

# FREQUENTLY ASKED QUESTIONS

## S2100 FLAT TOP ZERO TANGENT™ RADIUS WEB EVENT QUESTIONS AND ANSWERS

### GENERAL

#### **What is a Zero Tangent belt?**

Zero Tangent belts have no straight section within a layout.

The S2100 accomplishes this with wedge-shaped modules with a set turn angle.

### APPLICATION

#### **Is it possible for the conveyor to be a complete 360°?**

Yes, this is possible. Although the conveyor could be 360, belt would still need to wrap around a drive and idle shaft. This means there would be one transfer plate.

#### **Is it possible to center drive S2100?**

Yes, a center drive is possible, as the belt is designed to run in either direction.

#### **We find various ways of interpretation of 90/180 degrees: belt extending over sprockets (90° shaft center to shaft center) or belt ends at 90/180 degrees (tip of conveyor to tip of conveyor). Which one is the correct situation that will reflect the delivered amount of belt?**

Delivered amount of belt is enough to support the longer interpretation (shaft center to shaft center). Removing only a few rows will produce the alternative interpretation.

#### **Is it better to make a 90 degree curve from shaft center to shaft center, rather than 90 degrees from tip of conveyor to tip of conveyor?**

A conveyor that is 90 degrees from shaft center to shaft center will maintain product orientation. A conveyor that is 90 degrees from conveyor end to conveyor end will have shaft centers at less than 90 degrees, resulting in slightly skewed product (not an issue for round products). The shorter conveyor does take up (a few inches) less floor space.

### UNIQUE TO INTRALOX

#### **Is there help available to OEM's who are new to building conveyors with this type of belt?**

Yes, only Intralox will provide Belt and Sprockets without the purchase of DPE's. Sample CAD drawing packages, Design Recommendations, Technical Support, and motor sizing recommendations are all readily available thru Intralox.

#### **Is S2100 patent protected?**

Yes, the drive design is patent pending. The way the module drive pocket is shaped allows sprockets to be symmetrical, thereby making sprocket installation easier. This becomes important when a company wants to assemble sprockets onto a shaft without referring to complicated instructions.

## What testing has Intralox done on the S2100 Zero Tangent Radius?

Intralox has invested in Ultimate Tensile, high speed, inside edge pressure/velocity, sprocket wrap, retrofit, and design guideline testing, which have all met or well exceeded expectations with conservative safety factors beyond published values. Long term wear and fatigue testing has been underway for four months, and will continue internally at least until the end of this year.

## COMPETITOR BELTS

### Is 2100 a drop-in replacement for flat belt turns?

No, 2100 requires an untensioned sprocketed drive and is a thicker belt. Flat belts are typically driven by a single metal sprocket and chain. In most cases, it is less expensive to build a new conveyor than to modify an existing one. Each flat belt curve manufacturer has a different radius for each belt width. Sometimes replacing the existing conveyor will be possible with minimal labor, and sometimes it will be cost prohibited.

### How does the Intralox S2100 Zero Tangent Radius price compare to other flat belts conveyors?

Intralox designed this belt to allow OEMs to build belt curve conveyors. With this in mind, Intralox priced the belt and sprockets to be competitive for OEMs to build the conveyor vs. purchasing a complete piece of equipment.

## 2100 BELT

### How is the belt shape specified?

Belts are defined by inside radius, width, and angle of turn.

## 2100 SPROCKETS

### How are sprockets located?

Belt modules have a number molded in each sprocket pocket, which matches a number machined into the side of each sprocket. The number is the radius at that point (in millimeters).

All sprockets must be locked in position from sliding with locking collars and/or spacers.

### What size spacers do I need between sprockets?

75±2mm (2.95 ± 0.08 inch) wide spacers are required. A section of 1-1/2inch PVC conduit works nicely.

### How many sprockets should I use?

Two sprockets are required for every 200mm (~7-3/4") wide module. More precisely, two specific PD sprockets are required for each module. Customer Service (or Technical Sales Group) will help match the correct sprockets to the modules required to make the turn radius for each belt.

### What sprockets are available?

Intralox has 12 tooth wear resistant round bore Non-FDA Black Nylon sprockets available in both metric and imperial bore sizes.

### What bore sprockets are available?

40mm and 1-7/16inch round bore sprockets are available stock. Other bores can be purchased through special request.

### Do I need keys for all sprockets?

Actually, not all sprockets require keys. The smallest two sprockets available (at 650mm and 750mm radius) have molded in keys, and do not require metal key stock.

## SHAFTS

### How are shafts oriented?

Shafts as seen from above are radial from the center of the turn, like spokes on a bicycle wheel. Shafts as seen from the conveyor end are angled downward 2.5° from inside of turn to outside of turn.

### Do I need to machine special shafts for locating sprockets?

No. All 2100 sprockets are designed for fully keyed round shafts. If appropriately sized bearings are used, shafts can be purchased fully keyed and cut to length.

## CONVEYOR COMPONENTS

### What is required for hold downs?

No hold downs are required; treat this belt as if it were a straight running belt.

### What supports the inside edge of the belt?

Bearings must be mounted to the inner frame rail to support the inside edge of the belt, both in the carryway and returnway. This is critical to keep friction and heat to a minimum.

### Can typical returnway rollers be used in the returnway?

No. Since the belt modules are triangularly shaped; the inside portion of the belt moves slower than the outside portions of the belt. Therefore, the returnway must either have individual bearings, conical rollers, or shoes. This way the returnway is not constantly scrubbing the belt top surface. If conical rollers are used, they must be mounted at 7.5° from horizontal.

### Is the returnway flat?

No, the returnway is at twice the angle as the drive and idle shafts. The returnway is about 5° off of horizontal.

## INSIDE EDGE BEARINGS

### What do the inside edge bearings look like?

The carryway must have horizontally mounted bearings, and the returnway must be perpendicular to the belt top (5° from vertical).

### What is the required diameter of inside edge rollers?

12mm double row 5201-2RS bearing has worked well as an inside edge bearing and as a returnway bearing. Similar bearings are ok, much smaller bearing outside diameter is not recommended, (since less bearing surface would support the belt). The minimum bearing width must contact the full belt thickness, the double wide bearing allows for larger manufacturing tolerances. We suggest using a bearing that matches a common shoulder bolt, for easy replacement in the future.

### When do I need to use inside edge bearings?

Use inside edge bearings for all applications.

### What bearings do I need to use on the inside edge?

A good bearing for the inside edge is one with ½" inside diameter, 1-3/8" outside diameter, 7/16" width, and 940 pound dynamic load rating.

## **ADDITIONAL MATERIALS AND SUPPORT**

### **How are replacement parts ordered?**

Replacement of belt modules and sprockets are ordered separately. Inside radius, turn angle, and width are all necessary to order a belt. A module can be ordered by knowing the inside turn radius (molded into the top of the module "XXXX mm Inside Radius") and quantity. Sprockets can be ordered by knowing the turn radius (etched into the side of the sprocket and moulded into the sprocket pocket), bore shape and size.

### **Does Intralox sell anything in addition to belt and sprockets?**

The only other conveyor component Intralox sells for S2100 is wearstrip and wearstrip components.

### **Will there be other turn angles offered at a later date?**

YES, we plan to offer this belt for sale at any angle of turn between 15 and 370 degrees once our ordering system is adjusted to handle this change. Until then, belts can be purchased at a few pre-set lengths, and adjusted by customers (by removing or adding rows) to fit their conveyor angle needs. [For example; Customer A could buy a 90 degree belt, take out some rows and successfully install the belt on a 35 degree conveyor. Customer B could buy two 180 degree belts, connect them together and successfully install a portion of the resulting belt on a 315 degree conveyor.]

### **Does the ordering limitation (90° or 180° only) also exist in the standard CAD package?**

Intralox will offer sample CAD drawings that will assist in designing and fabricating the conveyor. The use of these drawings along with the complete design guidelines will allow OEMs to design any angle turn

### **What motor size is needed for my belt?**

While the CAD drawing Bill Of Materials has a generic-sized motor that should be large enough for most applications, Intralox Technical Sales Group has a calculator to help Original Equipment Manufacturers decide on minimum motor size for specific applications.

### **Can S2100 be put in a center drive configuration?**

Yes, the belt is designed to run in either direction. Keep in mind the belt length is short, so catenary pocket space for belt elongation is limited.

Country- and industry-specific toll-free phone numbers, and information on Intralox's global locations, available at [www.intralox.com](http://www.intralox.com).

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