BELT STRUCTURE & CONVEYOR SYSTEMS

PIONEER C CONVEYOR.COM

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Turn Key Projects: Engineering, Manufacturing, Installation

PIONEER PLCONVEYOR

Conveyor Structure

Belt Drives & Terminal Groups

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INTRODUCTION

Pioneer Conveyor is a leading bulk material conveyor manufacturing firm serving customers throughout North America and across the globe. Pioneer Conveyor has designed and manufactured thousands of standard and custom conveyor systems for a multitude of applications.

Pioneer Conveyor has complete engineering, machining, fabrication, and manufacturing departments on-site to design and manufacture your next conveyor project. Pioneer Conveyor is a certified CEMA (Conveyor Equipment Manufacturers Association) member www.cemanet.org. All of Pioneer Conveyor's products are designed and manufactured significantly above required CEMA specification requirements. This allows Pioneer Conveyor to offer our customers the most attractive warranty in the industry.

Pioneer Conveyor's mission is to raise the bar for worldwide conveyor systems one customer at a time. "Our success will be measured by our ability to increase the expectations of all conveyor system consumers so that they will never settle for anything less than receiving the highest quality products at a great price, custom engineered for their unique applications, delivered on-time, and monitored closely by the regional sales engineers."

Give us a call! Our sales team will visit your site to discuss your conveyor requirements!

YO MM SEAL PRODUCT

Pioneer Conveyor now manufactures a 40mm product to meet our clients heavier application needs.

Available in 1/4'' wall steel tube with tight tolerance on Ovality, OD, and Straightness

External Labyrinth Seal diverts contaminants away from bearing cavity by centrifugal force

Five Part Labyrinth Seal Kit is packed with Renolit ST-80 grease to retard contaminates from entering bearing cavity, and also carries oxidation prohibitors to eliminate possible corrosion due to condensation

The area behind the inner labyrinth seal is filled with Renolit CSX CCG2 Calcium Sulfanate Grease behind inner labyrinth seal to prevent oxidation, and provide a 3rd layer of protection to the bearing

High Capacity Permanently Sealed 6308 Deep Groove Ball Bearing has 25% more than standard bearings for harsh conveyor environment applications.

Custom Bearing Cavity design to produce idlers with minimal TIR (Total Indicated Runout)

APPLICATION

- 40mm products are best for larger belt widths and heavier applications
- For assistance in determining what is best for your application contact us

MODELS / SIZES

- Available in 20° and 35° trough angles.
- Available in 48" and larger belt widths.
- Available in 6", 7" and 8" idlers

30 MM SEAL PRODUCT

Available in 1/4'' wall or Seven Gauge Tube ASTM 513 Specified Steel Tube with tight tolerance on Ovality, OD, and Straightness

External Labyrinth Seal diverts contaminants away from bearing cavity by centrifugal force Five Part Labyrinth Seal Kit is packed with Renolit ST-80 grease to retard contaminates from entering bearing cavity, and also carries oxidation prohibitors to eliminate possible corrosion due to metal condensation Area behind the inner labyrinth seal is filled with Renolit CSX CCG2 Calcium Sulfanate Grease behind inner labyrinth seal to prevent oxidation, and provide 3rd layer of protection to the bearing High Capacity Permanently Sealed 6306 Deep Groove Ball Bearing with 25% more than standard grease fill for harsh conveyor

Custom Bearing Cavity design to produce idlers with minimal TIR (Total Indicated Runout)

environment application.

APPLICATION

- System component for conveyor structure used for moving bulk materials.
- Modify your troughing angle to maximum material transport based on belt speed and material characteristics
- For assistance in determining what is best for your application contact us

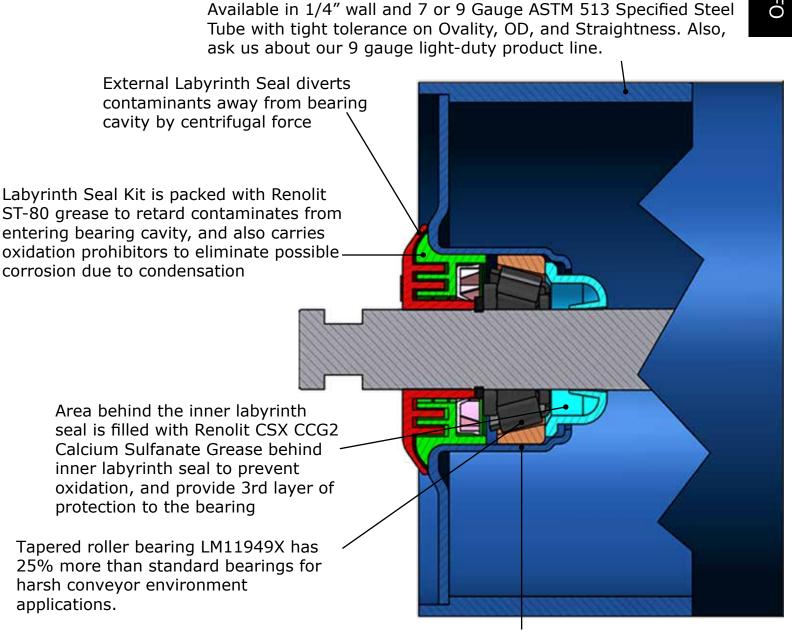
MODELS / SIZES

- Available in 20° and 35° trough angles.
- Available in 18", 24", 36", 42", 48", 54", 60" and 72" belt widths.
- Also available in CEMA B-D

3

3/4" SEAL PRODUCT

The new Pioneer CEMA C design features low rolling resistance (< 4 in lb) and a solid 3/4" shaft. This provides structural integrity that minimizes shaft deflection at the bearing location resulting in increased bearing life. All idlers are fitted with modified Geometry Tapered Roller Bearing.



Custom Bearing Cavity design to produce idlers with minimal TIR

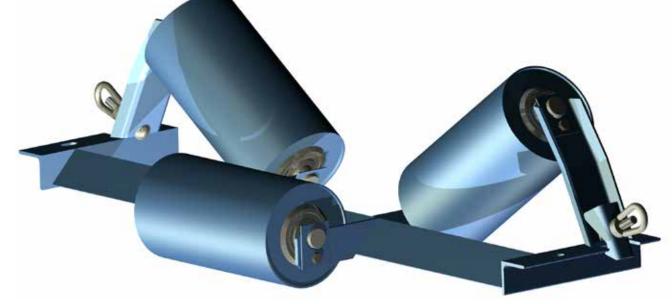
APPLICATION

- The 3/4" products are perfect at economically moving all your bulk material
- Modify your troughing angle to maximum material transport based on belt speed and material characteristics
- For assistance in determining what is best for your application contact us

MODELS / SIZES

- Available for 20° and 35° trough angles.
- Available in 18", 24", 36", 42", 48", 54" and 60" belt widths.
- Also available in CEMA B-D.

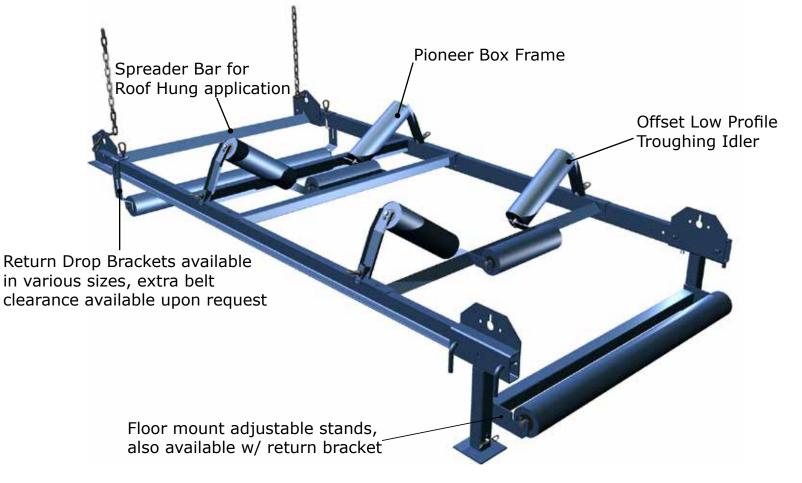
PIONEER TROUGHING IDLERS



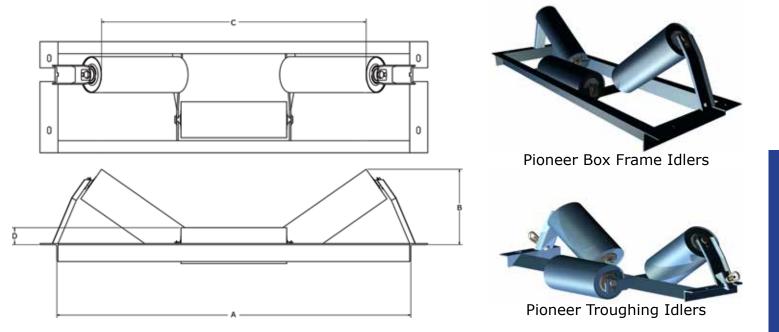
Pioneer style structure is available for 3", 4" or 5" rigid rail/floor mount, or can be roof hung.

Available with various roll sizes, CEMA B, C, D & E as well as various belt widths, see details - page 7.

AVAILABLE FOR VARIOUS APPLICATIONS



PIONEER TROUGHING IDLERS

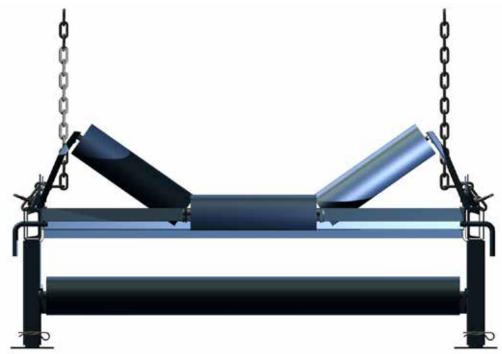


The Pioneer standard product line is availabe in a variety of belt widths and can be equipped with 4"-6" rollers. Also, available in 10, 15, 20, 30 and 45 degree troughing angle.

BW	A		В		С			D		
		Ø4	Ø5	Ø6	Ø4	Ø5	Ø6	Ø4	Ø5	Ø6
30	40 7/8		8 9/16			28 7/8			2	
36	46 7/8	6 25/32	9 1/2	6 25/32	31 13/16	34	31 13/16	1 9/16	2	1 9/16
42	53 1/4	7 19/32	10 21/32	7 19/32	36 29/32	39 5/32	36 29/32	1 9/16	2	1 9/16
48	58 7/8		11 27/32			44 7/8			2	
54	62 9/16					48 27/32			3 19/32	
60	68 9/16								3 19/32	

Dimensions are subject to change. Call to confirm.

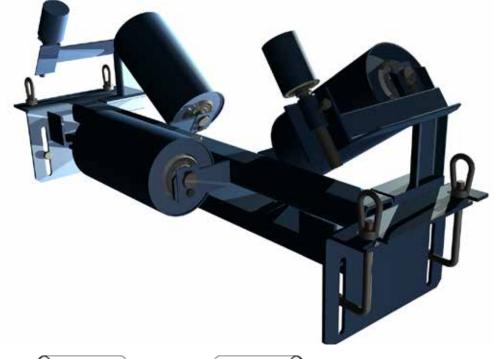
Pioneer stands can be adjusted to various heights with a standard 14" adjustable leg.

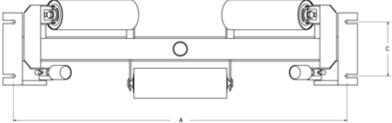


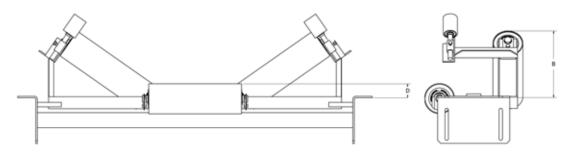
PIONEER BOLT-ON TRAINERS

Pioneer Bolt-on Top Trainers

Top trainers are available with 4", 5", 6" and 7" rollers for all belt widths.







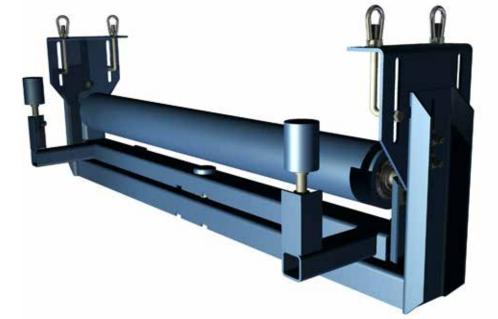
Belt	۸		В	С	Ľ)
Width	A	Ø4	Ø5	J	Ø4	Ø5
18	n/a	n/a	n/a	5 1/4	8 3/8	8 7/8
24	33	13 3/8	13 13/16	5 1/4	8 3/8	8 7/8
30	39	14 7/16	14 7/8	5 1/4	8 3/8	8 7/8
36	45	15 7/8	16 5/16	5 1/4	8 3/8	8 7/8
42	51	17 1/8	17 9/16	5 1/4	8 3/8	8 7/8
48	57	18 5/16	18 3/4	5 1/4	8 3/8	8 7/8
54	63	19 3/8	19 13/16	5 1/4	8 3/8	8 7/8
60	69	20 7/16	20 7/8	5 1/4	8 3/8	8 7/8

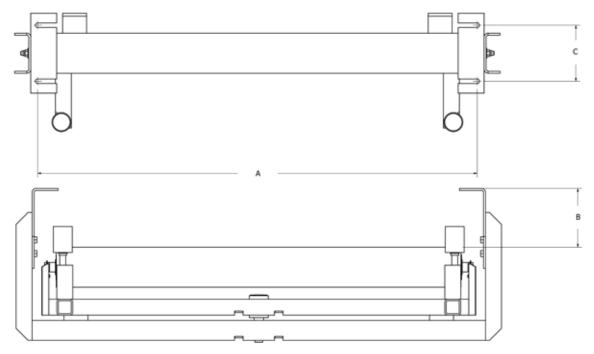
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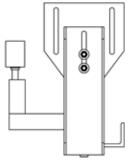
PIONEER BOLT-ON TRAINERS

Pioneer Bolt-on Bottom Trainers

Bottom Trainers are available with 4", 5", 6" and 7" rollers for all belt widths.







Belt	Δ		В	C
Width	A	Ø 4	Ø 5	C
18	n/a	4 31/32	4 15/32	7
24	33	4 31/32	4 15/32	7
30	39	4 31/32	4 15/32	7
36	45	4 31/32	4 15/32	7
42	51	4 31/32	4 15/32	7
48	57	4 31/32	4 15/32	7
54	63	4 31/32	4 15/32	7
60	69	4 31/32	4 15/32	7

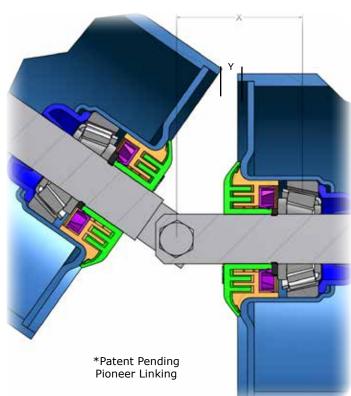
Dimensions are subject to change. Call to confirm.

CATENARY TOPS

Pioneer Conveyor's Catenary Top Structure Features Enhanced Technology

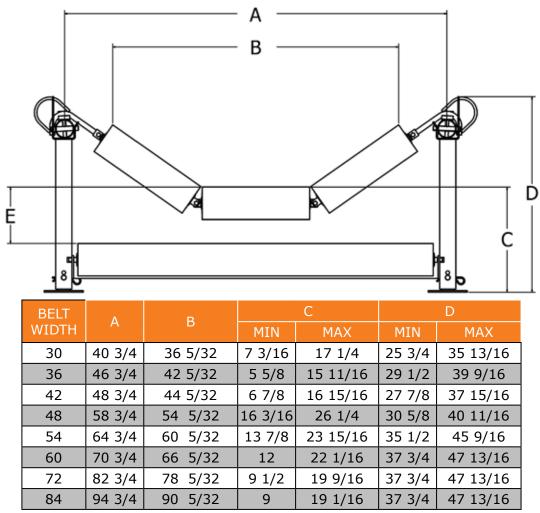
- Eliminates one degree of freedom from each connecting link, resulting in longer L_{10} life expectancy
- Minimizes distance (x) at critical load points
- Reduces roll gap by over 1/4", reduces belt wear (y)





Conventional Style Linking

Pioneer Conveyor's Catenary structure is engineered for optimal performance. Our patentpending catenary tops, and training components are designed to our clients specifications to provide quick installation, easy retreival and virtually maintenance free conveyor lines.



Dimensions are subject to change. Call to confirm.

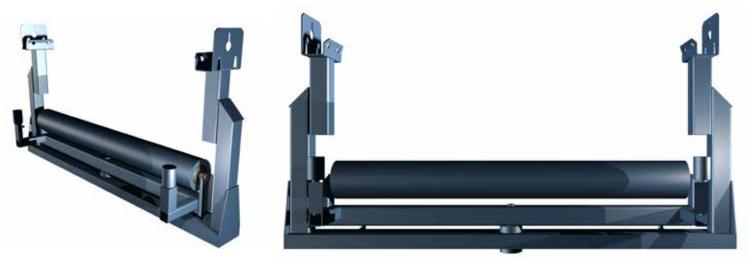
CATENARY TRAINERS

Pioneer Conveyor delivers a line of catenary training structure engineered to ensure that material remains on the belt without interfering with the conveyor structure. Optimized for belt-tracking and performance the Pioneer Catenary Training line offers medium to heavy duty solutions that can be deployed in any conveying environment or application. Both tops and bottoms work with mechanical or vulcanized belt, and are designed to be easily installable. A versatile and durable 'out-of-the-box' solution that is budget conscious. Available for above ground or underground application.

CATENARY TOP TRAINERS



ATENARY BOTTOM TRAINERS



Experiencing heat point violations?

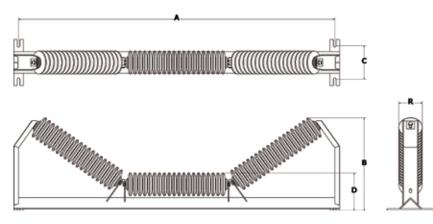
If you're experience issues with heat point violations, Pioneer Conveyor can provide high quality trainers that will greatly reduce your HPV.

Top and Bottom Trainers available for 36", 42", 48", 54", 60" and 72" belt widths.

Dimensions are subject to change. Call to confirm.

IMPACT TOPS

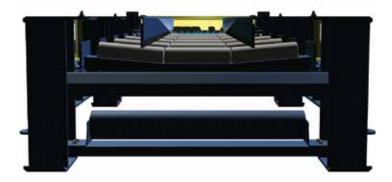
Pioneer Conveyor offers various impact structures to eliminate damage at any impact point in a conveyor system. Individual impact top idlers, cross belt sliders or bolt down slider beds are available for various belt sizes and applications.



Belt Width	А	В	С	D
18	27	12 9/32	5 3/4	8 5/16
24	33	13 5/8	5 3/4	8 5/16
30	39	14 1/2	5 3/4	8 5/16
36	45	15 15/16	5 3/4	8 5/16
42	51	17 1/16	7 1/2	8 5/16
48	57	18 1/4	7 1/2	8 5/16
54	63	20 1/4	9	8 5/16
60	69	20 1/2	9	8 5/16

Dimensions are subject to change. Call to confirm.

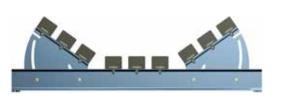
CROSS BELT SLIDERS



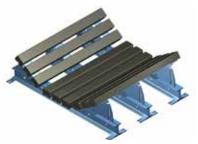


Cross Belt Sliders can be deployed for a minimal maintenance impact application. Shown here as part of a Pioneer Tail Piece assembly. Available in various sizes and can be customized to meet the customers specifications.

DOWN SLIDER BEDS



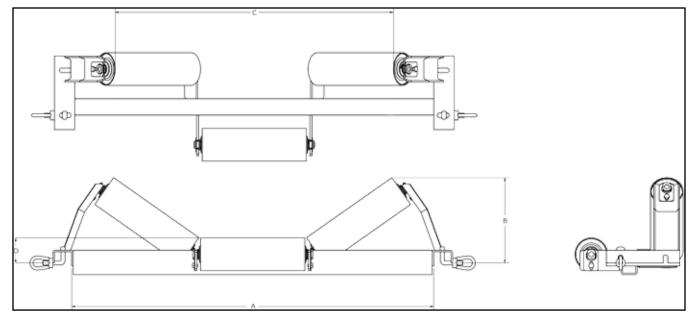
BOLT



Pioneer Bolt-on Slides are available in CEMA C or CEMA D specs and also can be custom designed and manufactured to suite the needs of your mine. Available in standard belt widths: 18", 24", 30", 36", 42", 48", 54", 60", 72" and 84".

MPACT STRUCTURE

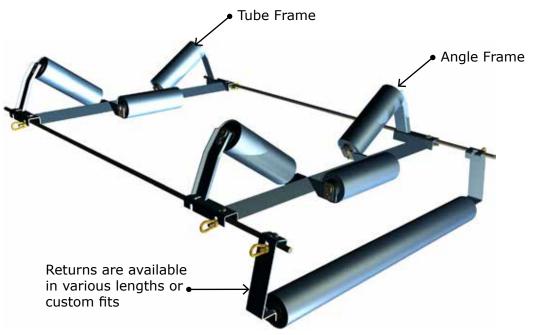
LA TUBE / ANGLE FRAME TROUGHING IDLERS



Belt	^	E	3	(C	D		
Width	A	Ø 4	Ø 5	Ø 4	Ø 5	Ø 4	Ø 5	
30	36 3/8					3 1/8	3 19/32	
36	44 3/8	10 13/32	10 13/16	33 7/8	33 5/16	3 1/8	3 19/32	
42	50 1/2	11 15/32	11 7/8	39 5/16	38 5/16	3 1/8	3 19/32	
48	56 1/2				43 25/32	3 1/8	3 19/32	
54	62 9/16				48 27/32	3 1/8	3 19/32	
60	68 9/16					3 1/8	3 19/32	

Dimensions are subject to change. Call to confirm.

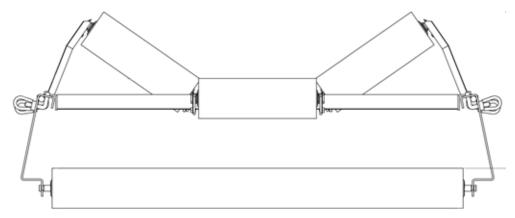
LA STYLE WIRE ROPE STRUCTURE



**Rope anchor stands (Sailboats) also available

LA WIRE ROPE STYLE

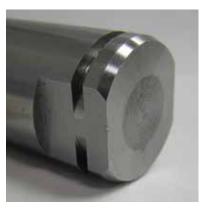
LA Wire Rope Style is available in belt widths of 30", 36", 42", 48", 54" and 60".



* Available with various size return brackets.

RETROFIT REPLACEMENT IDLERS

Pioneer Conveyor offers a variety of retrofit and replacement capables for all steel and impact idlers. Retrofits are available for any frame style and provides a seamless transition for adapting retrofits to your custom application.



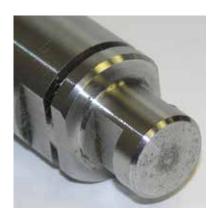
LA STYLE



DUAL APPLICATION



BIG HUB STYLE



CUSTOM ADAPTERS



PIONEER CATENARY

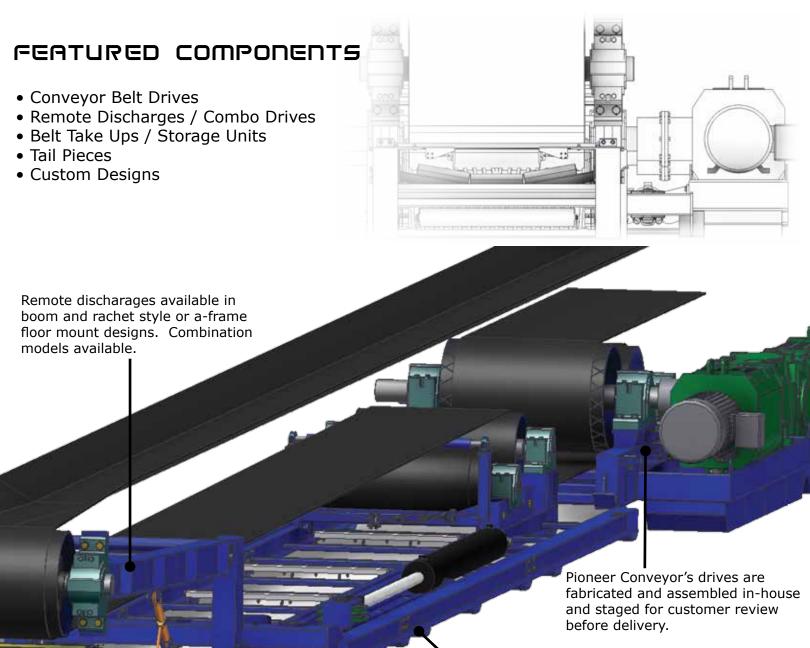
30MM TO 3/4"

TERMINAL GROUPS

TERMINAL GROUPS

Pioneer Conveyor's terminal groups and conveyor components are engineered to handle all bulk material handling requirements. Terminal group components are prototype simulated, and fabricated to assure minimal maintenance and ease of installation. All components are applied to application specific scenarios to determine optimal performance across all elements of the conveying system.

Primary components are available for the customer's underground or surface needs, and can be designed to work with existing conveyor components. All terminal group components are designed heavy-duty for any bulk material handling needs while maintaining cost efficient solutions.



Belt Takeups / Storage Units designed to maximize performance across entire belt system.

Loading sections and tailpieces custom designed and engineered to suite the needs of any application.

BELT DRIVES





Pioneer offers a line of pre-engineered base and combination drives. Engineered solutions are available and built to customer specifications. Drives are fabricated and welded with heavy duty applications in mind. Combination drives feature discharge, take-up and drive pulley. All drives are built to be easily installed and easily moved.

TAKE UPS / BELT STORAGE





Take ups are available in various lengths or can be custom engineered to handle customer specific applications. Pioneer take-ups can be used in any bulk material handling environment to eliminate belt slack and tension.

LOADING STATIONS / TAIL SECTIONS





Pre-engineered or custom designs available for material acceptance from any loading equipment or conveyors. Tail sections are equipped with moon sliders or inline impact bars and features removable guarding and spiral tail pulleys. Available for flat floor mount or sloped applications.

CONVEYOR PROJECTS

Pioneer Conveyor provides turn key projects for a variety of different industries and materials including any bulk material handling needs. We engineer, fabricate, and install foundations, and trusses, screening and loadout facilities and aggregates plants. Pioneer works for our customers to ensure seamless project management from beginning to end. Whether the need is project management, fabrication and installation or technical and engineering support.



Project:

Turn-key Overland Project

Location:

Morgantown, West Virginia

Components & Services:

- 48" overland conveyor system
- Dual 100 ft radial stackers
- Screen building, dual 1000 thp screens
- Transfer building, drive house
- Flop and knife gates
- Directional chute design

Project:

Truck Loadout and Scale House

Location:

Bluefield, Virginia

Components & Services:

- Mechanical design and engineering
- 142' and 123' tapered end truss systems
- 12' x 120' stacker tube
- Various chutes and transfer points
- Intergrated weigh hopper and truck load out





Project: Refuse Conveyor Project

Location: Maidsville, West Virginia

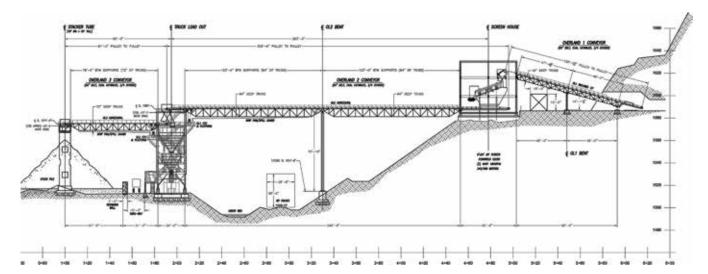
Components & Services:

- 36" overland conveyor system
- 100 ft radial stacker
- Interface w/ existing structure
- Material direction change

ENGINEERING SERVICES

Pioneer Conveyor engineering services specialize in complex material handling and bulk conveyor systems for heavy industrial and mining facilities. All technical services and products required for facility systems are engineered in-house using state-of-the-art technologies. Pioneer Conveyor engineering can provide developmental concepts and prototypes, general arrangement drawings for bid packages, detail and fabrication drawings and site installation plans.

CONVEYOR SYSTEM ENGINEERING

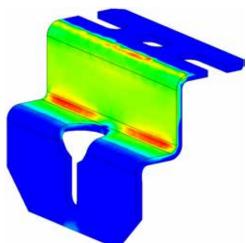


DIGITAL PROTOTYPING

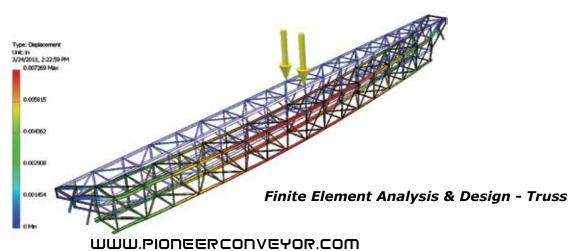
Stress Analysis

- Early design optimization
- Dynamically simulate application conditions
- Understand load points
- Create a safer component

Pioneer Conveyor constructs digital prototypes of all conveyors, components and design elements to optimize parts and material usage. Using these technologies allows our engineers to see the problem before it happens.

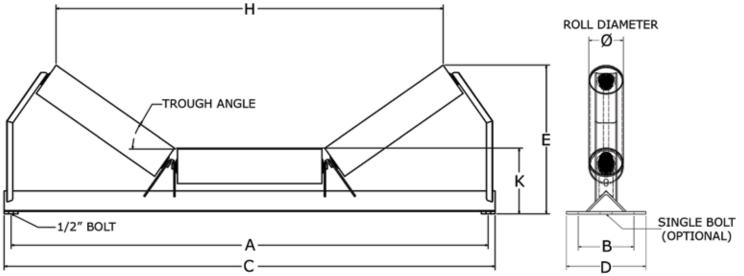


Pioneer Drop Hanger Stress Analysis



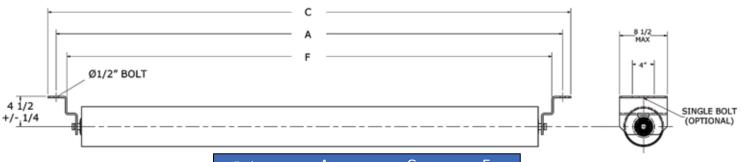
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CEMA B INLINE TOPS



Belt Width	Trough	E Max		ΗΝ	1ax	K +/- 1/4″		
width	Angle	Ø 4	Ø 5	Ø 4	Ø 5	Ø 4	Ø 5	
18	20	10	10 1/4	22	21 3/4	7	7 1/2	
18	35	11 1/2	12	20 1/4	19 3/4	7	7 1/2	
24	20	10 3/4	11 1/4	28	27 3/4	7	7 1/2	
24	35	12 3/4	13 1/4	25 3/4	25 1/4	7	7 1/2	
30	20	11 1/2	12	34	33 3/4	7	7 1/2	
30	35	13 3/4	14 1/4	31 1/4	30 3/4	7	7 1/2	
36	20	12 1/4	12 3/4	40	39 3/4	7	7 1/2	
36	35	15	15 1/2	37	36 1/2	7	7 1/2	
42	20	13 1/2	14	46	45 3/4	7 1/2	8	
42	35	16 3/4	17 1/4	42 1/2	42	7 1/2	8	
48	20	13 3/4	15	52	51 3/4	7 1/2	8	
48	35	18	18 1/2	48	47 1/2	7 1/2	8	

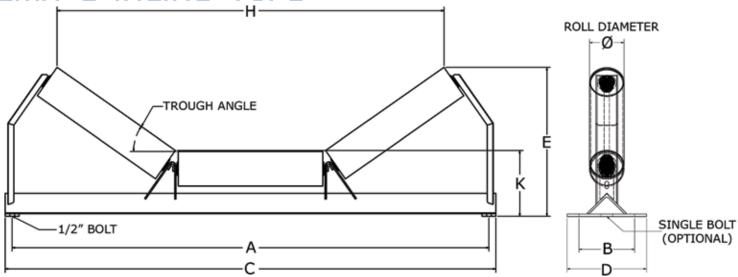
CEMA B RETURN BRACKETS



Belt	А	С	F
Width	Stnd Base	Max	Min
18	27	29 1/2	22
24	33	35 1/2	28
30	39	41 1/2	34
36	45	47 1/2	40
42	51	53 1/2	46
48	57	59 1/8	52

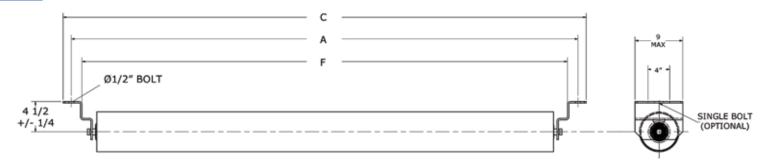
Dimensions are subject to change. Call to confirm.





Belt	Trough		E Max			H Max		ł	〈 (+/- 1/4″))
Width	Angle	Ø 4	Ø 5	Ø 6	Ø 4	Ø 5	Ø 6	Ø 4	Ø 5	Ø 6
18	35	12 1/2	13	-	21	21	3	8	8 1/2	-
24	35	13 3/4	14 1/4	14 3/4	26 1/2	26 1/2	25	8	8 1/2	9
30	35	15	15 1/2	16	32	32	30 1/2	8	8 1/2	9
36	35	16 1/4	16 3/4	17 1/4	37 1/2	37 1/2	36	8	8 1/2	9
42	35	17 3/4	18 1/4	18 3/4	43	43	41 1/2	8 1/2	9	9 1/2
48	35	19	19 3/4	20	48 1/2	48 1/2	47	8 1/2	9	9 1/2
54	35	20 1/4	21	21 1/4	49	49	47 1/2	8 3/4	9 1/4	9 3/4
60	35	21 1/2	22 1/4	22 1/2	59 1/2	59 1/2	58	8 3/4	9 1/4	9 3/4

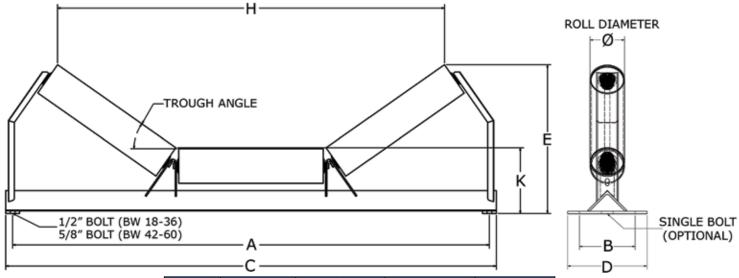
CEMA C DROP BRACKETS



Belt	А	С	F
Width	Stnd Base	Max	Min
18	27	29 1/2	23
24	33	35 1/2	29
30	39	41 1/2	35
36	45	47 1/2	41
42	51	53 1/2	47
48	57	59 1/8	53

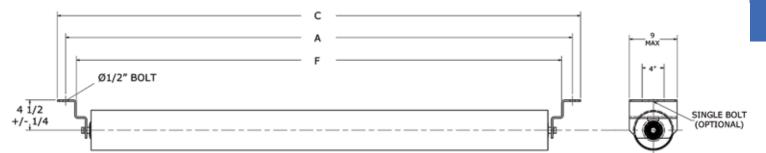
Dimensions are subject to change. Call to confirm.

CEMA D INLINE TOPS



Belt	Trough			ΗМ	1ax	K +/- 1/4"		
Width	Angle	Ø 5	Ø 6	Ø 5	Ø 6	Ø 5	Ø 6	
24	35	14 1/4	14 3/4	26 1/2	25	8 1/2	9	
30	35	15 1/2	16	32	30 1/2	8 1/2	9	
36	35	16 3/4	17 1/4	37 1/2	36	8 1/2	9	
42	35	18 1/4	18 3/4	43	41 1/2	9	9 1/2	
48	35	19 3/4	20	48 1/2	47	9	9 1/2	
54	35	21	21 1/4	49	47 1/2	9 1/4	9 3/4	
60	35	22 1/4	22 1/2	59 1/2	58	9 1/4	9 3/4	
72	35	25	25	68 1/2	69	9 1/2	10	

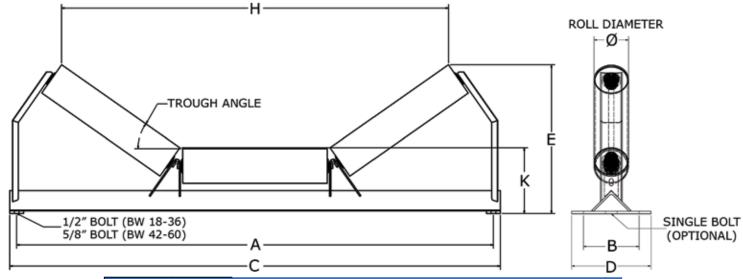
CEMA D DROP BRACKETS



Belt	А	С	F
Width	Stnd Base	Max	Min
24	33	35 1/2	29
30	39	41 1/2	35
36	56	47 1/2	41
42	51	53 1/2	47
48	57	59 1/8	53
54	63	65 1/2	59
60	69	71 1/2	65
66	75	77 1/2	71
72	81	83 1/2	77
78	87	89 1/2	83

Dimensions are subject to change. Call to confirm.

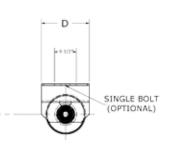
CEMA E INLINE TOPS



Belt	Trough	E١	1ax	Н Мах		K +/- 1/4″	
Width	Angle	Ø 6	Ø 7	Ø 6	Ø 7	Ø 6	Ø 7
36	35	21	21 1/2	38	38	10 3/4	11 1/4
42	35	22 1/2	23	43 1/2	43 1/2	10 3/4	11 1/4
48	35	24	24 1/2	49	49	10 3/4	11 1/4
54	35	25 1/2	26	54 1/2	54 1/2	10 3/4	11 1/4
60	35	27	27 1/2	60	60	10 3/4	11 1/4
72	35	29	29 1/2	71	71	11 1/2	12
84	35	31	31 1/2	82	82	11 3/4	12 1/4
96	35	33	33 1/2	93	93	11 3/4	12 1/4

CEMA E BOTTOM RETURNS





Belt	А	С	D	F
Width	Stnd Base	Max	Max	Min
36	45	48 1/2	12 1/2	41
42	51	54 1/2	12 1/2	47
48	57	30 1/2	12 1/2	53
54	63	66 1/2	12 1/2	59
60	69	72 1/2	12 1/2	65
66	75	78 1/2	12 1/2	71
72	81	84 1/2	12 1/2	77
78	87	90 1/2	12 1/2	83
84	93	96 1/2	12 1/2	89
90	99	102 1/2	12 1/2	95
96	105	108 1/2	12 1/2	101
102	111	114 1/2	12 1/2	107

Dimensions are subject to change. Call to confirm. WWW.PIONEERCONVEYOR.COM

Customer Name: _____ Fax Number:

Company Name: _____ Customer Email:

Phone Number: _____

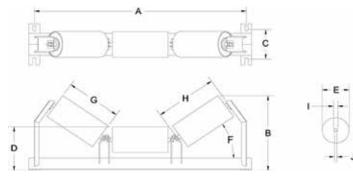
Conveyor Horse Power Calculations

*Conveyor Length	
*Conveyor Lift	
*Belt information	

Material _____

Desired Belt Speed	
*required	

Idler Retrofit Specification:



- A. Bolt Hole Center (Length) _____
- B. Overall Height _____
- C. Bolt Hole Center (Width)
- D. Height to Center Roll _____
- E. Can Diameter _____
- F. Troughing Degree _____
- G. Can Length _____
- H. Shaft Notch Center to Center _____
- I. Notch Measurement / Hub Style _____
- J. Shaft Diameter _____

Additional Information

Belt Drive

Voltage: _____

Choose Startup Type:

Fluid Coupling / VFD / Crossline Start **Drive Location:**

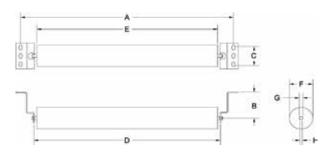
Surface / Underground

Drive Type:

Shaft Mount / Direct Drive / Belt or Chain
Preferred Reducer Mfg:

Take-up Style:

Gravity / Hydraulic / Screw



- A. Bolt hole centers (length) _____
- B. Drop Hanger Height _____
- C. Bolt Hole Center (Width)
- D. Can Diameter
- E. Shaft Diameter _____
- F. Notch / Hub Style_____
- G. Shaft Notch to Notch Center _____

Idler Manufacture _____

Mine/Plant

Amount Required

Structure Configuration (choose one)

- Pioneer StyleCatenary Style
- L.A. Style
- Inline CEMA Series
- Continental Style
- Other

CEMA Rating

ВП

C 🗆

 $D \square$

ЕΠ

F 🗌

П

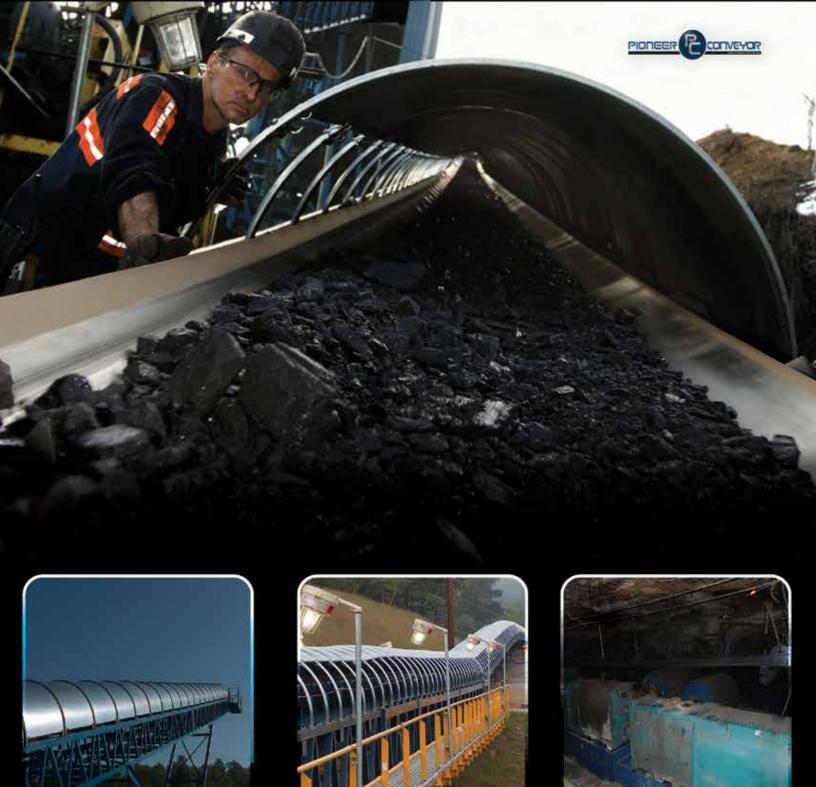
П

П

Impact 🗌

Idler Type

Steel 🗆



For further product information, contact us directly or visit our website at www.pioneerconveyor.com

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