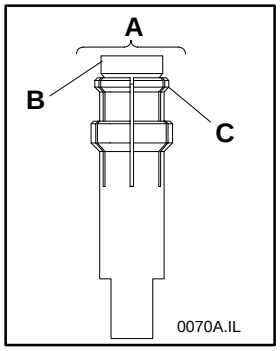


Figure 28

2. Insert bearing removal tool (E of Figure 29) into the spindle (G) through bearing (F).

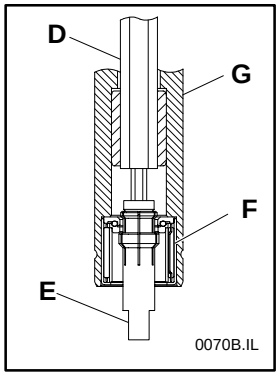


Figure 29

☆ - Part of Tool Kit, Part Number 2500. See page 22.

◇- Shipped with conveyors wider than 12″ (305 mm).

While holding the hex key wrench extension tool (P of Figure 30), part number ⭐25-08 or ◇25-08A, rotate bearing removal tool using flats (K) to tighten the bearing removal tool's tapered screw (N) until the flair (H) of the tool is completely spread open behind the bearing (M).

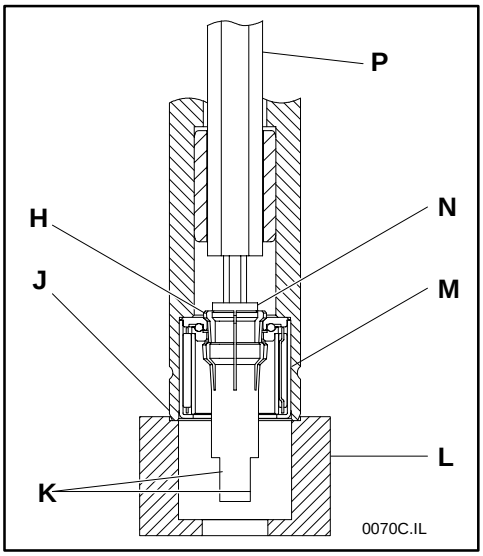


Figure 30

3. Support spindle end (J) with bearing anvil/sleeve removal tool (L), part number ⭐25-09. Using an arbor press or drill press, press bearing (M) out of the spindle into bearing anvil/sleeve removal tool (L).

IMPORTANT:

Heavy tapping or hammering will damage the hex key wrench extension tool (P) and/or bearing (M).

Installation

Use the following procedure to install spindle bearings (R of Figure 31).

1. Hold the spindle (U) in an upright position with "V" block or other means. Support the bottom end of spindle (U) using the bearing anvil/sleeve removal tool (L of Figure 30), part number ⭐25-09.
2. Install the bearing insertion tool (Q of Figure 31), part number ⭐25-10 in an arbor press or drill press. Then, align bearing insertion tool (Q) with spindle bore (T).
3. Slide bearing (R) onto the bearing insertion tool (Q).

NOTE:

Keep bearings (R) and spindle (U) aligned when installing. Misalignment tilts the bearing and may result in bearing damage.

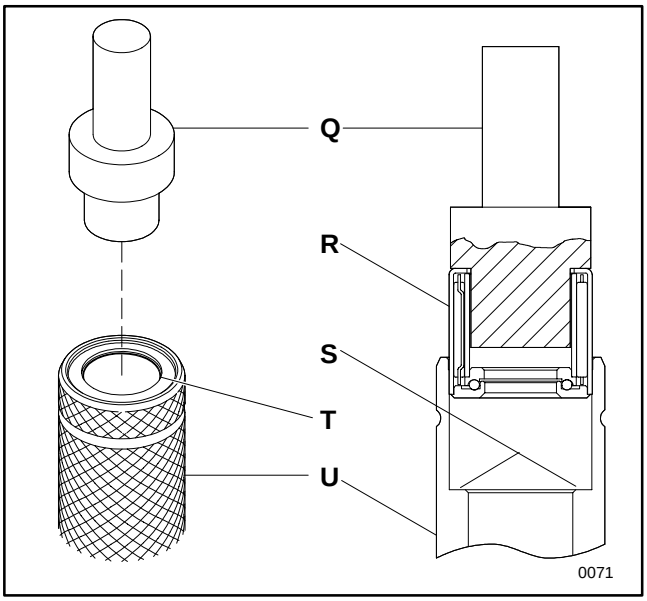


Figure 31

4. Press bearing (R) firmly and slowly into spindle (U) until it bottoms out on spindle shoulder (S). If bearing fits too loosely in the spindle bore (T) or if the bore is out of round, the spindle must be replaced.

Spindle Replacement Procedure

Refer to Figure 25 on page 17 to install spindles as described below:

NOTE:

If the outboard drive shaft is being replaced, be sure the hex broach, in the spindle, is oriented correctly. Refer to "Outboard Drive Shaft Replacement" topic on page 16.

1. Insert spindle (D of Figure 25) between the tail spindle plates (E).
2. Slide the retaining sleeves (C) through openings in the tail spindle plates (E) and into the spindle (D) on each side.
3. Install the plastic plug (F of Figure 26) into the ends of the spindle retaining sleeves (G).
4. Secure the tail cover plates (B of Figure 25) to the conveyor with tail cover plate screws (A).
5. Install the conveyor belt. Refer to the "Conveyor Belt Replacement" topic beginning on page 8, the "Conveyor Belt Tension for End Drive Conveyors or Conveyor Belt Slack Take-up for Center Drive Conveyors" topic on page 14, and the "Conveyor Belt Tracking" procedure beginning on page 14.

⭐ - Part of Tool Kit, Part Number 2500. See page 22.

◇- Shipped with conveyors wider than 12″ (305 mm).

Timing Belt Tension Adjustment for Top and Bottom Mounting Packages

WARNING

To prevent injury, make sure all electrical power sources have been disconnected and locked-out before you perform any maintenance, make any adjustments or replace any components.

1. Disconnect power.
2. Remove the screws (C of Figure 32) securing the belt guard (D) to the back guard plate (A). Remove the belt guard.

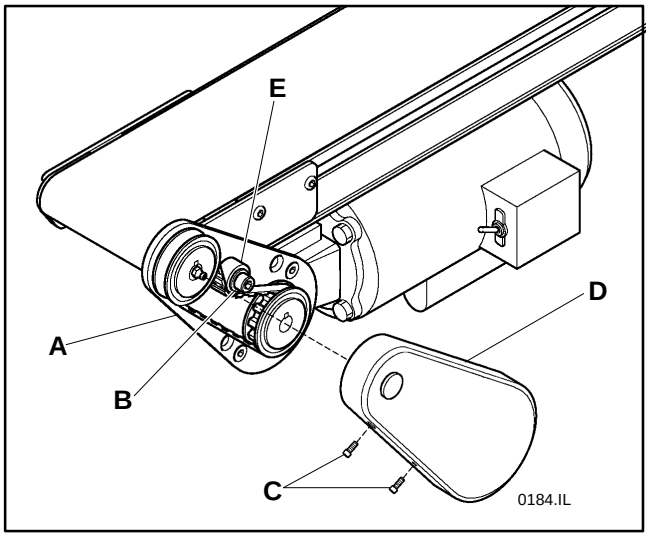


Figure 32

3. Check the timing belt for wear. Replace if worn.
4. Before making any adjustments to the timing belt tension, determine the conveyor belt direction of travel (F of Figure 33 and 34) and make sure the tensioning roller assembly (E of Figures 32, 33 and 34) is positioned on the slack side of the timing belt.
5. Loosen the cap screw (B of Figure 32) securing the tensioning bearing assembly (E of Figures 32, 33 and 34) to the back guard plate (A of Figure 32).
6. Every timing belt application exhibits its own individual operating characteristics. The optimum timing belt tension should be determined experimentally.

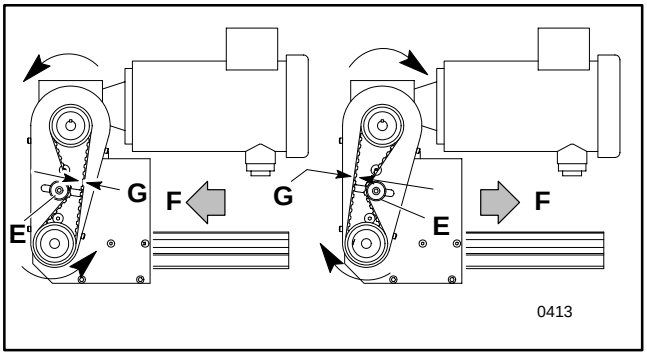


Figure 33: Top End Drives

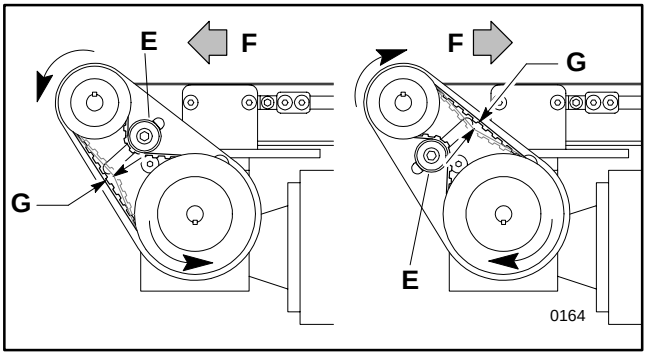


Figure 34: Bottom End Drives

7. As a starting point for the tensioning process, slide the tensioning bearing assembly (E of Figures 32, 33 and 34) against the timing belt until deflection (G of Figures 33 and 34) of the timing belt is 1/8″ with 1 lb (0.5 kg or 4.3 N) of force.
   If necessary, continue to slide the tensioning bearing assembly (E of Figures 32, 33 and 34) against the timing belt until the belt is tensioned so as to prevent jumping of teeth under the most severe conditions which the drive will encounter.

NOTE:

Over-tensioning the timing belt may cause reduced belt life or bearing and drive damage.

8. After the timing belt is properly adjusted re-tighten the tensioning bearing assembly cap screw (B of Figure 32).
9. Re-assemble the belt guard (D) and belt guard screws (C) to the back guard plate (A).

Troubleshooting Guide

Bearings

Problem	Possible Cause	Solution
Bearing failure	Grit getting into bearing.	Side wipers and bottom wiper may be needed along with increased frequency of lubrication.
	Solvent getting into bearings.	Same as above. Keep greasing adapters in retaining sleeves. Install guards and tilt conveyor to reduce amount of solvent on conveyor.
	Drive shaft misaligned or excessive side force on shaft and couplings.	Be sure spindle, sleeves and bearings are correctly installed and shaft is aligned. Flexible or Universal couplings may be required.
	Excessive heat in application.	Increase frequency of lubrication.
	Damage due to improper reassembly.	Use tool kit for proper reassembly.
Bearing seizure.	Grit getting into bearings. Failure to lubricate bearings periodically.	Lubricate bearings periodically.

Gearmotors

WARNING

Remove power before attempting to re-wire motor or system electrical control.

Problem	Possible Cause	Solution
Motor cuts out intermittently.	Overloading.	Check conveyor load. Use torque wrench to determine input torque. Check for guides or accessories rubbing on belt. Check belt tracking.
	Improper cooling.	Check motor operation and ambient temperature.
Motor running hot, above 170°F (77°C). **Note:** 1/3 hp Baldor motor normally runs at 170°F (77°C).	Overloading.	Check amperage draw, replace motor, reduce conveyor load.
	Jammed part.	Remove jam.
	Incorrect voltage/wiring.	Check wiring diagram. Replace motor or change wiring.
	Improper cooling.	Reduce excessive ambient temperature.
Conveyor runs in wrong direction.	Improper wiring.	Check wiring diagram.
Oil leaking from gearbox.	Broken seal.	Contact manufacturer for replacement parts or Dorner for further information. Contact Dorner for new gearbox.
	Oil vent plug installed below oil level.	Reinstall vent plug well above oil level.
	Oil level too high.	See instructions for gearbox oil capacity.
	Vent plug not installed.	Contact Dorner to locate a manufacturer's service representative or to order a new gear reducer.

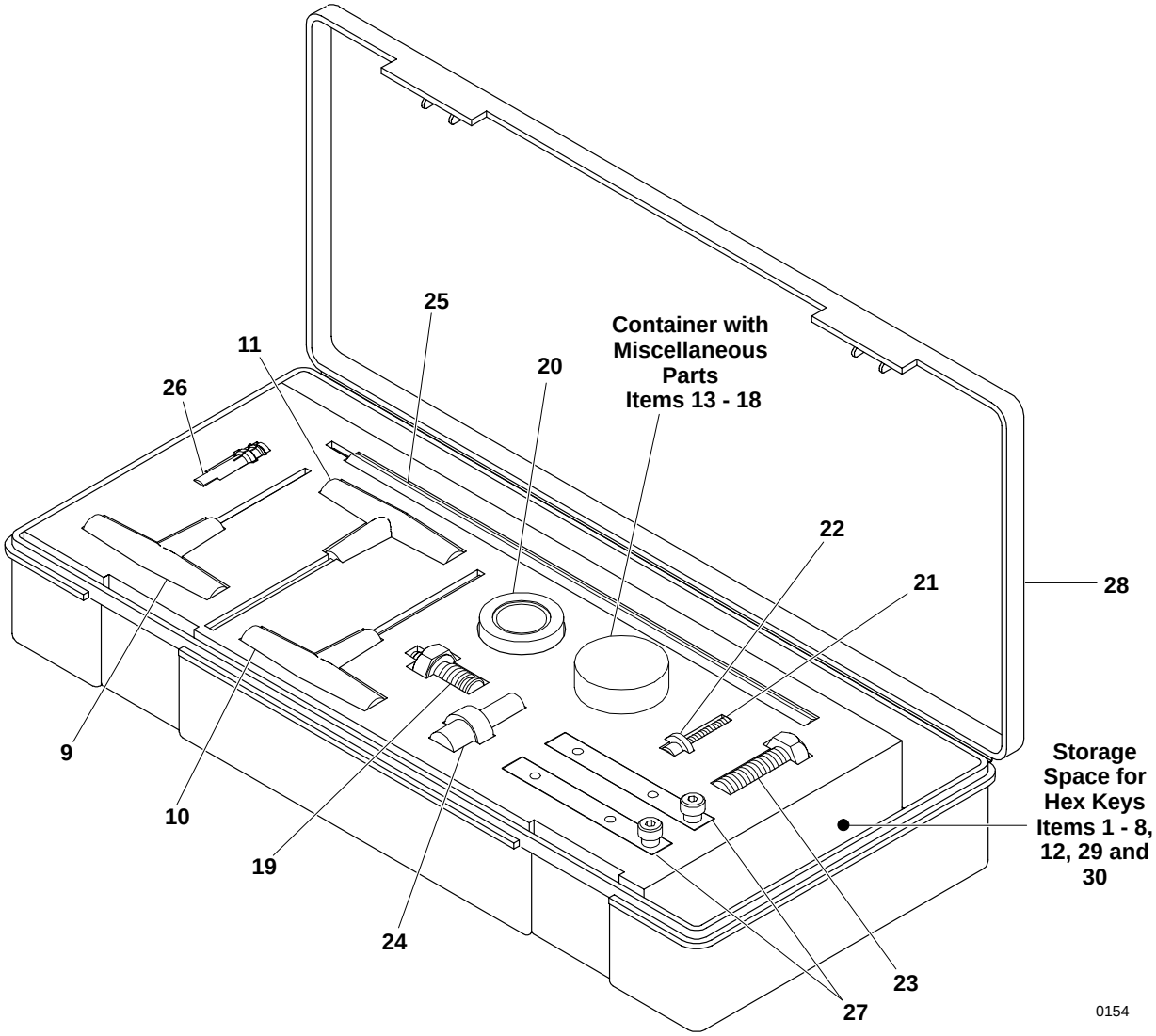
Conveyor Belt

Problem	Possible Cause	Solution
Belt slipping.	Belt is too loose.	Adjust belt tension. If belt is still loose, replace belt. **Note: Belt may have stretched. See "Belt stretching" problem below.**
	Dirt impacted in knurl on end of driven spindle.	Clean spindle.
	Knurl worn on spindle.	Replace spindle.
	Excessive weight on conveyor. **Note: May be a combination of drive "pushing" belt or magnets too strong for application.**	Reduce weight on conveyor by reducing production rate, or increasing belt speed.
	Drive is "pushing" belt. **Note: May be a combination of this and excessive weight on conveyor.**	Move end drive to discharge end of conveyor. Turn center drive 180° so gearmotor and driven spindle are towards discharge end.
	Magnets too strong for application.	Increase belt speed or replace magnetic bedplate.
	Debris wedged in belt path or in conveyor.	Clean conveyor and install chute and/or wipers.
Belt stretching.	Solvent or chemical reaction with belt.	Remove solvent or try a different belt material. Test solvent with belt sample. **Note: A belt-type conveyor may not be applicable.**
	Belt repeatedly stalled, causing spindle to wear or "burn" in to backside of belt.	Replace belt and identify reason for stalling.
Cuts on belt surface.	Parts getting caught in bottom wiper	Replace wiper.
	Bottom wiper is damaged, missing or on wrong end of the conveyor.	Replace wiper. **Note: Conveyor belt should always be run towards bottom wiper.**
	Parts getting under belt. Wiper shears top surface leaving marks in belt surface.	High sides, side wipers or side deflectors may be needed.
	Side wipers damaged or missing which is allowing material to get under belt.	Replace or add wipers, as needed.
	Sharp parts penetrating belt surface.	Install baffle to reduce energy of falling part.
	Guides or accessories rubbing on belt.	Re-adjust guides, as necessary.
Worn belt edges.	Debris impacted on spindles causing belt tracking problems.	Clean spindles. Correct source of contamination. See "Belt tracking incorrectly" problem below.
	Belt tracking incorrectly.	Refer to the "Conveyor Belt Tracking" topic beginning on page 14.
Belt breaking at splice.	Solvent or chemical reaction with belt.	Remove solvent or try a different belt material. Test solvent with belt sample. **Note: A belt-type conveyor may not be applicable.**
Belt tracking incorrectly.	Spindles not perpendicular to conveyor center line.	Inspect spindles and/or sleeves. Reposition spindles or reinstall sleeves, if necessary.
	Frame misalignment. **Note: Frame mounting surface may be misaligned.**	Frame mounting must be straight and in same plane. Check this with a straight edge and level.
	Frame distortion due to damage.	Repair or replace frame components and/or bed plate. Check with a straight edge.
	Side force being applied to belt.	Check for jammed part or mechanical pusher force on belt.
	Belt tracking cam incorrectly adjusted.	Refer to the "Conveyor Belt Tracking" topic beginning on page 14.

Timing Belt

Problem	Possible Cause	Solution
Intermittent conveyor belt travel.	Timing belt is too loose.	Adjust belt tension. Refer to "Timing Belt Tension Adjustment for Top or Bottom Mounting Packages topic on page 19.
	Worn or damaged timing (drive) belt.	Replace defective timing belt.

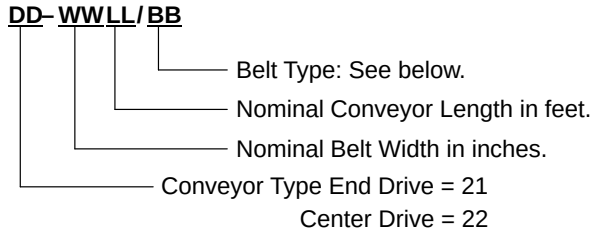
Tool Kit - Part Number 2500



Item	Part No.	Description	Qty.
1	807-516	Hex Key, 5/64″ Long Arm	2
2	807-517	Hex Key, 3/32″ Long Arm	2
3	807-518	Hex Key, 1/8″ Long Arm	2
4	807-520	Hex Key, 3/16″ Long Arm	2
5	807-521	Hex Key, 1/4″ Long Arm	1
6	807-522	Hex Key, 5/16″ Long Arm	1
7	807-524	Hex Key, 9/64″ Long Arm	2
8	807-526	Hex Key, 5/32″ Long Arm	2
9	807-341	Hex Key, 1/8″ T-Handle	1
10	807-342	Hex Key, 5/32″ T-Handle	1
11	807-343	Hex Key, 3/16″ T-Handle	1
12	807-577	Torx® Key T-25 Short Arm	1
13	200039P	Belt Tracking Cam	2
14	903-060	Special Flat Head Cap Screw, #8-32 x 0.38″	8
15	901-104	Button Head Cap Screw, #10-32 x 0.25″	4
16	901-129	Button Head Cap Screw, 1/4-20 x 0.50″	8

Item	Part No.	Description	Qty.
17	901-106	Button Head Cap Screw, #10-32 x 0.38″	4
18	902-054	Socket Head Cap Screw, #8-32 x 0.25″	6
19	200046	Greasing Adapter	1
20	25-09	Bearing Anvil/Sleeve Removal Tool	1
21	902-163	Socket Head Cap Screw, 1/4-28 x 1.25″	1
22	605279	Washer, Special	1
23	906-278	Bolt, Special Threaded	1
24	25-10	Bearing Insertion Tool	1
25	25-08	Hex Key Extension Tool 2″ to 12″ (44 mm to 610 mm)	1
26	25-05	Bearing Removal Tool	1
27	300362	Tail Installation Tool (3100 series conveyor)	2
28	652928	Tool Box 2500	1
29	807-780	Hex Key, 2 mm Long Arm	1
30	807-563	Hex Key, 3 mm Long Arm	1

Conveyor Belt Part Number



Belt Type - BB

01 **Accumulator Top FDA Approved** 80-90 Durometer surface hardness. Products may be accumulated on the low friction surface of this belt. Maximum part temperature is 176 °F (80 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.063″ (1.6 mm).

02 **Standard Urethane** 75-85 Durometer surface hardness. This is our standard belting, very durable and works well in most applications. Maximum part temperature is 212 °F (100 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.071″ (1.8 mm).

03 **Soft Urethane FDA Approved** 70-80 Durometer surface hardness. This belt provides more surface friction and is more resistant to chemicals than /01 or /02. Maximum part temperature is 176 °F (80 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.063″ (1.6 mm).

04 **Gray Friction Belt** This belt provides a high degree of surface traction when clean and dry. It can be used to convey parts up inclines or in other applications where parts must not slide on the belt surface. This belt should not be used with very small or sharp parts. Maximum part temperature is 158 °F (70 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.083″ (2.1 mm).

NOTE:

04 Gray Friction Belt cannot be used with 03 and/or 06 Side Profiles.

EXAMPLE: #2 Standard Urethane replacement belt for an end drive conveyor measuring 4″ (102 mm) wide x 8 ft (2,438 mm) long would be Part Number 21-0408/02.

NOTE:

All belts include a thermally welded finger splice*. If Clipper® spliced belt is required, add a “-C” suffix

EXAMPLE: Part No 21-0408/02-C

NOTE:

For replacement belting on vacuum, cleated and specially modified conveyors, contact factory with model & order numbers for replacement information.

05 **Woven Polyester Belt** Offers advantages in low friction product accumulation. Maximum part temperature is 212 °F (100 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.047″ (1.2 mm).

06 **Black Anti-Static Belt** Is a carbon impregnated polyester belt used where an anti-static/conductive belt is required. Belt should be tested per application for resistance to ground. Maximum part temperature is 230 °F (110 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.063″ (1.6 mm).

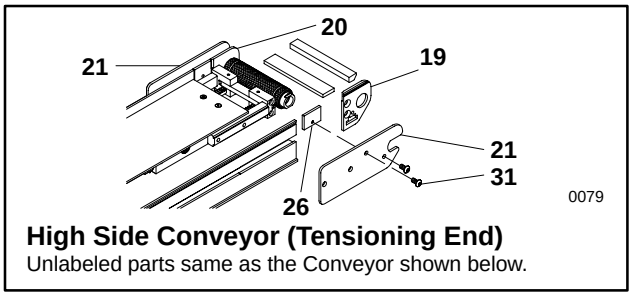
07 **Heat Resistant Belt** This belt resists product temperatures up to 358 °F (180 °C). Smooth, thermally welded zig-zag splice*. Belt thickness about 0.051″ (1.3 mm).

IMPORTANT:

If switching from Belt Types 01, 02, 05 or 07 to Belt Types 03, 04 or 06 you must remove and the original Bottom Wiper, Item 28 on page 25 and replace it with a Bottom Bar, Item 29 on page 25.

* Thermal splice is standard. Clipper® splice is available upon request. A thinner bottom bar must be used, in place of the standard bottom wiper, when belt types 01, 02, 05 and 07 are spliced with wire clipper.

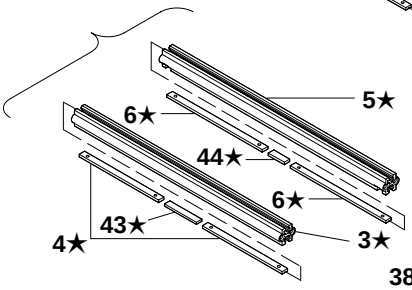
Conveyor Components

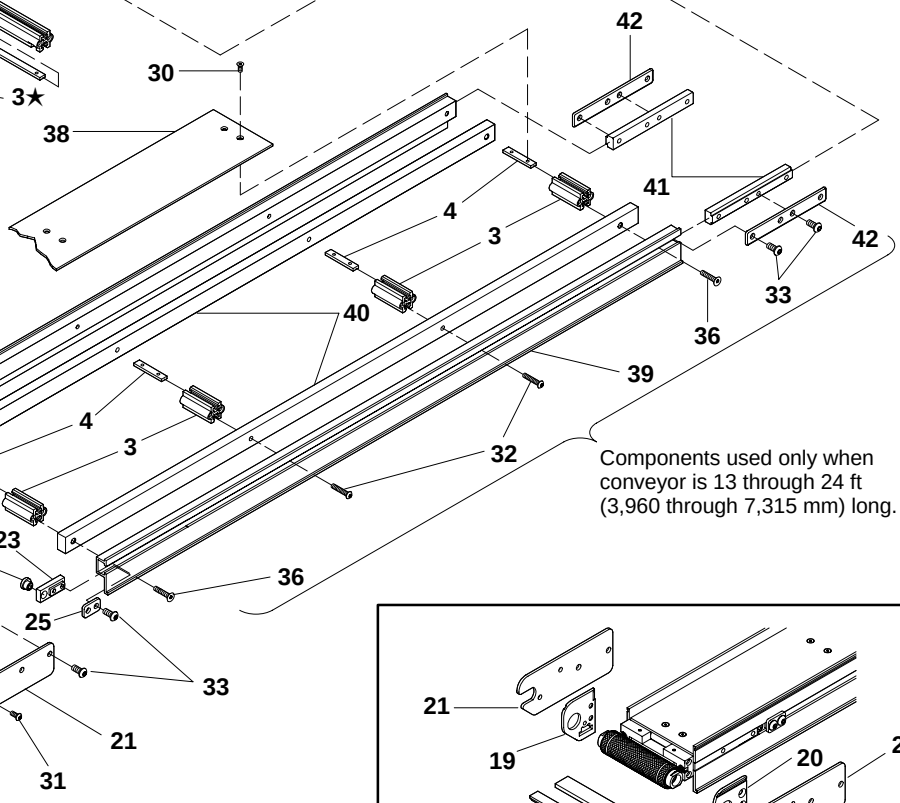


High Side Conveyor (Tensioning End)
Unlabeled parts same as the Conveyor shown below.

Low Side Conveyor
(Tensioning End)

Components used only when conveyor is 15 through 24″ (610 through 457 mm) wide.

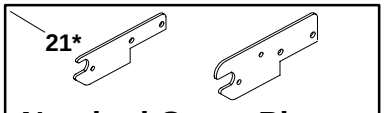




Low Side Conveyor
(Drive End)

Drive Section
All Conveyors

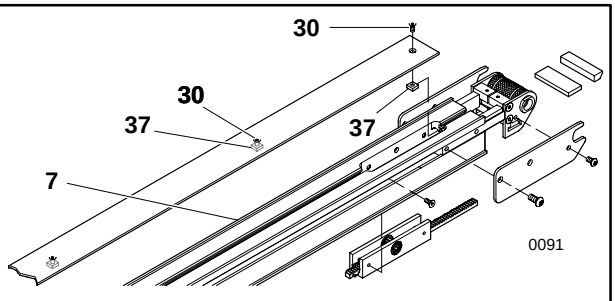
Components used only when conveyor is 13 through 24 ft (3,960 through 7,315 mm) long.



Notched Cover Plates
Used on Low Side (Left) &
High Side (Right)
2 ft (610 mm) Long Conveyors,
Belt Tension End Only

High Side Conveyor (Drive End)
Unlabeled parts same as the Conveyor shown above.

Item	Part No.	Part Description
1◇	Page 26	SideRail
2◇	Page 26	Support Bar
3◇	Page 26	Center Rail
4	Page 26	Rail Nut Strip
5◇	Page 26	Center Rail, Tension End
6◇	Page 26	Rail Nut Strip, Tension End
7	Page 26	Conveyor Frame for 2″ (44 mm) Only
8	200222	Rack and Pinion Housing Assembly (Includes Items 9 - 13)
9	200031	Gear Housing
10	200034	Pinion Wear Ring
11	200033	Gearbox Flat Spring
12	200151	Rack Bowed Spring
13	200032	Rack Gear
14	Page 26	Pinion Gear
15	Page 26	Cross Bar Assembly
16	See Chart	Pulley Spindle Assembly
17	200035	Pulley Spindle Retaining Sleeve
18	807-784	Plastic Plug
19	200028	Tail Plate (Low Side)
	200026	Tail Plate (High Side)
20	200027	Tail Plate (Low Side)
	200025	Tail Plate (High Side)
21	200030	Cover Plate (Low Side)
	200029	Cover Plate (High Side)
	200351⁎	Cover Plate, Notched, Low Side (All 2 ft long Conveyors, belt tension end only)
	200350⁎	Cover Plate, Notched, High Side (All 2 ft long Conveyors, belt tension end only)
22	200331	Belt Tracking Cam Assembly (Includes Items 23 - 25 & 33)
23	200341	Cam Retaining Block
24	200039P	Belt Tracking Cam
25	200038	Cam Clamping Plate
26	200041	Filler Plate (High Side Only)
27	Page 27	Bedplate
28	Page 27	Bottom Wiper
29	Page 27	Bottom Bar

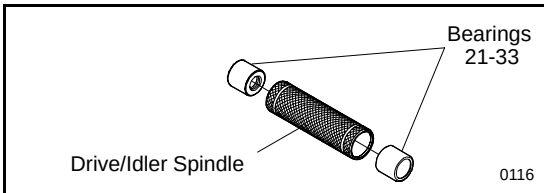


2″ (44 mm) Width Conveyor (Tensioning End)
Unlabeled parts same as the Conveyor shown on preceding page.

◇- Used on all Conveyors except 2″ (44 mm) wide.
● - Center Drive Conveyor not available in widths over 12″ (305 mm).
□ - Used on Center Drive Conveyors in lengths over 12 ft (3660 mm).
★- Used only with 15 to 24″ (457 to 610 mm) wide End Drive Conveyor.
⁎- Used on 2' long Conveyors only.

Item	Part No.	Part Description
30	903-060	Flat Head Screw, #8-32 x 0.38″
31	901-106	Button Head Cap Screw, #10-32 x 0.38″
32	901-114	Button Head Cap Screw, #10-32 x 0.88″ for 3″ (70 mm) Width Only
	901-116	Button Head Cap Screw, #10-32 x 1.00″ for 4 to 24″ (95 to 610 mm) Widths
33	901-129	Button Head Cap Screw, 1/4-20 x 0.50″
34	903-059	Flat Head Cap Screw, #8-32 x 0.38″
35	903-108	Flat Head Cap Screw, #10-32 x 0.50″
36	903-114	Flat Head Cap Screw, #10-32 x 0.88″ for 3″ (70 mm) Only
	903-116	Flat Head Cap Screw, #10-32 x 1.00" for 4 to 24″ (95 to 610 mm)
37	910-189	Square Nut, #8-32 for 2 " (44 mm) Only
38□	Page 27	Intermediate Bedplate (Used on Conveyors in lengths over 12 ft (3660 mm)
39□	201225	Intermediate Side Rail (Used on Conveyors in lengths over 12 ft (3660 mm)
		Low Side Rail, 6 ft (1830 mm)
	201226	High Side Rail, 6 ft (1830 mm)
	201228	Low Side Rail, 12 ft (3660 mm)
	201229	High Side Rail, 12 ft (3660 mm)
40□		Intermediate Support Bar (Used on Conveyors in lengths over 12' (3660 mm)
	201227	Support Bar, 6 ft (1830 mm)
	201230	Support Bar, 12 ft (3660 mm)
41	300151	Intermediate Tee Bar
42	300153	Intermediate Clamp Plate
43★	207202	Spacer, Center Rail Nut Strip
44★	307201	Spacer, Center Rail Nut Strip, Tension End

Spindle Assembly
Item 16



Nominal Conveyor Width	Part No.	
	Drive/Idler Spindle Assembly with Bearings	Drive/Idle Spindle Only
2″ (44 mm)	21-2-34	Not Applicable
3″ (70 mm)	21-3-34	21-3-28
4″ (95 mm)	21-4-34	21-4-28
5″ (127 mm)	21-5-34	21-5-28
6″ (152 mm)	21-6-34	21-6-28
7″ (178 mm)	21-7-34	21-7-28
8″ (203 mm)	21-8-34	21-8-28
10″ (254 mm)	21-10-34	21-10-28
12″ (305 mm)	21-12-34	21-12-28
●15″ (381 mm)	21-15-34	21-15-28
●18″ (457 mm)	21-18-34	21-18-28
●21″ (533 mm)	21-21-34	21-21-28
●24″ (610 mm)	21-24-34	21-24-28

Nominal Conveyor Widths are listed in ″ (mm) and Nominal Conveyor Lengths are in ft (mm). Item numbers listed on the next two pages refer to the illustrations and parts list on pages 24 and 25.

Side Rail
Items 1 and 39

Length in ft (mm)	Low Side	High Side
2 (610)	200002	202502
3 (915)	200003	202503
4 (1220)	200004	202504
5 (1525)	200005	202505
6 (1830)	200006	202506
7 (2135)	200007	202507
8 (2440)	200008	202508
9 (2745)	200009	202509
10 (3050)	200010	202510
11 (3355)	200011	202511
12 (3660)	200012	202512
□13 (3960)	200007, 201225	202507, 201226
□14 (4265mm)	200008, 201225	202508, 201226
□15 (4570)	200009, 201225	202509, 201226
□16 (4880)	200010, 201225	202510, 201226
□17 (5180)	200011, 201225	202511, 201226
□18 (5485)	200012, 201225	202512, 201226
□19 (5790)	200007, 201228	202507, 201229
□20 (6095)	200008, 201228	202508, 201229
□21 (6400)	200009, 201228	202509, 201229
□22 (6705)	200010, 201228	202510, 201229
□23 (7010)	200011, 201228	202511, 201229
□24 (7315)	200012, 201228	202512, 201229

Support Bar Item 2
3 to 24″ (70 to 610 mm)

Length in ft (mm)	Part No.
2 (610)	200102
3 (915)	200103
4 (1220)	200104
5 (1525)	200105
6 (1830)	200106
7 (2135)	200107
8 (2440)	200108
9 (2745)	200109
10 (3050)	200110
11 (3355)	200111
12 (3660)	200112
□13 (3960)	200107, 201227
□14 (4265)	200108, 201227
□15 (4570)	200109, 201227
□16 (4880)	200110, 201227
□17 (5180)	200111, 201227
□18 (5485)	200112, 201227
□19 (5790)	200107, 201230
□20 (6095)	200108, 201230
□21 (6400)	200109, 201230
□22 (6705)	200110, 201230
□23 (7010)	200111, 201230
□24 (7315)	200112, 201230

Center Rail
Item 3

Width	Part No.
2″ (44 mm)	Not Applicable
3″ (70 mm)	202803
4″ (95 mm)	202804
5″ (127 mm)	202805
6″ (152 mm)	202806
7″ (178 mm)	202807
8″ (203 mm)	202808
10″ (254 mm)	202810
12″ (305 mm)	202812
●15″ (381 mm)	202815
●18″ (457 mm)	202818
●21″ (533 mm)	202821
●24″ (610 mm)	202824

Rail Nut Strip
Item 4

Width	Part No.
2″ (44 mm)	Not Applicable
3″ (70 mm)	207203
4″ (95 mm)	207204
5″ (127 mm)	207205
6″ (152 mm)	207206
7″ (178 mm)	207207
8″ (203 mm)	207208
10″ (254 mm)	207210
12″ (305 mm)	207212
●15″ (381 mm)	207207, 207208
●18″ (457 mm)	207208, 207210
●21″ (533 mm)	207207 (3x)
●24″ (610 mm)	207212(2x)

Center Rail, Tension End
Item 5

Width	Part No.
2″ (44 mm)	Not Applicable
3″ (70 mm)	202903
4″ (95 mm)	202904
5″ (127 mm)	202905
6″ (152 mm)	202906
7″ (178 mm)	202907
8″ (203 mm)	202908
10″ (254 mm)	202910
12″ (305 mm)	202912
●15″ (381 mm)	202915
●18″ (457 mm)	202918
●21″ (533 mm)	202921
●24″ (610 mm)	202924

Rail Nut Strip, Tension End
Item 6

§Width	Part No.
2″ (44 mm)	Not Applicable
3″ (70 mm)	307203
4″ (95 mm)	307204
5″ (127 mm)	307205
6″ (152 mm)	307206
7″ (178 mm)	307207
8″ (203 mm)	307208
10″ (254 mm)	307210
12″ (305 mm)	307212
●15″ (381 mm)	307207 & 307208
●18″ (457 mm)	307208, 307210
●21″ (533 mm)	307207 (3x)
●24″ (610 mm)	307212 (2x)

Conveyor Frame Item 7
2″ (44 mm)

Length in ft (mm)	Low Side	High Side
2 (610	209702	209802
3 (915	209703	209803
4 (1220)	209704	209804
5 (1525)	209705	209805
6 (1830)	209706	209806
7 (2135)	209707	209807
8 (2440)	209708	209808
9 (2745)	209709	209809
10 (3050)	209710	209810
11 (3355)	209711	209811
12 (3660)	209712	209812
□13 (3960)	209707, 209718	209807, 209818
□14 (4265)	209708, 209718	209808, 209818
□15 (4570)	209709, 209718	209809, 209818
□16 (4880)	209710, 209718	209810, 209818
□17 (5180)	209711, 209718	209811, 209818
□18 (5485)	209712, 209718	209812, 209818
□19 (5790)	209707, 209724	209807, 209824
□20 (6095)	209708, 209724	209808, 209824
□21 (66400)	209709, 209724	209809, 209824
□22 (6705)	209710, 209724	209810, 209824
□23 (77010)	209711, 209724	209811, 209824
□24 (7315)	209712, 209724	209812, 209824

Pinion Gear
Item 14

Width	Part No.
2″ (44 mm)	203002
3″ (70 mm)	203003
4″ (95 mm)	203004
5″ (127 mm)	203005
6″ (152 mm)	203006
7″ (178 mm)	203007
8″ (203 mm)	203008
10″ (254 mm)	203010
12″ (305 mm)	203012
●15″ (381 mm)	203015
●18″ (457 mm)	203018
●21″ (533 mm)	203021
●24″ (610 mm)	203024

Tension Cross Bar Assembly
Item 15

Width	Part No.
2″ (44 mm)	202702
3″ (70 mm)	202703
4″ (95 mm)	202704
5″ (127 mm)	202705
6″ (152 mm)	202706
7″ (178 mm)	202707
8″ (203 mm)	202708
10″ (254 mm)	202710
12″ (305 mm)	202712
●15″ (381 mm)	202715
●18″ (457 mm)	202718
●21″ (533 mm)	202721
●24″ (610 mm)	202724

Nominal Conveyor Widths are listed in ″ (mm) and Nominal Conveyor Lengths are in ft (mm).

Bedplate
Item 27

Width	Length in ft (mm)										
	2 (610)	3 (915)	4 (1220)	5 (1525)	6 (1830)	7 (2135)	8 (2440)	9 (2745)	10 (3050)	11 (3355)	12 (3660)
2″ (44 mm)	200202	200203	200204	200205	200206	200207	200208	200209	200210	200211	200212
3″ (70 mm)	200302	200303	200304	200305	200306	200307	200308	200309	200310	200311	200312
4″ (95 mm)	200402P	200403P	200404P	200405P	200406P	200407P	200408P	200409P	200410P	200411P	200412P
5″ (127 mm)	200502P	200503P	200504P	200505P	200506P	200507P	200508P	200509P	200510P	200511P	200512P
6″ (152 mm)	200602P	200603P	200604P	200605P	200606P	200607P	200608P	200609P	200610P	200611P	200612P
7″ (178 mm)	200702P	200703P	200704P	200705P	200706P	200707P	200708P	200709P	200710P	200711P	200712P
8″ (203 mm)	200802P	200803P	200804P	200805P	200806P	200807P	200808P	200809P	200810P	200811P	200812P
10″ (254 mm)	201002P	201003P	201004P	201005P	201006P	201007P	201008P	201009P	201010P	201011P	201012P
12″ (305 mm)	201202P	201203P	201204P	201205P	201206P	201207P	201208P	201209P	201210P	201211P	201212P
●15″ (381 mm)	200702P & 200802P	200703P & 200803P	200704P & 200804P	200705P & 200805P	200706P & 200806P	200707P & 200807P	200708P & 200808P	200709P & 200809P	200710P & 200810P	200711P & 200811P	200712P & 200812P
●18″ (457 mm)	200802P & 201002P	200803P & 201003P	200804P & 201004P	200805P & 201005P	200806P & 201006P	200807P & 201007P	200808P & 201008P	200809P & 201007P	200810P & 201010P	200811P & 201011P	200812P & 201012P
●21″ (533 mm)	200702P (Qty. 3)	200703P (Qty. 3)	200704P (Qty. 3)	200705P (Qty. 3)	200706P (Qty. 3)	200707P (Qty. 3)	200708P (Qty. 3)	200709P (Qty. 3)	200710P (Qty. 3)	200711P (Qty. 3)	200712P (Qty. 3)0
●24″ (610 mm)	201202P (Qty. 2)	201203P (Qty. 2)	201204P (Qty. 2)	201205P (Qty. 2)	201206P (Qty. 2)	201207P (Qty. 2)	201208P (Qty. 2)	201209P (Qty. 2)	201210P (Qty. 2)	201211P (Qty. 2)	201212P (Qty. 2)

Bedplate
Items 27 and 38

Width	□Length in ft (mm)											
	13 (3960)	14 (4265)	15 (4570)	16 (4880)	17 (5180)	18 (5485)	19 (5790)	20 (6095)	21 (6400)	22 (6705)	23 (7010)	24 (7315)
2″ (44 mm)	200207 & 201245	200208 & 201245	200209 & 201245	200210 & 201245	200211 & 201245	200212 & 201245	200207 & 201247	200208 & 201247	200209 & 201247	200210 & 201247	200211 & 201247	200212 & 201247
3″ (70 mm)	200307 & 300306	200308 & 300306	200309 & 300306	200310 & 300306	200311 & 300306	200312 & 300306	200307 & 300312	200308 & 300312	200309 & 300312	200310 & 300312	200311 & 300312	200312 & 300312
4″ (95 mm)	200407P & 300406P	200408P & 300406P	200409P & 300406P	200410P & 300406P	200411P & 300406P	200412P & 300406P	200407P & 300412P	200408P & 300412P	200409P & 300412P	200410P & 300412P	200411P & 300412P	200412P & 300412P
5″ (127 mm)	200507P & 300506P	200508P & 300506P	200509P & 300506P	200510P & 300506P	200511P & 300506P	200512P & 300506P	200507P & 300512P	200508P & 300512P	200509P & 300512P	200510P & 300512P	200511P & 300512P	200512P & 300512P
6″ (152 mm)	200607P & 300606P	200608P & 300606P	200609P & 300606P	200610P & 300606P	200611P & 300606P	200612P & 300606P	200607P & 300612P	200608P & 300612P	200609P & 300612P	200610P & 300612P	200611P & 300612P	200612P & 300612P
7″ (178 mm)	200707P & 201248P	200708P & 201248P	200709P & 201248P	200710P & 201248P	200711P & 201248P	200712P & 201248P	200707P & 201249P	200708P & 201249P	200709P & 201249P	200710P & 201249P	200711P & 201249P	200712P & 201249P
8″ (203 mm)	200807P & 300806P	200808P & 300806P	200809P & 300806P	200810P & 300806P	200811P & 300806P	200812P & 300806P	200807P & 300812P	200808P & 300812P	200809P & 300812P	200810P & 300812P	200811P & 300812P	200812P & 300812P
10″(254 mm)	201007P & 301006P	201008P & 301006P	201009P & 301006P	201010P & 301006P	201011P & 301006P	201012P & 301006P	201007P & 301012P	201008P & 301012P	201009P & 301012P	201010P & 301012P	201011P & 301012P	201012P & 301012P
12″(305 mm)	201207P & 301206P	201208P & 301206P	201209P & 301206P	201210P & 301206P	201211P & 301206P	201212P & 301206P	201207P & 301212P	201208P & 301212P	201209P & 301212P	201210P & 301212P	201211P & 301212P	201212P & 301212P

Bottom Wiper
(Belt Types /01, /02, /05, /07)
Item 28

Width	Part No.
2″ (44 mm)	203502
3″ (70 mm)	203503
4″ (95 mm)	203504
5″ (127 mm)	203505
6″ (152 mm)	203506
7″ (178 mm)	203507
8″ (203 mm)	203508
10″ (254 mm)	203510
12″ (305 mm)	203512
●15″ (381 mm)	203515
●18″ (457 mm)	203518
●21″ (533 mm)	203521
●24″ (610 mm)	203524

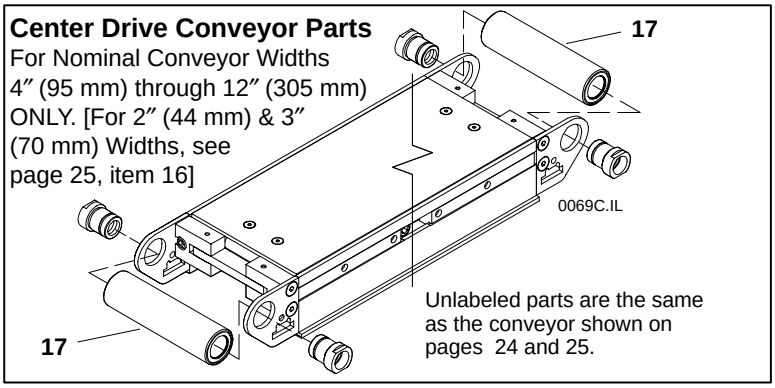
Bottom Bar
(Belt Types /03, /04, /06 & all Clipper® Splice Belts)
Item 29

Width	Part No.
2″ (44 mm)	203602
3″ (70 mm)	203603
4″ (95 mm)	203604
5″ (127 mm)	203605
6″ (152 mm)	203606
7″ (178 mm)	203607
8″ (203 mm)	203608
10″ (254 mm)	203610
12″ (305 mm)	203612
●15″ (381 mm)	203615
●18″ (457 mm)	203618
●21″ (533 mm)	203621
●24″ (610 mm)	203624

● - Center Drive Conveyor not available in widths over 12″ (305 mm).
□ - End Drive Conveyor not available in lengths over 12 ft (3660 mm).

Center Drive Module Components

Center Drive Conveyor Parts
For Nominal Conveyor Widths 4″ (95 mm) through 12″ (305 mm) ONLY. [For 2″ (44 mm) & 3″ (70 mm) Widths, see page 25, item 16]



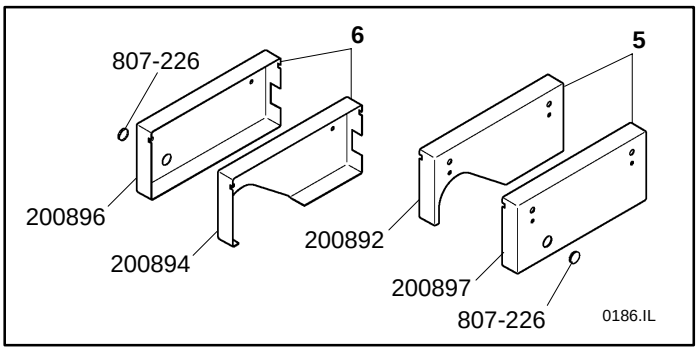
Unlabeled parts are the same as the conveyor shown on pages 24 and 25.

Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	Page 30	Bottom Plate Assembly
2	200363	Cylinder Mounting Plate 2″ (44 mm)
	200364	Cylinder Mounting Plate 3″ (70 mm)
	200365	Cylinder Mounting Plate 4″ (95 mm)
	200366	Cylinder Mounting Plate 5″ (127 mm)
	200367	Cylinder Mounting Plate 6″ (152 mm)
	200368	Cylinder Mounting Plate 7″ (178 mm)
	200369	Cylinder Mounting Plate 8″ (203 mm)
	200370	Cylinder Mounting Plate 10″ (254 mm)
	200371	Cylinder Mounting Plate 12″ (305 mm)
3	200453	End Plate 2″ (44 mm)
	200454	End Plate 3″ (70 mm)
	200455	End Plate 4″ (95 mm)
	200456	End Plate 5″ (127 mm)
	200457	End Plate 6″ (152 mm)
	200458	End Plate 7″ (178 mm)
	200459	End Plate 8″ (203 mm)
	200460	End Plate 10″ (254 mm)
	200461	End Plate 12″ (305 mm)
4	200650	Cover Plate 2″ (44 mm)
	200651	Cover Plate 3″ (70 mm)
	200652	Cover Plate 4″ (95 mm)
	200653	Cover Plate 5″ (127 mm)
	200654	Cover Plate 6″ (152 mm)
	200655	Cover Plate 7″ (178 mm)
	200656	Cover Plate 8″ (203 mm)
	200657	Cover Plate 10″ (254 mm)
	200658	Cover Plate 12″ (305 mm)
5	See Below	Side Cover
6	See Below	Side Cover
7	200274	Take-up Slide Spacer
8	200828	Side Plate
9	200783	Take-up Tie Bar 2″ (44 mm)
	200784	Take-up Tie Bar 3″ (70 mm)
	200785	Take-up Tie Bar 4″ (95 mm)
	200786	Take-up Tie Bar 5″ (127 mm)
	200787	Take-up Tie Bar 6″ (152 mm)
	200788	Take-up Tie Bar 7″ (178 mm)
	200789	Take-up Tie Bar 8″ (203 mm)
	200790	Take-up Tie Bar 10″ (254 mm)
	200791	Take-up Tie Bar 12″ (305 mm)

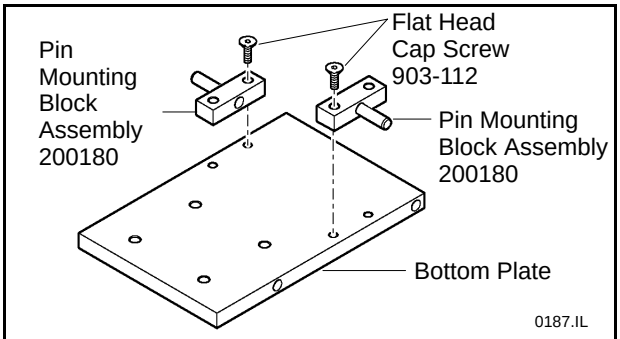
Item	Part No.	Part Description
10	200241	Side Take-up Plate
11	200181	Side Take-up Plate
12	810-070	Regulator and Gauge
13	825-066	Nipple, 1/8″ NPT x 1.00″
14	804-242	Air Cylinder for 2″ (44 mm) Width
	804-243	Air Cylinder for 3″ (70 mm) Width
	804-402	Air Cylinder for 4 to 12″ (95 to 305 mm) Widths
15	200240	Take-up Retaining Sleeve with Grease Fitting
16	620901	Take-up Shaft 2″ (44 mm)
	620902	Take-up Shaft 3″ (70 mm)
	620903	Take-up Shaft 4″ (95 mm)
	620904	Take-up Shaft 5″ (127 mm)
	620905	Take-up Shaft 6″ (152 mm)
	620906	Take-up Shaft 7″ (178 mm)
	620907	Take-up Shaft 8″ (203 mm)
	620908	Take-up Shaft 10″ (254 mm)
	620909	Take-up Shaft 12″ (305 mm)
17	Page 30	Smooth Spindle Assembly
18	200035	Spindle Retaining Sleeve
19	Page 30	Drive Spindle Assembly
20	Page 30	Idler Assembly
21	200825	Shaft Retaining Clip
22	200526	Drive Clamp Plate
23	200823	Clamp Block
24	901-056	Button Head Cap Screw, #8-32 x 0.25″
25	902-128	Socket Head Cap Screw, 1/4-20 x 0.50″
26	200824P	Guard Mounting Offset
27	901-181	Button Head Cap Screw, 5/16-18 x 0.63″
28	902-040	Socket Head Cap Screw, #6-32 x 0.75″ for 2″ (44 mm) Width
	902-112	Socket Head Cap Screw, #10-32 x 0.75″ for 3″ to 12″ (70 to 305 mm) Widths
29	904-002	Socket Head Shoulder Screw, 0.25 x 0.38″
30	902-132	Socket Head Cap Screw, 1/4-20 x 0.75″
31	901-104	Button Head Cap Screw, #10-32 x 0.25″
32	825-095	90° Elbow, 1/8″ NPT
33	825-008	Nipple, 1/8″ NPT x 4.00″
34	825-080	90° Street Elbow, 1/8″ NPT

Side Cover
Items 5 and 6



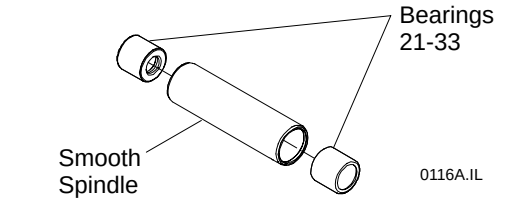
Nominal Conveyor Widths are listed in ″ (mm). Item numbers listed on the next two pages refer to the illustrations and parts list on pages 28 & 29

Bottom Plate Assembly
Item 1



Width	Part No.	
	Bottom Plate Assembly	Bottom Plate
2″ (44 mm)	200883	200863
3″ (70 mm)	200884	200864
4″ (95 mm)	200885	200865
5″ (127 mm)	200886	200866
6″ (152 mm)	200887	200867
7″ (178 mm)	200888	200868
8″ (203 mm)	200889	200869
10″ (254 mm)	200890	200870
12″ (305 mm)	200891	200871

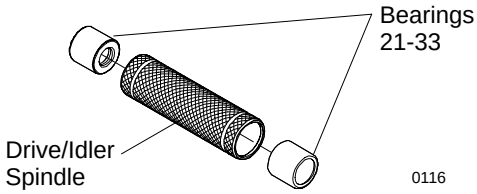
Smooth Spindle Pulley Assembly
Item 17



Width	Part No.	
	Smooth Spindle Assembly with Bearings	Smooth Spindle Only
2″ (44 mm)	303102	302202
3″ (70 mm)	303103	302203
4″ (95 mm)	303104	302204
5″ (127 mm)	303105	302205
6″ (152 mm)	303106	302206
7″ (178 mm)	303107	302207
8″ (203 mm)	303108	302208
10″ (254 mm)	303110	302210
12″ (305 mm)	303112	302212

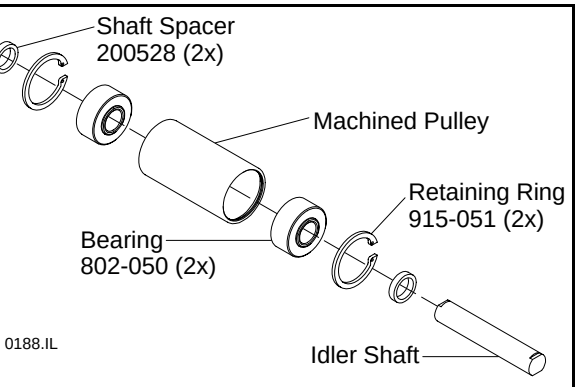
Adapter Assembly
Item 1 (Includes 2, 3 and Grease Fitting)

Drive Spindle Assembly
Item 19

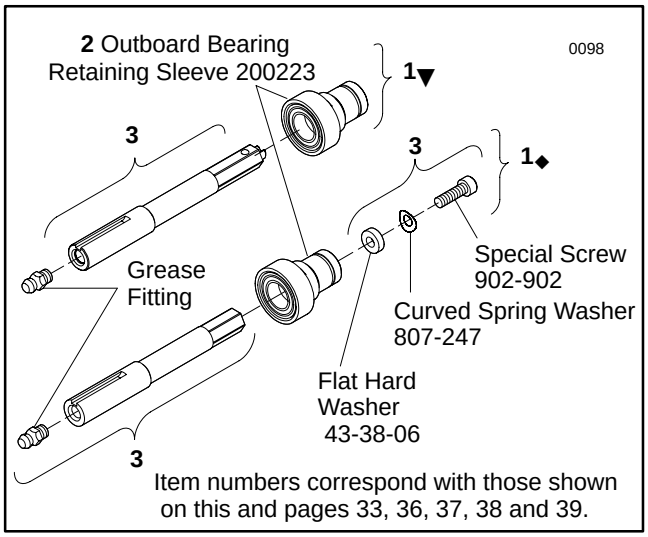


Width	Part No.	
	Drive Spindle Assembly with Bearings	Drive Spindle Only
2″ (44 mm)	21-2-34	Not Applicable
3″ (70 mm)	21-3-34	21-3-28
4″ (95 mm)	21-4-34	21-4-28
5″ (127 mm)	21-5-34	21-5-28
6″ (152 mm)	21-6-34	21-6-28
7″ (178 mm)	21-7-34	21-7-28
8″ (203 mm)	21-8-34	21-8-28
10″ (254 mm)	21-10-34	21-10-28
12″ (305 mm)	21-12-34	21-12-28

Idler Assembly
Item 20

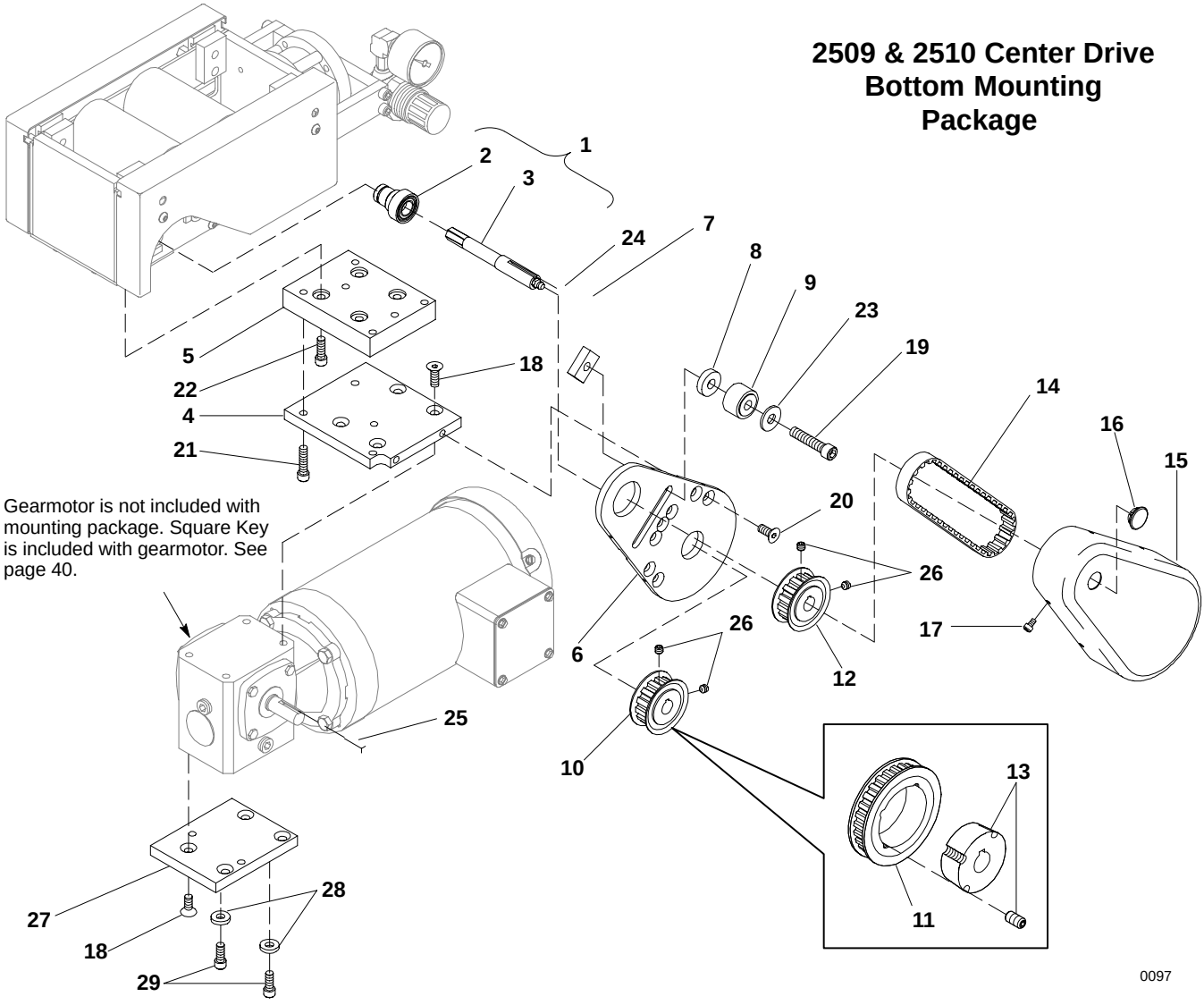


Width	Part No.		
	Idler Assembly Complete Set	Machined Pulley	Idler Shaft
2″ (44 mm)	200943	200550	301902
3″ (70 mm)	200944	200551	301903
4″ (95 mm)	200945	200552	301904
5″ (127 mm)	200946	200553	301905
6″ (152 mm)	200947	200554	301906
7″ (178 mm)	200948	200555	301907
8″ (203 mm)	200949	200556	301908
10″ (254 mm)	200950	200557	301910
12″ (305 mm)	200951	200558	301912



Width	Part Number		
	Adapter Assembly (1)	**Drive Shaft Assembly (3)**	**Grease Fitting**
2″ (44mm)	23-38-02◆	23-38-2-12	Not Applicable
3″ (70 mm)	23-38-03◆	23-38-3-15	810-138
4″ - 12″ (95 - 305 mm)	23-38-04◆	23-38-4-16	810-138
15 - 24″ (381 - 610 mm)	23-38-15▼	204734	810-292

2509 & 2510 Center Drive Bottom Mounting Package



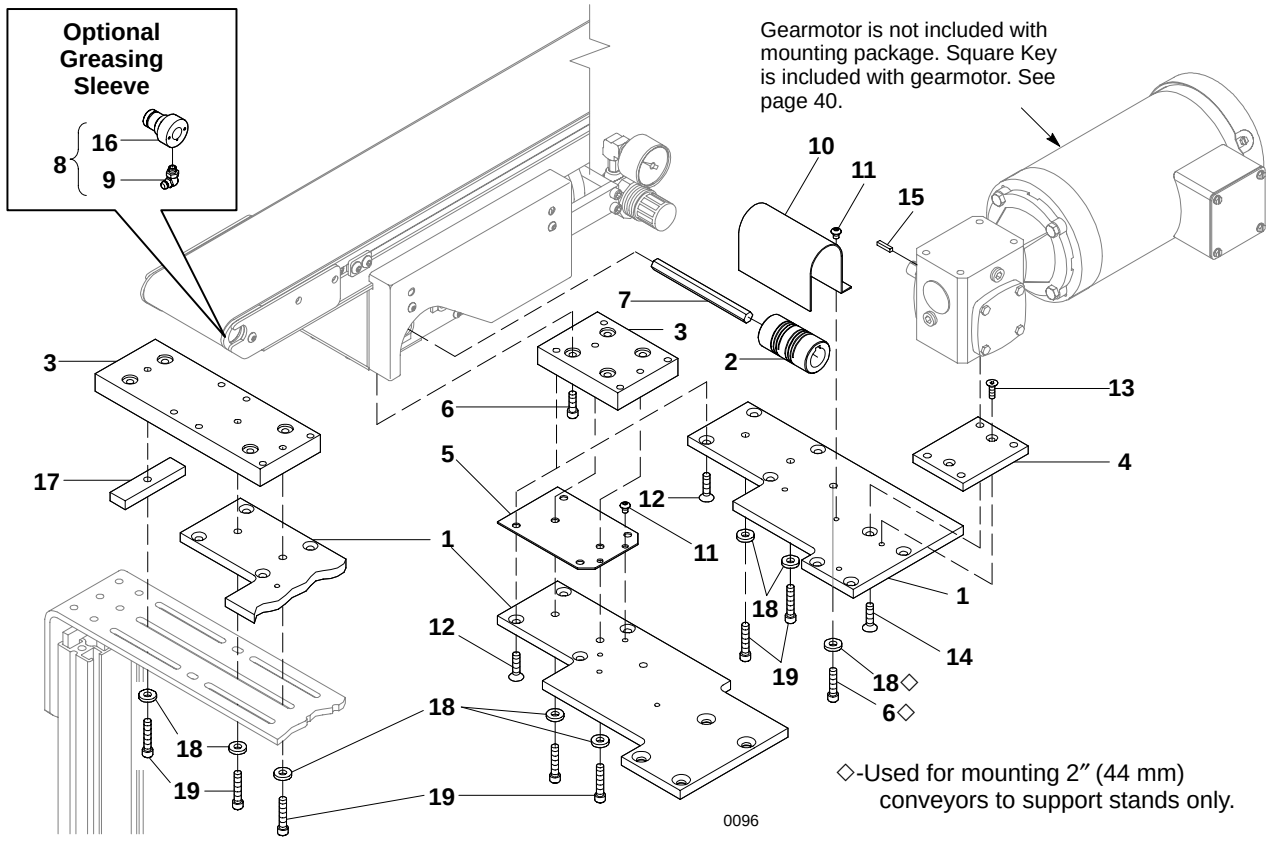
Gearmotor is not included with mounting package. Square Key is included with gearmotor. See page 40.

Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	Page 30	Adapter Assembly (Includes Items 2 and 3)
2	200223	Outboard Bearing Retaining Sleeve
3	Page 30	Drive Shaft Assembly
4	609423	Mounting Plate *(2509)*
	609762	Mounting Plate *(2510)*
5	202244	Mounting Block for 2″ (44 mm)*(2509)*
	636155	Mounting Block for 2″ (44 mm)*(2510)*
	202245	Mounting Block for 3″ (70 mm)*(2509)*
	636156	Mounting Block for 3″ (70 mm)*(2510)*
	609479	Mounting Block for 4″ (95 mm)*(2509)*
	636157	Mounting Block for 4″ (95 mm)*(2510)*
	609480	Mounting Block for 5″ (127 mm)
	609481	Mounting Block for 6″ (152 mm)
	609482	Mounting Block for 7″ (178 mm)
	609483	Mounting Block for 8″ (203 mm)
	609484	Mounting Block for 10″ (254 mm)
	609485	Mounting Block for 12″ (305 mm)
6	200375	Back Guard Plate
7	609424	Tensioning Bearing Nut
8	609425	Tensioning Bearing Spacer
9	802-046	Tensioning Bearing
10	603394	Drive Pulley, 12 Tooth, 0.50″ Bore *(2509)*
	604783	Drive Pulley, 12 Tooth, 0.63″ Bore *(2510)*
	605219	Drive Pulley, 14 Tooth, 0.50″ Bore *(2509)*
	606276	Drive Pulley, 14 Tooth, 0.63″ Bore *(2510)*
	605222	Drive Pulley, 16 Tooth, 0.50″ Bore *(2509)*
	611978	Drive Pulley, 16 Tooth, 0.63″ Bore *(2510)*
	607779	Drive Pulley, 17 Tooth, 0.50″ Bore *(2509)*
	611979	Drive Pulley, 17 Tooth, 0.63″ Bore *(2510)*
	611987	Drive Pulley, 19 Tooth, 0.50″ Bore *(2509)*
	611988	Drive Pulley, 19 Tooth, 0.63″ Bore *(2510)*
	607778	Drive Pulley, 21 Tooth, 0.50″ Bore *(2509)*
	611980	Drive Pulley, 21 Tooth, 0.63″ Bore *(2510)*
11	811-101	Drive Pulley, 18 Tooth, Taper Lock®-TL1108
	811-103	Drive Pulley, 20 Tooth, Taper Lock®-TL1008
	811-115	Drive Pulley, 22 Tooth, Taper Lock®-TL1108
	611933	Drive Pulley, 24 Tooth, Taper Lock®
	611934	Drive Pulley, 26 Tooth, Taper Lock®
	611935	Drive Pulley, 28 Tooth, Taper Lock®
	611936	Drive Pulley, 30 Tooth, Taper Lock®

Item	Part No.	Part Description
12	603395	Driven Pulley, 10 Tooth, 0.50″ Bore
	603394	Driven Pulley, 12 Tooth, 0.50″ Bore
	605219	Driven Pulley, 14 Tooth, 0.50″ Bore
	605222	Driven Pulley, 16 Tooth, 0.50″ Bore
13	811-109	Taper Lock® Bushing-TL1008, 0.50″ *(2509)*
	811-108	Taper Lock® Bushing-TL1008, 0.63″ *(2510)*
	811-165	Taper Lock® Bushing-TL1108, 0.50″ *(2509)*
	811-166	Taper Lock® Bushing-TL1108, 0.63″ *(2510)*
	611929	Taper Lock® Bushing, 0.50″ *(2509)*
	611930	Taper Lock® Bushing, 0.63″ *(2510)*
	611931	Taper Lock® Bushing, 0.50″ *(2509)*
	611932	Taper Lock® Bushing, 0.63″ *(2510)*
14	814-021	Timing Belt, 15.00″ (381.00 mm) Long
	814-052	Timing Belt, 15.75″ (400.05 mm) Long
	814-044	Timing Belt, 16.50″ (419.10 mm) Long
	814-053	Timing Belt, 17.25″ (438.15 mm) Long
	814-054	Timing Belt, 17.63″ (447.80 mm) Long
	814-022	Timing Belt, 18.75″ (476.25 mm) Long
15	200376	Timing Belt Guard
16	807-226	Plastic Plug
17	902-054	Socket Head Cap Screw, #8-32 x .25″
18	903-136	Flat Head Cap Screw, 1/4-20 x .75 *(2509)*
	903-183	Flat Head Cap Screw, 5/16-18 x .75 *(2510)*
19	902-186	Socket Head Cap Screw, 5/16-18 x 1.50″
20	903-134	Flat Head Cap Screw, 1/4-20 x 0.63″
21	902-136	Socket Head Cap Screw, 1/4-20 x 1.00″
22	902-132	Socket Head Cap Screw, 1/4-20 x 0.75″
23	911-008	Flat Washer, SAE
24	912-052	Square Key, 1/8″ x 0.63″
25	912-052	Square Key, 1/8″ x 0.63″ *(2509)*
	912-077	Square Key, 3/16″ x 0.63″ *(2510)*
26	907-141	Cup Set Screw, 1/4-28 x 0.25 ″
27	200063	Stand Adapting Plate *(2509)*
	200064	Stand Adapting Plate *(2510)*
28	605279	Hard Washer
29	902-130	Socket Head Cap Screw, 1/4-20 x .63″

2505 & 2506 Center Drive Side Mounting Package

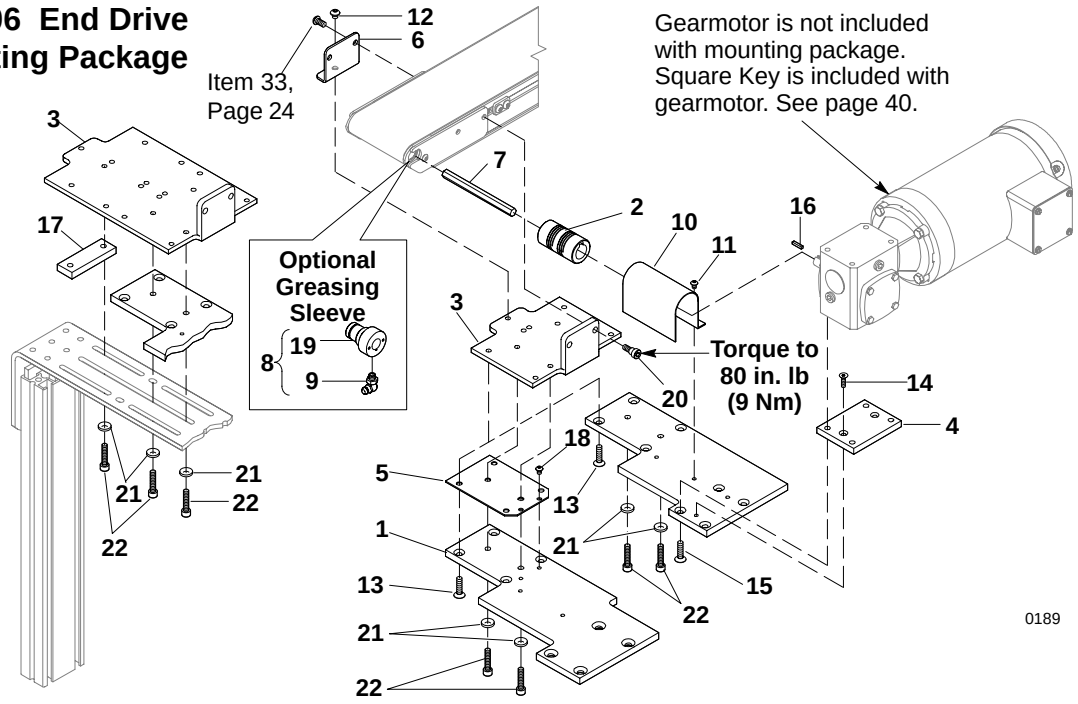


Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	610068	Mounting Base Plate for 2″ (44 mm) *(2505)*
	610070	Mounting Base Plate for 2″ (44 mm) *(2506)*
	610069	Mounting Base Plate for 3″ (70 mm) *(2505)*
	609989	Mounting Base Plate for 3″ (70 mm) *(2506)*
	610063	Mounting Base Plate for 4″ to 12″ (95 mm to 305 mm) *(2505)*
	610064	Mounting Base Plate for 4″ to 12″ (95 mm to 305 mm) *(2506)*
2	23-27	Flex Coupling, 0.50″ Bore *(2505)*
	23-28	Flex Coupling, 0.63″ Bore *(2506)*
3	609487	Spacer Block for 2″ (44 mm)
	609488	Spacer Block for 3″ (70 mm)
	609479	Spacer Block for 4″ (95 mm)
	609480	Spacer Block for 5″ (127 mm)
	609481	Spacer Block for 6″ (152 mm)
	609482	Spacer Block for 7″ (178 mm)
	609483	Spacer Block for 8″ (203 mm)
	609484	Spacer Block for 10″ (254 mm)
	609485	Spacer Block for 12″ (305 mm)
4	610065	Mounting Spacer Block *(2505)*
5	609990	Spacer Shim for 2″ (44 mm) *(2506)*
	609991	Spacer Shim for 3″ (70 mm) *(2506)*
	610066	Spacer Shim for 4″ to 12″ (95 mm to 305 mm)
6	902-132	Socket Head Cap Screw, 1/4-20 x 0.75″

Item	Part No.	Part Description
7	616302	Hex Drive Shaft for 2″ (44 mm)
	616303	Hex Drive Shaft for 3″ (70 mm)
	616304	Hex Drive Shaft 4″ (95 mm)
	616305	Hex Drive Shaft 5″ (127 mm)
	616306	Hex Drive Shaft 6″ (152 mm)
	616307	Hex Drive Shaft 7″ (178 mm)
	616308	Hex Drive Shaft 8″ (203 mm)
	616310	Hex Drive Shaft 10″ (254 mm)
	616312	Hex Drive Shaft 12″ (305 mm)
8	200398	Retaining Sleeve/Grease Assembly with 90° Fitting (Optional) (Includes Items 9 and 16)
9	200075	Retaining Sleeve for Grease (Optional)
10	200379	Coupling Guard *(2505)*
	200380	Coupling Guard *(2506)*
11	901-104	Button Head Cap Screw, #10-32 x 0.25″
12	903-140	Flat Head Cap Screw, 1/4-20 x 1.00″
13	903-110	Flat Head Cap Screw, #10-32 x 0.63″ *(2505)*
14	903-136	Flat Head Cap Screw, 1/4-20 x 0.75″ *(2505)*
	903-183	Flat Head Cap Screw, 5/16-18 x 0.75″ *(2506)*
15	912-052	Square Key, 1/8″ x 0.63″ *(2505)*
	912-077	Square Key, 3/16″ x 0.63″ *(2506)*
16	810-139	90° Grease Fitting
17	618998	Spacer Block for 8″ to (203) - 12″ (203 to 305 mm)
	621508	Spacer Block for 8″ to (203) - 12″ (203 to 305 mm)
18	605279	Hard Washer
19	902-138	Socket Head Cap Screw, 1/4-20 x 1.25″

2305 & 2306 End Drive Side Mounting Package

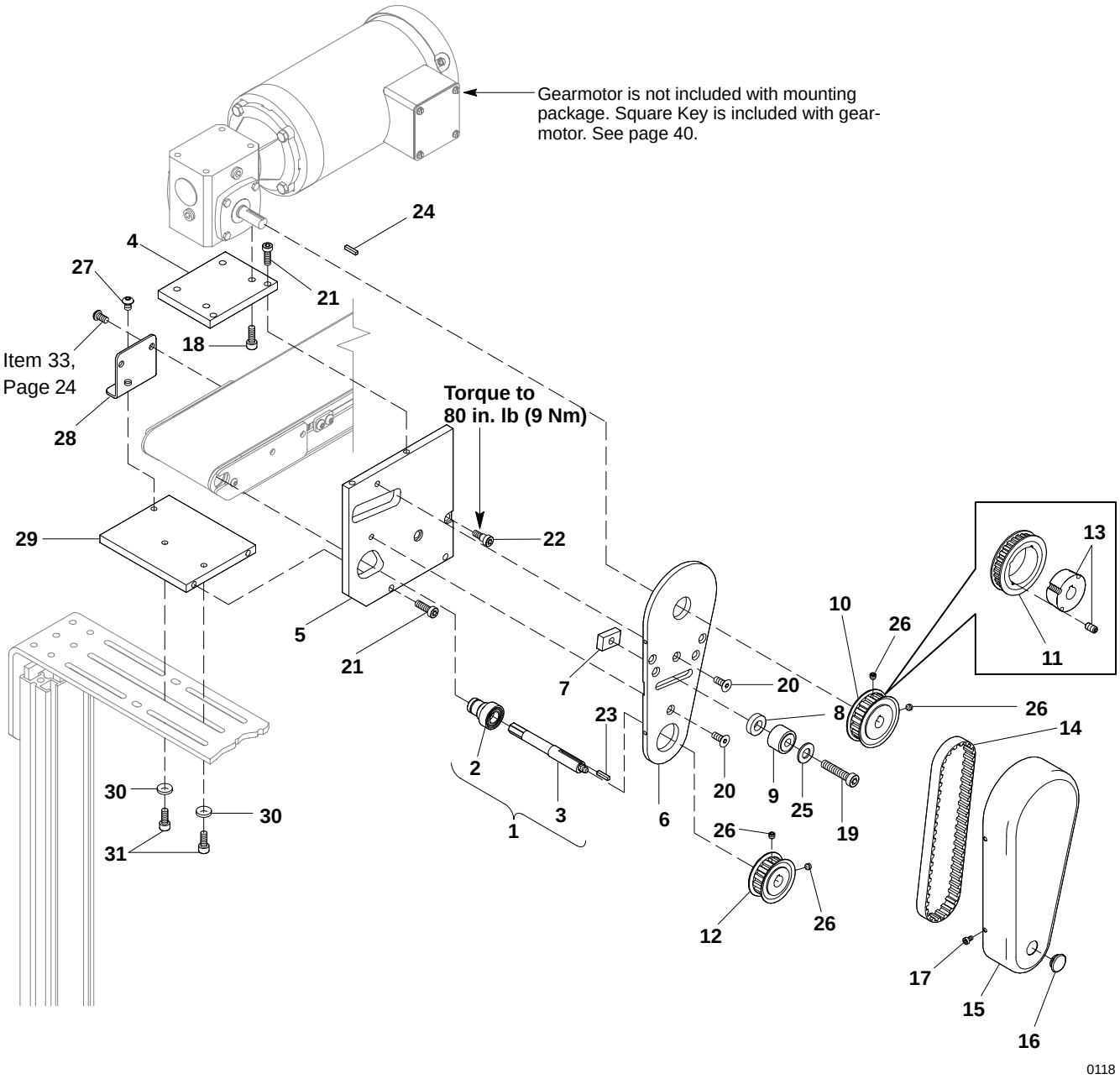


Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	610069	Mounting Plate for 2 & 3″ (44 & 70 mm) *(2305)*
	609989	Mounting Plate for 2 & 3″ (44 & 70 mm) *(2306)*
	610063	Mounting Plate for 4 - 24″ (95 - 610mm) *(2305)*
	610064	Mounting Plate for 4 - 24″ (95 - 610 mm) *(2306)*
2	23-27	Flex Coupling, 0.50″ Bore *(2305)*
	23-28	Flex Coupling, 0.63″ Bore *(2306)*
3	200085	Adapting Plate for 2″ (44 mm)
	200174	Adapting Plate for 3″ (70 mm)
	200087	Adapting Plate for 4″ (95 mm)
	200088	Adapting Plate for 5″ (127 mm)
	200089	Adapting Plate for 6″ (152 mm)
	200090	Adapting Plate for 7″ (178 mm)
	200091	Adapting Plate for 8″ (203 mm)
	200092	Adapting Plate for 10″ (254 mm)
	200093	Adapting Plate for 12″ (305 mm)
	202785	Adapting Plate for 15″ (381 mm)
	202788	Adapting Plate for 18″ (457 mm)
	202791	Adapting Plate for 21″ (533 mm)
	202794	Adapting Plate for 24″ (610 mm)
4	610065	Mounting Spacer Block *(2305)*
5	609991	Spacer Shim for 2 & 3″ (44 & 70 mm) *(2306)*
	610066	Spacer Shim for 4 - 24″ (95 to 610mm) *(2306)*
6	200095	Drive Mounting Bracket

Item	Part No.	Part Description
7	616302	Hex Drive Shaft for 2″ (44 mm)
	616303	Hex Drive Shaft for 3″ (70 mm)
	616304	Hex Drive Shaft for 4″ (95 mm)
	616305	Hex Drive Shaft for 5″ (127 mm)
	616306	Hex Drive Shaft for 6″ (152 mm)
	616307	Hex Drive Shaft for 7″ (178 mm)
	616308	Hex Drive Shaft 8″ (203 mm)
	616310	Hex Drive Shaft for 10″ (254 mm)
	616312	Hex Drive Shaft for 12″ (305 mm)
	203965	Hex Drive Shaft for 15″ (381 mm)
	203968	Hex Drive Shaft for 18″ (457 mm)
	203971	Hex Drive Shaft for 21″ (533 mm)
	203974	Hex Drive Shaft for 24″ (610 mm)
8	200398	Retaining Sleeve/Grease Assembly with 90° Fitting (Optional) (Includes Items 9 and 19)
9	200075	Retaining Sleeve for Grease (Optional)
10	200379	Coupling Guard *(2305)*
	200380	Coupling Guard *(2306)*
11	901-104	Button Head Cap Screw, #10-32 x 0.25″
12	901-125	Button Head Cap Screw, 1/4-20 x 0.25″
13	903-134	Flat Head Cap Screw, 1/4-20 x 0.63″
14	903-110	Flat Head Cap Screw, #10-32 x 0.63″ *(2305)*
15	903-140	Flat Head Cap Screw, 1/4-20 x 1.00″ *(2305)*
	903-183	Flat Head Cap Screw, 5/16-18 x 0.75″ *(2306)*
16	912-052	Square Key, 1/8″ x 0.63″ *(2305)*
	912-077	Square Key, 3/16″ x 0.63″ *(2306)*
17	200172	Spacer for 7 - 24″ (178 - 610 mm) *(2305)*
	200325	Spacer for 7 - 24″ (178 - 610 mm) *(2306)*
18	901-104	Button Head Cap Screw, #10-32 x 0.25″ *(2306)*
19	810-139	90° Grease Fitting
20	904-050	Socket Head Shoulder Screw, 0.31″ x 0.25″
21	605279	Hard Washer
22	902-136	Socket Head Cap Screw, 1/4-20 x 1.00″

2307 & 2308 End Drive
Top Mounting Package

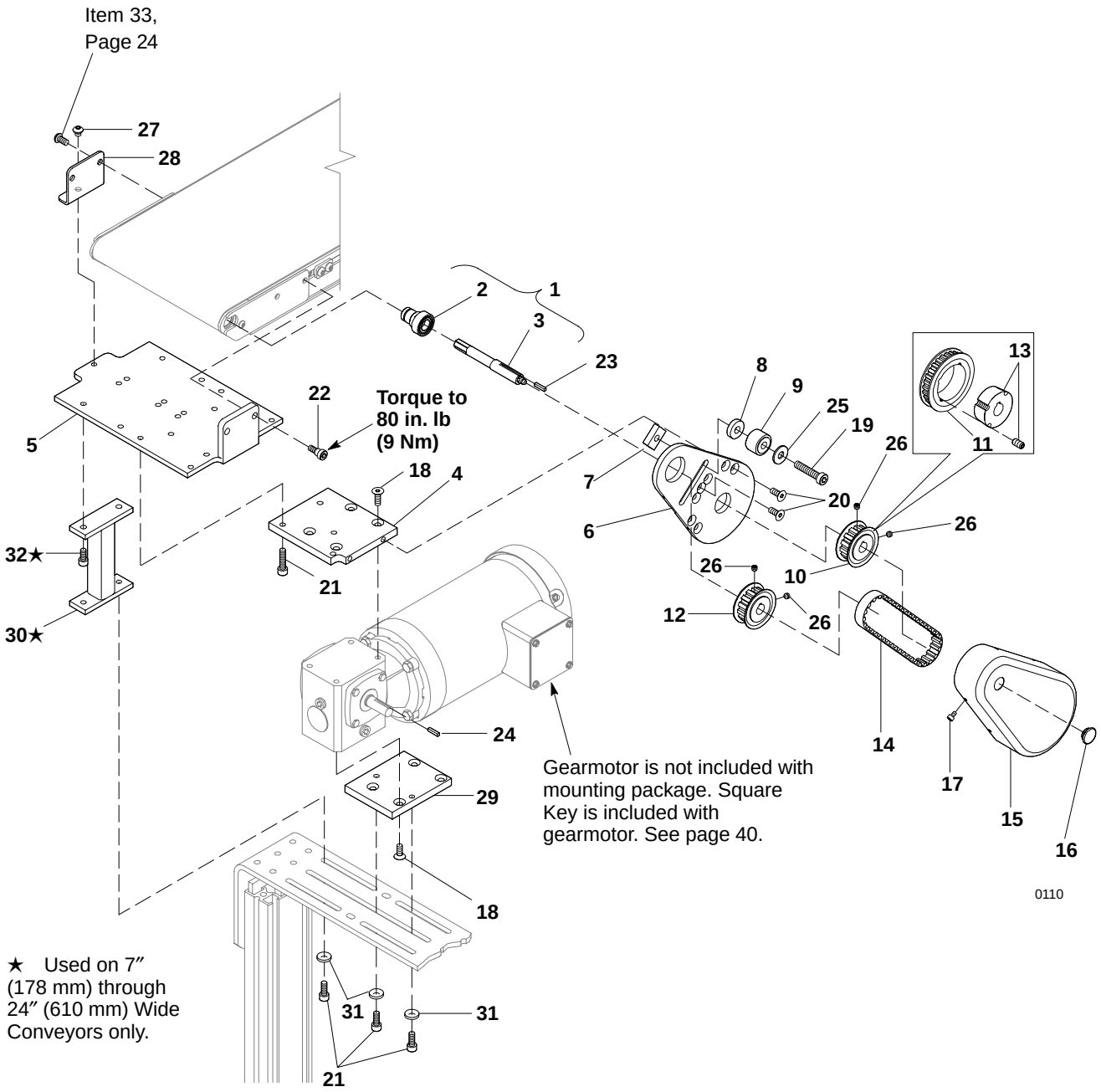


Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	Page 30	Adapter Assembly (Includes Items 2 and 3)
2	200223	Outboard Bearing Retaining Sleeve
3	Page 30	Drive Shaft Assembly
4	200234	Mounting Plate *(2307)*
	200235	Mounting Plate *(2308)*
5	200056	Side Mounting Plate *(2307)*
	200236	Side Mounting Plate *(2308)*
6	200381	Back Guard Plate
7	609424	Tensioning Bearing Nut
8	609425	Tensioning Bearing Spacer
9	802-046	Tensioning Bearing
10	603395	Drive Pulley, 10 Tooth, 0.50″ Bore *(2307)*
	605231	Drive Pulley, 10 Tooth, 0.63″ Bore *(2308)*
	603394	Drive Pulley, 12 Tooth, 0.50″ Bore *(2307)*
	604783	Drive Pulley, 12 Tooth, 0.63″ Bore *(2308)*
	605219	Drive Pulley, 14 Tooth, 0.50″ Bore *(2307)*
	606276	Drive Pulley, 14 Tooth, 0.63″ Bore *(2308)*
	605222	Drive Pulley, 16 Tooth, 0.50″ Bore *(2307)*
	611978	Drive Pulley, 16 Tooth, 0.63″ Bore *(2308)*
	607779	Drive Pulley, 17 Tooth, 0.50″ Bore *(2307)*
	611979	Drive Pulley, 17 Tooth, 0.63″ Bore *(2308)*
	611987	Drive Pulley, 19 Tooth, 0.50″ Bore *(2307)*
	611988	Drive Pulley, 19 Tooth, 0.63″ Bore *(2308)*
	607778	Drive Pulley, 21 Tooth, 0.50″ Bore *(2307)*
	611980	Drive Pulley, 21 Tooth, 0.63″ Bore *(2308)*
11	811-101	Drive Pulley, 18 Tooth, Taper Lock®-TL1108
	811-103	Drive Pulley, 20 Tooth, Taper Lock®-TL1008
	811-115	Drive Pulley, 22 Tooth, Taper Lock®-TL1108
	611933	Drive Pulley, 24 Tooth, Taper Lock®-TL1210
	611934	Drive Pulley, 26 Tooth, Taper Lock®-TL1210
	611935	Drive Pulley, 28 Tooth, Taper Lock®-TL1610
	611936	Drive Pulley, 30 Tooth, Taper Lock®-TL1610
12	603395	Driven Pulley, 10 Tooth, 0.50″ Bore
	603394	Driven Pulley, 12 Tooth, 0.50″ Bore
	605219	Driven Pulley, 14 Tooth, 0.50″ Bore
	605222	Driven Pulley, 16 Tooth, 0.50″ Bore
13	811-109	Taper Lock® Bushing-TL1008, 0.50″ *(2307)*
	811-108	Taper Lock® Bushing-TL1008, 0.63″ *(2308)*
	811-165	Taper Lock® Bushing-TL1108, 0.50″ *(2307)*
	811-166	Taper Lock® Bushing-TL1108, 0.63″ *(2308)*
	611929	Taper Lock® Bushing-TL1210, 0.50″ *(2307)*
	611930	Taper Lock® Bushing-TL1210, 0.63″ *(2308)*
	611931	Taper Lock® Bushing-TL1610, 0.50″ *(2307)*
	611932	Taper Lock® Bushing-TL1610, 0.63″ *(2308)*

Item	Part No.	Part Description
14	814-044	Timing Belt, 16.50″ (419.10 mm) Long
	814-053	Timing Belt, 17.25″ (438.15 mm) Long
	814-054	Timing Belt, 17.63″ (447.80 mm) Long
	814-022	Timing Belt, 18.75″ (476.25 mm) Long
	814-051	Timing Belt, 19.50″ (495.30 mm) Long
	814-023	Timing Belt, 21″ (533.40 mm) Long
	814-055	Timing Belt, 21.75″ (552.45 mm) Long
15	200377	Timing Belt Guard
16	807-226	Plastic Plug
17	902-054	Socket Head Cap Screw, #8-32 x 0.25″
18	902-132	Socket Head Cap Screw, 1/4-20 x 0.75″ *(2307)*
	902-179	Socket Head Cap Screw, 5/16-18 x 0.75″ *(2308)*
19	902-186	Socket Head Cap Screw, 5/16-18 x 1.50″
20	903-134	Flat Head Cap Screw, 1/4-20 x 0.63″
21	902-132	Socket Head Cap Screw, 1/4-20 x 0.75″
22	904-050	Socket Head Shoulder Screw, 0.31″ x 0.25″
23	912-052	Square Key, 1/8″ x 0.63″
24	912-052	Square Key, 1/8″ x 0.63″ *(2307)*
	912-077	Square Key, 3/16″ x 0.63″ *(2308)*
25	911-008	Flat Washer, SAE
26	907-141	Cup Set Screw, 1/4-28 x 0.25″
27	901-127	Button Head Cap Screw, 1/4-20 x 0.38″
28	200237	Drive Mounting Bracket
29	200225	Adapting Plate for 2″ (44 mm)
	200226	Adapting Plate for 3″ (70 mm)
	200227	Adapting Plate for 4″ (95 mm)
	200228	Adapting Plate for 5″ (127 mm)
	200229	Adapting Plate for 6″ (152 mm)
	200230	Adapting Plate for 7″ (178 mm)
	200231	Adapting Plate for 8″ (203 mm)
	200232	Adapting Plate for 10″ (254 mm)
	200233	Adapting Plate for 12″ (305 mm)
	203645	Adapting Plate for 15″ (381 mm)
	203648	Adapting Plate for 18″ (457 mm)
	203651	Adapting Plate for 21″ (533 mm)
	203654	Adapting Plate for 24″ (610 mm)
30	605279	Hard Washer
31	902-130	Socket Head Cap Screw, 1/4-20 x 0.63″

2309 & 2310 End Drive
Bottom Mounting Package



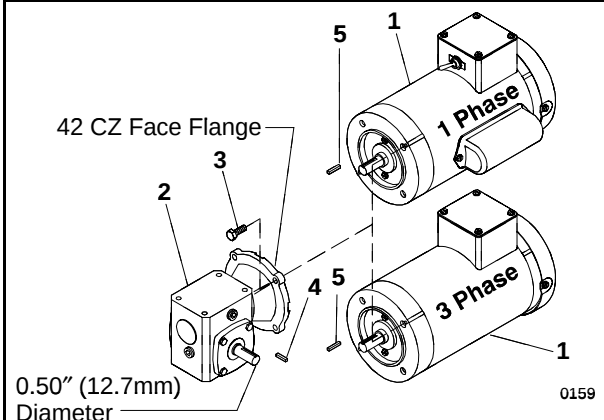
Nominal Conveyor Widths are listed in ″ (mm).

Item	Part No.	Part Description
1	Page 30	Adapter Assembly (Includes Items 2 and 3)
2	200223	Outboard Bearing Retaining Sleeve
3	Page 30	Drive Shaft Assembly
4	609423	Mounting Plate for 2 - 12″ (44 - 305 mm) *(2309)*
	609762	Mounting Plate for 2 - 12″ (44 - 305 mm) *(2310)*
5	200198	Adapting Plate for 2 & 3″ (44 & 70 mm) *(2309)*
	200087	Adapting Plate for 4″ (95 mm) *(2309)*
	200086	Adapting Plate for 2 - 4″ (44 - 95 mm) *(2310)*
	200088	Adapting Plate for 5″ (127 mm)
	200089	Adapting Plate for 6″ (152 mm)
	200090	Adapting Plate for 7″ (178 mm)
	200091	Adapting Plate for 8″ (203 mm)
	200092	Adapting Plate for 10″ (254 mm)
	200093	Adapting Plate for 12″ (305 mm)
	202785	Adapting Plate for 15″ (381 mm)
	202788	Adapting Plate for 18″ (457 mm)
	202791	Adapting Plate for 21″ (533 mm)
	202794	Adapting Plate for 24″ (610 mm)
6	200375	Back Guard Plate
7	609424	Tensioning Bearing Nut
8	609425	Tensioning Bearing Spacer
9	802-046	Tensioning Bearing
10	603394	Drive Pulley, 12 Tooth, 0.50″ Bore *(2309)*
	604783	Drive Pulley, 12 Tooth, 0.63″ Bore *(2310)*
	605219	Drive Pulley, 14 Tooth, 0.50″ Bore *(2309)*
	606276	Drive Pulley, 14 Tooth, 0.63″ Bore *(2310)*
	605222	Drive Pulley, 16 Tooth, 0.50″ Bore *(2309)*
	611978	Drive Pulley, 16 Tooth, 0.63″ Bore *(2310)*
	607779	Drive Pulley, 17 Tooth, 0.50″ Bore *(2309)*
	611979	Drive Pulley, 17 Tooth, 0.63″ Bore *(2310)*
	611987	Drive Pulley, 19 Tooth, 0.50″ Bore *(2309)*
	611988	Drive Pulley, 19 Tooth, 0.63″ Bore *(2310)*
	607778	Drive Pulley, 21 Tooth, 0.50″ Bore *(2309)*
	611980	Drive Pulley, 21 Tooth, 0.63″ Bore *(2310)*
11	811-101	Drive Pulley, 18 Tooth, Taper Lock®-TL1108
	811-103	Drive Pulley, 20 Tooth, Taper Lock®-TL1008
	811-115	Drive Pulley, 22 Tooth, Taper Lock®-TL1108
	611933	Drive Pulley, 24 Tooth, Taper Lock®
	611934	Drive Pulley, 26 Tooth, Taper Lock®
	611935	Drive Pulley, 28 Tooth, Taper Lock®
	611936	Drive Pulley, 30 Tooth, Taper Lock®

Item	Part No.	Part Description
12	603395	Driven Pulley, 10 Tooth, 0.50″ Bore
	603394	Driven Pulley, 12 Tooth, 0.50″ Bore
	605219	Driven Pulley, 14 Tooth, 0.50″ Bore
	605222	Driven Pulley, 16 Tooth, 0.50″ Bore
13	811-109	Taper Lock® Bushing-TL1008, 0.50″ *(2309)*
	811-108	Taper Lock® Bushing-TL1008, 0.63″ *(2310)*
	811-165	Taper Lock® Bushing-TL1108, 0.50″ *(2309)*
	811-166	Taper Lock® Bushing-TL1108, 0.63″ *(2310)*
	611929	Taper Lock® Bushing, 0.50″ *(2309)*
	611930	Taper Lock® Bushing, 0.63″ *(2310)*
	611931	Taper Lock® Bushing, 0.50″ *(2309)*
	611932	Taper Lock® Bushing, 0.63″ *(2310)*
14	814-021	Timing Belt, 15.00″ (381.00 mm) Long
	814-052	Timing Belt, 15.75″ (400.05 mm) Long
	814-044	Timing Belt, 16.50″ (419.10 mm) Long
	814-053	Timing Belt, 17.25″ (438.15 mm) Long
	814-054	Timing Belt, 17.63″ (447.80 mm) Long
	814-022	Timing Belt, 18.75″ (476.25 mm) Long
15	200376	Timing Belt Guard
16	807-226	Plastic Plug
17	902-054	Socket Head Cap Screw, #8-32 x 0.25″
18	903-136	Flat Head Cap Screw, 1/4-20 x 0.75″ *(2309)*
	903-183	Flat Head Cap Screw, 5/16-18 x 0.75″ *(2310)*
19	902-186	Socket Head Cap Screw, 5/16-18 x 1.50″
20	903-134	Flat Head Cap Screw, 1/4-20 x 0.63″
21	902-130	Socket Head Cap Screw, 1/4-20 x 0.63″
22	904-050	Socket Head Shoulder Screw, 0.31″ x 0.25″
23	912-052	Square Key, 1/8″ x 0.63″
24	912-052	Square Key, 1/8″ x 0.63″ *(2309)*
	912-077	Square Key, 3/16″ x 0.63″ *(2310)*
25	911-008	Flat Washer, SAE
26	907-141	Cup Set Screw, 1/4-28 x 0.25″
27	901-125	Button Head Cap Screw 1/4-20 x 0.25″
28	200095	Drive Mounting Bracket
29	200063	Stand Adapting Plate *(2309)*
	200064	Stand Adapting Plate *(2310)*
30	200096	Support Assembly *(2309)*
	200097	Support Assembly *(2310)*
31	605279	Hard Washer
32	902-128	Socket Head Cap Screw, 1/4-20 x 0.50″

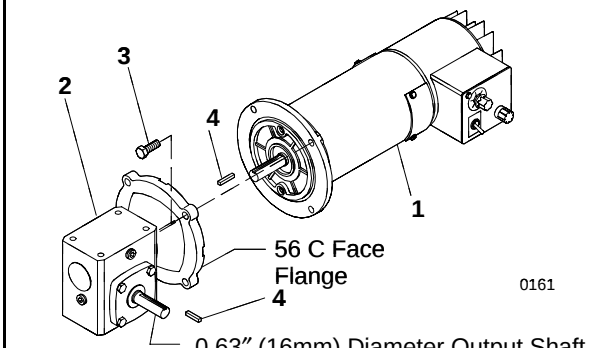
Fixed Speed Gearmotor

0.33 HP, totally enclosed, fan cooled, 0.50″ (12.7 mm) diameter output shaft.
Single Phase Motor equipped with switch, cord and overload protection, 115 volts, 60HZ.
Three Phase Motor is not equipped with switch or cord, 208-230/460 volts, 50/60HZ.

Illustration	Item	Part No.	Description
	1	22-4114	Electric Motor, Single Phase
		22-4114-R	Electric Motor, Single Phase, Reversing
		22-4434	Electric Motor, Three Phase
	2	22-005R-4	Gear Reducer, 5:1 Ratio
		22-007R-4	Gear Reducer, 7.5:1 Ratio
		22-010R-4	Gear Reducer, 10:1 Ratio
		22-015R-4	Gear Reducer, 15:1 Ratio
		22-020R-4	Gear Reducer, 20:1 Ratio
		22-025R-4	Gear Reducer, 25:1 Ratio
		22-030R-4	Gear Reducer, 30:1 Ratio
		22-040R-4	Gear Reducer, 40:1 Ratio
		22-050R-4	Gear Reducer, 50:1 Ratio
		22-060R-4	Gear Reducer, 60:1 Ratio
	3	906-002	Hex Head Bolt, 1/4-20 x 0.75″ (Supplied with Reducer)
	4	912-052	Key, 1/8” x 0.63″ (Supplied with Reducer)
	5	912-053	Key, 1/8” x 0.75″ (Supplied with Motor)

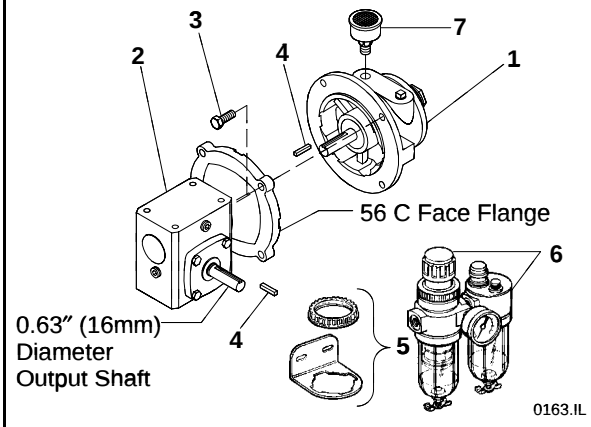
Variable Speed Gearmotor

0.33 HP, totally enclosed, non-ventilated D.C. motor, equipped with switch, cord and controller. Input voltage: 115 volts, 50/60HZ, single phase, 0.63″ (16 mm) diameter output shaft.

Illustration	Item	Part No.	Description
	1	22-3115-7	Electric Motor
		22-3115-7R	Electric Motor, Reversing
	2	22-005R-5	Gear Reducer, 5:1 Ratio
		22-007R-5	Gear Reducer, 7.5:1 Ratio
		22-010R-5	Gear Reducer, 10:1 Ratio
		22-015R-5	Gear Reducer, 15:1 Ratio
		22-020R-5	Gear Reducer, 20:1 Ratio
		22-025R-5	Gear Reducer, 25:1 Ratio
		22-030R-5	Gear Reducer, 30:1 Ratio
		22-040R-5	Gear Reducer, 40:1 Ratio
		22-050R-5	Gear Reducer, 50:1 Ratio
		22-060R-5	Gear Reducer, 60:1 Ratio
	3	906-125	Hex Head Bolt, 3/8-16 x 1.0″ (Supplied with Reducer)
	4	912-080	Key, 3/16” x 1.0″ (Supplied with Reducer and Motor)

Air Gearmotor

0.63″ (16 mm) diameter output shaft.

Illustration	Item	Part No.	Description
	1	22-0005-8	Air Motor
	2	22-005R-5	Gear Reducer, 5:1 Ratio
		22-007R-5	Gear Reducer, 7.5:1 Ratio
		22-010R-5	Gear Reducer, 10:1 Ratio
		22-015R-5	Gear Reducer, 15:1 Ratio
		22-020R-5	Gear Reducer, 20:1 Ratio
		22-025R-5	Gear Reducer, 25:1 Ratio
		22-030R-5	Gear Reducer, 30:1 Ratio
		22-040R-5	Gear Reducer, 40:1 Ratio
		22-050R-5	Gear Reducer, 50:1 Ratio
		22-060R-5	Gear Reducer, 60:1 Ratio
	3	906-125	Hex Head Bolt, 3/8-16 x 1.0″ (Supplied with Reducer)
	4	912-080	Key, 3/16” x 1.0″ (Supplied with Reducer and Motor)
	5	810-148	Bracket and Nut
	6	810-146	Filter/Regulator/Lubricator Unit
	7	810-055	Muffler

Note: All Gear Reducers illustrated above are RIGHT HAND models. Left Hand and Double Output Shaft Models are available.

Notes

Date	Hours Used	Lubrication	Remarks

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

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