MATERIAL HANDLING

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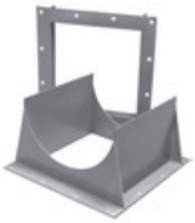
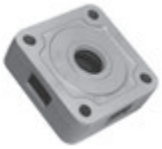


INLET AND DISCHARGE SPOUTS

SPLIT GLAND

PACKING GLAND SHAFT SEAL COMPRESSION TYPE



WASTE PACK SHAFT SEAL

PLATE SHAFT SEAL

DROP-OUT SHAFT SEAL FLANGED PRODUCT

HELICOID SCREWS

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Martin BRONZE
NYLATRON
WHITE NYLON
WOOD
CERAMIC

SADDLES AND FEET

SCREW CONVEYOR DRIVE WITH ACCESSORIES

SPEED REDUCER SHAFT MOUNTED WITH ACCESSORIES

FLANGED COVER WITH ACCESSORIES

Martin manufacturers the most complete line of stock components in the industry. We stock mild steel, stainless, galvanized, and many other items that are “special order” from the others in the industry.

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APPENDIX GENERAL ENGINEERING INFORMATION *i*-1

Introduction

The following section is designed to present the necessary engineering information to properly design and layout most conveyor applications. The information has been compiled from many years of experience in successful design and application and from industry standards.

We hope that the information presented will be helpful to you in determining the type and size of screw conveyor that will best suit your needs.

The “Screw Conveyor Design Procedure” on the following page gives ten step-by-step instructions for properly designing a screw conveyor. These steps, plus the many following tables and formulas throughout the engineering section will enable you to design and detail screw conveyor for most applications.

If your requirements present any complications not covered in this section, we invite you to contact our Engineering Department for recommendations and suggestions.

Screw Conveyor Design Procedure		
STEP 1	Establish Known Factors	1. Type of material to be conveyed. 2. Maximum size of hard lumps. 3. Percentage of hard lumps by volume. 4. Capacity required, in cu.ft./hr. 5. Capacity required, in lbs./hr. 6. Distance material to be conveyed. 7. Any additional factors that may affect conveyor or operations.
STEP 2	Classify Material	Classify the material according to the system shown in Table 1-1. Or, if the material is included in Table 1-2, use the classification shown in Table 1-2.
STEP 3	Determine Design Capacity	Determine design capacity as described on pages H-16–H-18.
STEP 4	Determine Diameter and Speed	Using known capacity required in cu.ft./hr., material classification, and % trough loading (Table 1-2) determine diameter and speed from Table 1-6.
STEP 5	Check Minimum Screw Diameter for Lump Size Limitations	Using known screw diameter and percentage of hard lumps, check minimum screw diameter from Table 1-7.
STEP 6	Determine Type of Bearings	From Table 1-2, determine hanger bearing group for the material to be conveyed. Locate this bearing group in Table 1-11 for the type of bearing recommended.
STEP 7	Determine Horsepower	From Table 1-2, determine Horsepower Factor "Fm" for the material to be conveyed. Refer to page H-23 and calculate horsepower by the formula method.
STEP 8	Check Torsional and/or Horsepower ratings of Standard Conveyor Components	Using required horsepower from step 7 refer to pages H-26 and H-27 to check capacities of standard conveyor pipe, shafts and coupling bolts.
STEP 9	Select Components	Select basic components from Tables 1-8, 1-9, and 1-10 in accordance with Component Group listed in Table 1-2 for the material to be conveyed. Select balance of components from the Components Section of catalog.
STEP 10	Conveyor Layouts	Refer to pages H-39 and H-40 for typical layout details.

Table 1-1
Material Classification Code Chart

Major Class	Material Characteristics Included		Code Designation
Density	Bulk Density, Loose		Actual lbs/PC
Size	Very Fine	No. 200 Sieve (.0029") and Under	A200
		No. 100 Sieve (.0059") and Under	A100
		No. 40 Sieve (.016") and Under	A40
	Fine	No. 6 Sieve (.132") and Under	B6
	Granular	1/2" And Under (6" Sieve to 1/2")	C1/2
		3" And Under (1/2" to 3")	D3
		7" And Under (3" to 7")	D7
	Lumpy	16" And Under (0" to 16")	D16
		Over 16" To Be Specified, X = Actual Maximum Size	DX
	Irregular	Irregular Stringy, Fibrous, Cylindrical, Slabs, Etc.	E
Flowability	Very Free Flowing		1
	Free Flowing		2
	Average Flowability		3
	Sluggish		4
Abrasiveness	Mildly Abrasive		5
	Moderately Abrasive		6
	Extremely Abrasive		7
Miscellaneous Properties or Hazards	Builds Up and Hardens		F
	Generates Static Electricity		G
	Decomposes — Deteriorates in Storage		H
	Flammability		J
	Becomes Plastic or Tends to Soften		K
	Very Dusty		L
	Aerates and Becomes a Fluid		M
	Explosiveness		N
	Stickiness — Adhesion		O
	Contaminable, Affecting Use		P
	Degradable, Affecting Use		Q
	Gives Off Harmful or Toxic Gas or Fumes		R
	Highly Corrosive		S
	Mildly Corrosive		T
	Hygroscopic		U
	Interlocks, Mats or Agglomerates		V
	Oils Present		W
	Packs Under Pressure		X
	Very Light and Fluffy — May Be Windswept		Y
	Elevated Temperature		Z

Table 1-2
Material Characteristics

Material Characteristics

The material characteristics table (page H-7 or H-15) lists the following Design Data for many materials.

A. The weight per cubic foot data may be used to calculate the required capacity of the conveyor in cubic feet per hour.

B. B. The material code for each material is as described in Table 1-1, and as interpreted below.

C. The Intermediate Bearing Selection Code is used to properly select the intermediate hanger bearing from Table 1-11 (Page H-22).

D. The Component Series Code is used to determine the correct components to be used as shown on page H-21.

E. The Material Factor Fm is used in determining horsepower as described on pages H-23 thru H-25.

F. The Trough Loading column indicates the proper percent of cross section loading to use in determining diameter and speed of the conveyor.

For screw conveyor design purposes, conveyed materials are classified in accordance with the code system in Table 1-1, and listed in Table 1-2.

Table 1-2 lists many materials that can be effectively conveyed by a screw conveyor. If a material is not listed in Table 1-2, it must be classified according to Table 1-1 or by referring to a listed material similar in weight, particle size and other characteristics.

HOW TO READ THE MATERIAL CODE

FROM TABLE 1-2

Material: Brewers Grain Spent Wet

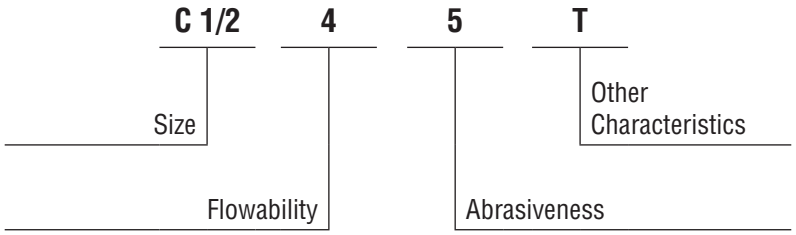

Table 1-2
Material Characteristics

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Adipic Acid	45	A100-35	S	2	.5	30A
Alfalfa Meal	14-22	B6-45WY	H	2	.6	30A
Alfalfa Pellets	41-43	C1/2-25	H	2	.5	45
Alfalfa Seed	10-15	B6-15N	L-S-B	1	.4	45
Almonds, Broken	27-30	C1/2-35Q	H	2	.9	30A
Almonds, Whole Shelled	28-30	C1/2-35Q	H	2	.9	30A
Alum, Fine	45-50	B6-35U	L-S-B	1	.6	30A
Alum, Lumpy	50-60	B6-25	L-S	2	1.4	45
Alumina	55-65	B6-27MY	H	3	1.8	15
Alumina, Fine	35	A100-27MY	H	3	1.6	15
Alumina Sized or Briquette	65	D3-37	H	3	2.0	15
Aluminate Gel (Aluminate Hydroxide)	45	B6-35	H	2	1.7	30A
Aluminum Chips, Dry	7-15	E-45V	H	2	1.2	30A
Aluminum Chips, Oily	7-15	E-45V	H	2	.8	30A
Aluminum Hydrate	13-20	C1/2-35	L-S-B	1	1.4	30A
Aluminum Ore (See Bauxite)	—	—	—	—	—	—
Aluminum Oxide	60-120	A100-17M	H	3	1.8	15
Aluminum Silicate (Andalusite)	49	C1/2-35S	L-S	3	.8	30A
Aluminum Sulfate	45-58	C1/2-25	L-S-B	1	1.0	45
Ammonium Chloride, Crystalline	45-52	A100-45FRS	L-S	3	.7	30A
Ammonium Nitrate	45-62	A40-35NTU	H	3	1.3	30A
Ammonium Sulfate	45-58	C1/2-35FOTU	L-S	1	1.0	30A
Antimony Powder	—	A100-35	H	2	1.6	30A
Apple Pomace, Dry	15	C1/2-45Y	H	2	1.0	30A
Arsenate Of Lead (See Lead Arsenate)	—	—	—	—	—	—
Arsenic Oxide (Arsenolite)	100-120	A100-35R	L-S-B	—	—	30A
Arsenic Pulverized	30	A100-25R	H	2	.8	45
Asbestos — Rock (Ore)	81	D3-37R	H	3	1.2	15
Asbestos — Shredded	20-40	E-46XY	H	2	1.0	30B
Ash, Black Ground	105	B6-35	L-S-B	1	2.0	30A
Ashes, Coal, Dry — 1/2"	35-45	C1/2-46TY	H	3	3.0	30B
Ashes, Coal, Dry — 3"	35-40	D3-46T	H	3	2.5	30B
Ashes, Coal, Wet — 1/2"	45-50	C1/2-46T	H	3	3.0	30B
Ashes, Coal, Wet — 3"	45-50	D3-46T	H	3	4.0	30B
Ashes, Fly (See Fly Ash)	—	—	—	—	—	—
Asphalt, Crushed — 1/2"	45	C1/2-45	H	2	2.0	30A
Bagasse	7-10	E-45RVXY	L-S-B	2	1.5	30A
Bakelite, Fine	30-45	B6-25	L-S-B	1	1.4	45
Baking Powder	40-55	A100-35	S	1	.6	30A
Baking Soda (Sodium Bicarbonate)	40-55	A100-25	S	1	.6	45
Barite (Barium Sulfate) + 1/2" — 3"	120-180	D3-36	H	3	2.6	30B
Barite, Powder	120-180	A100-35X	H	2	2.0	30A
Barium Carbonate	72	A100-45R	H	2	1.6	30A
Bark, Wood, Refuse	10-20	E-45TVY	H	3	2.0	30A
Barley, Fine, Ground	24-38	B6-35	L-S-B	1	.4	30A
Barley, Malted	31	C1/2-35	L-S-B	1	.4	30A
Barley, Meal	28	C1/2-35	L-S-B	1	.4	30A
Barley, Whole	36-48	B6-25N	L-S-B	1	.5	45
Basalt	80-105	B6-27	H	3	1.8	15
Bauxite, Dry, Ground	68	B6-25	H	2	1.8	45
Bauxite, Crushed — 3"	75-85	D3-36	H	3	2.5	30B
Beans,Castor, Meal	35-40	B6-35W	L-S-B	1	.8	30A
Beans, Castor, Whole Shelled	36	C1/2-15W	L-S-B	1	.5	45
Beans, Navy, Dry	48	C1/2-15	L-S-B	1	.5	45
Beans, Navy, Steeped	60	C1/2-25	L-S-B	1	.8	45
Bentonite, Crude	34-40	D3-45X	H	2	1.2	30A

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Bentonite, –100 Mesh	50-60	A100-25MXY	H	2	0.7	45
Benzene Hexachloride	56	A100-45R	L-S-B	1	0.6	30A
Bicarbonate of Soda (Baking Soda)	—	—	S	1	0.6	—
Blood, Dried	35-45	D3-45U	H	2	2	30A
Blood, Ground, Dried	30	A100-35U	L-S	1	1	30A
Bone Ash (Tricalcium Phosphate)	40-50	A100-45	L-S	1	1.6	30A
Boneblack	20-25	A100-25Y	L-S	1	1.5	45
Bonechar	27-40	B6-35	L-S	1	1.6	30A
Bonemeal	50-60	B6-35	H	2	1.7	30A
Bones, Whole*	35-50	E-45V	H	2	3	30A
Bones, Crushed	35-50	D3-45	H	2	2	30A
Bones, Ground	50	B6-35	H	2	1.7	30A
Borate of Lime	60	A100-35	L-S-B	1	0.6	30A
Borax, Fine	45-55	B6-25T	H	3	0.7	30B
Borax Screening — 1/2"	55-60	C1/2-35	H	2	1.5	30A
Borax, 11/2" - 2" Lump	55-60	D3-35	H	2	1.8	30A
Borax, 2" - 3" Lump	60-70	D3-35	H	2	2	30A
Boric Acid, Fine	55	B6-25T	H	3	0.8	30A
Boron	75	A100-37	H	2	1	30B
Bran, Rice — Rye — Wheat	16-20	B6-35NY	L-S-B	1	0.5	30A
Braunite (Manganese Oxide)	120	A100-36	H	2	2	30B
Bread Crumbs	20-25	B6-35PQ	L-S-B	1	0.6	30A
Brewer's Grain, Spent, Dry	14-30	C1/2-45	L-S-B	1	0.5	30A
Brewer's Grain, Spent, Wet	55-60	C1/2-45T	L-S	2	0.8	30A
Brick, Ground — 1/8"	100-120	B6-37	H	3	2.2	15
Bronze Chips	30-50	B6-45	H	2	2	30A
Buckwheat	37-42	B6-25N	L-S-B	1	0.4	45
Calcine, Flour	75-85	A100-35	L-S-B	1	0.7	30A
Calcium Carbide	70-90	D3-25N	H	2	2	30A
Calcium Carbonate (See Limestone)	—	—	—	—	—	—
Calcium Fluoride (See Fluorspar)	—	—	—	—	—	—
Calcium Hydrate (See Lime, Hydrated)	—	—	—	—	—	—
Calcium Hydroxide (See Lime, Hydrated)	—	—	—	—	—	—
Calcium Lactate	26-29	D3-45QTR	L-S	2	0.6	30A
Calcium Oxide (See Lime, Unslaked)	—	—	—	—	—	—
Calcium Phosphate	40-50	A100-45	L-S-B	1	1.6	30A
Calcium Sulfate (See Gypsum)	—	—	—	—	—	—
Carbon, Activated, Dry Fine*	—	—	—	—	—	—
Carbon Black, Pelleted*	—	—	—	—	—	—
Carbon Black, Powder*	—	—	—	—	—	—
Carborundum	100	D3-27	H	3	3	15
Casein	36	B6-35	H	2	1.6	30A
Cashew Nuts	32-37	C1/2-45	H	2	0.7	30A
Cast Iron, Chips	130-200	C1/2-45	H	2	4	30A
Caustic Soda	88	B6-35RSU	H	3	1.8	30A
Caustic Soda, Flakes	47	C1/2-45RSUX	L-S	3	1.5	30A
Celite (See Diatomaceous Earth)	—	—	—	—	—	—
Cement, Clinker	75-95	D3-36	H	3	1.8	30B
Cement, Mortar	133	B6-35Q	H	3	3	30A
Cement, Portland	94	A100-26M	H	2	1.4	30B
Cement, Aerated (Portland)	60-75	A100-16M	H	2	1.4	30B
Cerrusite (See Lead Carbonate)	—	—	—	—	—	—
Chalk, Crushed	75-95	D3-25	H	2	1.9	30A
Chalk, Pulverized	67-75	A100-25MXY	H	2	1.4	45
Charcoal, Ground	18-28	A100-45	H	2	1.2	30A
Charcoal, Lumps	18-28	D3-45Q	H	2	1.4	30A

*Consult Factory

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Chocolate, Cake Pressed	40-45	D3-25	S	2	1.5	30A
Chrome Ore	125-140	D3-36	H	3	2.5	30B
Cinders, Blast Furnace	57	D3-36T	H	3	1.9	30B
Cinders, Coal	40	D3-36T	H	3	1.8	30B
Clay (See Bentonite, Diatomaceous Earth, Fuller's Earth, Kaolin & Marl)	—	—	—	—	—	—
Clay, Ceramic, Dry, Fines	60-80	A100-35P	L-S-B	1	1.5	30A
Clay, Calcined	80-100	B6-36	H	3	2.4	30B
Clay, Brick, Dry, Fines	100-120	C1/2-36	H	3	2.0	30B
Clay, Dry, Lumpy	60-75	D3-35	H	2	1.8	30A
Clinker, Cement (See Cement Clinker)	—	—	—	—	—	—
Clover Seed	45-48	B6-25N	L-S-B	1	.4	45
Coal, Anthracite (River & Culm)	55-61	B6-35TY	L-S	2	1.0	30A
Coal, Anthracite, Sized-1/2"	49-61	C1/2-25	L-S	2	1.0	45
Coal, Bituminous, Mined	40-60	D3-35LNXY	L-S	1	.9	30A
Coal, Bituminous, Mined, Sized	45-50	D3-35QV	L-S	1	1.0	30A
Coal, Bituminous, Mined, Slack	43-50	C1/2-45T	L-S	2	.9	30A
Coal, Lignite	37-45	D3-35T	H	2	1.0	30A
Cocoa Beans	30-45	C1/2-25Q	L-S	1	.5	45
Cocoa, Nibs	35	C1/2-25	H	2	.5	45
Cocoa, Powdered	30-35	A100-45XY	S	1	.9	30A
Cocoanut, Shredded	20-22	E-45	S	2	1.5	30A
Coffee, Chaff	20	B6-25MY	L-S	1	1.0	45
Coffee, Green Bean	25-32	C1/2-25PQ	L-S	1	.5	45
Coffee, Ground, Dry	25	A40-35P	L-S	1	.6	30A
Coffee, Ground, Wet	35-45	A40-45X	L-S	1	.6	30A
Coffee, Roasted Bean	20-30	C1/2-25PQ	S	1	.4	45
Coffee, Soluble	19	A40-35PUY	S	1	.4	45
Coke, Breeze	25-35	C1/2-37	H	3	1.2	15
Coke, Loose	23-35	D7-37	H	3	1.2	15
Coke, Petrol, Calcined	35-45	D7-37	H	3	1.3	15
Compost	30-50	D7-45TV	L-S	3	1.0	30A
Concrete, Pre-Mix Dry	85-120	C1/2-36U	H	3	3.0	30B
Copper Ore	120-150	DX-36	H	3	4.0	30B
Copper Ore, Crushed	100-150	D3-36	H	3	4.0	30B
Copper Sulphate, (Bluestone)	75-95	C1/2-35S	L-S	2	1.0	30A
Copperas (See Ferrous Sulphate)	—	—	—	—	—	—
Copra, Cake Ground	40-45	B6-45HW	L-S-B	1	.7	30A
Copra, Cake, Lumpy	25-30	D3-35HW	L-S-B	2	.8	30A
Copra, Lumpy	22	E-35HW	L-S-B	2	1.0	30A
Copra, Meal	40-45	B6-35HW	H	2	.7	30A
Cork, Fine Ground	5-15	B6-35JNY	L-S-B	1	.5	30A
Cork, Granulated	12-15	C1/2-35JY	L-S-B	1	.5	30A
Corn, Cracked	40-50	B6-25P	L-S-B	1	.7	45
Corn Cobs, Ground	17	C1/2-25Y	L-S-B	1	.6	45
Corn Cobs, Whole*	12-15	E-35	L-S	2		30A
Corn Ear*	56	E-35	L-S	2		30A
Corn Germ	21	B6-35PY	L-S-B	1	.4	30A
Corn Grits	40-45	B6-35P	L-S-B	1	.5	30A
Cornmeal	32-40	B6-35P	L-S	1	.5	30A
Corn Oil, Cake	25	D7-45HW	L-S	1	.6	30A
Corn Seed	45	C1/2-25PQ	L-S-B	1	.4	45
Corn Shelled	45	C1/2-25	L-S-B	1	.4	45
Corn Sugar	30-35	B6-35PU	S	1	1.0	30A
Cottonseed, Cake, Crushed	40-45	C1/2-45HW	L-S	1	1.0	30A
Cottonseed, Cake, Lumpy	40-45	D7-45HW	L-S	2	1.0	30A

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Cottonseed, Dry, Delinted	22-40	C1/2-25X	L-S	1	.6	45
Cottonseed, Dry, Not Delinted	18-25	C1/2-45XY	L-S	1	.9	30A
Cottonseed, Flakes	20-25	C1/2-35HWY	L-S	1	.8	30A
Cottonseed, Hulls	12	B6-35Y	L-S	1	.9	30A
Cottonseed, Meal, Expeller	25-30	B6-45HW	L-S	3	.5	30A
Cottonseed, Meal, Extracted	35-40	B6-45HW	L-S	1	.5	30A
Cottonseed, Meats, Dry	40	B6-35HW	L-S	1	.6	30A
Cottonseed, Meats, Rolled	35-40	C1/2-45HW	L-S	1	.6	30A
Cracklings, Crushed	40-50	D3-45HW	L-S-B	2	1.3	30A
Cryolite, Dust	75-90	A100-36L	H	2	2.0	30B
Cryolite, Lumpy	90-110	D16-36	H	2	2.1	30B
Cullet, Fine	80-120	C1/2-37	H	3	2.0	15
Cullet, Lump	80-120	D16-37	H	3	2.5	15
Culm, (See Coal, Anthracite)	—	—	—	—	—	—
Cupric Sulphate (Copper Sulfate)	—	—	—	—	—	—
Detergent (See Soap Detergent)	—	—	—	—	—	—
Diatomaceous Earth	11-17	A40-36Y	H	3	1.6	30B
Dicalcium Phosphate	40-50	A40-35	L-S-B	1	1.6	30A
Disodium Phosphate	25-31	A40-35	H	3	.5	30A
Distiller's Grain, Spent Dry	30	B6-35	H	2	.5	30A
Distiller's Grain, Spent Wet	40-60	C1/2-45V	L-S	3	.8	30A
Dolomite, Crushed	80-100	C1/2-36	H	2	2.0	30B
Dolomite, Lumpy	90-100	DX-36	H	2	2.0	30B
Earth, Loam, Dry, Loose	76	C1/2-36	H	2	1.2	30B
Ebonite, Crushed	63-70	C1/2-35	L-S-B	1	.8	30A
Egg Powder	16	A40-35MPY	S	1	1.0	30A
Epsom Salts (Magnesium Sulfate)	40-50	A40-35U	L-S-B	1	.8	30A
Feldspar, Ground	65-80	A100-37	H	2	2.0	15
Feldspar, Lumps	90-100	D7-37	H	2	2.0	15
Feldspar, Powder	100	A200-36	H	2	2.0	30B
Feldspar, Screenings	75-80	C1/2-37	H	2	2.0	15
Ferrous Sulfide — 1/2"	120-135	C1/2-26	H	2	2.0	30B
Ferrous Sulfide — 100M	105-120	A100-36	H	2	2.0	30B
Ferrous Sulphate	50-75	C1/2-35U	H	2	1.0	30A
Fish Meal	35-40	C1/2-45HP	L-S-B	1	1.0	30A
Fish Scrap	40-50	D7-45H	L-S-B	2	1.5	30A
Flaxseed	43-45	B6-35X	L-S-B	1	.4	30A
Flaxseed Cake (Linseed Cake)	48-50	D7-45W	L-S	2	.7	30A
Flaxseed Meal (Linseed Meal)	25-45	B6-45W	L-S	1	.4	30A
Flour Wheat	33-40	A40-45LP	S	1	.6	30A
Flue Dust, Basic Oxygen Furnace	45-60	A40-36LM	H	3	3.5	30B
Flue Dust, Blast Furnace	110-125	A40-36	H	3	3.5	30B
Flue Dust, Boiler H. Dry	30-45	A40-36LM	H	3	2.0	30B
Fluorspar, Fine (Calcium Fluoride)	80-100	B6-36	H	2	2.0	30B
Fluorspar, Lumps	90-110	D7-36	H	2	2.0	30B
Fly Ash	30-45	A40-36M	H	3	2.0	30B
Foundry Sand, Dry (See Sand)	—	—	—	—	—	—
Fuller's Earth, Dry, Raw	30-40	A40-25	H	2	2.0	15
Fuller's Earth, Oily, Spent	60-65	C1/2-450W	H	3	2.0	30A
Fuller's Earth, Calcined	40	A100-25	H	3	2.0	15
Galena (See Lead Sulfide)	—	—	—	—	—	—
Gelatine, Granulated	32	B6-35PU	S	1	.8	30A
Gilsonite	37	C1/2-35	H	3	1.5	30A
Glass, Batch	80-100	C1/2-37	H	3	2.5	15
Glue, Ground	40	B6-45U	H	2	1.7	30A
Glue, Pearl	40	C1/2-35U	L-S-B	1	.5	30A

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Glue, Veg. Powdered	40	A40-45U	L-S-B	1	.6	30A
Gluten, Meal	40	B6-35P	L-S	1	.6	30A
Granite, Fine	80-90	C1/2-27	H	3	2.5	15
Grape Pomace	15-20	D3-45U	H	2	1.4	30A
Graphite Flake	40	B6-25LP	L-S-B	1	.5	45
Graphite Flour	28	A100-35LMP	L-S-B	1	.5	30A
Graphite Ore	65-75	DX-35L	H	2	1.0	30A
Guano Dry*	70	C1/2-35	L-S	3	2.0	30A
Gypsum, Calcined	55-60	B6-35U	H	2	1.6	30A
Gypsum, Calcined, Powdered	60-80	A100-35U	H	2	2.0	30A
Gypsum, Raw — 1"	70-80	D3-25	H	2	2.0	30A
Hay, Chopped*	8-12	C1/2-35JY	L-S	2	1.6	30A
Hexanedioic Acid (See Adipic Acid)	—	—	—	—	—	—
Hominy, Dry	35-50	C1/2-25	L-S-B	1	.4	45
Hops, Spent, Dry	35	D3-35	L-S-B	2	1.0	30A
Hops, Spent, Wet	50-55	D3-45V	L-S	2	1.5	30A
Ice, Crushed	35-45	D3-35Q	L-S	2	.4	30A
Ice, Flaked*	40-45	C1/2-35Q	S	1	.6	30A
Ice, Cubes	33-35	D3-35Q	S	1	.4	30A
Ice, Shell	33-35	D3-45Q	S	1	.4	30A
Ilmenite Ore	140-160	D3-37	H	3	2.0	15
Iron Ore Concentrate	120-180	A40-37	H	3	2.2	15
Iron Oxide Pigment	25	A100-36LMP	H	2	1.0	30B
Iron Oxide, Millscale	75	C1/2-36	H	2	1.6	30B
Iron Pyrites (See Ferrous Sulfide)	—	—	—	—	—	—
Iron Sulphate (See Ferrous Sulfate)	—	—	—	—	—	—
Iron Sulfide (See Ferrous Sulfide)	—	—	—	—	—	—
Iron Vitriol (See Ferrous Sulfate)	—	—	—	—	—	—
Kafir (Corn)	40-45	C1/2-25	H	3	.5	45
Kaolin Clay	63	D3-25	H	2	2.0	30A
Kaolin Clay-Talc	32-56	A40-35LMP	H	2	2.0	30A
Kryalith (See Cryolite)	—	—	—	—	—	—
Lactose	32	A40-35PU	S	1	.6	30A
Lamp Black (See Carbon Black)	—	—	—	—	—	—
Lead Arsenate	72	A40-35R	L-S-B	1	1.4	30A
Lead Arsenite	72	A40-35R	L-S-B	1	1.4	30A
Lead Carbonate	240-260	A40-35R	H	2	1.0	30A
Lead Ore — 1/8"	200-270	B6-35	H	3	1.4	30A
Lead Ore — 1/2"	180-230	C1/2-36	H	3	1.4	30B
Lead Oxide (Red Lead) — 100 Mesh	30-150	A100-35P	H	2	1.2	30A
Lead Oxide (Red Lead) — 200 Mesh	30-180	A200-35LP	H	2	1.2	30A
Lead Sulphide — 100 Mesh	240-260	A100-35R	H	2	1.0	30A
Lignite (See Coal Lignite)	—	—	—	—	—	—
Limanite, Ore, Brown	120	C1/2-47	H	3	1.7	15
Lime, Ground, Unslaked	60-65	B6-35U	L-S-B	1	.6	30A
Lime Hydrated	40	B6-35LM	H	2	.8	30A
Lime, Hydrated, Pulverized	32-40	A40-35LM	L-S	1	.6	30A
Lime, Pebble	53-56	C1/2-25HU	L-S	2	2.0	45
Limestone, Agricultural	68	B6-35	H	2	2.0	30A
Limestone, Crushed	85-90	DX-36	H	2	2.0	30B
Limestone, Dust	55-95	A40-46MY	H	2	1.6-2.0	30B
Lindane (Benzene Hexachloride)	—	—	—	—	—	—
Linseed (See Flaxseed)	—	—	—	—	—	—
Litharge (Lead Oxide)	—	—	—	—	—	—
Lithopone	45-50	A325-35MR	L-S	1	1.0	30A
Maize (See Milo)	—	—	—	—	—	—

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Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Malt, Dry, Ground	20-30	B6-35NP	L-S-B	1	.5	30A
Malt, Meal	36-40	B6-25P	L-S-B	1	.4	45
Malt, Dry Whole	20-30	C1/2-35N	L-S-B	1	.5	30A
Malt, Sprouts	13-15	C1/2-35P	L-S-B	1	.4	30A
Magnesium Chloride (Magnesite)	33	C1/2-45	L-S	1	1.0	30A
Manganese Dioxide*	70-85	A100-35NRT	L-S	2	1.5	30A
Manganese Ore	125-140	DX-37	H	3	2.0	15
Manganese Oxide	120	A100-36	H	2	2.0	30B
Manganese Sulfate	70	C1/2-37	H	3	2.4	15
Marble, Crushed	80-95	B6-37	H	3	2.0	15
Marl, (Clay)	80	DX-36	H	2	1.6	30B
Meat, Ground	50-55	E-45HQTX	L-S	2	1.5	30A
Meat, Scrap (w/bone)	40	E-46H	H	2	1.5	30B
Mica, Flakes	17-22	B6-16MY	H	2	1.0	30B
Mica, Ground	13-15	B6-36	H	2	.9	30B
Mica, Pulverized	13-15	A100-36M	H	2	1.0	30B
Milk, Dried, Flake	5-6	B6-35PUY	S	1	.4	30A
Milk, Malted	27-30	A40-45PX	S	1	.9	30A
Milk, Powdered	20-45	B6-25PM	S	1	.5	45
Milk Sugar	32	A100-35PX	S	1	.6	30A
Milk, Whole, Powdered	20-36	B6-35PUX	S	1	.5	30A
Mill Scale (Steel)	120-125	E-46T	H	3	3.0	30B
Milo, Ground	32-36	B6-25	L-S-B	1	.5	45
Milo Maize (Kafir)	40-45	B6-15N	L-S-B	1	.4	45
Molybdenite Powder	107	B6-26	H	2	1.5	30B
Monosodium Phosphate	50	B6-36	H	2	.6	30B
Mortar, Wet*	150	E-46T	H	3	3.0	30B
Mustard Seed	45	B6-15N	L-S-B	1	.4	45
Naphthalene Flakes	45	B6-35	L-S-B	1	.7	30A
Niacin (Nicotinic Acid)	35	A40-35P	H	2	2.5	30A
Oats	26	C1/2-25MN	L-S-B	1	.4	45
Oats, Crimped	19-26	C1/2-35	L-S-B	1	.5	30A
Oats, Crushed	22	B6-45NY	L-S-B	1	.6	30A
Oats, Flour	35	A100-35	L-S-B	1	.5	30A
Oat Hulls	8-12	B6-35NY	L-S-B	1	.5	30A
Oats, Rolled	19-24	C1/2-35NY	L-S-B	1	.6	30A
Oleo Margarine (Margarine)	59	E-45HKPWX	L-S	2	.4	30A
Orange Peel, Dry	15	E-45	L-S	2	1.5	30A
Oxalic Acid Crystals — Ethane Diacid Crystals	60	B6-35QS	L-S	1	1.0	30A
Oyster Shells, Ground	50-60	C1/2-36T	H	3	1.6-2.0	30B
Oyster Shells, Whole	80	D3-36TV	H	3	2.1-2.5	30B
Paper Pulp (4% or less)	62	E-45	L-S	2	1.5	30A
Paper Pulp (6% to 15%)	60-62	E-45	L-S	2	1.5	30A
Paraffin Cake — 1/2"	45	C1/2-45K	L-S	1	.6	30A
Peanuts, Clean, in shell	15-20	D3-35Q	L-S	2	.6	30A
Peanut Meal	30	B6-35P	S	1	.6	30A
Peanuts, Raw, Uncleaned (unshelled)	15-20	D3-36Q	H	3	.7	30B
Peanuts, Shelled	35-45	C1/2-35Q	S	1	.4	30A
Peas, Dried	45-50	C1/2-15NQ	L-S-B	1	.5	45
Perlite — Expanded	8-12	C1/2-36	H	2	.6	30B
Phosphate Acid Fertillizer	60	B6-25T	L-S	2	1.4	45
Phosphate Disodium (See Sodium Phosphate)	—	—	—	—	—	—
Phosphate Rock, Broken	75-85	DX-36	H	2	2.1	30B
Phosphate Rock, Pulverized	60	B6-36	H	2	1.7	30B
Phosphate Sand	90-100	B6-37	H	3	2.0	15
Plaster of Paris (See Gypsum)	—	—	—	—	—	—

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Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Plumbago (See Graphite)	—	—	—	—	—	—
Polystyrene Beads	40	B6-35PQ	S	1	.4	30A
Polyvinyl, Chloride Powder	20-30	A100-45KT	S	2	1.0	30A
Polyvinyl, Chloride Pellets	20-30	E-45KPQT	S	1	.6	30A
Polyethylene, Resin Pellets	30-35	C1/2-45Q	L-S	1	.4	30A
Potash (Muriate) Dry	70	B6-37	H	3	2.0	15
Potash (Muriate) Mine Run	75	DX-37	H	3	2.2	15
Potassium Carbonate	51	B6-36	H	2	1.0	30B
Potassium Chloride Pellets	120-130	C1/2-25TU	H	3	1.6	45
Potassium Nitrate — 1/2"	76	C1/2-16NT	H	3	1.2	30B
Potassium Nitrate — 1/8"	80	B6-26NT	H	3	1.2	30B
Potassium Sulfate	42-48	B6-46X	H	2	1.0	30B
Potato Flour	48	A200-35MNP	L-S	1	.5	30A
Pumice — 1/8"	42-48	B6-46	H	3	1.6	30B
Pyrite, Pellets	120-130	C1/2-26	H	3	2.0	30B
Quartz — 100 Mesh	70-80	A100-27	H	3	1.7	15
Quartz — 1/2"	80-90	C1/2-27	H	3	2.0	15
Rice, Bran	20	B6-35NY	L-S-B	1	.4	30A
Rice, Grits	42-45	B6-35P	L-S-B	1	.4	30A
Rice, Polished	30	C1/2-15P	L-S-B	1	.4	45
Rice, Hulled	45-49	C1/2-25P	L-S-B	1	.4	45
Rice, Hulls	20-21	B6-35NY	L-S-B	1	.4	30A
Rice, Rough	32-36	C1/2-35N	L-S-B	1	.6	30A
Rosin — 1/2"	65-68	C1/2-45Q	L-S-B	1	1.5	30A
Rubber, Reclaimed Ground	23-50	C1/2-45	L-S-B	1	.8	30A
Rubber, Pelleted	50-55	D3-45	L-S-B	2	1.5	30A
Rye	42-48	B6-15N	L-S-B	1	.4	45
Rye Bran	15-20	B6-35Y	L-S-B	1	.4	45
Rye Feed	33	B6-35N	L-S-B	1	.5	30A
Rye Meal	35-40	B6-35	L-S-B	1	.5	30A
Rye Middlings	42	B6-35	L-S	1	.5	30A
Rye, Shorts	32-33	C1/2-35	L-S	2	.5	30A
Safflower, Cake	50	D3-26	H	2	.6	30B
Safflower, Meal	50	B6-35	L-S-B	1	.6	30A
Safflower Seed	45	B6-15N	L-S-B	1	.4	45
Saffron (See Safflower)	—	—	—	—	—	—
Sal Ammoniac (Ammonium Chloride)	—	—	—	—	—	—
Salt Cake, Dry Coarse	85	B6-36TU	H	3	2.1	30B
Salt Cake, Dry Pulverized	65-85	B6-36TU	H	3	1.7	30B
Salicylic Acid	29	B6-37U	H	3	.6	15
Salt, Dry Coarse	45-60	C1/2-36TU	H	3	1.0	30B
Salt, Dry Fine	70-80	B6-36TU	H	3	1.7	30B
Saltpeter — (See Potassium Nitrate)	—	—	—	—	—	—
Sand Dry Bank (Damp)	110-130	B6-47	H	3	2.8	15
Sand Dry Bank (Dry)	90-110	B6-37	H	3	1.7	15
Sand Dry Silica	90-100	B6-27	H	3	2.0	15
Sand Foundry (Shake Out)	90-100	D3-37Z	H	3	2.6	15
Sand (Resin Coated) Silica	104	B6-27	H	3	2.0	15
Sand (Resin Coated) Zircon	115	A100-27	H	3	2.3	15
Sawdust, Dry	10-13	B6-45UX	L-S-B	1	1.4	15
Sea — Coal	65	B6-36	H	2	1.0	30B
Sesame Seed	27-41	B6-26	H	2	.6	30B
Shale, Crushed	85-90	C1/2-36	H	2	2.0	30B
Shellac, Powdered or Granulated	31	B6-35P	S	1	.6	30A
Silicon Dioxide (See Quartz)	—	—	—	—	—	—
Silica, Flour	80	A40-46	H	2	1.5	30B

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Silica Gel + 1/2" - 3"	45	D3-37HKQU	H	3	2.0	15
Slag, Blast Furnace Crushed	130-180	D3-37Y	H	3	2.4	15
Slag, Furnace Granular, Dry	60-65	C1/2-37	H	3	2.2	15
Slate, Crushed, — 1/2"	80-90	C1/2-36	H	2	2.0	30B
Slate, Ground, — 1/8"	82-85	B6-36	H	2	1.6	30B
Sludge, Sewage, Dried	40-50	E-47TW	H	3	.8	15
Sludge, Sewage, Dry Ground	45-55	B-46S	H	2	.8	30B
Soap, Beads or Granules	15-35	B6-35Q	L-S-B	1	.6	30A
Soap, Chips	15-25	C1/2-35Q	L-S-B	1	.6	30A
Soap Detergent	15-50	B6-35FQ	L-S-B	1	.8	30A
Soap, Flakes	5-15	B6-35QXY	L-S-B	1	.6	30A
Soap, Powder	20-25	B6-25X	L-S-B	1	.9	45
Soapstone, Talc, Fine	40-50	A200-45XY	L-S-B	1	2.0	30A
Soda Ash, Heavy	55-65	B6-36	H	2	2.0	30B
Soda Ash, Light	20-35	A40-36Y	H	2	1.6	30B
Sodium Aluminate, Ground	72	B6-36	H	2	1.0	30B
Sodium Aluminum Fluoride (See Kryolite)	—	—	—	—	—	—
Sodium Aluminum Sulphate*	75	A100-36	H	2	1.0	30B
Sodium Bentonite (See Bentonite)	—	—	—	—	—	—
Sodium Bicarbonate (See Baking Soda)	—	—	—	—	—	—
Sodium Chloride (See Salt)	—	—	—	—	—	—
Sodium Carbonate (See Soda Ash)	—	—	—	—	—	—
Sodium Hydrate (See Caustic Soda)	—	—	—	—	—	—
Sodium Hydroxide (See Caustic Soda)	—	—	—	—	—	—
Sodium Borate (See Borax)	—	—	—	—	—	—
Sodium Nitrate	70-80	D3-25NS	L-S	2	1.2	30A
Sodium Phosphate	50-60	A-35	L-S	1	.9	30A
Sodium Sulfate (See Salt Cake)	—	—	—	—	—	—
Sodium Sulfite	96	B6-46X	H	2	1.5	30B
Sorghum, Seed (See Kafir or Milo)	—	—	—	—	—	—
Soybean, Cake	40-43	D3-35W	L-S-B	2	1.0	30A
Soybean, Cracked	30-40	C1/2-36NW	H	2	.5	30B
Soybean, Flake, Raw	18-25	C1/2-35Y	L-S-B	1	.8	30A
Soybean, Flour	27-30	A40-35MN	L-S-B	1	.8	30A
Soybean Meal, Cold	40	B6-35	L-S-B	1	.5	30A
Soybean Meal Hot	40	B6-35T	L-S	2	.5	30A
Soybeans, Whole	45-50	C1/2-26NW	H	2	1.0	30B
Starch	25-50	A40-15M	L-S-B	1	1.0	45
Steel Turnings, Crushed	100-150	D3-46WV	H	3	3.0	30B
Sugar Beet, Pulp, Dry	12-15	C1/2-26	H	2	.9	30B
Sugar Beet, Pulp, Wet	25-45	C1/2-35X	L-S-B	1	1.2	30A
Sugar, Refined, Granulated Dry	50-55	B6-35PU	S	1	1.0-1.2	30A
Sugar, Refined, Granulated Wet	55-65	C1/2-35X	S	1	1.4-2.0	30A
Sugar, Powdered	50-60	A100-35PX	S	1	.8	30A
Sugar, Raw	55-65	B6-35PX	S	1	1.5	30A
Sulphur, Crushed — 1/2"	50-60	C1/2-35N	L-S	1	.8	30A
Sulphur, Lumpy, — 3"	80-85	D3-35N	L-S	2	.8	30A
Sulphur, Powdered	50-60	A40-35MN	L-S	1	.6	30A
Sunflower Seed	19-38	C1/2-15	L-S-B	1	.5	45
Talcum, — 1/2"	80-90	C1/2-36	H	2	.9	30B
Talcum Powder	50-60	A200-36M	H	2	.8	30B
Tanbark, Ground*	55	B6-45	L-S-B	1	.7	30A
Timothy Seed	36	B6-35NY	L-S-B	1	.6	30A
Titanium Dioxide (See Ilmenite Ore)	—	—	—	—	—	—
Tobacco, Scraps	15-25	D3-45Y	L-S	2	.8	30A
Tobacco, Snuff	30	B6-45MQ	L-S-B	1	.9	30A

*Consult Factory

Table 1-2
Material Characteristics (Cont'd)

Material	Weight lbs. per cu. ft	Intermediate Material Code	Bearing Selection	Component Series	Material Factor Fm	Trough Loading
Tricalcium Phosphate	40-50	A40-45	L-S	1	1.6	30A
Triple Super Phosphate	50-55	B6-36RS	H	3	2.0	30B
Trisodium Phosphate	60	C1/2-36	H	2	1.7	30B
Trisodium Phosphate Granular	60	B6-36	H	2	1.7	30B
Trisodium Phosphate, Pulverized	50	A40-36	H	2	1.6	30B
Tung Nut Meats, Crushed	28	D3-25W	L-S	2	.8	30A
Tung Nuts	25-30	D3-15	L-S	2	.7	30A
Urea Prills, Coated	43-46	B6-25	L-S-B	1	1.2	45
Vermiculite, Expanded	16	C1/2-35Y	L-S	1	.5	30A
Vermiculite, Ore	80	D3-36	H	2	1.0	30B
Vetch	48	B6-16N	L-S-B	1	.4	30B
Walnut Shells, Crushed	35-45	B6-36	H	2	1.0	30B
Wheat	45-48	C1/2-25N	L-S-B	1	.4	45
Wheat, Cracked	40-45	B6-25N	L-S-B	1	.4	45
Wheat, Germ	18-28	B6-25	L-S-B	1	.4	45
White Lead, Dry	75-100	A40-36MR	H	2	1.0	30B
Wood Chips, Screened	10-30	D3-45VY	L-S	2	.6	30A
Wood Flour	16-36	B6-35N	L-S	1	.4	30A
Wood Shavings	8-16	E-45VY	L-S	2	1.5	30A
Zinc, Concentrate Residue	75-80	B6-37	H	3	1.0	15
Zinc Oxide, Heavy	30-35	A100-45X	L-S	1	1.0	30A
Zinc Oxide, Light	10-15	A100-45XY	L-S	1	1.0	30A

*Consult Factory

Selection of Conveyor Size and Speed

In order to determine the size and speed of a screw conveyor, it is necessary first to establish the material code number. It will be seen from what follows that this code number controls the cross-sectional loading that should be used. The various cross-sectional loadings shown in the Capacity Table (Table 1-6) are for use with the standard screw conveyor components indicated in the Component Group Selection Guide on page H-21 and are for use where the conveying operation is controlled with volumetric feeders and where the material is uniformly fed into the conveyor housing and discharged from it. Check lump size limitations before choosing conveyor diameter. See Table 1-7 on page H-18.

Capacity Table

The capacity table, (Table 1-6), gives the capacities in cubic feet per hour at one revolution per minute for various size screw conveyors for four cross-sectional loadings. Also shown are capacities in cubic feet per hour at the maximum recommended revolutions per minute.

The capacity values given in the table will be found satisfactory for most applications. Where the capacity of a screw conveyor is very critical, especially when handling a material not listed in Table 1-2, it is best to consult our Engineering Department.

The maximum capacity of any size screw conveyor for a wide range of materials, and various conditions of loading, may be obtained from Table 1-6 by noting the values of cubic feet per hour at maximum recommended speed.

Conveyor Speed

For screw conveyors with screws having standard pitch helical flights the conveyor speed may be calculated by the formula:

$$N = \frac{\text{Required capacity, cubic feet per hour}}{\text{Cubic feet per hour at 1 revolution per minute}}$$

N= Revolutions per minute of screw
(but not greater than the maximum recommended speed.)

For the calculation of conveyor speeds where special types of screws are used, such as short pitch screws, cut flights, cut and folded flights and ribbon flights, an equivalent required capacity must be used, based on factors in the Tables 1-3, 4, 5.

Factor CF_1 relates to the pitch of the screw. Factor CF_2 relates to the type of the flight. Factor CF_3 relates to the use of mixing paddles within the flight pitches.

The equivalent capacity then is found by multiplying the required capacity by the capacity factors. See Tables 1-3, 4, 5 for capacity factors.

$$\left(\begin{array}{c}\text{Equiv. Capacity}\\ \text{Cubic Feet Per Hour}\end{array}\right) = \left(\begin{array}{c}\text{Required Capacity}\\ \text{Cubic Feet Per Hour}\end{array}\right) (CF_1)\,(CF_2)\,(CF_3)$$

Table 1-3

Special Conveyor Pitch Capacity Factor CF_1		
Pitch	**Description**	**CF_1**
Standard	Pitch = Diameter of Screw	1.00
Short	Pitch =2/3 Diameter of Screw	1.50
Half	Pitch =1/2 Diameter of Screw	2.00
Long	Pitch = 1 1/2 Diameter of Screw	0.67

Table 1-4

Special Conveyor Pitch Capacity Factor CF_2			
Type of Flight	**Conveyor Loading**		
	15%	**30%**	**45%**
Cut Flight	1.95	1.57	1.43
Cut & Folded Flight	N.R.*	3.75	2.54
Ribbon Flight	1.04	1.37	1.62

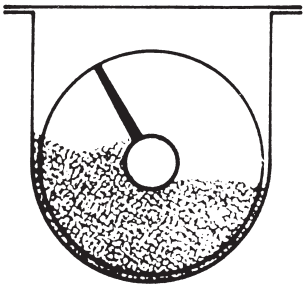
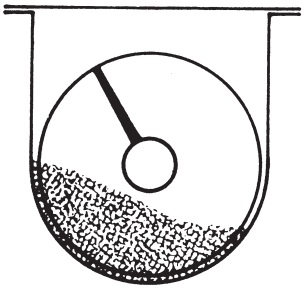
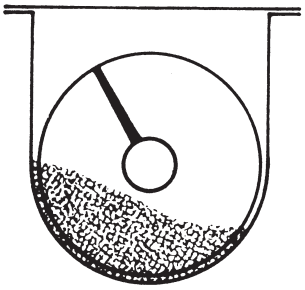
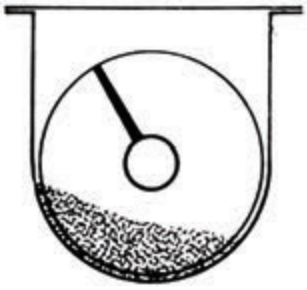
*Not recommended
If none of the above flight modifications are used: $CF_2 = 1.0$

Table 1-5

Special Conveyor Pitch Capacity Factor CF_3					
Standard Paddles at 45° Reverse Pitch	**Paddles Per Pitch**				
	None	**1**	**2**	**3**	**4**
Factor CF_3	1.00	1.08	1.16	1.24	1.32

Capacity Table
Horizontal Screw Conveyors
(Consult Factory for Inclined Conveyors)

Table 1-6

Trough Loading		Screw Diameter Inch	Capacity Cubic Feet Per Hour (Full Pitch)		Max. RPM
			At One RPM	At Max. RPM	
45%		4	0.62	114	184
		6	2.23	368	165
		9	8.20	1270	155
		10	11.40	1710	150
		12	19.40	2820	145
		14	31.20	4370	140
		16	46.70	6060	130
		18	67.60	8120	120
		20	93.70	10300	110
		24	164.00	16400	100
		30	323.00	29070	90
		36	553.20	4142	75
30% A		4	0.41	53	130
		6	1.49	180	120
		9	5.45	545	100
		10	7.57	720	95
		12	12.90	1160	90
		14	20.80	1770	85
		16	31.20	2500	80
		18	45.00	3380	75
		20	62.80	4370	70
		24	109.00	7100	65
		30	216.00	12960	60
		36	368.80	18400	50
30% B		4	0.41	29	72
		6	1.49	90	60
		9	5.45	300	55
		10	7.60	418	55
		12	12.90	645	50
		14	20.80	1040	50
		16	31.20	1400	45
		18	45.00	2025	45
		20	62.80	2500	40
		24	109.00	4360	40
		30	216.00	7560	35
		36	368.80	11064	30
15%		4	0.21	15	72
		6	0.75	45	60
		9	2.72	150	55
		10	3.80	210	55
		12	6.40	325	50
		14	10.40	520	50
		16	15.60	700	45
		18	22.50	1010	45
		20	31.20	1250	40
		24	54.60	2180	40
		30	108.00	3780	35
		36	184.40	5537	30

Lump Size Limitations

The size of a screw conveyor not only depends on the capacity required, but also on the size and proportion of lumps in the material to be handled. The size of a lump is the maximum dimension it has. If a lump has one dimension much longer than its transverse cross-section, the long dimension or length would determine the lump size.

The character of the lump also is involved. Some materials have hard lumps that won't break up in transit through a screw conveyor. In that case, provision must be made to handle these lumps. Other materials may have lumps that are fairly hard, but degradable in transit through the screw conveyor, thus reducing the lump size to be handled. Still other materials have lumps that are easily broken in a screw conveyor and lumps of these materials impose no limitations.

Three classes of lump sizes are shown in TABLE 1-7 and as follows.

Class I

A mixture of lumps and fines in which not more than 10% are lumps ranging from maximum size to one half of the maximum; and 90% are lumps smaller than one half of the maximum size.

Class II

A mixture of lumps and fines in which not more than 25% are lumps ranging from the maximum size to one half of the maximum; and 75% are lumps smaller than one half of the maximum size.

Class III

A mixture of lumps only in which 95% or more are lumps ranging from maximum size to one half of the maximum size; and 5% or less are lumps less than one tenth of the maximum size.

Table 1-7

Maximum Lump Size Table (Inches)					
Screw Diameter	Pipe O.D.*	Radial Clearance △	Class I 10% Lumps Max. Lump	Class II 25% Lumps Max. Lump	Class III 95% Lumps Max. Lump
6	2 3/8	2 5/16	1 1/4	3/4	1/2
9	2 3/8	3 3/16	2 1/4	1 1/2	3/4
9	2 7/8	3 9/16	2 1/4	1 1/2	3/4
12	2 7/8	5 1/16	2 3/4	2	1
12	3 1/2	4 3/4	2 3/4	2	1
12	4	4 1/2	2 3/4	2	1
14	3 1/2	5 3/4	3 1/4	2 1/2	1 1/4
14	4	5 1/2	2 1/2	1 1/4	1 1/4
16	4	6 1/2	3 3/4	2 3/4	1 1/2
16	4 1/2	6 1/4	3 3/4	2 3/4	1 1/2
18	4	7 1/2	4 1/4	3	1 3/4
18	4 1/2	7 1/2	4 1/4	3	1 3/4
20	4	8 1/2	4 3/4	3 1/2	2
20	4 1/2	8 1/4	4 3/4	3 1/2	2
24	4 1/2	10 1/4	6	3 3/4	2 1/2
30	4 1/2	13 1/4	8	5	4
36	5 3/8	14 1/2	9 1/2	7 1/2	6

* For special pipe sizes, consult factory.

△ Radial clearance is the distance between the bottom of the trough and the bottom of the conveyor pipe.

EXAMPLE: Lump Size Limitations

To illustrate the selection of a conveyor size from the Maximum Lump Size Table, Table 1-7, consider crushed ice as the conveyed material. Refer to the material charts Table 1-2 and find crushed ice and its material code D3-35Q and weight of 35-45 lbs./C.F. D3 means that the lump size is 1/2" to 3", this is noted by referring to the material classification code chart on page H-5. From actual specifications regarding crushed ice it is known that crushed ice has a maximum lump size of 1 1/2" and only 25% of the lumps are 1 1/2". With this information refer to Table 1-7, Maximum Lump Size Table. Under the column Class II and 1 1/2" Max. lump size read across to the minimum screw diameter which will be 9".

Component Selection

Component Groups

To facilitate the selection of proper specifications for a screw conveyor for a particular duty, screw conveyors are broken down into three Component Groups. These groups relate both to the Material Classification Code and also to screw size, pipe size, type of bearings and trough thickness.

Referring to Table 1-2, find the component series designation of the material to be conveyed.

Having made the Component Series selection, refer to Tables 1-8, 9, 10 which give the specifications of the various sizes of conveyor screws. (The tabulated screw numbers in this table refer to standard specifications for screws found on pages H-77 – H-85 Component Section.) These standards give complete data on the screws such as the length of standard sections, minimum edge thickness of screw flight, bushing data, bolt size, bolt spacing, etc.

EXAMPLE: For a screw conveyor to handle brewers grain, spent wet, refer to the material characteristics Table 1-2. Note that the component series column refers to series 2. Refer now to page H-21, component selection, Table 1-9, component group 2. The standard shaft sizes, screw flight designations, trough gauges and cover gauges are listed for each screw diameter.

Table 1-8

Component Group 1					
Screw Diameter Inches	Coupling Diameter Inches	Screw Number		Thickness, U.S. Standard Gauge or Inches	
		Helicoid Flights	Sectional Flights	Trough	Cover
6	1 1/2	6H304	6S307	16Ga.	16Ga.
9	1 1/2	9H306	9S307	14Ga.	14Ga.
9	2	9H406	9S409	14Ga.	14Ga.
12	2	12H408	12S409	12Ga.	14Ga.
12	2 7/16	12H508	12S509	12Ga.	14Ga.
14	2 7/16	14H508	14S509	12Ga.	14Ga.
16	3	16H610	16S612	12Ga.	14Ga.
18	3	—	18S612	10Ga.	12Ga.
20	3	—	20S612	10Ga.	12Ga.
24	3 7/16	—	24S712	10Ga.	12Ga.
30	3 15/16	—	30S816	3/16"	10Ga.
36	4 7/16	—	36S916	1/4"	10Ga.

Table 1-9

Component Group 2					
Screw Diameter Inches	Coupling Diameter Inches	Screw Number		Thickness, U.S. Standard Gauge or Inches	
		Helicoid Flights	Sectional Flights	Trough	Cover
6	1 1/2	6H308	6S309	14Ga.	16Ga.
9	1 1/2	9H312	9S309	10Ga.	14Ga.
9	2	9H412	9S412	10Ga.	14Ga.
12	2	12H412	12S412	3/16"	14Ga.
12	2 7/16	12H512	12S512	3/16"	14Ga.
12	3	12H614	12S616	3/16"	14Ga.
14	2 7/16	—	14S512	3/16"	14Ga.
14	3	14H614	14S616	3/16"	14Ga.
16	3	16H614	16S616	3/16"	14Ga.
18	3	—	18S616	3/16"	12Ga.
20	3	—	20S616	3/16"	12Ga.
24	3 7/16	—	24S716	3/16"	12Ga.
30	3 15/16	—	30S824	1/4"	10Ga.
36	4 7/16	—	36S924	3/8"	3/16"

Table 1-10

Component Group 3					
Screw Diameter Inches	Coupling Diameter Inches	Screw Number		Thickness, U.S. Standard Gauge or Inches	
		Helicoid Flights	Sectional Flights	Trough	Cover
6	1 1/2	6H312	6S312	10Ga.	16Ga.
9	1 1/2	9H312	9S312	3/16"	14Ga.
9	2	9H414	9S416	3/16"	14Ga.
12	2	12H412	12S412	1/4"	14Ga.
12	2 7/16	12H512	12S512	1/4"	14Ga.
12	3	12H614	12S616	1/4"	14Ga.
14	3	—	14S624	1/4"	14Ga.
16	3	—	16S624	1/4"	14Ga.
18	3	—	18S624	1/4"	12Ga.
20	3	—	20S624	1/4"	12Ga.
24	3 7/16	—	24S724	1/4"	12Ga.
30	3 15/16	—	30S832	3/8"	10Ga.
36	4 7/16	—	36S932	3/8"	3/16"

Bearing Selection

The selection of bearing material for intermediate hangers is based on experience together with a knowledge of the characteristics of the material to be conveyed. By referring to the material characteristic tables, page H-7 thru H-15 the intermediate hanger bearing selection can be made by viewing the Bearing Selection column. The bearing selection will be made from one of the following types: B, L, S, H. The various bearing types available in the above categories can be selected from the following table.

Table 1-11

Hanger Bearing Selection				
Bearing Component Groups	**Bearing Types**	**Recommended Coupling Shaft Material △**	**Max. Recommended Operating Temperature**	**F_b**
B	Ball	Standard	180°F	1.0
L	Bronze	Standard	300°F	
S	Martin Bronze*	Standard	450°F	2.0
	Graphite Bronze	Standard	500°F	
	Oil Impregnated Bronze	Standard	200°F	
	Oil Impregnated Wood	Standard	160°F	
	Nylatron	Standard	250°F	
	Nylon	Standard	160°F	
	Teflon	Standard	250°F	
	UHMW	Standard	225°F	
	Melamine (MCB)	Standard	250°F	
	Ertalyte® Quadrent	Standard	200°F	
	Urethane	Standard	200°F	
H	Martin Hard Iron*	Hardened	500°F	3.4
	Hard Iron	Hardened	500°F	4.4
	Hard Surfaced	Hardened or Special	500°F	
	Stellite	Special	500°F	
	Ceramic	Special	1,000°F	
	White Iron Alloy	Special	500°F	

* Sintered Metal. Self-lubricating.

△ OTHER TYPES OF COUPLING SHAFT MATERIALS
Various alloys, stainless steel, and other types of shafting can be furnished as required.

Horizontal Screw Conveyors

***Consult Factory for Inclined Conveyors or Screw Feeders**

The horsepower required to operate a horizontal screw conveyor is based on proper installation, uniform and regular feed rate to the conveyor and other design criteria as determined in this book.

The horsepower requirement is the total of the horsepower to overcome friction (HP_f) and the horsepower to transport the material at the specified rate (HP_m) multiplied by the overload factor F_o and divided by the total drive efficiency, or:

$$HP_f = \frac{L\,N\,F_d f_b}{1{,}000{,}000} = \text{(Horsepower to run an empty conveyor)}$$

$$HP_m = \frac{C\,L\,W\,F_f F_m F_p}{1{,}000{,}000} = \text{(Horsepower to move the material)}$$

$$\text{Total HP} = \frac{(HP_f + HP_m)\,F_o}{e}$$

The following factors determine the horsepower requirement of a screw conveyor operating under the foregoing conditions.

- L = Total length of conveyor, feet
- N = Operating speed, RPM (revolutions per minute)
- F_d = Conveyor diameter factor (See Table 1-12)
- F_b = Hanger bearing factor (See Table 1-13)
- C = Capacity in cubic feet per hour
- W = Weight of material, lbs. per cubic foot
- F_f = Flight factor (See Table 1-14)
- F_m = Material factor (See Table 1-2)
- F_p = Paddle factor, when required. (See Table 1-15)
- F_o = Overload factor (See Table 1-16)
- e = Drive efficiency (See Table 1-17)

Table 1-12

Conveyor Diameter Factor, F_d	
Screw Diameter (Inches)	**Factor F_d**
4	12.0
6	18.0
9	31.0
10	37.0
12	55.0
14	78.0
16	106.0
18	135.0
20	165.0
24	235.0
30	365.0
36	540.0

Table 1-13

Hanger Bearing Selection		
Bearing Types		**Hanger Bearing F_b**
B	Ball	1.0
L	Martin Bronze	2.0
S	* Graphite Bronze	
	* Oil Impregnated Bronze	
	* Oil Impregnated Wood	
	* Nylatron	
	* Nylon	
	* Teflon	
	* UHMW	
	* Melamine (MCB)	
	* Ertalyte® Quadrent	
	* Urethane	
H	* Martin Hard Iron*	3.4
	* Hard Iron	4.4
	* Stellite	
	* Ceramic	
	* White Iron Alloy	

* Non lubricated bearings, or bearings not additionally lubricated.

Horsepower Factor Tables

Table 1-14

Flight Factor F_f				
Flight Type	F_f Factor for Percent Conveyor Loading			
	15%	30%	45%	95%
Standard	1.0	1.0	1.0	1.0
Cut Flight	1.10	1.15	1.20	1.3
Cut & Folded Flight	N.R.*	1.50	1.70	2.20
Ribbon Flight	1.05	1.14	1.20	—

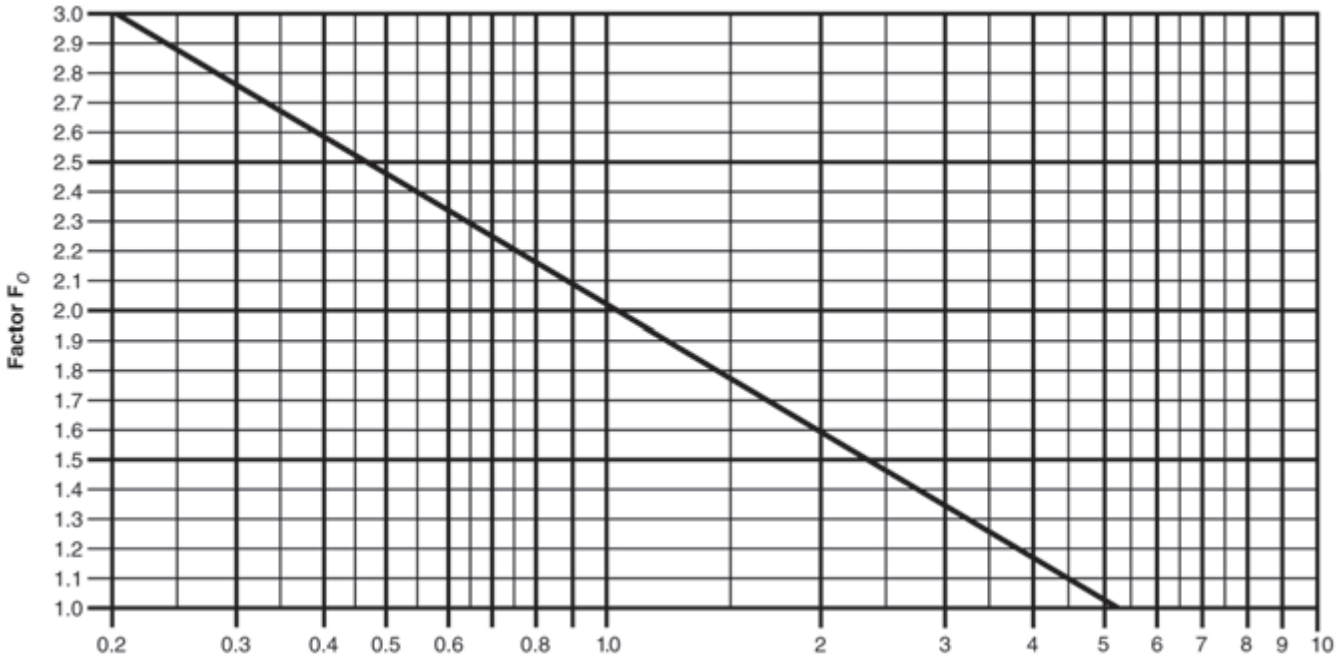
*Not Recommended

Table 1-15

Paddle Factor F_p					
Standard Paddles per Pitch, Paddles Set at 45º Reverse Pitch					
Number of Paddles per Pitch	0	1	2	3	4
Paddle Factor – F_p	1.0	1.29	1.58	1.87	2.16

Table 1-16

F_o – Overload Factor



Horsepower $HP_f + HP_m$

For values of $HP_f + HP_m$ greater than 5.2, F_o is 1.0

Trace the value of ($HP_f + HP_m$) vertically to the diagonal line, then across to the left where the F_o value is listed.

Table 1-17

e Drive Efficiency Factor				
Screw Drive or Shaft Mount w/V-Belt Drive	V-Belt to Helical Gear and Coupling	Gearmotor w/ Coupling	Gearmotor w/ Chain Drive	Worm Gear
.88	.87	.95	.87	Consult Manufacturer

EXAMPLE: Horsepower Calculation (See page H-189 for sample worksheet)

PROBLEM: Convey 1,000 cubic feet per hour Brewers grain, spent wet, in a 25'-0" long conveyor driven by a screw conveyor drive with V-belts.

SOLUTION:

1. Refer to material characteristic table 1-2 for Brewers grain, spent wet and find:
   A. wt/cf: 55 - 60
   B. Material code: C1/2 - 45T

      Refer to Table 1-1, material classification code chart where:

      C1/2 = Fine 1/2" and under
      4 = Sluggish
      5 = Mildly abrasive
      T = Mildly corrosive

   C. Intermediate bearing selection: L or S

      Refer to Table 1-11 Bearing Selection, Find:

      L = Bronze
      S = Nylatron, Nylon, Teflon, UHMW Melamine, Graphite Bronze, Oil-impreg. Bronze, and oil-impreg. wood and Urethane.

   D. Material Factor: $F_m = .8$
   E. Trough Loading: 30%A

      Refer to Table 1-6 capacity table and find 30%A which shows the various capacities per RPM of the standard size screw conveyors and the maximum RPM's for those sizes.
2. From Table 1-6, Capacity table under 30%A note that a 12" screw will convey 1,160 cubic feet per hour at 90 RPM maximum, therefore at 1 RPM a 12" screw will convey 12.9 cubic feet. For 1,000 CFH capacity at 12.9 CFH per RPM, the conveyor must therefore run 78RPM (1000 ÷ 12.9 = 77.52).
3. With the above information and factors from Tables 1-12 through 1-17 refer to the horsepower formulas on H-24 and calculate the required horsepower to convey 1000 CF/H for 25 feet in a 12" conveyor.

   Using the known factors find that:

   L = 25'
   N = 78 RPM from step 2 above
   Fd = 55 see Table 1-12, for 12"
   Fb = 2.0 see Table 1-13 for L
   e = .88 see Table 1-17
   C = 1000 CFH
   W = 60#/CF from step 1A
   Ff = 1 see Table 1-14, standard 30%
   Fp = 1 see Table 1-15
4. Solve the following horsepower equations:
   A. $HP_f = \frac{L\,N\,F_d\,F_b}{1{,}000{,}000} = \frac{25 \times 78 \times 55 \times 2.0}{1{,}000{,}000} = 0.215$
   B. $HP_m = \frac{C\,L\,W\,F_f\,F_m\,F_p}{1{,}000{,}000} = \frac{1000 \times 25 \times 60 \times 1 \times .8 \times 1}{1{,}000{,}000} = 1.2$

      Find the F_o factor from 1-16; by adding HP_f and HP_m and matching this sum to the values on the chart.
   C. $HP_f = \frac{(HP_f + HP_m)\,(F_o)}{e} = \frac{(1.414)\,(1.9)}{.88} = 3.05$

SOLUTION: 3.05 Horsepower is required to convey 1,000 CFH Brewers grain, spent wet in a 12" conveyor for 25 feet. A 5 H.P. motor should be used.

Torsional Ratings of Conveyor Screw Parts

Screw conveyors are limited in overall design by the amount of torque that can be safely transmitted through the pipes, couplings, and coupling bolts.

The table below combines the various torsional ratings of bolts, couplings and pipes so that it is easy to compare the torsional ratings of all the stressed parts of standard conveyor screws.

Table 1-18

Shaft Dia. In.	Pipe		Couplings		Dia. In.				
	Size In.	Torque In. Lbs.	Torque In. Lbs. *			Bolts in Shear In. Lbs. ▲		Bolts in Bearing In. Lbs.	
						No. of Bolts Used		No. of Bolts Used	
			C 1018	C 1045		2	3	2	3
1	1 1/4	3,140	820	1,025	3/8	1,380	2,070	1,970	2,955
1 1/2	2	7,500	3,070	3,850	1/2	3,660	5,490	5,000	7,500
2	2 1/2	14,250	7,600	9,500	5/8	7,600	11,400	7,860	11,790
2 7/16	3	23,100	15,030	18,780	5/8	9,270	13,900	11,640	17,460
3	3 1/2	32,100	28,350	35,440	3/4	16,400	24,600	15,540	23,310
3	4	43,000	28,350	35,440	3/4	16,400	24,600	25,000	37,500
3 7/16	4	43,300	42,470	53,080	7/8	25,600	38,400	21,800	32,700
3 15/16	5	65,100	61,190	76,485	1 1/8	48,540	72,810	52,120	78,180
4 7/16	6	101,160	88,212	110,265	1 1/4	67,520	101,280	90,750	136,125

▲ Values shown are for A307 64, Grade 2 Bolts. Values for Grade 5 Bolts are above × 2.5.
* Values are for unheattreated shafts.

The lowest torsional rating figure for any given component will be the one that governs how much torque may be safely transmitted. For example, using standard unhardened two bolt coupling shafts, the limiting torsional strength of each part is indicated in Table 1-18.

Thus it can be seen that the shaft itself is the limiting factor on 1", 1 1/2" and 2" couplings. The bolts in shear are the limiting factors on the 2-7/16" coupling and on the 3" coupling used in conjunction with 4" pipe. The bolts in bearing are the limiting factors for the 3" coupling used in conjunction with 3 1/2" pipe, and for the 3-7/16" coupling.

FORMULA: Horsepower To Torque (In. Lbs.)

$$\frac{63{,}025 \times HP}{RPM} = \text{Torque (In. Lbs.)}$$

EXAMPLE: 12" Screw, 78 RPM, 5 Horsepower

$$\frac{63{,}025 \times 5}{78} = 4{,}040 \text{ In. Lbs.}$$

From the table above 2" shafts with 2 bolt drilling and 2 1/2" std. pipe are adequate (4,040 < 7600).

If the torque is greater than the values in the above table, such as in 2" couplings (torque > 7600), then hardened shafts can be used as long as the torque is less than the value for hardened couplings (torque < 9500). If the torque is greater than the 2 bolt in shear value but less than the 3 bolt in shear value then 3 bolt coupling can be used. The same applies with bolts in bearing. When the transmitted torque is greater than the pipe size value, then larger pipe or heavier wall pipe may be used. Other solutions include: high torque bolts to increase bolt in shear rating, external collars, or bolt pads welded to pipe to increase bolt in bearing transmission. For solutions other than those outlined in the above table please consult our Engineering Department.

Horsepower Ratings of Conveyor Screw Parts

Screw conveyors are limited in overall design by the amount of horsepower that can be safely transmitted through the pipes, couplings, and coupling bolts.

The table below combines the various horsepower ratings of bolts, couplings and pipes so that it is easy to compare the ratings of all the stressed parts of standard conveyor screws.

Table 1-19

Coupling	Pipe		Coupling		Bolts				
Shaft Dia. In.	Size In.	H.P. per R.P.M.	H.P. per R.P.M		Bolt Dia. In.	Bolts in Shear H.P. per R.P.M. ▲		Bolts in Bearing H.P. per R.P.M.	
			CEMA Std (C-1018)	Martin Std. (C-1045)		No. of Bolts Used		No. of Bolts Used	
						2	3	2	3
1	1 1/4	.049	.013	.016	3/8	.021	.032	.031	.046
1 1/2	2	.119	.048	.058	1/2	.058	.087	.079	.119
2	2 1/2	.226	.120	.146	5/8	.120	.180	.124	.187
2 7/16	3	.366	.239	.289	5/8	.147	.220	.184	.277
3	3 1/2	.509	.450	.546	3/4	.260	.390	.246	.369
3	4	.682	.450	.546	3/4	.260	.390	.396	.595
3 7/16	4	.682	.675	.818	7/8	.406	.609	.345	.518
3	3 1/2	.509	.450	.546	3/4	.260	.390	.246	.369

▲ Values shown are for A307 64, Grade 2 Bolts.

The lowest horsepower rating figure for any given component will be the one that governs how much horsepower may be safely transmitted. The limiting strength of each part is indicated by the underlined figures in the table above.

FORMULA: Horsepower To Horsepower @ 1 RPM)

EXAMPLE: 12" Screw, 78 RPM, 5 Horsepower

$$\frac{5\ \text{HP}}{78\ \text{RPM}} = 0.06\ \text{HP at 1 RPM}$$

From the table above .038 is less than the lowest limiting factor for 2" couplings, so 2" standard couplings with 2 bolts may be used. Solutions to limitations are the same as shown on H-26.

Screw Conveyor End Thrust Thermal Expansion

End thrust in a Screw Conveyor is created as a reaction to the forces required to move the material along the axis of the conveyor trough. Such a force is opposite in direction to the flow of material. A thrust bearing and sometimes reinforcement of the conveyor trough is required to resist thrust forces. Best performance can be expected if the conveyor end thrust bearing is placed so that the rotating members are in tension; therefore, an end thrust bearing should be placed at the discharge end of a conveyor. Placing an end thrust bearing assembly at the feed end of a conveyor places rotating members in compression which may have undesirable effects, but this is sometimes necessary in locating equipment.

There are several methods of absorbing thrust forces, the most popular methods are:

1. Thrust washer assembly — installed on the shaft between the pipe end and the trough end plate, or on the outside of the end bearing.
2. Type "E" end thrust assembly, which is a Double Roller Bearing and shaft assembly.
3. Screw Conveyor Drive Unit, equipped with double roller bearing thrust bearings, to carry both thrust and radial loads.

Past experience has established that component selection to withstand end thrust is rarely a critical factor and thrust is not normally calculated for design purposes. Standard conveyor thrust components will absorb thrust without resorting to special design in most applications.

Expansion of Screw Conveyors Handling Hot Materials

Screw conveyors often are employed to convey hot materials. It is therefore necessary to recognize that the conveyor will increase in length as the temperature of the trough and screw increases when the hot material begins to be conveyed.

The recommended general practice is to provide supports for the trough which will allow movement of the trough end feet during the trough expansion, and during the subsequent contraction when handling of the hot material ceases. The drive end of the conveyor usually is fixed, allowing the remainder of the trough to expand or contract. In the event there are intermediate inlets or discharge spouts that cannot move, the expansion type troughs are required.

Furthermore, the conveyor screw may expand or contract in length at different rates than the trough. Therefore, expansion hangers are generally recommended. The trough end opposite the drive should incorporate an expansion type ball or roller bearing or sleeve bearing which will safely provide sufficient movement.

The change in screw conveyor length may be determined from the following formula:

$\Delta L = L\ (t1 - t2)\ C$

Where: ΔL = increment of change in length, inch
L = overall conveyor length in inches
t_1 = upper limit of temperature, degrees Fahrenheit
t_2 = limit of temperature, degrees Fahrenheit (or lowest ambient temperature expected)
C = coefficient of linear expansion, inches per inch per degree Fahrenheit. This coefficient has the following values for various metals:

a) Hot rolled carbon steel, 6.5×10^{-6}, (.0000065)
b) Stainless steel, 9.9×10^{-6}, (.0000099)
c) Aluminum, 12.8×10^{-6}, (.0000128)

EXAMPLE: A carbon steel screw conveyor 30 feet overall length is subject to a rise in temperature of 200°F, reaching a hot metal temperature of 260°F from an original metal temperature of 60°F.

$t_1 = 260$ $\quad t_1 - t_2 = 200$
$t_2 = 60$
$L = (30)\ (12) = 360$
$\Delta L = (360)\ (200)\ (6.5\times10–6)$
$= 0.468$ inches, or about 15/32 inches.

Conveyor Screw Deflection

When using conveyor screws of standard length, deflection is seldom a problem. However, if longer than standard sections of screw are to be used, without intermediate hanger bearings, care should be taken to prevent the screw flights from contacting the trough because of excessive deflection. The deflection at mid span may be calculated from the following formula.

$$D = \frac{5WL^3}{384\ (29{,}000{,}000)\ (I)}$$

Where:
- D = Deflection at mid span in inches
- W = Total screw weight in pounds, see pages H-79 to H-84
- L = Screw length in inches
- I = Movement of inertia of pipe or shaft, see table 1-20 or 1-21 below

Table 1-20

Schedule 40 Pipe									
Pipe Size	**2"**	**2 1/2"**	**3"**	**3 1/2"**	**4"**	**5"**	**6"**	**8"**	**10"**
I	.666	1.53	3.02	4.79	7.23	15.2	28.1	72.5	161

Table 1-21

Schedule 80 Pipe									
Pipe Size	**2"**	**2 1/2"**	**3"**	**3 1/2"**	**4"**	**5"**	**6"**	**8"**	**10"**
I	.868	1.92	3.89	6.28	9.61	20.7	40.5	106	212

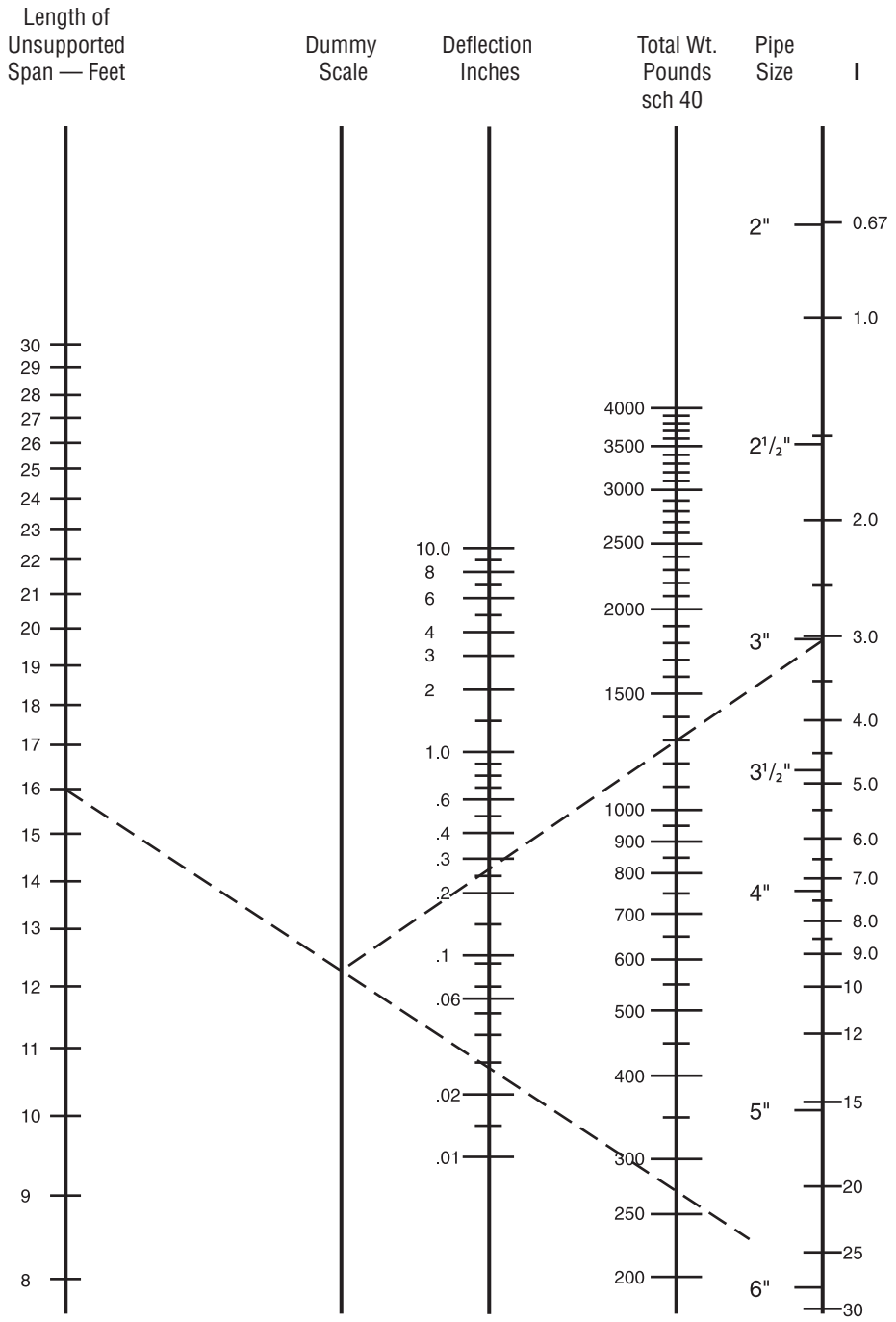
EXAMPLE: Determine the deflection of a 12H512 screw conveyor section mounted on 3" sch 40 pipe, overall length is 16"-0'.

W = 272#
L = 192"
I = 3.02 (From chart above

$$D = \frac{5(272\#)(192^3)}{384\ (29{,}000{,}000)\ (3.02)} = .29 \text{ inches}$$

Applications where the calculated deflection of the screw exceeds .25 inches (1/4") should be referred to our Engineering Department for recommendations. Very often the problem of deflection can be solved by using a conveyor screw section with a larger diameter pipe or a heavier wall pipe. Usually, larger pipe sizes tend to reduce deflection more effectively than heavier wall pipe.

Conveyor Screw Deflection



I = Moment of inertia of pipe or shaft, see Table 1-20 or 1-21

The above Nomograph can be used for a quick reference to check deflection of most conveyors.

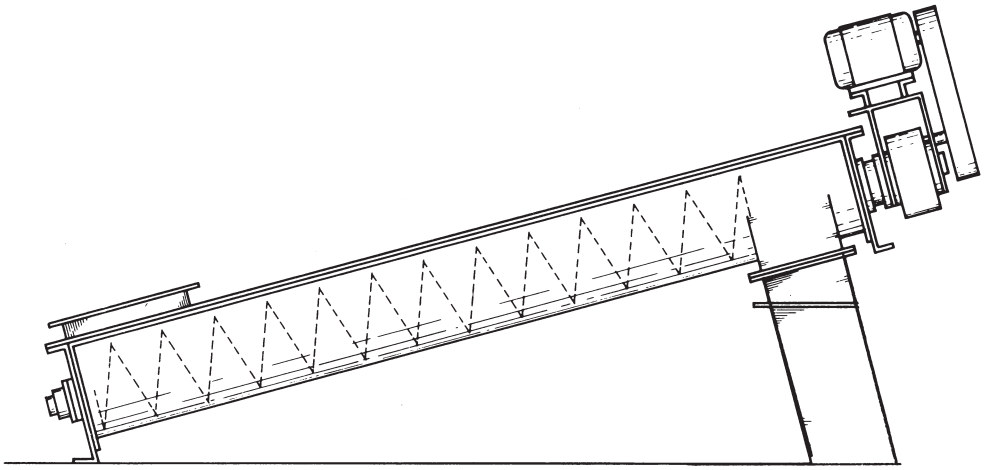
Inclined and Vertical Screw Conveyors

Inclined Screw Conveyors

Inclined screw conveyors have a greater horsepower requirement and a lower capacity rating than horizontal conveyors. The amounts of horsepower increase and capacity loss depend upon the angle of incline and the characteristics of the material conveyed.

Inclined conveyors operate most efficiently when they are of tubular or shrouded cover design, and a minimum number of intermediate hanger bearings. Where possible, they should be operated at relatively high speeds to help prevent fallback of the conveyed material.

Consult our Engineering Department for design recommendations and horsepower requirements for your particular application.



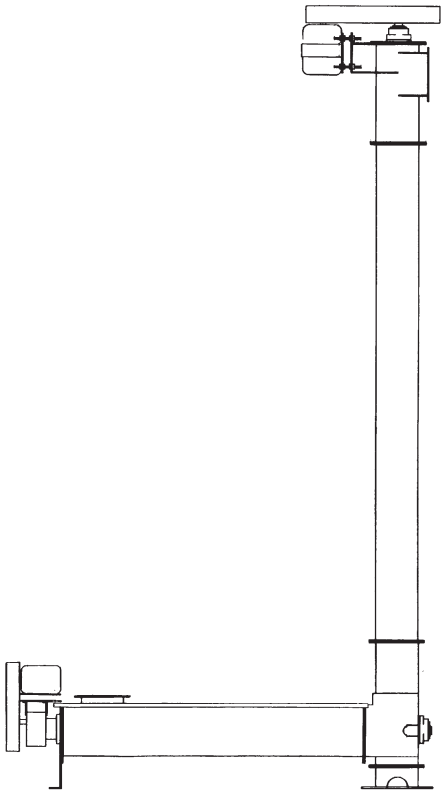
Vertical Screw Conveyors

Vertical screw conveyors provide an efficient method of elevating most materials that can be conveyed in horizontal screw conveyors. Since vertical conveyors must be uniformly loaded in order to prevent choking, they are usually designed with integral feeders.

As with horizontal conveyors, vertical screw conveyors are available with many special features and accessories, including components of stainless steel or other alloys.

Consult our Engineering Department for design recommendations and horsepower requirements for your particular application.

SEE VERTICAL SCREW CONVEYOR SECTION OF CATALOG FOR ADDITIONAL INFORMATION.



Screw Feeders

Screw Feeders are designed to regulate the rate of material flow from a hopper or bin. The inlet is usually flooded with material (95% loaded). One or more tapered or variable pitch screws convey the material at the required rate. Screw feeders are regularly provided with shrouded or curved cover plates for a short distance beyond the end of the inlet opening, to obtain feed regulation. As the pitch or diameter increases beyond the shroud the level of the material in the conveyor drops to normal loading levels. Longer shrouds, extra short pitch screws and other modifications are occasionally required to reduce flushing of very free flowing material along the feeder screw.

Feeders are made in two general types: Type 1 with regular pitch flighting and Type 2 with short pitch flighting. Both types are also available with uniform diameter and tapering diameter screws. The various combinations are shown on pages H-33 – H-34. Screw feeders with uniform screws, Types 1B, 1D, 2B, 2D are regularly used for handling fine free flowing materials. Since the diameter of the screw is uniform, the feed of the material will be from the forepart of the inlet and not across the entire length. Where hoppers, bins, tanks, etc. are to be completely emptied, or dead areas of material over the inlet are not objectionable, this type of feeder is entirely satisfactory, as well as economical. Screw feeders with tapering diameter screws will readily handle materials containing a fair percentage of lumps. In addition, they are used extensively where it is necessary or desirable to draw the material uniformly across the entire length of the inlet opening to eliminate inert or dead areas of material at the forepart of the opening. Types 1A, 1C, 2A, and 2C fall into this category. Variable pitch screws can be used in place of tapering diameter screws for some applications. They consist of screws with succeeding sectional flights increasing progressively in pitch. The portion of the screw with the smaller pitch is located under the inlet opening.

Screw feeders with extended screw conveyors are necessary when intermediate hangers are required, or when it is necessary to convey the material for some distance. A screw conveyor of larger diameter than the feeder screw is combined with the feeder to make the extension. See types 1C, 1D, 2C, 2D.

Multiple screw feeders are usually in flat bottom bins for discharging material which have a tendency to pack or bridge under pressure. Frequently, the entire bin bottom is provided with these feeders which convey the material to collecting conveyors. Such arrangements are commonly used for handling hogged fuel, wood shavings, etc.

Screw feeders are available in a variety of types to suit specific materials and applications. We recommend that you contact our Engineering Department for design information.

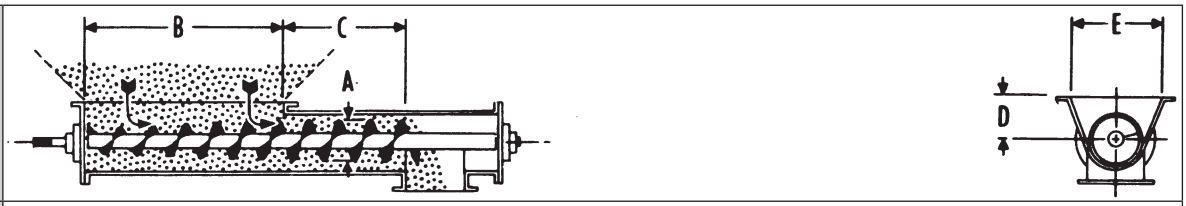
Screw Feeders

(For Inclined Applications Consult Factory)

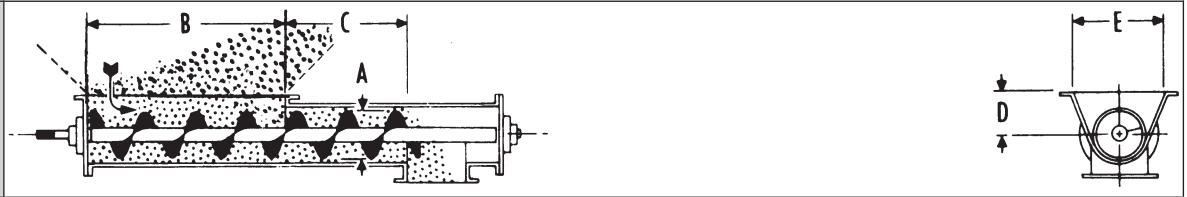
Typical Type 1

Feeder Type	Inlet Opening	Material Removal	Pitch	Feeder Screw Diameter	Extended Screw
SF1A	Standard	Uniform Full Length of Inlet Opening	Standard	Tapered	None
SF1B	Standard	Forepart Only of Inlet Opening	Standard	Uniform	None
SF1C	Standard	Uniform Full Length of Inlet Opening	Standard	Tapered	As Required
SF1D	Standard	Forepart Only of Inlet Opening	Standard	Uniform	As Required

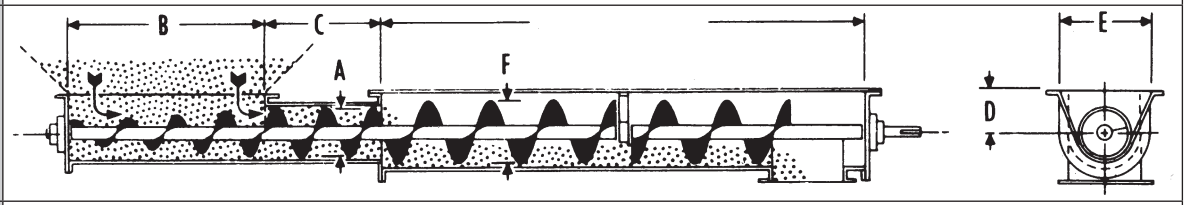
SF1A



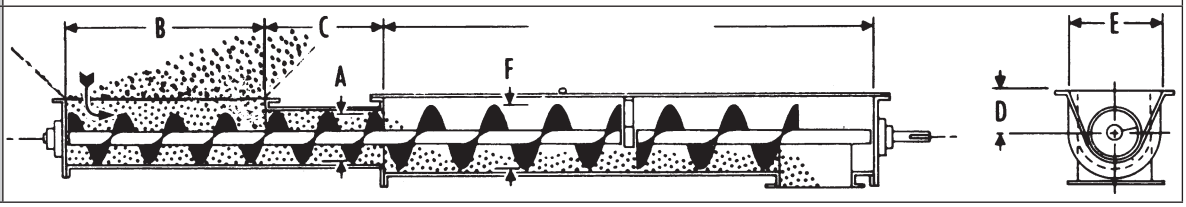
SF1B



SF1C



SF1D



Feeder Diameter A	Maximum Lump Size	Maximum Speed RPM	Capacity Cubic Feet per Hour		B*	C	D	E	Extended Screw Diameter F		
			At One RPM	At Maximum RPM					Trough Loading %		
									15	30	45
6	3/4"	70	4.8	336	36	12	7	14	12	9	9
9	1 1/2”	65	17	1105	42	18	9	18	18	14	12
12	2"	60	44	2640	48	24	10	22	24	18	16
14	2 1/2”	55	68	3740	54	28	11	24		20	18
16	3"	50	104	5200	56	32	11 1/2	28		24	20
18	3"	45	150	6750	58	36	12 1/8	31			24
20	3 1/2”	40	208	8320	60	40	13 1/2	34			
24	4"	30	340	10200	64	48	16 1/2	40			

* Consult factory if inlet exceeds these lengths.

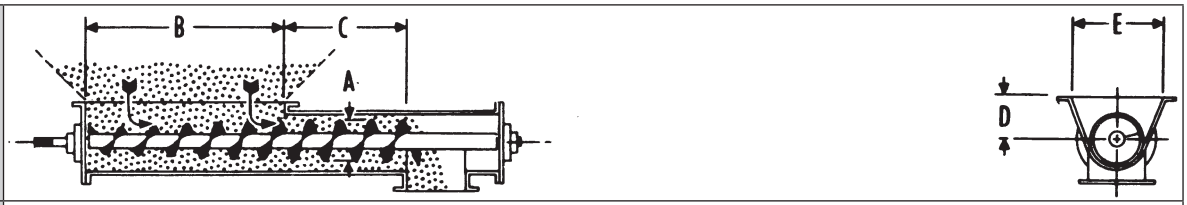
Screw Feeders

(For Inclined Applications Consult Factory)

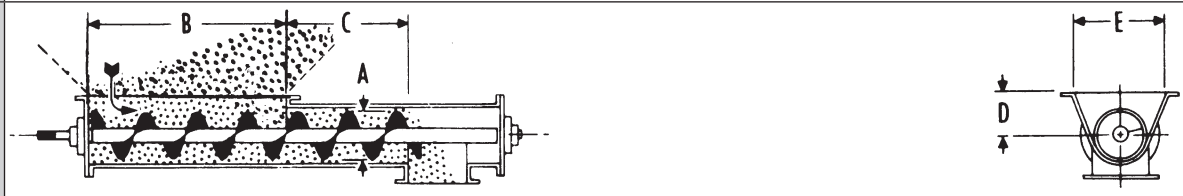
Typical Type 2

Feeder Type	Inlet Opening	Material Removal	Pitch	Feeder Screw Diameter	Extended Screw
SF2A	Long	Uniform Full Length of Inlet Opening	Short (2/3)	Tapered	None
SF2B	Long	Forepart Only of Inlet Opening	Short (2/3)	Uniform	None
SF2C	Long	Uniform Full Length of Inlet Opening	Short (2/3)	Tapered	As Required
SF2D	Long	Forepart Only of Inlet Opening	Short (2/3)	Uniform	As Required

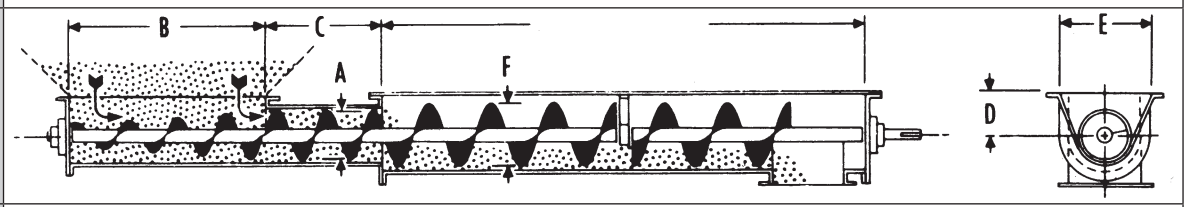
SF2A



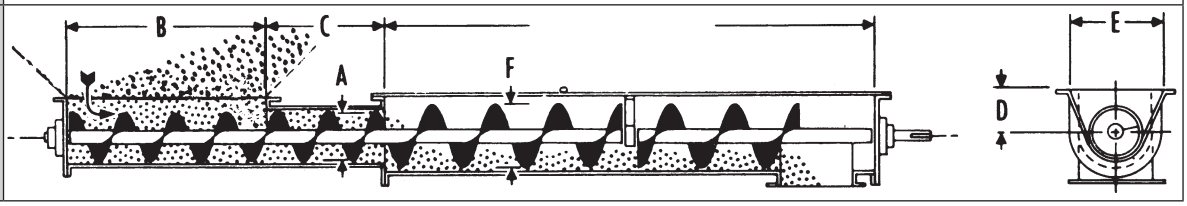
SF2B



SF2C



SF2D



Feeder Diameter A	Maximum Lump Size	Maximum Speed RPM	Capacity Cubic Feet per Hour		B*	C	D	E	Extended Screw Diameter F		
			At One RPM	At Maximum RPM					Trough Loading %		
									15	30	45
6	1/2"	70	3.1	217	60	18	7	14	10	9	9
9	3/4"	65	11	715	66	27	9	18	14	12	10
12	1"	60	29	1740	72	36	10	22	20	16	14
14	1 1/4"	55	44	2420	76	42	11	24	24	18	16
16	1 1/2"	50	68	3400	78	48	11 1/2	28	20	18	20
18	1 3/4"	45	99	4455	80	54	12 1/8	31	24	20	24
20	2"	40	137	5480	82	60	13 1/2	34	24		
24	2 1/2"	30	224	6720	86	72	16 1/2	40			

PAGE

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Classes of Enclosures

Conveyors can be designed to protect the material being handled from a hazardous surrounding or to protect the surroundings from a hazardous material being conveyed.

This section establishes recommended classes of construction for conveyor enclosures — without regard to their end use or application. These several classes call for specific things to be done to a standard conveyor housing to provide several degrees of enclosure protection.

Enclosure Classifications

Class IE — Class IE enclosures are those provided primarily for the protection of operating personnel or equipment, or where the enclosure forms an integral or functional part of the conveyor or structure. They are generally used where dust control is not a factor or where protection for, or against, the material being handled is not necessary — although as conveyor enclosures a certain amount or protection is afforded.

Class IIE — Class IIE enclosures employ constructions which provide some measure of protection against dust or for, or against, the material being handled.

Class IIIE — Class IIIE enclosures employ constructions which provide a higher degree of protection in these classes against dust, and for or against the material being handled.

Class IVE — Class IVE enclosures are for outdoor applications and under normal circumstances provide for the exclusion of water from the inside of the casing. They are not to be construed as being water-tight, as this may not always be the case.

When more than one method of fabrication is shown, either is acceptable.

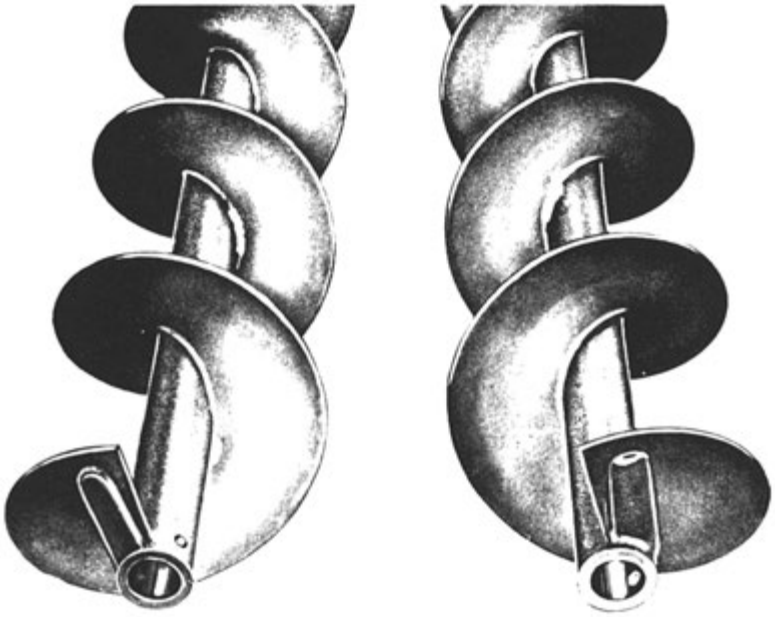
Enclosures

Enclosure Construction				
Component Classification	**Enclosure Classifications**			
	I E	**II E**	**III E**	**IV E**
A. TROUGH CONSTRUCTION				
Formed & Angle Top Flange				
1. Plate type end flange				
a. Continuous arc weld	X	X	X	X
b. Continuous arc weld on top of end flange and trough top rail	X	X	X	X
2. Trough Top Rail Angles (Angle Top trough only)				
a. Staggered intermittent arc and spot weld	X			
b. Continuous arc weld on top leg of angle on inside of trough and intermittent arc weld on lower leg of angle to outside of trough		X	X	X
c. Staggered intermittent arc weld on top leg of angle on inside of trough and intermittent arc weld on lower leg of angle to outside of trough, or spot weld when mastic is used between leg of angle and trough sheet		X	X	X
B. COVER CONSTRUCTION				
1. Plain flat				
a. Only butted when hanger is at cover joint	X			
b. Lapped when hanger is not at cover joint	X			
2. Semi-Flanged				
a. Only butted when hanger is at cover joint	X	X	X	X
b. Lapped when hanger is not at cover joint	X			
c. With buttstrap when hanger is not at cover joint		X	X	X
3. Flanged				
a. Only butted when hanger is at cover joint		X	X	X
b. Buttstrap when hanger is not at cover joint		X	X	X
4. Hip Roof				
a. Ends with a buttstrap connection				X
C. COVER FASTENERS FOR STANDARD GA. COVERS				
1. Spring, screw or toggle clamp fasteners or bolted construction				
a. Max. spacing plain flat covers	60"			
b. Max. spacing semi-flanged covers	60"	30"	18"	18"
c. Max. spacing flanged and hip-roof covers		40"	24"	24"
D. GASKETS				
1. Covers				
a. Red rubber or felt up to 230° F		X	X	
b. Neoprene rubber, when contamination is a problem		X	X	
c. Closed cell foam type elastic material to suit temperature rating of gasket		X	X	X
2. Trough End flanges				
a. Mastic type compounds		X	X	X
b. Red rubber up to 230° F		X	X	X
c. Neoprene rubber, when contamination is a problem		X	X	
d. Closed cell foam type elastic material to suit temperature rating of gasket		X	X	X
E. TROUGH END SHAFT SEALS*				
1. When handling non-abrasive materials			X	X
2. When handling abrasive materials	X	X	X	X

***NOTES:**
- Lip type seals for non-abrasive materials
- Felt type for mildly abrasive materials
- Waste type for highly abrasive materials
- Waste type for moderately abrasive
- Air-Purged Martin Super Pack for extremely abrasive
- Bulk Heads may be required for abrasive & hot materials

WARNING: CHECK MATERIAL TEMPERATURE.

Left Hand



Right Hand

Right and Left Hand Screw

A conveyor screw is either right hand or left hand depending on the form of the helix. The hand of the screw is easily determined by looking at the end of the screw.

The screw pictured to the left has the flight helix wrapped around the pipe in a counter-clockwise direction, or to your left. Same as left hand threads on a bolt. This is arbitrarily termed a LEFT hand screw.

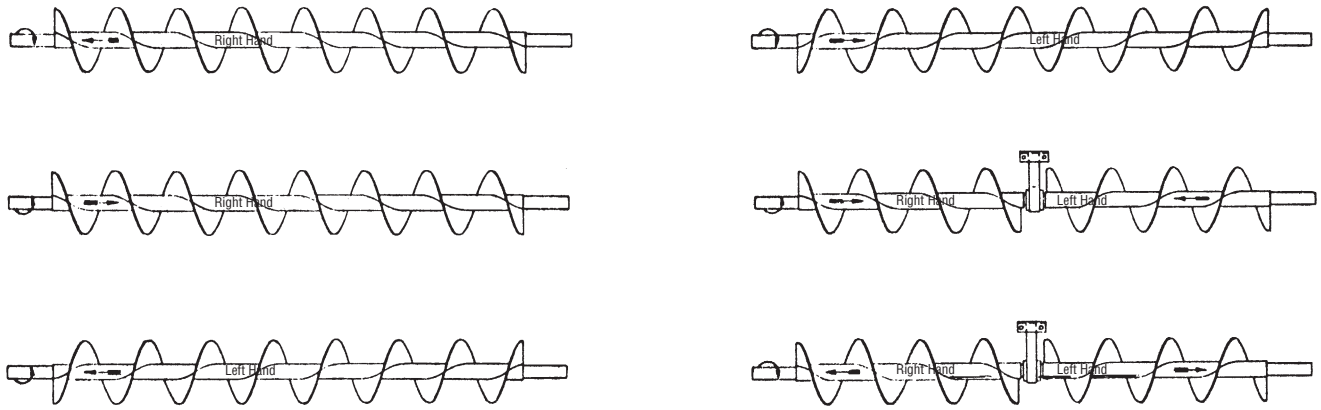
The screw pictured to the right has the flight helix wrapped around the pipe in a clockwise direction, or to your right. Same as right hand threads on a bolt. This is termed a RIGHT hand screw.

A conveyor screw viewed from either end will show the same configuration. If the end of the conveyor screw is not readily visible, then by merely imagining that the flighting has been cut, with the cut end exposed, the hand of the screw may be easily determined.

Conveyor Screw Rotation

The above diagrams are a simple means of determining screw rotation. When the material flow is in the direction away from the end being viewed, a R.H. screw will turn counter clockwise and a L.H. screw will turn clockwise rotation as shown by the arrows.

Conveyor Screw Rotation



The above diagram indicates the hand of conveyor screw to use when direction of rotation and material flow are known.

Special Screw Conveyor Continuous Weld Finishes

Specifications on screw conveyor occasionally include the term “grind smooth" when referring to the finish on continuous welds. This specification is usually used for stainless steel, but occasionally it will appear in carbon steel specifications as well.

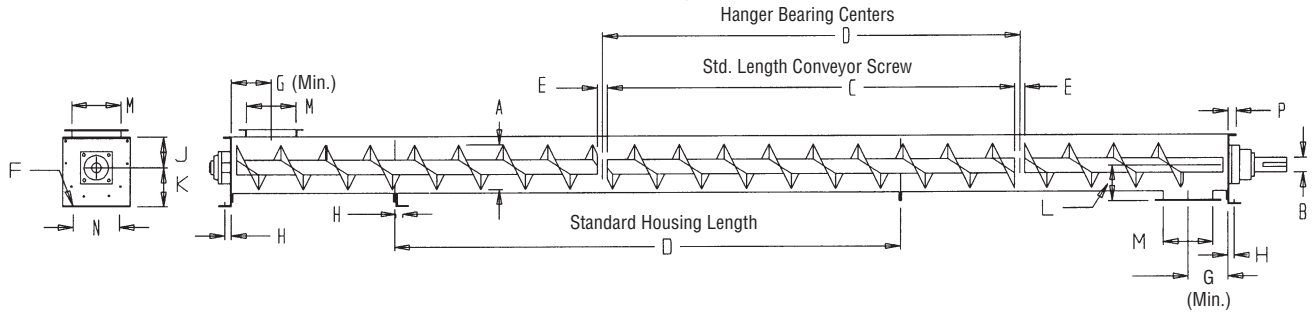
“Grind smooth" is a general term and subject to various interpretations. This Table establishes recommended classes of finishes, which should be used to help find the class required for an application.

Operation	Weld Finishes			
	I	II	III	IV
Weld spatter and slag removed	X	X	X	X
Rough grind welds to remove heavy weld ripple or unusual roughness (Equivalent to a 40-50 grit finish)		X		
Medium grind welds — leaving some pits and crevices (Equivalent to a 80-100 grit finish)			X	
Fine grind welds — no pits or crevices permissible (Equivalent to a 140-150 grit finish)				X

* Martin IV Finish: CEMA IV welds, polish pipe & flights to 140-150 grit finish.
* Martin IV Polish: Same as above plus Scotch-Brite Finish.

Layout

Trough

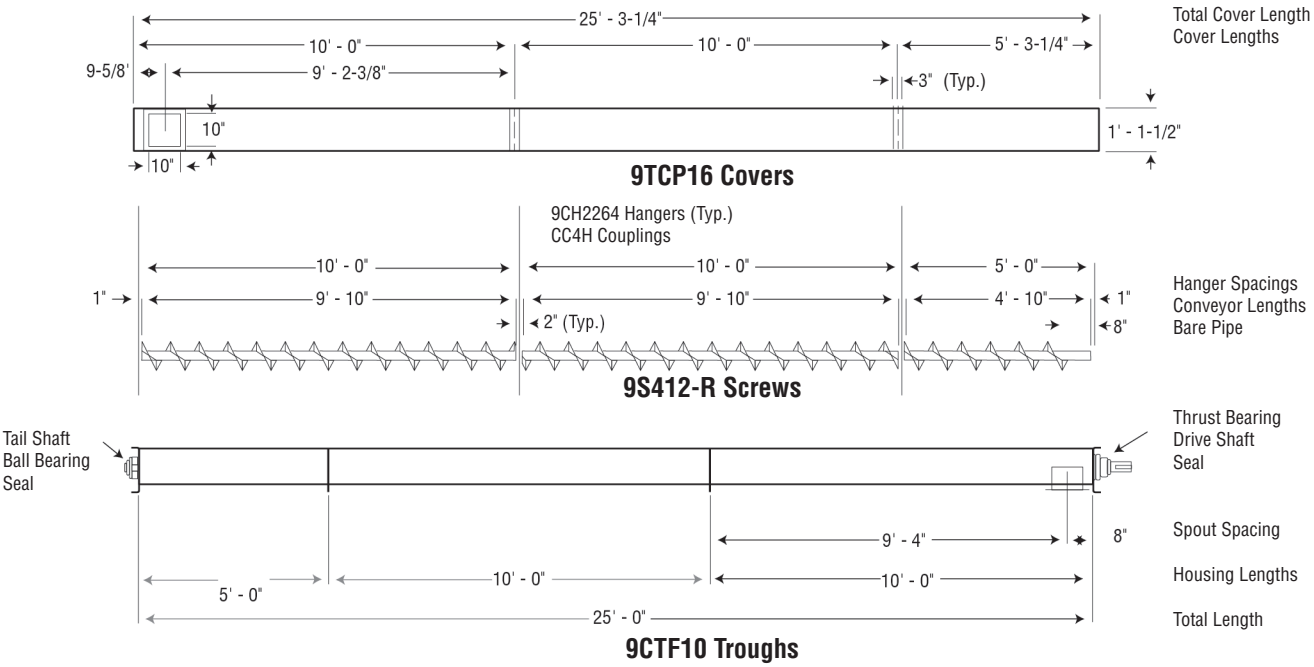


A Screw Dia.	B Coupling Dia.	C Length	D Length	E	F	G (Min.)	H	J	K	L	M	N	P	R
4	1	9 – 10 1/2	10	1 1/2	3/8	4 1/2	7/8	3 5/8	4 5/8	3 3/4	5	5 3/4	1 7/16	1
6	1 1/2	9 – 10	10	2	3/8	6	13/16	4 1/2	5 5/8	5	7	8 1/8	1 1/2	1
9	1 1/2 2	9 – 10	10	2	1/2	8	15/16	6 1/8	7 7/8	7 1/8	10	9 3/8	1 5/8	1 1/2
10	1 1/2 2	9 – 10	10	2	1/2	9	1 9/16	6 3/8	8 7/8	7 7/8	11	9 1/2	1 3/4	1 3/4
12	2 2 7/16 3	11 – 10 11 – 9 11 – 9	12	2 3 3	5/8	10 1/2	1 3/8	7 3/4	9 5/8	8 7/8	13	12 1/4	2	1 5/8
14	2 7/16 3	11 – 9	12	3	5/8	11 1/2	1 3/8	9 1/4	10 7/8	10 1/8	15	13 1/2	2	1 5/8
16	3	11 – 9	12	3	5/8	13 1/2	1 3/4	10 5/8	12	11 1/8	17	14 7/8	2 1/2	2
18	3 3 7/16	11 – 9 11 – 8	12	3 4	5/8	14 1/2	1 3/4	12 1/8	13 3/8	12 3/8	19	16	2 1/2	2
20	3 3 7/16	11 – 9 11 – 8	12	3 4	3/4	15 1/2	2	13 1/2	15	13 3/8	21	19 1/4	2 1/2	2 1/4
24	3 7/16	11 – 9	12	4	3/4	17 1/2	2 1/4	16 1/2	18 1/8	15 3/8	25	20	2 1/2	2 1/2

Screw clearance at trough end is one half of dimension E.

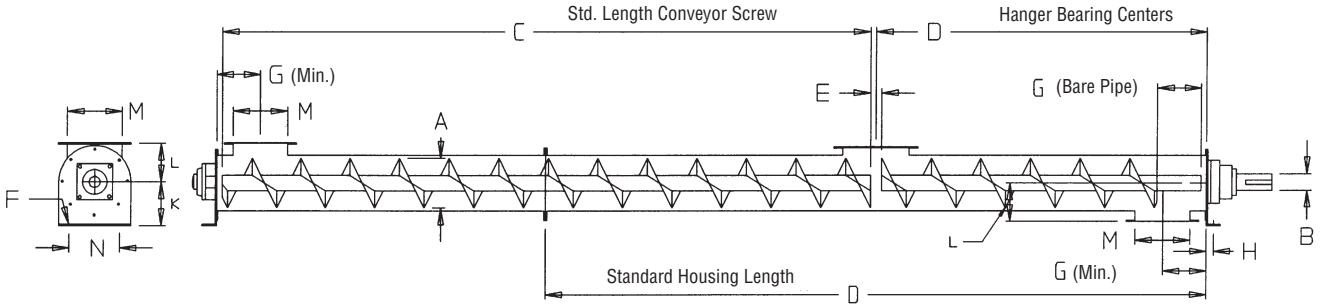
Typical Method of Detailing

9" × 2" × 25'-0" Conveyor



Layout

Tubular Housing

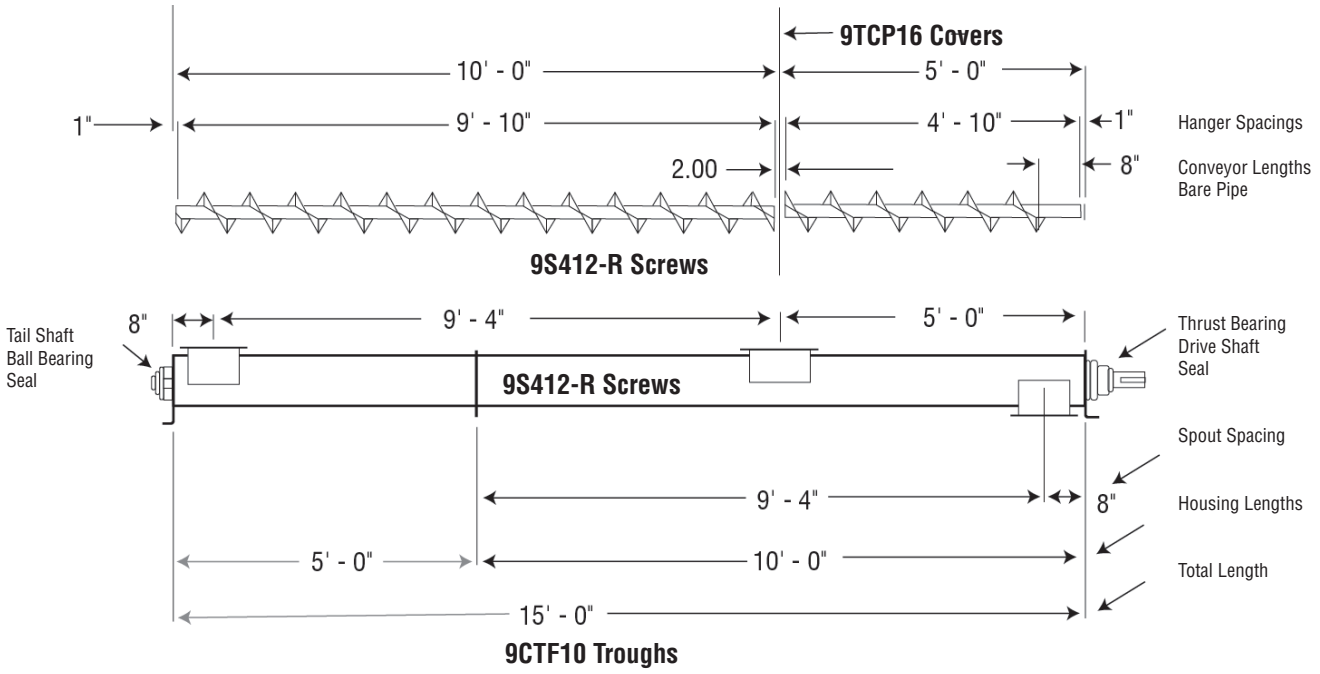


A Screw Dia.	B Coupling Dia.	C Length	D Length	E	F	G (Min.)	H	K	L	M	N	P	R
4	1	9 – 10 1/2	10	1 1/2	3/8	4 1/2	7/8	4 5/8	3 3/4	5	5 3/4	1 7/16	1
6	1 1/2	9 – 10	10	2	3/8	6	13/16	5 5/8	5	7	8 1/8	1 1/2	1
9	1 1/2 2	9 – 10 9 – 10	10	2	1/2	8	1 5/16	7 7/8	7 1/8	10	9 3/8	1 5/8	1 1/2
10	1 1/2 2	9 – 10 9 – 10	10	2	1/2	9	1 9/16	8 7/8	7 7/8	11	9 1/2	1 3/4	1 3/4
12	2 2 7/16 3	11 – 10 11 – 9 11 – 9	12	2 3 3	5/8	10 1/2	1 3/8	9 5/8	8 7/8	13	12 1/4	2	1 5/8
14	2 7/16 3	11 – 9 11 – 9	12	3	5/8	11 1/2	1 3/8	10 7/8	10 1/8	15	13 1/2	2	1 5/8
16	3	11 – 9	12	3	5/8	13 1/2	1 3/4	12	11 1/8	17	14 7/8	2 1/2	2
18	3 3 7/16	11 – 9 11 – 8	12	3 4	5/8 3/4	14 1/2 15 1/2	1 3/4 2	13 3/8 15	12 3/8 13 3/8	19 21	16 19 1/4	2 1/2 2 1/2	2 2 1/4
20	3 3 7/16	11 – 9 11 8	12	3 4	3/4	15 1/2	2	15	13 3/8	21	19 1/4	2 1/2	2 1/4
24	3 7/16	11 8	12	4	3/4	17 1/2	2 1/4	18 1/8	15 3/8	25	20	2 1/2	2 1/2

Screw clearance at trough end is one half of dimension E.

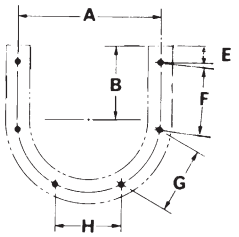
Typical Method of Detailing

9" × 2" × 25'-0" Conveyor

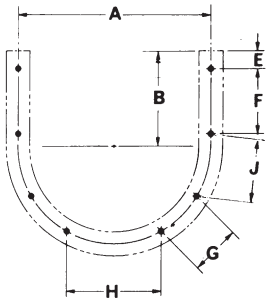


Bolt Pattern

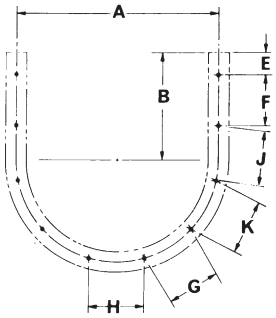
U-Trough End Flanges



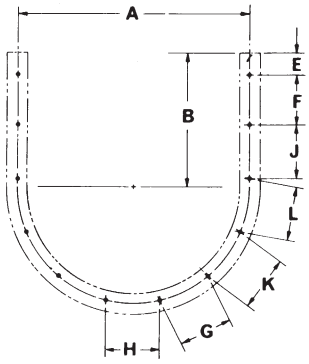
6 Bolts



8 Bolts



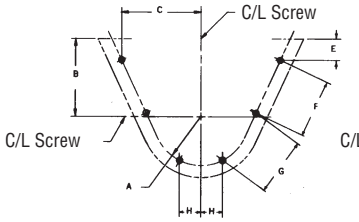
10 Bolts



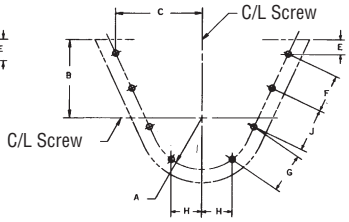
12 Bolts

Screw Diameter	Bolts		A	B	E	F	G	H	J	K	L
	Number	Diameter									
4	6	3/8	7	3 5/8	1 1/8	3 1/8	3 1/8	3 1/8	X	X	X
6	6	3/8	8 7/8	4 1/2	1 1/32	4 1/8	4 1/16	4 1/16	X	X	X
9	8	3/8	12 1/2	6 1/8	1 3/16	4 1/8	3 3/4	5 1/8	4 1/8	X	X
10	8	3/8	13 1/4	6 3/8	2 1/4	3 1/2	4 3/16	5 1/16	4 1/8	X	X
12	8	1/2	15 7/8	7 3/4	1 1/2	5 5/16	4 1/16	7 3/4	5 3/16	X	X
14	8	1/2	17 7/8	9 1/4	2 17/32	5 5/8	5 15/16	6	5 15/16	X	X
16	8	5/8	20	10 5/8	2 5/8	6 3/8	6 5/8	7 1/2	6 5/8	X	X
18	10	5/8	22	12 1/8	2 23/32	5 15/16	5 7/8	5 7/8	5 7/8	5 7/8	X
20	10	5/8	24 3/8	13 1/2	2 25/32	6 1/4	6 11/16	6 11/16	6 11/16	6 11/16	X
24	12	5/8	28 1/2	16 1/2	2 25/32	6 1/8	6 5/8	6 5/8	6 5/8	6 5/8	6 5/8

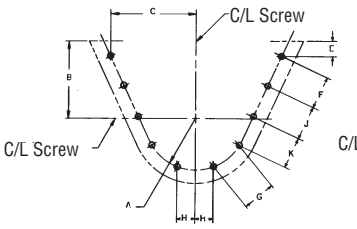
Flared Trough End Flanges



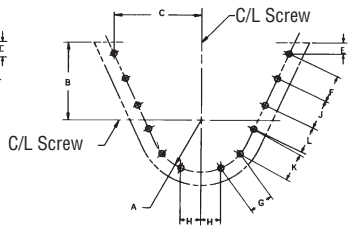
6 Bolts



8 Bolts



10 Bolts

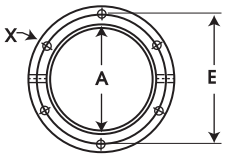


12 Bolts

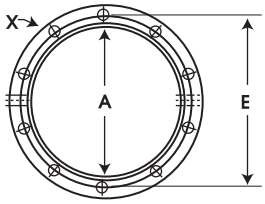
Screw Diameter	Bolts		A	B	C	E	F	G	H	J	K	L
	Diameter Number	Holes										
6	3/8	6	4 7/16	7	7 3/16	1 27/32	5 1/4	5 1/4	2 1/32	—	—	—
9	3/8	8	6 1/4	9	9 21/32	1 43/64	5	5	2 9/16	5	—	—
12	1/2	8	7 15/16	10	11 13/16	1 13/16	5 3/4	5 3/4	3 7/8	5 3/4	—	—
14	1/2	10	8 15/16	11	12 49/64	2 1/16	5 1/8	5 1/8	3	5 1/8	5 1/8	—
16	5/8	10	10	11 1/2	14 11/16	2 15/64	5 1/2	5 1/2	3 3/4	5 1/2	5 1/2	—
18	5/8	10	11	12 1/8	16	2 5/8	6 3/16	6 3/16	2 15/16	6 3/16	6 3/16	—
20	5/8	10	12 3/16	13 1/2	17 7/8	2 9/32	7	7	3 11/32	7	7	—
24	5/8	12	14 1/4	16 1/2	20 61/64	2 5/16	6 7/8	6 7/8	3 5/16	6 7/8	6 7/8	6 7/8

Bolt Patterns

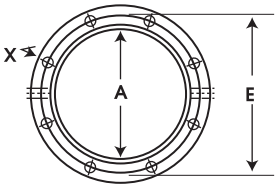
Tubular Housing Flanges



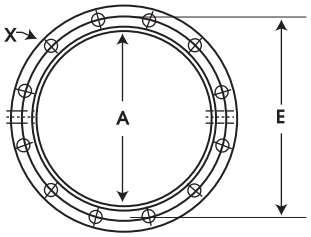
6 Bolts



10 Bolts

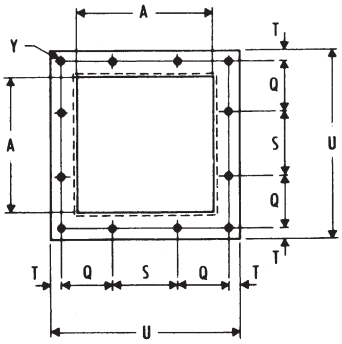


8 Bolts

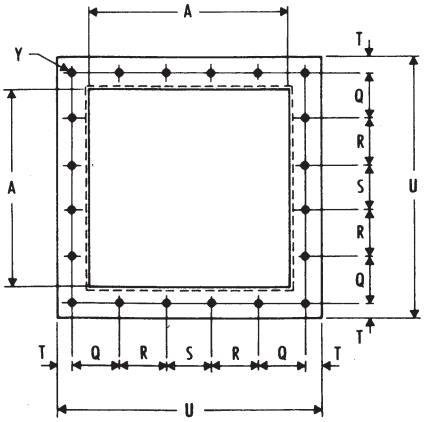


12 Bolts

Intake & Discharge Flanges



12 Bolts



20 Bolts

Screw Size	Flange Bolts		A	E	Q	R	S	T	U
	Tabular X	Discharge Y							
4	6 – 3/8	12 – 1/4	5	7	2 1/4	—	2 1/4	3/8	7 1/2
6	8 – 3/8	12 – 3/8	7	8 7/8	2 13/16	—	3	11/16	10
9	8 – 3/8	12 – 3/8	10	11 7/8	4	—	4	1/2	13
10	8 – 3/8	12 – 3/8	11	13 1/4	4 5/16	—	4 3/8	5/8	14 1/4
12	8 – 1/2	12 – 3/8	13	15	5 1/8	—	5 1/4	7/8	17 1/4
14	8 – 1/2	20 – 3/8	15	17	3 1/2	3 1/2	3 1/2	7/8	19 1/4
16	8 – 5/8	20 – 3/8	17	19 1/2	3 3/4	4	4	7/8	21 1/4
18	10 – 5/8	20 – 1/2	19	22	4 7/16	4 3/8	4 3/8	1 1/8	24 1/4
20	10 – 5/8	20 – 1/2	21	24 3/8	4 7/8	4 3/4	4 3/4	1 1/8	26 1/4
24	12 – 5/8	20 – 1/2	25	28 1/2	5 5/8	5 5/8	5 1/2	1 1/8	30 1/4

Bolt Requirements

Part Name	4	6	9	10	12	14	16	18	20	24
Flange, Trough	6 – 3/8 × 1 1/4	6 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 1/2 × 1 1/2	8 – 1/2 × 1 1/2	8 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	12 – 5/8 × 1 3/4
Flange, Tubular Housing	6 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 1/2 × 1 1/2	8 – 1/2 × 1 1/2	8 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	12 – 5/8 × 1 3/4
End, Trough										
Inside	6 – 1/4 × 3/4	7 3/8 × 1	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 1/2 × 1 1/4	8 – 1/2 × 1 1/4	8 – 5/8 × 1 1/4	10 – 5/8 × 1 1/4	10 – 5/8 × 1 1/2	12 – 5/8 × 1 1/2
Inside Discharge	4 – 3/8 × 1	4 – 3/8 × 1	4 – 3/8 × 1 1/4	6 – 3/8 × 1 1/4	6 – 1/2 × 1 1/4	6 – 1/2 × 1 1/4	6 – 5/8 × 1 1/4	6 – 5/8 × 1 1/2	6 – 5/8 × 1 1/2	6 – 5/8 × 1 1/2
Inside Rectangular	5 1/4 × 3/4	6 – 3/8 × 1	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	10 – 1/2 × 1 1/4	11 – 1/2 × 1 1/4	12 – 5/8 × 1 1/4	12 – 5/8 × 1 1/4	12 – 5/8 × 1 1/2	12 – 5/8 × 1 1/2
Outside Type	6 – 3/8 × 1 1/4	6 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 1/2 × 1 1/2	8 – 1/2 × 1 1/2	8 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	12 – 5/8 × 1 3/4
Outside Discharge	4 – 3/8 × 1	2 – 3/8 × 1	4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/4	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2	6 – 5/8 × 1 1/2
Ends, Tubular Housing	6 – 3/8 × 1	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 3/8 × 1 1/4	8 – 1/2 × 1 1/2	8 – 1/2 × 1 1/2	8 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	10 – 5/8 × 1 3/4	12 – 5/8 × 1 3/4
Hanger, Trough										
Style 60		2 – 1/2 × 2	2 – 1/2 × 2	2 – 1/2 × 2	2 – 1/2 × 2 1/2	2 – 1/2 × 2 1/2	2 – 5/8 × 2 3/4	2 – 5/8 × 2 3/4	2 – 5/8 × 2 3/4	
Style 70		4 – 3/8 × 1	4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 1/2 × 13/4	4 – 5/8 × 2	
Style 216		4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 5/8 × 13/4	4 – 5/8 × 2	4 – 5/8 × 2 1/2
Style 220	4 – 1/4 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 5/8 × 13/4	4 – 5/8 × 1 3/4	4 – 5/8 × 1 3/4
Style 226	4 – 1/4 × 1	4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 5/8 × 13/4	4 – 5/8 × 2	4 – 5/8 × 2 1/2
Style 230		4 – 3/8 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/2	4 – 5/8 × 13/4	4 – 5/8 × 1 3/4	4 – 5/8 × 1 3/4
Style 316	4 – 1/4 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 1/2 × 1 1/2	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/4	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2
Style 326	4 – 1/4 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 3/8 × 1	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/4	4 – 1/2 × 1 1/4	5 5/8 × 1 1/2	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2
Covers, Trough (Std. 10 ft.)	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1	10 – 5/16 × 1
Saddle – Feet										
Flanged Feet Saddle (Now Welded)	2 – 3/8 × 1 1/2	2 – 3/8 × 1 1/2	2 – 3/8 × 1 1/2	2 – 3/8 × 1 1/2	2 – 1/2 × 13/4	2 – 1/2 × 13/4	2 – 5/8 × 2	2 – 5/8 × 2	2 – 5/8 × 2	2 – 5/8 × 2
Spouts, Discharge										
Attaching Bolts	8 – 3/8 × 1 1/2	8 – 3/8 × 1 1/2	8 – 3/8 × 1 1/2	8 – 3/8 × 1 1/2	8 – 3/8 × 1 1/2	12 – 3/8 × 1 1/2	12 – 3/8 × 1 1/2	12 – 1/2 × 1 1/2	12 – 1/2 × 1 1/2	12 – 1/2 × 1 1/2
Flange	12 – 3/8 × 1	12 – 3/8 × 1	12 – 3/8 × 1	12 – 3/8 × 1	12 – 3/8 × 1	20 – 3/8 × 1	20 – 3/8 × 1	20 – 1/2 × 1	20 – 1/2 × 1	20 – 1/2 × 1
Flange w/Slide	10 – 3/8 × 1	10 – 3/8 × 1	10 – 3/8 × 1	10 – 3/8 × 1	10 – 3/8 × 1	16 – 3/8 × 1	16 – 3/8 × 1	16 – 1/2 × 1 1/4	16 – 1/2 × 1 1/4	16 – 1/2 × 1 1/4

All bolts hex head cap screws with hex nuts and lock washers.

Bolt Requirements

Part Name	1	1 1/2	2	2 7/16	3	3 7/16
Bearings, End						
Discharge Bronze	3 – 3/8 × 1 1/4	3 – 1/2 × 1 1/2	3 – 5/8 × 1 3/4	3 – 5/8 × 1 3/4	3 – 3/4 × 2	3 – 3/4 × 2 1/4
Discharge Ball	3 – 3/8 × 1 1/4	3 – 1/2 × 1 1/2	3 – 5/8 × 1 1/2	3 – 5/8 × 13/4	3 – 3/4 × 2	3 – 3/4 × 2 1/4
Flanged Bronze	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/2	4 – 5/8 × 1 3/4	4 – 5/8 × 13/4	4 – 3/4 × 2	4 – 3/4 × 2 1/4
Flanged Ball	4 – 3/8 × 1 1/4	4 – 1/2 × 1 1/2	4 – 5/8 × 1 3/4	4 – 5/8 × 13/4	4 – 3/4 × 2 1/2	4 – 3/4 × 2 3/4
Flanged Roller		4 – 1/2 × 2 1/2	4 – 1/2 × 2 1/2	4 – 5/8 × 3	4 – 3/4× 3	4 – 3/4 × 3 1/4
Pillow Block Bronze	2 – 3/8 × 1 1/2	2 – 1/2 × 1 3/4	2 – 5/8 × 2	2 – 5/8 × 21/4	2 – 3/4 × 2 1/2	2 – 7/8 × 2 3/4
Pillow Block Ball	2 – 3/8 × 1 3/4	2 – 1/2 × 2 1/4	2 – 5/8 × 2 1/2	2 – 5/8 × 23/4	2 – 7/8 × 3 1/2	2 – 7/8 × 3 3/4
Pillow Block, Roller		2 – 1/2 × 2 1/4	2 – 5/8 × 2 1/2	2 – 5/8 × 23/4	2 – 3/4 × 3	2 – 7/8 × 3 1/2
Bearings, Thrust						
Type “E" Roller		4 – 1/2 × 2 3/4	4 – 1/2 ×2 3/4	4 – 5/8 × 3 1/4	4 – 3/4 × 3 1/2	4 – 3/4 × 3 3/4
Coupling Bolts	3/8 × 2 1/16	1/2 × 3	5/8 × 3 5/8	5/8 × 4 3/8	3/4 × 5 – 3" Pipe 3/4 × 5 1/2 – 4" Pipe	7/8 × 5 1/2
Seals, Shafts						
Flanged Gland		4 – 1/2 × 1 1/2	4 – 5/8 × 1 1/2	4 – 5/8 × 1 1/2	4 – 3/4 × 1 3/4	4 – 3/4 × 1 3/4
Plate w/Ball or Bronze		4 – 1/2 × 2	4 – 5/8 × 2 1/4	4 – 5/8 × 2 1/4	4 – 3/4 × 3	4 – 3/4 × 3 1/2
Plate w/Roller		4 – 1/2 × 3	4 1/2 × 3	4 – 5/8 × 3 1/2	4 – 3/4 × 3 1/2	4 – 3/4 × 4
Split Gland		2 – 1/2 × 1 1/2	2 – 1/2 × 1 1/2	2 – 5/8 × 1 3/4	2 – 5/8 × 1 3/4	2 – 3/4 × 2 1/4
Waste Pack, w/Ball or Bronze		4 – 1/2 × 3 1/2	4 – 5/8 × 3 1/2	4 – 5/8 × 4	4 – 3/4 × 4	4 – 3/4 × 5
Waste Pack, w/Roller		4 – 1/2 × 4	4 – 1/2 × 4	4 – 5/8 × 4 1/2	4 – 3/4 × 5	4 – 3/4 × 5 1/2

All other bolts hex head cap screws with hex nuts and lock washers.

Pipe Sizes, Dimensions and Weights

Nominal Pipe Size	Outside Diameter	I.P.S Schedule			Wall	Inside Diameter	Wt./Ft. (lb)
1/8	.405		10S		.049	.307	.1863
		40	40S	Standard	.068	.269	.2447
		80	80S	Extra Heavy	.095	.215	.3145
1/4	.540		10S		.065	.410	.3297
		40	40S	Standard	.088	.364	.4248
		80	80S	Extra Heavy	.119	.302	.5351
3/8	.675		10S		.065	.545	.4235
		40	40S	Standard	.091	.493	.5676
		80	80S	Extra Heavy	.126	.423	.7388
1/2	.840		5S		.065	.710	.5383
			10S		.083	.674	.6710
		40	40S	Standard	.109	.622	.8510
		80	80S	Extra Heavy	.147	.546	1.088
		160			.187	.466	1.304
				XX Heavy	.294	.252	1.714
3/4	1.050		5S		.065	.920	.6838
			10S		.083	.884	.8572
		40	40S	Standard	.113	.824	1.131
		80	80S	Extra Heavy	.154	.742	1.474
		160			.218	.614	1.937
				XX Heavy	.308	.434	2.441
1	1.315		5S		.065	1.185	.8678
			10S		.109	1.097	1.404
		40	40S	Standard	.133	1.049	1.679
		80	80S	Extra Heavy	.179	.957	2.172
		160			.250	.815	2.844
				XX Heavy	.358	.599	3.659
1 1/4	1.660		5S		.065	1.530	1.107
			10S		.109	1.442	1.806
		40	40S	Standard	.140	1.380	2.273
		80	80S	Extra Heavy	.191	1.278	2.997
		160			.250	1.160	3.765
				XX Heavy	.382	.896	5.214
1 1/2	1.900		5S		.065	1.770	1.274
			10S		.109	1.682	2.085
		40	40S	Standard	.145	1.610	2.718
		80	80S	Extra Heavy	.200	1.500	3.631
		160			.281	1.338	4.859
				XX Heavy	.400	1.100	6.408
2	2.375		5S		.065	2.245	1.604
			10S		.109	2.157	2.638
		40	40S	Standard	.154	2.067	3.653
		80	80S	Extra Heavy	.218	1.939	5.022
		160			.343	1.689	7.444
				XX Heavy	.436	1.503	9.029
2 1/2	2.875		5S		.083	2.709	2.475
			10S		.120	2.635	3.531
		40	40S	Standard	.203	2.469	5.793
		80	80S	Extra Heavy	.276	2.323	7.661
		160			.375	2.125	10.01
				XX Heavy	.552	1.771	13.69
3	3.500		5S		.083	3.334	3.029
			10S		.120	3.260	4.332
		40	40S	Standard	.216	3.068	7.576
		80	80S	Extra Heavy	.300	2.900	10.25
		160			.438	2.624	14.32
				XX Heavy	.600	2.300	18.58
3 1/2	4.000		5S		.083	3.834	3.472
			10S		.120	3.760	4.973
		40	40S	Standard	.226	3.548	9.109
		80	80S	Extra Heavy	.318	3.364	12.50
4	4.500		5S		.083	4.334	3.915
			10S		.120	4.260	5.613
		40	40S	Standard	.237	4.026	10.79
		80	80S	Extra Heavy	.337	3.826	14.98
		120			.438	3.624	19.00
		160			.531	3.438	22.51
				XX Heavy	.674	3.152	27.54
5	5.563		5S		.109	5.345	6.349
			10S		.134	5.295	7.770
		40	40S	Standard	.258	5.047	14.62
		80	80S	Extra Heavy	.375	4.813	20.78
		120			.500	4.563	27.04
		160			.625	4.313	32.96
				XX Heavy	.750	4.063	38.55
6	6.625		5S		.109	6.407	7.585
			10S		.134	6.357	9.289
		40	40S	Standard	.280	6.065	18.97
		80	80S	Extra Heavy	.432	5.761	28.57
		120			.562	5.491	36.39
		160			.718	5.189	45.30
				XX Heavy	.864	4.897	53.16
8	8.625		5S		.109	8.407	9.914
			10S		.148	8.329	13.40
		20			.250	8.125	22.36
		30			.277	8.071	24.70
		40	40S	Standard	.322	7.981	28.55
		60			.406	7.813	35.64
		80	80S	Extra Heavy	.500	7.625	43.39
		100			.593	7.439	50.87
		120			.718	7.189	60.63
		140			.812	7.001	67.76
				XX Heavy	.875	6.875	72.42
		160			.906	6.813	74.69
10	10.750		5S		.134	10.482	15.19
			10S		.165	10.420	18.70
		20			.250	10.250	28.04
		30			.307	10.136	34.24
		40	40S	Standard	.365	10.020	40.48
		60	80S	Extra Heavy	.500	9.750	54.74
		80			.593	9.564	64.33
		100			.718	9.224	76.93
		120			.843	9.064	89.20
		140			1.000	8.750	104.1
		160			1.125	8.500	115.7

NOTE: Weights shown are in pounds per foot, based on the average wall of the pipe. The following formula was used in calculating the weight per foot.

$W = 10.68 (D — t)t$
W = Weight in pounds per foot (to 4 digits)
D = Outside Diameter in inches (to 3 decimal places)
t = Wall thickness in decimals (to 3 decimal places)

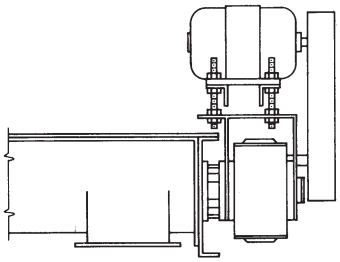
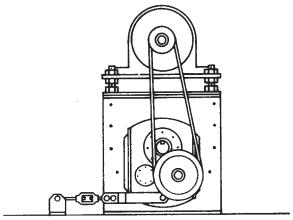
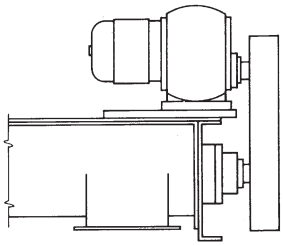
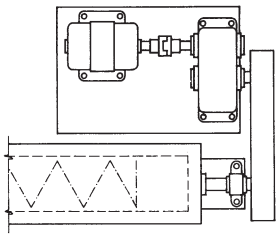
All weights are carried to four digits only, the fifth digit being carried forward if five or over, or dropped if under five.

Typical Drive Arrangements

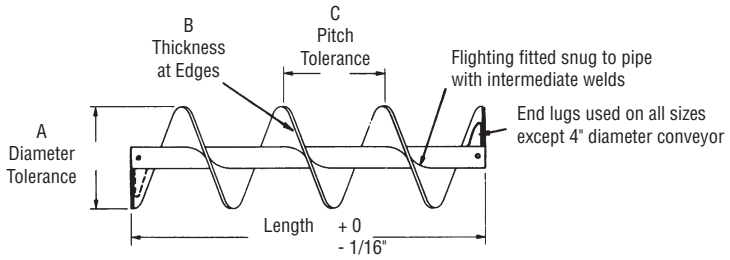
The most common types of drives for Screw Conveyors are illustrated below.

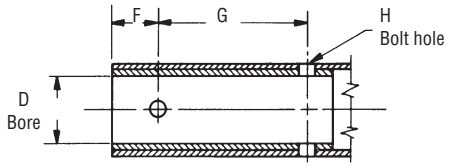
In addition to those shown, other types available are: variable speed drives, hydraulic drives, and take-off drives for connection to other equipment.

For special drive requirements, consult our Engineering Department.

SCREW DRIVER REDUCER	 (Side View)	Reducer mounts on trough end, and is directly connected to the conveyor screw and includes integral thrust bearing, seal gland, and drive shaft. Motor mount may be positioned at top, either side, or below. Separate drive shaft, end bearing, and seal are not required.
SHAFT MOUNTED REDUCER	 (End View)	Reducer mounts on conveyor drive shaft. Motor and "V"-Belt drive may be in any convenient location. The torque arm may be fastened to the floor, or fitted to trough end. Requires extended drive shaft, end bearing, and seal. Note: Requires thrust unit or collars to hold thrust.
GEARMOTOR DRIVE	 (Side View)	Integral motor-reducer with chain drive to conveyor drive shaft. Usually mounted to top of trough by means of an adapter plate.
BASE TYPE REDUCER DRIVE	 (Top View)	Motor direct-coupled to base type reducer, with chain drive to conveyor drive shaft. Usually mounted on floor or platform as close as possible to conveyor.

Helicoid Screw Conveyors

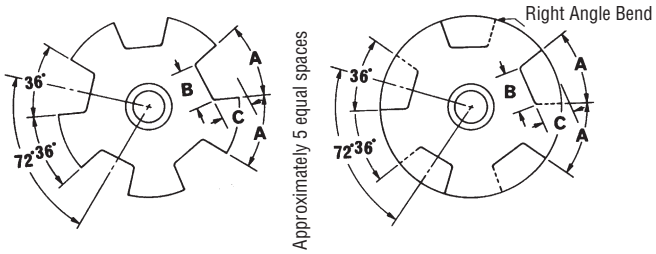




Listed Screw Diameter and Pitch	Coupling Diameter	Size Designation	Pipe Size Schedule 40	Length Feet and Inches	A Diameter Tolerance		B Thickness		C Pitch Tolerance		D Bushing Bore Inside Diameter		F Spacing 1st Bolt Hole	G Centers 2nd Bolt Hole	H Nominal Bolt Hole Size
					Plus	Minus	Inner Edge	Outer Edge	Plus	Minus	Min.	Max.			
4	1	4H206	1 1/4	9 – 10 1/2	1/16	1/8	3/16	3/32	1/2	1/4	1.005	1.016	1/2	2	13/32
6	1 1/2	6H304	2	9 – 10	1/16	3/16	1/8	1/16	1/2	1/4	1.505	1.516	7/8	3	17/32
6	1 1/2	6H308	2	9 – 10	1/16	3/16	1/4	1/8	3/4	1/4	1.505	1.516	7/8	3	17/32
6	1 1/2	6H312	2	9 – 10	1/16	3/16	3/8	3/16	3/4	1/4	1.505	1.516	7/8	3	17/32
9	1 1/2	9H306	2	9 – 10	1/16	3/16	3/16	3/32	3/4	1/4	1.505	1.516	7/8	3	17/32
9	1 1/2	9H312	2	9 – 10	1/16	3/16	3/8	3/16	3/4	1/4	1.505	1.516	7/8	3	17/32
9	2	9H406	2 1/2	9 – 10	1/16	3/16	3/16	3/32	3/4	1/4	2.005	2.016	7/8	3	21/32
9	2	9H412	2 1/2	9 – 10	1/16	1/4	3/8	3/16	3/4	1/4	2.005	2.016	7/8	3	21/32
9	2	9H414	2 1/2	9 – 10	1/16	1/4	7/16	7/32	3/4	1/4	2.005	2.016	7/8	3	21/32
10	1 1/2	10H306	2	9 – 10	1/16	3/16	3/16	3/32	3/4	1/4	1.505	1.516	7/8	3	17/32
10	2	10H412	2 1/2	9 – 10	1/16	1/4	3/8	3/16	3/4	1/4	2.005	2.016	7/8	3	21/32
12	2	12H408	2 1/2	11 – 10	1/8	5/16	1/4	1/8	1	1/4	2.005	2.016	7/8	3	21/32
12	2	12H412	2 1/2	11 – 10	1/8	5/16	3/8	3/16	1	1/4	2.005	2.016	7/8	3	21/32
12	2 7/16	12H508	3	11 – 9	1/8	5/16	1/4	1/8	1	1/4	2.443	2.458	15/16	3	21/32
12	2 7/16	12H512	3	11 – 9	1/8	5/16	3/8	3/16	1	1/4	2.443	2.458	15/16	3	21/32
12	3	12H614	3 1/2	11 – 9	1/8	3/8	7/16	7/32	1	1/4	3.005	3.025	1	3	25/32
14	2 7/16	14H508	3	11 – 9	1/8	5/16	1/4	1/8	1	1/4	2.443	2.458	15/16	3	21/32
14	3	14H614	3 1/2	11 – 9	1/8	3/8	7/16	7/32	1	1/4	3.005	3.025	1	3	25/32
16	3	16H610	3 1/2	11 – 9	1/8	3/8	5/16	5/32	1 1/2	1/4	3.005	3.025	1	3	25/32
16	3	16H614	4	11 – 9	1/8	3/8	7/16	7/32	1 1/2	1/4	3.005	3.025	1	3	25/32

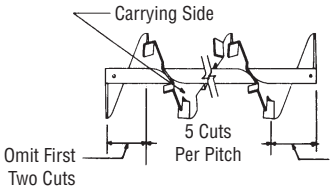
NOTE: All dimensions in inches.

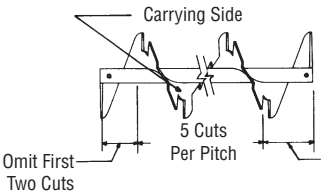
Cut Flight / Cut & Folded Flight Conveyors



Screw Diameter	A	B	C
4	1 3/8	1	5/8
6	2	1 1/2	7/8
9	3	2 1/8	1 1/2
10	3 3/8	2 1/4	1 3/4
12	4	2 3/4	2
14	4 5/8	3 1/8	2 1/2
16	5 1/4	3 1/2	3
18	6	3 7/8	3 3/8
20	6 5/8	4 1/4	3 7/8
24	7 7/8	4 7/8	4 7/8

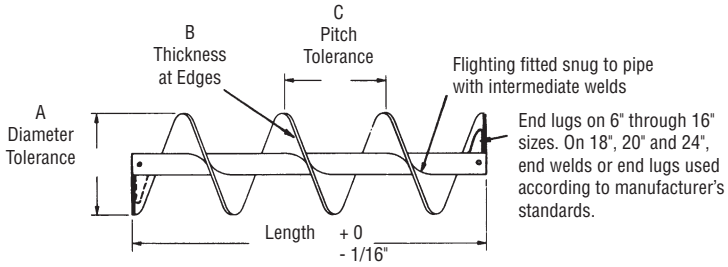
Depth of cut “C” is one half the flight width for normal maximum pipe size. Lengths “A” and “B” are calculated from the developed O.D. for standard pitch.

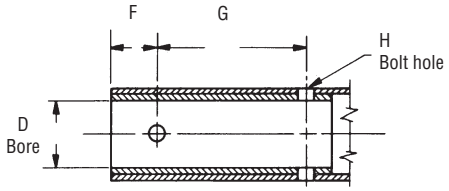




CEMA Standards

Sectional Screw Conveyors





Listed Screw Diameter and Pitch	Coupling Diameter	Size Designation	Pipe Size Schedule 40	Length Feet and Inches	A Diameter Tolerance		B Thickness	C Pitch Tolerance		D Bushing Bore Inside Diameter		F Spacing 1st Bolt Hole	G Centers 2nd Bolt Hole	H Nominal Bolt Hole Size
					Plus	Minus		Plus	Minus	Min.	Max.			
6	1 1/2	6S312	2	9 – 10	1/16	3/16	3/16	3/8	1/4	1.505	1.516	7/8	3	17/32
9	1 1/2	9S312	2	9 – 10	1/16	3/16	3/16	1/2	1/4	1.505	1.516	7/8	3	17/32
	2	9S412	2 1/2	9 – 10	1/16	3/16	3/16	1/2	1/4	2.005	2.016	7/8	3	21/32
	2	9S416	2 1/2	9 – 10	1/16	1/4	1/4	1/2	1/4	2.005	2.016	7/8	3	21/32
10	2	10S412	2 1/2	9 – 10	1/16	3/16	3/16	1/2	1/4	2.005	2.016	7/8	3	21/32
12	2	12S412	2 1/2	11 – 10	1/8	5/16	3/16	3/4	1/4	2.005	2.016	7/8	3	21/32
	2 7/16	12S512	3	11 – 9	1/8	5/16	3/16	3/4	1/4	2.443	2.458	15/16	3	21/32
	2 7/16	12S516	3	11 – 9	1/8	5/16	1/4	3/4	1/4	2.443	2.458	15/16	3	21/32
	3	12S616	3 1/2	11 – 9	1/8	5/16	1/4	3/4	1/4	3.005	3.025	1	3	25/32
	3	12S624	3 1/2	11 – 9	1/8	3/8	3/8	3/4	1/4	3.005	3.025	1	3	25/32
14	2 7/16	14S512	3	11 – 9	1/8	5/16	3/16	3/4	1/4	2.443	2.458	15/16	3	21/32
	3	14S616	3 1/2	11 – 9	1/8	5/16	1/4	3/4	1/4	3.005	3.025	1	3	25/32
	3	14S624	3 1/2	11 – 9	1/8	3/8	3/8	3/4	1/4	3.005	3.025	1	3	25/32
16	3	16S612	3 1/2	11 – 9	1/8	3/8	3/16	3/4	1/4	3.005	3.025	1	3	25/32
	3	16S616	3 1/2	11 – 9	1/8	3/8	1/4	3/4	1/4	3.005	3.025	1	3	25/32
	3	16S624	3 1/2	11 – 9	1/8	3/8	3/8	3/4	1/4	3.005	3.025	1	3	25/32
	3	16S632	3 1/2	11 – 9	1/8	1/2	1/2	3/4	1/4	3.005	3.025	1	3	25/32
18	3	18S612	3 1/2	11 – 9	3/16	3/8	3/16	3/4	1/2	3.005	3.025	1	3	25/32
	3	18S616	3 1/2	11 – 9	3/16	3/8	1/4	3/4	1/2	3.005	3.025	1	3	25/32
	3	18S624	3 1/2	11 – 9	3/16	3/8	3/8	3/4	1/2	3.005	3.025	1	3	25/32
	3	18S632	3 1/2	11 – 9	3/16	1/2	1/2	3/4	1/2	3.005	3.025	1	3	25/32
20	3	20S612	3 1/2	11 – 9	3/16	3/8	3/16	7/8	1/2	3.005	3.025	1	3	25/32
	3	20S616	3 1/2	11 – 9	3/16	3/8	1/4	7/8	1/2	3.005	3.025	1	3	25/32
	3	20S624	3 1/2	11 – 9	3/16	3/8	3/8	7/8	1/2	3.005	3.025	1	3	25/32
24	3 7/16	24S712	4	11 – 8	3/16	3/8	3/16	7/8	1/2	3.443	3.467	1 1/2	4	29/32
	3 7/16	24S716	4	11 – 8	3/16	3/8	1/4	7/8	1/2	3.443	3.467	1 1/2	4	29/32
	3 7/16	24S724	4	11 – 8	3/16	3/8	3/8	7/8	1/2	3.443	3.467	1 1/2	4	29/32
	3 7/16	24S732	4	11 – 8	3/16	1/2	1/2	7/8	1/2	3.443	3.467	1 1/2	4	29/32

NOTE: All dimensions in inches.

Components

COMPONENTS **PAGE**

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Component Selection

Required Information

Screw diameter

Shaft diameter

Material component group

Unusual material characteristics

Conveyor Screws

Standard length conveyor screws should be used whenever possible to reduce the number of hanger bearings required.

The recommended screws listed in the Component Series Table are standard helicoid and sectional screw conveyors. The use of helicoid or sectional conveyors is largely a matter of individual preference.

Right hand screw conveyors pull material toward the end which is being rotated in a clockwise direction. If the rotation is reversed (counterclockwise), the material is pushed away from that end.

In left hand screw conveyors, the material flow is opposite to that of right hand screws, the direction of rotation being unchanged.

To determine hand of screw see pages H-37 and H-38.

The material is carried on one face of the conveyor flighting in conveyors which are required to transport material in one direction, therefore, conveyor end lugs are located on the opposite face to facilitate unimpeded flow of the material. Conveyor sections must be installed in such a manner that all end lugs are toward the inlet end of the conveyor. Conveyor sections must not be turned end for end without reversing the direction of rotation, or conversely, the direction of rotation must not be reversed without turning the conveyor sections end for end.

Requirements for reversible conveyor screws intended for material transport in either direction should be referred to our Engineering Department.

Flighting should be omitted from the conveyor pipe over the last discharge opening to ensure complete discharge of material without carryover.

Continuity of material flow at hanger points is accomplished by opposing adjacent flight ends approximately 180º. (As close to 180° as the predrilled holes will allow.)

Conveyor Trough and Tubular Housing

Standard trough and housing sections are available in five, six, ten, and 12 foot lengths. Standard five and six foot lengths should be used when connecting flanges coincide with discharge openings or hanger bearings.

Shafts

The primary consideration in determining the type and size of coupling and drive shafts is whether the shafts selected are adequate to transmit the horsepower required, including any overload. Normally, cold-rolled shafts are adequate. However, high-tensile shafts may be required due to torque limitations. Also, stainless steel shafts may be necessary when corrosive or contaminable materials are to be handled. Conveyors equipped with non-lubricated hard iron hanger bearings require hardened coupling shafts. Specific shaft size determination is covered in the Torsional Rating Section, page H-26.

Shaft Seals

Several conveyor end seal types are available to prevent contamination of the conveyed material or to prevent the escape of material from the system.

Bearings

Hanger Bearing. The purpose of hanger bearings is to provide intermediate support when multiple screw sections are used. Hanger bearings are designed primarily for radial loads. Therefore, adequate clearance should be allowed between the bearings and the conveyor pipe ends to prevent damage by the thrust load which is transmitted through the conveyor pipe.

The hanger bearing recommendations listed in the Material Characteristic Tables are generally adequate for the material to be handled. Often, however, unusual characteristics of the material or the conditions under which the conveyor must operate make it desirable to use special bearing materials. Regarding the use of special bearing materials, consult our Engineering Department.

End Bearings. Several end bearing types are available, and their selection depends on two basic factors: Radial load and thrust load. The relative values of these loads determines end bearing types.

Radial load is negligible at the conveyor tail shaft. However, drive ends (unless integrated with the conveyor end plate) are subject to radial loading due to overhung drive loads, such as chain sprockets or shaft-mounted speed reducers. Screw Conveyor Drive Reducers at the drive end will adequately carry both thrust and radial loads.

Discharge Spouts and Gates

Standard discharge spouts and gates are available for either conveyor trough or tubular housing in several designs, operated either manually or by remote controls.

In installations where it is possible to overfill the device to which material is being transported, an additional overflow discharge opening or overflow relief device should be provided. Consult our Engineering Department for suggested electrical interlock and safety devices to prevent overflow or damage to equipment.

It is sometimes found that the material characteristics are such that standard component specifications are inadequate. Should unusual material characteristics or severe conditions exist, our Engineering Department should be consulted.

Conveyor Ends

A complete line of conveyor ends are available as standard for either conveyor trough or tubular housing with a choice of many bearing types and combinations.

Special Applications

More common of the unusual material characteristics which require other than the recommended components are:

Corrosive Materials. Components may be fabricated from alloys not affected by the material or may be coated with a protective substance.

Contaminable Materials. Require the use of oil impregnated, sealed, or dry type hanger bearings. End shafts should be sealed to prevent entrance of contaminants from the outside. Due to the necessity for frequent cleaning conveyor components should be designed for convenient disassembly.

Abrasive Materials. These materials may be handled in conveyors, troughs, or housings constructed of abrasion resistant alloys with hard surfaced screws. Lining of all exposed surfaces with rubber or special resins also materially reduces abrasive damage.

Interlocking or Matting Materials. Conveying with standard components is sometimes possible by the use of special feeding devices at the conveyor inlet.

Hygroscopic Materials. Frequently these materials may be handled successfully in a conveyor which is substantially sealed from the exterior atmosphere. In extreme cases it is necessary to provide jacketed trough or housing with an appropriate circulating medium to maintain the material at an elevated temperature. Purging of the conveyor with a suitable dry gas is also used in some installations.

Viscous or Sticky Materials. Ribbon flight conveyor screws are most frequently used for conveying these materials although standard components may be specially coated to improve the flow of material.

Harmful Vapors or Dusts. These materials may be safely handled in dust sealed trough, plain tubular housing, or gasketed flanged tubular housing with particular attention to shaft sealing. Trough or housing exhaust systems have also been successfully used in some installations.

Blending in Transit. Ribbon, cut flight, paddle, or a combination of these screw types may be designed to produce the desired degree of blending, aeration or mixing.

Explosive Dusts. The danger of this condition may be minimized in most installations by the use of components which are fabricated from non-ferrous materials and proper conveyor sealing techniques observed. Exhaust systems are also advisable for the removal of explosive dusts.

Materials Subject to Packing. This condition requires the use of aerating devices at the conveyor inlet when materials are pulverulent and a special feeder device when material particles are large or fibrous.

Materials which are Fluid when Aerated. This condition may be used to advantage in some installations by declining the conveyor system toward the discharge end.

Degradable Materials. Some particles that are easily broken or distorted may usually be handled in screw conveyors by reducing the speed and selecting a larger conveyor size sufficient to deliver the required volume of material.

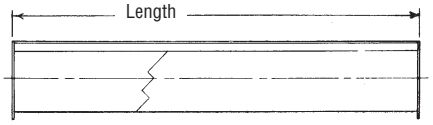
Elevated Temperature. Components should be fabricated from high temperature alloys. Should the process be such that cooling of the material in the conveyor is permissible, jacketed trough or housing may be used at the inlet end to cool the material and standard components used after the point where material temperature has been reduced to a safe degree.

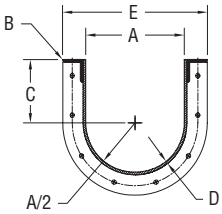
Conveyor Trough

FORMED FLANGE U-TROUGH		Commonly used economical trough. One piece construction. Standard lengths in stock
ANGLE FLANGE U-TROUGH		Rigid construction. Standard lengths in stock.
FORMED FLANGE TUBULAR U-TROUGH		Loadable to full cross section for feeder applications. Minimizes fall back in inclined applications. Easily taken apart for maintenance. Can be gasketed for dust tight enclosure. Hanger pockets required for use with standard hangers.
SOLID TUBULAR TROUGH		One piece construction for totally enclosed or inclined applications. Hanger pockets required for use with standard hangers.
FLARED TROUGH		Used where materials tend to bridge or when flared inlets are needed.
CHANNEL TROUGH		Adds structural support for longer than standard spans.
DROP BOTTOM TROUGH		Used when complete material clean-out is critical. Can be furnished with hinges either side and bolts or clamps opposite side.
FORMED FLANGE RECTANGULAR TROUGH		Material being conveyed forms its own trough thereby reducing trough wear. One piece construction.
ANGLE FLANGE RECTANGULAR TROUGH		The same as formed flange rectangular except top flanges are made from structural angle.
JACKTED TROUGH		Jacket allows heating or cooling of material being conveyed.

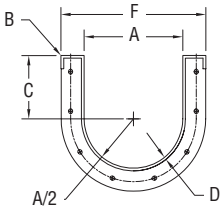
Standard Conveyor Trough

Standard conveyor troughs have a U-shaped steel body with angle iron top flanges or formed top flanges and jig drilled end flanges.





Angle Flange



Formed Flange

Conveyor Diameter	D Trough Thickness	Angle Flanged Trough					Formed Flanged Trough ▲					A	B	C	E	F
		Part Number	Weight				Part Number	Weight								
			10'* Length	5' Length	12' Length	6' Length		10' Length	5' Length	12' Length	6' Length					
4	☐ 16 GA.	4CTA16	53	29	—	—	4CTF16	41	23	—	—	5	1 1/4	3 5/8	7 3/4	2 1/2
	14	4CTA14	60	33	—	—	4CTF14	50	28	—	—				7 13/16	
	12	4CTA12	78	42	—	—	4CTF12	70	38	—	—				7 15/16	
6	☐ 16 GA.	6CTA16	67	44	—	—	6CTF16	55	32	—	—	7	1 1/4	4 1/2	9 3/4	3 1/2
	14	6CTA14	78	49	—	—	6CTF14	67	38	—	—				9 13/16	
	12	6CTA12	101	60	—	—	6CTF12	91	50	—	—				9 15/16	
	10	6CTA10	123	73	—	—	6CTF10	117	64	—	—				10 1/16	
	3/16	6CTA7	164	86	—	—	6CTF7	150	79	—	—				9 7/8	
9	16 GA.	9CTA16	113	66	—	—	9CTF16	83	51	—	—	10	1 1/2	6 1/8	13 1/4	5
	☐ 14	9CTA14	127	73	—	—	9CTF14	99	59	—	—				13 5/16	
	12	9CTA12	156	87	—	—	9CTF12	132	75	—	—				13 7/16	
	10	9CTA10	176	102	—	—	9CTF10	164	91	—	—				13 9/16	
	3/16	9CTA7	230	124	—	—	9CTF7	214	116	—	—				13 3/8	
	1/4	9CTA3	286	152	—	—	9CTF3	276	147	—	—				13 1/2	
10	16 GA.	10CTA16	118	69	—	—	10CTF16	88	54	—	—	11	1 1/2	6 3/8	14 1/4	5 1/2
	☐ 14	10CTA14	133	76	—	—	10CTF14	105	62	—	—				14 5/16	
	12	10CTA12	164	92	—	—	10CTF12	140	80	—	—				14 7/16	
	10	10CTA10	178	102	—	—	10CTF10	167	91	—	—				14 9/16	
	3/16	10CTA7	233	131	—	—	10CTF7	217	123	—	—				14 3/8	
	1/4	10CTA3	306	163	—	—	10CTF3	296	158	—	—				14 1/2	
12	☐ 12 GA.	12CTA12	197	113	236	135	12CTF12	164	95	197	114	13	2	7 3/4	17 7/16	6 1/2
	10	12CTA10	234	133	281	160	12CTF10	187	117	224	140				17 9/16	
	3/16	12CTA7	294	164	353	197	12CTF7	272	150	326	180				17 3/8	
	1/4	12CTA3	372	203	446	244	12CTF3	357	194	428	233				17 1/2	
14	☐ 12 GA.	14CTA12	214	121	257	145	14CTF12	183	102	219	122	15	2	9 1/4	19 7/16	7 1/2
	10	14CTA10	258	143	309	172	14CTF10	207	127	248	152				19 9/16	
	3/16	14CTA7	328	180	394	216	14CTF7	304	168	365	202				19 3/8	
	1/4	14CTA3	418	224	501	269	14CTF3	403	215	483	258				19 1/2	
16	☐ 12 GA.	16CTA12	238	133	285	160	16CTF12	206	107	247	128	17	2	10 5/8	21 7/16	8 1/2
	10	16CTA10	288	159	345	191	16CTF10	234	144	281	173				21 9/16	
	3/16	16CTA7	368	200	442	240	16CTF7	345	188	414	226				21 3/8	
	1/4	16CTA3	471	243	565	291	16CTF3	455	228	546	273				21 1/2	
18	☐ 12 GA.	18CTA12	252	159	302	191	18CTF12	240	133	288	160	19	2 1/2	12 1/8	24 7/16	9 1/2
	10	18CTA10	353	170	423	204	18CTF10	269	165	323	198				24 9/16	
	3/16	18CTA7	444	243	533	291	18CTF7	394	217	473	260				24 3/8	
	1/4	18CTA3	559	298	671	358	18CTF3	520	275	624	330				24 1/2	
20	☐ 10 GA.	20CTA10	383	228	460	274	20CTF10	296	190	355	228	21	2 1/2	13 1/2	26 9/16	10 1/2
	3/16	20CTA7	484	271	581	325	20CTF7	434	247	521	296				26 3/8	
	1/4	20CTA3	612	334	734	401	20CTF3	573	315	687	378				26 1/2	
24	☐ 10 GA.	24CTA10	443	255	531	306	24CTF10	384	227	461	272	25	2 1/2	16 1/2	30 9/16	12 1/2
	3/16	24CTA7	563	319	676	383	24CTF7	514	293	617	352				30 3/8	
	1/4	24CTA3	717	363	860	435	24CTF3	678	339	813	406				30 1/2	

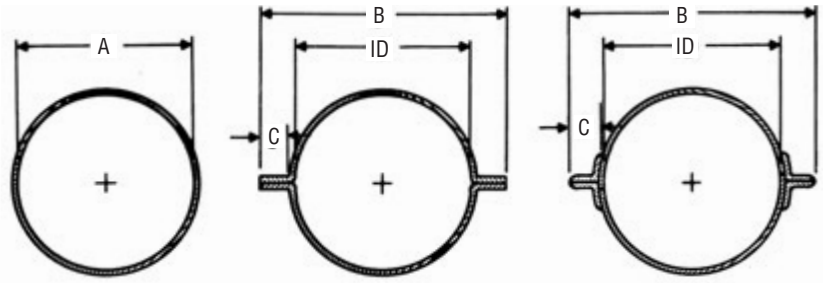
☐ **Standard Gauge Bolt Patterns** on page H-41

▲ Double formed flange standard on all sizes through 10 ga.

All troughs available in other materials such as stainless, aluminum, abrasion resistant, etc.

Tubular Housing

Tubular conveyor housings are inherently dust and weather-tight, and may be loaded to a full cross section. Conveyors with tubular housings are rigid and are highly suitable for conveying material on an incline. Three types shown are available.



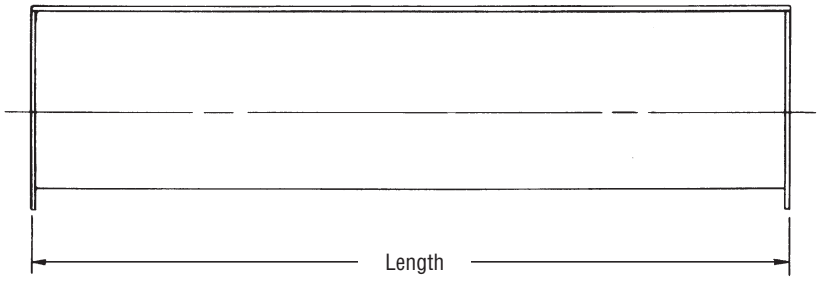
Tubular Housing | **Flanged Tubular Housing** | **Angle Flanged Tubular Housing**

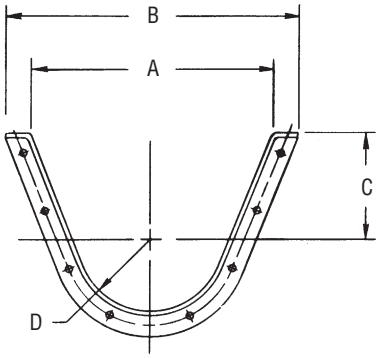
Conveyor Diameter	Trough Thickness	Tubular Housing			Formed Flanged		Angle Flanged		A	B	C
		Part Number	Weight 10' Length	Weight 5' Length	Part Number	Weight 10' Length	Part Number	Weight 10' Length			
4	☐ 16 GA.	4CHT16	60	31	4CHT16-F	43	4CHT16-A	81	5	7 1/8	1
	14	4CHT14			4CHT14-F	53	4CHT14-A	89		7 3/16	
	12	4CHT12			4CHT12-F	74	4CHT12-A	106		7 1/4	
6	☐ 16 GA.	6CHT16	50	27	6CHT16-F	60	6CHT16-A	110	7	9 5/8	1 1/4
	14	6CHT14	62	33	6CHT14-F	75	6CHT14-A	122		9 11/16	
	12	6CHT12	85	44	6CHT12-F	103	6CHT12-A	145		9 3/4	
	10	6CHT10	109	56	6CHT10-F	133	6CHT10-A	187		9 13/16	
	3/16	6CHT7	145	74	6CHT7-F	168	6CHT7-A	205		9 7/8	
9	16 GA.	9CHT16	72	39	9CHT16-F	84	9CHT16-A	131	10	12 5/8	1 1/4
	☐ 14	9CHT14	89	47	9CHT14-F	104	9CHT14-A	148		12 11/16	
	12	9CHT12	122	64	9CHT12-F	143	9CHT12-A	181		12 3/4	
	10	9CHT10	155	80	9CHT10-F	182	9CHT10-A	214		12 13/16	
	3/16	9CHT7	208	107	9CHT7-F	245	9CHT7-A	267		12 7/8	
	1/4	9CHT3	275	140	9CHT3-F	324	9CHT3-A	334		13	
10	16 GA.	10CHT16	79	42	10CHT16-F	91	10CHT16-A	138	11	13 5/8	1 1/4
	☐ 14	10CHT14	97	52	10CHT14-F	112	10CHT14-A	156		13 11/16	
	12	10CHT12	133	70	10CHT12-F	154	10CHT12-A	192		13 3/4	
	10	10CHT10	169	88	10CHT10-F	196	10CHT10-A	228		13 13/16	
	3/16	10CHT7	227	117	10CHT7-F	264	10CHT7-A	286		13 7/8	
	1/4	10CHT3	301	154	10CHT3-F	350	10CHT3-A	360		14	
12	☐ 12 GA.	12CHT12	163	88	12CHT12-F	193	12CHT12-A	235	13	16 1/4	1 1/2
	10	12CHT10	208	111	12CHT10-F	247	12CHT10-A	280		16 5/16	
	3/16	12CHT7	275	144	12CHT7-F	328	12CHT7-A	347		16 3/8	
	1/4	12CHT3	362	188	12CHT3-F	432	12CHT3-A	434		16 1/2	
14	☐ 12 GA.	14CHT12	187	101	14CHT12-F	217	14CHT12-A	259	15	18 1/4	1 1/2
	10	14CHT10	236	126	14CHT10-F	275	14CHT10-A	308		18 5/16	
	3/16	14CHT7	316	166	14CHT7-F	369	14CHT7-A	388		18 3/8	
	1/4	14CHT3	416	216	14CHT3-F	486	14CHT3-A	488		18 1/2	
16	☐ 12 GA.	16CHT12	212	114	16CHT12-F	242	16CHT12-A	310	17	21 1/4	2
	10	16CHT10	268	142	16CHT10-F	307	16CHT10-A	366		21 5/16	
	3/16	16CHT7	358	187	16CHT7-F	411	16CHT7-A	456		21 3/8	
	1/4	16CHT3	472	244	16CHT3-F	542	16CHT3-A	570		21 1/2	
18	☐ 12 GA.	18CHT12	242	133	18CHT12-F	280	18CHT12-A	340	19	23 1/4	2
	10	18CHT10	304	164	18CHT10-F	352	18CHT10-A	402		23 5/16	
	3/16	18CHT7	405	214	18CHT7-F	471	18CHT7-A	503		23 3/8	
	1/4	18CHT3	533	278	18CHT3-F	621	18CHT3-A	631		23 1/2	
20	☐ 10 GA.	20CHT10	335	188	20CHT10-F	381	20CHT10-A	433	21	25 5/16	2
	3/16	20CHT7	446	237	20CHT7-F	510	20CHT7-A	544		25 3/8	
	1/4	20CHT3	586	307	20CHT3-F	671	20CHT3-A	684		25 1/2	
24	☐ 10 GA.	24CHT10	399	215	24CHT10-F	445	24CHT10-A	497	25	29 5/16	2
	3/16	24CHT7	531	281	24CHT7-F	594	24CHT7-A	629		29 3/8	
	1/4	24CHT3	699	365	24CHT3-F	784	24CHT3-A	797		29 1/2	

☐ **Standard Gauge Bolt Patterns** on page H-42

Flared Conveyor Trough

Flared troughs are used primarily to convey materials which are not free-flowing or which have a tendency to stick to the trough.





Conveyor Diameter	Trough Thickness	Part Number	Weight Per Foot	A	B	C	D	Standard Length Foot
6	☐ 14 GA.	6FCT14	9	14	16 5/8	7	3 1/2	10
	12	6FCT12	12		16 3/4			
9	☐ 14 GA.	9FCT14	13	18	21 3/16	9	5	10
	12	9FCT12	14		21 1/4			
	10	9FCT10	19		21 1/4			
	3/16	9FCT7	22		21 3/8			
	1/4	9FCT3	25		21 1/2			
12	☐ 12 GA.	12FCT12	20	22	26 1/4	10	6 1/2	12
	10	12FCT10	24		26 1/4			
	3/16	12FCT7	32		26 3/8			
	1/4	12FCT3	43		26 1/2			
14	☐ 12 GA.	14FCT12	23	24	28 1/4	11	7 1/2	12
	10	14FCT10	27		28 1/4			
	3/16	14FCT7	37		28 3/8			
	1/4	14FCT3	49		28 1/2			
16	☐ 12 GA.	16FCT12	25	28	32 1/4	11 1/2	8 1/2	12
	10	16FCT10	31		32 1/4			
	3/16	16FCT7	39		32 3/8			
	1/4	16FCT3	52		32 1/2			
18	☐ 12 GA.	18FCT12	27	31	36 1/4	12 1/8	9 1/2	12
	10	18FCT10	35		36 1/4			
	3/16	18FCT7	45		36 3/8			
	1/4	18FCT3	56		36 1/2			
20	☐ 10 GA.	20FCT10	36	34	39 1/4	13 1/2	10 1/2	12
	3/16	20FCT7	48		39 3/8			
	1/4	20FCT3	60		39 1/2			
24	☐ 10 GA.	24FCT10	41	40	45 1/4	16 1/2	12 1/2	12
	3/16	24FCT7	54		45 3/8			
	1/4	24FCT3	69		45 1/2			

☐ **Standard Gauge Bolt Patterns** on page H-41

Discharges and Gates

Discharge Spout Index

14	TSD	12

Conveyor Diameter

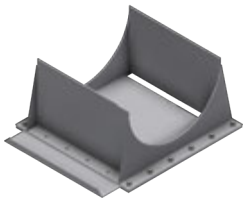
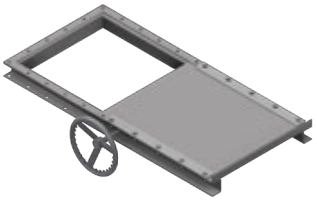
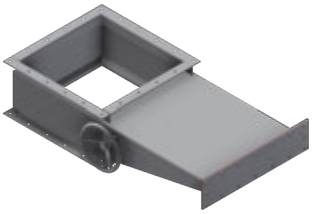
Types

TSD - Plain, Fixed Spout
TSDS - Plain Fixed Spout W/Slide
TSDF - Flush End Spout
RPF - Rack & Pinion/Flat Side

RPFD - Rack & Pinion/Flat Slide Dust Tight
RPC - Rack & Pinion/Curved Slide
RPCD - Rack & Pinion/Curved Slide Dust Tight

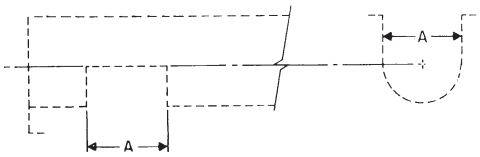
Spout Thickness

16 - 16 Gauge
14 - 14 Gauge
12 - 12 Gauge
10 - 10 Gauge
7 - 3/16

STANDARD DISCHARGE SPOUT		Most commonly used. Flanged hole drilling is per CEMA Standards. Select spout thickness according to trough thickness.
STANDARD DISCHARGE		Standard spout shown above with the addition of the slide and side guides. Select spout thickness according to trough thickness.
FLUSH END DISCHARGE SPOUT		Reduces distance from centerline of discharge to end of the conveyor which eliminates ledge at end of trough and product build-up. Special flush-end trough ends required when this style of discharge is used.
FLAT SLIDE GATE		Rack & pinion type available with hand wheel, rope wheel, pocket wheel and chain. Discharge spout is included when fitted. Flat slide (less rack & pinion) can be furnished with pneumatic, hydraulic, or electric actuators. (Not dust-tight)
CURVED SLIDE GATE		Contoured shape of slide eliminates pocket found in flat slide type. Rack & pinion type available with handwheel, or rope wheel, or pocket wheel with chain. Curved slide (less rack & pinion) can be furnished with pneumatic, hydraulic, or electric actuators. (Standard curved slide gate is not dust-tight) All curved slide gates should be installed at factory.
DUST TIGHT RACK AND PINION FLAT SLIDE		Dust tight rack and pinions are totally enclosed and can be furnished with either flat or curved slide. Handwheel is normally furnished but is also available with chain or rope wheel.

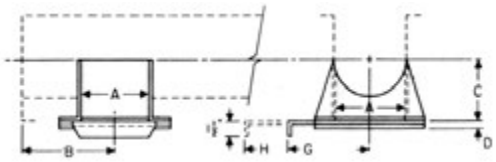
Discharge Spouts

Plain Opening



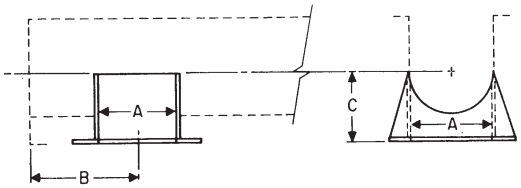
Plain spout openings are cut in the trough permitting free material discharge.

Fixed Spout with Slide Gate



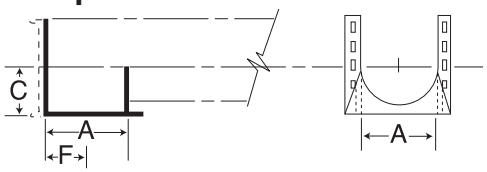
Fixed spouts with slide gates are used where distribution of material is to be controlled. Bolted flange permits slide to be operated from any side

Fixed Spout



Fixed spouts are fabricated in proportion to size and thickness of trough. Can be furnished loose or welded to trough.

Flush End Spout



Flush end discharge spouts are designed for use at the final discharge point. The end of the spout is comprised of a housing end with bottom flange drilled with standard discharge flange bolt pattern. Because it is located at the extreme end of the conveyor, there is no carryover of material past the final discharge point. The flush end arrangement eliminates the unnecessary extension of trough and interior components beyond the actual discharge point.

Screw Diameter	A	B	C	D	G	H	F
4	5	4 1/2	3 3/4	5/16	5 5/8	11	2 1/2
6	7	6	5	5/16	6 5/8	14	3 1/2
9	10	8	7 1/8	5/16	8	19	5
10	11	9	7 7/8	5/16	8 3/8	20	5 1/2
12	13	10 1/2	8 7/8	5/16	10 1/8	24	6 1/2
14	15	11 1/2	10 1/8	5/16	11 1/4	27	7 1/2
16	17	13 1/2	11 1/8	5/16	12 3/8	30	8 1/2
18	19	14 1/2	12 3/8	5/16	13 3/8	33	9 1/2
20	21	15 1/2	13 3/8	3/8	14 3/8	36	10 1/2
24	25	17 1/2	15 3/8	3/8	16 3/8	42	12 1/2

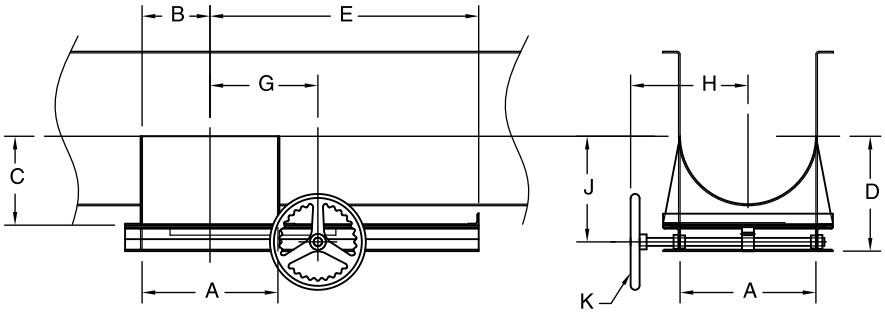
Screw Diameter	Trough Thickness Gauge	Spout and Gate Thickness Gauge	Part Number			Weight		
			Fixed Spout		Flush End Spout	Fixed Spout		Flush End Spout
			Plain	With Slide		Plain	Slide	
4	16 – 14	☐ 14	4TSD14	4TSDS14	4TSDF14	2	6	1.5
	12	12	4TSD12	4TSDS12	4TSDF12	3	7	2.25
6	14 – 12	☐ 14	6TSD14	6TSDS14	6TSDF14	4	11	3.0
	3/16	12	6TSD12	6TSDS12	6TSDF12	6	13	4.50
9	16 – 14 – 12 – 10	☐ 14	9TSD14	9TSDS14	9TSDF14	8	18	6.0
	3/16 – 1/4	10	9TSD10	9TSDS10	9TSDF10	13	22	9.75
10	14 – 12 – 10	☐ 14	10TSD14	10TSDS14	10TSDF14	10	21	7.5
	3/16 – 1/4	10	10TSD10	10TSDS10	10TSDF10	16	27	12.0
12	12 – 10	☐ 12	12TSD12	12TSDS12	12TSDF12	17	36	12.75
	3/16 – 1/4	3/16	12TSD7	12TSDS7	12TSDF7	29	48	21.75
14	12 – 10	☐ 12	14TSD12	14TSDS12	14TSDF12	22	46	16.50
	3/16 – 1/4	3/16	14TSD7	14TSDS7	14TSDF7	38	62	28.50
16	12 – 10	☐ 12	16TSD12	16TSDS12	16TSDF12	21	49	15.75
	3/16 – 1/4	3/16	16TSD7	16TSDS7	16TSDF7	40	68	30.0
18	12 – 10	☐ 12	18TSD12	18TSDS12	18TSDF12	32	69	24.0
	3/16 – 1/4	3/16	18TSD7	18TSDS7	18TSDF7	60	97	45.0
20	10	☐ 12	20TSD12	20TSDS12	20TSDF12	40	91	30.0
	3/16 – 1/4	3/16	20TSD7	20TSDS7	20TSDF7	67	118	50.25
24	10	☐ 12	24TSD12	24TSDS12	24TSDF12	52	116	39.0
	3/16 – 1/4	3/16	24TSD7	24TSDS7	24TSDF7	87	151	65.25

☐ **Standard Gauge Bolt Patterns** on page H-42

Discharge Gates

Rack and Pinion Flat Slide

Flat rack and pinion slide gates can be bolted to standard discharge spouts at any of the four positions desired. Hand wheel is normally furnished but is also available with chain or rope wheel.

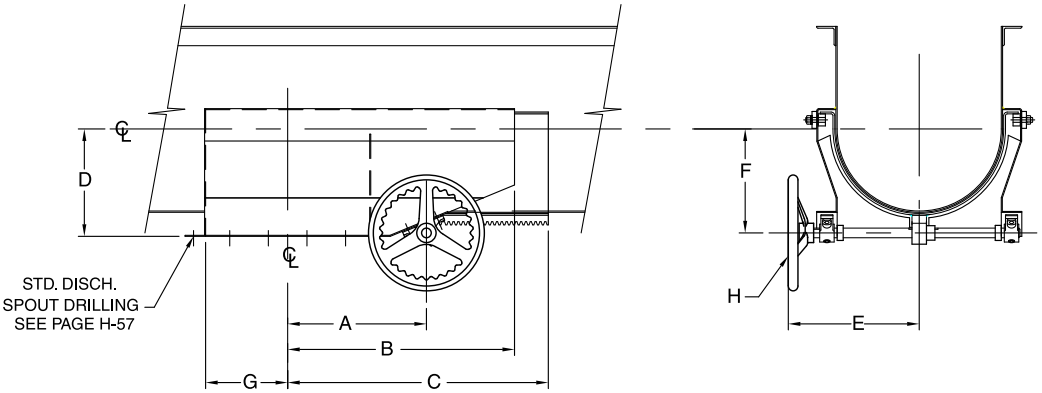


Screw Diameter	A	B	C	D	E	G	H	J	K Diameter
4	5	2 1/2	3 3/4	7	13 1/2	6 1/2	5	5 1/2	12
6	7	3 1/2	5	8 1/4	16	7 1/2	6	6 3/4	12
9	10	5	7 1/8	10 3/8	20 1/4	9	9 1/2	8 7/8	12
10	11	5 1/2	7 7/8	11 1/8	23 1/2	10 1/2	10	9 7/8	12
12	13	6 1/2	8 7/8	12 1/8	25 1/2	11	12 1/4	10 7/8	12
14	15	7 1/2	10 1/8	13 3/8	31 1/4	12 1/2	13 1/4	12	12
16	17	8 1/2	11 1/8	14 3/8	33 5/8	13 1/2	14 1/4	13	12
18	19	9 1/2	12 3/8	15 5/8	37 7/8	14 1/2	15 3/4	14 1/8	12
20	21	10 1/2	13 3/8	16 11/16	40 3/4	15 1/2	16 3/4	15 1/8	12
24	25	12 1/2	15 3/8	18 11/16	46 1/2	17 1/2	18 3/4	17 3/8	12

Screw Diameter	Trough Thickness Gauge	Spout and Gate Thickness Gauge	Part Number Rack and Pinion †	Weight Rack and Pinion
4	16 – 14	☐ 14	4RPF14	18
	12	12	4RPF12	21
6	16 – 14 – 12	☐ 14	6RPF14	28
	3/16	12	6RPF12	31
9	14 – 12 – 10	☐ 14	9RPF14	49
	3/16 – 1/4	10	9RPF10	54
10	14 – 12 – 10	☐ 14	10RPF14	56
	3/16 – 1/4	10	10RPF10	62
12	12 – 10	☐ 12	12RPF12	94
	3/16 – 1/4	3/16	12RPF7	106
14	12 – 10	☐ 12	14RPF12	107
	3/16 – 1/4	3/16	14RPF7	123
16	12 – 10	☐ 12	16RPF12	112
	3/16 – 1/4	3/16	16RPF7	131
18*	12 – 10	☐ 12	18RPF12	157
	3/16 – 1/4	3/16	18RPF7	185
20*	10	☐ 12	20RPF12	185
	3/16 – 1/4	3/16	20RPF7	212
24*	10	☐ 12	24RPF12	233
	3/16 – 1/4	3/16	24RPF7	268

☐ **Standard Gauge Bolt Patterns** on page H-42
* Hand Wheels supplied as Standard Assembly
– C Chain Wheel
– R Rope Wheel
† **All Rack and Pinion Gates 18" and Larger Have Double Rack and Pinion**

Rack and Pinion Curved Slide



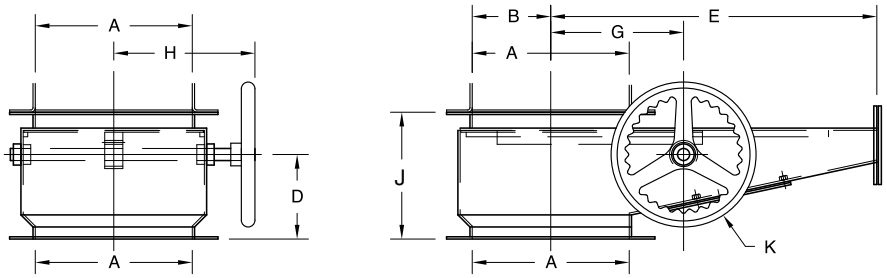
Screw Diameter	Trough Thickness	Spout Thickness	Part Number*	Weight	A	B	C	D	E	F	G	H Diameter
4	14,16 GA.	☐ 14 GA.	4RPC14	20	6 1/4	8 3/4	12	3 3/4	6	4 1/2	2 1/2	12
	12 GA.	12 GA.	4RPC12	22						4 5/8		
6	16,14,12 GA.	☐ 14 GA.	6RPC14	25	7 1/2	10 1/2	15	5	8	5 1/2	3 1/2	12
	3/16	12 GA.	6RPC12	28						5 5/8		
9	14,12,10 GA.	☐ 14 GA.	9RPC14	46	9	15	20 1/2	7 1/8	8 3/4	7	5	12
	3/16,1/4	10 GA.	9RPC10	54						7 1/8		
10	14,12,10 GA.	☐ 14 GA.	10RPC14	53	9 1/2	14 1/2	21	7 7/8	9 1/8	7 1/2	5 1/2	12
	3/16,1/4	10 GA.	10RPC10	62						7 5/8		
12	12,10 GA.	☐ 12 GA.	12RPC12	81	11 3/8	17 1/2	25 3/4	8 7/8	11	8 1/2	6 1/2	12
	3/16,1/4	3/16	12RPC7	97						8 5/8		
14	10,12 GA.	☐ 12 GA.	14RPC12	95	12 7/8	20 1/2	30 1/4	10 1/8	12	9 1/2	7 1/2	12
	3/16,1/4	3/16	14RPC7	114						9 5/8		
16	10,12 GA.	☐ 12 GA.	16RPC12	103	14 3/8	23 1/2	36	11 1/8	13	10 1/2	8 1/2	12
	3/16,1/4	3/16	16RPC7	116						10 5/8		
18*	10,12 GA.	☐ 12 GA.	18RPC12	157	15 7/8	25 1/2	37 1/4	12 3/8	15 3/8	11 1/2	9 1/2	12
	3/16,1/4	3/16	18RPC7	187						11 5/8		
20*	12 GA.	☐ 12 GA.	20RPC12	175	17 3/8	28 1/2	39	13 3/8	16 3/8	12 1/2	10 1/2	12
	3/16,1/4	3/16	20RPC7	208						12 5/8		
24*	10 GA.	☐ 12 GA.	24RPC12	220	19 3/8	35 1/2	47	15 3/8	18 3/8	14 1/2	12 1/2	12
	3/16,1/4	3/16	24RPC7	265						14 5/8		

☐ **Standard Gauge Bolt Patterns** on page H-42
* Hand Wheels supplied as Standard Assembly
– C Chain Wheel
– R Rope Wheel

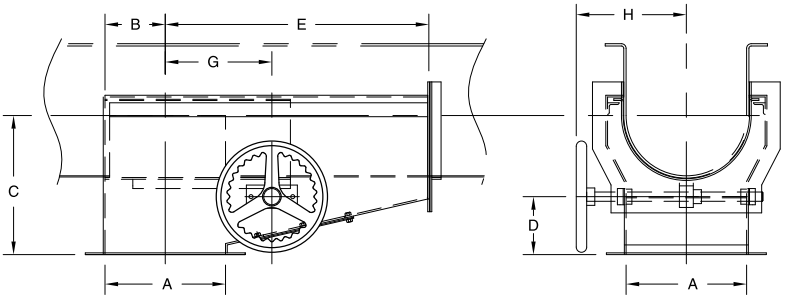
Discharge Gates

Dust Tight Rack and Pinion Flat Slide

Dust tight rack and pinions are totally enclosed and can be furnished with either flat or curved slide. Hand Wheel is normally furnished but is also available with chain or rope wheel.



Dust Tight Rack and Pinion Curved Slide



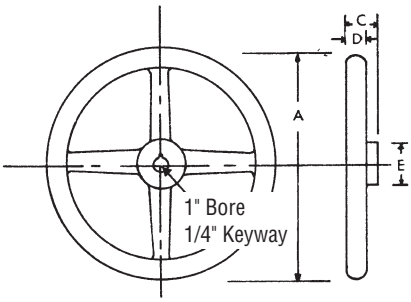
Screw Diameter	A	B	C	D	E	G	H	J	K Diameter
4	5	2 1/2	71/2	2 1/2	12	6	7	7 1/2	12
6	7	3 1/2	10	4	18 1/2	7 1/2	8	9	12
9	10	5	12 1/2	5	23	9	11	10	12
10	11	5 1/2	13	5	25	10	11 1/2	10 1/2	12
12	13	6 1/2	15	5	28	11 1/2	13	10 1/2	12
14	15	7 1/2	15 1/2	5 1/2	31	12 1/2	14	10 1/2	12
16	17	8 1/2	16 1/2	5 1/2	34	13 1/2	15	10 1/2	12
18	19	9 1/2	18 1/2	6 1/2	38 1/2	15	16 1/2	11 1/2	12
20	21	10 1/2	20	7	40 1/2	16	17 1/2	12	12
24	25	12 1/2	23	8	47 1/2	18	19 1/2	13	12

Screw Diameter	Trough Thickness Gauge	Spout and Gate Thickness Gauge	Part Number			
			Flat Slide *	Weight	Curved Slide *	Weight
4	16 – 14	14	4RPFD14	27	4RPCD16	30
	12	12	4RPFD12	32	4RPCD12	35
6	16 – 14 – 12	14	66RPFD14	42	6RPCD16	46
	3/16	12	6RPFD12	47	6RPCD12	52
9	14 – 12 – 10	14	9RPFD12	74	9RPCD12	81
	3/16 – 1/4	10	9RPFD10	81	9RPCD10	89
10	14 – 12 – 10	14	10RPFD14	84	10RPCD14	92
	3/16 – 1/4	10	10RPFD10	93	104PCD10	102
12	12 – 10	12	12RPFD12	141	12RPCD12	155
	3/16 – 1/4	3/16	12RPFD7	158	12RPCD7	174
14	12 – 10	12	14RPFD12	160	14RPCD12	176
	3/16 – 1/4	3/16	14RPFD7	185	14RPCD7	204
16	12 – 10	12	16RPFD12	168	16RPCD12	185
	3/16 – 1/4	3/16	16RPFD7	197	16RPCD7	217
18	12 – 10	12	18RPFD12	240	18RPCD12	264
	3/16 – 1/4	3/16	18RPFD7	277	18RPCD7	305
20	10	12	20RPFD12	278	20RPCD12	306
	3/16 – 1/4	3/16	20RPFD7	318	20RPCD7	350
24	10	12	24RPFD12	350	24RPCD12	385
	3/16 – 1/4	3/16	24RPFD7	402	24RPCD7	442

* Hand Wheels supplied as Standard Assembly
– C Chain Wheel
– R Rope Wheel

Flange drilling in standard. See page H-43

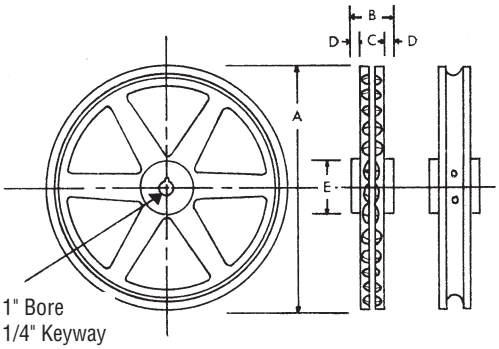
Discharge Gate Accesories



Hand Wheel

Wheel Diameter	Part Number	Weight	C	D	E
12	12HW1	11	2	1 1/8	1 7/8

The hand wheel is regularly furnished to rotate the pinion shaft when the slide gate is readily accessible.
NOTE: Zinc or nickel plated hand wheels available on request.



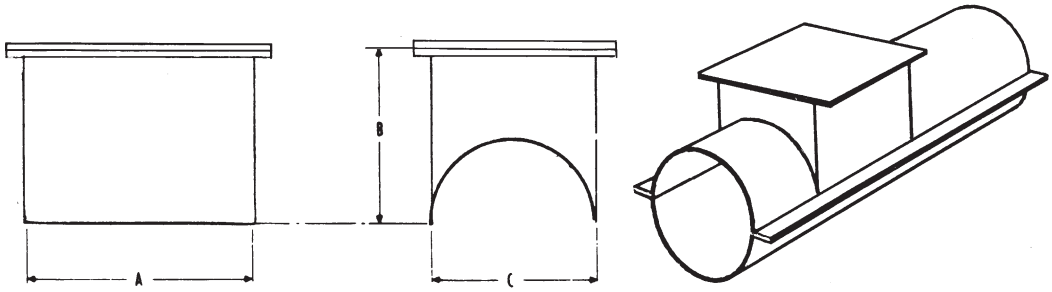
Pocket Chain Wheel & Rope Wheel

Wheel	Part Number	Weight	A	B	C	D	E
Chain Wheel	20PW1	11	12 3/4	2	1 3/8	5/16	2
Rope Wheel	12RW1	13	12 5/8	2 1/4	1 5/8	1 1/4	1 7/8

Pocket chain and rope wheels are used to rotate pinion shaft where remote operation is desired. It is designed to be used with number 3/16 pocket chain.
NOTE:
Zinc or nickel plated hand wheels available on request.
316 PC Pocket Chain in Stock.

Hanger Pockets

Hanger pockets are used with tubular trough and are mounted on the trough at bearing connections. The hanger pocket forms a “U” shaped section for a short distance, allowing the use of standard hangers and providing easy access to them.



Conveyor Diameter	Part Number	A	B	C	Weight Each
4	4CPH16	8	3 3/4	5	2
6	6CPH16	12	4 3/4	7	3
9	9CPH14	12	6 3/8	10	4
10	10CPH14	12	6 5/8	11	9
12	12CPH12	18	8	13	18
14	14CPH12	18	9 1/2	15	24
16	16CPH12	18	10 7/8	17	26
18	18CPH12	18	12 3/8	19	55
20	20CPH10	18	13 3/4	21	70
24	24CPH10	18	16 3/4	25	85

Trough Ends

Trough Ends

9	TEF	3	-BB	-P

9 — Conveyor Diameter

TEF — Type
- TE — Outside W/O Feet
- TEF — Outside W/Feet
- TEI — Inside
- TER — Inside Rectangular
- TEO — Single Bearing Pedestal
- TEOD — Double Bearing Pedestal
- FTEF — Outside Flared W/Feet
- FTE — Outside Flared W/O Feet
- FTEO — Single Bearing Flared Pedestal
- FTDO — Flared Discharge End
- TDO — Outside Discharge End
- TDI — Inside Discharge End
- CHTE — Outside Tubular W/O Feet
- CHTEF — Outside Tubular W/Feet
- SCD —Dorris Screw Drive

3 — Coupling Diameter
- 2 — 1"
- 3 — 1-1/2"
- 4 — 2"
- 5 — 2-7/16"
- 6 — 3"
- 7 —3-7/16"

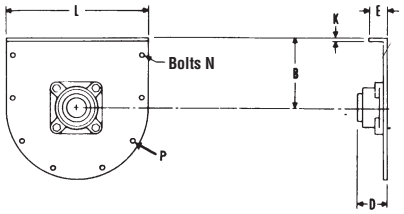
-BB — Bearing Type
- BB - Ball
- RB - Roller
- BR - Bronze

-P — Plate Only

	U-TROUGH	TUBULAR TROUGH	FLARED TROUGH	RECTANGULAR TROUGH	
OUTSIDE TROUGH ENDS WITH FEET					Most common type used as trough support is included
OUTSIDE TROUGH ENDS WITHOUT FEET					Trough support not included
INSIDE PATTERN TROUGH ENDS		Available on application	Available on application		Used where space is limited or trough does not have end flange
DISCHARGE TROUGH ENDS		Available on application			For end discharge conveyors. Special flange bearing required
OUTBOARD BEARING TROUGH END SINGLE					Used when compression type packing gland seal or split gland seal required

Outside Less Feet

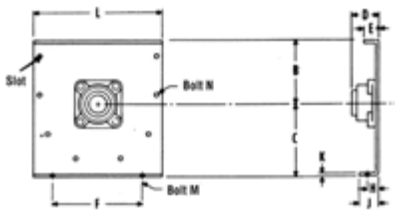
Outside trough ends less feet are used to support end bearing and cover when no trough support is required. Drilling for bronze bearing or flanged ball bearing is standard.



Conveyor Diameter	Shaft Diameter	▲ Part Number	B	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	K	L	N	Weight	P Slot
4	1	4TE2–*	3 5/8	2 3/16	1 5/8		1 7/16	1/4	8 1/8	3/8	3	7/16 × 9/16
6	1 1/2	6TE3–*	4 1/2	3 3/16	2 3/16	3 11/16	1 1/2	1/4	10 1/8	3/8	4	7/16 × 9/16
9	1 1/2	9TE3–*	6 1/8	3 1/4	2 3/16	3 11/16	1 5/8	1/4	13 3/4	3/8	9	7/16 × 9/16
	2	9TE4–*	6 1/8	4 1/4	2 1/2	3 13/16	1 5/8	1/4	13 3/4	3/8	9	
10	1 1/2	10TE3–*	6 3/8	3 1/4	2 3/16	3 11/16	1 3/4	1/4	14 3/4	3/8	11	7/16 × 9/16
	2	10TE4–*	6 3/8	4 1/4	2 1/2	3 13/16	1 3/4	1/4	14 3/4	3/8	11	
12	2	12TE4–*	7 3/4	4 1/4	2 9/16	3 7/8	2	1/4	17 1/4	1/2	20	9/16 × 11/16
	2 7/16	12TE5–*	7 3/4	5 1/4	2 15/16	4 7/16	2	1/4	17 1/4	1/2	20	
	3	12TE6–*	7 3/4	6 1/4	3 3/4	4 15/16	2	1/4	17 1/4	1/2	20	
14	2 7/16	14TE5–*	9 1/4	5 5/16	2 15/16	4 7/16	2	1/4	19 1/4	1/2	35	9/16 × 11/16
	3	14TE6–*	9 1/4	5 5/16	3 3/4	4 15/16	2	1/4	19 1/4	1/2	35	
16	3	16TE6–*	10 5/8	6 5/16	3 13/16	5	2 1/2	5/16	21 1/4	5/8	42	11/16 × 13/16
18	3	18TE6–*	12 1/8	6 3/8	3 13/16	5	2 1/2	3/8	24 1/4	5/8	60	11/16 × 13/16
	3 7/16	18TE7–*	12 1/8	7 3/8	4 5/16	5 9/16	2 1/2	3/8	24 1/4	5/8	60	
20	3	20TE6–*	13 1/2	6 3/8	3 7/8	5 1/16	2 1/2	3/8	26 1/4	5/8	90	11/16 × 13/16
	3 7/16	20TE7–*	13 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	26 1/4	5/8	90	
24	3 7/16	24TE7–*	16 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	30 1/4	5/8	120	11/16 × 13/16

Outside With Feet

Outside trough ends with feet are used to support end bearing, cover and trough. Drilling for bronze or flanged ball bearing is standard.



Conveyor Diameter	Shaft Diameter	▲ Part Number	B	C	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	F	H	J	K	L	M	N	Weight	P Slot
4	1	4TEF2–*	3 5/8	4 5/8	2 15/16	1 5/8	—	1 7/16	5 3/4	1	1 5/8	1/4	8 1/8	3/8	3/8	4	7/16 × 9/16
6	1 1/2	6TEF3–*	4 1/2	5 5/8	3 15/16	2 3/16	3 11/16	1 1/2	8 1/8	1	1 3/4	1/4	10 1/8	3/8	3/8	7	7/16 × 9/16
9	1 1/2	9TEF3–*	6 1/8	7 7/8	3 15/16	2 3/16	3 11/16	1 5/8	9 3/8	1 1/2	2 5/8	1/4	13 3/4	1/2	3/8	12	7/16 × 9/16
	2	9TEF4–*	6 1/8	7 7/8	4 15/16	2 1/2	3 13/16	1 5/8	9 3/8	1 1/2	2 5/8	1/4	13 3/4	1/2	3/8	12	
10	1 1/2	10TEF3–*	6 3/8	8 7/8	3 15/16	2 3/16	3 11/16	1 3/4	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	14	7/16 × 9/16
	2	10TEF4–*	6 3/8	8 7/8	4 15/16	2 1/2	3 13/16	1 3/4	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	14	
12	2	12TEF4–*	7 3/4	9 5/8	5	2 9/16	3 7/8	2	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	23	9/16 × 11/16
	2 7/16	12TEF5–*	7 3/4	9 5/8	5 1/2	2 15/16	4 7/16	2	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	23	
	3	12TEF6–*	7 3/4	9 5/8	5 5/8	3 3/4	4 15/16	2	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	23	
14	2 7/16	14TEF5–*	9 1/4	10 7/8	5 1/2	2 15/16	4 7/16	2	13 1/2	1 5/8	2 7/8	1/4	19 1/4	5/8	1/2	38	9/16 × 11/16
	3	14TEF6–*	9 1/4	10 7/8	5 5/8	3 3/4	4 15/16	2	13 1/2	1 5/8	2 7/8	1/4	19 1/4	5/8	1/2	38	
16	3	16TEF6–*	10 5/8	12	5 11/16	3 13/16	5	2 1/2	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	45	11/16 × 13/16
18	3	18TEF6–*	12 1/8	13 3/8	5 11/16	3 13/16	5	2 1/2	16	2	3 1/4	3/8	24 1/4	5/8	5/8	67	11/16 × 13/16
	3 7/16	18TEF7–*	12 1/8	13 3/8	6 15/16	4 5/16	5 9/16	2 1/2	16	2	3 1/4	3/8	24 1/4	5/8	5/8	67	
20	3	20TEF6–*	13 1/2	15	5 3/4	3 7/8	5 1/16	2 1/2	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	120	11/16 × 13/16
	3 7/16	20TEF7–*	13 1/2	15	7	4 3/8	5 5/8	2 1/2	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	120	
24	3 7/16	24TEF7–*	16 1/2	18 1/8	7	4 3/8	5 5/8	2 1/2	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	162	11/16 × 13/16

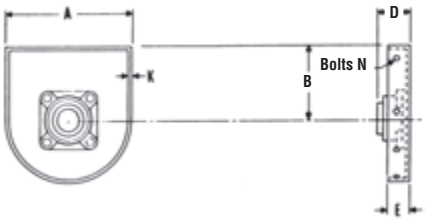
▲ Can be furnished with CSP, CSW, or CSFP seals

–*BB Ball Bearing
–*BR Bronze Bearing
–*RB Roller Bearing
–*PLess Bearing

Trough Ends

Inside

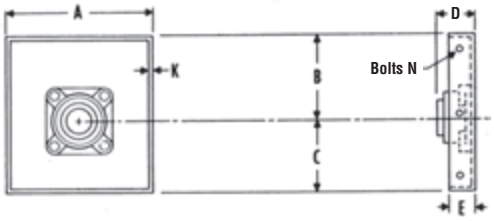
Inside trough ends are used in place of outside type where no trough end flanges are required. Drilling for bronze bearings or flanged ball bearing is standard.



Conveyor Diameter	Shaft Diameter	▲ Part Number	A	B	D			E	K	N	Weight
					Friction Bearing	Ball Bearing	Roller Bearing				
4	1	4TEI2–*	5	3 5/8	2 3/16	1 5/8	—	2	1/4	1/4	3
6	1 1/2	6TEI3–*	7	4 1/2	3 3/16	2 3/16	3 11/16	2	1/4	5/16	5
9	1 1/2	9TEI3–*	10	6 1/8	3 1/4	2 3/16	3 11/16	2	1/4	3/8	9
	2	9TEI4–*	10	6 1/8	4 1/4	2 1/2	3 13/16	2	1/4	3/8	9
10	1 1/2	10TEI3–*	11	6 3/8	3 1/4	2 3/16	3 11/16	2	1/4	3/8	11
	2	10TEI4–*	11	6 3/8	4 1/4	2 1/2	3 13/16	2	1/4	3/8	11
12	2	12TEI4–*	13	7 3/4	4 1/4	2 9/16	3 7/8	2	1/4	1/2	19
	2 7/16	12TEI5–*	13	7 3/4	5 1/4	2 15/16	4 7/16	2	1/4	1/2	19
	3	12TEI6–*	13	7 3/4	6 1/4	3 3/4	4 15/16	2	1/4	1/2	19
14	2 7/16	14TEI5–*	15	9 1/4	5 5/16	2 15/16	4 7/16	2	1/4	1/2	34
	3	14TEI6–*	15	9 1/4	6 5/16	3 3/4	4 15/16	2	1/4	1/2	34
16	3	16TEI6–*	17	10 5/8	6 5/16	3 13/16	5	2	5/16	5/8	40
18	3	18TEI6–*	19	12 1/8	6 3/8	3 13/16	5	2	3/8	5/8	58
	3 7/16	18TEI7–*	19	12 1/8	7 3/8	4 5/16	5 9/16	2	3/8	5/8	58
20	3	20TEI6–*	21	13 1/2	6 3/8	3 7/8	5 1/16	2	3/8	5/8	83
	3 7/16	20TEI7–*	21	13 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	83
24	3 7/16	24TEI7–*	25	16 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	116

Inside Rectangular

Rectangular trough ends are used inside of rectangular trough. Drilling for bronze bearing or flanged ball bearing is standard



Conveyor Diameter	Shaft Diameter	▲ Part Number	A	B	C	D			E	K	N	Weight
						Friction Bearing	Ball Bearing	Roller Bearing				
4	1	4TER2–*	5	3 5/8	2 1/2	2 3/16	1 5/8	—	2	1/4	1/4	4
6	1 1/2	6TER3–*	7	4 1/2	3 1/2	3 3/16	2 3/16	3 11/16	2	1/4	5/16	6
9	1 1/2	9TER3–*	10	6 1/8	5	3 1/4	2 3/16	3 11/16	2	1/4	3/8	9
	2	9TER4–*	10	6 1/8	5	4 1/4	2 1/2	3 13/16	2	1/4	3/8	9
10	1 1/2	10TER3–*	11	6 3/8	5 1/2	3 1/4	2 3/16	3 11/16	2	1/4	3/8	12
	2	10TER4–*	11	6 3/8	5 1/2	4 1/4	2 1/2	3 13/16	2	1/4	3/8	12
12	2	12TER4–*	13	7 3/4	6 1/2	4 1/4	2 9/16	3 7/8	2	1/4	1/2	21
	2 7/16	12TER5–*	13	7 3/4	6 1/2	5 1/4	2 15/16	4 7/16	2	1/4	1/2	21
	3	12TER6–*	13	7 3/4	6 1/2	6 1/4	3 3/4	4 15/16	2	1/4	1/2	21
14	2 7/16	14TER5–*	15	9 1/4	7 1/2	5 5/16	2 15/16	4 7/16	2	1/4	1/2	35
	3	14TER6–*	15	9 1/4	7 1/2	6 5/16	3 3/4	4 15/16	2	1/4	1/2	35
16	3	16TER6–*	17	10 5/8	8 1/2	6 5/16	3 13/16	5	2	5/16	5/8	41
18	3	18TER6–*	19	12 1/8	9 1/2	6 3/8	3 13/16	5	2	3/8	5/8	60
	3 7/16	18TER7–*	19	12 1/8	9 1/2	7 3/8	4 5/16	5 9/16	2	3/8	5/8	60
20	3	20TER6–*	21	13 1/2	10 1/2	6 3/8	3 7/8	5 1/16	2	3/8	5/8	88
	3 7/16	20TER7–*	21	13 1/2	10 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	88
24	3 7/16	24TER7–*	25	16 1/2	12 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	125

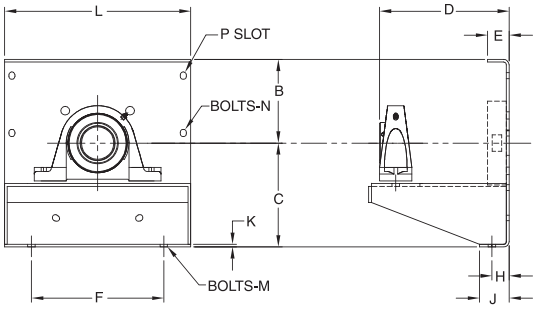
▲ Can be furnished with CSP, CSW, or CSFP seals

–*BB Ball Bearing
–*BR Bronze Bearing
–*RB Roller Bearing
–*PLess Bearing

Trough Ends

Single Bearing

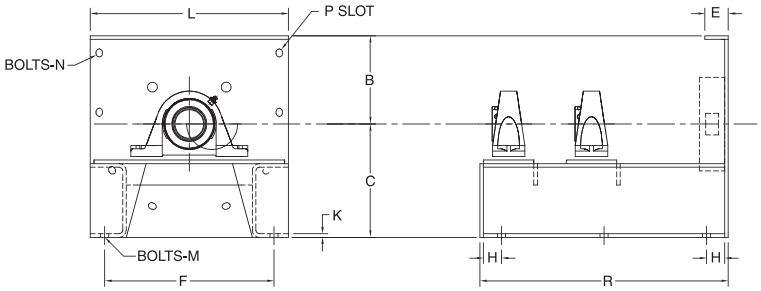
Single bearing pedestal type trough ends are constructed with base for mounting pillow block bearings and shaft seal or packing gland.



Conveyor Diameter	Shaft Diameter	Part Number	B	C	D	E	F	H	J	K	L	M	N	P Slot	Weight
6	1 1/2	6TEO3	Consult Factory												
9	1 1/2	9TEO3													
	2	9TEO4													
10	1 1/2	10TEO3													
	2	10TEO4													
12	2	12TEO4													
	2 7/16	12TEO5													
	3	12TEO6													
14	2 7/16	14TEO5													
	3	14TEO6													
16	3	16TEO6													
18	3	18TEO6													
	3 7/16	18TEO7													
20	3	20TEO6													
	3 7/16	20TEO7													
24	3 7/16	24TEO7													

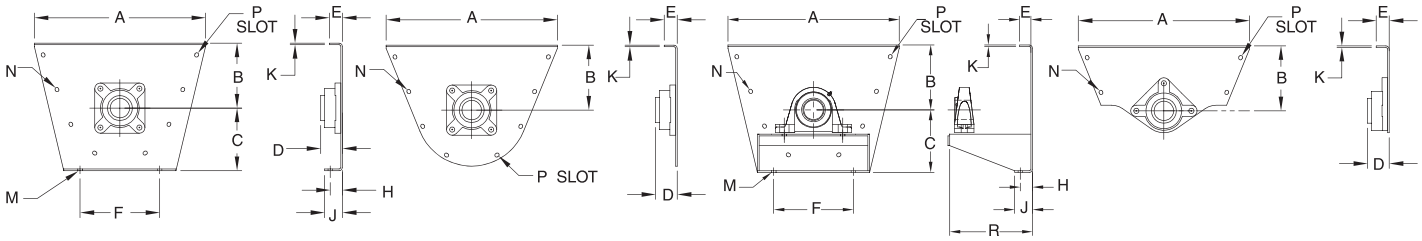
Double Bearing

Double bearing pedestal type trough ends are for use with pillow block bearing in conjunction with a flanged bearing providing extra shaft support.



Conveyor Diameter	Shaft Diameter	Part Number	B	C	E	F	H	K	L	M	R	P Slot	Weight
6	1 1/2	6TEOD3	Consult Factory										
9	1 1/2	9TEOD3											
	2	9TEOD4											
10	1 1/2	10TEOD3											
	2	10TEOD4											
12	2	12TEOD4											
	2 7/16	12TEOD5											
	3	12TEOD6											
14	2 7/16	14TEOD5											
	3	14TEOD6											
16	3	16TEOD6											
18	3	18TEOD6											
	3 7/16	18TEOD7											
20	3	20TEOD6											
	3 7/16	20TEOD7											
24	3 7/16	24TEOD7											

Trough Ends



Outside With Feet **Outside Less Feet** **Outboard Bearing** **Discharge**

Application: same as standard trough ends except for flared trough.

Conveyor Diameter	Shaft Diameter	A	B	C	D			E	F	H	J	K	M	N	R	P Slot
					Friction Bearing	Ball Bearing	Roller Bearing									
6	1 1/2	16 5/8	7	5 5/8	3 3/16	2 3/16	3 3/4	1 1/2	8 1/8	1	1 3/4	1/4	3/8	3/8	Consult Factory	7/16 × 9/16
9	1 1/2	21 1/4	9	7 7/8	3 1/4	2 3/16	3 3/4	1 5/8	9 3/8	1 1/2	2 5/8	1/4	1/2	3/8		7/16 × 9/16
	2	21 1/4	9	7 7/8	4 1/4	2 1/2	3 7/8	1 5/8	9 3/8	1 1/2	2 5/8	1/4	1/2	3/8		7/16 × 9/16
12	2	26 3/8	10	9 5/8	4 1/4	2 9/16	3 7/8	2	12 1/4	1 5/8	2 3/4	1/4	5/8	1/2		9/16 × 11/16
	2 7/16	26 3/8	10	9 5/8	5 1/4	2 15/16	4 1/2	2	12 1/4	1 5/8	2 3/4	1/4	5/8	1/2		9/16 × 11/16
	3	26 3/8	10	9 5/8	6 1/4	3 3/4	5	2	12 1/4	1 5/8	2 3/4	1/4	5/8	1/2		9/16 × 11/16
14	2 7/16	28 3/8	11	10 7/8	5 5/16	2 15/16	4 1/2	2	13 1/2	1 5/8	2 7/8	1/4	5/8	1/2		9/16 × 11/16
	3	28 3/8	11	10 7/8	6 5/16	3 3/4	5	2	13 1/2	1 5/8	2 7/8	5/16	5/8	1/2		9/16 × 11/16
16	3	32 1/2	11 1/2	12	6 5/16	3 13/16	5	2 1/2	14 7/8	2	3 1/4	5/16	5/8	5/8		11/16 × 13/16
18	3	36 1/2	12 1/8	13 3/8	6 3/8	3 13/16	5	2 1/2	16	2	3 1/4	3/8	5/8	5/8		11/16 × 13/16
	3 7/16	36 1/2	12 1/8	13 3/8	7 3/8	4 5/16	5 5/8	2 1/2	16	2	3 1/4	3/8	5/8	5/8		11/16 × 13/16
20	3	39 1/2	13 1/2	15	6 3/8	3 7/8	5	2 1/2	19 1/4	2 1/4	3 3/4	3/8	3/4	5/8		11/16 × 13/16
	3 7/16	39 1/2	13 1/2	15	7 3/8	4 3/8	5 5/8	2 1/2	19 1/4	2 1/4	3 3/4	3/8	3/4	5/8		11/16 × 13/16
24	3 7/16	45 1/2	16 1/2	18 1/8	7 3/8	4 3/8	5 5/8	2 1/2	20	2 1/2	4 1/8	3/8	3/4	5/8		11/16 × 13/16

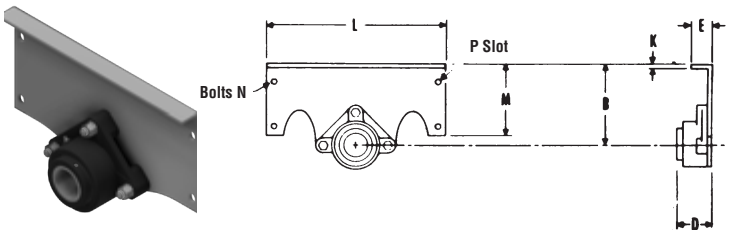
Conveyor Diameter	Shaft Diameter	Part Number							
		Outside With Feet	Weight	Outside Less Feet	Weight	Outboard Bearing	Weight	Discharge	Weight
6	1 1/2	6FTEF3.*	15	6FTE3–*	13	6FTEO3–*	22	6FTDO3–**	11
9	1 1/2	9FTEF3–*	22	9FTE3–*	19	9FTEO3–*	31	9FTDO3–**	15
	2	9FTEF4–*	27	9FTE4–*	24	9FTEO4–*	36	9FTDO4–**	20
12	2	12FTEF4–*	43	12FTE4–*	36	12FTEO4–*	63	12FTDO4–**	28
	2 7/16	12FTEF5–*	44	12FTE5–*	37	12FTEO5–*	64	12FTDO5–**	29
	3	12FTEF6–*	56	12FTE6–*	49	12FTEO6–*	76	12FTDO6–**	41
14	2 7/16	14FTEF5–*	52	14FTE5–*	43	14FTEO5–*	75	14FTDO5–**	33
	3	14FTEF6–*	64	14FTE6–*	55	14FTEO6–*	87	14FTDO6–**	45
16	3	16FTEF6–*	85	16FTE6–*	72	16FTEO6–*	125	16FTDO6–**	56
18	3	18FTEF6–*	98	18FTE6–*	83	18FTEO6–*	138	18FTDO6–**	63
	3 7/16	18FTEF7–*	104	18FTE7–*	89	18FTEO7–*	144	18FTDO7–**	69
20	3	20FTEF6–*	133	20FTE6–*	103	20FTEO6–*	196	20FTDO6–**	75
	3 7/16	20FTEF7–*	139	20FTE7–*	109	20FTEO7–*	202	20FTDO7–**	81
24	3 7/16	24FTEF7–*	179	24FTE7–*	132	24FTEO7–*	250	24FTDO7–**	96

–*BB-P Ball Bearing Plate Only
–*RB-P Roller Bearing Plate Only

For Bolt Pattern see Page H-41

Outside Discharge

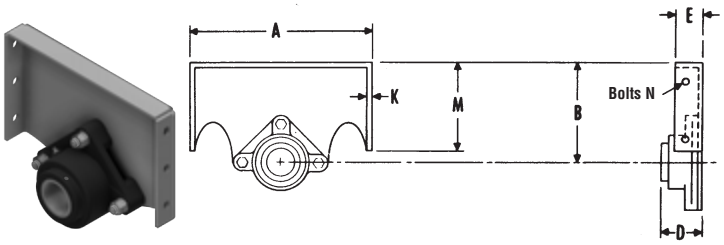
Outside discharge trough ends are used to support end bearing and will allow material to discharge or overflow through the end of the trough. Drilling for three bolt bronze or flanged ball bearing is standard.



Conveyor Diameter	Shaft Diameter	Part Number	B	D			E	K	L	M	N	P Slot	Weight
				Friction Bearing	Ball Bearing	Roller Bearing							
4	1	4TDO2.*	3 5/8	2 1/4	1 5/8		1 7/16	1/4	8	3 5/8	3/8	7/16 × 9 /16	2
6	1 1/2	6TDO3–*	4 1/2	3 1/2	2 1/8	3 3/4	1 1/2	1/4	9 3/4	4 1/2	3/8	7/16 × 9/16	3
9	1 1/2	9TDO3–*	6 1/8	3 1/2	2 1/8	3 3/4	1 5/8	1/4	13 3/4	6 1/8	3/8	7/16 × 9/16	5
	2	9TDO4–*	6 1/8	4 7/16	2 1/2	3 7/8	1 5/8	1/4	13 3/4	6 1/8	3/8	7/16 × 9/16	5
10	1 1/2	10TDO3–*	6 3/8	3 1/2	2 1/8	3 3/4	1 3/4	1/4	14 3/4	6 3/8	3/8	7/16 × 9/16	6
	2	10TDO4–*	6 3/8	4 7/16	2 1/2	3 7/8	1 3/4	1/4	14 3/4	6 3/8	3/8	7/16 × 9/16	6
12	2	12TDO4–*	7 3/4	4 7/16	2 1/2	3 7/8	2	1/4	17 1/4	7 3/4	1/2	9/16 × 11/16	12
	2 7/16	12TDO5–*	7 3/4	5 5/16	2 9/16	4 7/16	2	1/4	17 1/4	7 3/4	1/2	9/16 × 11/16	12
	3	12TDO6–*	7 3/4	5 15/16	3 3/4	4 15/16	2	1/4	17 1/4	7 3/4	1/2	9/16 × 11/16	12
14	2 7/16	14TDO5–*	9 1/4	5 5/16	2 9/16	4 7/16	2	1/4	19 1/4	9 1/4	1/2	9/16 × 11/16	17
	3	14TDO6–*	9 1/4	5 15/16	3 3/8	4 15/16	2	1/4	19 1/4	9 1/4	1/2	9/16 × 11/16	17
16	3	16TDO6–*	10 5/8	6	3 7/16	5	2 1/2	5/16	21 1/4	10 5/8	5/8	11/16 × 13/16	26
18	3	18TDO6–*	12 1/8	6 1/16	3 1/2	5 1/16	2 1/2	3/8	24 1/4	12 1/8	5/8	11/16 × 13/16	33
	3 7/16	18TDO7–*	12 1/8	6 5/8	3 3/4	5 5/8	2 1/2	3/8	24 1/4	12 1/8	5/8	11/16 × 13/16	33
20	3	20TDO6–*	13 1/2	6 1/16	3 1/2	5 1/16	2 1/2	3/8	26 1/4	13 1/2	5/8	11/16 × 13/16	55
	3 7/16	20TDO7–*	13 1/2	6 5/8	3 3/4	5 5/8	2 1/2	3/8	26 1/4	13 1/2	5/8	11/16 × 13/16	55
24	3 7/16	24TDO7–*	16 1/2	6 5/8	3 3/4	5 5/8	2 1/2	3/8	30 1/2	16 1/2	5/8	11/16 × 13/16	81

Inside Discharge

Inside discharge trough ends are used to support end bearing and will allow material to discharge or overflow through the end of the trough. This trough end is used inside the trough where no trough end flanges are required. Drilling for three bolt bronze or flanged ball bearing is standard.



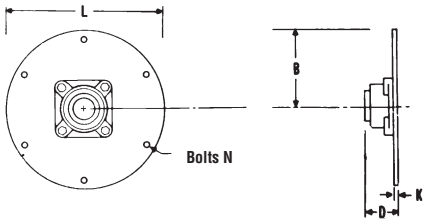
Conveyor Diameter	Shaft Diameter	Part Number	A	B	D			E	K	M	N	Weight
					Friction Bearing	Ball Bearing	Roller Bearing					
4	1	4TDI2–*	5	3 5/8	2 1/4	1 5/8		2	1/4	3 5/8	3/8	2
6	1 1/2	6TDI3–*	7	4 1/2	3 1/2	2 1/8	3 3/4	2	1/4	4 1/2	3/8	3
9	1 1/2	9TDI3–*	10	6 1/8	3 1/2	2 1/8	3 3/4	2	1/4	6 1/8	3/8	5
	2	9TDI4–*	10	6 1/8	4 7/16	2 1/2	3 7/8	2	1/4	6 1/8	3/8	5
10	1 1/2	10TDI3–*	11	6 3/8	3 1/2	2 1/8	3 3/4	2	1/4	6 3/8	3/8	6
	2	10TDI4–*	11	6 3/8	4 7/16	2 1/2	3 7/8	2	1/4	6 3/8	3/8	6
12	2	12TDI4–*	13	7 3/4	4 7/16	2 1/2	3 7/8	2	1/4	7 3/4	1/2	12
	2 7/16	12TDI5–*	13	7 3/4	5 5/16	2 9/16	4 7/16	2	1/4	7 3/4	1/2	12
	3	12TDI6–*	13	7 3/4	5 15/16	3 3/4	4 15/16	2	1/4	7 3/4	1/2	12
14	2 7/16	14TDI5–*	15	9 1/4	5 5/16	2 9/16	4 7/16	2	1/4	9 1/4	5/8	16
	3	14TDI6–*	15	9 1/4	5 15/16	3 3/8	4 15/16	2	1/4	9 1/4	5/8	16
16	3	16TDI6–*	17	10 5/8	6	3 7/16	5	2	5/16	10 5/8	5/8	25
18	3	18TDI6–*	19	12 1/8	6 1/16	3 1/2	5 1/16	2	3/8	12 1/8	5/8	32
	3 7/16	18TDI7–*	19	12 1/8	6 5/8	3 3/4	5 5/8	2	3/8	12 1/8	5/8	32
20	3	20TDI16–*	21	13 1/2	6 1/16	3 1/2	5 1/16	2	3/8	13 1/2	5/8	50
	3 7/16	20TDI7–*	21	13 1/2	6 5/8	3 3/4	5 5/8	2	3/8	13 1/2	5/8	50
24	3 7/16	24TDI7–*	25	16 1/2	6 5/8	3 3/4	5 5/8	2	3/8	16 1/2	5/8	76

–*BB-P Ball Bearing Plate Only
–*RB-P Roller Bearing Plate Only

Trough Ends

Outside

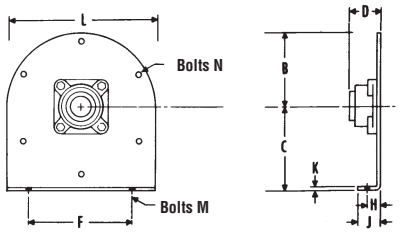
Outside tubular trough ends less feet are used to support end bearings on tubular trough where no foot or support is required. Drilling for bronze or flanged ball bearing is standard.



Conveyor Diameter	Shaft Diameter	Part Number	B	D			K	L	N	Weight
				Friction Bearing	Ball Bearing	Roller Bearing				
4	1	4CHTE2–*	4	2 1/4	1 5/8		1/4	8	3/8	2
6	1 1/2	6CHTE3–*	5 1/16	3 1/2	2 1/8	3 3/4	1/4	10 1/8	3/8	3
9	1 1/2	9CHTE3–*	6 5/8	3 1/2	2 1/8	3 3/4	1/4	13 1/4	3/8	6
	2	9CHTE4–*	6 5/8	4 7/16	2 1/2	3 7/8	1/4	13 1/4	3/8	6
10	1 1/2	10CHTE3–*	7 3/8	3 1/2	2 1/8	3 3/4	1/4	14 3/4	3/8	7
	2	10CHTE4–*	7 3/8	4 7/16	2 1/2	3 7/8	1/4	14 3/4	3/8	7
12	2	12CHTE4–*	8 1/8	4 7/16	2 1/2	3 7/8	1/4	16 1/4	1/2	13
	2 7/16	12CHTE5–*	8 1/8	5 5/16	2 9/16	4 7/16	1/4	16 1/4	1/2	13
	3	12CHTE6–*	8 1/8	5 15/16	3 3/4	4 15/16	1/4	16 1/4	1/2	13
14	2 7/16	14CHTE5–*	9 1/8	5 5/16	2 9/16	4 7/16	1/4	18 1/4	1/2	19
	3	14CHTE6–*	9 1/8	5 15/16	3 3/8	4 15/16	1/4	18 1/4	1/2	19
16	3	16CHTE6–*	10 5/8	6	3 7/16	5	5/16	21 1/4	5/8	29
18	3	18CHTE6–*	12 1/8	6 1/16	3 1/2	5 1/16	3/8	24 1/4	5/8	39
	3 7/16	18CHTE7–*	12 1/8	6 5/8	3 3/4	5 5/8	3/8	24 1/4	5/8	39
20	3	20CHTE6–*	13 1/8	6 1/16	3 1/2	5 1/16	3/8	26 1/4	5/8	63
	3 7/16	20CHTE7–*	13 1/8	6 5/8	3 3/4	5 5/8	3/8	26 1/4	5/8	63
24	3 7/16	24CHTE7–*	15 1/8	6 5/8	3 3/4	5 5/8	3/8	30 1/4	5/8	87

Outside with Feet

Outside tubular trough ends with feet are used to support end bearing where trough support is required. Drilling for bronze bearing or flanged ball bearing is standard.

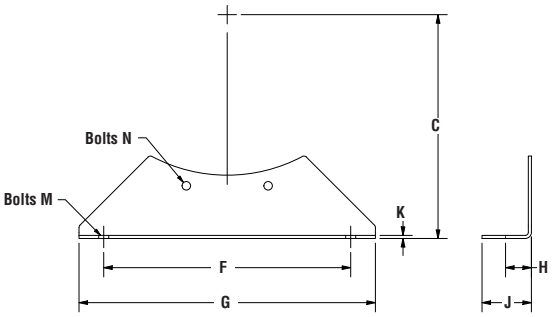


Conveyor Diameter	Shaft Diameter	Part Number	B	C	D			F	H	J	K	L	M	N	Weight
					Friction Bearing	Ball Bearing	Roller Bearing								
4	1	4CHTEF2–*	4	4 5/8	2 1/4	1 5/8		5 3/4	1	1 5/8	1/4	8	3/8	3/8	3
6	1 1/2	6CHTEF3–*	5 1/16	5 5/8	3 1/2	2 1/8	3 3/4	8 1/8	1	1 3/4	1/4	10 1/8	3/8	3/8	5
9	1 1/2	9CHTEF3–*	6 5/8	7 7/8	3 1/2	2 1/8	3 3/4	9 3/8	1 1/2	2 5/8	1/4	13 1/4	1/2	3/8	10
	2	9CHTEF4–*	6 5/8	7 7/8	4 7/16	2 1/2	3 7/8	9 3/8	1 1/2	2 5/8	1/4	13 1/4	1/2	3/8	10
10	1 1/2	10CHTEF3–*	7 3/8	8 7/8	3 1/2	2 1/8	3 3/4	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	12
	2	10CHTEF4–*	7 3/8	8 7/8	4 7/16	2 1/2	3 7/8	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	12
12	2	12CHTEF4–*	8 1/8	9 5/8	4 7/16	2 1/2	3 7/8	12 1/4	1 5/8	2 3/4	1/4	16 1/4	5/8	1/2	22
	2 7/16	12CHTEF5–*	8 1/8	9 5/8	5 5/16	2 9/16	4 7/16	12 1/4	1 5/8	2 3/4	1/4	16 1/4	5/8	1/2	22
	3	12CHTEF6–*	8 1/8	9 5/8	5 15/16	3 3/4	4 15/16	12 1/4	1 5/8	2 3/4	1/4	16 1/4	5/8	1/2	22
14	2 7/16	14CHTEF5–*	9 1/8	10 7/8	5 5/16	2 9/16	4 7/16	13 1/2	1 5/8	2 7/8	1/4	18 1/4	5/8	1/2	24
	3	14CHTEF6–*	9 1/8	10 7/8	5 15/16	3 3/8	4 15/16	13 1/2	1 5/8	2 7/8	1/4	18 1/4	5/8	1/2	24
16	3	16CHTEF6–*	10 5/8	12	6	3 7/16	5	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	44
18	3	18CHTEF6–*	12 1/8	13 3/8	6 1/16	3 1/2	5 1/16	16	2	3 1/4	3/8	24 1/4	5/8	5/8	56
	3 7/16	18CHTEF7–*	12 1/8	13 3/8	6 5/8	3 3/4	5 5/8	16	2	3 1/4	3/8	24 1/4	5/8	5/8	56
20	3	20CHTEF6–*	13 1/8	15	6 1/16	3 1/2	5 1/16	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	92
	3 7/16	20CHTEF7–*	13 1/8	15	6 5/8	3 3/4	5 5/8	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	92
24	3 7/16	24CHTEF7–*	15 1/8	18 1/8	6 5/8	3 3/4	5 5/8	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	134

–*BB-P Ball Bearing Plate Only
–*RB-P Roller Bearing Plate Only

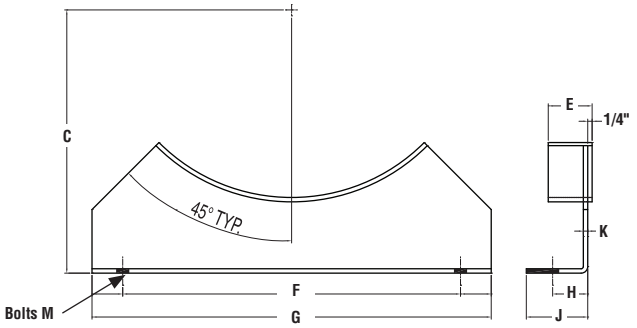
For Bolt Pattern see Page H-42

Saddles — Feet
Trough End Flanges



Flange Foot

Trough feet are used to support trough at trough connections.



Saddle

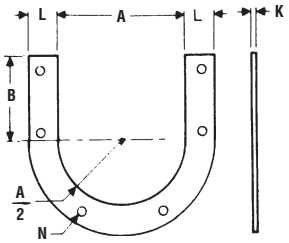
Trough saddles are used to support trough where flange feet cannot be used at connections

Conveyor Diameter	Part Number			Weight		
	Saddle	Tubular	Flange Foot	Saddle	Tubular	Flange Foot
4	4TS	4CHTFF	4TFF	1.5	1	1.5
6	6TS	6CHTFF	6TFF	2.0	2	2.0
9	9TS	9CHTFF	9TFF	4.5	4.5	4.5
10	10TS	10CHTFF	10TFF	5.0	4.5	5.0
12	12TS	12CHTFF	12TFF	6.0	5	6.0
14	14TS	14CHTFF	14TFF	7.0	7	7.0
16	16TS	16CHTFF	16TFF	8.0	8	7.5
18	18TS	18CHTFF	18TFF	10.0	10	9.5
20	20TS	20CHTFF	20TFF	13.0	11	12.5
24	24TS	24CHTFF	24TFF	15.0	12	14.5

Conveyor Diameter	C	E	F	G	H	J	K	M*	N
4	4 5/8	1 7/16	5 3/4	7 3/8	1	1 5/8	3/16	3/8	3/8
6	5 5/8	1 7/16	8 1/8	10	1 1/4	2	3/16	3/8	3/8
9	7 7/8	1 3/4	9 3/8	12	1 1/2	2 5/8	3/16	1/2	3/8
10	8 7/8	1 3/4	9 1/2	12 3/8	1 3/4	2 7/8	3/16	1/2	3/8
12	9 5/8	1 3/4	12 1/4	15	1 5/8	2 3/4	1/4	5/8	1/2
14	10 7/8	2	13 1/2	16 1/2	1 5/8	2 7/8	1/4	5/8	1/2
16	12	2	14 7/8	18	2	3 1/4	1/4	5/8	5/8
18	13 3/8	2	16	19 1/8	2	3 1/4	1/4	5/8	5/8
20	15	2 1/2	19 1/4	22 3/4	2 1/4	3 3/4	1/4	3/4	5/8
24	18 1/8	2 1/2	20	24	2 1/2	4	1/4	3/4	5/8

* Holes for Bolt M Slotted

Trough End Flanges

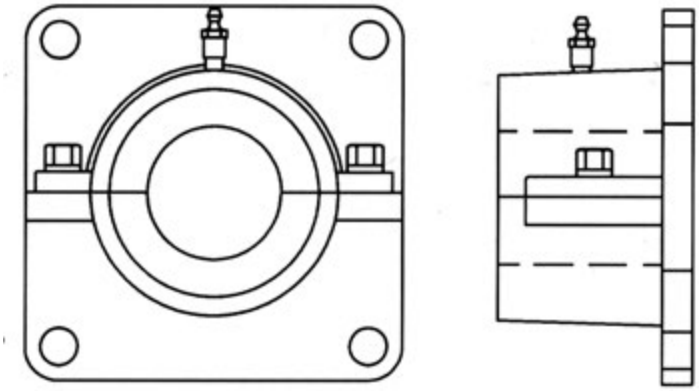


Size	Part Number	A		B	K	L	N	Weight	Red Rubber Gasket
		Trough Thickness							
		Thru 10 Ga.	3/16 & 1/4						Part Number
4	4TF*	5 1/4	5 3/8	3 3/8	1/4	1 1/4	3/8	.09	4TFG
6	6TF*	7 1/4	7 3/8	4 1/4	1/4	1 1/2	3/8	1.5	6TFG
9	9TF*	10 1/4	10 1/2	5 7/8	1/4	13/4	3/8	2.4	9TFG
10	10TF*	11 1/4	11 1/2	6 1/8	1/4	13/4	3/8	2.6	10TFG
12	12TF*	13 1/4	13 1/2	7 1/2	1/4	2	1/2	5.6	12TFG
14	14TF*	15 1/4	15 1/2	9	1/4	2	1/2	6.5	14TFG
16	16TF*	17 1/4	17 1/2	10 3/8	1/4	2	5/8	7.4	16TFG
18	18TF*	19 1/4	19 1/2	11 13/16	1/4	2 1/2	5/8	10.2	18TFG
20	20TF*	21 1/4	21 1/2	13 3/16	1/4	2 1/2	5/8	11.3	20TFG
24	24TF*	25 1/4	25 1/2	16 1/2	1/4	2 1/2	5/8	15.5	24TFG

*–10 used for troughs through 10 ga., –3 used for troughs 3/16 and 1/4 thick.
*** For White Rubber Gasket Add WN

End Bearing

KEEP THE HOUSING REPLACE THE INSERT.



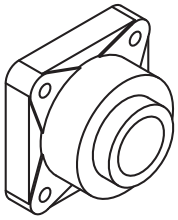
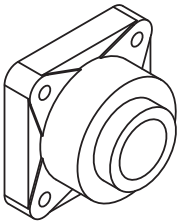
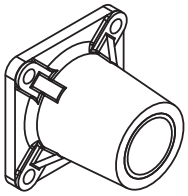
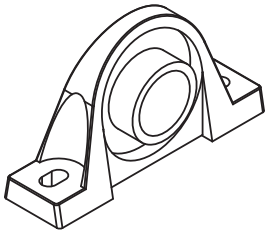
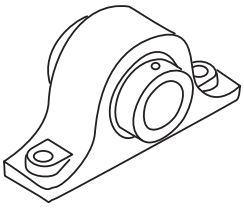
TEBH- Split Bearing Housings will help cut down on a plant's repair parts inventory, as well as the cost of the bearing. The rugged cast iron housing is not subject to wear, only the Style 220 Hanger bearing insert needs to be replaced.

The housings match CEMA standard ball bearing bolt pattern, so they can be used with most seals.

Split bearing housings are stocked in all Martin stocking facilities. Call your Martin distributor for more information.

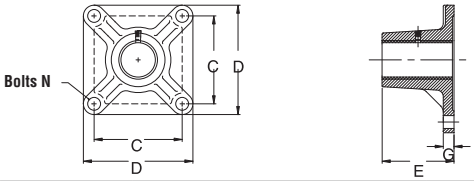
TROUGH END BEARING HOUSINGS

Martin Split Bearing Housings utilize Martin Style 220 Hanger Bearings.

FLANGE UNITS	Mounted on trough end plate		**Ball Bearing Flange Unit**
			**Roller Bearing Flange Unit**
			**Bronze Sleeve Bearing Flange Unit**
PILLOW BLOCKS	Mounted on pedestal of outboard bearing trough end.		**Ball Bearing Pillow Block**
			**Roller Bearing Pillow Block**

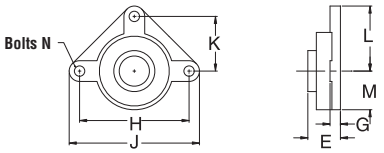
End Bearings

Bronze Flange Unit



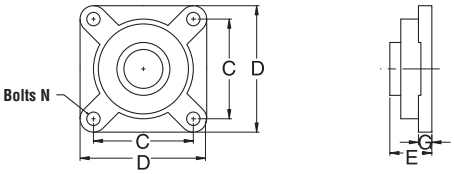
Bore	Part Number	C	D	E	G	N
1	TEB2BR	2 3/4	3 3/4	2	17/32	3/8
1 1/2	TEB3BR	4	5 1/8	3 1/4	9/16	1/2
2	TEB4BR	5 1/8	6 3/8	4 3/16	5/8	5/8
2 7/16	TEB5BR	5 5/8	6 7/8	4 15/16	13/16	5/8
3	TEB6BR	6	7 3/4	5 11/16	7/8	5/8
3 7/16	TEB7BR	6 3/4	8 7/16	6 1/4	1	13/16

Ball Bearing Discharge Unit



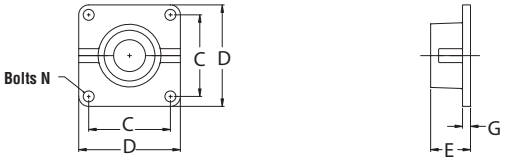
Bore	Part Number	E	G	H	J	K	L	M	N
1	TDB2BB	1 3/8	1/2	3 7/8	5 3/8	1 15/16	2 11/16	2	3/8
1 1/2	TDB3BB	2	9/16	5 5/8	7 1/4	2 13/16	3 5/8	2 1/2	1/2
2	TDB4BB	2 1/8	5/8	7 1/4	8	3 5/8	4	3	5/8
2 7/16	TDB5BB	2 1/2	11/16	8	9 7/8	4	4 15/16	3 1/2	5/8
3	TDB6BB	3 1/2	7/8	8 1/2	11	4 1/4	5 1/2	4	3/4
3 7/16	TDB7BB	4	1	9 1/2	12	4 3/4	6	4 1/2	3/4

Ball Bearing Flange Unit



Bore	Part Number	C	D	E	G	N
1	TEB2BB	2 3/4	3 3/4	1 3/8	1/2	3/8
1 1/2	TEB3BB	4	5 1/8	1 7/8	9/16	1/2
2	TEB4BB	5 1/8	6 1/2	2 3/8	11/16	5/8
2 7/16	TEB5BB	5 5/8	7	2 5/16	11/16	5/8
3	TEB6BB	6	7 3/4	3 1/8	7/8	3/4
3 7/16	TEB7BB	6 3/4	8 7/16	3 3/8	1	3/4

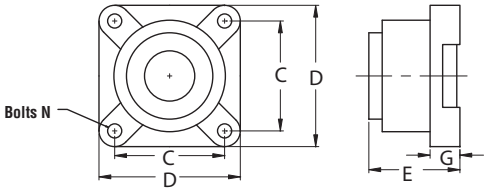
Trough End Bearing Housing



Bore	Part Number	C	D	E	G	N
1 1/2	TEBH3	4	5 1/4	2 1/2	1/2	1/2
2	TEBH4	5 1/8	6 3/8	2 1/2	1/2	5/8
2 7/16	TEBH5	5 5/8	6 7/8	3 9/16	9/16	5/8
3	TEBH6	6	7 3/4	3 5/8	5/8	3/4
3 7/16	TEBH7	7	9 1/4	4 3/4	3/4	3/4

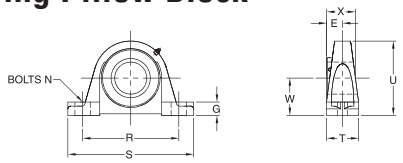
Use #220 Type Hanger Bearings, See Page H-93.

Roller Bearing Flange Unit



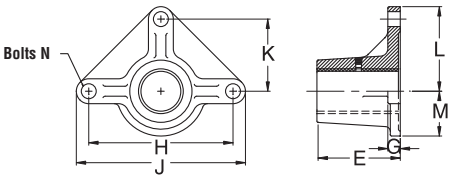
Bore	Part Number	C	D	E	G	N
1 1/2	TEB3R	4 1/8	5 3/8	3 1/2	1 3/16	1/2
2	TEB4R	4 3/8	5 5/8	3 5/8	1 3/16	1/2
2 7/16	TEB5R	5 3/8	6 7/8	4 3/16	1 1/2	5/8
3	TEB6R	6	7 3/4	4 11/16	1 5/8	3/4
3 7/16	TEB7R	7	9 1/4	5 1/4	1 7/8	3/4

Ball Bearing Pillow Block



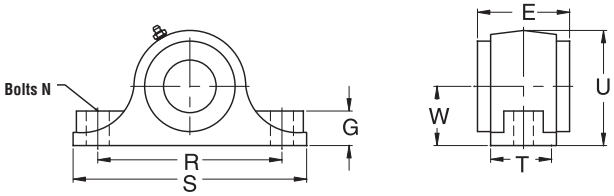
Bore	Part Number	E	G	N	R	S	T	U	W	X
1	TPB2BB	51/64	19/32	3/8	4 1/8	5 1/2	1 1/16	2 13/16	1 7/16	1 11/64
1 1/2	TPB3BB	1 11/64	7/8	1/2	5 1/2	7 1/4	1 7/8	4 1/8	2 1/8	1 21/64
2	TPB4BB	1 17/64	1	5/8	6 3/8	8 1/4	2 1/8	4 17/64	2 1/4	1 13/16
2 7/16	TPB5BB	1 15/16	1 1/16	5/8	7 3/8	9 5/8	2 3/8	5 15/32	2 3/4	1 57/64
3	TPB6BB	1 1/2	1 1/4	7/8	9	11 3/4	3	6 31/32	3 1/2	2 3/8
3 7/16	TPB7BB	1 9/16	1 11/32	7/8	11	14	3 3/8	7 7/8	4	2 23/64

Bronze Discharge Unit



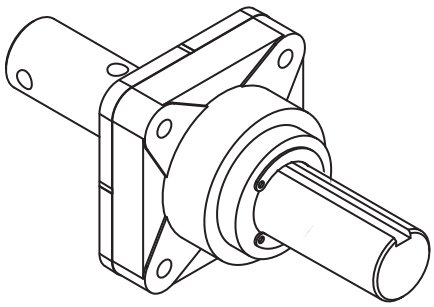
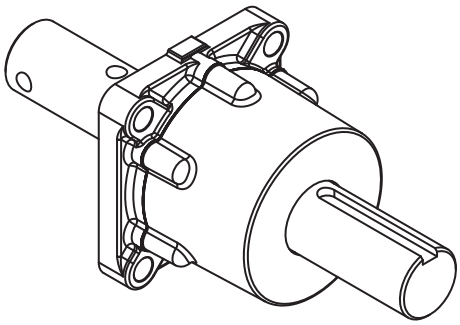
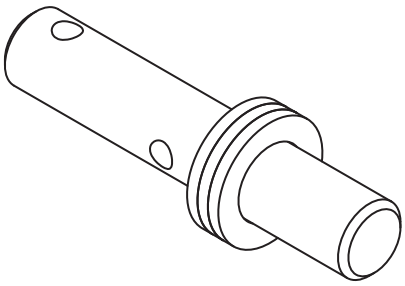
Bore	Part Number	E	G	H	J	K	L	M	N
1	TDB2BR	2	1/2	3 7/8	5 3/8	1 15/16	2 11/16	1	3/8
1 1/2	TDB3BR	3 1/4	9/16	5 5/8	7 1/4	2 13/16	3 5/8	1 1/4	1/2
2	TDB4BR	4 3/16	5/8	7 1/4	8	3 5/8	4	1 5/8	5/8
2 7/16	TDB5BR	4 15/16	11/16	8	9 7/8	4	4 15/16	1 7/8	5/8
3	TDB6BR	5 11/16	7/8	8 1/2	11	4 1/4	5 1/2	2 1/8	5/8
3 7/16	TDB7BR	6 1/4	1	9 1/2	12	4 3/4	6	2 1/2	3/4

Roller Bearing Pillow Block



Bore	Part Number	E	G	N	R	S	T	U	W
1 1/2	TPB3R	3 3/8	1 1/4	1/2	6 1/4	7 7/8	2 3/8	4 1/4	2 1/8
2	TPB4R	3 1/2	1 3/8	5/8	7	8 7/8	2 1/2	4 1/2	2 1/4
2 7/16	TPB5R	4	1 5/8	5/8	8 1/2	10 1/2	2 7/8	5 1/2	2 3/4
3	TPB6R	4 1/2	1 7/8	3/4	9 1/2	12	3 1/8	6 1/4	3 1/8
3 7/16	TPB7R	5	2 1/4	7/8	11	14	3 5/8	7 1/2	3 3/4

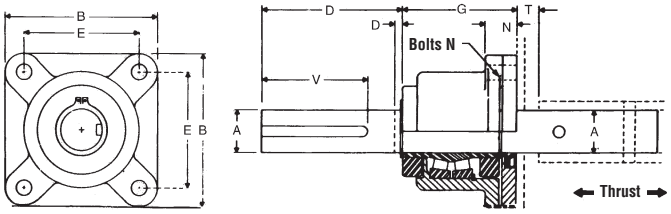
Thrust Bearings

TYPE E THRUST BEARINGS		Most common and economical thrust unit when a screw conveyor type drive is not being used.
TYPE H THRUST BEARINGS		For heavy-duty thrust requirements.
BRONZE WASHER		Light duty applications only. Used inside the trough and when screw used in compression.

Thrust Bearings

Type E Thrust Assembly

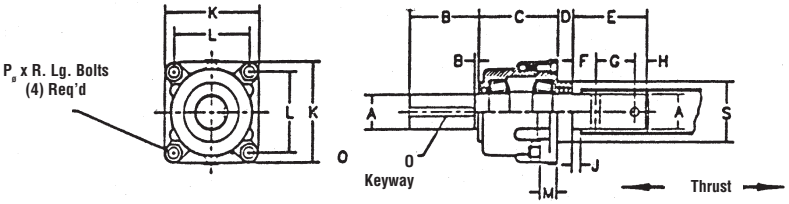
Type E roller thrust bearings are designed to carry thrust in both directions and carry radial load under normal conditions. This double roller bearing is furnished with a lip type seal plate and either drive or tail shaft whichever is applicable to conveyor design.



A	Part Number		B	D		E	G	H	N	T	V	Weight	
	Drive Shaft	End Shaft		Drive Shaft	End Shaft							Drive Shaft	End Shaft
1 1/2	CT3D	CT3E	5 3/8	4 3/4	3/4	4 1/8	4	1 11/16	1/2	1 1/4	4	22	20
2	CT4D	CT4E	5 5/8	5	3/4	4 3/8	4 1/8	1 11/16	1/2	1 1/4	4 1/2	32	29
2 7/16	CT5D	CT5E	6 7/8	5 1/2	3/4	5 3/8	4 11/16	2	5/8	1 13/16	5	50	44
3	CT6D	CT6E	7 3/4	6 1/2	3/4	6	5 3/16	2 1/8	3/4	1 7/8	6	73	60
3 7/16	CT7D	CT7E	9 1/4	7 1/2	3/4	7	6	2 5/8	3/4	2 3/8	7	111	88

Heavy-Duty RB End Thrust Bearings

Type E roller thrust bearings are designed to carry thrust in both directions and carry radial load under normal conditions. This double roller bearing is furnished with a lip type seal plate and either drive or tail shaft whichever is applicable to conveyor design.

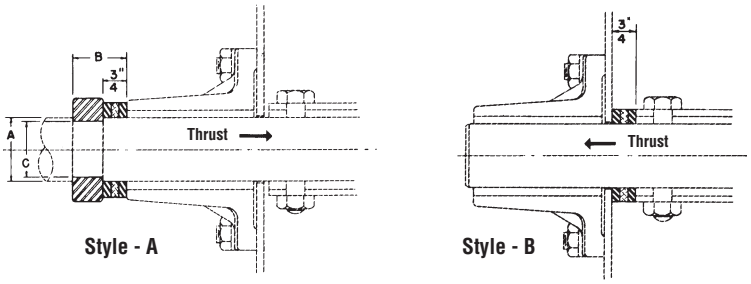


A	With Drive Shaft		With Tail Shaft		B		C	D	E	F	G	H	J	K	L	M	O	P	R	S
Shaft Dia.	Part Number	Wt.	Part Number	Wt.	Drive Shaft	End Shaft											Keyway			
1 1/2	CTH3D	60	CTH3E	52	4 1/2	1/4	6 3/4	1 1/8	4 7/8	1	3	7/8	1/8	7 1/4	5 3/4	1 3/16	3/8 × 4 1/4	3/4	2 1/2	4 3/4
2	CTH4D	65	CTH4E	56	4 1/2	1/4	6 3/4	1 1/8	4 7/8	1	3	7/8	1/8	7 1/4	5 3/4	1 3/16	1/2 × 4 1/4	3/4	2 1/2	4 3/4
2 7/16	CTH5D	80	CTH5E	66	5 9/16	5/16	6 1/4	1 1/4	5 7/16	1 1/2	3	15/16	9/16	8	6 1/4	1 1/2	5/8 × 5 1/4	3/4	3	5 1/2
3	CTH6D	145	CTH6E	119	6 1/8	1/4	8 1/4	1 1/2	5 3/8	1 3/8	3	1	3/8	10	8	1 3/4	3/4 × 5 3/4	1	3 1/2	6
3 7/16	CTH7D	170	CTH7E	140	7 1/8	3/8	8 1/4	1 1/2	7 5/8	2 3/8	4	1 1/4	7/8	10	8	1 3/4	7/8 × 6 3/4	1	3 1/2	6

Dimensions in inches and average weight in pounds.
Other shaft sizes available are 3 15/16", 4 7/16" & 4 15/16". Please consult factory.

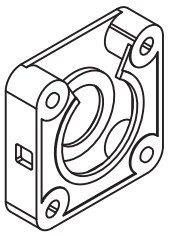
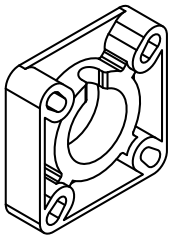
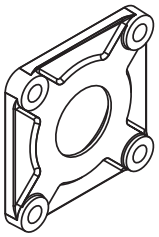
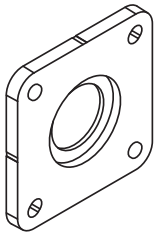
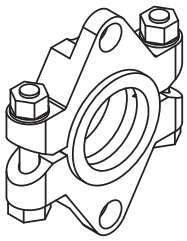
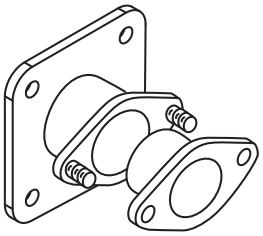
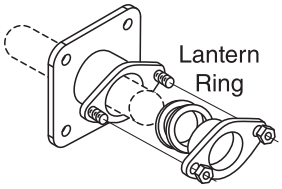
Thrust Washers

Thrust washers are designed for use where light thrust loads prevail. Style A or B mounting may be used depending on direction of thrust. This unit consists of two steel washers separated by one bronze washer, and Style B is not recommended for use in conveyors handling abrasive materials.



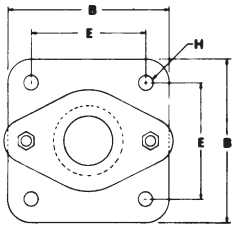
A	Washers & Collar Style A		Washer Set Style B		B	C
Size Shaft	Part Number	Weight	Part Number	Weight		
1 1/2	CTCW3	2.4	CTW3	1	1 1/4	1 1/4
2	CTCW4	2.8	CTW4	1.25	1 7/16	1 3/4
2 7/16	CTCW5	3.9	CTW5	1.5	1 1/2	2 1/8
3	CTCW6	4.6	CTW6	2	1 1/2	2 3/4
3 7/16	CTCW7	6.1	CTW7	3	1 5/8	3 1/4

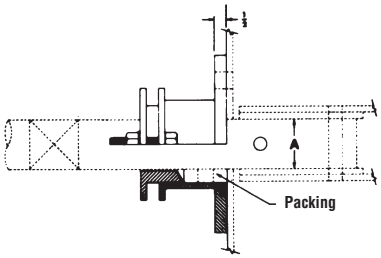
Shaft Seals

WASTE PACK SEAL		Waste pack seals can be furnished with waste packing or in combination with lip seal. This type seal is normally installed between the trough end and bearing, but may be used separately on pedestal type trough ends. An opening is provided at top for repacking without removing seal from trough end. Can be used with flanged ball, roller or other standard 4-bolt bearings.
Martin SUPER PACK SEAL		Martin Super Pack Seal combines the heavy duty waste pack housing with the superior sealing characteristics of a Super Pack Seal. Seal may also be air or grease purged for difficult sealing applications.
PRODUCT DROP OUT SEAL		This flange type dust seal is designed for insertion between trough end and flanged ball bearing. The cast iron housing is open on all four sides for exit of material that might work past seal or lubricant from bearing.
PLATE SEAL		Plate seals are the most common and economical seal. It is normally furnished with a lip seal. This type seal is normally installed between the trough end and bearing, but may be used separately on pedestal type trough ends. Can be used with flanged ball, roller or other standard 4-bolt bearings.
SPLIT GLAND SEAL		Split gland compression type seals provide for easy replacement and adjustment of packing pressure on the shaft without removal of the conveyor. These seals can be installed inside or outside the end plates.
COMPRESSION TYPE PACKING GLAND SEAL		Flanged packing gland seals consist of an external housing and an internal gland which is forced into the housing to compress the packing. This is the most positive type shaft seal and may be used where minor pressure requirements are desired.
AIR-PURGED SEAL		Air purge shaft seals are arranged for attaching to standard or special trough ends. A constant air pressure is maintained to prevent material from escaping from the trough along the shaft. The air purge seal is desirable for sealing highly abrasive materials. May be purged with grease or water.

Compression Type Packing Gland Seal

Flanged gland seals consist of an external housing and an internal gland which is forced into the housing to compress the packing. This is the most positive type shaft seal and may be used where pressure requirements are desired.



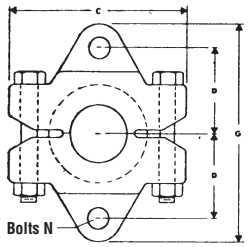


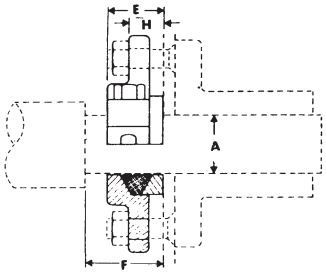
Shaft Diameter	Part Number	B	E	H Bolts	Weight
1 1/2	PGC3	5 1/4	4	1/2	14
2	PGC4	7 1/8	5 1/8	5/8	18
2 7/16	PGC5	7 5/8	5 5/8	5/8	21
3	PGC6	8 1/2	6	3/4	27
3 7/16	PGC7	9 1/4	6 3/4	3/4	30

*Braided rope graphite packing is standard. Other types available on request.

Split Gland Seal

Split gland compression type seals provide for easy replacement and adjustment of packing pressure on the shaft without removal of the conveyor. These seals are normally installed inside the end plates.

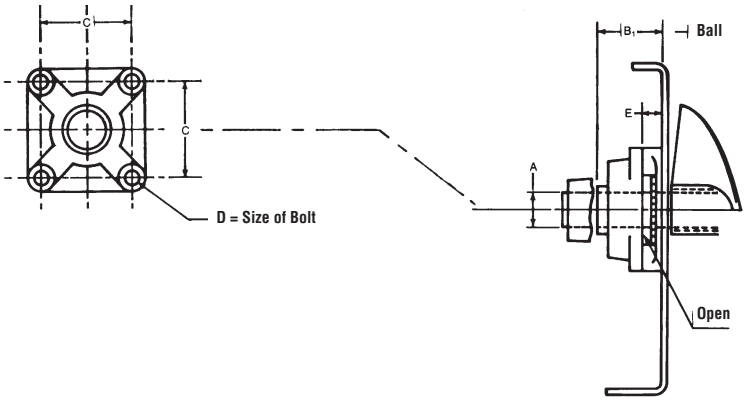




Shaft Diameter	Part Number	C	D	E	F	G	H	N	Weight
1 1/2	CSS3	4 3/4	2 3/16	1 7/16	2 1/2	5 7/8	7/8	1/2	5
2	CSS4	6 1/4	2 5/8	1 1/2	2 1/2	6 1/2	7/8	1/2	10
2 7/16	CSS5	6 7/8	3 1/16	1 5/8	3 1/4	7 5/8	1	5/8	15
3	CSS6	7 1/2	3 9/16	1 5/8	3 1/4	8 5/8	1	5/8	22
3 7/16	CSS7	8 3/4	4 1/8	2 1/8	3 3/4	10 1/4	1 1/4	3/4	30

Flanged Product Drop-Out Seal

This flange type dust seal is designed for insertion between trough end and flanged bearing. The cast iron housing is open on all four sides for exit of material that might work past seal or lubricant from bearing.

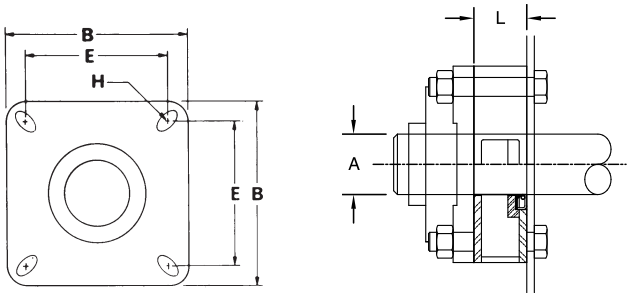


Shaft Diameter	Part Number	Weight	B_1	C	E	D
1	CSFP2	1.75	2 1/8	2 3/4	11/16	3/8
1 1/2	CSFP3	3.4	2 57/64	4	7/8	1/2
2	CSFP4	5.3	3 3/16	5 1/8	7/8	5/8
2 7/16	CSFP5	5.8	3 9/16	5 5/8	7/8	5/8
3	CSFP6	7.2	4 3/8	6	7/8	3/4
3 7/16	CSFP7	10.3	4 31/32	6 3/4	1	3/4

Shaft Seals

Martin Super Pack Seal

Martin Super Pack Seal combines the heavy duty waste pack housing with the superior sealing characteristics of a Super Pack Seal. Seal may also be air or grease purged for difficult sealing applications.

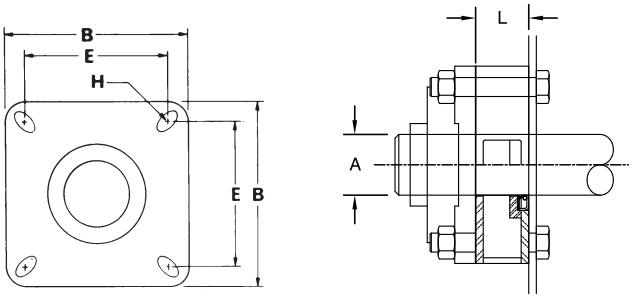


With Super Pack Seal

A Shaft Diameter	Part Number	B	L	E		H Bolts		Weight
				(-B)	(-R)	(-B)	(-R)	
1 1/2	MSP3	5 3/8	1 3/4	4	4 1/8	1/2	1/2	6
2	MSP4	6 1/2	1 3/4	5 1/8	4 3/8	5/8	1/2	8
2 7/16	MSP5	7 3/8	1 3/4	5 5/8	5 3/8	5/8	5/8	10
3	MSP6	7 3/4	1 3/4	6	6	3/4	3/4	13
3 7/16	MSP7	9 1/4	2 1/4	6 3/4	7	3/4	3/4	16

Waste Pack Seal

Waste pack seals are furnished with waste packing in combination with lip seal. This type seal is normally installed between the trough end and bearing, but may be used separately on pedestal type trough ends. An opening is provided at top for repacking without removing seal from trough end.

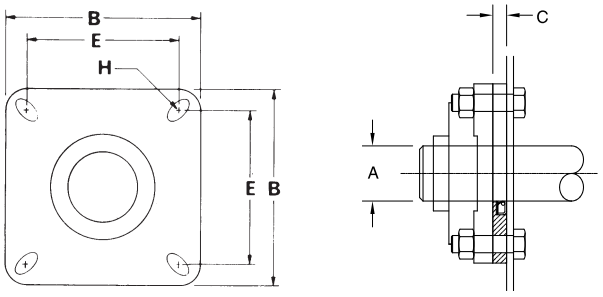


With Lip Seal

A Shaft Diameter	Part Number	B	L	E		H Bolts		Weight
				(-B)	(-R)	(-B)	(-R)	
1 1/2	CSW3	5 3/8	1 3/4	4	4 1/8	1/2	1/2	6
2	CSW4	6 1/2	1 3/4	5 1/8	4 3/8	5/8	1/2	8
2 7/16	CSW5	7 3/8	1 3/4	5 5/8	5 3/8	5/8	5/8	10
3	CSW6	7 3/4	1 3/4	6	6	3/4	3/4	13
3 7/16	CSW7	9 1/4	2 1/4	6 3/4	7	3/4	3/4	16

Plate Seal

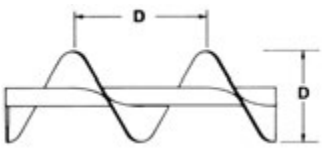
Plate seals are the most common and economical seal. They are furnished with a lip seal. This type seal is normally installed between the trough end and bearing, but may be used separately on pedestal type trough ends. Slotted mounting holes allow use with both ball and roller flanged bearings.



A Shaft Diameter	Part Number	B	C	E		H Bolts		Weight
				(-B)	(-R)	(-B)	(-R)	
1 1/2	CSP3	5 3/8	1/2	4	4 1/8	1/2	1/2	2
2	CSP4	6 1/2	1/2	5 1/8	4 3/8	5/8	1/2	3
2 7/16	CSP5	7 3/8	1/2	5 5/8	5 3/8	5/8	5/8	4
3	CSP6	7 3/4	1/2	6	6	3/4	3/4	5
3 7/16	CSP7	9 1/4	3/4	6 3/4	7	3/4	3/4	8

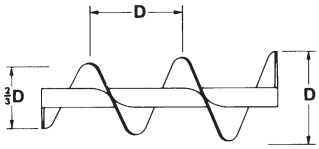
Conveyor Screws

STANDARD PITCH, SINGLE FLIGHT



Conveyor screws with pitch equal to screw diameter are considered standard. They are suitable for a whole range of materials in most conventional applications.

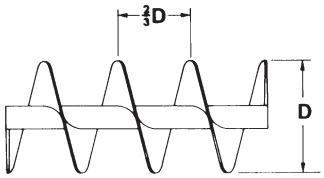
TAPERED, STANDARD PITCH, SINGLE FLIGHT



Price on Application

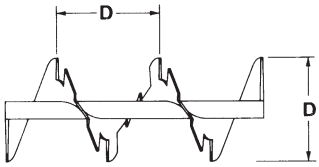
Screw flights increase from 2/3 to full diameter. Used in screw feeders to provide uniform withdrawal of lumpy materials. Generally equivalent to and more economical than variable pitch.

SHORT PITCH, SINGLE FLIGHT



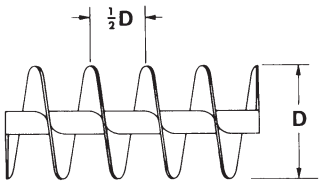
Flight pitch is reduced to 2/3 diameter. Recommended for inclined or vertical applications. Used in screw feeders. Shorter pitch reduces flushing of materials which fluidize.

SINGLE CUT-FLIGHT, STANDARD PITCH



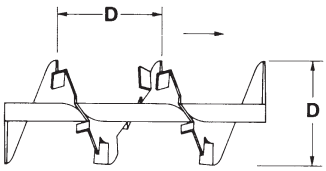
Screws are notched at regular intervals at outer edge. Affords mixing action and agitation of material in transit. Useful for moving materials which tend to pack.

HALF PITCH, SINGLE FLIGHT



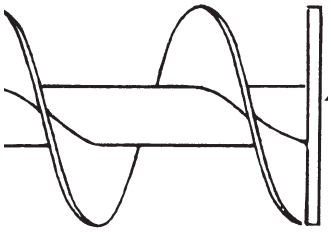
Similar to short pitch except pitch is reduced to 1/2 standard pitch. Useful for inclined applications, for screw feeders and for handling extremely fluid materials.

CUT & FOLDED FLIGHT, STANDARD PITCH



Folded flight segments lift and spill the material. Partially retarded flow provides thorough mixing action. Excellent for heating, cooling or aerating light substances.

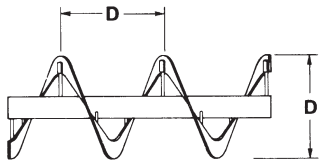
END DISC ON CONVEYOR SCREW



Price on Application

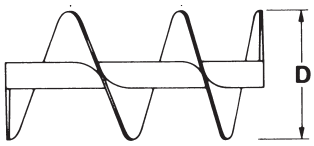
An end disc is the same diameter as the screw and is welded flush with the end of the pipe shaft at its discharge end and, of course, rotates with the screw. The end disc helps to keep discharging material away from the trough end seal.

SINGLE FLIGHT RIBBON



Excellent for conveying sticky or viscous materials. Open space between flighting and pipe eliminate collection and build-up of material.

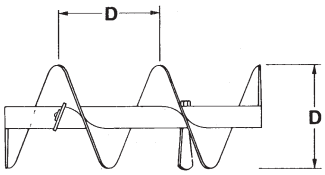
VARIABLE PITCH, SINGLE FLIGHT



Price on Application

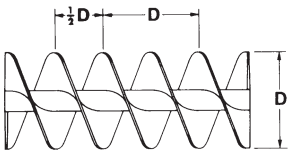
Flights have increasing pitch and are used in screw feeders to provide uniform withdrawal of fine, free flowing materials over the full length of the inlet opening.

STANDARD PITCH WITH PADDLES



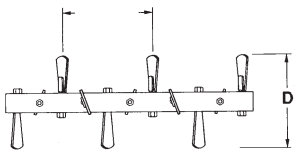
Adjustable paddles positioned between screw flights opposed flow to provide gentle but thorough mixing action.

DOUBLE FLIGHT, STANDARD PITCH



Double flight, standard pitch screws provide smooth regular material flow and uniform movement of certain types or materials.

PADDLE

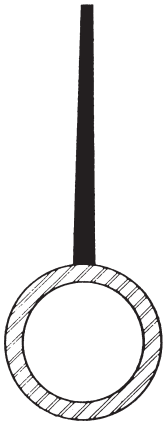


Adjustable paddles provide complete mixing action, and controlled material flow.

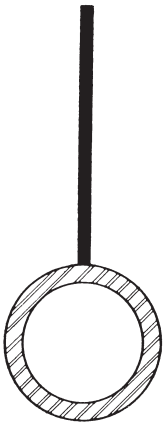
Conveyor Screws

Helicoid flights are formed in a special rolling machine by forming a steel strip into a continuous one-piece helix of the desired diameter, pitch and thickness to fit conveyor screw pipes. The helicoid flight is tapered in cross section, with the thickness at the inner edge approximately twice the thickness of the outer edge.

Sectional flights are individual flights or turns blanked from steel plates and formed into a spiral or helix of the desired diameter and pitch to fit conveyor screw pipes. The flights are butt welded together to form a continuous conveyor screw. Modifications can be furnished, such as, fabrication from various metals, different flight thicknesses, other diameters and pitches. The buttweld flight is the same thickness in the full cross section.



Helicoid Flight



Sectional Flight

Key to Conveyor Size Designation

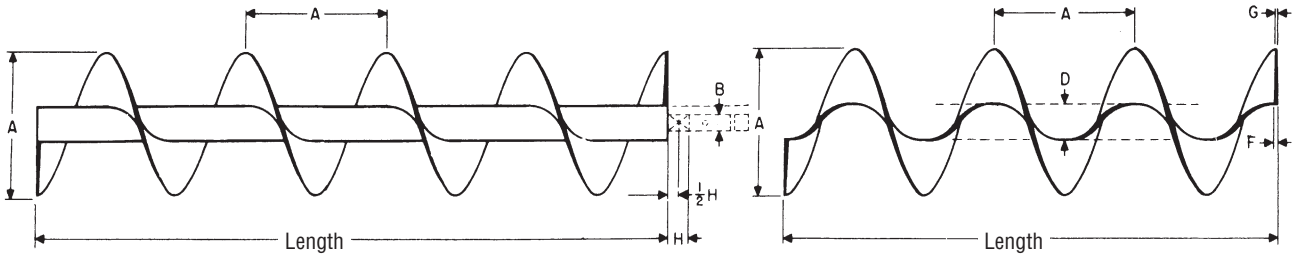
The letter "H" indicates screw conveyor with helicoid flighting. The figures to the left of the letters indicate the nominal outside diameter of the conveyor in inches. The first figure following the letters is twice the diameter of the couplings in inches. The last two figures indicate the nominal thickness of flighting at the outer edge in 1/64". Thus conveyor 12H408 indicates 12" diameter helicoid conveyor for 2" couplings with flighting 8/64" or 1/8" thickness at outer edge. Hand of conveyor is indicated by "R" or "L" following the designation.

Comparison Table • helicoid flight and sectional flight conveyor screws

Screw Diameter	Helicoid Flight						Sectional Flight			
	Conveyor Screw Size Designation ▽	Former Designation	Coupling Diameter	Nominal Inside Diameter of Pipe	Thickness of Flight: Inner Edge	Thickness of Flight: Outer Edge	Conveyor Screw Size Designation ▽	Coupling Diameter	Nominal Inside Diameter of Pipe	Thickness of Flight
4	4H206	4 X	1	1 3/8	3/16	3/32	–	–	–	–
6	6H304	6 Standard	1 1/2	2	1/8	1/16	–	–	–	–
	6H308	6 X	1 1/2	2	1/4	1/8	6S309	1 1/2	2	10 ga.
	6H312	6 XX	1 1/2	2	3/8	3/16	6S312	1 1/2	2	3/16 in.
9	9H306	9 Standard	1 1/2	2	3/16	3/32	9S307	1 1/2	2	12 ga.
	9H406	9 Special	2	2 1/2	3/16	3/32	9S407	2	2 1/2	12 ga.
	9H312	9 X	1 1/2	2	3/8	3/16	9S312	1 1/2	2	3/16 in.
	9H412	9 XX	2	2 1/2	3/8	3/16	9S412	2	2 1/2	3/16 in.
	9H414	—	2	2 1/2	7/16	7/32	9S416	2	2 1/2	1/4 in.
10	10H306	10 Standard	1 1/2	2	3/16	3/32	10S309	1 1/2	2	10 ga.
	10H412	10 XX	2	2 1/2	3/8	3/16	10S412	2	2 1/2	3/16 in.
12	12H408	12 Standard	2	2 1/2	1/4	1/8	12S409	2	2 1/2	10 ga.
	12H508	12 Special	2 7/16	3	1/4	1/8	12S509	2 7/16	3	10 ga.
	12H412	12 X	2	2 1/2	3/8	3/16	12S412	2	2 1/2	3/16 in.
	12H512	12 XX	2 7/16	3	3/8	3/16	12S512	2 7/16	3	3/16 in.
	12H614	—	3	3 1/2	7/16	7/32	12S616	3	3 1/2	1/4 in.
14	14H508	14 Standard	2 7/16	3	1/4	1/8	14S509	2 7/16	3	10 ga.
	14H614	14 XX	3	3 1/2	7/16	7/32	14S616	3	3 1/2	1/4 in.
16	16H610	16 Standard	3	3 1/2	5/16	5/32	16S609	3	3 1/2	10 ga.
	16H614	—	3	4	7/16	7/32	16S616	3	3 1/2	1/4 in.
18	18H610	—	3	3 1/2	5/16	5/32	18S609	3	3 1/2	10 ga.

▽ Size designation: Examples: 12H412 and 12S412.
12 = screw diameter in inches
H = helicoid flight
S = sectional flight
4 = 2 times 2" coupling diameter
12 = thickness of flight at periphery in increments of 1/64"

Conveyor Screws (Helicoid)

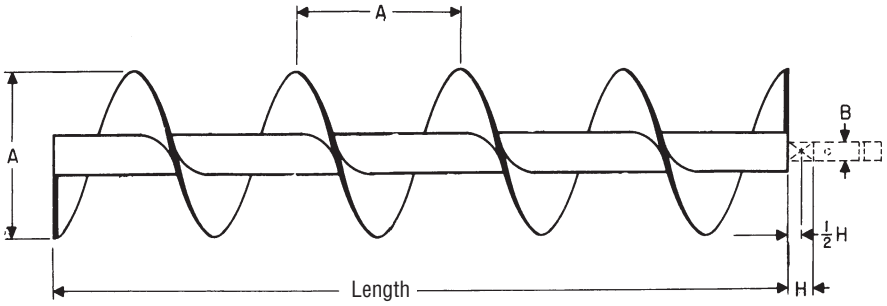


Helicoid Conveyor Screw **Flighting**

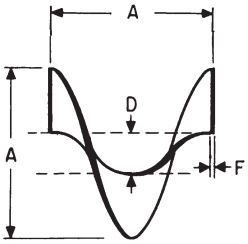
A	B	Size Part No. Conveyor Mounted	Size Part No. Flighting Only	D Pipe Size		Flight Thickness		H	Standard Length Feet – Inches	Average Weight			
										Complete Screw		Flighting Only	
Screw Diameter	Coupling Diameter			Nominal Inside	Outside	F Inside	G Outside	Coupling Bearing Length		Standard Length	Per Foot	Standard Length	Per Foot
4	1	4H206–*	4HF206–*	1 3/8	1 5/8	3/16	3/32	1 1/2	9 – 10 1/2	40	4	16	1.3
6	1 1/2	6H304–*	6HF304–*	2	2 3/8	1/8	1/16	2	9 – 10	52	5	14	1.4
	1 1/2	6H308–*	6HF308–*	2	2 3/8	1/4	1/8	2	9 – 10	62	6	28	2.8
	1 1/2	6H312–*	6HF312–*	2	2 3/8	3/8	3/16	2	9 – 10	72	7	42	4.3
9	1 1/2	9H306–*	9HF306–*	2	2 3/8	3/16	3/32	2	9 – 10	70	7	31	3.2
	1 1/2	9H312–*	9HF312–*	2	2 3/8	3/8	3/16	2	9 – 10	101	10	65	6.1
	2	9H406–*	9HF406–*	2 1/2	2 7/8	3/16	3/32	2	9 – 10	91	9	30	3.0
	2	9H412–*	9HF412–*	2 1/2	2 7/8	3/8	3/16	2	9 – 10	121	12	60	6.6
	2	9H414–*	9HF414–*	2 1/2	2 7/8	7/16	7/32	2	9 – 10	131	13	70	6.3
10	1 1/2	10H306–*	10HF306–*	2	2 3/8	3/16	3/32	2	9 – 10	81	8	48	4.9
	2	10H412–*	10HF412–*	2 1/2	2 7/8	3/8	3/16	2	9 – 10	130	13	76	7.7
12	2	12H408–*	12HF408–*	2 1/2	2 7/8	1/4	1/8	2	11 – 10	140	12	67	5.7
	2	12H412–*	12HF412–*	2 1/2	2 7/8	3/8	3/16	2	11 – 10	180	15	102	8.6
	2 7/16	12H508–*	12HF508–*	3	3 1/2	1/4	1/8	3	11 – 9	168	14	64	5.4
	2 7/16	12H512–*	12HF512–*	3	3 1/2	3/8	3/16	3	11 – 9	198	17	96	8.2
	3	12H614–*	12HF614–*	3 1/2	4	7/16	7/32	3	11 – 9	220	18	112	9.3
14	2 7/16	14H508–*	14HF508–*	3	3 1/2	1/4	1/8	3	11 – 9	170	14	84	7.1
	3	14H614–*	14HF614–*	3 1/2	4	7/16	7/32	3	11 – 9	254	22	132	11.2
16	3	16H610–*	16HF610–*	3 1/2	4	5/16	5/32	3	11 – 9	228	19	120	10.0
▽	3	16H614–*	16HF614–*	4	4 1/2	7/16	7/32	3	11 – 9	285	24	154	11.7
18 ▽	3	18H610–*	18HF610–*	3 1/2	4	5/16	5/32	3	11 – 9	282	24	167	13.9

▽ Offered only in full pitch helicoid flighting.
–* R For Right Hand
–* L For Left Hand

Conveyor Screws (Sectional)



Sectional Conveyor Screw

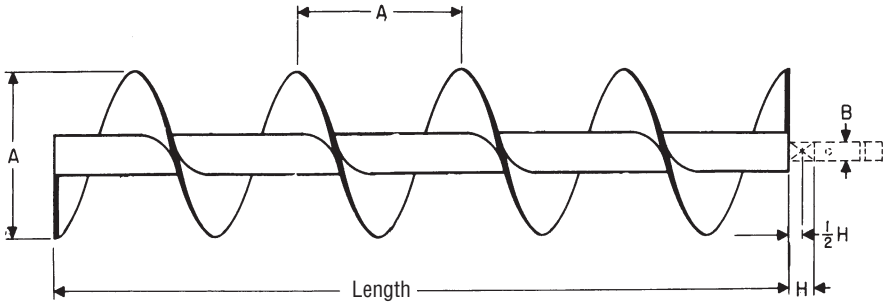


Flight

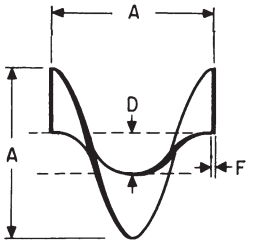
A	B	Size	Size	Pipe Size		F	H	Standard	Average Weight			
Screw Diameter	Coupling Diameter	Part No. Conveyor Mounted	Part No. Flighting Only	Nominal Inside	D Outside	Flight Thickness	Coupling Bearing Length	Length Feet-Inches	Standard Length	Per Foot	Flight Each	Approx. Flight Per Foot
6	1 1/2	6S312–*	6SF312–*	2	2 3/8	3/16	2	9 - 10	75	7.5	1.7	2.0
	1 1/2	6S316–*	6SF316–*	2	2 3/8	1/4	2	9 - 10	90	8.0	2.2	2.0
9	1 1/2	9S312–*	9SF312–*	2	2 3/8	3/16	2	9 - 10	95	9.5	4.3	1.33
	1 1/2	9S316–*	9SF316–*	2	2 3/8	1/4	2	9 - 10	130	13.0	5.5	1.33
	1 1/2	9S324–*	9SF324–*	2	2 3/8	3/8	2	9 - 10	160	16.0	7.9	1.33
	2	9S412–*	9SF412–*	2 1/2	2 7/8	3/16	2	9 - 10	115	11.5	4.3	1.33
	2	9S416–*	9SF416–*	2 1/2	2 7/8	1/4	2	9 - 10	130	13.0	5.5	1.33
	2	9S424–*	9SF424–*	2 1/2	2 7/8	3/8	2	9 - 10	160	16.0	7.9	1.33
10	1 1/2	10S312–*	10SF312–*	2	2 3/8	3/16	2	9 - 10	120	12.0	5.0	1.2
	1 1/2	10S316–*	10SF316–*	2	2 3/8	1/4	2	9 - 10	135	13.5	6.7	1.2
	1 1/2	10S324–*	10SF324–*	2	2 3/8	3/8	2	9 - 10	165	16.5	8.7	1.2
	2	10S412–*	10SF412–*	2 1/2	2 7/8	3/16	2	9 - 10	120	12.0	5.0	1.2
	2	10S416–*	10SF416–*	2 1/2	2 7/8	1/4	2	9 - 10	135	13.5	6.7	1.2
	2	10S424–*	10SF424–*	2 1/2	2 7/8	3/8	2	9 - 10	165	16.5	8.7	1.2
12	2	12S412–*	12SF412–*	2 1/2	2 7/8	3/16	2	11 - 10	156	13.0	7.2	1.0
	2	12S416–*	12SF416–*	2 1/2	2 7/8	1/4	2	11 - 10	204	17.0	9.7	1.0
	2	12S424–*	12SF424–*	2 1/2	2 7/8	3/8	2	11 - 10	268	22.3	12.7	1.0
	2 7/16	12S509–*	12SF509–*	3	3 1/2	10 Ga.	3	11 - 9	160	14.0	5.7	1.0
	2 7/16	12S512–*	12SF512–*	3	3 1/2	3/16	3	11 - 9	178	14.8	7.2	1.0
	2 7/16	12S516–*	12SF516–*	3	3 1/2	1/4	3	11 - 9	210	17.5	9.7	1.0
	2 7/16	12S524–*	12SF524–*	3	3 1/2	3/8	3	11 - 9	274	22.5	12.7	1.0
	3	12S612–*	12SF612–*	3 1/2	4	3/16	3	11 - 9	198	16.5	7.2	1.0
	3	12S616–*	12SF616–*	3 1/2	4	1/4	3	11 - 9	216	18.0	9.7	1.0
	3	12S624–*	12SF624–*	3 1/2	4	3/8	3	11 - 9	280	24.0	12.7	1.0

–* R For Right Hand
–* L For Left Hand

Conveyor Screws (Sectional)



Sectional Conveyor Screw



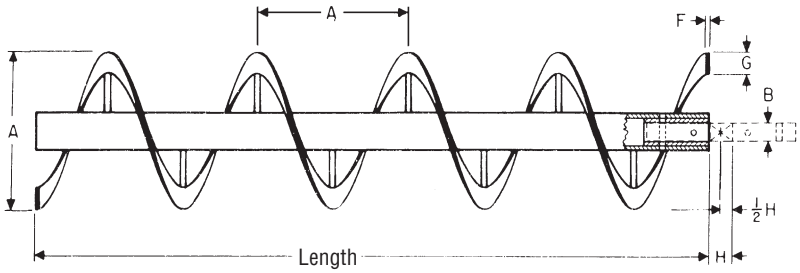
Flight

A	B	Size	Size	Pipe Size		F	H	Standard	Average Weight			Approx.
Screw Diameter	Coupling Diameter	Part No. Conveyor Mounted	Part No. Flighting Only	Nominal Inside	D Outside	Flight Thickness	Coupling Bearing Length	Length Feet-Inches	Standard Length	Per Foot	Flight Each	Flight Per Foot
14	2 7/16	14S512–*	14SF512–*	3	3 1/2	3/16	3	11 - 9	214	18.0	9.9	.86
	2 7/16	14S516–*	14SF516–*	3	3 1/2	1/4	3	11 - 9	240	20.0	13.2	.86
	2 7/16	14S524–*	14SF524–*	3	3 1/2	3/8	3	11 - 9	330	27.5	19.8	.86
	3	14S612–*	14SF612–*	3 1/2	4	3/16	3	11 - 9	222	19.0	9.9	.86
	3	14S616–*	14SF616–*	3 1/2	4	1/4	3	11 - 9	246	21.0	13.2	.86
	3	14S624–*	14SF624–*	3 1/2	4	3/8	3	11 - 9	342	29.0	19.8	.86
16	3	16S612–*	16SF612–*	3 1/2	4	3/16	3	11 - 9	234	20.0	14.0	.75
	3	16S616–*	16SF616–*	3 1/2	4	1/4	3	11 - 9	282	24.0	18.0	.75
	3	16S624–*	16SF624–*	3 1/2	4	3/8	3	11 - 9	365	31.0	25.5	.75
	3	16S632–*	16SF632–*	3 1/2	4	1/2	3	11 - 9	402	33.5	36.0	.75
18	3	18S612–*	18SF612–*	3 1/2	4	3/16	3	11 - 9	246	21.0	18.0	.67
	3	18S616–*	18SF616–*	3 1/2	4	1/4	3	11 - 9	294	25.0	24.0	.67
	3	18S624–*	18SF624–*	3 1/2	4	3/8	3	11 - 9	425	36.0	34.5	.67
	3	18S632–*	18SF632–*	3 1/2	4	1/2	3	11 - 9	530	44.0	46.0	.67
	3 7/16	18S712–*	18SF712–*	4	4 1/2	3/16	4	11 - 8	293	24.4	18.0	.67
	3 7/16	18S716–*	18SF716–*	4	4 1/2	1/4	4	11 - 8	345	28.8	24.0	.67
	3 7/16	18S724–*	18SF724–*	4	4 1/2	3/8	4	11 - 8	470	39.2	34.5	.67
	3 7/16	18S732–*	18SF732–*	4	4 1/2	1/2	4	11 - 8	570	47.5	46.0	.67
20	3	20S612–*	20SF612–*	3 1/2	4	3/16	3	11 - 9	300	26.0	20.0	.60
	3	20S616–*	20SF616–*	3 1/2	4	1/4	3	11 - 9	360	31.0	28.0	.60
	3	20S624–*	20SF624–*	3 1/2	4	3/8	3	11 - 9	410	33.4	40.0	.60
	3	20S632–*	20SF632–*	3 1/2	4	1/2	3	11 - 9	506	42.2	56.0	.60
	3 7/16	20S712–*	20SF712–*	4	4 1/2	3/16	4	11 - 8	310	27.0	20.0	.60
	3 7/16	20S716–*	20SF716–*	4	4 1/2	1/4	4	11 - 8	370	32.0	28.0	.60
24	3 7/16	24S724–*	24SF724–*	4	4 1/2	3/8	4	11 - 8	424	36.0		

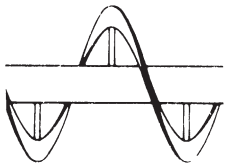
–* R For Right Hand
–* L For Left Hand

Conveyor Screws (Ribbon)

Ribbon flight conveyor screws consist of sectional flights, buttwelded together to form a continuous helix. Flights are secured to the pipe by supporting legs. Both ends of the pipe are prepared with internal collars and drilling to accept couplings, drive shafts, and end shafts. They are used to convey sticky, gummy, or viscous substances, or where the material tends to adhere to flighting and pipe.

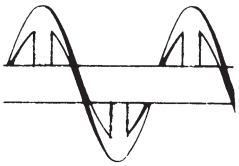


Ribbon Conveyor Screw



Post

Internal (Int) Leg

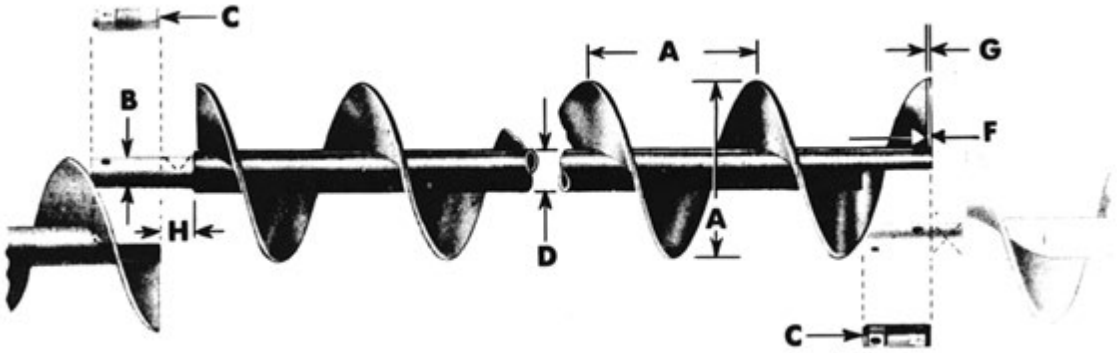


A	B	Size Part No. Conveyor Mounted	Pipe Size		Flight Size		H Coupling Bearing Length	Standard Length Feet-Inches	Weight Complete Screw	
Screw Diameter	Coupling Diameter		Inside	Outside	F Thickness	G Width			Standard Length	Per Foot
6	1 1/2	6R312–*	2	2 3/8	3/16	1	2	9 - 10	65	6.5
9	1 1/2	9R316–*	2	2 3/8	1/4	1 1/2	2	9 - 10	100	10
10	1 1/2	10R316–*	2	2 3/8	1/4	1 1/2	2	9 - 10	110	11
12	2	12R416–*	2 1/2	2 7/8	1/4	2	2	11 - 10	180	15
	2	12R424–*	2 1/2	2 7/8	3/8	2 1/2	2	11 - 10	216	19
	2 7/16	12R524–*	3	3 1/2	3/8	2 1/2	3	11 - 9	240	21
14	2 7/16	14R516–*	3	3 1/2	1/4	2 1/2	3	11 - 9	228	19
	2 7/16	14R524–*	3	3 1/2	3/8	2 1/2	3	11 - 9	264	22
	3	14R624–*	3 1/2	4	3/8	2 1/2	3	11 - 9	288	25
16	3	16R616–*	3 1/2	4	1/4	2 1/2	3	11 - 9	276	24
	3	16R624–*	3 1/2	4	3/8	2 1/2	3	11 - 9	324	28
18	3	18R624–*	3 1/2	4	3/8	3	3	11 - 9	384	33
20	3 7/16	20R724–*	4	4 1/2	3/8	3	4	11 - 8	408	35
24	3 7/16	24R724–*	4	4 1/2	3/8	3	4	11 - 8	424	36

–* R For Right Hand
–* L For Left Hand

Quick Detachable (QD) Helicoid Conveyor

QD — Quick Detachable conveyor screws are designed for convenient removal from the conveyor assembly. Each section of screw has a QD cap at one end of the pipe. By removing this cap, a conveyor screw section can quickly and easily be removed and returned to the conveyor assembly without disturbing the other screw sections. Quick Detachable conveyor can be furnished both in helicoid and buttweld construction.

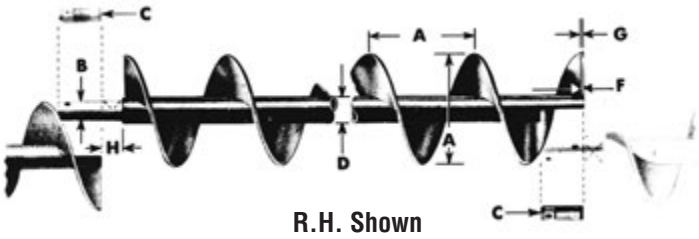


R.H. Shown

A	Size Part No. Conveyor Mounted	B	Standard Length Feet-Inches	C	D Pipe Size		Flight Thickness Ft.-In.		H	Average Weight	
Nominal Screw Diameter		Coupling Diameter	End to End of Pipe	Cap Part Number	Inside	Outside	F Inside	G Outside	Coupling Bearing Length	Standard Length	Per Foot
6	6HQ304–*	1 1/2	9-10	3QDC2	2	2 3/8	1/8	1/16	2	52	5
	6HQ308–*						1/4	1/8	2	62	6
	6HQ312–*						3/8	3/16	2	72	7
9	9HQ306–*	1 1/2	9-10	3QDC2	2	2 3/8	3/16	3/32	2	70	7
	9HQ312–*						3/8	3/16	2	101	10
	9HQ406–*	2	9-10	4QDC25	2 1/2	2 7/8	3/16	3/32	2	91	9
	9HQ412–*						3/8	3/16	2	121	12
	9HQ414–*						7/16	7/32	2	131	13
10	10HQ306–*	1 1/2	9-10	3QDC2	2	2 3/8	3/16	3/32	2	81	8
	10HQ412–*	2	9-10	4QDC25	2 1/2	2 7/8	3/8	3/16	2	130	13
12	12HQ408–*	2	11-10	4QDC25	2 1/2	2 7/8	1/4	1/8	2	140	12
	12HQ412–*						3/8	3/16	2	180	15
	12HQ508–*	2 7/16	11-9	5QDC3	3	3 1/2	1/4	1/8	3	168	14
	12HQ512–*						3/8	3/16	3	198	17
	12HQ614–*	3	11-9	6QDC35	3 1/2	4	7/16	7/32	3	220	18
14	14HQ508–*	2 7/16	11-9	5QDC3	3	3 1/2	1/4	1/8	3	170	14
	14HQ614–*	3	11-9	6QDC35	3 1/2	4	7/16	7/32	3	254	22
16	16HQ610–*	3	11-9	6QDC35	3 1/2	4	5/16	5/32	3	228	19
	16HQ614–*	3	11-9	6QDC4	4	4 1/2	7/16	7/32	3	285	23.8
18	18HQ610–*	3	11-9	6QDC4	3 1/2	4	5/16	5/32	3	282	13.9

–* R For Right Hand
–* L For Left Hand

Quick Detachable (QD) Sectional Spiral Conveyors

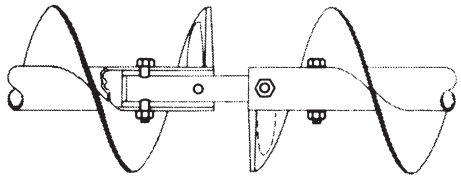


R.H. Shown

A	Size Part No.	B	Standard Length Feet-Inches	C	D Pipe Size		F	H	Average Weight	
Nominal Screw Diameter	Conveyor Mounted	Coupling Diameter	End to End of Pipe	Cap Part Number	Inside	Outside	Flight Thickness	Coupling Bearing Length	Standard Length	Per Foot
6	6SQ307–*	1 1/2	9-10	3QDC2	2	2 3/8	12	2	62	6.2
	6SQ309–*						10		65	6.5
	6SQ312–*						3/16		75	7.5
	6SQ316–*						1/4		90	8.0
9	9SQ307–*	1 1/2	9-10	3QDC2	2	2 3/8	12	2	73	7.3
	9SQ309–*						10		80	8.0
	9SQ312–*						3/16		95	9.5
	9SQ316–*						1/4		120	13
	9SQ407–*	2	9-10	4QDC25	2 1/2	2 7/8	12	2	90	9
	9SQ409–*						10		100	10
	9SQ412–*						3/16		115	11.5
	9SQ416–*						1/4		130	13.0
	9SQ424–*						3/8		160	16
10	10SQ309–*	1 1/2	9-10	3QDC2	2	2 3/8	10	2	85	8.5
	10SQ412–*	2	9-10	4QDC25	2 1/2	2 7/8	3/16	2	120	12.0
	10SQ416–*						1/4		135	13.5
12	12SQ409–*	2	11-10	4QDC25	2 1/2	2 7/8	10	2	140	12.0
	12SQ412–*						3/16		156	13.0
	12SQ416–*						1/4		204	17
	12SQ509–*	2 7/16	11-9	5QDC3	3	3 1/2	10	3	160	14
	12SQ512–*						3/16		178	15
	12SQ612–*	3	11-9	6QDC35	3 1/2	4	3/16	3	191	16.5
	12SQ616–*						1/4		216	18.0
	12SQ624–*						3/8		280	24
14	14SQ509–*	2 7/16	11-9	5QDC3	3	3 1/2	10	3	185	16
	14SQ512–*						3/16		214	18
	14SQ612–*	3	11-9	6QDC35	3 1/2	4	3/16	3	222	19
	14SQ616–*						1/4		246	21
	14SQ624–*						3/8		342	29
16	16SQ609–*	3	11-9	6QDC35	3 1/2	4	10	3	210	18
	16SQ612–*						3/16		234	20
	16SQ616–*						1/4		282	24
	16SQ624–*						3/8		365	31
18	18SQ612–*	3	11-9	6QDC35	3 1/2	4	3/16	3	246	21
	18SQ616–*						1/4		294	25
	18SQ624–*						3/8		425	36
20	20SQ612–*	3	11-9	6QDC35	3 1/2	4	3/16	3	300	26
	20SQ616–*						1/4		360	31
	20SQ724–*	3 7/16	11-8	7QDC4	4	4 1/2	3/8	4	475	40
24	24SQ712–*	3 7/16	11-8	7QDC4	4	4 1/2	3/16	4	410	37
	24SQ716–*						1/4		510	43
	24SQ724–*						3/8		595	50

–* R For Right Hand
–* L For Left Hand

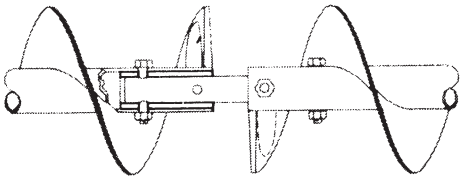
Coupling Bolts



Conveyor coupling bolts are manufactured from special analysis high-torque steel. Close tolerance for a minimum of wear. Lock nuts are furnished with each bolt.

Coupling Diameter	Outside Pipe Diameter	Bolt Size	Part Number Standard	Weight Each (lb)
1	1 5/8	3/8 × 2 1/16	CCB2	.13
1 1/2	2 3/8	1/2 × 3	CCB3	.2
2	2 7/8	5/8 × 3 5/8	CCB4	.45
2 7/16	3 1/2	5/8 × 4 3/8	CCB5	.5
3	4	3/4 × 5	CCB6	.85
3	4 1/2	3/4 × 5 1/2	CCB6A	.9
3 7/16	4 1/2	7/8 × 5 1/2	CCB7	1.29

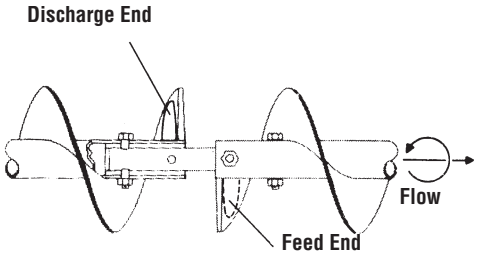
Internal Collar



Internal collars are made from seamless tubing machined for a press fit in the conveyor pipe. When installed at the factory collars are jig drilled and plug welded into the pipe. No drilling in replacement collars is furnished allowing for field drilling to match existing bolt holes.

Coupling Diameter	Inside Pipe Diameter	Part Number Standard	Weight Each (lb)
1	1 1/4	CIC2	.58
1 1/2	2	CIC3	2.06
2	2 1/2	CIC4	2.16
2 7/16	3	CIC5	3.72
3	3 1/2	CIC6	4.03
3	4	CIC6A	8.03
3 7/16	4	CIC7	6.52

End Lugs



Internal collars are made from seamless tubing machined for a press fit in the conveyor pipe. When installed at the factory collars are jig drilled and plug welded into the pipe. No drilling in replacement collars is furnished allowing for field drilling to match existing bolt holes.

Conveyor Diameter	Part Number		Weight Each (lb)
	Intake End Standard	Discharge End Standard	
6	6CELI–*	6CELD–*	.06
9	9CELI–*	9CELD–*	.15
10	9CELI–*	9CELD–*	.15
12	12CELI–*	12CELD–*	.2
14	12CELI–*	12CELD–*	.2
16	16CELI–*	16CELD–*	.4
18	16CELI–*	16CELD–*	.4
20	16CELI–*	16CELD–*	.4
24	16CELI–*	16CELD–*	.4

–* R For Right Hand
–* L For Left Hand

Shaft

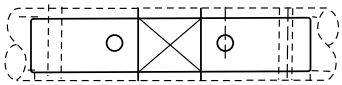
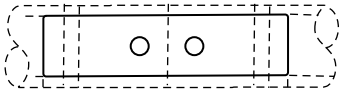
Coupling Shafts

CC	5

Coupling Part
CC — Coupling Shaft Std.*
CCC — Close Coupling Shaft
CHE — Hanger End Shaft*

Coupling Diameter
2 — 1"
3 — 1 1/2"
4 — 2"
5 — 2 7/16"
6 — 3"
7 —3 7/16"

* Add suffix H if Hardened

COUPLING		Conveyor couplings are used to join individual lengths of conveyor screws and allow for rotation within the hanger bearing. C-1045 steel couplings are normally furnished; however couplings with hardened bearing surfaces may be furnished where highly abrasive materials are being conveyed. Jig drilling allows for ease of installation.
CLOSE		Close couplings are used to adjoin conveyor screws where no hanger is required. Jig drilling allows for ease of installation.

Drive & End Shafts

1	CD	5	BB	W

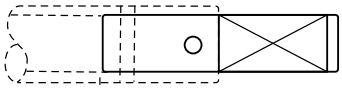
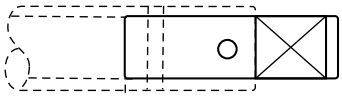
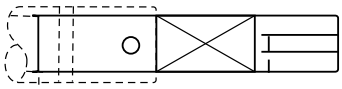
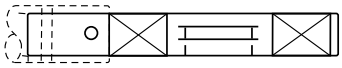
Seal Type
(Delete if without seal)
P — Plate
W — Waste Pack

Drive Shaft Number
1 — #1 Drive Shaft Only
2 — #2 Single Bearing Pedestal
3 — #3 Double Bearing Pedestal

Type
CD — Drive Shaft
CE — End Shaft

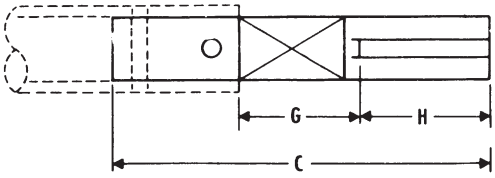
Coupling Diameter
2 — 1"
3 — 1 1/2"
4 — 2"
5 — 2 7/16"
6 — 3"
7 — 3 7/16"

Bearing Type
BB — Ball
RB — Roller

END		End shafts serve only to support the end conveyor section and are therefore usually supplied in cold rolled steel. End shafts are jig drilled for ease of assembly and close diametral tolerances are held for proper bearing operation.
HANGER END		Hanger end shafts are designed to connect only one conveyor section to a hanger bearing. These shafts may also be used in pairs to divide an excessively long conveyor assembly between two drives.
#1 DRIVE		No. 1 drive shafts are normally used where standard end plates are furnished. Jig drilling allows for ease of installation.
SPECIAL DRIVE		Length, bearing location, seals and keyway location and size as required.

No. 1 Drive Shaft

No. 1 drive shafts are normally used where standard end plates are furnished. Jig drilling allows for ease of installation.



No. 1 Drive Shaft Used Without Seal*

Bronze Bearing						Ball Bearing					
Shaft Diameter	Part Number	C	G	H	Weight	Shaft Diameter	Part Number	C	G	H	Weight
1	1CD2B	9 1/2	31/2	3	2.0	1	1CD2BB	9	3	3	1.8
1 1/2	1CD3B	12 3/4	43/4	3 1/4	6.3	1 1/2	1CD3BB	11 1/2	31/2	3 1/4	5.6
2	1CD4B	15	53/4	4 1/2	13.3	2	1CD4BB	13 1/8	37/8	4 1/2	11.5
2 7/16	1CD5B	17 3/8	7	5 1/2	21.0	2 7/16	1CD5BB	15 1/8	43/4	5 1/2	18.0
3	1CD6B	19 1/8	81/8	6	37.0	3	1CD6BB	16 5/8	55/8	6	32.0
3 7/16	1CD7B	23	9	7 1/4	60.4	3 7/16	1CD7BB	20 5/8	65/8	7 1/4	52.5

*Consult Factory

No. 1 Drive Shaft Used With Plate or Product Drop Out Seals*

Bronze Bearing						Ball Bearing					
Shaft Diameter	Part Number	C	G	H	Weight	Shaft Diameter	Part Number	C	G	H	Weight
1	1CD2B-P	10	4	3	2.1	1	1CD2BB-P	9 1/2	3 1/2	3	2.0
1 1/2	1CD3B-P	13 1/4	5 1/4	3 1/4	6.6	1 1/2	1CD3BB-P	12 3/8	4 3/8	3 1/4	6.2
2	1CD4B-P	15 1/4	6 1/4	4 1/2	14.1	2	1CD4BB-P	14	4 3/4	4 1/2	12.5
2 7/16	1CD5B-P	18 3/8	8	5 1/2	24.3	2 7/16	1CD5BB-P	15 7/8	5 1/2	5 1/2	21.0
3	1CD6B-P	19 5/8	8 5/8	6	38.0	3	1CD6BB-P	17 1/2	6 1/2	6	35.0
3 7/16	1CD7B-P	24 1/8	10 1/8	7 1/4	61.0	3 7/16	1CD7BB-P	21 1/2	7 1/2	7 1/4	56.5

*Consult Factory

No. 1 Drive Shaft Used With Waste Pack Seal*

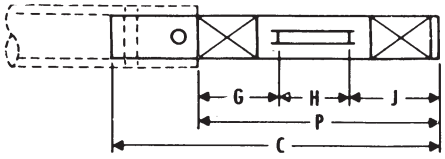
Bronze Bearing						Ball Bearing					
Shaft Diameter	Part Number	C	G	H	Weight	Shaft Diameter	Part Number	C	G	H	Weight
1	1CD2B-W	11	4 1/4	3	2.2	1	1CD2BB-W	10 1/2	3 3/4	3.0	2.0
1 1/2	1CD3B-W	14 1/2	6 1/2	3 1/4	7.2	1 1/2	1CD3BB-W	13 1/4	5 1/4	3.3	6.4
2	1CD4B-W	16 3/4	7 1/4	4 1/2	14.9	2	1CD4BB-W	14 7/8	5 5/8	4.5	13.0
2 7/16	1CD5B-W	19 1/8	8 3/4	5 1/2	23.3	2 7/16	1CD5BB-W	16 7/8	6 1/2	5.5	20.5
3	1CD6B-W	20 7/8	9 7/8	6	40.5	3	1CD6BB-W	18 3/8	7 3/8	6.0	35.5
3 7/16	1CD7B-W	25 7/8	11 7/8	7 1/4	66.3	3 7/16	1CD7BB-W	22 7/8	8 7/8	7.3	58.4

Shaft length allows for 1/2 hanger bearing length as clearance between end plate and screw
*Consult Factory

No. 2 and No. 3 Drive Shafts

No. 2 Drive Shaft

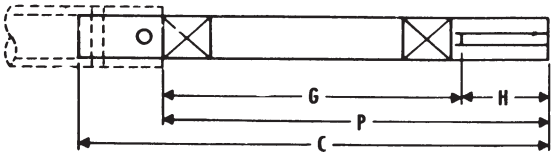
No. 2 drive shafts are used where pedestal type trough ends with single bearing are furnished. Jig drilling allows for ease of installation.



Shaft Diameter	Part Number	C	G	H	J	P	Weight
1	2CD2	11	3 1/4	2 1/4	2 1/2	8	2.5
1 1/2	2CD3	16 1/2	5	3 1/4	3 1/2	11 3/4	8.3
2	2CD4	18 3/4	5 1/4	4 1/4	4 1/2	14	17.0
2 7/16	2CD5	21 7/8	6	5 1/2	5 1/2	17	29.0
3	2CD6	23 1/2	6 1/2	5 1/2	6 1/2	18 1/2	49.0
3 7/16	2CD7	27	6 3/4	6	7 1/2	20 1/4	75.0

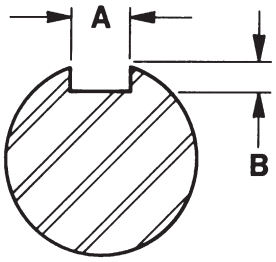
No. 3 Drive Shaft

No. 3 drive shafts are used where pedestal type trough ends with double bearings are furnished. Jig drilling allows for ease of installation.



Shaft Diameter	Part Number	C	G	H	P	Weight
1	3CD2	15 1/2	9 1/4	3	12 1/4	3
1 1/2	3CD3	20 1/4	12 1/2	3 1/4	15 3/4	10
2	3CD4	22	12 3/4	4 1/2	17 1/4	21
2 7/16	3CD5	24 5/8	14 1/4	5 1/2	19 3/4	36
3	3CD6	25 7/8	14 3/4	6	20 3/4	62
3 7/16	3CD7	29 7/8	15 7/8	7 1/4	23 1/8	95

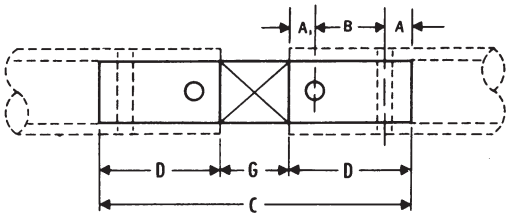
Drive Shaft Keyways



Shaft Diameter	A	B
1	1/4	1/8
1 1/2	3/8	3/16
2	1/2	1/4
2 7/16	5/8	5/16
3	3/4	3/8
3 7/16	7/8	7/16

Coupling

Conveyor couplings are used to join individual lengths of conveyor screws and allow for rotation within the hanger bearing. Mild steel couplings are normally furnished; however induction hardened bearing area couplings may be furnished where highly abrasive materials are being conveyed. Jig drilling allows for ease of installation.



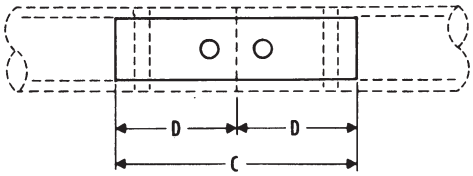
Shaft Diameter	Part Number*	A_1	A	B	C	D	G	Weight
1	CC2	1/2	1/2	2	7 1/2	3	1 1/2	1.5
1 1/2	CC3	7/8	7/8	3	11 1/2	4 3/4	2	5.6
2	CC4	7/8	7/8	3	11 1/2	4 3/4	2	9.8
2 7/16	CC5	15/16	15/16	3	12 13/16	4 7/8	3	15.4
3	CC6	1	1	3	13	5	3	23.8
3 7/16	CC7	1 1/2	1 1/4	4	17 1/2	6 3/4	4	44.5

*Add — H for Hardened Shaft.

Shaft is induction hardened in bearing area only to 40-50 RC.

Close Coupling

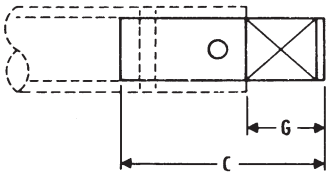
Close couplings are used to adjoin conveyor screws where no hanger is required. Jig drilling allows for ease of installation.



Shaft Diameter	Part Number*	C	D	Weight
1	CCC2	6	3	1.3
1 1/2	CCC3	9 1/2	4 3/4	4.8
2	CCC4	9 1/2	4 3/4	8.5
2 7/16	CCC5	9 3/4	4 7/8	13.0
3	CCC6	10	5	20.0
3 7/16	CCC7	13 1/2	6 3/4	37.0

Hanger End

Hanger end shafts are designed to connect only one conveyor section to a hanger bearing. These shafts may also be used in pairs to divide an excessively long conveyor assembly beween two drives.

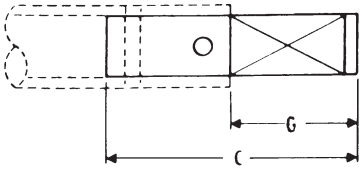


Shaft Diameter	Part Number*	C	G	Weight
1	CHE2	4 5/8	1 5/8	1.0
1 1/2	CHE3	6 7/8	2 1/8	3.5
2	CHE4	6 7/8	2 1/8	6.2
2 7/16	CHE5	8 1/8	3 1/4	10.6
3	CHE6	8 1/4	3 1/4	16.5
3 7/16	CHE7	11 1/4	4 1/4	29.7

*Add — H for Hardened Shaft
Shaft is induction hardened in bearing area only to 40-50 RC.

End Shaft

End shafts serve only to support the end conveyor section and are therefore usually supplied in cold rolled steel. End shafts are jig drilled for ease of assembly and close diametrical tolerances are held for proper bearing operation.



End Shaft Used Without Seal**

Bronze Bearing					Ball Bearing				
Shaft Diameter	Part Number*	C	G	Weight	Shaft Diameter	Part Number*	C	G	Weight
1	CE2B	6 1/2	3 1/2	1.4	1	CE2BB	6	3	1.2
1 1/2	CE3B	9 1/4	4 1/2	4.5	1 1/2	CE3BB	8 1/4	3 1/2	3.8
2	CE4B	10 1/4	5 1/2	9.0	2	CE4BB	8 5/8	3 7/8	7.5
2 7/16	CE5B	11 7/8	7	15.4	2 7/16	CE5BB	9 5/8	4 3/4	12.4
3	CE6B	13 1/8	8 1/8	25.6	3	CE6BB	10 5/8	5 5/8	20.8
3 7/16	CE7B	16 3/8	9 5/8	42.4	3 7/16	CE7BB	13 3/8	6 5/8	34.4

*Add – H for Hardened Shaft.
**Shaft length allows for 1/2 hanger bearing length, clearance between end plate and screw.
Consult Factory

End Shaft Used With Plate or Product Drop Out Seal**

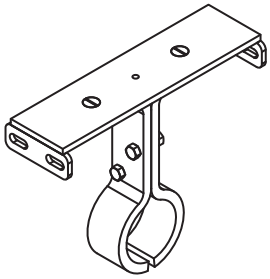
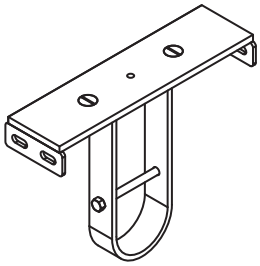
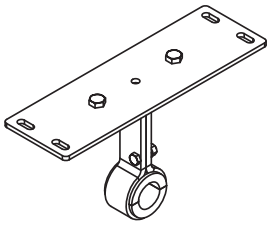
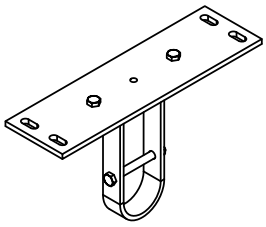
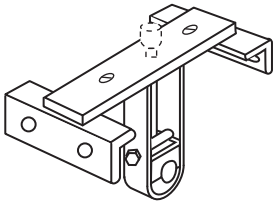
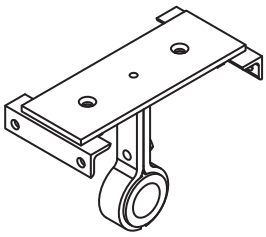
Bronze Bearing					Ball Bearing				
Shaft Diameter	Part Number*	C	G	Weight	Shaft Diameter	Part Number*	C	G	Weight
1	CE2B-P	7	4	1.5	1	CE2BB-P	6 1/2	3 1/2	1.4
1 1/2	CE3B-P	10 1/4	5 1/2	5.1	1 1/2	CE3BB-P	9	4 5/16	4.5
2	CE4B-P	11 1/4	6 1/2	10.0	2	CE4BB-P	9 3/8	4 5/8	8.3
2 7/16	CE5B-P	12 7/8	8	17.0	2 7/16	CE5BB-P	10 1/8	5 5/16	13.1
3	CE6B-P	13 5/8	8 5/8	29.8	3	CE6BB-P	11 1/2	6 1/2	23.0
3 7/16	CE7B-P	16 7/8	10 1/8	44.0	3 7/16	CE7BB-P	14 1/8	7 3/8	37.1

*Add – H for Hardened Shaft.
**Shaft length allows for 1/2 hanger bearing length, clearance between end plate and screw.
Consult Factory

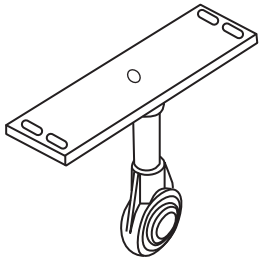
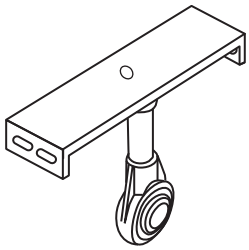
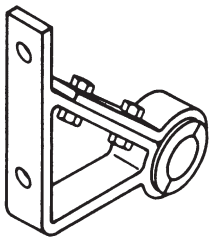
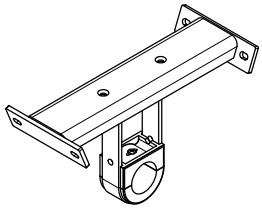
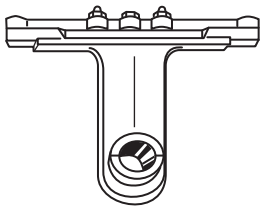
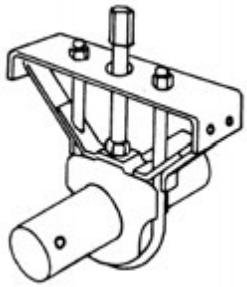
End Shaft Used With Waste Pack Seal**

Bronze Bearing					Ball Bearing				
Shaft Diameter	Part Number*	C	G	Weight	Shaft Diameter	Part Number*	C	G	Weight
1	CE2B-W	8	5	1.6	1	CE2BB-W	7 1/2	3 3/4	1.4
1 1/2	CE3B-W	11	6 1/4	5.2	1 1/2	CE3BB-W	10	5 1/4	4.8
2	CE4B-W	12	7 1/4	10.4	2	CE4BB-W	10 3/8	5 5/8	9.0
2 7/16	CE5B-W	13 5/8	8 3/4	17.6	2 7/16	CE5BB-W	11 3/8	6 1/2	14.8
3	CE6B-W	14 7/8	9 7/8	28.2	3	CE6BB-W	12 3/8	7 3/8	24.0
3 7/16	CE7B-W	18 5/8	11 7/8	48.0	3 7/16	CE7BB-W	15 5/8	8 7/8	40.2

*Add – H for Hardened Shaft.
**Shaft length allows for 1/2 hanger bearing length, clearance between end plate and screw.
Consult Factory

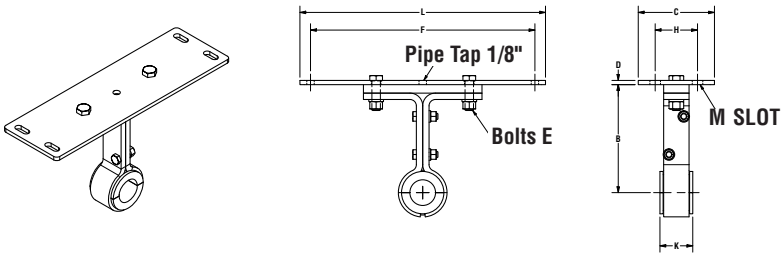
STYLE 226		No. 226 hangers are designed for flush mounting inside the trough permitting dust-tight or weather-proof operation. This type hanger allows for minimum obstruction of material flow in high capacity conveyors. Available with friction type bearing.
STYLE 216		No. 216 hangers are designed for heavy duty applications. This hanger is flush mounted inside the trough permitting dust tight or weather proof operation. Hard iron or bronze bearings are normally furnished; however, the hanger can be furnished with other bearings.
STYLE 220		No. 220 hangers are designed for mount on top of the trough flanges and may be used where dust-tight or weather proof operation is not required. This type hanger allows for minimum obstruction of material flow in high capacity conveyors. Available with friction type bearing.
STYLE 230		No. 230 hangers are designed for heavy duty applications where mounting on top of the trough flanges is required. Hard iron or bronze bearings are normally furnished; however, other bearings are available.
STYLE 316		No. 316 hangers are designed for heavy duty use in conveyors where abnormal heat requires unequal expansion between the screw and conveyor trough. Hard iron or bronze bearings are normally furnished; however, this hanger can be furnished with other bearings.
STYLE 326		No. 326 hangers are designed to permit minimum obstruction of material flow and are used in conveyors where abnormal heat requires unequal expansion between the screw and the conveyor trough. Hard iron or bronze bearings are normally furnished, but other type bearings are available.

Hangers

STYLE 60		No. 60 hangers are furnished with a heavy duty, permanently lubricated and sealed, self aligning ball bearing which permits temperatures up to 245º F. and will allow for up to 4º shaft misalignment. This hanger is mounted on top of the trough flanges. Grease fitting can be furnished if specified.
STYLE 70		No. 70 hangers are furnished with a heavy duty, permanently lubricated and sealed, self aligning ball bearing which permit temperatures up to 245º F. and will allow for up to 4º shaft misalignment. This hanger is mounted inside the trough. Grease fittings can be furnished if specified.
STYLE 30		No. 30 hangers are designed for side mounting within the conveyor trough on the noncarrying side and permit a minimum of obstruction of material flow. Available with friction type bearing.
STYLE 216F		No. 216F hangers are designed for heavy duty applications and are mounted inside of flared trough. Hard iron or bronze bearings are normally furnished; however, other bearings are available.
STYLE 19B		The No. 19B hanger is similar in construction to the No. 18B except they are mounted on top of the trough angles. Built-in ledges provide supports for the ends of the cover. They are streamline in design and permit free passage of the material. They are regularly furnished with Arguto oil impregnated wood, hard iron, bronze, or other special caps can be furnished.
AIR-PURGED HANGER		Air-Purged hangers are recommended when handling dusty and abrasive materials which contribute to shutdowns and hanger bearing failures. Air-swept hangers are available for 9"-24" conveyors. They should not be used when handling hot materials (over 250º F) or wet sticky materials or when handling non abrasive materials when an inexpensive hanger will do the job satisfactorily. In service, air-purged hangers deliver relatively trouble-free operation. They help solve noise nuisance problems, and they help reduce power requirement because of the low coefficient of fraction. Maximum trough loading should not exceed 15%. The air, at approximately 1-1/4 PSI enters the housing at the top, passes over and around the bearing, and is dissipated around the coupling shaft on both sides of the housing. Thus the bearing is protected from dust and the material in the trough at all times. Only 3 to 7 cu. ft. of air per minute is required to keep each hanger bearing clean.

Style 220

Conveyor couplings are used to join individual lengths of conveyor screws and allow for rotation within the hanger bearing. Mild steel couplings are normally furnished; however induction hardened bearing area couplings may be furnished where highly abrasive materials are being conveyed. Jig drilling allows for ease of installation.

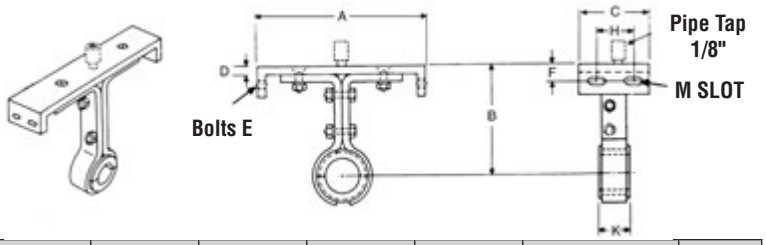


Conveyor Diameter	Coupling Size	Part Number*	B	C	D	E	F	H	K	L	M Slot	Weight Each
4	1	4CH2202	3 5/8	3 1/2	3/16	1/4	6 1/2	2	1 1/2	7 1/4	5/16 × 3 /4	5
6	1 1/2	6CH2203	4 1/2	4 1/2	3/16	3/8	8 3/4	2 1/2	2	9 3/4	7/16 × 1 1/16	7
9	1 1/2	9CH2203	6 1/8	4 1/2	1/4	3/8	12 1/4	2 1/2	2	13 1/2	7/16 × 1 1/16	9
	2	9CH2204	6 1/8	4 1/2	1/4	3/8	12 1/4	2 1/2	2	13 1/2		11
10	1 1/2	10CH2203	6 3/8	4 1/2	1/4	3/8	13 1/4	2 1/2	2	14 1/2	7/16 × 1 1/16	10
	2	10CH2204	6 3/8	4 1/2	1/4	3/8	13 1/4	2 1/2	2	14 1/2		12
12	2	12CH2204	7 3/4	5	3/8	1/2	15 3/4	2 1/2	2	17 1/2	9/16 × 1 5/16	16
	2 7/16	12CH2205	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2		21
	3	12CH2206	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2		28
14	2 7/16	14CH2205	9 1/4	5	1/2	1/2	17 3/4	2 1/2	3	19 1/2	9/16 × 1 5/16	26
	3	14CH2206	9 1/4	5	1/2	1/2	17 3/4	2 1/2	3	19 1/2		33
16	3	16CH2206	10 5/8	5	1/2	1/2	19 3/4	2 1/2	3	21 1/2	9/16 × 1 5/16	39
18	3	18CH2206	12 1/8	6	1/2	5/8	22 1/4	3 1/2	3	24 1/2	11/16 × 13/16	41
	3 7/16	18CH2207	12 1/8	6	1/2	5/8	22 1/4	3 1/2	4	24 1/2		49
20	3	20CH2206	13 1/2	6	1/2	5/8	24 1/4	3 1/2	3	26 1/2	11/16 × 13/16	43
	3 7/16	20CH2207	13 1/2	6	1/2	5/8	24 1/4	3 1/2	4	26 1/2		51
24	3 7/16	24CH2207	16 1/2	6	5/8	5/8	28 1/4	3 1/2	4	30 1/2	11/16 Hole	57

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Style 226

No. 226 hangers are designed for flush mounting inside the trough permitting dust-tight or weather-proof operation. This type hanger allows for minimum obstruction of material flow in high capacity conveyors. Also available with friction type bearing.



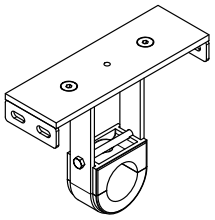
Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	H	K	M Slot	Weight Each
4	1	4CH2262	5	3 5/8	3 1/2	3/16	1/4	11/16	2	1 1/2	5/16 × 5/16	5
6	1 1/2	6CH2263	7	4 1/2	4 1/2	3/16	3/8	3/4	2 1/2	2	7/16 × 1 1/16	7
9	1 1/2	9CH2263	10	6 1/8	4 1/2	1/4	3/8	1	2 1/2	2	7/16 × 1 1/16	9
	2	9CH2264	10	6 1/8	4 1/2	1/4	3/8	1				11
10	1 1/2	10CH2263	11	6 3/8	4 1/2	1/4	3/8	1	2 1/2	2	7/16 × 1 1/16	10
	2	10CH2264	11	6 3/8	4 1/2	1/4	3/8	1				12
12	2	12CH2264	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	2	9/16 × 1 5/16	16
	2 7/16	12CH2265	13	7 3/4	5	3/8	1/2	1 1/4		3		21
	3	12CH2266	13	7 3/4	5	3/8	1/2	1 1/4		3		28
14	2 7/16	14CH2265	15	9 1/4	5	1/2	1/2	1 3/8	2 1/2	3	9/16 × 1 5/16	26
	3	14CH2266	15	9 1/4	5	1/2	1/2	1 3/8				33
16	3	16CH2266	17	10 5/8	5	1/2	1/2	1 3/8	2 1/2	3	9/16 × 1 5/16	39
18	3	18CH2266	19	12 1/8	6	1/2	5/8	1 1/2	3 1/2	3	11/16 × 1 11/16	41
	3 7/16	18CH2267	19	12 1/8	6	1/2	5/8	1 1/2		4		49
20	3	20CH2266	21	13 1/2	6	1/2	5/8	1 1/2	3 1/2	4	11/16 × 1 11/16	43
	3 7/16	20CH2267	21	13 1/2	6	1/2	5/8	1 1/2				51
24	3 7/16	24CH2267	25	16 1/2	6	5/8	5/8	1 5/8	3 1/2	4	11/16 × 1 11/16	57

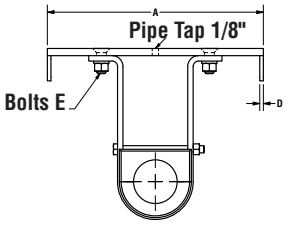
*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

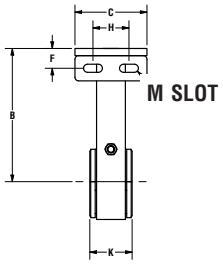
Hangers

Style 216

No. 216 hangers are designed for heavy duty applications. This hanger is flush mounted inside the trough permitting dust tight or weather proof operation. Hard iron or bronze bearings are normally furnished; however, the hanger can be furnished with other bearings.





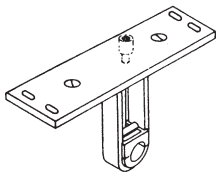


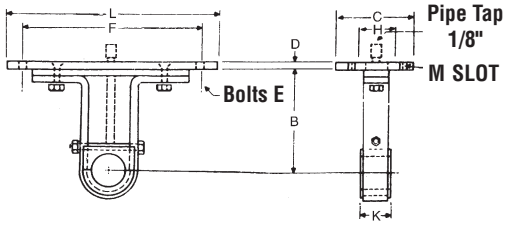
Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	H	K	M Slot	Weight Each
6	1 1/2	6CH2163	7	4 1/2	4 1/2	3/16	3/8	3/4	2 1/2	2	7/16 × 1 1/16	5
9	1 1/2	9CH2163	10	6 1/8	4 1/2	1/4	3/8	1	2 1/2	2	7/16 × 1 1/16	7
	2	9CH2164	10	6 1/8	4 1/2	1/4	3/8	1	2 1/2	2		9
10	1 1/2	10CH2163	11	6 3/8	4 1/2	1/4	3/8	1	2 1/2	2	7/16 × 1 1/16	8
	2	10CH2164	11	6 3/8	4 1/2	1/4	3/8	1	2 1/2	2		10
12	2	12CH2164	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	2	9/16 × 1 5/16	14
	2 7/16	12CH2165	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	3		18
	3	12CH2166	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	3		21
14	2 7/16	14CH2165	15	9 1/4	5	1/2	1/2	1 3/8	2 1/2	3	9/16 × 1 5/16	23
	3	14CH2166	15	9 1/4	5	1/2	1/2	1 3/8	2 1/2	3		25
16	3	16CH2166	17	10 5/8	5	1/2	1/2	1 3/8	2 1/2	3	9/16 × 1 5/16	28
18	3	18CH2166	19	12 1/8	6	1/2	5/8	1 1/2	3 1/2	3	11/16 × 1 11/16	34
	3 7/16	18CH2167	19	12 1/8	6	1/2	5/8	1 1/2	3 1/2	4		44
20	3	20CH2166	21	13 1/2	6	1/2	5/8	1 1/2	3 1/2	3	11/16 × 1 11/16	36
	3 7/16	20CH2167	21	13 1/2	6	1/2	5/8	1 1/2	3 1/2	4		47
24	3 7/16	24CH2167	25	16 1/2	6	5/8	5/8	1 5/8	3 1/2	4	11/16 × 1 11/16	53

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Style 230

No. 230 hangers are designed for heavy duty applications where mounting on top of the trough flange is required. Hard iron or bronze bearings are normally furnished; however, other bearings are available.



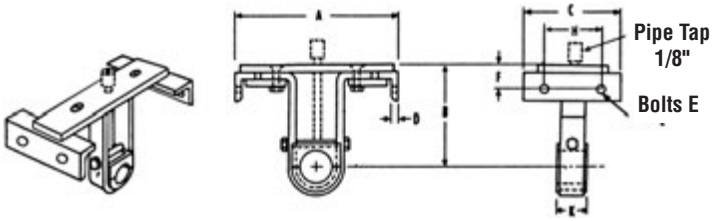


Conveyor Diameter	Coupling Size	Part Number*	B	C	D	E	F	H	K	L	M Slot	Weight Each
6	1 1/2	6CH2303	4 1/2	4 1/2	3/16	3/8	8 3/4	2 1/2	2	9 3/4	7/16 × 1 1/16	6
9	1 1/2	9CH2303	6 1/8	4 1/2	1/4	3/8	12 1/4	2 1/2	2	13 1/2	7/16 × 1 1/16	8
	2	9CH2304	6 1/8	4 1/2	1/4	3/8	12 1/4	2 1/2	2	13 1/2		10
10	1 1/2	10CH2303	63/8	4 1/2	1/4	3/8	13 1/4	2 1/2	2	14 1/2	7/16 × 1 1/16	9
	2	10CH2304	63/8	4 1/2	1/4	3/8	13 1/4	2 1/2	2	14 1/2		11
12	2	12CH2304	7 3/4	5	3/8	1/2	15 3/4	2 1/2	2	17 1/2	9/16 × 1 5/16	15
	2 7/16	12CH2305	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2		20
	3	12CH2306	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2		25
14	2 7/16	14CH2305	9 1/4	5	1/2	1/2	17 3/4	2 1/2	3	19 1/2	9/16 × 1 5/16	24
	3	14CH2306	9 1/4	5	1/2	1/2	17 3/4	2 1/2	3	19 1/2		29
16	3	16CH2306	10 5/8	5	1/2	1/2	19 3/4	2 1/2	3	21 1/2	9/16 × 1 5/16	35
18	3	18CH2306	12 1/8	6	1/2	5/8	22 1/4	3 1/2	3	24 1/2	1 1/16 × 13/16	34
	3 7/16	18CH2307	12 1/8	6	1/2	5/8	22 1/4	3 1/2	4	24 1/2		47
20	3	20CH2306	13 1/2	6	1/2	5/8	24 1/4	3 1/2	3	26 1/2	1 1/16 × 13/16	40
	3 7/16	20CH2307	13 1/2	6	1/2	5/8	24 1/4	3 1/2	4	26 1/2		49
24	3 7/16	24CH2307	16 1/2	6	5/8	5/8	28 1/4	3 1/2	4	30 1/2	1 1/16 Holes	55

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

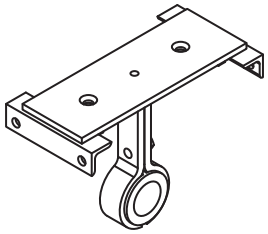
Style 316

No. 316 hangers are designed for heavy duty use in conveyors where abnormal heat requires unequal expansion between the screw and conveyor trough. Hard iron or bronze bearings are normally used; however, this hanger can be furnished with other bearings.



Style 326

No. 326 hangers are designed to permit minimum obstruction of material flow and are used in conveyors where abnormal heat requires unequal expansion between the screw and the conveyor trough. Hard iron or bronze bearings are normally used, but other type bearings are available.

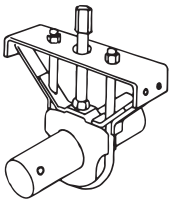


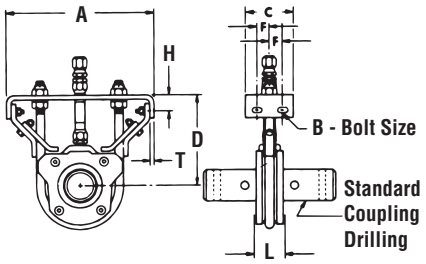
Conveyor Diameter	Coupling Size	Part Number		A	B	C	D	E	F	H	K
		Style 316*	Style 326*								
6	1 1/2	6CH3163	6CH3263	7	4 1/2	6	3/16	3/8	3/4	4 1/2	2
9	1 1/2	9CH3163	9CH3263	10	6 1/8	6	3/16	3/8	1	4 1/2	2
	2	9CH3164	9CH3264	10	6 1/8	6	3/16	3/8	1	4 1/2	2
10	1 1/2	10CH3163	10CH3263	11	6 3/8	6	3/16	3/8	1	4 1/2	2
	2	10CH3164	10CH3264	11	6 3/8	6	3/16	3/8	1	4 1/2	2
12	2	12CH3164	12CH3264	13	7 3/4	6 1/2	1/4	1/2	1 1/4	5	2
	2 7/16	12CH3165	12CH3265	13	7 3/4	6 1/2	1/4	1/2	1 1/4	5	3
	3	12CH3166	12CH3266	13	7 3/4	6 1/2	1/4	1/2	1 1/4	5	3
14	2 7/16	14CH3165	14CH3265	15	9 1/4	6 1/2	1/4	1/2	1 3/8	5	3
	3	14CH3166	14CH3266	15	9 1/4	6 1/2	1/4	1/2	1 3/8	5	3
16	3	16CH3166	16CH3266	17	10 5/8	6 1/2	1/4	1/2	1 3/8	5	3
18	3	18CH3166	18CH3266	19	12 1/8	7	1/4	5/8	1 5/8	5 1/4	3
	3 7/16	18CH3167	18CH3267	19	12 1/8	7	1/4	5/8	1 5/8	5 1/4	4
20	3	20CH3166	20CH3266	21	13 1/2	7	1/4	5/8	1 5/8	5 1/4	3
	3 7/16	20CH3167	20CH3267	21	13 1/2	7	1/4	5/8	1 5/8	5 1/4	4
24	3 7/16	24CH3167	24CH3267	25	16 1/2	7	1/4	5/8	1 3/4	5 1/4	4

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Air-Purged Hanger

Air purged hangers are recommended when handling dusty and abrasive materials which contribute to shut-downs and hanger bearing failures. They should not be used when handling hot materials (over 250°F) or wet sticky materials or when handling nonabrasive materials when an inexpensive hanger will do the job satisfactorily. Maximum trough loading should not exceed 15%. The air, at approximately 11/4 PSI, enters the housing at the top, passes over and around the bearing, and is dissipated around the coupling shaft on both sides of the housing. Only 3 to 7 cu. ft. of air per minute is required to keep each hanger bearing clean.





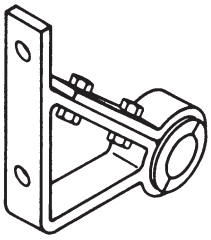
Conveyor Diameter	Coupling Size	Part Number		A	B	C	D	F	H	L	T
		Style 316*	Style 326*								
9	9CHAPH3	1 1/2	15	10	3/8	4 1/2	6 1/8	1 1/4	1	2	1/4
	9CHAPH4	2	20								
12	12CHAPH4	2	30	13	1/2	5	7 1/4	1 1/4	1 1/4	2	1/4
	12CHAPH5	2 7/16	52							3	
	12CHAPH6	3	68							3	
14	14CHAPH5	2 7/16	60	15	1/2	5	9 1/4	1 1/4	1 3/8	3	3/8
	14CHAPH6	3	74								
16	16CHAPH6	3	77	17	1/2	5	10 5/8	1 1/4	1 3/8	3	1/8
18	18CHAPH6	3	91	19	5/8	6	12 1/8	1 3/4	1 5/8	3	1/2
20	20CHAPH6	3	105	21	5/8	6	13 1/2	1 3/4	1 3/8	3	1/2
	20CHAPH7	3 7/16	140							4	
24	24CHAPH7	3 7/16	155	25	5/8	6	16 1/2	1 3/4	1 5/8	4	1/2

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Hangers

Style 30

No. 30 hangers are designed for side mounting within the conveyor trough on the non-carrying side and permit a minimum of obstruction of material flow. Available with friction type bearing.

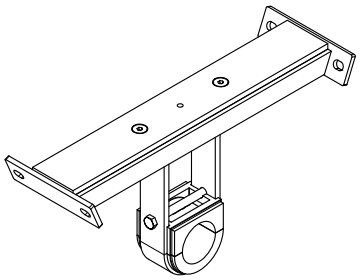


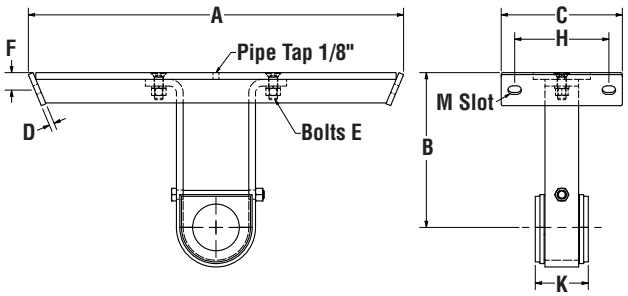
Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	G	H	Weight Each
6	1 1/2	6CH303	3 1/2	4 1/4	1 1/2	3/8	5/16	3 1/8	1/2	2	3
9	1 1/2	9CH303	5	5 7/8	1 1/2	3/8	3/8	4 1/4	1/2	2	6
	2	9CH304	5	5 7/8	1 1/2	1/2	3/8	4 1/4	1/2	2	8
10	1 1/2	10CH303	5 1/2	6 3/8	1 1/2	3/8	1/2	4 3/8	3/4	2	8
	2	10CH304	5 1/2	6 3/8	1 1/2	1/2	1/2	4 3/8	3/4	2	9
12	2	12CH304	6 1/2	7 1/2	1 1/2	1/2	1/2	5 1/2	3/4	2	12
	2 7/16	12CH305	6 1/2	7 1/2	2	1/2	1/2	5 1/2	3/4	3	18
	3	12CH306	6 1/2	7 1/2	2	5/8	1/2	5 1/2	3/4	3	20
14	2 7/16	14CH305	7 1/2	9	2	1/2	5/8	6 7/8	7/8	3	20
	3	14CH306	7 1/2	9	2	5/8	5/8	6 7/8	7/8	3	22
16	3	16CH306	8 1/2	10 3/8	2	5/8	5/8	8	1	3	32
18	3	18CH306	9 1/2	11 7/8	2	3/4	5/8	8	1 1/4	3	30
	3 7/16	18CH307	9 1/2	11 7/8	3	3/4	5/8	8	1 1/4	4	33
20	3	20CH306	10 1/2	13 1/4	2	3/4	5/8	10 1/4	1 1/4	3	32
	3 7/16	20CH307	10 1/2	13 1/4	3	3/4	5/8	10 1/4	1 1/4	4	38
24	3 7/16	24CH307	12 1/2	16 1/4	3	3/4	3/4	12 3/4	1 1/2	4	46

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Style 216F

No. 216F hangers are designed for heavy duty applications and are mounted inside of flared trough. Hard iron or bronze bearings are normally furnished; however, other bearings are available.



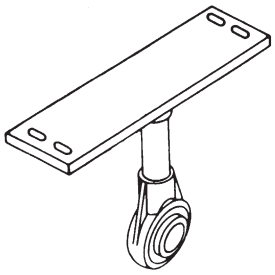


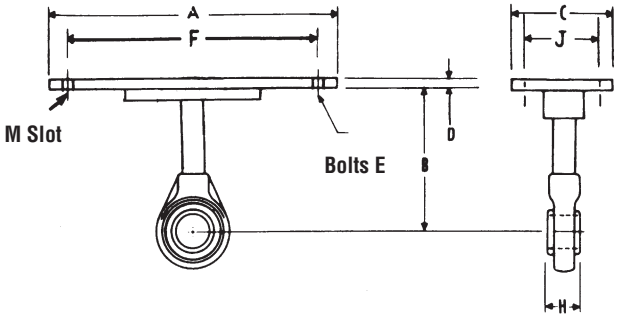
Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	H	K	Weight Each	M Slot
6	1 1/2	6CH216F3	14	7	7 1/2	1/4	3/8	7/8	6	2	9	7/16 × 3/4
9	1 1/2	9CH216F3	18	9	9	3/16	3/8	1	7	2	14	7/16 × 15/16
	2	9CH216F4									17	
12	2	12CH216F4	22	10	9	3/8	1/2	1 1/4	7	2	24	9/16 × 15/16
	2 7/16	12CH216F5								3	28	
	3	12CH216F6									32	
14	2 7/16	14CH216F5	24	11	9	3/8	1/2	1 1/8	7	3	31	9/16 × 15/16
	3	14CH216F6									34	
16	3	16CH216F6	28	11 1/2	9	1/2	5/8	1 1/4	7	3	38	11/16 × 1
18	3	18CH216F6	31	12 1/8	10	1/2	5/8	1 1/2	8	3	52	11/16 × 15/16
	3 7/16	18CH216F7								4	61	
20	3	20CH216F6	34	13 1/2	10	1/2	5/8	1 1/2	8	3	55	11/16 × 15/16
	3 7/16	20CH216F7								4	64	
24	3 7/16	24CH216F7	40	16 1/2	10	5/8	5/8	1 5/8	8	4	71	11/16 × 15/16

*Refer to Page H-99 for bearings. For hangers with oil pipe add –0 to part number

Style 60

No. 60 hangers are furnished with a heavy duty, permanently lubricated and sealed, self-aligning ball bearing which permits temperatures up to 245º F. and will allow for up to 4º shaft misalignment. This hanger is mounted on top of the trough flanges. Grease fitting can be furnished if specified.



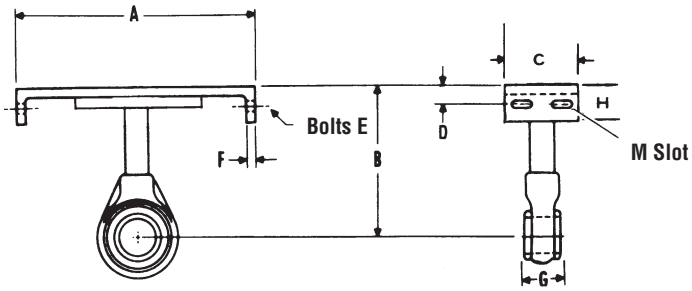


Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	H	J	Weight Each	M Slot
6	1 1/2	6CH603	9 3/4	4 1/2	4 1/2	3/16	3/8	8 3/4	1 11/16	2	7	7/16 × 11/16
9	1 1/2	9CH603	13 1/2	6 1/8	4 1/2	1/4	3/8	12 1/4	1 11/16	2 1/2	8	7/16 × 11/16
	2	9CH604	13 1/2	6 1/8	4 1/2	1/4	3/8	12 1/4	1 3/4	2 1/2	9	7/16 × 11/16
10	1 1/2	10CH603	14 1/2	6 3/8	4 1/2	1/4	3/8	13 1/4	1 11/16	2 1/2	9	7/16 × 15/16
	2	10CH604	14 1/2	6 3/8	4 1/2	1/4	3/8	13 1/4	1 3/4	2 1/2	10	7/16 × 15/16
12	2	12CH604	17 1/2	7 3/4	5	3/8	1/2	15 3/4	1 3/4	2 1/2	12	9/16 × 15/16
	2 7/16	12CH605	17 1/2	7 3/4	5	3/8	1/2	15 3/4	1 63/64	2 1/2	20	9/16 × 15/16
	3	12CH606	17 1/2	7 3/4	5	3/8	1/2	15 3/4	2 11/16	2 1/2	30	9/16 × 15/16
14	2 7/16	14CH605	19 1/2	9 1/4	5	1/2	1/2	17 3/4	1 63/64	2 1/2	21	9/16 × 15/16
	3	14CH606	19 1/2	9 1/4	5	1/2	1/2	17 3/4	2 11/32	2 1/2	32	9/16 × 15/16
16	3	16CH606	21 1/2	10 5/8	5	1/2	1/2	19 3/4	2 11/32	2 1/2	35	9/16 × 15/16
18	3	18CH606	24 1/2	12 1/8	6	1/2	5/8	22 1/4	2 11/32	3 1/2	40	11/16 × 1 11/16
20	3	20CH606	26 1/2	13 1/2	6	1/2	5/8	24 1/4	2 11/32	3 1/2	45	11/16 × 1 11/16
24	3 7/16	24CH607	30 1/2	16 1/2	6	5/8	5/8	28 1/4	2 31/64	3 1/2	58	11/16 × 1 11/16

*For hangers with oil pipe add –0 to part number

Style 70

No. 70 hangers are furnished with a heavy duty, permanently lubricated and sealed, self aligning ball bearing which permits temperatures up to 245º F. and will allow for up to 4º shaft misalignment. This hanger is mounted inside the trough. Grease fitting can be furnished if specified.



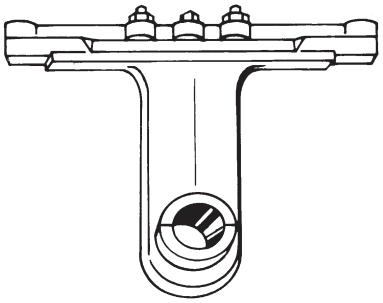
Conveyor Diameter	Coupling Size	Part Number*	A	B	C	D	E	F	G	H	Weight Each	M Slot
6	1 1/2	6CH703	7	4 1/2	4 1/2	3/4	3/8	3/16	1 11/16	1 1/2	7	7/16 × 11/16
9	1 1/2	9CH703	10	6 1/8	4 1/2	1	3/8	1/4	1 11/16	1 3/4	8	7/16 × 11/16
	2	9CH704	10	6 1/8	4 1/2	1	3/8	1/4	1 3/4	1 3/4	9	
10	1 1/2	10CH703	11	6 3/8	4 1/2	1	3/8	1/4	1 11/16	1 3/4	9	7/16 × 11/16
	2	10CH704	11	6 3/8	4 1/2	1	3/8	1/4	1 3/4	1 3/4	10	
12	2	12CH704	13	7 3/4	5	1 1/4	1/2	3/8	1 3/4	2 1/8	12	9/16 × 15/16
	2 7/16	12CH705	13	7 3/4	5	1 1/4	1/2	3/8	1 63/64	2 1/8	20	
	3	12CH706	13	7 3/4	5	1 1/4	1/2	3/8	2 11/32	2 1/8	30	
14	2 7/16	14CH705	15	9 1/4	5	1 3/8	1/2	1/2	1 63/64	2 1/4	21	9/16 × 15/16
	3	14CH706	15	9 1/4	5	1 3/8	1/2	1/2	2 11/32	2 1/4	32	
16	3	16CH706	17	10 5/8	5	1 3/8	1/2	1/2	2 11/32	2 1/4	35	9/16 × 15/16
18	3	18CH706	19	12 1/8	6	1 1/2	5/8	1/2	2 11/32	2 1/2	40	11/16 × 13/16
20	3	20CH706	21	13 1/2	6	1 1/2	5/8	1/2	2 11/32	2 1/2	45	11/16 × 13/16
24	3 7/16	24CH707	25	16 1/2	6	1 5/8	5/8	5/8	2 11/32	2 5/8	58	11/16 Holes

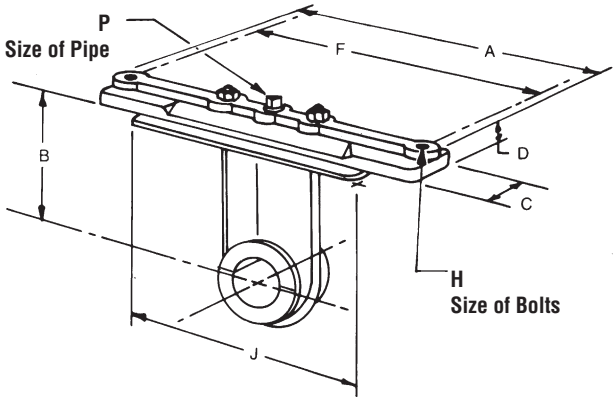
*For hangers with oil pipe add –0 to part number

Style 19B

The No. 19-B Hanger is similar in construction to the No. 18-B except they are mounted on top of the trough angles. Built-in ledges provide supports for the ends of the cover. They are streamlined in design and permit free passage of the material.

Top half is furnished with bronze bearing. Bottom half can be supplied in oil impregnated wood, hard iron, or other special caps may be furnished on request.





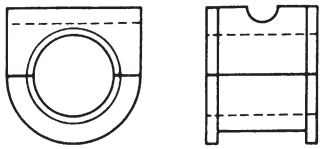
Conveyor Diameter	Coupling Size	Part Number	A	B	C	D	F	H	J	P	Weight
6	1 1/2	6CH19B3	9 7/8	4 1/2	1 7/8	7/8	8 3/4	9/16	6 1/2	1/8	8.5
9	1 1/2	9CH19B3	13 1/2	6 1/8	1 3/4	1	12 1/4	9/16	9 1/2	1/8	13.0
	2	9CH19B4	13 1/2	6 1/8	1 3/4	1	12 1/4	9/16	9 1/2	1/8	15.5
10	1 1/2	10CH19B3	14 1/2	6 3/8	1 3/4	1	13 1/4	9/16	10 1/2	1/8	14.0
	2	10CH19B4	14 1/2	6 3/8	1 3/4	1	13 1/4	9/16	10 1/2	1/8	14.0
12	2	12CH19B4	17	7 3/4	2	1 1/4	15 3/4	9/16	12 1/2	1/8	24.0
	2 7/16	12CH19B5	17	7 3/4	2 1/8	15/6	15 3/4	9/16	12 1/2	1/8	24.5
	3	12CH19B6	17	7 3/4	2 1/8	15/6	15 3/4	9/16	12 1/2	1/8	24.5
14	2 7/16	14CH19B5	19 1/4	9 1/4	3	1 1/2	17 3/4	9/16	14 1/2	1/8	37.0
	3	14CH19B6	19 1/4	9 1/4	3	1 1/2	17 3/4	9/16	14 1/4	1/8	37.0
16	3	16CH19B6	21 1/4	10 5/8	3	1 3/4	19 3/4	11/16	16 1/2	1/8	45.0
18	3	18CH19B6	23 3/4	12 1/8	3	1 5/8	22 1/4	11/16	18 1/2	1/8	48.5
20	3 7/16	20CH19B7	26 1/4	13 1/2	4	1 1/2	24 1/4	13/16	20	1/8	60.0

Screw Conveyor Hanger Bearing Selection Application

Bearing Material	Maximum Operating Temperature (°F)	Styles Available	Material FDA Complaint	Self Lube	Some Suggested Uses	Comments
Martin WHITE IRON	500°	220			Chemical, Cement, Aggregate	Requires hardened shaft. Can be noisy. Lubrication required in some applications.
ERTALYTE®	200°	220, 216	Yes		Food	Registered Trademark of Quadrant Engineering Products
GATKE	400°	220, 216			Chemical	Fiberglass fabric. Good for higher speeds.
Martin HARD IRON	500°	220		Yes	Chemical, Cement, Aggregate	Requires Hardened Shaft
CAST HARD IRON	500°	220, 216, 19B			Lime, Cement, Salt, Gypsum	Requires hardened shaft. Can be noisy. Lubrication required in some applications.
WOOD	160°	220, 216, 19B		Yes	Grain, Feed, Fertilizer	Good general purpose.
Martin BRONZE	850°	220		Yes	Grain, Feed, Processing	High quality bearings. High load capacity.
NYLATRON GS	250°	220, 19B		Yes	Chemical, Handling, Grain, Feed	Very low load capacity.
UHMW	225°	220, 216	Yes	Yes	Food	Material USDA approved. Does not swell in water.
STELLITE	1000°	220, 216			Chemical, Cement, Aggregate	Requires Stellite insert in shaft.
INDUSTRIAL GRADE ENGINEERED NYLON	160°	220		Yes	Grain, Feed, Fertilizer	Economical replacement for wood.
WHITE MELAMINE	190°	220	Yes		Food	Suitable for repeat use in food contact applications at temps not exceeding 190°F.
FOOD GRADE ENGINEERED NYLON	300°	220	Yes	Yes	Food, Grain, Fertilizer	For dry application.
BALL BEARING	180°	60, 70			Non-abrasive applications	General purpose use.
Martin HDPE	200°	220	Yes	Yes	Grain, Feed, Chemical Handling	Recommended for non-abrasive applications
CERAMIC[1]	1,000°	220, 216	Yes		Chemical, Cement, Food	Requires hardened shafts.
Martin URETHANE	200°	220		YES	Grain, Chemical, Fertilizer	Good general purpose.

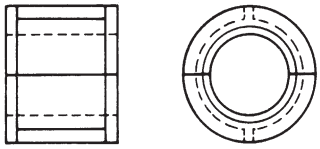
[1] Higher temperature ceramics are available.

Hanger Bearings

Hanger Types	Shaft Diameter	Part Number	Bearing
	1 1/2	CHB2163*	
216	2	CHB2164*	
230	2 7/16	CHB2165*	
316	3	CHB2166*	
	3 7/16	CHB2167*	

*H — Hard Iron *W — Wood *BR – Bronze *U — UHMW *G — Gatke *ER – Ertalyte® *C — Ceramic * ST — Stellite * UR - Urethane

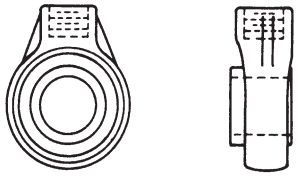
*Oil hole is furnished on hard iron and bronze standard.

Hanger Types	Shaft Diameter	Part Number	Bearing
	1	CHB2202*	
220	1 1/2	CHB2203*	
226	2	CHB2204*	
326	2 7/16	CHB2205*	
30	3	CHB2206*	
	3 7/16	CHB2207*	

*H — Cast Hard Iron with oil hole *W — Wood *N — Nylatron *P – HDPE *G — Gatke *ER – Ertalyte®

*MHI — Martin Hard iron (oil impregnated) *MCB — Melamine (Furnished Less Flanges) *C – Ceramic *WN – White Nylon *WI – White Iron

*MBR — Martin Bronze (oil impregnated) *U — UHMW *UR – Urethane

Hanger Types	Shaft Diameter	Part Number	Bearing
	1 1/2	CHB603	
60 Ball Bearing	2	CHB604	
70 Ball Bearing	2 7/16	CHB605	
	3	CHB606	
	3 7/16	CHB607	

Note: New style bearings are available with slinger shield one side.

Hanger Types	Shaft Diameter	Part Number	Bearing
	1 1/2	CHB18B3*	
18B	2	CHB18B4*	
19B	2 7/16	CHB18B5*	
	3	CHB18B6*	
	3 7/16	CHB18B7*	

*W—Wood *H—Hard Iron *N—Nylatron *G—Gatke

Note: Furnished as bottom cap only.

Ertalyte® is Registered Trademarks of Quadrant Engineered Plastic Products.

Trough Covers

Trough Cover

14	TCP	14	-12

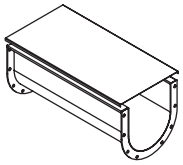
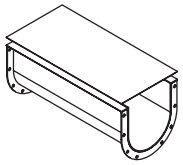
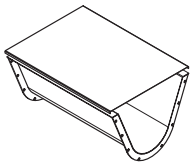
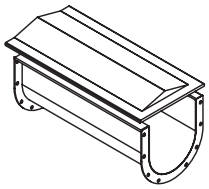
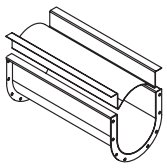
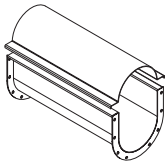
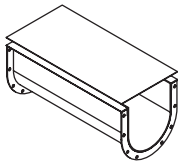
— Length of Cover

Conveyor Diameter

Type
TCP — Plain
TCS — Semi Flanged
TCF — Flanged
TCH — Hip Roof
TSC — Shroud

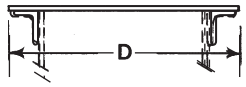
Cover Thickness
16 — 16 GA.
14 — 14 GA.
12 — 12 GA
10 — 10 GA.

It is the responsibility of the contractor, installer, owner and user to install, maintain and operate the conveyor components and conveyor assemblies manufactured and supplied by Martin 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 Standard Institute Safety Code.

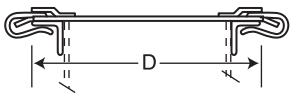
FLANGED COVERS		Most commonly used. Can be supplied with gaskets and butt straps for dust tight applications. Semi-flanged must be furnished if spring clamps are used.
FLAT COVERS		Usually used only to cover conveyor for safety.
FLARED TROUGH COVERS		Usually flanged type and heavier gauges because of span.
HIP ROOF COVERS		Hip roof covers are similar to conventional flanged covers except they are peaked slightly to form a ridge along the center of the cover. A welded end plate closes the peaked section at each end of the trough while intermediate joints are usually buttstrap connected. Hip roof covers are usually recommended for outdoor installations to prevent accumulation of moisture. They are also often used in applications where a more rigid cover is required.
SHROUD COVERS		Used to approximate tubular cross section for inclined or feeder applications.
DOMED COVERS		Domed covers are half circle domes rolled to the same inside diameter as the trough bottom and are flanged for bolting to the trough top rails. They are used where venting of fumes or heat from the material being conveyed is required. End sections have a welded end plate and intermediate joints are buttstrap connected. Vent pipes or suction lines can be attached to the cover.
FEEDER SHROUDS		Shrouds are used in trough sections of screw feeders to decrease the clearance between the cover and feeder screw to obtain proper feed regulation. Lengths are sufficient to prevent flushing of the majority of materials being handled and gauges are proportioned to trough size and gauge.

Trough Covers

Plain Cover

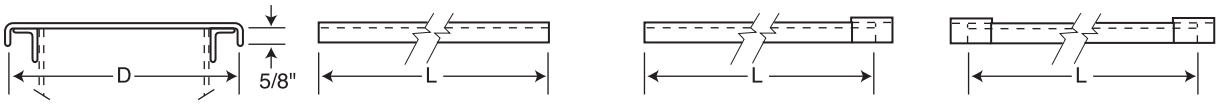


Semi-flanged Cover



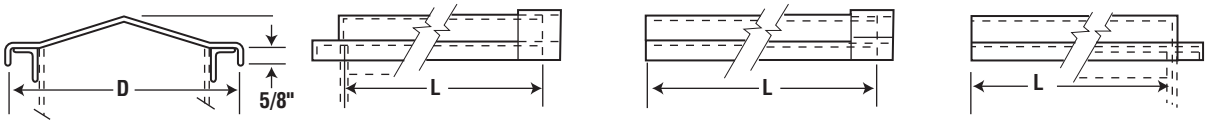
All conveyor troughs should have some type of cover not only to keep material inside the trough and to protect material in the trough from outside elements, **but trough definitely should be covered as a safety measure**, preventing injuries by keeping workers clear of the moving parts inside the conveyor trough. See H-122, Safety.

Flanged Cover



Type 1 Type 2 Type 3

Hip Roof Cover



End Trough Cover —Type 1 Intermediate Trough Cover —Type 2 End Trough Cover — Type 3

Conveyor Diameter	Plain Cover				Plain Semi-Flanged Cover				Flanged Cover				Hip Roof Cover			
	Part Number	Thickness Ga.	Wt. per ft.	D	Part Number	Thickness Ga.	Wt. per ft.	D	Part Number	Thickness Ga.	Wt. per ft.	D	Part Number	Thickness Ga.	Wt. per ft.	D
4	4TCP16	16	1.5	8	4TCS16	☐ 16	2.1	8 1/8	4TCF16	☐ 16	1.9	8 3/8	4TCH16	☐ 16	2	
*					4TCS14	14	2.6		4TCF14	14	2.4		4TCH14	14	2.5	8 3/8
6	6TCP16	16	2	9 3/4	6TCS16	☐ 16	2.3	10 1/8	6TCF16	☐ 16	2.1	10 3/8	6TCH16	☐ 16	2.3	10 3/8
*					6TCS14	14	3.8		6TCF14	14	2.6		6TCH14	14	2.8	
9	9TCP14	14	3.5	13 3/8	9TCS14	☐ 14	4.1	13 3/4	9TCF16	16	3.2	14	9TCH16	16	3.3	14
					9TCS12	12	5.7		9TCF14	☐ 14	3.9		9TCH14	☐ 14	4.1	
					9TCS10	10	7.3		9TCF12	12	5.5					
*									9TCF10	10	7.1					
10	10TCP14	14	3.8	14 3/8	10TCS14	☐ 14	4.4	14 3/4	10TCF16	16	3.4	15	10TCH16	16	3.5	15
					10TCS12	12	6.1		10TCF14	☐ 14	4.2		10TCH14	☐ 14	4.3	
					10TCS10	10	7.8		10TCF12	12	5.9					
*									10TCF10	10	7.6					
12	12TCP14	14	4.6	17 1/2	12TCS14	☐ 14	5.1	17 1/2	12TCF14	☐ 14	4.9	18	12TCH14	☐ 14	5	18
					12TCS12	12	7.1		12TCF12	12	6.9		12TCH12	12	7.1	
**					12TCS10	10	9		12TCF10	10	8.8					
14	14TCP14	14	5.1	19 1/2	14TCS14	☐ 14	5.6	19 1/2	14TCF14	☐ 14	5.4	19 7/8	14TCH14	☐ 14	5.5	19 7/8
					14TCS12	12	7.8		14TCF12	12	7.6		14TCH12	12	7.7	
**					14TCS10	10	9.9		14TCF10	10	9.7					
16	16TCP14	14	5.6	21 1/2	16TCS14	☐ 14	6.1	21 1/2	16TCF14	☐ 14	5.9	21 7/8	16TCH14	☐ 14	6.1	21 7/8
					16TCS12	12	8.5		16TCF12	12	8.3		16TCH12	12	8.5	
**					16TCS10	10	10.8		16TCF10	10	10.6					
18	18TCP12	12	8.9	24 1/2	18TCS12	☐ 12	9.6	24 1/2	18TCF14	14	6.7	25	18TCH14	14	6.8	25
					18TCS10	10	12.3		18TCF12	☐ 12	9.4		18TCH12	☐ 12	9.5	
**									18TCF10	10	12.1					
20	20TCP12	12	9.7	26 1/2	20TCS12	☐ 12	10.3	26 1/2	20TCF14	14	7.2	27	20TCH14	14	7.4	27
					20TCS10	10	13.3		20TCF12	☐ 12	10.1		20TCH12	☐ 12	10.4	
**									20TCF10	10	13.1					
24	24TCP12	12	11.1	30 1/2	24TCS12	☐ 12	11.8	30 1/2	24TCF14	14	8.3	31	24TCH14	14	8.4	31
					24TCS10	10	15.1		24TCF12	☐ 12	11.6		24TCH12	☐ 12	11.8	
**									24TCF10	10	14.9					

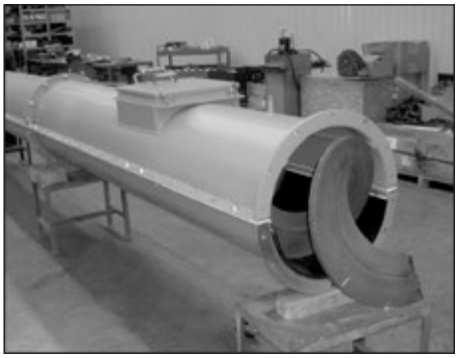
For average applications where dust confinement is not a problem, 2'-0" centers or 10 fasteners per 10'-0" section are generally satisfactory. For commercially dust tight 1'-0" centers or 20 fasteners per 10'-0" section are suggested.

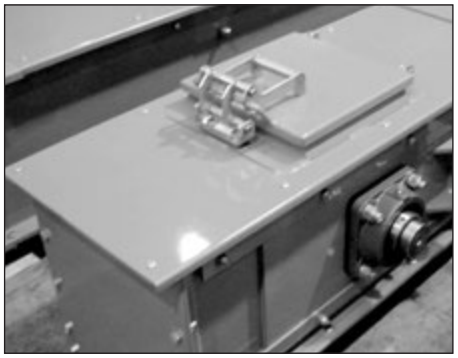
*L — Standard lengths are 5'-0" & 10'-0" **L — Standard lengths are 5', 6', 10' & 12'-0" ☐ — Standard gauge

Dust Tight Inspection Doors

The Martin dust tight inspection door is ideal for visual inspection in dusty applications. Once installed, the Martin inspection door will give you years of trouble free service. It allows efficient access by authorized personnel while maintaining security with a latch that can be bolted or locked. The door comes with a poured black rubber door seal for chemical resistance and long life. The hinge and latch on all models are laser cut of 304 SS material for precision and corrosion resistance.

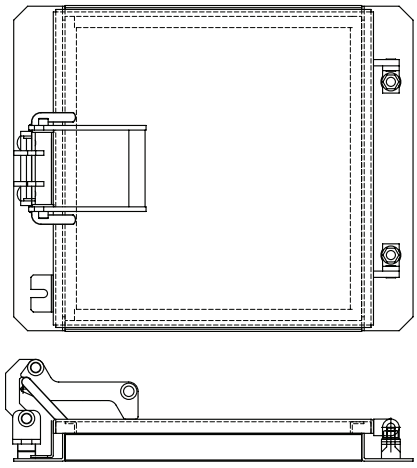
- Moisture and Dust Tight
- Heavy-Duty Construction
- Installs Easily on Existing Equipment
- Simple Operation
- Stocked in Carbon Steel and 304SS
- 316SS Available upon request





The Martin dust tight inspection door can be supplied with an expanded metal screen welded inside the opening to prevent physical access to moving parts. These doors are available from stock in many sizes. Custom sizes can be manufactured to fit your specific needs.

Call your local Martin Distributor for more information.



MDT® Martin Dust Tight Doors

Part Number		Size
Carbon Steel*	Stainless Steel	
0606PG-ID	0606PG-ID-SS	6" × 6"
0909PG-ID	0909PG-ID-SS	9" × 9"
1010PG-ID	1010PG-ID-SS	10" × 10"
1212PG-ID	1212PG-ID-SS	12" × 12"
1414PG-ID	1414PG-ID-SS	14" × 14"
1616PG-ID	1616PG-ID-SS	16" × 16"

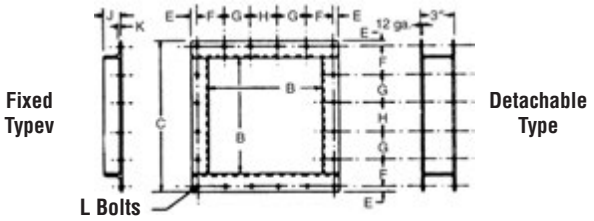
*Carbon Steel construction with Stainless Steel Hinge.

Martin Dust Tight Doors are stocked in Carbon Steel and 304SS, 316SS is available upon request. Special sizes also available upon request.

Cover Accessories

Flanged Conveyor Inlets

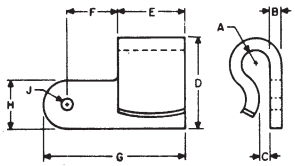
The two styles of flanged conveyor inlets are designed for either bolting or welding to flat or flanged conveyor trough cover. The inlet size and bolt arrangement is the same as the standard conveyor discharge spout.



Conveyor Diameter	Part Number		Weight	B	C		E		F	G	H	J	K	L
	Fixed Inlet	Detachable Inlet			Fixed Inlet	Detachable Inlet	Fixed Inlet	Detachable Inlet						
4	4CIF	4CID	1.8	5	7 1/2	7 1/2	3/8	3/8	2 1/4	—	2 1/4	1 1/4	3/16	1/4
6	6CIF	6CID	5.0	7	10	10	11/16	11/16	2 13/16	—	3	1 1/2	3/16	3/8
9	9CIF	9CID	6.8	10	13	13	1/2	1/2	4	—	4	1 1/2	3/16	3/8
10	10CIF	10CID	7.4	11	14 1/4	14 1/4	5/8	5/8	4 5/16	—	4 3/8	1 1/2	3/16	3/8
12	12CIF	12CID	12.1	13	17 1/4	17 1/4	3/4	7/8	5 1/8	—	5 1/4	2 1/8	3/16	3/8
14	14CIF	14CID	13.7	15	19 1/4	19 1/4	3/4	7/8	3 1/2	3 1/2	3 1/2	2 1/8	3/16	3/8
16	16CIF	16CID	15.8	17	21 1/4	21 1/4	3/4	7/8	3 3/4	4	4	2 1/8	3/16	3/8
18	18CIF	18CID	29.0	19	24 1/4	24 1/4	1	1 1/8	4 7/16	4 3/8	4 3/8	2 1/2	3/16	1/2
20	20CIF	20CID	31.8	21	26 1/4	26 1/4	1	1 1/8	4 7/8	4 3/4	4 3/4	2 1/2	3/16	1/2
24	24CIF	24CID	37.2	25	30 1/4	30 1/4	1	1 1/8	5 5/8	5 5/8	5 1/2	2 1/2	3/16	1/2

Spring Clamps

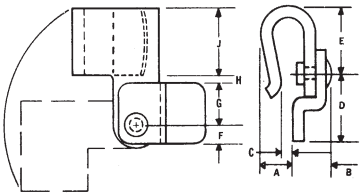
Spring Clamps are used to attach plain and semi-flanged covers to trough. These clamps are normally riveted to the trough flange and will pivot to allow removal of cover.



Clamp No.	A	B	C	D	E	F	G	H	J	Wt.
SPC-1	5/16	3/16	5/16	2	1 1/4	1 5/16	3	7/8	9/32	.38

Spring Clamps with Cover Bracket

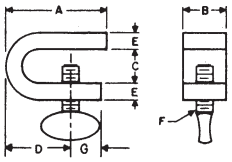
Spring Clamps with cover brackets are designed to attach to the top side of semi-flanged and plain covers.



Clamp No.	A	B	C	D	E	F	G	H	J	Wt.
SPCA-1	11/16	1/2	3/16	1 1/2	1 9/16	3/8	7/8	3/8	1 1/4	.50

Screw Clamps

Screw Clamps are a simple and effective means of attaching flanged or flat covers to trough. Screw Clamps available in mild steel, stainless steel and zinc plated.



Clamp No.	A	B	C	D	E	F	G	J	Wt.
CSC-2	2 1/4	1	1 3/16	1 7/16	5/16	3/8	1/2	.42	.50

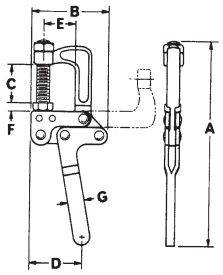
Cover Gaskets

Conveyor Diameter	Size		
	Red Rubber	Sponge Rubber	*White Rubber
4.6	RR125	SP125	WN125
	1/8 × 1 1/4	1 1/8 × 1 1/4	1/8 × 1 1/4
9,10	RR150	SP150	WN150
	1/8 × 1 1/2	1/8 × 1 1/2	1/8 × 1 1/2
12, 14, 16	RR200	SP200	WN200
	1/8 × 2	1/8 × 2	1/8 × 2
18, 20, 24	RR250	SP250	WN250
	1/8 × 2 1/2	1/8 × 2 1/2	1/8 × 2 1/2

*FDA Approved

Toggle Clamps

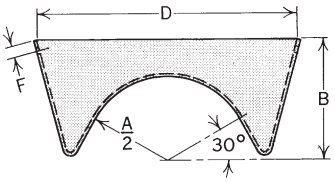
Quick acting toggle clamps are used to attach covers for quick accessibility. Normally this type clamp is attached by welding the front or top of clamp to the trough and can be adjusted to fit all sizes of trough, while allowing 90° to clear working area.



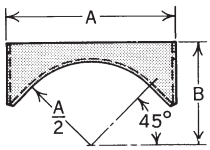
Conveyor	Part Number	No. Required per 10' Section	A	B	C	D	E	F	G
4 – 24	QTC	6 to 8	7 13/16	2 15/16	1 25/32	2	1 1/4	5/16	5/8

Feeder Shrouds

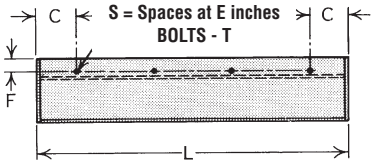
Shrouds are used in trough sections of screw feeders to decrease the clearance between the cover and feeder screw to obtain proper feed regulation. Lengths are sufficient to prevent flushing of the majority of materials being handled and gauges are proportioned to trough size and gauge.



Flared Trough



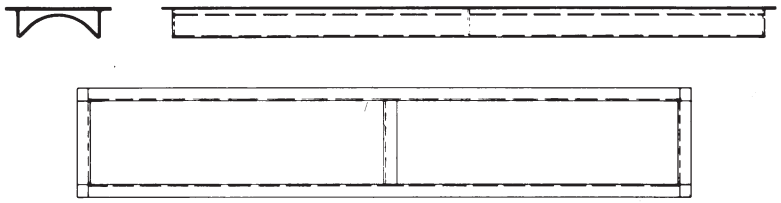
U-Trough



Screw Diameter	Part Number		Shroud Thickness	A	B		C	D	E	F		L	T	S
	U	Flared			U	Flared				U	Flared			
4	4TFS14	4FFS14	14 Ga.	5	3 5/8	—	2	—	4	5/8	—	8	1/4	1
6	6TFS14	6FFS14	14 Ga.	7	4 1/2	7	3	14	6	3/4	3/4	12	5/16	1
	6TFS12	6FFS12	12 Ga.	7	4 1/2	7	3	14	6	3/4	3/4	12	5/16	1
9	9TFS14	9FFS14	14 Ga.	10	6 1/8	9	3	18	6	7/8	3/4	18	3/8	2
	9TFS7	9FFS7	3/16"	10	6 1/8	9	3	18	6	7/8	3/4	18	3/8	2
10	10TFS14	10FFS14	14 Ga.	11	6 3/8	—	2 1/2	—	5	7/8	—	20	3/8	3
	10TFS7	10FFS7	3/16"	11	6 3/8	—	2 1/2	—	5	7/8	—	20	3/8	3
12	12TFS12	12FFS12	12 Ga.	13	7 3/4	10	3	22	6	1 1/8	1	24	3/8	3
	12TFS7	12FFS7	3/16"	13	7 3/4	10	3	22	6	1 1/8	1	24	3/8	3
14	14TFS12	14FFS12	12 Ga.	15	9 1/4	11	3 1/2	24	7	1 1/8	1	28	3/8	3
	14TFS7	14FFS7	3/16"	15	9 1/4	11	3 1/2	24	7	1 1/8	1	28	3/8	3
16	16TFS12	16FFS12	12 Ga.	17	10 5/8	11 1/2	4	28	8	1 1/8	1	32	3/8	3
	16TFS7	16FFS7	3/16"	17	10 5/8	11 1/2	4	28	8	1 1/8	1	32	3/8	3
18	18TFS12	18FFS12	12 Ga.	19	12 1/8	12 1/8	4 1/2	31	9	1 3/8	1 3/8	36	3/8	3
	18TFS7	18FFS7	3/16"	19	12 1/8	12 1/8	4 1/2	31	9	1 3/8	1 1/8	36	3/8	3
20	20TFS10	20FFS10	10 Ga.	21	13 1/2	13 1/2	4	34	8	1 3/8	1 3/8	40	3/8	4
	20TFS7	20FFS7	3/16"	21	13 1/2	13 1/2	4	34	8	1 3/8	1 3/8	40	3/8	4
24	24TFS10	24FFS10	10 Ga.	25	16 1/2	16 1/2	4	40	8	1 3/8	1 3/8	48	3/8	5
	24TFS7	24FFS7	3/16"	25	16 1/2	16 1/2	4	40	8	1 3/8	1 3/8	48	3/8	5

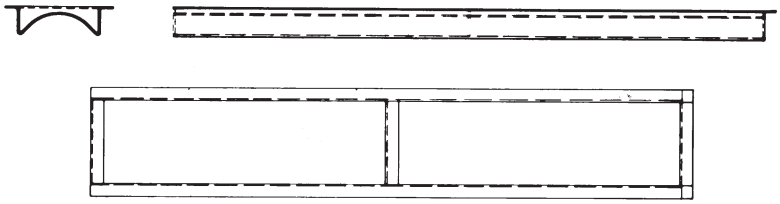
Conveyor Shrouds

Conveyor shroud covers are used to form a tubular cross section within the conveyor trough. This arrangement gives the features of a tubular housing while allowing removal of the shroud for easy access and cleaning. Flat or flanged covers can be used over the shroud cover when it is objectionable for the recess in the shroud to be exposed to dust or weather. Various types of shrouds are furnished to fit various applications. These types are described below.



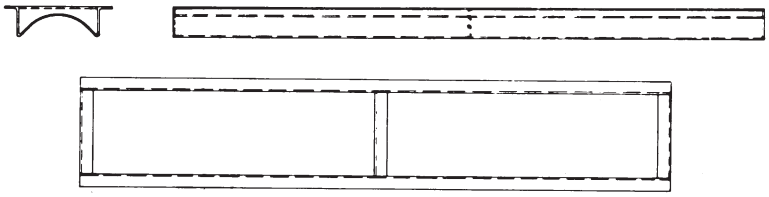
Type 1

Type 1 Shroud cover has flanged sides over top rail and flanged ends at both ends. This type is used when shroud is full length of trough or between hangers.



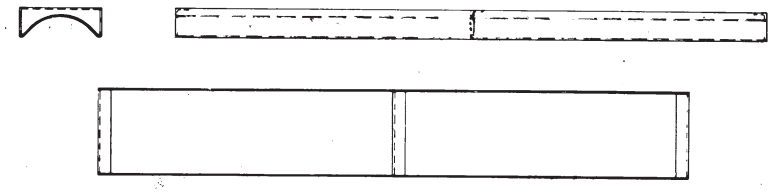
Type 2

Type 2 Shroud cover has flanged sides over top rails and flanged ends on one end over trough end; other end is plain. This type shroud is used at an inlet opening or next to a hanger at the plain end.



Type 3

Type 3 Shroud cover has flanged sides over top rail and both ends closed and no flanges over ends. This type shroud is used between hangers.



Type 4

Type 4 Shroud cover has no flanges at sides or ends. Bolt holes are provided along sides, for bolting through side of trough. This allows flush mounting with top of trough and a cover may be used over the shroud. This shroud is used mostly for short lengths when installed ahead of an inlet opening.

SPECIAL FEATURES **PAGE**

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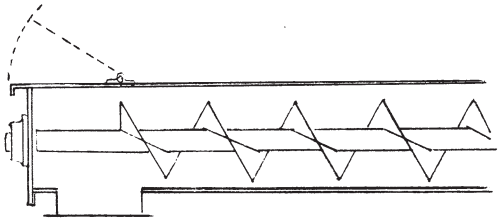
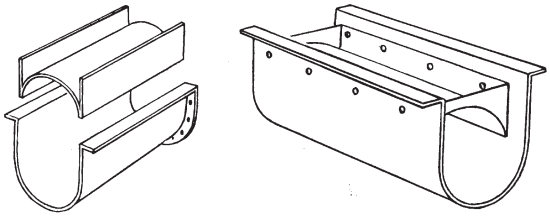
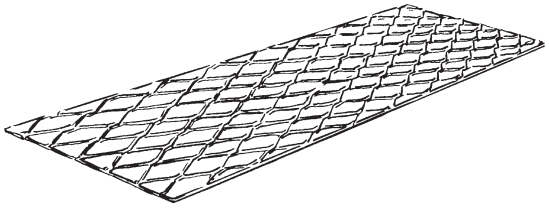
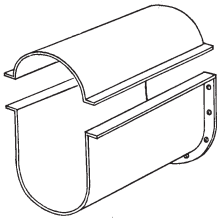
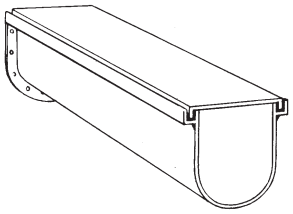
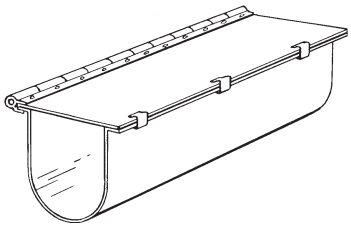
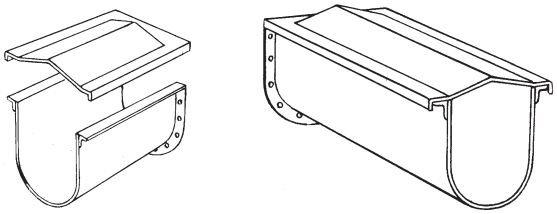
TROUGH ENDS H-109
TROUGH H-110
CONVEYOR SCREWS H-113
DISCHARGES H-118
INLET H-119

Special Features

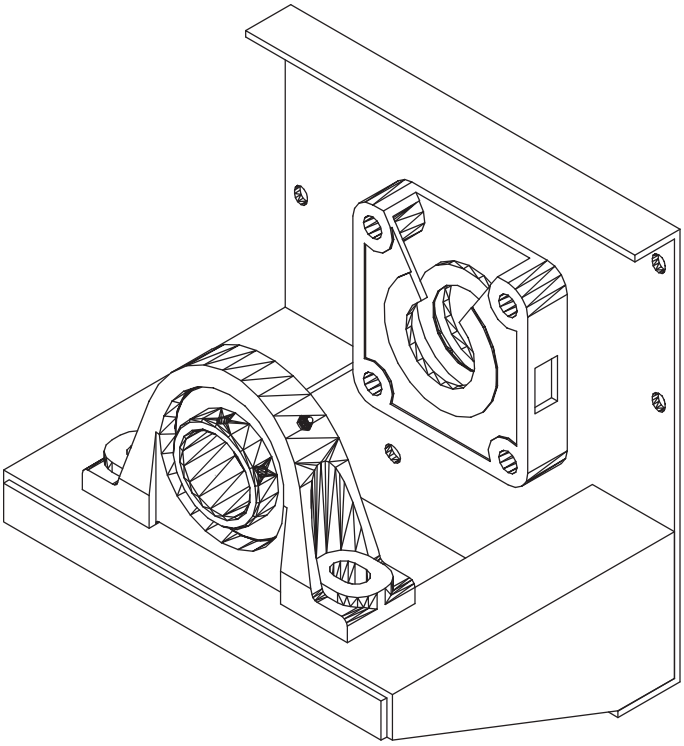
The information presented in this section gives descriptions and functions of the most commonly used special features available in the design of conveyor systems.

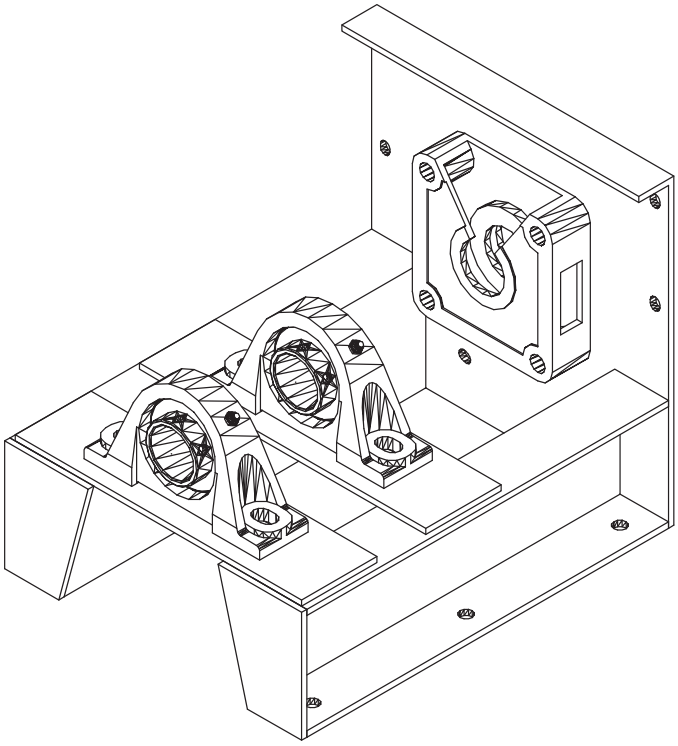
These special features will greatly broaden the range of uses for screw conveyor when added to the many standard features available. Standard features and components are always more desirable and practical in the design of a screw conveyor system; however, one or more of these special features may sometimes be required in special applications for a workable or more efficient system.

Covers

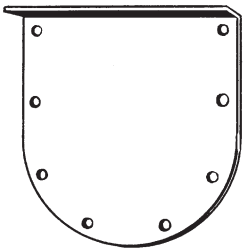
	**OVERFLOW COVER** sections are used as a safety relief to handle overflow over the discharge in cases where the discharge may become plugged. It is a short section of flanged or flat cover hinged across the width to the adjoining cover. The cover is not attached to the trough in order that it can be raised by pressure from within the trough.
	**SHROUD COVERS** are designed to fit inside a standard conveyor trough of a Screw Feeder or inclined conveyor, and create a tubular trough effect. This cover has an advantage over tubular trough in that ease of access is combined with the convenience of using standard hangers and accessories. An additional flat cover may be required over the shroud to prevent accumulation of dust or water in the recessed portion of the shroud cover.
	**EXPANDED METAL COVERS** can be furnished where cover is required for safety but constant visual inspection is required. **STANDARD COVERS** of any design can be furnished in heavier gauges, when needed to support weight.
	**DOME COVERS** are half circle domes rolled to the same inside diameter as the trough bottom and are flanged for bolting to the trough top rails. They are used where venting of fumes or heat from the material being conveyed is required. End sections have a welded end plate and intermediate joints are buttstrap connected. Vent pipes or suction lines can be attached to the cover.
	**DUST SEAL COVERS** are flanged down on all four sides to match channel sections fabricated on the sides, ends, and cross channels of special dust seal troughs. The length of the cover should not exceed one-half the length of the trough section.
	**HINGED COVERS** may be constructed from conventional flat covers or most special covers. They are equipped with a hinge on one side for attaching to the trough and are bolted or clamped to the trough on the other side. Hinged covers are used in applications where it is not desirable to have a loose cover, such as in high areas above walkways where the cover might fall.
	**HIP ROOF COVERS** are similar to conventional flanged covers except they are peaked slightly to form a ridge along the center of the cover. A welded end plate closes the peaked section at each end of the trough while intermediate joints are usually buttstrap connected. Hip roof covers are usually recommended for outdoor installations to prevent accumulation of moisture. They are also often used in applications where a more rigid cover is required.

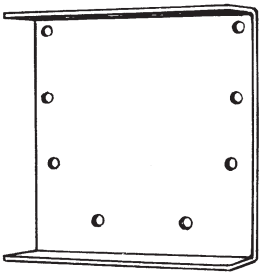
Trough Ends





SHELF-TYPE TROUGH ENDS are furnished with outboard bearing pedestals for mounting pillow block bearings. The bearings are mounted away from the trough end plate allowing ample room to protect the bearing when handling abrasive or hot materials. This arrangement allows the use of most any type shaft seal desired. Either one or two bearings can be used.

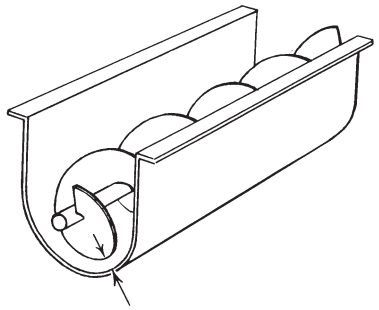
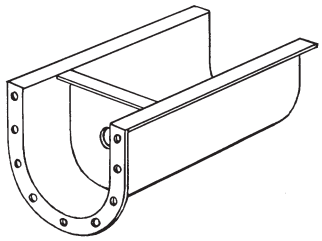
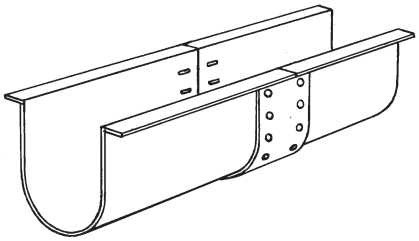
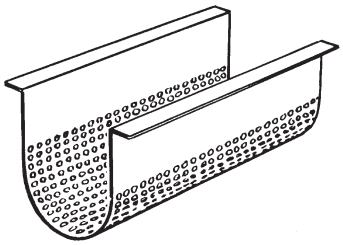
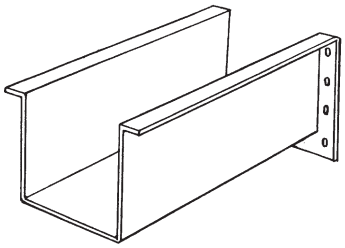
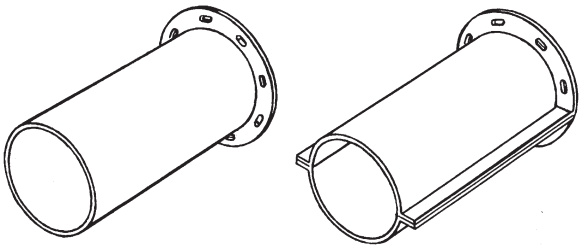




BLIND TROUGH ENDS are used on the tail end (normally the inlet end) of a conveyor, when sealing the end shaft is extremely difficult. A hanger is used inside the trough to support the tail shaft without the shaft projecting through the trough end.

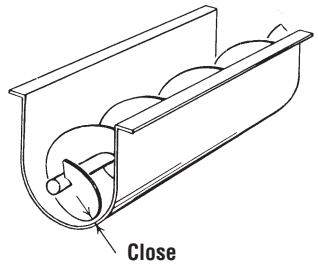
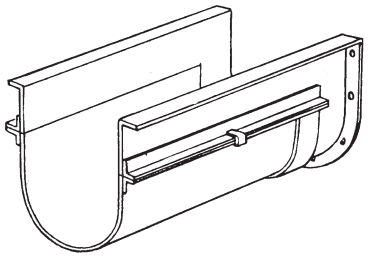
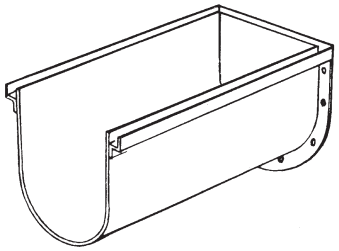
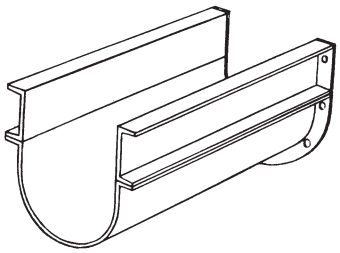
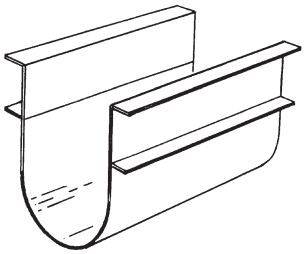
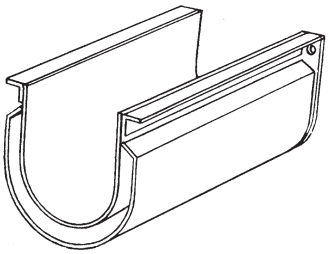
A blind trough end plate can also be furnished with a dead shaft welded to the end plate. For this type the screw is bushed with an antifriction bearing to carry the radial load of the screw. When required, a grease fitting can be furnished through the dead shaft for lubricating the bearing.

Troughs

	**WIDE CLEARANCE TROUGH** is of conventional construction except with a wider clearance between the outside of the conveyor screw and the inside of the trough. This type trough is used when it is desirable to form a layer of conveyed material in the trough. The material thus moves on itself, protecting the trough from undue wear. By using a wide clearance or oversize trough, a greater capacity than using a standard conveyor screw can be obtained for some materials that travel as a mass. When wide clearance trough is required, it is more economical to use a standard conveyor screw and the next larger size standard trough.
	**BULK HEAD** is a plate or baffle shaped to the contour of the inside of the trough and is normally welded or bolted six to twelve inches from the trough end. The bulk head protects the end bearing and drive unit from heat while handling hot materials, when the pocket formed is filled with packing or insulation. The bulk head can be used in the same manner to prevent damage to seals and bearings when handling extremely abrasive materials.
	**EXPANSION JOINT** is a connection within a length of trough to allow for expansion caused by hot materials being conveyed. The expansion joint is constructed with bolts fastened in slots to allow for expansion or with a telescoping type slip joint. The number of joints and amount of expansion will depend on the application.
	**PERFORATED BOTTOM TROUGH** is equipped with a perforated bottom, and is used as a screening operation or drain section when liquids are present in the conveyed material. The size of the perforations in the trough will vary depending on the material and application.
	**RECTANGULAR TROUGH** is made with a flat bottom and can be formed from a single sheet or with sides and bottom of separate pieces. This type trough is frequently used in handling abrasive materials capable of forming a layer of material on the bottom of the trough. The material thus moves on itself, protecting the trough from undue wear. Also in handling hot materials, the material will form its own internal insulation with this type trough.
	**TUBULAR TROUGH** is furnished in either solid tube construction or split tube construction with flanges for bolting or clamping the two halves together. This trough is a complete tube enclosure and is used for weather-tight applications, for loading to full cross sections, and for inclined or vertical applications where fall back necessitates the housing to operate at a full loading.

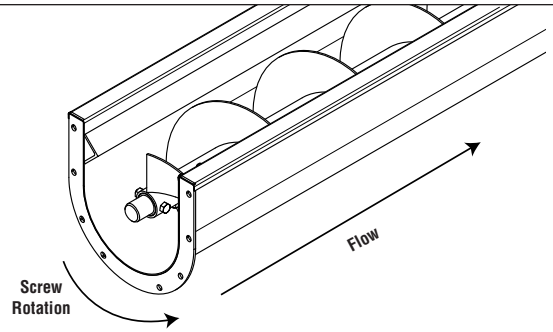
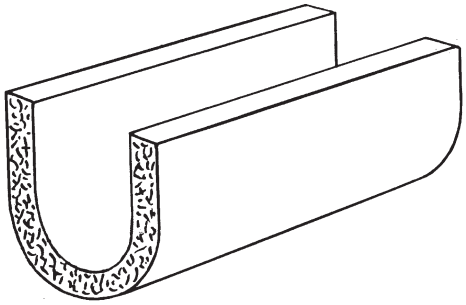
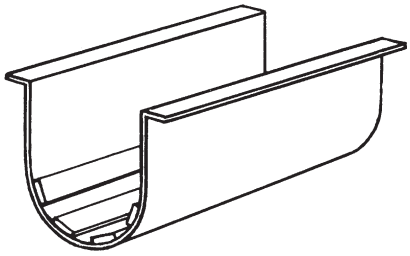
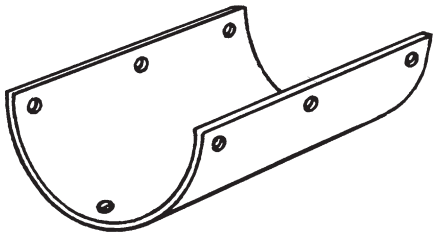
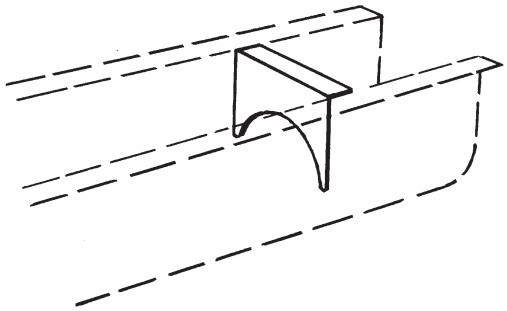
*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

Troughs

	**CLOSE CLEARANCE TROUGH** is of conventional construction except with a closer clearance between the outside of the conveyor screw and the inside of the trough. This type trough leaves less material in the trough and is often used when a greater clean-out of conveyed material is required. This type trough also minimizes fall back of certain materials in an inclined conveyor.
	**DROP BOTTOM TROUGH** is equipped with either a bolted or clamped and completely removable drop bottom, or hinged on one side with bolts or clamps on the opposite side. This design offers ease in cleaning of the trough and screw conveyor, and is often used when handling food products where internal inspection and cleaning of the screw conveyor is necessary.
	**DUST SEAL TROUGH** (Sometimes referred to as **SAND SEAL TROUGH**) has Z-bar top flanges and formed channel cross members making a continuous channel pocket around the top of the trough into which a special flanged cover is set. The channel is filled with sand or dust of the product being conveyed, thus creating an effective seal against the escape of dust from within the conveyor.
	**CHANNEL SIDE TROUGH** is made with separate detachable trough bottoms, bolted or clamped to formed or rolled steel channels. The channels may be of any reasonable length to span widely spaced supports. This type of trough is occasionally used for easy replacement of trough bottoms, and to facilitate repairs when conveyor screw and hangers are not accessible from the top. The channel side trough can also be used without a bottom for filling bins and hoppers.
	**HIGH SIDE TROUGH** is of conventional construction except that the trough sides extend higher than standard from the center line to the top of the trough. This type trough is frequently used in conveying materials which mat together and travel as a mass on top of the conveyor screw. High side trough will confine this type material in the trough, but still affords the necessary expansion room.
	**JACKETED TROUGH** consists of a formed jacket continuously welded to the trough. This type trough is widely used for heating, drying or cooling of materials. Pipe connections are provided for supply and discharge of the heating or cooling media. Special construction must be provided for higher pressures.

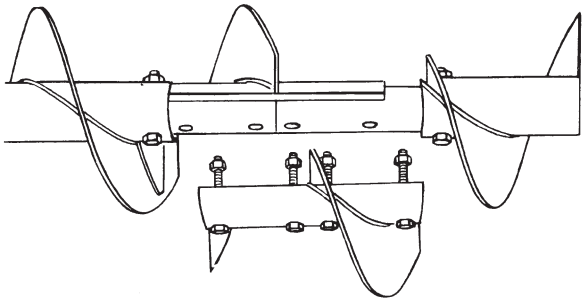
*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

Troughs

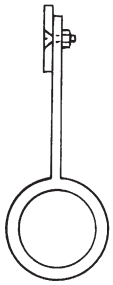
	**HOLD DOWN ANGLES** are used to hold the conveyor screw in the trough when the conveyor is operated without intermediate hangers or when chunks of material may tend to ride under the conveyor screw and push it up. The angle is constructed of formed or regular angle iron and is attached to one side of the full length of trough far enough above the conveyor screw to allow approximately one-half inch clearance between the bottom angle and the conveyor screw.
	**INSULATED CONVEYOR TROUGH** is used when handling hot or cold materials. There are many types of insulation materials and arrangements that can be used.
	**RIDER BARS** are flat bars one to one and one-half inches in width running part of length or full length of the trough. Two or four bars are normally used and are spaced an equal distance apart along the curved bottom of the trough. The bars are used to support the conveyor screw to prevent wear on the trough when internal hanger bearings are not used. Rider bars are sometimes referred to as Rifling Bars when they are used to assist in conveying materials that tend to stick to the conveyor screw and rotate with it.
	**SADDLE TYPE WEAR PLATES** are plates curved to the contour of the inside of the trough and of slightly less thickness than the clearance between the conveyor screw and trough. The plates are made in lengths of approximately one and one-half times the pitch of the conveyor screw and are normally spaced at intervals equal to the distance between hangers. They are used to support the conveyor screw to prevent damage to the trough when internal hanger bearings are not used.
	**STRIKE OFF PLATE (SHROUD BAFFLE)** Is a single plate bolted vertically to the upper portion of the trough and is cut out to the contour of the screw. This plate is used to regulate the flow of material from an inlet by preventing flooding across the top of the conveyor screw.

*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

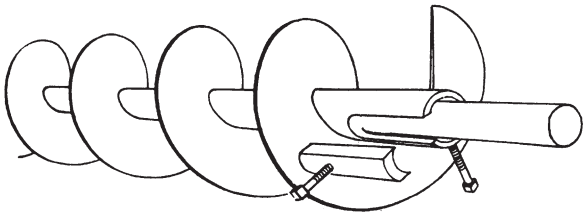
Conveyor Screws



SPLIT FLIGHT COUPLINGS permit installation or removal of individual sections of conveyor screw without disturbing adjoining sections. When they are installed on both sides of each hanger, sections of screw can be removed without disturbing the hangers. These must be furnished complete with matching shafts.



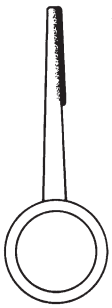
WEAR FLIGHTS, or wearing shoes, attached with countersunk bolts to the carrying side of conveyor screw flights are used for handling highly abrasive materials and are easily replaceable.



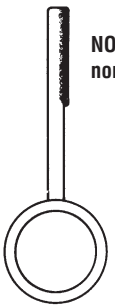
QUICK DETACHABLE KEY CONVEYOR SCREW is designed for easy removal from the conveyor trough. Each section of screw is provided with a removable key located at one end of the pipe. By removing this key, a conveyor screw section and coupling with a hanger can be quickly removed without disturbing other components.

Width of Application Chart

Screw Diameter	Standard Width of Application
6	1
9	1 1/2
12	2
14	2
16	2 1/2
18	2 1/2
20	3
24	3



Helicoid

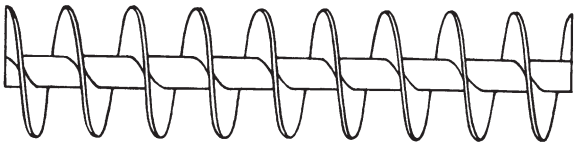


Sectional

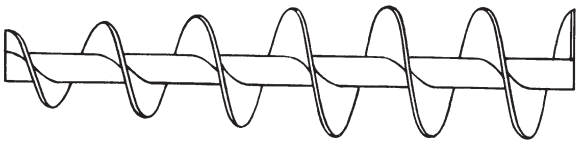
NOTE: Weld-on type normally 1/16" thick.

HARD SURFACED FLIGHTS sometimes called abrasive resistant conveyors can be furnished using one of many hardsurfacing processes. The hard surfaced area is normally an outer portion of the face of the flight on the carrying side of the conveyor screw. This process is applied to the conveyor screw to resist wear when handling highly abrasive materials.

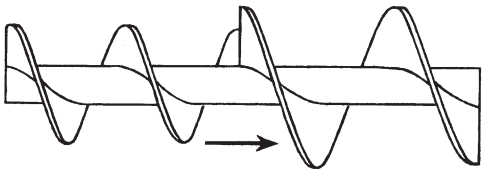
Conveyor Screws



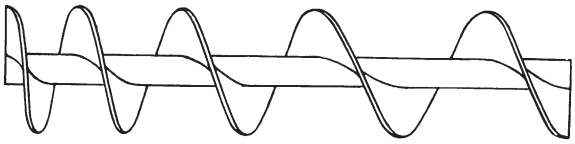
SHORT PITCH CONVEYOR SCREWS are of regular construction except that the pitch of the flights is reduced. They are recommended for use in inclined conveyors of 20 degrees slope and over, and are extensively used as feeder screws, and for controlling cross sectional loading in the balance of a conveyor when short pitch is used at the inlet opening.



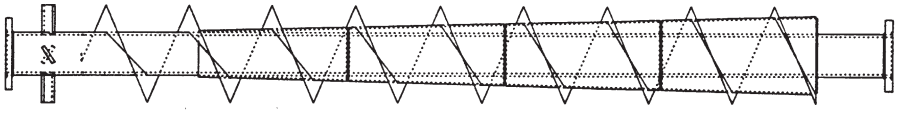
TAPERING FLIGHT CONVEYOR SCREWS are frequently used as feeder screws for handling friable lumpy material from bins or hoppers and also to draw the material uniformly from the entire length of the feed opening.



STEPPED DIAMETER CONVEYOR SCREWS consist of flights of different diameters, each with its regular pitch, mounted in tandem on one pipe or shaft. They are frequently used as feeder screws, with the smaller diameter located under bins or hoppers to regulate the flow of material.

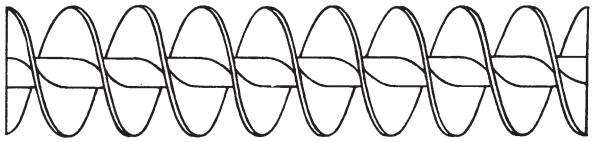


STEPPED PITCH CONVEYOR SCREWS are screws with succeeding single or groups of flights increasing in pitch and are used as feeder screws to draw free-flowing materials uniformly from the entire length of the feed opening.

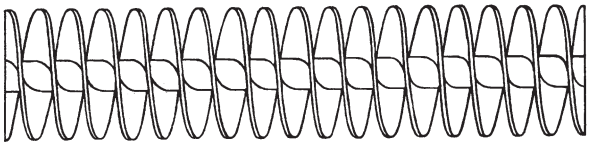


CONE SCREW to withdraw material evenly from a hopper or bin. Constant pitch reduces bridging. Requires less start-up horsepower.

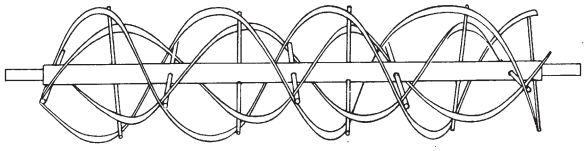
Conveyor Screws



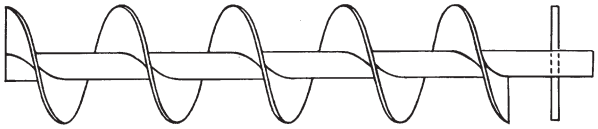
DOUBLE FLIGHT CONVEYOR SCREWS of regular pitch promote a smooth gentle flow and discharge of certain materials. Double flight can be used at hanger points only, for smooth flow past hangers.



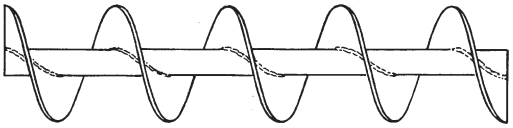
DOUBLE FLIGHT SHORT PITCH CONVEYOR SCREWS assure more accurate regulation of feed and flow in screw feeders and effectively deter flushing action of fluid materials.



MULTIPLE RIBBON FLIGHT CONVEYOR SCREWS. This type of screw consists of two or more ribbon flights of different diameters and opposite hand, mounted one within the other on the same pipe or shaft by rigid supporting lugs. Material is moved forward by one flight and backward by the other, thereby inducing positive and thorough mixing. (Made per customer specifications.)

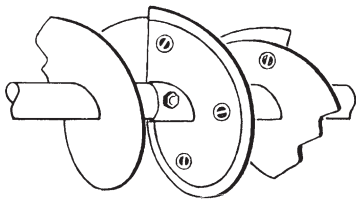


BREAKER PINS. The breaker pin is a rod approximately the same in length as the diameter of the conveyor screw and is inserted through the diameter of the pipe over the discharge to help break up lump materials.

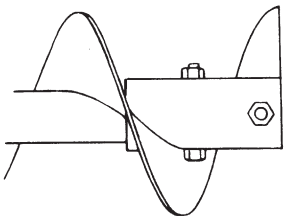


CONTINUOUS WELDING of the conveyor screw flight to the pipe can be furnished with welding one side or both sides. This welding is added to prevent stripping of flight from the pipe under extreme loads. The continuous welding can also be added to fill the slight crack between the flight and pipe for sanitary purposes.

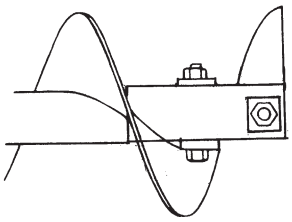
Conveyor Screws



BEARING SHOES (Nylon, Teflon, Brass, and other bearing type materials.) Bearing shoes are used in place of internal bearings and are bolted to the conveyor screw. They are made from bearing type material, and when attached to the conveyor screw flight, the bearing shoe projects beyond the outer edge of flighting and rotates with the screw thereby preventing metal to metal contact between the conveyor screw and the trough. The bearing shoes extend around the helix slightly more than one pitch and are spaced along the screw at approximately the same intervals as internal bearings.

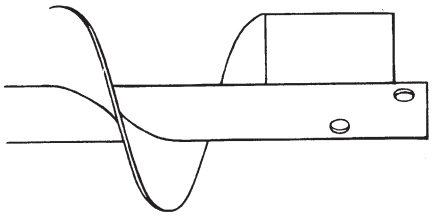


External Sleeves

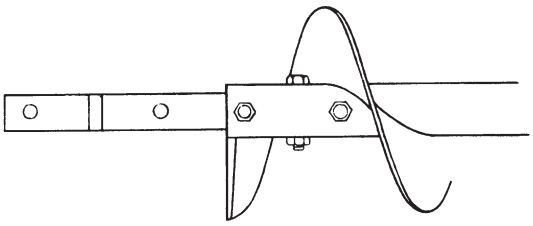


Bolt Pads

EXTERNAL SLEEVES OR BOLT PADS are added to the outside diameter of conveyor screw pipe at the end where the couplings are attached to reinforce the pipe at the bolt area.

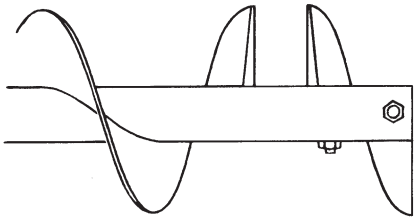


KICKER BARS are flat bars projecting from the conveyor screw pipe extending to the outside diameter of the screw over the discharge spout and are used to assist the discharge of materials.

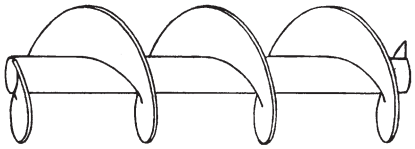


MULTIPLE HOLE DRILLING of the conveyor screw pipe and shafts will increase the torque rating of the bolted sections.

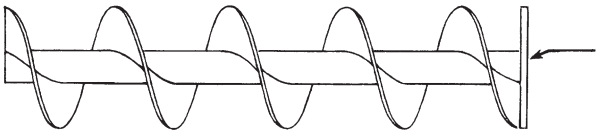
Conveyor Screws



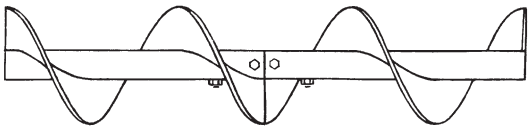
OPPOSITE HAND FLIGHTS are short sections (approximately one-half pitch) of flight added to the conveyor screw beyond the discharge point and are the opposite hand of the rest of the screw. This flight opposes the flow of material that tends to carry past the discharge spout and pack at the end plate and forces the material back to the spout for discharge.



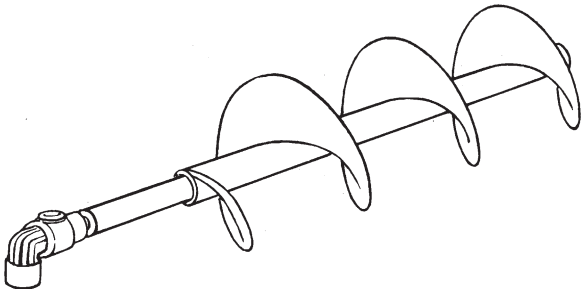
ODD DIAMETER CONVEYOR SCREW is of conventional construction except oversize or undersize in diameter. This type conveyor screw is used to provide a close clearance or wide clearance between the screw and trough and enable the use of standard component parts.



END DISC ON CONVEYOR SCREW. This disc is welded flush with the end of the conveyor screw pipe and is the same diameter as the screw. It rotates with the conveyor screw and assists in relieving the thrust of the conveyed material against the end plate shaft seal.

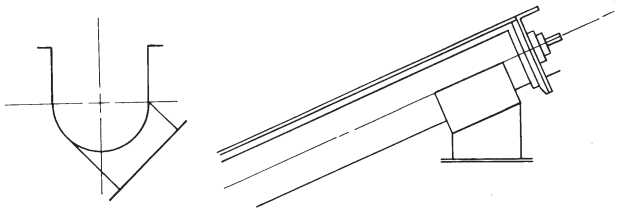
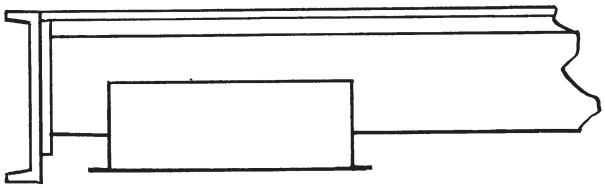
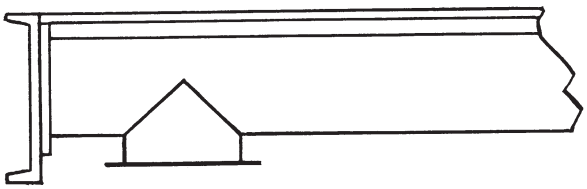
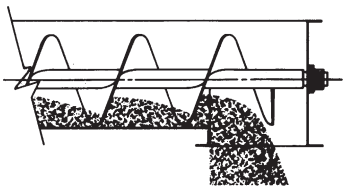
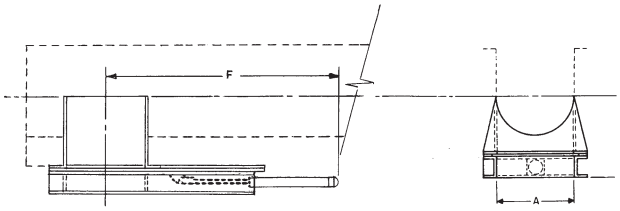
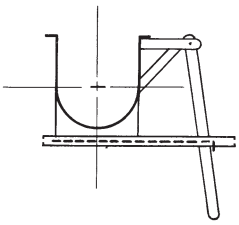
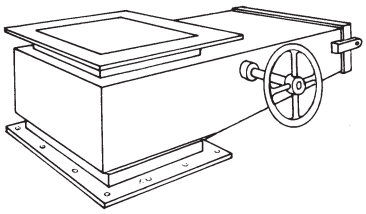


CLOSE COUPLED CONVEYOR SCREW. This type screw forms a continuous helix when two or more conveyor screws are close coupled by drilling the shaft of each to align the connecting flight.

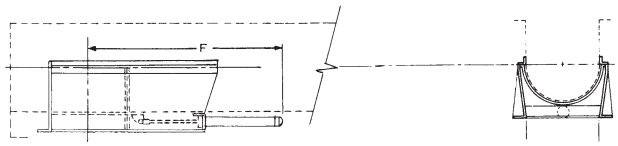
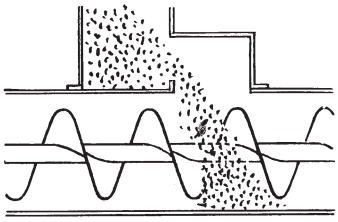
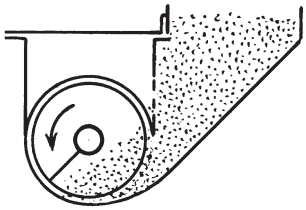
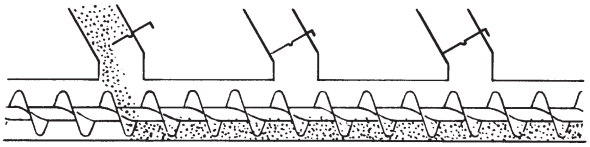
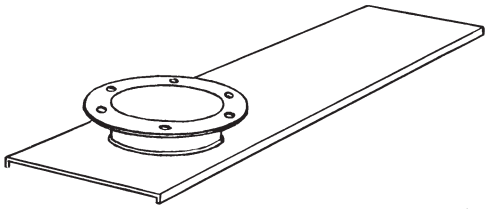
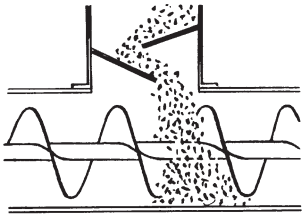
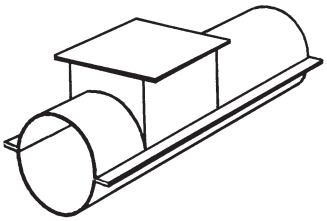


ROTARY JOINTS FOR COOLING AND HEATING are attached to one or both end shafts to provide a flow of heating or cooling media through the conveyor screw pipe.

Discharges

	**ANGULAR DISCHARGES** can be furnished when necessary for certain applications. This type discharge is normally used on inclined conveyors when it is necessary that the discharge be parallel to ground level, or at other times when material must be discharged to one side.
	**LONGER THAN STANDARD DISCHARGE SPOUTS** are approximately one and one-half times the length of the standard discharge spouts. This discharge is used with materials hard to discharge due to the material trying to convey past the discharge opening. This discharge is also used when operating conveyors.
	**ROUND DISCHARGE SPOUTS** are furnished where required for attaching tubular attachments, or when one conveyor discharges into another conveyor at an angle other than a right angle. By using a round discharge and round inlet the connection is easily made.
	**FLUSH END DISCHARGE SPOUTS** are furnished with a special trough end plate constructed on trough end side of the spout. This type spout offers a complete discharge without a ledge at the end plate for material build up. It is used primarily in handling food products, where infestation may occur.
	**AIR OPERATED FLAT SLIDE GATES** are similar in action and purpose to rack and pinion gates. The gate movement is accomplished by an air cylinder. These gates are usually employed when remote control and automatic operation is desired.
	**LEVER OPERATED GATES** are a modification of standard slide discharges with a lever attached for opening and closing the gates. This attachment provides a leverage for ease of operation and a convenient means for quick opening and closing.
	**ENCLOSED DUST-TIGHT OR WEATHER-PROOF** rack and pinion discharge spouts can be furnished in either flat or curved slide and are similar in construction to conventional rack and pinion slide gates except that the slide, rack, and pinion are fully enclosed in a housing.

Discharges and Inlets

	**AIR OPERATED CURVED SLIDE GATES** are similar to standard rack and pinion gates except they are operated with an air cylinder. The air operated gate is usually used for remote control and automatic operation. These gates can also be furnished in dust-tight or weather-proof construction with the cylinder and gate fully enclosed in the housing.
	**CUSHION CHAMBER INLETS (DEAD BED INLETS)** serve the same purpose as the deflector plate inlet, but are constructed with a ledge that forms a cushion for materials fed into the conveyor.
	**SIDE INLETS** are equipped with a gate to furnish a means of regulating or stopping the inlet flow to relieve the conveyor screw from excessive material pressures. When using the side inlet, the screw rotation should be toward the inlet opening to assure a constant flow rate.
	**HAND SLIDE INLET GATES** are normally used when multiple inlets are required. These inlets must be adjusted or closed manually to assure proper feed to the conveyor.
	**ROUND INLET SPOUTS** are used for tubular attachments or when connecting the discharge of one conveyor to the inlet of another at other than a right angle. This type connection is easily made with round discharges and inlets.
	**DEFLECTOR PLATE INLETS** are used when materials fall vertically into the inlet creating the possibility of impact damage or abrasion to the conveyor screw. The rectangular inlet is equipped with deflector plates, or baffles, that dampen the impact of the material in order to feed the conveyor more gently.
	**HANGER POCKETS** are used with tubular trough, mounted on top of the tubular trough at hanger bearing points. The hanger pocket forms a U-shape section for a short length, allowing the use of standard conveyor hangers and providing easy access to the hanger.

Installation & Maintenance

INSTALLATION AND MAINTENANCE **PAGE**

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OPERATION AND MAINTENANCE H-121
HAZARDOUS OPERATIONS H-121

General

All standard screw conveyor components are manufactured in conformity with Industry Standards. Special components are usually designed and manufactured to the particular job specifications.

Screw conveyors may be ordered either as complete units or by individual components. Complete units are normally shop assembled and then match marked and disassembled for shipment and field re-assembly. When components only are ordered, shipment is made as ordered, and these components must be sorted out and aligned in field assembly.

Because shop assembled screw conveyors are pre-aligned and match marked at the factory, they are easier to assemble in the field and require the minimum installation time. When individual components are ordered, more careful alignment and assembly are required. More time is required for field installation. Assembly bolts are not included with parts orders but are included with preassembled units.

Caution: All Martin Conveyors must be assembled and maintained in accordance with this section. Failure to follow these instructions may result in serious personal injury or property damage.

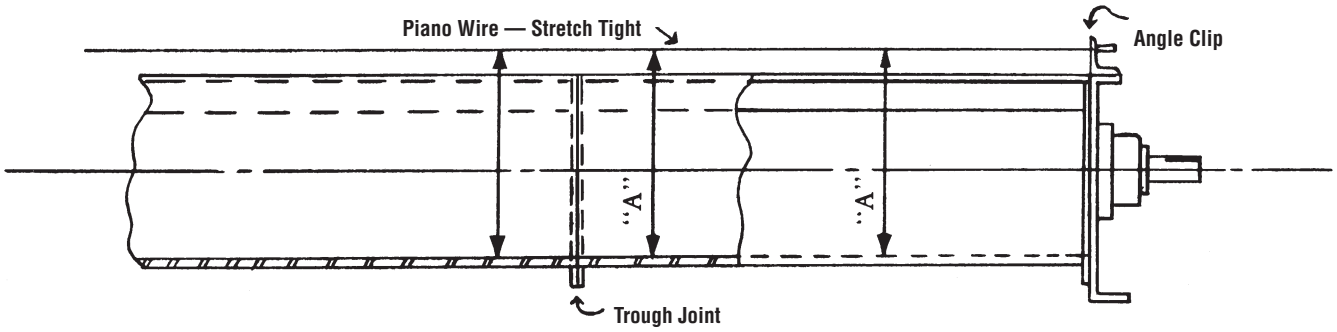
Installation

Receiving. Check all assemblies or parts with shipping papers and inspect for damage. Specifically check for dented or bent trough, bent flanges, bent flighting, bent pipe or hangers or damaged bearings. If any components are severely damaged in shipment, claims should be filed immediately with the carrier. NOTE: Handle Carefully! Fork lifts should have spreader bars to lift max. 24' lengths of assembled conveyors. Lift points should not exceed 10 - 12 feet.

Erection

For shop assembled conveyors, units are match marked and shipped in longest sections practical for shipment. Field assembly can be accomplished by connecting match marked joints, and in accordance with packing list, and/or drawing if applicable. In field erection, the mounting surfaces for supporting the conveyor must be level and true so there is no distortion in the conveyor. Shims or grout should be used when required. Check for straightness as assembly is made.

For conveyor assemblies purchased as parts or merchandise, assemble as follows: Place conveyor troughs in proper sequence with inlet and discharge spout properly located. Connect the trough flanges loosely. Do not tighten bolts. Align the trough bottom center-lines perfectly using piano wire (or equivalent) then tighten flange bolts. Tighten all anchor bolts.



Assembly of conveyor screws should always begin at the thrust end. If the unit does not require a thrust unit, assembly should begin at the drive end. If a thrust end is designated, assemble trough end and thrust bearing. Insert the end, or drive shaft, in the end bearing. Do not tighten set screws until conveyor assembly is completed.

Place the first screw section in the trough, slipping the end, or drive shaft, into the pipe end. Secure tightly with coupling bolts. Install so that conveyor end lugs are opposite the carrying side of the flight.

Place a coupling shaft into the opposite end of conveyor pipe. Tighten coupling bolts.

Insert coupling shaft into hanger bearing and clamp hanger to trough.

Assemble alternately, conveyor screws, couplings and hangers until all screws are installed.

1) **With Hangers:** Assemble screw section so that flighting at each end is approximately 180° from ends of flighting of adjacent sections. Also, adjust conveyor screw and thrust unit so that hangers are equally spaced between adjacent screws.
2) **Without Hangers:** (close coupled) Assemble screws so that flighting at adjoining ends of screw sections align to produce a continuous helix surface. (Note coupling holes have been drilled in assembly to allow for flight alignment.)

Remove hanger clamps and bolt hanger to trough with the bearing centered between conveyor screws.

Install trough covers in proper sequence. Properly locate inlet openings. Handle covers with reasonable care to avoid warping or bending.

Attach covers to trough with fasteners provided.

Install drive at proper location and in accordance with separate instructions or drawing provided.

Check screw rotation for proper direction of material travel after electrical connections have been made but before attempting to handle material. Incorrect screw rotation can result in serious damage to the conveyor and to related conveying and drive equipment.

If necessary, reconnect electrical leads to reverse rotation of conveyor and direction of material flow.

Operation

Lubricate all bearings and drives per service instructions. Gear reducers are normally shipped without lubricant. Refer to service instructions for lubrication.

In start-up of the conveyor, operate several hours empty as a break in period. Observe for bearing heat up, unusual noises or drive misalignment. Should any of these occur, check the following and take necessary corrective steps. (Non-lubricated hanger bearings may cause some noise.)

1) When anti-friction bearings are used, check for proper lubrication. Insufficient or excess lubricant will cause high operating temperatures.
2) Misalignment of trough ends, screws, hangers and trough end can cause excessive maintenance and poor life expectancy.
3) Check assembly and mounting bolts; tighten if necessary.

Do not overload conveyor. Do not exceed conveyor speed, capacity, material density or rate of flow for which the conveyor and drive were designed.

If the conveyor is to be inoperative for a prolonged period of time, operate conveyor until cleared of all material. This is particularly important when the material conveyed tends to harden or become more viscous or sticky if allowed to stand for a period of time.

It may be necessary to recenter hanger bearings after running material in conveyor.

Maintenance

Practice good housekeeping. Keep the area around the conveyor and drive clean and free of obstacles to provide easy access and to avoid interference with the function of the conveyor and drive.

Establish routine periodic inspections of the entire conveyor to ensure continuous maximum operating performance.

To replace conveyor screw section, proceed as follows:

1) Removal of a section, or sections, usually must proceed from the end opposite the drive. Make sure drive and electrical power are disconnected before starting to disassemble.
2) Remove the trough end, sections of screws, coupling shafts and hangers until all sections have been removed or until the damaged or worn section is reached and removed.
3) To reassemble follow the above steps in reverse order.
4) Quick detachable conveyor screws can be removed at intermediate locations without first removing adjacent sections.

Replacement parts can be identified from a copy of the original packing list or invoice.

The coupling bolt contains a lock nut that may become damaged when removed. It is recommended practice to replace them rather than re-use them when changing conveyor screw sections.

Hazardous Operations

Screw conveyors are not normally manufactured or designed to operate handling hazardous materials or in a hazardous environment.

Hazardous materials can be those that are explosive, flammable, toxic or otherwise dangerous to personnel if they are not completely and thoroughly contained in the conveyor housing. Special construction of screw and conveyor housing with gaskets and special bolted covers can sometimes be used for handling this type of material.

Special conveyors are not made or designed to comply with local, state or federal codes for unfired pressure vessels.

Bucket Elevators

BUCKET ELEVATORS **PAGE**

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Bucket Elevators Types

Introduction

Martin has been designing and manufacturing a multitude of bucket elevators for over 75 years with hundreds in service today. We offer a complete line of Industrial Elevators to efficiently handle a wide range of dry free flowing materials in a relatively small space with minimum horsepower. These Industrial Elevators include Centrifugal Discharge and Continuous Discharge with chain or belt mounted buckets. Our elevators can be supplied with either boot or head take-ups. Martin additionally offers a line of Industrial High-Speed Centrifugal Grain elevators in both single leg and double leg designs.

Mill Duty-Centrifugal Discharge Elevators are also available for your tough applications. The Mill Duty elevator is specifically designed and built for the severe service required by the cement, rock, fertilizer, lime, gypsum, coal and fine ore industries. The Mill Duty is offered with AC style buckets.

The Martin Super Capacity-Continuous Discharge elevator is designed around the use of “SC" bucket mounted between two strands of chain. These elevators are specifically used where higher capacities, severe duty and/or higher shaft centers are required.

Components such as sprockets, traction wheels, pulleys, buckets and most take-ups are manufactured by Martin.

Martin offers not only a complete line standard elevators but can design and manufacture MTO elevator specific for a customer’s application.

The Bucket Elevator catalog may be used to assist in making a preliminary selection. Please contact one of Martin’s many Service Centers or Distributors for a recommendation and quote.

Elevator Types

Martin designs and manufactures various types of industrial bucket elevators to efficiently handle most dry, free-flowing bulk materials. High design standards, quality manufacturing location throughout North America assures rapid manufacturing times and economical delivery. This catalog is designed as tool to help our customers make preliminary selections of bucket elevators manufactured by Martin. Martin also is able to fill your needs for a MTO bucket elevator to your specific requirements. Contact Martin to discuss your bucket elevator needs and to receive quotation.

Notes:

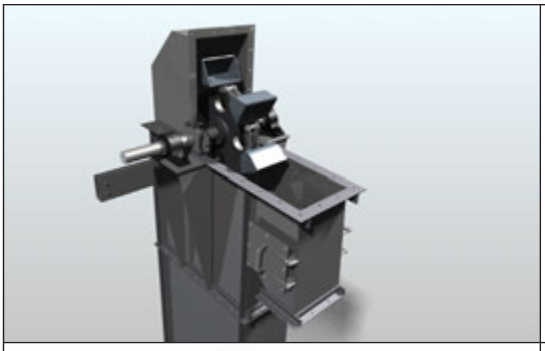
Various materials of construction and thicknesses are available.

Many types of drives are available and can be supplied. Bucket Elevator Styles 100, 200, 500, 700 and 800 are normally supplied with shaft mounted reducers having internal backstops. Other types of drives are available. Mill Duty and Super Capacity elevators are quoted with a right angle reducer and chain drive with an external backstop.

Although the charts in this catalog are based on one type of bucket many other types are available. Nonmetallic buckets are also available in many types of buckets but offered as standard on our 500 Series elevators.

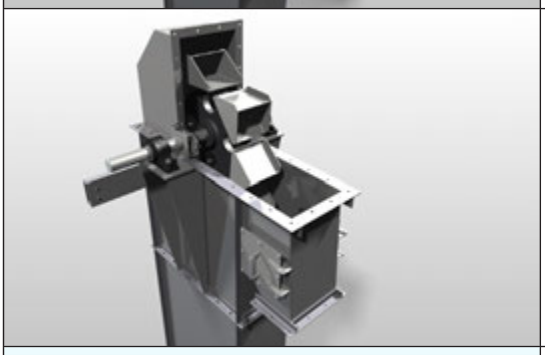
Martin recommends a backstop be installed on all Bucket Elevators.

Elevator Types



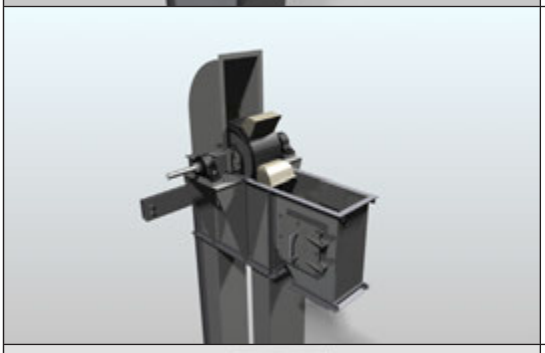
Centrifugal Discharge

Centrifugal discharge elevators are offered as: Series 100 (boot take-up) and Series 200 (head take-up). Both series are available with buckets mounted to a chain or belt. The centrifugal discharge elevators will handle free flowing materials with small to medium lump size. The Martin standard inlet chute and curved bottom plate help direct the material into the bucket, reducing the “digging" action of the bucket. The speed of the elevator is sufficient to discharge the material by centrifugal force.



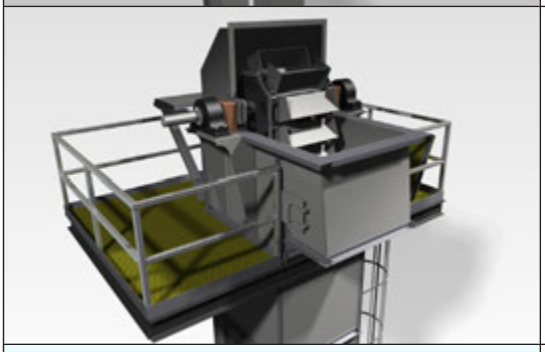
Continuous Discharge

Continuous discharge elevators are offered as: Series 700 (boot take-up) and Series 800 (head take-up). Either series is available with buckets continuous mounted on chain or belt to handle many bulk materials ranging from light to heavy and from fines to larger lumps. The buckets are loaded by direct feeding with the use of a loading leg. Spillage of material is minimizing by the close bucket spacing. As buckets discharge, material flows over the preceding buckets; projecting sides form a chute, assisting in proper discharge.



Centrifugal Discharge – High-Speed Grain

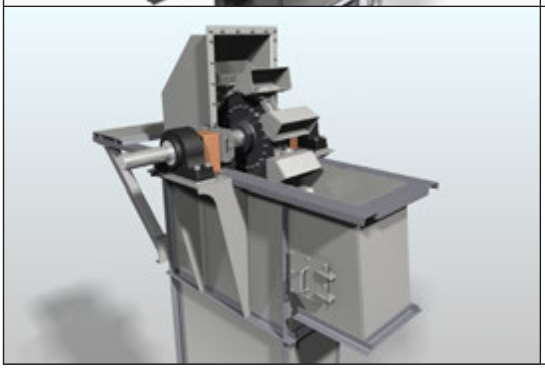
Series 500 (double leg) high-speed centrifugal discharge bucket elevators are specifically designed to economically handle grain and other free-flowing materials weighing less than 60 pounds a bushel. HSG elevators may be used in light duty frac sand applications.



Continuous Discharge – Super Capacity

Continuous Discharge Super Capacity elevators are offered as: Series SC with “SC" continuous discharge buckets mounted between two strands of heavy duty chain. These elevators are used where higher capacities, larger lumps, severe duty or higher shaft centers are required.

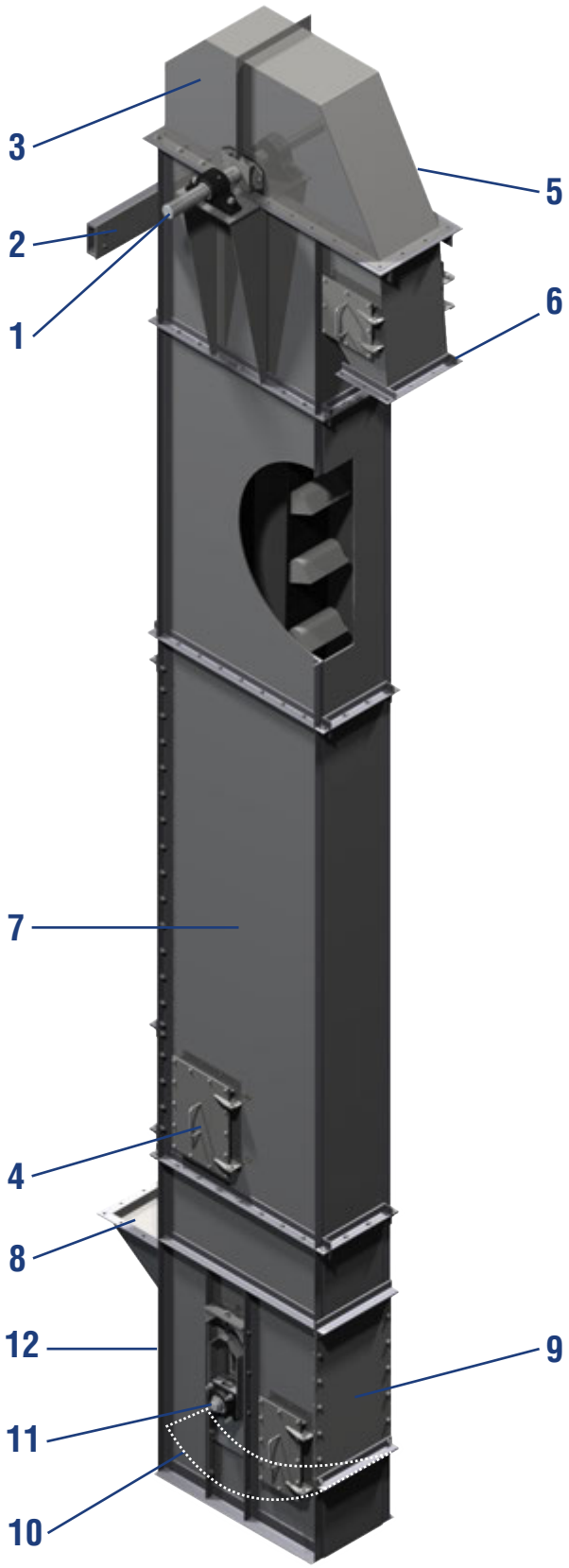
The feeding and discharge of material is similar to a standard continuous discharge elevator.



Centrifugal Discharge – Mill Duty

Centrifugal Mill Duty elevators are offered as: Series MDC with AC buckets mounted on a chain, Series MDC with buckets mounted on a chain and Series MDB with AC buckets mounted on a belt. The Mill Duty elevators Series MDC have a single medium duty or heavy duty rollerless elevator chain and a single row of AC type buckets. The Series MDB belt type elevators may have a single or double row of AC buckets bolted to a heavy duty rubber covered belt. Product is centrifugally discharged as material passes over the head wheel or pulley. A head mounted traction wheel is utilized in chain type elevators, where practical. Lagged pulleys are standard on belt type Mill Duty elevators.

Standard Features of Centrifugal & Continuous Elevators



1. **Shaft Mount Type Drive** . . . . . Furnished as standard. Other types available. Backstops are required to prevent reverse rotation. Various types are available. (Not shown on diagram.)
2. **Torque Arm Bracket** . . . . . Box channel Construction.
3. **Split Hood** . . . . . 14 gauge.
4. **Inspection Door**. . . . . Near side.
5. **Head Section**. . . . . Fabricated of 12 gauge steel with bearing pedestal structurally reinforced.
6. **Discharge Spout** (Style 1 shown) . . . . . Fabricated of 10 gauge plate steel with externally adjustable 4-ply belting throat lip (not shown). Style 2 (45°) available. Wear liners available.
7. **Intermediate Section** . . . . . Fixture welded 12 gauge casing continuously welded for dust tight construction. Sides are cross crimped for additional stiffness. Vertical corner angles are full length.
8. **Inlet**. . . . . Fabricated of 3/16" thick plate steel.
9. **Clean Out Door** . . . . . Bolted for easy removal.
10. **Curved Bottom Plate**. . . . . Reduces build-up in boot
11. **Take-Up Ball Bearing Screw Type** . . . . . For positive take-up tension. Available with roller bearings. Internal gravity type also available.
12. **Boot**. . . . . Fabricated of 3/16" thick plate steel.

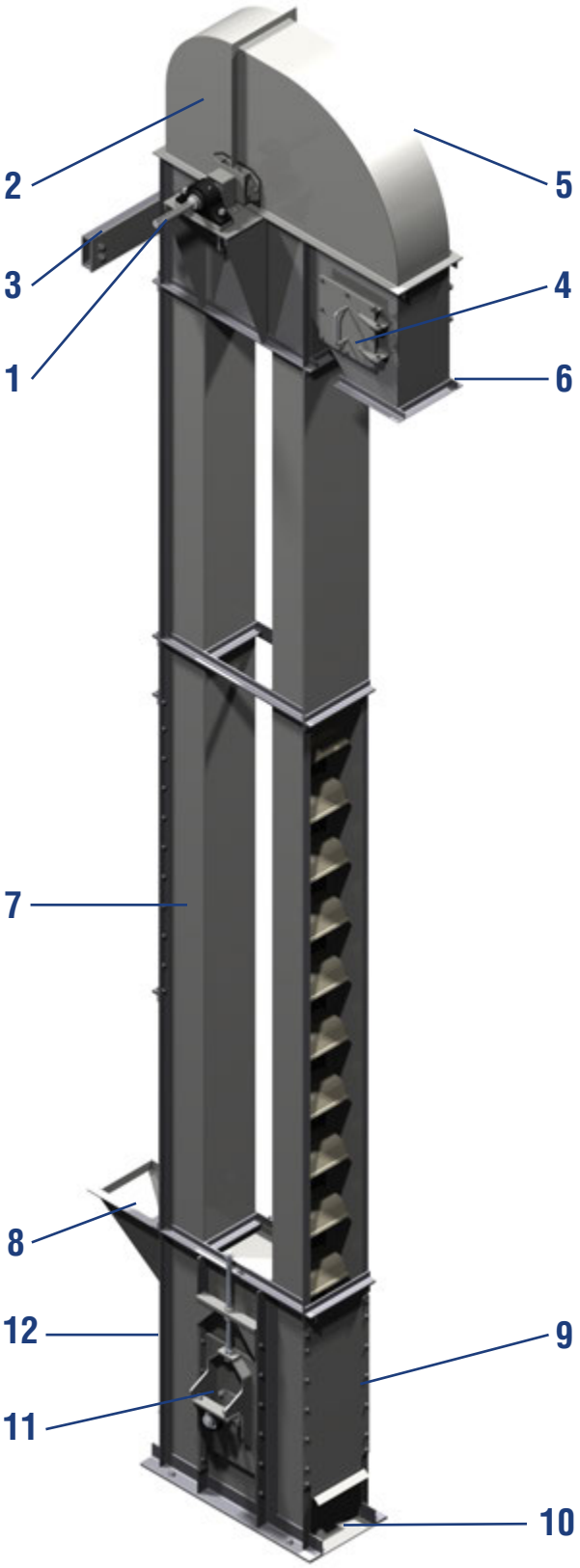
Elevator Number 100 thru 800 Series

Example – B43-108

Mounting	Bucket Size	Series	Head Wheel Diameter
I	I	I	I
B	**43**	**1**	**08**
I	I	I	I
B = Belt C = Chain	43 = 4 × 3 64 = 6 × 4 85 = 8 × 5 106 = 10 × 6 Etc.	1 = 100 2 = 200 5 = 500 7 = 700 8 = 800	08 = 8" dia.

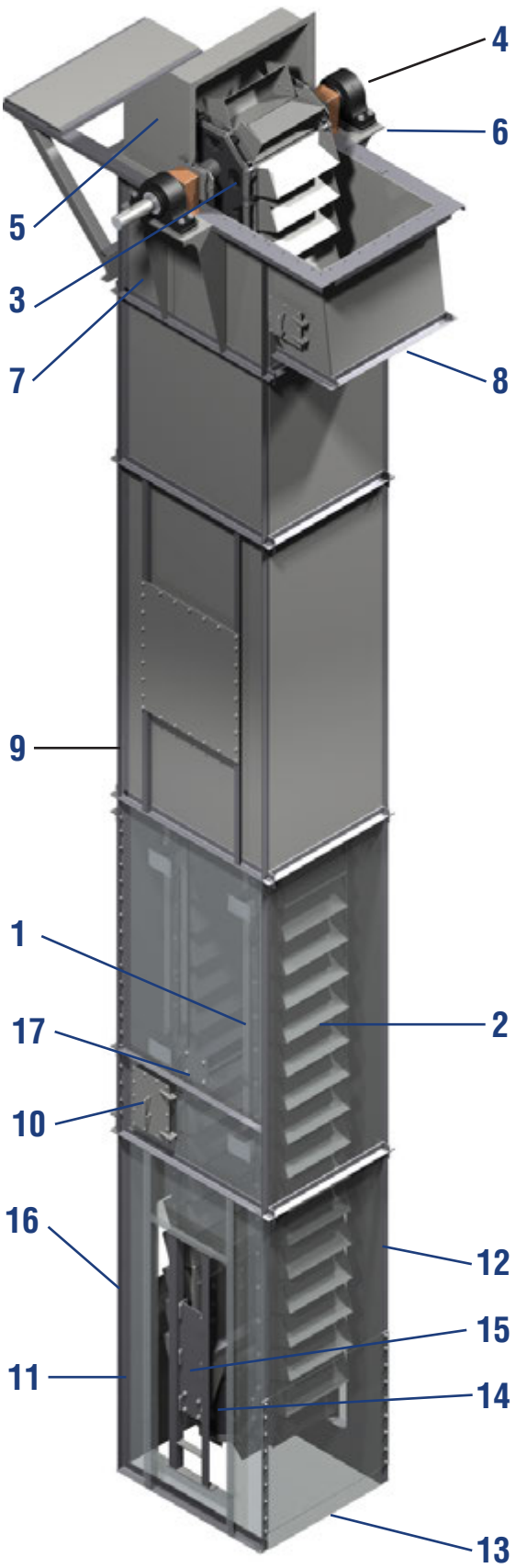
B43-108 is a belt (B) elevator with 4" × 3" (43) buckets, centrifugal discharge type with boot take up (Series 100), Unit 39. Specifications may be found on pages H-131.

Standard Features of High-Speed Grain Elevator



1. **Shaft Mount Type Drive** . . . . . Furnished as standard. Other types available. Backstops are required to prevent reverse rotation.(Not Shown on drawing.)
2. **High-Speed Type Split Hood**. . . . . 14 gauge.
3. **Torque Arm Bracket** . . . . . Box Channel construction.
4. **Inspection Doors**. . . . . One Side.
5. **Head Section**. . . . . Fabricated of 10 gauge steel minimum, with bearing pedestals structurally reinforced.
6. **Discharge Spout (Style 1)**. . . . . Fabricated of 10 gauge steel with externally adjustable 4-ply belting throat lip (not shown). Style 2 (45°) available as well as wear liners.
7. **Intermediate Section** . . . . . Fixture welded 12 gauge casing continuously welded for dust tight and weather tight constriction. Single casing intermediates are available. (Not Shown on drawing.)
8. **Inlet**. . . . . Fabricated of 3/16" thick steel plate and wear liners are available.
9. **Clean Out Door** . . . . . Bolted for easy removal.
10. **Flat Bottom with Clean-Out Slides** . . . . . Reduces material build-up in boot.
11. **Screw Type Ball Bearing Take-up**. . . . . Provides positive take-up tension and bell adjustment. Roller bearings are available as well as spring loaded style take-ups.
12. **Boot Section** . . . . . Fabricated of 3/16" thick steel minimum.
13. **Sway Bars** . . . . . Fabricated of structural angle and supplied on 30’ intervals.

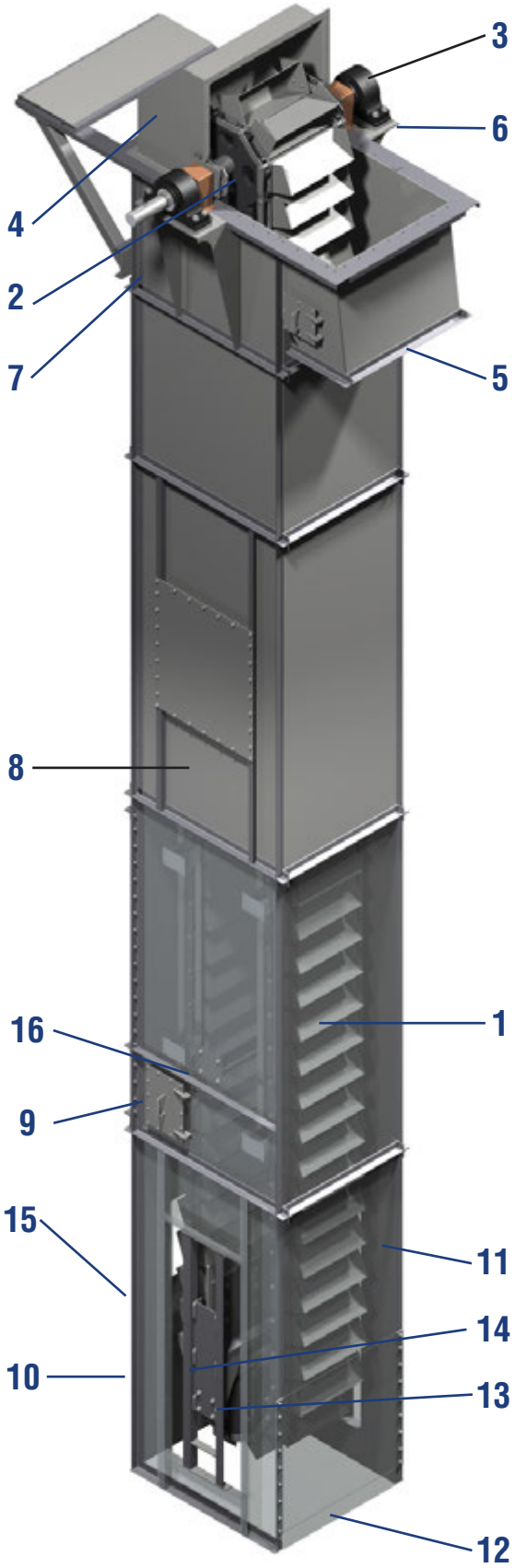
Standard Features of Martin Super-Capacity Elevator



1. **Double Chain** . . . . . Double strand of steel bushed "SC" chain.
2. **Buckets** . . . . . Fabricated steel "SC" continuous style buckets.
3. **Two Segmented Sprockets**. . . . . Solid body construction in hardened steel.
4. **Roller Bearing Pillow Block.**
5. **Split Removable Hood** . . . . . With lifting lugs and contoured to minimize packing of material.
6. **Heavy Steel Bearing Support Platform** . . . . . Designed to distribute the load to the head section.
7. **Head Section** . . . . . Minimum 1/4" steel plate.
8. **Discharge Stub** . . . . . With adjustable throat plate and access panel.
9. **Heavy-Duty Intermediates** . . . . . Of a dust-tight and weather tight construction. Internal angle rails guide the chain.
10. **Hinged Inspection Door.**
11. **Boot Section** . . . . . 1/4" steel plate construction minimum, supplied with an internal loading leg
12. **Bolted Side & Front Access Panels**. . . . . Allows access to take-up, bearings and tail sprocket /traction wheel. (Not Shown on drawing.)
13. **Flat Bottom Plate** . . . . . For better distribution of loads to the foundation.
14. **Hardened Steel Segmented Sprocket or Traction Wheel with Solid Hub.**
15. **Internal Gravity Take-Up** . . . . . Or optional heavy duty external take-up can be supplied.
16. **Flanged Inlet**. . . . . allowing easy connection to loading chute.
17. **Take-up loading beam** . . . . . For servicing the internal component**s.**

Super Capacity Elevator		
Example – SC35-2412		
Elevator Type	Head Wheel Diameter	Bucket Size
I **SC** I SC = Super Capacity Chain	I **35** I 35"	I **2412** I 24" × 12"

Standard Features of Martin Mill Duty Elevator



1. **Buckets** . . . . . AC style hooded back and high front fabricated steel buckets.
2. **Traction Wheel** . . . . . with solid body and hardened steel segments is supplied on chain type and a heavy duty pulley is supplied with a belt style AC elevator.
3. **Roller Bearing Pillow Blocks**
4. **Split Steel Hood** . . . . . 12 Gauge steel plate with lifting lugs and contoured to minimize packing of material.
5. **Discharge Stub** . . . . . With adjustable throat plate and access panel.
6. **Heavy Steel Bearing Support Platform** . . . . . designed to distribute the load to the head section.
7. **Head Section** . . . . . Min. 1/4" steel plate construction.
8. **Heavy-Duty Intermediates** . . . . . Of dust-tight and weather tight construction.
9. **Hinged Inspection Door**
10. **Boot Section** . . . . . Min. 1/4" steel plate construction.
11. **Bolted Side and Front Access Panels** . . . . . Allows access to take-up, bearings and tail sprocket or pulley (Not Shown on Drawing.)
12. **Flat Bottom Plate for Better Distribution of Loads to the Foundation.**
13. **Hardened Steel Segmented Sprocket or Heavy-Duty Tail Pulley.**
14. **Internal gravity take-up** . . . . . Supplied standard on MD elevators with chain and screw take-up on belt type. An optional external gravity take-up may be supplied.
15. **Flanged Inlet**. . . . . Allowing easy connection to loading chute.
16. **Take-Up Loading beam** . . . . . For servicing internal take-up and internal boot components.

Mill Duty Elevators			
Elevator Type	**Head Wheel Diameter**	**Bucket Size**	**Type of Spacing or # Rows**
Example – MDC26-2010A			
MDC	**26**	**2010**	**A**
MDC = Mill Duty Chain	26"	20" × 10"	
Example – MDC30-2714A-S			
MDC	**30**	**2714**	**A**
MDC = Mill Duty Chain	30"	27" × 14"	
Example – MDB30-1810DR			
MDC	**30**	**1810**	**DR**
MDB = Mill Duty Belt	30"	18" × 10"	DR = Double Row

Elevator Selection

General

To properly select a bucket elevator, the following factors must be determined:

1. **Volumetric Capacity** — All bucket elevators are volumetric devices with constant capacity ratings stated in cu.ft./hour, the capacity of any elevator in tons/hour varies with density. See Table 1-1 for conversions if necessary.
2. **Centers or Lift** — in feet.
3. **Lump Size and Lump Class** — Lump size is the largest particle dimension, and lump class is the percentage these lumps represent of the whole.
4. **Material Characteristics** — See Material Classification Code Chart.
5. **Operating Conditions** — Affecting operation include location (indoors, outdoors), number of hours per day operation, etc.

To Convert	To Cubic Feet per Hour (CF of FT^3/HR)
Tons per hour (short) TPH	$CFH = \frac{TPH \times 2000}{\text{Density (in pounds per cubic foot; PCF or LBS/}FT^3\text{)}}$
Pounds per hour Lbs/hour	$CFH = \frac{\text{Pounds per hour}}{\text{Density (in pounds per cubic foot; PCF or LBS/}FT^3\text{)}}$
Bushels per hour BPH	$CFH = BPH \times 1.24$

Procedure

The following steps should be followed to select an elevator:

1. **Determine proper elevator series** — See material table for recommendation.
2. **Select Elevator Number** — For the series selected, refer to the Capacity chart, and select an elevator number for which the capacity in cubic feet per hour listed equals or exceeds the required volumetric capacity. If the required volumetric capacity of centers exceed those listed, contact the Martin for a recommendation.
3. **Check Lump Size/Lump Class** — Check actual lump size/lump class against that listed for the elevator number selected. If the actual lump size/lump class is larger than that listed, choose a larger elevator where the actual is equal to or less than that listed.
4. **Determine Horsepower Requirements** — Consult Martin.
5. **List Specifications** — Refer to capacity, horsepower and dimension charts for the elevator number selected. List the specifications for the preliminary selection of the elevator.

Contact your local Martin Service Center or Martin, distributor for a recommendation.

Major Class	Material Characteristics Included		Code Designation
Density	Bulk Density, Loose		Actual lbs/PC
Size	Very Fine	No. 200 Sieve (.0029") and Under	A200
		No. 100 Sieve (.0059") and Under	A100
		No. 40 Sieve (.016") and Under	A40
	Fine	No. 6 Sieve (.132") and Under	B6
	Granular	1/2" And Under (6" Sieve to 1/2")	C1/2
		3" And Under (1/2" to 3")	D3
		7" And Under (3" to 7")	D7
	Lumpy	16" And Under (0" to 16")	D16
		Over 16" To Be Specified, X = Actual Maximum Size	DX
	Irregular	Irregular Stringy, Fibrous, Cylindrical, Slabs, Etc.	E
Flowability	Very Free Flowing		1
	Free Flowing		2
	Average Flowability		3
	Sluggish		4
Abrasiveness	Mildly Abrasive		5
	Moderately Abrasive		6
	Extremely Abrasive		7
Miscellaneous Properties or Hazards	Builds Up and Hardens		F
	Generates Static Electricity		G
	Decomposes — Deteriorates in Storage		H
	Flammability		J
	Becomes Plastic or Tends to Soften		K
	Very Dusty		L
	Aerates and Becomes a Fluid		M
	Explosiveness		N
	Stickiness — Adhesion		O
	Contaminable, Affecting Use		P
	Degradable, Affecting Use		Q
	Gives Off Harmful or Toxic Gas or Fumes		R
	Highly Corrosive		S
	Mildly Corrosive		T
	Hygroscopic		U
	Interlocks, Mats or Agglomerates		V
	Oils Present		W
	Packs Under Pressure		X
	Very Light and Fluffy — May Be Windswept		Y
	Elevated Temperature		Z

Material Tables

Material	Density LBS/FT³	Material Code	Recommended Elevator Series ▲
Alfalfa Meal	14-22	B6-45WY	F, H
Almonds, Broken	27-30	C1/2-35Q	C, F, H
Almonds, Whole Shelled	28-30	C1/2-35Q	F
Alum, Fine	45-50	B6-35U	A, F
Alum, Lumpy	50-60	B6-25	A, F
Alumina	55-65	B6-27MY	G
Aluminum Chips, Dry	7-15	E-45V	F
Aluminum Oxide	60-120	A100-17M	F
Ashes, Coal, Dry — 3" •	35-40	D3-46T	C, J, K, L
Asphalt, Crushed — 1/2"	45	C1/2-45	A, C, F, J, K
Bakelite, Fine	30-45	B6-25	F
Baking Powder	40-55	A100-35	F
Bauxite, Crushed — 3"	75-85	D3-36	A, C, F, J, K
Beans, Castor, Whole Shelled	36	C1/2-15W	A, C, F, H
Beans, Navy, Dry	48	C1/2-15	A, C, F, H
Bentonite, Crude	34-40	D3-45X	A, C, I, J, K
Bentonite — 100 Mesh •	50-60	A100-25MXY	A, C, I, J, K, L
Boneblack	20-25	A100-25Y	F
Bonemeal	50-60	B6-35	A, C
Bones, Crushed	35-50	D3-45	A, C, F, H
Bones, Ground	50	B6-35	A, C, F, H
Borax, Fine	45-55	B6-25T	A, C, I, J, K
Bran, Rice-Rye-Wheat	16-20	B6-35NY	A, C
Brewer's Grain, spent, dry	14-30	C1/2-45	A, C
Brewer's Grain, spent, wet	55-60	C1/2-45T	A, C
Buckwheat	37-42	B6-25N	E
Calcium Oxide (See Lime, unslaked)	—	—	—
Cast Iron, Chips	130-200	C1/2-45	F
Cement, Clinker	75-95	D3-36	A, F, I, J, K
Cement, Portland •	94	A100-26M	A, F, I, J, K, L
Chalk, Crushed	75-95	D3-25	A, F, I, J, K
Chalk, Pulverized	67-75	A100-25MXY	A, F, I
Charcoal, Lumps	18-28	D3-45Q	F, I
Cinders, Coal	40	D3-36T	A, F, I, J, K
Clay, Brick, Dry, Fines	100-120	C1/2-36	B
Coal, Anthracite, Sized 1/2"	49-61	C1/2-25	A, F, I, J, K
Coal, Bituminous, Mined, Slack	43-50	C1/2-45T	A, F, I
Coffee, Green Bean	25-32	C1/2-25PQ	A, F
Coffee, Roasted Bean	20-30	C1/2-25PQ	A, F
Coke, Breeze	25-35	C1/2-37	B, D
Coke, Loose	23-35	D7-37	D
Coke, Petrol, Calcined	35-45	D7-37	D, I, J, K, L
Copra, Cake, Ground	40-45	B6-45HW	A, C, F, G
Copra, Cake, Lumpy	25-30	D3-35HW	A, C, F
Copra, Lumpy	22	E-35HW	A, C, F
Copra, Meal	40-45	B6-35HW	A, C, F, G
Cork, Granulated	12-15	C1/2-35JY	F, H
Corn, Cracked	40-50	B6-25P	F, H
Corn Germ	21	B6-35PY	A, C
Corn Grits	40-45	B6-35P	A, C
Cornmeal	32-40	B6-35P	A, C
Corn Shelled	45	C1/2-25	E
Corn Sugar	30-35	B6-35PU	A, C
Cottonseed, Cake, Lumpy	40-45	D7-45HW	A, C
Cottonseed, Dry, Delinted	22-40	C1/2-25X	B, D
Cottonseed, Dry, Not Delinted	18-25	C1/2-45XY	B, D
Cottonseed, Hulls	12	B6-35Y	F, G
Cottonseed, Meal, Extracted	35-40	B6-45HW	A, C
Cottonseed, Meats, Dry	40	B6-35HW	A, C
Distiller's Grain, Spent Dry	30	B6-35	A, C
Dolomite, Crushed	80-100	C1/2-36	A, F, I, J, K
Ebonite, Crushed	63-70	C1/2-35	F
Feldspar, Ground •	65-80	A100-37	A, C, F, I, J, K
Feldspar, Powder	100	A200-36	F, H
Flaxseed	43-45	B6-35X	E
Flaxseed Cake (Linseed Cake)	48-50	D7-45W	C
Flaxseed Meal (Linseed Meal)	25-45	B6-45W	A, C

Material	Density LBS/FT³	Material Code	Recommended Elevator Series ▲
Fuller's Earth, Dry, Raw	30-40	A40-25	B, D
Fuller's Earth, Oily, Spent	60-65	C1/2-450W	B, D
Glass, Batch	80-100	C1/2-37	B, D
Granite, Fine	80-90	C1/2-27	F, I, J, K
Gypsum, Calcined •	55-60	B6-35U	A, C, F, H, I, J, K
Gypsum, Calcined, Powdered •	60-80	A100-35U	A, F, I, J, K, L
Gypsum, Raw — 1"	70-80	D3-25	F, I, J, K
Hops, Spent, Dry	35	D3-35	A, C
Hops, Spent, Wet	50-55	D3-45V	A, C
Ice, Crushed	35-45	D3-35Q	A, F
Ilmenite Ore	140-160	D3-37	A, C, F, G, I, J, K
Lime, Ground, Unslaked	60-65	B6-35U	A, C, F, G, I, J, K
Lime, Hydrated	40	B6-35LM	F, I
Lime, Pebble	53-56	C1/2-25HU	A, F, I, J, K
Limestone, Agricultural •	68	B6-35	A, C, F, H, I, J, K
Limestone, Crushed	85-90	DX-36	F, H, I, J, K
Malt, Dry, Ground	20-30	B6-35NP	A, C
Malt, Meal	36-40	B6-25P	A, C
Malt, Dry Whole	20-30	C1/2-35N	A, C
Marble, Crushed	80-95	B6-37	F, I
Milk, Malted	27-30	A40-45PX	A
Oats	26	C1/2-25MN	E
Oats, Rolled	19-24	C1/2-35NY	A, C
Oxalic Acid Crystals – Ethane Diacid Crystals	60	B6-35QS	B, D
Phosphate Rock, Broken	75-85	DX-36	A, C, F, H, I, J, K
Phosphate Rock, Pulverized •	60	B6-36	A, C, F, H, I, J, K
Potash (Muriate) Dry	70	B6-37	A, C, F, I, J, K
Pumice — 1/8" •	42-48	B6-46	F, I, J, K
Rice, Bran	20	B6-35NY	E
Rice, Grits	42-45	B6-35P	A, C
Rice, Hulled	45-49	C1/2-25P	E
Rye	42-48	B6-15N	E
Salt Cake, Dry Coarse	85	B6-36TU	A, C, F, H, J, K, L
Salt, Dry Fine	70-80	B6-36TU	F, H, I, J, K, L
Sand Dry Bank (Damp)	110-130	B6-47	B, G
Sand Dry Bank (Dry)	90-110	B6-37	B, G
Sand Foundry (Shake Out)	90-100	D3-37Z	B, G
Shale, Crushed	85-90	C1/2-36	B, H, I, J, K
Slag, Blast Furnace, Crushed	130-180	D3-37Y	F, I, J, K
Slate, Crushed — 1/2"	80-90	C1/2-36	F, I, J, K
Soda Ash, Heavy •	55-65	B6-36	A, C, I, J, K
Soda Ash, Light	20-35	A40-36Y	F, H, I
Sodium Phosphate	50-60	A-35	A, F
Soybean, Cake	40-43	D3-35W	C
Soybean, Cracked	30-40	C1/2-36NW	A
Soybean, Flake, Raw	18-25	C1/2-35Y	A, C
Soybean, Flour	27-30	A40-35Mn	B, D
Soybean Meal, Cold	40	B6-35	A, C
Soybean Meal, Hot	40	B6-35T	A, C
Soybeans, Whole	45-50	C1/2-26NW	E
Sugar Beet, Pulp, Dry	12-15	C1/2-26	F, H
Sugar Beet, Pulp, Wet	25-45	C1/2-35X	F, H
Sugar, Raw	55-65	B6-35PX	A, C
Trisodium Phosphate, Granular	60	B6-36	A, F
Wheat	45-48	C1/2-25N	E
Wheat, Cracked	40-45	B6-25N	A, C
Wheat, Germ	18, 28	B6-25	A, C
Wood Chips, Screened	10-30	D3-45VY	B, D

• Buckets should be drilled on the bottom for air venting to assure rated capacity.

▲ Elevator Series Designation	
A = Series 100 Chain	G = Series 700 Belt
B = Series 100 Belt	H = Series 800 Chain
C = Series 200 Chain	I = Series SC Double Chain
D = Series 200 Belt	J = Series MDC Chain
E = Series 500 Belt	L = Series MDB Belt
F = Series 700 Chain	

Centrifugal Discharge Chain

Series 100 Chain (Series 200 is for Head Take-up)

Centrifugal discharge chain type elevators handle a variety of relatively free-flowing dry materials with small to medium lump sizes that are mildly to moderately abrasive.

Buckets

Capacities and horsepower listed are for style “AA" buckets. Style “A", “AA-RB" and “Salem" can be furnished. Style “C" may also be used to handle wet or sticky materials. Consult the factory for a specific recommendation.

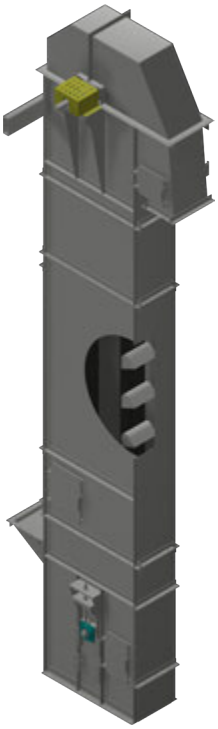
Chain

Centrifugal discharge chain type elevators are furnished with either combination chain for light to medium service or all steel (steel knuckle) chain for medium to severe service or when a higher chain working load is required.

Elevator	Capacity	Buckets				Chain			Lump Size		Nominal Casing Size		Head Sprocket			Boot Sprocket		
	Max CFH	Width	Proj.	Depth	Spacing	Number	Pitch	F.P.M.	100%	10%	Width	Depth	# Teeth	Pitch Dia.	RPM	# Teeth	Pitch Dia.	Shaft Dia.
C43-108	73	4	2.75	3	9.25	977	2.380	125	.5	1	8	18	10	7.50	63.7	10	7.5	1.500
C64-121	250	6	4	4.25	16	N102B	4.000	250	.5	3	11.75	39	16	20.50	39.4	14	18	1.500
C85-121	530	8	5	5.5	16	HSB102B	4.000	225	.75	3	11.75	39	16	20.50	41.9	10	13	1.500
C85-124	590	8	5	5.5	16	HSB102B	4.000	250	1	3.5	13.75	42	19	24.25	39.4	14	18	2.000
C106-124	1010	10	6	6.25	16	N102B	4.000	250	1.25	3.5	13.75	48	19	24.25	39.4	16	20.5	2.000
C127-125	1425	12	7	7.25	18	HSB110	6.000	250	1.25	4	15.75	48	13	25.00	38.2	9	17.5	2.438
C127-131	1765	12	7	7.25	16	N102B	4.000	275	1.25	4	17.75	54	24	30.50	34.4	19	24.25	2.438
C147-131	2135	14	7	7.25	16	N102B	4.000	275	1.25	4	19.75	54	24	30.50	34.4	19	24.25	2.438
C168-131	2800	16	8	8.5	18	HSB110	6.000	275	1.5	4.5	19.75	54	16	30.75	34.2	11	21.25	2.438
C188-131	3220	18	8	8.5	18	HSB110	6.000	275	1.5	4.5	24.75	54	16	30.75	34.2	11	21.25	2.438
C208-131	3460	20	8	8.5	18	HSB110	6.000	275	1.5	4.5	24.75	54	16	30.75	34.2	11	21.25	2.438
C248-131	4700	24	8	8.5	18	HSB833	6.000	275	1.5	4.5	30.75	54	16	30.75	34.2	11	21.25	3.000
C2410-131	6520	24	10	10.5	18	HSB833	6.000	275	2	4.5	30.75	54	16	30.75	34.2	11	21.25	3.000

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.
Other chain may be substituted based on chain pull requirements.

Centrifugal Discharge Belt



Series 100 Belt (Series 200 is for Head Take-up)

Centrifugal discharge belt type elevators handle a variety of relatively free-flowing dry materials with small to medium lump sizes that are mildly, moderately or extremely abrasive.

Buckets

Capacities listed are for style “AA" buckets. Style “A", “AA-RB" and “Salem" can be furnished. Style “C" may also be used to handle wet or sticky materials. Consult the factory for a specific recommendation.

Belt

Centrifugal discharge belt type elevators are typically furnished with 100% polyester carcass PVC belting or rubber covered ply belts specifically designed for elevator service. Many other types of belts and covers are available.

Elevator	Capacity	Buckets				Belt		Lump Size		Nominal Casing Size		Head Pulley		Boot Pulley	
	Max CFH	Width	Proj.	Depth	Spacing	Width	F.P.M.	100%	10%	Width	Depth	Pitch Dia.	RPM	Pitch Dia.	Shaft Dia.
B43-108	95	4	2.75	3	8	5	140	.25	1	8	18	8	62.9	8	1.500
B64-124	325	6	4	4.25	13	7	260	.5	2.5	11.75	39	24	40.5	24	1.500
B85-120	540	8	5	5.5	16	9	230	.75	2.5	11.75	39	20	42.9	20	1.500
B85-124	590	8	5	5.5	16	9	250	.75	3	13.75	42	24	39	24	2.000
B106-124	1010	10	6	6.25	16	11	250	1	3	15.75	48	24	39	24	2.000
B127-124	1425	12	7	7.25	18	13	250	1.25	4	17.75	48	24	39	24	2.438
B127-130	1600	12	7	7.25	18	13	280	1.25	4	17.75	54	30	35.1	30	2.438
B147-130	1930	14	7	7.25	18	15	280	1.25	4	19.75	54	30	35.1	30	2.438
B168-130	2860	16	8	8.5	18	17	280	1.5	4.5	22.75	54	30	35.1	30	2.438
B188-130	3280	18	8	8.5	18	19	280	1.5	4.5	24.75	54	30	35.1	30	2.438
B208-130	3530	20	8	8.5	18	21	280	1.5	4.5	26.75	54	30	35.1	30	2.438
B127-142S	4490	24	8	8.5	16	24	350	1.25	4	28	66	42	35.1	42	3.000
B2410-130	6640	24	10	10.5	18	25	280	1.5	4.5	30.75	60	30	35.1	30	3.000

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.

Continuous Discharge Chain

Series 700 Chain (Series 800 is for Head Take-up)

Continuous discharge chain type elevators will handle various free-flowing dry or sluggish materials which contain medium to large lumps and are mildly, moderately, or extremely abrasive.

Buckets

Capacities listed are for a medium-front, non-overlapping style fabricated steel bucket. High front style buckets are available. Consult the factory for a specific recommendation.

Chain

Continuous discharge chain type elevators are furnished with combination chain for mild to moderate service or all steel (steel knuckle) chain for moderate to severe service or when a higher chain working load is required.

Elevator	Capacity	Buckets				Chain			Lump Size		Nominal Casing Size		Head Sprocket			Boot Sprocket		
	Max CFH	Width	Proj.	Depth	Spacing	Number	Pitch	F.P.M.	100%	10%	Width	Depth	# Teeth	Pitch Dia.	RPM	# Teeth	Pitch Dia.	Shaft Dia.
C85-721	570	8	5	7.75	8	HSB102B	4.000	120	.75	2.5	11.75	39	16	20.5	22.4	11	20.5	1.50
C105-721	730	10	5	7.75	8	HSB102B	4.000	120	.75	2.5	13.75	39	16	20.5	22.4	11	20.5	2.000
C107-725	1010	10	7	11 5/8	12	HSB110	6.000	125	1	3	13.75	48	13	25	19.1	10	25	2.000
C127-725	1230	12	7	11 5/8	12	HSB110	6.000	125	1	3	15.75	48	13	25	19.1	10	25	2.438
C147-725	1425	14	7	11 5/8	12	HSB110	6.000	125	1	3	17.75	48	13	25	19.1	10	25	2.438
C128-725	1550	12	8	11 5/8	12	HSB110	6.000	125	1.25	4	15.75	48	13	25	19.1	9	25	2.438
C148-725	1828	14	8	11 5/8	12	HSB110	6.000	125	1.25	4	17.75	48	13	25	19.1	9	25	2.438
C168-725	2110	16	8	11 5/8	12	HSB110	6.000	125	1.5	4.5	19.75	48	13	25	19.1	9	25	2.438
C188-725	2365	18	8	11 5/8	12	HSB110	6.000	125	1.5	4.5	22.75	48	13	25	19.1	9	25	2.438
C208-725	2800	20	8	11 5/8	12	HSB833	6.000	125	1.5	4.5	24.75	48	13	25	19.1	9	25	2.438
C248-725	3400	24	8	11 5/8	12	HSB833	6.000	125	1.5	4.5	28.75	48	13	25	19.1	9	25	3.000
C2010-725	3900	20	10	11 5/8	12	HSB833	6.000	125	2	4.5	24.75	54	13	25	19.1	9	25	3.000
C2410-725	4670	24	10	11 5/8	12	HSB833	6.000	125	2	4.5	28.75	54	13	25	19.1	9	25	3.000

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.
Other chain may be substituted based on chain pull requirements.

Continuous Discharge Belt

Series 700 Belt (Series 800 is for Head Take-up)

Continuous discharge belt type elevators will handle various free-flowing dry or sluggish materials which contain medium to large lumps and are mildly, moderately, or extremely abrasive.

Buckets

Capacities listed are for a medium front, non-overlapping style fabricated steel bucket. High front style buckets are available. Consult the factory for a specific recommendation.

Belt

Continuous discharge belt type elevators are typically furnished with 100% polyester carcass PVC belting or rubber covered ply belts specifically designed for elevator service. Many other types of belt and covers are available.

Elevator	Capacity	Buckets				Belt		Lump Size		Nominal Casing Size		Head Pulley		Boot Pulley	
	Max CFH	Width	Proj.	Depth	Spacing	Width	F.P.M.	100%	10%	Width	Depth	Pitch Dia.	RPM	Pitch Dia.	Shaft Dia.
B85-720	760	8	5	7.75	8	8	160	.75	2.5	11.75	39	20.00	29.8	14	1.500
B105-720	975	10	5	7.75	8	11	160	.75	2.5	13.75	39	20.00	29.8	16	2.000
B107-724	1300	10	7	11.625	12	11	160	1	3	13.75	48	24.00	24.9	20	2.000
B127-724	1570	12	7	11.625	12	13	160	.75	3	15.75	48	24.00	24.9	20	2.438
B147-724	1825	14	7	11.625	12	15	160	1	3	17.75	48	24.00	24.9	20	2.438
B128-724	1980	12	8	11.625	12	13	160	1.25	4	15.75	48	24.00	24.9	20	2.438
B148-724	2340	14	8	11.625	12	15	160	1.25	4	17.75	48	24.00	24.9	20	2.438
B168-724	2700	16	8	11.625	12	17	160	1.25	4.5	19.75	48	24.00	24.9	20	2.438
B188-724	3025	18	8	11.625	12	19	160	1.5	4.5	22.75	48	24.00	24.9	20	2.438
B208-724	3560	20	8	11.625	12	21	160	1.5	4.5	24.75	48	24.00	24.9	20	2.438
B248-724	4320	24	8	11.625	12	25	160	1.5	4.5	26.75	48	24.00	24.9	20	3.000
B2010-724	4970	20	10	11.625	12	21	160	1.5	4.5	24.75	54	24.00	24.9	20	3.000
B2410-724	5975	24	10	11.625	12	25	160	1.5	4.5	28.75	60	24.00	24.9	20	3.000

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.

High-Speed Grain Centrifugal Discharge

Series 500 Belt

The High-Speed centrifugal discharge type elevator is specifically designed to handle free flowing dry materials such as 48 lb. grains which have a small lump size and are mildly abrasive.

Buckets

Capacities and horsepower listed are for style “HD-MAX" buckets. Other style and materials of construction can be supplied. Consult factory for a specific recommendation.

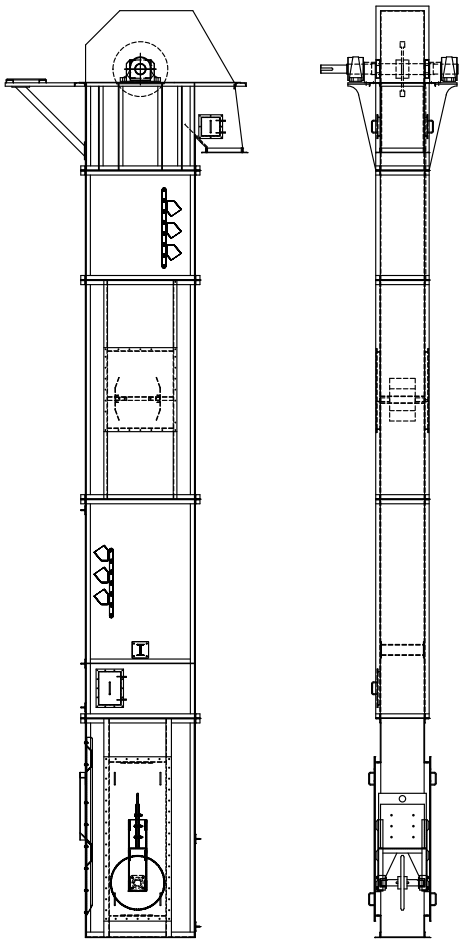
Belt

Centrifugal discharge High-Speed Grain elevators are supplied with 100% polyester carcass PVC belting or rubber covered belts specially designed for elevator service. Many other types of belts and covers are available

Part Number	No. Bucket Rows	Capacity				Buckets Standard Duty Plastic				Belt Width	Pulley Width	Head Pulley Diam.	Boot Pulley Diam.
		C.F.H.		At Speed									
		@ "Y-Y +5 Deg." Max. Useable	@ "Y - Y" (W.L.)	Belt RPM	H.S. RPM	Typical Style	Width	Proj.	Spacing				
B64-508 *	1	782	697	265	119	HD-MAX	6.250	4.500	7	7	7	8	8
B65-512A	1	1,079	980	350	107	HD-MAX	6.250	5.625	10	7	8	12	12
B65-512B	1	1,541	1,400	350	107	HD-MAX	6.250	5.625	7	7	8	12	12
B95-518A	1	1,853	1,640	440	90	HD-MAX	9.375	5.625	12	10	11	18	18
B95-518B	1	2,470	2,187	440	90	HD-MAX	9.375	5.625	9	10	11	18	18
B95-518C	1	3,176	2,812	440	90	HD-MAX	9.375	5.625	7	10	11	18	18
B96-524	1	3,974	3,600	460	70	HD-MAX	9.375	6.625	8	10	11	24	24
B96-530	1	4,406	3,991	510	63	HD-MAX	9.375	6.625	8	10	11	30	30
B106-530	1	4,931	4,534	510	63	HD-MAX	10.375	6.625	8	11	12	30	30
B136-530	1	6,388	5,864	510	63	HD-MAX	13.375	6.625	8	14	15	30	30
B127-536	1	8,879	8,123	600	62	HD-MAX	12.500	7.750	9	13	15	36	36
B147-536	1	10,747	9,900	600	62	HD-MAX	14.500	7.750	9	15	16	36	36
B167-536	1	12,000	11,289	600	62	HD-MAX	16.500	7.750	9	17	19	36	36
B168-542	1	14,751	13,798	620	55	HD-MAX	16.500	8.750	10	17	19	42	42
B188-542	1	16,740	15,764	620	55	HD-MAX	18.500	8.750	10	20	22	42	42
B2108-548	2	20,648	19,164	700	55	HD-MAX	10.500	8.750	10	22	24	48	48
B2138-548	2	26,412	23,706	700	55	HD-MAX	13.500	8.750	10	28	30	48	48
B2168-548	2	33,314	31,681	700	55	HD-MAX	16.500	8.750	10	34	36	48	48
B2188-548	2	37,800	35,595	700	55	HD-MAX	18.500	8.750	10	38	40	48	48
B3168-548	3	49,971	47,521	700	55	HD-MAX	16.500	8.750	10	50	52	48	48
B4158-548	4	63,222	59,652	700	55	HD-MAX	15.500	8.750	10	62	64	48	48
B4188-548	4	75,600	71,190	700	55	HD-MAX	18.500	8.750	10	74	76	48	48

* Single Leg Intermediate Casing: 50' maximum height.
Head shaft diameter to be determined by customer's application and specifications.
Plastic buckets are available as Nylon, HDP or Urethane. Steel is available on special request.

Super Capacity Continuous Discharge Chain



Series SC Chain Elevator

- Built to handle friable, heavy or abrasive materials typical of the aggregate and cement industries
- Buckets are mounted between two strands of chain and project back towards the center of the elevator thus carry a much larger capacity and larger lump sizes because of their deeper design
- The SC elevator's continuous discharge design allows for the operation of the elevator at much slow speeds greatly increasing chain and sprocket life
- As a result of the increased life of wear components, maintenance costs are reduced
- Higher shaft centers is also a benefit of the Martin SC elevator's double chain design
- The Super-Capacity elevator is designed to handle Free-Flowing materials with particles ranging from fines up to heavy lumps

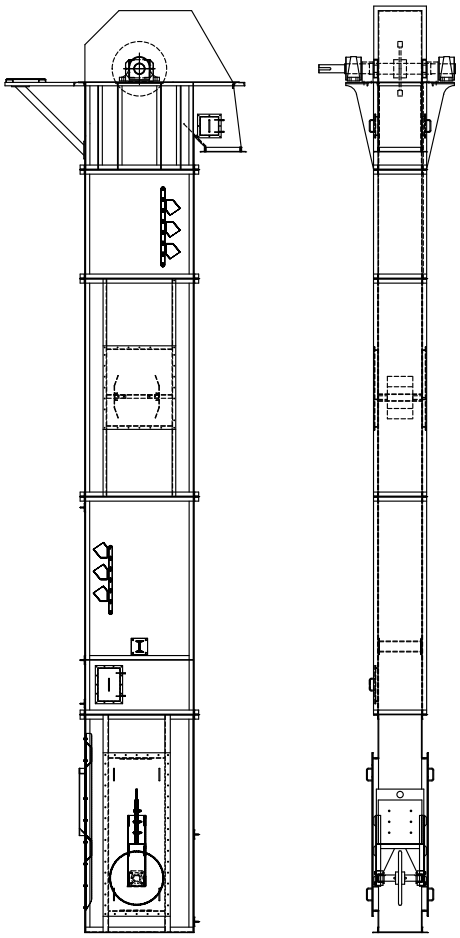
Super Capacity Elevator w SC Buckets SC Series Double Chain

Elevator	Max CFH Capacity	Bucket	Spacing	Chain	Speed	Lump Size	Casing Size	Head Wheel	RPM	Boot Sprocket	Shaft Diam.
SC31-128	2250	12 × 8.75 × 11.625	12	6102 1/2	100	2 to 4	26 × 56	31.36	12.2	8T-31.36PD	2.438
SC31-148	2700	14 × 8.75 × 11.625	12	6102 1/2	100	2 to 4	28 × 56	31.36	12.2	8T-31.36PD	2.438
SC31-168	3150	16 × 8.75 × 11.625	12	6102 1/2	100	2.5 to 6	30 × 56	31.36	12.2	8T-31.36PD	3
SC31-188	3600	18 × 8.75 × 11.625	12	6102 1/2	100	2.5 to 6	32 × 56	31.36	12.2	8T-31.36PD	3
SC31-208	4050	20 × 8.75 × 11.625	12	6102 1/2	100	2.5 to 6	34 × 56	31.36	12.2	8T-31.36PD	3
SC35-1612	5625	16 × 12.75 × 17.625	18	9124	125	3.5 to 8	33 × 68	34.77	13.7	12T-34.77PD	3
SC35-2012	7125	20 × 12.75 × 17.625	18	9124	125	3.5 to 8	37 × 68	34.77	13.7	12T-34.77PD	3
SC35-2412	8250	24 × 12.75 × 17.625	18	9124	125	3.5 to 8	41 × 68	34.77	13.7	12T-34.77PD	3.438
SC35-3012	10500	30 × 12.75 × 17.625	18	9124	125	3.5 to 8	47 × 68	34.77	13.7	12T-34.77PD	3.438
SC35-3612	12375	36 × 12.75 × 17.625	18	9124	125	3.5 to 8	53 × 68	34.77	13.7	12T-34.77PD	3.438
SC35-4212	14450	42 × 12.75 × 17.625	18	9150	125	3.5 to 8	60 × 68	34.77	13.7	12T-34.77PD	3.438
SC35-4812	16500	48 × 12.75 × 17.625	18	9150	125	3.5 to 8	66 × 68	34.77	13.7	12T-34.77PD	3.438

Notes: 6102 1/2 Chain is 12 Pitch
9124 Chain is 9 Pitch
9150 Chain is 9 Pitch

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.
Other chain may be substituted based on chain pull requirements.

Mill Duty
Centrifugal Discharge Chain



Series MDC Mill Duty Elevator with AC Buckets

- Built for the severe duty required of industries like cement, rock, lime, and gypsum
- Buckets are mounted to a single chain in a continuous sequence
- Material in fed directly into the bucket to minimize digging action, reducing wear and horsepower requirements
- Centrifugal force causes discharge of buckets as they pass over head wheel
- Designed to handle free-flowing material with particles ranging from fines up to 2” lumps
- Most commonly supplied with a heavy duty steel rollerless chain

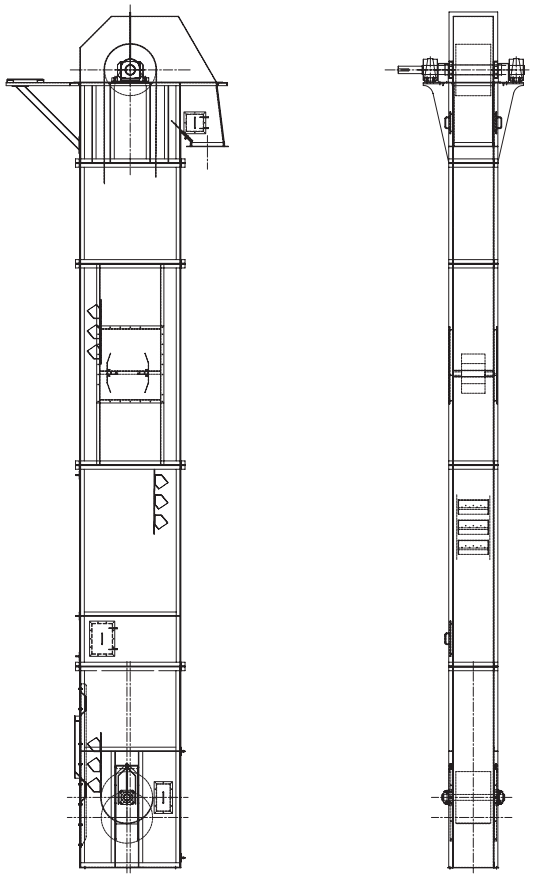
Mill Duty with AC Buckets & Chain - MDC Series

Elevator	Max CFH Capacity	Bucket	Spacing	Chain	Speed	Lump Size	Casing Size	Head Wheel	RPM	Boot Sprocket	Shaft Diam.
MDC26-128	2230	12 × 8 × 8.5	18	ER-856	265	Fines to 2	20 × 56	26	36	13T-25.07PD	3
MDC26-148	2625	14 × 8 × 8.5	18	ER-856	265	Fines to 2	22 × 56	26	36	13T-25.07PD	3
MDC26-128	3340	12 × 8 × 8.5	12	ER-856	265	Fines to 2	20 × 56	26	36	13T-25.07PD	3
MDC26-148	3935	14 × 8 × 8.5	12	ER-856	265	Fines to 2	22 × 56	26	36	13T-25.07PD	3
MDC26-168	4530	16 × 8 × 8.5	12	ER-856	265	Fines to 2	24 × 56	26	36	13T-25.07PD	3
MDC26-1810A	4930	18 × 10 × 10.5	18	ER-856	265	Fines to 2	26 × 64	26	36	13T-25.07PD	3
MDC26-2010A	5470	20 × 10 × 10.5	18	ER-856	265	Fines to 2	28 × 64	26	36	13T-25.07PD	3
MDC26-2410A	6760	24 × 10 × 10.5	18	ER-856	265	Fines to 2	32 × 64	26	36	13T-25.07PD	3
MDC26-1810B	7400	18 × 10 × 10.5	12	ER-859	265	Fines to 2	26 × 64	26	36	13T-25.07PD	3
MDC26-2010B	8200	20 × 10 × 10.5	12	ER-859	265	Fines to 2	28 × 64	26	36	13T-25-07PD	3
MDC26-2410B	10136	24 × 10 × 10.5	12	ER-859	265	Fines to 2	32 × 64	26	36	13T-25-07PD	3.438

Notes: 6102 1/2 Chain is 12 Pitch
9124 Chain is 9 Pitch
9150 Chain is 9 Pitch

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.
Other chain may be substituted based on chain pull requirements.

Mill Duty
Centrifugal Discharge Belt



Series MDB Mill Duty Elevator with AC Buckets

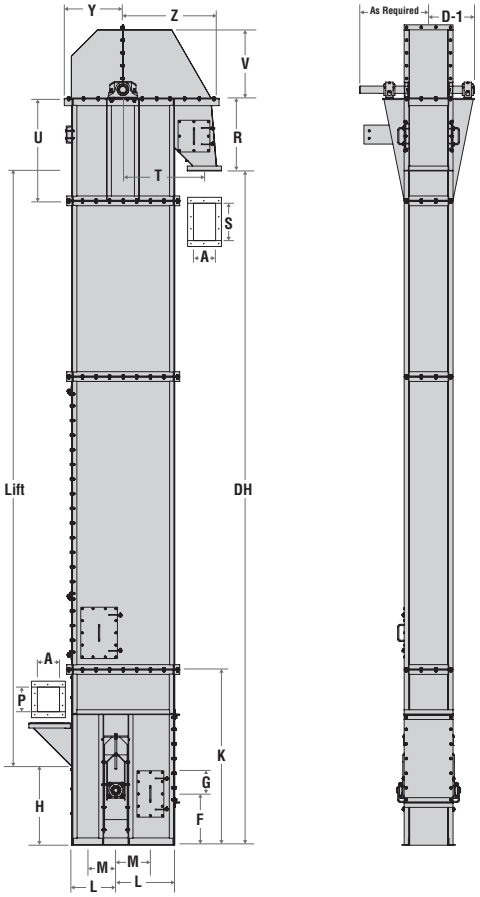
- Built for the severe duty required of industries like cement, rock, lime, and gypsum
- Buckets are mounted to a single belt in a continuous sequence
- Material in fed directly into the bucket to minimize digging action, reducing wear and horsepower requirements
- Centrifugal force causes discharge of buckets as they pass over head pulley
- Designed to handle free-flowing material with particles ranging from fines up to 2" lumps
- Most commonly supplied with a heavy belt or steel web core belt

Mill Duty with AC Buckets & Belt - MDB Series

Elevator	Max CFH Capacity	Bucket	Spacing	Belt	Speed	Lump Size	Casing Size	Head Wheel	RPM	Boot Sprocket	Shaft Diam.
MDB30-128A	2520	12 × 8 × 8.5	18	14	300	1.5 to 4	22 × 58	30.00	37.6	24.00	3.000
MDB30-148A	2970	14 × 8 × 8.5	18	16	300	1.5 to 4	24 × 58	30.00	37.6	24.00	3.000
MDB30-168A	3420	16 × 8 × 8.5	18	18	300	1.5 to 4	26 × 58	30.00	37.6	24.00	3.000
MDB30-128B	3780	12 × 8 × 8.5	12	14	300	1.5 to 4	22 × 58	30.00	37.6	24.00	3.000
MDB30-148B	4455	14 × 8 × 8.5	12	16	300	1.5 to 4	24 × 58	30.00	37.6	24.00	3.000
MDB30-168B	5130	16 × 8 × 8.5	12	18	300	1.5 to 4	26 × 58	30.00	37.6	24.00	3.000
MDB30-1810A	5580	18 × 10 × 10.5	18	20	300	2 to 5	28 × 64	30.00	37.6	24.00	3.000
MDB30-2010A	6190	20 × 10 × 12.5	18	22	300	2 to 5	30 × 64	30.00	37.6	24.00	3.000
MDB30-2410A	7650	24 × 10 × 10.5	18	26	300	2 to 5	34 × 64	30.00	37.6	24.00	3.000
MDB30-1810B	8370	18 × 10 × 10.5	12	28	300	2 to 5	28 × 64	30.00	37.6	24.00	3.000
MDB30-2010B	9290	20 × 10 × 10.5	12	30	300	2 to 5	30 × 64	30.00	37.6	24.00	3.000
MDB30-2410B	11475	24 × 10 × 10.5	12	34	300	2 to 5	34 × 64	30.00	37.6	24.00	3.475
MDB30-1610DR	12500	16 × 10 × 10.5	12	34	275	1.5 to 4	42 × 64	30.00	34.4	30.00	3.475
MDB30-1810DR	15345	18 × 10 × 10.5	12	38	275	2 to 4.5	46 × 64	30.00	34.4	30.00	3.475
MDB30-2010DR	17030	20 × 10 × 10.5	12	42	275	2.5 to 4.75	50 × 64	30.00	34.4	30.00	3.475
MDB30-2410DR	21040	24 × 10 × 10.5	12	50	275	2.5 to 4.75	58 × 64	30.00	34.4	30.00	3.475

All Dimensions in inches.
Max. CFH capacity is at 75% bucket load.
Consult Martin for head shaft size and horsepower requirements.
Other chain may be substituted based on chain pull requirements.

Dimensions of Standard Elevators



Standard Elevator - 100 & 200 Series

Elevator Number				Casing		Boot								Head								
Chain Series 100	Belt Series 700	Belt Series 100	Chain Series 700	A	B	F	G	H	J	K	L	M	N	P	R	S	T	U	V	Y	Z	D-1
C43-108		B43-108		8	18	9	6	27.25	36.75	42	9	6	10	6	15	8	17.5	36	14	9	20.25	13
C64-121		B64-124		11.75	39	14	9	26.5	43	72	19.5	16.5	15.5	13	31.5	10	30.5	42	21.5	19.5	32.5	14
C85-121	B85-720		C85-721	11.75	39	14	9	26.5	43	72	19.5	16.5	15.5	13	31.5	10	30.5	42	21.5	19.5	32.5	14
	B105-720	B85-120	C105-721	13.75	39	14	9	26.5	43	72	19.5	16.5	17.5	13	31.5	10	30.5	42	21.5	19.5	32.5	15
C85-124		B85-124		13.75	42	16	9	32.5	50	72	21	18	17.5	13	32.5	10	33.25	42	24	21	36.25	15.5
C106-124	B107-724		C107-725	13.75	48	19	9	40.5	60	72	24	21	17.5	15	35.75	13	36.5	48	27.5	24	40.625	16
C127-125	B127-724 B128-724	B106-124	C127-725 C128-725	15.75	48	19	9	40.5	60	72	24	21	19.5	15	35.75	13	36.5	48	27.5	24	40.625	17
		B127-124S		28	66	26	10	29.75	60.5	72	32	29	30.5	26.5	36	17	46.5	48	36.5	32	53	24
	B147-724 B148-724	B127-130	C147-725 C148-725	17.75	48	19	10	40.5	60	72	24	21	21.5	15	35.75	13	36.5	48	27.5	24	40.625	18
C127-131				17.75	54	21	10	36	60.5	72	27	24	21.5	17	38.25	17	41.5	48	31	27	45	19.25
	B168-724		C168-725	19.75	48	20	10	40.5	60	72	24	21	23.5	15	35.75	13	36.5	48	27.5	24	40.625	16
C147-131		B147-130		19.75	54	21	10	39	60.5	72	27	24	23.5	17	38.25	17	41.5	48	31	27	45	20
	B188-724		C188-725	22.75	48	19	10	40.5	60	72	24	21	26.5	15	35.75	13	36.5	48	27.5	24	40.625	21
C168-131		B168-130		22.75	54	21	10	39	60.5	72	27	24	26.5	17	38.25	17	41.5	48	31	27	45	22
	B208-724		C208-725	24.75	48	19	10	40.5	60	72	24	21	28.5	19	35.25	13	36.5	48	27.5	24	40.625	22
C188-131 C208-131	B2010-724	B188-130	C2010-725	24.75	54	21	10	40.5	60.5	72	27	24	28.5	19	38.25	17	41.5	48	31	27	45	23
	B248-724		C248-725	28.75	48	19	10	39	60	72	24	21	32.5	22.5	35.25	13	36.5	48	27.5	24	40.625	24
C248-131		B208-130	C2410-725	28.75	54	21	10	40.5	60.5	72	27	24	32.5	22.5	38.25	17	41.5	48	31	27	45	25
C2410-131	B2410-724	B2410-130		30.75	60	23	10	38	60.5	72	29	27	34.5	22.5	40	21	46.5	60	31	30	52	26

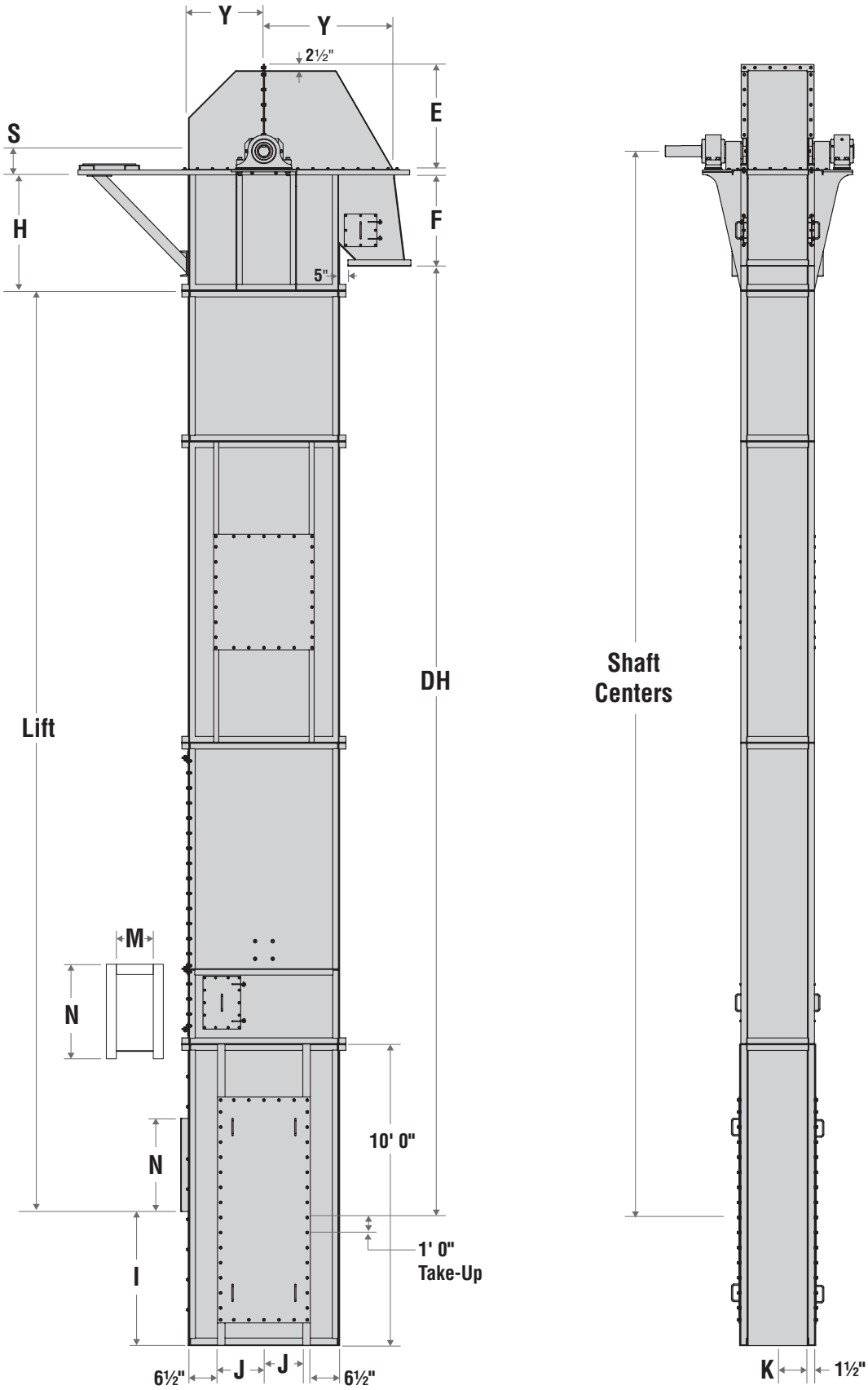
All Dimensions in inches.
① NOT certified for construction.
② Normal maximum for largest head shaft listed.
For units not shown, contact Martin.

Dimensions of High-Speed Grain Elevators

Part Number	Boot Shaft Diam.	External Casing Dimensions		Intermediate Casing Dimensions		Casing Thicknesses			Inlet Height Diam.
		Depth "C"	Width "A"	Depth "C"	Width "B"	Head	Boot	Int.	
B64-508 *	1.188	8	20	8	20*	12 ga.	12 ga.	12 ga.	30
B65-512A	1.438	9	27	9	8	12 ga.	12 ga.	12 ga.	32
B65-512B	1.438	9	27	9	8	12 ga.	12 ga.	12 ga.	32
B95-518A	1.438	12	34	12	9	12 ga.	10 ga.	12 ga.	39
B95-518B	1.438	12	34	12	9	12 ga.	10 ga.	12 ga.	39
B95-518C	1.438	12	34	12	9	12 ga.	10 ga.	12 ga.	39
B96-524	1.938	13	42	13	10	10 ga.	10 ga.	12 ga.	44
B96-530	1.938	15	48	15	10	10 ga.	3/16"	12 ga.	48
B106-530	1.938	15	48	15	10	10 ga.	3/16"	12 ga.	48
B136-530	1.938	18	48	18	10	10 ga.	3/16"	12 ga.	48
B127-536	2.438	18	56	18	11	10 ga.	3/16"	12 ga.	56
B147-536	2.438	21	56	21	11	10 ga.	3/16"	12 ga.	56
B167-536	2.438	21	56	21	11	10 ga.	3/16"	12 ga.	56
B168-542	2.438	23	68	23	14	3/16"	3/16"	12 ga.	72
B188-542	2.438	26	68	26	14	3/16"	3/16"	12 ga.	72
B2108-548	2.938	28	74	28	14	3/16"	1/4"	10 ga.	76
B2138-548	2.938	34	74	34	14	3/16"	1/4"	10 ga.	76
B2168-548	2.938	40	74	40	14	3/16"	1/4"	10 ga.	76
B2188-548	3.438	44	74	44	14	3/16"	1/4"	10 ga.	76
B3168-548	3.438	56	74	56	14	3/16"	1/4"	10 ga.	76
B4158-548	3.438	68	74	68	14	3/16"	1/4"	10 ga.	76
B4188-548	3.438	80	74	80	14	3/16"	1/4"	10 ga.	76

* Single Leg Intermediate Casing: 50' maximum height.
Head shaft diameter to be determined by customer's application and specifications.
Plastic buckets are available as Nylon, HDP or Urethane. Steel is available on special request.

Dimensions of Super Capacity & Mill Duty Elevator



Dimensions of Super Capacity & Mill Duty Elevator

Super Capacity Elevator with SC Buckets & Double Chain – SC Series

Elevator Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
SC31-128	26	56	28	48	34.5	47	44.25	60	56	25	14.750	17	8	20	23
SC31-148	28	56	28	48	34.5	47	44.25	60	56	25	15.750	17	10	20	24
SC31-168	30	56	28	48	34.5	47	44.25	60	56	25	16.750	17	11	20	25.625
SC31-188	32	56	28	48	34.5	47	44.25	60	56	25	17.750	17	8	20	26.625
SC31-208	34	56	28	48	34.5	47	44.25	60	56	25	18.750	17	10	20	27.625
SC35-1612	33	68	32	52	41.5	52	50.25	60	60	28	18.25	17	12	22	27.125
SC35-2012	37	68	32	52	41.5	52	50.25	60	60	28	20.25	17	13	22	29.125
SC35-2412	41	68	32	52	41.5	52	50.25	60	60	28	22.25	17	16	22	31.875
SC35-3012	47	68	32	52	41.5	52	50.25	60	60	28	25.25	17	12	22	34.875
SC35-3612	53	68	32	52	41.5	52	50.25	60	60	28	28.25	17	13	22	37.875
SC35-4212	60	68	32	52	41.5	52	50.25	60	60	28	31.750	17	16	22	41.375
SC35-4812	66	68	32	52	41.5	52	50.25	60	60	28	34.750	17	20	22	44.375

All Dimensions in inches.
Dimensions not certified for construction.
R & S dimensions dependent on head shaft size and reducer selection.
P will vary with shaft dimension.

Mill Duty Elevator with AC Buckets & Chain – MDC Series

Elevator Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
MDC26-128A	20	56	28	48	34.5	47	44.25	60	56	34.75	11.75	17	9	20	19
MDC26-148A	22	56	28	48	34.5	47	44.25	60	56	34.75	12.75	17	11	20	21
MDC26-128B	20	56	28	48	34.5	47	44.25	60	56	34.75	11.75	17	9	20	19
MDC26-148B	22	56	28	48	34.5	47	44.25	60	56	34.75	12.75	17	11	20	21
MDC12-168B	24	56	28	48	34.5	47	44.25	60	56	34.75	13.75	17	12	20	22
MDC26-1810A	26	64	32	52	41.5	52	48.25	60	60	38.75	14.75	17	14	20	23
MDC26-2010A	28	64	32	52	41.5	52	48.25	60	60	38.75	15.75	17	15	20	24
MDC26-2410A	32	64	32	52	41.5	52	48.25	60	60	38.75	17.75	17	18	20	26
MDC26-1810B	26	64	32	52	41.5	52	48.25	60	60	38.75	14.75	17	14	20	23
MDC26-2010B	28	64	32	52	41.5	52	48.25	60	60	38.75	15.75	17	15	20	24
MDC26-2410B	32	64	32	52	41.5	52	48.25	60	60	38.75	17.75	17	18	20	26

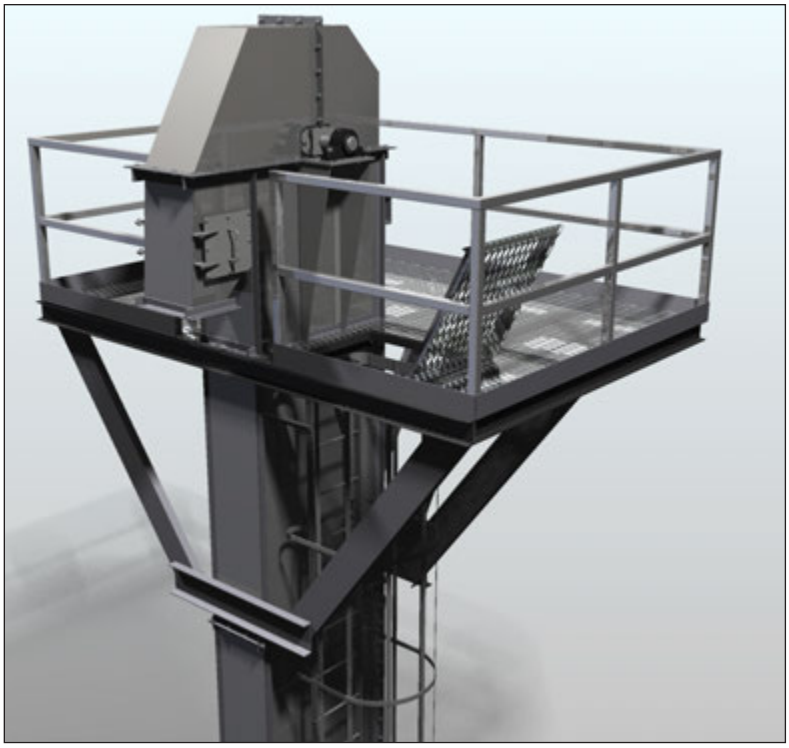
All Dimensions in inches.
Dimensions not certified for construction.
R & S dimensions dependent on head shaft size and reducer selection.
P will vary with shaft dimension.

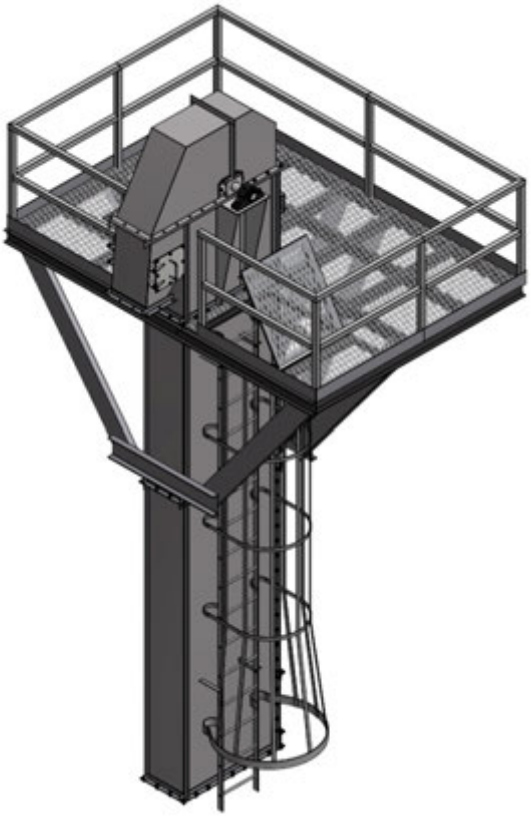
Mill Duty Elevator with AC Buckets & Belt – MDB Series

Elevator Number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
MDB30-128A	22	58	29	49	34.5	47	45.25	60	56	35.75	12.75	17	9	20	20
MDB30-148A	24	58	29	49	34.5	47	45.25	60	56	35.75	13.75	17	11	20	22
MDB30-168A	26	58	29	49	34.5	47	45.25	60	56	35.75	14.75	17	12	20	23
MDB30-128B	22	58	29	49	34.5	47	45.25	60	56	35.75	12.75	17	9	20	20
MDB30-148B	24	58	29	49	34.5	47	45.25	60	56	35.75	13.75	17	11	20	22
MDB30-168B	26	58	29	49	34.5	47	45.25	60	56	35.75	14.75	17	12	20	23
MDB30-1810A	28	64	32	52	41.5	52	48.25	60	60	38.75	15.75	17	14	20	24
MD30-2010A	30	64	32	52	41.5	52	48.25	60	60	38.75	16.75	17	15	20	26
MDB30-2410A	34	64	32	52	41.5	52	48.25	60	60	38.75	18.75	17	18	20	23
MDB30-1810B	28	64	32	52	41.5	52	48.25	60	60	38.75	15.75	17	14	20	24
MDB30-2010B	30	64	32	52	41.5	52	48.25	60	60	38.75	16.75	17	15	20	26
MDB30-2410B	34	64	32	52	41.5	52	48.25	60	60	38.75	18.75	17	18	20	27
MDB30-1610DR	42	64	32	52	41.5	52	48.25	60	60	38.75	22.75	17	18	20	32
MDB30-1810DR	46	64	32	52	41.5	52	48.25	60	60	38.75	24.75	17	21	20	34
MDB30-2010DR	50	64	32	52	41.5	52	48.25	60	60	38.75	26.75	17	22	20	36
MDB30-2410DR	58	64	32	52	41.5	52	48.25	60	60	38.75	30.75	17	26	20	40

All Dimensions in inches.
Dimensions not certified for construction.
R & S dimensions dependent on head shaft size and reducer selection.
P will vary with shaft dimension.

Head Service Platforms
Series 100 thru 800





Head Service Platforms
Series 100 thru 800

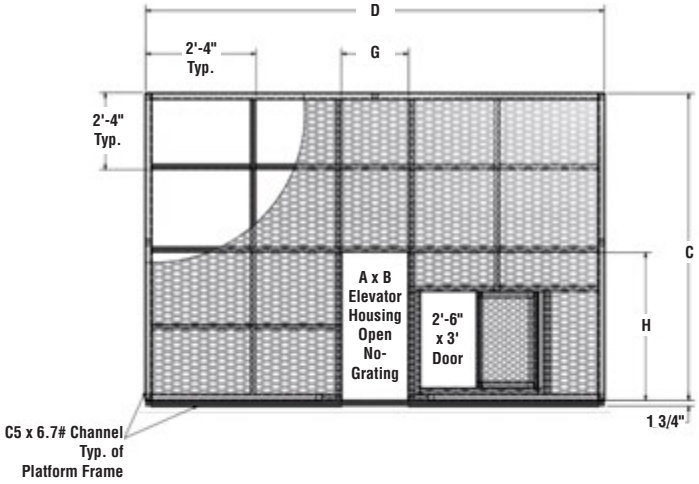
Head Platforms: Series 100 thru 800

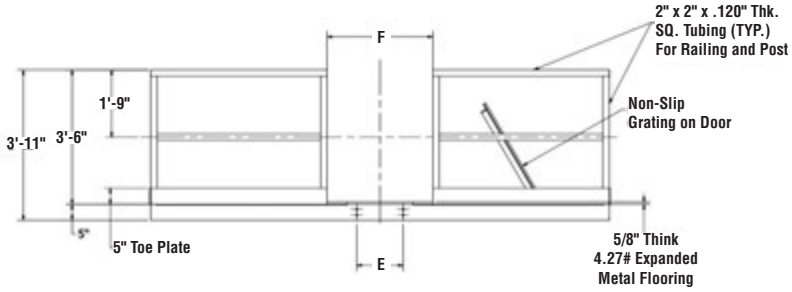
Martin head section service platforms consist of:

- Heavy structural steel frames
- Square tube handrail
- Heavy non-skid grating
- Toe plates

The platform is entirely supported by the elevator casing. Drives should be mounted on an integral support or be of a shaft mounted type. **Drives should not be mounted on the service platform.**

Martin Ladders / Safety Cages are designed to bolt to the elevator housing. They are constructed of heavy gauge steel and sized to provide easy access to platforms. Rest platforms are also available and required at 30' intervals.

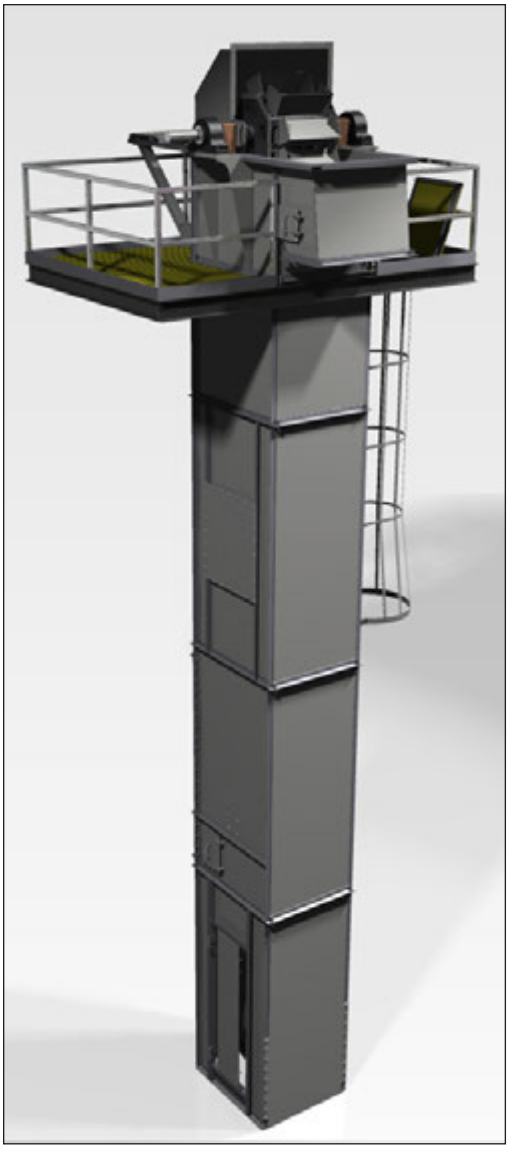


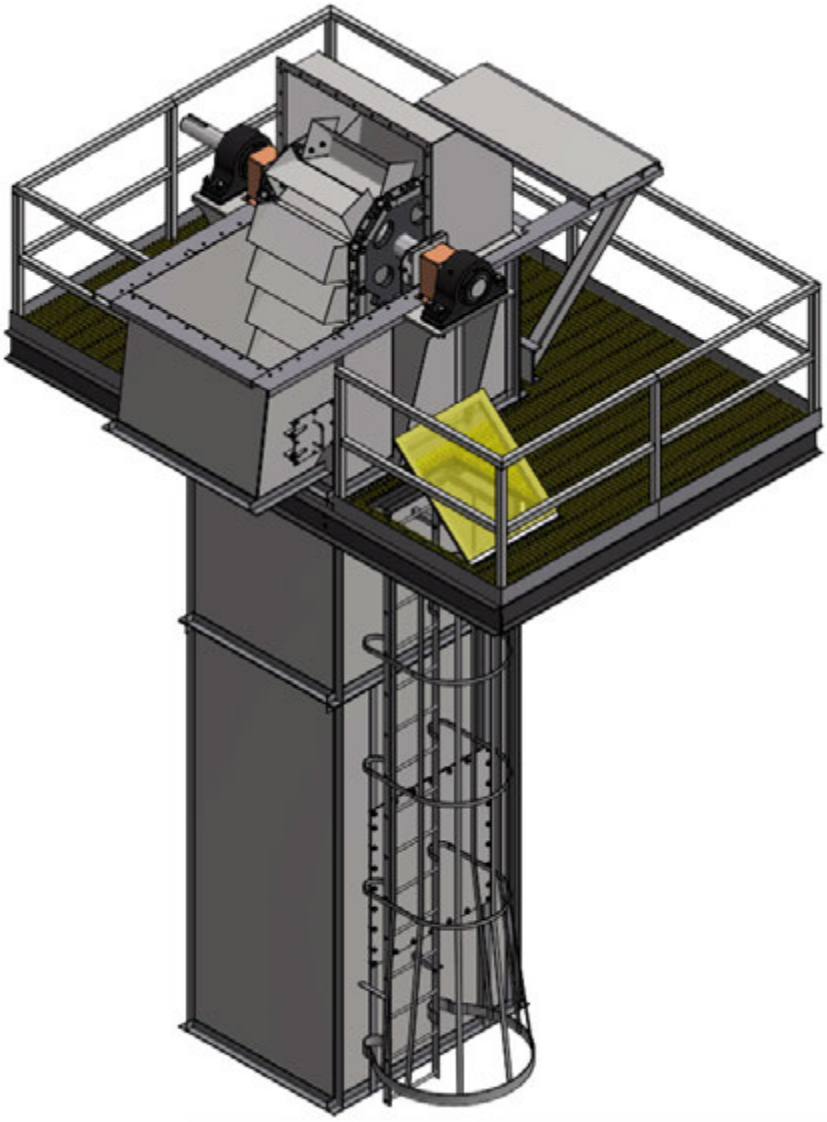


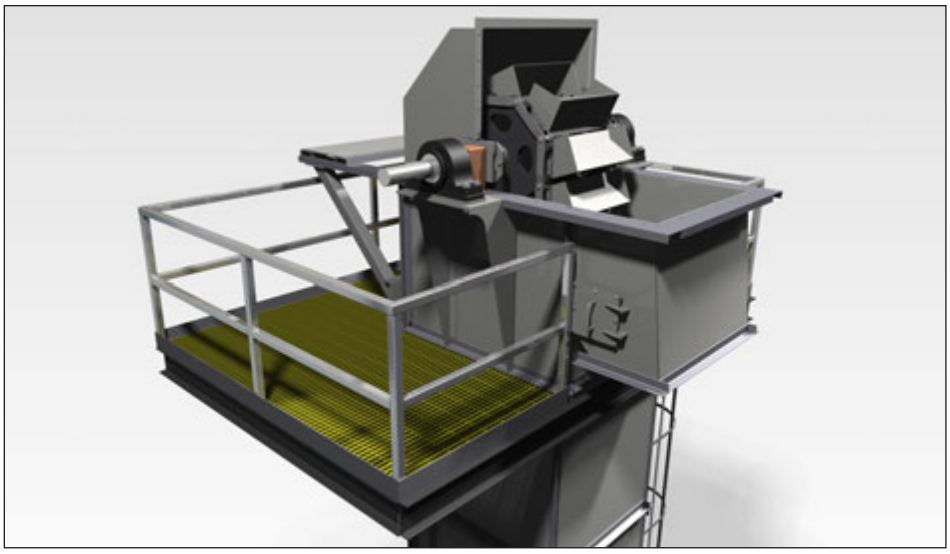
Casing Size		C	D	E	F	G	H
A	B						
11.75"	39"	8' - 0"	11' - 9"	A + 2.5"	A + 12.75"	A + .5"	B + .5"
13.75"	39"						
13.75"	42"						
15.75"	48"	8' - 0"	11' - 9"				
17.75"	48"						
19.75"	48"						
22.75"	48"						
24.75"	48"						
17.75"	54"	10' - 0"	11' - 9"				
19.75"	54"						
22.75"	54"						
24.75"	54"						
26.75"	54"	10' - 0"	12' - 0"				
28.75"	48"						
30.75"	54"						

Dimensions shown in the above table are for standard platforms only.
Platforms for elevators having large shafts, bearings, backstops or uselessly large drives will need to be designed and are made-to-order.
Note: Dimensions are subject to change and not for construction.
Casing Thickness: Casing thickness will vary with casing size and application.

Head Service Platforms
Series SD, MDC & MDB







Head Service Platforms
Series SD, MDC & MDB

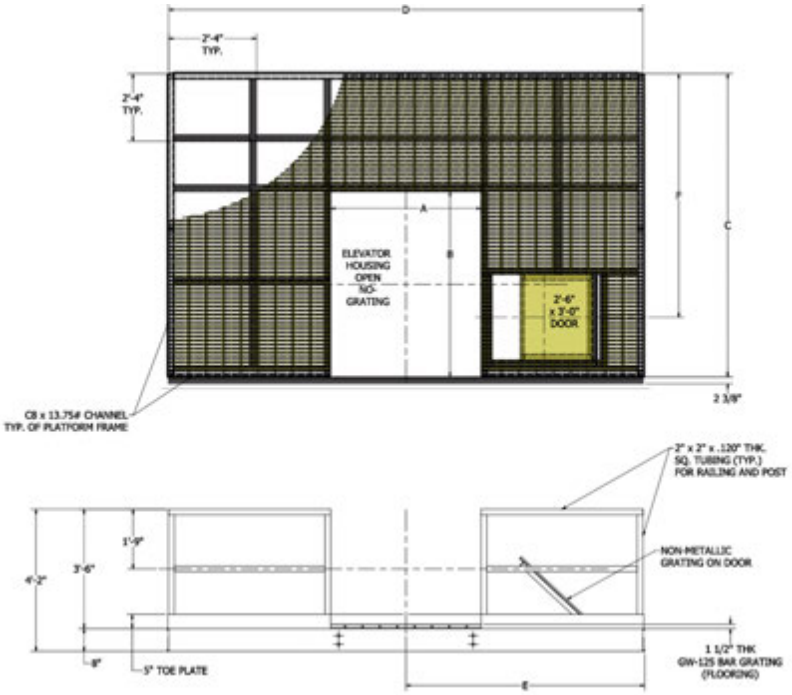
Head Platforms:
Series SC, MDC & MDB

Martin head section service platforms consist of:

- Heavy structural steel frames
- Square tube handrail
- Steel floor grating
- Toe plates

The platform is entirely supported by the elevator casing. Drives should be mounted on an integral support or be of a shaft mounted type. **Drives should not be mounted on the service platform.**

Martin Ladders / Safety Cages are designed to bolt to the elevator housing. They are constructed of heavy gauge steel and sized to provide easy access to platforms. Rest platforms are also available and required at 30' intervals.



Casing Size		C	D	E	F
A	B				
20"	56	11' - 2"	11' - 0"	5' - 5.75"	8' - 7.875"
22"	56				
24"	56				
26"	56				
28"	56	11' - 2"	13' - 0"	6' - 5.75"	8' - 7.875"
30"	56				
32"	56				
34"	56				
22"	58	11' - 4"	13' - 0"	5' - 5.75"	8' - 8.875"
24"	58				
26"	58				
26"	64	13' - 2"	13' - 0"	6' - 5.75"	10' - 8.875"
28"	64				
30"	64				
32"	64				
34"	64				
33"	68	13' - 2"	13' - 0"	6' - 5.75"	10' - 6.875"
37"	68				
41"	68	13' - 2"	13' - 6"	6' - 8.75"	10' - 6.875"
47"	68	13' - 2"	14' - 0"	6' - 11.75"	10' - 6.875"
53"	68	13' - 2"	14' - 6"	7' - 2.75"	10' - 6.875"
37"	80	14' - 8"	13' - 0"	6' - 5.75"	11' - 1"

Dimensions shown in the above table are for standard platforms only.
Platforms for elevators having large shafts, bearings, backstops or uselessly large drives will need to be designed and are made-to-order.
Note: Dimensions are subject to change and not for construction.
Standard Casing Thickness:
- Intermediate casing with a B dimension of 80" are 3/16" thickness.
- Intermediate casing with a B dimension of 68" or less are 10 ga. thinkness.
- Heavy casing are available on application.

Buckets

For more than 50 years, Martin has specialized in Bucket Elevators and other material handling solutions. Martin Elevator Buckets may be fabricated from many readily available materials such as mild steel or, stainless steel. They may also be cast in ductile iron or produced from a variety of non-metallic materials such as nylon, UHMW, polyurethane, or urethane. Whether you have a Centrifugal Elevator, Continuous Elevator, Super Capacity Elevator, or a High Speed Grain Elevator, we can provide the right bucket, at the right price, right when you need it.

Martin builds replacement buckets for existing Bucket Elevator equipment:

Standard buckets:

- Direct from our catalog
- Built to industry standards for a precise fit
- Custom or specialty buckets built to exact specification:
- Our knowledgeable sales engineers and specialists will assist you in finding the best custom solution for your specific application and help you navigate the many factors that may affect your final design and cost.

Reverse Engineered:

- Send us your bucket, our team of engineers, designers, and manufacturing experts will reverse engineer and build an exact duplicate for your application

Frequently Asked Questions:

Why a fabricated metallic bucket?

- They resist flexing and bending under load.
- They have much greater heat resistance.
- Resistant to damage from extremely sharp materials
- Fabricated metallic buckets are versatile, easy to modify for specific applications.
  - » A double thick front lip may be added for longer life when scooping or digging material.
  - » Available in wide range of long-lasting materials including Abrasion Resistant front plate and corrosion resistant alloys.
  - » Hard surfacing such as tungsten carbide or chromium carbide may be applied to wear faces and edges.
  - » Vent holes and mounting holes may be precut into the body before forming.
- Martin fabricated buckets are typically laser cut and continuously welded for precision, strength, and durability.
- Fabricated metallic buckets are lighter weight than cast ductile iron, which may allow use of less expensive drive units and lighter components, lowering overall cost.

Why a molded non-metallic bucket?

- Light weight
- Lower initial cost
- Flexible body, good for sticky products or material that may tend to pack.
- Abrasion and Corrosion resistant varieties available.

Why use a cast iron elevator bucket?

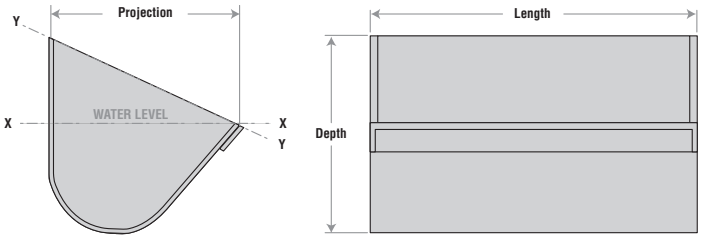
- Good abrasion and impact resistance.
- Typically used as “digger buckets” to loosen material in the bottom of a bucket elevator.
- Digger buckets are frequently spaced at uniform intervals between standard buckets. They have larger overall dimensions than standard buckets and help loosen material in the boot section and clear the way for the standard buckets.
- Ductile iron has good general corrosion and rust resistance.

What items are commonly purchased with buckets?

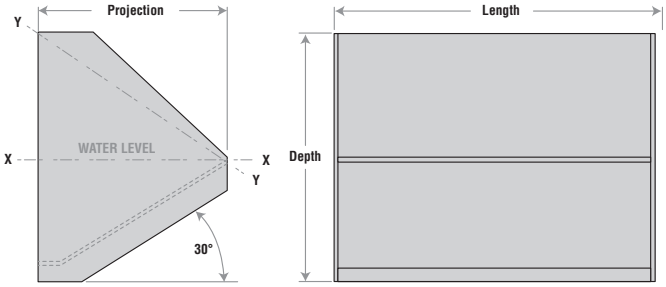
- Belt installations:
  - » Saber-Tooth Norway bolts with fender washer and lock nut.
  - » Belt splice kit to bind the ends of the belt.
  - » Belt punch to produce holes for mounting the belt splices.
- Chain installations:
  - » Hex head assembly bolts with double flat washer and hex nut.

Nomenclature

CENTRIFUGAL STYLE



CONTINUOUS STYLE



AA	–	8	5	5	–	10	–	B6	–	
Type		Length	Projection	Depth		Thickness		Punching		Material

Bucket Nomenclature definitions:

Bucket Type

- Centrifugal – **AA, AC, C**
- Continuous – **MF, HF, SC**

Dimensions – Whole numbers only, rounded down. Examples:

- 5.5" would be 5
- 7 5/8" would be **7**

Thickness – Only for metal buckets. Do not call out thickness on plastic buckets.

- Sheet metal gauge – **16, 14, 12, 10**
- Sheet metal plate
  - » 3/16" = **7**
  - » 1/4" = **3**
  - » > 1/4" = thickness x 64 (Ex. 3/8 = **24**)

Punching

- Belt Punching* – **B1, B3, B4, B5, B6, B7, B8**
- Chain Punching – Chain and attachment (ex. **R110K2**)

** See Bucket Punching on page H-155*

Material – Carbon steel is the default. You do not have to designate carbon steel.

- Material other than carbon steel:

  SS = 304 Stainless

  S6 = 316 Stainless

  NY = Nylon

  UR = Urethane

  Poly = Polyurethane

  DI = Ductile Iron

Style AA
Centrifugal

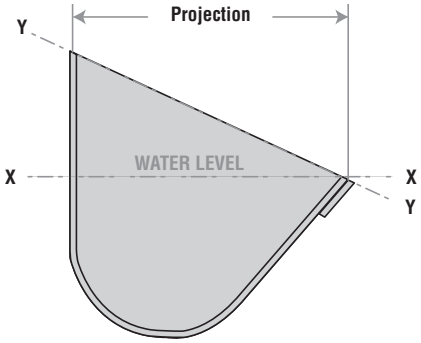
What is the Martin AA Bucket?

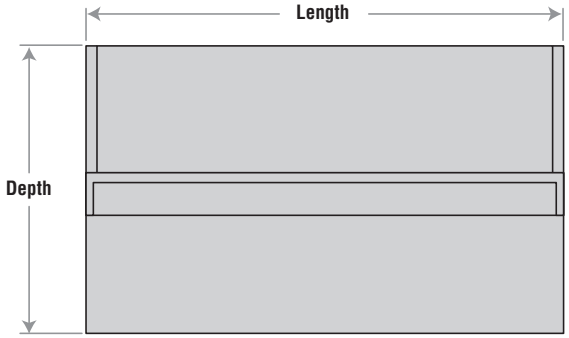
AA Style Buckets are centrifugal style generally used for dry, moderately free-flowing material that is not easily damaged. The smooth, curved bottom and angled front face of the AA Style Bucket provides efficient product discharge. AA Buckets typically do some "digging" during operation and therefore have a reinforced front edge for longer life. AA Buckets often mount to a reinforced multi-ply elevator belt but may also mount to chain.

Some common materials of construction are mild steel, stainless steel, AR plate and molded plastic models.

Typical Applications:

- Sand
- Rock
- Aggregate
- Stone
- Fertilizer
- Clay
- Salt
- Coal
- Other Similar Granular Material





STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	DEPTH (In)	X-X (WATER LEVEL) CAPACITY ft³	Y-Y (100% FILL) CAPACITY ft³	EMPTY WT.* (lb)		
						10GA	3/16"	1/4"
4 X 3	4	2 3/4	3	.006	.01	1.50	1.95	-
6 X 4	6	4	4 1/4	.02	.03	3.02	3.96	5.27
8 X 5	8	5	5 1/2	.04	.07	5.33	7.06	9.39
10 X 6	10	6	6 1/4	.07	.12	7.37	9.79	13.02
12 X 7	12	7	7 1/4	.12	.19	10.42	13.93	18.53
14 X 8	14	8	8 1/2	.20	.32	13.90	18.64	24.80
16 X 7	16	7	7 1/4	.16	.26	13.03	17.47	23.24
16 X 8	16	8	8 1/2	.23	.34	15.41	20.67	27.49
18 X 8	18	8	8 1/2	.26	.40	16.92	22.70	30.19
18 X 10	18	10	10 1/2	.33	.63	21.48	28.88	38.41
20 X 10	20	10	10 1/2	.45	.70	22.19	30.35	40.20
24 X 10	24	10	10 1/2	.54	.84	25.67	35.10	46.52

** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

AA Buckets are NOT continuous buckets.

Style AC
Centrifugal

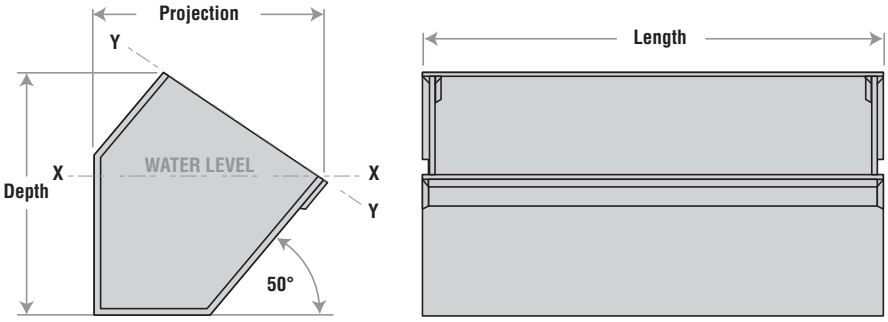
What is the Martin AC Bucket?

AC or Added Capacity style buckets are centrifugal style used for dry, free flowing to moderately free flowing, material that is not easily damaged. AC style elevator buckets have a high front for increased capacity. The angled front face and hooded back allows for closer mounting. Optional vent holes can help efficiently fill and discharge material. AC buckets may perform some "digging" of product in the elevator boot during operation. They can mount to a reinforced multi-ply elevator belt, or to a chain

Some common materials of construction are mild steel, stainless steel and AR plate.

Typical Applications:

- Asphalt
- Aggregate
- Ore
- Shale
- Cement
- Clinker
- Coal
- Other Similar Material

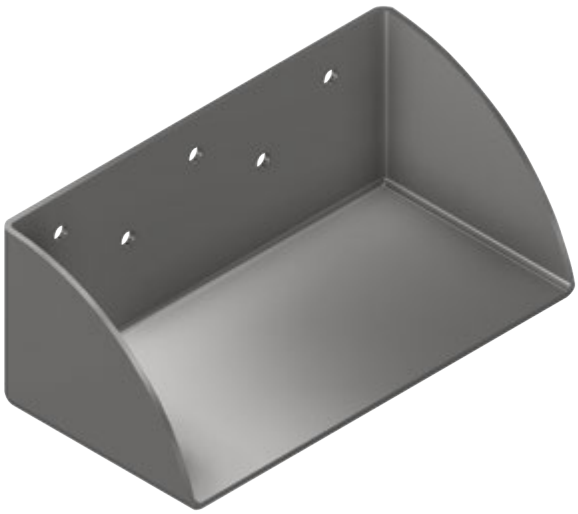


STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	DEPTH (In)	X-X (WATER LEVEL) CAPACITY ft³	Y-Y (100% FILL) CAPACITY ft³	EMPTY WT.* (lb)	
						10GA	3/16"
12 X 8 X 8	12	8	8 1/2	.231	.303	18.25	24.30
14 X 8 X 8	14	8	8 1/2	.271	.356	20.30	27.00
16 X 8 X 8	16	8	8 1/2	.311	.408	22.48	29.98
18 X 10 X 10	18	10	10 1/2	.488	.691	31.15	38.95
20 X 10 X 10	20	10	10 1/2	.542	.768	33.68	42.10
24 X 10 X 10	24	10	10 1/2	.651	.921	39.67	52.69
27 X 12 X 12	27	12	12 1/2	1.072	1.474	53.84	71.46

** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

AC Buckets are NOT continuous buckets.

Style C
Centrifugal



What is the Martin C Bucket?

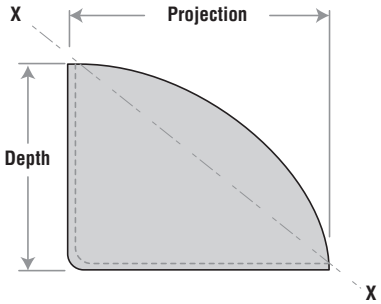
C Style Elevator Buckets are a centrifugal style bucket. They typically handle wet or sticky products, finely pulverized material, or products that easily pack. The open front face and angled sides allow the discharge of materials trapped by other bucket designs. C Style Buckets are low profile, permitting more buckets per foot than some other styles.

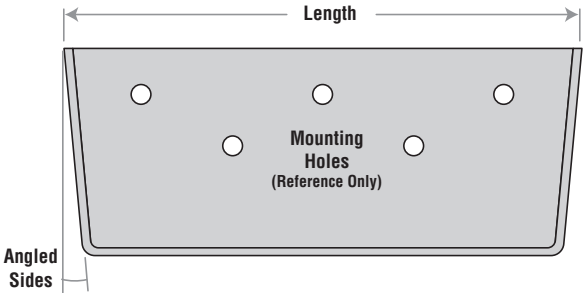
C Style buckets commonly mount on a multi-ply elevator belt.

Some common materials of construction are mild steel, stainless steel and AR plate

Typical Applications:

- Sugar
- Salt
- Clay
- Powders
- Chemicals
- Similar Products





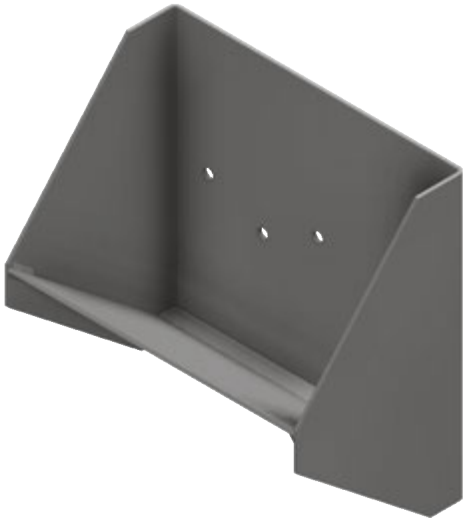
STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	DEPTH (in)	X-X (WATER LEVEL) CAPACITY ft³	EMPTY WT.* (lb)		
					12GA	10GA	3/16"
6 X 4 X 4	6	4 1/2	4	.026	2.00	2.59	3.50
8 X 4 X 4	8	4 1/2	4	.035	2.53	3.21	4.36
10 X 5 X 4	10	5	4	.052	3.23	4.10	5.58
12 X 5 X 4	12	5	4	.061	3.75	4.77	6.50
14 X 7 X 5	14	7	5 1/2	.138	6.34	8.08	11.09
16 X 7 X 5	16	7	5 1/2	.158	7.08	10.50	14.40

** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

C Buckets are NOT continuous buckets.

Style MF
Continuous

What is the Martin MF Bucket?

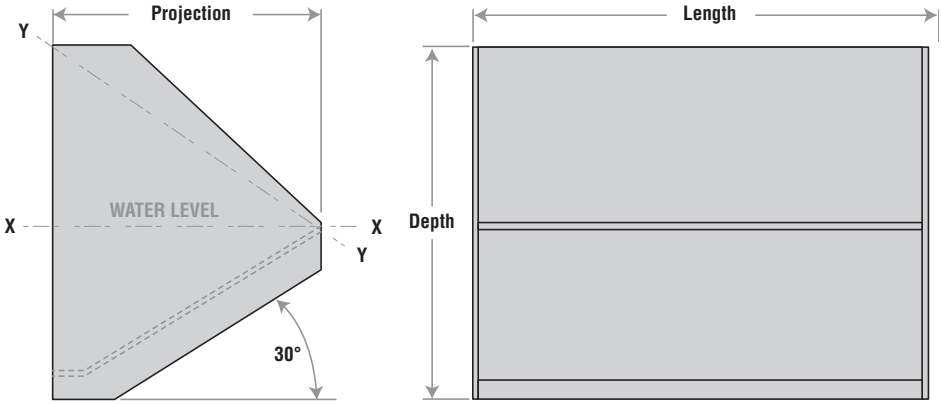


MF Style Elevator Buckets are continuous style with a medium front for slow speed product discharge. They gently handle dry, fragile, powdery, dusty, or abrasive materials. The angled face aids in product discharge and extended side panel bottom edges create a chute to direct product pouring from the previous bucket into the discharge. Optional vent holes can help provide maximum fill and product discharge. MF Buckets are not designed to "dig" through material in the elevator boot (bottom) during operation. MF style buckets can mount to a reinforced multi-ply elevator belt, or to a chain.

Some common materials of construction are mild steel, stainless steel, AR plate and molded plastic models.

Typical Applications:

- Gypsum
- Cement
- Pellets
- Grain
- Salt
- Sand
- Aggregate
- Fertilizer
- Other Similar Granular Material

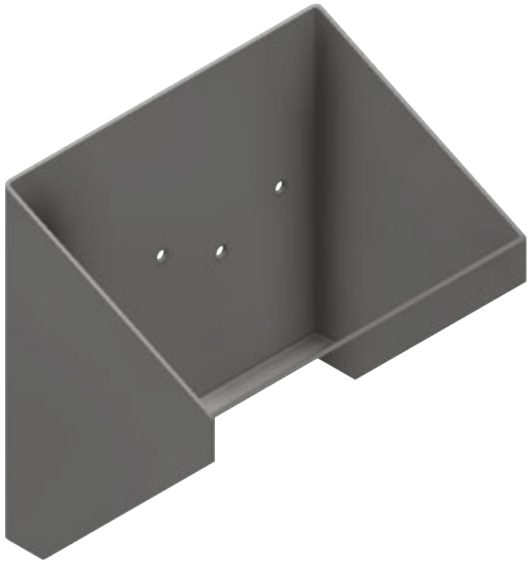


STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	DEPTH (In)	X-X (WATER LEVEL) CAPACITY ft³	Y-Y (100% FILL) CAPACITY ft³	EMPTY WT.* (lb)		
						10GA	3/16"	1/4"
8 X 5 X 7	8	5	7 3/4	.04	.07	6.30	8.70	-
10 X 5 X 7	10	5	7 3/4	.05	.09	7.40	10.20	-
10 X 7 X 11	10	7	11 5/8	.103	.180	11.90	16.50	-
12 X 7 X 11	12	7	11 5/8	.125	.218	13.40	18.60	24.80
12 X 8 X 11	12	8	11 5/8	.163	.275	14.40	20.00	26.10
14 X 7 X 11	14	7	11 5/8	.145	.253	14.90	20.70	27.60
14 X 8 X 11	14	8	11 5/8	.190	.325	16.00	22.20	29.10
16 X 8 X 11	16	8	11 5/8	.220	.375	17.60	24.50	32.00
18 X 8 X 11	18	8	11 5/8	.250	.420	19.20	26.70	35.00
20 X 8 X 11	20	8	11 5/8	.270	.470	20.80	29.00	38.00
24 X 10 X 11	24	10	11 5/8	.512	.850	27.40	38.20	50.00

** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

MF Buckets are not centrifugal buckets.

Style HF
Centrifugal



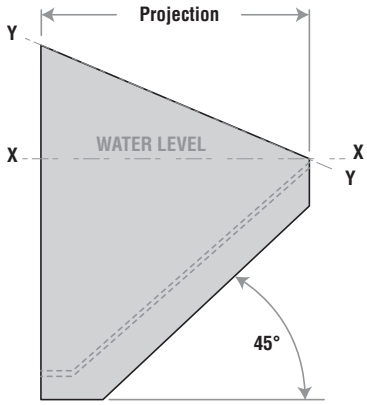
What is the Martin HF Bucket?

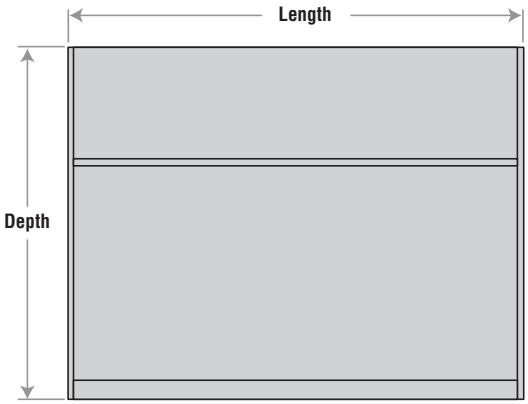
HF Style Elevator Buckets are continuous style with a high front place for greater capacity. Designed for slow speed product discharge, they gently handle dry, fragile, powdery, dusty, or abrasive materials. The angled front face aids in product discharge and extended side panel bottom edges create a chute to direct product pouring from the previous bucket into the discharge. Optional vent holes can provide maximum fill and product discharge. HF buckets do not "dig" material in the elevator boot (bottom) during operation. HF style buckets mount to a reinforced multi-ply elevator belt, or chain.

Some common materials of construction are mild steel, stainless steel and AR plate.

Typical Applications:

- Gypsum
- Cement
- Pellets
- Grain
- Salt
- Sand
- Aggregate
- Fertilizer
- Other Similar Granular Material





STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	DEPTH (in)	X-X (WATER LEVEL) CAPACITY ft³	Y-Y (100% FILL) CAPACITY ft³	EMPTY WT.* (lb)		
						10GA	3/16"	1/4"
8 X 5 X 7	8	5	7 3/4	.05	.08	6.20	8.50	-
10 X 5 X 7	10	5	7 3/4	.065	.100	7.30	10.00	-
10 X 7 X 11	10	7	11 5/8	.130	.190	11.60	16.00	20.90
12 X 7 X 11	12	7	11 5/8	.155	.240	13.20	18.20	23.90
12 X 8 X 11	12	8	11 5/8	.205	.295	14.30	20.00	26.00
14 X 7 X 11	14	7	11 5/8	.184	.280	14.80	20.40	26.70
14 X 8 X 11	14	8	11 5/8	.240	.350	16.00	22.40	28.10
16 X 8 X 11	16	8	11 5/8	.275	.395	17.70	24.70	32.20
18 X 8 X 11	18	8	11 5/8	.300	.447	20.51	28.44	37.67

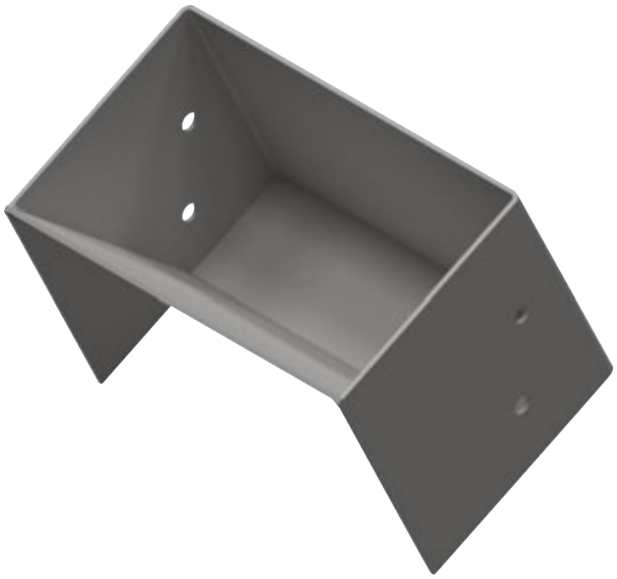
** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

HF Buckets are not centrifugal buckets.

Style SC
Continuous

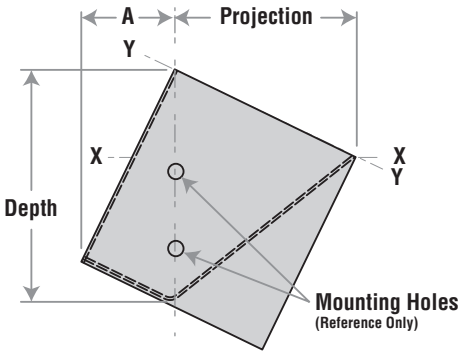
What is the Martin SC Bucket?

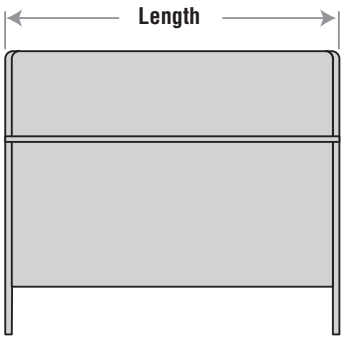
SC style elevator buckets are continuous style for use with Super Capacity Elevators and have increased capacity. They are designed for slow speed product discharge and very heavy materials. The angled front face aids in product discharge and extended side panels create a chute to direct product pouring from the previous bucket into the discharge. Optional vent holes can help provide maximum fill and product discharge. SC buckets do not "dig" material in the elevator boot during operation. SC style buckets mount between two strands of elevator chain.



Typical Applications:

- Gypsum
- Cement
- Sand
- Fertilizers
- Clay
- Salt
- Coal
- Rocks
- Other Similar Material





STANDARD BUCKET SIZE **	LENGTH (In)	PROJECTION (In)	A (In)	DEPTH	X-X (WATER LEVEL) CAPACITY ft³	Y-Y (100% FILL) CAPACITY ft³	EMPTY WT.* (lb)		
							10GA	3/16"	1/4"
12 X 8 X 11	12	8 3/4	4 9/16	11 5/8	.35	.54	22.00	29.00	39.00
14 X 8 X 11	14	8 3/4	4 9/16	11 5/8	.41	.63	23.00	31.00	41.00
16 X 8 X 11	16	8 3/4	4 9/16	11 5/8	.46	.72	25.00	34.00	45.00
16 X 12 X 17	16	12	6 1/2	17 5/8	1.11	1.55	43.00	58.00	76.00
18 X 8 X 11	18	8 3/4	4 9/16	11 5/8	.52	.81	27.00	36.00	48.00
20 X 8 X 11	20	8 3/4	4 9/16	11 5/8	.58	.90	29.00	39.00	52.00
20 X 12 X 17	20	12	4 9/16	17 5/8	1.40	1.94	49.00	67.00	88.00
24 X 12 X 17	24	12	4 9/16	17 5/8	1.68	2.33	55.00	75.00	104.00
30 X 12 X 17	30	12	6 1/2	17 5/8	2.11	2.91	65.00	88.00	117.00
36 X 12 X 17	36	12	6 1/2	17 5/8	2.53	3.49	73.00	99.00	132.00

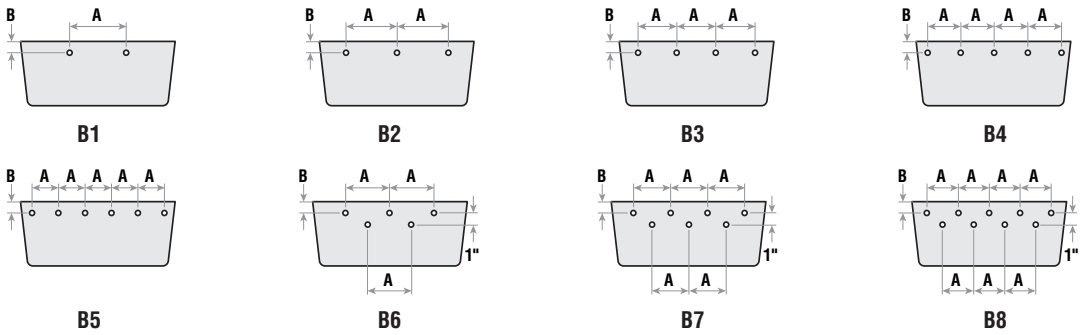
** Contact Martin for sizes not listed
* Estimated weight based on welded steel.
Price is affected by material type and thickness.

SC Buckets are not centrifugal buckets.

Bucket Punching (Belt)

CEMA Standard (Formerly P1 thru P9)

Bucket Punching – Belt (CEMA Standard (Formerly P1 thru P9))



Bucket Length	Salem and Other Similar Light Buckets				M.I. & Steel Buckets Style A, AA, AA-RB, B, C, etc.				Continuous Buckets			
	Punch	A	B	Bolt Dia.	Punch	A	B	Bolt Dia.	Punch	A	B	Bolt Dia.
6	B-1	4 3/8	5/8	1/4	B-1	4 3/8	1	1/4	—	—	—	—
8	B-2	3 1/16	7/8	1/4 - 5/16	B-6	3	7/8	1/4 - 5/16	B-6	3	$B = \frac{DEPTH - 1}{2}$	1/4-5/16
10	B-2	4 1/8	7/8	1/4 - 5/16	B-6	3 1/2	7/8	1/4 - 5/16	B-6	3 1/2		1/4-5/16
12	B-3	3 3/8	7/8	1/4 - 5/16	B-6	4 1/2	7/8	1/4 - 5/16	B-6	4 1/2		1/4-5/16
14	B-4	3	7/8	1/4 - 5/16	B-7	4	7/8	5/16	B-7	4		5/16
16	B-5	2 7/8	7/8	1/4 - 5/16	B-7	4 1/2	7/8	5/16	B-7	4 1/2		5/16
18	—	—	—	—	—	—	—	—	B-7	5		5/16

Centrifugal Bucket Belt Punching Patterns

Bucket Size	Style AA & C			
	Punch	A (In)	B (In)	** Bolts
4 X 3	B1	2 5/16	1	1/4
6 X 4	B1	4 3/8	1	1/4
8 X 4	B6	3	1	1/4
8 X 5	B6	3	1	1/4
10 X 5	B6	3 1/2	1	5/16
10 X 6	B6	3 1/2	1	5/16
12 X 5	B6	4 1/2	1	5/16
12 X 7	B6	4 1/2	1	5/16
14 X 7	B7	4	1	5/16
14 X 8	B7	4	1	5/16
16 X 7	B7	4 1/2	1	5/16
16 X 8	B7	4 1/2	1	5/16
18 X 8	B7	5	1	5/16
20 X 10	B8	4	1	5/16
24 X 10	B8	5	1	5/16

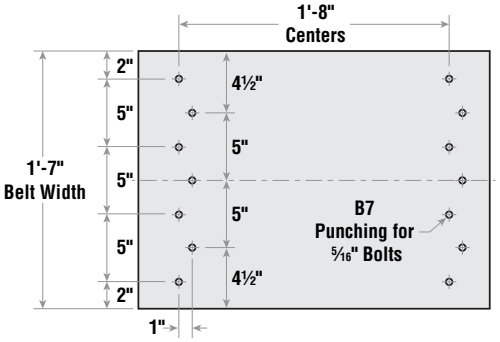
Continuous Bucket Belt Punching Patterns

Bucket Size	Style MF & LF			
	Punch	A (In)	B (In)	** Bolts
8 X 5 X 7	B6	3	3 3/8	1/4
8 X 5 X 8	B6	3	3 3/4	1/4
10 X 5 X 7	B6	3 1/2	3 3/8	5/16
10 X 7 X 11	B6	3 1/2	5 5/16	5/16
12 X 7 X 11	B6	4 1/2	5 5/16	5/16
12 X 8 X 11	B6	4 1/2	5 5/16	5/16
14 X 7 X 11	B7	4	5 5/16	5/16
14 X 8 X 11	B7	4	5 5/16	5/16
16 X 8 X 11	B7	4 1/2	5 5/16	5/16
18 X 8 X 11	B7	5	5 5/16	5/16
20 X 8 X 11	B8	4	5 5/16	5/16
24 X 10 X 11	B8	5	5 5/16	5/16

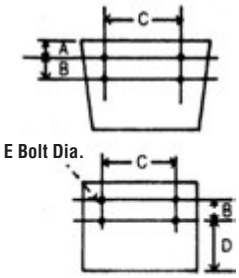
* For bucket sizes or punching patterns not listed, contact Martin.

* For belt punching drawings call out pattern and bolt size.

** Bolt clearance hole diameter on metal fabricated buckets to be 1/16" larger than bolt size.



Bucket Punching – Chain



Bucket Size	High-Speed Grain			
	Punch	A	B	C
7 × 5	B2	2 11/16	1 3/4	1/4
9 × 5	B2	3 5/8	1 3/4	1/4
9 × 6	B2	3 5/8	2	1/4
11 × 6	B3	3	2	1/4
12 × 6	B3	3 3/8	2	1/4
14 × 7	B4	3	2	5/16

Consult Martin for AC and SC Bucket Punching.

Chain Number	Attachment Number	A	B	C	D	E
C-977	K-1	1	—	3	—	3/8
C-188	K-2	1	1 1/4	4 3/16	2 3/4	
C-102B	K-2	3/4	1 3/4	5 5/16	2	
C-110	K-2	7/8	1 3/4	5 5/16	3 3/8	
C-111	K-2	3/4	2 5/16	6 1/4	2 1/8	
SS-102B	K-2	3/4	1 3/4	5 5/16	2	
SS-110	K-2	7/8	1 3/4	5 5/16	3 3/8	

Engineering Class Sprockets and Traction Wheels

Engineering Class Steel Sprockets

Steel sprockets are commonly used on Martin Bucket Elevators and our High-Speed Grain Elevators. These sprockets are readily available in solid, split, segmented types.

Traction Wheels

Traction wheels are offered in solid or segmental construction. Martin offers traction wheels of both steel or cast materials. They are offered as standard on several styles of bucket elevators to with stand abrasive materials. Traction wheels should not be used on the head of Super Capacity bucket elevator but work well in the boot. Where traction wheels are not useable a excellent alternative may be the Chainsaver Rim Sprocket offering many of the advantages of the Traction Wheel with the more positive engagement of a sprocket and increased chain life of a traction wheel. Please consult Martin to assure the proper application of traction wheels in a Bucket Elevator.

Engineering Class Cast Sprockets

Available as Non-Split Sprockets in various cast materials with or without hardened teeth

- **Split Sprockets** are made in one piece, machined, then split into two halves. The split design allows for installation and removal without the removing the shaft and bearings..
- **Segment Cast Sprockets** are offered with either solid or split hub bodies.
- **Segmental sprockets** greatly reduce the labor costs as well as the downtime associated with replacing worn sprockets. Worn segments can be replaced by simply replacing the segments, eliminating the removal of shaft, bearings and realigning sprockets.
- **Hunting Tooth** Sprockets are designed so each tooth will only contact the same barrel every second revolution. This is accomplished by make the sprocket ½ pitch and adding one tooth. Basically the life of the sprocket is doubled.

Chainsaver Sprocket

Sprocket Segments

Traction Wheel

Hunting Tooth Sprockets

Engineering Class Sprockets and Traction Wheels

Engineering Class Steel Sprocket with C Hub

Rex Chain #	Jeffrey Chain #	Webster Chain #	# Teeth	Pitch Diameter	Chain Pitch	Hub Diameter	LTB	Max Bore	Face Width	Weight lbs.
		N102B	14	18	4	6.5	6	3.94	1.75	152
		N102B	16	20.5	4	6.5	6	3.94	1.75	190
S102B	6102R	HSB102B	10	13	4	6.5	6	3.94	1.75	92
S102B	6102R	HSB102B	14	18	4	6.5	6	3.94	1.75	152
S102B	6102R	HSB102B	16	20.5	4	6.5	6	3.94	1.75	190
S102B	6102R	HSB102B	19	24.25	4	6.5	6	3.94	1.75	260
S110	6110R	HSB110	10	19.1	6	7	6	4.44	1.75	171
			11	21.25	6	7	6	4.44	1.75	204
			13	25'	6	7	6	4.44	1.75	271
			16	30.75	6	7	6	4.44	1.75	397
ES833	6138R	HSB833	9	17.5	6	8	6	5	2.25	187
			11	21.25	6	8	6	5	2.25	260
			13	25	6	8	6	5	2.25	346
			16	30.75	6	8	6	5	2.25	507

Engineering Cast Sprocket with Hub

Rex Chain #	Jeffrey Chain #	Webster Chain #	# Teeth	Pitch Diameter	Chain Pitch	Hub Diameter	LTB	Max Bore	Weight lbs.
		N102B	14	17.98	4	7	5	4.56	110
		N102B	16	20.5	4	7	5	4.56	135
S102B	6102R	HSB102B	10	13	4	7	5	4.56	68
S102B	6102R	HSB102B	14	18	4	7	5	4.56	110
S102B	6102R	HSB102B	16	20.5	4	7	5	4.56	135
S102B	6102R	HSB102B	19	24.25	4	7	5	4.56	170
S110	6110R	HSB110	10	19.1	6	7.50	5	5	88
			11	21.25	6	7.50	5	5	121
			13	25''	6	7.50	5	5	152
			16	30.75	6	8	6	5	181

See page F-25 of Martin Catalog.

Segmented Traction Wheel Rims (Available Cast)

Rex Chain #	Jeffrey Chain #	Webster Chain #	Outside Diameter	Use Body #	Face Width	Weight
S102B	6102R	HSB102B	24	16	1.75	115
S110	6110R	HSB110	24	16	1.75	115
S111	6111M	HSB111	22	16	2.25	125
		HSB833	24	16	2.25	125
			26	20	2.25	140
ES856	6956PB	HSB956	22	16	2.75	115
ER857	6867R	HSB857A	26	20	2.75	155
			28	20	2.75	170
			30	20	2.75	185
ER859	6859R	HSB859B	24	16	3.50	165
			26	20	3.5	175
ER864	6864R	HSB864B	30	20	3.5	175
			36	20	3.5	175
ER984			42	35	3.5	235

Always specify chain number and manufacture when ordering traction wheels and sprockets
Fabricated steel rims are readily available for most chains.

Do not use traction wheels where ambient conditions are flammable

Bodies (Without Bolts) – Solid – Steel

Body #	Outside Diameter	Bore Range	Length Thru Bore
MUS16	18.5	1.94 to 8.44	3.25 to 8
MUS20	22.5	1.94 to 9.94	5 to 9.5
MUS25	27.5	1.94 to 8.44	5.5 to 11
MUS35	38.0	1.94 to 8.44	5.50 to 11

Bodies (Without Bolts) – Split – Steel

Body #	Outside Diameter	Bore Range	Length Thru Bore
MUS16S	18.5	1.94 to 8.44	3.25 to 8
MUS20S	22.5	1.94 to 9.94	5 to 9.5
MUS25S	27.5	1.94 to 8.44	5.5 to 11
MUS35S	38.0	1.94 to 8.44	5.50 to 11

Bodies (Without Bolts) – Solid – Cast

Body #	Outside Diameter	Bore Range	Length Thru Bore
MUS16C	18.5	1.94 to 6.94	3.25 to 8
MUS20C	22.5	2.44 to 6.94	5 to 9.5

Bodies (Without Bolts) – Split – Cast

Body #	Outside Diameter	Bore Range	Length Thru Bore
MUS16CS	18.5	1.94 to 4.94	6.5 to 8.25
MUS20CS	22.5	1.94 to 7.44	4.375 to 11.12

Pulleys

Drum Pulley

Steel rims, end disc and hubs are welded together by submerged arc welding resulting in a strong, balanced and concentric long lasting pulley. Available with or without a crown. Available in various hub and bushing types.

Drum Pulley

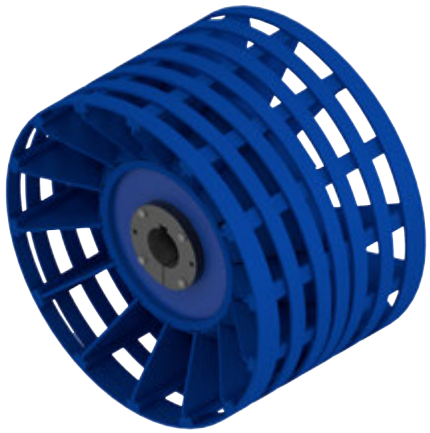
Single Disc Pulley

The heavy duty construction of the Martin SD Pulley assures a long lasting pulley designed for use in your High-Speed Grain Leg. All components are welded using the submerged arc process to assure a long lasting bond and concentricity of the pulley.

Available in face width from 8" thru 16".

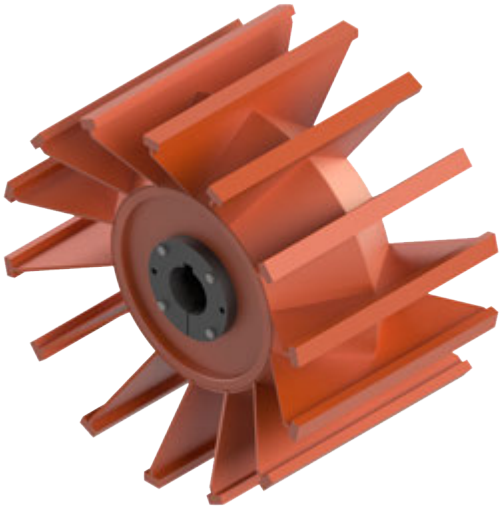
Wing Pulley

Martin's Heavy Duty Wing Pulley is ideal for cleaning the bucket elevators belt in the boot. The intermittent belt contact made by the wings help dislodge material as well as increases traction and reduces abrasion to the belt.



MTO Shafts Available, Call Martin

Need a special shaft in a hurry Martin has the capability to machine shafts weighing up to 18000 lb and measuring 20" dia. X 18" long on a CNC lathe. All keyways are cut on the lathe without repositioning the shaft.



Wing Pulleys

Take-Up Frames

Martin Tube Type

- Allows the use of a ball bearing or roller bearing pillow blocks
- The rod force is at the centerline of the bearing
- Available with take-up travel from 3” to 36”
- MTO versions can incorporate a spring to add take-up tension

Martin Wide Slot

- Compact design for ideal for smaller elevators
- Rod force is at the center line of the bearing
- MTO versions can incorporate a spring to add take-up tension
- Available with 6" to 30" of travel

Martin Internal Gravity

- Standard on most Mill Duty Elevator and Super Capacity Elevators using chain
- Heavy channel frame with easy to add steel weight plates
- Heavy duty friction bearing
- Internal lift channel.

Martin External Gravity

- Martin External Gravity take-up is offered as an option to the internal take-up
- Features a heavy channel frame that allows weight adjustments to be made from the exterior of the elevator
- Allows belt training adjustment

Complete Offering for your Bucket Elevator Needs!

ELEVATOR BOLTS

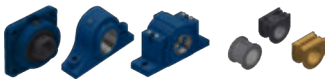
ELEVATOR BELT SPLICE KITS

ASSEMBLY HARDWARE

CUSTOM SHAFTING

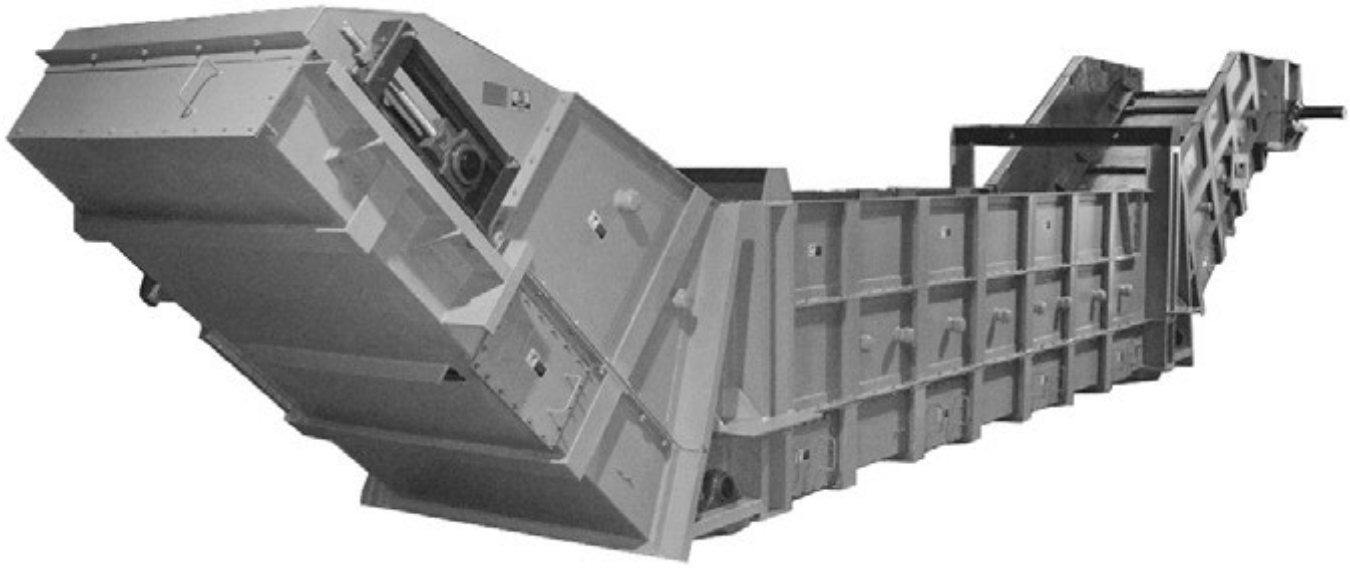
ELEVATOR BELTING

SHAFT SEALS



SHAFT BEARINGS

Drag Conveyors



DRAG CONVEYORS **PAGE**

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SUPER DUTY DRAG CONVEYOR . . . . . H-164 – H-165
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MILL DUTY DRAG CONVEYOR . . . . . H-167 – H-168
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Drag Conveyors

Martin has a long history of designing and manufacturing drag conveyors dating back more than 60 years to the Fort Worth Steel's "Incline Drag Flight Elevator".

Currently we offer a broad line of standard and Made-to-Order drag conveyors to meet our customer's conveying requirements, be it conveying grains or heavy abrasive materials. We have handled these materials in the horizontal, inclined and vertical planes. Martin is ready and willing to help design and manufacture the drag you need for your special application.

Martin offers Flat Bottom and Round Bottom drags for conveying relatively free flowing non- abrasive materials in a horizontal or slight incline. We developed our Super Duty Drags to convey a wide range of materials longer distances and at higher capacities; we have Super Duty Drags operating at lengths of over 660 feet.

Our Mill Duty Drag Conveyors were developed to handle abrasive and potentially hot materials by combining the features of our Flat Bottom and Super Duty Drags with a very heavy duty construction. We have designed and manufactured Submerged Drags to handle ash from boilers and industrial incinerators.

Our L Path Line of drags was designed to handle materials at inclines greater than 20 degrees up to and including vertical. The L-Path drag has also been redesigned using abrasive resistant steel liners and flights as well as a forged type chain to convey more abrasive products.

To assure the quality of our Drags, Martin has invested in the latest cutting, forming and welding equipment, such as laser cutting equipment, high definition plasmas, CNC angle punches, CNC machining equipment as well as robotics. We also manufacture our own sprockets, our own take-ups and line of inspection doors.

To assure the best service and availability in the industry, Martin is able to manufacture our drag conveyors in nine locations throughout North America.

We are always driven to provide the highest quality service, products and value to our customer without compromising safety.

Easy Application Chart

Drag Type	Materials	Capacity Range	Length Range	Incline Range	Chain Type	Flight Type	Speeds Range
Martin Flat Bottom (MFB™)	Non Abrasive	2800 CFH to 32000 CFH	20' to 200'	0 to 10 degrees	Welded Steel	Non-metallic	100 to 200 FPM
Martin Super Duty Flat Bottom (MSC™)	Non Abrasive	12000 CFH to 64000 CFH	150' to 675'	0 to 10 degrees	Welded Steel	Non-metallic	75 to 200 FPM
Martin Mill Duty Flat Bottom (MMD™)	Abrasive	1422 CFH to 14063 CFH	20' to 250'	0 to 10 degrees	142, WD & WS	Metallic	25 to 100 FPM
Martin L-Path Flat Bottom (MLP™)	Non Abrasive	600 CFH to 15000 CFH	20' to 125'	20 to 90 degrees	WS & 142	Non-metallic	50 to 100 FPM
Martin Slim Profile Flat Bottom (MSP™)	Non Abrasive	440 CFH to 3000 CFH	10' to 50'	0 to 45 degrees	Welded Steel	Non-metallic	25 to 100 FPM
Martin Round Bottom (MRB™)	Non Abrasive	2000 CFH to 30000 CFH	20' to 200'	0 to 20 degrees	Welded Steel	Non-metallic	100 to 200 FPM

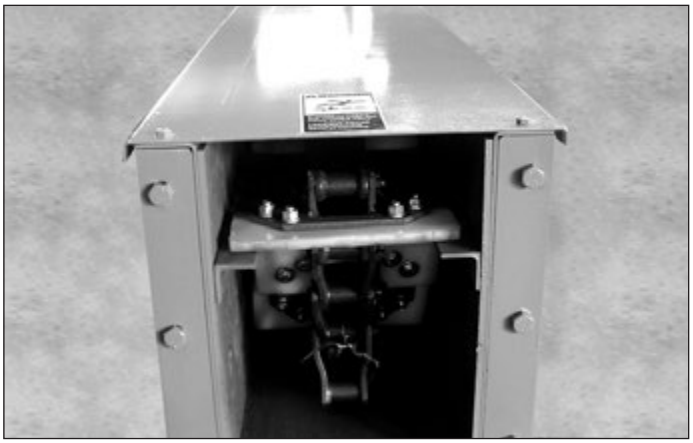
In all the above type drags the material should be relatively free flowing and not sticky.
Particle shape and particle size is also critical to a drags proper operation.
• The above recommendations are general in nature and specific to applications should be directed to Martin.

Flat Bottom Drag Conveyor

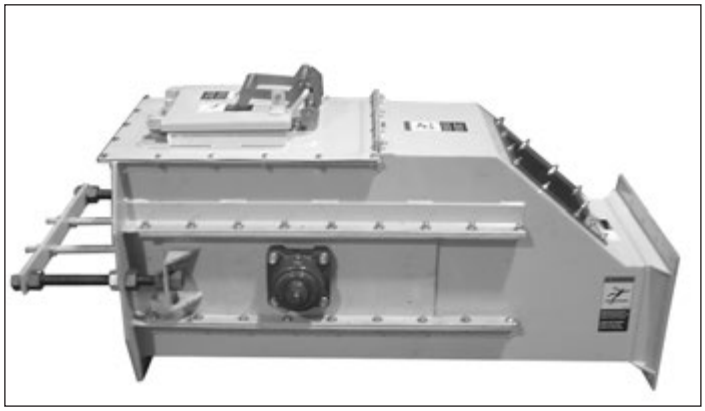
2416 MFB Flat Bottom Drag

Standard Features

- Bolted Replaceable Bottom
- Bolted Flanged Cover
- Jig Welded Flight Attachments
- UHMW Flights
- Heat Treated Sprockets
- Rail Return System
- Flow Thru Inlet
- Heavy-Duty Backing Plate



2412 MFB Intermediate



Self-Cleaning and Adjustable Tail Section

Popular Options

- Intermediate Discharges
  (Reduce Bed Depth to assure proper discharge.)
- Liners of Metallic and Non Metallic Materials
- Abrasive Resistant Steel Bottom Plates
- Feed Control Inlets
- Split Sprockets
- Stainless Steel Construction
- Self-Cleaning & Adjustable Tail Sections

Flat Bottom Drag Conveyor

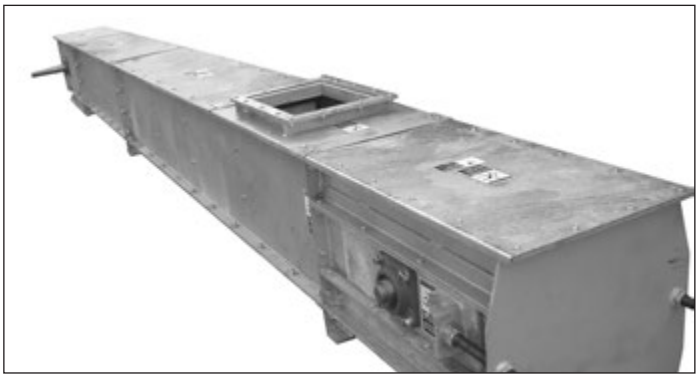
Capacity Chart for Standard Sizes

Series	1 FPM	100 FPM		125 FPM		150 FPM		175 FPM		200 FPM	
	CFH	CFH	RPM	CFH	RPM	CFH	RPM	CFH	RPM	CFH	RPM
2409	54.38	5,438	27	6,798	34	8,157	40	9,517	47	10,876	54
2412	68.25	6,825	27	8,531	34	10,238	40	11,944	47	13,650	54
2414	78.75	7,875	27	9,844	34	11,813	40	13,781	47	15,750	54
2416	89.25	8,925	27	11,156	34	13,388	40	15,619	47	17,850	54
2418	96.19	9,619	27	12,024	34	14,429	40	16,833	47	19,238	54
3016	111.56	11,156	23	13,945	29	16,734	34	19,523	40	22,312	46
3018	121.13	12,113	23	15,141	29	18,170	34	21,198	40	24,226	46
3020	133.88	13,388	23	16,735	29	20,082	34	23,429	40	26,776	46
3024	159.38	15,938	23	19,923	29	23,907	34	27,892	40	31,876	46

1. Capacities based on 90% loading with a free-flowing material.
2. Selection of conveyors should be based upon the material's characteristic.
3. Capacities and speed will vary for other than free flowing materials.

Please Consult Martin if you have questions concerning your application.

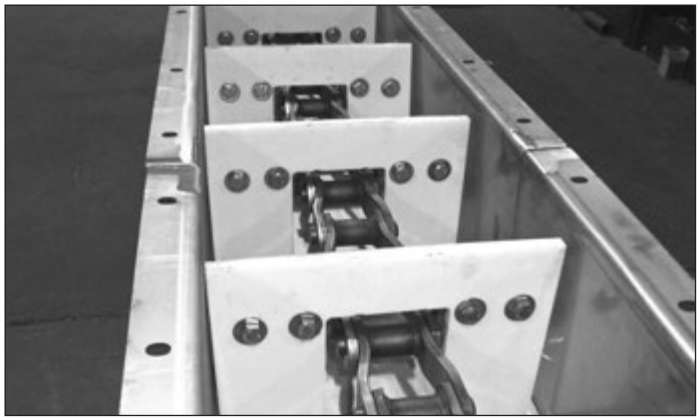
Inlets



Flow Thru Inlet

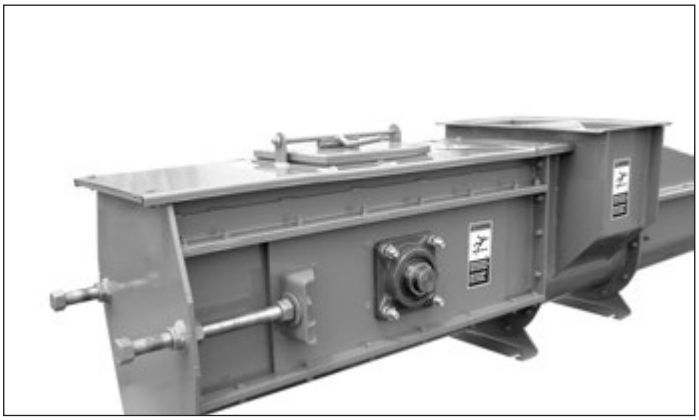
Best suited for free flowing non- abrasive materials with a controlled feed rate to the drag.

Chains



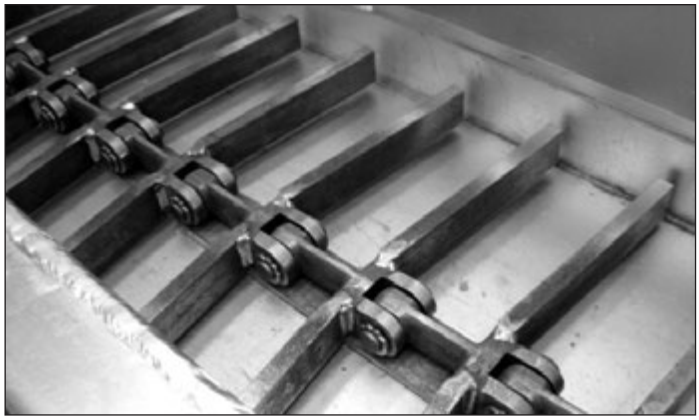
Welded Steel

Welded Steel chain is our standard and can be quoted and supplied from a chain manufacture of your choice.



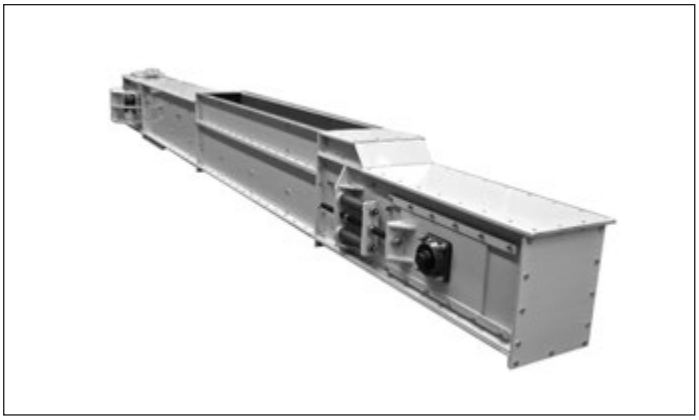
Bypass Inlet

Directs the flow of material to the carry strand of chain and flights.



142 Forged

Where abrasion or heat are an issue a 142 chains can be supplied. (Other chains are available.)



Feed Control Inlet

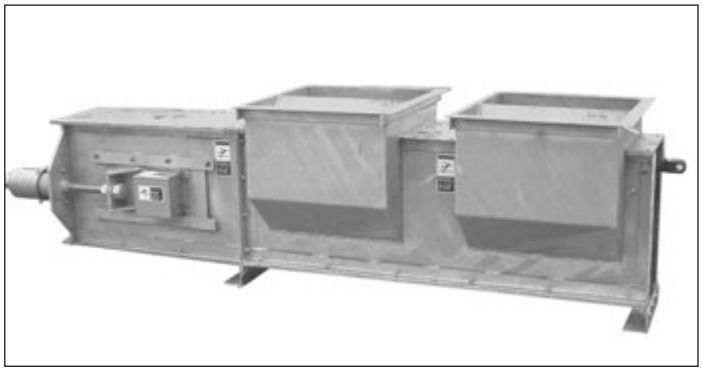
Allows the control of feed rates at the drag, limited to use with the Flat, Super Duty and Mill Duty Drags.

Super Duty Drag Conveyor

MSC Super Capacity Drag Head with Slack Side Tension Idler Sprocket

Standard Features

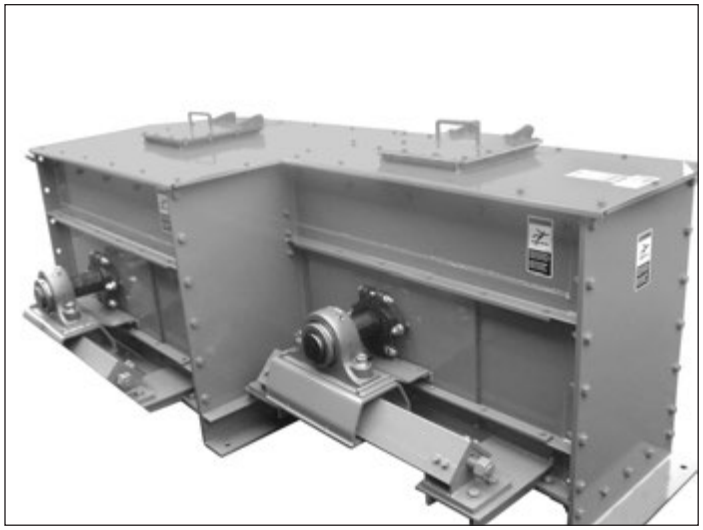
- Bolted Replaceable Bottom
- Bolted Flanged Cover
- Jig Welded Flight Attachments
- Welded Steel Chain
- Heavy Duty Steel Backing Plates
- UHMW Flights
- Heat Treated Split Sprockets
- Rail Return System with AR steel Wear Strips
- Abrasion Resistant Steel replaceable side liners
- Flow Thru Inlet
- Special HD Head Section with Martin Slack Side Tension Idler Sprocket Assembly
- Slack Side Tension transition cover
- Heavy Duty Tails Section with MHD Take-ups and Pillow Block Bearings



MMD Drag with two By-Pass Inlets

MLP Tail Section

Super Duty Drag Conveyor



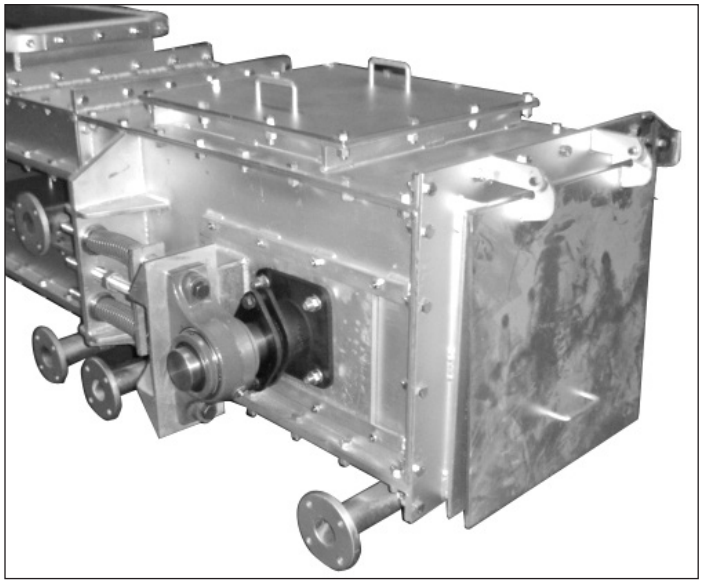
Double Chain Tail for MSD Drag

Popular Options

- Special Chains
- Double Chain Design with an Individual Chain Take-up Tail Section
- Spring Loaded Take-up
- Hydraulic. Take-up
- Stainless Steel Construction
- Liners of various materials
- Feed Control Inlet

Super Duty Capacity

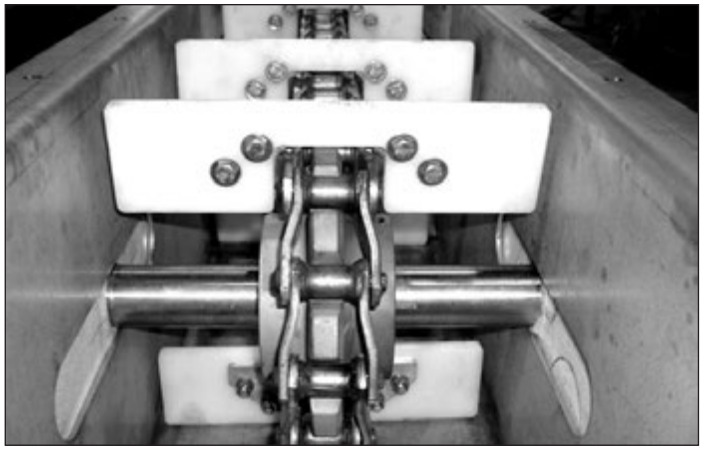
Series	FPM 1	100 FPM	125 FPM	150 FPM	200 FPM	
	CFH	CFH	CFH	CFH	CFH	
MSD 3024	168.75	16875	21094	25312	33750	
MSD 3030	209.25	20925	26156	31388	41850	
MSD 3036D	249.75	24975	31219	37462	49950	Double Chain
MSD 3040D	276.75	27675	34594	41512	55350	Double Chain
MSD 3048D	330.75	33075	41344	49612	66150	Double Chain



Special Tail Section with Spring Take-up and Relief Door

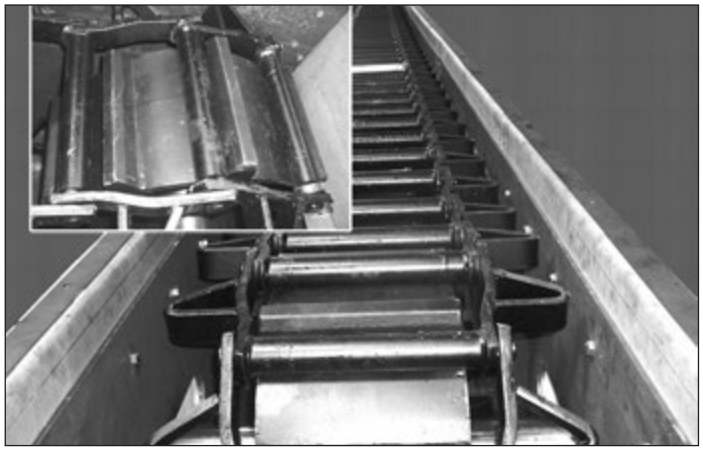
Martin Submerged Drag being loaded

Engineering Class Sprockets



Welded Steel Chain and Sprocket

All welded steel sprockets are heat treated and most can be offered split or with segmented rim for easier replacement. All sprockets can be supplied with a shear pin hub where needed.



Wide Face Drag Sprockets

Wide Face Drag Sprockets are available for Chain Numbers 102, 104, 120, 480, etc.

Wide Face Drag Sprockets are available in “QD”, or “Split Taper” style — Induction Heat Treat Available.

Stainless Steel Sprocket

Wide Face Sprocket with Forged Teeth

Cast Steel Sprocket

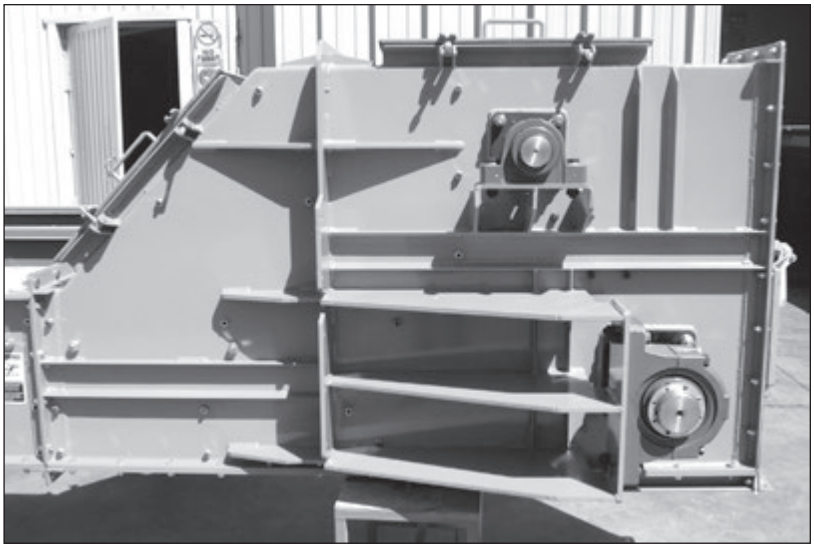
Segmented Rim Cast Sprockets

Cast Wide Face Traction Wheel

Cast Iron & Steel Sprockets

- Cast Split Sprockets
- Hunting Tooth Sprockets
- Rivetless Chain Sprocket
- Drag Chain Sprockets (Plain & Flanged)
- Traction Wheels (Plain & Flanged)
- Plate Body Sprockets
- Chain Saver Rim Sprockets
- Adjustable Hub Sprockets
- Chill Rim Sprockets

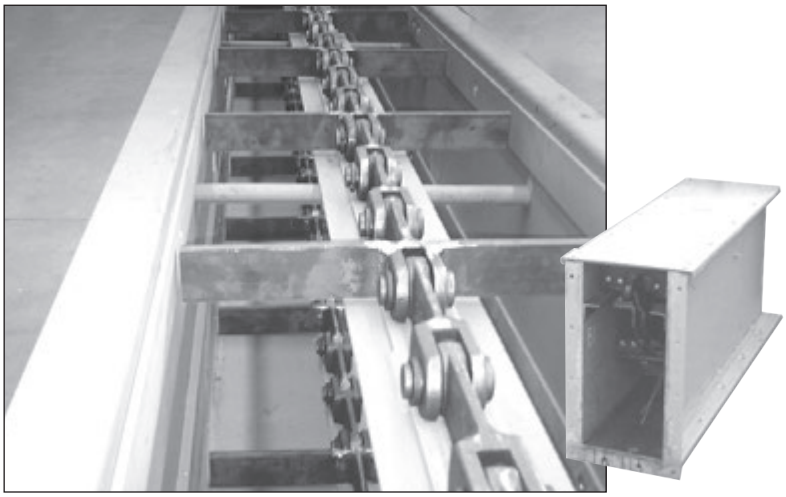
Mill Duty Drag Conveyor



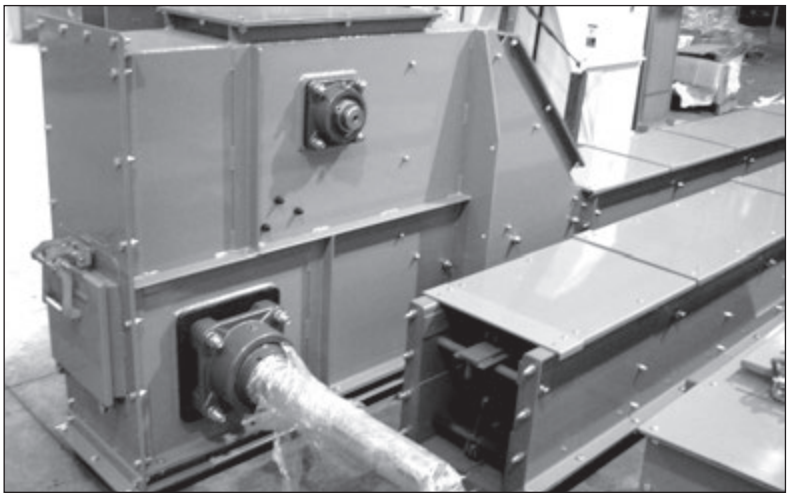
MMD Mill Duty Head with Martin Slack Side Tension Idler Sprocket

Standard Features

- Bolted Replaceable Bottom
- Bolted Heavy Flanged Cover
- 142 Forged Chain
- Heavy Duty Steel Backing Plates
- Non-metallic or Abrasion Resistant steel Flights
- Heat Treated Split Sprockets
- Center Support Rail Return System with AR steel Wear Strips
- Replaceable side liners of various materials
- Flow Thru Inlet
- Special Head Section with Pillow Block Bearings
- Heavy Duty Tails Section with MHD Take-ups and Pillow Block Bearings



Center Support Rail Return System with AR steel Wear Strips for MMD Drag



MMD Mill Duty Head and Intermediate

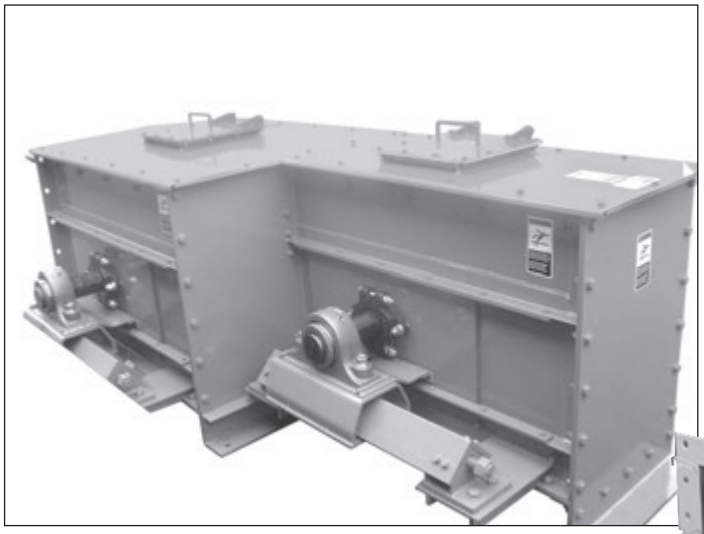
Mill Duty
Drag Conveyor

Mill Duty Drag

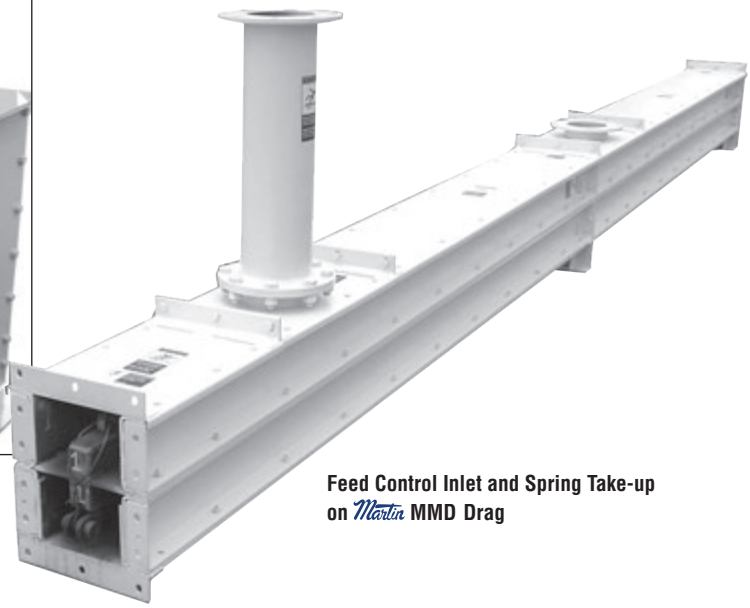
Series	FPM	25 FPM	50 FPM	75 FPM	100 FPM
	CFH	CFH	CFH	CFH	CFH
MD2412	57	1422	2844	4266	5688
MD2416	74	1859	3719	5578	7438
MD3020	118	2953	5906	8859	11813
MD3024	141	3516	7031	10547	14063

Popular Options

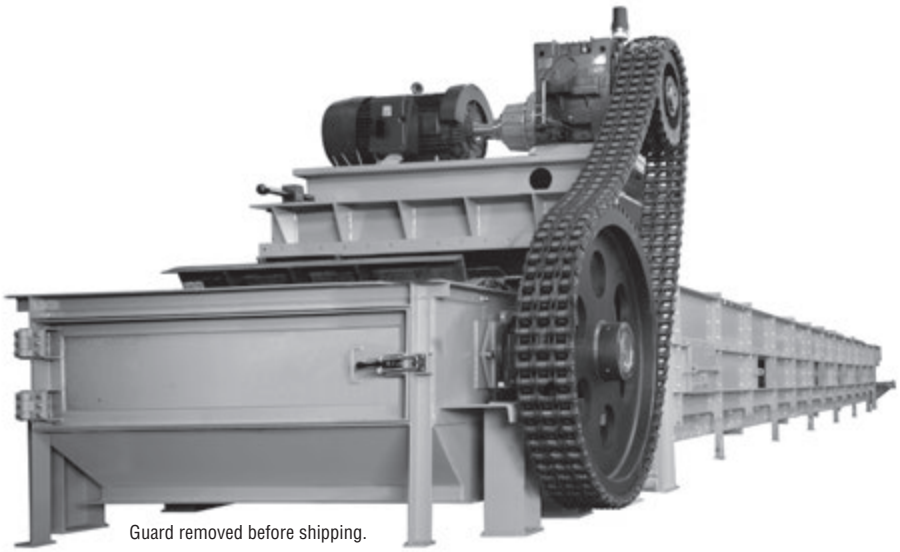
- Special Chains like WDH Welded Steel
- Special Heavy Duty Head Section with Martin Slack Side Tension Idler Sprocket Assembly
- Spring Loaded Take-up
- Hydraulic Take-up
- Stainless Steel Construction
- Liners of various materials both metallic and non-metallic
- Feed Control Inlet



Feed Control Inlet and Spring Take-up on Martin MMD Drag



Feed Control Inlet and Spring Take-up on Martin MMD Drag

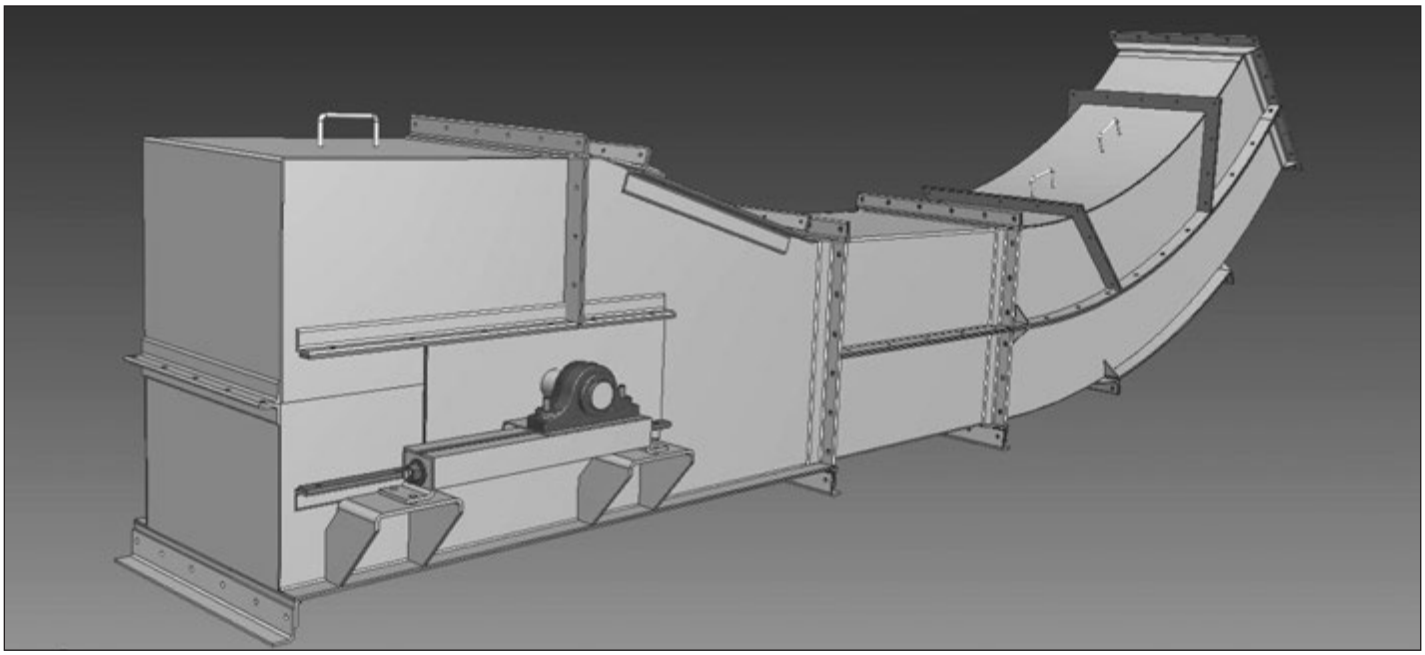


Guard removed before shipping.

Large Drag Conveyor

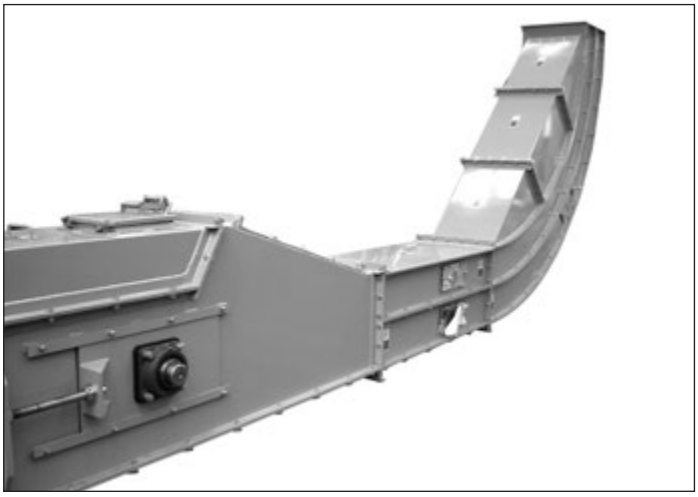
MMD Interior with 142 Chain

L-Path
Drag Conveyor



Standard Features

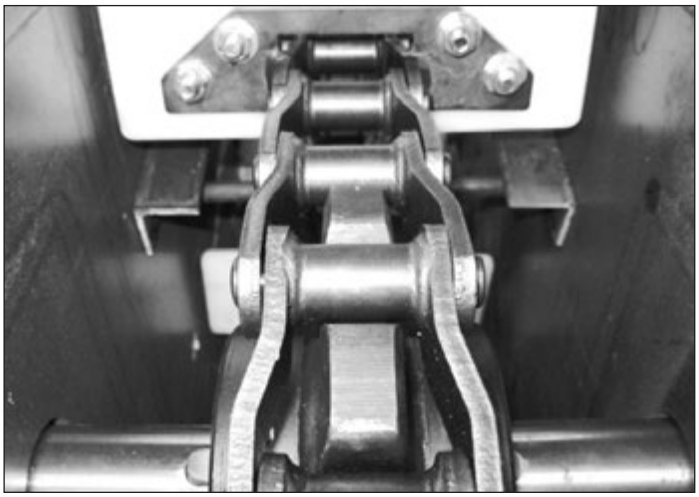
- Seven piece intermediate housing
- Welded steel chain
- Jig welded attachments
- UHMW flights
- Martin HT and Split Sprockets
- Pillow Block Bearings
- Martin MHD take-ups



MMD Mill Duty Head and Intermediate

Popular Options

- 142 Forged Chain
- Mill Duty type construction
- Abrasive Resistant steel divider plates
- Special flight materials metallic and non-metallic
- Slack chain accommodating lower bend (45 to 90 degree)
- Upper Bend Section



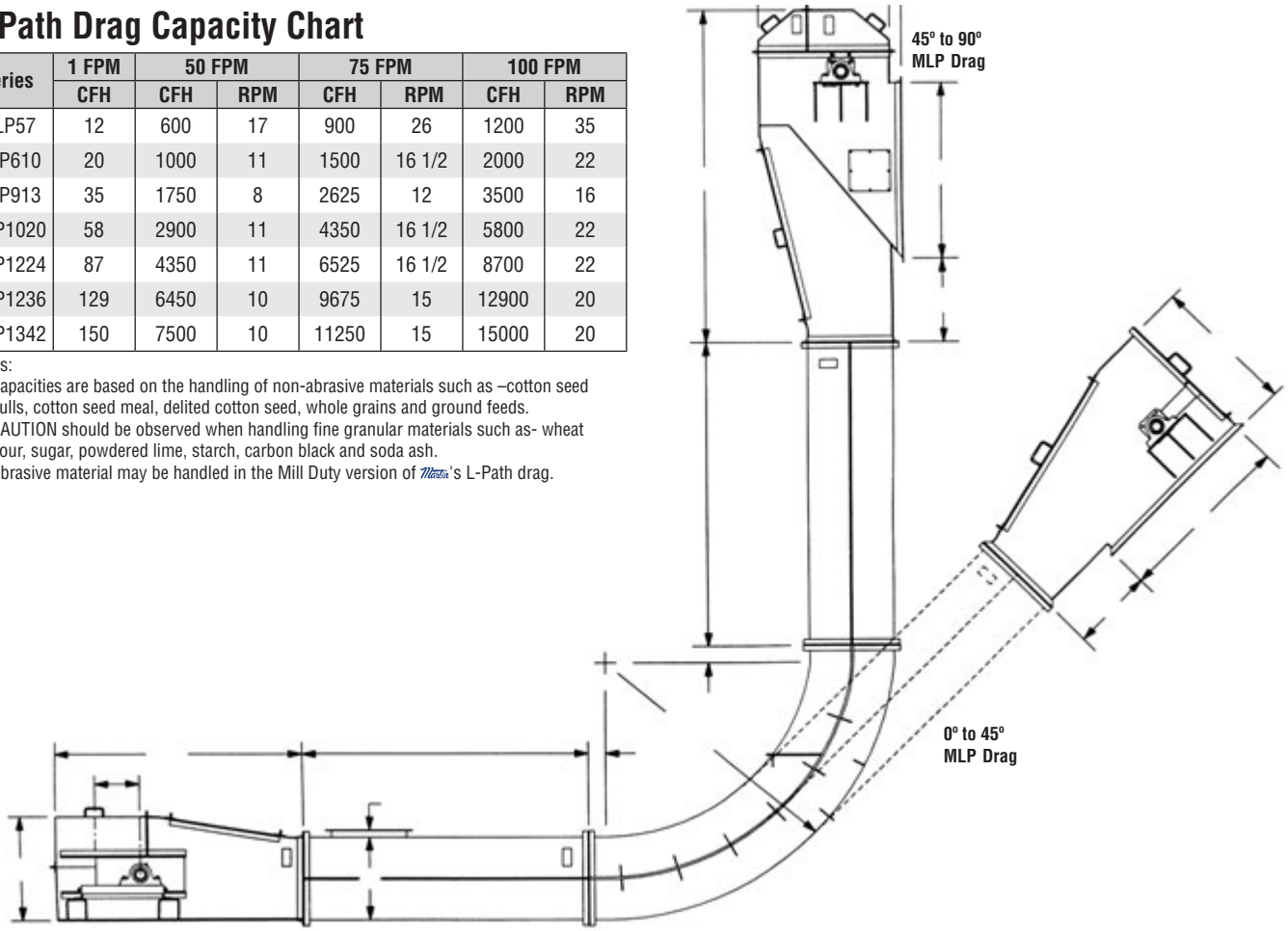
MMD Mill Duty Head and Intermediate

L-Path
Drag Conveyor

L-Path Drag Capacity Chart

Series	1 FPM	50 FPM		75 FPM		100 FPM	
	CFH	CFH	RPM	CFH	RPM	CFH	RPM
MLP57	12	600	17	900	26	1200	35
MLP610	20	1000	11	1500	16 1/2	2000	22
MLP913	35	1750	8	2625	12	3500	16
MLP1020	58	2900	11	4350	16 1/2	5800	22
MLP1224	87	4350	11	6525	16 1/2	8700	22
MLP1236	129	6450	10	9675	15	12900	20
MLP1342	150	7500	10	11250	15	15000	20

Notes:
1. Capacities are based on the handling of non-abrasive materials such as –cotton seed hulls, cotton seed meal, delited cotton seed, whole grains and ground feeds.
2. CAUTION should be observed when handling fine granular materials such as- wheat flour, sugar, powdered lime, starch, carbon black and soda ash.
3. Abrasive material may be handled in the Mill Duty version of Martin's L-Path drag.

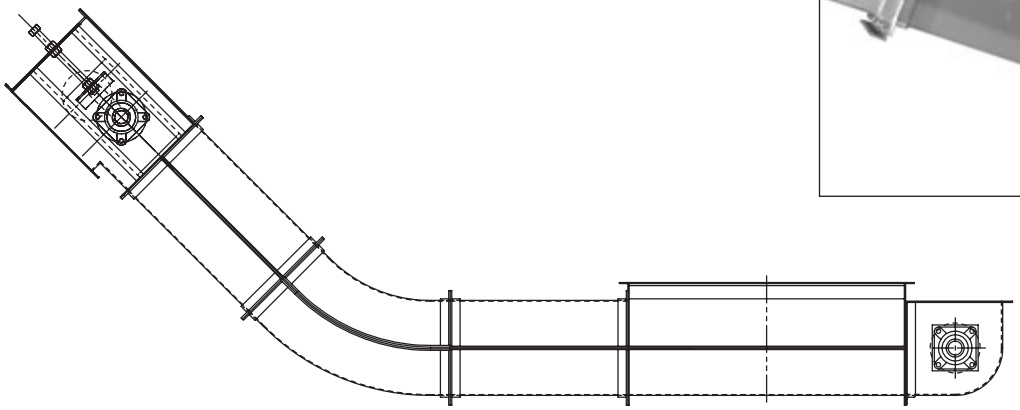


MLP Drag ready to ship

MMD Special L-Path Drag with Slack Accommodating Bend

L-Path Drag Conveyor

Slim Profile Drag Options



Popular Options

- AR Steel Divider Plate
- Tail Take-up
- Longer than Standard Inlet
- Optional Non-Metallic Flights such as TIVAR® or Nylon
- Stainless steel construction

Standard Features

- Self-Cleaning Tail Section
- Slim Profile Head with Martin CWS Wide Slot Take-up
- WH78 welded steel chain
- Jig welded attachments
- UHMW Flights with steel backing plates
- Flow Thru Inlet
- Martin Heat Treated Sprocket

Slim Profile Drag

Series	1 RPM	25 RPM	50 RPM	75 RPM	100 RPM
MSP 609	17.5	437.5	875	1312.5	1750
MSP 612	22.75	568.75	1137.5	1706.25	2275
MSP 616	29.75	743.75	1487.5	2231.25	2975
MLP1020	58	2900	11	4350	16 1/2
MLP1224	87	4350	11	6525	16 1/2
MLP1236	129	6450	10	9675	15
MLP1342	150	7500	10	11250	15

Notes:
1. Capacities are based on the handling of non-abrasive materials such as cotton seed hulls, cotton seed meal, delited cotton seed, whole grains and ground feeds.
2. CAUTION should be observed when handling fine granular materials such as wheat flour, sugar, powdered lime, starch, carbon black and soda ash.
3. Abrasive material may be handled in our Mill Duty version of our L-Path drag.

Slim Profile Drag being shipped

Special Mill Duty Drag Chain - Flight and Idler

TIVAR® is a registered trademark of the Quadrant Group of Companies.

Round Bottom Drag Conveyor

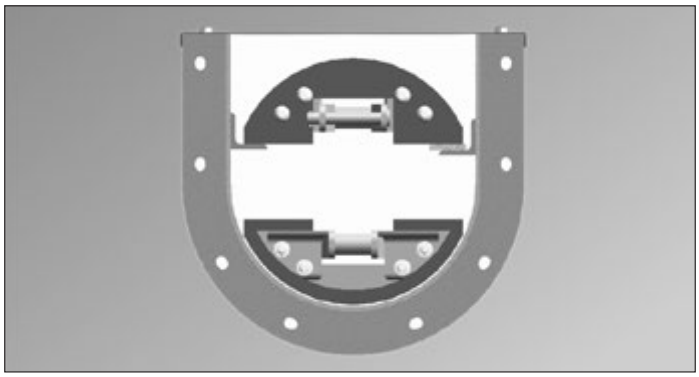
Capacity FPM / RPM

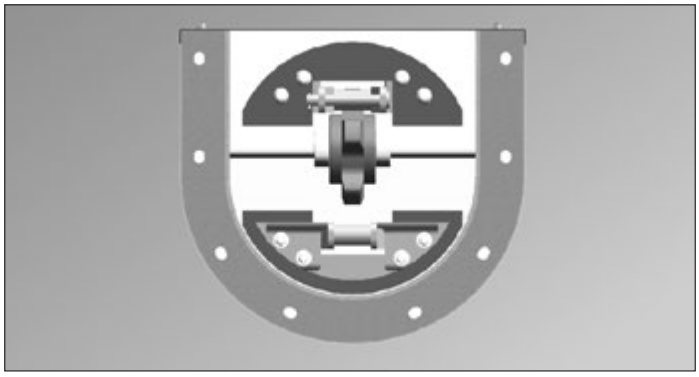
Series	Size	100 FPM		125 FPM		150 FPM		175 FPM		200 FPM	
		CFH	RPM	CFH	RPM	CFH	RPM	CFH	RPM	CFH	RPM
900	9"	2040	33	2600	41	3050	50	3500	58	4080	66
1200	12"	3475	33	4300	41	5200	50	6075	58	6950	66
1400	14"	4750	33	5900	40	7100	50	8300	58	9500	66
1600	16"	6050	32	7600	40	9150	48	10600	56	12100	64
1800	18"	8100	32	10150	40	12300	48	14300	56	16200	64
2000	20"	10500	23	13000	29	15650	35	18200	40	21000	46
2400	24"	14800	23	18150	29	22000	35	25750	40	29600	46

1. 90% loading Capacities based on with a free-flowing material.
2. Selection of conveyors should be based upon the material's characteristic.
3. Capacities and speed will vary from other than free flowing and will be reduced if idler return is used.

Please Consult Martin if you have questions concerning your application.

The Martin Round Bottom drag is designed with the user in mind. We have incorporated larger heat-treated sprockets into the design to reduce noise, vibration and chain chordal action while increasing chain and sprocket life. Our goal is to reduce maintenance and operating costs for the user.



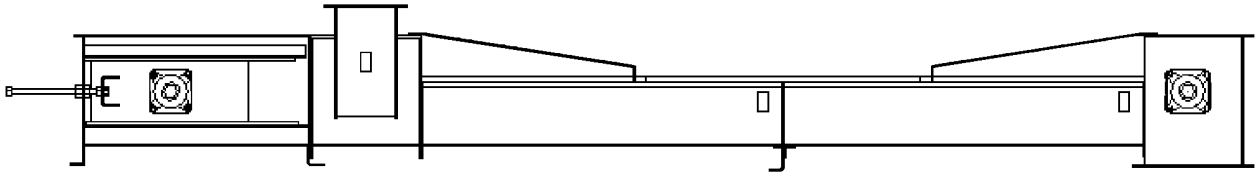


Standard Features

- Bolted Flanged Covers
- Welded Steel Chain
- Jig Welded Attachments
- UHMW Flights with Heavy Duty Backing Plate
- Dust Tight Form Flanged Trough
- Heat Treated Sprockets
- Rail Return System
- Flow Thru Inlet

Popular Options

- By-Pass Inlets
- Hip Roof Covers
- Self-Cleaning Tail
- Intermediate Discharges
- Idler Return System
- Abrasive Resistant Steel Return Wear Strip
- Split Sprockets



Martin Round Bottom Drag Conveyor (MRB)

Drag Conveyor Maintenance Tips

Field assembly of Martin MFB™ Drag

Assembly

Return Rails

Assure all return rails are adjusted so they match up evenly at the joints; be sure to grind any burrs off the rail joints. The vertical alignment of the rails is most critical on drags having outboard return rails.

Tightening the Chain

Tightening the chain on initial startup may require the removal of several links of chain. On drags with welded steel chain there will be a 10' section of cottered chain marked at the factory by contrasting spray paint. Do not over tighten the chain; always remember that the take-up control's the chain tension on the return strand. The carrying strand is naturally in tension.

Chain tension is one of the most import aspects of maintaining your drag. Never over tighten the drag chain. The tension should be tightened till the chain is pulled or stripped from the head sprocket but no tighter. Slack side tension can be helped by the use of mechanical devices such as an Slack Side Tension Idler Sprocket or stripper rail.

An under tightened chain will want to stay engaged with the head sprocket tooth and rap around the head sprocket. A catastrophic failure can be the result of an under tensioned chain. Regular chain inspection is important especially during the initial start-up period, make take-up adjustments as needed.

On **L-Path drags** the best place to watch and adjust the tension is at the bottom bend section and at the tail sprocket. The Slack Accommodating lower bend is an especially convenient way to look at and determine the optimum tension. Adjust tension till the chain is several inches off the divider plate and moves up and down as it runs. The chain movement is a result of chordal action caused by the sprocket (much more noticeable with sprockets having less than 12 teeth). The chain should move freely but should not hit the divider plate. The chain should be snug but not tight at the tail. The chain should disengage smoothly from the head sprocket. Once the drag is running to your satisfaction, mark on the side of the SA Bend near the inspection panel the proper location of the chain so that future adjustments are easily determined. By looking through the inspection panel you can see if the chain needs adjusted or links removed. With an L-path drag of more than 30 degrees incline you control the tension from the tail to the lower bend with the take-up; gravity takes care of tension on the incline section.

On the **Super Duty drag** the take-up adjustment is made at the Slack Side Tension Idler Sprocket in the head and at the tail. You adjust the take-ups till there is slight sag of the chain coming off the Slack Side Tension Idler Sprocket, located in the head. The chain at the tail should be snug but not tight. The chain should be smoothly disengaging the head sprocket. Mark the location of the chain when it is properly tensioned on the side of the transition cover at the inspection panel near the head, making future adjustments easier.

The **Flat Bottom and Round Bottom drags** chain tension adjustment is done at the tail by tensioning the chain till it is snug but not tight, you should be able to lift the chain when the drag is not running. Observe proper lockout and tag out procedures when maintaining the drag conveyor. With the chain running confirm that the chain is disengaging the head sprocket smoothly.

The **Mill Duty drag**'s chain tension is either adjusted like a Flat Bottom drag or a Super Duty drag depending on the type of head section your drag is furnished with.

Sprocket Alignment

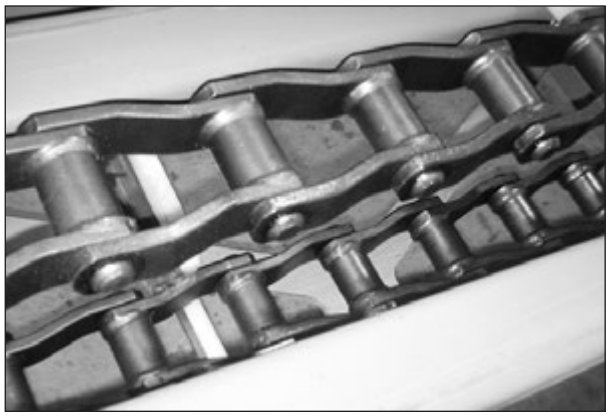
Assure that the sprocket is located in the center of the head and tail sections. Also check that all set screw or set collars are correctly tightened. Assure the sprockets are in alignment with each other, a laser is a useful tool to check sprocket alignment.

Lubrication

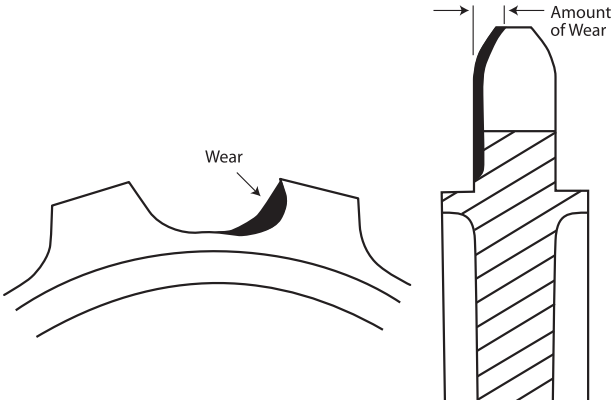
Assure that all bearings are properly lubricated with the manufacture's specified lubricant.

Assure all drives have the correct and adequate oil.

Drag Conveyor Maintenance Tips



Weld Steel Chain and MFB Tail™



Sprocket Wear

Common Operating Mistakes

Over Tightening the Chain

Over tightening the chain is the most common mistake and will cause accelerate chain and sprocket wear. Over tightening of the chain can also increase the wear of the drag flights, reduce bearings life and can cause damage to the shafts. It is better to slightly under tighten the chain than over tightening the chain.

Uneven Take-up Adjustment

Always adjust the take ups evenly and when the drag is not running. Uneven adjustment of the chain can cause accelerated chain, sprocket and flight wear. Uneven adjustment of the take ups may cause the chain to run to one side of the trough causing accelerated trough wear. It may be necessary to use the take up to get chain to run straight but should be minimized and can be an indication of an installation issue.

Not Checking Chain Wear

Set up and follow a preventative maintenance plan that includes regular inspection of the chain for stretch/wear. Chains tend to wear in during the initial operation of the chain so need to be inspected more often during the first 3 months of operation. Adjust the take-ups or remove chain links as needed to maintain proper tension.

Maintenance Tips

Chain Wear

Conveyor chain stretch is commonly used to identify when a drag chain is worn out. It is usually described as a percent of stretch and a commonly used range is 4% to 6% but it is Martin's recommendation that the user contact the chain manufacturer for their recommendation.

When replacing the drag chain it is Martin's recommendation to also replace the sprockets.

Sprocket Wear

As sprockets are worn, the drag chain tends to “cling” to the sprockets or vibrate. The amount of allowable wear is dependent on the chain type and chain size. Wear of between .12” to .24” is a good sign that the existing sprocket needs replaced. The wear appears in the root of the sprocket tooth.

Wear on the side of the tooth is an indication that the alignment of the sprockets may be incorrect. The wear may be an indication that the take-ups are not evenly adjusted or that sprockets are not in alignment. The mis-alignment can be caused by the shaft walking in the bearing or the sprocket moving caused by the set screw being loose. It is also important to assure that the shafts are parallel to each other.

Flight Wear

Accelerated flight wear can have several causes but the most common is the high material temperature. Material temperatures are most critical when dealing with non-metallic flights. It is important to check flight wear whenever your process has changed. Chain speed is always a component of flight wear and slower is better when wear is an issue. The chain tension should be checked if flight wear becomes an issue.

Anytime your process or the material changes it may have an effect on flight wear, chain wear and sprocket wear.

Make sure you have and follow a regular preventative maintenance inspection plan that is based on your operating conditions.

Assure you have a Safety Program that includes a Lockout/ Tag out Program.

Vertical Screw Elevator

VERTICAL SCREW ELEVATOR **PAGE**

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SCREW ELEVATOR TYPES H-176
STANDARD COMPONENTS H-177
STANDARD SCREW ELEVATOR SPEED AND CAPACITY H-178
SUPER SCREW ELEVATOR SPEED AND CAPACITY H-179
SUPER SCREW DRIVE UNIT H-180
SUPER SCREW ELEVATOR DIMENSIONS H-181- H-182

Martin Screw Elevators

For over fifty years, Martin Standard Screw Elevators have been successfully elevating a wide range of materials. In 1956, we added the heavier duty Superscrew Elevator, giving our customers the ability to elevate larger capacities to greater heights.

The Martin Screw Elevator is ideally suited to elevate a wide range of bulk materials in a relatively small space. If a material can be classified as very free flowing or free flowing, it can probably be elevated in a crew Elevator.

We offer both our Standard and Superscrew Elevators with several different drive arrangements to meet our customers' individual requirements. Martin has an experienced staff in over twenty locations throughout the U.S.A. and Canada that can help you design the right screw elevator for your application. We have the capability of manufacturing our screw elevators in six locations in the U.S.A.

Contact your nearest Martin facility with your application information and we will design the right elevator for your needs.

Partial Material List

- Alfalfa Meal
- Barley, Malted
- Bone Meal
- Cement
- Coffee
- Corn Meal
- Cotton Seed
- Cryolite
- Flours
- Grains
- Hops
- Ice
- Kaolin Clay
- Lead Oxide
- Lime
- Malt
- Mica
- Milk, Dried
- Mixed Feeds
- Mustard Seed
- Oats
- Paper Pulp
- Peanuts
- Resin
- Rubber, Ground
- Salt
- Sawdust
- Screened Wood Chips
- Shellac, Powder
- Soda Ash
- Soybean Meal
- Sugar
- Sunflower Seeds
- Tobacco
- Wheat
- Wood Flour

Type 4
Superscrew Elevator

*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

Screw Elevator

Martin Screw Elevators

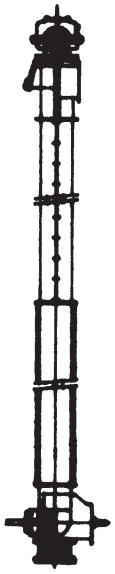
To help better meet the needs of our customers, we offer both the Martin Standard and Superscrew Elevators in sixteen different types. The different types allow us to vary the drive location, discharge location and feed arrangement. We are also able to drive the feeder or take-away conveyor by the screw elevator drive.

The Martin Screw Elevators are easy to install because they are factory assembled, match-marked and disassembled prior to shipment. All Martin Screw Elevators are of a sturdy self-supporting design and only need lateral support when installed.

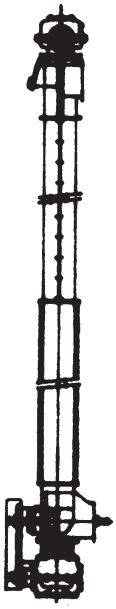
The drives for the Martin Standard and Superscrew Elevators are manufactured by Martin and are specifically designed for use with our screw elevators. We can also offer a Screw Conveyor Drive arrangement for lighter duty applications.

Super Screw Elevator Types

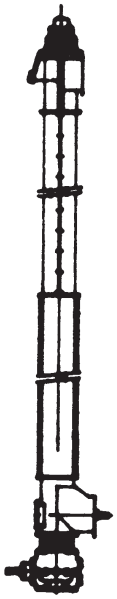
Type 1
Straight Inlet
Top Drive,
Pedestal Base



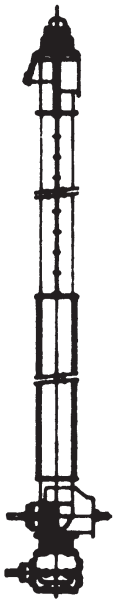
Type 2
Offset Inlet
Top Drive,
Pedestal Base



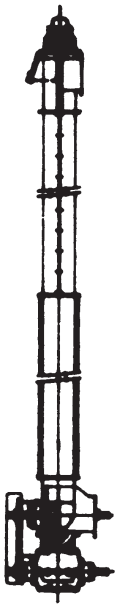
Type 4
Offset Inlet
Top Drive,
Bottom P.T.O.
With Drive



Type 5
Straight Inlet
Bottom Drive,
Thrust Head



Type 6
Offset Inlet
Bottom Drive,
Thrust Head



Type 8
Offset Inlet
Bottom Drive,
Thrust Head
With Drive

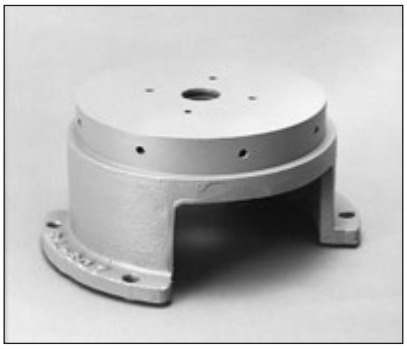
NOTE: All elevators are furnished less feeder and/or feeder drive unless otherwise specified.

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Screw Elevator

Standard Screw Thrust Unit

Stabilizer Bearing Used on Standard Screw Elevator



Standard Screw Pedestal Base

Standard Screw Thrust Head

All Martin Screw Elevators come with heavy duty helicoid or sectional screws which are checked for straightness and run-out to ensure a smooth running elevator. When handling free flowing material, we add stabilizers as needed, as the height of the elevator increases. The stabilizer bearings are available in a wide range of bearing materials to meet our customers' requirements, including wood, hard iron, bronze, UHMW, and others.

Both the Martin Standard Screw and Superscrew Elevators are supplied with split intermediate housing to allow easier maintenance.

Martin's specially engineered inlet/bottom section assures a smooth transfer to conveyed material from the horizontal to vertical with a minimum of back-up and product degradation.

The bottom inspection panel is bolted to minimize any product leakage. It also has a shroud to assure that the conveyed material is moving smoothly through the area.

The drives for both the Standard Screw and the Superscrew Elevator are manufactured by Martin to guarantee their quality and availability.

Clearance Between Screw and Housing

Size	Type of Housing	Clearance	Standard Screw Elevator			Superscrew Elevator		
			Intermediate	Top and Bottom Sections	Screw	Intermediate	Top and Bottom Sections	Screw
6	Standard Clearance	1/2	14	14	6H304	14	10	6H304
	Close Fitting Clearance	1/4	14	14	6.5S312*	14	10	6.5S312*
9	Standard Clearance	1/2	12	12	9H306	12	3/16	9H306
	Close Fitting Clearance	1/4	12	12	9.5S312*	12	3/16	9.5S312*
12	Standard Clearance	1/2	10	10	12H408	10	3/16	12H408
	Close Fitting Clearance	1/4	10	10	12.5S412*	10	3/16	12.5S412*
16	Standard Clearance	1/2	–	–	–	10	3/16	16H610
	Close Fitting Clearance	1/4	–	–	–	10	3/16	16.5S612*

* Close clearance sectional screws supplied as required.

Screw Elevator

The Martin Standard Screw Elevator is designed to handle under normal conditions, capacities ranging from 360 CFH to 3600 CFH in 6" dia., 9" dia., and 12" dia. sizes. With complete information, Martin engineering staff can help you design the right Screw Elevator for your application.

Martin Standard Screw Elevator Speed / Capacity

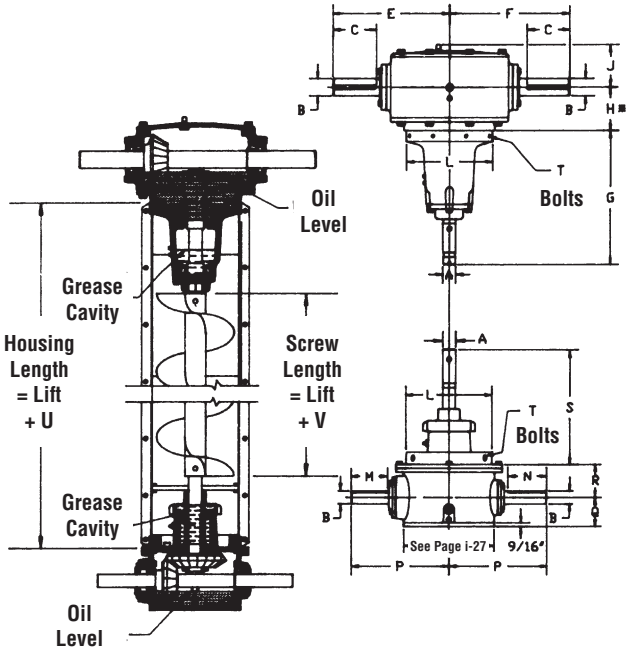
Clearance Between Screw and Housing

Size	Vertical Shaft Diameter	Ratio Top Drive	Ratio Bottom Drive	▲ Recommended Minimum and Maximum Speeds			RPM Horizontal Feeder Screw 45 Percent Loading	Capacity Cubic Foot per Hour
				Vertical Screw	Input Top Drive	Input Bottom Drive		
6	1 1/2	2:1	1.4:1	200	400	280	165	360
				215	430	301	177	400
				275	550	385	226	500
9	1 1/2	2:1	1.4:1	170	340	238	139	1100
				200	400	280	163	1300
				230	460	322	187	1500
12	2	2:1	2:1	155	310	310	147	2700
				165	330	330	156	3000
				200	400	400	189	3600

▲ For speeds in excess or less than shown, consult Martin.

The Standard Screw Elevator drive unit will function efficiently with the elevator erected at any angle of incline from horizontal to vertical. The input shaft can be driven in either direction, and the input shaft extension may be used to drive a horizontal feeder or discharge conveyor.

Both top and bottom drives are required when the elevator, feeder and discharge conveyor are all driven from one power source. A top drive and pedestal base are used when the elevator and discharge conveyor are driven from one source. A bottom drive and thrust unit are necessary if the elevator and feeder are driven from one power source. The drives are designed and constructed to withstand all radial and thrust loads and support the entire weight of a fully loaded elevator.



Size	Ratio		A	B		C	E	F	G	H	J	L	M	N	P	Q	R	S	T Bolts		U		V
	Top Drive	Bottom Drive		Top Drive	Bottom Drive														No. Rec'd	Size	B & BO	All Other Types	All Types
6*	2:1	1.4:1	1 1/2	2	1 1/2	5	13 1/2	14	15 1/4	7 5/8	4 15/16	7	4 1/4	4 1/2	11 11/32	3 3/8	3 13/16	13 1/4	4	3/8 - 16 NC	16 7/8	23 1/8	6 5/8
9	2:1	1.4:1	1 1/2	2	1 1/2	5	13 1/2	14	15 1/4	5	4 15/16	10	4 1/4	4 1/2	11 11/32	3 3/8	3 13/16	13 1/4	8	3/8 - 16 NC	21 1/2	27 3/4	8 3/4
12	2:1	2:1	2	2	2	5	13 1/2	14	15 1/4	4 7/8	4 15/16	13	5	5 9/16	14 7/16	3 7/8	4 9/16	13 1/4	8	1/2 - 13 NC	26	31 3/4	12 3/4

*2 5/8" lg. adapter for 6" head not illustrated.
Note: Dimensions not certified for construction.
Dimensions in Inches

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Superscrew Elevator

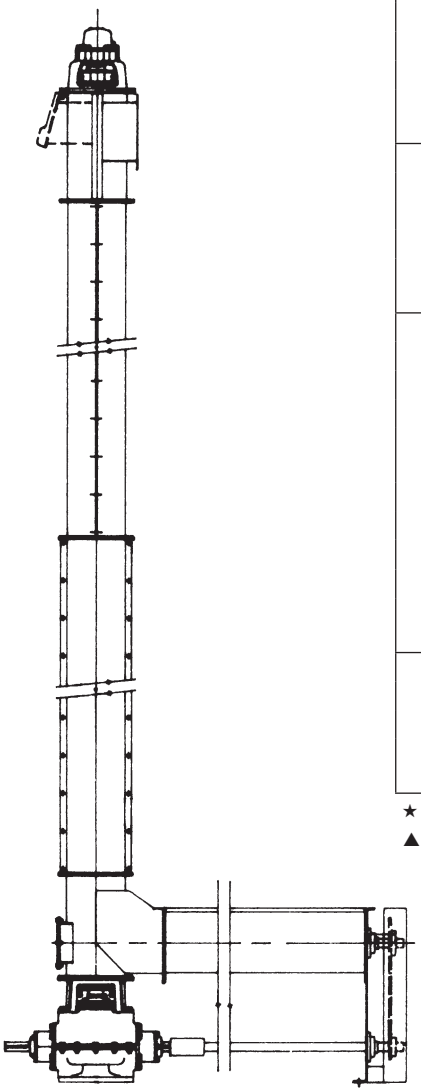
The Martin Superscrew Elevator is designed to handle capacities ranging from 360 CFH to 7000 CFH in 6" dia., 9" dia., 12" dia., and 16" dia. sizes.

Martin Superscrew Elevator Speed / Capacity

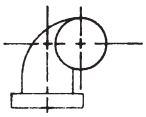
Size	Vertical Shaft Diameter	Ratio Top Drive	Ratio Bottom Drive	▲ Recommended Minimum and Maximum Speeds			RPM Horizontal Feeder Screw 45 Percent Loading	Capacity Cubic Foot per Hour
				Vertical Screw	Input Top Drive	Input Bottom Drive		
1	2	3	4	5	6	7	8	9
6	1 1/2	2:01	2:01	200	400	400	165	360
				215	430	430	177	400
				275	550	550	226	500
				330	660	660	272	600
				Up to 425	Up to 850	Up to 850	★	★
9	2	2:01	2:01	170	340	340	139	1100
				200	400	400	163	1300
				230	460	460	187	1500
				240	480	480	196	1600
				Up to 425	Up to 850	Up to 850	★	★
12	2 7/16	2:01	2:01	155	310	310	147	2800
				165	330	330	156	3000
				200	400	400	189	3600
				210	420	420	199	3800
				Up to 425	Up to 850	Up to 850	★	★
	2 7/16★ 3	2.06:1	2.06:1	155	319	319	151	2800
				165	340	340	161	3000
				200	412	412	195	3600
				210	433	433	205	3800
				Up to 425	Up to 876	Up to 876	★	★
16	3	2.06:1	2.06:1	138	284	284	132	6000
				150	309	309	144	6500
				161	332	332	155	7000
				Up to 425	Up to 876	Up to 876	★	★

★ Consult Martin.

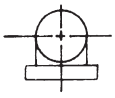
▲ For speeds in excess or less than those shown, consult Martin.



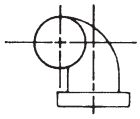
Type 7 Superscrew Elevator



Elevator Offset to the Right of Inlet



Straight Inlet

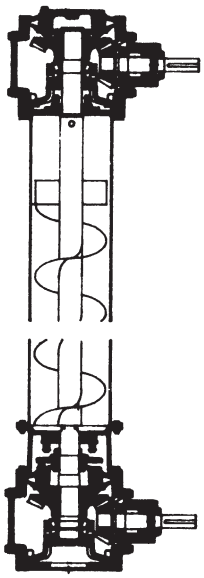


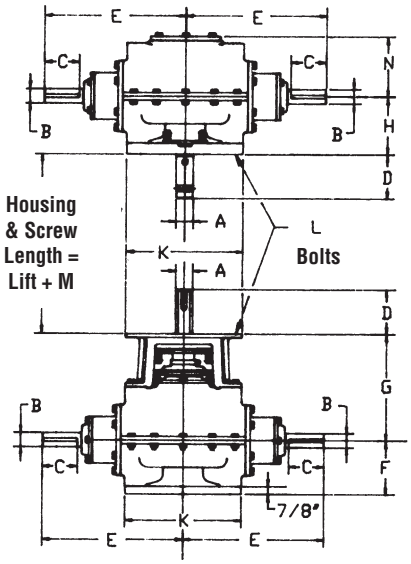
Elevator Offset to the Left of Inlet

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Superscrew Elevator

Superscrew Elevator D.S.D (Dry Shaft Drive)





DSD (Dry Shaft Drive) is a completely new design and construction concept especially developed to enable the Superscrew Elevator to broaden the application of screw elevators.

The DSD unit is designed to meet special conditions encountered in vertical installations and may be installed in the range of 70° to 90° incline. If a smaller angle of incline is required, special units may be furnished.

A patented lubrication system precisely "meters" the proper amount of lubricant to those points where needed with no danger of damaging seals.

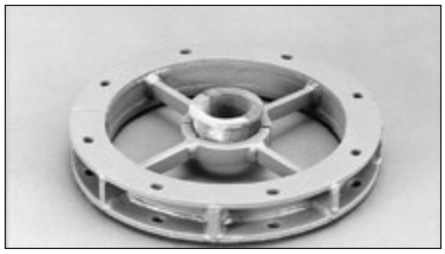
DSD units may be furnished at both the top and the bottom of the elevator. The top drive incorporates special design features to assure that no lubricant may pass into the elevator to contaminate the material being elevated. In the bottom drive unit other special features prevent entrance of foreign material into lubricant.

DSD units may also be furnished at the top only with a pedestal base or at the bottom only with a thrust head.

The compactness of the DSD requires a minimum of head room providing maximum lift with minimum overall elevator height.

DSD units are sturdily constructed to withstand all radial and thrust loads encountered and to support the entire weight of elevators and materials handled.

Size	Ratio	A	B	C	D		E	F	G	H	K	L		M
					Top	Bottom						No.	Size	
6	2:1	1 1/2	1 5/8	4	4 3/4	5	16	6 1/8	12	7 1/2	10 1/8	8	3/8	12 1/4
9	2:1	2	1 5/8	4	4 3/4	5	16	6 1/8	12	7 1/2	13 1/4	8	3/8	13 1/4
12	2:1	2 7/16	1 5/8	4	4 7/8	5	16	6 1/8	12	7 1/2	16 1/4	8	1/2	18 1/4
	2.06:1	2 7/16	1 5/8	4 1/4	4 7/8	5	18.1	6 7/8	12 5/8	7 1/4	17 1/4	8	1/2	18 1/4
	2.06:1	3	2 3/16	4 1/4	5	5	18.1	6 7/8	12 5/8	7 1/4	17 3/8	8	1/2	18 1/4
16	2.06:1	3	2 3/16	4 1/4	5	5	18.1	6 7/8	12 5/8	7 1/4	20 1/4	12	1/2	241 /4

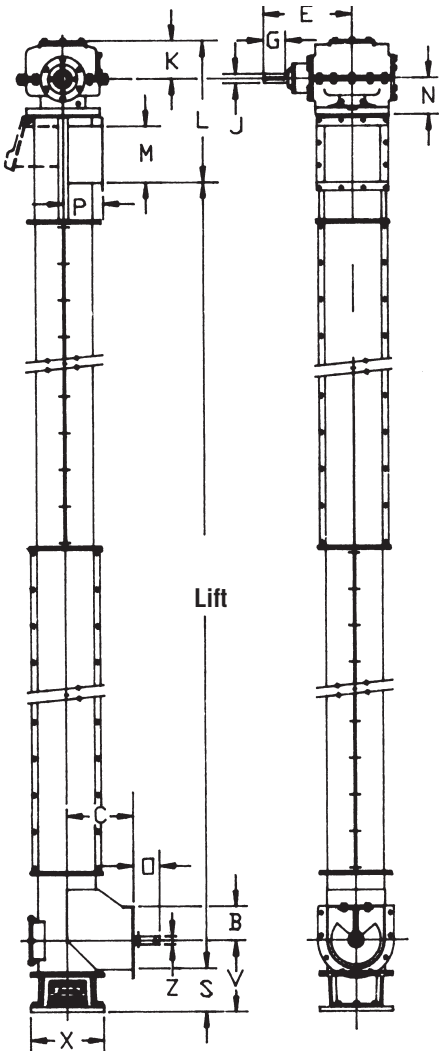


Spider Type Stabilizer Used on Superscrew

Superscrew Thrust Head

Superscrew Pedestal Base

Superscrew Elevator Dimensions



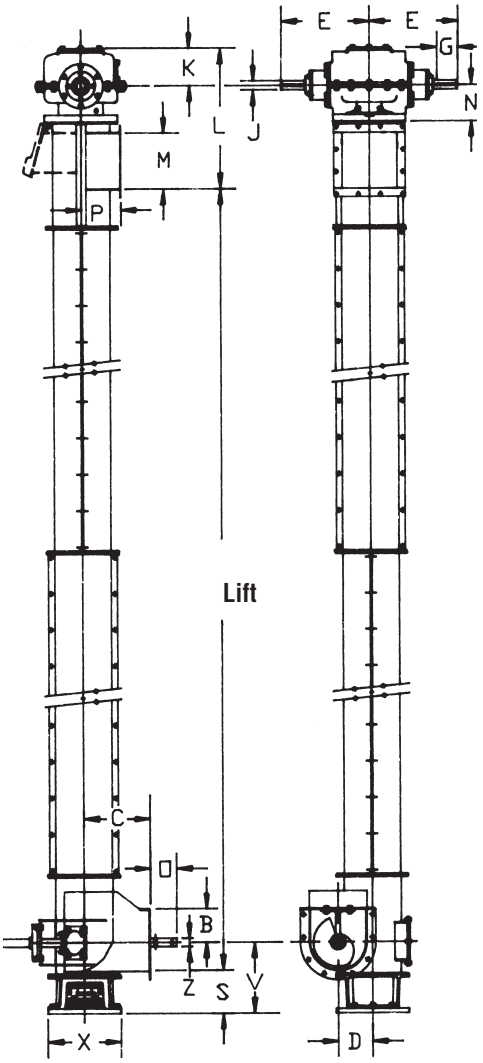
Type 1

Size of Elevator	Vertical Shaft Diameter	Ratio	B	C	E	G	J	K	L	M	N	O	P	S	V	X	Z ◇
6	1 1/2	2:1	4 1/2	10 1/2	16	4	1 5/8	6 3/4	26 3/4	7	6 1/2	4 3/4	5	8 3/8	11 7/8	13 1/4	1 1/2
9	2	2:1	6 1/8	12	16	4	1 5/8	6 3/4	28 1/4	10	6 1/2	4 3/4	7 1/8	7 7/8	12 7/8	13 1/4	1 1/2
12	2 7/16	2:1	7 3/4	15	16	4	1 5/8	6 3/4	32 1/4	13	6 1/2	4 3/4	8 7/8	8 7/8	15 3/8	13 1/4	2
	○2 7/16	2.06:1	7 3/4	15	18.1	4 1/4	2 3/16	7 15/16	34 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
	3	2.06:1	7 3/4	15	18.1	4 1/4	2 3/16	7 15/16	34 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
16	3	2.06:1	10 5/8	20	18.1	4 1/4	2 3/16	7 15/16	39 7/8	17	7 1/4	5	11 1/8	9 1/2	18	17 3/8	3

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Note: Dimensions not certified for construction.

Superscrew Elevator Dimensions



Normally Furnished Offset to the Left

Type 2

Size of Elevator	Vertical Shaft Diameter	Ratio	B	C	D	E	G	J	K	L	M	N	O	P	S	V	X	Z ◇
6	1 1/2	2:1	4 1/2	10 1/2	4 3/4	16	4	1 5/8	6 3/4	23 3/4	7	6 1/2	4 3/4	5	8 3/8	11 7/8	13 1/4	1 1/2
9	2	2:1	6 1/8	12	6 1/4	16	4	1 5/8	6 3/4	25 1/4	10	6 1/2	4 3/4	7 1/8	7 7/8	12 7/8	13 1/4	1 1/2
12	2 7/16	2:1	7 3/4	15	8	16	4	1 5/8	6 3/4	29 1/4	13	6 1/2	4 3/4	8 7/8	8 7/8	15 3/8	13 1/4	2
	○2 7/16	2.06:1	7 3/4	15	8	18.1	4 1/4	2 3/16	7 15/16	31 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
	3	2.06:1	7 3/4	15	8	18.1	4 1/4	2 3/16	7 15/16	31 3/8	13	7 1/4	4 3/4	8 7/8	9	15 1/2	17 3/8	2
16	3	2.06:1	10 5/8	20	10 1/2	18.1	4 1/4	2 3/16	7 15/16	36 3/4	17	7 1/4	5	11 1/8	9 1/2	18	17 3/8	3

Dimensions in Inches

◇ Horizontal coupling diameter may vary upon length of feeder.

○ Consult Martin before using.

CAUTION: Never operate without covers and guards. Always LOCKOUT/TAGOUT electrical power when working on equipment for inspection, cleaning, maintenance, or other purposes.

Note: Dimensions not certified for construction.

Modular Plastic Screw

MODULAR PLASTIC SCREWS **PAGE**

INTRODUCTION H-183
TECHNICAL AND DESIGN DATA . . . . . H-184 – H-185

Another Martin patented Innovation. We'll give your customers another reason to give you their business.

Popular Options

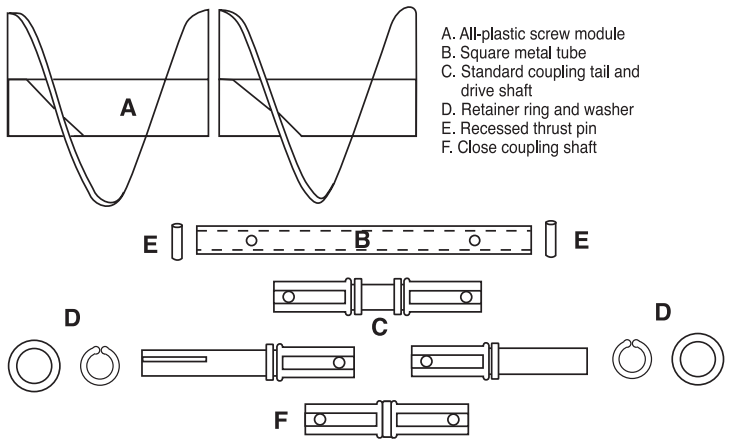
- Plastic modules consist of a helical flight spiraling once around a hollow square hub.
- Eliminates need to spot or continuously weld metal flights to shaft.
- Polyurethane - used where impact/abrasive wear is a problem. Lab tests show it up to 3 times more wear resistant than carbon or stainless steel in certain applications.
- All-plastic material does not corrode, is impervious to acids, caustics and other chemicals.
- Durable, lightweight injection-molded modules stack on square tube.
- Polypropylene - general purpose material for high temperature service.
- FDA approved for food contact.
- Highly resistant to corrosion.
- Modules are individually replaceable without welding or burning.
- Assembled conveyor is comparatively lightweight, easier to handle, and bearing life is prolonged.
- Polyethylene - general purpose material. FDA approved for food contact.
- Good abrasive and excellent corrosion resistance in a wide temperature range.
- Slick surface simplifies cleaning.

*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

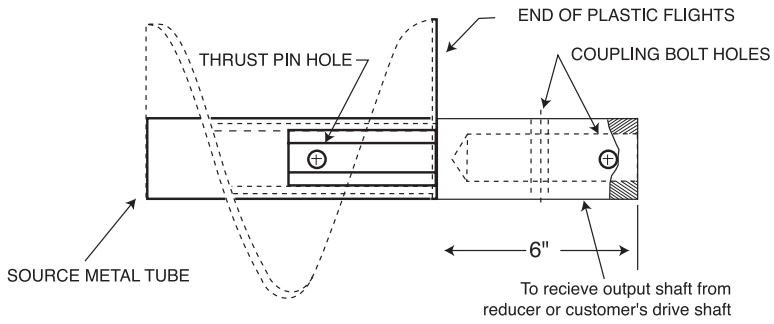
Modular Plastic Screw Conveyors Design Data

Martin Solutions to Screw Conveyor Problems

- Currently available in 6", 9" and 12" diameters, in right hand only.
- Assembled conveyors compatible with CEMA standards; easily retrofitted.
- Flight modules available in polyethylene, polypropylene, and polyurethane, each with characteristics to fill specific needs (see Technical Data).
- Flights and hubs are integrally molded, resulting in consistent diameter, pitch and thickness with a uniform, smooth finish.
- Plastic modules eliminate metal contamination to food.
- Assembled conveyor is light in weight, is safe and easy to handle; bearing life is prolonged.
- Plastic flights may operate at close clearances, or when conveying many materials, directly on the trough without danger of metal contamination.
- Modules are individually replaceable.
- Balance is excellent allowing high speed operation.

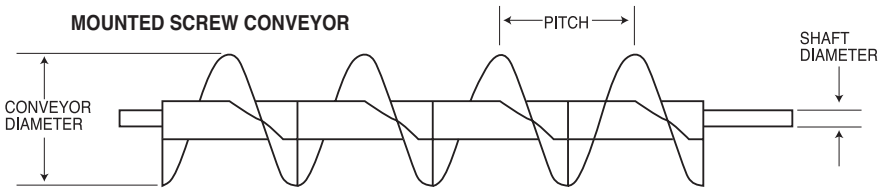


The Martin Screw Conveyor System consists of plastic modules stacked on a square metal tube. A shaft is inserted at each tube end and secured by a recessed pin. Modules are secured at tube ends by retainer rings and washers.

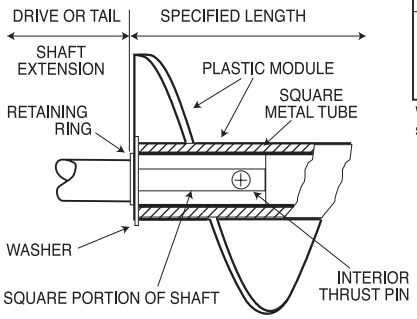


EXTERNAL ADAPTOR FOR STANDARD INDUSTRIAL CONSTRUCTION

MOUNTED SCREW CONVEYOR

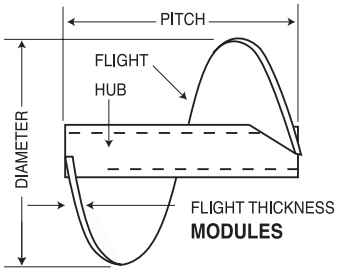


END CONSTRUCTION



DIAMETER	AVAILABLE SHAFTS	WEIGHT PER FOOT FULL PITCH	WEIGHT PER FOOT SHORT PITCH
6"	1-1/2", 2"	4.1 lb	4.3 lb
9"	1-1/2", 2"	4.5 lb	5.2 lb
12"	2", 2-7/16"	8.0 lb	9.5 lb
14"	NOT CURRENTLY AVAILABLE		
16"	NOT CURRENTLY AVAILABLE		

Weights shown as for polyethylene or polypropylene on stainless steel tube, polyurethane approximately 10% heavier.



MODULES

DIAMETER	FULL PITCH	SHORT PITCH	FLIGHT THICKNESS	OUTSIDE HUB	INSIDE HUB
6"	9.05"	4.53"	.25"	2.51"	2.03"
9"	9.05"	4.53"	.25"	2.51"	2.03"
12"	11.72"	5.86"	.34"	3.17"	2.53"
14"	NOT CURRENTLY AVAILABLE				
16"	NOT CURRENTLY AVAILABLE				

Technical & Design Data

Screw Conveyor Capacities

CUBIC FEET PER HOUR PER R.P.M. FULL PITCH HORIZONTAL				
DIAMETER	PITCH	CONVEYOR LOAD		
		FULL	45%	30%
6"	9"	5.72	2.57	1.72
9"	9"	16.73	7.53	5.02
12"	12"	39.27	17.67	11.78
14"	14"	NOT CURRENTLY AVAILABLE		
16"	16"	NOT CURRENTLY AVAILABLE		

Maximum Recommended Conveyor Speed / Horizontal Operation / R.P.M.

DIA.	SHAFT	TYPE OF INTERMEDIATE BEARING	
		WOOD, NYLATRON, BRONZE	CLOSE COUPLED*
6"	1 1/2"	165	90
9"	1 1/2"	165	80
9"	2"	150	80
12"	2"	145	70
12"	2 7/16"	140	70
14"	2 7/16"	NOT CURRENTLY AVAILABLE	
14"	3"	NOT CURRENTLY AVAILABLE	
16"	3"	NOT CURRENTLY AVAILABLE	

* Close coupled limitations apply to screw lengths over 12 ft. (for 6" and 9" dia.) or 15 ft. (for 12" dia). For longer lengths or units without intermediate bearing supports, locate end bearing no more than 3 1/8" (for 6" size); 4 5/8" (for 9" size); or 6 1/8" (for 12" size); centers above the inside bottom of the conveyor trough.

Horsepower Ratings

DIA.	SHAFT	RATINGS FOR CARBON STEEL SHAFT AND TUBE			
		50 R.P. M.	75 R.P.M.	100 R.P.M.	150 R.P.M.
6"-9"	1 1/2"	3.4	5.1	6.8	10.1
6"-9"	2"	5.6	8.4	11.2	16.8
12"	2"	8.0	12.0	16.0	24.0
12"	2 7/16"	9.1	13.6	18.2	27.3
14"	2 7/16"	NOT CURRENTLY AVAILABLE			
14"	3"	NOT CURRENTLY AVAILABLE			
16"	3	NOT CURRENTLY AVAILABLE			

NOTE: The above limitations are based on Martin modular plastic construction throughout. The use of coupling bolts, as required for an external adaptor, may reduce horsepower capacity.

Materials of Construction

	POLYETHYLENE	POLYPROPYLENE	POLYURETHANE
FDA Approved	Yes	Yes	No
Abrasive Resistance	Good	Fair	Excellent
Corrosive Resistance	Excellent	Excellent	Good
Impact Resistance	Good	Fair	Excellent
Temperature Limit	-60º to +150º F	+40º to +220º F	-20º to +150º
Release	Excellent	Good	Good

Note: Release pertains to the capability of conveying "sticky" products.

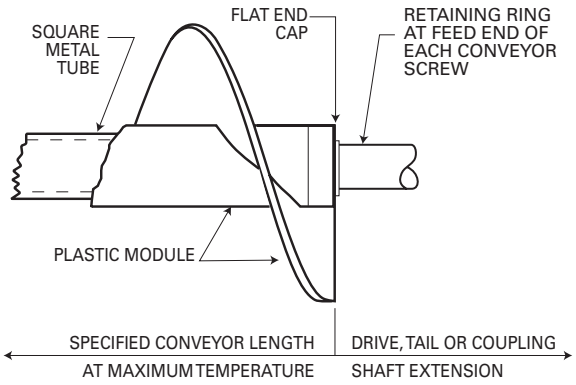
Design Data for Bonded Construction

Bonded Construction is used in the handling of a finished food product or for the conveying of any product in which it is necessary to guard against material entering the internal clearances between the modules or into the inside of the square tube.

The hubs of the individual modules are heat fused together, the ends of the flights may be fused or may be cut to create a "clean out" gap, usually 1/8" to 1/4" wide.

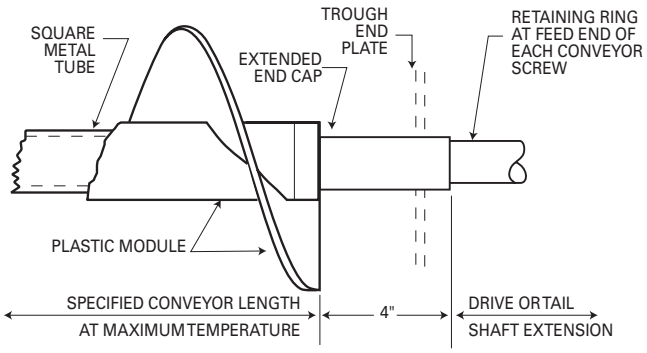
The ends are capped and fitted with an "O" ring to seal around the shaft. The cap may be of alternate construction as detailed below.

Bonded Construction has USDA acceptance for use as a component part of food processing equipment in federally inspected meat and poultry processing plants.



FLAT END CAPS

Flat End Caps are the basic construction for conveying finished food products. Drive and Tail End Shafts are shipped factory installed. If used with coupling shafts, the thrust bearing must be at the feed end of the conveyor assembly. Retaining ring may be eliminated in some applications depending upon length and temperature involved.



EXTENDED END CAPS

Extended End Caps are used in the handling of products which require a total elimination of cracks and crevices on the conveyor screw. This precludes the use of coupling shafts and therefore limits the unit to one conveyor length, a maximum of 20 feet. Retainer rings and shafts are entirely outside the product area. Drive and Tail End Shafts are shipped factory installed.

Shaftless Screw Conveyors

SHAFTLESS SCREW CONVEYORS **PAGE**

TYPICAL APPLICATIONS H-186

FEATURE, FUNCTION & BENEFIT H-187

SIZE AND CAPACITY H-188

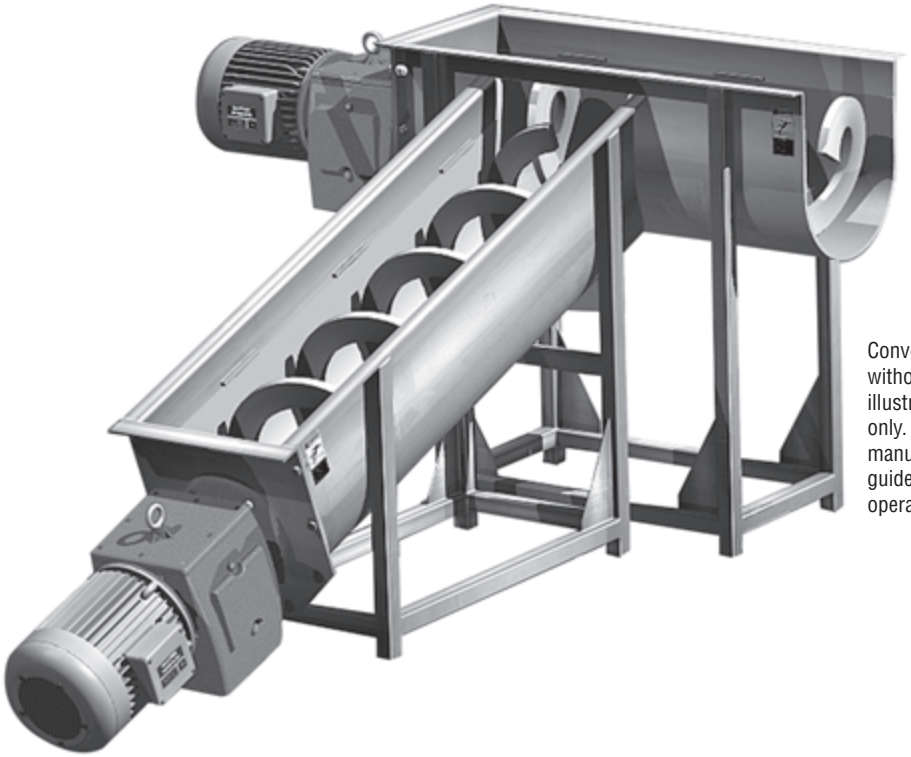
Martin Shaftless Screw Conveyors – The Problem Solver

Martin Shaftless Screw Conveyors are the ideal solution for hard-to-transport materials ranging from irregularly shaped dry solids such as scrap wood and metals, to semi-liquid and sticky materials including pulp, compost, food-processing refuse, hospital waste, and wastewater products.

Martin Shaftless Conveyors' simple, pipeless design employs fewer parts than conventional shafted-screw conveyors, reducing lifetime maintenance costs. It enables higher trough loading and lower RPMs, maximizing the volume of materials conveyed. Martin's Shaftless Screw eliminates jamming and buildup typical in shafted-screw conveyors for greater uptime, higher efficiency, and lower maintenance. It eliminates hanger bearings and end bearings to reduce maintenance and increase efficiency – enabling direct transfer to another conveyor.

Martin Shaftless Screw Conveyors and components are manufactured and stocked at our branches strategically located near major industrial markets across North America. This ensures rapid shipping on new installations and next-day delivery on stock replacement parts.

Several test units, as well as video footage of actual applications, are available for demonstration of the unique capabilities of the shaftless screw. Discover the benefits Martin conveyors can bring to your business – call us today to arrange an on-site demo using your product.



Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

Shaftless Screw Conveyors

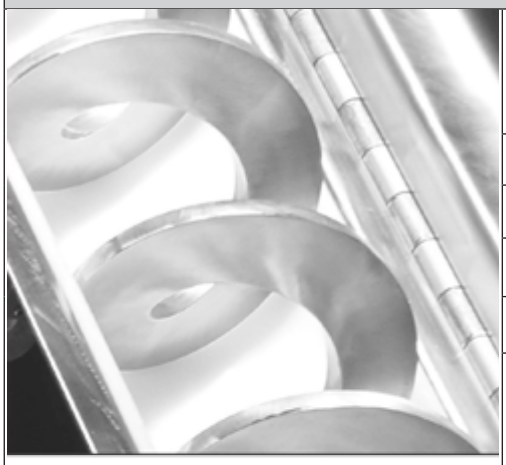
Typical Applications

- **Rendering**
  - **Poultry Processing**
    - Chicken Feathers
  - **Meat Processing**
    - Whole Carcasses
  - **Fish Processing**
    - Animal Waste
    - Fish/Animal Bones
- **Pulp & Paper, Gypsum Board, Particle Board**
  - Lime Mud
  - Pulp
  - Wood Chips
  - Fiber Sludge
  - Hogged Bark
  - Screenings
  - Shavings
- **Agriculture**
  - Fertilizer
  - Grain
  - Meal
  - Corn Gluten
  - Powder
  - Peat
  - Sugar Beets/Sugar Cane
  - Salt
  - Pellets
  - Chopped Hay
  - Flour
- **Hospital Waste Processing, Recycle Plants**
  - Shredded Cans
  - Heavy Reject
  - Bottles
  - Pulper Reject
  - Paper
  - Screenings
  - Medical Disposables
- **Wine & Beverage Industries**
  - Whole Berry
  - Stems
  - Pumice
  - Fruit Peels
- **Waste Water**
  - Solid Waste Treatment
  - Screenings
  - Sludge
  - Solids Removal
  - Grit
- **Chemical & Heavy Industrial**
  - Ash
  - Coal
  - Bauxite
  - Recycle Batteries
  - Metal Chip Handling
  - Iron Ore
  - Carbon Black
  - Bentonite
  - Limestone
  - Shredded Tires
  - Caustic Soda
  - Insulation

FEATURE	FUNCTION	BENEFIT
No Center Pipe Required	Eliminate buildup on pipe	Able to convey large irregularly shaped and sticky product
Continuous Flight	Hanger bearings not required	Eliminate costly hanger bearing maintenance
Higher Trough Loading	Can handle more product at lower RPMs	Longer wear life
Can use Blind Endplate on Tail End	No tail bearings or seals to maintain	Reduces maintenance and replacement costs
No End Bearings Needed	Direct transfer to another conveyor, incline, vertical or horizontal	Can be designed to fit within space limitations or plant layout
Side Inlet Feeding	No vertical transition necessary	Lower installation cost — Reduces headroom
3/4" - 1" Thick Flighting	Long lasting due to wear resistance	Increases uptime
Cold Formed Flight	High Brinell	Longer life
Wide Variety of Liners	Offer proper liner for specific application	Reduced wear resulting in lower maintenance costs
Simple Design	Fewer operating parts	Lower overall operating costs
Compact Drive System	Doesn't require belts	Easy to maintain
Can be Completely Enclosed	Prevent material leakage — Reduces dust	Eliminates environmental or product contamination
Manufactured in North America	Quality Built — Local Stock	Fast delivery

Size and Capacity

CONFIGURATIONS / OPTIONS



Shaftless Screw Live Bottom

Type of Steel	• Carbon Steel • High Brinell Carbon Steel • Stainless Steel
Capacity	• Up to 17,000 CFH
Diameter	• 6" to 30" (and larger)
Pitches	• Full, 2/3, 1/2
Trough	• CEMA Standards
Options	• Liners -UHMW -Xylethon -Tivar -AR • Rider Bars • Inspection and Overflow Hatches • Various Drive Configurations • Available • Housings: CEMA Standard • U-Trough or Split Tubular Housing
Configurations	• Single or Inner/Outer Flight Design • Twin Screw • Multiple Live Bottom Feeders • Inclined Screw Conveyors • Grit Washers • Vertical

*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

50% Trough Loading*					
Nom. Dia.	A Dia.	B Inside	C Pitch	CFH @ 1 RPM	Max RPM
6	6	7	6	2.5	25
9	9	10	9	9.1	25
10	10	11	10	12.7	25
12	12	13	12	21.6	25
14	14	15	14	34.7	25
16	16	17	16	51.9	25
18	18	19	18	75.1	25
20	20	21	20	104	25
24	24	25	24	182	25
30	30	31	30	359	25

* Based on horizontal application only.

Sample Work Sheet

Client: _____ Date Quote: _____

Conveyor No.: _____ Inquiry No.: _____

Table 1-2

_____ Dia. × Length **L** = _____ Recommended % Trough Loading: _____

Material: _____ Material HP Factor: F_M = _____

Capacity: _____ Component Series: _____

Density: **W** = _____ lb/ft³ Intermediate Hanger Bearing Series: _____

Lumps: Max. Size _____ in. Class (I) (II) (III) _____ Notes: _____

Required Capacity = **C** = _____ CFH (cubic feet per hour)

$$CFH = \frac{TPH \times 2000}{W}$$

$$CFH = \frac{\text{Pounds per Hour}}{W}$$

CFH = Bushels per Hour × 1.24

Tables 1-3, 1-4, 1-5

$$\text{Equivalent Capacity} = \frac{\text{Req'd Capacity}}{____} \times \frac{CF_1}{____} \times \frac{CF_2}{____} \times \frac{CF_3}{____} = ____ \text{ CFH}$$

Tables 1-6

Screw Diameter = _____ Select Diameter from "at max RPM" column where capacity listed equals or exceeds equivalent capacity

$$\text{Screw RPM} = \mathbf{N} = ____ = \frac{\text{Equivalent Capacity}}{\text{Capacity "at one RPM" for diameter selected}}$$

Tables 1-7

Check lump size and lump class for diameter selected. If larger screw diameter recommended, recalculate RPM per instructions above for selected diameter.

Tables 1-12, 1-13, 1-14, 1-15, 1-16, 1-17

Values to be substituted in formula: _____ _____ _____ _____ _____

Fd **Fb** **Ff** **Fp** **e**

$$HPf = \frac{(L)(N)(Fd)(Fb)}{1{,}000{,}000} = ____$$

$$HPf = \frac{(C)(L)(W)(Ff)(Fm)(Fp)}{1{,}000{,}000} = ____$$

If HPf + HPm is less than 5.2, select overload factor F_0 = _____ (If HPf + HPm is greater than 5.2 F_0 = 1.0)

$$\text{Total HP} = \frac{(HPf + HPm)\,F_0}{e} = ____ = ____$$

Drive: Use _____ HP motor with AGMA Class (I) (II) (III) Drive at _____ Screw RPM

Tables 1-18, 1-19

$$\text{Torque} = \frac{\text{Motor HP} \times 63{,}025}{\text{Screw RPM}} = ____ \text{ in-lb}$$

Tables 1-8, 1-9, 1-10, 1-11

Select Components:

Trough _____ Screw _____ Hanger Style _____ Hanger Bearing _____ Cover _____

Sample Work Sheet

Client: _____ Date Quote: _____

Conveyor No.: _____ Inquiry No.: _____

Table 1-2

_____ Dia. × Length **L** = _____ Recommended % Trough Loading: _____

Material: _____ Material HP Factor: F_M = _____

Capacity: _____ Component Series: _____

Density: **W** = _____ lb/ft³ Intermediate Hanger Bearing Series: _____

Lumps: Max. Size _____ in. Class (I) (II) (III) _____ Notes: _____

Required Capacity = **C** = _____ CFH (cubic feet per hour)

$$CFH = \frac{TPH \times 2000}{W}$$

$$CFH = \frac{\text{Pounds per Hour}}{W}$$

CFH = Bushels per Hour × 1.24

Tables 1-3, 1-4, 1-5

$$\text{Equivalent Capacity} = \frac{\text{Req'd Capacity}}{____} \times \frac{CF_1}{____} \times \frac{CF_2}{____} \times \frac{CF_3}{____} = ____ \text{ CFH}$$

Tables 1-6

Screw Diameter = _____ Select Diameter from "at max RPM" column where capacity listed equals or exceeds equivalent capacity

$$\text{Screw RPM} = \mathbf{N} = ____ = \frac{\text{Equivalent Capacity}}{\text{Capacity "at one RPM" for diameter selected}}$$

Tables 1-7

Check lump size and lump class for diameter selected. If larger screw diameter recommended, recalculate RPM per instructions above for selected diameter.

Tables 1-12, 1-13, 1-14, 1-15, 1-16, 1-17

Values to be substituted in formula: _____ _____ _____ _____ _____

Fd **Fb** **Ff** **Fp** **e**

$$HPf = \frac{(L)(N)(Fd)(Fb)}{1{,}000{,}000} = ____$$

$$HPf = \frac{(C)(L)(W)(Ff)(Fm)(Fp)}{1{,}000{,}000} = ____$$

If HPf + HPm is less than 5.2, select overload factor F_0 = _____ (If HPf + HPm is greater than 5.2 F_0 = 1.0)

$$\text{Total HP} = \frac{(HPf + HPm)\,F_0}{e} = ____ = ____$$

Drive: Use _____ HP motor with AGMA Class (I) (II) (III) Drive at _____ Screw RPM

Tables 1-18, 1-19

$$\text{Torque} = \frac{\text{Motor HP} \times 63{,}025}{\text{Screw RPM}} = ____ \text{ in-lb}$$

Tables 1-8, 1-9, 1-10, 1-11

Select Components:

Trough _____ Screw _____ Hanger Style _____ Hanger Bearing _____ Cover _____

Vertical Screw Data Sheet

Customer: _____ Date Quote Due: _____

Address: _____

Contact: _____ Phone #: _____

Vertical Screw: Lift: _____ Discharge Height: _____

_____

_____

Inlet Configuration (Indicate One):

☐	☐	☐
Elevator Offset to Left	**Straight Inlet**	**Elevator Offset to Right**

Capacity: _____ (CFH)(lb/hr)(TPH)(MTPH)(BPH)

Material: _____ Density: _____ lb/ft^3 Temp: _____ ^{o}F Moisture: _____ %

Lumps: Max Size: _____ in Lump Class: _____ (Lump % of Total; I - 10%, II - 25%, III - 95%)

Fed by: _____ Discharges to: _____

Material of Construction: ☐ Mild Steel ☐ T304 ☐ T316 ☐ H.D Galv. ☐ Other

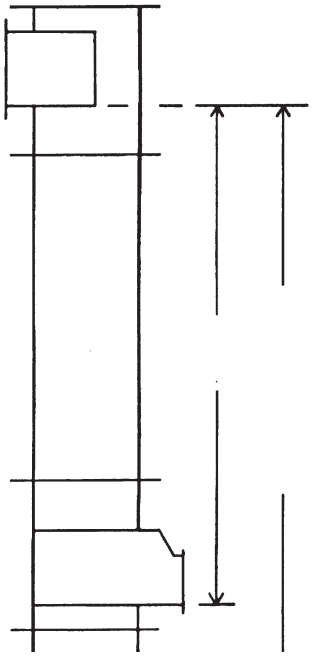
Installation: ☐ New ☐ Replacement ☐ Indoors ☐ Outdoors

Drive: (Direct) (Screw Conveyor Drive) (Other): _____ ☐ V-Belt ☐ Chain ☐ Guard

Motor: ☐ TEFC ☐ X-Proof ☐ Other _____ Notes _____

Notes _____

_____



Trough: _____

Screw: _____

Shaft Diameter: _____

Hanger Style: _____

Hanger Bearing: _____

Bottom Bearing: _____

Bottom Seal: _____

Gaskets: _____

Trough: _____

Drive: _____ HP | At _____ RPM

Reducer: _____

Paint: _____

Notes: _____

_____

_____

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Screw Conveyor Data Sheet

Customer: _____ Date Quote Due: _____

Address: _____

Contact: _____ Phone #: _____

Screw Descri.: _____ Qty.: _____ Dia. × _____ Long (C Inlet to C Disch.)(Overall) ☐Horiz. ☐ Incl. _____° ☐ Decl. _____°

Capacity: _____ (CFH)(lb/hr)(TPH)(MTPH)(BPH)

Material: _____ Density: _____ lb/ft³ Temp: _____ °F Moisture: _____ %

Lumps: Max Size: _____ in Lump Class: _____ (Lump % of Total; I - 10%, II - 25%, III - 95%)

Material of Construction: ☐ Mild Steel ☐ T304 ☐ T316 ☐ H.D Galv. ☐ Other

Installation: ☐ New ☐ Replacement ☐ Indoors ☐ Outdoors

Is it? ☐ Feeder ☐ Conveyor Is Feed? ☐ Flood Load ☐ Uniform

Fed by: _____ Inlet Size: _____ Discharges to: _____

Drive: (Direct) (Screw Conveyor Drive) (Other): _____ ☐ V-Belt ☐ Chain ☐ Guard

Notes _____

Trough: Style: _____ Thk.: _____ Coupl. Bolts: _____

Discharge: Type: _____ Qty.: _____ Hanger: Style: _____

Gates: Type: _____ Qty.: _____ Hanger Brg.: Type: _____

Trough End Type: Tail: _____ Cover: Style: _____ Thk.: _____

Trough End Type: Head: _____ Cover Fasteners: Type: _____

Bearing Type: Tail _____ Head.: _____ Inlets: Style: _____ Qty.: _____

Seal Type: Tail: _____ Head.: _____ Gaskets: Type: _____ Thk.: _____

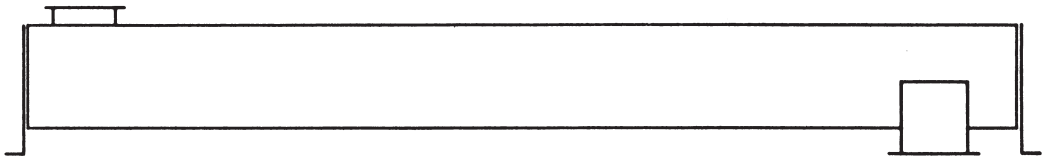
Screw: Dia.: _____ (RH)(LH) Pitch _____ Thk. _____ Drive: _____ HP At: _____ RPM

Motor: _____ Motor Mount: _____

Reducer: _____

V-Belt/Chain: _____

Notes _____



Sketch — (Show feeder inlet size and location, drive location, etc.)

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Bucket Elevator Data Sheet

Customer: _____ Date Quote Due: _____

Address: _____

Contact: _____ Phone #: _____

Bucket Elevator: (CTRS/Lift) _____ Descr.: _____

Capacity: _____ (CFH)(lb/hr)(TPH)(MTPH)(BPH)

Material: _____ Density: _____ lb/ft³ Temp: _____ °F Moisture: _____ %

Lumps: Max Size: _____ in Lump Class: _____ (Lump % of Total; I - 10%, II - 25%, III - 95%)

Fed by: _____ Discharges to: _____

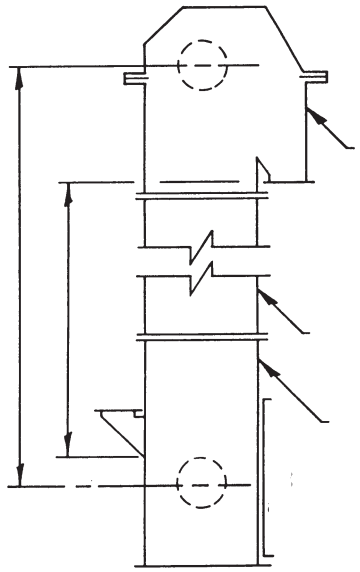
Material of Construction: ☐ Mild Steel ☐ T304 ☐ T316 ☐ H.D Galv. ☐ Other

Installation: ☐ New ☐ Replacement ☐ Indoors ☐ Outdoors

Drive: (Shaft Mount)(Foot Mounted Gear Reducer)(Other): _____ ☐ V-Belt ☐ Chain ☐ Guard

_____ Motor: ☐ TEFC ☐ X-Proof ☐ Other _____ Backstop: ☐ Shaft ☐ Integral to Reducer ☐ Other

_____ Notes: _____



Type: ☐ Centrifugal ☐ Continuous ☐ Grain Type ☐ Other _____

☐ Chain ☐ Belt Specs.: _____

Drive: _____ HP At: _____ RPM Reducer _____

Sprockets/Sheaves _____ Chain/V-Belts _____

_____ Backstop _____

Inlet: ☐ Standard ☐ Special _____

Discharge: ☐ Standard ☐ 45°

Cage: ☐ Yes ☐ No Ladder: Length _____

Head Platform: ☐ Standard Size ☐ Special _____

Int. Platform: ☐ Standard Size ☐ Special _____

Thickness: Head _____ Boot _____ Int. _____

Take-up: ☐ Head ☐ Boot ☐ Screw ☐ Gravity

Seals: ☐ Standard ☐ Special _____ Vents: Size _____ Qty. _____

_____ Paint: _____

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Drag Conveyor Data Sheet

Customer: _____ Date Proposal Due: _____

Address: _____

Contact: _____ Phone #: _____

Lenght: _____ (C Inlet to C Disch.) ☐Horiz. ☐ Incl. _____° ☐ Decl. _____°

Capacity: _____ (CFH)(lb/hr)(TPH)(MTPH)(BPH)

Material: _____ Density: _____ lb/ft³ Temp: _____ °F Moisture: _____ %

Lumps: Max Size: _____ in Lump Class: _____ (Lump % of Total; I - 10%, II - 25%, III - 95%)

Installation: ☐ New ☐ Replacement ☐ Indoors ☐ Outdoors

Material of Construction: ☐ Mild Steel ☐ T304 ☐ T316 ☐ H.D Galv. ☐ Other

Is Feed? ☐ Flood Load ☐ Uniform

Fed by: _____ Inlet Size: _____ Discharges to: _____

Drive: (Direct) (Screw Conveyor Drive) (Other): _____ ☐ V-Belt ☐ Chain ☐ Guard

Notes _____

_____

Type: ☐ Round Bottom ☐ Flat Bottom ☐ L-Path ☐ STD. ☐ Mill Duty

Drive: _____ HP At: _____ RPM Horizontal C/L to C/L: _____ Discharge HT.: _____

Discharge: Type: _____ Qty.: _____

Gates: Type: _____ Qty.: _____ Hanger Brg.: Type: _____

Sprockets/Chain: ☐ Solid Style _____ ☐ Split _____ ☐ Sheave/V-Belts _____

Inlet: ☐ Standard ☐ Bypass

Take-Up ☐ Screw ☐ Spring Loaded

Thickness: Head: _____

Boot: _____

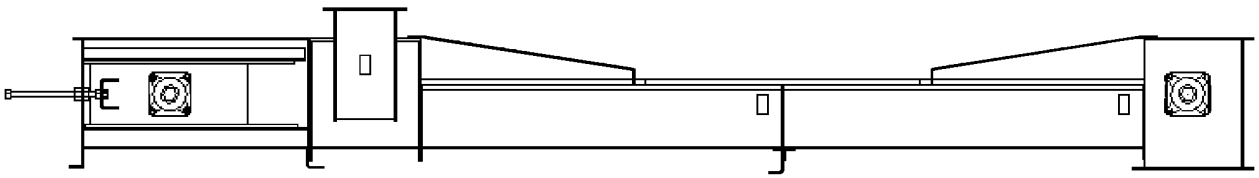
Intermediates: _____

Covers: ☐ Flanged ☐ Hip Roof

Paint: _____

Liners: ☐ UHMW ☐ Mild Steel ☐ AR Steel

Other Desired Options: _____



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