

Lubrication

Proper lubrication reduces wear, maximizes horsepower, and helps reduce chain pulsation.

Important points of lubrication are shown in Figure 4.

- Between sidebars (for pin and bushing lubrication).
- Between roller and sidebar (for lubrication of roller and bushing).

Factors to Consider when Lubricating Roller Conveyor Chain

For large diameter rollers or outboard rollers lubricate by self-lubricating sintered metal bushings or by pressure through a grease fitting. Lubrication through pin heads or through rods is suggested only for chains with more than 3/4" pin or rod diameter. When this method is used on through rods, lock collars are provided in place of cotter pins. In severe applications rollers may be equipped with anti-friction bearings that have grease fittings or removable caps for grease packing.

Lubrication with grease requires pressure fittings to port the grease through chain joints. The following examples are methods of porting grease lubrication (Figure 5).

Figure 4

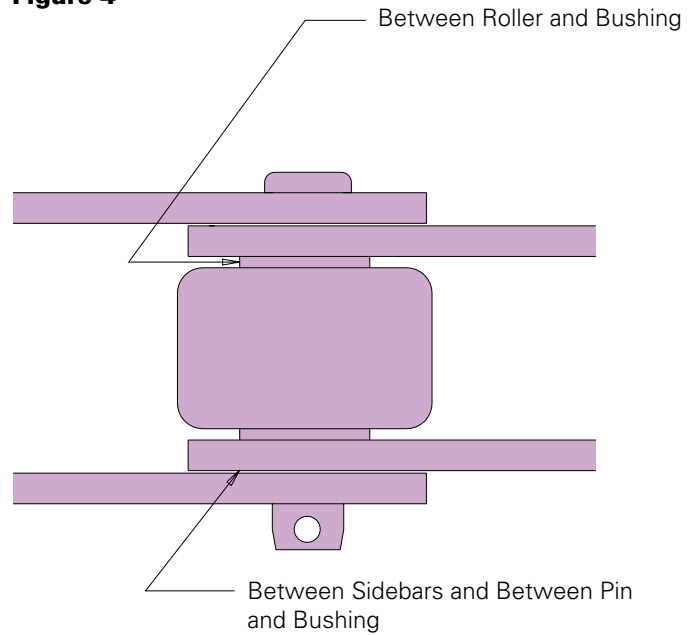


Figure 5

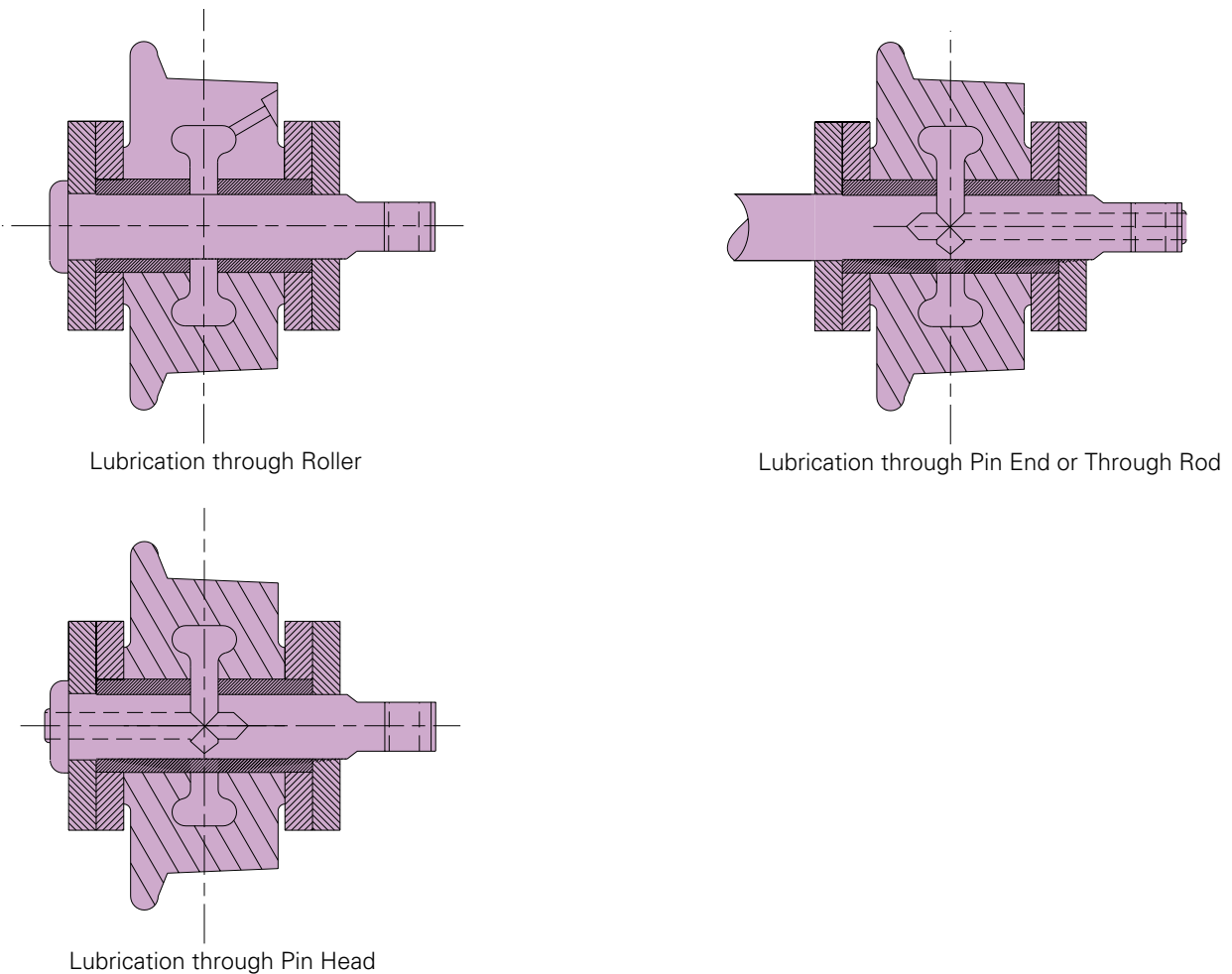
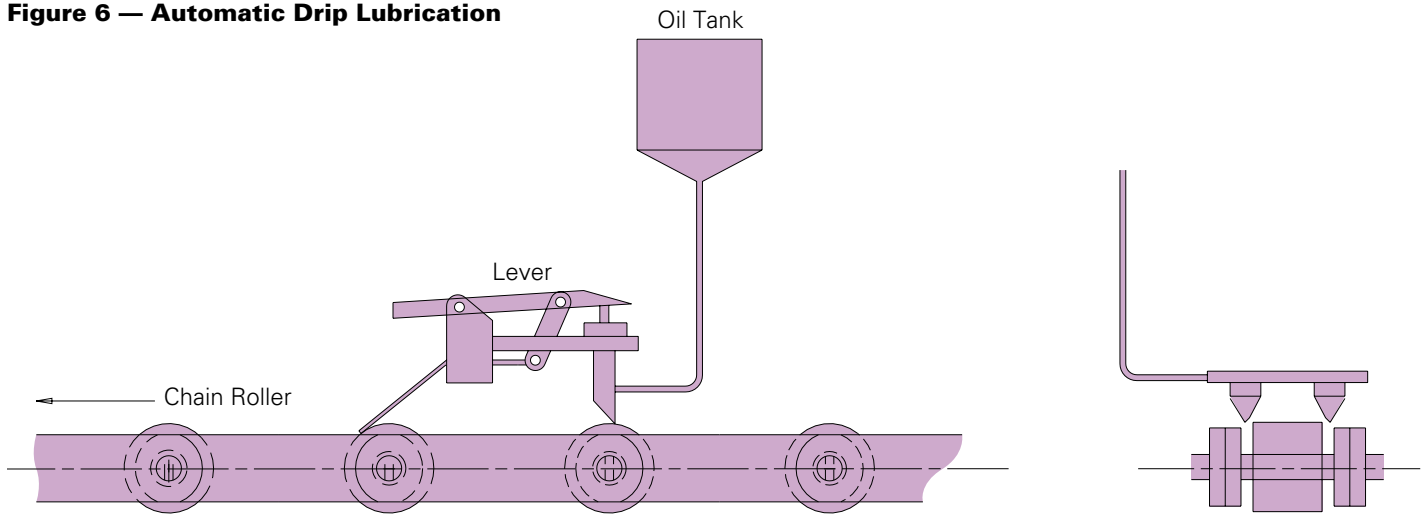


Figure 6 — Automatic Drip Lubrication



Automatic Lubrication

Use automatic lubrication to save labor or when manual lubrication is not possible due to the location of the chain.

The automatic drip system shown in Figure 6 utilizes the chain roller as a cam. The roller pushes a pump as it passes by and causes the oil to drip.

Use a mist-type lubricator when the conveyor chain is used as an overhead trolley conveyor or when the chain requires many points to be lubricated.

For coil conveyor chain, an automatic grease feeder is suggested.

Lubrication is ineffective for bulk conveyors that convey powdery and granular materials. It will not work for flow or trough conveyors where the chain buries itself in the material as it moves and dust or other particles become embedded in the chain clearances.

Inspection

Lubrication

- Manual: Carefully follow lubrication schedule.
- Drip: Inspect the filling of oiler cups and the rate of feed. Check that the feed cups are not clogged and are properly positioned over the chain.
- Bath: Inspect the oil level and check that there is no sludge. Drain, flush and refill the system as the application requires.

If the chains have not been lubricated properly, the joints may have a brownish (rusty) color and the pins of the connecting link of the chain, when removed, may be a discolored brown. The pins may also be roughened, grooved, or galled. Properly lubricated chains will not show the brownish color at the joints; they will be brightly polished with a high luster.

- Check wear on link plates and sides of sprocket teeth indicating misalignment.
- Check shaft and sprocket alignment to prevent wear.
- Check wear on working faces of sprocket teeth. As the system runs these faces should develop a bright, polished appearance. Scratches, galls, grooves, or visible changes in tooth form are probably caused by lubrication failure or overloading.
- Check and adjust chain tension. An elongation of as much as five percent indicates that the chain is riding near its limit of

allowable height on the sprocket teeth. A gradual increase in chain length is the result of normal wear. A sudden increase in slack indicates one or more of the following:

- Lubrication failure
- Excessive overloading or shock
- Displacement of shaft bearings
- Displacement or failure of take-ups

- Check the chain to be sure it is free from dirt, grit or other abrasive material. Clean the chain periodically.
- Check guides, tracks, and the area below the conveyor for buildup of material or dirt which will cause interference or binding of the chain. Exit and entry points of guides and tracks must permit the chain to pass with a minimum amount of impact or interference. Roller chain tracks can be over-lubricated, forcing the rollers to slide rather than roll.
- Exceptionally low chain conveyor speed coupled with high drag friction will occasionally cause surging. A slight increase in speed will correct this problem if the friction can not be reduced.
- Inspect apron and pan bead openings. If the beads have been wedged apart or otherwise distorted, fine material may bleed into moving parts and cause excessive wear.