



QUICK DESIGN GUIDE AND RULES OF THUMB

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CHAIN

[GENERAL GUIDELINES]

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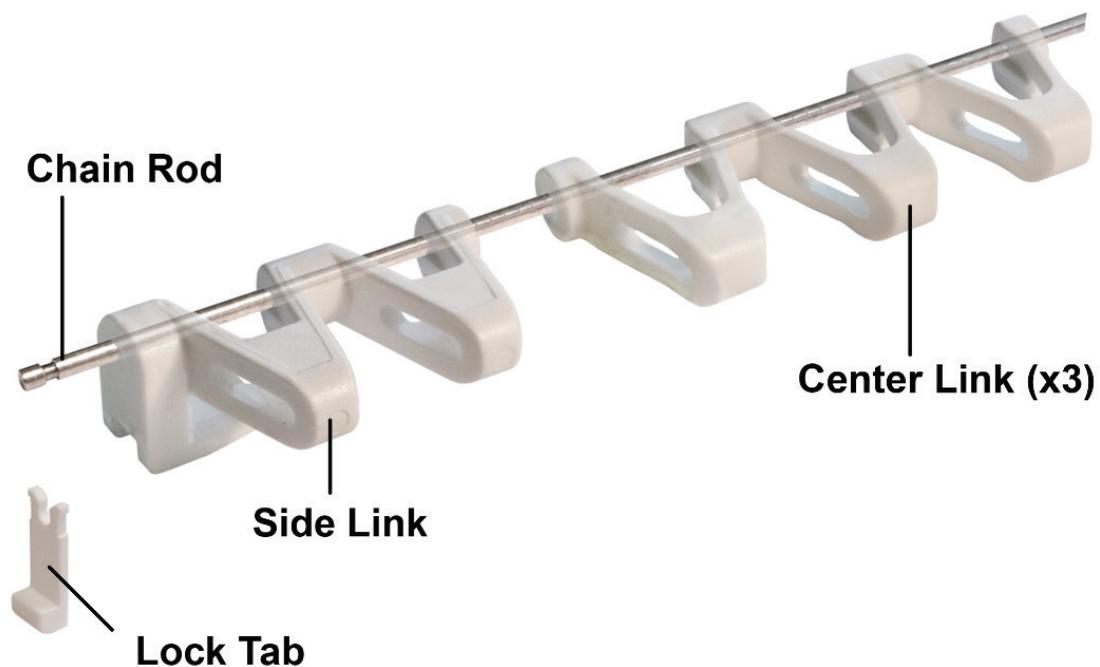
CHAIN STRUCTURE

Square Matrix Design

Span Tech builds its chain on a square matrix. The square matrix allows for fewer parts and chain that can be repaired or replaced in a very short amount of time.

Copy Exact

All chain rods made by Span Tech are identical from one day to the next, from one year to the next. A replacement rod bought 10 years after the sale of the system will be an exact match to the original.



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CHAIN GENERAL

As a rule of thumb, there are four basic types of product movement on a conveyor:

- 1. Product Transport**
- 2. Product Incline**
- 3. Product Decline**
- 4. Product Accumulation**

The following guidelines will assist in designing the proper chain options for various applications.

Plain Chain [1A]

Span Tech's plain chain is used for typical product transportation. Plain chain is also ideal for applications requiring accumulation because of its edgeless design. Guide rails are added to retain the product while in accumulation. Most products will normally incline up a grade of 5° and decline down a grade of 7°. When steeper angles are necessary, high friction chain should be used.

Pillow Top [1B]

Pillow Top is a perfect application for food production facilities. The innovative Pillow Top design allows the conveyor to sit as close to the transfer unit as possible. This results in successful transferring of very small products which could otherwise get caught or snagged in more traditional transfers.

👍 Pillow Top chain conveyors handle the most delicate products with ease and precision while offering a very tight turning radius for the chain width.

Moving Side Guides [1C]

Moving side guides, which are molded to the left and right side links, move along with the conveyor providing positive retention of products during transportation. Moving side guides also work extremely well with products that move in mass flow, like frozen sausage balls.

👍 Product accumulation cannot occur when moving side guides are used.

👍 Product side to side transfers can not occur when moving side guides are used.

Raised Top Chain [1D]

Span Tech's raised top chain is typically used with finger transfer plates when conveyor end to end transfer of a product is necessary. Raised top chain can also be used to reduce the amount of contact between the chain and product.

Closed Top Chain [1E]

Sometimes you need a conveyor chain with a smooth, closed carrying surface. With no open areas, Closed Top chain adds a measure of safety perfect for operator stations. Closed Top chain has an internal roller which results in extremely low running friction. This means you have the option of creating extra long conveyors of 100' or more.

👍 Closed top conveyors are straight running, but can carry heavier products due to its robust design.

Accumulation Chain [1F & 2F]

The accumulation chain option is essential for products requiring low back pressure. Back pressure is reduced by approximately 1/2 eliminating chain product damage.

👍 Products can incline or decline up to 2° when using accumulation chain patterns.

👍 Roller chain patterns require plain acetal links to interface with the drive sprockets for pulling the chain around the conveyor.

High Friction Chain [1G]

If a product must be inclined or declined at grades steeper than plain chain will accommodate, a higher friction chain is needed. Since Span Tech chain is modular, the center links can be made of a high friction material. As a rule of thumb, high friction links can incline or decline products a maximum of 25° depending on the products coefficient of friction.

👍 Product accumulation cannot occur when using high friction chain.

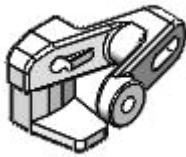
👍 High friction chain patterns require plain acetal links to interface with the drive sprockets for pulling the chain around the conveyor

Cleated Chain [1H]

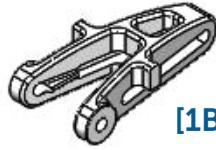
When it is necessary to elevate or lower products at angles greater than the maximum of 25° provided by high friction chain, cleated chain should be used.

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CHAIN GENERAL



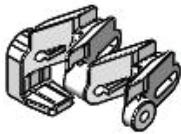
[1A]



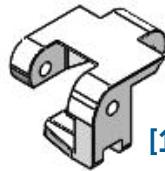
[1B]



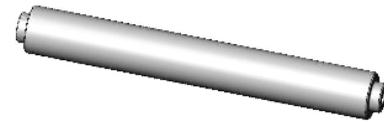
[1C]



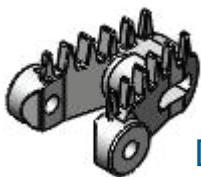
[1D]



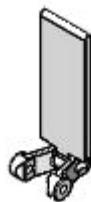
[1E]



[1F]



[1G]



[1H]



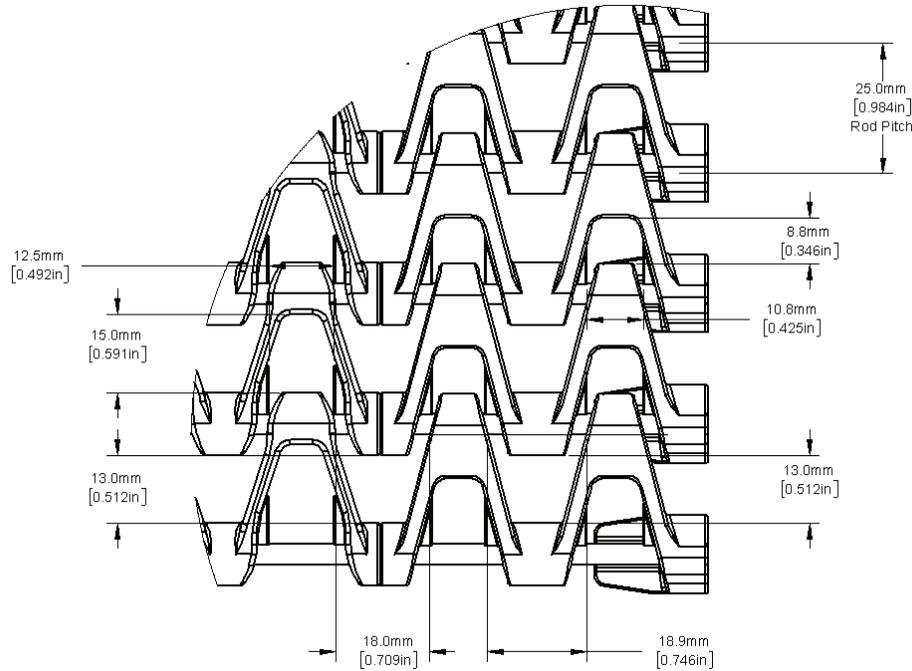
[2F]

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CHAIN DIMENSIONS

The following illustrations are plan views of chain for each conveyor type within the Span Tech family of conveyors. The dimensions shown represent basic openings for each particular type of chain.

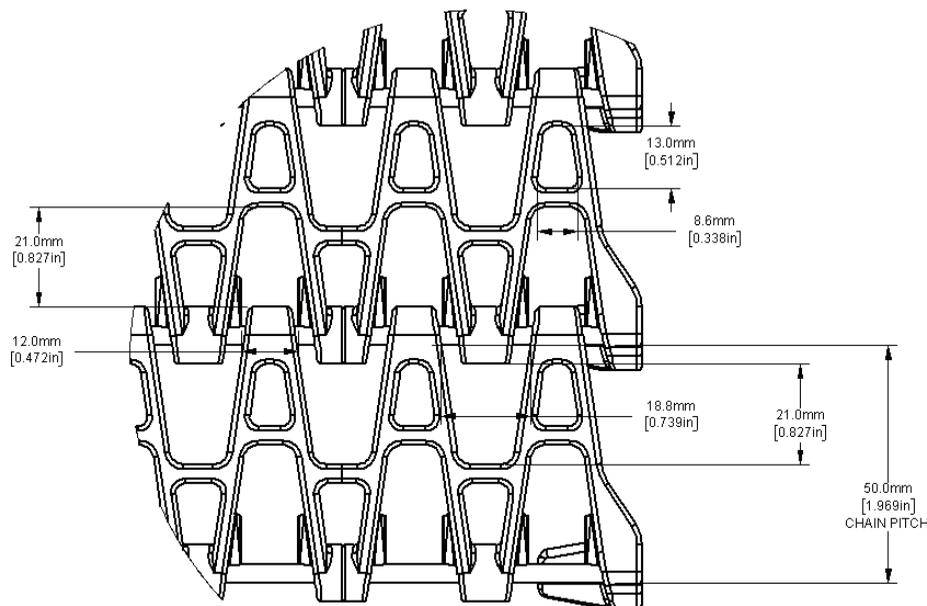
Please use the following rules when determining product size limitations for general transport and accumulate functions for each of the conveyor types within the Span Tech family.



25mm SuperTight

👍 **25mm SuperTight Plain Chain**
Smallest Product Limitation
≥1.0" (25.4mm) Dia.

👍 **25mm SuperTight Raised Top Chain**
Smallest Product Limitation
≥1.125" (28.58mm) Dia.



50mm SuperTight

👍 **50mm SuperTight Plain Chain**
Smallest Product Limitation
≥1.0" (25.4mm) Dia.

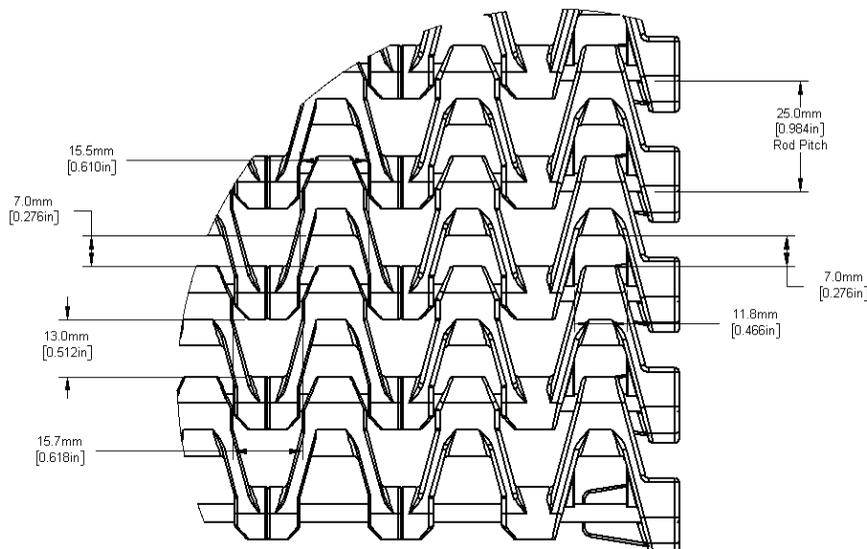
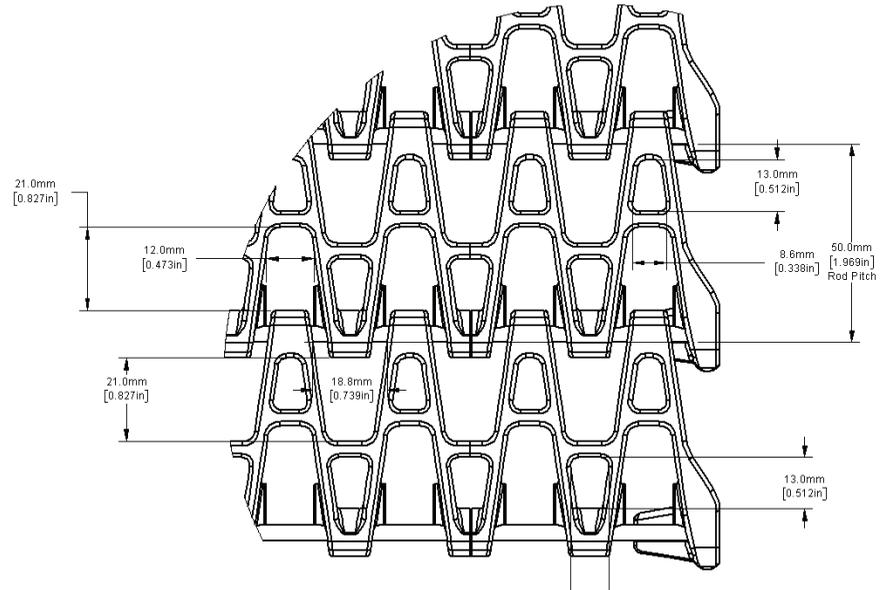
👍 **50mm Super Tight Raised Top Chain**
Smallest Product Limitation
≥1.75" (44.45mm) Dia.

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50mm Pillow Top

👍 **50mm Pillow Top Plain Chain**
Smallest Product Limitation
 $\geq 1.0"$ (25.4mm) Dia.

👍 **50mm Pillow Top Raised Top Chain**
Smallest Product Limitation
 $\geq 1.75"$ (44.45mm) Dia.

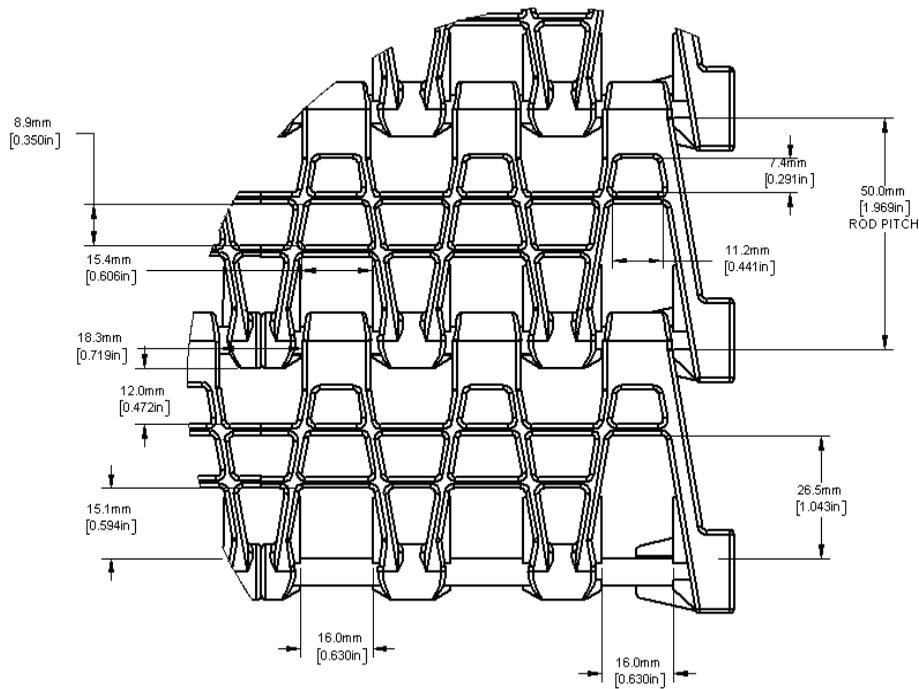


25mm MultiSpan

👍 **MultiSpan Plain Chain**
Smallest Product Limitation
 $\geq 1.0"$ (25.4mm) Dia.

👍 **MultiSpan Raised Top Chain**
Smallest Product Limitation
 $\geq 1.125"$ (28.58mm) Dia.

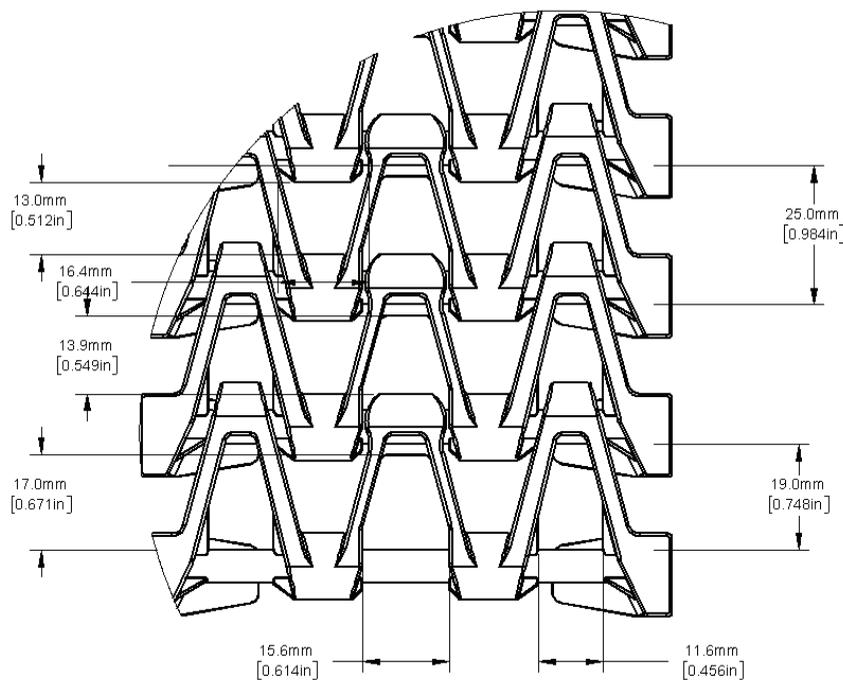
The information that has been provided are guidelines only. This does not represent all design variations possible. For detailed or specific design requirements please contact a representative or email info@spantechllc.com.



50mm MaxiSpan

👍 **MaxiSpan Plain Chain**
Smallest Product Limitation
 $\geq 1.0''$ (25.4mm) Dia.

👍 **MaxiSpan Raised Top Chain**
Smallest Product Limitation
 $\geq 1.75''$ (44.45mm) Dia.



25mm MonoSpan

👍 **MonoSpan Plain Chain**
Smallest Product Limitation
 $\geq 1.0''$ (25.4mm) Dia or Sq.

👍 **MonoSpan Raised Top Chain**
Smallest Product Limitation
 $\geq 1.125''$ (28.58mm) Dia.

standard width
 3.76" (95.6mm)

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CHAIN GUIDELINES

The absolute minimum centerline turning radius for any of Span Tech conveyors is 18.0" (457.20mm) for aluminum framing and 21.0" (533.40mm) for stainless steel framing.

Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return	Horizontal Bend Centerline Radius Aluminum (Inches)	Horizontal Bend Centerline Radius Stainless Steel (Inches)	Helical Bend Centerline Radius (Inches)
3.76	95.6	1	0	0	18	21	33.88
4.94	125.6	2	0	0	18	21	34.47
6.13	155.6	2	0	0	18	21	35.06
7.31	185.6	2	0	0	18	21	35.65
8.49	215.6	2	0	0	18	21	36.24
9.67	245.6	2	0	0	19.50	21	36.83
10.85	275.6	2	0	0	22.21	22.21	37.43
12.03	305.6	3	0	0	24.91	24.91	38.02
13.21	335.6	3	1	0	27.61	27.61	38.61
14.39	365.6	3	1	0	30.31	30.31	39.20
15.57	395.6	3	1	0	33.02	33.02	39.79
16.76	425.6	3	1	0	35.74	35.74	40.38
17.94	455.6	4	2	0	38.44	38.44	40.97
19.12	485.6	4	2	0	41.15	41.15	41.56
20.30	515.6	4	2	0	43.85	43.85	43.85
21.48	545.6	5	3	0	46.55	46.55	46.55
22.66	575.6	5	3	0	49.25	49.25	49.25
23.84	605.6	5	3	0	51.95	51.95	51.95
25.02	635.6	5	3	1	54.66	54.66	54.66
26.20	665.6	5	3	1	57.36	57.36	57.36
27.39	695.6	5	3	1	60.08	60.08	60.08
28.57	725.6	5	3	1	62.79	62.79	62.79
29.75	755.6	5	3	1	65.49	65.49	65.49
30.93	785.6	5	3	1	68.19	68.19	68.19
32.11	815.6	5	3	1	70.89	70.89	70.89
33.29	845.6	6	4	1	73.59	73.59	73.59
34.47	875.6	6	4	1	76.30	76.30	76.30
35.65	905.6	6	4	1	79.00	79.00	79.00
36.83	935.6	6	4	1	81.70	81.70	81.70
38.02	965.6	7	5	1	84.43	84.43	84.43
39.20	995.6	7	5	1	87.13	87.13	87.13
40.38	1025.6	7	5	1	89.83	89.83	89.83
41.56	1055.6	7	5	1	92.53	92.53	92.53
42.74	1085.6	7	5	1	95.24	95.24	95.24
43.92	1115.6	7	5	1	97.94	97.94	97.94
45.10	1145.6	7	5	1	100.64	100.64	100.64
46.28	1175.6	7	5	1	103.34	103.34	103.34
47.46	1205.6	8	6	2	106.04	106.04	106.04

25mm SuperTight Centerline Bend Radius = CW * 2.29 - 2.64"

25MM SUPERTIGHT

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Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return	Horizontal Bend Centerline Radius Aluminum (Inches)	Horizontal Bend Centerline Radius Stainless Steel (Inches)	Helical Bend Centerline Radius (Inches)
3.76	95.6	1	0	0	18	21	33.88
4.94	125.6	2	0	0	18	21	34.47
6.13	155.6	2	0	0	18	21	35.06
7.31	185.6	2	0	0	18	21	35.65
8.49	215.6	2	0	0	18	21	36.24
9.67	245.6	2	0	0	18.66	21	36.83
10.85	275.6	2	0	0	20.94	21	37.43
12.03	305.6	3	0	0	23.22	23.22	38.02
13.21	335.6	3	1	0	25.50	25.50	38.61
14.39	365.6	3	1	0	27.77	27.77	39.20
15.57	395.6	3	1	0	30.05	30.05	39.79
16.76	425.6	3	1	0	32.35	32.35	40.38
17.94	455.6	4	2	0	34.62	34.62	40.97
19.12	485.6	4	2	0	36.90	36.90	41.56
20.30	515.6	4	2	0	39.18	39.18	42.15
21.48	545.6	5	3	0	41.46	41.46	42.74
22.66	575.6	5	3	0	43.73	43.73	43.33
23.84	605.6	5	3	0	46.01	46.01	43.92
25.02	635.6	5	3	1	48.29	48.29	45.66
26.20	665.6	5	3	1	50.57	50.57	47.94
27.39	695.6	5	3	1	52.86	52.86	52.86
28.57	725.6	5	3	1	55.14	55.14	55.14
29.75	755.6	5	3	1	57.42	57.42	57.42
30.93	785.6	5	3	1	59.70	59.70	59.70
32.11	815.6	5	3	1	61.97	61.97	61.97
33.29	845.6	6	4	1	64.25	64.25	64.25
34.47	875.6	6	4	1	66.53	66.53	66.53
35.65	905.6	6	4	1	68.81	68.81	68.81
36.83	935.6	6	4	1	71.08	71.08	71.08
38.02	965.6	7	5	1	73.38	73.38	73.38
39.20	995.6	7	5	1	75.66	75.66	75.66
40.38	1025.6	7	5	1	77.93	77.93	77.93
41.56	1055.6	7	5	1	80.21	80.21	80.21
42.74	1085.6	7	5	1	82.49	82.49	82.49
43.92	1115.6	7	5	1	84.77	84.77	84.77
45.10	1145.6	7	5	1	87.04	87.04	87.04
46.28	1175.6	7	5	1	89.32	89.32	89.32
47.46	1205.6	8	6	2	91.60	91.60	91.60
50mm SuperTight Centerline Bend Radius = CW * 1.93							

50MM SUPERTIGHT

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Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return
3.76	95.6	1	0	0
4.94	125.6	2	0	0
6.13	155.6	2	0	0
7.31	185.6	2	0	0
8.49	215.6	2	0	0
9.67	245.6	2	0	0
10.85	275.6	2	0	0
12.03	305.6	3	0	0
13.21	335.6	3	1	0
14.39	365.6	3	1	0
15.57	395.6	3	1	0
16.76	425.6	3	1	0
17.94	455.6	4	2	0
19.12	485.6	4	2	0
20.30	515.6	4	2	0
21.48	545.6	5	3	0
22.66	575.6	5	3	0
23.84	605.6	5	3	0
25.02	635.6	5	3	1
26.20	665.6	5	3	1
27.39	695.6	5	3	1
28.57	725.6	5	3	1
29.75	755.6	5	3	1
30.93	785.6	5	3	1
32.11	815.6	5	3	1
33.29	845.6	6	4	1
34.47	875.6	6	4	1
35.65	905.6	6	4	1
36.83	935.6	6	4	1
38.02	965.6	7	5	1
39.20	995.6	7	5	1
40.38	1025.6	7	5	1
41.56	1055.6	7	5	1
42.74	1085.6	7	5	1
43.92	1115.6	7	5	1
45.10	1145.6	7	5	1
46.28	1175.6	7	5	1

CLOSED TOP

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Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return	Horizontal Bend Centerline Radius Aluminum (Inches)	Horizontal Bend Centerline Radius Stainless Steel (Inches)	Helical Bend Centerline Radius (Inches)
3.76	95.6	1	0	0	18	21	33.88
4.94	125.6	2	0	0	18	21	34.47
6.13	155.6	2	0	0	19.12	21	35.06
7.31	185.6	2	0	0	22.80	22.80	35.65
8.49	215.6	2	0	0	26.48	26.48	36.24
9.67	245.6	2	0	0	30.17	30.17	36.83
10.85	275.6	2	0	0	33.85	33.85	37.43
12.03	305.6	3	0	0	37.53	37.53	38.02
13.21	335.6	3	1	0	41.22	41.22	41.22
14.39	365.6	3	1	0	44.90	44.90	44.90
15.57	395.6	3	1	0	48.58	48.58	48.58
16.76	425.6	3	1	0	52.29	52.29	52.29
17.94	455.6	4	2	0	55.97	55.97	55.97
19.12	485.6	4	2	0	59.65	59.65	59.65
20.30	515.6	4	2	0	63.33	63.33	63.33
21.48	545.6	5	3	0	67.02	67.02	67.02
22.66	575.6	5	3	0	70.70	70.70	70.70
23.84	605.6	5	3	0	74.38	74.38	74.38
25.02	635.6	5	3	1	78.06	78.06	78.06
26.20	665.6	5	3	1	81.74	81.74	81.74
27.39	695.6	5	3	1	85.46	85.46	85.46
28.57	725.6	5	3	1	89.14	89.14	89.14
29.75	755.6	5	3	1	92.82	92.82	92.82
30.93	785.6	5	3	1	96.5	96.5	96.5
32.11	815.6	5	3	1	100.18	100.18	100.18
33.29	845.6	6	4	1	103.87	103.87	103.87
34.47	875.6	6	4	1	107.55	107.55	107.55
35.65	905.6	6	4	1	111.23	111.23	111.23
36.83	935.6	6	4	1	114.91	114.91	114.91
38.02	965.6	7	5	1	118.62	118.62	118.62
39.20	995.6	7	5	1	122.30	122.30	122.30
40.38	1025.6	7	5	1	125.99	125.99	125.99
41.56	1055.6	7	5	1	129.67	129.67	129.67
42.74	1085.6	7	5	1	133.35	133.35	133.35
43.92	1115.6	7	5	1	137.03	137.03	137.03
45.10	1145.6	7	5	1	140.71	140.71	140.71
46.28	1175.6	7	5	1	144.39	144.39	144.39
47.46	1205.6	8	6	2	148.08	148.08	148.08
MultiSpan Centerline Bend Radius = CW*3.12							

MULTISPAN

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Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return	Horizontal Bend Centerline Radius Aluminum (Inches)	Horizontal Bend Centerline Radius Stainless Steel (Inches)
8.24	209.2	2	2	0	21.75	21.75
12.17	309.2	3	3	0	35.45	35.45
16.11	409.2	4	4	0	49.15	49.15
20.05	509.2	5	5	0	62.85	62.85
23.98	609.2	6	6	1	76.56	76.56
27.92	709.2	7	7	1	90.26	90.26
31.86	809.2	8	8	1	103.96	103.96
35.80	909.2	9	9	1	117.66	117.66
39.73	1009.2	10	10	1	131.36	131.36
43.67	1109.2	11	11	1	145.06	145.06
47.61	1209.2	12	12	1	158.76	158.76

MAXISPAN

Chain Width inches	Chain Width MM	No. of Sprockets	Chain Support Rails Top	Chain Support Rails Return	Horizontal Bend Centerline Radius Aluminum (Inches)	Horizontal Bend Centerline Radius Stainless Steel (Inches)
3.76	95.6	1	0	0	21	21
7.53	191.26	2	0	0	23.49	23.49
11.29	286.77	2	0	0	35.22	35.22
15.06	382.52	2	0	0	46.99	46.99

MonoSpan is a fixed width of 3.76" when requiring a wider width conveying surface multiple chain modules are used.

MONOSPAN

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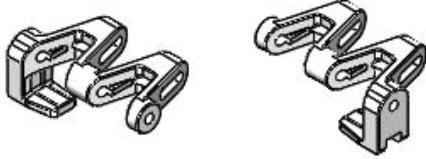
CHAIN TYPES

[SUPERTIGHT CHAIN]

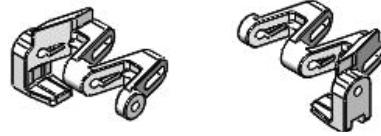
The information that has been provided are guidelines only. This does not represent all design variations possible. For detailed or specific design requirements please contact a representative or email info@spantechllc.com.

ACETAL LINKS

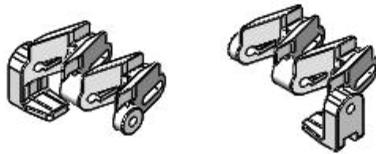
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



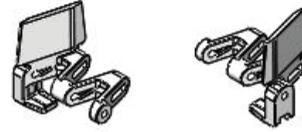
DS0126-02A - LEFT HAND PLAIN
DS0127-02A - RIGHT HAND PLAIN



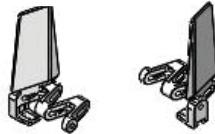
DS0128-03A - LH MSG 6MM
DS0129-03A - RH MSG 6MM



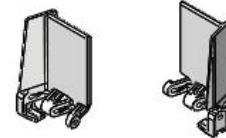
DS0132-02A - LH RAISED 6MM
DS0133-02A - RH RAISED 6MM



DS0136-01A-30 - LH 30MM MSG
DS0137-01A-30 - RH 30MM MSG



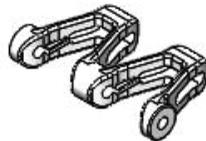
DS0136-01A - LH 75MM MSG
DS0137-01A - RH 75MM MSG



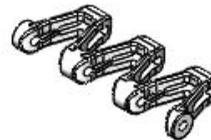
DS0138-01A - LH 75MM MSG/PUSHER
DS0139-01A - RH 75MM MSG/PUSHER



DS-C-ST-PL-1-A
PLAIN CENTER
1 LINK



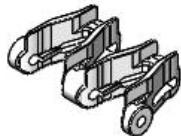
DS-C-ST-PL-2-A
PLAIN CENTER
2 LINK



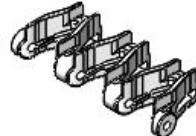
DS-C-ST-PL-3-A
PLAIN CENTER
3 LINK



DS0134-02A
PLAIN CENTER
7 LINK



DS C ST 6MM RT 2 A
6 MM RAISED CENTER
2 LINK



DS C ST 6MM RT 3 A
6MM RAISED CENTER
3 LINK



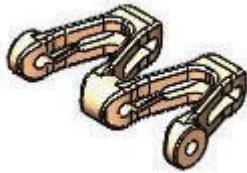
DS0135-02A
6MM RAISED CENTER
7 LINK

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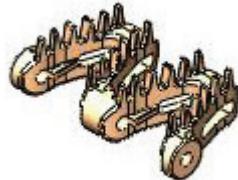
SANTOPRENE & POLYURETHANE LINKS

[HIGH FRICTION]

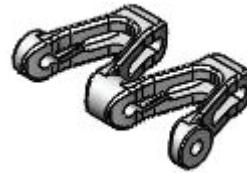
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



DS-C-ST-PL-2-S
PLAIN CENTER
2 LINK



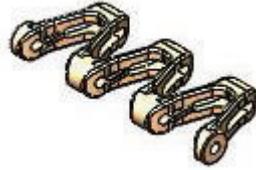
DS-C-ST-6MM-BT-2-S
6MM BRUSH TOP
2 LINK



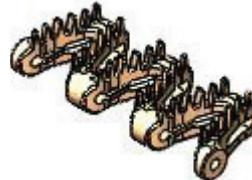
DS-C-ST-PL-2-PU
PLAIN CENTER
2 LINK



DS-C-ST-6MM-BT-2-PU
6MM BRUSH TOP
2 LINK



DS-C-ST-PL-3-S
PLAIN CENTER
3 LINK



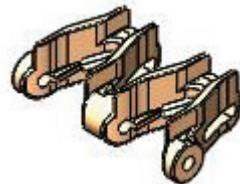
DS-C-ST-6MM-BT-3-S
6MM BRUSH TOP
3 LINK



DS-C-ST-PL-3-PU
PLAIN CENTER
3 LINK



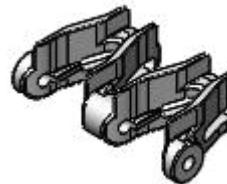
DS-C-ST-6MM-BT-3-PU
6MM BRUSH TOP
3 LINK



DS-C-ST-6MM-RT-2-S
6MM RAISED
2 LINK



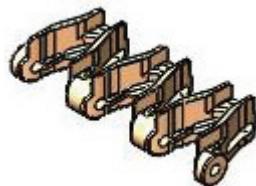
DS-C-ST-10MM-BT-2-S
10MM BRUSH TOP
2 LINK



DS-C-ST-6MM-RT-2-PU
6MM RAISED
2 LINK



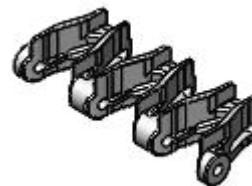
DS-C-ST-10MM-BT-2-PU
10MM BRUSH TOP
2 LINK



DS-C-ST-6MM-RT-3-S
6MM RAISED
3 LINK



DS-C-ST-10MM-BT-3-S
10MM BRUSH TOP
3 LINK



DS-C-ST-6MM-RT-3-PU
6MM RAISED
3 LINK

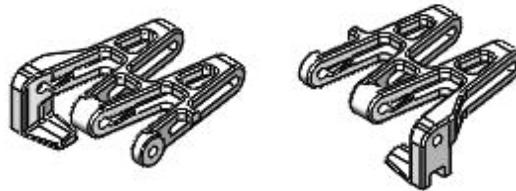


DS-C-ST-10MM-BT-3-PU
10MM BRUSH TOP
3 LINK

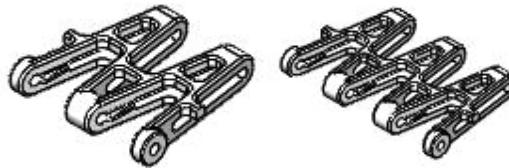
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ACETAL & POLYPROPYLENE LINKS

KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



DS0142A - LEFT HAND PLAIN
DS0143A- RIGHT HAND PLAIN



DS0011P-2V - PLAIN CENTER 2/8
DS0011P-3V - PLAIN CENTER 3/8

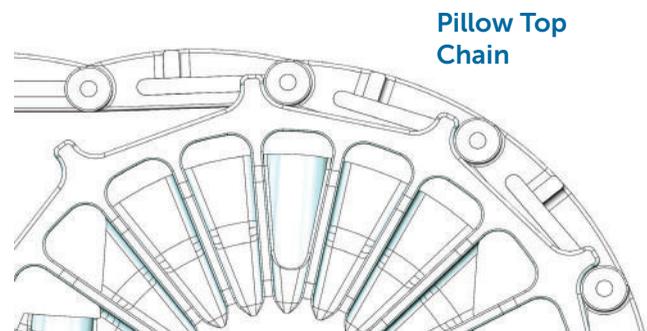
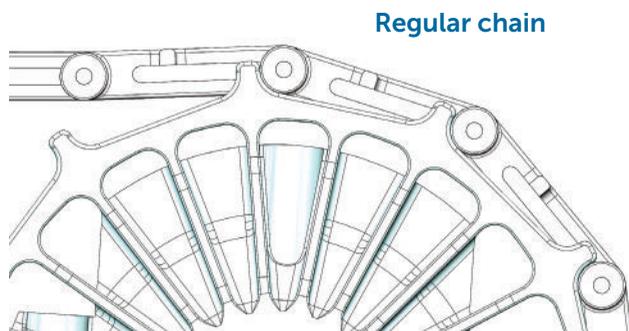


DS0011P-7M - PLAIN CENTER

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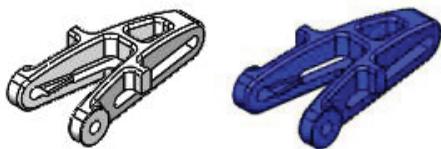
WHAT IS CHORDAL ACTION?

The rising and lowering of an individual chain link as it enters a sprocket is known as chordal action. The reason it happens is simply due to geometry. When a chain is “wrapped” around a sprocket, the pins of the chain form a polygon shape. When you look at this polygon shape traveling around a sprocket, it is bumpy – not smooth. When a conveyor chain enters a drive sprocket, it goes from a flat line to this polygon shape and results in a rise/lowering of the pin. This effect can be lessened only by using a smaller pitch chain, or increasing the sprocket size – it cannot be prevented. That being said, depending on the elevation of the chain (in relation to the sprocket), we can control whether the chain “rises” or “lowers” to match this polygon shape.

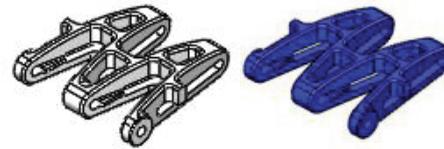


ACETAL SANTOPRENE & POLYURETHANE LINKS

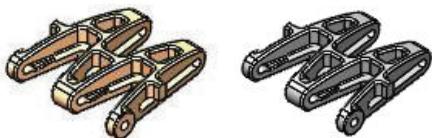
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



DS0162A-1V - 50MM CENTER PLAIN
DS0162A-1V - 50MM CENTER BLUE



DS0162A-2V - 50MM CENTER 2C PLAIN
DS0162A-2V - 50MM CENTER 2C BLUE



DS0162S-2V - 50 MM PILLOW TOP 2C (S)
DS0162PU-2V - 50MM PILLOW TOP 2C (P)

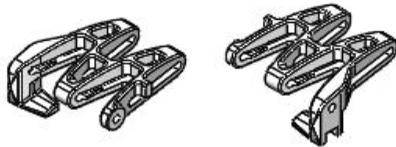


DS0162S-3V - 50MM 3C (S)
DS0162PU-3V - 50 MM 3C (P)

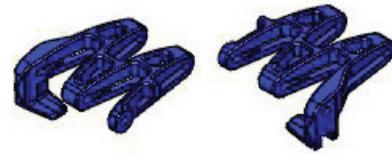
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ACETAL SANTOPRENE & POLYURETHANE LINKS

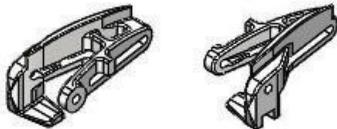
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



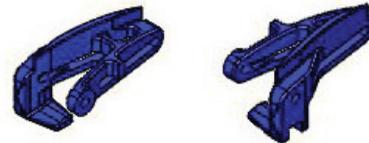
DS0160A - 50MM LH PLAIN
DS0161A- 50MM RH PLAIN



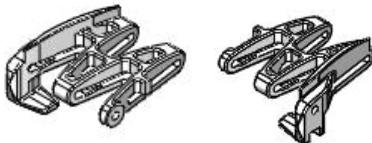
DS0160A-BLUE - 50MM LH
DS0161A-BLUE - 50MM RH



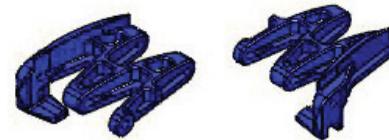
DS0163A-1/2 - 50MM LH 6MM MSG 1/2
DS0164A-1/2 - 50MM RH 6MM MSG 1/2



DS0163A-1/2-BLUE - 50MM LH 6MM MSG 1/2
DS0164A-1/2-BLUE - 50MM RH 6MM MSG 1/2



DS0163A - 50MM LH 6MM MSG
DS0164A - 50MM 6MM MSG



DS0163A-BLUE - 50MM LH 6MM MSG
DS0164A-BLUE - 50MM RH 6MM MSG



DS0162A - 50MM CENTER 8C PLAIN
DS0162A-BLUE - 50MM CENTER 8C BLUE

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TUBE TOP ROLLER & ACCUMULATION OPTIONS

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DS5093
Ø16.0MM
TUBE TOP TUBE



DS0054-01A
Ø16.0MM
TUBE TOP BEARING
(A) CENTER LINK

OTHER ACCUMULATION OPTIONS:



DS0053P
Ø16.0MM
BARREL ROLLER
(PP) CENTER LINK



DA7000
SPHERICAL ROLLER

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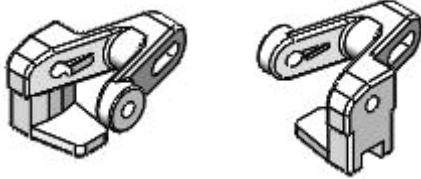
CHAIN TYPES

[LEGACY CHAIN]

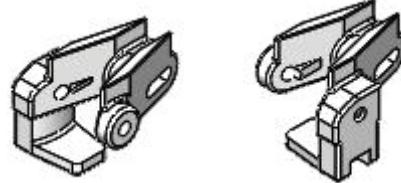
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ACETAL LINKS

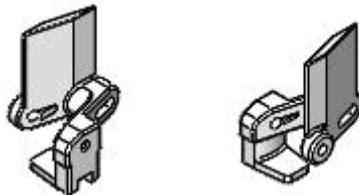
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



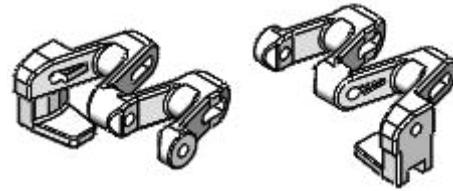
DS0120A - LEFT HAND PLAIN
DS0121A - RIGHT HAND PLAIN



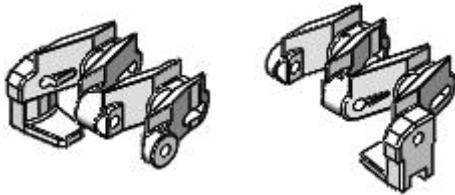
DS0124-01A - LEFT HAND 6MM RAISED
DS0125-01A - RIGHT HAND 6MM RAISED



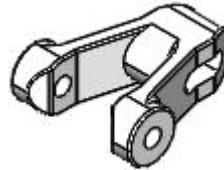
DS0123A - LEFT HAND 30MM MOVING SIDE GUIDE
DS0122A - RIGHT HAND 30MM MOVING SIDE GUIDE



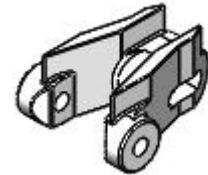
DS0146A - LEFT HAND COMBO PLAIN
DS0147A - RIGHT HAND COMBO PLAIN



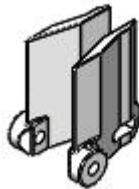
DS0148A - LEFT HAND COMBO 6MM RAISED
DS0149A - RIGHT HAND COMBO 6MM RAISED



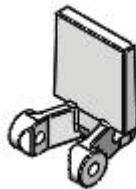
DS0001A -(A) PLAIN CENTER
DS0001P - (P) PLAIN CENTER



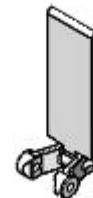
DS0002-01A
6MM RAISED TOP
(A) CENTER LINK



DS003-01-01A
30MM RAISED TOP CLEAT
(A) CENTER LINK



DS0005A
30MM PUSHER CLEAT
(A) CENTER LINK

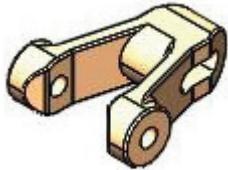


DS0005A-75
75MM PUSHER CLEAT
(A) CENTER LINK

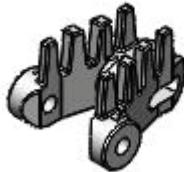
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SANTOPRENE & POLYURETHANE LINKS

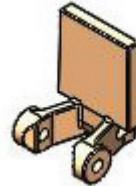
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



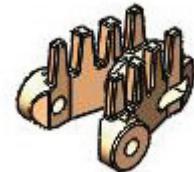
DS0001S55
55 DUROMETER
(S) CENTER LINK



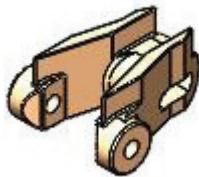
DS0010-BT-PU
10MM BRUSH TOP
70 DUROMETER
(P) CENTER LINK



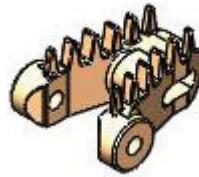
DS0005 (S55 - S87)
30MM PUSHER CLEAT
(S) CENTER LINK
55 OR 87 DUROMETER



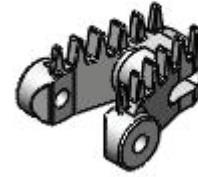
DS0010-BT-55
10MM BRUSH TOP
55 DUROMETER
(S) CENTER LINK



DS0002S-01S55
6MM RAISED TOP
(S) CENTER LINK



DS004-01-BT-55
6MM BRUSH TOP
55 DUROMETER
(S) CENTER LINK

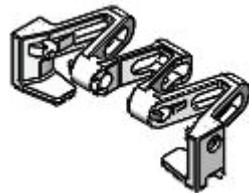


DS004-BT-PU
6MM BRUSH TOP
70 DUROMETER
(P) CENTER LINK

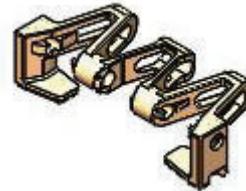
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ACETAL & SANTOPRENE LINKS

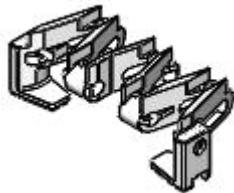
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



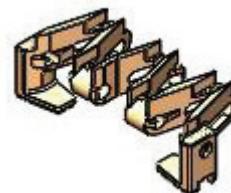
DS0200-01A - PLAIN (A)



DS0200-01S55-1/2 - PLAIN 55D (S)



DS0200-03A - 6MM RAISED (A)

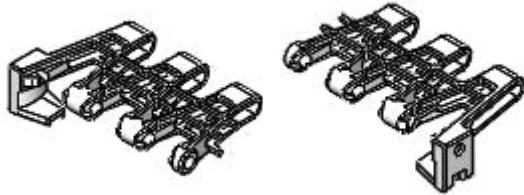


DS0200-03S55 - 6MM RAISED 55D (S)

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ACETAL & SANTOPRENE LINKS

KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



DS5210A - LH PLAIN (A)
DS5230A - RH PLAIN (A)



DS5218A - LH 30MM MSG (A)
DS5238A - RH 30MM MSG (A)



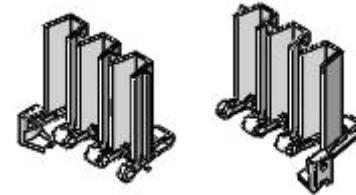
DS5212A - LH 6MM RAISED (A)
DS5232A - RH 6MM RAISED (A)



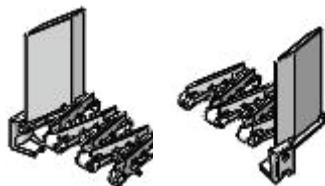
DS5220A - LH 6MM / 30MM MSG (A)
DS5240A - RH 6MM / 30MM MSG (A)



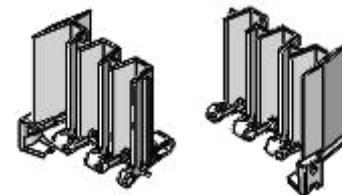
DS5214A - LH 75MM MSG (A)
DS5234A - RH 75MM MSG (A)



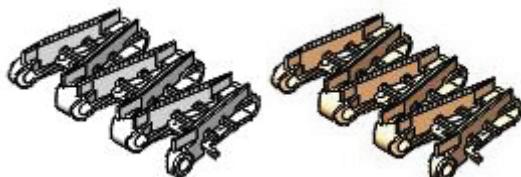
DS5222A - LH 75MM PUSHER CLEAT (A)
DS5242A - RH 75MM PUSHER CLEAT (A)



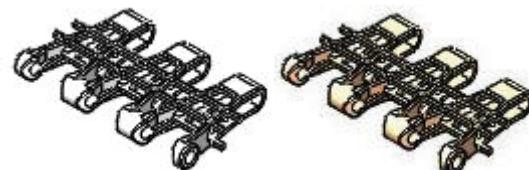
DS5216A - LH 6MM RAISED / 75MM MSG (A)
DS5236A - RH 6MM RAISED / 75MM MSG (A)



DS5224A - LH 75MM PUSHER CLEAT / MSG (A)
DS5244A - RH 75MM PUSHER CLEAT / MSG (A)



DS5203A - 6MM RAISED CENTER (A)
DS5203S55 - 6MM RAISED CENTER 55D (S)



DS5201A - PLAIN CENTER (A)
DS5201S55 - PLAIN CENTER 55D (S)

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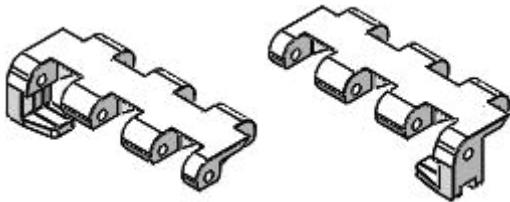
CHAIN TYPES

[SPECIALTY CHAIN]

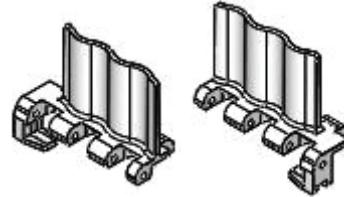
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ACETAL LINKS

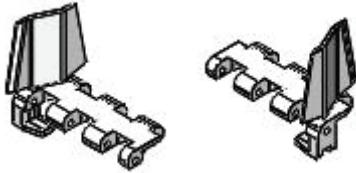
KEY: LH = LEFT HAND • RH = RIGHT HAND • MSG = MOVING SIDE GUIDE • (PU) = POLYURETHANE • (S) = SANTOPRENE • (A) = ACETAL



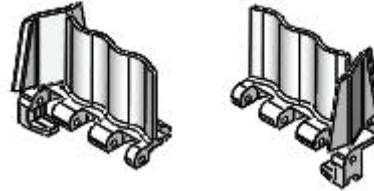
DS0063A - RH PLAIN (A)
DS0067A - LH PLAIN (A)



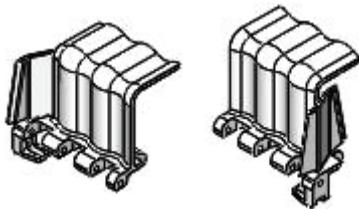
DS0068A - LH 50MM PUSHER (A)
DS0064A - RH 50 MM PUSHER (A)



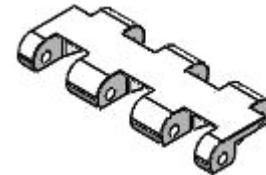
DS0069A - LH 50MM MSG (A)
DS0065A - RH 50MM MSG (A)



DS0070A - LH 50MM PUSHER/MSG (A)
DS0066A - RH 50MM PUSHER/MSG (A)



DS0057A - LH 50MM SCOOP/MSG (A)
DS0056A - RH 50MM SCOOP/MSG (A)



DS0061A - PLAIN CENTER (A)



DS0060A
INTERNAL BARREL ROLLER (A)

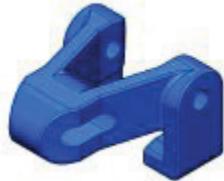


DS9964-CT-01
RETURN CHAIN
SUPPORT LINK (A)

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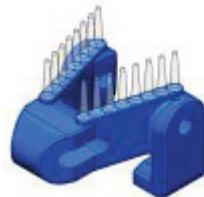
DS801-30-06



DS801-60-06



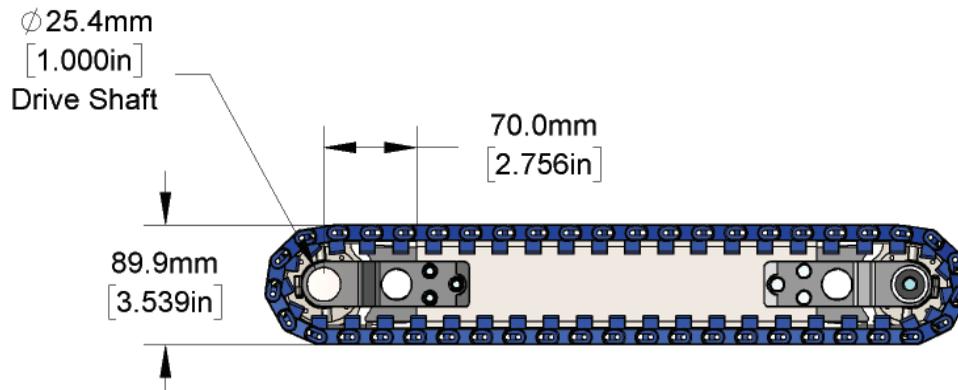
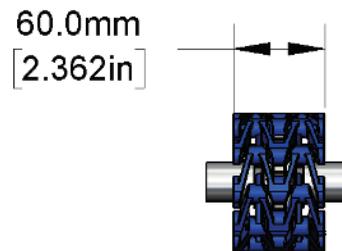
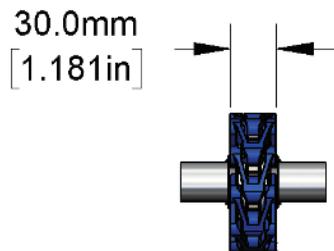
DS8010-60BT-10MM



DS8010-30BT-10MM



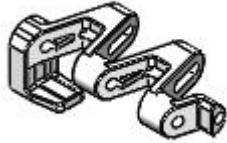
DS8010-30BT



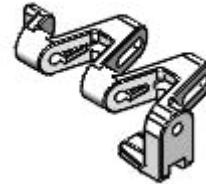
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ACETAL LINKS

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DS0155-02A - LEFT HAND (A)



DS0156-02A - RIGHT HAND (A)

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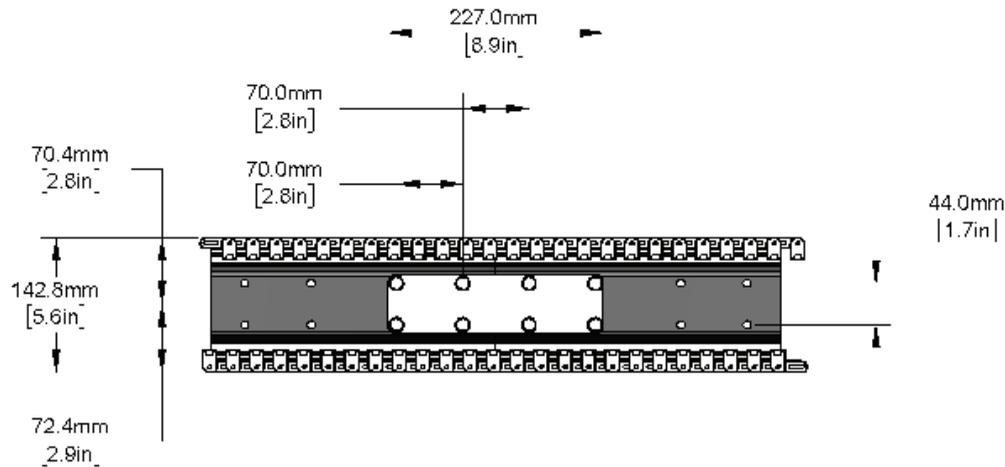
CONVEYORS

[DIRECTIONAL SECTIONS]

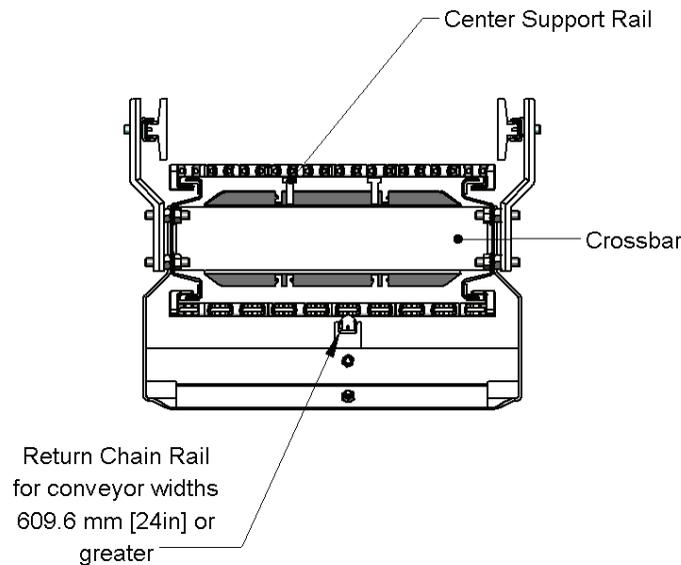
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BED SECTIONS

Span Tech conveyors are manufactured with either steel or aluminum framing. Standard bed sections are 12 ft. in length with a crossbar every 24.0". Higher load applications use crossbars every 12.0" for more chain support. Individual bed sections are bolted together with an 8 hole pattern connecting strap.



The illustration above is an elevation view of a conveyor bed section. Typical location dimensions are given for crossbar spacing as well as connecting strap hole locations. The overall bed section depth has also been noted, which applies to plain chain only. For raised top or cleated chain add 2 times the cleat height to the standard bed section depth.



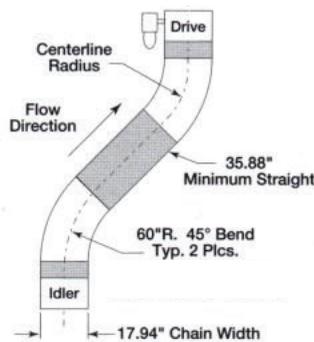
The illustration above represents a cross section view of a standard conveyor bed section with guide rails, center support rails, and return chain support rail.

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HORIZONTAL CURVES

One of the most unique features of Span Tech's family of conveyors is the horizontal curve. Horizontal curves can be manufactured to any degree angle at any radius staying within the rules. When designing conveyors that incorporate horizontal curves, be certain to apply the following rules of thumb.

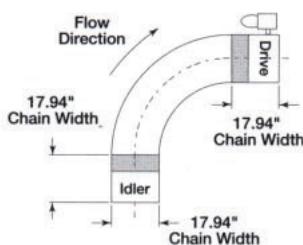
👍 Between offsetting Horizontal Curves (S-curves) there should be a straight section that is greater than or equal to 2 times the chain width. This applies to all conveyors within the Span Tech family.



The illustration above shows the placement of straight sections between offsetting curves for a MultiSpan conveyor.

The following rule applies to all 25mm chain.

👍 From the end of a Horizontal Curve to the end of a drive or idler, there should be a straight section with a length that is greater than or equal to the chain width.



MultiSpan Curve Rule

Use the following formulas to calculate the minimum centerline radius for all Span Tech conveyors.

MultiSpan chain's minimum centerline turning radius is equal to:

$$\text{Chain Width}^{\text{inches}} \times 3.12$$

$$\text{Chain Width}^{\text{mm}} \times 3.12$$

MaxiSpan chain's minimum centerline turning radius is equal to:

$$\text{Chain Width}^{\text{inches}} \times 3.48 - 6.91"$$

$$\text{Chain Width}^{\text{mm}} \times 3.48 - 175.5\text{mm}$$

25MM SuperTight chain's minimum centerline turning radius is equal to:

$$\text{Chain Width}^{\text{inches}} \times 2.29 - 2.64"$$

$$\text{Chain Width}^{\text{mm}} \times 2.29 - 67.06\text{mm}$$

50MM SuperTight chain's minimum centerline turning radius is equal to:

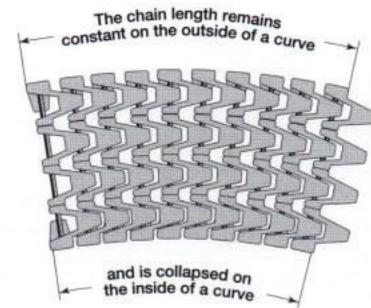
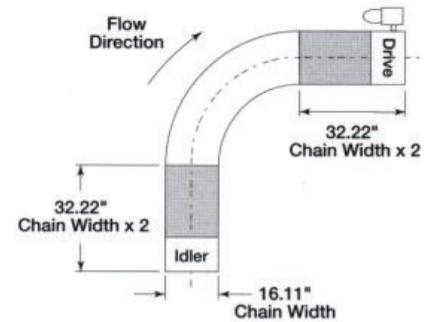
$$\text{Chain Width}^{\text{inches}} \times 1.93$$

$$\text{Chain Width}^{\text{mm}} \times 1.93$$

The absolute minimum centerline turning radius for any of Span Tech conveyors is 18.0" (457.20mm) for aluminum framing and 21.0" (533.40mm) for steel framing.

The following rule applies to all 50mm chain.

👍 From the end of a Horizontal Curve to the end of a drive or idler, there should be a straight section with a length that is greater than or equal to 2 times the chain width.



Chain condition while traveling through a horizontal curve

The reason for following the previous rules when applying horizontal curves in a conveyor layout is illustrated above. The pitch length of the chain is constant on the outside radius of a curve and is collapsed on the inside radius of a curve. The chain must have time for the rods to straighten out allowing the chain stress to be redistributed evenly before making another direction change along the conveyor path.

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VERTICAL BENDS

Elevation changes in a conveyor layout can be accomplished in various ways but the most common method is with the use of vertical bends.

The Span Tech family of conveyors uses molded plastic vertical bends made of high density polypropylene.

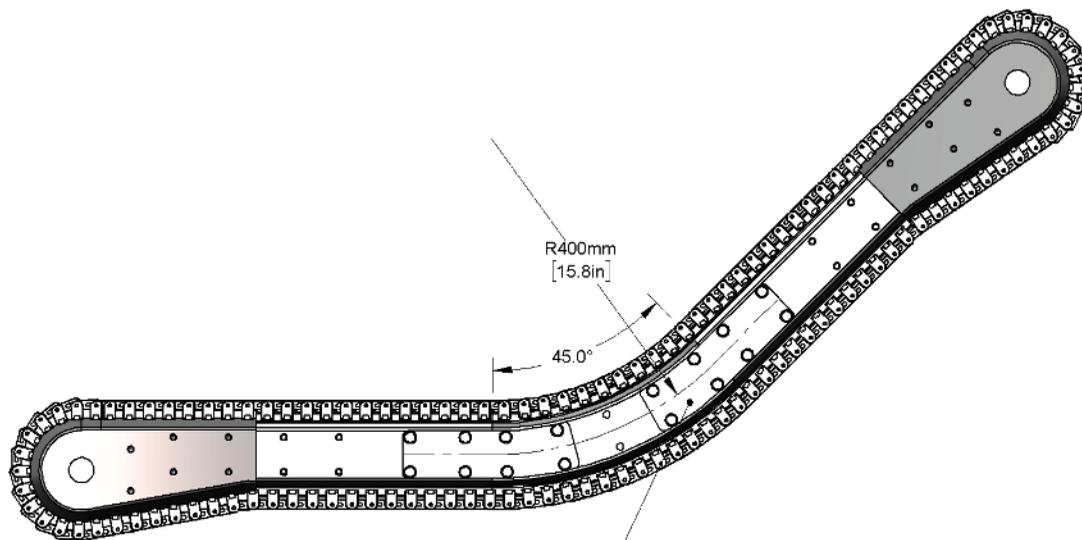
Vertical bends have a centerline radius of 15.75" (400mm) and range from 4° to 90° angles in increments of 1°.

Use the following rules of thumb when designing conveyor layouts that include vertical bends for making elevation changes.

👍 Drive or Idler assemblies can be attached directly to a vertical bend assembly.

Incline Angle	Rise/ Ft. Inches	Rise/Ft MM	Incline Angle	Rise/ Ft. Inches	Rise/Ft MM	Incline Angle	Rise/ Ft. Inches	Rise/Ft MM
1°	0.209	5.32	21°	4.606	117.00	41°	10.431	264.96
2°	0.419	10.64	22°	4.848	123.15	42°	10.805	274.44
3°	0.629	15.97	23°	5.094	129.38	43°	11.190	284.23
4°	0.839	21.31	24°	5.343	135.71	44°	11.588	294.34
5°	1.050	26.67	25°	5.596	142.13	45°	12.000	304.80
6°	1.261	32.04	26°	5.853	148.66	46°	12.426	315.63
7°	1.473	37.42	27°	6.114	155.30	47°	12.868	326.86
8°	1.686	42.84	28°	6.381	162.07	48°	13.327	338.51
9°	1.901	48.28	29°	6.652	168.95	49°	13.804	350.63
10°	2.116	53.74	30°	6.928	175.98	50°	14.301	363.25
11°	2.333	59.25	31°	7.210	183.14	51°	14.819	376.40
12°	2.551	64.79	32°	7.498	190.46	52°	15.359	390.13
13°	2.770	70.37	33°	7.793	197.94	53°	15.925	404.48
14°	2.992	76.00	34°	8.094	205.59	54°	16.517	419.52
15°	3.215	81.67	35°	8.402	213.42	55°	17.138	435.30
16°	3.441	87.40	36°	8.719	221.45	56°	17.791	451.88
17°	3.669	93.19	37°	9.043	229.68	57°	18.478	469.35
18°	3.899	99.04	38°	9.375	238.14	58°	19.204	487.78
19°	4.132	104.95	39°	9.717	246.82	59°	19.971	507.27

Shown above is the rise per foot for elevation changes at various angles.



2° - 30° vertical bends have one (1) connecting strap per side
 > 30° vertical bends have two (2) connecting straps per side

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SUPPORT STRUCTURES

Standard Supports [1]

Span Tech standard stainless steel or painted mild steel supports are 2" x 2" tubing, with a 1" x 1" horizontal cross brace.

👍 **Standard support elevations are 12" - 84" Top of Conveyor.**

Drive Supports [2]

Drive supports include an additional extended bottom brace to help stabilize the drive end of the conveyor.

Aluminum Supports [3]

Aluminum Supports are "C" channel.

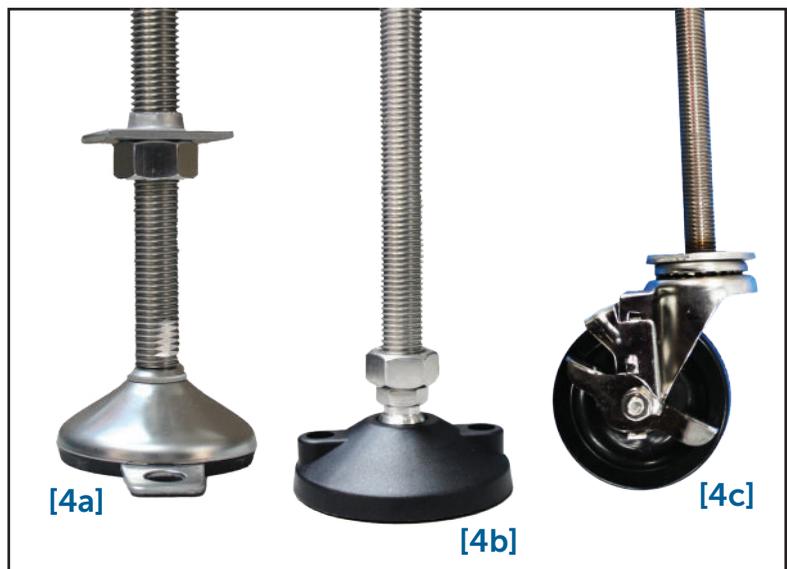
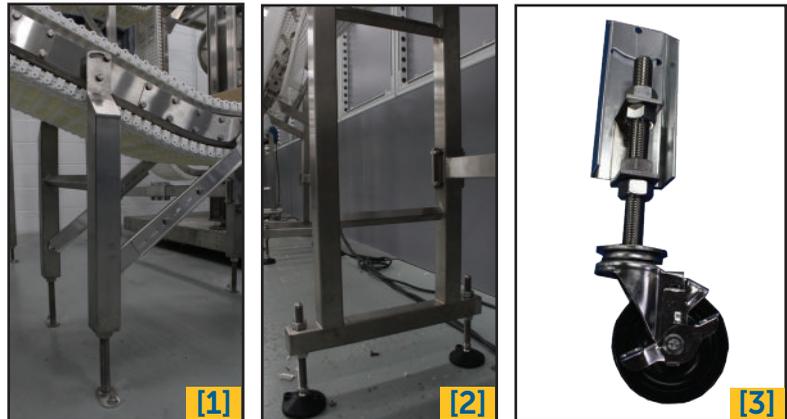
Support Feet Options [4]

Each support comes with optional feet types.

- Bolted to the floor. [4a]
- Free standing on padded feet. [4b]
- Lockable swivel casters. [4c]

Ceiling Support Options [5]

Ceiling support brackets are used for all elevations over 84" Top of Conveyor unless specified by the customer (at which the job becomes a special design).



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CONVEYORS

[ELEVATION CHANGE]

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TOPPER LIFT

Tackle tricky angles, product orientation and elevation change with a smaller footprint. The Topper Lift puts steep angles within your reach.

Product Handling

The Topper Lift is capable of handling rigid or flexible products such as bagged, boxed, or frozen items.

Impressive Elevation

Most cost effective for elevating up to 60°

No PLC? No Problem

No programmable logic controller (PLC) is needed to run the Topper Lift.

Configurable Width

Using our standard chain widths, the Topper Lift's width can be configured to fit your needs and footprint.



RULES OF THUMB FOR TOPPER LIFTS

MAX RECOMMENDED ANGLE: 60°

MAX RECOMMENDED SPEED: 200 fpm

PRODUCT PITCH = 4 * PRODUCT LENGTH

- The Topper Lift conveyor system sandwiches a product between two conveyor chains, in order to apply pressure across the top of the product and prevent it from tipping over. This allows the product to be transported at excessive angles that would not be possible on a standard incline conveyor.
- There must be (3) product lengths between adjacent products.
- Chain width must be at least 4.75" wider than the product in order to guarantee full high friction module coverage.
- There must be at least 12" of vertical clearance above the top of the product.
- Multiple lanes of product are not recommended.

- The top conveyor must be driven with a VFD in order to set the right speed for the application (in some instances it could run slightly faster or slower than the bottom conveyor).

NOTES:

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OUTRUNNER SPIRAL

A cost effective solution for changing elevations. Gives you the capacity to move a wide range of product types without taking up valuable floor space.

Small Footprint

Save floor space by elevating with an Outrunner Spiral.

Extremely Configurable

A variable height, diameter, angle, chain width, infeed, and exit location.

Applications Include

Elevating, cooling, curing, and dwell times.

Catenary Free

Our chain is captured throughout the entire system making the Outrunner Spiral safer than other spirals.



RULES OF THUMB FOR OUTRUNNER SPIRALS

MAX INCLINE ANGLE: 25°

MAX DECLINE ANGLE: 4°

MINIMUM TIER PITCH: 4.92" (125mm)

MAX SPEED LIMITS BASED ON CHAIN WIDTH:

3.76" - 7.31" = 250 fpm (95.5mm - 185.7mm)

8.49" - 12.03" = 200 fpm (215.6mm - 305.6mm)

13.21" - 17.94" = 175 fpm (335.5mm - 455.7mm)

19.11" - 23.84" = 150 fpm (485.4mm - 605.5mm)

- All Outrunner Spirals must have a controlled stop/start sequence (smooth acceleration/deceleration) to prevent chain from crowding into the Outrunner Drive sprocket.

- All Outrunner Spirals must be designed with Pillow Top or SuperTight 6mm or 30mm moving side guides on the sides where it is driven by the Outrunner sprockets. In addition, the opposite side of the chain should also be supplied with a moving side guide unless a side by side transfer is required.

- Outrunner Spirals are intended to add dwell time to a product flow, but are not intended to be accumulation devices (holding product while the spiral runs).

- Outrunner Spirals will NOT maintain product orientation.

- A torque limiter between the gearmotor and the primary sprocket is required and this torque limiter must have an accompanying proximity sensor to tell the PLC or VFD to stop the spiral in case of an over-torque condition.

NOTES:

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WEDGE UNIT

The Wedge Unit provides vertical movement in a compact and all mechanical design for ultimate reliability.

Small Footprint

The Wedge Unit has an extremely small footprint compared to elevation change.

Impressive Elevation

Elevation of up to 30 feet.

Technology Not Required

No expensive controls are needed to operate the Wedge Unit.

Handles Most Rigid Products

Available in a wide variety of chain types and widths to accommodate a large array of products.

Version Options

You have the choice of a positionable or fully adjustable unit (which can be motor driven).



RULES OF THUMB FOR WEDGE UNITS

MAX SPEED:

180 feet per minute. (55 mpm)

MINIMUM INFEED ELEVATION: 26 inches

OVERALL WIDTH:

39.1" - positionable units

48.4" - 0 - 12" adjustable units

60.4" - 0 - 24" adjustable units

- Wedge conveyors must be equipped with a variable frequency drive (VFD) with soft start/stop capability. The VFD can be customer supplied or provided by Span Tech.

- If your incoming product does not meet the minimum gap requirements, you may increase the velocity of the Wedge Unit to pull the needed gap. Use the basic formula below to find the necessary velocity of the Wedge Unit.

$$V_w = V_o (L + Gap_{min} / L + Gap_i)$$

V_w = Desired velocity of Wedge unit (FPM)

V_o = Initial velocity of incoming conveyor (FPM)

Gap_{min} = minimum gap required

Gap_i = initial product gap

STANDARD CHAIN WIDTHS / CENTER LINE RADIUS :

6.13 inches - 21"

7.31 inches - 22.81"

8.49 inches - 26.49"

9.67 inches - 30.45"

10.85 inches - 33.85"

RECOMMENDED PRODUCT HEIGHT RESTRICTIONS:

6.13" - 2.0" - 6.9"

7.31" - 7.0" - 11.9"

8.49" - 12.0" - 16.9"

9.67" - 17.0" - 21.9"

10.85" - 22.0" - 24.0"

- The spacing between products (gap) is critical to the layout of the Wedge Unit. If the gap is too small, products could contact and interfere with each other through the curves. Use the following formula to determine the minimum gap for your product.

$$Gap_{min} = (L+1) / (2R/H) - 1$$

R =Radius of Curve (referenced above),

H =Height of product,

L =Length of product,

Gap_{min} =Minimum gap required for your product

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WEDGE UNIT [CONTINUED]

DYNAMIC LOAD CAPACITY:

• 10' OFFSET

Chain Width	50 FPM	100 FPM	150 FPM	180 FPM
6.13"	92lbs	40lbs	22lbs	27lbs
7.31"	92lbs	38lbs	20lbs	24lbs
8.49"	92lbs	37lbs	19lbs	21lbs
9.67"	92lbs	36lbs	17lbs	18lbs
10.85"	91lbs	34lbs	15lbs	15lbs

• 20' OFFSET

Chain Width	50 FPM	100 FPM	150 FPM	180 FPM
6.13"	146lbs	62lbs	35lbs	25lbs
7.31"	145lbs	60lbs	32lbs	22lbs
8.49"	143lbs	58lbs	29lbs	19lbs
9.67"	142lbs	55lbs	26lbs	17lbs
10.85"	140lbs	52lbs	23lbs	15lbs

• 30' OFFSET

Chain Width	50 FPM	100 FPM	150 FPM	180 FPM
6.13"	181lbs	85lbs	47lbs	34lbs
7.31"	176lbs	82lbs	43lbs	31lbs
8.49"	170lbs	78lbs	39lbs	26lbs
9.67"	164lbs	74lbs	35lbs	22lbs
10.85"	159lbs	71lbs	31lbs	18lbs

NOTES:

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CONVEYORS

[SORTING & MERGING]

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TRANSPOSITOR

Successfully creates right-angle product transfers without skewing.

Product Handling

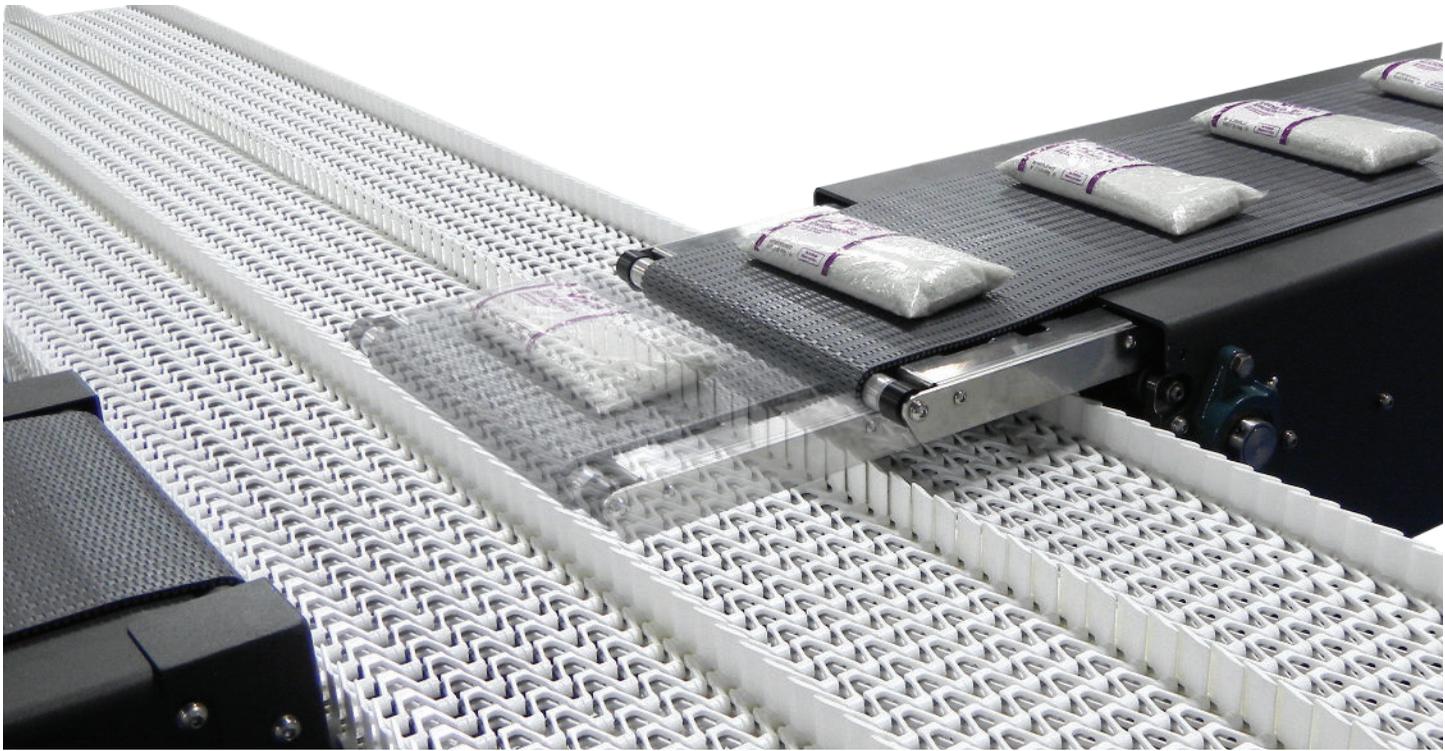
Has the ability to handle almost any type of product.

Low Maintenance

No lubrication is required to run, making it virtually maintenance free.

Efficiency

Safe, low-noise running off of 24 volts.



RULES OF THUMB FOR TRANSPOSITORS

- Transpositors can be used as a product reject or divert for delicate products.
- Ideal for feeding wrappers, casepackers, and handpack stations.
- Sprocket driven chain.
- Build product lanes or patterns across the width of receiving conveyors.
- Can be 300mm or 600mm wide.
- Retract speed of 300 fpm.
- Forward speed of 150 fpm.
- Available cross belts for side to side diverts.

NOTES:

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CONVEYORS

[SPECIALTY]

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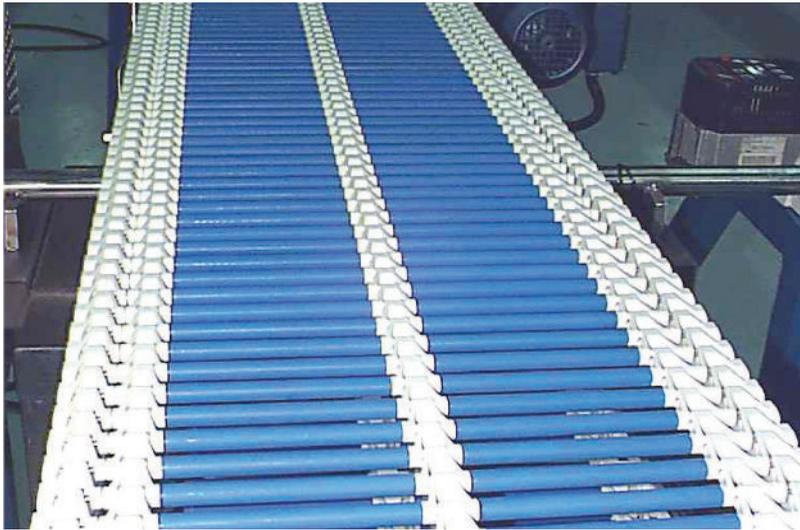
CONVEYORS

[ACCUMULATION]

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ACCUMULATION RULES

Accumulation on Tube Top Chain:



- Back pressure decreases drastically when accumulating on Tube Top Chain.
- Increasing the angle of the Tube Top accumulation conveyor can drop the back pressure further.
- Because the tubes roll underneath the product during accumulation, the product surface is not damaged during accumulation.

Tube Top Chain was created so that more products could be accumulated than what was possible on plain chains. The tubes rotate freely under products that are stopped on the chain allowing a longer slug of products to accumulate without crushing the first product.

Accumulation on Curved Conveyors:



Accumulated Round Products:

Pull a gap as the product exits the 180° bend due to the compression and expansion of the conveyor chain underneath the product. Accumulated round products maintain orientation because they keep a single point of contact through the curve.

Accumulated Square Products:

Pull a gap as the product exits the 180° bend due to the compression and expansion of the conveyor chain underneath the product. Accumulated square products also skew as they exit the curve due to the point of contact shifting from the product side to the corner as it moves through the curve. Square products can also lock up and get wedged between the guiderail.

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CONVEYORS

[DRIVES & GEAR MOTORS]

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DRIVES

Flexibility matched with power and durability is the essence of Span Tech drives.

The conveyor chain flexes around the end of the conveyor, over the drive sprockets and continues underneath without ever leaving the frame. There is no loose catenary to contend with. The chain will be captured at all times.

Drive sprockets are two piece units making maintenance and repair quick and simple. The drive shaft does not have to be removed for sprocket replacement. Sprockets are also protected by a shear pin making an expensive friction clutch unnecessary.

The drive sprockets are mounted on a 1 1/4" diameter stainless steel drive shaft. One end of this drive shaft can extend out whichever side of the conveyor is preferred.

Drives and idlers are identical in design. The conveyor drive can be positioned at either end of the conveyor, or either side resulting in either a push or pull drive or somewhere in the center using an intermediate drive.

Various drive arrangements are possible with Span Tech family of conveyors such as the hollow shaft mount, remote mount (chain and sprockets) and the coupled mount. A selection of motor and gearbox combinations are available to power Span Tech conveyors in the most demanding applications.

The MaxiSpan and 50mm SuperTight sprocket assembly has 11 teeth and a pitch radius of 3.49" (88.7mm). Chain travel per sprocket revolution is equal to 1.83 ft. (0.55 meters).

The Multispan, Monospan and 25mm SuperTight sprocket assembly has 21 teeth and a pitch radius of 3.29" (83.5mm). Chain travel per sprocket revolution is equal to 1.72 ft. (0.52 meters).

MaxiSpan and 50mm SuperTight chain speed can be calculated using the following formulas.

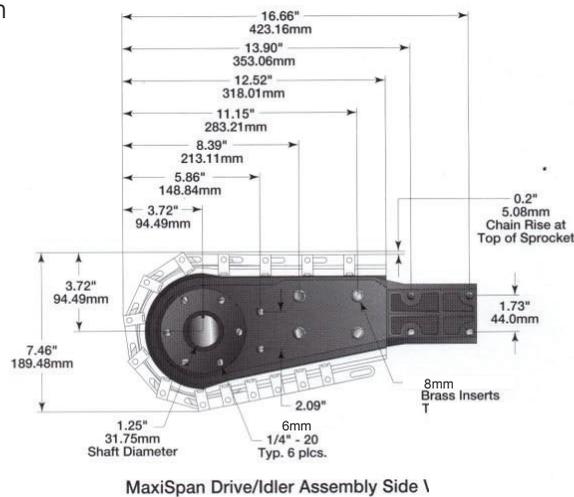
$$\text{Chain speed}^{(\text{ft}/\text{min})} = \text{shaft rpm} \times 1.83 \text{ ft.}$$

$$\text{Chain speed}^{(\text{meters}/\text{min})} = \text{shaft rpm} \times 0.55 \text{ meters.}$$

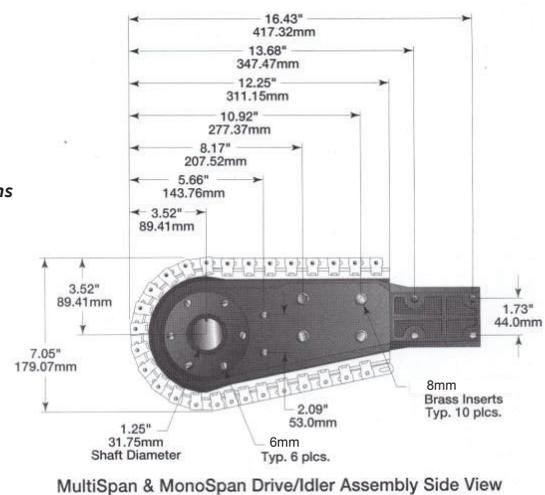
MultiSpan, MonoSpan and 25mm SuperTight chain speed can be calculated using the following formulas.

$$\text{Chain speed}^{(\text{ft}/\text{min})} = \text{shaft rpm} \times 1.72 \text{ ft.}$$

$$\text{Chain speed}^{(\text{meters}/\text{min})} = \text{shaft rpm} \times 0.52 \text{ meters.}$$



The illustrations shown represent typical space requirements and location dimensions of standard drive and idler assemblies for Span Tech conveyors.



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OUTRUNNER DRIVE

OutRunner Drives are typically used in continuous loop systems with top running chain only.

Accumulation

Outrunner Drives are the perfect solution for Endless Loop conveyors.



RULES OF THUMB FOR OUTRUNNER DRIVES

- Outrunner Drives power the conveyor chain from the side of the chain instead of chain wrapped around sprockets inside the conveyor.
- Outrunner Drives must be placed on an outside curve only. They are not suitable for straights or inside curves.
- Up to 2 Outrunner Drives can be used on a single conveyor using a single VFD. More than 2 Outrunner Drives require special controls.
- Combining Outrunner and Standard Drives can only be done with special controls which are available upon request.
- The Outrunner Drive can be configured to drive only the top chain (this is useful in making Endless Loop Conveyors) or the top and bottom chain in a standard conveyor with idlers on each end.

- Includes follower sprocket mechanism that will stop the drive if it is “tripped”. This is a safety mechanism to prevent things from getting pulled into the drive. Additionally, it will also stop the drive if a side link is missing.

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GEARMOTORS

Torque - The measure of a force's tendency to produce a rotation about an axis (a turning or twisting force).

Horsepower - A unit of measurement of power (the rate at which work is done).

General Information:

SEW preferred Gearmotors. Span Tech uses WA, SA, and KA Gearmotors from SEW. They are wired for any country's electric standards.

SA Gearmotor:

- Slightly more expensive than the W series.
- Boasts an efficiency rating of around 85%.
- SA47 most common Gearmotor used.
- Offers hundred of reduction ratios.



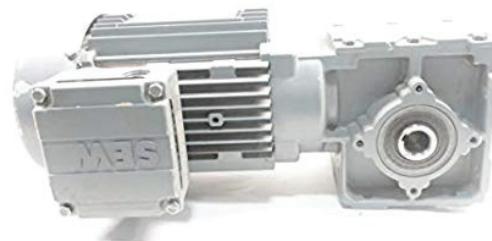
KA Gearmotor:

- Most efficient & expensive gear box we use (94%-98%).
- Most robust Gearmotor SEW makes as it uses steel gearing.
- Designed to run constantly with high cycling rates with continuous load.



WA Gearmotor:

- Worm Gearmotor allows motor to handle shock loading, and constant starting and stopping.
- Least expensive and least efficient (around 60%).
- Because this is a smaller horse power motor, there are fewer gear ratios than S or K.



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GEARMOTORS

BRAKE MOTORS

- To be used more as a “safety lock” to prevent the shaft from moving after it has already stopped.
- Not meant to stop the rotation of a shaft quickly.
- Acts like an e-brake not a brake pedal.



Z FAN

- Optional cast iron fan on gearmotors when the conveyor speed is over 120/fpm.
- Acts as a mechanical soft start and soft stop for the gearmotor.
- Reduces wear on the internal gears.



GEARMOTOR CONTROLS



Motor Starter:

- Glorified on/off switch



Variable Frequency Drive

- Can change speeds.
- Ramp ups and shutdowns.
- Change direction of the motor.
- Has overload protection.

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CONVEYORS

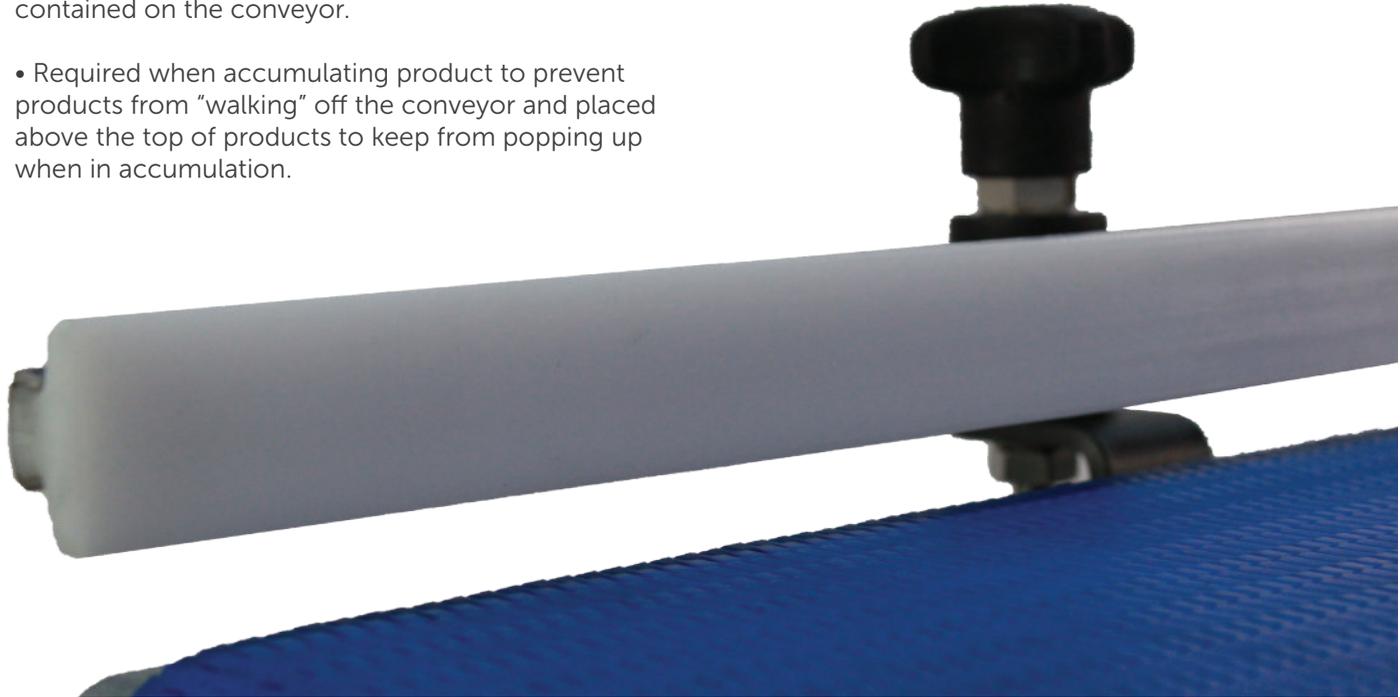
[ADD ONS]

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GUIDE RAIL

FEATURES:

- Used to guide product to a certain position on the conveyor. To align product with another conveyor, transfer or for automation.
- Used to stabilize tall product and keep them contained on the conveyor.
- Required when accumulating product to prevent products from “walking” off the conveyor and placed above the top of products to keep from popping up when in accumulation.



GUIDE RAIL BRACKET TYPES:

ValuGuide Adjustable (stainless or painted)

- Variable product sizes.
- Ability to adjust to an angle.
- Easy to adjust width but more difficult to adjust height. (spacers required)

Standard Adjustable (stainless or painted)

- Easy to adjust height and width.
- Limited width adjustments.
- Not as washdown friendly.

Fixed Channel Brackets (stainless or painted)

- Fixed product sizes.
- Fixed horizontal width.
- More cost effective than flat offset brackets.

Fixed Flat Offset Brackets (stainless or painted)

- Fixed product sizes.
- Horizontal offset can be tooled to wider widths.
- Higher cost bracket than channel brackets.

GUIDE RAIL TYPES:

Span Tech keeps an inventory in stock of three types of guide rails. Each rail is UHMW with a stainless-steel backing.

- 5/8” round rail
- 1 1/4” T-rail (flat profile)
- 2 1/4” T-rail (flat profile)

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BUMP ROTATE

FEATURES:

- Intentional obstruction in the path of the product on a conveyor which causes the product to rotate and change orientation 90°.
- Two Bump Rotates can be used to rotate the product 180 °.
- Mechanical design operates without the used of sensing devices, I/O components, or powered automation.
- Generally requires guide rail after the Bump Rotate to straighten the product.
- Temporarily slows the product down on the conveyor which is why a minimum [pitch rule \(see below\)](#) must be followed.



PITCH RULES:

Roller Chain $V = (W \times 3.2) \times R$

- V = Conveyor Speed (fpm)
- W = Incoming Product Dimension (ft.)
- R = Max production rate (products per meter)

**an acceleration zone or metering stop may be necessary to achieve the correct product spacing.*

High Friction Chain $V = (W \times 2.0) \times R$

- V = Conveyor Speed (fpm)
- W = Incoming Product Dimension (ft.)
- R = Max production rate (products per meter)

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VARIABLE FREQUENCY DRIVE

FEATURES:

- Controlled start/stop (for smooth acceleration/ deceleration of the motor).
- Automatic or manual changes to the speed of the motor while its running.
- Ability to reverse the direction of the motor.
- Loss of torque will happen above and below 60 Hz.
- Overload protection.
- Feedback for how much voltage/amps the motor is using while its running.
- Can be controlled via external devices (PLC).
- VFD's are sized according to the amount of power they will need to supply to the electromechanical device they are powering.



VINYL UNDER GUARDING

FEATURES:

- A yellow vinyl cloth connected to the conveyor with stainless still brackets.



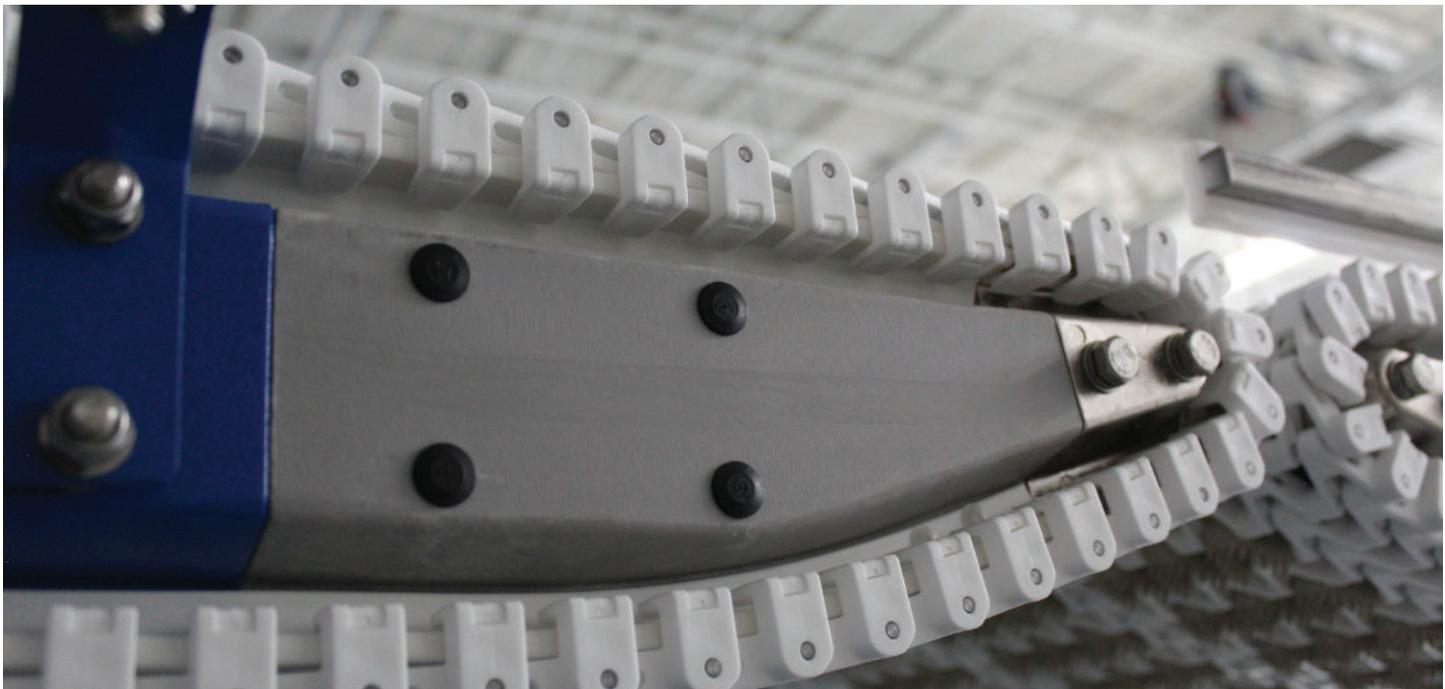
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LOW PROFILE IDLER

FEATURES:

- Low Profile Idlers slim design can eliminate the need for transfer devices at the conveyor infeed or discharge.
- Moves product as small as 4.5" without stalling or using a transfer bridge.
- Existing conveyors can be directly retrofitted with the Low Profile Idler. If your product changes, your conveyors can change with it.



RULES OF THUMB FOR LOW PROFILE IDLERS

- The Low Profile Idler is the same length as the standard idler unit and they are interchangeable.
- The Low Profile Idler has a 3.4" nose diameter.
- Low Profile Gravity Roller Transfers are used in conjunction with Low Profile Idlers (2, 3, or 4 rollers).
- 50mm MultiSpan, MaxiSpan and MonoSpan chains are not compatible with Low Profile Idlers.
- Low Profile Idlers should not be used with Closed Top chain over 25.02" wide.

NOTES:

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LANE DIVIDERS

- Suspended from above the conveyor in order to create multiple rows for products on the same conveyor.
- Used to separate rows of small product on a single conveyor.
- Made of sidewall or guiderail.
- Made to be fixed or adjustable for straight sections only.



LEXAN SAFETY GUARDING

Lexan guarding is an option for certain applications where safety could be a concern. The High Speed Switch is an area where contact with the conveyor could result in injury. Lexan guarding covers the conveyor where parts are moving at very high speeds to ensure the safety of the members who station it. It ultimately blocks unintentional direct contact with the conveyor resulting in minimal opportunity for injury*.



**The safety of any conveyor system is ultimately the responsibility of the end user. The lexan guarding provided, while very sturdy and capable of offering adequate protection from moving parts, does not follow a specific guarding or OSHA guideline.*

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CONVEYORS

[TRANSFERS]

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HORIZONTAL BALLISTIC TRANSFER

Horizontal ballistic transfers are the most basic of transfers that Span Tech offers. They are the most cost efficient of all the SpanTech transfers because no additional hardware is needed. Products are transferred from one conveyor to the next. These transfers are flat with no elevation changes.

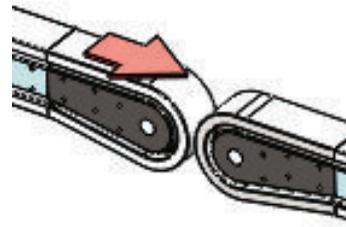
PRODUCT REQUIREMENTS FOR ALL

- Small products may be possible depending on product characteristics and conveyor speed.
- Product should be stable.
- These methods are not suitable for products small enough to dip into the gap between conveyors.

HORIZONTAL STANDARD TO STANDARD BALLISTIC TRANSFER

The product is transferred from a standard drive to a standard idler.

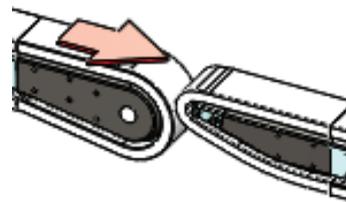
- Small products may be possible depending on product characteristics and conveyor speed.
- Product should be stable.
- These methods are not suitable for products small enough to dip into the gap between conveyors.



HORIZONTAL STANDARD TO LOW PROFILE BALLISTIC TRANSFER

The smaller radius of the low-profile design provides a shorter transfer gap. This transfer has a slightly higher cost due to the use of the low-profile idler.

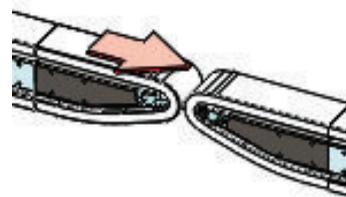
- Products as small as seven inches (177.8 mm) may be possible depending on product characteristics and conveyor speed.
- When using a low-profile idler, conveyor speed in general is limited to 150 feet per minute (45.72 mpm).



HORIZONTAL LOW PROFILE TO LOW PROFILE BALLISTIC TRANSFER

With both conveyors having the low profile design, this technique provides the shortest ballistic transfer gap and can therefore handle the smallest product of any ballistic transfer configuration. This transfer has a slightly higher cost due to the use of the low profile idler.

- Products as small as six inches (152.4 mm) may be transferred.
- When using a low profile idler, conveyor speed in general is limited to 150 fpm (45-72 mpm).



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OFFSET BALLISTIC TRANSFER

Another method of product transfer is known as an offset transfer (also called a waterfall transfer). An offset transfer occurs when a product is dropped from the end of one conveyor onto a second conveyor, positioned at a lower elevation. This method is usually used for bulk product flow or product in bags. An offset transfer adds no cost, but can cause the product to tumble during the transfer. Products may also lose orientation during transfer and guide rails or moving side guides may be required.

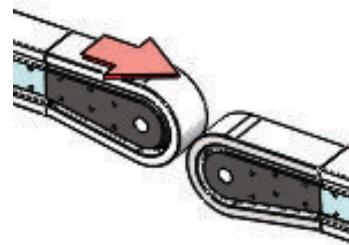
PRODUCT REQUIREMENTS FOR ALL

- Small Products may be possible, depending on product characteristics and conveyor speed..

OFFSET STANDARD TO STANDARD BALLISTIC TRANSFER

The product is transferred from a standard drive to a standard idler.

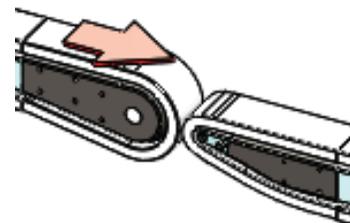
- Products with a minimum length of 8.5 inches (215.9 mm).



OFFSET STANDARD TO LOW PROFILE BALLISTIC TRANSFER

The smaller radius of the low profile design provides a shorter transfer gap. This transfer has a slightly higher cost due to the use of the low profile idler.

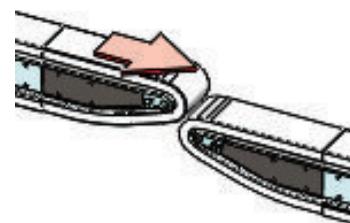
- Products as small as 7.5" (177.8 mm) may be transferred.
- When using a low profile idler, conveyor speed in general is limited to 150 feet per minute (45.72 mpm).



OFFSET LOW PROFILE TO LOW PROFILE BALLISTIC TRANSFER

The low profile to low profile offset ballistic transfer offers the shortest transfer distance possible without the use of a transfer device.

- Products as small as 5.75" (146.05 mm) may be transferred.
- When using a low profile idler, conveyor speed in general is limited to 150 fpm (45.72 mpm).
- Smallest transfer distance without using a device.



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DEAD PLATE TRANSFER

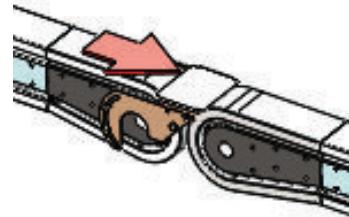
A dead plate transfer uses a flat piece of stainless steel or UHMW to bridge the gap between conveyors. As with all Span Tech transfers, the dead plate transfer incorporates a lift-out design – an important safety feature in the event that anything becomes caught between the transfer and conveyor.

PRODUCT REQUIREMENTS FOR BOTH

- Smaller products are possible at speeds of 120 feet per minute (36.576 mpm) and higher
- Raw or sticky material is likely to stall on a dead plate transfer.
- This method can only be used in applications where the conveyor runs fast enough to reliably propel the product across the unpowered transfer bridge.
- Transfer is not suitable for most bagged products as their flaps or seams could get caught in the transfer
- Designed with a safety lift-out feature.

HORIZONTAL STANDARD TO STANDARD DEAD PLATE TRANSFER

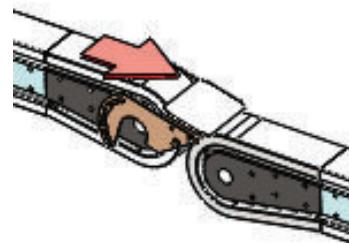
- Products as small as 8.5" (215.9 mm) can be transferred at any speed.
- Best suited for higher-speed conveyors carrying larger, rigid products.



OFFSET STANDARD TO STANDARD DEAD PLATE TRANSFER

The offset dead plate transfer is similar to an offset transfer. Due to the downhill angle of the plate, the offset dead plate transfer can work with conveyor speeds slower than those compatible with the standard dead plate. Like the offset ballistic transfer, the offset dead plate may cause products to tumble, and therefore may require the use of guide rails for some applications.

- Products as small as 8.5" (215.9 mm) can be transferred at any speed.
- Best suited for higher-speed conveyors carrying larger, rigid products.



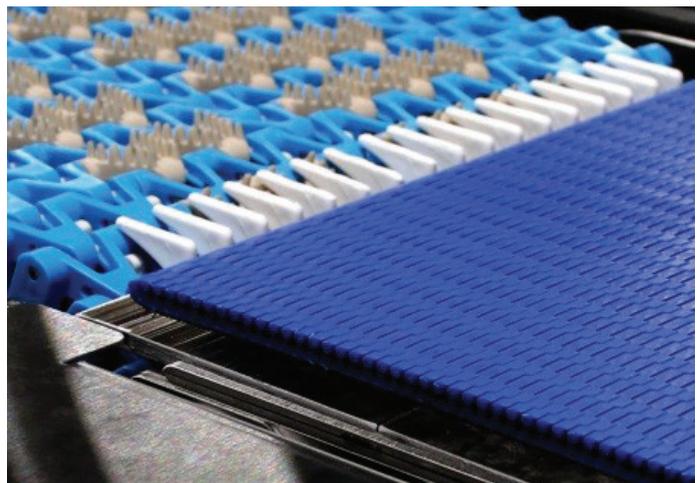
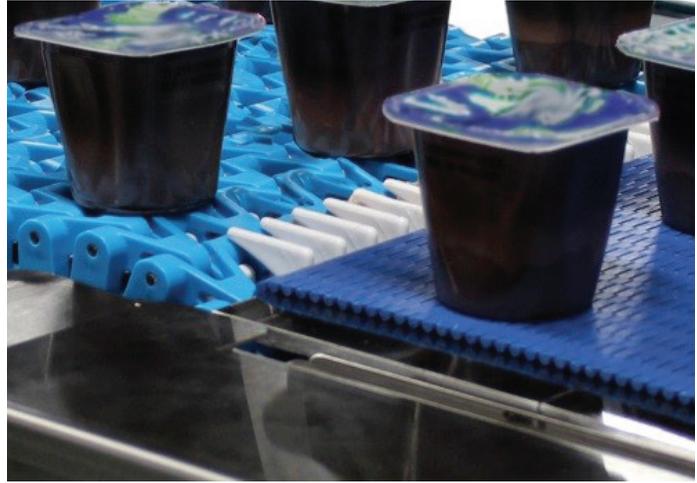
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FINGERS TRANSFER

Between the conveyor and transfer there is a small gap which could cause problems with transferring smaller products. One way to reduce this gap is to use fingers (in combination with raised chain). Fingers are made from molded plastic and are designed to sit in between the raised rows of the conveyor chain. These fingers act as a very small dead plate transfer with the added advantage that there is no leading edge for the product to catch on.

Fingers can be used with plain chain, but this is considered a special application and is typically not necessary for most applications.

Fingers are available for Standard Drive/Idler units with Gravity Roller, MicroSpan, and Wire Mesh transfers.



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