

System 310 **CONVEYOR SPECIFICATION**

1.0 CHAIN

- 1.1 Capacities
- 1.2 Construction
- 1.3 Assembly
- 1.4 Pusher Dogs

2.0 TRACK

- 2.1 Construction
- 2.2 Assembly

3.0 TRACK COMPONENTS

- 3.1 Drive
- 3.2 Wheelturn
- 3.3 Take-Up
- 3.4 Horizontal & Vertical - Curves
- 3.5 Expansion
- 3.6 Inspection Section
- 3.7 Air Operated Stop
- 3.8 Switches – Air Operated Diverge & Trolley Operated Merge
- 3.9 Lubricator
- 3.10 Anti-Runback (Free Trolleys)

4.0 FREE TROLLEYS

- 4.1 Capacities
- 4.2 Assembly

SYSTEM 310
CONVEYOR SPECIFICATION

1. CHAIN

1.1 CAPACITIES

Maximum chain pull capacity	600 lbs
Breaking Load – ultimate strength	5000 lbs
Chain Pitch (multiples that pusher dogs can attach to)	8”
Maximum Operation Temperature	Metal 180 deg C/356 deg F Air 240 deg C/464 deg F
Minimum Radius Horizontal Bend	24”
Maximum Operating Speed	50 F.P.M.

1.2 CONSTRUCTION

Bi-Planar Chain with the following parts per pitch.

- 1 Horizontal Wheel
- 1 Wheel Rivet
- 2 Vertical Side Links
- 2 Horizontal Side Links
- 2 Sintered Blocks
- 2 Long Block Rivet
- 2 Short Block Rivet
- 4 Bearing Wheels

1.3 ASSEMBLY

The horizontal wheel is riveted between horizontal side links. Bearing wheels are riveted through the vertical links in pairs.

The vertical and horizontal links are joined by riveting through the sintered blocks.

1.4 PUSHER DOGS

The cast pusher dogs are means of engaging and pushing the load carrying free trolleys around the conveyor system. These are held in the chain by two SP-0745 roll pins.

When fitting the pusher dogs, care must be taken to ensure:

- a) The pusher dog is fitted facing the right direction (refer to drawing).
- b) Both roll pins are fitted through both long side links.
- c) Side links must be supported when fitting roll pins to avoid damage to the back link.

SYSTEM 310 CONVEYOR SPECIFICATION

2.0 TRACK

2.1 CONSTRUCTION

POWER TRACK

Manufactured from pre-formed rolled steel channel section
56.4 x 41.4 x 3 mm thick
2 7/32" x 1 5/8" x 10 gauge.

FREE TRACK

Manufactured from 2 lengths of rolled steel channel section
59 x 17.5 x 3 mm thick
2 5/16" x 1 1/16" x 10 gauge

POWER AND FREE TRACK

A combination of the above types of track welded using pressed yokes at 375 mm,
14 3/4" centers.

2.2 ASSEMBLY

Pressed yokes are welded at 375 mm, 14 3/4" centers to form modular sections for bolted construction track
section types are as follows:

Power only track (power chain only)

Free track (free trolley lines for manual push without power chain)

Power and free (free trolley lines with accumulation drop)

Power and free tight track (incline/decline sections) (tight track drop)

SYSTEM 310 CONVEYOR SPECIFICATION

3.0 TRACK COMPONENTS

3.1 DRIVE UNITS

IN-LINE DRIVE UNIT can be used on chain only or power and free track sections, to a maximum of 15 M/min. (50 F.P.M.)

WHEELTURN DRIVE UNIT used on chain only track section with provision for speed variation up to a maximum of 15 M/min. (50 F.P.M.)

3.2 WHEELTURN UNIT

8 tooth, 8" pitch, 180° idler wheel used on chain only sections for chain tensioning and dog adjustment purposes.

3.3 TAKE-UP UNITS x 180°

Take-up sections for power only or power and free track used for tensioning the conveyor chain. Adjustment is by threaded rods fitted each side of the maximum track adjustment is 10".

Take-ups are available in (3) styles:

- i – screw type (manual)
- ii – spring type (automatic)
- iii – air type (automatic with pressure adjustment)

3.4 CURVES

Power only horizontal curves are fabricated from folded channel rollings in standard radii of 450 mm (18 inch) and 600 mm (24 inch).

Vertical curves are fabricated from folded channel and angle rollings in standard radii of 600 mm (24 inch).

Vertical and horizontal power only curves have yokes welded on each end.

Power and free curves are fabricated as above but include rolled steel channels and yokes at each end, in increments of 15 degrees.

3.5 EXPANSION UNITS

Manufactured as take-up sections but without the threaded rods fitted. These are located in ovens and allow for expansion and contraction of track as the oven heats and cools.

SYSTEM 310 CONVEYOR SPECIFICATION

3.6 INSPECTION SECTIONS

Removable cover fitted centrally on a 750 mm (30 inch) length of the power chain track. These allow visual inspection of the conveyor chain and the pusher dogs, also the conveyor chain can be connected in this section.

With the power and free track, 500 mm (20 inch) sections are split in half, enabling the complete removal of 500 mm (20 inch) side of track. This allows for replacement of pusher dogs, inspection and removal of carrier trolleys and connection of the conveyor chain.

3.7 AIR OPERATED STOP UNITS

With the stop unit cylinder extended, the stop blade cams down the front trolley flapper, disengaging the trolley from the power chain pusher dog. Once disengaged, the blade provides a positive stop for the trolley to seat against. By retracting the pneumatic cylinder, the blade is withdrawn and the trolley flapper springs back to its 'up' position, ready to be driven out by the next upstream pusher dog.

3.8 SWITCH UNITS – AIR OPERATED DIVERGE & TROLLEY OPERATED MERGE

Manufactured from power track bend segments and free track angles, track switches are configured to give diverge or merge conditions from the left or right hand side. Notation of switches is KY, XY or KK. The first letter denotes the shape in plan view, of the power track and the section letter, the shape in plan view of free track.

Diverge switches are power activated by pneumatic cylinder and valve.

Merge switches are trolley activated. (Note: air stops are required for merge control)

3.9 LUBRICATOR UNITS (BRUSH TYPE CHAIN ONLY)

Power only and power and free track section applies lubricant to chain at 3 points via replaceable nylon brushes. Each brush is fed with lubricant by a cyclic plunger pump with variable flow capacity. A transparent reservoir clearly shows the level of lubricant.

For recommended lubricants, see lubrication recommendation chart. (maintenance section)

3.10 ANTI-RUN BACK (FREE TROLLEYS)

As carriers accumulate behind one another, back from an air stop unit, anti-runback latches are positioned to prevent carriers from running backwards. This will tend to occur on faster chains, as the load on the carrier creates a "pendulum" effect; the anti-runback latch allows passage of the trolley in one direction (powered chain) forward only. Fitted on incline sections, the anti-runback serves as a safe guard in case a trolley becomes disengaged from the chain (to be fitted in every 5 feet of elevation change).

SYSTEM 310 CONVEYOR SPECIFICATION

4.0 FREE TROLRIES

4.1 Each trolley has a load carrying capacity of 200 lbs. When carriers are configured with two free trolleys connected with a load bar, the capacity is doubled to 400 lbs. Note: the load should be equally distributed over the two trolleys.

4.2 ASSEMBLY

The trolley body is fabricated from heavy steel pressings pre-punched for load carrying spindles.

The vertical load carrying wheels are high quality semi-precision, grease packed ball bearings.

The horizontal guide wheels are machined rollers fitted with bushings.

Leading trolleys are fitted with spring-loaded retractable floppers, manufactured from malleable iron castings. (Note: the spring-loaded floppers allow for over/under, inverted applications)

Trailing trolleys are fitted with a machined rear disengaging cam.

Intermediate trolleys are idler trolleys without the floppers and cams. The intermediate free trolleys are utilized in 3 or 4 trolley carrier arrangements, in a bias banking application or where part clearances are required when traveling around horizontal and vertical bends.

Combination and HJORT trolleys combine the attributes of a leading and trailing trolley with the floppers and the cams. This application is for parts less than 12" in length and width. The system can handle more parts and cost savings are realized by removing a 2nd free trolley and load bar configuration.