

Technical Report

The P2 Pathwinder Conveyor



In tight quarters, a P2 Pathwinder makes a 180 degree helical turn.

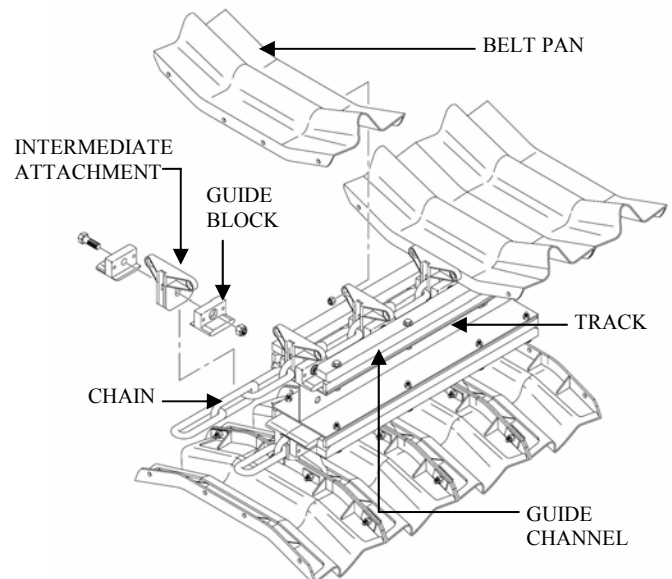
Serpentix's twenty years of experience with drag (or slide) type conveyor systems is the foundation of the P2 conveyor. Over three hundred Pathwinder conveyors are installed in wastewater treatment and industrial plants. This innovative conveyor design is supported by two U.S. Patents.

A Serpentix conveyor can elevate materials **at steep inclines and turn horizontally** – *this alone differentiates it from all other bulk handling conveyors.*

The benefits of the P2 design include lower initial building and equipment costs, operational efficiencies, and durable life with minimal maintenance.

P2 Pathwinder Conveyor Features:

- 6 and 9 foot radius turns through vertical, horizontal, and helical paths
- Elevate material at incline angles up to 45 degrees
- Belt speeds up to 50 feet/minute
- Conveyor lengths up to 150 feet
- 20" & 26" belt widths
- 30 tons/hour capacity
- No idler rollers to lubricate
- Modular construction permits future path alterations.



P2 Belt and Track Detail

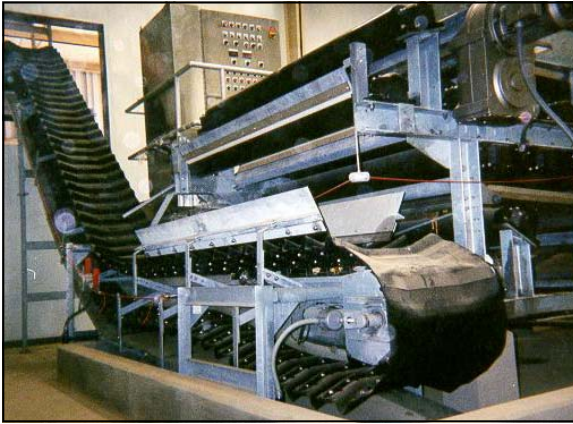
SERPENTIX

9085 MARSHALL COURT
WESTMINSTER
COLORADO
80031
PHONE: 800-466-SXXS
FAX: 303-430-7337
SALES@SERPENTIX.COM
WWW.SERPENTIX.COM



Technical Report

The P2 Pathwinder Conveyor



The P2 tension station removes slack from the main conveyor chain.

Construction: The P2 conveyor track, supports, drive and tension stations are typically manufactured using A36 structural steel.

The conveyor track consists of a fabricated steel I-beam capped with an assembled ultra-high molecular weight polyethylene guide channel. All steel components are hot dip galvanized.

Chain: A sprocket, at the drive (discharge) end, pulls the main conveyor chain through the guide channel.

The chain is kept under tension at the opposite end. The chain's construction is case hardened steel. Sprockets, located at the drive and tension station, are machined from UHMW polyethylene.



Belting: The conveyor belting is made of separate sections, belt pans, which are fastened together to form a near watertight surface. Each belt pan has a permanently molded 1½ inch high convolution. Non-metallic stiffeners molded into each pan impart a 20-degree trough shape to the belt.

The conveyor belting is fastened to the main conveyor chain with belt pan attachment/guide block assemblies. The guide block, molded from enhanced plastics, is lightweight and abrasion resistant. A low coefficient of friction between the guide block and the guide channel facilitates the P2 design. The guide block is the primary wear component on the conveyor and is easily replaced by removing one bolt.

Technical Report

The P2 Pathwinder Conveyor

Unique belting system adds benefits:

Convolutions formed in the belt permit material to be elevated at incline angles to 45 degrees -- *over twice as steep as a conventional flat belt conveyor.*

The convolutions permit the belt to make horizontal and helical turns by allowing the inner side of the belt to compress and the outer side to expand.

The convolutions stretch flat as the belt passes around the discharge end of the conveyor. Dry material will fall naturally from the flattened surface; sticky material can be easily scraped from the belt.

General Discussion:



A P2 drive structure with scraper bar. This conveyor hauls grit and screenings collected from the inflow channel of a wastewater treatment plant.

Continuous Path Conveying™: An increase in the number of transfer points associated with multiple conveyors compounds housekeeping issues. As a result of its turning capability, [a single Serpentix conveyor frequently replaces multiple conveyors.](#)

Accessories, such as drip pans, covers, and skirt boards, are available in galvanized mild steel, or stainless steel.

➔ **Also available with the P2 conveyor is a flex-end discharge, which permits distribution of material over a 12-foot arc.**

For over twenty years Serpentix has designed and fabricated drag and slide type conveyors. The P2 conveyor is the result of our field experience and is truly a state-of-the-art design.

SERPENTIX

9085 MARSHALL COURT
WESTMINSTER
COLORADO
80031

PHONE: 800-466-SXSX

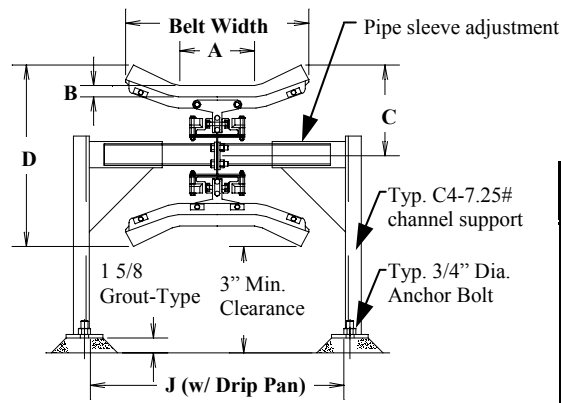
FAX: 303-430-7337

SALES@SERPENTIX.COM

WWW.SERPENTIX.COM



TYPICAL TRACK CROSS SECTION



Technical Report

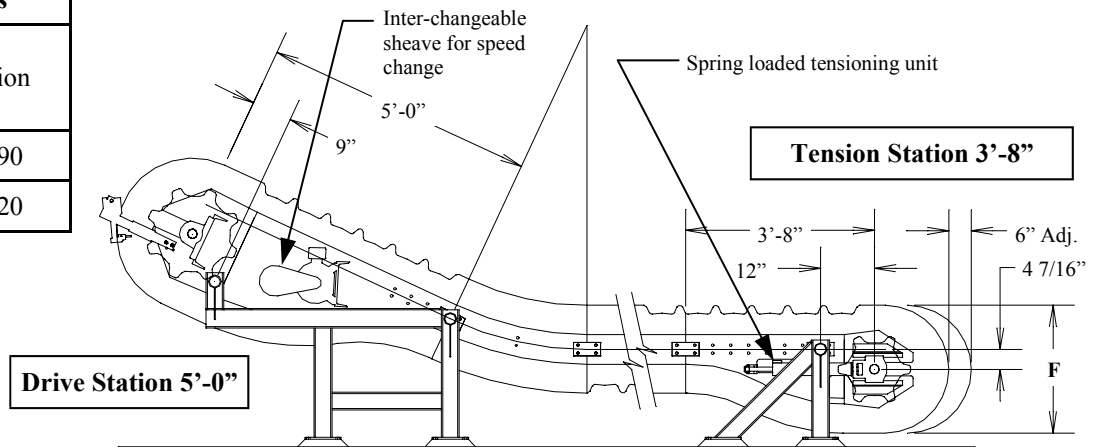
The P2 Pathwinder Conveyor

Drive Station Weights				
Belt Width	HP	5'-0" Drive	7'-6" Drive	3'-6" Drive
20"	2	730	800	810
20"	3	760	830	840
20"	5	780	850	860

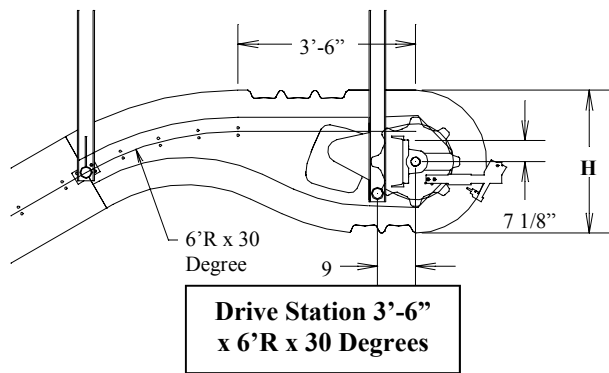
Drive Station Weights				
Belt Width	HP	5'-0" Drive	7'-6" Drive	3'-6" Drive
26"	2	760	840	850
26"	3	760	830	840
26"	5	780	850	860

Tension Station Weights		
Belt Width	3'-8" Tension	6'-8" Tension
20"	310	390
26"	330	420

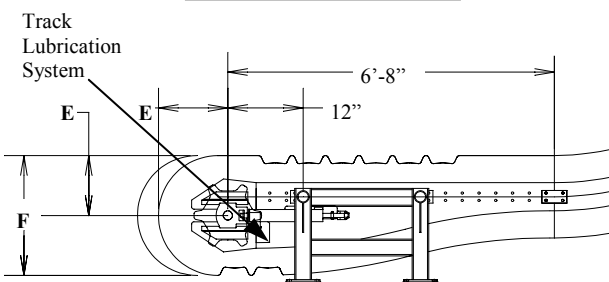
Empty wt. of conveyor components and track per ft.	
Belt Width	Lbs./ft.
20"	26
26"	30



Belt Width	A	B	C	D	E	F	G	H	J
20"	9 1/4"	1 1/2"	9 7/8"	19 7/8"	14 3/8"	28 3/4"	17"	34"	27"
26"	11 3/8"	1 5/8"	11 1/4"	22 1/2"	15 5/8"	31 3/8"	18 3/8"	36 3/4"	32"



Drive Station 3'-6" x 6'R x 30 Degrees

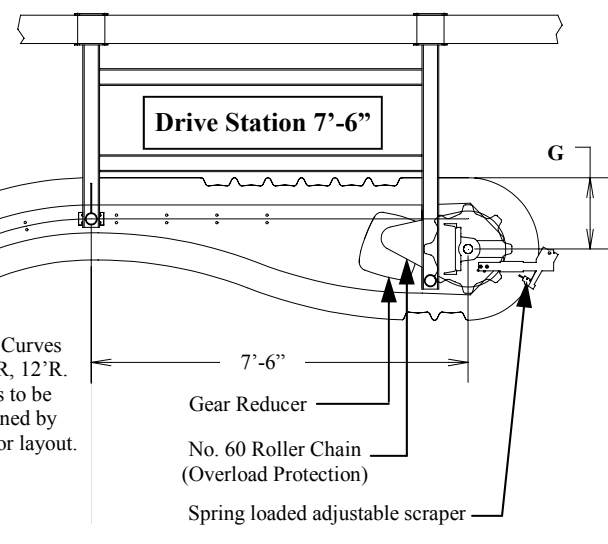


Drive Station 6'-8"

STANDARD CROSS SECTIONS

Vertical and horizontal curves. Standard 6'R, 9'R, 12'R, 15'R, 24'R. Degrees to be determined by conveyor layout.

Helical Curves 6'R, 9'R, 12'R. Degrees to be determined by conveyor layout.



Drive Station 7'-6"