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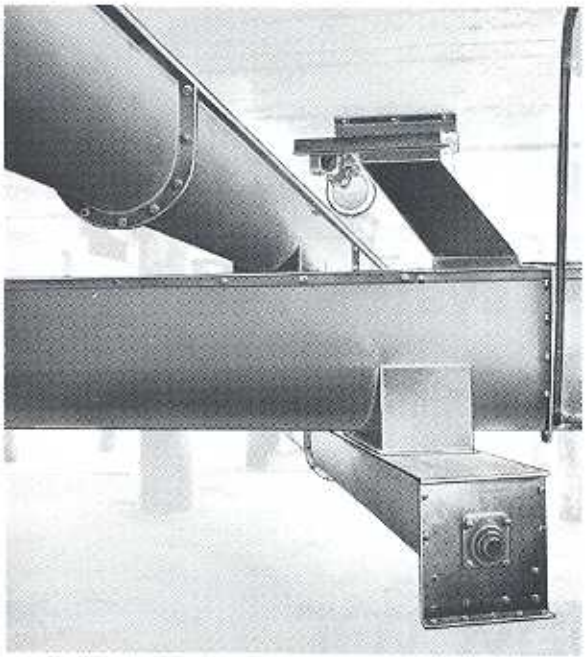
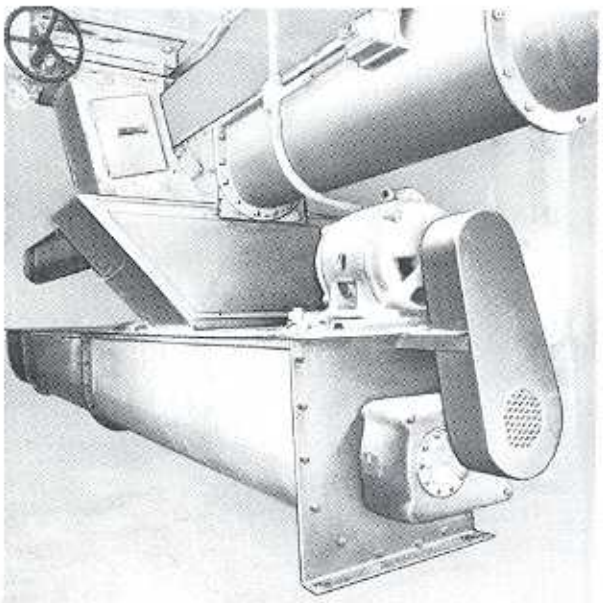
SCREW CONVEYORS

Catalogue 7700





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Screw Conveyor Engineering Catalogue No. 7700

INTRODUCTION

Strongco Engineered Systems Inc. is pleased to present our latest catalogue covering the complete line of screw conveyors and accessories.

Strongco Engineered Systems Inc. manufactures both helecoid and sectional screw conveyors, as well as all varieties of special and modified screw flighting.

All our screw conveyors are designed in accordance with industry standards, therefore our conveyors are interchangeable with equipment of other recognized manufacturers for replacement in, or additions to, existing installations.

Strongco Engineered Systems Inc. continues to offer diversity and flexibility in design, our engineering and manufacturing capabilities include offices in Calgary, Winnipeg, Toronto and Montreal. Our combined experience assures you of prompt, professional attention with design, drafting and estimating services as near as your telephone.

We carry large stocks for immediate shipping of most conveyor accessories and replacement components. Computer automation has allowed us to network our manufacturing and warehousing centres increasing our ability to provide fast service and response to your orders.

Strongco Engineered Systems Inc. is confident you will find us a valuable partner in meeting your business needs. We welcome the opportunity to work with you and to meet your standards in bulk materials handling equipment.

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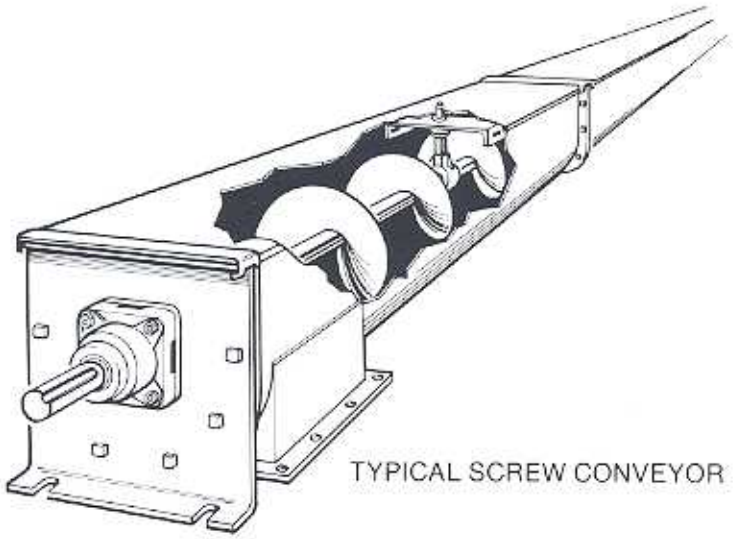


TYPICAL SCREW CONVEYOR

The screw conveyor is one of the oldest conveying devices known to mankind, having been designed by Archimedes more than two thousand years ago. Its principle was well known to Leonardo da Vinci and other inventors many hundreds of years ago, but it was not until the advent of reliable sources of power that the screw conveyor came into its own as a method of transporting large volumes of material.

Today, modern technology has made the screw conveyor one of the most efficient and economical methods of moving bulk material.

Many years of experience in the design and practical application of screw conveyors has resulted in the refinement of conveyor design procedure. This procedure makes it possible to accurately calculate size, speed, and power requirements with a minimum of mathematical calculations.

The step-by-step instructions for designing a screw conveyor are given on the next page, and these, in conjunction with the tables and graphs on the pages following, will enable a screw conveyor to be designed and detailed for almost any application.

If your requirements present any problems not covered in this catalogue, 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 operation.
STEP 2	Classify Material	Classify the material according to the system shown in Table 1 (page 7). Or, if the material is included in Table 2 (pages 8 to 16), use the classification shown in Table 2.
STEP 3	Determine Design Capacity	Determine design capacity as described on page 17.
STEP 4	Determine Minimum Screw Dia.	Using known maximum size and percentage of hard lumps, determine minimum screw diameter from Table 4 (page 18).
STEP 5	Determine Diameter and Speed	Using known capacity required in cu.ft./hr., material classification, and minimum screw diameter, determine diameter and speed from Tables 5 to 9 (pages 18 and 19).
STEP 6	Determine Type of Bearings	From Table 2 (pages 8 to 16), determine Component Group for the material to be conveyed. Locate this Component Group in Table 17 (page 25) for the type of bearing recommended. Refer also to pages 26 and 27 for special considerations.
STEP 7	Determine Friction Factor	Using known screw diameter and bearing type, determine Friction Factor from Table 10 (page 20).
STEP 8	Determine Horsepower	From Table 2 (pages 8 to 16), determine Horsepower Factor "F" for the material to be conveyed. Refer to Table 11 (page 20) and calculate horsepower by either the graphic or formula method. (See Tables 14 and 15, pages 22 and 23 for horsepower graphs). If conveyor is to have modified flighting, refer also to Table 12 (page 21).
STEP 9	Select Motor	Using the horsepower determined in Step 8, select motor from Table 13 (page 21).
STEP 10	Determine Sizes of Power Transmission Components	Using known screw diameter, speed, and motor horsepower, determine sizes of shafts and pipe from Table 16 (page 24).
STEP 11	Select Components	Select basic components from Table 17 (page 25) in accordance with Component Group listed in Table 2 (pages 8 to 16) for the material to be conveyed. Refer also to page 27 for special considerations. Select balance of components from the Components Section of this catalogue.
STEP 12	Conveyor Layout	Refer to Table 18 (page 29) for typical layout details.

MATERIAL CLASSIFICATION

For screw conveyor design purposes, conveyed materials are classified in accordance with the code system shown in this table. This system conforms to that of the Conveyor Equipment Manufacturers Association (CEMA).

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

MATERIAL CLASSIFICATION CODE

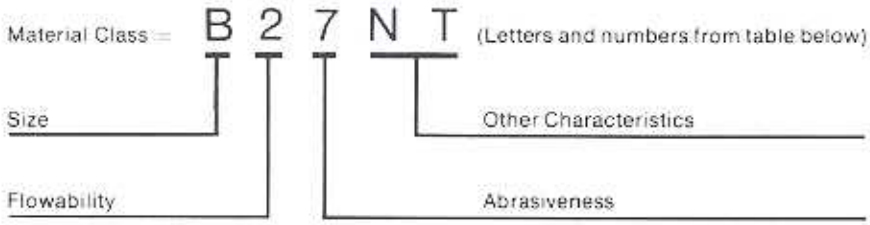


TABLE 1

MATERIAL CLASSIFICATION

Properties of Material		Class.
Size	Very fine – 100 mesh and Under	A
	Fine – 1/8" mesh and Under	B
	Granular – 1/2" mesh and Under	C
	Lumpy – containing lumps over 1/2"	D
	Irregular – fibrous, stringy, 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
Other Characteristics	Aerates & Becomes Fluid	F
	Becomes Plastic	G
	Builds Up & Hardens	H
	Contaminable, Affecting Use	J
	Decomposes – Deteriorates in Storage	K
	Degradable, Affecting Use	L
	Elevated Temperature	M
	May contain explosive dust	N
	Flammability	O
	Generates Static Electricity	P
	Gives Off Harmful or Toxic Fumes or Gas	Q
	Highly Corrosive	R
	Hygroscopic	S
	Interlocks, Mats or Agglomerates	T
	Mildly corrosive	U
	Oils Present	V
	Packs Under Pressure	W
	Stickiness	X
	Very Dusty	Y
	Very Light and Fluffy	Z

MATERIALS TABLE

TABLE 2

This table lists the required design data for many materials.

The weight per cubic foot data may be used to calculate the required capacity of the conveyor in either cubic feet per hour or pounds per hour, when only one of these factors is known.

The Material Class Code for each material is as described in Table 1, page 7.

The Component Group code shown is used to determine the type of bearings and other components, as described in Table 17, page 25.

The Capacity Table column indicates the proper Capacity Table to use in determining Diameter and Speed of the conveyor. Where it is desired to convey the material in 95% loaded tubular or shrouded conveyors, refer to Table 9 only for Diameter and Speed determination. (See pages 18 & 19 for capacity tables).

The H.P. Factor is used in determining Horsepower, as described in Table 11, page 20.

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Acetylenogen (Calcium Carbide)	70-90	D25N	2D	6	2.0
Adipic Acid	45	A35S	2B	6	0.8
Alfalfa Meal	14-22	B45VZ	2D	6	0.6
Alfalfa Pellets	42	C25	2D	8	0.6
Alfalfa Seed	10-15	B15N	1A, 1B, 1C	8	0.5
Almonds Broken	27-30	C35L	2D	6	0.9
Almonds, Whole Shelled	28-30	C35L	2D	6	0.9
Alum-Lumpy	50-60	B25	2A, 2B	8	1.4
Alum-Pulverized	45-50	B35S	1A, 1B, 1C	6	0.6
Alumina	55-65	B27FZ	3D	5	1.8
Alumina Fines	35	A27FZ	3D	5	1.6
Alumina Sized or Briquette	65	D37	3D	5	2.0
Aluminate Gel (Aluminate Hydroxide)	45	B35	2D	6	1.7
Aluminum Chips Dry	7-15	E45T	2D	6	1.2
Aluminum Chips (Oily)	7-15	E45T	2D	6	0.8
Aluminum Hydrate	13-20	C35	1A, 1B, 1C	6	1.4
Aluminum Ore (See Bauxite)	–	–	–	–	–
Aluminum Oxide	60-120	A17F	3D	5	1.8
Aluminum Silicate (Andalusite)	49	C35R	3A, 3B	6	0.8
Aluminum Sulfate	45-58	C25	1A, 1B, 1C	8	1.0
Amianthus (Asbestos)	20-40	E46	2D	7	1.0
Ammonium Chloride (Crystalline)	45-52	A45HQR	1A, 1B, 1C	6	0.7
Ammonium Nitrate	45-62	A35NUS	3D	6	1.3
Ammonium Sulfate	45-58	C35HXUS	1A, 1B, 1C	6	1.0
Antimony Powder	–	*A35*	*2D*	*6*	*1.6*
Apple Pomace, Dry	15	C45Z	2D	6	1.0
Arsenic Oxide (Arsenolite)	100-120	A35Q	–	6	–
Arsenic Pulverized	30	A25Q	2D	8	0.8
Asbestos Rock (Ore)	81	D37Q	3D	5	1.2
Asbestos, Shredded	20-40	E46WZ	2D	7	1.0
Ash, Black Ground	105	B35	1A, 1B, 1C	6	2.0
Ashes, Coal, Dry – ½"	35-45	C46UZ	3D	7	3.0
Ashes, Coal, Dry – 3"	35-40	D46U	3D	7	2.5
Ashes, Coal, Wet – ½"	45-50	C46U	3D	7	3.0
Ashes, Coal, Wet – 3"	45-50	D46U	3D	7	4.0
Asphalt, Crushed – ½"	45	C45	1A, 1B, 1C	6	2.0
Bagasse	7-10	E45QTWZ	2A, 2B, 2C	6	1.5

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Bakelite, Fine	30-45	B25	1A, 1B, 1C	8	1.4
Baking Powder	40-45	A35	1B	6	0.6
Baking Soda (Sodium Bicarbonate)	40-55	A25	1B	8	0.6
Barite (Barium Sulfate) – ½"-3"	120-180	D36	3D	7	2.6
Barite Powder	120-180	A35W	2D	6	2.0
Barium Carbonate	72	A45Q	2D	6	1.6
Bark Wood Refuse	10-20	E45UTZ	3D	6	2.0
Barley, Fine, Ground	24-38	B35	1A, 1B, 1C	6	0.4
Barley, Malted	31	C35	1A, 1B, 1C	6	0.4
Barley Meal	28	C35	1A, 1B, 1C	6	0.4
Barley, Whole	36-48	B25N	1A, 1B, 1C	8	0.5
Basalt	80-105	B27	3D	5	1.8
Bauxite, Dry, Ground	68	B25	2D	8	1.8
Bauxite, Crushed–3"	75-85	D36	3D	7	2.5
Beans, Castor, Meal	35-40	B35V	1A, 1B, 1C	6	0.8
Beans, Castor, Whole Shelled	36	C15V	1A, 1B, 1C	8	0.5
Beans, Navy, Dry	48	C15	1A, 1B, 1C	8	0.5
Beans, Navy, Steeped	60	C25	1A, 1B, 1C	8	0.8
Bentonite, Crude	34-40	D45W	2D	6	1.2
Bentonite, –100 Mesh	50-60	A25FWZ	2D	8	0.7
Benzene Hexachloride	56	A45Q	1A, 1B, 1C	6	0.6
Bicarbonate of Soda (Baking Soda)	40-45	A25	1B	8	0.6
Blood Dried	35-45	D45S	2D	6	2.0
Blood, Ground, Dried	30	A35S	1A, 1B	6	1.0
Bone Ash (Tricalcium Phosphate)	40-50	A45	1A, 1B	6	1.6
Boneblack	20-25	A25Z	1A, 1B	8	1.5
Bonechar	27-40	B35	1A, 1B	6	1.6
Bonemeal	50-60	B35	2D	6	1.7
Bones, Whole	35-50	E45T	2D	6	3.0
Bones, Crushed	35-50	D45	2D	6	2.0
Bones, Ground	50	B35	2D	6	1.7
Borate of Lime	60	A35	1A, 1B, 1C	6	0.6
Borax, Fine	45-55	B25U	3D	8	0.7
Borax-Screening – ½"	55-60	C35	2D	6	1.5
Borax, 1½"-2" Lump	55-60	D35	2D	6	1.8
Borax, 2"-3" Lump	60-70	D35	2D	6	2.0
Boric Acid, Fine	55	B25U	3D	8	0.8
Boron	75	A37	2D	5	1.0
Bran, Rice-Rye-Wheat	16-20	B35NZ	1A, 1B, 1C	6	0.5
Braunite (Manganese Oxide)	120	A36	2D	7	2.0
Bread Crumbs	20-25	B35JL	1A, 1B, 1C	6	0.6
Brewer's Grain, spent, dry	14-30	C45	1A, 1B, 1C	6	0.5
Brewer's Grain, spent, wet	55-60	C45U	2A, 2B	6	0.8
Brick, Ground – ⅛"	100-120	B37	3D	5	2.2
Bronze Chips	30-50	B45	2D	6	2.0
Buckwheat	37-42	B25N	1A, 1B, 1C	8	0.4
Calcine, Flour	75-85	A35	1A, 1B, 1C	6	0.7
Calcium Carbide	70-90	D25N	2D	6	2.0
Calcium Carbonate (See Limestone)	–	–	–	–	–
Calcium Fluoride (See Fluorspar)	–	–	–	–	–
Calcium Hydrate (See Lime, Hydrated)	–	–	–	–	–
Calcium Hydroxide (See Lime, Hydrated)	–	–	–	–	–
Calcium Lactate	26-29	D45LQU	2A, 2B	6	0.6
Calcium Oxide (See Lime, Unslaked)	–	–	–	–	–

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Component Group	Capacity Table No.	H.P. Factor
Calcium Phosphate	40-50	A45	1A, 1B, 1C	6	1.6
Calcium Sulfate (See Gypsum)	–	–	–	–	–
Carbon Black, Pelleted	–	–	–	–	–
Carbon Black, Powder	–	–	–	–	–
Carborundum	100	D27	3D	5	3.0
Casein	36	B35	2D	6	1.6
Cashew Nuts	32-37	C45	2D	6	0.7
Cast Iron, Chips	130-200	C45	2D	6	4.0
Caustic Soda	88	B35QRS	3D	6	1.8
Caustic Soda, Flakes	47	C45QRSW	3A, 3B	6	1.5
Celite, (See Diatomaceous Earth)	–	–	–	–	–
Cement, Clinker	75-95	D36	3D	7	1.8
Cement, Mortar	133	B35L	3D	6	3.0
Cement, Portland	94	A26F	2D	7	1.4
Cement, Aerated (Portland)	60-75	A16F	2D	7	1.4
Cerrusite (See Lead Carbonate)	–	–	–	–	–
Chalk, Crushed	75-95	D25	2D	6	1.9
Chalk, Pulverized	67-75	A25FWZ	2D	8	1.4
Charcoal, Ground	18-28	A45	2D	6	1.2
Charcoal, Lumps	18-28	D45L	2D	6	1.4
Chocolate, Cake Pressed	40-45	D25	2B	6	1.5
Chrome Ore	125-140	D36	3D	7	2.5
Cinders, Blast Furnace	57	D36U	3D	7	1.9
Cinders, Coal	40	D36U	3D	7	1.8
Clay (See Bentonite, Diatomaceous Earth, Fuller's Earth, Kaolin & Marl)	–	–	–	–	–
Clay, Ceramic, Dry, Fines	60-80	A35J	1A, 1B, 1C	6	1.5
Clay, Calcined	80-100	B36	3D	7	2.4
Clay, Brick, Dry, Fines	100-120	C36	3D	7	2.0
Clay, Dry, Lumpy	60-75	D35	2D	6	1.8
Clinker, Cement (See Cement Clinker)	–	–	–	–	–
Clover Seed	45-48	B25N	1A, 1B, 1C	8	0.4
Coal, Anthracite (River & Culm)	55-61	B35UZ	2A, 2B	6	1.0
Coal, Anthracite Sized – ½"	49-61	C25	2A, 2B	8	1.0
Coal, Bituminous, Mined	40-60	D35YNWZ	1A, 1B	6	0.9
Coal, Bituminous, Mined, Sized	45-50	D35LT	1A, 1B	6	1.0
Coal, Bituminous, Mined, Slack	43-50	C45U	2A, 2B	6	0.9
Coal, Lignite	37-45	D35U	2D	6	1.0
Cocoa Beans	30-45	C25L	1A, 1B	8	0.5
Cocoa, Nibs	35	C25	2D	8	0.5
Cocoa, Powdered	30-35	A45WZ	1B	6	0.9
Cocoanut, Shredded	20-22	E45	2B	6	1.5
Coffee, Chaff	20	B25FZ	1A, 1B	8	1.0
Coffee, Green Bean	25-32	C25JL	1A, 1B	8	0.5
Coffee, Ground, Dry	25	A35J	1A, 1B	6	0.6
Coffee, Ground, Wet	35-45	A45W	1A, 1B	6	0.6
Coffee, Roasted Bean	20-30	C25JL	1B	8	0.4
Coffee, Soluble	19	A35JSZ	1B	6	0.4
Coke, Breeze	25-35	C37	3D	5	1.2
Coke, Loose	23-35	D37	3D	5	1.2
Coke, Petrol, Calcined	35-45	D37	3D	5	1.3
Compost	30-50	D45UT	3A, 3B	6	1.0
Concrete, Pre-Mix Dry	85-120	C36S	3D	7	3.0
Copper Ore	120-150	D36	3D	7	4.0

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Copper Ore, Crushed	100-150	D36	3D	7	4.0
Copper Sulphate, (Bluestone)	75-95	C35R	2A, 2B, 2C	6	1.0
Copperas (See Ferrous Sulphate)	–	–	–	–	–
Copra, Cake Ground	40-45	B45KV	1A, 1B, 1C	6	0.7
Copra, Cake, Lumpy	25-30	D35KV	2A, 2B, 2C	6	0.8
Copra, Lumpy	22	E35KV	2A, 2B, 2C	6	1.0
Copra, Meal	40-45	B35KV	2D	6	0.7
Cork, Fine Ground	5-15	B35ONZ	1A, 1B, 1C	6	0.5
Cork, Granulated	12-15	C35OZ	1A, 1B, 1C	6	0.5
Corn, Cracked	40-50	B25J	1A, 1B, 1C	8	0.7
Corn Cobs, Ground	17	C25Z	1A, 1B, 1C	8	0.6
Corn Cobs, Whole	12-15	E35	2A, 2B	6	
Corn Ear	56	E35	2A, 2B	6	
Corn Germ	21	B35JZ	1A, 1B, 1C	6	0.4
Corn Grits	40-45	B35J	1A, 1B, 1C	6	0.5
Cornmeal	32-40	B35J	1A, 1B	6	0.5
Corn Oil, Cake	25	D45KV	1A, 1B	6	0.6
Corn Seed	45	C25JL	1A, 1B, 1C	8	0.4
Corn Shelled	45	C25	1A, 1B, 1C	8	0.4
Corn Sugar	30-35	B35JS	1B	6	1.0
Cottonseed, Cake, Crushed	40-45	C45KV	1A, 1B	6	1.0
Cottonseed, Cake, Lumpy	40-45	D45KV	2A, 2B	6	1.0
Cottonseed, Dry, Delinted	22-40	C25W	1A, 1B	8	0.6
Cottonseed, Dry, Not Delinted	18-25	C45WZ	1A, 1B	6	0.9
Cottonseed, Flakes	20-25	C35YVZ	1A, 1B	6	0.8
Cottonseed, Hulls	12	B35Z	1A, 1B	6	0.9
Cottonseed, Meal, Expeller	25-30	B45KV	3A, 3B	6	0.5
Cottonseed, Meal, Extracted	35-40	B45KV	1A, 1B	6	0.5
Cottonseed, Meats, Dry	40	B35KV	1A, 1B	6	0.6
Cottonseed, Meats, Rolled	35-40	C45KV	1A, 1B	6	0.6
Cracklings, Crushed	40-50	D45KV	2A, 2B, 2C	6	1.3
Cryolite, Dust	75-90	A36Y	2D	7	2.0
Cryolite, Lumpy	90-110	D36	2D	7	2.1
Cullet, Fine	80-120	C37	3D	5	2.0
Cullet, Lump	80-120	D37	3D	5	2.5
Culm, (See Coal, Anthracite)	–	–	–	–	–
Cupric Sulphate (Copper Sulfate)	–	–	–	–	–
Detergent (See Soap Detergent)	–	–	–	–	–
Diatomaceous Earth	11-17	A36Z	3D	7	1.6
Dicalcium Phosphate	40-50	A35	1A, 1B, 1C	6	1.6
Disodium Phosphate	25-31	A35	3D	6	0.5
Distiller's Grain, Spent, Dry	30	B35	2D	6	0.5
Distiller's Grain, Spent Wet	40-60	C45T	3A, 3B	6	0.8
Dolomite, Crushed	80-100	C36	2D	7	2.0
Dolomite, Lumpy	90-100	D36	2D	7	2.0
Earth, Loam, Dry, Loose	76	C36	2D	7	1.2
Ebonite, Crushed	63-70	C35	1A, 1B, 1C	6	0.8
Egg Powder	16	A35FJZ	1B	6	1.0
Epsom Salts (Magnesium Sulfate)	40-50	A35S	1A, 1B, 1C	6	0.8
Feldspar, Ground	65-80	A37	2D	5	2.0
Feldspar, Lumps	90-100	D37	2D	5	2.0
Feldspar, Powder	100	A36	2D	7	2.0
Feldspar, Screenings	75-80	C37	2D	5	2.0
Ferrous Sulfide – ½"	120-135	C26	1A, 1B, 1C	7	2.0

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Ferrous Sulfide-100M	105-120	A36	1A, 1B, 1C	7	2.0
Ferrous Sulphate	50-75	C35S	2D	6	1.0
Fish Meal	35-40	C45KJ	1A, 1B, 1C	6	1.0
Fish Scrap	40-50	D45K	2A, 2B, 2C	6	1.5
Flaxseed	43-45	B35W	1A, 1B, 1C	6	0.4
Flaxseed Cake (Linseed Cake)	48-50	D45V	2A, 2B	6	0.7
Flaxseed Meal (Linseed Meal)	25-45	B45V	1A, 1B	6	0.4
Flour Wheat	33-40	A45YJ	1B	6	0.6
Flue Dust, Basic Oxygen Furnace	45-60	A36YF	3D	7	3.5
Flue Dust, Blast Furnace	110-125	A36	3D	7	3.5
Flue Dust, Boiler H. Dry	30-45	A36YF	3D	7	2.0
Fluorspar, Fine (Calcium Fluoride)	80-100	B36	2D	7	2.0
Fluorspar, Lumps	90-110	D36	2D	7	2.0
Flyash	30-45	A36F	3D	7	2.0
Foundry Sand, Dry (See Sand)	–	–	–	–	–
Fuller's Earth, Dry, Raw	30-40	A25	2D	8	2.0
Fuller's Earth, Oily, Spent	60-65	C45XV	3D	6	2.0
Fuller's Earth, Calcined	40	A25	3D	8	2.0
Gelena (See Lead Sulfide)	–	–	–	–	–
Gelatine, Granulated	32	B35JS	1B	6	0.8
Gilsonite	37	C35	3D	6	1.5
Glass, Batch	80-100	C37	3D	5	2.5
Glue, Ground	40	B45S	2D	6	1.7
Glue, Pearl	40	C35S	1A, 1B, 1C	6	0.5
Glue, Veg, Powdered	40	A45S	1A, 1B, 1C	6	0.6
Gluten, Meal	40	B35J	1B	6	0.6
Granite, Fine	80-90	C27	3D	5	2.5
Grape Pomace	15-20	D45S	2D	6	1.4
Graphite Flake	40	B25YJ	1A, 1B, 1C	8	0.5
Graphite Flour	28	A35YFJ	1A, 1B, 1C	6	0.5
Graphite Ore	65-75	D35Y	2D	6	1.0
Guano Dry	70	C35	3A, 3B	6	2.0
Gypsum, Calcined	55-60	B35S	2D	6	1.6
Gypsum, Calcined, Powdered	60-80	A35S	2D	6	2.0
Gypsum, Raw-1"	70-80	D25	2D	6	2.0
Hay, Chopped	8-12	C35OZ	2A, 2B	6	1.6
Hexanedioic Acid (See Adipic Acid)	–	–	–	–	–
Hominy, Dry	35-50	C25	1A, 1B, 1C	8	0.4
Hops, Spent, Dry	35	D35	2A, 2B, 2C	6	1.0
Hops, Spent, Wet	50-55	D45T	2A, 2B	6	1.5
Ice, Crushed	35-45	D35X	2A, 2B	6	0.4
Ice, Flaked	40-45	C35X	1B	6	0.6
Ice, Cubes	33-35	D35X	1B	6	0.4
Ice, Shell	33-35	D45X	1B	6	0.4
Ilmenite Ore	140-160	D37	3D	5	2.0
Iron Ore Concentrate	120-180	A37	3D	5	2.2
Iron Oxide Pigment	25	A36YFJ	1A, 1B, 1C	7	1.0
Iron Oxide, Millscale	75	C36	2D	7	1.6
Iron Pyrites (See Ferrous Sulfide)	–	–	–	–	–
Iron Sulphate (See Ferrous Sulfate)	–	–	–	–	–
Iron Sulfide (See Ferrous Sulfide)	–	–	–	–	–
Iron Vitriol (See Ferrous Sulfate)	–	–	–	–	–
Kafir (Corn)	40-45	C25	3D	8	0.5
Kaolin Clay	63	D25	2D	6	2.0

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Kaolin Clay-Talc	42-56	A35YFJ	2D	6	2.0
Kryalith (See Cryolite)	–	–	–	–	–
Lactose	32	A35JS	1B	6	0.6
Lamp Black (See Carbon Black)	–	–	–	–	–
Lead Arsenate	72	A35Q	1A, 1B, 1C	6	1.4
Lead Arsenite	72	A35Q	1A, 1B, 1C	6	1.4
Lead Carbonate	240-260	A35Q	2D	6	1.0
Lead Ore – ⅛"	200-270	B35	3D	6	1.4
Lead Ore – ½"	180-230	C36	3D	7	1.4
Lead Oxide (Red Lead) – 100 Mesh	30-150	A35J	2D	6	1.2
Lead Oxide (Red Lead) – 200 Mesh	30-180	A35YJ	2D	6	1.2
Lead Sulphide – 100 Mesh	240-260	A35Q	2D	6	–
Lignite (See Coal Lignite)	–	–	–	–	–
Limanite, Ore, Brown	120	C47	3D	5	1.7
Lime, Ground, Unslaked	60-65	B35S	1A, 1B, 1C	6	0.6
Lime Hydrated	40	B35YF	2D	6	0.8
Lime, Hydrated, Pulverized	32-40	A35YF	1A, 1B	6	0.6
Lime, Pebble	53-56	C25KS	2A, 2B	8	2.0
Limestone, Agricultural	68	B35	2D	6	2.0
Limestone, Crushed	85-90	D36	2D	7	2.0
Limestone, Dust	55-95	A46FZ	2D	7	2.0
Lindane (Benzene Hexachloride)	–	–	–	–	–
Linseed (See Flaxseed)	–	–	–	–	–
Litharge (Lead Oxide)	–	–	–	–	–
Lithopone	45-50	A35FQ	1A, 1B	6	1.0
Maize (See Milo)	–	–	–	–	–
Malt, Dry, Ground	20-30	B35NJ	1A, 1B, 1C	6	0.5
Malt, Meal	36-40	B25J	1A, 1B, 1C	8	0.4
Malt, Dry Whole	20-30	C35N	1A, 1B, 1C	6	0.5
Malt, Sprouts	13-15	C35J	1A, 1B, 1C	6	0.4
Magnesium Chloride (Magnesite)	33	C45	1A, 1B	6	1.0
Manganese Dioxide	70-85	A35NQU	2A, 2B	6	1.5
Manganese Ore	125-140	D37	3D	5	2.0
Manganese Oxide	120	A36	2D	7	2.0
Manganese Sulfate	70	C37	3D	5	2.4
Marble, Crushed	80-95	B37	3D	5	2.0
Marl, (Clay)	80	D36	2D	7	1.6
Meat, Ground	50-55	E45KLUW	2A, 2B	6	1.5
Meat, Scrap (W/bone)	40	E46K	2D	7	1.5
Mica, Flakes	17-22	B16FZ	2D	7	1.0
Mica, Ground	13-15	B36	2D	7	0.9
Mica, Pulverized	13-15	A36F	2D	7	1.0
Milk, Dried, Flake	5-6	B35JSZ	1B	6	0.4
Milk, Malted	27-30	A45JW	1B	6	0.9
Milk, Powdered	20-45	B25JF	1B	8	0.5
Milk, Sugar	32	A35JW	1B	6	0.6
Milk, Whole, Powdered	20-36	B35JSW	1B	6	0.5
Mill Scale (Steel)	120-125	E46U	3D	7	3.0
Milo, Ground	32-36	B25	1A, 1B, 1C	8	0.5
Milo Maize (Kafir)	40-45	B15N	1A, 1B, 1C	8	0.4
Molybdenite Powder	107	B26	2D	7	1.5
Monosodium Phosphate	50	B36	2D	7	0.6
Mortar, Wet	150	E46U	3D	7	3.0
Mustard Seed	45	B15N	1A, 1B, 1C	8	0.4

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Component Group	Capacity Table No.	H.P. Factor
Naphthalene Flakes	45	B35	1A, 1B, 1C	6	0.7
Niacin (Nicotinic Acid)	35	A35J	2D	6	0.8
Oats	26	C25FN	1A, 1B, 1C	8	0.4
Oats, Crimped	19-26	C35	1A, 1B, 1C	6	0.5
Oats, Crushed	22	B45NZ	1A, 1B, 1C	6	0.6
Oats, Flour	35	A35	1A, 1B, 1C	6	0.5
Oat Hulls	8-12	B35NZ	1A, 1B, 1C	6	0.5
Oats, Rolled	19-24	C35NZ	1A, 1B, 1C	6	0.6
Oleo Margarine (Margarine)	59	E45KGJVW	2A, 2B	6	0.4
Orange Peel, Dry	15	E45	2A, 2B	6	1.5
Oxalic Acid Crystals – Ethane Diacid Crystals	60	B35LR	1A, 1B	6	1.0
Oyster Shells, Ground	50-60	C36U	3D	7	1.6-2.0
Oyster Shells, Whole	80	D36UT	3D	7	2.1-2.5
Paper Pulp (4% or less)	62	E45	2A, 2B	6	1.5
Paper Pulp (6% to 15%)	60-62	E45	2A, 2B	6	1.5
Paraffin Cake – ½"	45	C45G	1A, 1B	6	0.6
Peanuts, Clean, in shell	15-20	D35L	2A, 2B	6	0.6
Peanut Meal	30	B35J	1B	6	0.6
Peanuts, Raw Uncleaned (unshelled)	15-20	D36L	3D	7	0.7
Peanuts, Shelled	35-45	C35L	1B	6	0.4
Peas, Dried	45-50	C15L	1A, 1B, 1C	8	0.5
Perlite-Expanded	8-12	C36	2D	7	0.6
Phosphate Acid Fertilizer	60	B25U	2A, 2B	8	1.4
Phosphate Disodium (See Sodium Phosphate)	–	–	–	–	–
Phosphate Rock, Broken	75-85	D36	2D	7	2.1
Phosphate Rock, Pulverized	60	B36	2D	7	1.7
Phosphate Sand	90-100	B37	3D	5	2.0
Plaster of Paris (See Gypsum)	–	–	–	–	–
Plumbago (See Graphite)	–	–	–	–	–
Polystyrene Beads	40	B35JL	1B	6	0.4
Polyvinyl, Chloride Powder	20-30	A45GU	2B	6	1.0
Polyvinyl, Chloride Pellets	20-30	E45GJLU	1B	6	0.6
Polyethelene, Resin Pellets	30-35	C45L	1A, 1B	6	0.4
Potash (Muriate) Dry	70	B37	3D	5	2.0
Potash (Muriate) Mine Run	75	D37	3D	5	2.2
Potassium Carbonate	51	B36	2D	7	1.0
Potassium Chloride Pellets	120-130	C25US	3D	8	1.6
Potassium Nitrate – ½"	76	C16NU	3D	7	1.2
Potassium Nitrate – ⅛"	80	B26NU	3D	7	1.2
Potassium Sulfate	42-48	B46W	2D	7	1.0
Potato Flour	48	A35FNJ	1A, 1B	6	0.5
Pumice – ⅛"	42-48	B46	3D	7	1.6
Pyrite, Pellets	120-130	C26	3D	7	2.0
Quartz – 100 Mesh	70-80	A27	3D	5	1.7
Quartz – ½"	80-90	C27	3D	5	2.0
Rice, Bran	20	B35NZ	1A, 1B, 1C	6	0.4
Rice, Grits	42-45	B35J	1A, 1B, 1C	6	0.4
Rice, Polished	30	C15J	1A, 1B, 1C	8	0.4
Rice, Hulled	45-49	C25J	1A, 1B, 1C	8	0.4
Rice, Hulls	20-21	B35NZ	1A, 1B, 1C	6	0.4
Rice, Rough	32-36	C35N	1A, 1B, 1C	6	0.6
Rosin – ½"	65-68	C45L	1A, 1B, 1C	6	1.5
Rubber, Reclaimed Ground	23-50	C45	1A, 1B, 1C	6	0.8
Rubber, Pelleted	50-55	D45	2A, 2B, 2C	6	1.5

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Com-ponent Group	Capacity Table No.	H.P. Factor
Rye	42-48	B15N	1A, 1B, 1C	8	0.4
Rye Bran	15-20	B35Z	1A, 1B, 1C	6	0.4
Rye Feed	33	B35N	1A, 1B, 1C	6	0.5
Rye Meal	35-40	B35	1A, 1B, 1C	6	0.5
Rye Middlings	42	B35	1A, 1B	6	0.5
Rye, Shorts	32-33	C35	2A, 2B	6	0.5
Safflower, Cake	50	D26	2D	7	0.6
Safflower, Meal	50	B35	1A, 1B, 1C	6	0.6
Safflower Seed	45	B15N	1A, 1B, 1C	8	0.4
Saffron (See Safflower)	–	–	–	–	–
Sal Ammoniac (Ammonium Chloride)	–	–	–	–	–
Salt Cake, Dry Coarse	85	B36US	3D	7	2.1
Salt Cake, Dry Pulverized	65-85	B36US	3D	7	1.7
Salicylic Acid	29	B37S	3D	5	0.6
Salt, Dry Coarse	45-60	C36US	3D	7	1.0
Salt, Dry Fine	70-80	B36US	3D	7	1.7
Saltpeter (See Potassium Nitrate)	–	–	–	–	–
Sand Dry Bank (Damp)	110-130	B47	3D	5	2.8
Sand Dry Bank (Dry)	90-110	B37	3D	5	1.7
Sand Dry Silica	90-100	B27	3D	5	2.0
Sand Foundry (Shake Out)	90-100	D37M	3D	5	2.6
Sand (Resin Coated) Silica	104	B27	3D	5	2.0
Sand (Resin Coated) Zircon	115	A27	3D	5	2.3
Sawdust, Dry	10-13	B45SW	1A, 1B, 1C	6	0.7
Sea-Coal	65	B36	2D	7	1.0
Sesame Seed	27-41	B26	2D	7	0.6
Shale, Crushed	85-90	C36	2D	7	2.0
Shellac, Powdered or Granulated	31	B35J	1B	6	0.6
Silicon Dioxide (See Quartz)	–	–	–	–	–
Silica, Flour	80	A46	2D	7	1.5
Silica Gel ½"-3"	45	D37KGLS	3D	5	2.0
Slag, Blast Furnace Crushed	130-180	D37Z	3D	5	2.4
Slag, Furnace Granular, Dry	60-65	C37	3D	5	2.2
Slate, Crushed – ½"	80-90	C36	2D	7	2.0
Slate, Ground – ⅛"	82-85	B36	2D	7	1.6
Sludge, Sewage, Dried	40-50	E47UV	3D	5	0.8
Sludge, Sewage, Dry Ground	45-55	B46R	2D	7	0.8
Soap, Beads or Granules	15-35	B35L	1A, 1B, 1C	6	0.6
Soap, Chips	15-25	C35L	1A, 1B, 1C	6	0.6
Soap Detergent	15-50	B35HL	1A, 1B, 1C	6	0.8
Soap, Flakes	5-15	B35LWZ	1A, 1B, 1C	6	0.6
Soap, Powder	20-25	B25W	1A, 1B, 1C	8	0.9
Soapstone, Talc, Fine	40-50	A45WZ	1A, 1B, 1C	6	2.0
Soda Ash, Heavy	55-65	B36	2D	7	1.0
Soda Ash, Light	20-35	A36Z	2D	7	0.8
Sodium Aluminate, Ground	72	B36	2D	7	1.0
Sodium Aluminum Fluoride (See Kryolite)	–	–	–	–	–
Sodium Aluminum Sulphate	75	A36	2D	7	1.0
Sodium Bentonite (See Bentonite)	–	–	–	–	–
Sodium Bicarbonate (See Baking Soda)	–	–	–	–	–
Sodium Borate (See Borax)	–	–	–	–	–
Sodium Chloride (See Salt)	–	–	–	–	–
Sodium Carbonate (See Soda Ash)	–	–	–	–	–
Sodium Hydrate (See Caustic Soda)	–	–	–	–	–

MATERIALS TABLE

Material	Av. wt. lbs./cu. ft.	Matl. Class Code	Component Group	Capacity Table No.	H.P. Factor
Sodium Hydroxide (See Caustic Soda)	–	–	–	–	–
Sodium Nitrate	70-80	D25NR	2A, 2B	6	1.2
Sodium Phosphate	50-60	A35	1A, 1B	6	0.9
Sodium Sulfate (See Salt Cake)	–	–	–	–	–
Sodium Sulfite	96	B46W	2D	7	1.5
Sorghum, Seed (See Kafir or Milo)	–	–	–	–	–
Soybean, Cake	40-43	D35V	2A, 1B, 1C	6	1.0
Soybean, Cracked	30-40	C36NV	2D	7	0.5
Soybean, Flake, Raw	18-25	C35Z	1A, 1B, 1C	6	0.8
Soybean, Flour	27-30	A35FN	1A, 1B, 1C	6	0.8
Soybean Meal, Cold	40	B35	1A, 1B, 1C	6	0.5
Soybean Meal, Hot	40	B35U	2A, 2B	6	0.5
Soybeans, Whole	45-50	C26NV	3D	7	1.0
Starch	25-50	A15F	1A, 1B, 1C	8	1.0
Steel Turnings, Crushed	100-150	D46TV	3D	7	3.0
Sugar Beet, Pulp, Dry	12-15	C26	2D	7	0.9
Sugar Beet, Pulp, Wet	25-45	C35W	1A, 1B, 1C	6	1.2
Sugar, Refined, Granulated Dry	50-55	B35JS	1B	6	1.0-1.2
Sugar, Refined, Granulated, Wet	55-65	C35W	1B	6	1.4-2.0
Sugar, Powdered	50-60	A35JW	1B	6	0.8
Sugar, Raw	55-65	B35JW	1B	6	1.5
Sulphur, Crushed – ½"	50-60	C35N	1A, 1B	6	0.8
Sulphur, Lumpy, – 3"	80-85	D35N	2A, 2B	6	0.8
Sulphur, Powdered	50-60	A35FN	1A, 1B	6	0.6
Sunflower Seed	19-38	C15	1A, 1B, 1C	8	0.5
Talcum, – ½"	80-90	C36	2D	7	0.9
Talcum Powder	50-60	A36F	2D	7	0.8
Tanbark, Ground	55	B45	1A, 1B, 1C	6	0.7
Timothy Seed	36	B35NZ	1A, 1B, 1C	6	0.6
Titanium Dioxide (See Ilmenite Ore)	–	–	–	–	–
Tobacco, Scraps	15-25	D45Z	2A, 2B	6	0.8
Tobacco, Snuff	30	B45FL	1A, 1B, 1C	6	0.9
Tricalcium Phosphate	40-50	A45	1A, 1B	6	1.6
Triple Super Phosphate	50-55	B36QR	3D	7	2.0
Trisodium Phosphate	60	C36	2D	7	1.7
Trisodium Phosphate, Granular	60	B36	2D	7	1.7
Trisodium Phosphate, Pulverized	50	A36	2D	7	1.6
Tung Nut Meats, Crushed	28	D25V	2A, 2B	6	0.8
Tung Nuts	25-30	D15	2A, 2B	6	0.7
Urea Prills, Coated	43-46	B25	1A, 1B, 1C	8	1.2
Vermiculite, Expanded	16	C35Z	1A, 1B	6	0.5
Vermiculite, Ore	80	D36	2D	7	1.0
Vetch	48	B16N	1A, 1B, 1C	7	0.4
Walnut Shells, Crushed	35-45	B36	2D	7	1.0
Wheat	45-48	C25N	1A, 1B, 1C	8	0.4
Wheat, Cracked	40-45	B25N	1A, 1B, 1C	8	0.4
Wheat, Germ	18-28	B25	1A, 1B, 1C	8	0.4
White Lead, Dry	75-100	A36FQ	2D	7	1.0
Wood Chips, Screened	10-30	D45TZ	2A, 2B	6	0.6
Wood Flour	16-36	B35N	1A, 1B	6	0.4
Wood Shavings	8-16	E45TZ	2A, 2B	6	1.5
Zinc, Concentrate Residue	75-78	B37	3D	5	1.0
Zinc Oxide, Heavy	30-35	A45W	1A, 1B	6	1.0
Zinc Oxide, Light	10-15	A45WZ	1A, 1B	6	1.0

CAPACITY

CAPACITY CALCULATION

The selection of screw conveyor diameter and speed is accomplished by the following steps:

1. Establish the design capacity as shown below.
2. Establish the minimum screw diameter from Table 4 (page 18).
3. Select diameter and speed from appropriate graph, Tables 5 to 9 (pages 18 and 19).

DESIGN CAPACITY

Most applications utilize standard pitch (i.e. the pitch is equal to the diameter) and standard flight configuration. Some applications, however, require special pitch or flight configurations and since these will convey at a reduced rate, the design capacity must be calculated as shown below:

Design Capacity = Required Capacity × Capacity Factor(s)

Capacity factors are shown in Table 3 below.

TABLE 3 CAPACITY FACTORS

Standard Pitch & Flight conveyor screws: Capacity Factor = 1.0

Multiple Flight conveyor screws: Capacity Factor = 1.0

RIBBON CONVEYOR CAPACITY FACTORS

Dia	Ribbon Width	Conveyor Loading 15%	30%	45%
6	1	1.32	1.52	1.79
9	1½	1.34	1.54	1.81
10	1½	1.45	1.67	1.96
12	2	1.32	1.52	1.79
	2½	1.11	1.27	1.50
14	2½	1.27	1.45	1.71
16	2½	1.55	1.69	1.90
18	3	1.33	1.53	1.80
20	3	1.60	1.75	1.96
24	3	2.02	2.14	2.28

SPECIAL CONVEYOR PITCH CAPACITY FACTORS

Pitch	Description	Factor
Standard	Pitch=Diameter	1.00
Short	Pitch=⅔ Diameter	1.50
Half	Pitch=½ Diameter	2.00
Long	Pitch=1½ Diameters	0.67

SPECIAL CONVEYOR FLIGHT CAPACITY FACTORS

Type	Conveyor Loading 15%	30%	45%
Cut Flight	1.10	1.15	1.20
Cut & Folded Flight	N.R.*	1.50	1.70

*Not Recommended

FACTORS FOR CONVEYORS WITH PADDLES †

	Paddles Per Pitch 1	2	3	4
Factor:	1.29	1.58	1.87	2.16

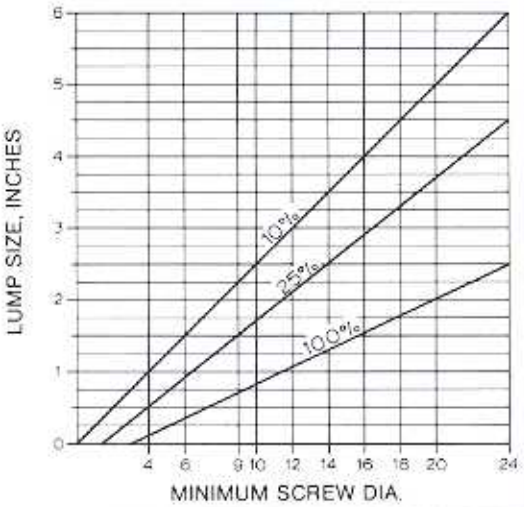
† Std. Paddles at 45° reverse pitch

CAPACITY TABLES

TABLE 4

MINIMUM SCREW DIAMETER

If the conveyed material contains hard lumps that will not break up, the minimum screw diameter to handle such lumps may be determined from the adjacent table. Locate lump size at left edge of table and project a horizontal line to the intersecting line representing the percent by volume of lumps in the material. From this point, drop a vertical line to the bottom edge of the graph and select the next largest screw diameter to the right of this line. If the material does not contain hard lumps over ¼" in size, this step may be omitted.



CAPACITY TABLES

HOW TO USE CAPACITY TABLES

1. Use the capacity table specified for your material in Table 2 (pages 8 to 16). If your material is not listed in Table 2, classify it as described in Table 1 (page 7), and use the capacity table listed for that classification. For tubular or shrouded conveyors, use Table 9 (page 19).
2. Locate the design capacity in cubic feet per hour at the bottom of the graph.
3. Project a line upward to the intersecting sloped line representing the minimum screw diameter as determined by Table 4 above, or, if Table 4 does not apply, to the smallest screw diameter that is below the Maximum Recommended Speed line.
4. Having thus determined the screw diameter, project a horizontal line to the left edge of the graph and read the required speed in R.P.M.

EXAMPLE

A screw conveyor is required to transport 15,520 lbs. per hour of crushed ice weighing 45 lbs./cu. ft., and containing 2" hard lumps comprising 25% of the volume of material. The conveyor screw is to have 2/3 cut-and-folded flighting to distribute the lumps evenly throughout the material during transit.

From Table 2, page 12, it is found that a loading of 30%A is recommended. (Matl. class D35, Table 6, page 19).

The actual volume of material to be conveyed:

$$\frac{\textbf{15,520 lbs.}}{\textbf{45 lbs./cu. ft.}} = \textbf{345 cu. ft./hr.}$$

Before using the capacity tables, the Design Capacity must be determined, to compensate for the special pitch and flighting:

Design capacity = 345 x 1.50 x 1.50 = 776 cu. ft./hr.

Referring to Table 4 above, the 2" lumps comprising 25% of material requires a minimum screw diameter of 12".

The diameter and speed of the conveyor may now be determined by referring to the capacity graph for 30%A loading, Table 6 (page 19).

If the material contained no lumps, the design capacity of 776 cu. ft./hr. would require a 10" diameter screw running at 98 R.P.M. However, as the minimum diameter to convey the lumps is 12", the conveyor will require a 12" screw running at 60 R.P.M.

This diameter and speed will convey the specified material at the required rate of 345 cu. ft./hr.

CAPACITY TABLE 5

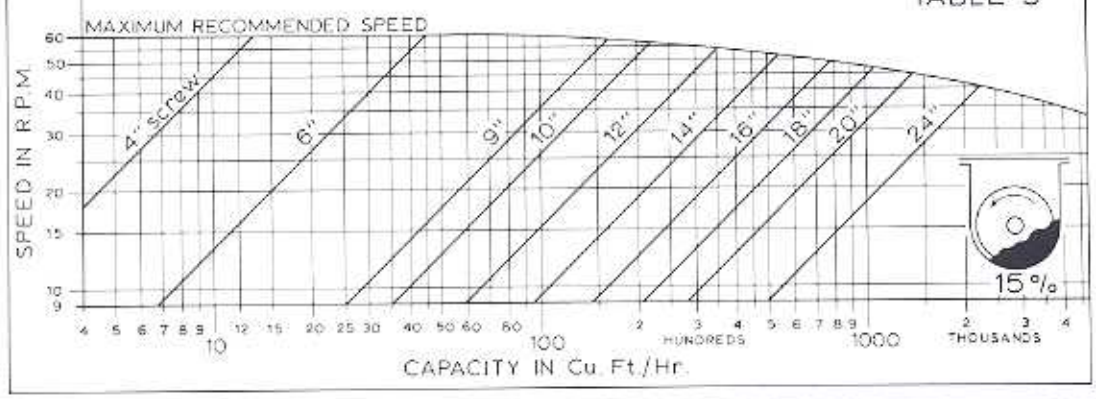
15%

TROUGH LOADING

Matl. Class

A17 A27 A37 A47
B17 B27 B37 B47
C17 C27 C37 C47
D17 D27 D37 D47
E17 E27 E37 E47

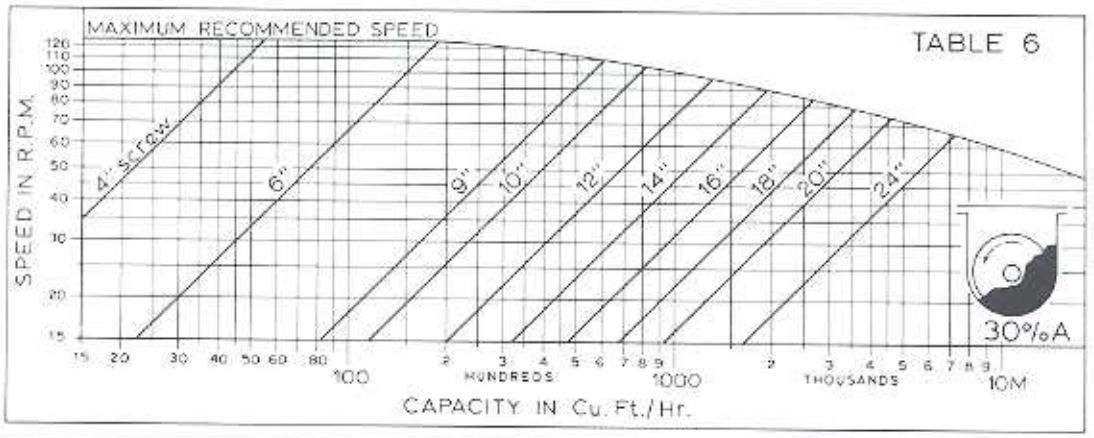
TABLE 5



CAPACITY TABLES

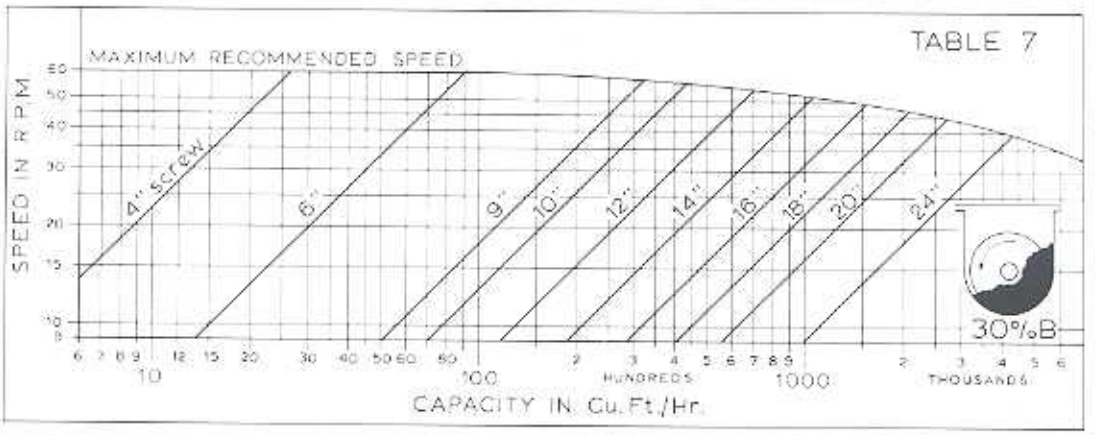
CAPACITY
TABLE 6
30% A
TROUGH
LOADING

Matl. Class
A35 A45
B35 B45
C35 C45
D15 D25 D35 D45
E15 E25 E35 E45



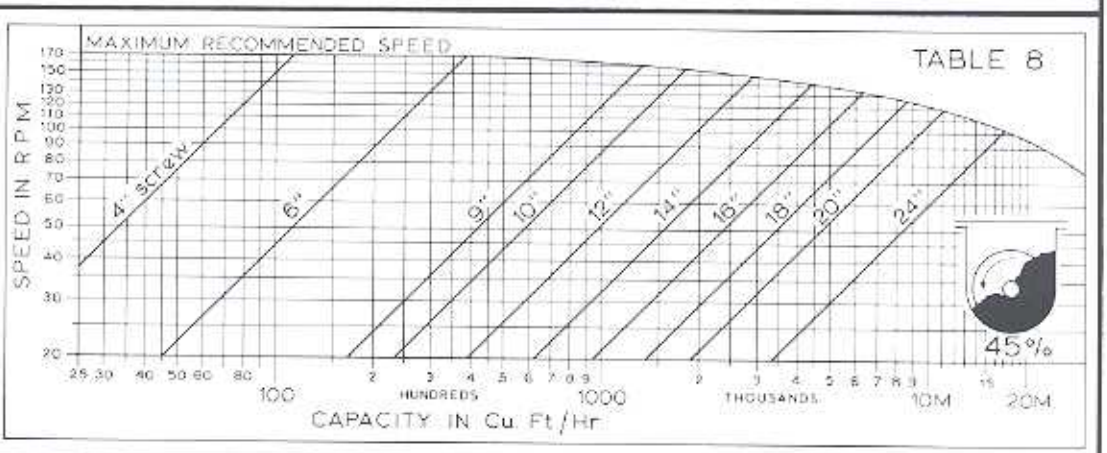
CAPACITY
TABLE 7
30% B
TROUGH
LOADING

Matl. Class
A16 A26 A36 A46
B16 B26 B36 B46
C16 C26 C36 C46
D16 D26 D36 D46
E16 E26 E36 E46



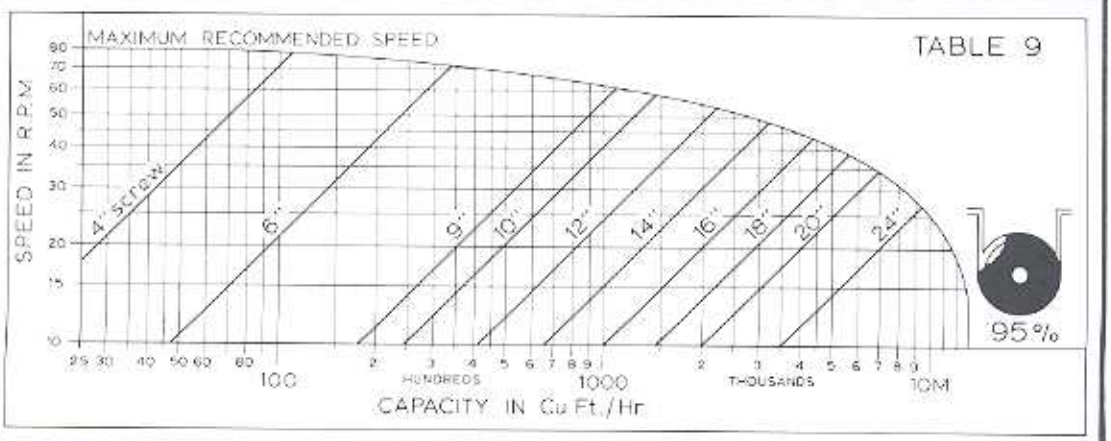
CAPACITY
TABLE 8
45%
TROUGH
LOADING

Matl. Class
A15 A25
B15 B25
C15 C25



CAPACITY
TABLE 9
95%
TROUGH
LOADING

For
Tubular
or
Shrouded
Conveyors
Only



HORSEPOWER

The Friction Factor is a constant that takes into account the power required to overcome friction in the conveyor bearings, and is used in the calculation of total required horsepower. The Friction Factor for any conveyor may be found in the following table under the heading for the type of bearings being used, and opposite the screw diameter of the conveyor. For selection of bearing type, see page 6, step 6.

TABLE 10

FRICTION FACTOR

Friction Factor				
Screw Dia.	Type of Hanger Bearings			
	Ball or Roller	Wood, Babbitt or Bronze	Nylon	Hard Iron
4	12	21	25	50
6	18	33	38	80
9	32	54	67	130
10	38	66	80	160
12	55	96	115	250
14	78	135	164	350
16	106	186	225	480
18	140	240	294	600
20	165	285	346	700
24	230	390	485	950

TABLE 11

HORSEPOWER CALCULATION

The horsepower required at the drive shaft of the conveyor is the sum of the Friction Horsepower (power required to overcome bearing friction) and the Work Horsepower (power required to convey the material).

Friction Horsepower is a function of the speed of rotation of the screw, the Friction Factor of the bearings, and the number of bearings. The number of bearings need not be determined, because all graphs and formulae herein are based on standard spacing of bearings, and therefore only the total distance that material is to be conveyed need be known.

Work Horsepower is a function of the quantity of material to be conveyed per hour, the total distance it is to be conveyed, and the conveyance characteristics of the material.

Horsepower required at the drive shaft of a conveyor with standard flighting may be determined by either the Graphic Method, or the Formula Method, as shown below.

If the conveyor has modified flighting, the horsepower determined by the Graphic or Formula method must be increased to allow for the increased resistance to the material flow caused by the modified flighting. See Table 12 (page 21).

After determining total horsepower required at the conveyor drive shaft, refer to Table 13 (page 21) for selection of proper motor.

Graphic Method	Formula Method
$H = P_f + P_w$	$H = \frac{L(DS + QF)}{1{,}000{,}000}$
H = Horsepower (standard flighting) P_f = Friction H.P., from graph, Table 14 P_w = Work H.P., from graph, Table 15	**H** = Horsepower (standard flighting) **L** = Distance material to be conveyed, in feet. **D** = Friction Factor, from Table 10 above. **S** = Speed in RPM, from tables 5 to 9. **Q** = Quantity of conveyed material, in lbs./hr. **F** = H.P. Factor of material, from Table 2
See pages 22 & 23 for horsepower graphs.	

HORSEPOWER

Conveyor flighting with deviation in pitch only requires the same horsepower as standard pitch. Use Table 11, page 20.

Modified flighting requires additional power. The total horsepower required is determined by the following formula:

$$H_m = H \times M$$

H_m = Horsepower (modified flighting)
H = Horsepower (standard flighting), obtained from Table 11.
M = Modified Flight Factor, from tables below.

TABLE 12

MODIFIED FLIGHT FACTOR

Conveyors with Modified Flighting				
Flight Type	M @ Conveyor Loading:			
	15%	30%	45%	95%
Cut Flight	1.10	1.15	1.20	1.30
Cut & Folded Flight	N.R.*	1.50	1.70	2.20
Ribbon Flight	1.05	1.14	1.20	–

*Not Recommended

Conveyors with Paddles at 45° Reverse Pitch	
Paddles per Pitch	M
1	1.29
2	1.58
3	1.87
4	2.16

This table indicates the minimum recommended motor size. The table incorporates correction factors to allow for small overloads or minor choke conditions, and to compensate for power losses in the drive equipment.

Locate the range into which the calculated conveyor H.P. falls, and select the Motor H.P. opposite.

For example, if the calculated conveyor H.P. is 4.21, as this falls within the range 3.62 to 6.75 in the table, the correct motor to use is 7½ H.P.

TABLE 13

MOTOR SELECTION

Conveyor H.P.	Motor H.P.
Up to .45	1
.46 to .67	1½
.68 to .90	2
.91 to 1.80	3
1.81 to 3.61	5
3.62 to 6.75	7½
6.76 to 9.00	10

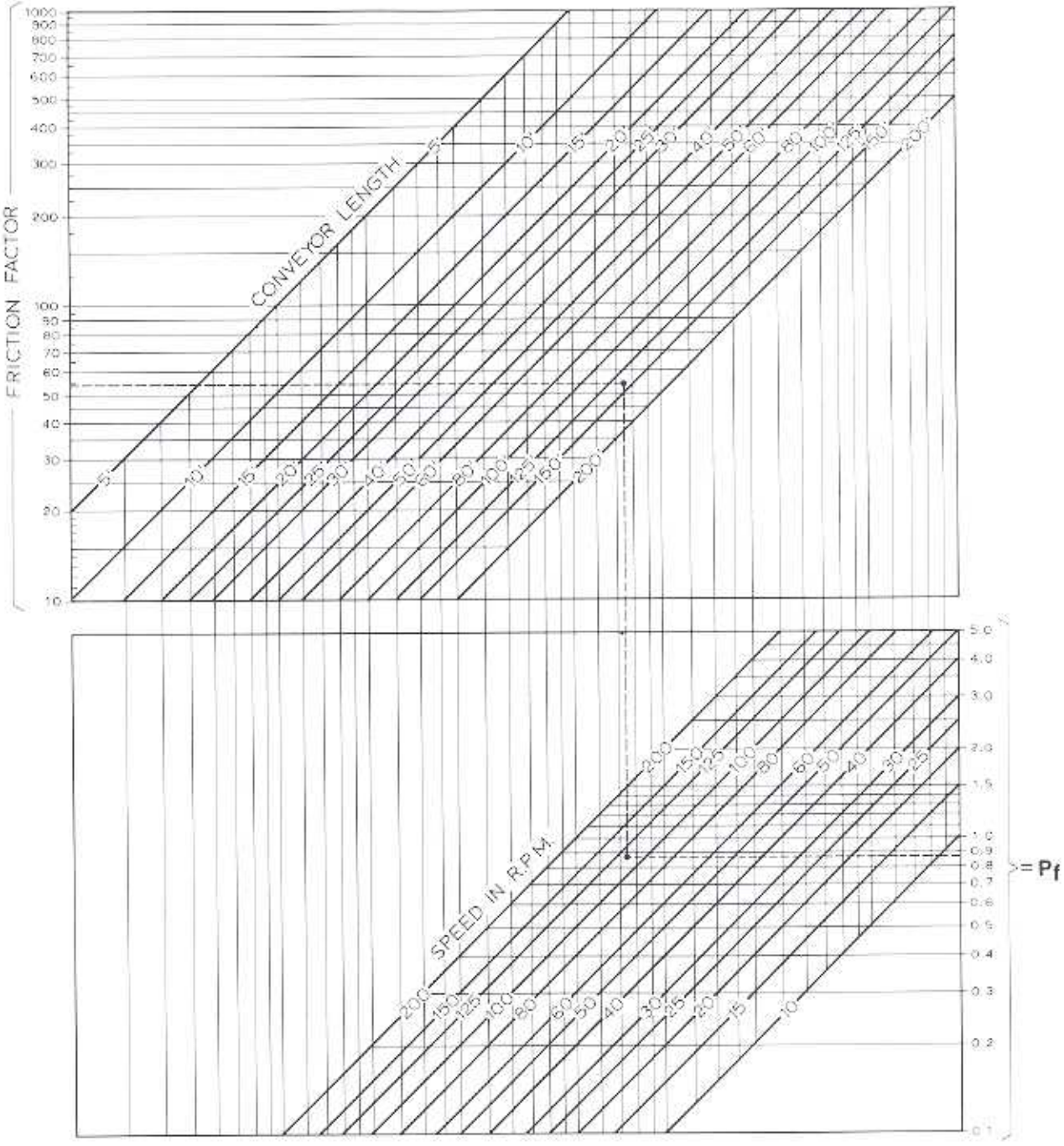
Conveyor H.P.	Motor H.P.
9.1 to 13.5	15
13.6 to 18.0	20
18.1 to 22.5	25
22.6 to 27.0	30
27.1 to 36.0	40
36.1 to 45.0	50
45.1 to 54.0	60

HORSEPOWER

TABLE 14 FRICTION HORSEPOWER (P_f)

Locate the Friction Factor (from Table 10) at the left edge of the graph. Project a horizontal line from the Friction Factor to a point that represents the length that the material is to be conveyed in feet, as indicated by the upper set of sloped lines. From this point, drop a vertical line to a point that represents the speed of the conveyor in R.P.M., as indicated by the lower set of sloped lines. From this point project a horizontal line to the right edge of the graph and read off the Friction Horsepower (P_f).

Example illustrated by broken line: Friction Factor = 54
Length = 140'
Speed = 115 R.P.M.
P_f = 0.87 H.P.



Conveyor H.P. = $P_f + P_w$

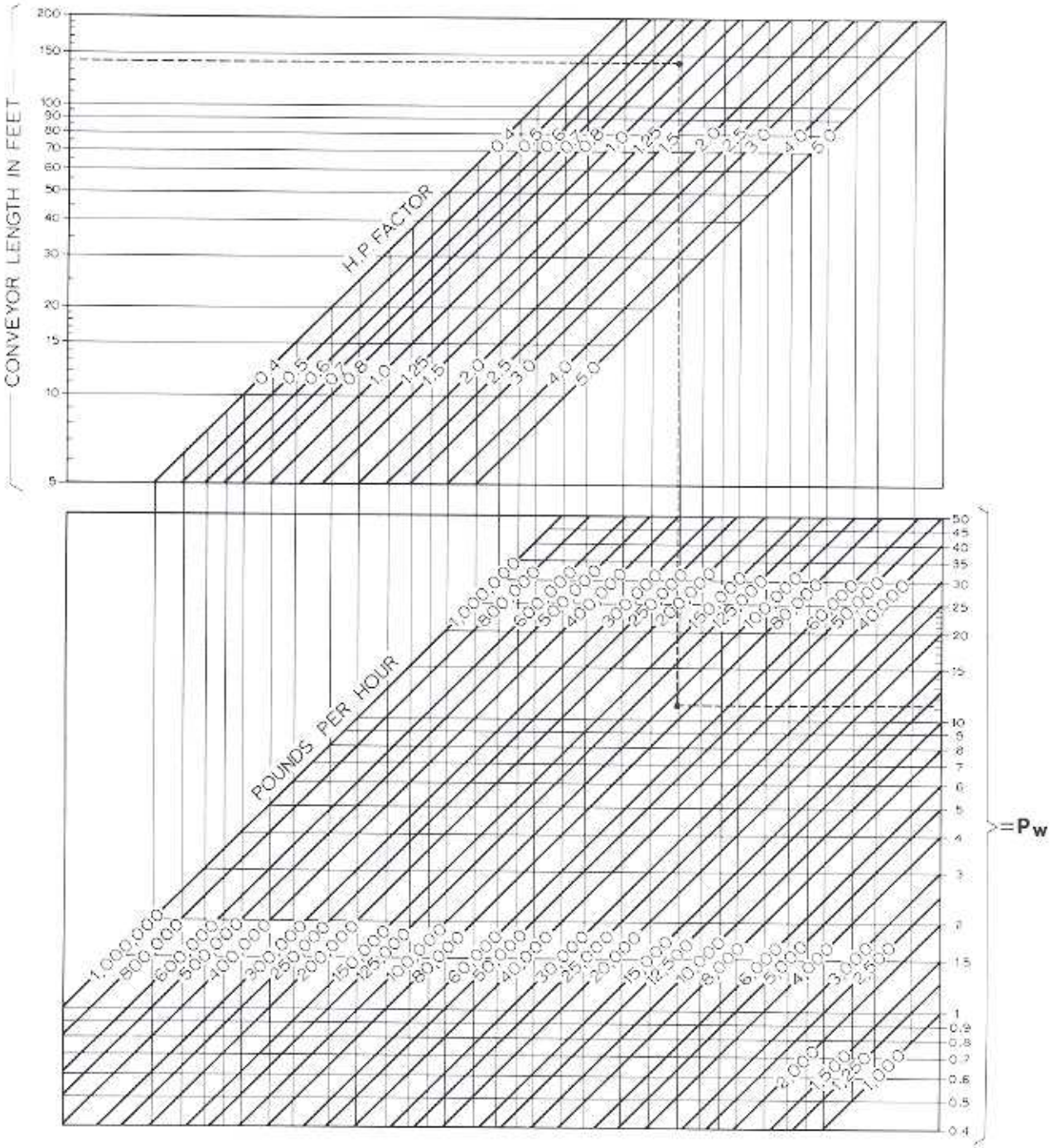
See Table 13 for Motor Selection

HORSEPOWER

TABLE 15 WORK HORSEPOWER (P_W)

Locate the length that the material is to be conveyed at the left edge of the graph. Project a horizontal line from the length to a point that represents the H.P. Factor (from Table 2) for the material to be conveyed, as indicated by the upper set of sloped lines. From this point, drop a vertical line to a point that represents the required capacity of the conveyor, in pounds per hour, as indicated by the lower set of sloped lines. From this point project a horizontal line to the right edge of the graph and read off the Work Horsepower (P_W).

Example illustrated by broken line: Length = 140'
H.P. Factor = 0.9
Capacity = 90,000 lb./hr.
P_W = 11.3 H.P.



Conveyor H.P. = $P_f + P_W$

See Table13 for Motor Selection

POWER TRANSMISSION COMPONENTS

TABLE 16

The maximum horsepower that can be applied to a screw conveyor at a given speed is determined by the torque ratings of the power transmission components: shafts, conveyor pipe, and coupling bolts.

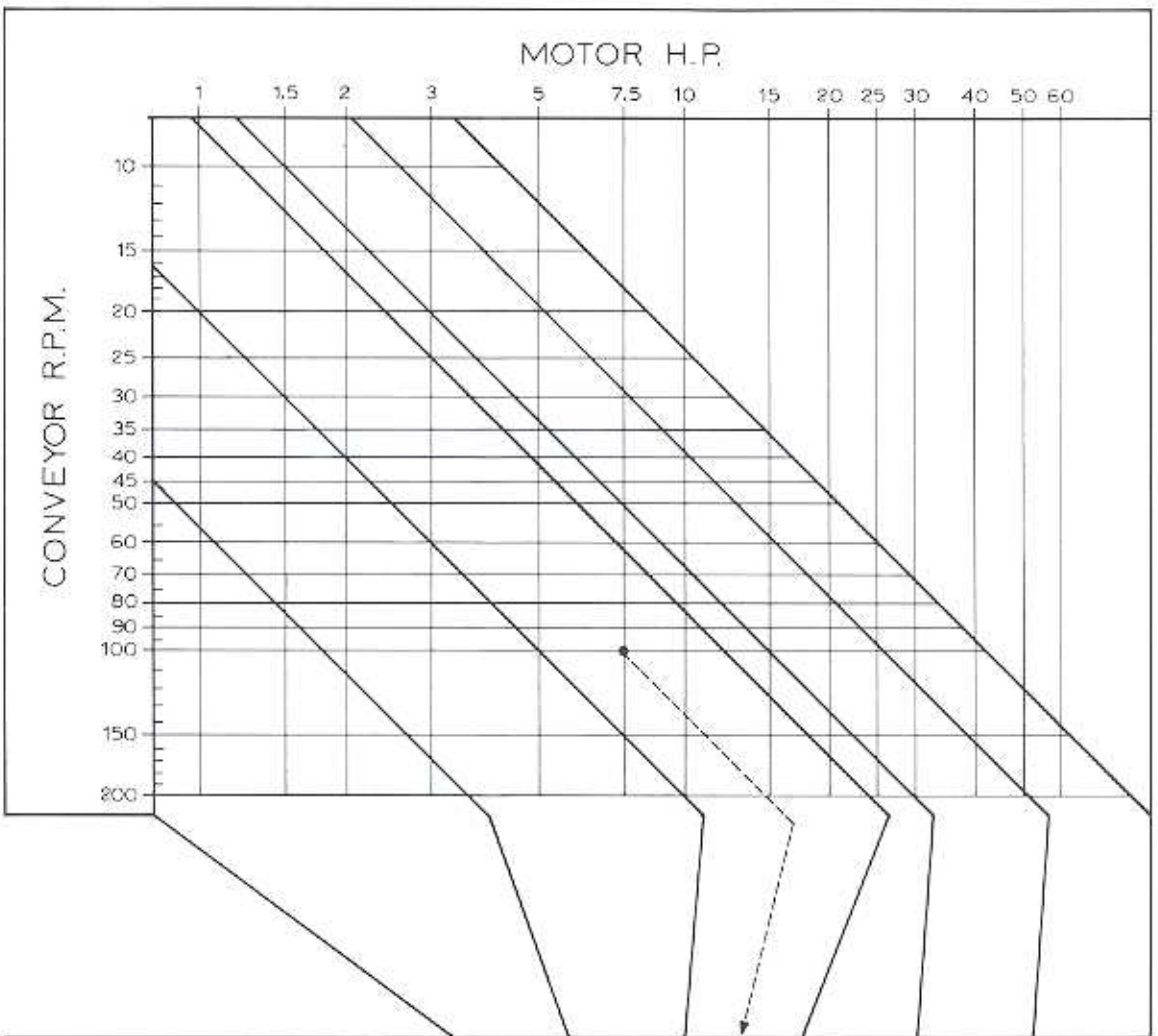
The following table indicates the correct components for the selected motor and conveyor speed.

The ratings are based on schedule 40 conveyor pipe, standard cold rolled shafts and standard coupling bolts. For horsepower ratings of heavier pipe, high torque shafts or bolts, and stainless steel or other alloy components, contact our Engineering Department.

To use the graph, project lines from the H.P. of the selected motor at the top edge of the graph, and the R.P.M. of the conveyor at the left edge of the graph. Follow the sloped area in which these lines intersect to the bottom of the graph, and read off the required sizes of shafts, conveyor pipe, and the standard screw diameters in which these sizes of components are normally stocked.

In the example shown by a broken line in the graph, a 7½ H.P. motor driving a conveyor at 100 R.P.M. requires 2" shafts, and 2½" conveyor pipe, which are standard components in 9", 10", and 12" diameter screw sizes.

The proper bolt size for each size of shaft and conveyor pipe is shown in the Components Section of this catalogue.



Shaft Diameter	1	1 ½	2	2 7/16	3	3 7/16
Conveyor Pipe Size (Sched. 40 Pipe)	1 ¼	2	2 ½	3	3 ½	4
Standard Screw Diameters	4	6, 9, 10	9, 10, 12	12, 14	12, 14, 16, 18, 20	20, 24

COMPONENT SELECTION

TABLE 17

Use the following table to select the major components for the conveyor. These components have been classed according to the properties of the material to be conveyed.

The recommended bearings shown in the table are the types most commonly used for each of the component groups shown. Bearing selection, however, is often affected by other considerations such as temperature, product contamination by lubricant, and noise level. See following page for detailed bearing recommendations.

To use the table, identify the Component Group for the material to be conveyed, from Table 2. Opposite this group, locate the required screw diameter, and the shaft diameter determined in Table 16, and read off the recommended screw part numbers and the gauges for trough and cover.

Other components may then be selected from the Components Section of this catalogue, to suit the physical layout of the conveyor.

Component Group	Type of Material	Recommended Bearings	Screw Dia.	Shaft & Coupling Dia.	Screw Part No.		Trough Thickness	Cover Thickness
					Helicoid	Sectional		
1A	Mildly abrasive	Babbitt or Bronze	4	1	4H204	–	16 ga.	16 ga.
			6	1 1/2	6H304	6S309	16	16
			9	1 1/2	9H306	9S309	14	16
				2	9H406	9S409	14	16
			10	1 1/2	10H306	10S309	14	16
				2	10H412	10S409	14	16
1B	Mildly abrasive	Wood or Nylon	12	2	12H408	12S409	12	14
				2 7/16	12H508	12S509	12	14
				3	12H614	12S612	12	14
			14	2 7/16	14H508	14S509	12	14
				3	14H614	14S612	12	14
1C	Mildly abrasive	Ball or Roller	16	3	16H610	16S612	12	14
			18	3	–	18S612	10	12
			20	3	–	20S612	10	12
				3 7/16	–	20S712	10	12
			24	3 7/16	–	24S712	10	12
2A	Mildly abrasive, irregular or lumpy	Babbitt or Bronze	4	1	4H206	–	14 ga.	16 ga.
			6	1 1/2	6H308	6S309	14	16
			9	1 1/2	9H312	9S309	10	16
				2	9H412	9S412	10	16
2B	Mildly abrasive, irregular or lumpy	Wood or Nylon	10	1 1/2	–	10S309	10	16
				2	10H412	10S412	10	16
			12	2	12H412	12S412	3/16	14
				2 7/16	12H512	12S512	3/16	14
				3	12H614	12S616	3/16	14
2C	Mildly abrasive, irregular or lumpy	Ball or Roller	14	2 7/16	–	14S512	3/16	14
				3	14H614	14S616	3/16	14
			16	3	16H614	16S616	3/16	14
			18	3	–	18S616	3/16	12
2D	Moderately abrasive	*Hard Iron	20	3	–	20S616	3/16	12
				3 7/16	–	20S716	3/16	12
			24	3 7/16	–	24S716	3/16	12
3A	Mildly corrosive	Babbitt or Bronze	6	1 1/2	6H312	6S312	10 ga.	16 ga.
			9	1 1/2	9H312	9S312	3/16	16
				2	9H414	9S416	3/16	16
			10	1 1/2	–	10S312	3/16	16
				2	–	10S416	3/16	16
			12	2	12H412	12S412	1/4	14
				2 7/16	12H512	12S512	1/4	14
				3	12H614	12S616	1/4	14
3D	Extremely abrasive	*Hard Iron	14	3	–	14S624	1/4	14
			16	3	–	16S624	1/4	14
			18	3	–	18S624	1/4	12
			20	3	–	20S624	1/4	12
				3 7/16	–	20S724	1/4	12
			24	3 7/16	–	24S724	1/4	12

*NOTE: HARDENED STEEL COUPLINGS MUST BE USED WITH HARD IRON BEARINGS

COMPONENT SELECTION

BEARING RECOMMENDATIONS

Selection of bearing material for an intermediate hanger is based on experience together with a consideration of the characteristics of the material to be conveyed. Normally, the bearing selection will be made from one of the following four bearing types:

A. **BABBITTED OR BRONZE BEARINGS**
Lubricated babbitted bearings are frequently used, but have a maximum operating temperature of 130°F; lubricated bronze bearings may be operated at temperatures up to 225°F. This temperature figure for bronze bearings may be exceeded by the use of special high temperature alloys and/or by using appropriate high temperature lubricants. Care must be exercised in the use of babbitted or bronze bearings when the conveyed material must not be contaminated by the products of bearing wear or the lubricants used.

B. **SELF LUBRICATED BEARINGS**
Self lubricated bearings are available in several types.
1. Oil impregnated hard maple wood has a maximum operating temperature of 160°F.
2. Oil impregnated sintered bronze has a maximum operating temperature of 200°F.
3. Plastic and reinforced fibre compounds are available in a wide variety of compositions and constructions, and can be obtained from many sources. They require no grease or oil lubrication other than a small application of light lubricating oil at initial startup. They are best suited for use in conveyors handling a material wetted with water. Maximum operating temperatures vary with the composition and construction of the bearing. When appropriately used, the wear rate is usually low and contamination of the material conveyed is not a very great hazard.
4. Graphited bronze bearings have a maximum operating temperature of 500°F.
5. Commercial carbon bearings may be used for operating temperatures up to 700°F.

C. **BALL BEARINGS**
Ball bearings are preferably used when handling granular or pelletized materials not containing any fine powder. Maximum operating temperature is 225°F with petroleum base lubricants, or 270°F with high temperature synthetic lubricants. When appropriately used and sealed against loss of lubricant, ball bearings usually involve no contamination of the material conveyed.

D. **HARD IRON BEARINGS**
Hard white iron or chilled iron bearings are used with hardened coupling shafts, for handling abrasive materials. Depending on circumstances, manganese steel, stellite or hardened nickel iron may be used in place of hard iron bearings. Hard iron bearings are not normally lubricated. The maximum operating temperature is 500°F.

Conveyors screw speeds must be considered when using hard iron bearings on hardened coupling shafts in order to minimize wear and to reduce the squealing noise of dry metal on metal. The following formula gives maximum recommended operating speed:

$$N = \frac{120}{\text{Shaft diameter in inches}}$$

where N = Maximum operating RPM of screw

SPECIAL MATERIALS AND APPLICATIONS

In designing a Screw Conveyor special consideration must be given to the selection of components if the material to be conveyed has unusual characteristics. The following are the most commonly encountered:

ABRASIVE MATERIALS

Abrasive materials cause excessive wear on conveyor components and should be carried at slow speeds and at minimum trough loading. For very abrasive materials, it may be necessary to specify heavy gauge, surface hardened, or special alloy components.

CONTAMINABLE MATERIALS

Easily contaminable materials, such as certain chemicals and foodstuffs, require the use of sealed end bearings, and hanger bearings of wood, nylon, or other dry operating type. Trough covers should be tightly sealed, and easily removable for frequent cleaning. Certain materials may require the use of stainless steel components.

CORROSIVE MATERIALS

When handling corrosive materials, conveyors should be constructed of stainless steel, or other corrosion resistant alloys.

DEGRADABLE MATERIALS

Materials that tend to break up or separate should be carried in large diameter conveyors at very slow speeds, to minimize physical agitation of the material.

EXTREME TEMPERATURES

Conveyors carrying materials at extreme temperatures should be constructed of metal alloys designed to meet these conditions. The use of jacketed trough may be advisable, wherein a heating or cooling medium may be circulated to keep the conveyed material within safe operating temperatures.

EXPLOSIVE MATERIALS

The conveyor must be designed with non-sparking components, and must be tightly sealed. Where hazardous dusts exist, an exhaust system should be incorporated to remove them.

FLUIDIZING MATERIALS

When conveying materials that tend to aerate and increase in volume in the conveyor, the conveyor size and speed must be designed on the basis of this larger aerated volume and density.

HYGROSCOPIC MATERIALS

Hygroscopic materials readily absorb moisture and tend to become denser and less free flowing. This must be taken into account when determining the size, speed, and horsepower of the conveyor. Tightly sealed conveyors that exclude exterior atmosphere are effective in handling these materials.

MATERIALS THAT TEND TO PACK

These materials are best handled by a standard conveyor if they are fed into the conveyor by aerating devices (for fine materials) or feeding devices (for large or fibrous materials).

MIXING IN TRANSIT

When it is desired to mix or blend materials in transit, ribbon flights, cut flights, cut and folded flights, or paddles may be used.

TOXIC MATERIALS

Where toxic materials are being conveyed, or where harmful dusts or vapours exist, the conveyor must be tightly sealed. In some cases, an exhaust system may be necessary to remove the dusts or vapours.

VISCOUS OR STICKY MATERIALS

Ribbon flight conveyors are recommended in order to minimize material build-up.

SCREW CONVEYOR FABRICATION MATERIALS

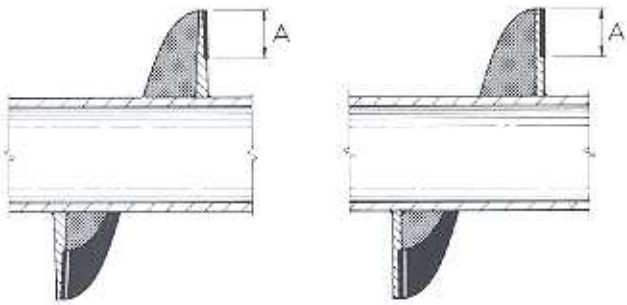
Screw Conveyors are normally constructed of low carbon, hot rolled steel, from standard sheets, plates, and structural shapes. Shafts and couplings are normally of cold finished mild steel.

However, certain conveyed materials or conditions, as described elsewhere in this Engineering Section, require the use of other materials in the construction of the conveyor.

Several special fabrication materials and methods are available, the most common of which are as follows:

ABRASION RESISTANT FACING

For conveying very abrasive materials, screw flighting may be surface hardened to give a 68-72 rating on the Rockwell "C" scale. A special alloy is applied to the carrying area of the flight face, usually to the standard widths shown in the table below. Under extreme conditions, it may be advisable to harden the full width of the flight. The conveyor pipe may also be surface hardened. The alloy is applied to the conveying surface, then fused and imbedded into the base metal, penetrating several thousands of an inch. The surface buildup is limited to only a few thousands of an inch.



HELICOID SECTIONAL

Screw Diameter	A
6	1"
9	1½"
10	1½"
12	2"
14	2"
16	2½"
18	2½"
20	3"
24	3"

ABRASION RESISTING STEELS

For abrasive conditions, screw flighting and trough may be constructed of A.R. steel.

STAINLESS STEELS AND OTHER ALLOYS

For sanitary requirements or problems of corrosion or contamination, the conveyor components may be fabricated from stainless steel, monel, inconel, aluminum alloy, or any other commercially available alloy to suit the application.

COATING

Standard components may be coated by a variety of methods to suit requirements, such as galvanizing, nickle or chrome plating, rubber coating, etc.

HIGH TORQUE COMPONENTS

In cases where a screw conveyor must be run at more than its normally rated horsepower, high torque coupling bolts, drive shafts, and coupling shafts are available.

Our Engineering Department will be pleased to advise you on any special materials or fabrication methods recommended for your particular application.

CONVEYOR LAYOUT

Once the screw conveyor has been designed in accordance with the data on the preceeding pages, the physical layout may now be determined.

A typical layout and table of standard dimensions is shown below.

Individual components to suit the layout may be selected from the Components Section of this catalogue.

SCREWS

Unless otherwise specified, screws will be supplied with a right hand helix.

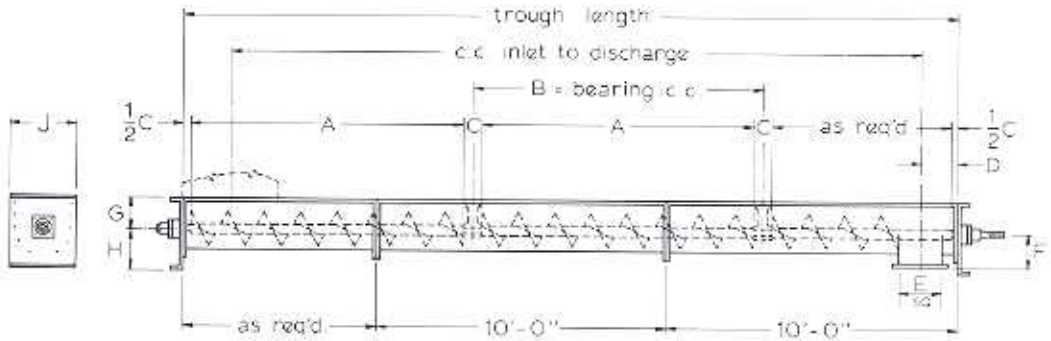
OTHER COMPONENTS

Trough and cover should be specified in standard lengths, with one odd length, to make up required conveyor length. Inlet openings should be detailed to suit your requirements. Hanger bearings should be located at positions staggered with the trough joints. Thrust bearings, when required are normally located at the discharge end.

See the Components Section of this catalogue for detailed description and recommended applications of all components.

TABLE 18

TYPICAL CONVEYOR LAYOUT



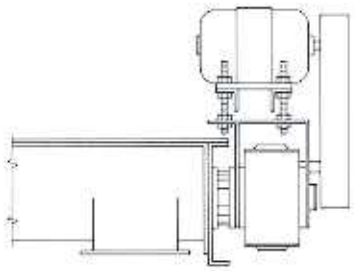
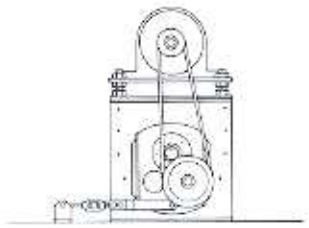
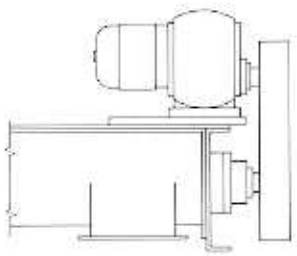
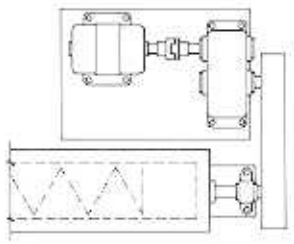
Screw Diameter	Shaft Dia.	A	B	C	D	E	F	G	H	J
4	1	7-10½	8-0	1½	4½	5	3¾	3⅝	4⅝	7¾
6	1½	9-10	10-0	2	6	7	5	4½	5⅝	9¾
9	1½ 2	9-10 9-10	10-0	2	8	10	7⅛	6⅛	7⅞	13¾
10	1½ 2	9-10 9-10	10-0	2	9	11	7⅞	6⅜	8⅞	14¾
12	2 2 7/16 3	11-10 11-9 11-9	12-0	2 3 3	10½	13	8⅞	7¾	9⅝	17¼
14	2 7/16 3	11-9 11-9	12-0	3	11½	15	10⅛	9¼	10⅞	19¼
16	3	11-9	12-0	3	13½	17	11⅛	10⅝	12	21¼
18	3 3 7/16	11-9 11-8	12-0	3 4	14½	19	12⅜	12⅛	13⅜	24¼
20	3 3 7/16	11-9 11-8	12-0	3 4	15½	21	13⅜	13½	15	26¼
24	3 7/16	11-8	12-0	4	17½	25	15⅜	16½	18⅛	30¼

SCREW CONVEYOR DRIVES

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.
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.

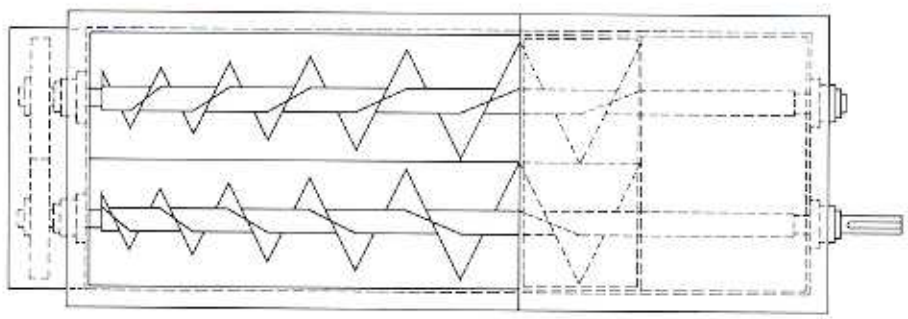
SCREW FEEDERS

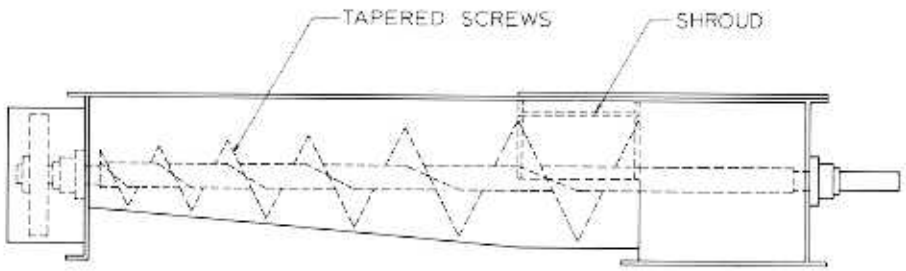
Screw Feeders are designed to regulate the rate of material flow from a hopper or bin.

The inlet is usually flooded with material (95% loaded). One or more tapered or variable pitch screws convey the material at the required rate. A shroud is commonly used to prevent flooding of the material beyond the inlet area. As the pitch or diameter increases beyond the shroud, the level of the material in the conveyor drops to normal loading levels.

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.

TYPICAL SCREW FEEDER





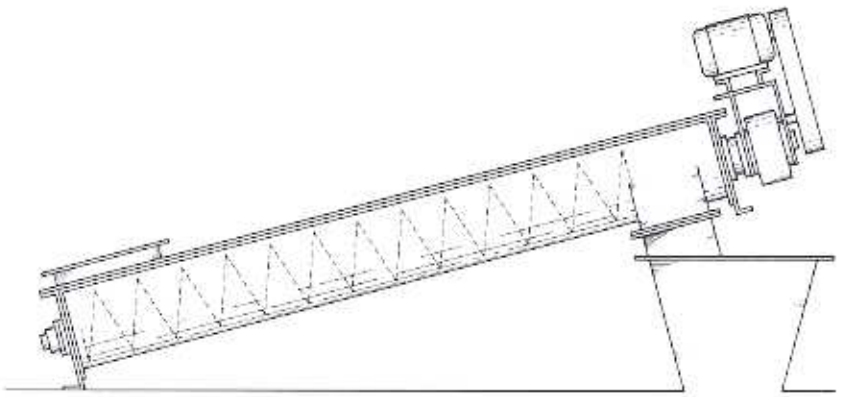
INCLINED AND VERTICAL SCREW CONVEYORS

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, with short pitch flighting 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.

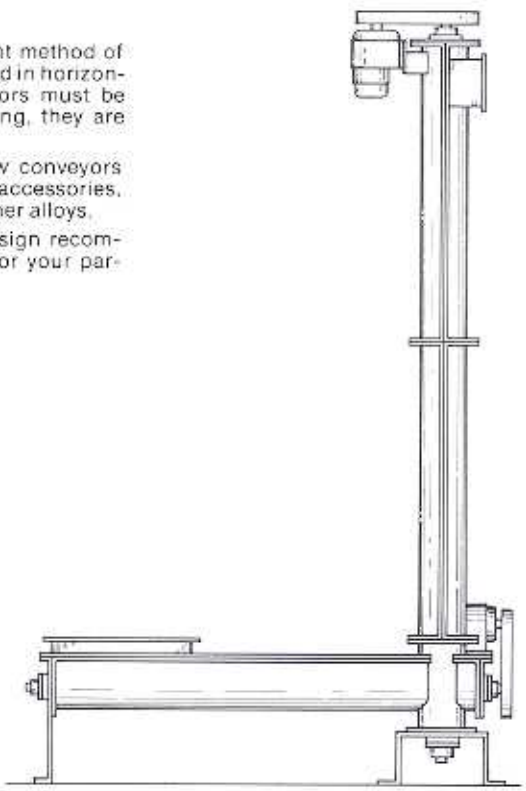


VERTICAL SCREW CONVEYORS

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.



PNEUMATIC CONTROLS

Pneumatic control of inlet and discharge gates of a conveyor system is particularly suited to applications where remotely controlled gates are desirable.

Generally, because pneumatic gate controls only consume air momentarily while opening or closing, these controls can be fed from any existing plant air system that is at nominal 100 P.S.I. pressure.

The most economical control system is shown in Fig. A below, and is suitable where the control valve can be located close to the gate.

Where the controls are to be located at some distance from the gate, or where it is desired to operate the gate automatically by bin level sensors, etc., the system shown in Fig. B is recommended. A control valve located near the gate is operated by solenoids electrically connected to the remote control device, which may be manually or automatically operated. Several such devices may be connected to the circuit, as shown.

The remote control system may also be equipped with pilot lights at the control console, to indicate the positions of all gates in the system.

The air system should be provided with a filter and an oiler. Pneumatic speed control valves may also be installed to control the speed of opening and closing of the gates.

Our Engineering Department is at your disposal to recommend and design a complete control system for your particular application.

FIG. A

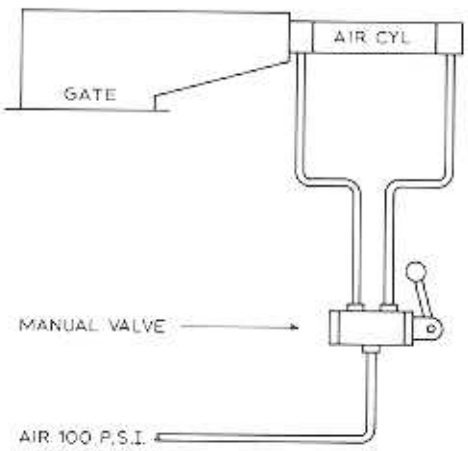
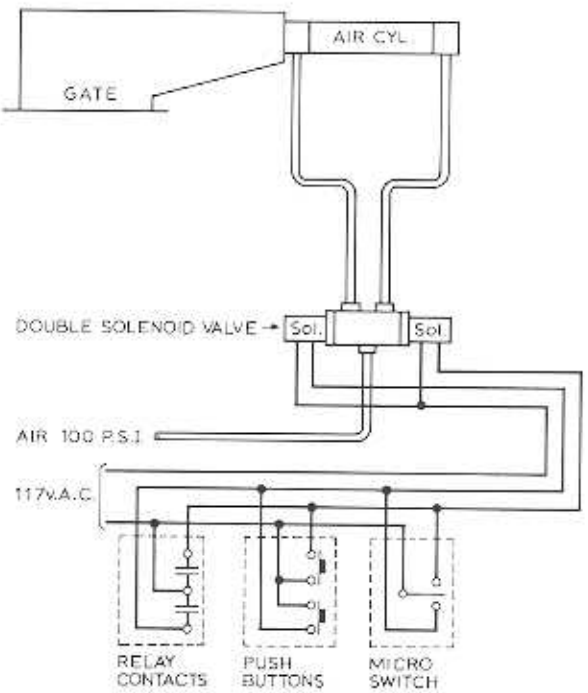
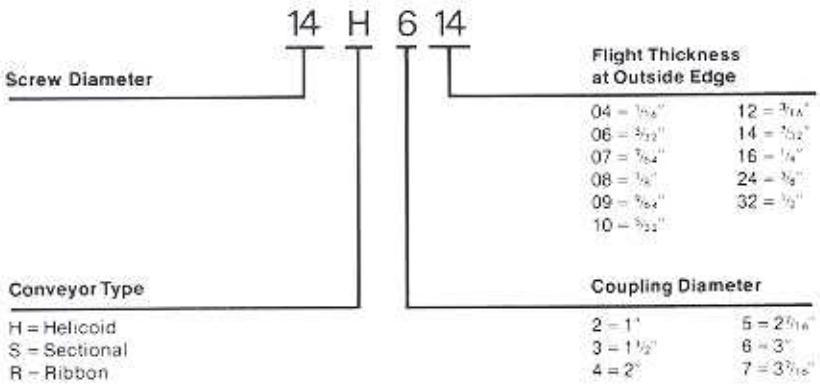


FIG. B



CONVEYOR SCREW INDEX

Numerical Designation System for Standard Conveyor Screws



Conveyor screws supplied with right hand flighting unless otherwise specified.

Conveyor screws supplied in standard lengths unless otherwise specified.

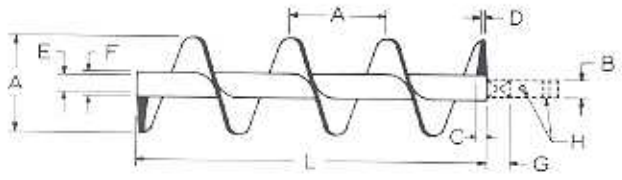
Flighting supplied full length of conveyor pipe unless otherwise specified.

Conveyor screws are fabricated of mild steel unless otherwise specified.

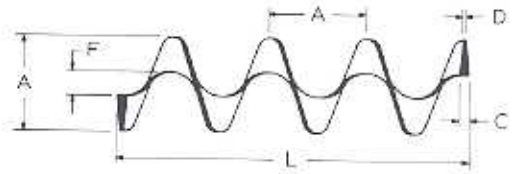
Conveyor screws are also available in stainless steel, special alloys, surface hardened mild steel and abrasion resistant steel. Contact our Engineering Department for further information.

HELICOID CONVEYOR SCREWS
CARBON STEEL

Complete Screw



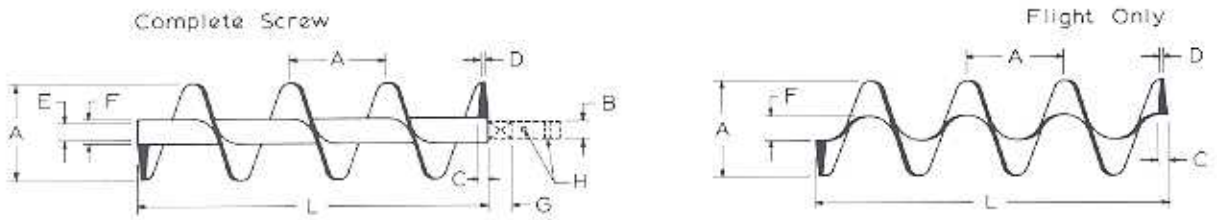
Flight Only



Dimensions shown are approximate. Request certified prints for installation.

Dia. & Pitch	Cplg. Dia.	Conveyor Size Designation	Flight Thickness		Schedule 40 Pipe Size		Bearing Length	Coupling Bolts	Standard Length	Average Weight in pounds			
										Complete Screw		Flight Only	
A	B		C	D	E (I.D.)	F (O.D.)	G	H	L	Std. Length	Per Ft.	Std. Length	Per Ft.
4	1	4H204	1/8	1/16	1 1/4	1 5/8	1 1/2	3/8 x 2 1/8	7'-10 1/2"	25	3	7.2	0.9
		4H206	3/16	3/32						32	4	12.8	1.6
6	1 1/2	6H304	1/8	1/16	2	2 3/8	2	1/2 x 3	9'-10"	52	5	14	1.4
		6H308	1/4	1/8						62	6	28	2.8
		6H312	3/8	3/16						72	7	42	4.2
9	1 1/2	9H306	3/16	3/32	2	2 3/8	2	1/2 x 3	9'-10"	70	7	31	3.1
		9H312	3/8	3/16						101	10	65	6.5
	2	9H406	3/16	3/32	2 1/2	2 7/8	2	5/8 x 3 5/8	9'-10"	91	9	30	3.0
		9H412	3/8	3/16						121	12	60	6.0
		9H414	7/16	7/32						140	14	85	8.6
10	1 1/2	10H306	3/16	3/32	2	2 3/8	2	1/2 x 3	9'-10"	81	8	48	4.8
	2	10H412	3/8	3/16	2 1/2	2 7/8		5/8 x 3 5/8		130	13	76	7.6
12	2	12H408	1/4	1/8	2 1/2	2 7/8	2	5/8 x 3 5/8	11'-10"	140	12	67	5.6
		12H412	3/8	3/16						180	15	102	8.5
	2 7/16	12H508	1/4	1/8	3	3 1/2	3	5/8 x 4 3/8	11'-9"	168	14	64	5.3
		12H512	3/8	3/16						198	17	96	8.0
	3	12H614	7/16	7/32	3 1/2	4	3	3/4 x 5	11'-9"	228	19	120	10.2
14	2 7/16	14H508	1/4	1/8	3	3 1/2	3	5/8 x 4 3/8	11'-9"	170	14	84	7.0
	3	14H614	7/16	7/32	3 1/2	4	3	3/4 x 5		254	22	132	11.0
16	3	16H610	5/16	5/32	3 1/2	4	3	3/4 x 5	11'-9"	228	19	120	10.0
		16H614	7/16	7/32	3 1/2	4		3/4 x 5		276	27	168	14.3

HELICOID CONVEYOR SCREWS
STAINLESS STEEL



Dimensions shown are approximate. Request certified prints for installation.
*Add alloy number, and type of finish, e.g. "-304, Type II". (See below).

Dia. & Pitch A	Cplg. Dia. B	Conveyor Size Designation	Flight Thickness C	Flight Thickness D	Schedule 40 Pipe Size E (I.D.)	Schedule 40 Pipe Size F (O.D.)	Bearing Length G	Coupling Bolts H	Standard Length L	Average Weight in pounds: Complete Screw Std. Length	Complete Screw Per Ft.	Flight Only Std. Length	Flight Only Per Ft.
4	1	4H204S-*	1/8	1/16	1 1/4	1 5/8	1 1/2	3/8 x 2 1/8	7'-10 1/2"	27	3	7.7	1.0
		4H206S-*	3/16	3/32						34	4	13.7	1.7
6	1 1/2	6H304S-*	1/8	1/16	2	2 3/8	2	1/2 x 3	9'-10"	56	5	15	1.5
		6H308S-*	1/4	1/8						67	6	30	3.0
		6H312S-*	3/8	3/16						77	7	45	4.6
9	1 1/2	9H306S-*	3/16	3/32	2	2 3/8	2	1/2 x 3	9'-10"	75	7	33	3.4
		9H312S-*	3/8	3/16						108	11	70	7.1
	2	9H406S-*	3/16	3/32	2 1/2	2 7/8	2	5/8 x 3 5/8	9'-10"	98	10	32	3.2
		9H412S-*	3/8	3/16						130	13	64	6.6
10	1 1/2	10H306S-*	3/16	3/32	2	2 3/8	2	1/2 x 3	9'-10"	87	9	52	5.3
12	2	12H408S-*	1/4	1/8	2 1/2	2 7/8	2	5/8 x 3 5/8	11'-10"	150	13	72	6.1
		12H412S-*	3/8	3/16						193	16	110	9.2
	2 7/16	12H508S-*	1/4	1/8	3	3 1/2	3	5/8 x 4 3/8	11'-9"	180	15	69	5.8
		12H512S-*	3/8	3/16						213	18	103	8.8

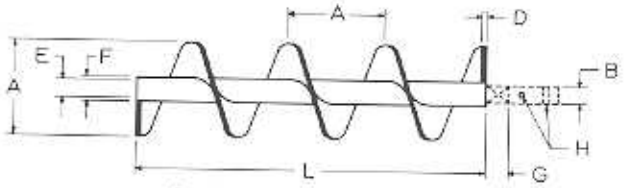
STAINLESS STEEL FINISHES:

These specifications apply to conveyor screws with continuous welding of the flighting to the pipe.

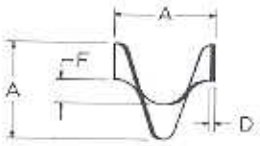
Type I Weld spatter and slag removed, welds not ground.
Type II Welds ground to remove ripple and roughness, equal to 40-50 grit finish.
Type III Welds medium ground with some pits and crevices remaining, equal to 80-100 grit finish. Recommended for materials that do not tend to contaminate or hang up in pits and crevices.
Type IV Welds fine ground, equal to 140-150 grit finish. No pits or crevices permissable. Recommended where total exclusion of the conveyed material from welded surfaces is required.
Type V Same as Type IV except polished to a bright uniform finish.

SECTIONAL CONVEYOR SCREWS
CARBON STEEL

Complete Screw



Flight Only



Sectional screws can be manufactured with any special features desired, such as special thickness of flight, special diameter, pitch, pipe size, etc.

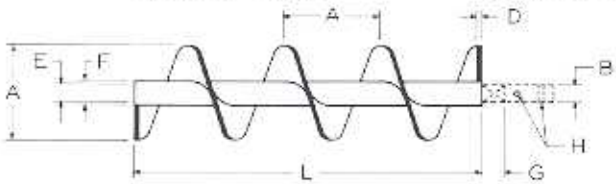
Dimensions shown are approximate. Request certified prints for installation.

Dia. & Pitch A	Cplg. Dia. B	Conveyor Size Designation	Flight Thickness D	Schedule 40 Pipe Size E (I.D.)	Schedule 40 Pipe Size F (O.D.)	Bearing Length G	Coupling Bolts H	Standard Length L	Average Weight (lbs.) Complete Screw Std. Length	Average Weight (lbs.) Complete Screw Per Ft.	Average Weight (lbs.) Flight Only
6	1½	• 6S309 • 6S312 6S316	10 ga. 3/16 ¼	2	2⅜	2	½x3	9'-10"	65 75 85	7 8 9	1.3 1.7 2.2
9	1½	9S309 • 9S312 9S316	10 ga. 3/16 ¼	2	2⅜	2	½x3	9'-10"	80 95 115	8 10 12	3.3 4.3 5.8
	2	9S409 • 9S412 • 9S416 9S424	10 ga. 3/16 ¼ ⅜	2½	2⅞	2	⅝x3⅝	9'-10"	100 115 130 162	10 12 13 16	3.3 4.3 5.5 7.9
10	1½	10S309 10S312	10 ga. 3/16	2	2⅜	2	½x3	9'-10"	85 98	9 10	3.9 5.0
	2	10S409 • 10S412 10S416	10 ga. 3/16 ¼	2½	2⅞	2	⅝x3⅝	9'-10"	107 120 140	11 12 14	3.9 5.0 6.7
12	2	12S409 • 12S412 12S416	10 ga. 3/16 ¼	2½	2⅞	2	⅝x3⅝	11'-10"	140 156 180	12 13 15	5.4 7.2 9.7
	2 7/16	12S509 • 12S512 12S516 12S524	10 ga. 3/16 ¼ ⅜	3	3½	3	⅝x4⅜	11'-9"	160 178 210 265	14 15 18 22	5.4 7.2 9.7 14.4
	3	12S612 • 12S616 12S624	3/16 ¼ ⅜	3½	4	3	¾x5	11'-9"	187 216 280	16 18 24	7.2 9.7 14.4
14	2 7/16	14S509 14S512 14S516	10 ga. 3/16 ¼	3	3½	3	⅝x4⅜	11'-9"	185 214 247	16 18 21	7.2 9.9 13.2
	3	14S612 • 14S616 14S624	3/16 ¼ ⅜	3½	4	3	¾x5	11'-9"	213 246 342	18 21 29	9.9 13.2 19.8
16	3	• 16S609 16S612 • 16S616 16S624 16S632	10 ga. 3/16 ¼ ⅜ ½	3½	4	3	¾x5	11'-9"	204 234 282 365 420	17 20 24 31 36	10.0 13.5 18.0 27.0 36.0
18	3	18S612 18S616 18S624 18S632	3/16 ¼ ⅜ ½	3½	4	3	¾x5	11'-9"	246 294 425 530	21 25 36 44	18.0 24.0 36.0 48.0
20	3	20S612 20S616 20S624 20S632	3/16 ¼ ⅜ ½	3½	4	3	¾x5	11'-9"	300 360 410 506	26 31 35 43	20.0 28.0 40.0 56.0
	3 7/16	20S712 20S716 20S724 20S732	3/16 ¼ ⅜ ½	4	4½	4	⅞x5½	11'-8"	319 379 429 525	27 32 37 45	20.0 28.0 40.0 56.0
24	3 7/16	24S712 24S716 24S724 24S732	3/16 ¼ ⅜ ½	4	4½	4	⅞x5½	11'-8"	440 510 595 690	37 43 50 60	32.0 42.0 64.0 84.0

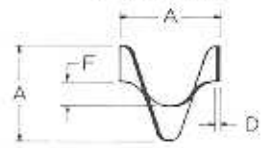
• See Helicoid equivalent.

SECTIONAL CONVEYOR SCREWS
STAINLESS STEEL

Complete Screw



Flight Only



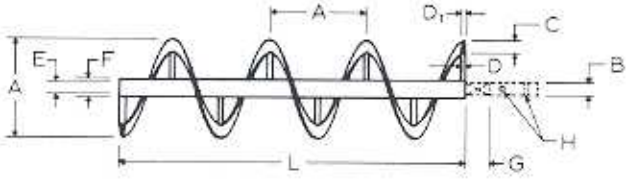
Sectional screws can be manufactured with any special features desired, such as special thickness of flight, special diameter, pitch, pipe size, etc.
Dimensions shown are approximate. Request certified prints for installation.
*Add alloy number, and type of finish, e.g. "-304, Type II". (See page 36 for finishes)

Dia. & Pitch A	Cplg. Dia. B	Conveyor Size Designation	Flight Thickness D	Schedule 40 Pipe Size E (I.D.)	Schedule 40 Pipe Size F (O.D.)	Bearing Length G	Coupling Bolts H	Standard Length L	Average Weight (lbs.) Complete Screw Std. Length	Average Weight (lbs.) Complete Screw Per Ft.	Average Weight (lbs.) Flight Only
6	1½	• 6S309S-* • 6S312S-* 6S316S-*	10 ga. 3/16 ¼	2	2⅜	2	½ x 3	9'-10"	68 78 88	7 8 9	1.4 1.9 2.4
9	1½	9S309S-* • 9S312S-* 9S316S-*	10 ga. 3/16 ¼	2	2⅜	2	½ x 3	9'-10"	88 102 116	9 11 12	3.6 4.7 5.8
	2	9S409S-* • 9S412S-* 9S416S-* 9S424S-*	10 ga. 3/16 ¼ ⅜	2½	2⅞	2	⅝ x 3⅝	9'-10"	109 123 138 177	11 13 14 18	3.6 4.7 5.8 8.8
10	1½	10S309S-* 10S312S-*	10 ga. 3/16	2	2⅜	2	½ x 3	9'-10"	92 108	10 11	4.3 5.7
	2	10S409S-* 10S412S-* 10S416S-*	10 ga. 3/16 ¼	2½	2⅞	2	⅝ x 3⅝	9'-10"	113 129 153	12 14 16	4.3 5.7 7.7
12	2	12S409S-* • 12S412S-* 12S416S-*	10 ga. 3/16 ¼	2½	2⅞	2	⅝ x 3⅝	11'-10"	146 168 232	13 15 20	6.1 7.9 13.3
	2 7/16	12S509S-* • 12S512S-* 12S516S-* 12S524S-*	10 ga. 3/16 ¼ ⅜	3	3½	3	⅝ x 4⅛	11'-9"	170 191 255 328	15 17 22 28	6.1 7.9 13.3 19.5
	3	12S612S-* 12S616S-* 12S624S-*	3/16 ¼ ⅜	3½	4	3	¾ x 5	11'-9"	210 273 346	18 24 30	7.9 13.3 19.5
14	2 7/16	14S509S-* 14S512S-* 14S516S-*	10 ga. 3/16 ¼	3	3½	3	⅝ x 4⅛	11'-9"	185 212 250	16 18 22	8.3 10.9 14.5
	3	14S612S-* 14S616S-* 14S624S-*	3/16 ¼ ⅜	3½	4	3	¾ x 5	11'-9"	231 269 353	20 23 30	10.9 14.5 22.5
16	3	16S609S-* 16S612S-* 16S616S-* 16S624S-* 16S632S-*	10 ga. 3/16 ¼ ⅜ ½	3½	4	3	¾ x 5	11'-9"	213 252 290 382 470	19 22 25 33 40	11.0 15.4 19.8 30.2 40.2
18	3	18S612S-* 18S616S-* 18S624S-* 18S632S-*	3/16 ¼ ⅜ ½	3½	4	3	¾ x 5	11'-9"	273 325 420 520	24 28 36 45	19.8 26.4 38.5 51.4
20	3	20S612S-* 20S616S-* 20S624S-* 20S632S-*	3/16 ¼ ⅜ ½	3½	4	3	¾ x 5	11'-9"	270 332 436 544	23 29 38 47	22.0 30.8 45.7 61.0
	3 7/16	20S712S-* 20S716S-* 20S724S-* 20S732S-*	3/16 ¼ ⅜ ½	4	4½	4	⅞ x 5½	11'-8"	296 357 462 569	26 31 40 49	22.0 30.8 45.7 61.0
24	3 7/16	24S712S-* 24S716S-* 24S724S-* 24S732S-*	3/16 ¼ ⅜ ½	4	4½	4	⅞ x 5½	11'-8"	346 410 544 628	26 30 47 54	28.4 35.2 46.2 61.5

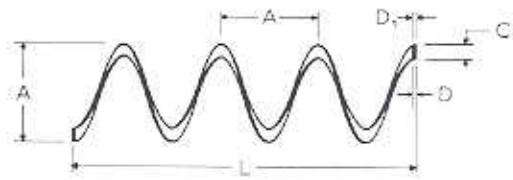
● See Helicoid equivalent

RIBBON CONVEYOR SCREWS
CARBON STEEL

Complete Screw



Flight Only

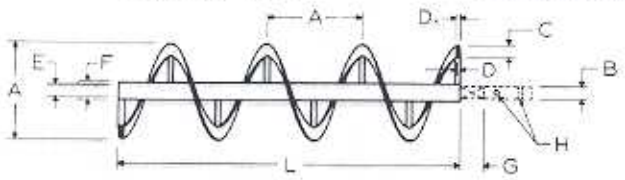


Dimensions shown are approximate. Request certified prints for installation.

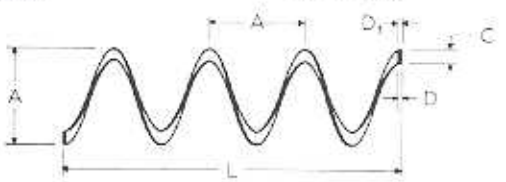
Dia. & Pitch A	Cplg. Dia. B	Conveyor Size Designation	Flight Dimensions C Width	D Thick	D_1 Thick	Schedule 40 Pipe Size E (I.D.)	F (O.D.)	Bearing Length G	Coupling Bolts H	Standard Length L	Average Weight in pounds: Complete Screw Std. Length	Complete Screw Per Ft.	Flight Only Std. Length	Flight Only Per Ft.
6	1 1/2	6R312	1	3/16	1/8	2	2 3/8	2	1/2 × 3	9'-10"	65	6.5	25	2.5
9	1 1/2	9R316	1 1/2	1/4	3/16	2	2 3/8	2	1/2 × 3	9'-10"	100	10	50	5.0
10	1 1/2	10R316	1 1/2	1/4	3/16	2	2 3/8	2	1/2 × 3	9'-10"	110	11	60	6.0
12	2	12R416 12R424	2 2 1/2	1/4 3/8	3/16 1/4	2 1/2	2 7/8	2	5/8 × 3 3/8	11'-10"	180 216	15 18	71 120	6.0 10.0
	2 7/16	12R524	2 1/2	3/8	1/4	3	3 1/2	3	5/8 × 4 3/8	11'-9"	240	20	120	10.0
14	2 7/16	14R524	2 1/2	3/8	1/4	3	3 1/2	3	5/8 × 4 3/8	11'-9"	264	22	120	10.0
	3	14R624	2 1/2	3/8	1/4	3 1/2	4	3	3/4 × 5	11'-9"	288	25	120	10.0
16	3	16R616 16R624	2 1/2 2 1/2	1/4 3/8	3/16 1/4	3 1/2	4	3	3/4 × 5	11'-9"	276 324	24 28	96 132	8.0 11.0
18	3	18R624	3	3/8	1/4	4	4 1/2	3	3/4 × 5	11'-9"	384	33	156	13.0
20	3 7/16	20R724	3	3/8	1/4	4	4 1/2	4	7/8 × 5 1/2	11'-8"	408	35	168	14.0
24	3 7/16	24R724	3	3/8	1/4	4	4 1/2	4	7/8 × 5 1/2	11'-8"	424	36	180	15.0

RIBBON CONVEYOR SCREWS
STAINLESS STEEL

Complete Screw



Flight Only

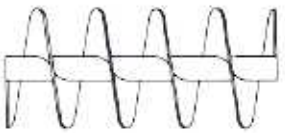
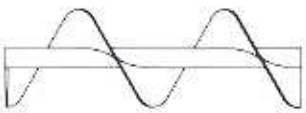
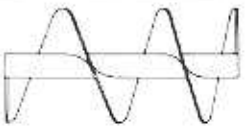
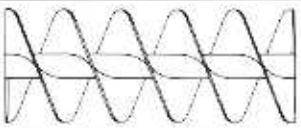
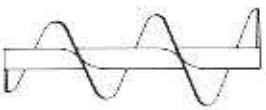
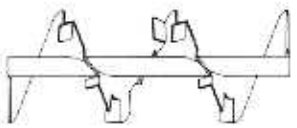
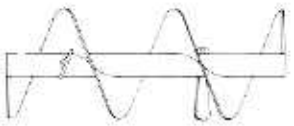


Dimensions shown are approximate. Request certified prints for installation.

*Add alloy number, and type of finish, e.g. "-304, Type II". (See page 36 for finishes)

Dia. & Pitch A	Cplg. Dia. B	Conveyor Size Designation	Flight Dimensions C Width	D Thick	D_1 Thick	Schedule 40 Pipe Size E (I.D.)	F (O.D.)	Bearing Length G	Coupling Bolts H	Standard Length L	Average Weight in pounds: Complete Screw Std. Length	Complete Screw Per Ft.	Flight Only Std. Length	Flight Only Per Ft.
6	1 1/2	6R312S-*	1	3/16	1/8	2	2 3/8	2	1/2 × 3	9'-10"	72	9.7	32	3.2
9	1 1/2	9R316S-*	1 1/2	1/4	3/16	2	2 3/8	2	1/2 × 3	9'-10"	107	11	54	5.4
10	1 1/2	10R316S-*	1 1/2	1/4	3/16	2	2 3/8	2	1/2 × 3	9'-10"	118	12	64	6.6
12	2	12R416S-* 12R424S-*	2 2 1/2	1/4 3/8	3/16 1/4	2 1/2	2 7/8	2	5/8 × 3 3/8	11'-10"	193 232	16 19	76 129	6.4 10.8
	2 7/16	12R524S-*	2 1/2	3/8	1/4	3	3 1/2	3	5/8 × 4 3/8	11'-9"	258	21	129	10.9
14	2 7/16	14R524S-*	2 1/2	3/8	1/4	3	3 1/2	3	5/8 × 4 3/8	11'-9"	284	24	129	10.9
	3	14R624S-*	2 1/2	3/8	1/4	3 1/2	4	3	3/4 × 5	11'-9"	309	27	129	10.9
16	3	16R616S-* 16R624S-*	2 1/2 2 1/2	1/4 3/8	3/16 1/4	3 1/2	4	3	3/4 × 5	11'-9"	296 348	26 30	103 142	8.8 12.1
18	3	18R624S-*	3	3/8	1/4	4	4 1/2	3	3/4 × 5	11'-9"	412	35	168	14.3
20	3 7/16	20R724S-*	3	3/8	1/4	4	4 1/2	4	7/8 × 5 1/2	11'-8"	438	38	180	15.5
24	3 7/16	24R724S-*	3	3/8	1/4	4	4 1/2	4	7/8 × 5 1/2	11'-8"	455	39	193	16.5

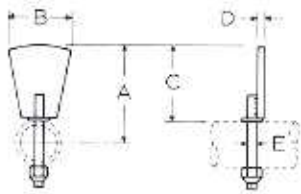
SPECIAL CONVEYOR SCREWS

SPECIAL PITCHES	SHORT PITCH		Pitch less than screw diameter. For inclined or for feeder applications. For materials that aerate and become fluid.
	LONG PITCH		Pitch greater than screw diameter. For agitating fluid materials. For rapid movement of free-flowing materials.
	VARIABLE PITCH		Combination of various pitches. For uniform withdrawal of fine, free-flowing materials over full length of inlet opening.
SPECIAL FLIGHTS	DOUBLE FLIGHT		Two separate helices for smooth, regular material flow.
	TAPERED FLIGHT		Gradual increase in flight diameter. For uniform withdrawal of lumpy material. Generally equivalent to and more economical than variable pitch.
	CUT FLIGHT		For mixing and agitating materials in transit. For materials that tend to pack.
	CUT & FOLDED FLIGHT		For heating, cooling, or aerating light materials. Folded segments lift and spill material. Partially retarded flow provides thorough mixing action.
	FLIGHT WITH PADDLES		Opposes material flow to provide gentle but thorough mixing action. Paddles may be added to most standard and special screws. Paddles available in fixed pitch (welded in place) or adjustable pitch (bolt mounted).
	PADDLES ONLY		For complete mixing action and controlled material flow. Available in fixed pitch (welded in place) or adjustable pitch (bolt mounted).

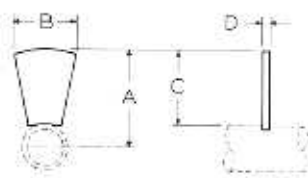
FOR OTHER SPECIAL CONVEYOR TYPES, CONTACT OUR ENGINEERING DEPARTMENT.

PADDLES

Adjustable



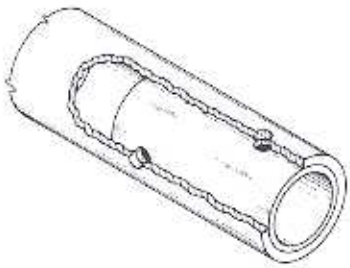
Welded



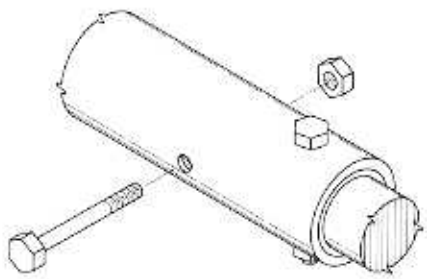
Dimensions shown are approximate. Request certified prints for installation.

Conveyor Size	Part Number		Pipe	A	B	C	D	E	Weight Each (lbs.)	
	Adjustable	Welded	O.D.						Adjustable	Welded
4	CP42-1	CP42-2	1 5/8	2	1 1/2	1 3/16	3/16	3/8	.25	.13
6	CP63-1	CP63-2	2 3/8	3	2 1/16	1 13/16	1/4	1/2	.50	.35
9	CP93-1 CP94-1	CP93-2 CP94-2	2 3/8 2 7/8	4 1/2	2 3/4	3 5/16 3 1/16	1/4	1/2 5/8	.50 .75	.40 .36
10	CP103-1 CP104-1	CP103-2 CP104-2	2 3/8 2 7/8	5	3 1/8	3 13/16 3 5/16	1/4	1/2 5/8	.75 1.00	.65 .85
12	CP124-1 CP125-1 CP126-1	CP124-2 CP125-2 CP126-2	2 7/8 3 1/2 4	6	3 11/16	4 5/16 4 1/4 4	3/8	5/8 5/8 3/4	1.75 1.50 1.75	1.35 1.05 1.00
14	CP145-1 CP146-1	CP145-2 CP146-2	3 1/2 4	7	4 1/4	5 1/4 5	3/8	5/8 3/4	2.25 2.50	1.85 1.75
16	CP166-1 CP167-1	CP166-2 CP167-2	4 4 1/2	8	4 15/16	6 5 3/4	3/8	3/4 7/8	3.25 3.50	2.50 2.45
18	CP186-1 CP187-1	CP186-2 CP187-2	4 4 1/2	9	5 3/8	7 6 3/4	3/8	3/4 7/8	4.00 4.25	3.25 3.20
20	CP206-1 CP207-1	CP206-2 CP207-2	4 4 1/2	10	6 1/8	8 7 3/4	3/8	3/4 7/8	4.75 5.00	4.00 3.95
24	CP247-1	CP247-2	4 1/2	12	7 3/8	9 3/4	1/2	7/8	6.75	5.60

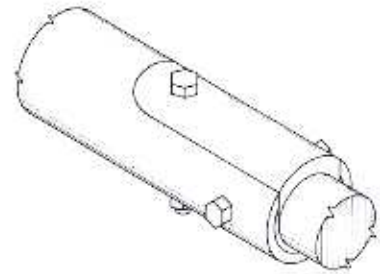
INTERNAL COLLAR



COUPLING BOLTS



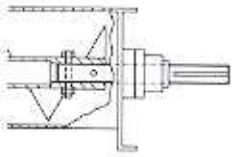
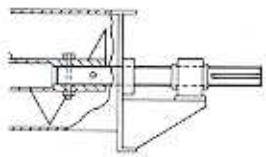
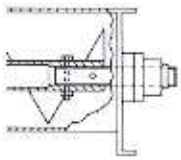
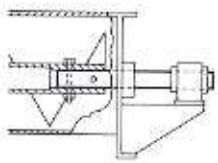
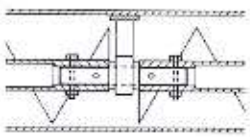
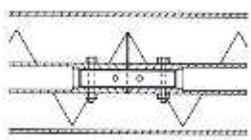
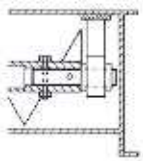
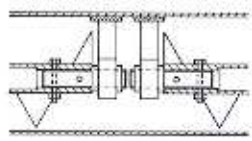
QUICK-RELEASE KEY



Dimensions shown are approximate. Request certified prints for installation.

Coupling Dia.	Schedule 40 Pipe Size		Internal Collars		Coupling Bolts				Quick Release Keys	
	I.D.	O.D.	Part Number	Weight Each (lbs.)	Part Number		Size	Weight Each (lbs.)	Part Number	Weight Each (lbs.)
					Standard	High-Torque				
1	1 1/4	1 5/8	CIC-1	.7	CCB-1	CCBX-1	3/8 x 2 1/8	.13	–	–
1 1/2	2	2 3/8	CIC-112	2.2	CCB-112	CCBX-112	1/2 x 3	.25	CQR-112	1.3
2	2 1/2	2 7/8	CIC-2	2.4	CCB-2	CCBX-2	5/8 x 3 5/8	.50	CQR-2	1.6
2 7/16	3	3 1/2	CIC-2716	4.1	CCB-2716	CCBX-2716	5/8 x 4 3/8	.56	CQR-2716	2.1
3	3 1/2	4	CIC-3	4.3	CCB-3	CCBX-3	3/4 x 5	.75	CQR-3	2.5
3 7/16	4	4 1/2	CIC-3716	7.3	CCB-3716	CCBX-3716	7/8 x 5 1/2	1.25	CQR-3716	4.3

SHAFT INDEX

DRIVE SHAFTS	STANDARD TROUGH END 	OUTBOARD BEARING TROUGH END 	See Shaft Style Selection Table on next page.	Page 44
END SHAFTS	STANDARD TROUGH END 	OUTBOARD BEARING TROUGH END 		Page 45
COUPLING SHAFTS	STANDARD 	CLOSE COUPLING 	Standard couplings are used to join two sections of conveyor screw at a hanger bearing. Where it is necessary to omit the hanger, a close coupling is used.	Page 46
HANGER END SHAFTS	TROUGH END 	MID-TROUGH 	Hanger end shafts are used where open end discharge is required. They may also be used mid-trough where drives at both ends are required.	Page 46
THRUST BEARING SHAFTS	See Thrust Bearing Section of this catalogue.			Page 59

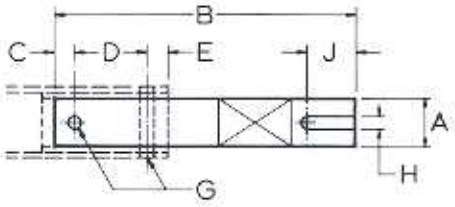
SHAFT STYLE SELECTION TABLE

Each type and diameter of Drive and End shaft is available in several styles, varying only in length to suit various combinations of end bearings and seals.

From the table below, determine the shaft style for the required shaft diameter, bearing type, and seal, then select this style in the required shaft diameter from the Drive and End shaft tables on the pages following.

Bearing Type	Shaft Dia.	STANDARD TROUGH END WITH FLANGED BEARING			OUTBOARD BEARING TROUGH END WITH PILLOW BLOCK BEARING	
		No External Seal –	External Plate Seal TYPE CSF	External Packing Seal Housing TYPE CSW	Any Seal Except Type CSG. –	External Packed Gland Seal TYPE CSG.
BALL	1	Style (1)	Style (1)	–	–	–
	1 1/2	Style (1)	Style (2)	Style (3)	Style (5)	Style (6)
	2	Style (1)	Style (2)	Style (3)	Style (5)	Style (6)
	2 7/16	Style (1)	Style (1)	Style (2)	Style (4)	Style (5)
	3	Style (1)	Style (1)	Style (2)	Style (4)	Style (5)
	3 7/16	Style (1)	Style (1)	Style (2)	Style (4)	Style (5)
ROLLER	1 1/2	–	Style (3)	Style (4)	Style (5)	Style (6)
	2	–	Style (3)	Style (4)	Style (5)	Style (6)
	2 7/16	–	Style (2)	Style (3)	Style (4)	Style (5)
	3	–	Style (2)	Style (3)	Style (4)	Style (5)
	3 7/16	–	Style (2)	Style (3)	Style (4)	Style (5)
SLEEVE	1	Style (1)	–	–	–	–
	1 1/2	Style (2)	–	–	Style (5)	Style (6)
	2	Style (3)	–	–	Style (5)	Style (6)
	2 7/16	Style (3)	–	–	Style (4)	Style (5)
	3	Style (3)	–	–	Style (4)	Style (5)
	3 7/16	Style (3)	–	–	Style (4)	Style (5)

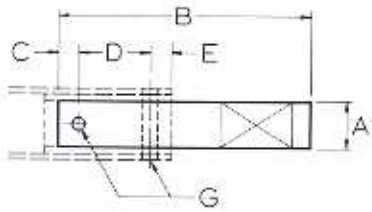
DRIVE SHAFTS



Dimensions shown are approximate. Request certified prints for installation.
Part numbers shown are for standard cold rolled shafting. For special shafting, add the following suffixes to the part numbers shown: –H for hardened shafting; –HT for high-torque shafting

A Shaft Dia.	Shaft Style	Part No.	Wt.	B	C	D	E	G Bolts	H	J
1	①	CDS1-1	1.9	8 1/2	1/2	2	1/2	3/8	1/4	2
1 1/2	①	CDS1-112	5.4	10 3/4	7/8	3	7/8	1/2	3/8	2
	②	CDS2-112	5.7	11 1/4						
	③	CDS3-112	6.3	12 1/2						
	④	CDS4-112	6.9	13 3/4						
	⑤	CDS5-112	7.1	14 1/4						
	⑥	CDS6-112	8.9	17 3/4						
2	①	CDS1-2	19.6	10 3/4	7/8	3	7/8	5/8	1/2	2
	②	CDS2-2	10.0	11 1/4						
	③	CDS3-2	11.1	12 1/2						
	④	CDS4-2	12.3	13 3/4						
	⑤	CDS5-2	13.4	15						
	⑥	CDS6-2	16.5	18 1/2						
2 7/16	①	CDS1-2716	17.7	13 1/2	15/16	3	15/16	5/8	5/8	3
	②	CDS2-2716	19.0	14 1/2						
	③	CDS3-2716	20.7	15 3/4						
	④	CDS4-2716	23.4	17 3/4						
	⑤	CDS5-2716	28.2	21 1/2						
3	①	CDS1-3	28.3	14 1/2	1	3	1	3/4	3/4	3
	②	CDS2-3	31.3	15 3/4						
	③	CDS3-3	33.8	17						
	④	CDS4-3	38.3	19 1/4						
	⑤	CDS5-3	45.5	22 3/4						
3 7/16	①	CDS1-3716	48.3	18 1/2	1 1/4	4	1 1/2	7/8	7/8	4
	②	CDS2-3716	52.2	20						
	③	CDS3-3716	55.5	21 1/4						
	④	CDS4-3716	62.4	24						
	⑤	CDS5-3716	71.0	27 1/4						

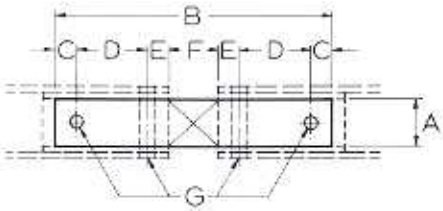
END SHAFTS



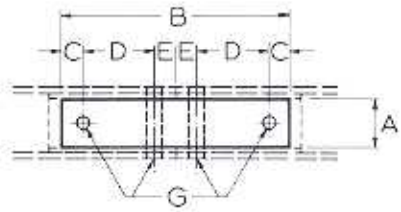
Dimensions shown are approximate. Request certified prints for installation.
Part numbers shown are for standard cold rolled shafting. For special shafting, add the following suffixes to the part numbers shown: –H for hardened shafting; –HT for high-torque shafting

A Shaft Dia.	Shaft Style	Part No.	Wt.	B	C	D	E	G Bolts
1	①	CES1-1	1.5	6½	½	2	½	⅜
1 ½	①	CES1-112	4.4	8¾	⅞	3	⅞	½
	②	CES2-112	4.7	9¼				
	③	CES3-112	5.3	10½				
	④	CES4-112	5.9	11¾				
	⑤	CES5-112	6.1	12¼				
	⑥	CES6-112	7.9	15¾				
2	①	CES1-2	7.8	8¾	⅞	3	⅞	⅝
	②	CES2-2	8.3	9¼				
	③	CES3-2	9.4	10½				
	④	CES4-2	10.5	11¾				
	⑤	CES5-2	11.6	13				
	⑥	CES6-2	14.7	16½				
2 7/16	①	CES1-2716	13.7	10½	15/16	3	15/16	⅝
	②	CES2-2716	15.0	11½				
	③	CES3-2716	16.7	12¾				
	④	CES4-2716	19.4	14¾				
	⑤	CES5-2716	24.1	18½				
3	①	CES1-3	22.8	11½	1	3	1	¾
	②	CES2-3	25.3	12¾				
	③	CES3-3	27.8	14				
	④	CES4-3	32.3	16¼				
	⑤	CES5-3	39.2	19¾				
3 7/16	①	CES1-3716	37.8	14½	1 ¼	4	1 ½	⅞
	②	CES2-3716	41.7	16				
	③	CES3-3716	45.0	17¼				
	④	CES4-3716	52.0	20				
	⑤	CES5-3716	60.5	23¼				

COUPLING SHAFTS



STANDARD



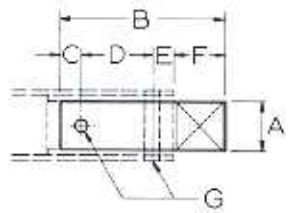
CLOSE COUPLING

Dimensions shown are approximate. Request certified prints for installation.

Part numbers shown are for standard cold rolled shafting. For special shafting, add the following suffixes to the part numbers shown: —H for hardened shafting; —HT for high-torque shafting

A Shaft Dia.	Standard			Close Coupling			C	D	E	F	G Bolts
	Part No.	Wt.	B	Part No.	Wt.	B					
1	CC-1	1.7	7½	CCC-1	1.4	6	½	2	½	1½	⅜
1½	CC-112	5.8	11½	CCC-112	4.8	9½	⅞	3	⅞	2	½
2	CC-2	10.3	11½	CCC-2	8.5	9½	⅞	3	⅞	2	⅝
2 7/16	CC-2716	16.9	12¾	CCC-2716	12.8	9¾	15/16	3	15/16	3	⅝
3	CC-3	26.1	13	CCC-3	20.0	10	1	3	1	3	¾
3 7/16	CC-3716	46.0	17½	CCC-3716	35.5	13½	1¼	4	1½	4	⅞

HANGER END SHAFTS



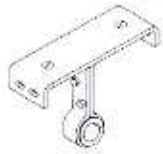
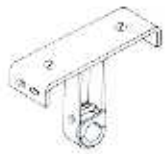
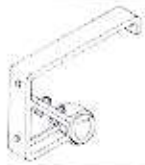
Dimensions shown are approximate. Request certified prints for installation.

Part numbers shown are for standard cold rolled shafting. For special shafting, add the following suffixes to the part numbers shown: —H for hardened shafting; —HT for high-torque shafting

A Shaft Dia.	Part No.	Wt.	B	C	D	E	F	G Bolts
1	CEH-1	1.1	4⅝	½	2	½	1⅝	⅜
1½	CEH-112	3.5	6⅞	⅞	3	⅞	2⅛	½
2	CEH-2	6.2	6⅞	⅞	3	⅞	2⅛	⅝
2 7/16	CEH-2716	10.8	8⅛	15/16	3	15/16	3¼	⅝
3	CEH-3	16.6	8¼	1	3	1	3¼	¾
3 7/16	CEH-3716	29.4	11⅛	1¼	4	1½	4⅜	⅞

HANGER INDEX

All hanger inserts can be replaced without removing coupling except No. 216, 270, and 230.

—	—	Numerical Designation System for Hangers	Page 48
No. 226		Minimum obstruction to material flow. Rigid construction. Top plate mounted flush with trough flanges.	Page 48
No. 216		Maximum stability, but increased obstruction to material flow. Top plate mounted flush with trough flanges.	Page 48
No. 270		Self-aligning sealed ball bearing. Top plate mounted flush with trough flanges.	Page 49
No. 220		Minimum obstruction to material flow. Rigid Construction. Top plate mounted on top of trough flanges.	Page 49
No. 230		Maximum stability, but increased obstruction to material flow. Top plate mounted on top of trough flanges.	Page 49
No. 30		Minimum obstruction to material flow. Side plate mounted to inside of trough on non-carrying side.	Page 50
No. 326		For high temperature applications. Top plate has special expansion mounting brackets.	Page 50
Hangers for Flared Trough		Available in all the above types.	—
Type CBX Type CBZ Type CBB	Hanger Bearings	Type CBX for hanger Nos. 30, 220, 226, and 326. Type CBZ for hanger Nos. 216 and 230. Type CBB for hanger No. 270.	Page 51

Numerical Designation System for Hangers

CH12 230 2716 – BR

Screw Diameter

Hanger Number

Shaft Diameter

1 = 1"
112 = 1½"
2 = 2"
2716 = 2 7/16"
3 = 3"
3716 = 3 7/16"

Bearing Material Code

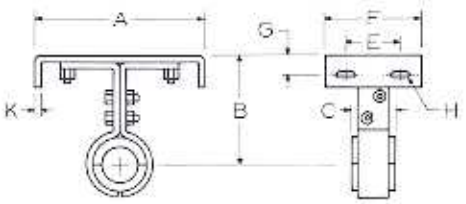
B = Babbitt
BR = Bronze
H = Hard Iron
W = Oil Impregnated Wood
N = Teflon Filled Nylon

Lubrications fittings supplied as standard with all Babbitt, Bronze, and Ball Bearings.

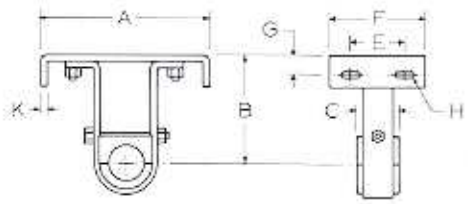
No. 270 has cast frame. All other types fabricated from mild steel as standard.

Fabricated types also available in 304 or 316 stainless steel, monel, inconel, and other alloys.

No. 226



No. 216

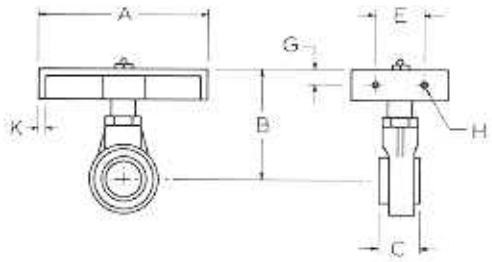


Dimensions shown are approximate. Request certified prints for installation.

*Add bearing material code to part numbers shown below.

Screw Dia.	Shaft Dia.	*Part Number		A	B	C	E	F	G	Bolts H	K	Wt. (lbs.) #226	Wt. (lbs.) #216
		No. 226	No. 216										
4	1	CH4 226 1	–	5	3⅝	1½	2	3½	⅝	¼	3/16	4	–
6	1½	CH6 226 112	CH6 216 112	7	4½	2	2½	4	¾	⅜	¼	6	5
9	1½ 2	CH9 226 112 CH9 226 2	CH9 216 112 CH9 216 2	10	6⅛	2 2	2½	4	1	⅜	¼	8 9	7 9
10	1½ 2	CH10 226 112 CH10 226 2	CH10 216 112 CH10 216 2	11	6⅜	2 2	2½	4	1	⅜	¼	9 11	8 10
12	2 2 7/16 3	CH12 226 2 CH12 226 2716 CH12 226 3	CH12 216 2 CH12 216 2716 CH12 216 3	13	7¾	2 3 3	2½	5	1¼	½	⅜	13 18 24	14 18 21
14	2 7/16 3	CH14 226 2716 CH14 226 3	CH14 216 2716 CH14 216 3	15	9¼	3 3	2½	5	1⅜	½	⅜	22 29	23 25
16	3	CH16 226 3	CH16 216 3	17	10⅝	3	2½	5	1⅜	½	⅜	34	28
18	3 3 7/16	CH18 226 3 CH18 226 3716	CH18 216 3 CH18216 3716	19	12⅛	3 4	3½	5	1⅝	⅝	½	35 46	34 44
20	3 3 7/16	CH20 226 3 CH20 226 3716	CH20 216 3 CH20 216 3716	21	13½	3 4	3½	5	1⅝	⅝	½	41 52	36 47
24	3 7/16	CH24 226 3716	CH24 216 3716	25	16½	4	3½	5	1¾	⅝	½	63	53

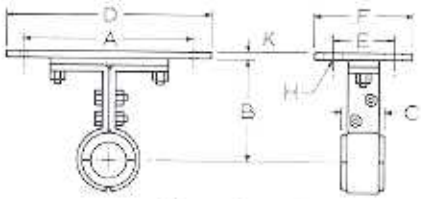
No. 270



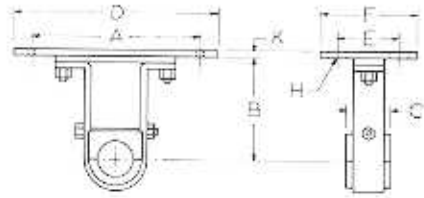
Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Shaft Dia.	Part Number	A	B	C	E	G	Bolts H	K	Weight (lbs.)
6	1½	CH6 270 112	7	4½	2	1⅞	¾	⅜	¼	7
9	1½ 2	CH9 270 112 CH9 270 2	10	6⅛	2 2	2½	1	⅜	⅜	8 9
10	1½ 2	CH10 270 112 CH10 270 2	11	6⅜	2 2	2½	1	⅜	⅜	9 10
12	2 2 7/16 3	CH12 270 2 CH12 270 2716 CH12 270 3	13	7¾	2 3 3	2½	1¼	½	½	12 20 30
14	2 7/16 3	CH14 270 2716 CH14 270 3	15	9¼	3 3	2½	1⅜	½	½	21 32
16	3	CH16 270 3	17	10⅝	3	2½	1⅜	½	⅝	35
18	3	CH18 270 3	19	12⅛	3	3½	1⅝	⅝	¾	40

No. 220



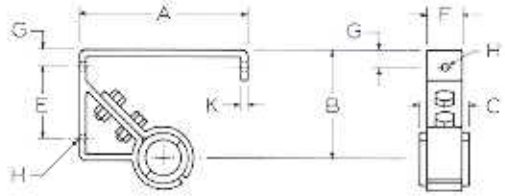
No. 230



Dimensions shown are approximate. Request certified prints for installation.
*Add material bearing code to part numbers shown below.

Screw Dia.	Shaft Dia.	*Part Number		A	B	C	D	E	F	Bolts H	K	Wt. (lbs.)	
		No. 220	No. 230									#220	#230
4	1	CH4 220 1	–	6¼	3⅝	1½	7¼	2	4	¼	¼	5	–
6	1½	CH6 220 112	CH6 230 112	8¾	4½	2	9¾	2½	4	⅜	¼	7	6
9	1½ 2	CH9 220 112 CH9 220 2	CH9 230 112 CH9 230 2	12¼	6⅛	2 2	13½	2½	4	⅜	¼	9 11	8 10
10	1½ 2	CH10 220 112 CH10 220 2	CH10 230 112 CH10 230 2	13¼	6⅜	2 2	14½	2½	4	⅜	¼	10 12	9 11
12	2 2 7/16 3	CH12 220 2 CH12 220 2716 CH12 220 3	CH12 230 2 CH12 230 2716 CH12 230 3	15¾	7¾	2 3 3	17½	2½	5	½	⅜	16 21 28	15 20 25
14	2 7/16 3	CH14 220 2716 CH14 220 3	CH14 230 2716 CH14 230 3	17¾	9¼	3 3	19½	2½	5	½	⅜	26 33	24 29
16	3	CH16 220 3	CH16 230 3	19¾	10⅝	3	21½	2½	5	½	⅜	39	35
18	3 3 7/16	CH18 220 3 CH18 220 3716	CH18 230 3 CH18 230 3716	22¼	12⅛	3 4	24½	3½	5	⅝	½	41 49	34 47
20	3 3 7/16	CH20 220 3 CH20 220 3716	CH20 230 3 CH20 230 3716	24¼	13½	3 4	26½	3½	5	⅝	½	43 51	40 49
24	3 7/16	CH24 220 3716	CH24 230 3716	28¼	16½	4	30½	3½	5	⅝	½	57	55

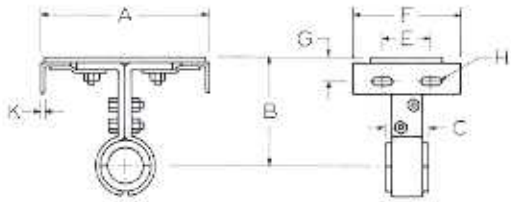
No. 30



Dimensions shown are approximate. Request certified prints for installation.
*Add bearing material code to part numbers shown below.

Screw Dia.	Shaft Dia.	* Part Number	A	B	C	E	F	G	Bolts H	K	Wt. (lbs.)
6	1 1/2	CH6 30 112	7	4 1/2	2	3	1 1/2	3/4	3/8	1/4	4
9	1 1/2 2	CH9 30 112 CH9 30 2	10	6 1/8	2 2	3 1/2	1 1/2 1 1/2	1	1/2	3/8	5 5
10	1 1/2 2	CH10 30 112 CH10 30 2	11	6 3/8	2 2	3 3/4	1 3/4 1 3/4	1	1/2	3/8	6 6
12	2 2 7/16 3	CH12 30 2 CH12 30 2716 CH12 30 3	13	7 3/4	2 3 3	5 1/4	2 2 1/4 2 1/4	1 1/4	1/2	3/8	8 13 18
14	2 7/16 3	CH14 30 2716 CH14 30 3	15	9 1/4	3 3	6 3/4	2 1/4 2 1/4	1 1/4	5/8	3/8	17 19
16	3	CH16 30 3	17	10 5/8	3	8	2 1/4	1 1/4	5/8	1/2	21
18	3 3 7/16	CH18 30 3 CH18 30 3716	19	12 1/8	3 4	9 1/8	2 1/2 3	1 3/8	5/8	1/2	22 32
20	3 3 7/16	CH20 30 3 CH20 30 3716	21	13 1/2	3 4	10 3/8	2 1/2 3	1 3/8	5/8	1/2	25 36
24	3 7/16	CH24 30 3716	25	16 1/2	4	12	3	2	3/4	5/8	36

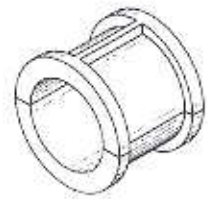
No. 326



Dimensions shown are approximate. Request certified prints for installation.
*Add bearing material code to part numbers shown below.

Screw Dia.	Shaft Dia.	* Part Number	A	B	C	E	F	G	Bolts H	K	Wt. (lbs.)
6	1 1/2	CH6 326 112	7	4 1/2	2	2 1/2	6	3/4	3/8	1/8	7
9	1 1/2 2	CH9 326 112 CH9 326 2	10	6 1/8	2 2	2 1/2	6	1	3/8	3/16	9 10
10	1 1/2 2	CH10 326 112 CH10 326 2	11	6 3/8	2 2	2 1/2	6	1	3/8	3/16	10 12
12	2 2 7/16 3	CH12 326 2 CH12 326 2716 CH12 326 3	13	7 3/4	2 3 3	2 1/2	6 1/2	1 1/4	1/2	3/16	14 19 25
14	2 7/16 3	CH14 326 2716 CH14 326 3	15	9 1/4	3 3	2 1/2	6 1/2	1 3/8	1/2	1/4	23 31
16	3	CH16 326 3	17	10 5/8	3	2 1/2	6 1/2	1 3/8	1/2	1/4	36
18	3 3 7/16	CH18 326 3 CH18 326 3716	19	12 1/8	3 4	3 1/2	6 1/2 7	1 5/8	5/8	1/4	36 48
20	3 3 7/16	CH20 326 3 CH20 326 3716	21	13 1/2	3 4	3 1/2	6 1/2 7	1 5/8	5/8	1/4	38 48
24	3 7/16	CH24 326 3716	25	16 1/2	4	3 1/2	7	1 3/4	5/8	5/16	58

Hanger Bearings Type CBX

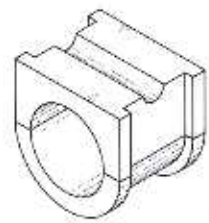


For hanger Nos. 30, 220, 226, 326.

Also available in other materials.

Shaft Dia.	Part Number				
	Babbitt	Bronze	Hard Iron	Oil Impregnated Wood	Teflon Filled Nylon
1	CBX1B	CBX1BR	CBX1H	CBX1W	CBX1N
1 1/2	CBX112B	CBX112BR	CBX112H	CBX112W	CBX112N
2	CBX2B	CBX2BR	CBX2H	CBX2W	CBX2N
2 7/16	CBX2716B	CBX2716BR	CBX2716H	CBX2716W	CBX2716N
3	CBX3B	CBX3BR	CBX3H	CBX3W	CBX3N
3 7/16	CBX3716B	CBX3716BR	CBX3716H	CBX3716W	CBX3716N

Hanger Bearings Type CBZ



For hanger Nos. 216, 230.

Also available in other materials.

Shaft Dia.	Part Number		
	Babbitt	Hard Iron	Oil Impregnated Wood
1	CBZ1B	CBZ1H	CBZ1W
1 1/2	CBZ112B	CBZ112H	CBZ112W
2	CBZ2B	CBZ2H	CBZ2W
2 7/16	CBZ2716B	CBZ2716H	CBZ2716W
3	CBZ3B	CBZ3H	CBZ3W
3 7/16	CBZ3716B	CBZ3716H	CBZ3716W

Hanger Bearings Type CBB

For hanger No. 270.

Self-aligning, sealed ball bearing.

Shaft Dia.	Part Number
1 1/2	CBB112
2	CBB2
2 7/16	CBB2716
3	CBB3

TROUGH END INDEX

Numerical Designation System for Trough Ends

CEF 6 112 BB

Trough End Type

Screw Diameter

Shaft Diameter

1 = 1"
112 = 1½"
2 = 2"
2716 = 2 7/16"
3 = 3"
3716 = 3 7/16"

Bearing Code

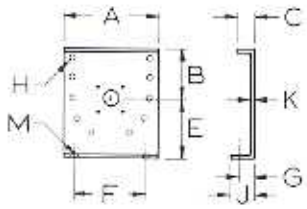
P = No bearing
BB = Ball Bearing
RB = Roller Bearing
B = Babbitt Bearing
BR = Bronze Bearing

See Bearings Section of this catalogue for dimensions of flange bearings and pillow blocks.

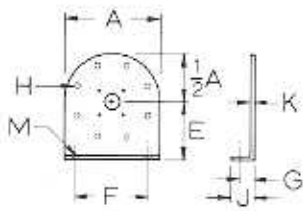
See Bolt Requirement Section of this catalogue for bolt hole patterns.

Weights shown in the following tables include weight of typical bearing.

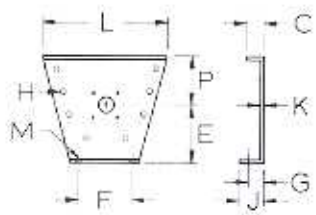
TROUGH ENDS WITH FEET



U - TROUGH



TUBULAR TROUGH

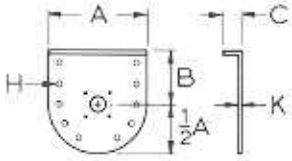


FLARED TROUGH

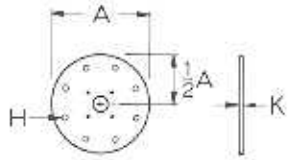
Note: Add Bearing Code suffix to part numbers shown below. Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Shaft Dia.	U-Trough Part No.	U-Trough Wt.	Tubular Part No.	Tubular Wt.	Flared Part No.	Flared Wt.	A	B	C	E	F	G	H Bolts	J	K	L	M Bolts	P
4	1	CEF41	7	–	–	–	–	7¾	3⅜	1½	4⅝	5¾	1	⅜	1⅜	5/16	–	⅜	–
6	1½	CEF6112	12	CEFT6112	11	CEFV6112	15	9¾	4½	1½	5⅝	8⅛	1	⅜	1¾	5/16	16⅝	⅜	7
9	1½ 2	CEF9112 CEF92	18 21	CEFT9112 CEFT92	15 18	CEFV9112 CEFV92	22 27	13¾	6⅛	1½	7⅞	9⅝	1½	⅜	2⅜	¼	21¼	½	9
10	1½ 2	CEF10112 CEF102	27 31	CEFT10112 CEFT102	25 29	– –	– –	14¾	6⅜	1½	8⅞	9½	1¾	⅜	2⅞	¼	–	½	–
12	2 2 7/16 3	CEF122 CEF122716 CEF123	36 38 50	CEFT122 CEFT122716 CEFT123	29 31 43	CEFV122 CEFV122716 CEFV123	43 44 56	17¼	7¾	2	9⅝	12¼	1⅛	½	2¾	¼	26⅜	⅝	10
14	2 7/16 3	CEF142716 CEF143	45 57	CEFT142716 CEFT143	39 51	CEFV142716 CEFV143	52 64	19¼	9¼	2	10⅞	13½	1⅛	½	2⅞	5/16	28⅜	⅝	11
16	3	CEF163	75	CEFT163	65	CEFV163	85	21¼	10⅜	2½	12	14⅞	2	⅝	3¼	5/16	32½	⅝	11½
18	3 3 7/16	CEF183 CEF183716	89 99	CEFT183 CEFT183716	78 89	CEFV183 CEFV183716	98 104	24¼	12⅛	2½	13⅜	16	2	⅝	3¼	⅜	36½	⅝	12⅛
20	3 3 7/16	CEF203 CEF203716	126 132	CEFT203 CEFT203716	115 127	CEFV203 CEFV203716	133 139	26¼	13½	2½	15	19¼	2¼	⅝	3¾	⅜	39½	¾	13½
24	3 7/16	CEF243716	169	CEFT243716	157	CEFV243716	173	30¼	16½	2½	18⅛	20	2½	⅝	4⅛	⅜	45½	¾	16½

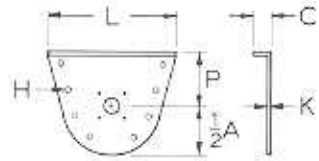
TROUGH ENDS WITHOUT FEET



U-TROUGH



TUBULAR TROUGH

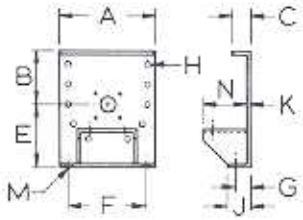


FLARED TROUGH

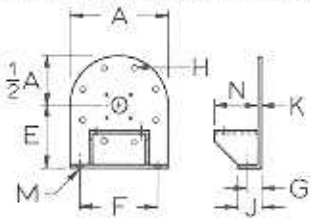
Dimensions shown are approximate. Request certified prints for installation.
Note: Add Bearing Code suffix to part numbers shown below.

Screw Dia.	Shaft Dia.	U-Trough Part No.	U-Trough Wt.	Tubular Part No.	Tubular Wt.	Flared Part No.	Flared Wt.	A	B	C	H Bolts	K	L	P
4	1	CE41	5	–	–	–	–	7¾	3⅝	1½	⅜	3/16	–	–
6	1½	CE6112	10	CET6112	9	CEV6112	13	9¾	4½	1½	⅜	3/16	16⅝	7
9	1½ 2	CE9112 CE92	15 18	CET9112 CET92	12 15	CEV9112 CEV92	19 24	13¾	6⅛	1½	⅜	¼	21¼	9
10	1½ 2	CE10112 CE102	22 26	CET10112 CET102	20 24	– –	– –	14¾	6⅜	1½	⅜	¼	–	–
12	2 2 7/16 3	CE122 CE122716 CE123	29 31 43	CET122 CET122716 CET123	22 24 36	CEV122 CEV122716 CEV123	36 37 49	17¼	7¾	2	½	¼	26⅜	10
14	2 7/16 3	CE142716 CE143	36 48	CET142716 CET143	30 42	CEV142716 CEV143	43 55	19¼	9¼	2	½	5/16	28⅜	11
16	3	CE163	62	CET163	52	CEV163	72	21¼	10⅜	2½	⅝	5/16	32½	11½
18	3 3 7/16	CE183 CE183716	74 84	CET183 CET183716	63 74	CEV183 CEV183716	83 89	24¼	12⅛	2½	⅝	⅜	36½	12⅛
20	3 3 7/16	CE203 CE203716	96 102	CET203 CET203716	85 97	CEV203 CEV203716	103 109	26¼	13½	2½	⅝	⅜	39½	13½
24	3 7/16	CE243716	128	CET243716	115	CEV243716	132	30¼	16½	2½	⅝	⅜	45½	16½

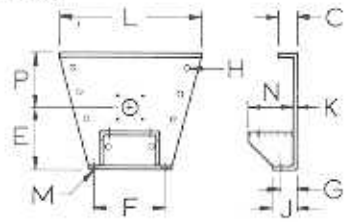
OUTBOARD BEARING TROUGH ENDS



U-TROUGH



TUBULAR TROUGH

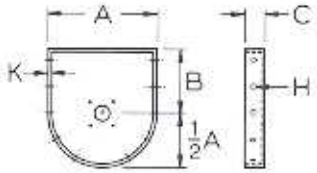


FLARED TROUGH

Note: Add Bearing Code suffix to part numbers shown below. Dimensions shown are approximate. Request certified prints for installation.
Note: Normally supplied with Std. Dim. "N". When specified for use with Type CSG Packed Gland Seal, supplied with CSG Dim. "N".

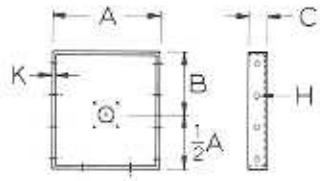
Screw Dia.	Shaft Dia.	U-Trough Part No.	U-Trough Wt.	Tubular Part No.	Tubular Wt.	Flared Part No.	Flared Wt.	A	B	C	E	F	G	H Bolts	J	K	L	M Bolts	N Std.	N CSG	P
6	1½	CEO6112	19	CEOT6112	18	CEOV6112	22	9¾	4½	1½	5⅛	8⅛	1	⅜	1¾	3/16	16⅝	⅜	5½	9⅛	7
9	1½ 2	CEO9112 CEO92	27 30	CEOT9112 CEOT92	24 27	CEOV9112 CEOV92	31 36	13¾	6⅛	1½	7⅛	9⅛	1½	⅜	2⅜	¼	21¼	½	5½ 6⅜	9⅛ 9⅞	9
10	1½ 2	CEO10112 CEO102	37 41	CEOT10112 CEOT102	35 39	– –	– –	14¾	6⅜	1½	8⅞	9½	1¾	⅜	2⅞	¼	–	½	5½ 6⅜	9⅛ 9⅞	–
12	2 2 7/16 3	CEO122 CEO122716 CEO123	56 58 70	CEOT122 CEOT122716 CEOT123	49 51 63	CEOV122 CEOV122716 CEOV123	63 64 76	17¼	7¾	2	9⅝	12¼	1⅝	½	2¾	¼	26⅜	⅝	6⅜ 7⅛ 8	9⅞ 10¾ 11½	10
14	2 7/16 3	CEO142716 CEO143	68 80	CEOT142716 CEOT143	62 74	CEOV142716 CEOV143	75 87	19¼	9¼	2	10⅞	13½	1⅝	½	2⅞	5/16	28⅜	⅝	7⅛ 8	10¾ 11½	11
16	3	CEO163	115	CEOT163	105	CEOV163	125	21¼	10⅜	2½	12	14⅞	2	⅝	3¼	5/16	32½	⅝	8	11½	11½
18	3 3 7/16	CEO183 CEO183716	129 139	CEOT183 CEOT183716	118 149	CEOV183 CEOV183716	138 144	24¼	12⅛	2½	13⅜	16	2	⅝	3¼	⅜	36½	⅝	8 9⅜	11½ 12¼	12⅛
20	3 3 7/16	CEO203 CEO203716	189 195	CEOT203 CEOT203716	178 190	CEOV203 CEOV203716	196 202	26¼	13½	2½	15	19¼	2¼	⅝	3¾	⅜	39½	¾	8 9⅜	11½ 12¼	13½
24	3 7/16	CEO243716	246	CEOT243716	234	CEOV243716	250	30¼	16½	2½	18⅛	20	2½	⅝	4⅛	⅜	45½	¾	9⅜	12¼	16½

INSIDE PATTERN TROUGH ENDS



U - TROUGH

Dimensions shown are approximate. Request certified prints for installation.

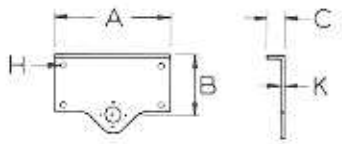


RECT. STEEL or WOOD TROUGH

Note: Add Bearing Code suffix to part numbers shown below.

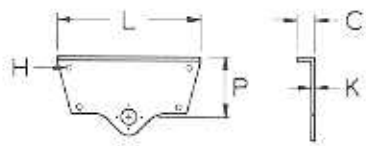
Screw Dia.	Shaft Dia.	U-Trough Part No.	U-Trough Wt.	Rect. Trough Part No.	Rect. Trough Wt.	A	B	C	H Bolts	K
6	1½	CEI6112	11	CEW6112	12	7	4½	2	⅜	3/16
9	1½ 2	CEI9112 CEI92	14 18	CEW9112 CEW92	16 20	10	6⅛	2	⅜	¼
10	1½ 2	CEI10112 CEI102	15 19	CEW10112 CEW102	17 21	11	6⅜	2	⅜	¼
12	2 2 7/16 3	CEI122 CEI122716 CEI123	27 29 41	CEW122 CEW122716 CEW123	30 32 45	13	7¾	2	½	¼
14	2 7/16 3	CEI142716 CEI143	35 47	CEW142716 CEW143	39 52	15	9¼	2	½	5/16
16	3	CEI163	59	CEW163	65	17	10⅜	2	⅝	5/16
18	3 3 7/16	CEI183 CEI183716	68 80	CEW183 CEW183716	75 88	19	12⅛	2	⅝	⅜
20	3 3 7/16	CEI203 CEI203716	103 115	CEW203 CEW203716	114 127	21	13½	2	⅝	⅜
24	3 7/16	CEI243716	145	CEW243716	160	25	16½	2	⅝	⅜

DISCHARGE TROUGH ENDS



U - TROUGH

Dimensions shown are approximate. Request certified prints for installation.

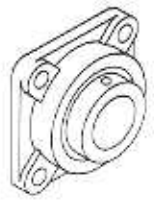
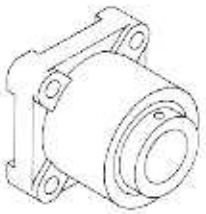
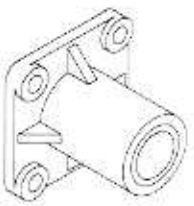
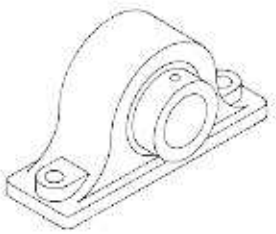
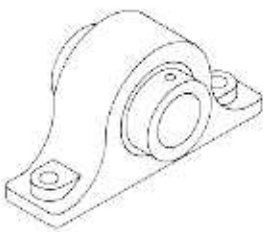
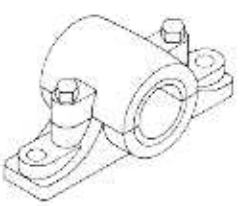


FLARED TROUGH

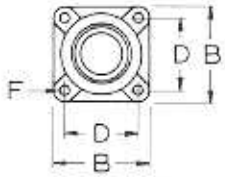
Note: Add Bearing Code suffix to part numbers shown below.

Screw Dia.	Shaft Dia.	U-Trough or Rect. Part No.	U-Trough or Rect. Wt.	Flared Part No.	Flared Wt.	A	B	C	H Bolts	K	L	P
6	1½	CED6112	8	CEDV6112	11	9¾	4½	1½	⅜	3/16	16⅜	7
9	1½ 2	CED9112 CED92	11 14	CEDV9112 CEDV92	15 20	13¾	6⅛	1½	⅜	¼	21¼	9
10	1½ 2	CED10112 CED102	11 15	– –	– –	14¾	6⅜	1½	⅜	¼	–	–
12	2 2 7/16 3	CED122 CED122716 CED123	21 23 34	CEDV122 CEDV122716 CEDV123	28 29 41	17¼	7¾	2	½	¼	26⅜	10
14	2 7/16 3	CED142716 CED143	26 38	CEDV142716 CEDV143	33 45	19¼	9¼	2	½	5/16	28⅜	11
16	3	CED163	47	CEDV163	56	21¼	10⅝	2½	⅝	5/16	32½	11½
18	3 3 7/16	CED183 CED183716	54 65	CEDV183 CEDV183716	63 69	24¼	12⅛	2½	⅝	⅜	36½	12⅛
20	3 3 7/16	CED203 CED203716	77 89	CEDV203 CEDV203716	75 81	26¼	13½	2½	⅝	⅜	39½	13½
24	3 7/16	CED243716	109	CEDV243716	96	30¼	16½	2½	⅝	⅜	45½	16½

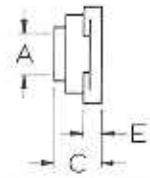
END BEARING INDEX

FLANGE UNITS	Mounted on trough end plate.		Ball Bearing Flange Unit	Page 57
			Roller Bearing Flange Unit	
			Sleeve Bearing Flange Unit	
PILLOW BLOCKS	Mounted on pedestal of outboard bearing trough end.		Ball Bearing Pillow Block	Page 58
			Roller Bearing Pillow Block	
			Sleeve Bearing Pillow Block	

BALL BEARING FLANGE UNIT

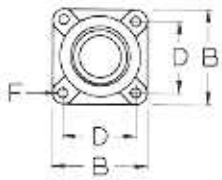


Dimensions shown are approximate. Request certified prints for installation.

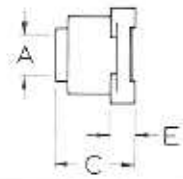


A Bore	Part No.	Weight	B	C	D	E	F Bolts
1	CEB1BB	1.9	3¾	1⅜	2¾	½	⅜
1½	CEB112BB	4.8	5⅛	2	4	9/16	½
2	CEB2BB	9.6	6½	2⅜	5⅛	11/16	⅝
2 7/16	CEB2716BB	11.0	7	2½	5⅝	11/16	⅝
3	CEB3BB	23.0	7¾	3⅜	6	⅞	¾
3 7/16	CEB3716BB	29.0	8½	3⅞	6¾	1	¾

ROLLER BEARING FLANGE UNIT

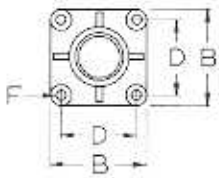


Dimensions shown are approximate. Request certified prints for installation.

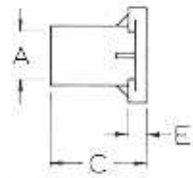


A Bore	Part No.	Weight	B	C	D	E	F Bolts
1½	CEB112RB	10.0	5⅜	3½	4⅛	1¼	½
2	CEB2RB	12.0	5⅝	3⅝	4⅜	1¼	½
2 7/16	CEB2716RB	21.0	6⅞	4¼	5⅜	1½	⅝
3	CEB3RB	28.0	7¾	4¾	6	1⅝	¾
3 7/16	CEB3716RB	46.0	9¼	5¼	7	1⅞	¾

SLEEVE BEARING FLANGE UNIT

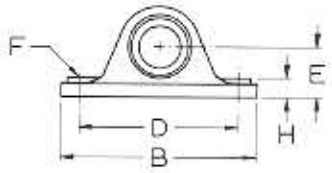


Dimensions shown are approximate. Request certified prints for installation.

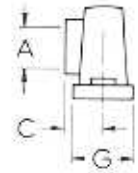


A Bore	Babbitt		Bronze		B	C	D	E	F Bolts
	Part No.	Weight	Part No.	Weight					
1	CEB1B	3.0	CEB1BR	3.0	3⅛	2	2¾	¾	⅜
1½	CEB112B	9.0	CEB112BR	9.0	5⅛	3	4	1 3/16	½
2	CEB2B	14.5	CEB2BR	14.5	6½	4	5⅛	1 3/16	⅝
2 7/16	CEB2716B	16.5	CEB2716BR	16.5	6⅞	5	5⅝	1 3/16	⅝
3	CEB3B	23.0	CEB3BR	23.0	7¾	6	6	1 3/16	¾
3 7/16	CEB3716B	38.0	CEB3716BR	38.0	8⅝	7	6¾	1¼	¾

BALL BEARING PILLOW BLOCK

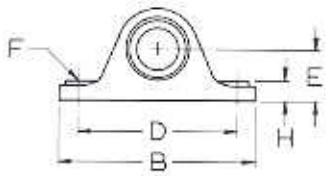


Dimensions shown are approximate. Request certified prints for installation.

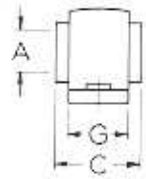


A Bore	Part No.	Weight	B	C	D	E	F Bolts	G	H
1	CPB1BB	1.9	5 1/8	3/4	4	1 7/16	3/8	1 1/2	9/16
1 1/2	CPB112BB	4.8	6 7/8	1 1/4	5 1/2	1 15/16	1/2	1 15/16	3/4
2	CPB2BB	9.4	8 5/8	1 3/8	6 3/4	2 1/2	5/8	2 3/8	15/16
2 7/16	CPB2716BB	11.3	9 1/2	1 5/8	7 1/2	2 11/16	5/8	2 1/2	1
3	CPB3BB	32.0	13	1 7/8	9	3 1/2	7/8	3 1/2	1 1/4
3 7/16	CPB3716BB	27.6	12 3/8	2	10	3 3/4	7/8	3 1/4	1 3/8

ROLLER BEARING PILLOW BLOCK

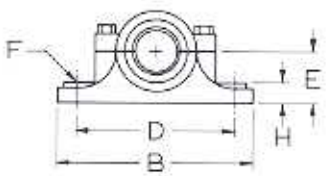


Dimensions shown are approximate. Request certified prints for installation.

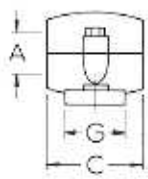


A Bore	Part No.	Weight	B	C	D	E	F Bolts	G	H
1 1/2	CPB112RB	7.9	8 1/8	3 3/8	6 5/8	2.362	1/2	2 3/8	1
2	CPB2RB	11.2	10	3 3/4	8 1/4	2.756	5/8	2 3/4	1 1/8
2 7/16	CPB2716RB	20.5	11	4 5/8	9 1/8	3.150	5/8	3 1/8	1 1/8
3	CPB3RB	29.5	12 5/8	5	10 3/8	3.470	3/4	3 5/8	1 1/4
3 7/16	CPB3716RB	48.8	15	6 3/8	12 5/8	4.409	7/8	4 3/8	1 1/2

SLEEVE BEARING PILLOW BLOCK

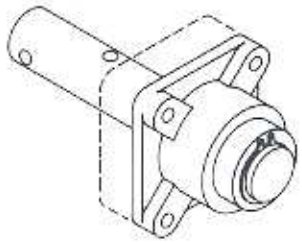
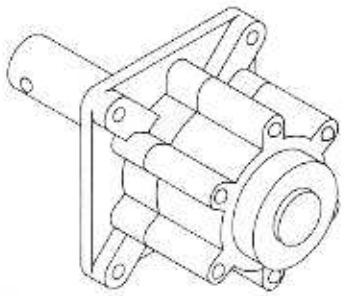
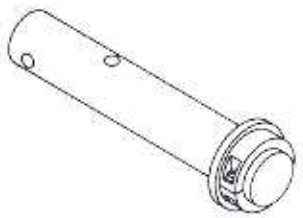
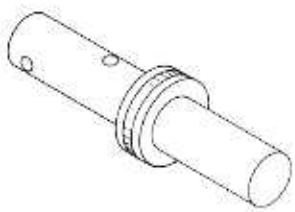


Dimensions shown are approximate. Request certified prints for installation.



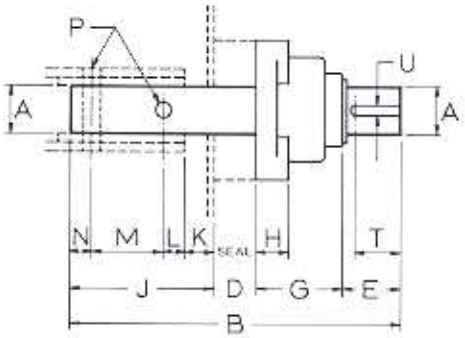
A Bore	Babbitt		Bronze		B	C	D	E	F Bolts	G	H
	Part No.	Weight	Part No.	Weight							
1 1/2	CPB112B	4.6	CPB112BR	4.6	6 1/4	3	4 7/8	1 3/8	1/2	2	3/4
2	CPB2B	8.6	CPB2BR	8.6	7 1/2	4	6	1 3/4	5/8	2 1/2	1
2 7/16	CPB2716B	16.0	CPB2716BR	16.0	9 1/4	5	7 1/8	2 1/8	5/8	3	1 1/8
3	CPB3B	24.0	CPB3BR	24.0	10 3/4	6	8 1/2	2 1/2	3/4	3 1/2	1 3/8
3 7/16	CPB3716B	40.0	CPB3716BR	40.0	12	7	9 1/4	2 7/8	7/8	4	1 1/2

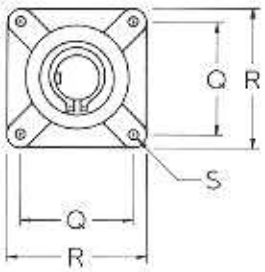
THRUST BEARING INDEX

TYPE M THRUST BEARINGS		The most commonly used thrust bearing, the Type M dual-roller bearing is suitable for medium thrust and radial loads. The integral shaft is retained by exterior spring steel snap rings. The Type M bearing is designed for use with either Type CSF or Type CSW seals.	Page 60
TYPE H THRUST BEARINGS		The heavy-duty Type H thrust bearing is designed for extreme thrust loads. The internally shouldered shaft and heavy-duty roller bearings provide maximum load capacities. Lip type seals are provided within the housing, so that no external seals are required.	Page 61
COLLAR AND WASHER		For use with sleeve type end bearings in applications with only nominal thrust loads, the collar and washer and grooved shaft are designed for use only at the discharge end of the conveyor, with the screw in tension.	Page 62
BRONZE WASHER		Designed for interior mounting at the inlet end of the conveyor, with the screw in compression, the bronze washer is capable of bearing light loads only, and is exposed continuously to the conveyed material.	Page 62

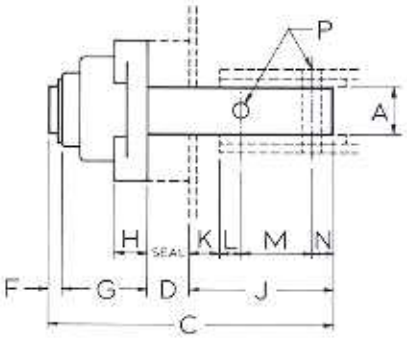
TYPE M THRUST BEARINGS

DRIVE SHAFT





END SHAFT



Part Nos. shown include bearing and shaft assembly only.
Order shaft seals separately.
Dimensions are approximate. Request certified prints for installation.

DRIVE SHAFT ASSEMBLIES

A Shaft Dia.	Seal Type	Part No.	Wt.	B	D	
1 1/2	CSF	CTM112-DF	22	12 1/4	1/2	DIMENSIONS CONTINUED BELOW
	CSW	CTM112-DW	23	13 1/2	1 3/4	
2	CSF	CTM2-DF	32	12 1/2	1/2	
	CSW	CTM2-DW	33	13 3/4	1 3/4	
2 7/16	CSF	CTM2716-DF	50	14 13/16	1/2	
	CSW	CTM2716-DW	52	16 1/16	1 3/4	
3	CSF	CTM3-DF	73	15 9/16	1/2	
	CSW	CTM3-DW	76	16 13/16	1 3/4	
3 7/16	CSF	CTM3716-DF	111	19 5/8	5/8	
	CSW	CTM3716-DW	115	21 1/4	2 1/4	

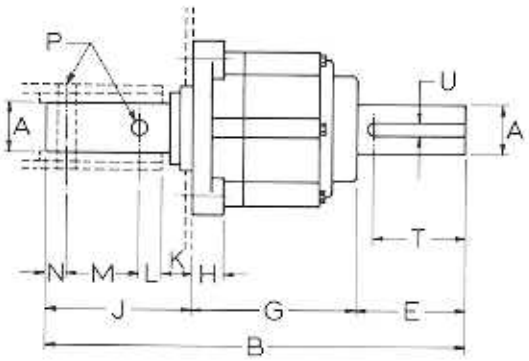
END SHAFT ASSEMBLIES

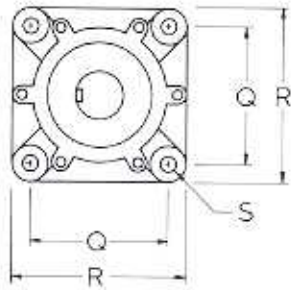
A Shaft Dia.	Seal Type	Part No.	Wt.	C	D	
1 1/2	CSF	CTM112-EF	20	10 1/4	1/2	DIMENSIONS CONTINUED BELOW
	CSW	CTM112-EW	21	11 1/2	1 3/4	
2	CSF	CTM2-EF	29	10 3/8	1/2	
	CSW	CTM2-EW	30	11 5/8	1 3/4	
2 7/16	CSF	CTM2716-EF	44	11 11/16	1/2	
	CSW	CTM2716-EW	46	12 15/16	1 3/4	
3	CSF	CTM3-EF	60	12 5/16	1/2	
	CSW	CTM3-EW	63	13 9/16	1 3/4	
3 7/16	CSF	CTM3716-EF	88	15 3/8	5/8	
	CSW	CTM3716-EW	92	17	2 1/4	

A Shaft Dia.	E	F	G	H	J	K	L	M	N	P Bolts	Q	R	S Bolts	T	U Key
1 1/2	2 1/4	1/4	3 1/2	1 3/16	6	1 1/4	7/8	3	7/8	1/2	4 1/8	5 3/8	1/2	1 7/8	3/8
2	2 3/8	1/4	3 5/8	1 3/16	6	1 1/4	7/8	3	7/8	5/8	4 3/8	5 5/8	1/2	1 7/8	1/2
2 7/16	3 1/2	3/8	4 3/16	1 1/2	6 5/8	1 3/4	15/16	3	15/16	5/8	5 3/8	6 7/8	5/8	2 7/8	5/8
3	3 5/8	3/8	4 11/16	1 5/8	6 3/4	1 3/4	1	3	1	3/4	6	7 3/4	3/4	2 7/8	3/4
3 7/16	4 3/4	1/2	5 1/4	1 7/8	9	2 1/4	1 1/2	4	1 1/4	7/8	7	9 1/4	3/4	3 7/8	7/8

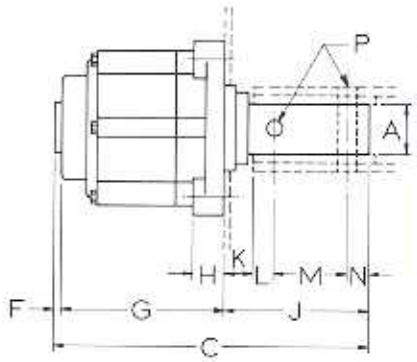
TYPE H THRUST BEARINGS

DRIVE SHAFT





END SHAFT



Part Nos. shown include bearing and shaft assembly.
Dimensions are approximate. Request certified prints for installation.

DRIVE SHAFT ASSEMBLIES

A Shaft Dia.	Part No.	Wt.	B
1½	CTH112-D	60	17
2	CTH2-D	65	17
2 7/16	CTH2716-D	80	18⅛
3	CTH3-D	145	20⅞
3 7/16	CTH3716-D	170	23⅝

DIMENSIONS CONTINUED BELOW

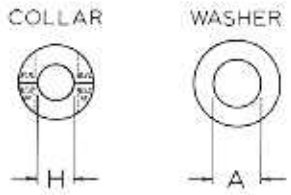
END SHAFT ASSEMBLIES

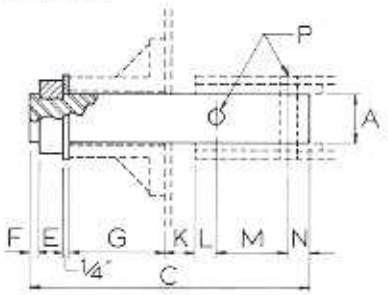
A Shaft Dia.	Part No.	Wt.	C
1½	CTH112-E	52	13¼
2	CTH2-E	56	13¼
2 7/16	CTH2716-E	66	13
3	CTH3-E	119	15¼
3 7/16	CTH3716-E	140	17⅛

DIMENSIONS CONTINUED BELOW

A Shaft Dia.	E	F	G	H	J	K	L	M	N	P Bolts	Q	R	S Bolts	T	U Key
1½	4	¼	6¾	1¼	6¼	1½	⅞	3	⅞	½	5¾	7¼	¾	3½	⅜
2	4½	¼	6¾	1¼	6¼	1½	⅞	3	⅞	⅝	5¾	7¼	¾	4	½
2 7/16	5½	⅜	6¼	1¼	6⅜	1½	15/16	3	15/16	⅝	6¼	8	⅞	5	⅝
3	6	⅜	8¼	1⅜	6⅝	1⅝	1	3	1	¾	8	10	1	5¼	¾
3 7/16	7	½	8¼	1⅜	8⅜	1⅝	1½	4	1¼	⅞	8	10	1	6¼	⅞

COLLAR AND WASHER

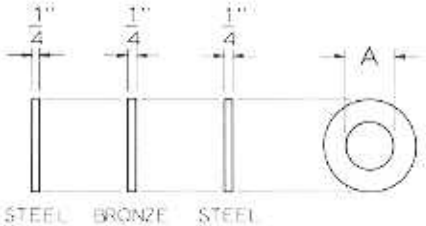


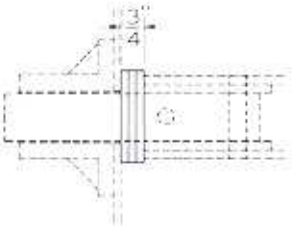


Part Nos. shown include collar, washer, and shaft.
Dimensions are approximate. Request certified prints for installation.

A Shaft Dia.	Part No.	Wt.	C	E	F	G	H	K	L	M	N	P Bolts
1½	CTW112-C	8	10 3/16	15/16	¼	3	1¼	1¼	⅞	3	⅞	½
2	CTW2-C	14	11⅜	15/16	7/16	4	1¾	1¼	⅞	3	⅞	⅝
2 7/16	CTW2716-C	24	13⅜	1 3/16	9/16	5	2⅛	1¾	15/16	3	15/16	⅝
3	CTW3-C	39	14⅝	1 3/16	11/16	6	2¾	1¾	1	3	1	¾
3 7/16	CTW3716-C	52	18	1 3/16	13/16	7	3⅛	2¼	1½	4	1¼	⅞

BRONZE WASHER

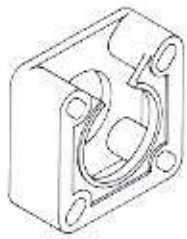
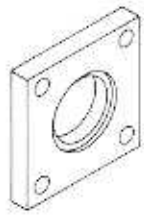
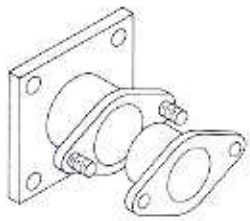




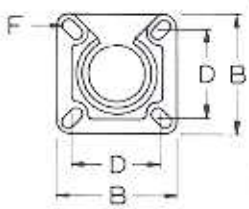
Part Nos. shown include one bronze and two steel washers.
Dimensions are approximate. Request certified prints for installation.

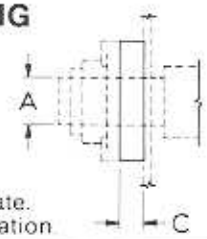
A Shaft Dia.	Part No.	Weight
1½	CTW112	2
2	CTW2	2
2 7/16	CTW2716	3
3	CTW3	3
3 7/16	CTW3716	4

SHAFT SEAL INDEX

PACKING SEAL HOUSING		This universal type seal is designed for use with waste packing or cartridge-type lip or felt seals. An opening at the top of the housing facilitates lubrication and repacking. The packing seal housing is mounted outside between the end bearing and the trough end plate. It may also be mounted independently for use with outboard bearing trough ends.	Page 63
PLATE SEAL		The plate seal is an economical sealing device designed for exterior mounting between the end bearing and the conveyor trough end. Standard units include lip-type seals, but other types of commercial seal cartridges may also be used. The plate seal and the end bearing are attached by means of common bolts. The plate may also be attached independently when outboard bearing ends are used.	Page 64
SPLIT GLAND SEAL		This unit provides an effective seal by compression of the packing which is contained in a split housing to facilitate assembly and replacement of the packing material. Packing pressure may be adjusted by means of the two mounting bolts.	Page 64
PACKED GLAND SEAL		The packed gland seal is a highly effective means of sealing the conveyor for normal and also pressure and vacuum service. Mechanical compression of the packing material is accomplished by means of two compression bolts. It is designed for use with outboard bearing trough ends.	Page 64

PACKING SEAL HOUSING

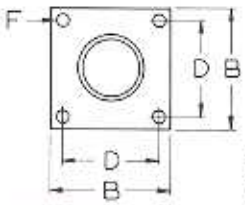


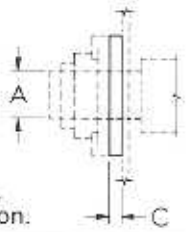


Dimensions shown are approximate.
Request certified prints for installation

A Shaft Dia.	Part No.	B	C	D		F Bolts	Weight
				Minimum	Maximum		
1½	CSW112	5⅜	1¾	4	4⅛	½	6
2	CSW2	6⅜	1¾	4⅜	5⅛	⅝	8
2 7/16	CSW2716	7	1¾	5⅜	5⅝	⅝	9
3	CSW3	7¾	1¾	6	6	¾	13
3 7/16	CSW3716	9¼	2¼	6¾	7	¾	17

PLATE SEAL

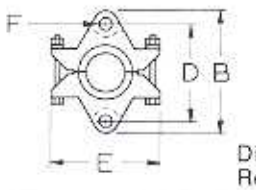


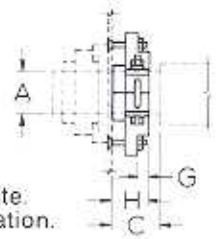


Dimensions shown are approximate.
Request certified prints for installation.

A Shaft Dia.	For Use With Flanged Ball Bearing				For Use With Flanged Roller Bearing				C	Weight
	Part No.	B	D	F Bolts	Part No.	B	D	F Bolts		
1½	CSF112-B	5⅜	4	½	CSF112-R	5⅜	4⅛	½	½	2
2	CSF2-B	6½	5⅛	⅝	CSF2-R	6½	4⅜	½	½	3
2 7/16	CSF2716-B	7	5⅝	⅝	CSF2716-R	7	5⅜	⅝	½	4
3	CSF3-B	7¾	6	¾	CSF3-R	7¾	6	¾	½	5
3 7/16	CSF3716-B	9¼	6¾	¾	CSF3716-R	9¼	7	¾	⅝	8

SPLIT GLAND SEAL

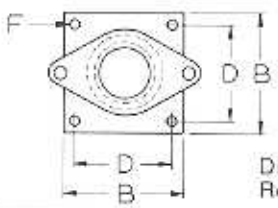


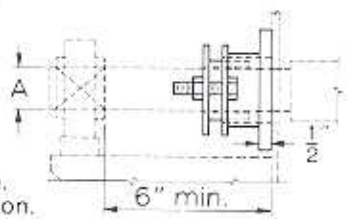


Dimensions shown are approximate.
Request certified prints for installation.

A Shaft Dia.	Part No.	B	C	D	E	F Bolts	G	H	Weight
1½	CSS112	5⅝	2	4⅜	4½	½	½	1 7/16	5
2	CSS2	6½	2	5¼	5⅜	½	⅝	1½	10
2 7/16	CSS2716	7⅝	2	6⅛	6⅛	⅝	⅝	1⅝	15
3	CSS3	8⅜	2	7⅛	6¾	⅝	⅝	1⅝	22
3 7/16	CSS3716	10¼	3	8¼	8¾	¾	⅞	2⅛	30

PACKED GLAND SEAL

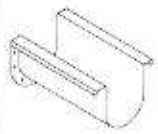
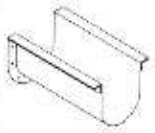
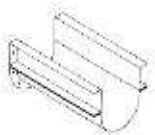
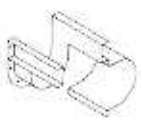
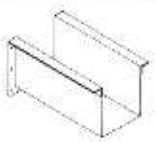
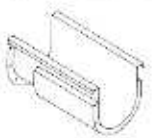




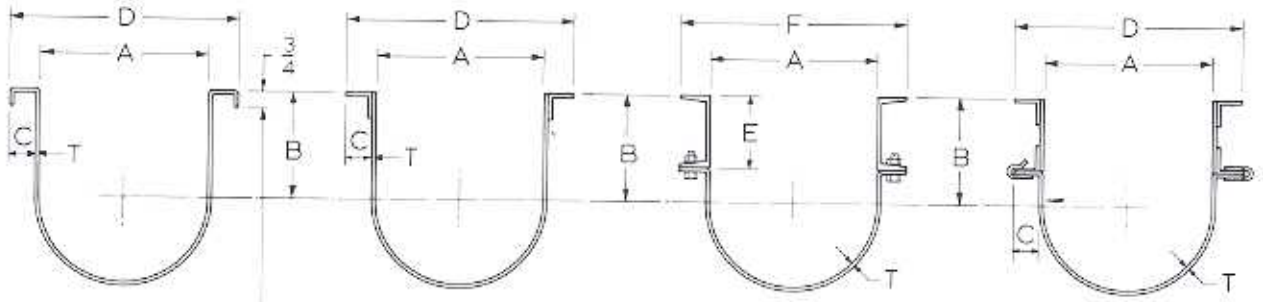
Dimensions shown are approximate.
Request certified prints for installation.

A Shaft Dia.	Part No.	B	D	F Bolts	Weight
1½	CSG112	5⅜	4	½	14
2	CSG2	6½	5⅛	⅝	18
2 7/16	CSG2716	7	5⅝	⅝	21
3	CSG3	7¾	6	¾	27
3 7/16	CSG3716	9¼	6¾	¾	30

CONVEYOR TROUGH INDEX

STANDARD TROUGHS	FORMED FLANGE U-TROUGH		One piece, rigid construction. Most economical and commonly employed trough.	Page 66
	ANGLE FLANGE U-TROUGH		Top flanges fabricated from structural steel angle.	Page 66
	FORMED FLANGE TUBULAR TROUGH		Easily dismantled for cleaning and maintenance. Flanges gasketted for dust tight enclosure. Minimum product fallback in inclined installations. Readily loadable to full cross section.	Page 67
	SOLID TUBULAR TROUGH		One piece welded construction. Minimum product fallback in inclined installations. Readily loadable to full cross section.	Page 67
	FLARED TROUGH		Primarily for materials that tend to bridge over the screw.	Page 68
SPECIAL TROUGHS	CHANNEL TROUGH		Structural steel channel construction well suited for applications requiring long distances between trough supports. Formed steel channel construction well suited for abrasive applications where frequent replacement of lower section is anticipated.	Page 66
	DROP BOTTOM TROUGH		For applications requiring frequent access to interior of conveyor for cleaning or maintenance. One side of lower section is hinged, with other side fastened to top section with quick-opening devices. Flanges gasketted for dust tight enclosure.	Page 66
	FORMED FLANGE RECTANGULAR TROUGH		For highly abrasive applications. Conveyed material forms its own trough, thus minimizing wear on trough bottom. One piece, rigid construction.	Page 67
	ANGLE FLANGE RECTANGULAR TROUGH		Top flanges fabricated from structural steel angle.	Page 67
	JACKETED TROUGH		Jackets may be added to any of the above troughs to form a chamber for heating or cooling. Built to individual requirements.	—
STANDARD	END FLANGES	As shown in above illustrations.	For bolt hole patterns, see Bolt Requirement Section of this catalogue.	Page 68

FORMED FLANGE U-TROUGH | **ANGLE FLANGE U-TROUGH** | **CHANNEL TROUGH** | **DROP BOTTOM TROUGH**



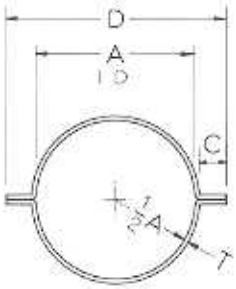
¾" side flange omitted where T = 3/16" or greater.

Dimensions shown are approximate. Request certified prints for installation.

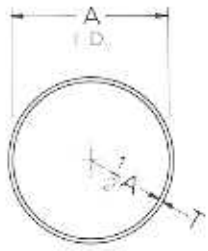
Screw Dia.	T	Formed Flange Part Number	Formed Flange Wt. 10'	Angle Flange Part Number	Angle Flange Wt. 10'	Channel Part Number	Channel Wt. 10'	Drop Bottom Part Number	Drop Bottom Wt. 10'	A	B	C	D	E	F
4	•16 ga.	CTF416	44	CTA416	56	–	–	–	–	5	3⅝	1	7⅛	–	–
	14	CTF414	54	CTA414	64	–	–	–	–				7 3/16		
	12	CTF412	73	CTA412	81	–	–	–	–				7¼		
6	•16	CTF616	52	CTA616	73	–	–	CTD616	117	7	4½	1¼	9⅝	4	10¼
	14	CTF614	64	CTA614	83	CTS614	149	CTD614	127				9 1/16		
	12	CTF612	90	CTA612	105	CTS612	164	CTD612	149				9¾		
	10	CTF610	114	CTA610	125	CTS610	178	CTD610	169				9 13/16		
	3/16"	CTF607	155	CTA607	159	CTS607	203	CTD607	203				9⅞		
9	•14	CTF914	91	CTA914	115	–	–	CTD914	169	10	6⅛	1½	13 3/16	6	13¾
	12	CTF912	127	CTA912	145	CTS912	239	CTD912	199				13¼		
	10	CTF910	160	CTA910	173	CTS910	259	CTD910	227				13 5/16		
	3/16"	CTF907	216	CTA907	221	CTS907	292	CTD907	275				13⅜		
	¼"	CTF903	286	CTA903	280	CTS903	332	CTD903	334				13½		
10	•14	CTF1014	97	CTA1014	119	–	–	CTD1014	173	11	6⅜	1½	14 3/16	–	–
	12	CTF1012	130	CTA1012	152	–	–	CTD1012	206				14¼		
	10	CTF1010	170	CTA1010	182	–	–	CTD1010	236				14 5/16		
	3/16"	CTF1007	229	CTA1007	233	–	–	CTD1007	287				14⅜		
	¼"	CTF1003	304	CTA1003	297	–	–	CTD1003	351				14½		
12	•12	CTF1212	158	CTA1212	190	CTS1212	333	CTD1212	263	13	7¾	2	17¼	7	17½
	10	CTF1210	200	CTA1210	225	CTS1210	359	CTD1210	298				17 5/16		
	3/16"	CTF1207	269	CTA1207	287	CTS1207	403	CTD1207	360				17⅜		
	¼"	CTF1203	357	CTA1203	361	CTS1203	455	CTD1203	434				17½		
14	•12	CTF1412	184	CTA1412	216	CTS1412	387	CTD1412	289	15	9¼	2	19¼	9	19¾
	10	CTF1410	231	CTA1410	258	CTS1410	415	CTD1410	331				19 5/16		
	3/16"	CTF1407	312	CTA1407	329	CTS1407	466	CTD1407	402				19⅜		
	¼"	CTF1403	412	CTA1403	419	CTS1403	526	CTD1403	492				19½		
16	•12	CTF1612	208	CTA1612	239	–	–	CTD1612	312	17	10⅝	2	21¼	10	22¼
	10	CTF1610	260	CTA1610	287	CTS1610	472	CTD1610	360				21 5/16		
	3/16"	CTF1607	350	CTA1607	369	CTS1607	529	CTD1607	442				21⅜		
	¼"	CTF1603	464	CTA1603	472	CTS1603	596	CTD1603	545				21½		
18	•12	CTF1812	240	CTA1812	300	–	–	CTD1812	423	19	12⅛	2½	24¼	12	25
	10	CTF1810	300	CTA1810	354	CTS1810	603	CTD1810	477				24 5/16		
	3/16"	CTF1807	402	CTA1807	446	CTS1807	666	CTD1807	569				24⅜		
	¼"	CTF1803	530	CTA1803	561	CTS1803	741	CTD1803	684				24½		
20	•10	CTF2010	329	CTA2010	383	CTS2010	619	CTD2010	506	21	13½	2½	26 5/16	12	27
	3/16"	CTF2007	441	CTA2007	485	CTS2007	687	CTD2007	608				26⅜		
	¼"	CTF2003	581	CTA2003	613	CTS2003	769	CTD2003	736				26½		
24	•10	CTF2410	393	CTA2410	443	–	–	CTD2410	566	25	16½	2½	30 5/16	15	31¾
	3/16"	CTF2407	526	CTA2407	566	CTS2407	1002	CTD2407	689				30⅜		
	¼"	CTF2403	695	CTA2403	719	CTS2403	1097	CTD2403	842				30½		

• = Standard Gauge.

FORMED TUBULAR TROUGH

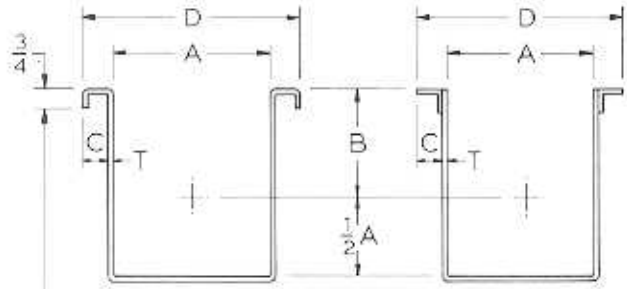


SOLID TUBULAR TROUGH



FORMED FLANGE RECTANGULAR

ANGLE FLANGE RECTANGULAR



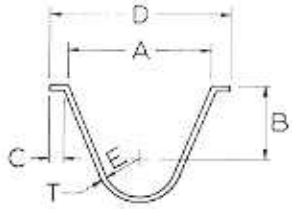
¾" side flange omitted where T = 3/16" or greater.

Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	T	Formed Flange Tubular		Solid Tubular		Formed Flange Rectangular		Angle Flange Rectangular		A	B	C	D
		Part Number	Wt. 10'	Part Number	Wt. 10'	Part Number	Wt. 10'	Part Number	Wt. 10'				
6	•16 ga.	CHF616	64	CHP616	53	CTR616-F	51	CTR616-A	89	7	4½	1¼	9⅝
	14	CHF614	78	CHP614	65	CTR614-F	66	CTR614-A	103				9 11/16
	12	CHF612	109	CHP612	91	CTR612-F	91	CTR612-A	142				9¾
	10	CHF610	138	CHP610	115	–	–	–	–				9 13/16
	3/16"	CHF607	188	CHP607	156	–	–	–	–				9⅞
9	•14	CHF914	111	CHP914	95	CTR914-F	98	CTR914-A	130	10	6⅛	1½	13 3/16
	12	CHF912	153	CHP912	131	CTR912-F	134	CTR912-A	161				13¼
	10	CHF910	192	CHP910	164	CTR910-F	172	CTR910-A	192				13 5/16
	3/16"	CHF907	259	CHP907	221	CTR907-F	228	CTR907-A	248				13⅜
	¼"	CHF903	343	CHP903	292	–	–	–	–				13½
10	•14	CHF1014	119	CHP1014	103	–	–	–	–	11	–	1½	14 3/16
	12	CHF1012	164	CHP1012	142	–	–	–	–				14¼
	10	CHF1010	206	CHP1010	178	–	–	–	–				14 5/16
	3/16"	CHF1007	278	CHP1007	240	–	–	–	–				14⅜
	¼"	CHF1003	367	CHP1003	316	–	–	–	–				14½
12	14	–	–	–	–	CTR1214-F	124	CTR1214-A	176	13	7¾	2	17 3/16
	•12	CHF1212	200	CHP1212	170	CTR1212-F	170	CTR1212-A	218				17¼
	10	CHF1210	251	CHP1210	213	CTR1210-F	216	CTR1210-A	260				17 5/16
	3/16"	CHF1207	338	CHP1207	286	CTR1207-F	291	CTR1207-A	316				17⅜
	¼"	CHF1203	446	CHP1203	377	–	–	–	–				17½
14	14	–	–	–	–	CTR1414-F	140	CTR1414-A	192	15	9¼	2	19 3/16
	•12	CHF1412	231	CHP1412	201	CTR1412-F	192	CTR1412-A	240				19¼
	10	CHF1410	290	CHP1410	252	CTR1410-F	245	CTR1410-A	288				19 5/16
	3/16"	CHF1407	390	CHP1407	338	CTR1407-F	330	CTR1407-A	355				19⅜
	¼"	CHF1403	515	CHP1403	446	–	–	–	–				19½
16	•12	CHF1612	260	CHP1612	230	CTR1612-F	214	CTR1612-A	262	17	10⅝	2	21¼
	10	CHF1610	326	CHP1610	288	CTR1610-F	273	CTR1610-A	316				21 5/16
	3/16"	CHF1607	438	CHP1607	386	CTR1607-F	375	CTR1607-A	411				21⅜
	¼"	CHF1603	578	CHP1603	509	CTR1603-F	502	CTR1603-A	527				21½
18	•12	CHF1812	301	CHP1812	264	CTR1812-F	248	CTR1812-A	311	19	12⅛	2½	24¼
	10	CHF1810	375	CHP1810	328	CTR1810-F	315	CTR1810-A	373				24 5/16
	3/16"	CHF1807	503	CHP1807	439	CTR1807-F	432	CTR1807-A	482				24⅜
	¼"	CHF1803	661	CHP1803	576	CTR1803-F	576	CTR1803-A	608				24½
20	12	–	–	–	–	CTR2012-F	283	CTR2012-A	346	21	13½	2½	26¼
	•10	CHF2010	410	CHP2010	363	CTR2010-F	360	CTR2010-A	418				26 5/16
	3/16"	CHF2007	549	CHP2007	485	CTR2007-F	495	CTR2007-A	544				26⅜
	¼"	CHF2003	724	CHP2003	639	CTR2003-F	660	CTR2003-A	698				26½
24	12	–	–	–	–	CTR2412-F	374	CTR2412-A	434	25	16½	2½	30¼
	•10	CHF2410	485	CHP2410	438	CTR2410-F	475	CTR2410-A	530				30 5/16
	3/16"	CHF2407	649	CHP2407	585	CTR2407-F	653	CTR2407-A	698				30⅜
	¼"	CHF2403	855	CHP2403	770	CTR2403-F	870	CTR2403-A	908				30½

• = Standard Gauge

FLARED TROUGH

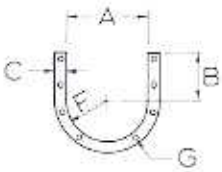


Dimensions shown are approximate. Request certified prints for installation

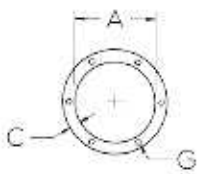
Screw Dia.	T	Part Number	Weight 10'	A	B	C	D	E
6	•14 ga. 12	CTV614 CTV612	78 110	14	7	1¼	16⅝ 16⅝	3½
9	•12 10	CTV912 CTV910	148 186	18	9	1½	21¼ 21¼	5
12	•12 10 3/16"	CTV1212 CTV1210 CTV1207	189 228 306	22	10	2	26¼ 26¼ 26⅜	6½
14	•12 10 3/16"	CTV1412 CTV1410 CTV1407	202 253 340	24	11	2	28¼ 28¼ 28⅜	7½
16	•10 3/16" ¼"	CTV1610 CTV1607 CTV1603	282 379 499	28	11½	2	32¼ 32⅜ 32½	8½
18	•10 3/16" ¼"	CTV1810 CTV1807 CTV1803	312 416 546	31	12⅛	2½	36¼ 36⅜ 36½	9½
20	•10 3/16" ¼"	CTV2010 CTV2007 CTV2003	331 442 579	34	13½	2½	39¼ 39⅜ 39½	10½
24	•10 3/16" ¼"	CTV2410 CTV2407 CTV2403	381 508 668	40	16½	2½	45¼ 45⅜ 45½	12½

• = Standard Gauge

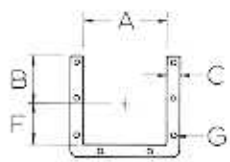
END FLANGES



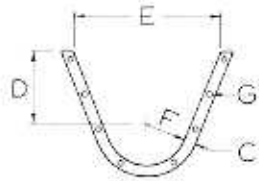
U - TROUGH



TUBULAR TROUGH



RECT. TROUGH



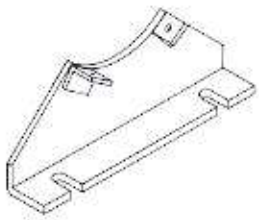
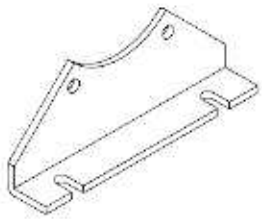
FLARED TROUGH

Dimensions shown are approximate. Request certified prints for installation

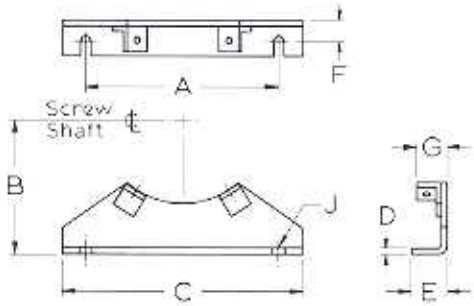
FLANGE THICKNESS: 3/16" for sizes 6" to 10"; ¼" for sizes 12" to 24".
See Bolt Requirement Section for quantity and layout of bolt holes.

Screw Dia.	Part Number				A		B	C	D	E		F		G
	U-Trough	Tubular Trough	Rect. Trough	Flared Trough	Thru 10 ga.	3/16" ¼"				Thru 10 ga.	3/16" ¼"	Thru 10 ga.	3/16" ¼"	Bolt. Dia.
4	CFU4	–	–	–	5¼	–	3 7/16	1	–	–	–	2⅝	–	⅜
6	CFU6	CFO6	CFR6	CFV6	7¼	7⅜	4¼	1¼	6¾	14¼	–	3⅝	–	⅜
9	CFU9	CFO9	CFR9	CFV9	10¼	10½	5⅞	1½	8¾	18¼	–	5⅛	–	⅜
10	CFU10	CFO10	CFR10	–	11¼	11½	6⅛	1½	–	–	–	5⅝	–	⅜
12	CFU12	CFO12	CFR12	CFV12	13¼	13½	7½	2	9¾	22¼	22½	6⅝	6¾	½
14	CFU14	CFO14	CFR14	CFV14	15¼	15½	9	2	10¾	24¼	24½	7⅝	7¾	½
16	CFU16	CFO16	CFR16	CFV16	17¼	17½	10⅜	2	11¼	28¼	28½	8⅝	8¾	⅝
18	CFU18	CFO18	CFR18	CFV18	19¼	19½	11 13/16	2½	11 13/16	31¼	31½	9⅝	9¾	⅝
20	CFU20	CFO20	CFR20	CFV20	21¼	21½	13 3/16	2½	13 3/16	34¼	34½	10⅝	10¾	⅝
24	CFU24	CFO24	CFR24	CFV24	25¼	25½	16 3/16	2½	16 3/16	40¼	40½	12⅝	12¾	⅝

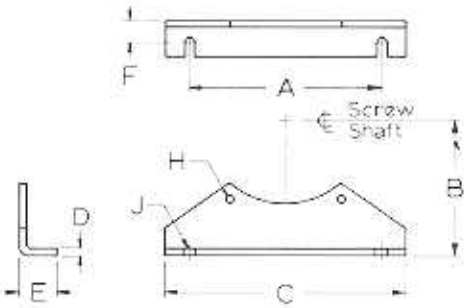
SADDLES & SUPPORT FEET

SADDLE		Used to support trough at intermediate points between trough flanges. Normally welded to trough.
SUPPORT FOOT		Used to support trough at junctions between trough sections. Normally bolted to flanges.

SADDLE



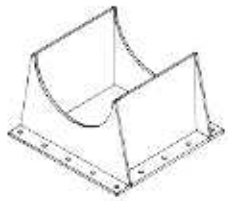
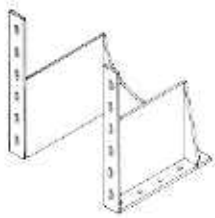
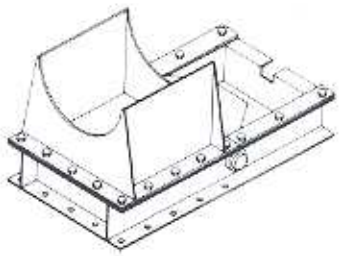
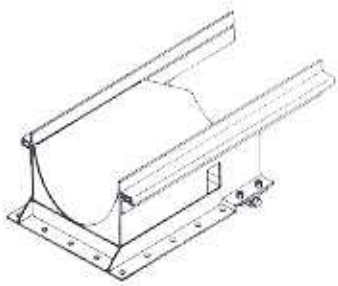
SUPPORT FOOT



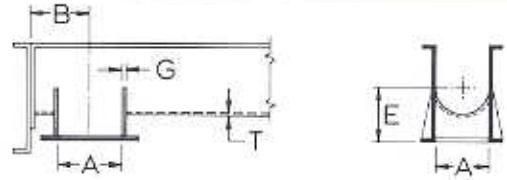
Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Saddle		Support Foot		A	B	C	D	E	F	G	H	J
	Part No.	Wt.	Part No.	Wt.								Bolts	Bolts
4	CS4	2.0	–	–	5¾	4⅝	7⅜	3/16	1½	⅞	1 3/16	3/8	3/8
6	CS6	3.0	CFF6	2.0	8⅛	5⅝	10	3/16	1½	1 3/16	1 3/16	3/8	3/8
9	CS9	4.0	CFF9	3.0	9⅜	7⅞	12	3/16	2½	1 5/16	1½	3/8	½
10	CS10	5.0	CFF10	5.0	9½	8⅞	12⅜	3/16	2½	1 5/16	1½	3/8	½
12	CS12	6.0	CFF12	6.0	12¼	9⅝	15	3/16	2½	1⅜	1½	½	⅝
14	CS14	8.0	CFF14	7.0	13½	10⅞	16½	¼	2½	1⅜	1¾	½	⅝
16	CS16	9.5	CFF16	7.5	14⅞	12	18	¼	3	1¾	1¾	⅝	⅝
18	CS18	11.0	CFF18	9.5	16	13⅜	19⅛	¼	3	1¾	1¾	⅝	⅝
20	CS20	14.5	CFF20	12.5	19¼	15	22¾	¼	3½	2	2¼	⅝	¾
24	CS24	17.0	CFF24	14.5	20	18⅛	24	¼	4	2½	2¼	⅝	¾

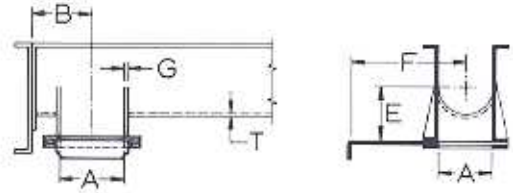
DISCHARGE SPOUT INDEX

STANDARD DISCHARGE SPOUT		Generally welded to trough, but may also be supplied loose for field assembly. Gauge of steel is proportionate to the gauge of the trough. Bottom flange drilled for attachment to other equipment.	Page 71
STANDARD DISCHARGE SPOUT WITH HAND SLIDE		Identical to Standard Discharge Spout, except that a hand slide is added. The slide may be installed on either side or parallel to the trough. Bottom flange drilled for attachment to other equipment.	Page 71
FLUSH END DISCHARGE SPOUT		Primarily intended for applications where space does not permit a standard discharge spout. Requires a specially drilled trough end.	Page 71
FLAT SLIDE GATE		Identical to a Standard Discharge Spout, except that a mechanically operated flat slide gate is added. Operation may be by handwheel, chain wheel, or pneumatic cylinder.	Page 72
		As above, in dust tight enclosure.	Page 73
CURVED SLIDE GATE		Special spout is designed to enclose a curved slide gate, contoured to fit the trough bottom. Operation may be by handwheel, chain wheel, or pneumatic cylinder.	Page 72
		As above, in dust tight enclosure.	Page 73

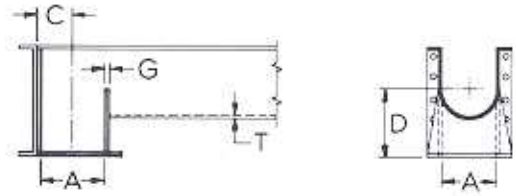
STANDARD DISCHARGE SPOUT



STANDARD DISCHARGE SPOUT WITH HAND SLIDE



FLUSH END DISCHARGE SPOUT



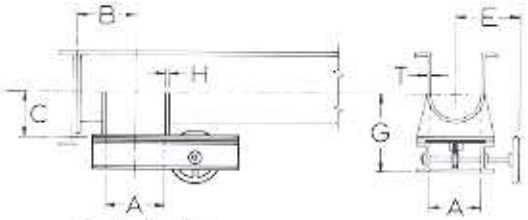
Dimensions shown are approximate. Request certified prints for installation.

Note; See Bolt Requirement Section for discharge flange bolt pattern.

Screw Dia.	T	G	Std. Spout		Std. Spout with Hand Slide		Flush End Spout	
			Part No.	Wt.	Part No.	Wt.	Part No.	Wt.
4	16-14 ga. 12 ga.	16 ga. 12 ga.	CSD416 CSD412	2 3	CSD416-S CSD412-S	6 7	CSD416-F CSD412-F	1 2
6	16-14-12 10-3/16	16 12	CSD616 CSD612	4 6	CSD616-S CSD612-S	11 13	CSD616-F CSD612-F	3 5
9	14-12-10 3/16-1/4	14 10	CSD914 CSD910	8 13	CSD914-S CSD910-S	18 22	CSD914-F CSD910-F	6 10
10	14-12-10 3/16-1/4	14 10	CSD1014 CSD1010	10 16	CSD1014-S CSD1010-S	21 27	CSD1014-F CSD1010-F	8 12
12	12-10 3/16-1/4	12 3/16	CSD1212 CSD1207	17 29	CSD1212-S CSD1207-S	36 48	CSD1212-F CSD1207-F	13 22
14	12-10 3/16-1/4	12 3/16	CSD1412 CSD1407	22 38	CSD1412-S CSD1407-S	46 62	CSD1412-F CSD1407-F	17 29
16	12-10 3/16-1/4	12 3/16	CSD1612 CSD1607	21 40	CSD1612-S CSD1607-S	49 68	CSD1612-F CSD1607-F	16 30
18	12-10 3/16-1/4	12 3/16	CSD1812 CSD1807	32 60	CSD1812-S CSD1807-S	69 97	CSD1812-F CSD1807-F	23 45
20	10 3/16-1/4	12 3/16	CSD2012 CSD2007	40 67	CSD2012-S CSD2007-S	91 118	CSD2012-F CSD2007-F	30 50
24	10 3/16-1/4	12 3/16	CSD2412 CSD2407	52 87	CSD2412-S CSD2407-S	116 151	CSD2412-F CSD2407-F	39 65

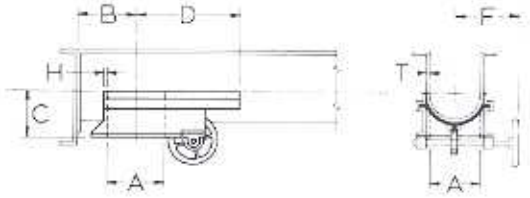
Screw Dia.	A	B	C	D	E	F
4	5	4 1/2	2 1/2	4 5/8	3 3/4	11
6	7	6	3 1/2	5 5/8	5	14
9	10	8	5	7 7/8	7 1/8	19
10	11	9	5 1/2	8 7/8	7 7/8	20
12	13	10 1/2	6 1/2	9 5/8	8 7/8	24
14	15	11 1/2	7 1/2	10 7/8	10 1/8	27
16	17	13 1/2	8 1/2	12	11 1/8	30
18	19	14 1/2	9 1/2	13 3/8	12 3/8	33
20	21	15 1/2	10 1/2	15	13 3/8	36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

FLAT SLIDE GATES



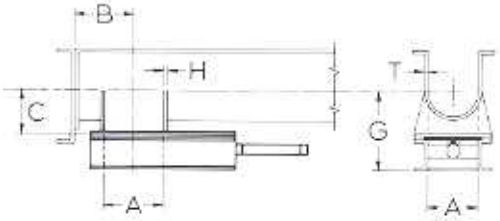
Rack & Pinion

CURVED SLIDE GATES

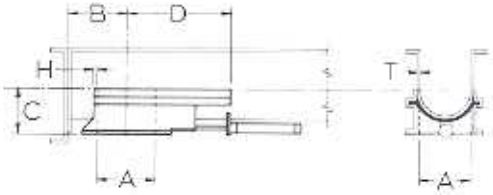


Rack & Pinion

Rack & Pinion gates normally supplied with hand wheel. Also available with chain or rope wheel.



Pneumatic



Pneumatic

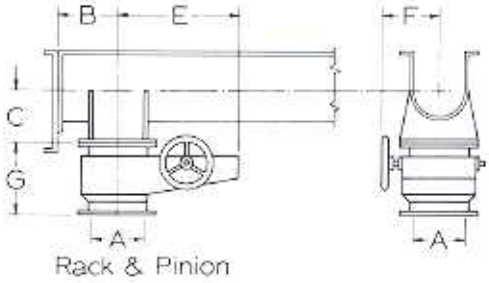
Dimensions shown are approximate. Request certified prints for installation.

Note: See Bolt Requirement Section for discharge flange bolt pattern.

Screw Dia.	T	H	FLAT SLIDE GATES				CURVED SLIDE GATES			
			Rack & Pinion		Pneumatic		Rack & Pinion		Pneumatic	
			Part No.	Wt.	Part No.	Wt.	Part No.	Wt.	Part No.	Wt.
6	16-14-12 ga. 10-3/16	16 ga. 12 ga.	CRP616-F CRP612-F	29 31	CDP616-F CDP612-F	50 51	CRP616-C CRP612-C	24 27	CDP616-C CDP612-C	47 49
9	14-12-10 3/16-1/4	14 10	CRP914-F CRP910-F	47 52	CDP914-F CDP910-F	67 72	CRP914-C CRP910-C	41 48	CDP914-C CDP910-C	63 70
10	14-12-10 3/16-1/4	14 10	CRP1014-F CRP1010-F	55 60	CDP1014-F CDP1010-F	76 80	CRP1014-C CRP1010-C	53 56	CDP1014-C CDP1010-C	76 78
12	12-10 3/16-1/4	12 3/16	CRP1212-F CRP1207-F	93 103	CDP1212-F CDP1207-F	112 121	CRP1212-C CRP1207-C	71 86	CDP1212-C CDP1207-C	92 106
14	12-10 3/16-1/4	12 3/16	CRP1412-F CRP1407-F	115 117	CDP1412-F CDP1407-F	140 141	CRP1412-C CRP1407-C	82 101	CDP1412-C CDP1407-C	110 125
16	12-10 3/16-1/4	12 3/16	CRP1612-F CRP1607-F	117 132	CDP1612-F CDP1607-F	148 160	CRP1612-C CRP1607-C	90 111	CDP1612-C CDP1607-C	124 142
18	12-10 3/16-1/4	12 3/16	CRP1812-F CRP1807-F	155 172	CDP1812-F CDP1807-F	184 203	CRP1812-C CRP1807-C	129 156	CDP1812-C CDP1807-C	161 190
20	10 3/16-1/4	12 3/16	CRP2012-F CRP2007-F	180 191	CDP2012-F CDP2007-F	217 226	CRP2012-C CRP2007-C	144 176	CDP2012-C CDP2007-C	185 214
24	10 3/16-1/4	12 3/16	CRP2412-F CRP2407-F	223 250	CDP2412-F CDP2407-F	262 286	CRP2412-C CRP2407-C	187 230	CDP2412-C CDP2407-C	230 270

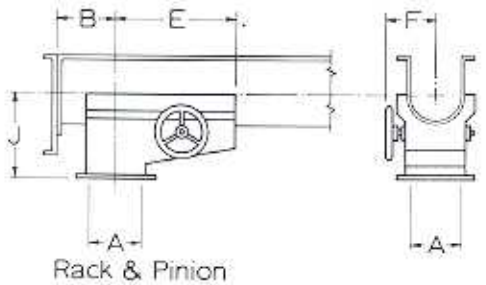
Screw Dia.	A	B	C	D	E	F	G
6	7	6	5	16½	8½	9¼	9 13/16
9	10	8	7⅛	20	10	11½	11 15/16
10	11	9	7⅞	20½	11	11	12 1/16
12	13	10½	8⅞	23½	12½	12½	13 1/16
14	15	11½	10⅛	24½	13½	13¾	14 15/16
16	17	13½	11⅛	26½	14½	14½	15 15/16
18	19	14½	12⅜	30½	16	16	17 3/16
20	21	15½	13⅜	33½	17	17½	18¼
24	25	17½	15⅜	39½	19	23½	20⅞

FLAT SLIDE DUST TIGHT GATES



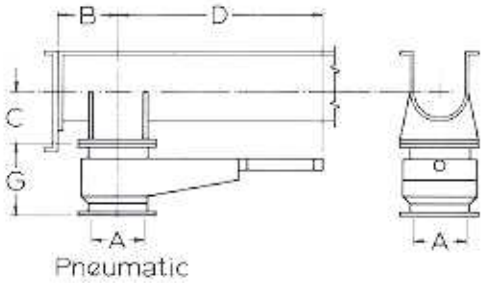
Rack & Pinion

CURVED SLIDE DUST TIGHT GATES

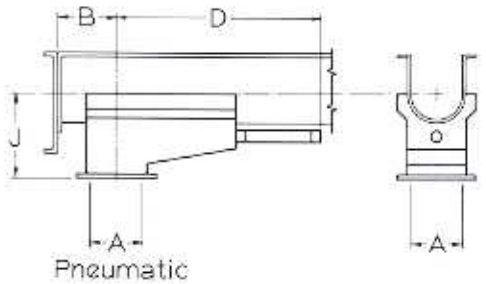


Rack & Pinion

Rack & Pinion gates normally supplied with hand wheel.
Also available with chain or rope wheel.



Pneumatic



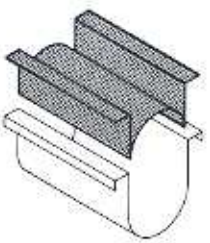
Pneumatic

Note: See Bolt Requirement Section for discharge flange bolt pattern. Dimensions shown are approximate. Request certified prints for installation.

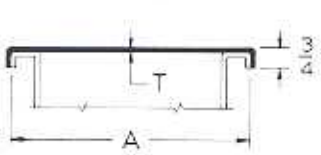
Screw Dia.	Trough Thickness ga.	Spout and Slide Thickness ga.	FLAT SLIDE GATES				CURVED SLIDE GATES			
			Rack & Pinion		Pneumatic		Rack & Pinion		Pneumatic	
			Part No.	Wt.	Part No.	Wt.	Part No.	Wt.	Part No.	Wt.
6	16-14-12-10	16	CRP616-FD	42	CDP616-FD	63	CRP616-CD	46	CDP616-CD	69
	3/16	12	CRP612-FD	47	CDP612-FD	67	CRP612-CD	52	CDP612-CD	74
9	14-12-10	14	CRP914-FD	74	CDP914-FD	94	CRP914-CD	81	CDP914-CD	103
	3/16-1/4	10	CRP910-FD	81	CDP910-FD	101	CRP910-CD	89	CDP910-CD	111
10	14-12-10	14	CRP1014-FD	84	CDP1014-FD	105	CRP1014-CD	92	CDP1014-CD	115
	3/16-1/4	10	CRP1010-FD	93	CDP1010-FD	113	CRP1010-CD	102	CDP1010-CD	124
12	12-10	12	CRP1212-FD	141	CDP1212-FD	160	CRP1212-CD	155	CDP1212-CD	176
	3/16-1/4	3/16	CRP1207-FD	158	CDP1207-FD	176	CRP1207-CD	174	CDP1207-CD	194
14	12-10	12	CRP1412-FD	160	CDP1412-FD	185	CRP1412-CD	176	CDP1412-CD	204
	3/16-1/4	3/16	CRP1407-FD	185	CDP1407-FD	207	CRP1407-CD	204	CDP1407-CD	228
16	12-10	12	CRP1612-FD	168	CDP1612-FD	199	CRP1612-CD	185	CDP1612-CD	219
	3/16-1/4	3/16	CRP1607-FD	197	CDP1607-FD	225	CRP1607-CD	217	CDP1607-CD	248
18	12-10	12	CRP1812-FD	240	CDP1812-FD	269	CRP1812-CD	264	CDP1812-CD	296
	3/16-1/4	3/16	CRP1807-FD	277	CDP1807-FD	308	CRP1807-CD	305	CDP1807-CD	339
20	10	12	CRP2012-FD	278	CDP2012-FD	315	CRP2012-CD	306	CDP2012-CD	347
	3/16-1/4	3/16	CRP2007-FD	318	CDP2007-FD	353	CRP2007-CD	350	CDP2007-CD	388
24	10	12	CRP2412-FD	350	CDP2412-FD	389	CRP2412-CD	385	CDP2412-CD	428
	3/16-1/4	3/16	CRP2407-FD	402	CDP2407-FD	438	CRP2407-CD	442	CDP2407-CD	482

Screw Dia.	A	B	C	D	E	F	G	J
6	7	6	5	28½	15½	8	9	10
9	10	8	7⅛	36	20	11	10	12½
10	11	9	7⅞	39	22	11½	10½	13
12	13	10½	8⅞	43½	24½	13	10½	15
14	15	11½	10⅛	50	27½	14	10½	15½
16	17	13½	11⅛	55	30½	15	10½	16½
18	19	14½	12⅜	61½	35	16½	11½	18½
20	21	15½	13⅜	65½	37	17½	12	20
24	25	17½	15⅜	76½	44	19½	13	23

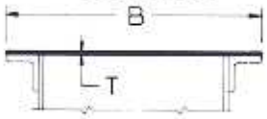
TROUGH COVER INDEX

FLANGED COVERS		For use with all formed flange troughs where gauge of trough is 10 ga. or less.	Page 75
FLAT COVERS		For use with all formed flange troughs where gauge of trough is 3/16" or greater, and for all other troughs not having 3/4" formed side flange.	Page 75
FLARED TROUGH COVERS		For use with flared troughs. Can be supplied flat or flanged.	Page 75
HIP ROOF COVERS		Recommended for outdoor applications, to shed rain or snow. Standard hip roof covers have flanged edges. Also available for flared trough.	Page 75
SHROUD COVERS		For use with standard U-troughs when a tubular cross section but ease of access is required. May be used in conjunction with covers shown above.	Page 75
DOMED COVERS		Primarily for applications where fumes or heat must be vented from the trough. Built to individual specifications for each application.	—

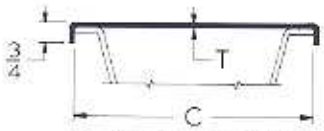
COVERS



FLANGED



FLAT



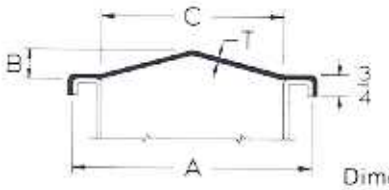
FLARED TROUGH

Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	T	Flanged Covers		Flat Covers		Flared Trough Covers		A	B	C
		Part No.	Wt./ft.	Part No.	Wt./ft.	Part No.	Wt./ft.			
4	•16 ga.	CTC416-F	2.0	CTC416	1.6	–	–	8	7¼	–
6	•16	CTC616-F	2.4	CTC616	2.0	CTC616-V	3.9	10½	9¾	17⅜
9	•16	CTC916-F	3.2	CTC916	3.0	CTC916-V	5.0	14	13¼	22
	14	CTC914-F	4.0	CTC914	3.5	CTC914-V	5.9			
10	•16	CTC1016-F	3.4	CTC1016	3.2	–	–	15	14¼	–
	14	CTC1014-F	4.9	CTC1014	3.7	–	–			
12	•14	CTC1214-F	5.0	CTC1214	4.5	CTC1214-V	7.4	18	17¼	27
	12	CTC1212-F	7.1	CTC1212	6.2	CTC1212-V	10.6			
14	•14	CTC1414-F	5.6	CTC1414	5.0	CTC1414-V	7.9	20	19¼	29
	12	CTC1412-F	7.8	CTC1412	7.0	CTC1412-V	11.1			
16	•14	CTC1614-F	6.1	CTC1614	5.5	CTC1614-V	9.0	22	21¼	33
	12	CTC1612-F	8.5	CTC1612	7.7	CTC1612-V	12.5			
18	•12	CTC1812-F	10.0	CTC1812	8.8	CTC1812-V	14.5	25	24¼	37
	10	CTC1810-F	12.4	CTC1810	11.3	CTC1810-V	18.0			
20	•12	CTC2012-F	10.5	CTC2012	9.8	CTC2012-V	15.8	27	26¼	40
	10	CTC2010-F	13.4	CTC2010	12.3	CTC2010-V	19.5			
24	•12	CTC2412-F	11.8	CTC2412	11.0	CTC2412-V	17.0	31	30¼	46
	10	CTC2410-F	15.2	CTC2410	15.2	CTC2410-V	21.8			

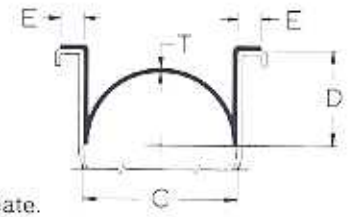
• = Standard Gauge

COVERS



HIP ROOF

Dimensions shown are approximate.
Request certified prints for installation.



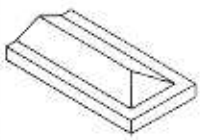
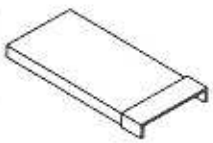
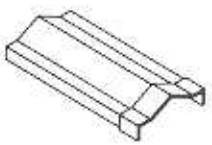
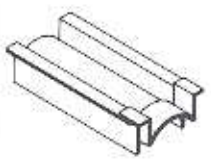
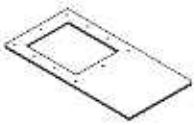
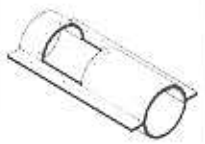
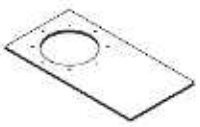
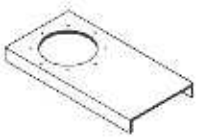
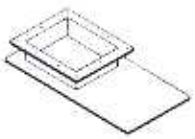
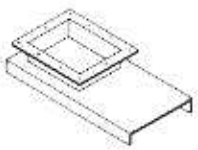
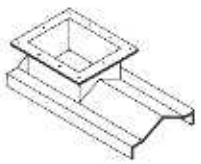
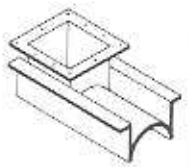
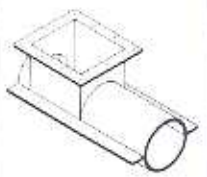
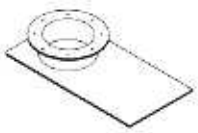
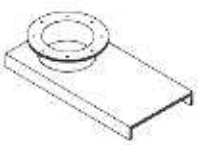
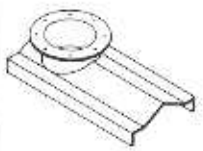
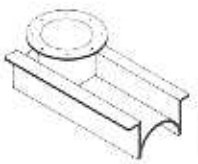
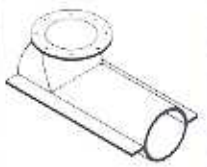
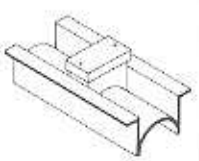
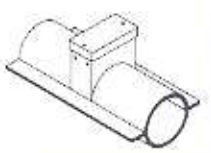
SHROUD

Screw Dia.	T	Hip Roof Covers		Shroud Covers		A	B	C	D	E
		Part No.	Wt./ft.	Part No.	Wt./ft.					
4	•16 ga.	CTC416-H	2.1	CTC416-S	3.6	8	⅝	5	3⅜	1¼
6	•16	CTC616-H	2.6	CTC616-S	4.6	10½	¾	7	4½	1¾
9	•16	CTC916-H	3.4	CTC916-S	6.3	14	1⅛	10	6⅛	1½
	14	CTC914-H	4.3	CTC914-S	8.0					
10	•16	CTC1016-H	3.7	CTC1016-S	7.0	15	1¼	11	6⅜	1½
	14	CTC1014-H	4.6	CTC1014-S	8.5					
12	•14	CTC1214-H	5.4	CTC1214-S	10.5	18	1⅜	13	7¾	2
	12	CTC1212-H	7.5	CTC1212-S	14.6					
14	•14	CTC1414-H	6.0	CTC1414-S	12.0	20	1⅜	15	9¼	2
	12	CTC1412-H	8.4	CTC1412-S	16.7					
16	•14	CTC1614-H	6.5	CTC1614-S	14.3	22	1¾	17	10⅝	2
	12	CTC1612-H	9.1	CTC1612-S	19.8					
18	•12	CTC1812-H	10.8	CTC1812-S	25.0	25	2	19	12⅛	2½
	10	CTC1810-H	13.3	CTC1810-S	30.6					
20	•12	CTC2012-H	11.6	CTC2012-S	25.3	27	2¼	21	13½	2½
	10	CTC2010-H	14.3	CTC2010-S	30.2					
24	•12	CTC2412-H	12.7	CTC2412-S	28.6	31	2⅝	25	16½	2½
	10	CTC2410-H	16.3	CTC2410-S	36.8					

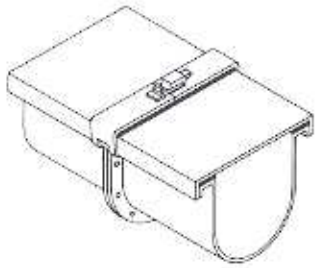
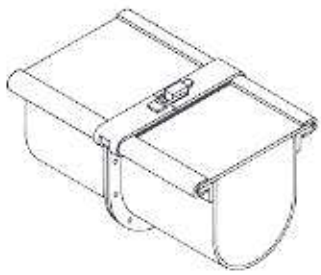
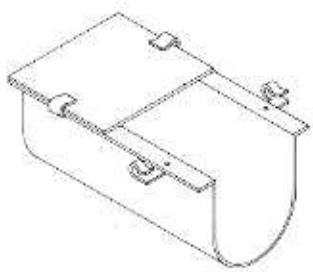
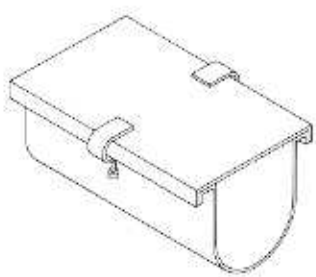
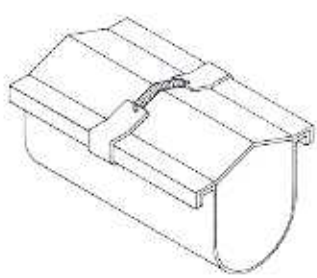
• = Standard Gauge.

COVER ACCESSORIES

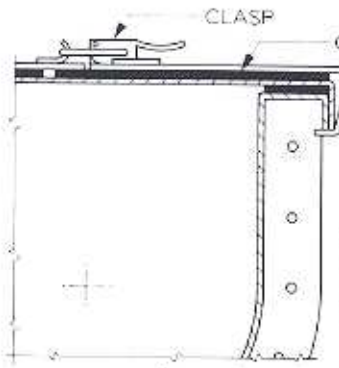
Unless otherwise specified, covers are normally supplied with plain ends, and without inlet openings.

Accessory	Flat Covers	Flanged Covers	Hip Roof Covers	Shroud Covers	Tubular Trough
FLANGED END	—				—
BUTT STRAP					—
INLET OPENING, RECTANGULAR			—	—	
INLET OPENING, ROUND			—	—	—
FLANGED INLET, RECTANGULAR					
FLANGED INLET, ROUND					
HANGER BEARING POCKET	—	—	—		

COVER FASTENER INDEX

FLANGED COVER "CLAMPSEAL"		Two-piece gasketted clamp, joined by a quick acting clasp, forms an effective seal at cover joints. May be used in conjunction with continuous gaskets between cover and trough side flanges.	Page 78
FLAT COVER "CLAMPSEAL"		Continuous "U" edging with integral gasket seals joint between flat cover and trough side flange. Two-piece gasketted clamp, joined by a quick acting clamp, installed at cover joints, seals the cover joint and secures the "U" edging in place.	Page 78
SPRING CLAMP		For flat covers. Pivotted clamp is fastened to trough side flange with a loose rivet. Clamp jaw is designed to fit flat covers with or without gaskets. Butt straps recommended at cover joints.	Page 78
SCREW CLAMP		May be used to secure flat or flanged covers. Butt straps recommended at cover joints.	Page 78
HIP ROOF CLAMP		Specially designed for hip roof covers. Butt straps recommended at cover joints.	Page 78
OTHER FASTENERS	Other types of fasteners, such as bolts, toggle clamps, and continuous piano hinges, are also available. Refer to our Engineering Department for specific applications.		

FLANGED COVER "CLAMPSEAL"

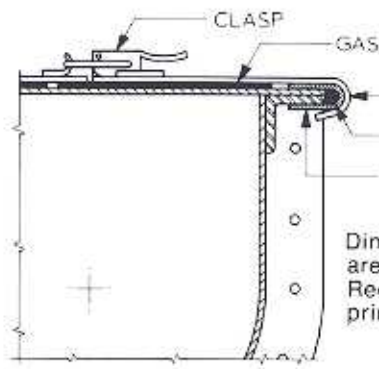


Dimensions shown are approximate. Request certified prints for installation.

Normal spacing 5'-0"

Screw Dia.	Part No.
4	CCAF4
6	CCAF6
9	CCAF9
10	CCAF10
12	CCAF12
14	CCAF14
16	CCAF16
18	CCAF18
20	CCAF20
24	CCAF24

FLAT COVER "CLAMPSEAL"

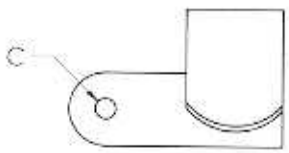


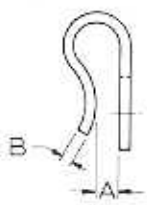
Dimensions shown are approximate. Request certified prints for installation.

Normal spacing 5'-0"

Screw Dia.	Part Nos.	
	Clamp	"U" Edging
4	CCAU4	CAU416
6	CCAU6	
9	CCAU9	
10	CCAU10	
12	CCAU12	
14	CCAU14	
16	CCAU16	
18	CCAU18	CAU1824
20	CCAU20	
24	CCAU24	

SPRING CLAMP



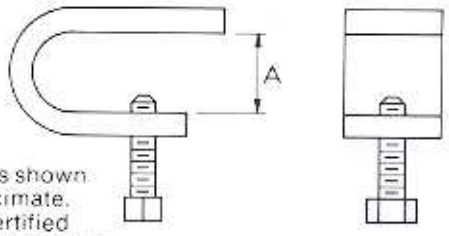


Dimensions shown are approximate. Request certified prints for installation.

Normal spacing 2'-6"

Cover Gauge	Part No.		A	B	C
	Left Hand	Right Hand			
16 to 12	CCAS1-L	CCAS1-R	1/4	1/8	9/32
10 to 3/16	CCAS2-L	CCAS2-R	5/16	3/16	3/8

SCREW CLAMP

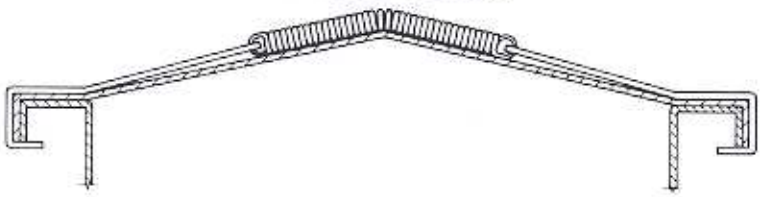


Dimensions shown are approximate. Request certified prints for installation.

Normal spacing 2'-6"

Screw Dia.	Used with	Part No.	A
All sizes, 4 to 24	Flanged covers	CCAC-1	1
	Flat covers	CCAC-2	9/16

HIP ROOF CLAMP

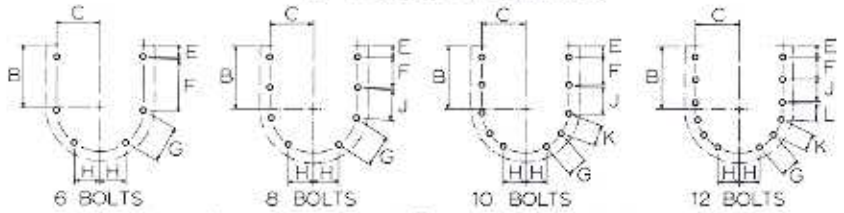


Normal spacing 5'-0"

Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Part No.
4	CCAH4
6	CCAH6
9	CCAH9
10	CCAH10
12	CCAH12
14	CCAH14
16	CCAH16
18	CCAH18
20	CCAH20
24	CCAH24

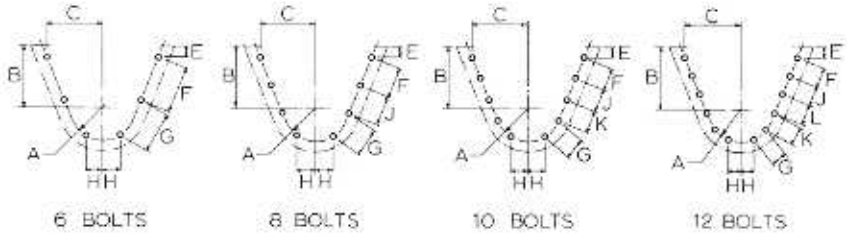
U - TROUGH FLANGES



Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Bolts Qty.	Bolts Dia.	B	C	E	F	G	H	J	K	L
4	6	3/8	3 5/8	3 1/2	1 1/8	3 1/8	3 1/8	1 9/16	–	–	–
6	6	3/8	4 1/2	4 7/16	1 1/32	4 1/8	4 1/16	2 1/32	–	–	–
9	8	3/8	6 1/8	6 1/4	1 3/16	4 1/8	3 3/4	2 9/16	4 1/8	–	–
10	8	3/8	6 3/8	6 5/8	2 1/4	3 1/2	4 3/16	2 17/32	4 1/8	–	–
12	8	1/2	7 3/4	7 15/16	1 1/2	5 5/16	4 1/16	3 7/8	5 3/16	–	–
14	8	1/2	9 1/4	8 15/16	2 17/32	5 3/8	5 15/16	3	5 15/16	–	–
16	8	5/8	10 5/8	10	2 5/8	6 3/8	6 5/8	3 3/4	6 5/8	–	–
18	10	5/8	12 1/8	11	2 23/32	5 15/16	5 7/8	2 15/16	5 7/8	5 7/8	–
20	10	5/8	13 1/2	12 3/16	2 25/32	6 1/4	6 1/16	3 1/32	6 1/16	6 1/16	–
24	12	5/8	16 1/2	14 1/4	2 25/32	6 1/8	6 5/8	3 5/16	6 5/8	6 5/8	6 5/8

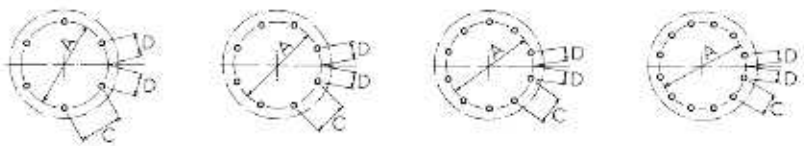
FLARED TROUGH FLANGES



Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Bolts Qty.	Bolts Dia.	A	B	C	E	F	G	H	J	K	L
6	6	3/8	4 7/16	7	7 3/16	1 27/32	5 1/4	5 1/4	2 1/32	–	–	–
9	8	3/8	6 1/4	9	9 21/32	1 43/64	5	5	2 9/16	5	–	–
12	8	1/2	7 15/16	10	11 13/16	1 13/16	5 3/4	5 3/4	3 7/8	5 3/4	–	–
14	10	1/2	8 15/16	11	12 49/64	2 1/16	5 1/8	5 1/8	3	5 1/8	5 1/8	–
16	10	5/8	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	10	5/8	11	12 1/8	16	2 5/8	6 3/16	6 3/16	2 15/16	6 3/16	6 3/16	–
20	10	5/8	12 3/16	13 1/2	17 7/8	2 9/32	7	7	3 1/32	7	7	–
24	12	5/8	14 1/4	16 1/2	20 1/64	2 5/16	6 7/8	6 7/8	3 5/16	6 7/8	6 7/8	6 7/8

TUBULAR TROUGH FLANGES

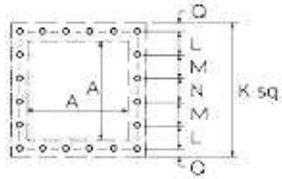


Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Bolts Qty.	Bolts Dia.	A	C	D
6	6	3/8	8 7/8	4 7/16	2 7/32
9	8	3/8	12 1/2	4 13/16	2 13/32
10	8	3/8	13 1/4	5 1/16	2 17/32
12	8	1/2	15 7/8	6 1/16	3 1/32
14	8	1/2	17 7/8	6 13/16	3 13/32
16	8	5/8	20	7 5/8	3 13/16
18	10	5/8	22	6 13/16	3 13/32
20	10	5/8	24 3/8	7 1/2	3 3/4
24	12	5/8	28 1/2	7 3/8	3 11/16

DISCHARGE SPOUT FLANGES

ALL 4 SIDES DRILLED ALIKE



Dimensions shown are approximate. Request certified prints for installation.

Screw Dia.	Bolts Qty.	Bolts Dia.	A	K	L	M	N	Q
4	12	1/4	5	7 1/2	2 1/4	x	2 1/4	3/8
6	12	3/8	7	10	2 13/16	x	3	11/16
9	12	3/8	10	13	4	x	4	1/2
10	12	3/8	11	14 1/4	4 5/16	x	4 3/8	5/8
12	12	3/8	13	17 1/4	5 1/8	x	5 1/4	7/8
14	20	3/8	15	19 1/4	3 1/2	3 1/2	3 1/2	7/8
16	20	3/8	17	21 1/4	3 3/4	4	4	7/8
18	20	1/2	19	24 1/4	4 7/16	4 3/8	4 3/8	1 1/8
20	20	1/2	21	26 1/4	4 7/8	4 3/4	4 3/4	1 1/8
24	20	1/2	25	30 1/4	5 5/8	5 5/8	5 1/2	1 1/8

BOLT REQUIREMENTS 4" TO 12" DIA. SCREW CONVEYORS

	Conveyor Diameter	4		6		9				10				12						Type of Bolt
	Shaft Diameter	1		1 1/2		1 1/2		2		1 1/2		2		2		2 7/16		3		
	Bolts	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	No.	Size	
	End Flange	6	3/8 x 1	6	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	1/2 x 1 1/4	8	1/2 x 1 1/4	8	1/2 x 1 1/4	
	Support Foot	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	1/2 x 1 1/2	2	1/2 x 1 1/2	2	1/2 x 1 1/2	
	Saddle	2	3/8 x 3/4	2	3/8 x 3/4	2	3/8 x 3/4	2	3/8 x 3/4	2	3/8 x 3/4	2	3/8 x 3/4	2	3/8 x 1	2	3/8 x 1	2	3/8 x 1	
Trough End	Type CE & CEF	6	3/8 x 1	6	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	1/2 x 1 1/4	8	1/2 x 1 1/4	8	1/2 x 1 1/4	Hex. Head Mach. Bolt
Trough End	Type CEI	6	3/8 x 3/4	7	3/8 x 3/4	7	3/8 x 3/4	7	3/8 x 3/4	7	3/8 x 3/4	7	3/8 x 3/4	9	1/2 x 1	9	1/2 x 1	9	1/2 x 1	
Trough End	Type CEW	6	3/8 x 3/4	6	3/8 x 3/4	8	3/8 x 3/4	8	3/8 x 3/4	8	3/8 x 3/4	8	3/8 x 3/4	8	1/2 x 1	8	1/2 x 1	8	1/2 x 1	
Trough End	Type CDO	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4	1/2 x 1 1/4	
Flange Bearing	Type B or BR	4	3/8 x 1 3/4	4	1/2 x 2 1/4	4	1/2 x 2 1/4	4	5/8 x 2 1/4	4	1/2 x 2 1/4	4	5/8 x 2 1/4	4	5/8 x 2 1/4	4	5/8 x 2 1/4	4	3/4 x 2 1/2	Flat Head Cap Screw
Flange Bearing	Type BB	4	3/8 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 1 3/4	4	1/2 x 1 1/2	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	3/4 x 2 1/4	
Flange Bearing	Type RB, CSF seal	–	—	4	1/2 x 2 3/4	4	1/2 x 2 3/4	4	1/2 x 3	4	1/2 x 2 3/4	4	1/2 x 3	4	1/2 x 3	4	5/8 x 3 1/4	4	3/4 x 3 1/2	
Flange Bearing	Type BB, CSF seal	4	3/8 x 2	4	1/2 x 2	4	1/2 x 2	4	5/8 x 2 1/4	4	1/2 x 2	4	5/8 x 2 1/4	4	5/8 x 2 1/4	4	5/8 x 2 1/4	4	3/4 x 2 3/4	
Flange Bearing	Type BB, CSW seal	–	—	4	1/2 x 3 1/4	4	1/2 x 3 1/4	4	5/8 x 3 1/2	4	1/2 x 3 1/4	4	5/8 x 3 1/2	4	5/8 x 3 1/2	4	5/8 x 3 1/2	4	3/4 x 4	
Thrust Bearing	Type M, CSF seal	–	—	4	1/2 x 2 3/4	4	1/2 x 2 3/4	4	1/2 x 3	4	1/2 x 2 3/4	4	1/2 x 3	4	1/2 x 3	4	5/8 x 3 1/4	4	3/4 x 3 1/2	
Thrust Bearing	Type H	–	—	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	3/4 x 2 1/4	4	1 x 3	
Seal	Type CSW	–	—	4	1/2 x 3 1/2	4	1/2 x 3 1/2	4	5/8 x 3 1/2	4	1/2 x 3 1/2	4	5/8 x 3 1/2	4	5/8 x 3 1/2	4	5/8 x 3 1/2	4	3/4 x 3 1/2	
Seal	Type CSS	–	—	2	1/2 x 2	2	1/2 x 2	2	1/2 x 2	2	1/2 x 2	2	1/2 x 2	2	1/2 x 2	2	5/8 x 2 1/4	2	5/8 x 2 1/4	
Seal	Type CSG	–	—	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 2	4	1/2 x 1 1/2	4	5/8 x 2	4	5/8 x 2	4	5/8 x 2	4	3/4 x 2 1/4	
Hanger	No. 30	–	—	3	3/8 x 1	3	1/2 x 1	3	1/2 x 1	3	1/2 x 1	3	1/2 x 1	3	1/2 x 1 1/4	3	1/2 x 1 1/4	3	1/2 x 1 1/4	Hex. Head Mach. Bolt
Hanger	No. 270	–	—	4	3/8 x 1	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	
Hanger	No. 216 & 226	4	5/16 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4	1/2 x 1 1/4	
Hanger	No. 220 & 230	4	5/16 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4	1/2 x 1 1/4	
Hanger	No. 316 & 326	–	—	4	3/8 x 1	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4	1/2 x 1 1/4	
	Shaft Bolts	4	3/8 x 2 1/8	4	1/2 x 3	4	1/2 x 3	4	5/8 x 3 5/8	4	1/2 x 3	4	5/8 x 3 5/8	4	5/8 x 3 5/8	4	5/8 x 4 3/8	4	3/4 x 5	Type CCB or CCBX
	Cover Clamp CCAS	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	1	1/4 x 5/8	Rivet
	Cover Bolted	–	1/4 x 3/4	–	1/4 x 3/4	–	1/4 x 3/4	–	1/4 x 3/4	–	1/4 x 3/4	–	1/4 x 3/4	–	5/16 x 3/4	–	5/16 x 3/4	–	5/16 x 3/4	Hex. Head Mach. Bolt

BOLT REQUIREMENTS 14" TO 24" DIA. SCREW CONVEYORS

	Conveyor Diameter	14				16		18				20				24		Type of Bolt
	Shaft Diameter	2 7/16		3		3		3		3 7/16		3		3 7/16		3 7/16		
	Bolts	No.	Size	No.	Size	No.	Size	No.	Size	No	Size	No.	Size	No.	Size	No.	Size	
	End Flange	8	½ x 1¼	8	½ x 1¼	8	⅝ x 1¼	10	⅝ x 1¼	10	⅝ x 1¼	10	⅝ x 1¼	10	⅝ x 1¼	12	⅝ x 1¼	
	Support Foot	2	½ x 1½	2	½ x 1½	2	⅝ x 1½	2	⅝ x 1½	2	⅝ x 1½	2	⅝ x 1½	2	⅝ x 1½	2	⅝ x 1½	
	Saddle	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	2	⅜ x 1	
Trough End	Type CE & CEF	8	½ x 1¼	8	½ x 1¼	8	⅝ x 1¼	10	⅝ x 1¼	8	⅝ x 1¼	8	⅝ x 1¼	8	⅝ x 1¼	12	⅝ x 1¼	Hex. Head Mach. Bolt
Trough End	Type CEI	9	½ x 1	9	½ x 1	9	½ x 1	11	½ x 1	11	½ x 1	11	½ x 1	11	½ x 1	13	½ x 1	
Trough End	Type CEW	8	½ x 1	8	½ x 1	10	½ x 1	10	½ x 1	10	½ x 1	12	½ x 1	12	½ x 1	14	½ x 1	
Trough End	Type CDO	4	½ x 1¼	4	½ x 1¼	4	⅝ x 1¼	4	⅝ x 1¼	4	⅝ x 1¼	4	⅝ x 1¼	4	⅝ x 1¼	6	⅝ x 1¼	
Flange Bearing	Type B or BR	4	⅝ x 2¼	4	¾ x 2½	4	¾ x 2½	4	¾ x 2½	4	¾ x 2¾	4	¾ x 2½	4	¾ x 2¾	4	¾ x 2¾	Flat Head Cap Screw
Flange Bearing	Type BB	4	⅝ x 1¾	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2½	4	¾ x 2¼	4	¾ x 2½	4	¾ x 2½	
Flange Bearing	Type RB, CSF seal	4	⅝ x 3¼	4	¾ x 3½	4	¾ x 3½	4	¾ x 3½	4	¾ x 4	4	¾ x 3½	4	¾ x 4	4	¾ x 4	
Flange Bearing	Type BB, CSF seal	4	⅝ x 2¼	4	¾ x 2¾	4	¾ x 2¾	4	¾ x 2¾	4	¾ x 3½	4	¾ x 2¾	4	¾ x 3½	4	¾ x 3½	
Flange Bearing	Type BB, CSW seal	4	⅝ x 3½	4	¾ x 4	4	¾ x 4	4	¾ x 4	4	¾ x 5	4	¾ x 4	4	¾ x 5	4	¾ x 5	
Thrust Bearing	Type M, CSF seal	4	⅝ x 3¼	4	¾ x 3½	4	¾ x 3½	4	¾ x 3½	4	¾ x 4	4	¾ x 3½	4	¾ x 4	4	¾ x 4	
Thrust Bearing	Type H	4	¾ x 2¼	4	1 x 3	4	1 x 3	4	1 x 3	4	1 x 3	4	1 x 3	4	1 x 3	4	1 x 3	
Seal	Type CSW	4	⅝ x 3½	4	¾ x 3½	4	¾ x 3½	4	¾ x 3½	4	¾ x 5	4	¾ x 3½	4	¾ x 5	4	¾ x 5	
Seal	Type CSS	2	⅝ x 2¼	2	⅝ x 2¼	2	⅝ x 2¼	2	⅝ x 2¼	2	¾ x 2½	2	⅝ x 2¼	2	¾ x 2½	2	¾ x 2½	
Seal	Type CSG	4	⅝ x 2	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	4	¾ x 2¼	
Hanger	No. 30	3	⅝ x 1½	3	⅝ x 1½	3	⅝ x 1½	3	⅝ x 1½	3	⅝ x 1½	3	⅝ x 1½	3	⅝ x 1½	3	¾ x 2	Hex. Head Mach. Bolt
Hanger	No. 270	4	½ x 1¾	4	½ x 1¾	4	½ x 1¾	4	⅝ x 1¾	4	⅝ x 1¾	–	–	–	–	–	–	
Hanger	No. 216 & 226	4	½ x 1¼	4	½ x 1¼	4	½ x 1¼	4	⅝ x 1¼	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	
Hanger	No. 220 & 230	4	½ x 1¼	4	½ x 1¼	4	½ x 1¼	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	
Hanger	No. 316 & 326	4	½ x 1¼	4	½ x 1¼	4	½ x 1¼	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	4	⅝ x 1½	
	Shaft Bolts	4	⅝ x 4⅜	4	¾ x 5	4	¾ x 5	4	¾ x 5	4	⅞ x 5½	4	¾ x 5	4	⅞ x 5½	4	⅞ x 5½	Type CCB or CCBX
	Cover Clamp CCAS	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	1	¼ x ⅝	Rivet
	Cover Bolted	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	–	5/16 x ¾	Hex. Head Mach. Bolt

INSTALLATION AND MAINTENANCE

A screw conveyor may be furnished either as a complete unit which has been shop-assembled, and match-marked and test run, or as individual components which are aligned and fitted in the field.

Since shop-assembled conveyors are pre-aligned and match-marked before shipment, they are easier to assemble in the field and require less installation time. Shop-assembled units also include all necessary components, including assembly bolts.

DELIVERY

Upon receipt of the conveyor, check all components with shipping documents and inspect for damage. Minor damage can usually be repaired in the field. Early attention to minor damage can substantially extend the service life of a conveyor.

If any components are severely damaged in transit, a claim should be filed immediately with the carrier.

ASSEMBLY

1. A conveyor assembly should always begin at the thrust end. If the conveyor does not require a thrust bearing unit, assembly should begin at the discharge end.

2. Place the conveyor trough sections in their proper sequence, using match marks or assembly drawing. Connect the end flanges loosely. Do not tighten bolts. Align and level the trough bottom centrelines accurately, then tighten flange bolts.

3. If thrust end is designated, assemble the trough end plate and thrust bearing.

4. Insert the end or drive shaft in the bearing. Do not tighten set screws.

5. Place the first conveyor screw section in the trough, slipping the end or drive shaft into the conveyor pipe end. Secure with coupling bolts. A clearance is required between the trough ends and the conveyor pipe ends. Unless otherwise stipulated, this clearance should be one-half the bore length of the hanger bearings.

6. Insert coupling shaft into the opposite end of the first screw section. Tighten coupling bolts.

7. Insert the coupling shaft through the hanger bearing and bolt hanger temporarily to the trough.

CAUTION:

Before bolting each hanger bearing in place, force all assembled screws away from the discharge end. This removes all slack due to coupling bolt hole clearance and places the conveyor screw sections longitudinally in the position they would assume under full thrust load during operation. This is particularly important in long conveyors to prevent the screw pipe from contacting hanger bearings and transferring thrust loads that would result in early failure. A minimum clearance of 1/32" must be allowed between the conveyor pipe end and the hanger bearing on the side nearest the conveyor discharge. For reversible conveyors, the available clearance between the hanger bearing and pipe ends should be divided equally on each side.

8. Tighten end bearing set screws firmly against the first end or drive shaft.

9. Tighten the first hanger bolts. Be sure that the hanger is at right angles to the trough.

10. Insert a coupling shaft in the second conveyor section and secure with coupling bolts. Attach the opposite end to the coupling shaft in the first screw section. Secure with coupling bolts. Be sure to allow 1/32" clearance between the hanger bearing and the pipe end of the second section after forcing the screw sections toward the inlet end.

11. Repeat the preceding steps for each conveyor screw section.

12. Insert the final end or drive shaft into the last screw section and attach coupling bolts.

13. Attach the trough end and end bearing to the shaft and bolt the end to the trough.

14. Lubricate the bearings if required.

15. If possible, turn the conveyor by hand to check alignment. If binding occurs, hangers may require realignment. If the size and weight of the conveyor prohibit turning by hand, apply power momentarily. DO NOT APPLY FULL POWER UNTIL ALIGNMENT HAS BEEN CHECKED.

MAINTENANCE

Lubrication: A screw conveyor may utilize numerous types of bearings, some of which require lubrication, and some of which do not.

Ball and roller bearing units, both for hangers and end bearings, are frequently sealed for life and may not require subsequent field lubrication. Such units provide for the addition of lubrication fittings should field lubrication be required.

For specific lubrication recommendations, consult the bearing manufacturer's lubrication data, or Strongco Engineered Systems Engineering Department.

When lubrication of ball or roller bearings is required, be sure to use a recommended lubricant. Do not over-lubricate, as the seals may be damaged.

Babbitt or other types of sleeve bearings generally require periodic lubrication. The frequency and type of lubricant depend upon the material being handled and operating conditions.

Oil-impregnated wood or fibre, hard iron, hard surfaced, and many types of plastic bearings do not require lubrication. For nylon bearings however it is recommended that a small amount of light oil be applied at initial startup.

INSPECTION

It is good practice to inspect the conveyor periodically for excessive wear or damaged components. Important items to check: Intake and discharge points, flight thickness at outer edge, condition of bearings, etc.

Since the highest torque is transmitted at the drive shaft and conveyor connection, it is recommended that coupling bolts be removed periodically to inspect for widening of bolts holes and bent or worn bolts.

SCREW CONVEYOR DATA SHEET

FOR

Name:

Address:

Telephone:

CONVEYED MATERIAL

Description:

Moisture Content: _____ %

Temperature: _____ °F.

Bulk Density, packed: _____ lbs./cu. ft.

Bulk Density, loose: _____ lbs./cu. ft.

Bulk Density, Agitated: _____ lbs./cu. ft.

Maximum Particle Size & % Volume: ____ inches, ____ mesh, _____ %

Minimum Particle size & % Volume: ____ inches, ____ mesh, _____ %

Static Angle of Repose: _____ degrees from horizontal

Abrasiveness:

☐ non abrasive ☐ mildly abrasive ☐ very abrasive

Unusual Characteristics:

☐ Toxic dust ☐ Toxic vapours
☐ Corrosive ☐ Contaminable
☐ Contains explosive dust ☐ Hydraulic tendencies
☐ Degradable or friable ☐ Tendency to pack

Remarks:

CAPACITY

_____ pounds per hour _____ cubic feet per hour

LENGTH & ANGLE

Length inside, between trough ends: _____ ' _____ "

Angle: ☐ Horizontal ☐ Inclined at ____ degrees

TYPE OF FEED

☐ Uniform ☐ Choke Other:

DUTY CYCLE

_____ hours per day _____ days per week _____ weeks per year

STOP/START

Frequency of stop/start under load: ☐ Frequent ☐ Infrequent

MOTOR

H.P.	Frame	Volts	Phase	Cycle	Enclosure
					☐ drip proof ☐ totally enclosed ☐ explosion proof

PREFERRED CONSTRUCTION

Screw:
Material _____ Part No. _____ Gauge _____

Trough:
Material _____ Part No. _____ Gauge _____

Cover:
Material _____ Part No. _____ Gauge _____

Sealing:
☐ standard ☐ dust/vapour tight ☐ pressure tight

DISCHARGES

Quantity with slides: _____. Locations: _____

Quantity less slides: _____. Locations: _____

REMARKS

(Use reverse side for additional remarks and rough sketches)

Date: _____ Prepared by: _____

strongco
engineered systems inc.

SAMPLE DATA SHEET. DO NOT REMOVE. COPIES AVAILABLE UPON REQUEST.
PLEASE SUBMIT THESE DATA WHEN REQUESTING INFORMATION OR QUOTATION.

PIPE SIZES, DIMENSIONS AND WEIGHTS

NOMINAL PIPE SIZE Inches	OUTSIDE DIAMETER Inches	I.P.S. SCHEDULE	WALL Inches	INSIDE DIAMETER Inches	WT/FT Pounds
⅛	.405	10S	.049	.307	.1863
		40 40S Std.	.068	.269	.2447
		80 80S Ex. Hvy.	.095	.215	.3145
¼	.540	10S	.065	.410	.3297
		40 40S Std.	.088	.364	.4248
		80 80S Ex. Hvy.	.119	.302	.5351
⅜	.675	10S	.065	.545	.4235
		40 40S Std.	.091	.493	.5676
		80 80S Ex. Hvy.	.126	.423	.7388
½	.840	5S	.065	.710	.5383
		10S	.083	.674	.6710
		40 40S Std.	.109	.622	.8510
		80 80S Ex. Hvy.	.147	.546	1.088
		160	.187	.466	1.304
		XX Hvy.	.294	.252	1.714
¾	1.050	5S	.065	.920	.6838
		10S	.083	.884	.8572
		40 40S Std.	.113	.824	1.131
		80 80S Ex. Hvy.	.154	.742	1.474
		160	.218	.614	1.937
		XX Hvy.	.308	.434	2.441
1	1.315	5S	.065	1.185	.8678
		10S	.109	1.097	1.404
		40 40S Std.	.133	1.049	1.679
		80 80S Ex. Hvy.	.179	.957	2.172
		160	.250	.815	2.844
		XX Hvy.	.358	.599	3.659
1¼	1.660	5S	.065	1.530	1.107
		10S	.109	1.442	1.806
		40 40S Std.	.140	1.380	2.273
		80 80S Ex. Hvy.	.191	1.278	2.997
		160	.250	1.160	3.765
		XX Hvy.	.382	.896	5.214
1½	1.900	5S	.065	1.770	1.274
		10S	.109	1.682	2.085
		40 40S Std.	.145	1.610	2.718
		80 80S Ex. Hvy.	.200	1.500	3.631
		160	.281	1.338	4.859
		XX Hvy.	.400	1.100	6.408
2	2.375	5S	.065	2.245	1.604
		10S	.109	2.157	2.638
		40 40S Std.	.154	2.067	3.653
		80 80S Ex. Hvy.	.218	1.939	5.022
		160	.343	1.689	7.444
		XX Hvy.	.436	1.503	9.029
2½	2.875	5S	.083	2.709	2.475
		10S	.120	2.635	3.531
		40 40S Std.	.203	2.469	5.793
		80 80S Ex. Hvy.	.276	2.323	7.661
		160	.375	2.125	10.01
		XX Hvy.	.552	1.771	13.69
3	3.500	5S	.083	3.334	3.029
		10S	.120	3.260	4.332
		40 40S Std.	.216	3.068	7.576
		80 80S Ex. Hvy.	.300	2.900	10.25
		160	.438	2.624	14.32
		XX Hvy.	.600	2.300	18.58
3½	4.000	5 5S	.083	3.834	3.472
		10 10S	.120	3.760	4.973
		40 40S Std.	.226	3.548	9.109
		80 80S Ex. Hvy.	.318	3.364	12.50
4	4.500	5S	.083	4.334	3.915
		10S	.120	4.260	5.613
		40 40S Std.	.237	4.026	10.79
		80 80S Ex. Hvy.	.337	3.826	14.98
		120	.438	3.624	19.00
		160	.531	3.438	22.51
		XX Hvy.	.674	3.152	27.54
5	5.563	5S	.109	5.345	6.349
		10S	.134	5.295	7.770
		40 40S Std.	.258	5.047	14.62
		80 80S Ex. Hvy.	.375	4.813	20.78
		120	.500	4.563	27.04
		160	.625	4.313	32.96
		XX Hvy.	.750	4.063	38.55
6	6.625	5S	.109	6.407	7.585
		10S	.134	6.357	9.289
		40 40S Std.	.280	6.065	18.97
		80 80S Ex. Hvy.	.432	5.761	28.57
		120	.562	5.491	36.39
		160	.718	5.189	45.30
		XX Hvy.	.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 Std.	.322	7.981	28.55
		60	.406	7.813	35.64
		80 80S Ex. Hvy.	.500	7.625	43.39
		100	.593	7.439	50.87
		120	.718	7.189	60.63
		140	.812	7.001	67.76
		XX Hvy.	.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 Std.	.365	10.020	40.48
		60 80S Ex. Hvy.	.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.

SUPPLEMENTARY ENGINEERING DATA

HORSEPOWER FORMULAE AND TORQUE TABLE

HORSEPOWER (HP) is the common unit of mechanical power and one HP is the rate of work required to raise 33,000 lbs. a distance of one foot in one minute, or to raise 1 lb. a distance of 33,000 feet in one minute.

TORQUE (T) is the twisting action on a shaft and is expressed in inch or foot pounds. It is computed by multiplying the turning force in pounds by the distance, in inches or feet, from the centreline of the shaft to the point at which the turning force is applied. This distance is frequently the radius of a pulley, pitch radius of a sprocket or gear, and is referred to as the lever arm.

Torque (inch pounds) = HP × 63025 ÷ RPM
Torque (foot pounds) = HP × 5252 ÷ RPM

The table below shows the Torque in inch pounds for a range of horsepowers at various RPM. For fractional horsepowers, move the decimal point to the left in HP and Torque values, thus:

25 HP at 150 RPM = 10,504 inch lbs. Torque.
0.25 HP at 150 RPM = 105.04 inch lbs. Torque.

For other RPM values move the decimal point in RPM to the left or right as required, and in torque values move decimal point in the opposite direction the same number of places, thus:

25 HP at 150 RPM = 10,504 inch lbs. Torque.
25 HP at 1.5 RPM = 1,050,400 inch lbs. Torque.
0.25 HP at 1.5 RPM = 10,504 inch lbs. Torque.

TORQUE IN INCH POUNDS FOR HORSEPOWERS AT VARIOUS SPEEDS

HP	Revolutions Per Minute															
	100	125	150	175	200	250	300	350	400	450	500	600	700	800	900	1000
1	630	504	420	360	315	252	210	180	157	140	126	105	90	78	70	63
2	1260	1008	840	720	630	504	420	360	315	280	252	210	180	157	140	126
3	1890	1512	1260	1080	945	756	630	540	472	420	378	315	270	236	210	189
4	2521	2016	1680	1440	1260	1008	840	720	630	560	504	420	360	315	280	252
5	3151	2520	2100	1800	1575	1260	1050	900	787	700	630	525	450	393	350	315
6	3781	3024	2521	2160	1890	1512	1260	1080	945	840	756	630	540	472	420	378
7	4411	3528	2941	2520	2205	1764	1470	1260	1102	980	882	735	630	551	490	441
8	5042	4032	3361	2880	2521	2016	1680	1440	1260	1120	1008	840	720	630	560	504
9	5672	4536	3781	3240	2836	2268	1890	1620	1418	1260	1134	945	810	709	630	567
10	6302	5042	4201	3600	3151	2521	2100	1800	1575	1400	1260	1050	900	787	700	630
25	15756	12604	10504	9003	7878	6302	5252	4501	3939	3501	3151	2626	2250	1969	1750	1575

AREAS AND VOLUMES

Circumference of circle... = 3.1416 × diameter

Diameter of circle..... = 0.3183 × circumference

Side of a square of equal area..... = 0.8862 × diameter

Diameter of a circle of equal area..... = 1.1284 × side of square

Area of a circle..... = 0.7854 × square of the diameter

Diameter of a circle..... = 1.1284 × square root of the area

Surface area of a sphere . = 3.1416 × square of the diameter

Volume of a sphere..... = 0.5236 × cube of diameter

Volume of cylinder or prism..... = area of base × height

Volume of cone or pyramid..... = ⅓ × area of base × height

Volume of the frustrum of a cone or pyramid..... = ⅓ × height × (area of upper base + area of lower base

$+ \sqrt{\text{area of upper base} \times \text{area of lower base}}$.)

Doubling the diameter of a pipe increases its volume four times; generalizing, increasing the diameter "n" times increase the volume "n^2" or "$n \times n$" times.

DRY MEASURE

1 British Imperial bushel = 8 Imperial gallons = 1.2837 cubic feet = 2218.19 cubic inches.

1 bushel (U.S. or Winchester struck bushel) = 1.2445 cubic feet = 2150.42 cubic inches.

1 bushel = 4 pecks = 32 quarts = 64 pints.

1 peck = 8 quarts = 16 pints.

1 quart = 2 pints.

1 heaped bushel = 1¼ struck bushel.

1 cubic foot = 0.8036 struck bushel.

LIQUID MEASURE

1 British Imperial gallon = 1.2009 U.S. gallon = 277.42 cubic inches.

1 U.S. gallon = 0.1337 cubic foot = 231 cubic inches = 4 quarts = 8 pints.

1 quart = 2 pints = 8 gills.

1 pint = 4 gills.

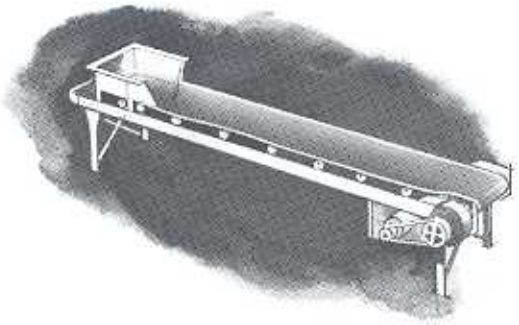
1 cubic foot = 7.48 U.S. gallons. = 6.24 Imp. gallons.

SPECIFIC GRAVITY

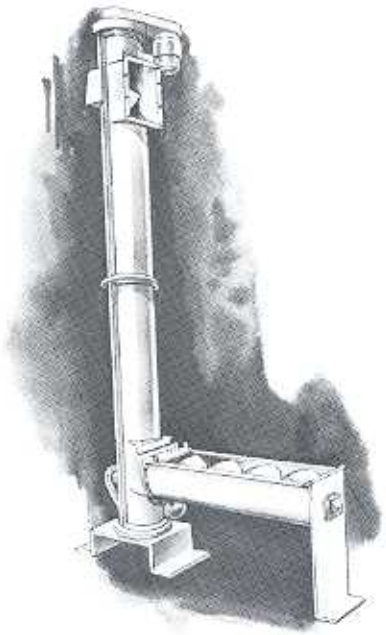
The specific gravity of a substance is its weight as compared with the weight of an equal bulk of pure water. For making specific gravity determinations the temperature of the water is usually taken at 62°F. when 1 cubic foot of water weighs 62.355 lbs. Water is at its greatest density at 39.2°F. or 4° Centigrade.

COMPONENT CODE INDEX

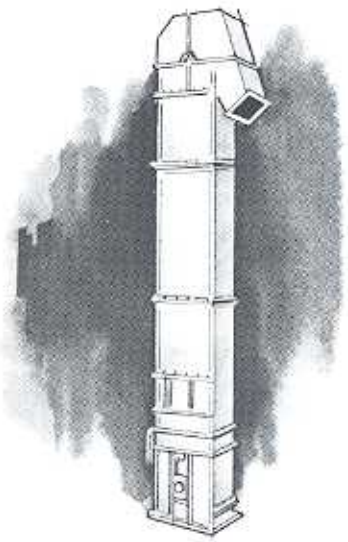
INDEX



BELT CONVEYORS



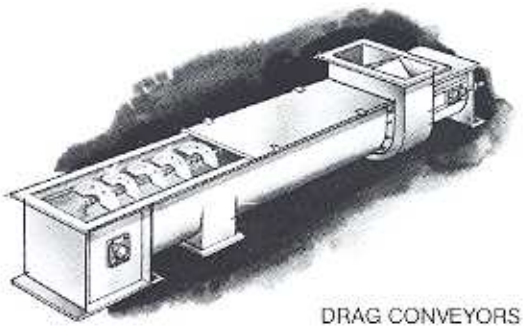
VERTICAL SCREW CONVEYORS



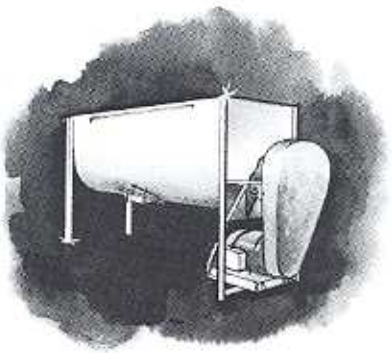
BUCKET ELEVATORS

Whatever your materials handling requirements, Strongco Engineered Systems can supply the equipment to meet them.

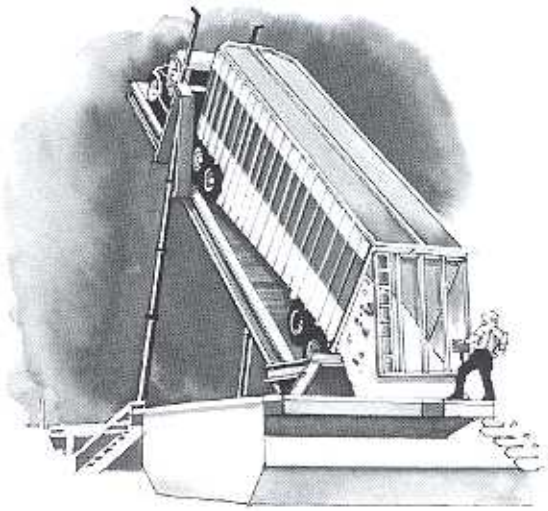
In addition to being able to supply a wide variety of equipment from stock, we have the facilities to design and manufacture custom equipment and systems to suit your application.



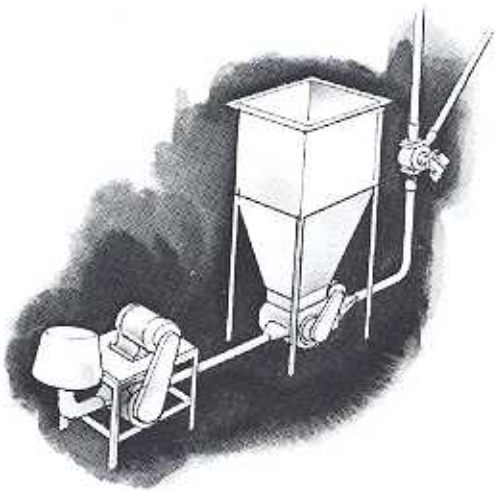
DRAG CONVEYORS



MIXERS



TRUCK DUMPERS



PNEUMATIC CONVEYING SYSTEMS

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