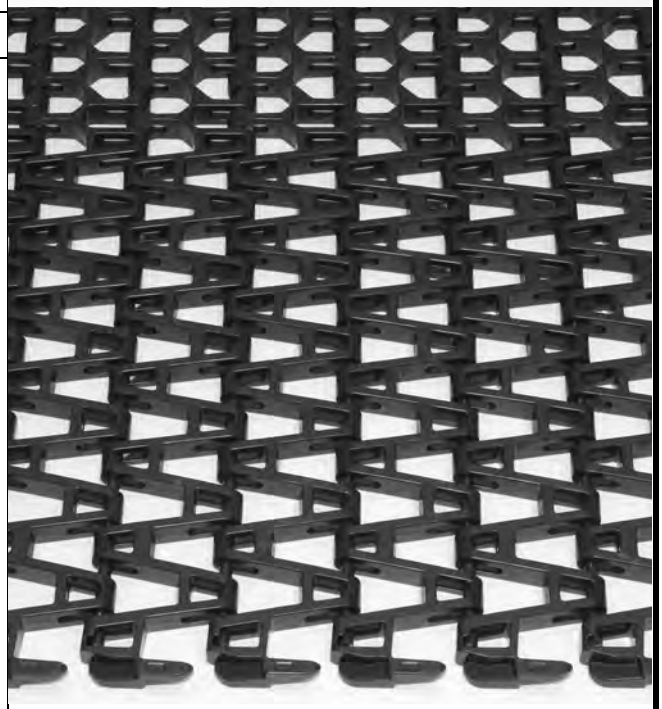
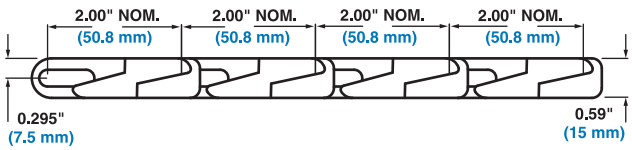
Spiralox® 1.0 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	26	660
Maximum Width[a]	50	1270
Width Increments	1.0	25.4
Opening Size (approx.)	0.85 x 0.88	21.6 x 22.5
Open Area (fully extended)	56%	
Minimum Open Area (1.0TR)	22%	
Hinge Style	Open	
Drive Method	Hinge-Driven	





Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 1.0 times the belt width (measured from inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Minimum sprocket indent from the inside (collapsed) edge of the spiral is 12 in (304.8 mm).
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 26 in (660 mm) and over 50 in (1270 mm).

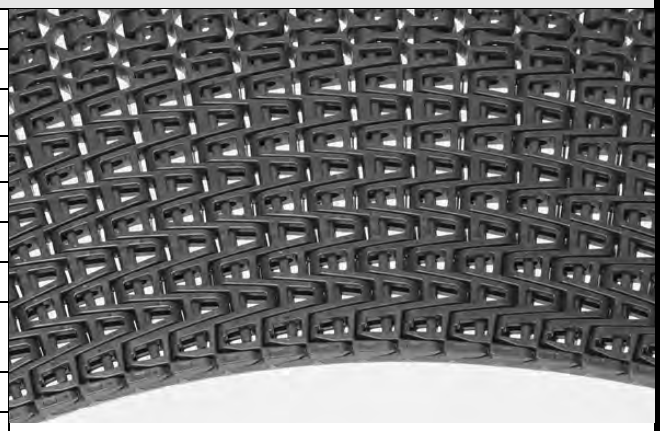
Belt Data

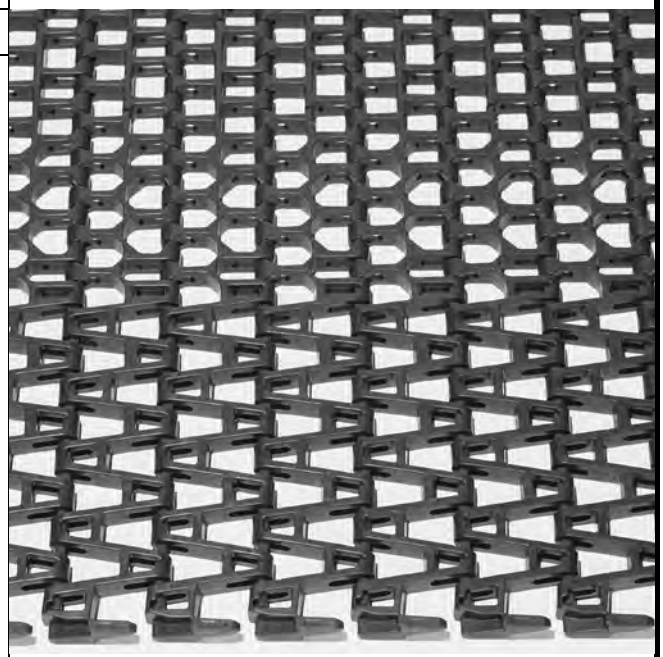
Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lbs	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1300	1935	300	136	-50 to 200	-46 to 93	1.46	7.13
SELM	Acetal	1300	1935	300	136	-50 to 200	-46 to 93	1.24	6.05

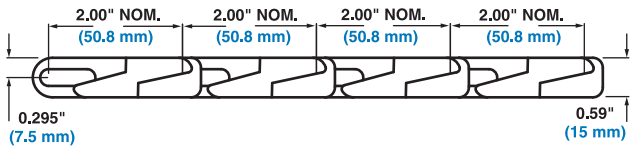
a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® 1.1 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	26	660
Maximum Width[a]	44	1118
Width Increments	1.00	25.4
Opening Size (approximate)	0.85 × 0.88	21.6 × 22.5
% Open Area (fully extended)	56%	
% Minimum Open Area (1.1 Turn Ratio)	22%	
Hinge Style	Open	
Drive Method	Hinge-driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 1.1 times the belt width (measured from inside edge).
- Uses headless rods.
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Minimum sprocket indent from the inside (collapsed) edge of the spiral is 9.0 in (228.6 mm).
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 26 in (660mm) and over 44 in (1118mm).

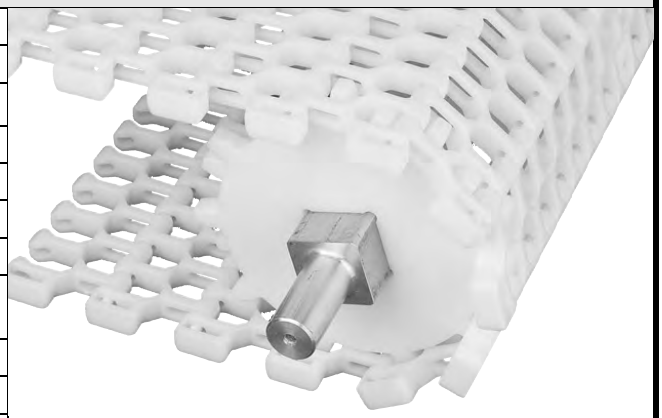
Belt Data

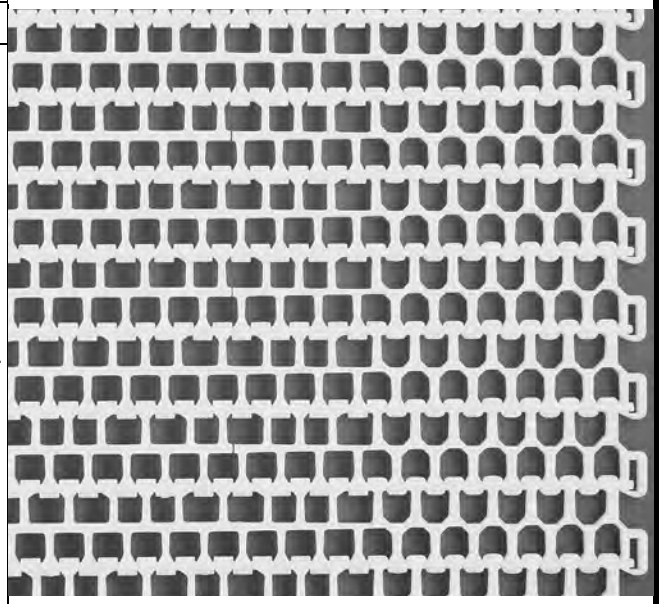
Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lbs	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1300	1935	300	136	-50 to 200	-46 to 93	1.44	7.03
SELM	Acetal	1300	1935	300	136	-50 to 200	-46 to 93	1.24	6.05

a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® 1.6, 2.0 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	1.00	25.4
Opening Size (approximate)	0.94 × 0.65	23.8 × 16.5
% Open Area (fully extended)	54%	
% Minimum Open Area (1.6 Turn Ratio)	40%	
Hinge Style	Open	
Drive Method	Hinge-driven	

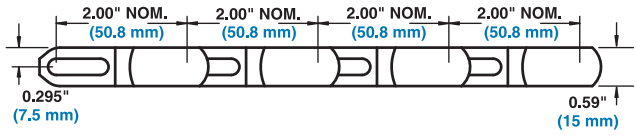




Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 1.6 times the belt width (measured from inside edge).
- Uses headless rods.
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.



Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 24" (610mm).

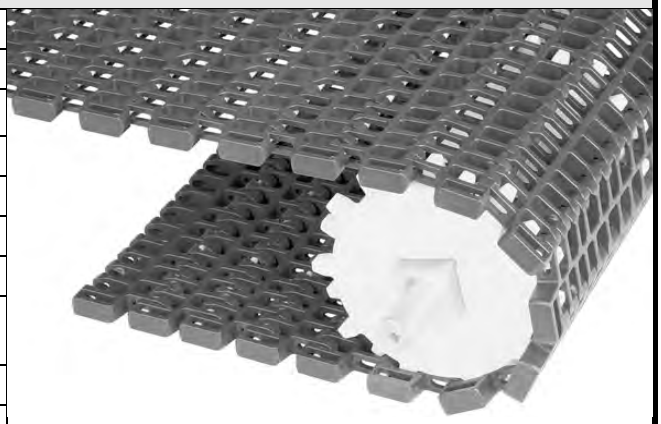
Belt Data

Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lbs	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	375	170	-50 to 200	-46 to 93	1.41	6.88
Poylpropylene[b]	Acetal	1500	2232	300	136	34 to 200	1 to 93	1.01	4.93
SELM	Acetal	1500	2232	300	136	-50 to 200	-46 to 93	1.24	6.05

a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.
b. Available in 1.6 Radius only.

Spiralox® 2.2, 2.5, and 3.2 Radius

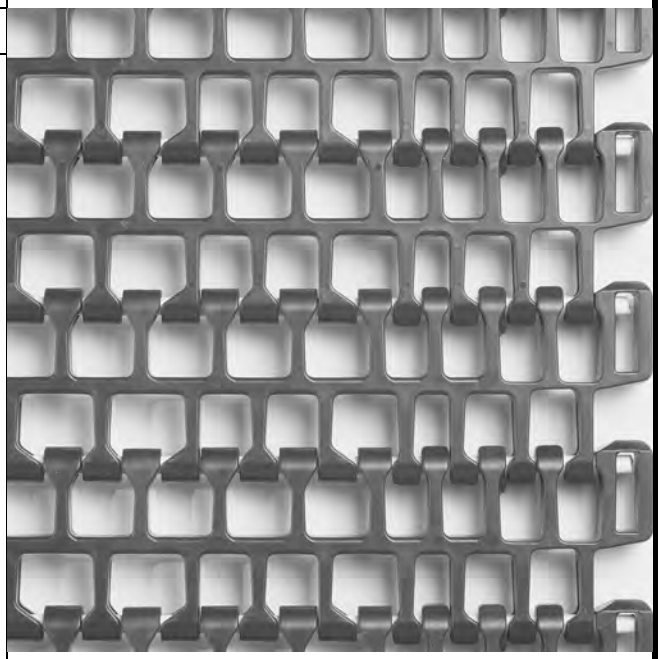
	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	1.00	25.4
Opening Size (approximate)	0.94 × 0.65	23.8 × 16.5
% Open Area (fully extended)	57%	
% Minimum Open Area (2.2 Turn Ratio)	32%	
Hinge Style	Open	
Drive Method	Hinge-driven	



Product Notes

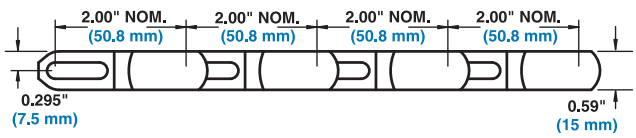
- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 2.2 times the belt width (measured from inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.



Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)



a. Contact Intralox Customer Service for more information regarding belt widths under 24" (610mm).

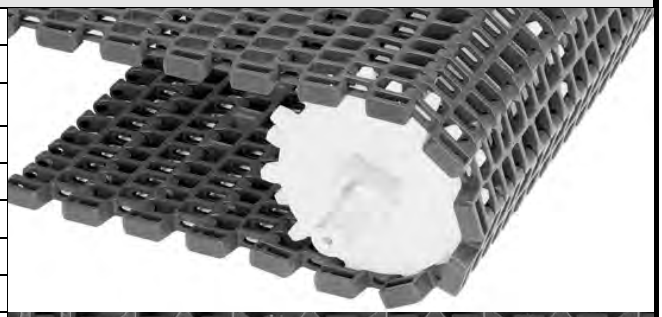
Belt Data

Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lbs	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	475	215	-50 to 200	-46 to 93	1.54	7.52
Poylpropylene	Acetal	1500	2232	400	181	34 to 200	1 to 93	1.04	5.08
SELM	Acetal	1500	2232	375	170	-50 to 200	-46 to 93	1.24	6.05

a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® Rounded Friction Top

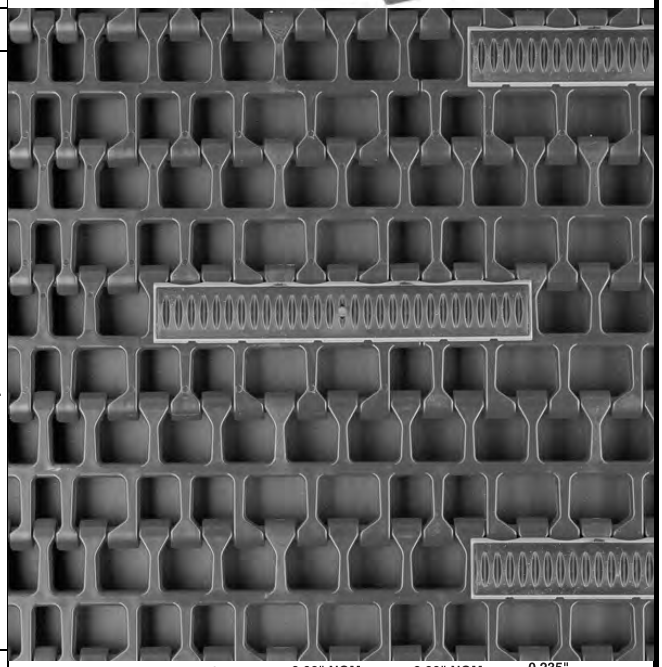
	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	1.00	25.4
Opening Size (approximate)	0.94 × 0.65	23.8 × 16.5
Hinge Style	Open	
Drive Method	Hinge-driven	

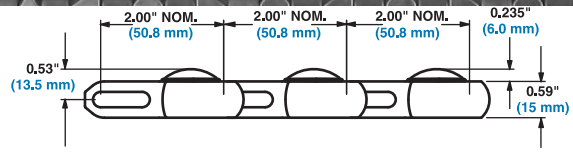


Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Friction top available in white polypropylene with white rubber, blue polypropylene with black rubber, and natural polyethylene with white rubber.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.
- Contact Customer service for minimum indent requirements.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.





Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 24 in (610mm).

Belt Data

Base Belt Material	Base/Friction Color	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Belt Strength		Spiral Belt Strength 1.6 TR (2.2, 2.5, 3.2 TR)		Temperature Range (continuous)		W Belt Weight		Friction Top Hardness	Agency Acceptability	
			lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²		FDA (USA)	EU MC[b]
Acetal	Blue/Black	Acetal	1700	2530	375 (475)	170 (215)	34 to 150	1 to 66	1.44 (1.54)	7.03 (7.52)	55 Shore A	•	c
Acetal	White/White	Acetal	1700	2530	376 (475)	171 (215)	35 to 150	2 to 66	1.44 (1.54)	7.03 (7.52)	55 Shore A	a	c
Polypropylene	Blue/Black	Acetal	1500	2232	300 (400)	136 (181)	34 to 150	1 to 66	1.01 (1.04)	4.93 (5.08)	55 Shore A	a	
Polypropylene	White/White	Acetal	1500	2232	300 (400)	136 (181)	34 to 150	1 to 66	1.01 (1.04)	4.93 (5.08)	55 Shore A	a	c

• - Fully compliant

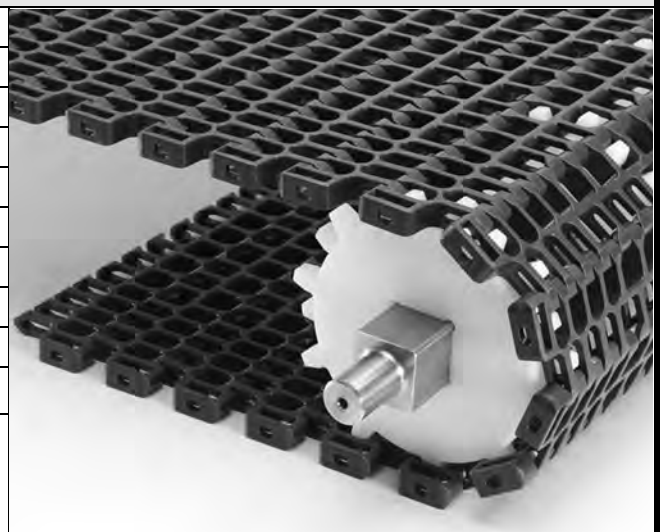
a - FDA Compliant with Restriction: Do not use in direct contact with fatty foods.

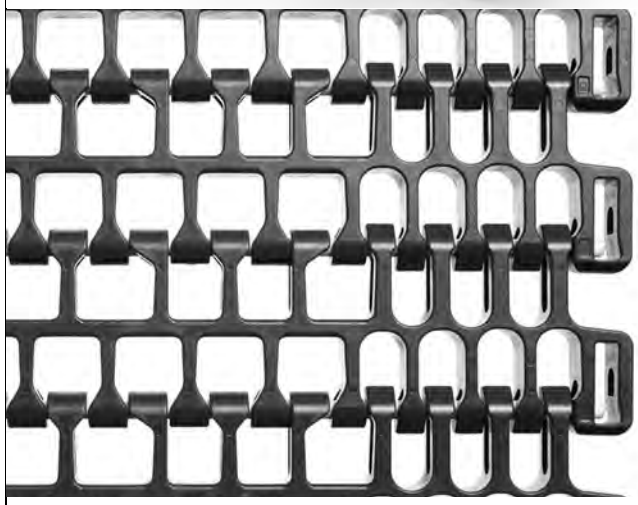
b - European Migration Certificate providing approval for food contact according to EU Regulation 10/2011.

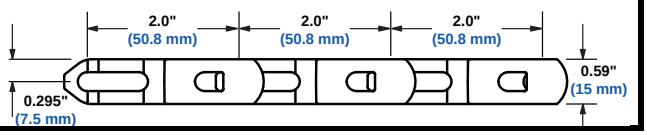
c - EU compliant with Restriction: Do not use in direct contact with fatty foods.

Dual Turning 2.0

	in	mm
Pitch	2.00	50.8
Minimum Width	18	457.2
Maximum Width	60	1524
Width Increments	1.0	25.4
Opening Size (approx.)	0.94 x 0.65	23.8 x 16.5
Open Area (fully extended)	57%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

DO NOT USE IN SPIRAL CONVEYOR SYSTEMS.

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Rod insertion is accomplished from edge of belt. No special tools are required.
- Uses headless rods.
- Designed for standard drive and i-Drive systems.
- Turn ratios of 2.0 times belt width (radius measured at inside edge).
- Preferred run direction is to align with slotted holes leading.
- Consult Engineering Program/i-Drive Program for specific widths not listed in this product data.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5).
- See *"Standard Belt Materials"* (page 9).
- See *"Special Application Belt Materials"* (page 9).

Belt Data

Base Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Curved Belt Strength[a] Belt Widths						Temperature Range (continuous)		W Belt Weight	
				18 in	457 mm	24 in	610 mm	36 in	914 mm				
		lb/ft	kg/m	lbs	kg	lbs	kg	lbs	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	213	97	300	136	475	215	-50 to 200	-46 to 93	1.54	7.52
Polypropylene	Acetal	1500	2232	190	86	260	118	400	181	34 to 200	1 to 93	1.04	5.08
SELM	Acetal	990	1473	108	49	144	65	215	98	-50 to 200	-46 to 93	1.24	6.05

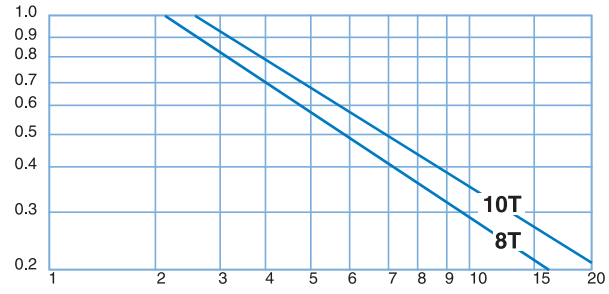
a. Published curved belt strengths and their method of calculation vary among radius belt manufacturers. Please consult an Intralox Sales Engineer for accurate comparison of curve belt strengths. Curved belt strength does not change above 36 in (914 mm).

Sprocket and Support Quantity Reference[a]

Belt Width Range[b]		**Minimum** Number of Sprockets Per Shaft[c]	Wearstrips	
in.	mm		Carryway	Returnway
24	610	3	3	3
26	660	3	3	3
28	711	5	3	3
30	762	5	3	3
32	813	5	3	3
34	864	5	3	3
36	914	5	3	3
38	965	5	4	4
40	1016	5	4	4
42	1067	5	4	4
44	1118	7	4	4
46	1168	7	4	4
48	1219	7	4	4
50	1270	7	4	4
52	1321	7	4	4
54	1372	7	5	5
56	1422	7	5	5
58	1473	7	5	5
60	1524	9	5	5
For Other Widths, Use Odd Number of Sprockets at Maximum 6 in. (152 mm) ℄ Spacing			Contact Technical Support Group	Maximum 12 in. (305 mm) ℄ Spacing

a. For low-tension capstan drive spirals contact Technical Support Group for suggested carryway support recommendations. Belt edges must be supported by support rollers on drive shafts. Contact Technical Support Group for more information.
b. If your belt width exceeds a number listed in the table, please refer to the sprocket and support material minimums for the next larger width range listed. Belts are available in 1.00 in. (25.4 mm) increments beginning with minimum width of 24 in. (610 mm). **If the actual width is critical, consult Customer Service.**
c. These are the minimum number of sprockets. Additional sprockets may be required for heavily loaded applications. See Retainer Rings/Center Sprocket Offset chart on page 410 for lock down location.

S Strength Factor

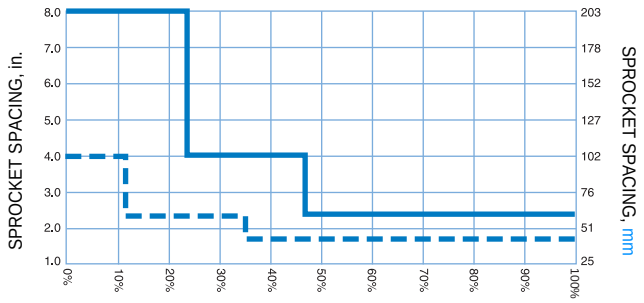


SPEED/LENGTH RATIO (V/L)

V = ft/min (m/min)
T = number of teeth
L = ft (m)

Divide belt speed "V" by the shaft ℄ distance "L". Strength Factor is found at intersection of speed/length ratio and appropriate sprocket line. See page 20 for more information.

Sprocket Spacing as a Function of Belt Strength Utilized



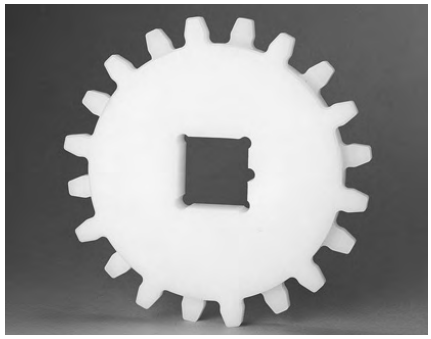
PERCENT OF ALLOWABLE BELT STRENGTH UTILIZED, %

Solid line: Square Bore Sprockets

Dashed line: Round Bore Sprockets

UHMW Polyethylene Sprocket[a]

No. of Teeth (Chordal Action)	Nom. Pitch Dia. in.	Nom. Pitch Dia. mm	Nom. Outer Dia. in.	Nom. Outer Dia. mm	Nom. Hub Width in.	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in.	Square in.	Round mm	Square mm
8 (7.61%)	5.2	132	5.4	136	0.8	20.32	1-1/4 1-7/16 1-1/2 2	1-1/2 2-1/2		40 60
10 (4.89%)	6.5	165	6.7	170	0.8	20.32	1-1/4 1-7/16 1-1/2 2	1-1/2 2-1/2		40 60



a. **Contact Customer Service for lead times, preferred method of locking down sprockets, and for proper sprocket timing.**

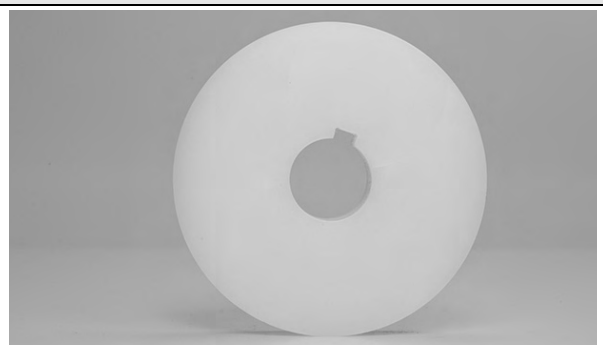
EZ Clean Sprocket[a]

No. of Teeth (Chordal Action)	Nom. Pitch Dia. in.	Nom. Pitch Dia. mm	Nom. Outer Dia. in.	Nom. Outer Dia. mm	Nom. Hub Width in.	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in.	Square in.	Round mm	Square mm
10 (4.89%)	6.5	165	6.7	170	0.8	20.32		2-1/2		

a. **Contact Customer Service for lead times.**

Support Wheel

Available Pitch Diameter		Available Bore Sizes			
		U.S. Sizes		Metric Sizes	
in	mm	Round in	Square in	Round mm	Square mm
5.2	132	1.25 1-7/16 1.5 2	1.5 2.5		40 60
6.5	165	1.25 1-7/16 1.5 2	1.5 2.5		40 60



Universal Sideguards

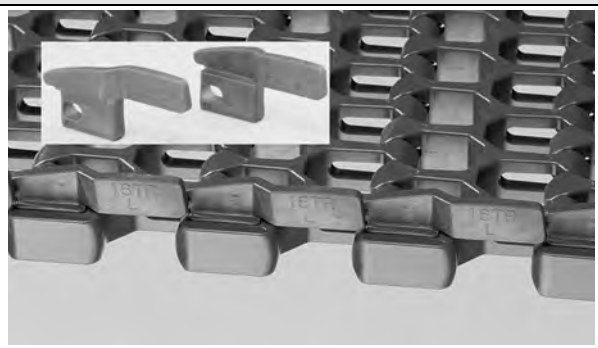
Available Height		Available Materials
in.	mm	
0.50	12.7	Acetal, SELM
1.00	25.4	
2.00[a]	50.8[a]	

Note: Maximizes product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Turn ratios that Universal Sideguards can be used in are 1.6, 2.2, 2.5, and 3.2.

a. Only available in 1.6 TR

Overlapping Sideguards

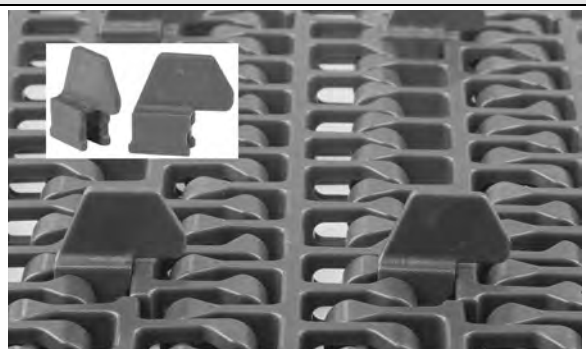
Available Height		Available Materials
in.	mm	
0.50	12.7	Acetal, SELM
1.00	25.4	



Note: Maximizes product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Turn ratios for 0.50 in (12.7 mm) Overlapping Sideguards in Acetal are 1.6, 2.2, 2.5, and 3.2.
Note: The turn ratio for 1.00 in (25.4 mm) Overlapping Sideguards is 1.6 only.
Note: Makes the belt’s outer edge more snag-resistant.
Note: Keeps small products from falling through belt gaps.

Lane Dividers

Available Height		Available Materials
in.	mm	
0.75	19.0	Acetal, Polypropylene

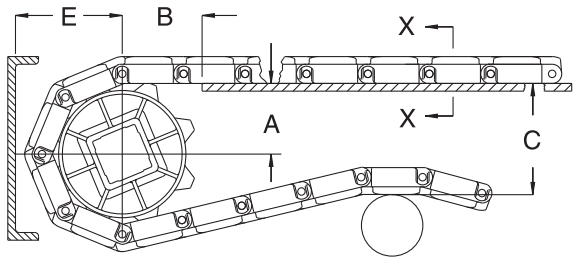


Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: For 1.6 Turning Radius modules the Lane Dividers can be placed on indents of 1.5" (38.1 mm), 2.5" (63.5 mm), 3.5" (88.9 mm), 4.5" (114 mm), 11.5" (292 mm), and up in 1.00" (25.4 mm) increments .
Note: For 2.2 Turning Radius modules the Lane Dividers can be placed on indents of 4.5" (114 mm) and up in 1.00" (25.4 mm) increments .

Conveyor Frame Dimensions

Regardless of type or configuration, all conveyors using Intralox belts have some basic dimensional requirements. Specifically, dimensions "A", "B", "C" and "E" listed below should be implemented in any design.

For general applications and applications where end transfer of tip-sensitive product is not critical, use the "A" dimension at the bottom of the range.



A - ±0.031" (1 mm)
B - ±0.125" (3 mm)
C - ± (Max)
E - ± (Min)

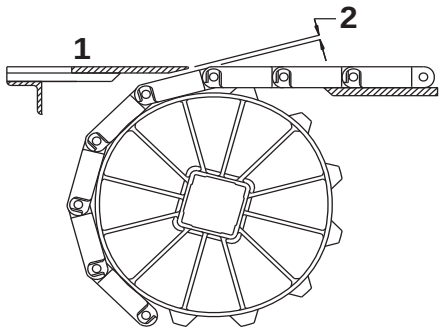
Complete descriptions of the dimensions are listed on page 423.

Sprocket Description					A		B		C		E	
Pitch Diameter		Nominal OD		No. Teeth	Range (Bottom to Top)		in.	mm	in.	mm	in.	mm
in.	mm	in.	mm		in.	mm						
SERIES 2600 SPIRALOX® 1.0 RADIUS, 1.1 RADIUS, 1.6 RADIUS, 2.0 RADIUS, 2.2 RADIUS, 2.5 RADIUS, 3.2 RADIUS												
5.2	132	5.4	137	8	2.12-2.32	54-59	2.25	57	5.23	133	2.97	75
6.5	165	6.7	170	10	2.78-2.94	71-75	2.54	65	6.47	164	3.59	91
SERIES 2600 SPIRALOX® ROUNDED FRICTION TOP												
5.2	132	5.4	137	8	2.12-2.32	54-59	2.25	57	5.46	139	3.21	82
6.5	165	6.7	170	10	2.78-2.94	71-75	2.54	65	6.71	170	3.83	97

Dead Plate Gap

Where there is a transfer point from a belt without finger transfer plates to a dead plate, there should be a gap between the surfaces to allow for the chordal action of the belt. As the belt engages its sprockets, chordal action causes the modules to move past a *fixed* point (the tip of the dead plate) with *varying* clearances. The table below shows the minimum amount of gap which occurs at the "low point" of the modules if the tip of the dead plate just comes in contact with the "high point" as the modules pass.

In some installations it may be desirable to keep the tip of the dead plate in contact with the belt, rather than allow a gap to occur. This can be done by hinging the mounting bracket for the dead plate. This allows the dead plate to move as the modules pass, but results in a small oscillating motion which may present tippage problems for sensitive containers or products.



1 - Top surface of dead plate
2 - Dead plate gap

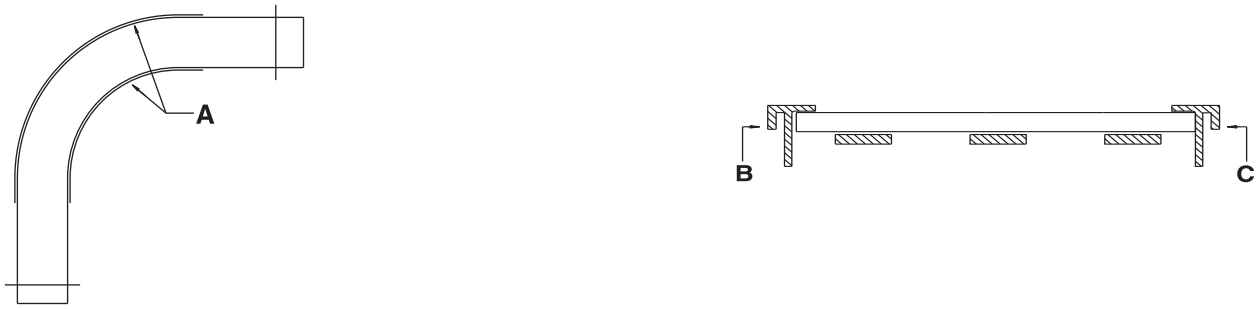
Note: The top surface of the dead plate is typically 0.031 in. (0.8 mm) above the belt surface for product transfer onto the belt, and 0.031 in. (0.8 mm) below the belt surface for product transfer off the belt.

Sprocket Description			Gap	
Pitch Diameter		No. Teeth	in.	mm
in.	mm			
5.2	132	8	0.200	5.1
6.5	165	10	0.158	4.0

HOLD DOWN RAILS AND WEARSTRIPS

Intralox recommends using continuous hold down rails through an entire turn, starting at a distance of 1X the belt width before the turn and ending 1X the belt width after the turn. This applies to both carryway and returnway. The use of hold down rails along both side of the belt over the full carryway is recommended but not mandatory. See *"Custom wearstrips"* (page 416).

FLUSH EDGE WITH WEARSTRIP



A - HOLD DOWN RAIL PLACEMENT

B - OUTSIDE HOLD DOWN RAIL

C - INSIDE HOLD DOWN RAIL

Fig. 2–8 HOLD DOWN RAILS AND WEARSTRIPS FOR SERIES 2600 FLAT-TURNS

BELT SELECTION INSTRUCTIONS

ENGINEERING PROGRAM ANALYSIS FOR SERIES 2600

Intralox Customer Service Technical Support Group can calculate the estimated belt pull for radius applications using **Series 2600**. The following information is required (refer to *"Radius belt data sheet"* (page 469)):

- Any environmental conditions which may affect the friction coefficient (for dirty or abrasive conditions, use higher friction coefficients than normal)
- Belt width
- Length of each straight run
- Turning angle of each turn
- Turn direction of each turn
- Inside turning radius of each turn
- Carryway/hold down rail material
- Product loading lb/ft² (kg/m²)
- Product back-up conditions
- Belt speed
- Elevation changes on each section
- Operating temperatures.

For assistance with radius belt and low-tension capstan drive spiral selections, contact Intralox Customer Service Technical Support Group. The Engineering Program should be run to ensure that the belt is strong enough for the radius application in question.

SERIES 2600 DESIGN GUIDE SUMMARY
For more information, see the ***Installation, Maintenance and Troubleshooting manual*** available from Intralox.

A - The minimum turning radius for **Series 2600** is the turning radius times the belt width, measured from the inside edge.

B - The minimum straight run required between turns of opposing direction is 2.0 times the belt width. Shorter straight sections will lead to high wear on the edge guide rail and high pull stresses in the belt.

C - There is no minimum straight run required between turns that are in the same direction.

D - The minimum final straight run (leading to the drive shaft) should be a minimum of 5 ft. (1.5 m). If 5 ft. (1.5 m) is not feasible, then a shorter distance (down to 1.5 times the belt width) would require a weighted take up in order to avoid sprocket wear and tracking problems. See *"Special Take-Up Arrangements"* (page 431).

E - The minimum length of the first straight run (immediately after the idle shaft) is 1.5 times the belt width. When shorter lengths are required (down to 1.0 times the width), an idle roller may be used in place of sprockets.

F - IDLE SHAFT

G - 1ST TURN

H - BELT WIDTH

I - BELT TRAVEL

J - 2ND TURN

K - DRIVE MOTOR

L - DRIVE SHAFT

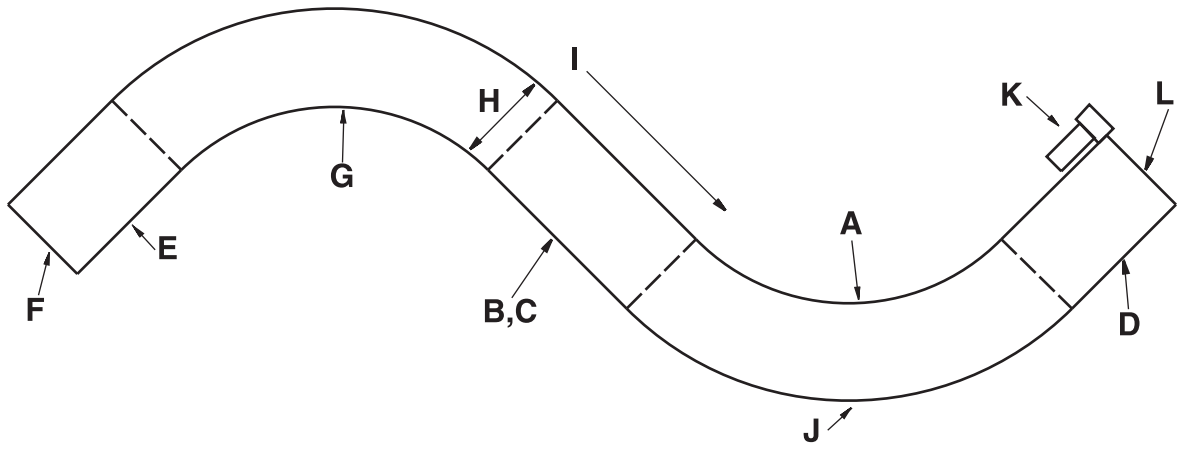
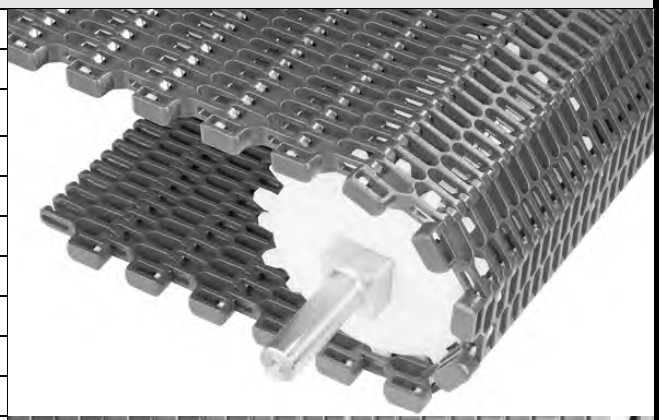
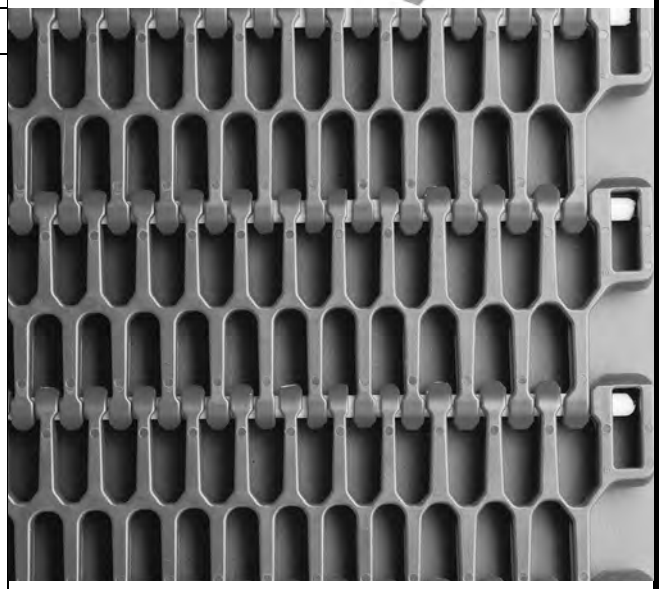


Fig. 2–9 TYPICAL 2-TURN RADIUS LAYOUT

Spiralox® 1.6 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	0.50	12.7
Opening Size (approximate)	0.38 × 0.64	9.52 × 16.5
Open Area (fully extended)	45%	
Min. Open Area (1.6 TR)	27%	
Hinge Style	Open	
Drive Method	Hinge-driven	

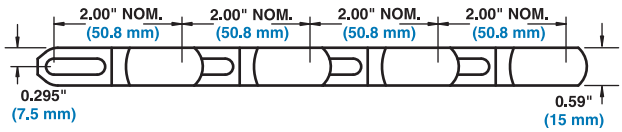




Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 1.6 times the belt width (measured from inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.



Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 24 in (610 mm).

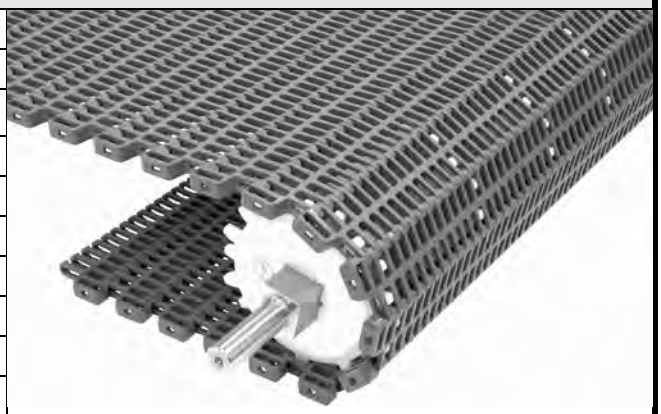
Belt Data

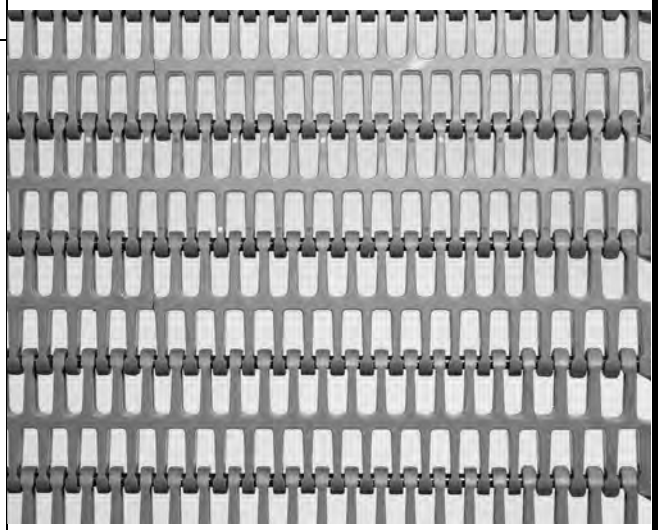
Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	2000	2976	375	170	-50 to 200	-46 to 93	1.74	8.50
SELM	Acetal	1060	1577	300	136	-50 to 200	-46 to 93	1.36	6.64

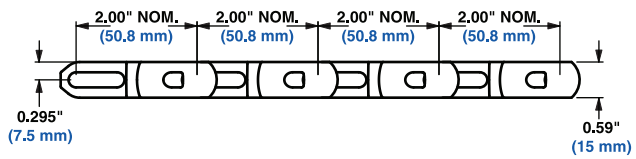
a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® 2.2 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	0.50	12.7
Opening Size (approx.)	0.38 x 0.64	9.52 x 16.5
Open Area (fully extended)	48%	
Min. Open Area (2.2 TR)	23%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 2.2 times the belt width (measured from inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 24 in (610 mm).

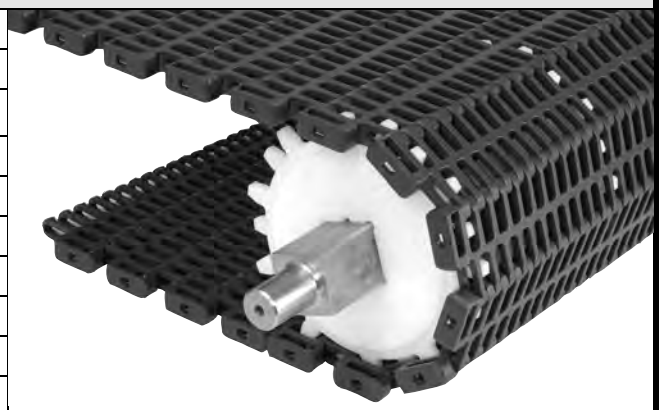
Belt Data

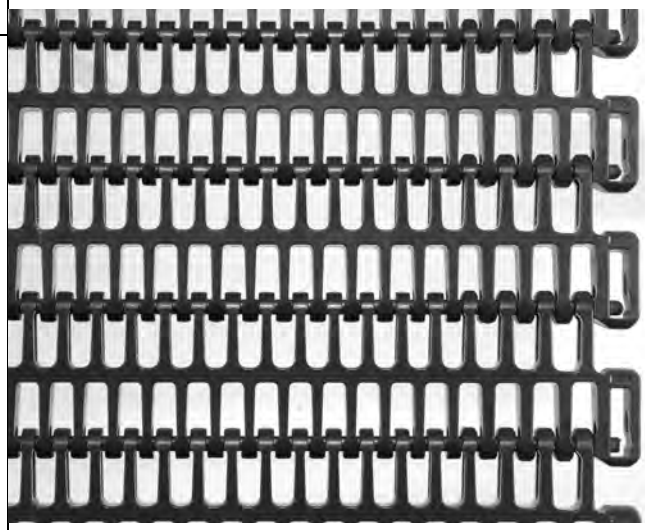
Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	375	170	-50 to 200	-46 to 93	1.85	9.03
Polypropylene	Acetal	1500	2232	300	136	34 to 200	1 to 93	1.26	6.15
SELM	Acetal	1060	1577	300	136	-50 to 200	-46 to 93	1.44	7.03

a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® 2.7 Radius

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	24	610
Maximum Width	60	1524
Width Increments	0.50	12.7
Opening Size (approx.)	0.38 x 0.64	9.5 x 16.5
Open Area (fully extended)	48%	
Min. Open Area (2.7 TR)	23%	
Hinge Style	Open	
Drive Method	Hinge-Driven	





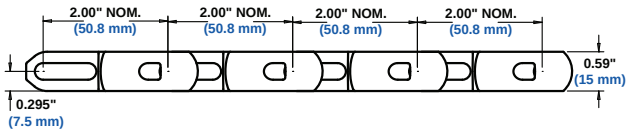
Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension, capstan drive spiral applications with a minimum turn radius of 2.7 times the belt width (measured from inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Contact Customer Service for preferred run direction on spiral applications.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)



a. Contact Intralox Customer Service for more information regarding belt widths under 24 in (610 mm).

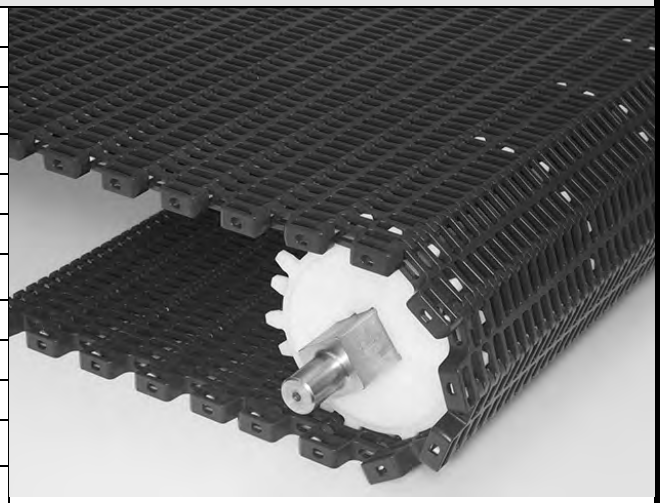
Belt Data

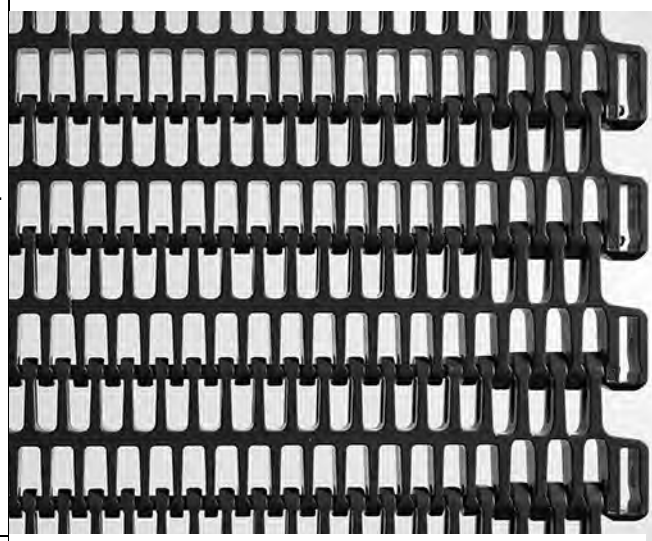
Belt Material	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	375	170	-50 to 200	-46 to 93	1.86	9.08
Polypropylene	Acetal	1500	2232	300	136	34 to 200	1 to 93	1.26	6.15
SELM	Acetal	1060	1577	300	136	-50 to 200	-46 to 93	1.44	7.03

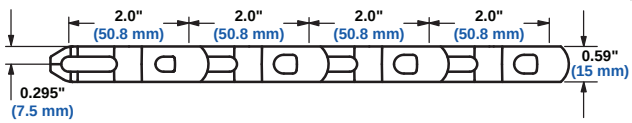
a. Published spiral belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Side Drive

	in	mm
Pitch	2.00	50.8
Minimum Width[a]	12	304.8
Maximum Width	60	1524
Width Increments	0.50	12.7
Opening Size (approx.)	0.38 x 0.64	9.5 x 16.5
Open Area (fully extended)[b]	44%	
Min. Open Area (2.0 TR)	23%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Rod insertion is accomplished from edge of belt. No special tools are required.
- Uses headless rods.
- Designed for standard drive and i-Drive systems.
- Do not use in spiral conveyor systems.
- Turn ratios of 2.0 times belt width (measured from inside edge).
- Preferred run direction is to align slotted holes leading.
- Consult Engineering Program/ i-Drive Program for specific widths not listed in this product data.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Contact Intralox Customer Service for more information regarding belt widths under 12 in (305 mm).
b. Open area calculations for S2700 Dual Turning (2.0) are unique to this style, and therefore are not directly comparable to other S2700 styles.

Belt Data

Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Curved Belt Strength[a]		Temperature Range (continuous)[b]		W Belt Weight	
		lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²
Acetal	Acetal	1700	2530	375	170	-50 to 200	-46 to 93	1.84	8.98
Acetal	Nylon	1700	2530	375	170	-50 to 200	-46 to 93	1.81	8.84
SELM	Acetal	1060	1577	300	136	-50 to 200	-46 to 93	1.42	6.93
SELM	Nylon	1060	1577	300	136	-50 to 212	-46 to 100	1.40	6.84

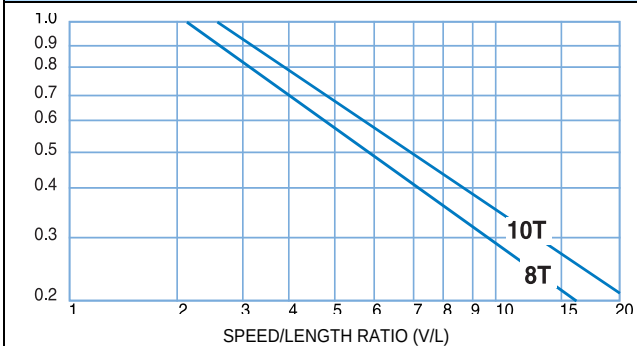
a. Published curved belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of curve belt strengths.
b. Belt will function mechanically up to 240°F (116°C). Belt used in the temperature window of 212°F to 240°F (100°C to 116°C) is not FDA-compliant.

Sprocket and Support Quantity Reference[a]

Belt Width Range[b]		**Minimum** Number of Sprockets Per Shaft[c]	Wearstrips[d]	
in.	mm		Carryway	Returnway
24	610	5	2	2
26	660	5	2	2
28	711	5	2	2
30	762	5	3	2
32	813	5	3	2
34	864	7	3	2
36	914	7	3	2
38	965	7	3	2
40	1016	7	3	2
42	1067	7	3	2
44	1118	7	3	2
46	1168	9	3	2
48	1219	9	3	2
50	1270	9	3	2
52	1321	9	3	2
54	1372	9	3	2
56	1422	9	4	3
58	1473	11	4	3
60	1524	11	4	3
For Other Widths, Use Odd Number of Sprockets at Maximum 8 in. (203 mm) ℄ Spacing			Maximum 25 in. (635 mm) ℄ Spacing	Maximum 30 in. (762 mm) ℄ Spacing

a. For low-tension capstan drive spirals contact Technical Support Group for suggested carryway support recommendations. Belt edges must be supported by support rollers on drive shafts. Contact Technical Support Group for more information.
b. If your belt width exceeds a number listed in the table, please refer to the sprocket and support material minimums for the next larger width range listed. Belts are available in 0.50 in. (12.7 mm) increments beginning with minimum width of 24 in. (610 mm). **If the actual width is critical, consult Customer Service.**
c. These are the minimum number of sprockets. Additional sprockets may be required for heavily loaded applications. See Retainer Rings/Center Sprocket Offset chart on page 410 for lock down location.
d. Carryway Spacing dependant on a distributed 2 lb/ft² at 65 °F for Acetal belt with Acetal Rod with a 2" and 4" overhang.

S Strength Factor



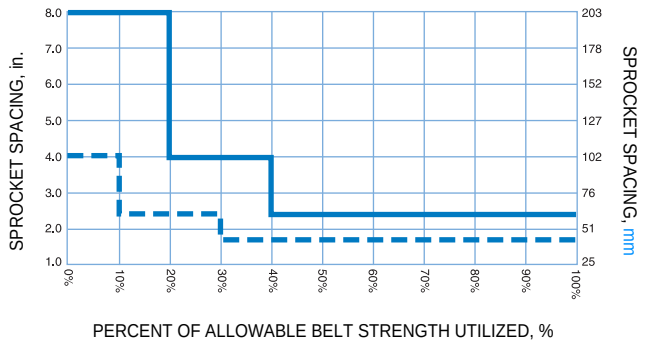
V = ft/min (m/min)

T = number of teeth

L = ft (m)

Divide belt speed "V" by the shaft ℄ distance "L". Strength Factor is found at intersection of speed/length ratio and appropriate sprocket line. See page 20 for more information.

Sprocket Spacing as a Function of Belt Strength Utilized

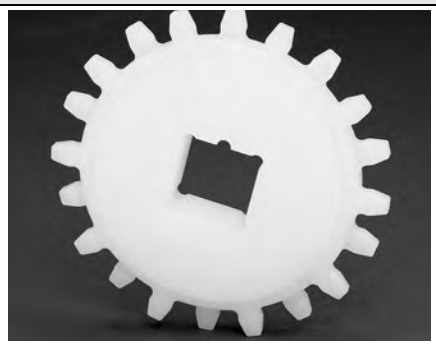


Solid line: Square Bore Sprockets

Dashed line: Round Bore Sprockets

Acetal Sprocket[a]

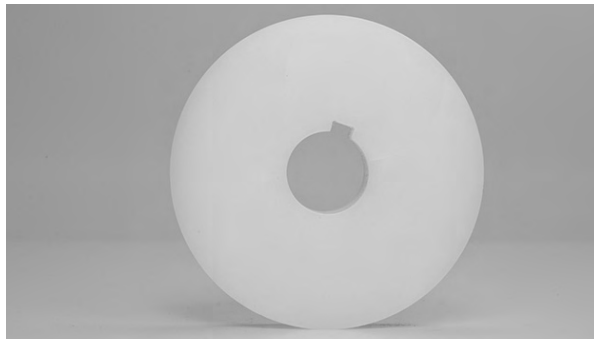
No. of Teeth (Chordal Action)	Nom. Pitch Dia. in	Nom. Pitch Dia. mm	Nom. Outer Dia. in	Nom. Outer Dia. mm	Nom. Hub Width in	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in	Square in	Round mm	Square mm
8 (7.61%)	5.2	132	5.4	136	0.8	20.32	1-1/4 1-7/16 2	1-1/2 2-1/2		60
10 (4.85%)	6.5	165	6.7	170	0.8	20.32	1-1/4 1-7/16 2	1-1/2 2-1/2		40 60



a. **Contact Customer Service for lead times, preferred method of locking down sprockets, and for proper sprocket timing.**

Support Wheel

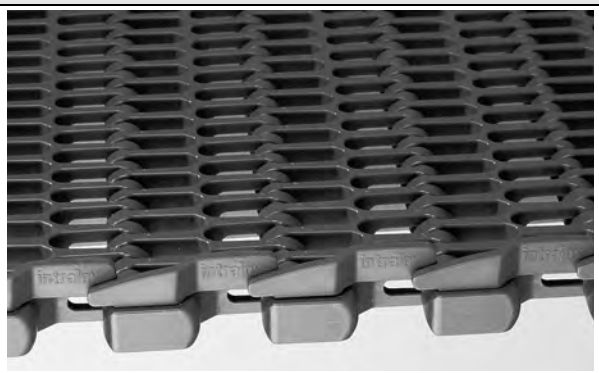
Available Pitch Diameter		Available Bore Sizes			
		U.S. Sizes		Metric Sizes	
in	mm	Round in	Square in	Round mm	Square mm
5.2	132	1.25 1-7/16 1.5 2	1.5 2.5		40 60
6.5	165	1.25 1-7/16 1.5 2	1.5 2.5		40 60



Overlapping Sideguards

Available Height		Available Materials
in	mm	
0.50	12.7	Acetal, SELM
1.00	25.4	

Note: Sideguards maximize product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Sideguard assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Turn ratio for 0.50 in (12.7 mm) Overlapping Sideguards in Acetal is 1.6.
Note: The turn ratio for 1.00 in (25.4 mm) Overlapping Sideguard is 1.6 only.



Universal Sideguards

Available Height		Available Materials
in	mm	
0.50	12.7	Acetal, SELM
1.00	25.4	
2.00[a]	50.8[a]	

Note: Maximizes product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.

a. Only available in 1.6 TR

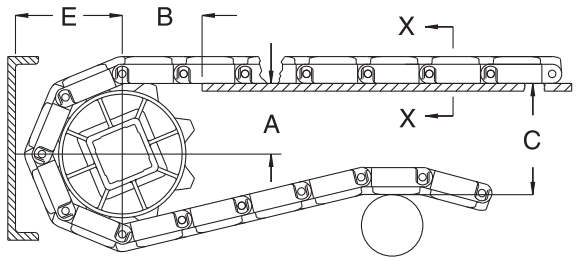
Lane Dividers

Available Height		Available Materials
in	mm.	Acetal, SELM
0.75	19	

Conveyor Frame Dimensions

Regardless of type or configuration, all conveyors using Intralox belts have some basic dimensional requirements. Specifically, dimensions "A", "B", "C" and "E" listed below should be implemented in any design.

For general applications and applications where end transfer of tip-sensitive product is not critical, use the "A" dimension at the bottom of the range.



A - ±0.031" (1 mm)
B - ±0.125" (3 mm)
C - ± (Max)
E - ± (Min)

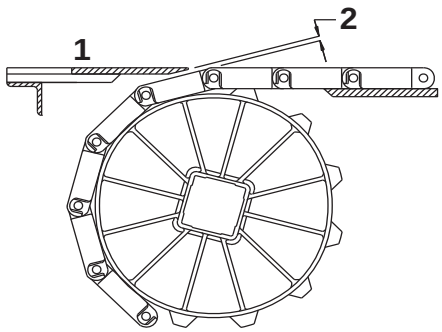
Complete descriptions of the dimensions are listed on page 423.

Sprocket Description					A		B		C		E	
Pitch Diameter		Nominal OD		No. Teeth	Range (Bottom to Top)		in.	mm	in.	mm	in.	mm
in.	mm	in.	mm		in.	mm						
SERIES 2700 SPIRALOX® 1.6 RADIUS, 2.2 RADIUS, 2.7 RADIUS												
5.2	132	5.4	137	8	2.12-2.32	54-59	2.25	57	5.23	133	2.97	75
6.5	165	6.7	170	10	2.78-2.94	71-75	2.54	65	6.47	164	3.59	91

Dead Plate Gap

Where there is a transfer point from a belt without finger transfer plates to a dead plate, there should be a gap between the surfaces to allow for the chordal action of the belt. As the belt engages its sprockets, chordal action causes the modules to move past a *fixed* point (the tip of the dead plate) with *varying* clearances. The table below shows the minimum amount of gap which occurs at the "low point" of the modules if the tip of the dead plate just comes in contact with the "high point" as the modules pass.

In some installations it may be desirable to keep the tip of the dead plate in contact with the belt, rather than allow a gap to occur. This can be done by hinging the mounting bracket for the dead plate. This allows the dead plate to move as the modules pass, but results in a small oscillating motion which may present tippage problems for sensitive containers or products.



1 - Top surface of dead plate
2 - Dead plate gap

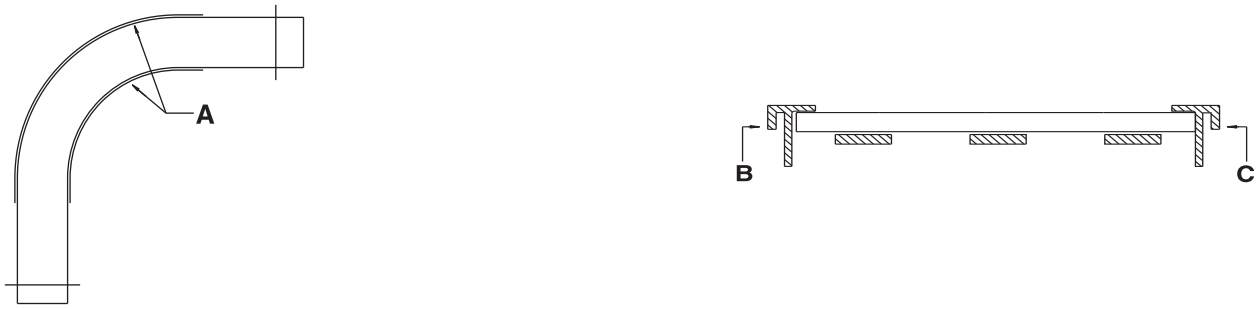
Note: The top surface of the dead plate is typically 0.031 in. (0.8 mm) above the belt surface for product transfer onto the belt, and 0.031 in. (0.8 mm) below the belt surface for product transfer off the belt.

Sprocket Description			Gap	
Pitch Diameter		No. Teeth	in.	mm
in.	mm			
5.2	132	8	0.200	5.1
6.5	165	10	0.158	4.0

HOLD DOWN RAILS AND WEARSTRIPS

Intralox recommends using continuous hold down rails through an entire turn, starting at a distance of 1X the belt width before the turn and ending 1X the belt width after the turn. This applies to both carryway and returnway. The use of hold down rails along both side of the belt over the full carryway is recommended but not mandatory. See *"Custom wearstrips"* (page 416).

FLUSH EDGE WITH WEARSTRIP



A - HOLD DOWN RAIL PLACEMENT

B - OUTSIDE HOLD DOWN RAIL

C - INSIDE HOLD DOWN RAIL

Fig. 2–10 HOLD DOWN RAILS AND WEARSTRIPS FOR SERIES 2700 FLAT-TURNS

BELT SELECTION INSTRUCTIONS

ENGINEERING PROGRAM ANALYSIS FOR SERIES 2700

Intralox Customer Service Technical Support Group can calculate the estimated belt pull for radius applications using **Series 2700**. The following information is required (refer to *"Radius belt data sheet"* (page 469)):

- Any environmental conditions which may affect the friction coefficient (for dirty or abrasive conditions, use higher friction coefficients than normal)
- Belt width
- Length of each straight run
- Turning angle of each turn
- Turn direction of each turn
- Inside turning radius of each turn
- Carryway/hold down rail material
- Product loading lb/ft² (kg/m²)
- Product back-up conditions
- Belt speed
- Elevation changes on each section
- Operating temperatures.

For assistance with radius belt and low-tension capstan drive spiral selections, contact Intralox Customer Service Technical Support Group. The Engineering Program should be run to ensure that the belt is strong enough for the radius application in question.

SERIES 2700 DESIGN GUIDE SUMMARY
For more information, see the ***Installation, Maintenance and Troubleshooting manual*** available from Intralox.

A - The minimum turning radius for **Series 2700** is 2.2 times the belt width, measured from the inside edge for the standard edge or 1.7 times the belt width for the tight turning style.

B - The minimum straight run required between turns of opposing direction is 2.0 times the belt width. Shorter straight sections will lead to high wear on the edge guide rail and high pull stresses in the belt.

C - There is no minimum straight run required between turns that are in the same direction.

D - The minimum final straight run (leading to the drive shaft) should be a minimum of 5 ft. (1.5 m). If 5 ft. (1.5 m) is not feasible, a shorter distance (down to 1.5 times the belt width) would require a weighted take up in order to avoid sprocket wear and tracking problems. See *"Special Take-Up Arrangements"* (page 431).

E - The minimum length of the first straight run (immediately after the idle shaft) is 1.5 times the belt width. When shorter lengths are required (down to 1.0 times the width), an idle roller may be used in place of sprockets.

F - IDLE SHAFT

G - 1ST TURN

H - BELT WIDTH

I - BELT TRAVEL

J - 2ND TURN

K - DRIVE MOTOR

L - DRIVE SHAFT

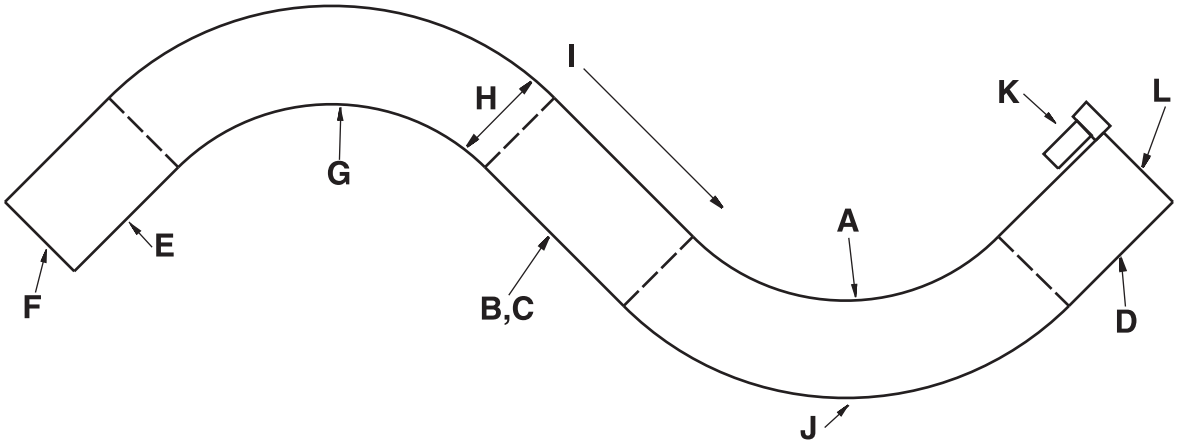
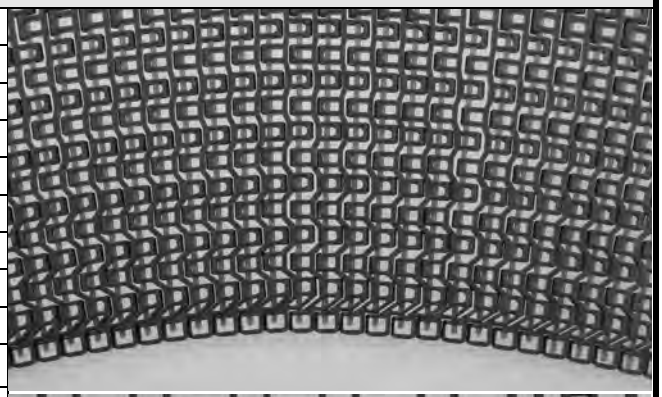
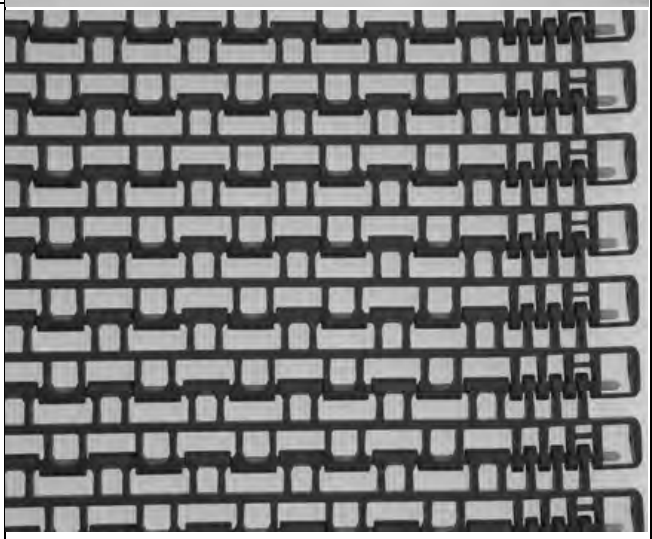


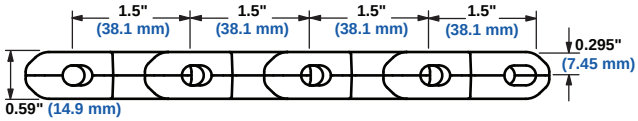
Fig. 2–11 TYPICAL 2-TURN RADIUS LAYOUT

Spiralox® GTech 1.6 Radius

	in	mm
Pitch	1.5	38.1
Minimum Width	24	609.6
Width Increments	1.00	25.4
Opening Sizes (approx.)	1.1 x 0.42	27.9 x 10.7
Open Area (Fully Extended)	50%	
Minimum Open Area	36%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension capstan drive spiral applications with a minimum turn radius of 1.6 times the belt width (measured from the inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Minimum sprocket indent from the inside belt edge and from the outside belt edge may vary. Contact Customer Service to determine exact placement.
- Lightweight, relatively strong belt with smooth surface grid.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Robust edge feature adds strength to the outside edge of the belt.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

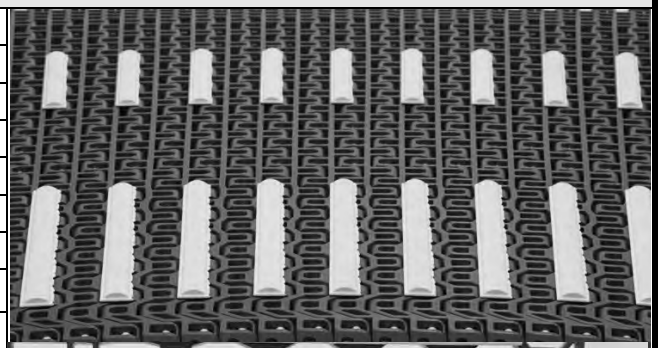
Belt Data

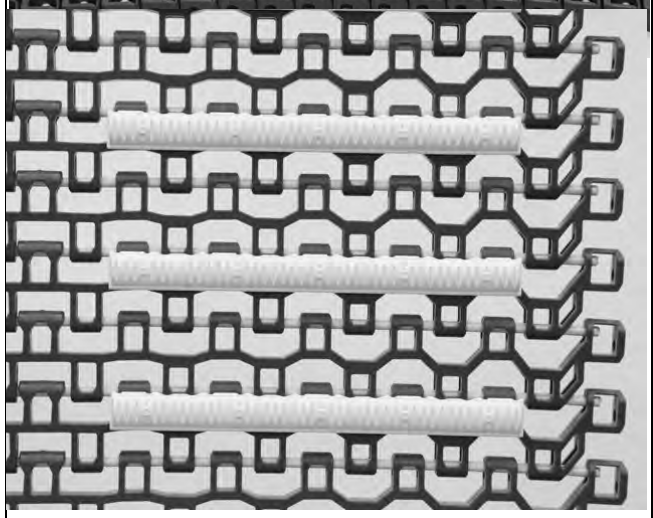
Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb./ft.	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.60	7.81
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.28	6.25

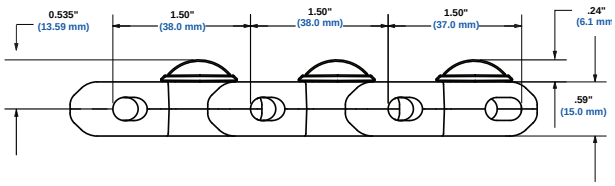
a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please contact Intralox Customer Service for accurate comparison of spiral belt strengths.

Spiralox® GTech Rounded Friction Top

	in	mm
Pitch	1.5	38.1
Minimum Width	24	609.6
Width Increments	1.00	25.4
Opening Sizes (approx.)	1.1 x 0.42	27.9 x 10.7
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Friction top available in white polypropylene with white rubber or blue polypropylene with high-performance blue rubber.
- Contact Customer Service for minimum indent requirements.
- Minimum sprocket indent from the inside belt edge and from the outside belt edge may vary. Contact Customer Service to determine exact placement.
- Must have a 2.0 in (50.8 mm) minimum gap between friction inserts for correct sprocket placement.
- Lightweight, relatively strong belt with smooth surface grid.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Robust edge feature adds strength to the outside edge of the belt.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

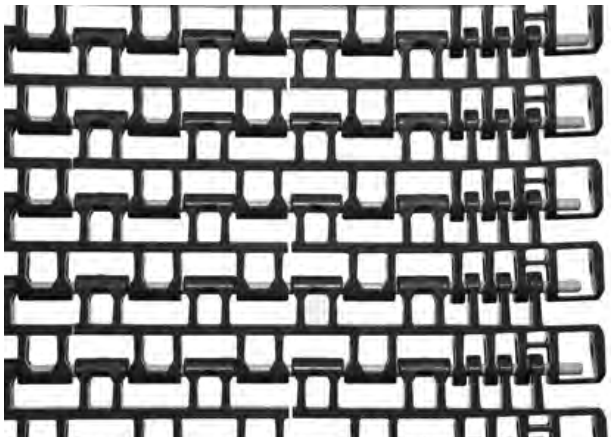
Belt Data

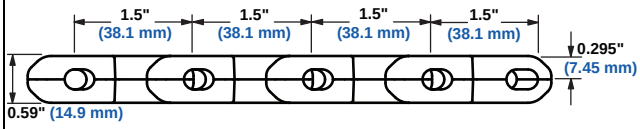
Base Belt Material	Base/Friction Color	Standard Rod Material Ø 0.24 in (6.1 mm)	BS Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight		Friction Top Hardness	Agency Acceptability[b]	
			lb/ft	kg/m	lb	kg	°F	°C	lb/ft²	kg/m²		FDA (USA)	EU MC[c]
Acetal	White/White	Acetal	1700	2530	376 (475)	171 (215)	34 to 150	1 to 66	1.44 (1.54)	7.03 (7.52)	55 Shore A	•	•
Acetal	High Performance FT Blue/Blue	Acetal	1700	2530	376 (475)	171 (215)	34 to 212	1 to 100	1.44 (1.54)	7.03 (7.52)	59 Shore A	•	•

a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Contact an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.
b. Prior to Intralox's development of Series S2800, USDA-FSIS Meat and Poultry discontinued publishing a list of acceptable new products designed for food contact. As of the printing of the manual, third-party approvals are being investigated, but are not yet sanctioned by the USDA-FSIS.
c. European Migration Certificate providing approval for food contact according to EU Regulation 10/2011.

Spiralox® GTech 2.2 and 3.2

	in	mm
Pitch	1.5	38.1
Minimum Width	24	609.6
Width Increments	1.00	25.4
Opening Sizes (approx.)	1.1 x 0.42	27.9 x 10.7
Open Area (Fully Extended)	50%	
Minimum Open Area	36%	
Hinge Style	Open	
Drive Method	Hinge-Driven	





Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for low-tension capstan drive spiral applications with a minimum turn radius of 2.2 times the belt width (measured from the inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most low-tension, capstan drive spiral applications, ensuring that the belt is strong enough for the application. Contact Intralox Technical Support for more information.
- Minimum sprocket indent from the inside belt edge and from the outside belt edge may vary. Contact Customer Service to determine exact placement.
- Lightweight belt with extreme beam strength prevents bowing and buckling.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Open hinge and slot design facilitates sanitation.
- Uses headless rods.
- Robust edge feature adds strength to the outside edge of the belt.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

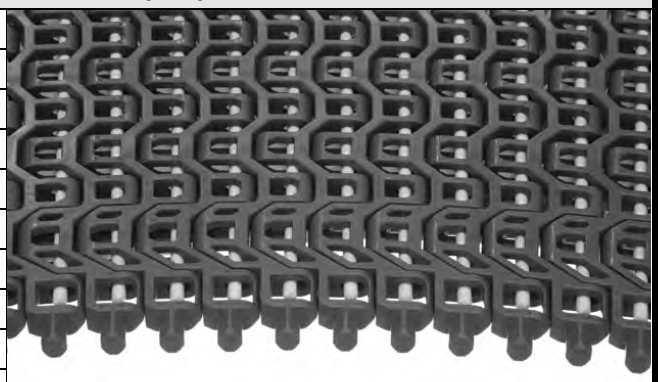
Belt Data

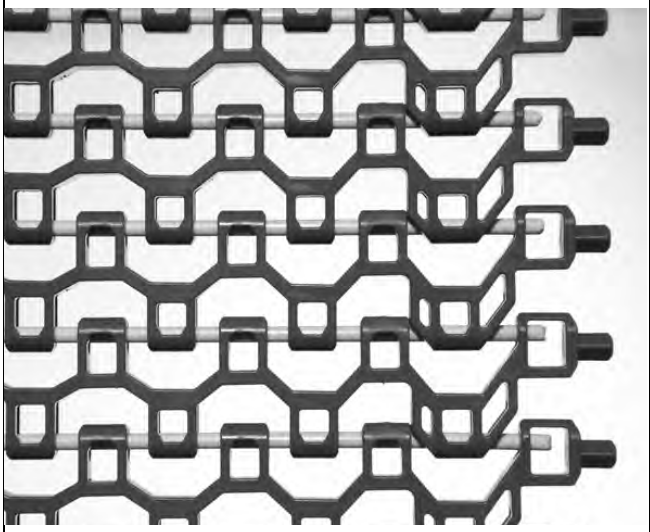
Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb./ft.	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.60	7.81
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.27	6.3

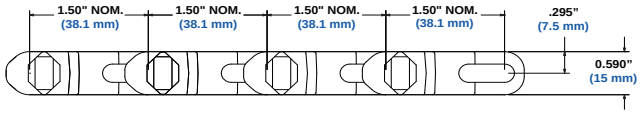
a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® DirectDrive™ (DD)

	in	mm
Pitch	1.5	38.1
Minimum Width	24	609.6
Width Increments	1.00	25.4
Opening Sizes (approx.)	1.1 x 0.42	27.9 x 10.7
Open Area (Fully Extended)	50%	
Minimum Open Area	36%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- The Intralox Spiral Program will help predict the strength requirements of most spiral applications, ensuring that the belt is strong enough for the application.
- Minimum sprocket indent from the inside belt edge and from the outside belt edge may vary. Contact Customer Service to determine exact placement.
- Lightweight, relatively strong belt with smooth surface grid.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Uses headless rods.
- Robust edge feature adds strength to the outside edge of the belt.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

Belt Data

Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb./ft.	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.60	7.81
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.27	6.2

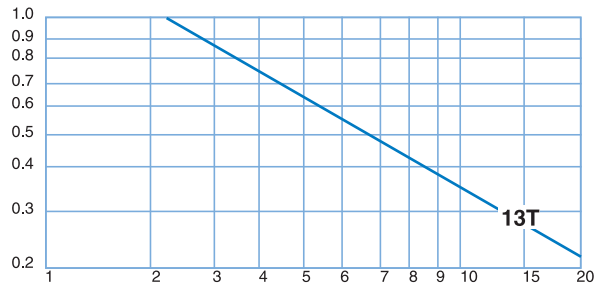
a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Sprocket and Support Quantity Reference

Belt Width Range[a]		**Minimum** Number of Sprockets Per Shaft[b]	Wearstrips	
in.	mm		Carryway	Returnway
24	610	4	2	2
26	660	4	2	2
28	711	5	2	2
30	762	5	2	2
32	813	5	2	2
34	864	6	2	2
36	914	6	2	2
38	965	6	3	3
40	1016	7	3	3
42	1067	7	3	3
44	1118	7	3	3
46	1168	8	3	3
48	1219	8	3	3
50	1270	8	3	3
52	1321	9	3	3
54	1372	9	3	3
56	1422	9	3	3
58	1473	10	3	3
60	1524	10	3	3

a. If your belt width exceeds a number listed in the table, please refer to the sprocket and support material minimums for the next larger width range listed. Belts are available in 1.00 in. (25.4 mm) increments beginning with minimum width of 24 in. (609.6 mm). **If the actual width is critical, consult Customer Service.**
b. These are the minimum number of sprockets. Additional sprockets may be required for heavily loaded applications.

S Strength Factor

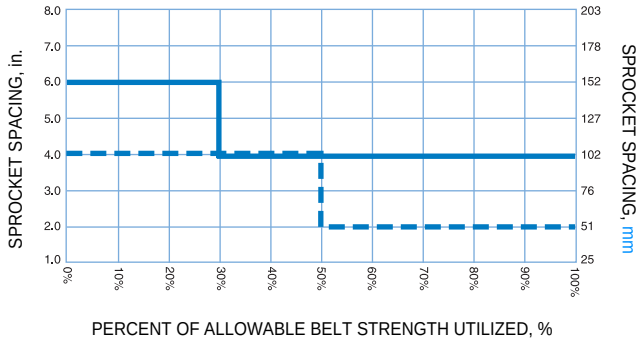


SPEED/LENGTH RATIO (V/L)

V = ft/min (m/min)
T = number of teeth
L = ft (m)

Divide belt speed "V" by the shaft ℄ distance "L". Strength Factor is found at intersection of speed/length ratio and appropriate sprocket line. See page 20 for more information.

Sprocket Spacing as a Function of Belt Strength Utilized



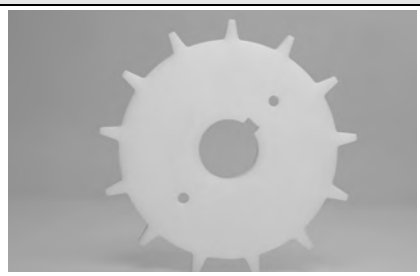
PERCENT OF ALLOWABLE BELT STRENGTH UTILIZED, %

Solid line: Square Bore Sprockets

Dashed line: Round Bore Sprockets

Acetal Sprocket[a]

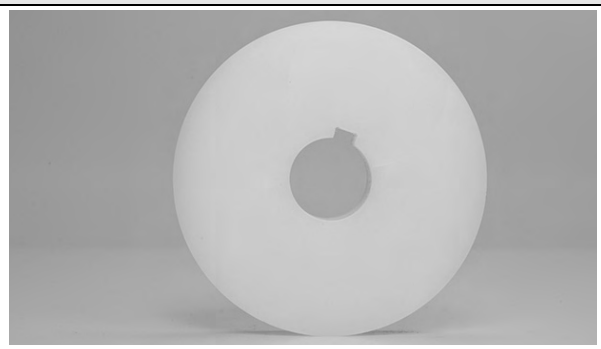
No. of Teeth (Chordal Action)	Nom. Pitch Dia. in	Nom. Pitch Dia. mm	Nom. Outer Dia. in	Nom. Outer Dia. mm	Nom. Hub Width in	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in	Square in	Round mm	Square mm
13 (1.92%)	6.2	157.5	6.4	162.6	1.2	30.5	1-7/16 1-1/2 2	1.5 2.5		40 60



a. **Contact Customer Service for lead times.**

Support Wheel

Available Pitch Diameter		Available Bore Sizes			
		U.S. Sizes		Metric Sizes	
in	mm	Round in	Square in	Round mm	Square mm
6.3	160	1-7/16 2	1.5 2.5		40 60



Overlapping Sideguards

Available Height		Available Materials
in	mm	
0.50	12.7	Acetal
1.0	25.4	Acetal

Note: Maximizes product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Turn ratio for 0.50 in (12.7 mm) Overlapping Sideguards is 1.6.
Note: Makes the belt’s outer edge more snag-resistant.
Note: Keeps small products from falling through belt gaps.

Lane Dividers

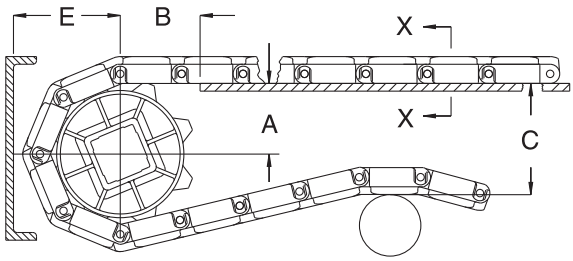
Available Height		Available Materials
in	mm	
0.75	19	Acetal, SELM

Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Lane Dividers can be spaced 2 in (50.8 mm) apart along the width of the belt.
Note: Please contact Customer Service for minimum indent requirements.

Conveyor Frame Dimensions

Regardless of type or configuration, all conveyors using Intralox belts have some basic dimensional requirements. Specifically, dimensions "A", "B", "C" and "E" listed below should be implemented in any design.

For general applications and applications where end transfer of tip-sensitive product is not critical, use the "A" dimension at the bottom of the range.



A - ±0.031" (1 mm)
C - ± (Max)
B - ±0.125" (3 mm)
E - ± (Min)

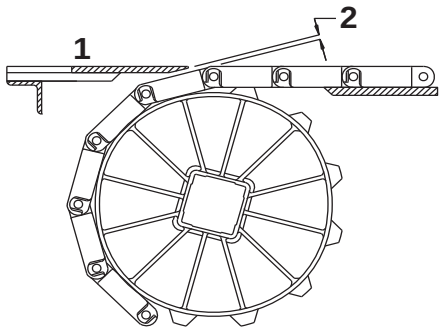
Complete descriptions of the dimensions are listed on page 423.

Sprocket Description					A		B		C		E	
Pitch Diameter		Nominal OD		No. Teeth	Range (Bottom to Top)		in.	mm	in.	mm	in.	mm
in.	mm	in.	mm		in.	mm						
SERIES 2800 SPIRALOX® G-TECH 1.6, 2.2 & 3.2 RADIUS and DIRECT DRIVE												
6.3	160	6.5	165	13	2.75-2.84	70-72	2.51	64	6.27	159	3.49	89
SERIES 2800 SPIRALOX® G-TECH ROUNDED FRICTION TOP												
6.3	160	6.5	165	13	2.75-2.84	70-72	2.51	64	6.51	165	3.74	95

Dead Plate Gap

Where there is a transfer point from a belt without finger transfer plates to a dead plate, there should be a gap between the surfaces to allow for the chordal action of the belt. As the belt engages its sprockets, chordal action causes the modules to move past a *fixed* point (the tip of the dead plate) with *varying* clearances. The table below shows the minimum amount of gap which occurs at the "low point" of the modules if the tip of the dead plate just comes in contact with the "high point" as the modules pass.

In some installations it may be desirable to keep the tip of the dead plate in contact with the belt, rather than allow a gap to occur. This can be done by hinging the mounting bracket for the dead plate. This allows the dead plate to move as the modules pass, but results in a small oscillating motion which may present tippage problems for sensitive containers or products.



1 - Top surface of dead plate
2 - Dead plate gap

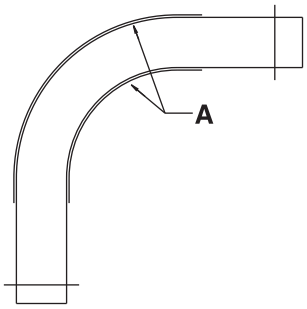
Note: The top surface of the dead plate is typically 0.031 in. (0.8 mm) above the belt surface for product transfer onto the belt, and 0.031 in. (0.8 mm) below the belt surface for product transfer off the belt.

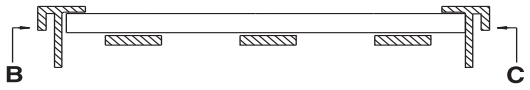
Sprocket Description			Gap	
Pitch Diameter		No. Teeth	in.	mm
in.	mm			
6.3	160	13	0.091	2.3

HOLD DOWN RAILS AND WEARSTRIPS

Intralox recommends using continuous hold down rails through an entire turn, starting at a distance of 1X the belt width before the turn and ending 1X the belt width after the turn. This applies to both carryway and returnway. The use of hold down rails along both side of the belt over the full carryway is recommended but not mandatory. See *"Custom wearstrips"* (page 416).

FLUSH EDGE WITH WEARSTRIP





A - HOLD DOWN RAIL PLACEMENT

B - OUTSIDE HOLD DOWN RAIL

C - INSIDE HOLD DOWN RAIL

Fig. 2–12 HOLD DOWN RAILS AND WEARSTRIPS FOR SERIES 2800 FLAT-TURNS

BELT SELECTION INSTRUCTIONS

ENGINEERING PROGRAM ANALYSIS FOR SERIES 2800

Intralox Customer Service Technical Support Group can calculate the estimated belt pull for radius applications using **Series 2800**. The following information is required (refer to *"Radius belt data sheet"* (page 469)):

- Any environmental conditions which may affect the friction coefficient (for dirty or abrasive conditions, use higher friction coefficients than normal)
- Belt width
- Length of each straight run
- Turning angle of each turn
- Turn direction of each turn
- Inside turning radius of each turn
- Carryway/hold down rail material
- Product loading lb/ft² (kg/m²)
- Product back-up conditions
- Belt speed
- Elevation changes on each section
- Operating temperatures.

For assistance with radius belt and low-tension capstan drive spiral selections, contact Intralox Customer Service Technical Support Group. The Engineering Program should be run to ensure that the belt is strong enough for the radius application in question.

SERIES 2800 DESIGN GUIDE SUMMARY
For more information, see the ***Installation, Maintenance and Troubleshooting manual*** available from Intralox.

A - The minimum turning radius for **Series 2800** is 1.6 times the belt width, measured from the inside edge for the standard edge.

B - The minimum straight run required between turns of opposing direction is 1.6 times the belt width. Shorter straight sections will lead to high wear on the edge guide rail and high pull stresses in the belt.

C - There is no minimum straight run required between turns that are in the same direction.

D - The minimum final straight run (leading to the drive shaft) should be a minimum of 5 ft. (1.5 m). If 5 ft. (1.5 m) is not feasible, a shorter distance (down to 1.5 times belt width) would require a weighted take up in order to avoid sprocket wear and tracking problems. See *"Special Take-Up Arrangements"* (page 431).

E - The minimum length of the first straight run (immediately after the idle shaft) is 1.5 times the belt width. When shorter lengths are required (down to 1.0 times the width), an idle roller may be used in place of sprockets.

F - IDLE SHAFT

G - 1ST TURN

H - BELT WIDTH

I - BELT TRAVEL

J - 2ND TURN

K - DRIVE MOTOR

L - DRIVE SHAFT

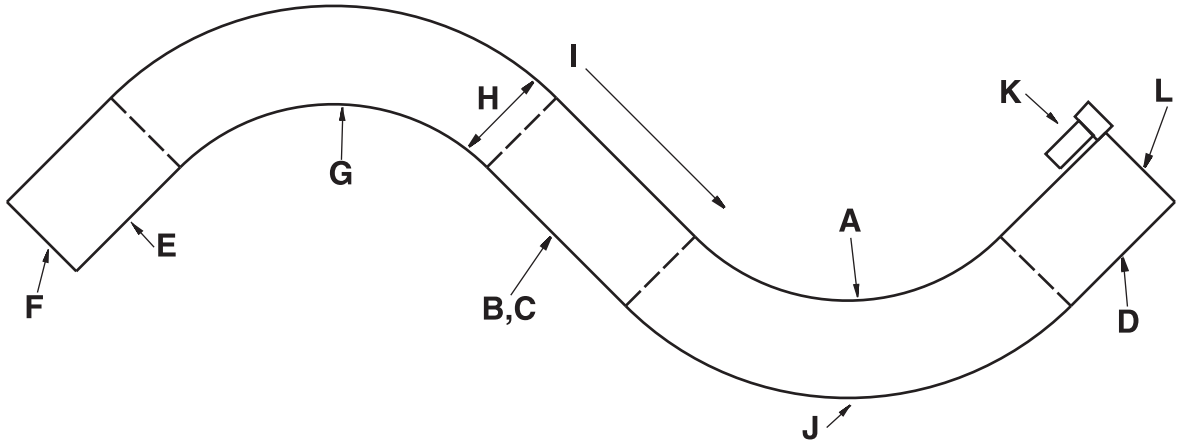
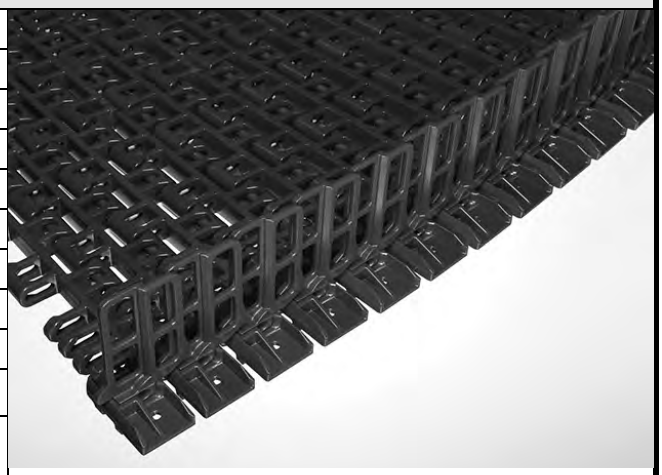
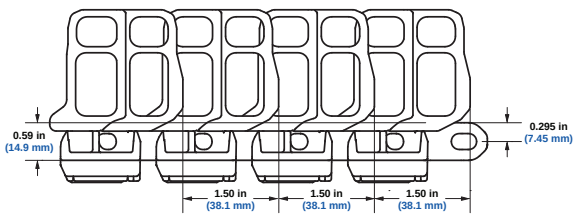


Fig. 2–13 TYPICAL 2-TURN RADIUS LAYOUT

DirectDrive™ Stacker

	in	mm
Pitch	1.5	38.1
Minimum Width	12	304.8
Width Increments	2.00	50.8
Opening Sizes (approx.)	1.1 x 0.42	27.9 x 10.7
Open Area (Fully Extended)	50%	
Minimum Open Area	36%	
Hinge Style	Open	
Drive Method	Hinge-Driven	





Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for stacker applications using the patented DirectDrive technology.
- The Intralox Spiral Program can help predict the strength requirements of most spiral applications, ensuring the belt is strong enough for the application. Contact our Technical Service Group for more information.
- Lightweight, strong belt with smooth surface grid for good product release.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling of product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- 60 mm, 80 mm, & 100 mm tier spacing available.
- Sideplates are permanently installed and cannot be replaced.
- Uses headless rods.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

Belt Data

Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)[b]		W Belt Weight	
		lb./ft	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.96	9.57

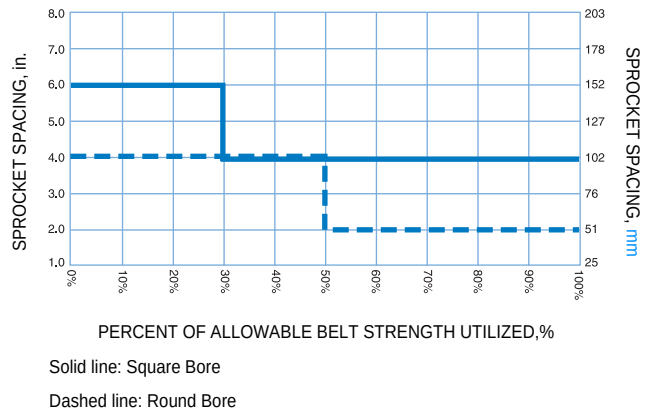
a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.
b. Sideflexing applications should not exceed 180 °F (82 °C).

Sprocket and Support Quantity Reference				
Belt Width Range[a]		**Minimum** Number of Sprockets Per Shaft[b]	Wearstrips	
in	mm		Carryway	Returnway
24	610	4	2	2
26	660	4	2	2
28	711	5	2	2
30	762	5	2	2
32	813	5	2	2
34	864	6	2	2
36	914	6	2	2
38	965	6	3	3
40	1016	7	3	3
42	1067	7	3	3
44	1118	7	3	3
46	1168	8	3	3
48	1219	8	3	3
50	1270	8	3	3
52	1321	9	3	3
54	1372	9	3	3
56	1422	9	3	3
58	1473	10	3	3
60	1524	10	3	3

a. If your belt width exceeds a number listed in the table, please refer to the sprocket and support material minimums for the next larger width range listed. Belts are available in 1.00 in. (25.4 mm) increments beginning with minimum width of 24 in. (609.6 mm). **If the actual width is critical, consult Customer Service.**
b. These are the minimum number of sprockets. Additional sprockets may be required for heavily loaded applications. The center sprocket should be locked down. See Center Sprocket Offset chart for lock down location

Center Sprocket Offset		
Number of Links	**Offset**	
	in	**mm**
even	0.0	0.0
odd	0.5	12.7

Sprocket Spacing as a Function of Belt Strength Utilized



Solid line: Square Bore

Dashed line: Round Bore

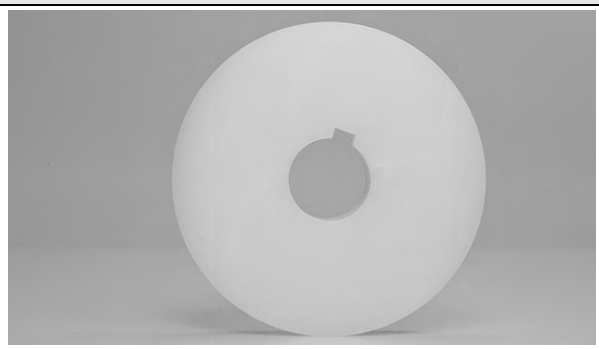
Acetal Sprocket[a]

No. of Teeth (Chordal Action)	Nom. Pitch Dia. in	Nom. Pitch Dia. mm	Nom. Outer Dia. in	Nom. Outer Dia. mm	Nom. Hub Width in	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in	Square in	Round mm	Square mm
13 (1.92%)	6.2	157.5	6.4	162.6	1.2	30.5	2 1-7/16	1.5 2.5		40 60

a. **Contact Customer Service for lead times.**

Support Wheel

Available Pitch Diameter		Available Bore Sizes			
		U.S. Sizes		Metric Sizes	
in	mm	Round in	Square in	Round mm	Square mm
6.3	160	1-7/16 2	1.5 2.5		40 60

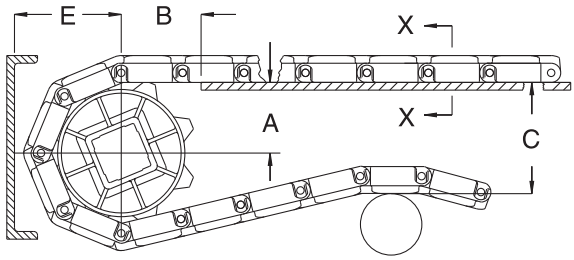


Conveyor Frame Dimensions

Regardless of type or configuration, all conveyors using Intralox belts have some basic dimensional requirements. Specifically, implement dimensions “A”, “B”, “C” and “E” listed in the following table in any design.

For general applications and applications where end transfer of tip-sensitive product is not critical, use the “A” dimension at the bottom of the range.

Conveyor frame dimensions are established using the top of the roller as the top of the belt and the bottom of the module as the bottom of the belt. “B” dimension is based on a 0.5 in (12.7 mm) thick carryway.



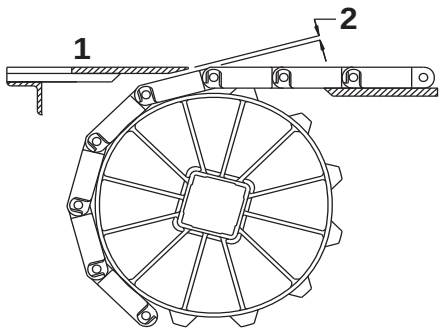
A - ±0.031” (1 mm)
B - ±0.125” (3 mm)
C - ± (Max)
E - ± (Min.)

Sprocket Description			A		B		C		E	
Pitch Diameter		No. Teeth	Range (Bottom to Top)		in	mm	in	mm	in	mm
in	mm		in	mm						
DIRECTDRIVE™ STACKER										
6.3	160	13	2.75-2.84	70-72	2.51	64	6.27	159	3.49	89

Dead Plate Gap

Where there is a transfer point from a belt without finger transfer plates to a dead plate, there should be a gap between the surfaces to allow for the chordal action of the belt. As the belt engages its sprockets, chordal action causes the modules to move past a *fixed* point (the tip of the dead plate) with *varying* clearances. The following table shows the minimum amount of gap which occurs at the "low point" of the modules if the tip of the dead plate just comes in contact with the "high point" as the modules pass.

In some installations, it may be desirable to keep the tip of the dead plate in contact with the belt, rather than allow a gap to occur. This can be done by hinging the mounting bracket for the dead plate. This allows the dead plate to move as the modules pass, but results in a small oscillating motion which may present tippage problems for sensitive containers or products.



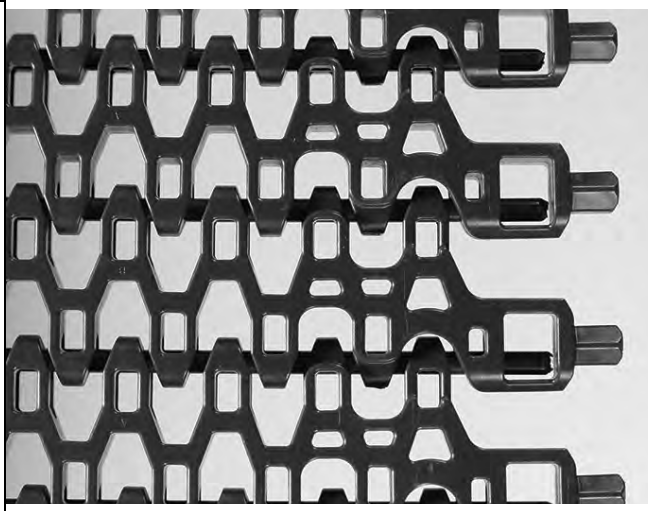
1 - Top surface of dead plate **2 -** Dead plate gap

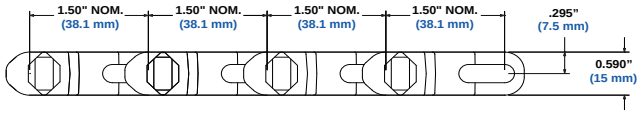
Note: The top surface of the dead plate is typically 0.031 in (0.8 mm) above the belt surface for product transfer onto the belt, and 0.031 in (0.8 mm) below the belt surface for product transfer off the belt.

Sprocket Description			Gap	
Pitch Diameter		No. Teeth	in	mm
in	mm			
6.3	160	13	0.091	2.3

Spiralox® DirectDrive™

	in	mm
Pitch	1.5	38.1
Minimum Width[a]	13.5	343
Maximum Width[a]	61.7	1567
Width Increments	1.0	25.4
Opening Sizes (approx.)	0.52 x 0.39	13 x 10
Open Area (Fully Extended)	44%	
Minimum Open Area (Collapsed)	26%	
Hinge Style	Open	
Drive Method	Hinge-Driven	





Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- The Intralox Spiral Program will help predict the strength requirements of most spiral applications, ensuring that the belt is strong enough for the application.
- Minimum sprocket indent from the inside belt edge and from the outside belt edge may vary. Contact Customer Service to determine exact placement.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Robust edge feature adds strength to the outside edge of the belt.
- Uses headless rods.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Width dimension includes tooth protrusion.

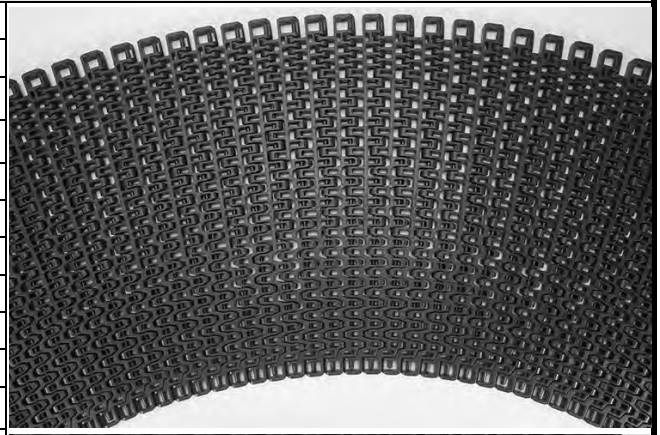
Belt Data

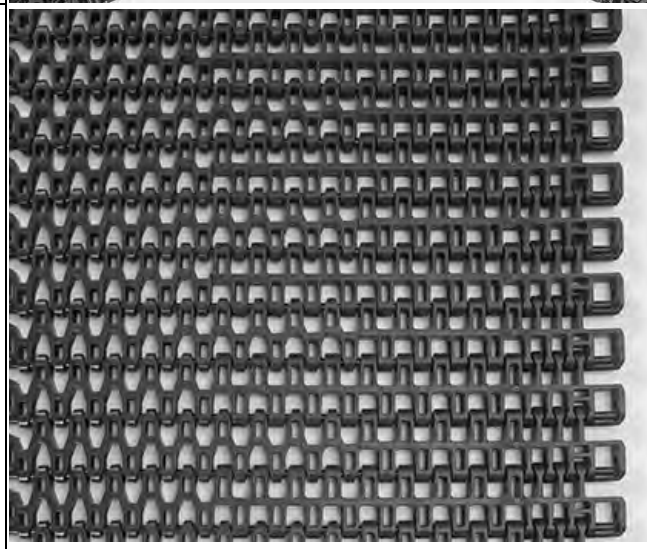
Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb/ft	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.78	8.69
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.46	7.13

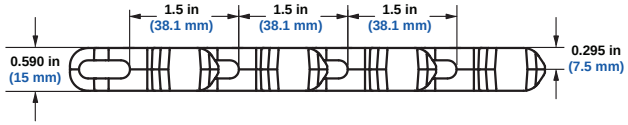
a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.

Spiralox® 1.6

	in	mm
Pitch	1.5	38.1
Minimum Width[a]	13.5	343
Maximum Width[a]	61.7	1567
Width Increments	0.5	12.7
Opening Sizes (approx.)	0.52 x 0.39	13 x 10
Open Area (Fully Extended)	44%	
Minimum Open Area	26%	
Hinge Style	Open	
Drive Method	Center/Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for friction drive, capstan spiral applications with a minimum turn radius of 1.6 times the belt width (measured from the inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most spiral applications, ensuring that the belt is strong enough for the application.
- Minimum sprocket indent from the inside and outside edges of the belt may vary. Discuss exact placement with Intralox Technical Support Group.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Enhanced beam stiffness
- Eliminates product contamination from metal wear debris
- Simple, quick repairs and changeovers
- Cage-friendly inside edge and frame-friendly outside edge
- Robust edge feature adds strength to the outside edge of the belt.
- Uses headless rods.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Personnel should not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

a. Width dimension includes tooth protrusion.

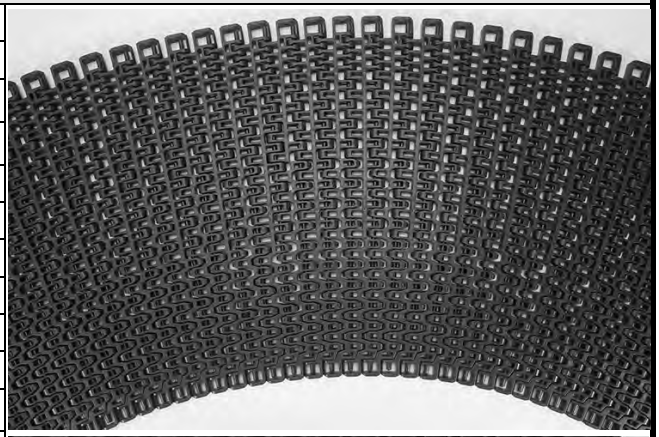
Belt Data

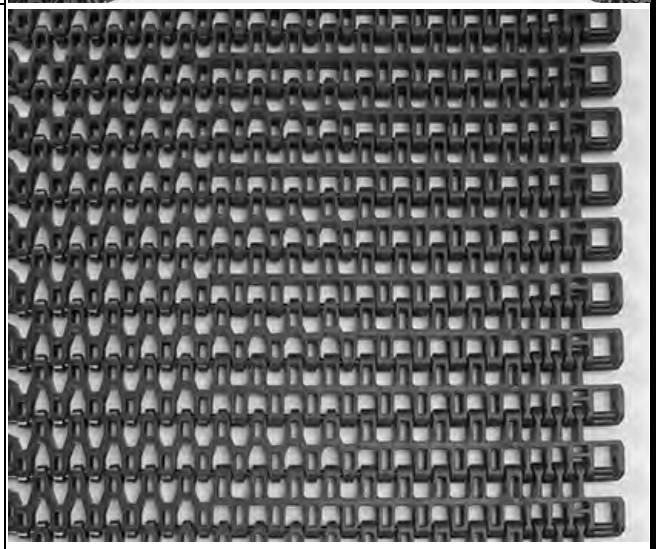
Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb./ft.	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.78	8.69
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.46	7.13

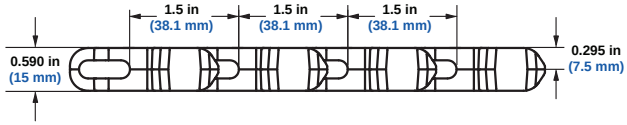
a. Published curved belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of curve belt strengths.

Spiralox® 2.2

	in	mm
Pitch	1.5	38.1
Minimum Width[a]	13.5	343
Maximum Width[a]	61.7	1567
Width Increments	0.5	12.7
Opening Sizes (approx.)	0.52 x 0.39	13 x 10
Open Area (Fully Extended)	44%	
Minimum Open Area	26%	
Hinge Style	Open	
Drive Method	Center/Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for friction drive, capstan spiral applications with a minimum turn radius of 2.2 times the belt width (measured from the inside edge).
- The Intralox Spiral Program will help predict the strength requirements of most spiral applications, ensuring that the belt is strong enough for the application.
- Minimum sprocket indent from the inside and outside edges of the belt may vary. Discuss exact placement with Intralox Technical Support Group.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- Enhanced beam stiffness
- Eliminates product contamination from metal wear debris
- Simple, quick repairs and changeovers
- Cage-friendly inside edge and frame-friendly outside edge
- Robust edge feature adds strength to the outside edge of the belt.
- Uses headless rods.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Personnel should not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

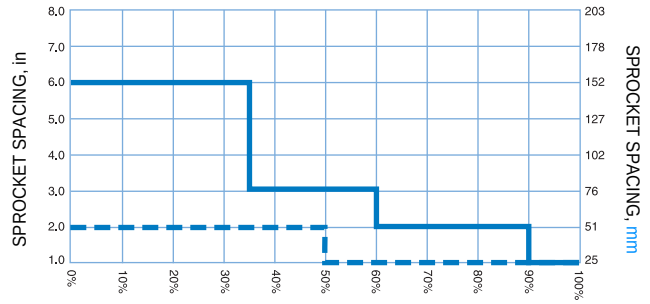
a. Width dimension includes tooth protrusion.

Belt Data

Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)		W Belt Weight	
		lb./ft.	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	1.78	8.69
SELM	Acetal	500	744	375	170	-50 to 200	-46 to 93	1.46	7.13

a. Published curved belt strengths and their method of calculation vary among spiral belt manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of curve belt strengths.

Sprocket Spacing as a Function of Belt Strength Utilized

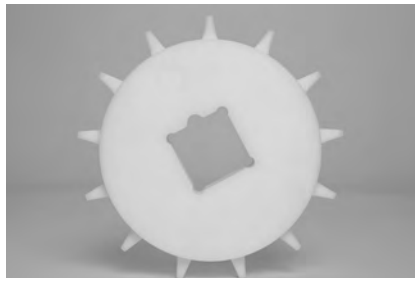


Solid line: Square Bore

Dashed line: Round Bore

Acetal Sprocket[a]

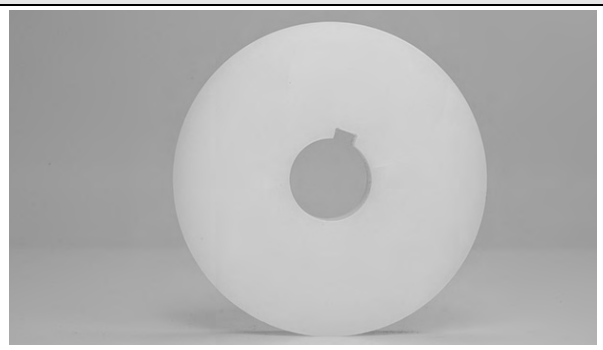
No. of Teeth (Chordal Action)	Nom. Pitch Dia. in	Nom. Pitch Dia. mm	Nom. Outer Dia. in	Nom. Outer Dia. mm	Nom. Hub Width in	Nom. Hub Width mm	Available Bore Sizes			
							U.S. Sizes		Metric Sizes	
							Round in	Square in	Round mm	Square mm
13 (2.97%)	6.2	157	6.4	163	1.2	30.5	1-7/16 2	1.5 2.5		40 60



a. **Contact Customer Service for lead times.**

Support Wheel

Available Pitch Diameter		Available Bore Sizes			
		U.S. Sizes		Metric Sizes	
in	mm	Round in	Square in	Round mm	Square mm
6.3	160	1-7/16 2	1.5 2.5		40 60



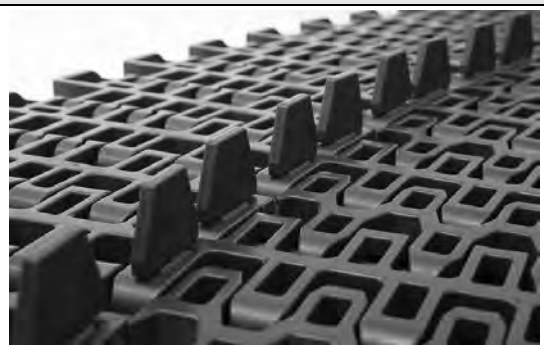
Overlapping Sideguards

Available Height		Available Materials
in	mm	
0.50	12.7	Acetal
1.0	25.4	Acetal

Note: Maximizes product carrying capacity: they fit into the very edge of the belt, with no indent.
Note: Assembly does not require “finger cuts” on the modules, so the belt’s beam strength is uncompromised.
Note: Turn ratio for 0.50 in (12.7 mm) Overlapping Sideguards is 1.6.
Note: Makes the belt’s outer edge more snag-resistant.
Note: Keeps small products from falling through belt gaps.

Lane Dividers

Available Height		Available Materials
in	mm	
0.75	19	Acetal, SELM

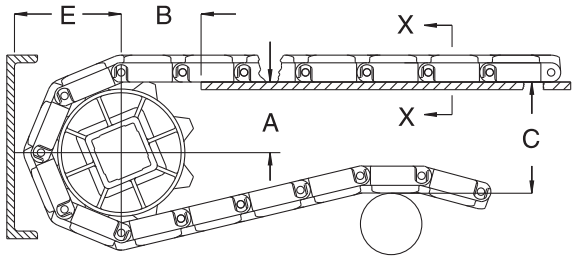


Conveyor Frame Dimensions

Regardless of type or configuration, all conveyors using Intralox belts have some basic dimensional requirements. Specifically, dimensions "A", "B", "C" and "E" listed below should be implemented in any design.

For general applications and applications where end transfer of tip-sensitive product is not critical, use the "A" dimension at the bottom of the range.

Conveyor frame dimensions are established using the top of the roller as the top of the belt and the bottom of the module as the bottom of the belt. "B" dimension is based on a 0.5 in (12.7 mm) thick carryway.



A - ±0.031" (1 mm)
B - ±0.125" (3 mm)
C - ± (Max)
E - ± (Min)

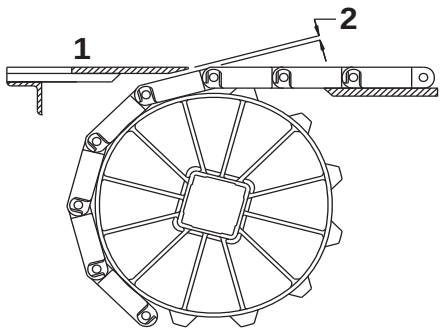
Complete descriptions of the dimensions are listed on page 423.

Sprocket Description			A		B		C		E	
Pitch Diameter		No. Teeth	Range (Bottom to Top)		in.	mm	in.	mm	in.	mm
in.	mm		in.	mm						
SPIRALOX® DirectDrive										
6.3	160	13	2.75-2.84	70-72	2.51	64	6.27	159	3.49	89

Dead Plate Gap

Where there is a transfer point from a belt without finger transfer plates to a dead plate, there should be a gap between the surfaces to allow for the chordal action of the belt. As the belt engages its sprockets, chordal action causes the modules to move past a *fixed* point (the tip of the dead plate) with *varying* clearances. The table below shows the minimum amount of gap which occurs at the "low point" of the modules if the tip of the dead plate just comes in contact with the "high point" as the modules pass.

In some installations it may be desirable to keep the tip of the dead plate in contact with the belt, rather than allow a gap to occur. This can be done by hinging the mounting bracket for the dead plate. This allows the dead plate to move as the modules pass, but results in a small oscillating motion which may present tippage problems for sensitive containers or products.



1 - Top surface of dead plate **2 -** Dead plate gap

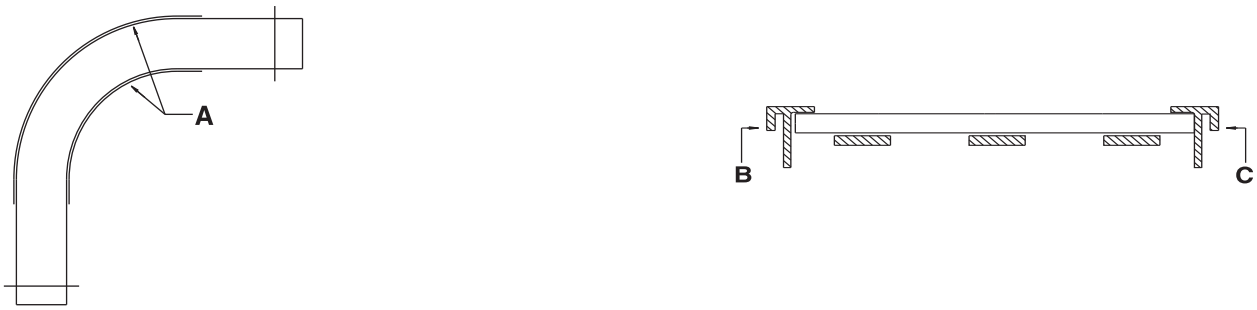
Note: The top surface of the dead plate is typically 0.031 in. (0.8 mm) above the belt surface for product transfer onto the belt, and 0.031 in. (0.8 mm) below the belt surface for product transfer off the belt.

Sprocket Description			Gap	
Pitch Diameter		No. Teeth	in.	mm
in.	mm			
6.3	160	13	0.091	2.3

HOLD DOWN RAILS AND WEARSTRIPS

Intralox recommends using continuous hold down rails through an entire turn, starting at a distance of 1X the belt width before the turn and ending 1X the belt width after the turn. This applies to both carryway and returnway. The use of hold down rails along both side of the belt over the full carryway is recommended but not mandatory. See *"Custom wearstrips"* (page 416).

FLUSH EDGE WITH WEARSTRIP



A - HOLD DOWN RAIL PLACEMENT

B - OUTSIDE HOLD DOWN RAIL

C - INSIDE HOLD DOWN RAIL

Fig. 2–14 HOLD DOWN RAILS AND WEARSTRIPS FOR SERIES 2900 FLAT-TURNS

BELT SELECTION INSTRUCTIONS

ENGINEERING PROGRAM ANALYSIS FOR SERIES 2900

Intralox Customer Service Technical Support Group can calculate the estimated belt pull for radius applications using **Series 2900**. The following information is required (refer to *"Radius belt data sheet"* (page 469)):

- Any environmental conditions which may affect the friction coefficient (for dirty or abrasive conditions, use higher friction coefficients than normal)
- Belt width
- Length of each straight run
- Turning angle of each turn
- Turn direction of each turn
- Inside turning radius of each turn
- Carryway/hold down rail material
- Product loading lb/ft² (kg/m²)
- Product back-up conditions
- Belt speed
- Elevation changes on each section
- Operating temperatures.

For assistance with radius belt and low-tension capstan drive spiral selections, contact Intralox Customer Service Technical Support Group. The Engineering Program should be run to ensure that the belt is strong enough for the radius application in question.

SERIES 2900 DESIGN GUIDE SUMMARY
For more information, see the ***Installation, Maintenance and Troubleshooting manual*** available from Intralox.

A - The minimum turning radius for **Series 2900** is 1.6 times the belt width, measured from the inside edge for the standard edge.

B - The minimum straight run required between turns of opposing direction is 1.6 times the belt width. Shorter straight sections will lead to high wear on the edge guide rail and high pull stresses in the belt.

C - There is no minimum straight run required between turns that are in the same direction.

D - The minimum final straight run (leading to the drive shaft) should be a minimum of 5 ft. (1.5 m). If 5 ft. (1.5 m) is not feasible, a shorter distance (down to 1.5 times belt width) would require a weighted take up in order to avoid sprocket wear and tracking problems. See *"Special Take-Up Arrangements"* (page 431).

E - The minimum length of the first straight run (immediately after the idle shaft) is 1.5 times the belt width. When shorter lengths are required (down to 1.0 times the width), an idle roller may be used in place of sprockets.

F - IDLE SHAFT

G - 1ST TURN

H - BELT WIDTH

I - BELT TRAVEL

J - 2ND TURN

K - DRIVE MOTOR

L - DRIVE SHAFT

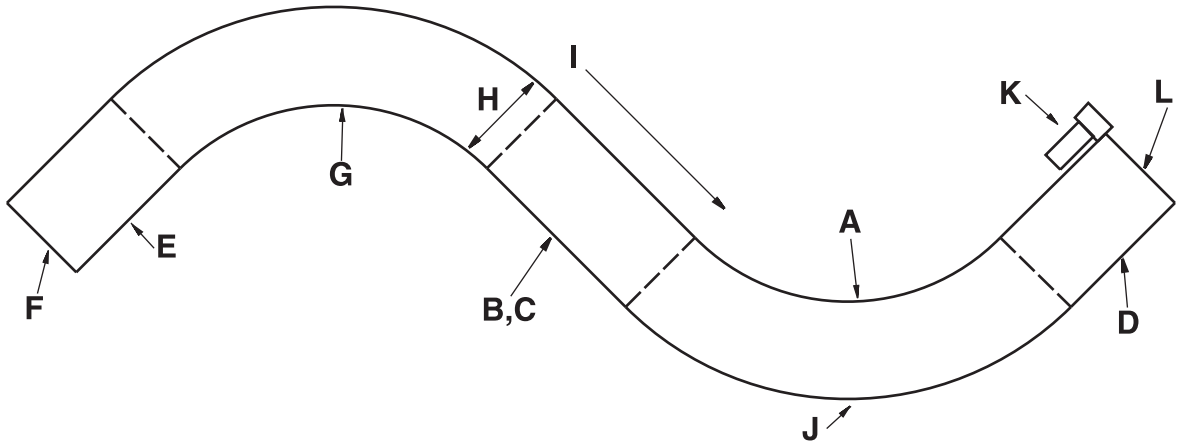
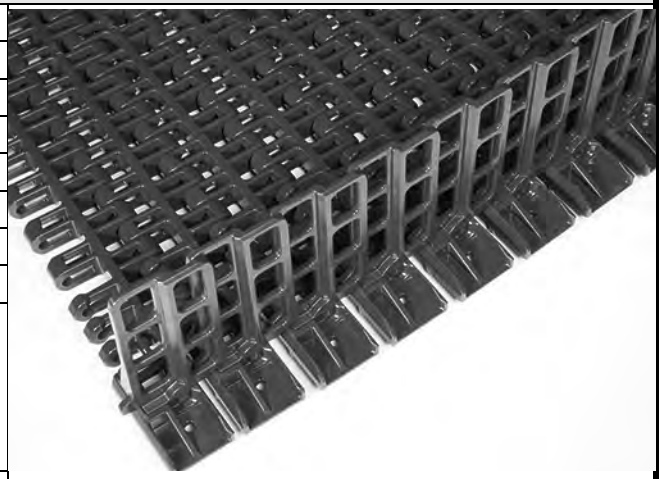
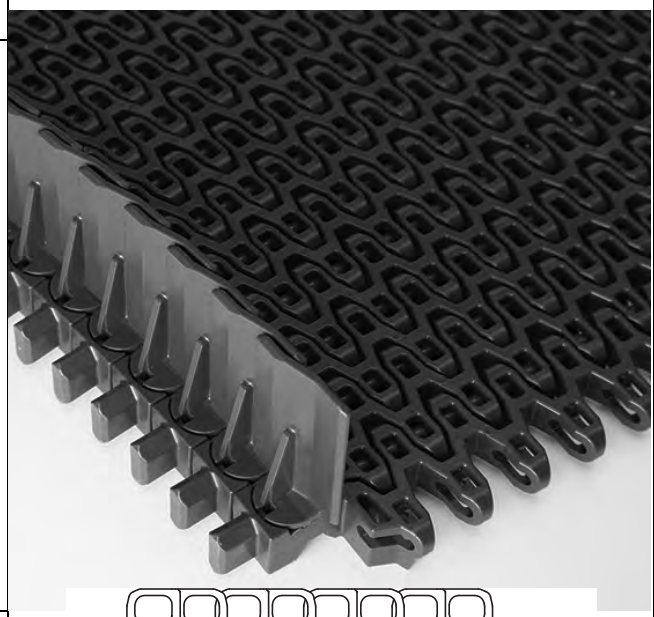


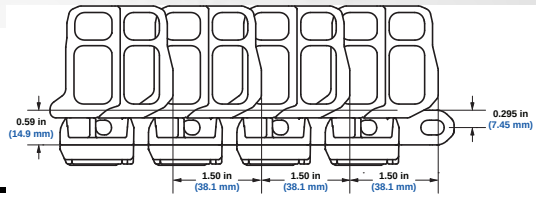
Fig. 2–15 TYPICAL 2-TURN RADIUS LAYOUT

DirectDrive™ Stacker

	in	mm
Pitch	1.5	38.1
Minimum Width	12	304.8
Width Increments	1.00	25.4
Opening Sizes (approx.)	0.52 x 0.39	13.0 x 10.0
Open Area (Fully Extended)	44%	
Minimum Open Area	26%	
Hinge Style	Open	
Drive Method	Hinge-Driven	







Product Notes

- **Contact Intralox for precise belt measurements and stock status before designing equipment or ordering a belt.**
- Designed for stacker applications using the patented DirectDrive technology.
- The Intralox Spiral Program can help predict the strength requirements of most spiral applications, ensuring the belt is strong enough for the application. Contact our Technical Service Group for more information.
- Lightweight, strong belt with smooth surface grid for good product release.
- Relatively uniform open area across the width of the belt to aid in freezing and cooling of product.
- Belt openings pass straight through the belt, making the belt easy to clean.
- 60 mm, 80 mm, & 100 mm tier spacing available.
- Sideplates are permanently installed and cannot be replaced.
- Uses headless rods.

WARNING: Do not place fingers in or on this belt. Fingers can get trapped in belt openings, resulting in personal injury. This belt has pinch points due to the belt spreading and collapsing as it flexes to follow the conveyor path. Pinch points can trap fingers, hair, or clothing, causing personal injury. Do not wear loose clothing, loose gloves, or hand/finger jewelry when working near this belt. Call Customer Service for tags, flyers, and stickers containing this warning.

Additional Information

- See *"Belt Selection Process"* (page 5)
- See *"Standard Belt Materials"* (page 9)
- See *"Special Application Belt Materials"* (page 9)
- See *"Friction Factors"* (page 13)

Belt Data

Belt Material	Standard Rod Material Ø 0.240 in (6.1 mm)	BS Straight Belt Strength		Spiral Belt Strength[a]		Temperature Range (continuous)[b]		W Belt Weight	
		lb./ft	kg/m	lbs.	kg	°F	°C	lb./ft.²	kg/m²
Acetal	Acetal	1600	2381	475	215	-50 to 200	-46 to 93	2.18	10.64

a. Published spiral belt strengths and their method of calculation vary among spiral manufacturers. Please consult an Intralox Spiral Engineer for accurate comparison of spiral belt strengths.
b. Sideflexing applications should not exceed 180 °F (82 °C).