Roller Conveyor Speeds

Conveyor speed is dictated by the nature of the load, how it is loaded and unloaded on the conveyor, and what is done to the load during conveying. Table 2 shows the basic conveyors and their typical operating speeds.

Table 2 — Typical Operating Speeds

Conveyor	Speed (ft./min.)
Continuous bucket elevator	75 to 150
Centrifugal bucket elevator	200 to 300
Slat or flat top conveyor	50 to 150
Carrier conveyor[1]	50 to 150
Assembly line conveyor	5 to 15
Drag and scraper conveyors	50 to 100
Apron conveyors	10 to 60

[1]Material conveyed directly on chain

Roller Conveyor Installation and Operation

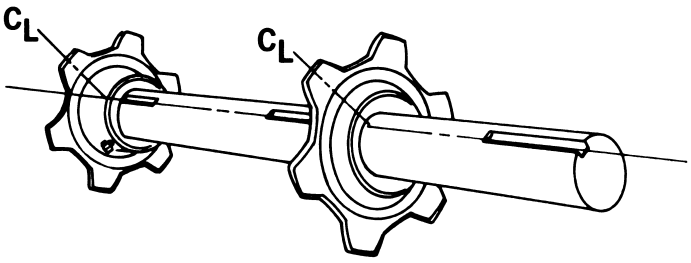
Shaft Alignment

Shaft alignment is ensured by rigidly supporting shafts in properly designed bearings. Align the shafts horizontally with a leveling device. Head and tail shafts must be parallel and at 90˚ to the direction of travel of the conveyor. Take-ups provide the means for shaft alignment and chain tension adjustment.

Sprocket Alignment

Sprockets must be in a line and not offset on the shafts. When two or more strands of chain operate as a single unit, as in a double-strand conveyor, the sprocket teeth on the head shaft must be timed to pick up the load on each chain simultaneously. First align the keyways in the shaft. Then align the keyways of the sprockets on tooth centerline. Sprockets should be "keywayed-in-line and matched in pairs." Since the tail shaft is an idling shaft, key it to only one sprocket. The other sprocket is held in alignment by set collars and is allowed to turn freely. In this way the sprocket can position itself if uneven wear takes place in the chain strands.

Headshaft Sprockets Keyed In Line



Chain

Place the chain around the sprockets with the free ends meeting one another. When assembling straight sidebar chains, insert the connecting link and then the closing bar over the pins. Drive the closing bar onto both pins at the same time, taking care not to bend the link. Most chains are designed with a "press-fit" between the pins and sidebars. Do not grind away a pin end so that it fits loosely in the chain sidebar.

Freedom from Interference

The chain should not come into contact with adjacent objects. Clearance should provide for normal chain sag and take-up movement. Guides and tracks should be smooth and free of foreign objects.

Start-Up

Adjust the chain tension. For high-temperature applications, adjust the chain while cold. Jog the conveyor through one complete cycle. Start the conveyor and run with no load, making certain that all chain joints flex freely.

For oil-lubricated applications, lubricate each chain joint well with a good grade of nondetergent petroleum base oil. The oil should be applied between the sidebars at each joint and be of a viscosity such that it will flow freely into the pin-bushing area. Grease may be used if it can be forced directly into the pin-bushing area.

A break-in running period of 8 to 12 hours under no load will allow the chain joints to seat properly. After this initial running period adjust take-ups again to compensate for initial elongation of chain.

Chain Tension

Make sure you have the correct amount of chain slack; when the chain is too tight the working parts of the chain carry a much heavier load.

Frequency of Adjustment

The chain will elongate at the beginning of operation due to slight distortion of its component parts. After this initial change in the chain, it elongates slightly, but constantly, due to normal wear. Maintain the proper chain tension by adjustments made according to the following suggested schedule (Table 3).

Table 3 — Suggested Adjustment Schedule

Time in Operation	Frequency of Adjustment
Week 1	Once a day
Weeks 2-4	Twice a week
After week 4	Twice a month

Note: This frequency schedule is based on eight hours of operation per day. For longer operation days, adjust the schedule accordingly.