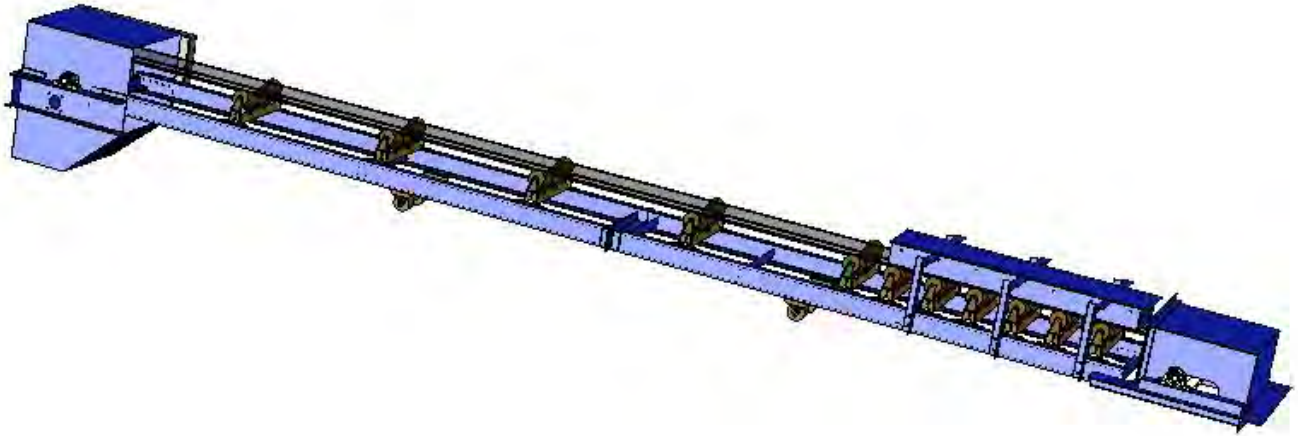




# Belt Conveyor Catalog



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**Phone:** (308) 324-7591  
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## WARNING AND SAFETY REMINDERS FOR SCREW , DRAG , AND BUCKET ELEVATOR CONVEYORS

APPROVED FOR DISTRIBUTION BY THE SCREW CONVEYOR SECTION OF THE  
CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION (CEMA)

It is the responsibility of the contractor, installer, owner and user to install, maintain and operate the conveyor, components and, conveyor assemblies in such a manner as to comply with the Williams-Steiger Occupational Safety and Health Act and with all state and local laws and ordinances and the American National Standards Institute (ANSI) B20.1 Safety Code.

In order to avoid an unsafe or hazardous condition, the assemblies or parts must be installed and operated in accordance with the following minimum provisions.

1. Conveyors shall not be operated unless all covers and/or guards for the conveyor and drive unit are in place. If the conveyor is to be opened for inspection cleaning, maintenance or observation, the electric power to the motor driving the conveyor must be LOCKED OUT in such a manner that the conveyor cannot be restarted by anyone; however remote from the area, until conveyor cover or guards and drive guards have been properly replaced.
2. If the conveyor must have an open housing as a condition of its use and application, the entire conveyor is then to be guarded by a railing or fence in accordance with ANSI standard B20.1. (Request current edition and addenda)
3. Feed openings for shovel, front loaders or other manual or mechanical equipment shall be constructed in such a way that the conveyor opening is covered by a grating. If the nature of the material is such that a grating cannot be used, then the exposed section of the conveyor is to be guarded by a railing or fence and there shall be a warning sign posted.
4. Do not attempt any maintenance or repairs of the conveyor until power has been LOCKED OUT.
5. Always operate conveyor in accordance with these instructions and those contained on the caution labels affixed to the equipment.
6. Do not place hands, feet, or any part of your body, in the conveyor.
7. Never walk on conveyor covers, grating or guards.
8. Do not use conveyor for any purpose other than that for which it was intended.
9. Do not poke or prod material into the conveyor with a bar or stick inserted through the openings.
10. Keep area around conveyor drive and control station free of debris and obstacles.
11. Eliminate all sources of stored energy (materials or devices that could cause conveyor components to move without power applied) before opening the conveyor
12. Do not attempt to clear a jammed conveyor until power has been LOCKED OUT.
13. Do not attempt field modification of conveyor or components.
14. Conveyors are not normally manufactured or designed to handle materials that are hazardous to personnel. These materials which are hazardous include those that are explosive, flammable, toxic or otherwise dangerous to personnel. Conveyors may be designed to handle these materials. Conveyors are not manufactured or designed to comply with local, state or federal codes for unfired pressure vessels. If hazardous materials are to be conveyed or if the conveyor is to be subjected to internal or external pressure, manufacturer should be consulted prior to any modifications.

CEMA insists that disconnecting and locking out the power to the motor driving the unit provides the only real protection against injury. Secondary safety devices are available; however, the decision as to their need and the type required must be made by the owner-assembler as we have

no information regarding plant wiring, plant environment, the interlocking of the screw conveyor with other equipment, extent of plant automation, etc. Other devices should not be used as a substitute for locking out the power prior to removing guards or covers. We caution that use of the secondary devices may cause employees to develop a false sense of security and fail to lock out power before removing covers or guards. This could result in a serious injury should the secondary device fail or malfunction.

There are many kinds of electrical devices for interlocking of conveyors and conveyor systems such that if one conveyor in a system or process is stopped other equipment feeding it, or following it can also be automatically stopped.

Electrical controls, machinery guards, railings, walkways, arrangement of installation, training of personnel, etc., are necessary ingredients for a safe working place. It is the responsibility of the contractor, installer, owner and user to supplement the materials and services furnished with these necessary items to make the conveyor installation comply with the law and accepted standards.

Conveyor inlet and discharge openings are designed to connect to other equipment or machinery so that the flow of material into and out of the conveyor is completely enclosed.

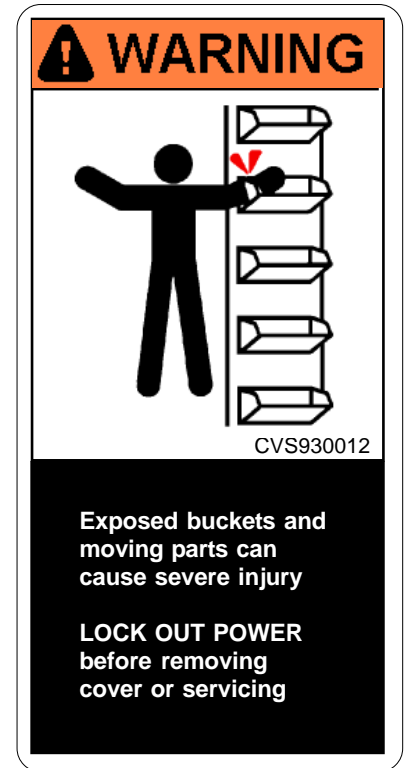
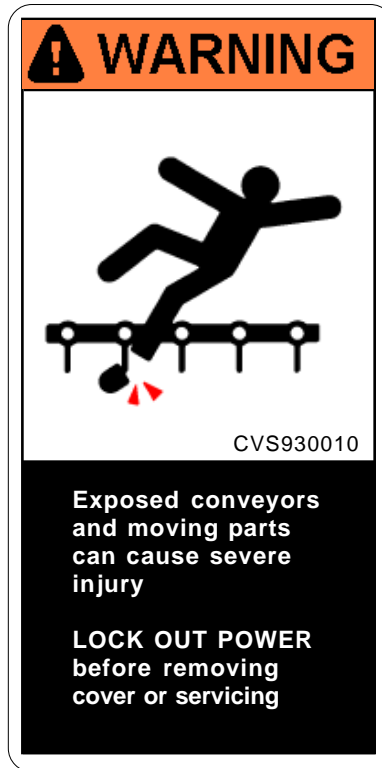
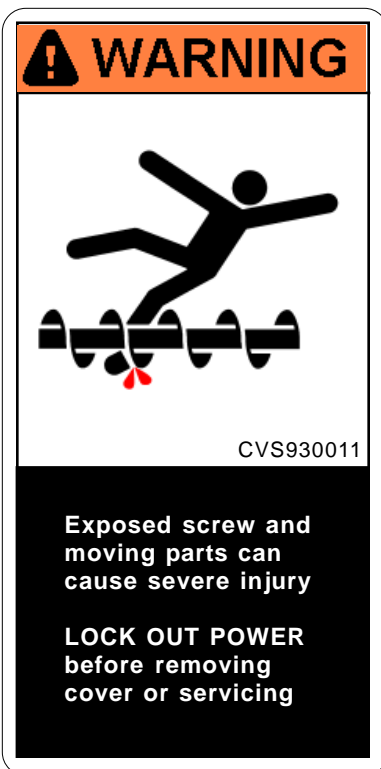
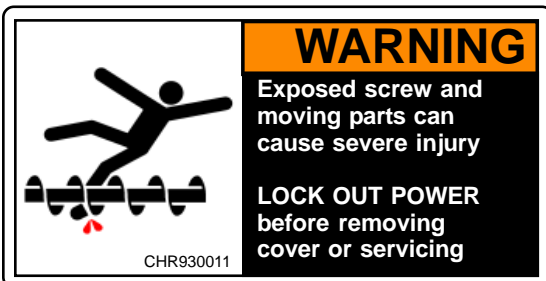
One or more warning labels should be visible on conveyor housings, conveyor covers and elevator housings. If the labels attached to the equipment become illegible, please order replacement warning labels from the OEM or CEMA.

The Conveyor Equipment Manufacturers Association (CEMA) has produced an audio-visual presentation entitled "Safe Operation of Screw Conveyors, Drag Conveyors, and Bucket Elevators." CEMA encourages acquisition and use of this source of safety information to supplement your safety program.

**SEE OTHER SIDE FOR  
SAFETY LABELS**

## CEMA Safety Labels

The CEMA safety labels shown below should be used on screw conveyors, drag conveyors, and bucket elevators. Safety labels should be placed on inlets, discharges, troughs, covers, inspection doors & drive guards. See CEMA Safety Label Placement Guidelines on CEMA Web Site: <http://www.cemanet.org/safety/guidelines.html>



### **PROMINENTLY DISPLAY THESE SAFETY LABELS ON INSTALLED EQUIPMENT**

**SEE OTHER SIDE FOR SAFETY REMINDERS**

**Note: Labels alone do not substitute for a thorough in-plant safety training program centered on the hazards associated with operating your installed equipment.**

**Contact CEMA or Your Equipment Manufacturer for Replacement Labels**

**CONVEYOR EQUIPMENT MANUFACTURERS ASSOCIATION**

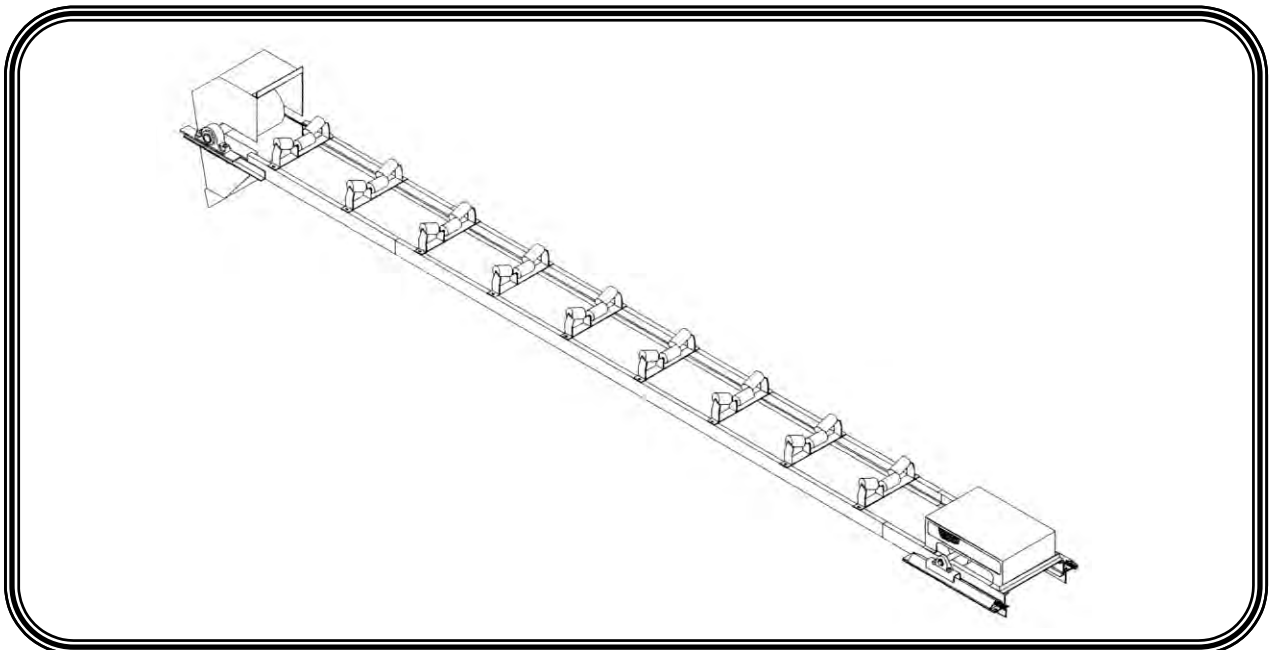
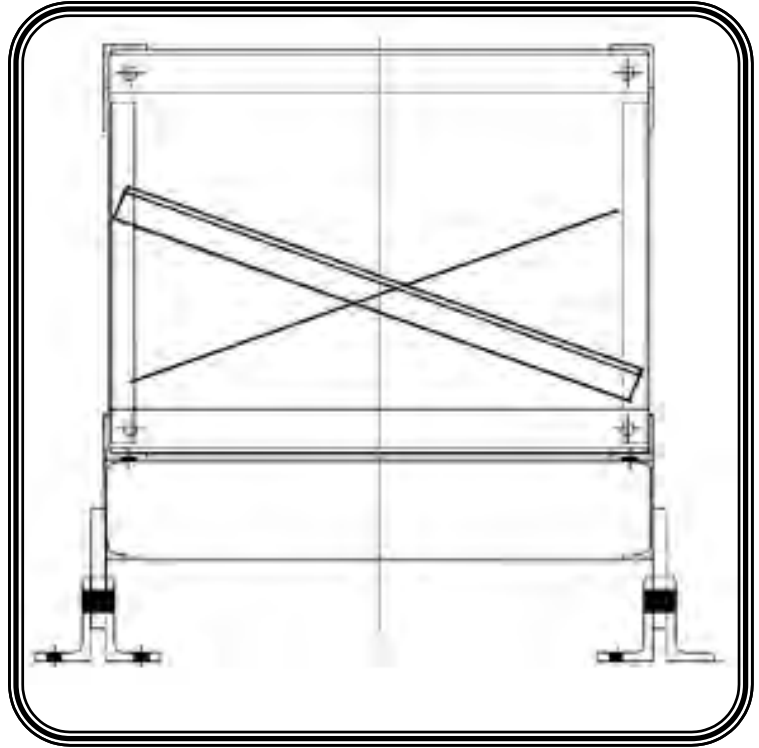
6724 Lone Oak Blvd., Naples, Florida 34109

239-514-3441

This catalog is a partial representation of the different styles, designs and options of **ORTHMAN** belt conveyors and the accessories that accompany them. **ORTHMAN** will design and manufacture complete systems using either standard or special parts to meet the customer's exact needs.

**ORTHMAN'S** experience in handling products such as sand, gravel, grain, coffee, minerals, etc. will insure a properly sized conveyor for handling any bulk material. We specialize in heavy duty construction as a standard to reduce maintenance and extend the life of all equipment.

**ORTHMAN** puts a very strong emphasis on application engineering. Studied attention to detail during this phase eliminates costly installation and operation errors. Meeting our client's performance expectations with quality machinery is our number one goal.



## **DESIGN CONSIDERATIONS:**

Belt Widths:	18", 24", 30", 36", 48"
Belt Speeds:	18" B. W. 400 FPM max. 24" B. W. 500 FPM max. 30" B. W. 600 FPM max. 36" B. W. 650 FPM max. 48" B. W. 700 FPM max.
Carrying Idlers:	CEMA B, CEMA C, flat steel, 20 degree troughing, 35 degree troughing, impact and training
Idler Spacing:	Carrying: 5' – 0" Return: 10' – 0"
Drives:	Standard drives include: 1750 rpm, TEFC, NEMA B motor with a 1.15 S.F. Class II shaft mounted gear reducer "V" type sheaves and belts Motor Mount Belt Guard Integral Backstop (if required)

## **BASIC DESIGN**

### **STEP 1: Compile the Basic Design Information Required**

#### **Length of Conveyor:**

Measured in feet from center to center of pulleys, parallel to belt line.

#### **Inclination of conveyor:**

Measured in degrees off the horizontal, consult the CEMA Belt Conveyor Manual or **ORTHMAN CONVEYING** Engineering Department to determine the maximum angle at which the particular material may be conveyed.

#### **Maximum and Minimum Material Density:**

Measured in pounds per cubic foot (PCF), the maximum density is used for power calculations while the minimum density is used in the conveyor calculations.

#### **Peak Capacity:**

Measured in tons per hour (TPH), the capacity used should be the peak capacity at which the conveyor is expected to perform, not a lesser average capacity.

**STEP 2: Determine Belt Width**

Using Table 1 (pg. 3), determine the conveyor belt width required in inches.

TABLE 1							
BELT WIDTH INCHES	Capacity in Tons per Hour at 100 FPM Belt Speed			Lump Size Inches		Maximum Recommended Belt Speed, FPM*	
	Weight of Material, Pounds per cu. ft (PCF)			Sized	Unsized	50% Max. Size Lumps	100% Max. Size Lumps
	50	75	100				
18	27	41	54	3	5	400	300
24	50	75	100	4 1/2	8	500	400
30	81	122	162	7	10	600	450
36	117	176	235	8	12	650	500

\*Certain materials should not be handled at maximum belt speeds. Consult the CEMA Belt conveyor manual or Orthman Engineering Department.

**STEP 3: Determine Operating Speed**

Using Table 2 (below), determine the conveyor operating speed in feet per minute (FPM)

TABLE 2													
Material Density PCF	BELT WIDTH, INCHES	Capacity, Tons per Hour (TPH)											
		Belt Speed, Feet per minute (FPM)											
		100	150	200	250	300	350	400	450	500	550	600	650
50	18	27	41	54	68	81	95	108					
	24	50	75	100	125	150	175	200	225	250			
	30	81	122	162	203	243	284	324	365	405	446	486	
	36	118	176	235	294	353	411	470	529	588	646	705	764
75	18	41	61	81	101	122	142	162					
	24	75	113	150	188	225	263	300	338	375			
	30	122	182	243	304	365	425	486	547	608	668	729	
	36	176	264	353	441	529	617	705	793	881	969	1058	1146
100	18	54	81	108	135	162	189	216					
	24	100	150	200	250	300	350	400	450	500			
	30	162	243	324	405	486	567	648	729	810	891	972	
	36	235	352	470	587	705	822	940	1057	1175	1292	1410	1527

**STEP 4: Calculate the Horsepower Required**

Using Table 3, determine the horsepower required to drive the empty conveyor per each 100 FPM of belt speed,  $HP_o$ , then,  $HP_e = (\text{Belt Speed}/100) \times HP_o$ .

TABLE 3												
BELT WIDTH, INCHES	Horsepower to drive empty conveyor for each 100 FPM of belt speed											
	Conveyor centers, feet											
	50	100	150	200	300	400	500	600	700	800	900	1000
18	0.20	0.37	0.45	0.52	0.67	0.82	1.00	1.20	1.40	1.50	1.60	1.70
24	0.30	0.47	0.57	0.66	0.88	1.10	1.20	1.40	1.60	1.80	2.00	2.20
30	0.40	0.60	0.75	0.90	1.20	1.40	1.70	2.00	2.30	2.60	2.80	3.00
36	0.65	0.80	0.95	1.10	1.50	1.80	2.10	2.40	2.70	3.00	3.40	3.80

Using Table 4 (pg.4) determine the horsepower required to convey the material horizontally,  $HP_m$ .

TABLE 4												
Tons Per Hour (TPH)	Horsepower to convey material horizontally*											
	Conveyor Centers, feet											
	50	100	150	200	300	400	500	600	700	800	900	1000
50	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.3	1.4	1.6	1.7
100	0.6	0.8	0.9	1.1	1.4	1.7	2.0	2.3	2.6	2.9	3.2	3.5
150	0.9	1.1	1.4	1.6	2.0	2.5	3.0	3.4	3.9	4.3	4.8	5.2
200	1.2	1.5	1.8	2.1	2.7	3.3	3.9	4.5	5.2	5.8	6.4	7.0
300	1.8	2.3	2.7	3.2	4.1	5.0	5.9	6.8	7.7	8.6	9.6	10.5
400	2.4	3.0	3.6	4.2	5.5	6.7	7.9	9.1	10.3	11.5	12.7	13.9
500	3.0	3.8	4.5	5.3	6.8	8.3	9.8	11.4	12.9	14.4	15.9	17.4
600	3.6	4.5	5.5	6.4	8.2	10.0	11.8	13.6	15.5	17.3	18.7	21.0
700	4.2	5.3	6.4	7.4	9.5	11.7	13.8	15.9	18.0	20.0	22.0	24.0
800	4.8	6.1	7.3	8.5	10.9	13.3	15.8	18.2	21.0	23.0	25.5	28.0
900	5.5	6.8	8.2	9.5	12.3	15.0	17.7	20.0	23.0	26.0	28.5	31.0
1000	6.1	7.6	9.1	10.6	13.6	16.7	19.7	23.0	25.0	29.0	32.0	35.0
1100	6.7	8.3	10.0	11.7	15.0	18.3	22.0	25.0	27.0	32.0	35.0	38.0
1200	7.3	9.1	10.9	12.7	16.4	20.0	24.0	27.0	31.0	35.0	38.5	

\*For any speed and any material

Using Table 5, determine the horsepower required to elevate the material,  $HP_j$ .

TABLE 5											
Tons Per Hour (TPH)	Horsepower to elevate the material										
	Conveyor lift, feet										
	10	20	30	40	50	60	70	80	90	100	
50	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.6	5.1	
100	1.0	2.0	3.0	4.0	5.1	6.1	7.1	8.1	9.1	10.1	
150	1.5	3.0	4.5	6.1	7.6	9.1	10.6	12.1	13.7	15.2	
200	2.0	4.0	6.1	8.1	10.1	12.1	14.2	16.2	18.1	20.0	
300	3.0	6.1	9.1	12.1	15.2	18.2	21.2	24.0	27.0	30.0	
400	4.0	8.1	12.1	16.2	20.0	24.0	28.0	32.0	36.0	40.0	
500	5.1	10.1	15.2	20.0	25.0	30.0	35.0	40.0			
600	6.1	12.1	18.2	24.0	30.0	36.0					
700	7.1	14.1	21.0	28.0	35.0						
800	8.1	16.2	24.0	32.0	40.0						
900	9.1	18.2	27.0	36.0							
1000	10.1	20.0	30.0	40.0							
1100	11.1	22.0	33.0								
1200	12.1	24.0	36.0								

To calculate the Horsepower required, use the following equation:

$$HP_{req} = HP_e + HP_m + HP_j$$

**STEP 5: Determine the Motor Horsepower**

Motor  $HP_{min} = HP_{req} / \text{Drive Efficiency}$

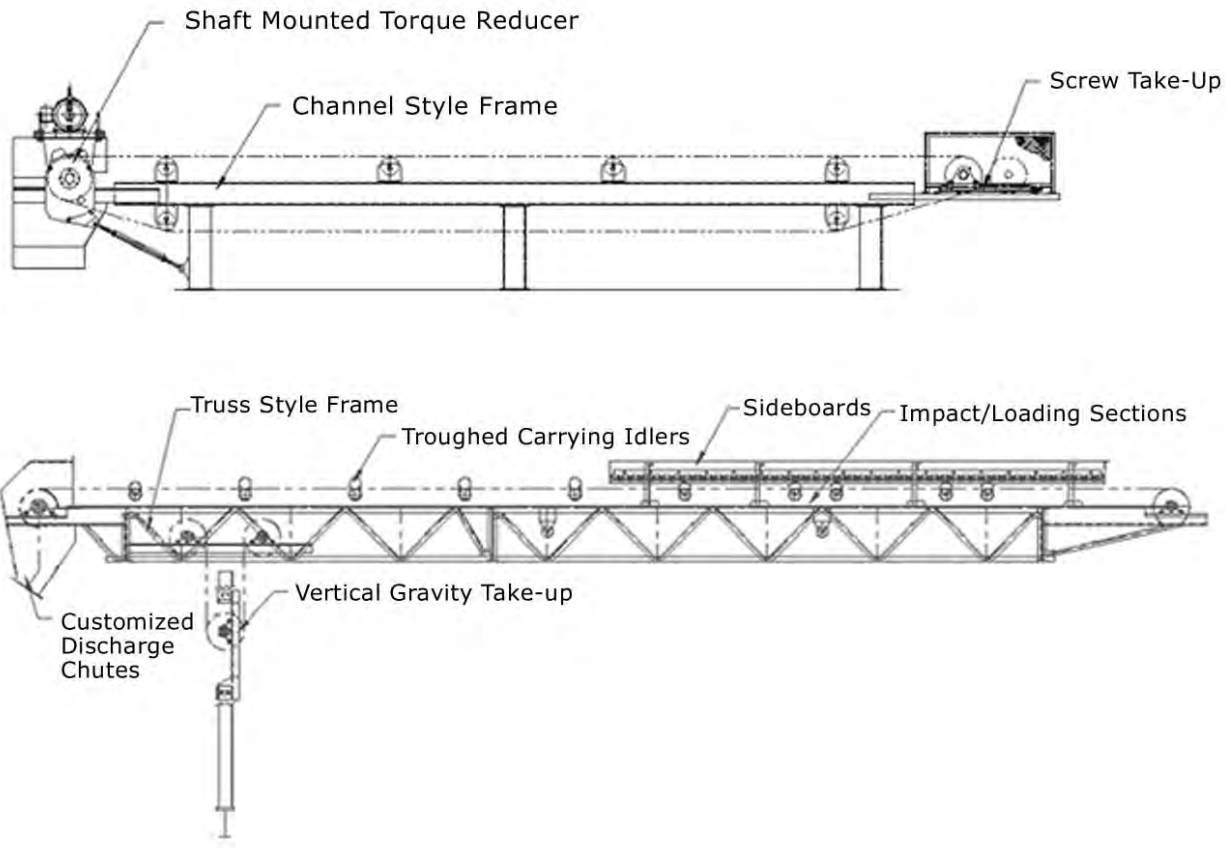
Motor HP = next standard Motor HP greater than Motor  $HP_{min}$

**STEP 6: Identify the Conveyor Layout**

Identify the conveyor layout. See following sections to determine channel or truss construction, gravity or screw take-up, sideboards, covers, etc.

**STEP 7: Complete the Request for Quotation form included in this catalog.**

## CONVEYOR OPTIONS



### CHANNEL STRINGER CONVEYORS

Conveyors designed with channel stringers are available in 10' 0", and 20' 0" standard sections. Depending on the required conveyor length, an additional, nonstandard length section will be supplied. A bolted splice plate connection joins and stiffens each joint. Channel stringer sections can be joined to truss sections by special lateral frames for spanning distances that require a truss section, while still enabling channel stringers to be used where the spanned distance does not require a truss. Channel stringers range in size from C4x5.4 to C10x20, depending on load, capacity and span requirements. Schedule 40 pipe or carbon steel angles are used for cross-members, supplying added strength and rigidity. Steel channel or fabricated bents are used for supports. The channel frame design is especially suited to any application where overhead clearance is limited.



## **TRUSS FRAME CONVEYORS**

Truss frame conveyors are available in 24" deep and 42" deep sections. The 24" deep sections are available in lengths of 6'- 0", 15'- 0", 18'- 0", and 20'- 0". The 42" deep sections are available in 16'- 0", 20'- 0", and 24'- 0" lengths. As with the channel frame conveyors, a non-standard section may be required to meet the customers' required conveyor length. The truss frame conveyors are used in applications where a channel frame conveyor cannot span an unsupported distance required by the customer.

**Please refer to the following chart for permissible spans:**

<b>MAXIMUM TRUSS SECTION SPANS – FEET</b>			
<b>Truss Depth, Inches</b>	<b>Belt Width, Inches</b>	<b>Allowable Span w/o walkway, Feet</b>	<b>Allowable Span w/ walkway, Feet</b>
24	18	48	33
24	24	44	31
24	30	40	29
24	36	36	27
42	18	55	46
42	24	52	43
42	30	49	40
42	36	49	37

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## **OTHER CONVEYOR OPTIONS**

### **Slider Bed Conveyors:**

14 to 10 ga. Plate is used for conveyor decking depending on conveyor loads. Heavy, conservative design insures long life while also minimizing the number of intermediate supports needed for industries whose light bulk material densities allow their use. Conveyors requiring moderate incline (23 degrees or less) may be supplied with special cleated belts.

### **U-Trough Slider Conveyors:**

Used to provide better material containment on the carrying run. Minimizes fallback and increases efficiency in inclined applications when used with wood chips to provide more inter-meshing of material.

## Flat Slide Conveyors

Used when weighing of the material is necessary, when the belt serves as a feeder, or when limited overhead clearance requires a flat slide design.

## Totally Enclosed Conveyors

Sealed covers and drip pans allow for virtually dust-free material conveyance. Corrugated or non-corrugated covers are available. Drip pans are constructed of 14 ga. steels, standard.

## Custom Engineered Conveyors

If none of the standard conveyor designs fits the customer's needs, **ORTHMAN** will be pleased to design a custom conveyor application. By supplying **ORTHMAN** with specifications and/or drawings illustrating the particular application, the engineering department will be able to produce general arrangement drawings for the customer's approval.

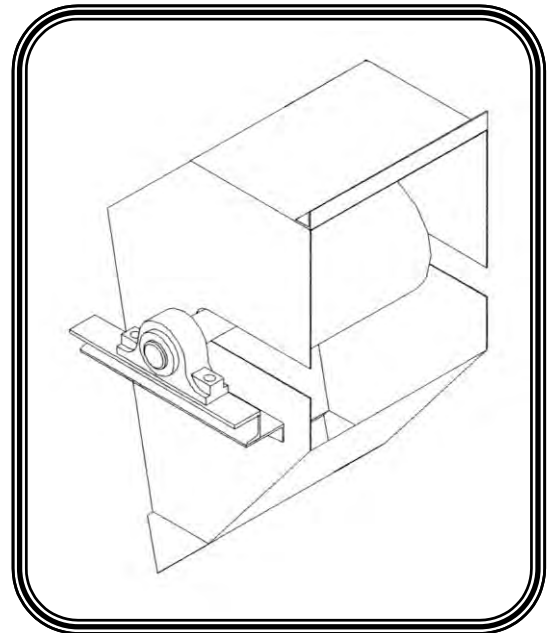
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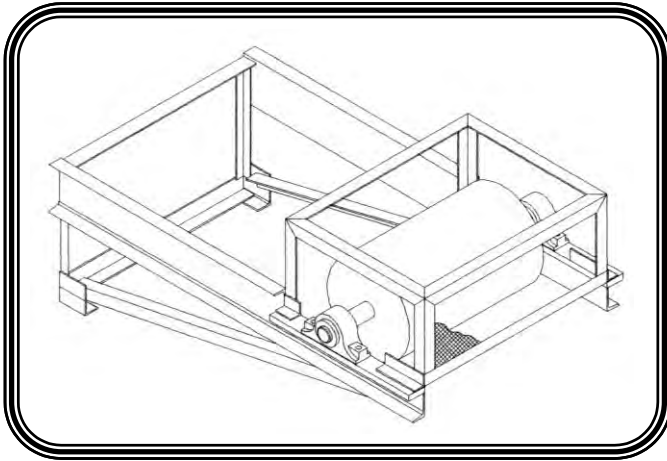
## ORTHMAN CONVEYING DISCHARGE CHUTES

The standard **ORTHMAN** Discharge Chutes are constructed of 14 ga. to ¼" plate, depending on application. Chutes may be constructed of a range of materials depending on usage, including: stainless steel, aluminum, and carbon steel (standard). Chute options also include abrasion resistant or UHMW liners. Access panels may also be added to facilitate pulley maintenance. Clip angles allow for easy removal of Discharge Chute.

These chutes may be fitted with the standard **ORTHMAN** belt cleaner or with several commercially available belt cleaners, including brush type belt cleaners. Customer should specify what type of belt cleaner, if any, is applicable to their requirements.



Custom chute extensions or flange connections may be specified by the customer. Standard discharge angle is 60 degrees, but customer may specify required discharge angle. Please note that some materials require a steeper discharge angle than others to prevent material from sticking to inside of chute. Consult **ORTHMAN CONVEYOR SYSTEMS** to determine the optimum angle for the material to be conveyed.



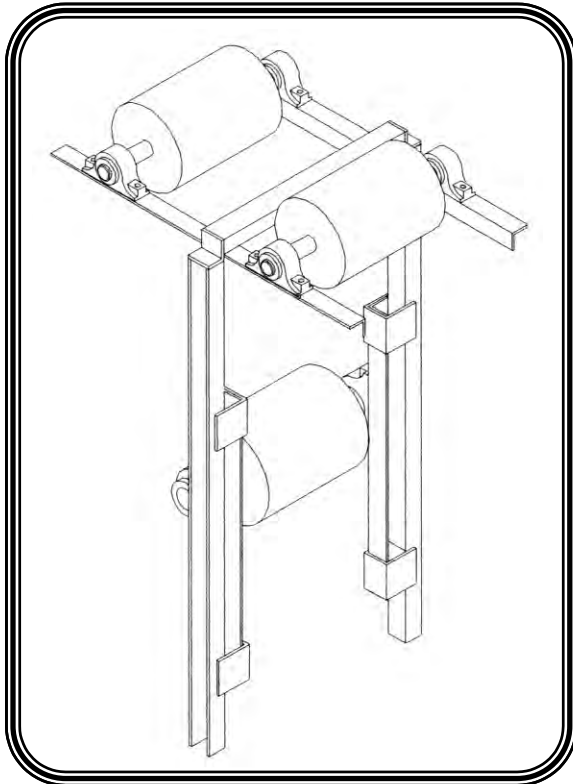
## **FIXED TAIL TERMINALS**

This style is used when the conveyor has a gravity take-up arrangement. The unit consists of a fabricated steel frame, ball or roller type pillow block bearings, a wing-type tail pulley (unless otherwise specified), and a fabricated expanded metal tail pulley guard. For a totally enclosed conveyor, the tail pulley guard is made with solid sheet metal. The unit can also be welded to the last stringer section

for easy maintenance. The tail terminal shown is designed to bolt to a truss section. Terminals for channel stringers are also available.

<b>TAIL SECTIONS – FIXED PULLEY</b>				
Belt Width, in	Pulley Dia., in	Shaft Dia., in	Frame Ht., in	Weight, lbs
18	14	1 15/16	24	190
18	14	2 7/16	24	195
18	14	2 15/16	24	210
18	14	1 15/16	42	220
18	14	2 7/16	42	225
18	14	2 15/16	42	240
24	14	1 15/16	24	205
24	14	2 7/16	24	210
24	14	2 15/16	24	225
24	14	1 15/16	42	230
24	14	2 7/16	42	235
24	14	2 15/16	42	250
30	16	1 15/16	24	220
30	16	2 7/16	24	225
30	16	2 15/16	24	240
30	16	3 7/16	24	255
30	16	1 15/16	42	250
30	16	2 7/16	42	255
30	16	2 15/16	42	270
36	16	3 7/16	42	285
36	16	2 7/16	24	245
36	16	2 15/16	24	260
36	16	3 7/16	24	275
36	16	2 7/16	42	270
36	16	2 15/16	42	285
36	16	3 7/16	42	300

- Notes: 1. Weight values are frame-weights only; tail pulley guard weight is not included.  
 2. Pulley and shaft diameters will change with excessive loads and/or capacities.



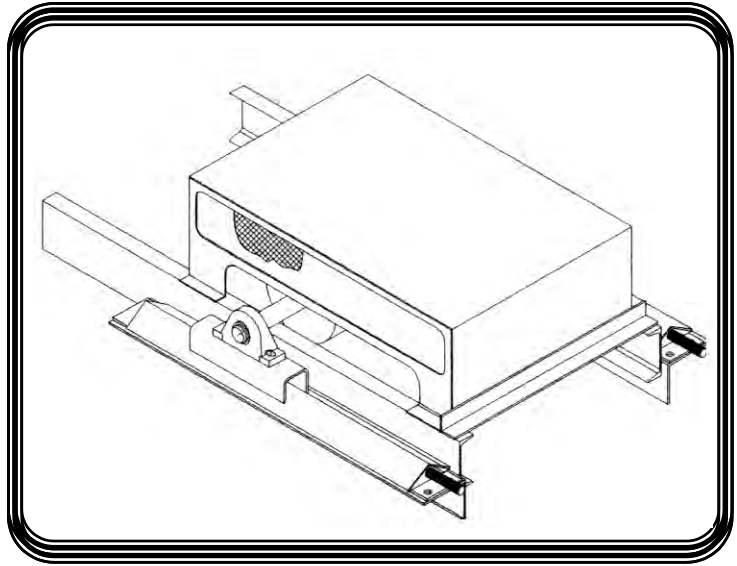
## **GRAVITY TAKE-UP**

This illustration shows a standard gravity take-up. Depending on the specific conveyor requirements, design changes may be made to accommodate them. The standard gravity take-up includes two drum bend pulleys with ¼" plain lagging and one wing-type take-up pulley. The bearings are ball or roller type pillow blocks. The frame is fabricated carbon steel that is designed to either weld or bolt to the conveyor structure, depending on customer requirements. There is also a counterweight box, not shown for clarity. A take-up guard may be required for certain conveyors. Gravity take-ups have a travel of 18", 24" and 30" depending on conveyor length. Longer travel lengths may be designed if required. The chart shows values for standard gravity take-ups. Pulley diameters, shaft diameters and weights may change if there are excessive loads and/or capacities.

<b>GRAVITY TAKE-UP SPECIFICATION – STANDARD</b>			
<b>Belt Width, in</b>	<b>Pulley Diameter, in</b>	<b>Shaft Diameter, in</b>	<b>Weight, lbs</b>
18	16	1 15/16	285
18	16	2 7/16	365
18	16	2 15/16	395
18	16	3 7/16	440
24	16	1 15/16	325
24	16	2 7/16	380
24	16	2 15/16	455
24	16	3 7/16	515
30	16	2 7/16	410
30	16	2 15/16	515
30	16	3 7/16	605
36	16	2 7/16	500
36	16	2 15/16	550
36	16	3 7/16	690
36	16	3 15/16	740

## **SCREW TAKE-UP** **TAIL TERMINALS**

These terminals are also made of fabricated steel construction. These include screw-type take-up frames, ball or roller type pillow block bearings, wing-type tail pulleys, and expanded metal tail guards. Take-up lengths can be 12", 18", 24", or 36". Standard units are designed to be welded to the last stringer section, but a bolted connection can also be supplied.



The terminal shown is designed to be welded to a channel type stringer.

<b>TAIL SECTIONS – SCREW TAKE-UPS</b>					
Belt Width, in	Pulley Diam, in	Shaft Dia, in	Frame Ht, in	T-U Travel, in	Weight, lbs
18	14	1 15/16	24	12-30	190-260
18	14	2 7/16	24	12-30	195-280
18	14	2 15/16	24	12-30	210-310
18	14	1 15/16	42	12-30	220-290
18	14	2 7/16	42	12-30	225-310
18	14	2 15/16	42	12-30	240-340
24	14	1 15/16	24	12-30	205-275
24	14	2 7/16	24	12-30	210-295
24	14	2 15/16	24	12-30	225-325
24	14	1 15/16	42	12-30	230-305
24	14	2 7/16	42	12-30	235-325
24	14	2 15/16	42	12-30	250-355
30	16	1 15/16	24	12-36	220-295
30	16	2 7/16	24	12-36	225-315
30	16	2 15/16	24	12-36	240-345
30	16	3 7/16	24	12-36	255-365
30	16	1 15/16	42	12-36	250-315
30	16	2 7/16	42	12-36	255-335
30	16	2 15/16	42	12-36	270-365
30	16	3 7/16	42	12-36	285-385
36	16	2 7/16	24	12-36	245-310
36	16	2 15/16	24	12-36	260-330
36	16	3 7/16	24	12-36	275-350
36	16	2 7/16	42	12-36	270-340
36	16	2 15/16	42	12-36	285-360
36	16	3 7/17	42	12-36	300-380

Notes: 1. Weight Values are frame-weights only; tail pulley guard weight is not included.

2. Pulley and shaft diameters will change with excessive loads and/or capacities.

3. The amount of take-up required is dependant on the length of the conveyor.

Please consult the ORTHMAN **Engineering Department** to determine your specific take-up needs.

## **CONVEYOR ACCESSORIES**

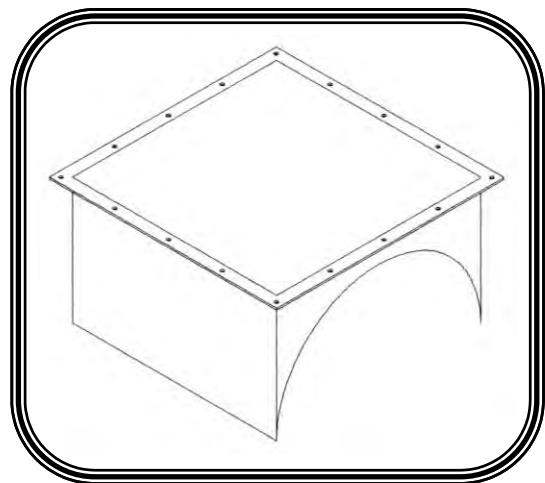
### **BELT CLEANERS**

ORTHMAN has several different styles of industrial and food grade belt cleaners. The most standard design is a spring-loaded belt cleaner with either a rubber or UHMW scraper blade. This type cleaner is the most often used and will provide adequate cleaning in most applications. Motor driven brush type cleaners are also available for applications where the scraper type cleaner does not remove enough material. Please consult the Engineering Staff at ORTHMAN to determine what type of belt cleaner best suits your application.

The chart below shows the most standard belt cleaners available:

<b>SCRAPER-TYPE BELT CLEANERS, STANDARD</b>		
Belt Width, In	Blade Material	Weight, lbs
18	Standard Rubber	25
24	Standard Rubber	30
30	Standard Rubber	35
36	Standard Rubber	40
18	UHMW	25
24	UHMW	30
30	UHMW	35
36	UHMW	40

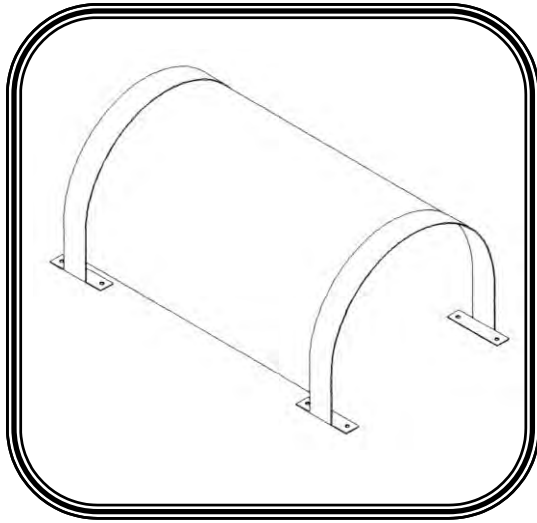
These inlets provide a guide for incoming flow for covered conveyors. The flange may be the ORTHMAN standard or specified by the customer to attach to already existing chuting. The inlet chute itself is made of 14 ga. steel metal, standard. The chute is designed to be welded to a standard ORTHMAN'S curved cover. This same type of cover may be adapted for a box-type cover. UHMW or abrasion-resistant lining may be added if required. For applications where conveyors must be dust-proof, a gasket will be supplied with the flange.



### **FLANGED INLETS LOAD HOPPERS (FOR COVERED CONVEYORS)**

Load hoppers are available for non-enclosed conveyors. A load hopper is able to guide the incoming flow of material properly onto the belt. The unit consists of structural steel chute walls, adjustable rubber or UHMW skirt seals and an optional downstream cover. The load hopper bolts directly to the top of any of ORTHMAN'S conveyor structures. If needed, impact idlers or a load section is located under the hopper's discharge point. The chute sides may be inclined or vertical to suit customers' applications.

## STANDARD CONVEYOR COVERS



ORTHMAN offers a variety of standard conveyor covers. These covers are designed to protect the belt, material and idlers from the weather and other contaminants. Conveyor covers also protect the belt from being sun dried and damaged, and offers protection from wind and rain. Shown here is a non-hinged, smooth curved cover. This standard cover consists of steel, galvanized steel or aluminum cover sections supported on bands of heavier gauge steel or aluminum. The support bands bolt directly to the foot brackets which are subsequently bolted to the top chord of truss frames or to the top of channel stringers.

The chart below gives some specifications on the curved covers:

STANDARD CONVEYOR COVERS – WEIGHTS			
Belt Width, inches	Weight per 4' – 0" Section, Lbs		
	Full, galvanized	Full, aluminum	<sup>3</sup> / <sub>4</sub> , galvanized
18"	52	22	42
24"	58	25	47
30"	65	28	52
36"	71	30	55
48"	84	36	72
60"	97	41	84
72"	109	47	93

## CONVEYOR DECK PLATES

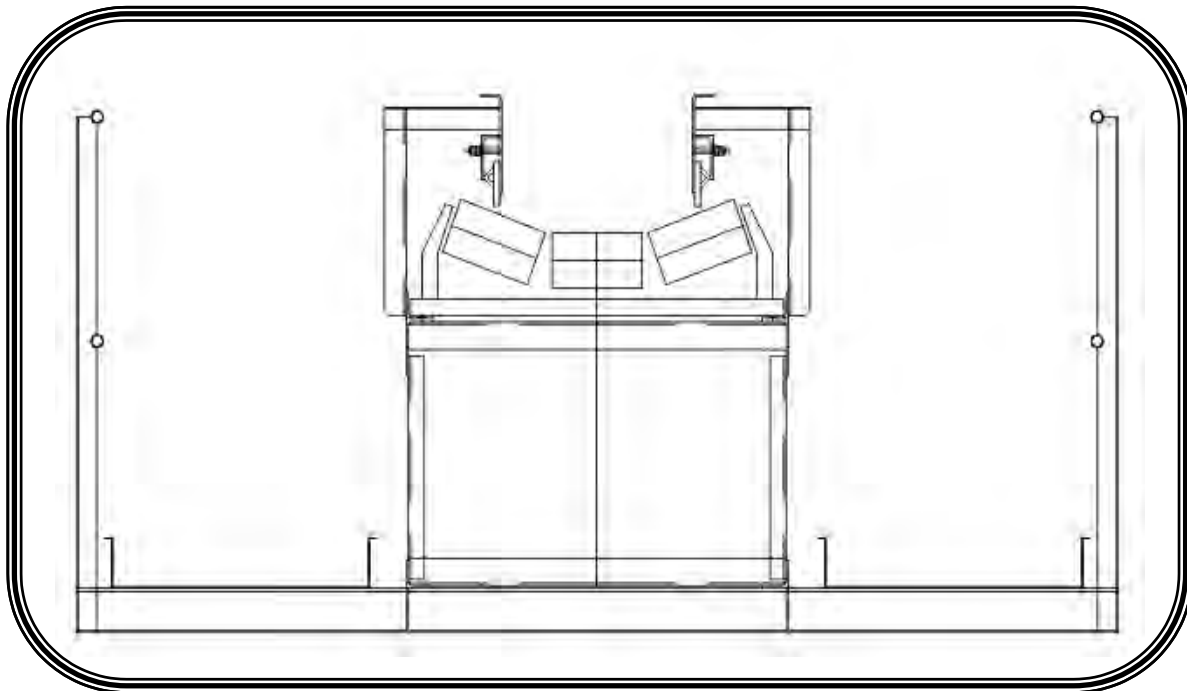
Deck plates for the conveyors are an optional feature used to deflect any material from the carrying run of the belting from falling on the return run of the belting. Typically, 16 ga. material is used, although the customer may specify thicker material if it is needed. Inclined conveyor decking is designed to shed water and debris, while still protecting the belt and return idlers.

## DRIP PANS

Essential for conveyors running in areas where delicate machinery or people may be underneath the conveyors, the fabricated drip pans are designed to keep any material on the carrying and return runs from falling below the conveyors. The drip pans are made of 14 ga. carbon steel and are joined together with bolted splice sections. For totally enclosed conveyors, gaskets will be provided to ensure the drip pans are dust-proof.

## WALKWAYS AND HANDRAILS

**ORTHMAN** offers walkways and handrails for one or both sides of their conveyors to provide maintenance access to the full length of the conveyor. Standard walkways are either 36" or 48" wide. Walkways are designed to bolt to the conveyor supports of channel frame conveyors, or directly to the lower cord angles of truss sections. The handrails may either be welded directly to the walkway support frame, or may be designed to bolt together at the job site, depending on shipping and installation needs. Standard walkway flooring is 1 ¼" X ¾" bar grating, and standard handrails are 1 ¼" Sch 40 pipe. Walkway sections are available in 10'-0" or 20'-0" lengths. Galvanized walkway is non-standard, but is available in 10'-0" sections. Ladders and cages are also available if needed. In addition, **ORTHMAN** can provide the customer with service platforms and support steel needed at critical maintenance areas, such as the head and tail sections.



This picture shows a conveyor installation by **ORTHMAN** already in the field. The walkways, handrails, platforms, ladders and/or steps are tailored to the individual customer's application. Please note that a safety stop switch is recommended on conveyors where workers will be near a running conveyor.

Some welding and/or assembly may be required in the field for installation of walkways and handrails. **ORTHMAN** will supply any installation instructions that are needed.



## **OTHER ORTHMAN PRODUCTS**

### **BUCKET ELEVATORS**

Designed to move flowing powders or bulk solids vertically. Series of buckets mounted on chain or belt operating over a sprocket or pulley is the typical elevator configuration. Take-ups are provided as a means to compensate for variation in conditions, or belt or chain wear. A steel casing encloses the bucket line. Boot sections can be designed for various angles and heights of inlet material. Discharge hoods can be designed to accommodate specific customer applications. Please contact the ORTHMAN CONVEYOR SYSTEMS Sales Department for a complete catalog of standard bucket elevators.

### **SCREW CONVEYORS**

Industrial and food grade screw conveyors are available for conveying a variety of different materials. ORTHMAN offers a wide range of standard screw conveyors and options shown in our Screw Conveyor catalog. This catalog is also available through contacting the Sales Department at our home office or through your local sales representative. ORTHMAN provides a full line of screw conveyors and related components from water-jacketed heat-transferring models to multiple-screw "live bottom" type feeder units.

### **GATES**

ORTHMAN offers gates of virtually any configuration. Electric-actuated, air-operated, and manual Y flop gates, flat slide gates, as well as made-to-order gates of the customers' design are available. Our general catalog shows many types of gates already in use in the field. A wide range of materials is available for fabrication of the gates including steel, stainless steel, and aluminum. Gates lined with abrasion resistant steel or UHMW are available to suit customer requirements.

### **DRAG CONVEYORS**

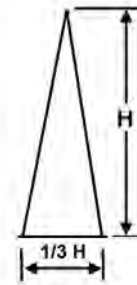
Drag conveyors are typically a chain-driven series of solid or perforated flights. This type of conveyor is used for material retrieval where there is little overhead room, such as under a casting line. They are also used for material retrieval in an oil or water pit after a wash procedure. These conveyors are designed per customer requirements and are tailored to fit customer needs. Because these conveyors are usually installed in areas where maintenance access is usually difficult, they are built ruggedly. As with all ORTHMAN products, these conveyors are built with the highest level of quality to avoid frequent maintenance.

### **CUSTOM FABRICATION**

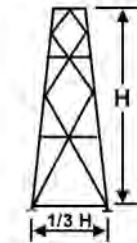
From support steel structures to custom conveyors and mass flow hoppers, ORTHMAN'S fabrication, welding and machine departments are able to supply just about any type of fabricated steel structure, designed to suit customer requirements.

## BELT CONVEYOR BENT SUPPORTS

HEIGHT H	PIPE BENTS		BRACED BENTS	
	STEEL WT/LB	WT/FT	STEEL WT/LB	WT/FT
10	800	80	800	80
20	1600	80	1700	85
30	3800	127	2500	83
40	5000	125	3200	80
50	6500	130	4700	94
60	8000	133	7000	117
70	12000	171	11000	157
80	16000	200	15000	225
90	20000	222	20000	222
100	23000	230	22000	220
110	26000	236	27000	245
120	29000	242	32000	266
130	36000	277	37000	284
140	39000	278	41000	292
150	42000	280	47000	313
160	45000	281	53000	331
170	47000	276	59000	347



PIPE BENT

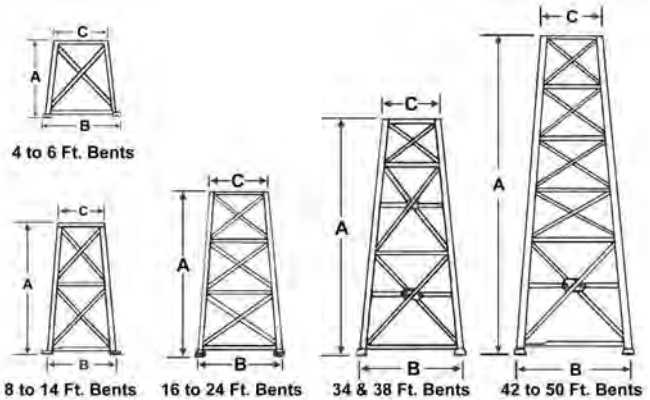


BRACED BENT

\*Bents designed for 40° wind shear and 90° DL & LL (per col.)

### GENERAL DIMENSIONS – FOR CONVEYORS 12” THROUGH 42” IN WIDTH

BENT HEIGHT	CONVEYOR WIDTHS			WT/LBS
	18” AND 24”			
A	B	C		
4	4' 3 1/2"	3' 6"		159
6	4' 8 1/2"	3' 6"		190
8	5' 1"	3' 6"		281
10	5' 6"	3' 6"		324
12	5' 11"	3' 6"		459
14	6' 3 1/2"	3' 6"		516
16	6' 8 1/2"	3' 6"		634
18	7' 1"	3' 6"		671
20	7' 6"	3' 6"		723
22	7' 11"	3' 6"		774
24	8' 3 1/2"	3' 6"		858
26	8' 8 1/2"	3' 6"		1177
28	9' 1"	3' 6"		1232
30	9' 6"	3' 6"		1225
32	9' 11"	3' 6"		1384
34	10' 4"	3' 6"		1656
36	10' 5 1/2"	3' 6"		1759
38	11' 1"	3' 6"		1998
40	11' 6"	3' 6"		2064
42	11' 11"	3' 6"		2507
44	12' 4"	3' 6"		2593
46	12' 8 1/2"	3' 6"		2677
48	13' 1"	3' 6"		3722
50	13' 6"	3' 6"		3844



BENT HT	CONVEYOR WIDTHS			BENT HT	CONVEYOR WIDTHS		
	30”, 36” AND 42”				30”, 36” AND 42”		
A	B	C	WT/LBS	A	B	C	WT/LBS
4	5' 3 1/2"	4' 6"	178	28	10' 1"	4' 6"	1282
6	5' 8 1/2"	4' 6"	219	30	10' 6"	4' 6"	1354
8	6' 1"	4' 6"	312	32	10' 11"	4' 6"	1435
10	6' 6"	4' 6"	351	34	11' 4"	4' 6"	1732
12	6' 11"	4' 6"	486	36	11' 8 1/2"	4' 6"	1806
14	7' 3 1/2"	4' 6"	543	38	12' 1"	4' 6"	2053
16	7' 8 1/2"	4' 6"	863	40	12' 6"	4' 6"	2129
18	8' 1"	4' 6"	7-5	42	12' 11"	4' 6"	2618
20	8' 6"	4' 6"	775	44	13' 4"	4' 6"	2673
22	8' 11"	4' 6"	798	46	13' 8 1/2"	4' 6"	2781
24	9' 3 1/2"	4' 6"	870	48	14' 1"	4' 6"	3783
26	9' 8 1/2"	4' 6"	1222	50	14' 8"	4' 6"	3907

# REQUEST FOR QUOTATION

## ORTHMAN CONVEYOR SYSTEMS BELT CONVEYORS

### MINIMUM DESIGN INFORMATION TO QUOTE

#### CUSTOMER INFORMATION

Customer Name:	Conveyor Name or #:
Customer Location/Fax #:	Quantity Required:

#### MATERIAL HANDLED

Material Type:	<b>CONVEYOR PROFILE &amp; LAYOUT</b>
Minimum Density, PCF:	Conveyor Length, feet:
Maximum Density, PCF:	Conveyor Lift, feet:
Maximum Lump Size, in.:	Support Span, feet:
% Lumps at Max. Size:	Cover Requirement:
Capacity Required, TPH:	Walkway Requirement:

#### Additional Design Information Required (If Applicable)

Load Hopper Requirement:	Number of Scrapers Req'd:
Load Section Length:	Number of Plows Req'd:
Material Height at Load:	

#### Optional Design Information (Only Required if Specified)

Belt Width, in.:	<b>Pulleys &amp; Bearings</b>
Belt Speed, FPM:	Head Pulley Diameter, in.:
Discharge Hood Req'd	Head Pulley Lagging:
Motor Specification	Bearing Manufacturer:
Motor HP	Bearing Model:
Motor Manufacturer:	Snub Pulley Diameter, in.:
Paint Specification:	Snub Pulley Lagging:
Drive Type:	Snub Bearing Diameter, in.:
Drive Model:	Tail Pulley Diameter, in.:
Belt/Chain Drive:	Tail Pulley Lagging:
Belt Specification:	Take-up Pulley Diameter, in.:
Belt Fastener:	Take-up Pulley Lagging:
Idler CEMA Class:	Take-up Pulley Bearing Diameter, in.:
Idler Diameter:	Bend Pulley Diameter, in.:
Additional Features:	Bend Pulley Lagging:
	Bend Bearing Diameter:
	Take-up Type:
	Take-up Travel:

## IDLER SURVEY SHEET

Customer Name: \_\_\_\_\_ Customer Location: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

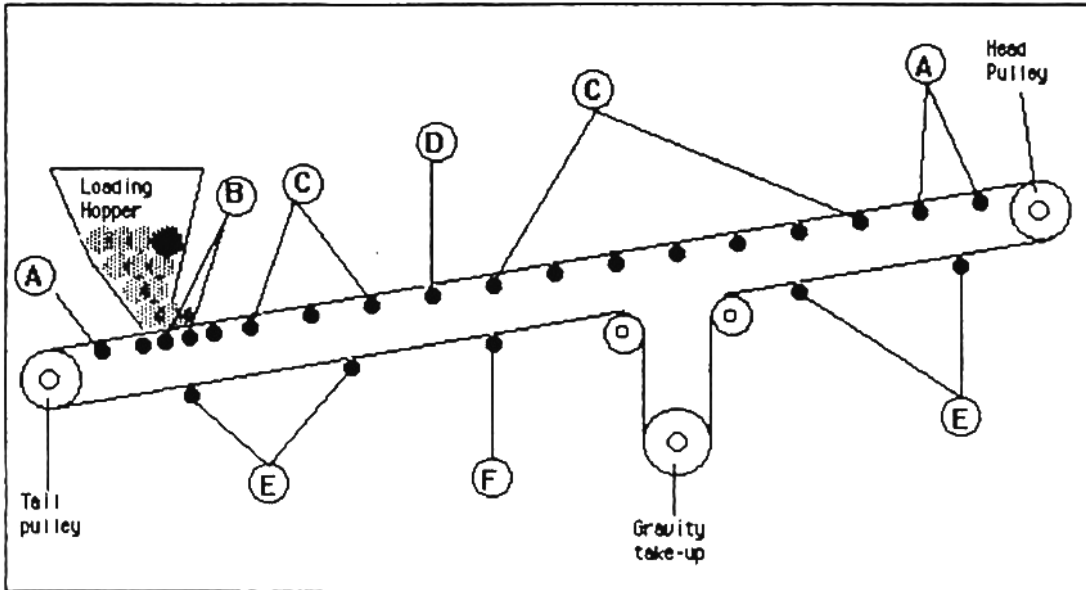
CONVEYOR \_\_\_\_\_

Length: \_\_\_\_\_ Capacity (STPH): \_\_\_\_\_

Speed: \_\_\_\_\_ Material Lump Size & Wt: \_\_\_\_\_

Width: \_\_\_\_\_ CEMA Series (Used): \_\_\_\_\_

CEMA Recommended: \_\_\_\_\_



LOCATION	DESCRIPTION	QUANTITY	ROLL		PART #	CATALOG PAGE #
			DIAMETER	DEGREE		
A	Transition Idlers					
B	Load Area Idlers					
C	Carrying Idlers					
D	Carrying Belt					
E	Return Idlers					
F	Return Belt					
	Training Idlers					

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_



[www.conveyusa.com](http://www.conveyusa.com)



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