

**Section 4 – Belt Driven Live Roller Conveyor**

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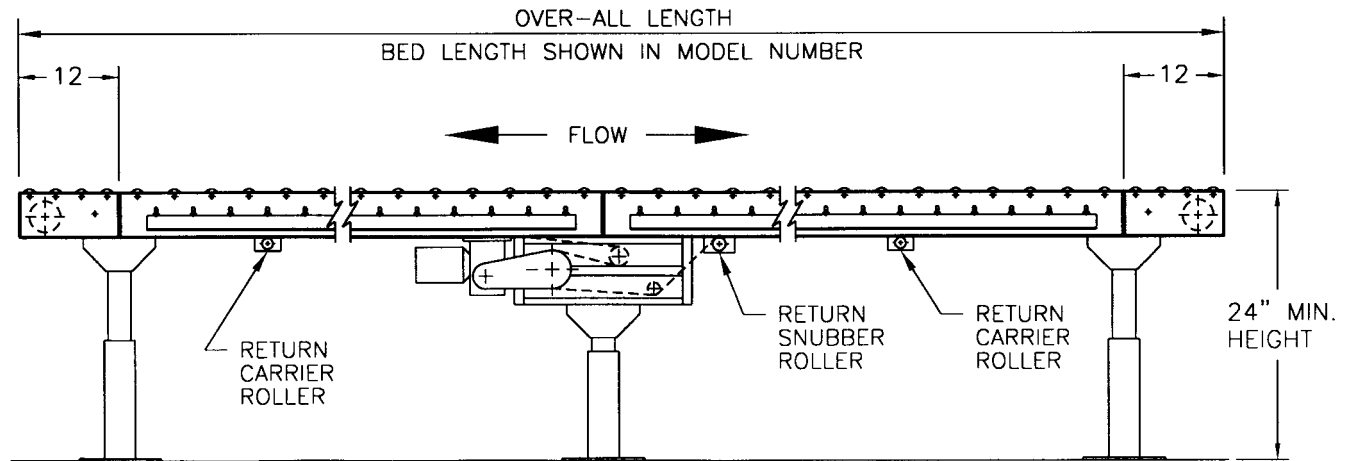
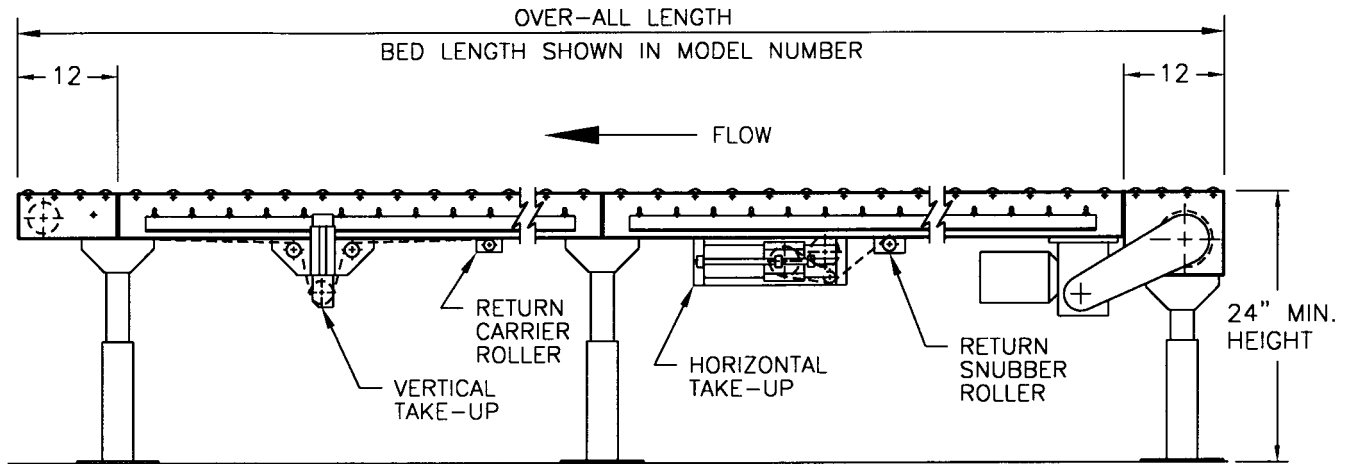
**Steps To Assembling a Complete Belt Driven Live Roller Conveyor Unit:**

The following steps will assist you in assembling a complete belt conveyor unit.

- 1) Determine the width of the conveyor you will require based on the widest product that will be conveyed on the unit.
- 2) Determine the overall length of the unit (starting point and ending point).
- 3) Determine the style of conveyor to be used.
  - 401 Belt Drive Live Roller mainly used for transportation.
  - 430 Belt Driven Live Roller accumulating conveyor.
  - 435 Belt Driven Live Roller electronic accumulating conveyor.
- 4) What is the heaviest product? How much product weight is on the conveyor total?
- 5) Select the Type of drive required.
  - End Drives are used for non-reversing applications.
  - Center Drives are used for reversing applications.
- 6) Select the Motor and Reducer for the drive based on Speed and Horsepower.
- 7) Select End Pulleys as required.
  - One end pulley is required on an end drive conveyor without a power tail.
  - One end pulley is required on a center drive with a power tail.
  - Two end pulleys are required on a center drive without a power tail.
- 8) Select an auxiliary take-up if the length of the unit requires one, or if the end pulleys cannot be used as take-ups due to a length restriction. Belt length take-ups are required because over time the belt will stretch.
  - Center drives have a belt take-up built into the design.
  - End drives require a take-up if the end pulley cannot be adjusted due to length restrictions. The drive side is fixed so only one end pulley can be adjusted.
  - A horizontal take-up should be used on end drives with one adjustable tail pulley on conveyors 40 feet in length up to 110 feet in length.
  - A horizontal take-up should be used on end drives without an adjustable tail pulley on conveyors 10 feet in length up to 75 feet in length.
  - A vertical take-up should be used on end drives with one adjustable tail pulley on conveyors 40 feet in length up to 80 feet in length.
  - A vertical take-up should be used on end drives without an adjustable tail pulley on conveyors 10 feet in length up to 40 feet in length.
- 9) Select Accessories as required. These may include the following:
  - Guard Rail, Supports, Controls or conveyor that feeds product on the belt conveyor.
- 10) Overhead applications require axle hold-down strips to prevent roller pop-out.



401/430 Belt Drive Live Roller Elevation Examples:





**Belt Conveyor Power Conveyor Data Sheet:**

Unit Model Number:

Overall Unit Length:

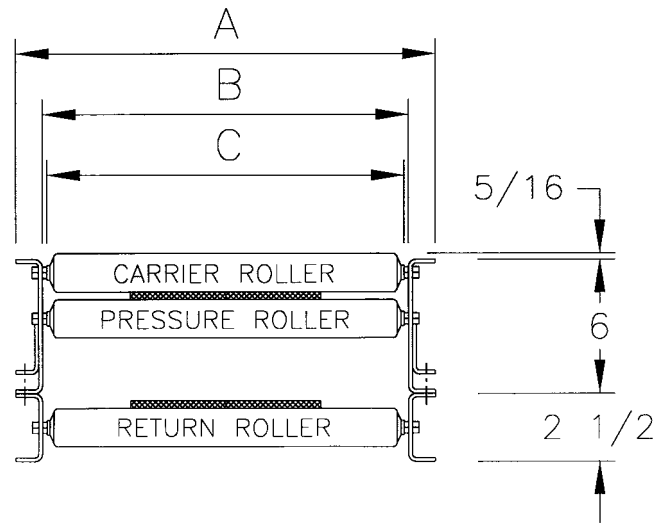
Speed of Unit:

<b>Component</b>	<b>Part Number</b>	<b>Description</b>
Drive		
Motor Horsepower		
Speed of Unit (FPM)		
Bed Construction		
Bottom Pans		
Feeders		
End Assembly		
Take-ups		
Connectors		
Belt type and length		
<b>Accessories</b>		
Guard Rails		
Trussing		
Controls		
Supports		
Finish	Metzgar Blue	



**401 Belt Driven Live Roller Conveyor Specifications and Unit Model Number:**

“A” Bed Width	“B” Between Frame	“C” Roller Width	Belt Width
12”	9 ½”	9 ¼”	6”
15”	12 ½”	12 ¼”	6”
18”	15 ½”	15 ¼”	6”
24”	21 ½”	21 ¼”	6”
30”	27 ½”	27 ¼”	12”
36”	33 ½”	33 ¼”	12”
42”	39 ½”	39 ¼”	12”
48”	45 ½”	45 ¼”	12”



Belt: 6” or 12” wide PVC Cover One Side x Slider Back with Cover Up.

Frame: 10 gage x 6” deep formed steel channel with 1 ¼” flange.

Frames are welded together using 1 ½” x 1 ½” x 3/16” structural steel crossmembers.

Carrier Rollers: Rollers are 1.9” diameter x 16 gage steel with ball bearings and 7/16” hex axles. Axles are spring loaded for easy assembly or removal.

Carrier rollers are available on 2.4”, 3”, 4” or 6” Centers.

Drive Pulleys: Standard Drive pulleys are 6” or 9” diameter crowned and lagged.

Drive pulley shafts are 1 3/16” dia, or 1 7/16” dia.

End Pulleys and Take-up Pulleys: 4” diameter crowned with 1 3/16” dia. shaft.

Internal mounted bearings are standard.

Drive Snubber Roller: Rollers are 2 ½” diameter 11 gage steel with ball bearings and 11/16” hex tube spanner and 7/16” diameter shaft.

Belt return Idler Rollers: Rollers are 1.9” diameter x 16 gage steel with ball bearings and 7/16” hex axles. Axles are spring loaded for easy assembly or removal.

Belt Speed: 60 Feet Per Minute (FPM) is the most common. Other speeds and variable speed are available as options.

**401 Belt Driven Conveyor Model Number:**

**401 - C - 18 - 3 - 25 - ¾**

Conveyor Series

Drive Type E= End C=Center

Frame Bed Width

Carrier Roller Centers(2.4”,3”,4”or6”)

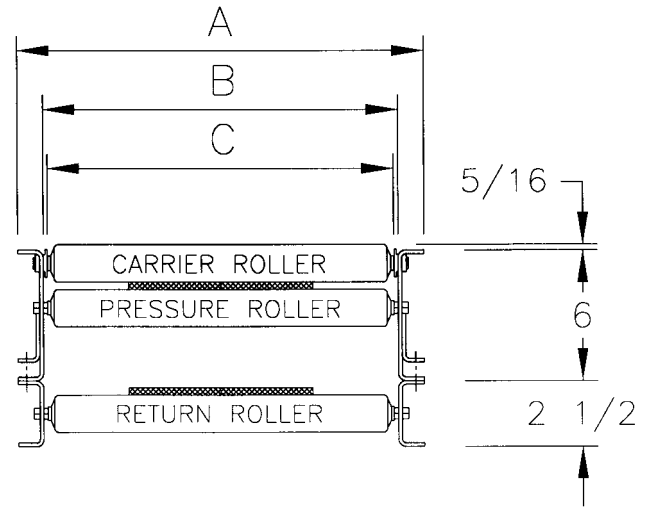
Overall Unit Length in Feet-Inches

Motor Horsepower



**430 Belt Driven Live Roller Conveyor Specifications and Unit Model Number:**

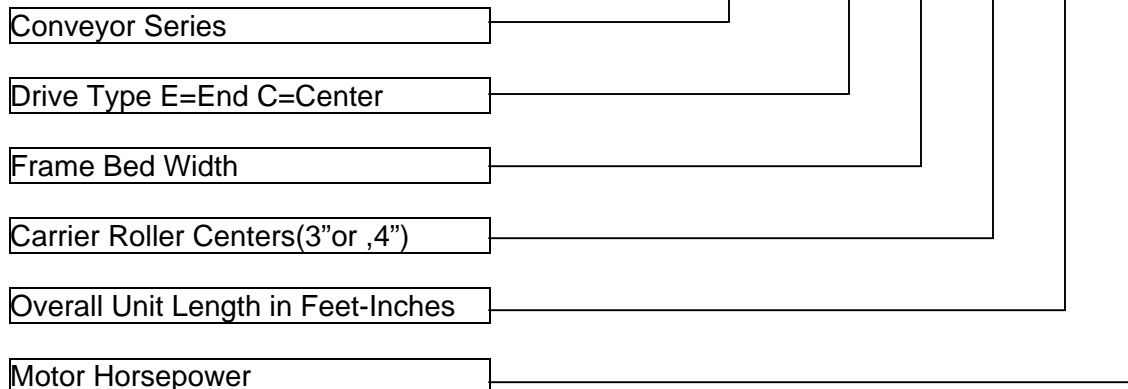
"A" Bed Width	"B" Between Frame	"C" Roller Width	Belt Width
12"	9 1/2"	9"	6"
15"	12 1/2"	12"	6"
18"	15 1/2"	15"	6"
24"	21 1/2"	21"	6"
30"	27 1/2"	27"	12"
36"	33 1/2"	33"	12"
42"	39 1/2"	39"	12"
48"	45 1/2"	45"	12"



- Belt: 6" or 12" wide PVC Cover One Side x Slider Back with Cover Down.
- Frame: 10 gage x 6" deep formed steel channel with 1 1/4" flange.  
Frames are welded together using 1 1/2" x 1 1/2" x 3/16" structural steel crossmembers.  
Frames have sloped slots for roll up accumulation on 3" or 4" roller centers.
- Carrier Rollers: Rollers are 1.9" diameter x 16 gage steel with ball bearings and 7/16" hex axles. Axles are spring loaded for easy assembly or removal.  
Carrier rollers are available on 3" or 4" Centers.
- Drive Pulleys: Standard Drive pulleys are 6" or 9" diameter crowned and lagged.  
Drive pulley shafts are 1 3/16" dia, or 1 7/16" dia.
- End Pulleys and Take-up Pulleys: 4" diameter crowned with 1 3/16" dia. shaft.  
Internal mounted bearings are standard.
- Drive Snubber Roller: Rollers are 2 1/2" diameter 11 gage steel with ball bearings and 11/16" hex tube spanner and 7/16" diameter shaft.
- Belt return Idler Rollers: Rollers are 1.9" diameter x 16 gage steel with ball bearings and 7/16" hex axles. Axles are spring loaded for easy assembly or removal.
- Belt Speed: 60 Feet Per Minute (FPM) is the most common. Other speeds and variable speed are available as options.

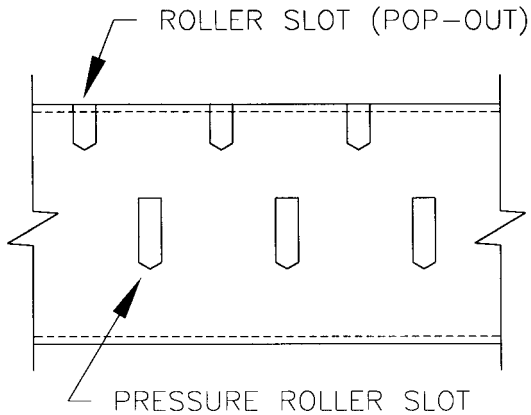
**430 Belt Driven Conveyor Model Number:**

**430 - C - 18 - 3 - 25 - 3/4**





**Belt Driven Live Roller Conveyor Bed Section Part Numbers:**



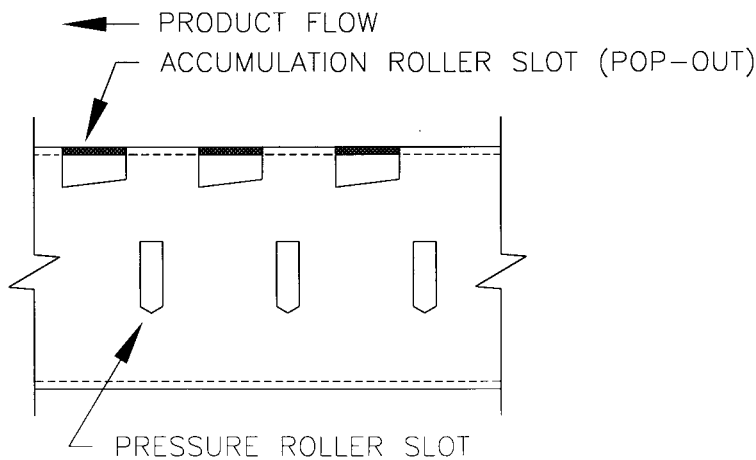
**401 Bed Section Model Number:**

401 - 15 - 3

Conveyor Series

Frame Bed Width

Roller Centers(2.4", 3", 4" or 6")



**430 Bed Section Model Number:**

430 - 15 - 3

Conveyor Series

Frame Bed Width

Roller Centers( 3"or 4")

**Standard Bed Length 2'-6", 5'-0", 7'-6" and 10'-0".  
Center Drives are assembled on 7'-6" bed sections.**

**Order Separately the Belt, Guard Rail and Supports.**



**Conveyor Belt Selection Guide:**

**Belt Length Chart**

Model	Equipment Description	Length of Belt Req'd
409	9" End Drive	2'-6"
409	9" Center Drive	3'-6"
406	6" End Drive	2'-4"
406	6" Center Drive	3'-1"
401	401 End Pulley Assembly	1'-3"
401	Horizontal Take-up	2'-10"
401	Vertical Take-up	1'-4"

Determining the length of the Belt for a particular unit:

- 1) Take the length of all bed sections and multiply by two.
- 2) Add the belt lengths for each assembly required (See above Chart).

**Application Notes:**

**The Temperature range on the standard belting listed above is 32° F to 150° F. Consult the factory for low or high temperature applications.**

**430 Series Accumulation Operation:**

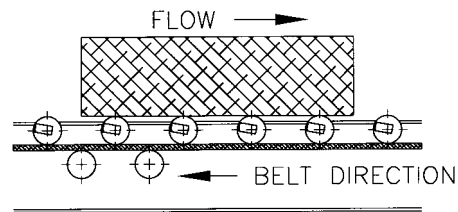


FIGURE 1

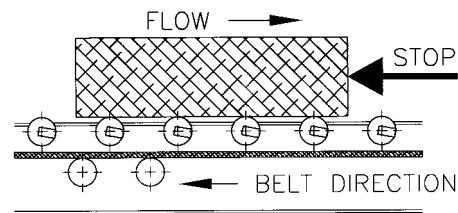


FIGURE 2

The axles of the carrier rollers are mounted in a sintered bushing positioned in the sloped slots of the accumulator frame (figure 1).

When forward motion of the product is stopped, the backward force of the belt causes the carrier rollers to travel up the sloped slots in the frame. As the carrier rollers roll up the slots, a floating effect is created, reducing the pressure to a minimum (figure 2).

When the holding force is removed, the carrier rollers proceed to roll down the slots and resume driving the product with positive force.

430 Series accumulating conveyor is designed for one direction only (non-reversing).





**401 Horsepower Section:**

**To Determine the Horsepower required on a 401 Series BDLR Unit:**

- 1) Determine the maximum weight of product that will be on the unit at any time.
- 2) Divide the maximum weight by the unit length to get weight per foot
- 3) Use Table 1 below to determine the estimated horsepower required at 60 FPM.

Table 1 – 401 Series Horsepower for Maximum Load in weight per foot.

Unit Width	HP	20'	30'	40'	50'	60'	70'	80'	90'	100'
12	1/2	82	52	36	27	21	17	13		
	3/4	134	84	61	48	40	31	27	23	20
15	1/2	79	49	33	24	18	14	11		
	3/4	130	81	58	45	37	28	24	20	17
	1		110	80	59	46	38	32	27	23
18	1/2	76	46	30	22	15	10	9		
	3/4	126	78	55	42	34	25	21	17	14
	1		107	77	57	44	36	30	25	22
	1 1/2			132	104	85	71	61	53	47
24	1/2	70	40	24	16	10				
	3/4	118	72	49	36	28	19	15	11	8
	1		103	73	53	40	32	26	21	18
	1 1/2			128	100	82	68	58	50	44
30	1/2	64	34	18	11	5				
	3/4	110	66	43	30	22	13	9		
	1		98	68	49	36	28	22	17	14
	1 1/2			126	97	79	65	55	46	40
36	1/2	59	28	12	6					
	3/4	102	60	37	24	16	7			
	1		93	63	45	32	24	18	13	8
	1 1/2			122	94	75	61	51	43	37
42	1/2	54	23	7						
	3/4	97	55	32	19	11				
	1		88	58	40	27	19	13	8	
	1 1/2			117	89	70	56	46	38	32
48	1/2	49	18							
	3/4	92	50	27	14	6				
	1		83	53	35	22	14	8		
	1 1/2			112	84	65	51	41	33	27

**For Loads that are greater than listed in this table consult the factory.  
Tables are based on 60 Feet Per Minute with a 1.25 service factor.**



**430 Horsepower Section:**

**To Determine the Horsepower required on a 430 Series BDLR Unit:**

- 1) Determine the maximum weight of product that will be on the unit at any time.
- 2) Divide the maximum weight by the unit length to get weight per foot
- 3) Use Table 2 below to determine the estimated horsepower required at 60 FPM.

Table 2 – 430 Series Horsepower for Maximum Load in weight per foot.

Unit Width	HP	20'	30'	40'	50'	60'	70'	80'	90'	100'
12	½	70	41	29	17					
	¾	109	70	52	35	30	22	18	14	
15	½	66	37	25	14					
	¾	106	66	48	31	26	18	14	11	
	1		101	66	48	38	29	23	17	13
18	½	62	34	22	11					
	¾	102	62	44	28	23	14	12		
	1		97	62	44	35	25	19	13	
	1 ½					68	54	44	37	30
24	½	59	30	18	7					
	¾	100	59	42	24	19	12			
	1		94	59	42	31	22	16	11	
	1 ½					65	50	42	34	26
30	½	53	24	13						
	¾	94	53	36	18	13				
	1		88	53	36	25	16	11		
	1 ½					59	44	36	28	20
36	½	47	18							
	¾	88	47	30	13					
	1		82	47	30	19	11			
	1 ½					53	40	30	22	14
42	½	41	12							
	¾	82	41	24	7					
	1		76	41	24	12				
	1 ½					47	34	24	16	8
48	½	35	6							
	¾	76	35	18						
	1		70	35	18	6				
	1 ½					41	28	18	10	

**For Loads that are greater than listed in this table consult the factory.**

**Tables are based on 60 Feet Per Minute with a 1.25 service factor.**

**430 series applications should not exceed 50 pounds per foot. Exceeding 50 pounds per foot will greatly increase line pressure.**



**401 and 430 Drives:**

Horsepower / Reducer Availability 6” Drive Speed in FPM

30	40	50	60	70	80	90	100
1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
N/A	N/A	N/A	1	1	1	1	1

Horsepower / Reducer Availability 9” Drive Speed in FPM

30	40	50	60	70	80	90	100
1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
N/A	1	1	1	1	1	1	1
N/A	N/A	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
N/A	N/A	2	2	2	2	2	2

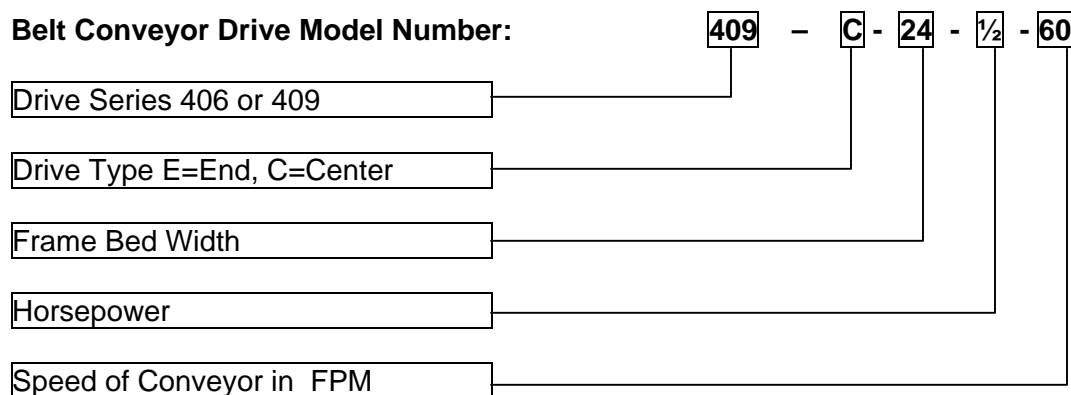
To Determine the part number for a drive the following information is required.

- 1) Frame Width
- 2) If a End Drive or Center Drive is Required.
- 3) The Horsepower of the motor (From Table 1 or 2)
- 4) Determine the drive size required based on the load of product in weight per foot(Table 3).

Table 3 - Drive Size

Drive Size	406 (30” wide Max)	409
401 Unit	975	1950
430 Unit	800	1600

**Belt Conveyor Drive Model Number:**

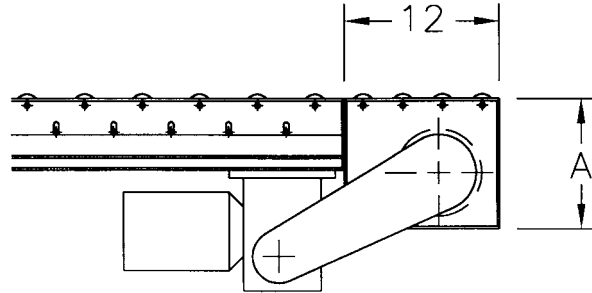




Drive Dimensions and End Pulley Part Numbers :

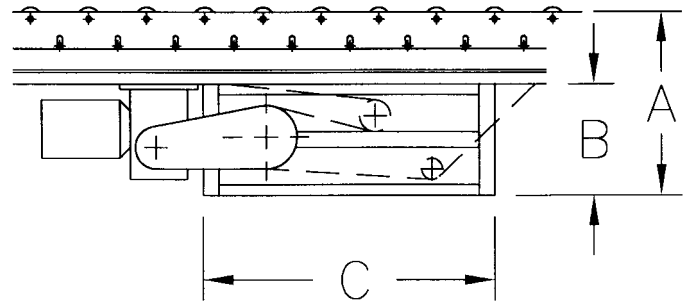
401/430 End Drives

Drive Pulley	"A" Dim.
6" Dia.	9
9" Dia.	12



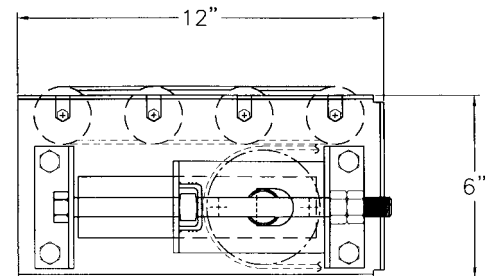
401/430 Center Drives:

Drive Pulley	"A" Dim.	"B" Dim.	"C" Dim.
6" Dia.	13"	7"	28"
9" Dia.	21 1/2"	13"	32"



401/430 End Pulley Assembly:

- Pulley Diameter: 4 inch
- Bearings: Internal to Pulley
- Shaft Diameter: 1 3/16"



One end pulley is required on an end drive conveyor.  
 Two end pulleys are required on a center drive unit.

End Pulley Model Number:

401EP - 24

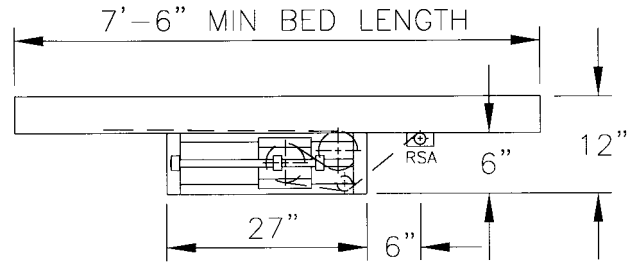
Conveyor Series End Pulley

Frame Bed Width



**401/430 Belt Take-ups:**

**Horizontal Take-up:**



A horizontal take-up should be used on end drives with one adjustable tail pulley on conveyors 40 feet in length up to 110 feet in length.

A horizontal take-up should be used on end drives without an adjustable tail pulley on conveyors 10 feet in length up to 75 feet in length.

**Horizontal Take-up Model Number:**

**401 - HTU - 24**

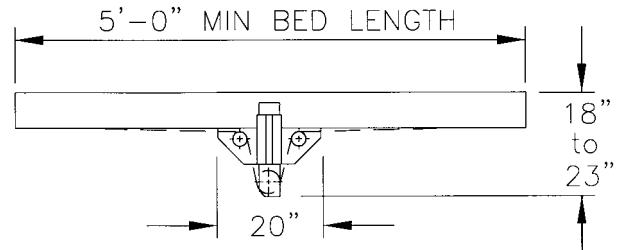
Conveyor Series

Horizontal Take-up

Frame Bed Width

**Standard unit includes a take-up frame assembly with snubber roller, two 4" diameter pulleys with 1 3/16" diameter shafts and guards.**

**Vertical Take-up:**



A vertical take-up should be used on end drives with one adjustable tail pulley on conveyors 40 feet in length up to 80 feet in length.

A vertical take-up should be used on end drives without an adjustable tail pulley on conveyors 10 feet in length up to 40 feet in length.

**Vertical Take-up Model Number:**

**401 - VTU - 24**

Conveyor Series

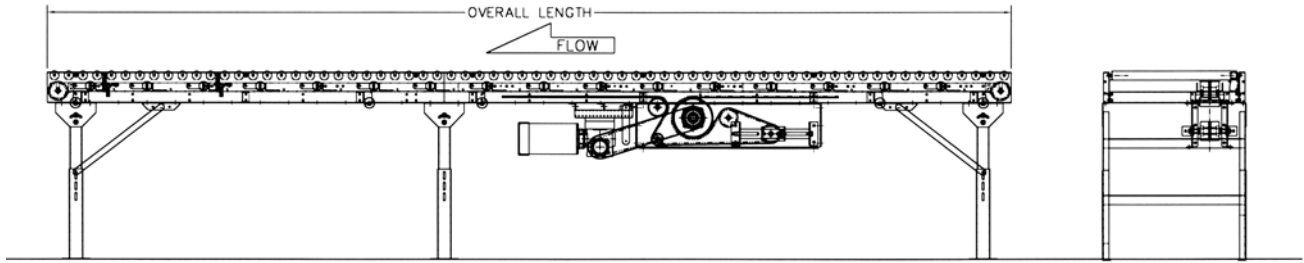
Vertical Take-up

Frame Bed Width

**Standard unit includes a take-up frame assembly with two snubber rollers, one 4" diameter pulley with 1 3/16" diameter shafts and guards.**



**435 Zero Pressure Electronic Accumulating BDLR Elevation Example and Features:**

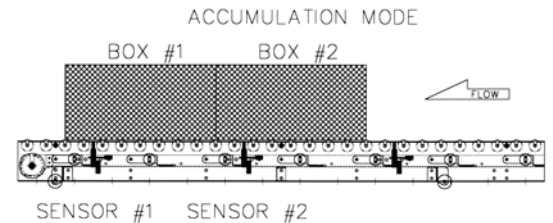


**Features:**

- Zero Pressure product accumulation.
- Efficient full-length accumulation without gaps between products regardless of variations in product lengths.
- End Pulley assemblies are integrated into the frame.
- Systems Require 24vdc and 20 PSI compressed air
- Electronic Sensors – no mechanical adjustments required.
- Drives have a standard three phase motor.
- Ability to slave drive a 450 Series V-Belt Driven Curve.
- Standard unit has Pressure/drive rollers on 12” centers with electronic sensors on 24” centers.
- Optional brake zones allow for positive stopping of rollers.

**Accumulation:**

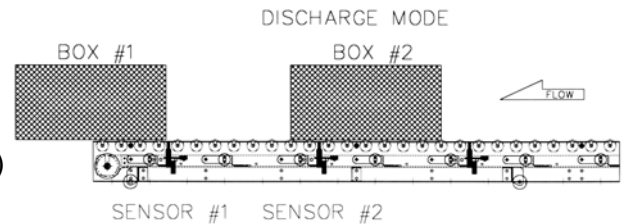
435 Series accumulation is accomplished using air pucks to raise the drive belt to contact the rollers for drive. Electronic sensors are used to sense the product and remove air from the puck, lowering the drive rollers. When two consecutive sensors are blocked the drive is removed from the upstream zone.



**Discharge:**

The discharge can be accomplished by two methods.

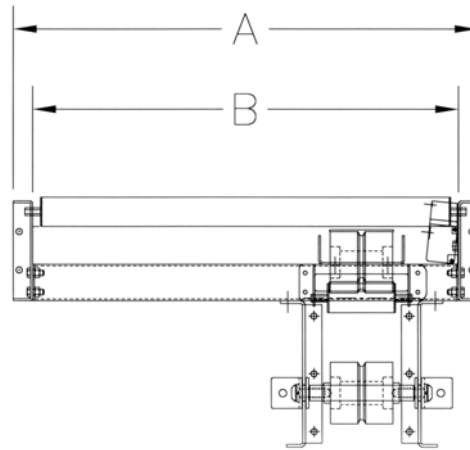
- 1) Singulation release, which the products are released one at a time with a gap between. (Shown in Example)
- 2) Slug release, which all the products are released creating a continuous flow of product.





**435 Zero Pressure Electronic Accumulating BDLR Specifications and Unit Model Number:**

“A” Bed Width	“B” Between Frame
18”	15 ½”
24”	21 ½”
30”	27 ½”
36”	33 ½”
42”	39 ½”
48”	45 ½”



Belt: 4” PVC Cover One Side x Slider Back with Cover Down, v-guide molded to back side.

Frame: 10 gage x 6 1/2” deep formed steel channel with 1 ¼” flange.

Frames are bolted together using formed steel crossmembers.

Frames have hex slots for accumulation punched on 3” centers.

Carrier Rollers: Rollers are 1.9” diameter x 16 gage steel with ball bearings and 7/16” hex axles. Axles are spring loaded for easy assembly or removal.

Carrier rollers are available on 3” or 6” Centers.

Drive Pulleys: Standard Drive pulley is 8” diameter with v-guide.

Drive pulley shafts are 1 3/16” dia for 8” drive.

End Pulleys and Take-up Pulleys: 4” diameter with v-guide.

Drive Snubber Roller: Rollers are 2 ½” diameter with ball bearings.

Belt return Idler Rollers: Rollers are 1.9” diameter x 16 gage steel with ball bearings and 7/16” hex axles. Axles are spring loaded for easy assembly or removal.

Belt Speed: 60 Feet Per Minute (FPM) is the most common. Other speeds and variable speed are available as options.

**435 Belt Driven Conveyor Model Number:**

**435 - C - 18 - 3 - 25 - ¾**

Conveyor Series

Drive Type C=Center

Overall Frame Bed Width

Carrier Roller Centers(3”,6”)

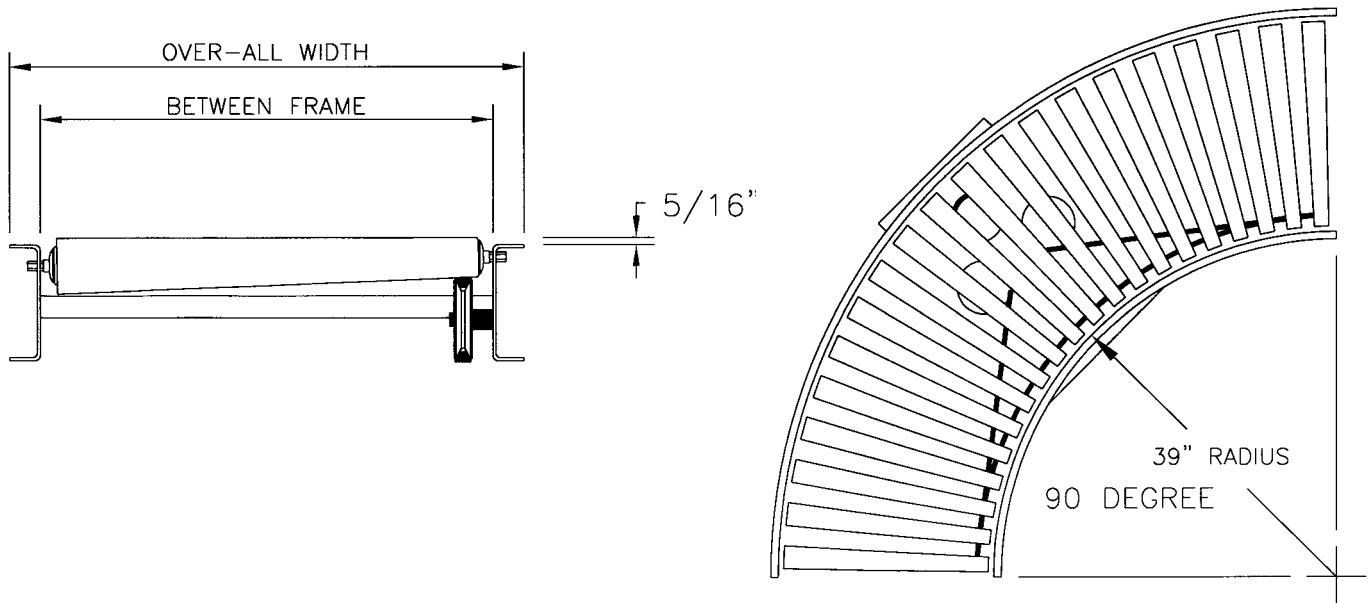
Overall Unit Length in Feet-Inches

Motor Horsepower

**Optional 8” wide belt is available for heavy load applications.  
Order Separately: Brakes, Guard Rail, Supports and Controls.**

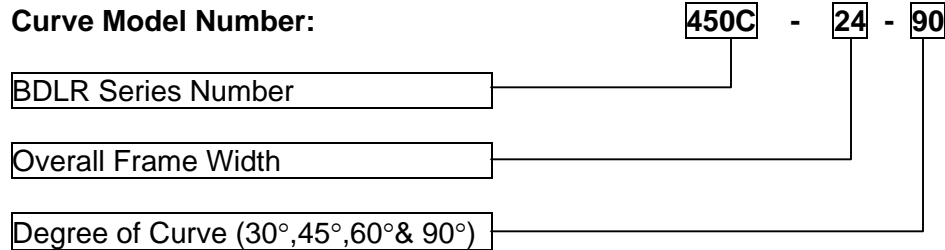


**450 Series Tapered Roller Curves:**



**Maximum Drive per Roller is 13 pounds.**  
**Maximum Weight of product on curve is 250 pounds.**

**450 Curves are available in 18", 24", 30", 36" and 42" OAW .**



**450 Series Tapered Roller Curve:**

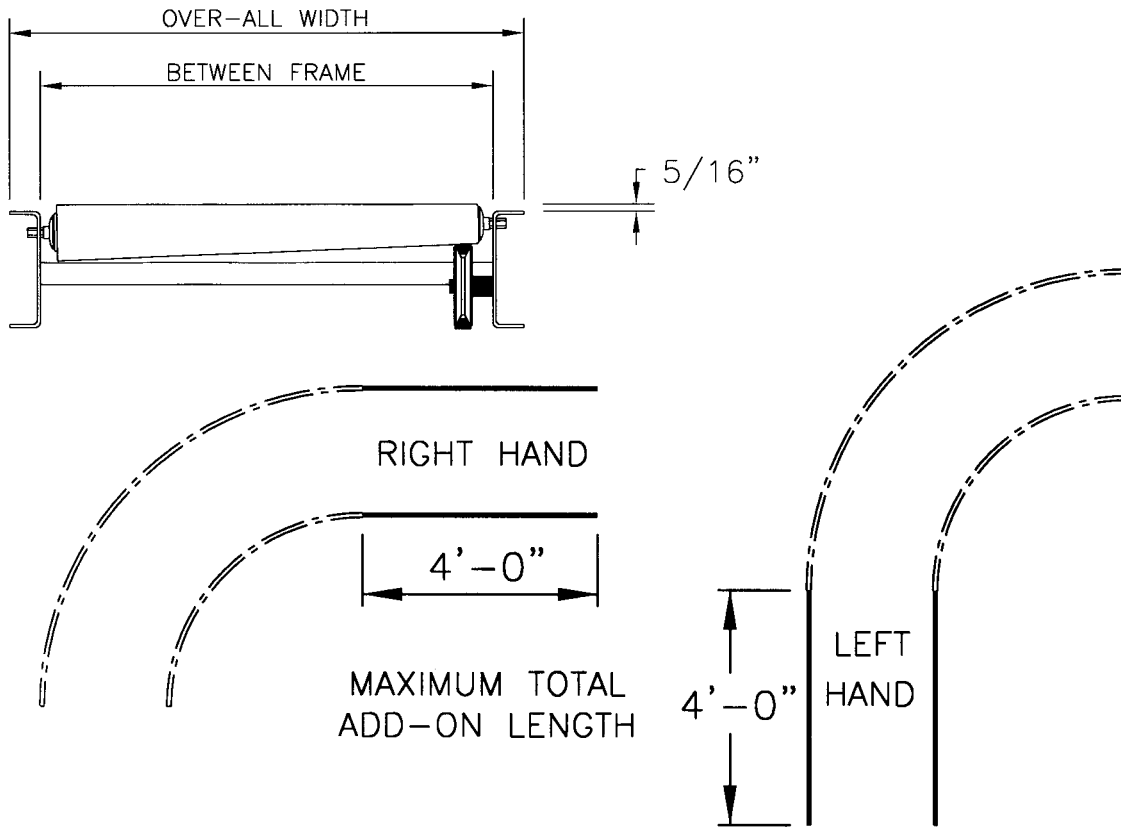
- Tapered Rollers: 1-5/8" Diameter on small end with 7/16" hex axle with ball bearings.
- Tapered Rollers have .042" of taper per inch of length to the large end.
- Roller ends are swaged over the bearings to provide a smooth, full length carrying surface.
- Roller axles are 7/16" hex stock spring loaded for easy removal and assembly.
- The top of the roller is 5/16" above the top flange of the frame.
- Frame: 10 gage formed channel 4-1/2" deep with 1-1/4" flanges.
- Axle holes are 7/16" hex.
- Crossmembers are formed 10 gage steel bolted to frames.
- Drive Belt: B-Section Endless V-Belt
- Motor/Drive: 1/2 Hp for 60 Feet Per Minute is standard.
- Finish: Standard finish for painted components is Metzgar Medium Blue or Vista Green

**Standard Curves Contain 20 Rollers in a 90 Degree Curve.**  
**30° and 45° Curves include a 12" tangent section as standard.**  
**Order Separately: Guard Rail, Supports and Controls.**  
**Standard Speed is 60 FPM consult factory for other speeds.**





**450 Series Curve Tangents:**



**Maximum Drive per Roller is 9 pounds with Tangent added.**  
**Maximum Weight of product on curve and Tangent is 250 pounds.**  
**450 Curve Tangents are available in 18", 24", 30", 36" and 42" OAW .**

**Curve Model Number:**

**450S - 24 - 4**

BDLR Series Number

Overall Frame Width

Length of Tangent in Feet (4' max.)

**450 Series Straight Roller Curve Tangent:**

Straight Rollers: 1.9" Diameter x 16 gage galvanized tube.

Roller ends are swaged over the bearings to provide a smooth, full length carrying surface.

Roller axles are 7/16" hex stock spring loaded for easy removal and assembly.

The top of the roller is 5/16" above the top flange of the frame.

Frame: 10 gage formed channel 4-1/2" deep with 1-1/4" flanges.

Axle holes are 7/16" hex.

Crossmembers are formed 10 gage steel bolted to frames.

Drive Belt: B-Section Endless V-Belt

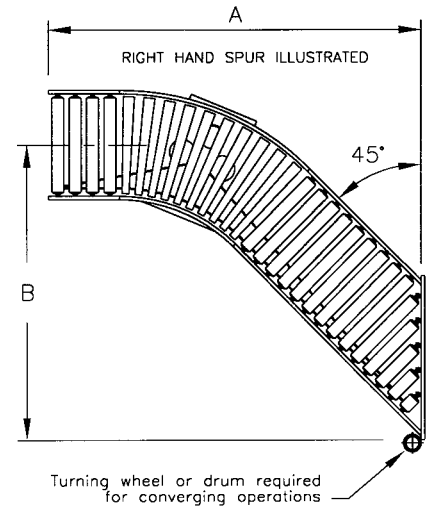
Motor/Drive: Included on Curve

Finish: Standard finish for painted components is Metzgar Medium Blue or Vista Green



**450 Series 90 Degree Spur/ Merge:**

OAW	“A”	“B”
18”	67 ¼”	52
24”	72 ¼”	59 ½
30”	91 ¼”	73 ¼”
36”	103 ½”	83 ½”
42	115 ½”	94



**Maximum Drive per Roller is 13 pounds.**

**Maximum Weight of product on Spur / Merge is 250 pounds.**

**450 90° Spur / Merges are available in 18” , 24” , 30” , 36”and 42” OAW .**

**Spur Model Number:**

**450-LRS - 24 - 90 - RH**

BDLR Series Number

Frame Width

Degree of Curve

Right Hand or Left Hand (RH or LH)

**450 Series 90 Degree Spur / Merge:**

Tapered Rollers: 1-5/8” Diameter on small end with 7/16” hex axle with ball bearings.

Tapered Rollers have .042” of taper per inch of length to the large end.

Roller ends are swaged over the bearings to provide a smooth, full length carrying surface.

Roller axles are 7/16” hex stock spring loaded for easy removal and assembly.

The top of the roller is 5/16” above the top flange of the frame.

Straight Rollers: 1.9” diameter x 16 gage galvanized tube with 7/16” hex axle with ball bearings.

Roller ends are swaged over the bearings to provide a smooth, full length carrying surface.

Roller grooves are cold formed in the roller shell.

Roller axles are 7/16” hex stock spring loaded for easy removal and assembly

Frame: 10 gage formed channel 4-1/2” deep with 1-1/4” flanges.

Axle holes are 7/16” hex.

Crossmembers are formed 10 gage steel bolted to frames.

Drive Belt: B-Section Endless V-Belt

Motor/Drive: ½ Hp for 60 Feet Per Minute is standard.

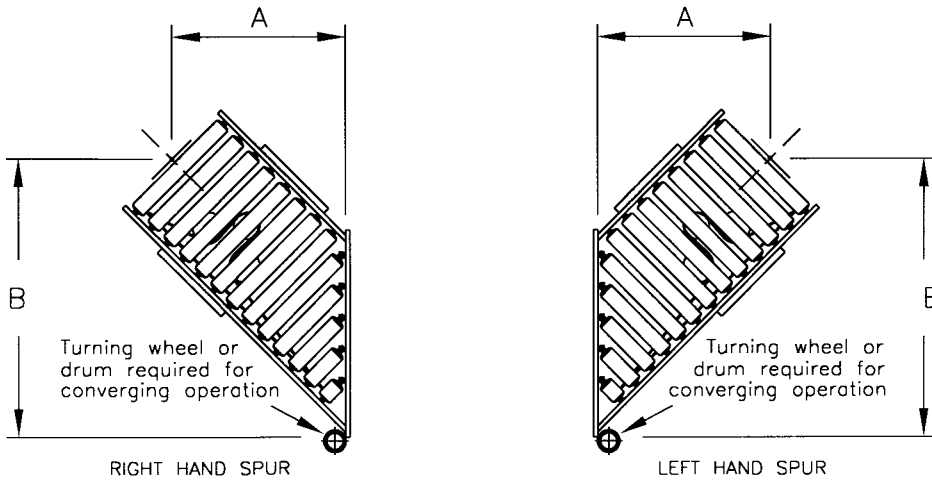
Finish: Standard finish for painted components is Metzgar Medium Blue or Vista Green

***Order Separately: Guard Rail, Supports, Turning Wheel and Controls.***

***Standard Speed is 60 FPM consult factory for other speeds.***



**450 Series 45 Degree Spur / Merge:**



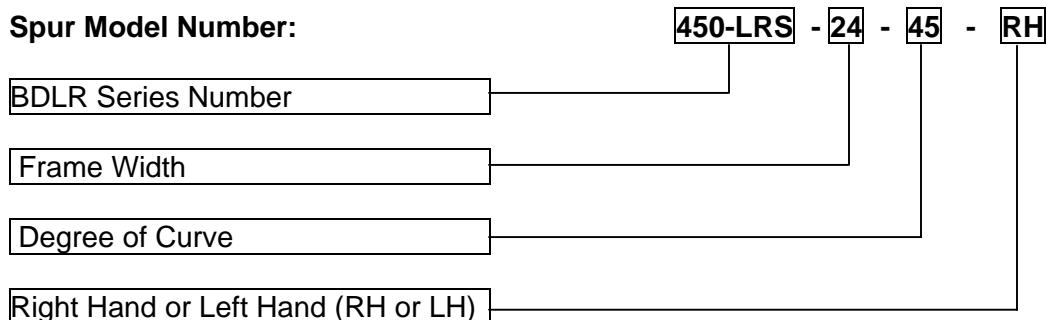
OAW	"A"	"B"
18"	27"	40 1/2"
24"	29 1/4"	38 1/4"
30"	31 1/4"	44 1/2"
36"	33 1/2"	51"
42"	35 1/2"	65 1/2"

**Maximum Drive per Roller is 13 pounds.**

**Maximum Weight of product on Spur / Merge is 250 pounds.**

**450 45° Spur / Merges are available in 18", 24", 30", 36" and 42" OAW .**

**Spur Model Number:**



**450 Series 45 Degree Spur / Merge:**

Straight Rollers: 1.9" diameter x 16 gage galvanized tube with 7/16" hex axle with ball bearings.

Roller ends are swaged over the bearings to provide a smooth, full length carrying surface.

Roller grooves are cold formed in the roller shell.

Roller axles are 7/16" hex stock spring loaded for easy removal and assembly

Frame: 10 gage formed channel 4-1/2" deep with 1-1/4" flanges.

Axle holes are 7/16" hex.

Crossmembers are formed 10 gage steel bolted to frames

Drive Belt: B-Section Endless V-Belt

Motor/Drive: 1/2 Hp for 60 Feet Per Minute is standard.

Finish: Standard finish for painted components is Metzgar Medium Blue or Vista Green

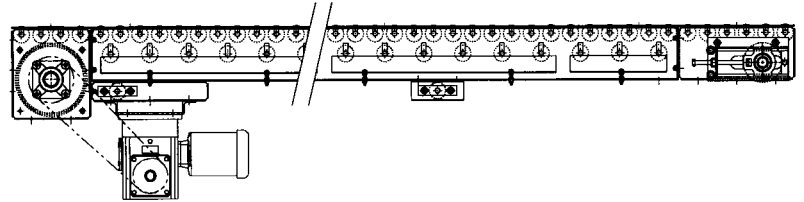
**Order Separately: Guard Rail, Supports, Turning Wheel and Controls.**

**Standard Speed is 60 FPM consult factory for other speeds.**



**460 Heavy Duty Belt Driven Live Roller Conveyor Specifications and Unit Model Number:**

“A” Bed Width	“B” Between Frame	“C” Roller Width
42 1/4”	39”	38 3/4”
46 1/4”	43”	42 3/4”
50 1/4”	47”	46 1/4”
54 1/4”	51”	50 3/4”
58 1/4”	55”	54 3/4”
62 1/4”	59”	58 3/4”
66 1/4”	63”	62 3/4”
70 1/4”	67”	66 3/4”
74 1/4”	71”	70 3/4”



- Belt: 18” wide PVC Cover One Side x Slip Back with Cover Up.
- Frame: 7 gage x 8” deep formed steel channel with 1 5/8” flange.  
 Frames are welded together using 2” x 2” x 1/4” structural angle crossmembers.  
 Frames are slotted for pop-out roller safety feature.
- Carrier Rollers: Rollers are 2 1/2” diameter x 11 gage steel with ball bearings and 11/16” hex axles. Axles are spring loaded for easy assembly or removal.  
 Carrier rollers are available on 3” or 6” Centers. Roller capacity is 650 pounds each.
- Drive Pulleys: Standard Drive pulleys come in 10” diameter crowned and lagged.  
 Drive pulley shaft is 1 15/16” dia.  
 Standard Drive motor is located on the Left side looking with the direction of flow.
- End Pulleys and Take-up Pulleys: 6” diameter crowned with 1 7/16” dia. shaft.  
 External mounted bearings are standard.
- Drive Snubber Roller: Rollers are 2 1/2” diameter 11 gage steel with ball bearings and 11/16” hex tube spanner and 7/16” diameter shaft.
- Belt return Idler Rollers: Rollers are 2 1/2” diameter x 11 gage steel with ball bearings and 11/16” hex axles. Axles are spring loaded for easy assembly or removal.
- Standard Speed: 30 Feet Per Minute (FPM). Other speeds and variable speed are available as options.

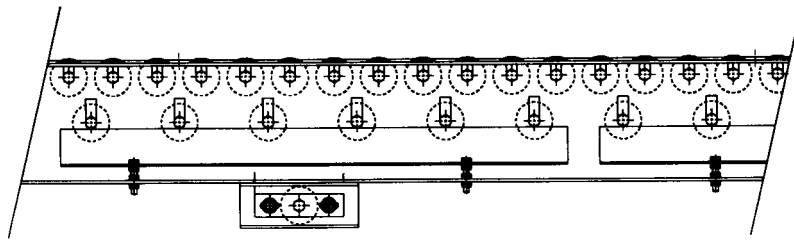
**460 Belt Driven Conveyor Model Number:**

**460 - E - 50 - 3 - 25 - 3/4**

- Conveyor Series
- Drive Type E= End C=Center
- Frame Bed Width
- Carrier Roller Centers(3” or 6”)
- Overall Unit Length in Feet-Inches
- Motor Horsepower



**460 Bed Selection, Belt Length and End Pulley**



**460 Bed Section Model Number:**

**460 - 50 - 3**

Conveyor Series

Frame Bed Width

Roller Centers(2.4", 3", 4" or 6")

**460 Belt Length Chart**

Model	Equipment Description	Length of Belt Req'd
460	10" End Drive	2'-8"
460	6" Diameter End Pulley	2'-6"

Determining the length of the Belt for a particular unit:

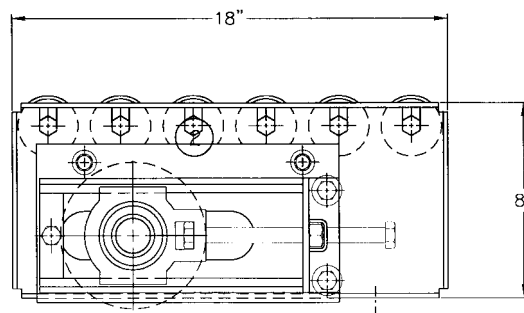
- 1) Take the length of all bed sections and multiply by two.
- 2) Add the length of the end assembly and drive.

**460 End Pulley Assembly**

Pulley Diameter: 6 inch

Bearings: External with 6" travel of take-up

Shaft Diameter: 1 7/16"



**End Pulley Model Number:**

**460EP - 50**

Conveyor Series End Pulley

Frame Bed Width



**460 Horsepower Section:**

**To Determine the Horsepower required on a 460 Series BDLR Unit:**

- 1) Determine the maximum weight of product that will be on the unit at any time.
- 2) Divide the maximum weight by the unit length to get weight per foot
- 3) Use Table 3 below to determine the estimated horsepower required at 40 FPM.

Table 3 – 460 Series Horsepower for Maximum Load in weight per foot Rollers on 3” Centers.

Unit Width	HP	20'	30'	40'	50'	60'	70'	80'	90'
<b>42</b>	$\frac{3}{4}$	119	35	22					
	1	179	94	52	26	9			
	1 ½	319	187	122	82	56	37	23	12
	2	428	260	176	126	92	68	51	37
<b>46</b>	$\frac{3}{4}$	113	48	15					
	1	172	88	45	20				
	1 ½	312	181	115	76	50	31	17	
	2	421	254	170	119	86	62	44	30
<b>50</b>	$\frac{3}{4}$	107	42	9					
	1	166	81	39	14				
	1 ½	306	175	109	70	43	25	11	
	2	415	247	164	113	80	56	38	24
<b>54</b>	$\frac{3}{4}$	100	36						
	1	160	75	33					
	1 ½	300	169	103	64	37	18		
	2	409	241	157	107	74	50	32	18
<b>58</b>	$\frac{3}{4}$	94	29						
	1	153	69	26					
	1 ½	293	162	96	57	31	12		
	2	402	235	151	101	67	43	25	11
<b>62</b>	$\frac{3}{4}$	88	23						
	1	147	63	20					
	1 ½	287	156	90	51	25			
	2	396	228	145	94	61	37	19	
<b>66</b>	$\frac{3}{4}$	82	17						
	1	141	56	14					
	1 ½	281	150	84	45	18			
	2	390	222	139	88	55	31	13	
<b>70</b>	$\frac{3}{4}$	76	11						
	1	135	50						
	1 ½	275	144	78	39	12			
	2	384	216	133	82	49	25		
<b>74</b>	$\frac{3}{4}$	69							
	1	129	44						
	1 ½	269	137	72	32				
	2	378	210	126	76	42	19		

**For Loads that are greater than listed in this table consult the factory.  
Tables are based on 40 Feet Per Minute.**



**460 Horsepower Section:**

**To Determine the Horsepower required on a 460 Series BDLR Unit:**

- 1) Determine the maximum weight of product that will be on the unit at any time.
- 2) Divide the maximum weight by the unit length to get weight per foot
- 3) Use Table 4 below to determine the estimated horsepower required at 40 FPM.

Table 4 – 460 Series Horsepower for Maximum Load in weight per foot Rollers on 6” Centers.

Unit Width	HP	20'	30'	40'	50'	60'	70'	80'	90'
<b>42</b>	<sup>3</sup> / <sub>4</sub>	147	82	50	31	18	8		
	1	207	122	80	54	37	25	16	
	1 ½	347	215	150	110	84	65	51	40
	2	456	288	204	154	120	97	79	65
<b>46</b>	<sup>3</sup> / <sub>4</sub>	143	78	46	27	14			
	1	203	118	76	50	33	21	12	
	1 ½	343	211	146	106	80	61	47	36
	2	452	284	200	150	116	93	75	61
<b>50</b>	<sup>3</sup> / <sub>4</sub>	140	75	42	23	10			
	1	199	114	72	45	30	18	9	
	1 ½	339	208	142	103	76	58	44	33
	2	448	280	197	146	113	89	71	57
<b>54</b>	<sup>3</sup> / <sub>4</sub>	136	72	39	19				
	1	195	110	68	43	26	14		
	1 ½	335	204	138	99	73	54	40	29
	2	444	278	193	143	109	85	67	53
<b>58</b>	<sup>3</sup> / <sub>4</sub>	132	67	35	15				
	1	191	107	64	39	22	10		
	1 ½	331	200	134	95	69	50	36	25
	2	440	273	189	139	105	81	63	49
<b>62</b>	<sup>3</sup> / <sub>4</sub>	128	63	31	11				
	1	188	103	61	35	18	6		
	1 ½	328	196	131	91	65	46	32	21
	2	437	269	185	135	101	77	59	45
<b>66</b>	<sup>3</sup> / <sub>4</sub>	124	60	27	8				
	1	184	99	57	32	15			
	1 ½	324	193	127	88	61	42	28	17
	2	433	265	181	131	98	74	56	42
<b>70</b>	<sup>3</sup> / <sub>4</sub>	121	56	23					
	1	180	95	53	28	11			
	1 ½	320	189	123	84	57	39	25	14
	2	429	261	178	127	94	70	52	38
<b>74</b>	<sup>3</sup> / <sub>4</sub>	117	52	20					
	1	176	92	49	24	7			
	1 ½	316	185	119	80	54	35	21	10
	2	425	258	174	124	90	66	48	34

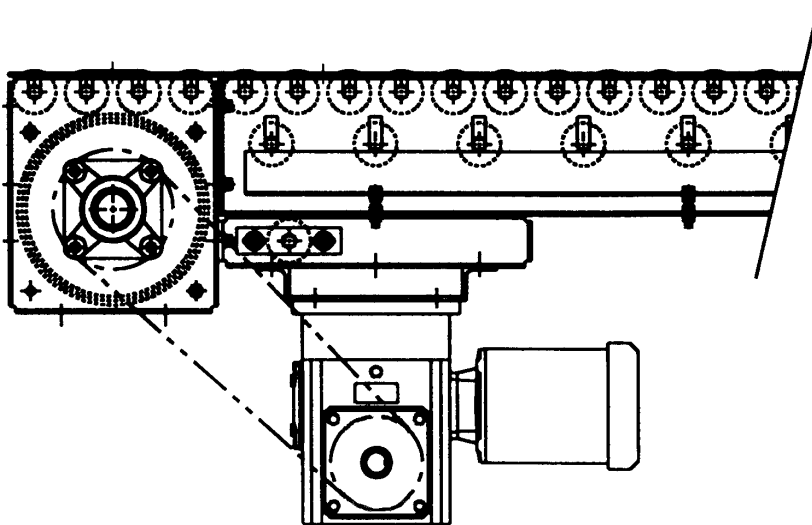
**For Loads that are greater than listed in this table consult the factory.  
Tables are based on 40 Feet Per Minute.**



460 Belt Driven Live Roller Drive Model Number:

Horsepower / Reducer Availability 460 Drive Speed in FPM

30	35	40	45	50	55	60
3/4	3/4	3/4	3/4	3/4	3/4	3/4
3/4	3/4	3/4	3/4	3/4	3/4	3/4
1	1	1	1	1	1	1
1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
2	2	2	2	2	2	2



Belt Driven Conveyor Drive Model Number:

460 - E - 2418 - 3/4 - 30

Drive Series

Drive Type (see below)

Frame Bed Width

Horsepower

Speed of Conveyor in FPM



**Belt Driven Live Roller Options:**

**Frame Options:**

Butt Bolt Frame Connectors  
Special Widths to match an Existing Conveyor  
Special Degree Curves  
Special Paint Colors  
Powder Coated Frames  
Bright Zinc Plating on Frames  
Full Width End Covers  
Full Width End Cover Stops

**Roller Options:**

Special Roller Lengths  
Powder Coated Rollers  
Bright Zinc Plating on Rollers  
Semi Precision Roller Bearings  
ABEC-1 Precision Roller Bearings

**Drive Options:**

Single or Three Phase Motors  
Clutch/Brake Assemblies



**BDLR Replacement Parts:**

**6" Drive Pulleys (5" Diameter plus Lagging) Includes 1 3/16" Diameter Shaft**

Overall Width	Face Width	Pulley with 1 3/16" Bore
12"	7"	<b>406-12Dpulley</b>
15"	10"	<b>406-15Dpulley</b>
18"	13"	<b>406-18Dpulley</b>
24"	19"	<b>406-24Dpulley</b>
30"	25"	<b>406-30Dpulley</b>
36"	31"	<b>406-36Dpulley</b>
42"	37"	<b>406-42Dpulley</b>
48"	43"	<b>406-48Dpulley</b>

**9" Drive Pulleys (8" Diameter plus Lagging) Includes 1 7/16" Diameter Shaft**

Overall Width	Face Width	Pulley with 1 7/16" Bore
12"	7"	<b>409-12Dpulley</b>
15"	10"	<b>409-18Dpulley</b>
18"	13"	<b>409-18Dpulley</b>
24"	19"	<b>409-24Dpulley</b>
30"	25"	<b>409-30Dpulley</b>
36"	31"	<b>409-36Dpulley</b>
42"	37"	<b>409-42Dpulley</b>
48"	43"	<b>409-48Dpulley</b>

**4" Take-up End Pulley (4" Diameter with Internal Bearings) Includes 1 3/16" Diameter Shaft**

Overall Width	Face Width	Pulley with 1 3/16" Bore
12"	7"	<b>401-12-419TUEpulley</b>
15"	10"	<b>401-15-419TUEpulley</b>
18"	13"	<b>401-18-419TUEpulley</b>
24"	19"	<b>401-24-419TUEpulley</b>
30"	25"	<b>401-30-419TUEpulley</b>
36"	31"	<b>401-36-419TUEpulley</b>
42"	37"	<b>401-42-419TUEpulley</b>
48"	43"	<b>401-48-419TUEpulley</b>

**401/430 Drive Snubber Roller**

Overall Width	Snubber Rollers Steel
12 "	<b>401-12SRS</b>
15"	<b>401-15SRS</b>
18"	<b>401-18SRS</b>
24"	<b>401-24SRS</b>
30"	<b>401-30SRS</b>
36"	<b>401-36SRS</b>
42"	<b>401-42SRS</b>
48"	<b>401-48SRS</b>

**401 and 430 Return Rollers and 401 Carrier Rollers with 7/16" Hex Shaft (Return Roller Bracket ordered Separate)**

Overall Width	Return Rollers Steel
12"	<b>401-12RRS</b>
15"	<b>401-15RRS</b>
18"	<b>401-18RRS</b>
24"	<b>401-24RRS</b>
30"	<b>401-30RRS</b>
36"	<b>401-36RRS</b>
42"	<b>401-42RRS</b>
48"	<b>401-48RRS</b>

**430 Carrier Rollers with 7/16" Hex Shaft**

Overall Width	Carrier Rollers Steel
12"	<b>430-12CRS</b>
15"	<b>430-15CRS</b>
18"	<b>430-18CRS</b>
24"	<b>430-24CRS</b>
30"	<b>430-30CRS</b>
36"	<b>430-36CRS</b>
42"	<b>430-42CRS</b>
48"	<b>430-48CRS</b>



**401/430 Misc Parts**

BDLR Return Carrier Bracket	<b>401-RCA</b>
430 Accumulator Sintered Bushing	<b>430-SAB</b>

**435 Carrier Rollers with 7/16" Hex Shaft**

Overall Width	Carrier Rollers Steel
18"	<b>435-18RS</b>
24"	<b>435-24RS</b>
30"	<b>435-30RS</b>
36"	<b>435-36RS</b>
42"	<b>435-42RS</b>
48"	<b>435-48RS</b>

**435 Misc Parts**

Electronic Sensor Photoeye/Solenoid Valve	<b>435-PESOL</b>
435 Air Bladder/Puck	<b>435-PUCK</b>
435 4" Wide V-guide Belt x Length	<b>435-Vbelt x _ft</b>

**450 Series Tapered Rollers:**

Overall Width	Tapered Steel With No Grooves
18	<b>450-18-TRS-NG</b>
24	<b>450-24-TRS-NG</b>
30	<b>450-30-TRS-NG</b>
36	<b>450-36-TRS-NG</b>
42	<b>450-42-TRS-NG</b>

**450 Misc Parts**

450 End Drive Shive with Molded Tire	<b>450-DSMT</b>
450 Pressure Shive D-8040	<b>450-PS</b>
450 Reducer Mounted Drive Shive	<b>450-RMDS</b>
450 Idler Shive ( All Sizes )	<b>450-IS</b>

**460 Rollers 2 1/2" x 11 gage with 11/16 hex Axles**

Overall Width	Snubber Rollers Steel
42 1/4"	<b>460-42SRS</b>
46 1/4"	<b>460-46SRS</b>
50 1/4"	<b>460-50SRS</b>
54 1/4"	<b>460-54SRS</b>
58 1/4"	<b>460-58SRS</b>
62 1/4"	<b>460-62SRS</b>
66 1/4"	<b>460-66SRS</b>
70 1/4"	<b>460-70SRS</b>
74 1/4"	<b>460-74SRS</b>

**460 10" Drive Pulleys (10" Diameter plus Lagging) Includes 1 15/16" Diameter Shaft**

Overall Width	Face Width	Pulley with 1 15/16" Bore
42 1/4"	37"	<b>460-42Dpulley</b>
46 1/4"	41"	<b>460-46Dpulley</b>
50 1/4"	45"	<b>460-50Dpulley</b>
54 1/4"	49"	<b>460-54Dpulley</b>
58 1/4"	53"	<b>460-58Dpulley</b>
62 1/4"	57"	<b>460-62Dpulley</b>
66 1/4"	61"	<b>460-66Dpulley</b>
70 1/4"	65"	<b>460-70Dpulley</b>
74 1/4"	69"	<b>460-74Dpulley</b>

**460 6" End Pulleys Includes 1 7/16" Diameter Shaft**

Overall Width	Face Width	Pulley with 1 7/16" Bore
42 1/4"	37"	<b>460-42TUEpulley</b>
46 1/4"	41"	<b>460-46TUEpulley</b>
50 1/4"	45"	<b>460-50TUEpulley</b>
54 1/4"	49"	<b>460-54TUEpulley</b>
58 1/4"	53"	<b>460-58TUEpulley</b>
62 1/4"	57"	<b>460-62TUEpulley</b>
66 1/4"	61"	<b>460-66TUEpulley</b>
70 1/4"	65"	<b>460-70TUEpulley</b>
74 1/4"	69"	<b>460-74TUEpulley</b>



**Bearings**

ID of Bearing	Part Number
1 3/16"	<b>406-4hole19</b>
1 7/16"	<b>409-4hole23</b>
1 15/16"	<b>460-4hole31</b>
1 7/16"	<b>460-ETU23</b>

**Chain Guards**

Drive	Part Number
406 Plastic	<b>406-PCG</b>
409 Plastic	<b>409-PCG</b>
460-Steel	<b>460-SCG</b>

**Chain Parts:**

<b>50B12T to 50B35T</b>	Standard Sprockets for #50 Chain
<b>50-Chain</b>	Feet of #50 Roller Chain
<b>60B11T to 60B36T</b>	Standard Sprockets for #60 Chain
<b>60-Chain</b>	Feet of #60 Roller Chain
<b>80B12T to 80B30T</b>	Standard Sprockets for #80 Chain
<b>80-Chain</b>	Feet of #80 Roller Chain

**Touch-Up Paint**

<b>MB-SPaint</b>	Spray Can of Metzgar Blue Touch-up Paint
<b>MB-1gCPaint</b>	One Gallon Can of Metzgar Blue Touch-up Paint
<b>VG-SPaint</b>	Spray Can of Vista Green Touch-up Paint
<b>VG-1gCPaint</b>	One Gallon Can of Vista Green Touch-up Paint