

Service Instructions

- Installation
- Service & Repair
- Maintenance

Link-Belt®
Heavy-Duty

Coilmount
Oscillating
Conveyors



SAFETY

In the maintenance and operation of mechanical equipment, SAFETY is a basic factor that must be considered at all times. Through the use of the proper clothing, tools, and methods of handling, serious accidents causing injury to you or your fellow worker can be prevented.

Throughout this manual are listed a number of safety precautions. Study them, follow them, and insist upon those working with you doing the same. Remember, an accident is usually caused by someone's carelessness, neglect, or oversight.

The preferred procedures and precautions in this manual should be followed at all times. Detailed instructions for servicing, operating, and maintaining should be followed carefully to ensure the best use of this equipment. Although there are many safety warnings in this book, no instructions can take the place of common sense, sound judgement, and acceptable work practices. Refer to page 11 for specific safety precautions.

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INSTALLATION

Conveyors must be adequately supported on concrete foundations, concrete pads or steel supports and must be fastened securely at each anchor bolt hole in the base. (See Figure 2 for typical mountings.) Supporting members are subject to both horizontal and vertical oscillating forces. If conveyor is to be mounted on structural supports, support the conveyor base section under the eccentric drive with a continuous member. When more than one conveyor is mounted in-line, allow for differences in elevation. (See Figure 1).

ORDER OF ASSEMBLY OF SECTIONS

Any conveyor section may be connected to any other, or to the drive section. Drive section may be located anywhere along the conveyor. Any 5'-0", or 10'-0" conveyor section or drive section may be used as a primary or feed end section. However, if a 20'-0" section is used as a primary section, it must be fitted with auxiliary rocker legs at the feed end.

PREPARATION OF SITE

Careful preparation of the conveyor site will contribute to efficient and long service life of the conveyor.

1. Locate and mark center line of conveyor.
2. Stretch a wire tight and parallel to center line of conveyor. Locate and mark anchor bolts.
3. Drill holes and set $\frac{3}{4}$ " anchor bolts. (Securing anchor bolts by lead fills or cinch anchors is not recommended).

Table 1 - Dimensions

Size	A	B	C	D	E
	Inches				
24	24	11-1/2	18-7/8	18-1/2	38-1/2
30	24	14-1/2	21-7/8	21-1/2	41-1/2
36	24	17-1/2	24-7/8	24-1/2	44-1/2
42	24	20-1/2	27-7/8	27-1/2	47-1/2

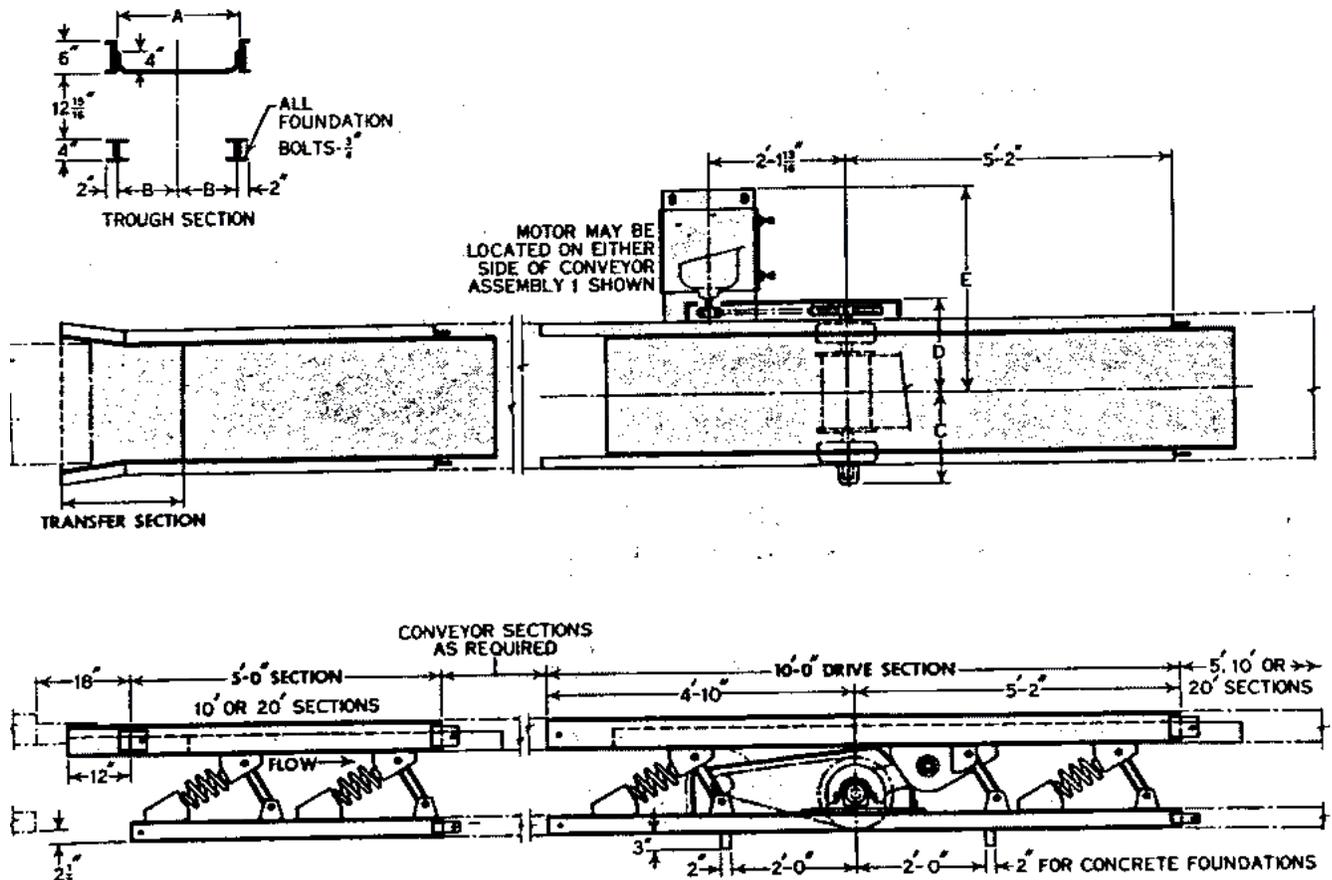


Fig. 1 - DIMENSIONS

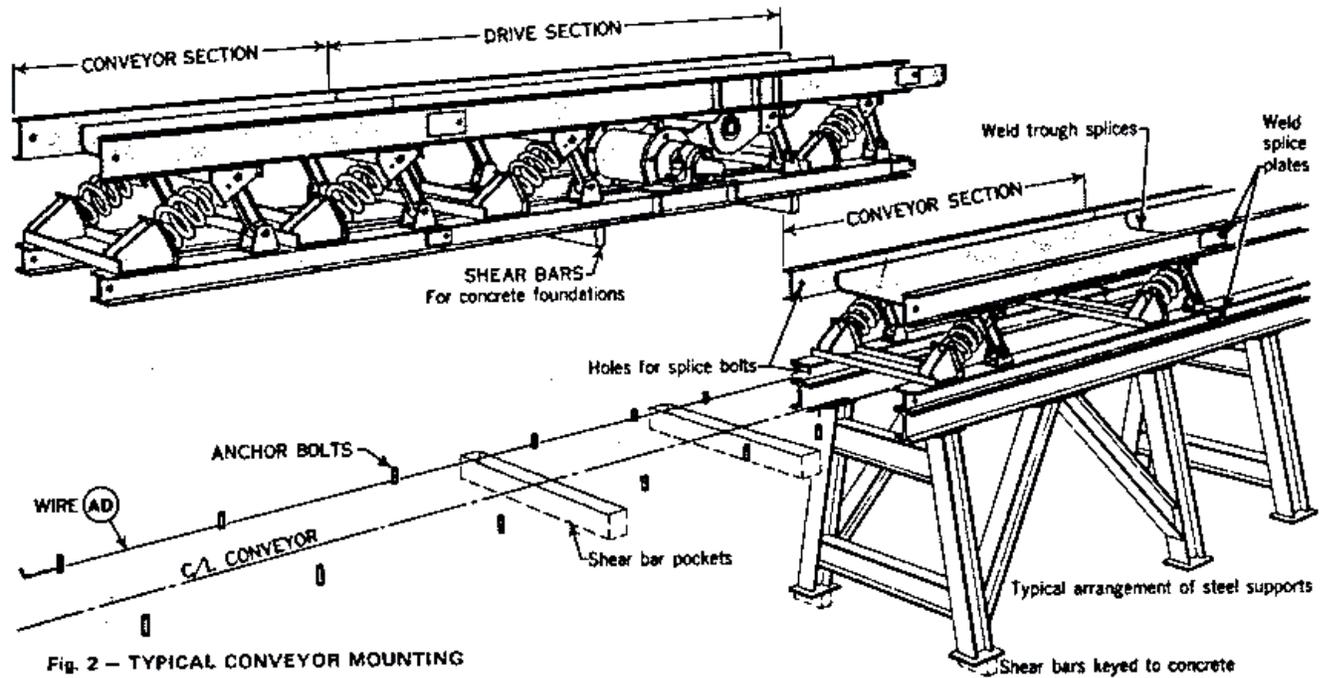


Fig. 2 - TYPICAL CONVEYOR MOUNTING

ASSEMBLY OF CONVEYOR COMPONENTS

Assembly steps are as follows:

1. For conveyors mounted on concrete, weld shear bars C to drive section.
2. Bolt motor mount to proper side of drive section.
3. Assemble drive section and conveyor sections in proper order and in line with wire AD.
4. Level top surface of base frames, shim under beams as required, and tighten connection splice bolts and anchor bolts.
5. Recheck alignment of conveyor and re-level base; correct by shimming when necessary. Tack-weld shims to conveyor base.
6. For conveyors mounted on concrete, grout base and shear bars in place with non-shrinking grout.
7. For conveyors mounted on steel, shim level and colt conveyor base to steel support.
8. Weld drive section to support steel, and tack-weld shims in place.
9. Before starting conveyor, loosen bearing mounting bolts AN, Figure 7 and follow instructions on Page 5 under Installing eccentric drive, items 5 to 17.
10. Check speed of eccentric drive. Recommended speed is stamped on side of trough.
11. After short run-in period, check tightness of all bolts and wrist pin taper lock bushings. Check tension of V-belts periodically and readjust if necessary. **See Tensioning V-belt**, page 7. V-belts may have some tendency to settle in the sheave grooves and stretch during the run-in period.
12. Weld trough splices at each section joint to prevent material leakage. Weld splice plates at each section joint. Tack weld drive bracket to trough.

NOTE: Rocker legs are normally assembled in Hole 1 in trough bracket, Figure 9 Page 6. For some applications, conveying or scalping action may be improved by moving upper end of leg to Hole 2 in trough bracket.

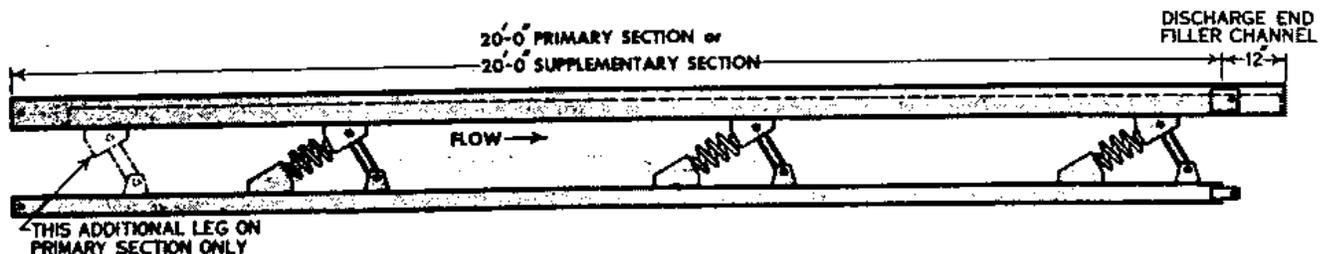


Fig. 3 - CONVEYOR SECTION WITH ROCKER LEG

SERVICE AND REPAIR

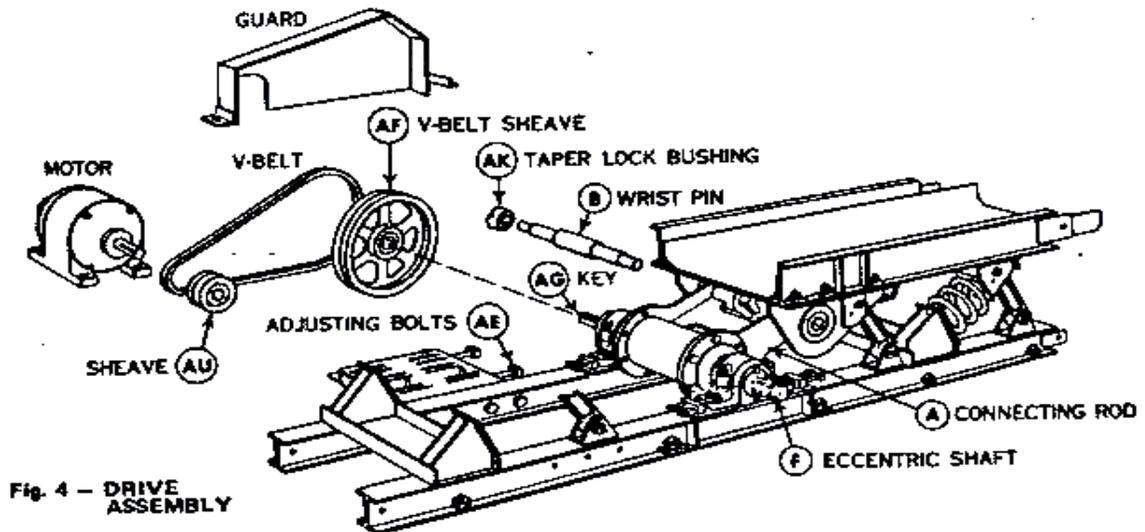


Fig. 4 - DRIVE ASSEMBLY

Eccentric drive and renewal of wrist pin bushing

Inspect eccentric drive, as often as is practical, preferably when conveyor is empty. Eccentric drive will normally operate quietly; if a knock or pound develops, correct it immediately. Excessive wear in bearings can usually be detected by feeling the bearing housings while conveyor is running.

Disassembly of eccentric drive

1. Remove all guards from drive.
2. Loosen adjusting bolts AE in motor base to remove V-belt.
3. Remove V-belt sheave AF by removing pull-up bolts and using them as jack screws in tapped holes in sheave hub.
4. Remove automatic pressure grease cup from end of wrist pin, if one is used. Grease cups are used only with drives having bronze instead of rubber bushings.
5. Loosen clamp bolts AH and tighten jack screw AJ to release grip on bushing. Figure 6, Page 5.
6. Remove taper lock bushings AK holding wrist pin B by removing mounting screws AL using one in jack screw hole AM to force bushing out. Remove and examine wrist pin and bushing assembly for wear. If bronze bushing is used, replace wrist pin when new wrist pin bushing is installed.
7. Remove pillow block mounting bolts AN, and loosen pillow block adjusting screws AP. Figure 7, Page 5.
8. Lift the two pillow blocks and eccentric drive assembly off mounting base and place in a clean workspace.
9. See Figure 12, Page 7, for parts identification.
10. Remove cap from one pillow block.
11. Bend lockwasher tang out of slot in locknut and loosen locknut 2 or 3 turns.
12. Tap locknut toward bearing using a wood or base rod until grip of tapered adapter sleeve on bearing is released.
13. Lift bearing from pillow block base being careful not to damage shaft seals or C-spacer. (C-spacer is not used on floating bearings).
14. Remove adapter locknut, slide bearing, lockwasher and adapter from shaft. (If new bearing is required in pillow block, install it according to instructions in bearing installation and operating instructions shipped with conveyor).

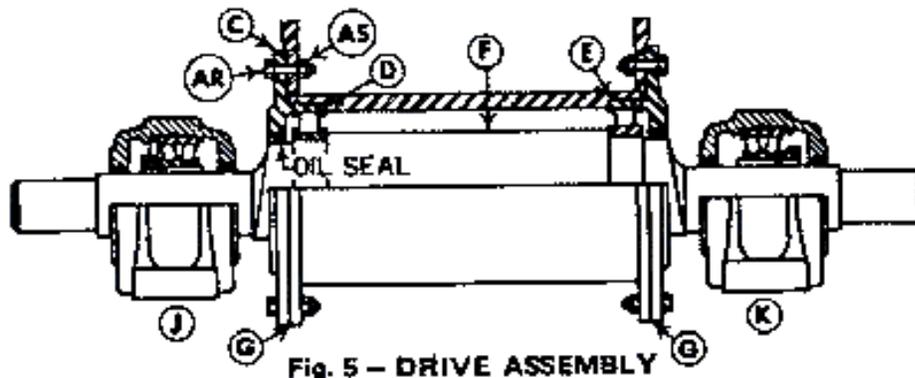


Fig. 5 - DRIVE ASSEMBLY

15. Remove bolts AR and nuts AS. Figure 5 (above).
16. Remove bearing retainers C, being careful not to damage oil seals.
17. Inspect bearings and identify separable bearing E, which does not have shoulders on inner race.
18. Press out shaft from the side containing bearing E toward the side containing bearing D. Inner ring of bearing E will remain on shaft. Do not allow inner race of bearing E to scrape, drag, or nick.
19. Remove bearing D from shaft using bearing puller or by supporting edge of bearing and pushing shaft out. Remove inner ring of bearing E from shaft. Use a press, lever, or other device that produces a constant force. If these are not available, use a hammer on a wood or fiber block.
20. Remove bearing E from housing using bearing puller or by supporting edge of housing and pushing bearing out by applying pressure to outer ring. Use a press, lever, or other device that will produce a constant force. If these are not available, use a hammer on a wood or fiber block.
21. Inspect oil seals in bearing retainers C. Install new seals if needed. Be sure that lip of seals point to outside of retainers and that seals are not cocked.

Reassemble of drive

1. Press self-contained bearing D on shaft.
2. Press inner ring of separable bearing E on shaft.
3. Press shaft assembly into place in housing. Do not allow inner ring of bearing E to scrape, drag, or nick while installing shaft.
4. Press outer ring of separable bearing E into place in housing. Press against the outer race.
5. Install gaskets G. Reuse old gaskets if they were not damaged.
6. Slide retainers C in place. Bolt them securely.
7. Install pillow block housings according to separate instructions.
8. To install drive, follow instructions under **Installing eccentric drive**, Items 5 to 15.

Installing new pillow block bearings

1. Make sure eccentric shaft is clean, straight, free of burrs and nicks, and not worn out-of-round.
2. Install new bearing or replace old bearing in pillow block and mount block according to separate instructions supplied. Do not bolt pillow blocks tight to base frame.

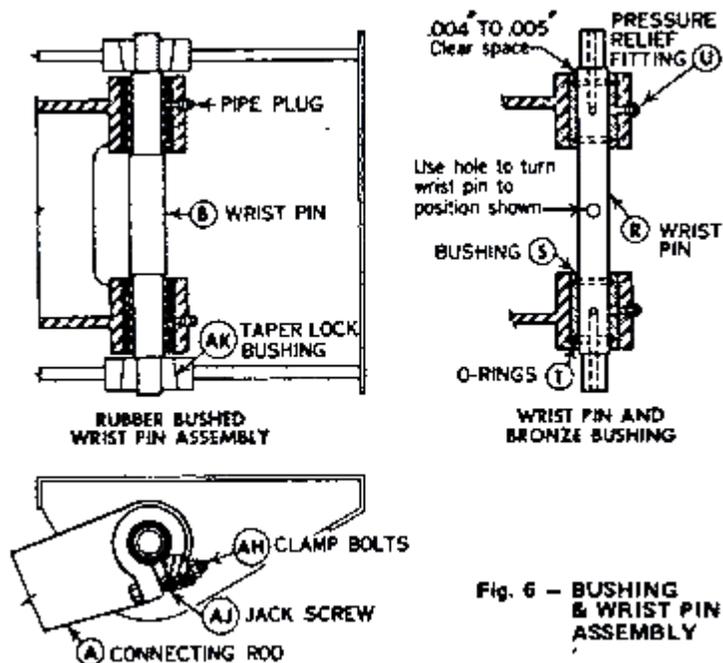


Fig. 6 - BUSHING & WRIST PIN ASSEMBLY

Installing eccentric drive, Figures 6 and 7.

1. Slide rubber-bushed wrist pin assembly through drive bracket N and connecting rod A. Be sure wrist pin projects an equal amount on each side of bracket.
2. Loosen jack screw AJ and tighten connecting rod clamp bolts AN.
3. If bronze bushings are used, install bushing in connecting rod clamp bolts one-half turn at a time with wrist pin in place. Compress bushing until obtaining .004" to .005" clearance between wrist pin and bushing. Also follow this procedure when adjusting old bushings. Adjust bronze bushed wrist pin clearances with pin in rod A and O-rings removed from bushing but not assembled on bracket. After obtaining correct fit, slip pin out of rod, replace O-rings, mount rod in position in bracket and replace pin.

CAUTION: Hole in bushing and in connecting rod clamp must be in-line and pressure relief fitting installed to replace pipe plug normally furnished.

4. Install two taper lock bushings AK and tighten mounting screws. **See taper lock bushing**, Page 6. It is good practice to repeat this tightening procedure after the conveyor has operated for 1 or 2 weeks. **CAUTION:** Do not insert screw in portion of taper lock bushing reserved for jack screw. See Page 6.

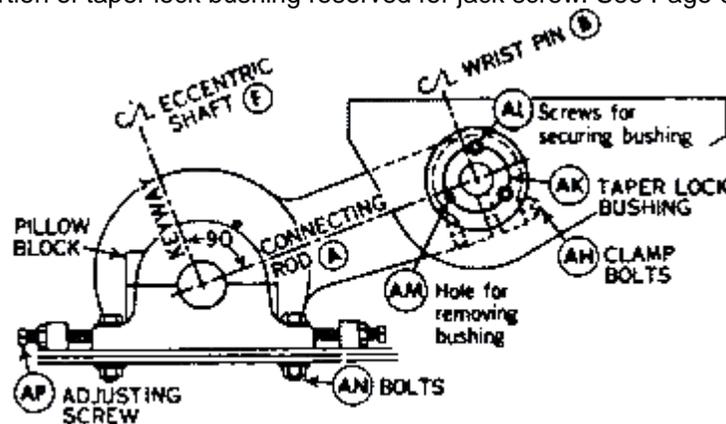


Fig. 7 - ALIGNMENT OF ECCENTRIC DRIVE

5. Rotate eccentric shaft F to center stroke position (keyway 90° to connecting rod) and allow pillow blocks to shift into position shown in Figure 7, (trough must be empty). Recommended special settings are shown on general arrangement drawing furnished when conveyor was purchased.

CAUTION: Proper setting of drive will ensure maximum life of drive components and rocker legs.

6. Align eccentric shaft F parallel to wrist pin B. Install shims under pillow blocks if required. Also adjust shims so eccentric draft is concentric with shaft openings in both ends of pillow block housings.

7. Tighten pillow block mounting bolts AN. Adjust adjusting screws AP and tighten jam nuts securely.

8. If bronze bushing is used, install automatic pressure grease cup.

9. Assemble V-belt sheave AF on eccentric shaft F. Position hub on shaft and tighten hub clamping screw. Tighten setscrew over key. Place sheave on hub and tighten pull-up bolts alternately and evenly.

Caution: With sheave in place on hub, there must be a gap between face of sheave and hub flange.

10. Mount motor on slide base.

11. Assemble sheave AU to motor and align with driven sheave AF. Figure 4, Page 4.

12. Mount V-belts and adjust tension with adjusting bolts AE. See Tensioning V-belt, page 7. Check alignment of sheaves and realign if necessary.

13. Tighten motor mounting bolts.

14. Lubricate drive according to separate instructions.

15. Rotate sheave AF by hand to make sure drive turns freely, shaft has clearance in bearing housing, and conveyor is clear of obstructions.

16. Run conveyor with power for about 15 minutes. Check eccentric bearings and pillow block housings to see if bearings are overheating. Overheating may be caused by misalignment of drive or excess grease in bearings.

17. After conveyor operates correctly, bolt on guards.

Taper lock bushing

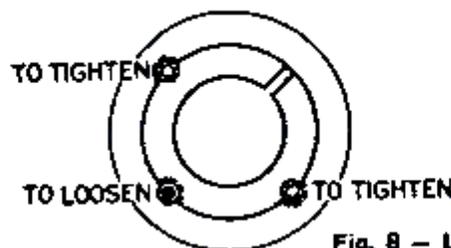


Fig. 8 - LOCATION OF BUSHINGS

To install

1. Clean shaft, bushing and inside of hub.
2. Place bushing in hub and insert screws loosely in mounting holes.
3. Locate bushing on shaft.
4. Tighten screws alternately and evenly until they are pulled up tight.
5. Drive bushing into hub housing using a hammer and wood block.
6. Re-tighten both screws.

To remove

1. Remove all mounting screws.
2. Insert screw in jack screw hole and tighten until bushing is loose.

Replacement of reactor springs

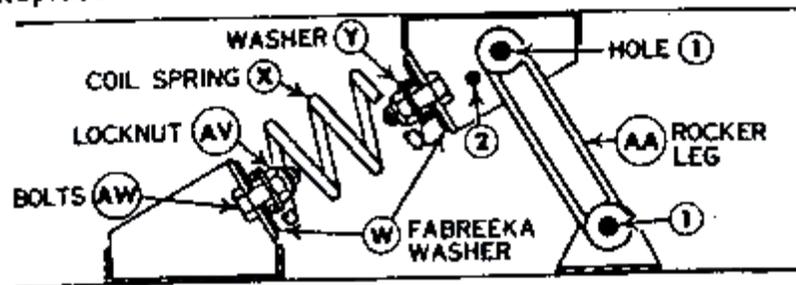


Fig. 9 - REACTOR SPRING ASSEMBLY

Remove worn parts and assemble replacements as follows:

1. Place a Fabreeka washer W on each end of reactor spring X and assemble between mounting surfaces of base and trough brackets.

2. Insert bolts AW and filler washer Y through spring and brackets and secure in place with locknuts.

NOTE: Holes 1-1 are used for assembly of rocker legs AA. Hole 2 is used for adjustment only, as referred to in note at bottom of Page 3.

Replacement of rocker leg

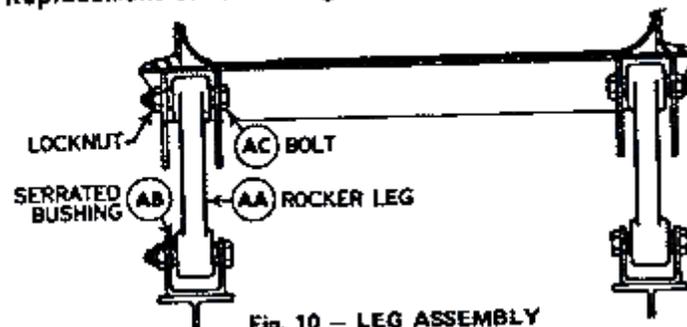


Fig. 10 - LEG ASSEMBLY

Replacement of single rocker leg

1. Align holes in rocker legs AA with Holes 1-1 in trough bracket and base bracket.
2. Insert bolt AC from inside leg AA and fasten on outside with locknut.
3. Tighten locknut with torque wrench to 100 foot-pounds torque.

Replacement of serrated bushings

1. Remove rocker leg from conveyor. Use hydraulic press or similar equipment to press old bushing out of leg.
2. Insert bushing in end of hole in rocker leg.
3. Apply pressure to outer steel shell edge of bushing only to seat bushing in leg.
4. Re-assemble rocker leg in conveyor according to preceding instructions.

MAINTENANCE

Link-Belt Heavy-duty Coilmount oscillating conveyors are built to provide many years of dependable service. A regular maintenance routine including inspection of V-belts, sheave alignment and springs, and tightening of loose bolts is essential.

If conveyor repair is necessary, take immediate action to prevent injury to other conveyor parts due to faulty operation. If excess run-out or worn parts are discovered, it is more economical to install new parts than to run the risk of more serious damage through neglect.

Include information on drive nameplate when ordering spare parts or repairs.

LUBRICATION

Follow lubrication instructions closely to assure maximum service life of conveyor drive.

Drive lubrication

Drive must be re-greased at regular intervals. Conveyor operating conditions determine the re-greasing interval. Lubricate at points shown on drawing below.

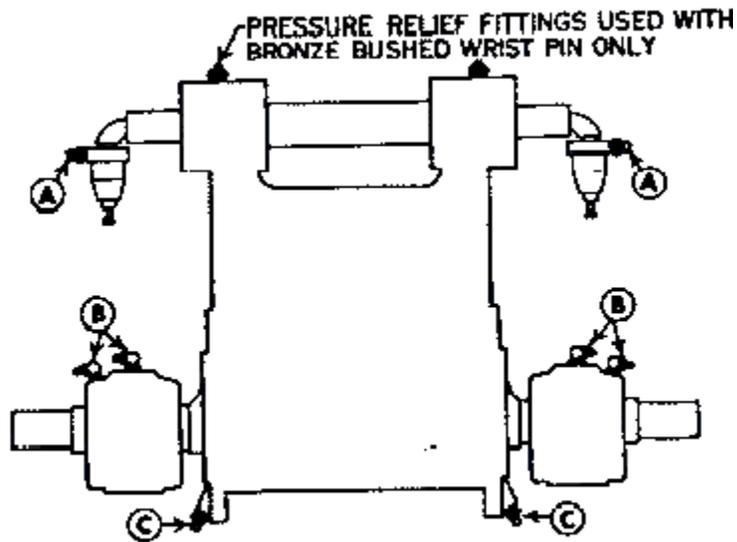


Fig. 11 - LOCATION OF LUBE FITTINGS

Fitting	Frequency of lubrication	Lubricant	Capacity, ounces
A Bronze wrist pin bushing	Weekly	Standard Oil Co. of Ind. Stanobar S N.Y. and N.J. Lub. Co.-F-925 Gulf Refining Co.-	2
B Pillow block	Every 3 weeks	Gulf Anti-Friction No. 1 Master Lubricant Co. Lubriko M-3 Special	4
C Main bearing	Every 3 weeks	Atlantic Refining Co.- No. 62 Mobil Oil Corp.-Mobilux Ep-0,1,2	2

□ No fitting when rubber bushing is used. No lubrication is required.

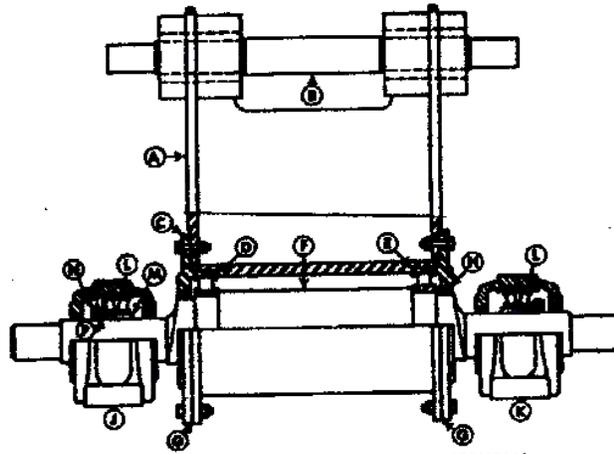
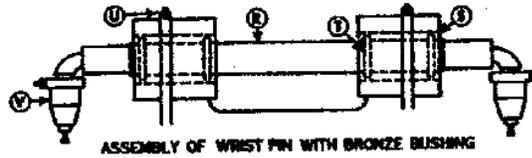


Fig. 12 – MODEL 6000 ECCENTRIC DRIVE ASSEMBLY

Table 2 – Drive Parts List

Locator	Description	Number Required
A	Connecting rod	1
B▲	Wrist pin, with rubber bushings	1
C	Bearing Retainer	2
D▲	Bearing (self contained)	1
E▲	Bearing (separable)	1
F▲	Eccentric shaft	1
G	Gasket	2
H▲	Oil seal	2
J▲	Pillow block (fixed type)	1
K▲	Pillow block (floating type)	1
L▲	Bearing	2
M▲	2-7/16" adapter	2
N▲	Bearing locknut	2
P	Bearing lockwasher	2
R	Wrist pin (bronze bushed)	1
S▲	Bronze bushing	2
T▲	O-ring	4
U	Pressure relief fitting	2
V	Grease cup	2

Include information on drive nameplate when ordering spare parts.

▲ Recommended spare parts.

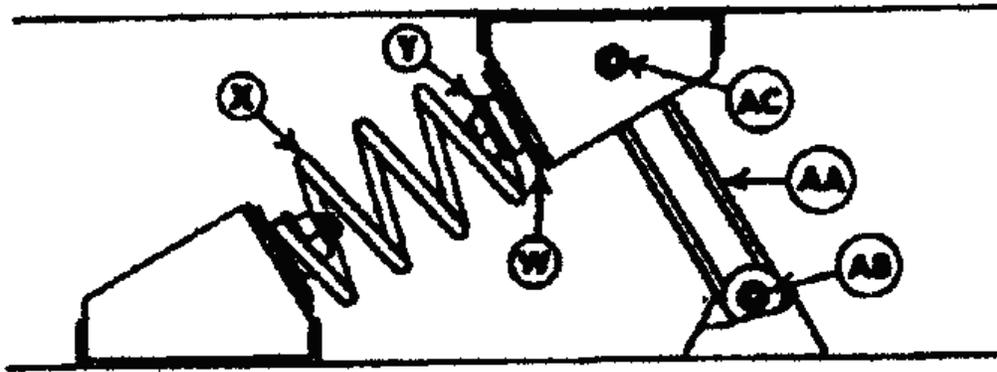


Fig. 13 – ROCKER LEG AND REACTOR SPRING ASSEMBLY

TABLE 3 – Rocker Leg and Reactor Spring Parts List

Locator	Description	Number Required
W	Fabreeka washer	2
X▲	Reactor spring	1
Y	3/4" filler washer	2
AA	Rocker leg with bushing	1
AB▲	Serrated bushing	2
AC▲	1/2" alloy steel bolt with locknut	2

Include information on conveyor nameplate when ordering spare parts or repairs
 ▲ Recommended spare parts

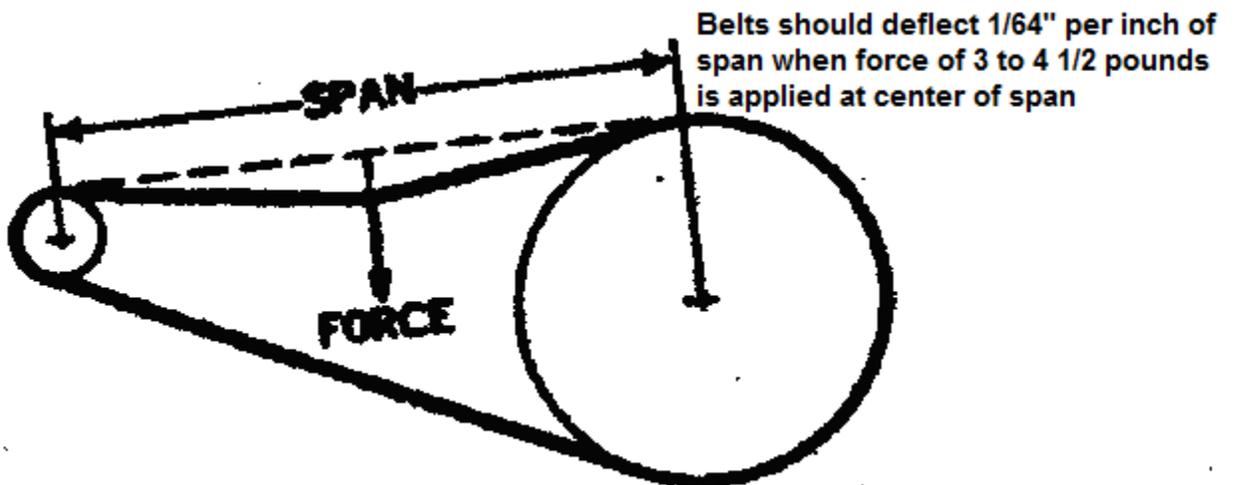


Fig. 14 – TENSIONING V-BELT

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