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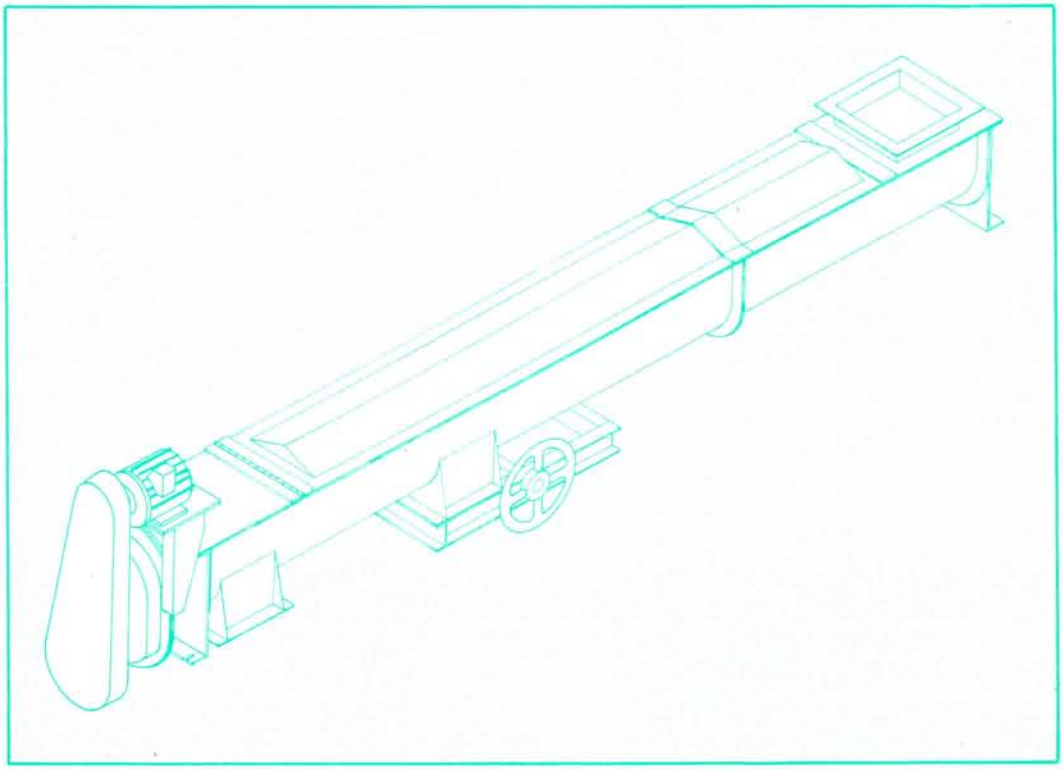
thomas conveyor company



screw conveyor engineering guide

MANUFACTURERS ♦ DESIGNERS ♦ ENGINEERS

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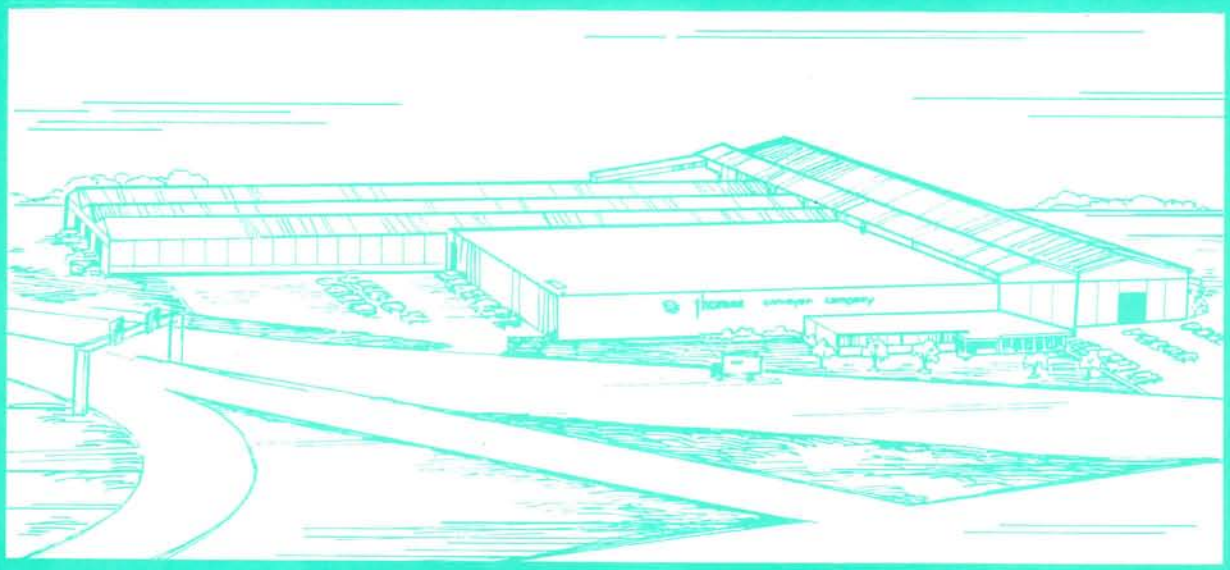
thomas conveyor company



Devoted exclusively to engineering and production of quality machinery for efficient handling of bulk materials, Thomas Conveyor Company operates a 220,000 square foot facility in an industrial area near Fort Worth, Texas.

Thomas Conveyors progressive management team, backed by extensive experience in bulk material handling equipment, broad engineering and design capabilities,and manufacturing strength have made Thomas Conveyor an industry standard for screw conveyors, drag conveyors, and bucket elevators. From design to delivery, Thomas Conveyor is the one you can depend on.

contents

engineering section

materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Alfalfa meal	17	30A	0.9	A	7
Almonds, broken or whole	28-30	30B	0.4	B	4
Alum, lumpy	50-60	30A	1.4	E	●
Alum, pulverized	45-50	30A	0.6	A	●
Alumina	60	15	1.8	F	
Aluminate jell	45	30B	1.7	B	
Aluminum hydrate	13-20	30A	1.4	A	
Ammonium chloride, crystalline	52	30A	.07	A	
Antimony powder		30B	1.6	B	7
Apple pomace, dry	15	30B	1.0	B	7
Asbestos shred	20-25	30A	1.0	E	8
Ashes, dry	35-40	30B	4.0	B	
Ashes, wet	45-50	30B	5.0	B	
Asphalt, crushed	45	30A	2.0	A	
Ammonium sulphate	45	30A	1.0		
Bagasse	7-8	30A	1.0	E	9
Bakelite, powdered	30-40	30A	1.4	A	
Baking powder	41	30A	0.6	A	
Barite	160	15	2.0	F	6
Bark, wood, refuse	10-20	30B	1.2	B	9 ●
Barley	38	45	0.4	A	1
Bauxite, crushed	75-85	15	1.8	C	●
Beans, castor	36	45	0.5	A	
Beans, castor, meal		45	1.2	A	
Beans, navy, dry	48	45	0.5	A	
Bentonite, minus 100 mesh	51	30B	0.7	B	6 ●
Bicarbonate of soda	41	30A	0.6	A	
Blood, dried	35-45	30B	1.7	B	
Bones, crushed, minus 1/2 inch	35-40	30B	2.0	B	●
Bones, ground, minus 1/8 inch	50	30B	1.7	B	
Boneblack, minus 100 mesh	20-25	30B	1.7	B	●
Bonechar, minus 1/8 inch	40	30B	1.7	B	
Bonemeal	55-60	30B	1.7	B	
Borate of lime		30A	0.6	A	●
Borax, powdered	53	30A	0.7	A	
Boric acid, powdered		30A	0.8	A	
Bran	16	30A	0.4	A	7
Bread crumbs		30A	0.6	A	4
Brewer's grain, spent, dry	25-30	30A	0.4	A	●
Brewer's grain, spent, wet	55-60	30A	0.6	A	●
Brick, ground		15	2.2	F	
Buckwheat	40-42	45	0.4	A	1
Butter	59	30A	0.4	A	●
Calcine flour	75-85	30B	0.7	A	
Calcium carbide	70-90	30B	1.6	B	
Carbon black, granular	25	30A	0.4	●	
Carbon black, pelletized	25	●	1.0	●	
Carbon black powder, channel	4-6	30A	0.4	●	
Carbon black powder, furnace	4-6	30A	0.4	●	
Casein	36	30B	1.6	B	
Cast iron borings	130-200	30B	4.0	B	
Cement, portland	75-85	30B	1.4	B	6

□ See material characteristics, Page 8

● Consult our Engineering Dept.

Materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Cement clinker	75-80	15	1.8	C	
Chalk, crushed	85-90	30B	1.9	B	
Chalk, pulverized, minus 100 mesh	70-75	30B	1.4	B	6-8
Charcoal	18-25	30B	1.4	B	4
Cinders, coal	40	15	1.6	C	
Clay, kaolin, minus 3 inches		30B	2.0	B	●
Clover seed	48	45	0.4	A	1
Coal, anthracite, sized	52-60	30A	1.0	E	4
Coal, bituminous, fines, minus 50 mesh	50	30A	0.9	D	2
Coal, bituminous, sized	50	30A	1.0	D	2-4
Coal, bituminous, slack, minus 1/2 inch	50	30A	0.9	D	2
Cocoa, powdered	30-35	30A	0.9	A	8
Cocoa beans	30-40	30B	0.4	B	4 ●
Cocoa nibs	35	30B	0.5	B	
Coconut, shredded	20-22	30A	1.0	E	
Coffee, green bean	32	30A	0.8	A	4
Coffee, ground	25	30A	0.4	A	
Coffee, roasted bean	22-26	45	0.4	A	
Coke, loose	23-32	15	1.2	C	4-9 ●
Coke, petroleum	35-42	30B	1.0	B	9
Coke breeze, minus 1/4 inch	25-34	15	1.2	F	
Copper sulphate (bluestone)	60-70	30A	1.0	E	
Copperas	50-70	30B	0.8	A	
Copra	22	30A	0.8	E	
Copra cake	25-30	30A	1.0	E	
Copra cake, ground	40-45	30A	0.7	A	
Cork, fine ground	12-15	30A	0.5	A	6-7
Cork, granulated, minus 1/2 inch	12-15	30A	0.4	A	
Corn, cracked	45-50	30A	0.7	A	
Corn, seed	45	45	0.4	A	4
Corn, shelled	45	45	0.4	A	1
Corn germs	21	30A	0.4	A	
Corn grits	42-43	30A	0.5	A	
Corn sugar	31	30A	1.0	A	
Cornmeal	38-40	30A	0.4	A	
Cottonseed, dry de-linted	35	30A	0.9	A	
Cottonseed, dry, undelinted	18-25	30A	0.8	A	
Cottonseed cake, cracked	40-45	30A	1.0	E	
Cottonseed flakes	20-25	30A	0.8	A	7 ●
Cottonseed hulls	12	30A	0.9	A	7
Cottonseed meal	35-40	30A	0.4	A	
Cottonseed meats	40	30A	0.6	A	
Cracklings, crushed, minus 3 inches	40-50	30A	1.3	E	
Cryolite	50-75	30B	2.1	B	
Cullet	80-120	15	2.0	C	●
Dicalcium phosphate	43	30A	1.6	A	
Dolomite, crushed	90-100	30B	2.0	B	●
Ebonite, crushed, minus 1/2 inch	65-70	30A	0.8	A	
Egg powder	16	30A	1.0		●
Epsom salts	40-50	30A	0.7	A	
Feldspar, ground, minus 100 mesh	65-70	30B	2.0	B	

□ See material characteristics, Page 8

● Consult our Engineering Dept.

materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Ferrous sulphate	50-70	30B	1.0	A	
Fish meal	35-40	30A	0.9	A	
Fish scrap	40-50	30A	1.5	E	
Flaxseed	45	45	0.4	A	1
Flaxseed cake, expeller	48-50	30A	0.6	E	
Flaxseed meal	25	30A	0.4	A	
Flour, wheat	35-40	45	0.6		●
Flue dust, boiler house, dry	110-125	30B	3.5	B	6 ●
Fluorspar	82	30B	2.0	B	
Fly ash, dry	35-40	30B	3.5	B	6 ●
Foundry sand	90-100	30B	2.0	D	
Fuller's earth, burnt, oil refinery	40	15	2.0	F	
Fuller's earth, raw, oil refinery	35-40	30B	2.0	B	
Fuller's earth, spent, 35 per cent oil	45-55	30B	2.0	D	●
Gelatine, granulated	32	30A	0.8	A	4
Glass batch	90-100	15	2.0	C	●
Glue, ground, minus 1/8 inch	40	30B	1.7	B	
Glue, pearl	40	45	0.5	A	
Gluten meal	40	30A	0.6	A	
Grains, distillery, spent, dry	30	30A	0.4	E	7
Graphite, flake, minus 1/2 inch	40	30A	0.4	A	
Graphite, flour	28	45	0.4	A	6
Graphite, ore	65-75	30B	1.0	B	
Grape pomace	15-20	30B	1.0	B	7
Grass seed	10-12	30A	0.4	A	1-7
Gypsum, calcined, minus 1/2 inch	55-60	30B	1.2	B	
Gypsum, crushed, raw, under 1 inch	90-100	30B	1.6	B	
Gypsum, pulverized, calcined		30B	2.0	B	
Hominy	37	45	0.4	A	
Hops, spent, dry	35	30A	1.0	E	
Hops, spent, wet	50-55	30A	1.2	D	2
Ice, crushed	35-45	30A	0.4	E	
Ilmenite ore	140	15	2.0	F	
Iron oxide, mill scale	110-125	30B	1.6	B	
Iron sulphate	50-70	30B	1.0	A	
Lard	59	30A	0.4	A	
Lead arsenate	72	30A	1.2		
Lead oxide	30-150	30B	1.0	B	●
Lignite, air dried, minus 3 inches	45-55	30A	1.0	E	
Lime, ground, minus 1/8 inch	60	30A	0.6	A	8
Lime, hydrated, not pulverized or air separated	40	30A	0.8	A	6
Lime, hydrated, pulverized, air separated	32-40	30A	0.6	A	6-8
Lime, pebble	56	30A	1.3	E	
Limestone, agricultural, minus 1/8 inch	68	30B	2.0	B	●
Limestone, crushed	85-90	30B	2.0	B	●
Limestone dust	75-85	30B	1.6	B	●
Linseed cake	48-50	45	0.6	A	
Magnesium chloride	33	30A	0.6	A	
Malt, dry, ground, minus 1/8 inch	22	30A	0.4	A	1-7
Malt, dry, whole	27-30	30A	0.4	A	1

□ See material characteristics, Page 8

● Consult Our Engineering Dept.

materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Malt, wet or green	60-65	30A	0.4	A	●
Malt meal	36-40	30A	0.4	A	
Manganese sulphate	70	15	2.0	F	
Marl	80	30B	1.6	B	
Mica, ground	13-15	30B	0.7	B	
Mica, pulverized	13-15	30B	0.7	B	6
Mica, flakes	17-22	30B	1.4	B	6-7
Milk, dried flake	36	30A	1.0	A	3 ●
Milk, malted	27	30A	0.9	A	3-8
Milk, powdered	36	45	0.5		●
Muriate of potash	77	15	1.8	F	
Mustard seed	45	45	0.4	A	1
Maize	56	45	0.4	A	1
Naphthalene flakes	45	30A	0.7		●
Oats	26	45	0.4	A	1
Oats, rolled	19	30A	0.5	A	7
Oleomargarine	59	30A	0.4	A	●
Orange peel, dry	15	30A	1.0	E	
Oxalic acid crystals	60	30A	1.0	A	5
Oyster shells, whole	80	30B	2.1-2.5	B	9
Oyster shells, ground, minus 1/2 inch	53	30B	1.6-2.0	B	
Paper pulp 4% or less	62	30A	0.9	A	●
Paper pulp 6-15%	60-62	30B	1.2	A	
Peanuts, raw, uncleaned, unshelled	15-20	30B	0.7	A	●
Peanuts, shelled	35-45	30A	0.5	A	
Peanuts, in shells, clean	15-20	30B	0.7	E	4
Peas, dried	45-50	45	0.5	A	1-4
Phosphate rock	75-85	30B	1.8	B	●
Phosphate sand	90-100	15	1.6	F	
Plaster of paris	60-80	30B	2.0	B	
Pumice, ground, minus 1/8 inch	42-45	15	1.0	F	●
Potassium nitrate	80	30A	1.2	A	1
Paraffin, broken	45	30B	0.6	A	4
Phosphate, pulverized	60	30B	1.4	B	
Rice, hulled or polished	45-48	45	0.4	A	
Rice, rough	36	30A	0.4	A	1
Rice, bran	20	30A	0.4	A	1-7
Rice grits	42-45	30A	0.4	A	
Rubber, ground	23	30A	0.8	A	
Rye	44	45	0.4	A	1
Salt, dry, fine	70-80	30B	1.0	D	2-5 ●
Salt, dry, coarse	45-50	30B	1.2	D	2-5 ●
Salt cake, dry, coarse	85	30A	1.0	E	
Salt cake, dry, pulverized	65-85	30A	1.2	A	
Saltpeter	80	30A	1.2	A	1
Sand, dry, bank	90-110	15	2.0	F	
Sand, dry, silica	90-100	15	2.0	F	
Sawdust	10-13	30A	0.7	A	●
Shale, crushed	85-90	30B	2.0	B	●

□ See material characteristics, Page 8

● Consult Our Engineering Dept.

materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Shavings, wood	15	30A	1.0	A	
Shellac, powdered or granulated	31	30A	0.6	A	●
Silica gel	45	15	1.0	F	
Slag, furnace, granulated	60-65	15	1.2	F	
Slate, crushed, minus 1/2 inch	80-90	30B	2.0	B	
Slate, ground, minus 1/8 inch	82	30B	2.0	B	
Sludge, sewage, dried	40-55	30A	0.5	A	●
Soap beads or granules	15-35	30A	0.6	A	4
Soap chips	5-15	30A	0.6	A	4 ●
Soap flakes		30A	0.6	A	4 ●
Soap powder	20-25	30A	0.9	A	●
Soapstone talc	165-170	30B	2.0	B	
Soda ash, light	20-35	30B	0.7	B	7
Soda ash, heavy	55-65	30B	0.7	B	
Sodium phosphate	50	30A	0.9	A	●
Sodium sulphate	85	30A	1.0	E	
Soybean cake, over 1/2 inch	40-43	30A	1.0	E	
Soybean flakes, raw or spent	18-26	30A	0.8	A	7
Soybean meal, cold	40	30A	0.6	A	
Soybeans, cracked	32-36	30A	0.5	A	1
Soybeans, whole	45-50	30B	0.4	B	1 ●
Starch	45	30A	1.0	A	●
Steel chips, crushed	25-85	15	1.8	C	
Sugar, granulated, dry	50-55	30A	0.7	A	3-4
Sugar, granulated, wet		30A	1.4-2.0	A	3 ●
Sugar, raw	55-65	30A	1.0	A	8 ●
Sugar beet pulp, dry	12-15	30A	0.9	A	●
Sugar beet pulp, wet	25-45	30A	0.9	A	●
Sulphur, crushed, minus 1/2 inch	50-60	30A	0.8	A	1 ●
Sulphur, lumpy, minus 3 inches	80-85	30A	0.8	E	1 ●
Sulphur, powdered	50-60	30A	0.7	A	1-6 ●
Talcum powder	50-60	30B	0.6	B	6
Tanbark, ground	55	30A	0.7	A	●
Timothy seed	36	30A	0.4	A	7
Tobacco, scraps	15-25	30A	0.8	E	7
Tobacco, snuff	30	30A	0.9	A	4-6
Tri-sodium phosphate	60	30B	1.7	B	
Tung nut meats, crushed	25	30A	0.8	E	
Vermiculite, expanded	16	30A	0.5	A	7
Vermiculite ore	80	30A	0.8	E	
Wheat	45-48	45	0.4	A	1
Wheat, cracked	40-45	30A	0.4	A	1
Wheat, flour	35-40	45	0.6	A	●
Wheat germ	28	30A	0.4	A	
White lead, dry	74	30A	1.0	A	
Wood chips, screened	12-20	30A	06.-1.0		●
Wood flour	16-36	45	0.6	A	●
Wood shavings	15	30A	1.0	A	7-9 ●
Zinc oxide, light	10-15	30A	0.9	A	7-8 ●
Zinc oxide, heavy	30-35	30A	1.0	A	●

□ See material characteristics, Page 8

● Consult Our Engineering Dept.

conveyor capacity

Required Information

Type and condition of material being conveyed.

Conveyor capacity in cubic feet per hour.

Maximum particle size in inches.

1. loading

Refer to Material Tables, pages 3-7, and find the recommended conveyor loading per cent for the material to be conveyed.

2. capacity

In Capacity Table, page 9, find the group that corresponds to the recommended per-cent loading. Refer to the capacity at maximum R.P.M. column in this group, and find the capacity which equals, or just exceeds, that required; note the conveyor size and maximum lump size corresponding to this value.

3. particle size

If this size does not exceed the maximum particle size being conveyed, the selected conveyor size will be adequate. If this tabular value is less than the maximum particle size being conveyed, select a larger conveyor whose tabular maximum lump size equals, or exceeds, the particle size being conveyed.

4. speed

Conveyor speed (S_c) may be found from the following equation:

$$S_c = \frac{C_v}{C_{v1}}$$

C_v = Conveyor capacity in cubic feet per hour.
C_{v1} = Conveyor capacity in cubic feet per hour at one rpm.

100% loading

Capacity charts and tables given for 100% loaded conveyors are average values for pulverulent materials, and it is recommended that our engineering department be consulted concerning particular materials.

pitch

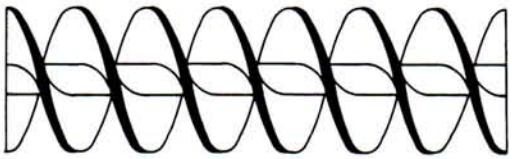
Capacity and speed tables are based on standard pitch conveyors, (pitch equals conveyor diameter). For other than standard pitch, determine the required conveyor speed (S_c), as outlined above, and multiply by the conveyor pitch factor (F_p) from the following table.

$$S_c = F_p \ (S_c \text{ std. pitch})$$

Pitch		F_p
Standard	(pitch equals diameter)	1.00
Half	(pitch equals 1/2 diameter)	2.00
Short	(pitch equals 2/3 diameter)	1.50
Long	(pitch equals 1-1/2 diameters)	0.67

flights

When using equally spaced multiple flights, i.e. more than one helicoid interlaced, the pitch of a single helicoid only need be considered for capacity determinations.



For example, if a double flight — short pitch conveyor is under consideration, the pitch factor (F_p) for speed calculations would be 2/3 diameter ($F_p = 1.50$) rather than 1/3 diameter.

material characteristics

The following unusual material characteristics will be found noted in the Material Tables, pages 3-7.

1 Contains explosive dust
2 Mildly corrosive
3 Contaminable
4 Degradable
5 Hygroscopic
6 Aerates becoming fluid
7 Very light and fluffy
8 Packs under pressure
9 Interlocks or mats
10 Consult our Engineering Department

materials

Note: The characteristics of materials frequently conveyed are shown below. Consult CEMA Table for materials not described or consult Thomas Engineering.

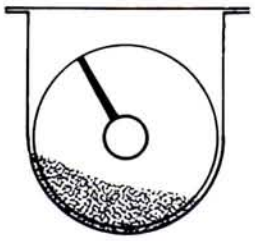
Material	Average weight per cubic foot, pounds	C_L Conveyor Loading %	F_M Material H.P. Factor	Component Group	Note □
Shavings, wood	15	30A	1.0	A	
Shellac, powdered or granulated	31	30A	0.6	A	●
Silica gel	45	15	1.0	F	
Slag, furnace, granulated	60-65	15	1.2	F	
Slate, crushed, minus 1/2 inch	80-90	30B	2.0	B	
Slate, ground, minus 1/8 inch	82	30B	2.0	B	
Sludge, sewage, dried	40-55	30A	0.5	A	●
Soap beads or granules	15-35	30A	0.6	A	4
Soap chips	5-15	30A	0.6	A	4 ●
Soap flakes		30A	0.6	A	4 ●
Soap powder	20-25	30A	0.9	A	●
Soapstone talc	165-170	30B	2.0	B	
Soda ash, light	20-35	30B	0.7	B	7
Soda ash, heavy	55-65	30B	0.7	B	
Sodium phosphate	50	30A	0.9	A	●
Sodium sulphate	85	30A	1.0	E	
Soybean cake, over 1/2 inch	40-43	30A	1.0	E	
Soybean flakes, raw or spent	18-26	30A	0.8	A	7
Soybean meal, cold	40	30A	0.6	A	
Soybeans, cracked	32-36	30A	0.5	A	1
Soybeans, whole	45-50	30B	0.4	B	1 ●
Starch	45	30A	1.0	A	●
Steel chips, crushed	25-85	15	1.8	C	
Sugar, granulated, dry	50-55	30A	0.7	A	3-4
Sugar, granulated, wet		30A	1.4-2.0	A	3 ●
Sugar, raw	55-65	30A	1.0	A	8 ●
Sugar beet pulp, dry	12-15	30A	0.9	A	●
Sugar beet pulp, wet	25-45	30A	0.9	A	●
Sulphur, crushed, minus 1/2 inch	50-60	30A	0.8	A	1 ●
Sulphur, lumpy, minus 3 inches	80-85	30A	0.8	E	1 ●
Sulphur, powdered	50-60	30A	0.7	A	1-6 ●
Talcum powder	50-60	30B	0.6	B	6
Tanbark, ground	55	30A	0.7	A	●
Timothy seed	36	30A	0.4	A	7
Tobacco, scraps	15-25	30A	0.8	E	7
Tobacco, snuff	30	30A	0.9	A	4-6
Tri-sodium phosphate	60	30B	1.7	B	
Tung nut meats, crushed	25	30A	0.8	E	
Vermiculite, expanded	16	30A	0.5	A	7
Vermiculite ore	80	30A	0.8	E	
Wheat	45-48	45	0.4	A	1
Wheat, cracked	40-45	30A	0.4	A	1
Wheat, flour	35-40	45	0.6	A	●
Wheat germ	28	30A	0.4	A	
White lead, dry	74	30A	1.0	A	
Wood chips, screened	12-20	30A	06.-1.0		●
Wood flour	16-36	45	0.6	A	●
Wood shavings	15	30A	1.0	A	7-9 ●
Zinc oxide, light	10-15	30A	0.9	A	7-8 ●
Zinc oxide, heavy	30-35	30A	1.0	A	●

□ See material characteristics, Page 8

● Consult Our Engineering Dept.

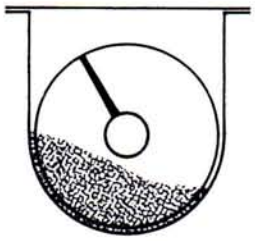
capacity

CONVEYOR LOADING C_L %



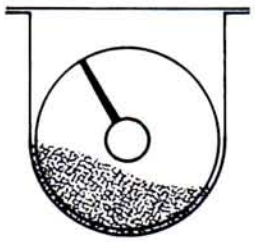
15%

Screw Diameter	Maximum Lump Size	Capacity Cubic Feet Per Hour		Maximum Economical Speed RPM
		At One RPM	At Maximum RPM	
4	5/8	.22	17	75
6	3/4	.75	45	60
9	1 1/2	2.72	150	55
10	1 3/4	3.75	206	55
12	2	6.46	325	50
14	2 1/2	10.4	520	50
16	3	15.6	700	45
18	3	22.5	1,010	45
20	3 1/2	31.2	1,250	40
24	4	54.6	2,180	40



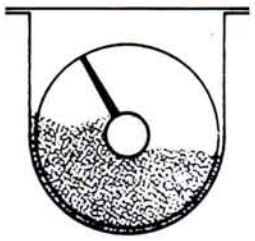
30% A

4	5/8	.43	56	130
6	3/4	1.49	180	120
9	1 1/2	5.45	545	100
10	1 3/4	7.51	713	95
12	2	12.9	1,160	90
14	2 1/2	20.8	1,770	85
16	3	31.2	2,500	80
18	3	45.0	3,380	75
20	3 1/2	62.5	4,370	70
24	4	109.0	7,100	65



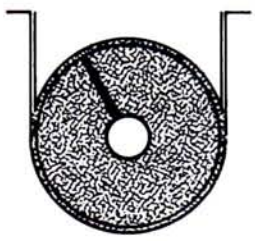
30% B

4	5/8	.43	32	75
6	3/4	1.49	90	60
9	1 1/2	5.45	300	55
10	1 3/4	7.51	413	55
12	2	12.9	645	50
14	2 1/2	20.8	1,040	50
16	3	31.2	1,400	45
18	3	45.0	2,025	45
20	3 1/2	62.5	2,500	40
24	4	109.0	4,360	40



45%

4	5/8	.65	120	185
6	3/4	2.23	368	165
9	1 1/2	8.2	1,270	155
10	1 3/4	11.26	1,689	150
12	2	19.4	2,820	145
14	2 1/2	31.2	4,370	140
16	3	46.7	6,060	130
18	3	67.6	8,120	120
20	3 1/2	93.7	10,300	110
24	4	164.0	16,400	100



100%

4	5/8	1.44	454	315
6	3/4	4.98	1,494	300
9	1 1/2	18.50	5,088	275
10	1 3/4	25.02	6,630	265
12	2	44.40	11,322	255
14	2 1/2	70.0	16,800	240
16	3	104.70	23,034	220
18	3	151	31,710	210
20	3 1/2	209	39,710	190
24	4	363	58,080	160

horsepower

The following procedures for the determination of conveyor horsepower are based on the assumption that conveyors are installed with correct alignment of components and that speeds and capacities are based on those set forth in the preceeding capacity equations and tables.

Required Information

Conveyor size	Conveyor speed
Conveyor capacity	Material conveyed
Conveyor length	Hanger bearing type

Graphic Solution

For installations of standard conveyor which will operate under normal loading conditions, Total Required Horsepower at conveyor drive shaft (HP_t), may be found by adding Conveyor Friction Horsepower (HP_f) to Conveyed Material Horsepower (HP_m), as determined by graphic solution using the appropriate nomograph found on pages 12 and 13.

A straight edge may be aligned with appropriate values appearing on the two left vertical scales. The third or blank index line should be marked where crossed by the straightedge.

From this index mark, a straight line crossing the appropriate value on the fourth vertical scale will intersect the last scale at the proper horsepower value.

Calculated Solution

For more complex installations, the following four independent calculations are to be preferred.

1. Conveyor friction horsepower HP_f
2. Conveyed material horsepower HP_m
3. Conveyor total horsepower HP_t
4. Drive horsepower HP_d

(1) HP_f Conveyor Friction Horsepower

The horsepower required to overcome friction in the moving parts of the conveyor assembly may be determined by the following equation:

$$HP_f = \frac{L_c \; S_c \; F_c \; F_b}{1{,}000{,}000}$$

L_c = Total length, in feet, of conveyor under consideration.

S_c = Speed of conveyor in rpm, maximum in the case of variable speed drives.

F_c = Conveyor diameter factor from the following table.

F_b = Hanger bearing type factor from the following table.

F_c Conveyor Diameter Factor

Diameter	Factor	Diameter	Factor
4	12	14	78
6	18	16	106
9	31	18	135
10	37	20	165
12	55	24	235

F_b Conveyor Hanger Bearing Factor

Bearing Type	Factor	Bearing Type	Factor
Arguto	1.7*	Manganese Steel	4.4*
Babbitt	1.7	Nylon	2.0*
Ball	1.0	Oilite	1.7*
Bronze	1.7	Stellite	4.4*
(self lubricating)	1.7*	Teflon	2.0*
Graphite Bronze	1.7*	Hard Iron	4.4*
Graphitex	2.0*	Wood	1.7*
Lignum Vitae	1.7*	Nylon	2.0*

* Non lubricated bearings.

CONVEYORS WITH MODIFIED FLIGHTS

The procedure for calculation of horsepower for conveyors with special or modified flights is identical to that used for standard conveyors except that the Material Horsepower must be multiplied by one or more of the following applicable factors:

MODIFIED FLIGHT FACTORS

Flight Type	Conveyor Loading			
	15	30	45	95
Cut Flight	1.0	1.0	1.0	1.0
Cut & Folded Flight	1.3	1.5	1.7	2.2
Ribbon Flight	1.05	1.14	1.20	

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

Total Shaft Horsepower (TSHP) is calculated by adding Material Horsepower, multiplied by the appropriate modified flight factor or factors to Friction Horsepower.

NOTE

Conveyors which have deviation in pitch only do not require special consideration, and their horsepower calculations are as described for standard conveyors.

horsepower

(2) HP_m Conveyed Material Horsepower

Horsepower required to convey material horizontally is determined from the following equation:

$$HP_m = \frac{C_v \; M \; L_c \; F_m}{1{,}000{,}000}$$

or

$$= \frac{C_w \; L_c \; F_m}{1{,}000{,}000}$$

C_v = Conveyor capacity in cubic feet per hour.

M = Average material weight in pounds per cubic foot.

L_c = Total conveyor length in feet.

F_m = Material horsepower factor from tables, pages 3-7

C_w = Conveyor capacity in pounds per hour.

(3) HP_t Conveyor Total Horsepower

Total horsepower required at the conveyor drive shaft may be determined from the following:

$$HP_t = \frac{\left(HP_f + HP_m\right) F_o}{\text{DRIVE EFFICIENCY}}$$

HP_f = Conveyor friction horsepower.

HP_m = Horsepower required to convey material.

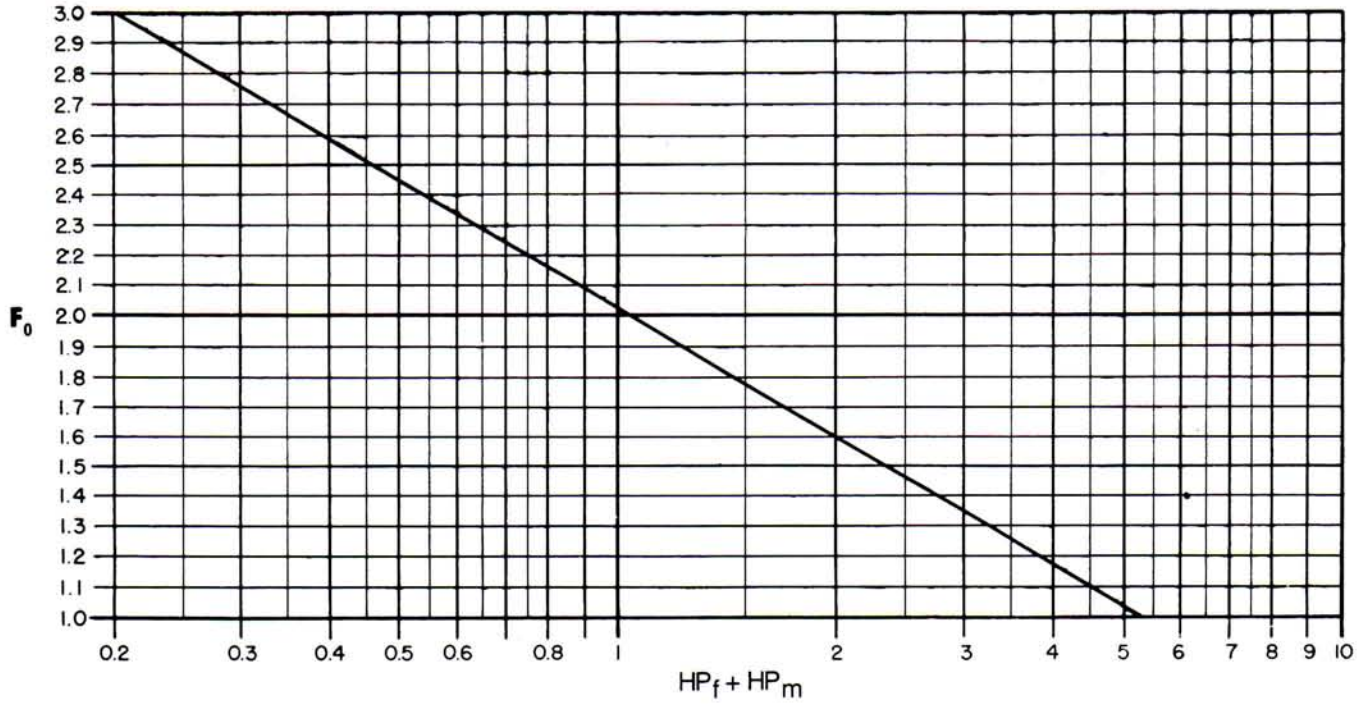
F_o = Conveyor overload factor from the following chart.

(4) HP_d Drive Horsepower

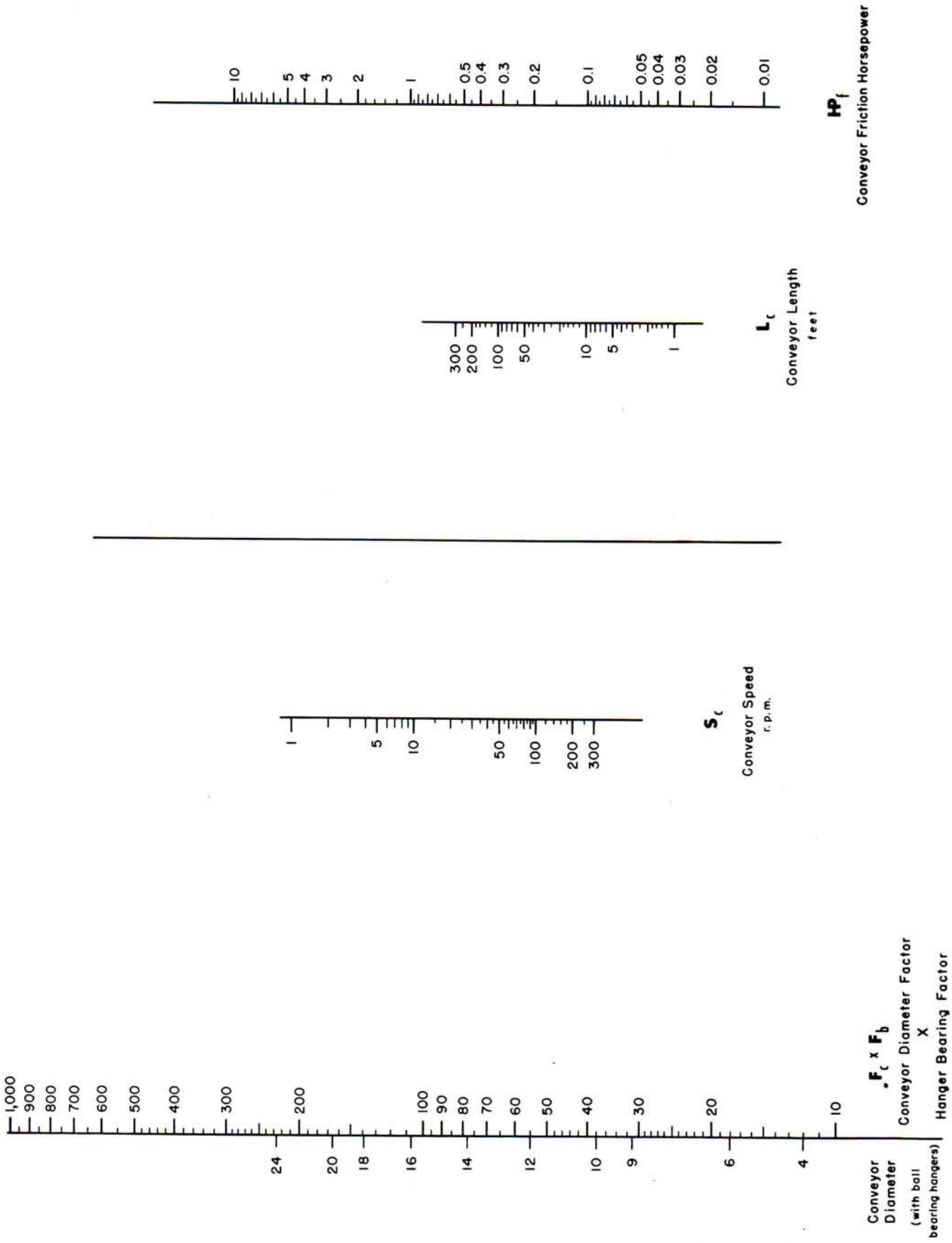
Motor horsepower required to drive the conveyor assembly is dependent also on the efficiency of the method employed to reduce the motor speed to the required speed of the conveyor.

Reference should be made to the Thomas Screw Conveyor Drive Guide or manufacturer's selection tables relative to the transmission device used.

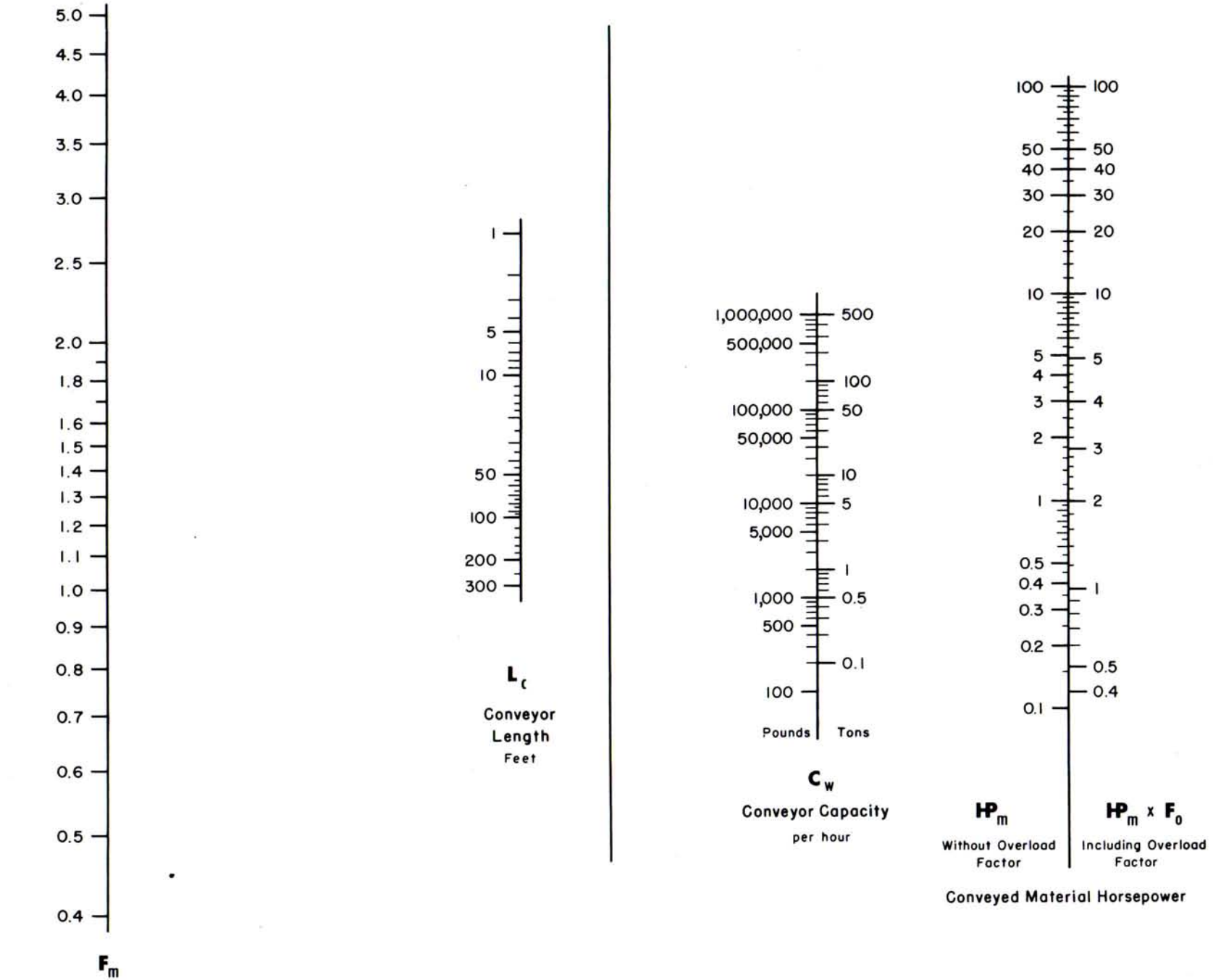
In either instance, the drive unit must be selected with an output horsepower equal to or greater than the computed Conveyor Total Horsepower (HP_t) as found above, with due regard to recommended service factors for the particular drive type.



horsepower


10
5
4
3
2
1
0.5
0.4
0.3
0.2
0.1
0.05
0.04
0.03
0.02
0.01
HP_f
Conveyor Friction Horsepower
300
200
100
50
10
5
1
L_c
Conveyor Length
feet
1
5
10
50
100
200
300
S_c
Conveyor Speed
r.p.m.
1,000
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
24
20
18
16
14
12
10
9
6
4
20
10
$F_c \times F_b$
Conveyor Diameter Factor
X
Hanger Bearing Factor
Conveyor Diameter
(with ball bearing hangers)

horsepower


5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.8
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
F_m
Material Horsepower Factor
1
5
10
50
100
200
300
L_c
Conveyor
Length
Feet
1,000,000
500,000
100,000
50,000
10,000
5,000
1,000
500
100
500
100
50
10
5
1
0.5
0.1
Pounds
Tons
C_w
Conveyor Capacity
per hour
100
50
40
30
20
10
5
4
3
2
1
0.5
0.4
0.3
0.2
0.1
100
50
40
30
20
10
5
4
3
2
1
0.5
0.4
HP_m
Without Overload
Factor
$HP_m \times F_o$
Including Overload
Factor
Conveyed Material Horsepower

component selection - size

Once the horsepower required to operate a conveyor has been determined, it is advisable to check the allowable horsepower for the various components transmitting the torque necessary to operate the conveyor.

Required Information

Conveyor size

Conveyor speed

Conveyor total horsepower

F_{hp} Horsepower Factor

To determine whether or not the selected conveyor components are adequate to transmit the required horsepower, the Horsepower Factor (F_{hp}) must be established by means of the nomograph on page 21, or the following equation;

$$F_{hp} = \frac{100 \quad HP_t}{S_c}$$

HP_t = Total horsepower required at conveyor drive shaft.

S_c = Speed of conveyor in rpm.

Refer to the Conveyor Component Horsepower Table, page 15. Opposite the required conveyor diameter and shaft size will be found the maximum allowable Horsepower Factor (F_{hp}) for coupling bolts, shafts and conveyor pipe, in standard, heavy duty and stainless steel. Should the horsepower factor of any of the standard duty components fall below that required for the conveyor under consideration, as found above, either a heavy duty or larger size component should be selected which has a horsepower factor greater than that required by the conveyor.

In some long or heavily loaded conveyors, the horsepower required at the drive shaft is sufficiently great to require the use of large or heavy duty components near the drive end only, which if used throughout the conveyor would constitute an unnecessarily expensive installation. In this situation, the economical solution would be to use the large or heavy duty components only in that portion of the conveyor where they are actually required.

In order to determine how many large or heavy duty sections are required, it is necessary to establish the Horsepower Factor for individual conveyor sections (F_{hpn}) at their respective positions in the assembly, as found by the following equation:

$$F_{hpn} = \frac{F_{hp}}{N} \quad n$$

F_{hp} = Conveyor horsepower factor.

N = Total number of conveyor sections in installation.

n = Numerical order of individual conveyor sections beginning opposite from drive end.

By this method, the point in the conveyor assembly at which the horsepower factor falls within the range of standard or smaller components may be found.

Special Conveyor Pipe

Conveyors mounted on pipe other than that used in the standard series of conveyor screws are desirable in specific applications.
Horsepower Factor (F_{hp}) for frequently used pipe sizes and schedules along with largest allowable shaft size will be found in the table on page 16.

The foregoing proceedures should be adequate to establish conveyor requirements for most situations, however, it is advisable in the case of complex applications, to refer full specifications to our Engineering Department for recommendations.

For examples see page 29

Conveyor Component Horsepower Table

Screw Diam.	Shaft Diam.	Screw Part Number		F_{hp} Horsepower Factor								
				Coupling Bolts			Conveyor Shaft			Conveyor Pipes		
		Helicoid	Sectional	Std.	Hi-Torque	Stainless ●	Std.	Hi-Torque	Stainless ▲	Std. Sch.40	Hi-Torque Sch.80	Stainless ■ Sch.40
4	1	4H206	——	1.9	3.4	3.0	2.0	2.7	2.2	4.0	4.6	6.4
	1	4H206	——	1.9	3.4	3.0	2.0	2.7	2.2	4.0	4.6	6.4
6	1 ½	6H304	6S304	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
	1 ½	6H308	6S309	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
	1 ½	6H312	6S312	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
9	1 ½	9H306	9S305	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
	1 ½	9H312	9S312	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
	2	9H406	9S405	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
	2	9H412	9S412	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
	2	9H416	9S416	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
10	1 ½	10H306	10S305	5.1	9.3	8.3	7.2	9.9	8.1	8.9	12.0	15.0
	2	10H412	10S412	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
12	2	12H408	12S407	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
	2	12H412	12S412	10.6	19.2	17.3	16.6	23.5	19.5	16.6	20.7	29.0
	2 7/16	12H508	12S507	12.8	23.2	20.9	31.0	43.0	35.0	27.8	35.0	47.0
	2 7/16	12H512	12S512	12.8	23.2	20.9	31.0	43.0	35.0	27.8	35.0	47.0
	3	12H616	12S616	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
14	2 7/16	14H508	14S507	12.8	23.2	20.9	31.0	43.0	35.0	27.8	35.0	47.0
	3	14H614	14S616	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
16	3	16H610	16S609	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
	3	16H616	16S616	23.0	41.5	37.4	61.0	82.0	68.0	50.5	66.3	87.0
18	3	18H610	18S609	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
	3		18S616	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
	3 7/16		18S716	35.5	64.0	57.6	90.0	120.0	100.0	50.5	66.3	87.0
20	3		20S609	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
	3		20S616	23.0	41.5	37.4	61.0	82.0	68.0	37.8	50.5	64.0
	3 7/16		20S716	35.5	64.0	57.6	90.0	120.0	100.0	50.5	66.3	87.0
24	3 7/16		24S709	35.5	64.0	57.6	90.0	120.0	100.0	50.5	66.3	87.0
	3 7/16		24S716	35.5	64.0	57.6	90.0	120.0	100.0	50.5	66.3	87.0

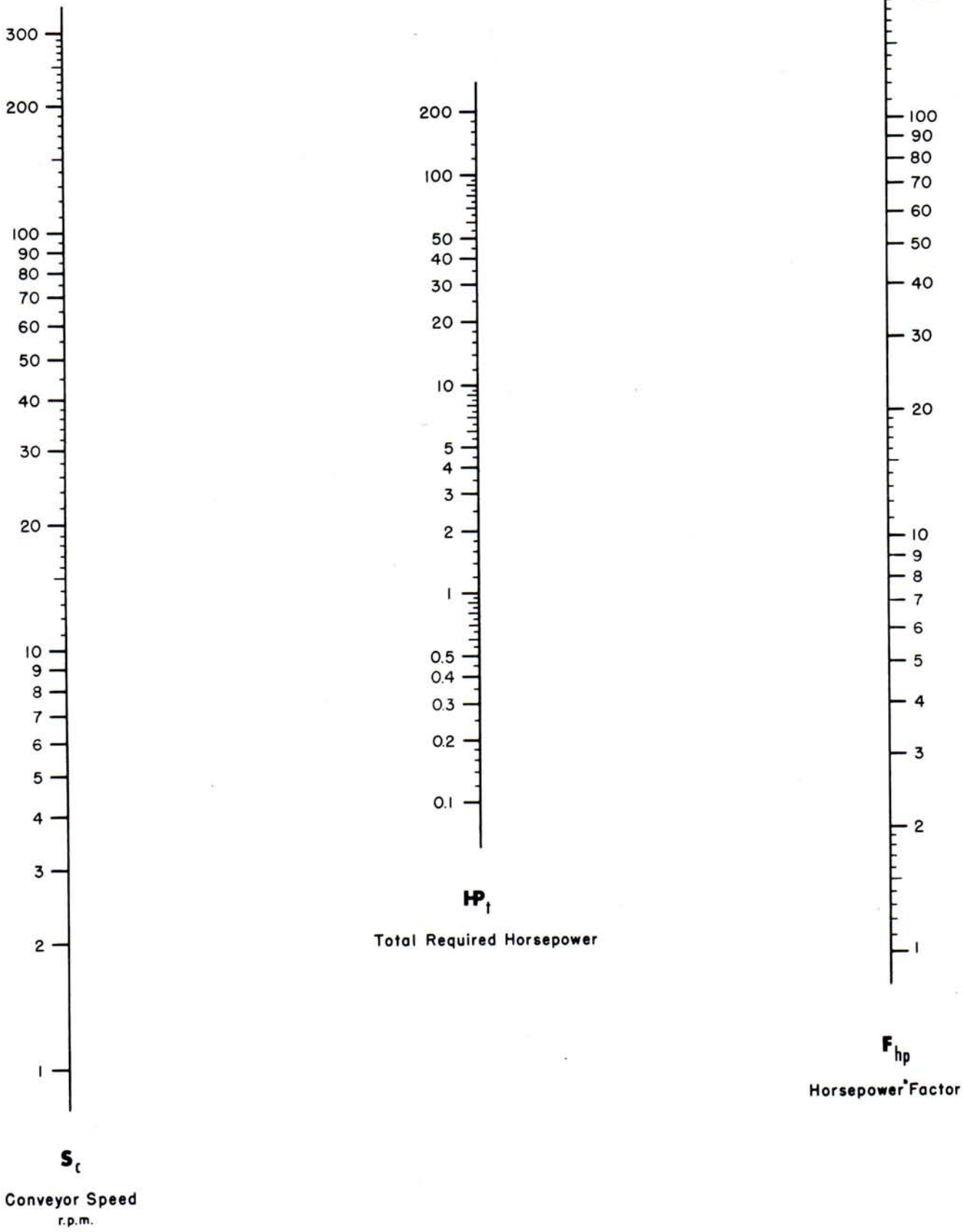
▲ Stainless Steel Type 303 & 316
■ Stainless Steel Type 304 & 316
● Stainless Steel Type 316

Special Pipe Horsepower Table

Shaft Diameter (Maximum)	Pipe		F_{hp} Horsepower Factor		Coupling Bolts	Weight Per Foot Pounds	Pipe Diameter	
	Size	Schedule	Standard	Stainless			Inside	Outside
1	1¼	40	4.0	6.4	⅜ x 2 1/16	2.272	1.38	1.660
1	1¼	80	4.6	7.5	⅜ x 2 1/16	2.996	1.27	1.660
1	1½	40	5.3	8.9	⅜ x 2 1/16	2.717	1.61	1.900
1	1½	80	6.4	10.4	⅜ x 2 1/16	3.631	1.50	1.900
1	1½	160	8.0	13.6	⅜ x 2 1/16	4.862	1.33	1.900
1	2	Dbl.X	17.3	29.6	⅜ x 2 1/16	9.029	1.50	2.375
1½	2	40	8.9	15.0	½ x 3	3.652	2.06	2.375
1½	2	80	12.0	20.4	½ x 3	5.022	1.93	2.375
1½	2	160	15.0	26.2	½ x 3	7.450	1.68	2.375
1½	2½	160	25.7	43.6	½ x 3 ⅝ *	10.01	2.12	2.875
1½	2½	Dbl.X	31.3	53.1	½ x 3 ⅝ *	13.69	1.77	2.875
2	2½	40	16.6	29.1	⅝ x 3 ⅝	5.76	2.46	2.875
2	2½	80	20.7	35.8	⅝ x 3 ⅝	7.66	2.323	2.875
2	3	Dbl.X	53.4	95.0	⅝ x 4 ⅜ *	18.58	2.300	3.500
2 7/16	3	40	27.8	47.0	⅝ x 4 ⅜	7.57	3.068	3.500
2 7/16	3	80	35.0	59.0	⅝ x 4 ⅜	10.25	2.900	3.500
2 7/16	3	160	44.6	76.5	⅝ x 4 ⅜	14.32	2.624	3.500
2 7/16	3½	Dbl.X	77.4	—	⅝ x 5 *	22.85	2.728	4.00
3	3½	40	37.8	64.5	¾ x 5	9.11	3.548	4.00
3	3½	80	50.5	87.2	¾ x 5	12.51	3.364	4.00
3 7/16	4	40	50.5	87.8	⅞ x 5 ½	10.79	4.026	4.500
3 7/16	4	80	66.3	—	⅞ x 5 ½	14.98	3.826	4.500
3 7/16	4	120	81.3	—	⅞ x 5 ½	19.00	3.624	4.500

* Non standard coupling bolts.

component selection - size



component selection - type

Required Information

Screw diameter
Shaft diameter
Material component group
Unusual material characteristics

Refer to page 20 or 21 for specifications of components as established by Component Group, Screw Diameter and Shaft Diameter. These specifications have been found to be adequate and economical for handling materials in horizontal screw conveyors under normal operating conditions.

Conveyor Screws

Standard length conveyors should be used whenever possible to reduce the number of hanger bearings required, however, when a short section of conveyor screw is necessary to obtain the total required conveyor length, it is preferably located at the discharge end of the conveyor.

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

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

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

Continuity of material flow at hanger points is accomplished by opposing adjacent flight ends approximately 180 degrees.

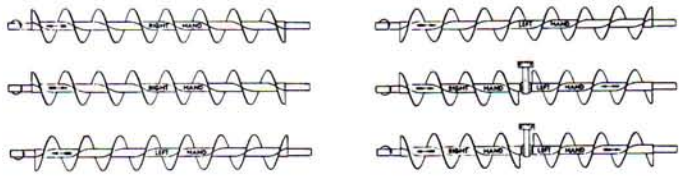
Conveyor Trough and Tubular Housing

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

When possible, the extreme end flanges should be supported to facilitate removal of conveyor ends without disturbing conveyor alignment. Conveyor trough or tubular housing should be supported at ten foot intervals by flange feet or saddles.

Conveyor Hand

The following diagram illustrates the direction of rotation and hand of conveyor screw relative to the direction of material flow.



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

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

Hand of conveyor may be readily determined by observation of the near side of the conveyor flight edge. If the flight slopes downward to the right, the conveyor is right hand, or conversely, if the edge slopes downward to the left, the conveyor is left hand.

Hanger Bearings

Although the hanger bearing recommendations listed according to component groups on pages 24 and 25 are adequate for their respective material groups, numerous special bearing materials are available as equal or for specific applications in either lubricated or non lubricated installations. A list of the more popular bearing materials will be found on page 10.

Hanger bearings should be located in such a manner that they will clear all trough or housing flange joints and discharge openings.

Conveyor Shafts

Conveyor drive and coupling shafts should be selected with due regard to the preceeding section covering component horsepower capacity. Tail shafts, unless required to drive auxiliary equipment, require no special horsepower capacity consideration.

Conveyor Ends

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

component selection - type

Discharge Spouts and Gates

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

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

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

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

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

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

Abrasive Materials — These materials may be handled in conveyors, troughs, or housings constructed of abrasion resistant alloys with hard surfaced screws. Lining of all exposed surfaces with rubber or special resins also materially reduces abrasive damage. Mild abrasion may be frequently overcome by the use of cast components.

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

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

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

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

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

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

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

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

Degradable Materials — Some particles that are easily broken or distorted may usually be handled in screw conveyors by reducing the speed and selecting a larger conveyor size sufficient to deliver the required volume of material. Soft rubber linings have also proven successful in some installations.

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

component selection - type

Component Group	Hanger Bearings	Coupling Shafts	Screw Diameter	Shaft Diameter	Screw Number		Trough Thickness	Cover Thickness
					Helicoid	Sectional		
A	Babbitt Wood Bronze Ball	Standard steel or Hi'torque	4	1	4H204	—	16 ga.	16 ga.
			6	1 1/2	6H304	6S309	16	16
			9	1 1/2 2	9H306 9H406	9S309 9S409	14	16
			10	1 1/2	10H306	10S309	14	16
			12	2 2 3/16 3	12H408 12H508 12H614	12S412 12S512 12S612	12	14
			14	2 3/16 3	14H508 14H614	14S512 14S612	12	14
			16	3	16H610	16S612	12	14
			18	3 3 3/16	18H610	18S609 18S709	12	14
			20	3 3 3/16		20S612 20S712	10	14
			24	3 3/16		24S712	10	12
B	Hard Iron	Hardened steel	4	1	4H206	—	14 ga.	16 ga.
			6	1 1/2	6H308	6S309	12	14
			9	1 1/2 2	9H312 9H412	9S309 9S412	10	14
			10	2	10H412	10S412	10	14
			12	2 2 3/16 3	12H412 12H512 12H614	12S412 12S512 12S616	3/16	14
			14	2 3/16 3	14H508 14H614	14S512 14S616	3/16	14
			16	3	16H614	16S616	3/16	14
			18	3 3 3/16		18S616 18S716	3/16	12
			20	3 3 3/16		20S616 20S716	3/16	12
			24	3 3/16		24S716	3/16	12
C	Hard Iron	Hardened steel	4	1	4H206	—	10 ga.	16 ga.
			6	1 1/2	6H312	6S312	3/16	14
			9	1 1/2 2	9H312 9H414	9S312 9S416	3/16	14
			10	2	10H412	10S416	3/16	14
			12	2 2 3/16 3	12H412 12H512 12H614	12S416 12S512 12S616	1/4	14
			14	2 3/16 3	14H508 14H614	14S512 14S616	1/4	14
			16	3	16H614	16S616	1/4	14
			18	3 3 3/16		18S616 18S716	1/4	12
			20	3 3 3/16		20S616 20S716	1/4	12
			24	3		24S716	1/4	12

component selection - type

Component Group	Hanger Bearings	Coupling Shafts	Screw Diameter	Shaft Diameter	Screw Number		Trough Thickness	Cover Thickness
					Helicoid	Sectional		
D	Babbitt Wood Bronze Ball	Standard steel or Hi' torque	4	1	4H206	—	10 ga.	16 ga.
			6	1 ½	6H312	6S312	3/16	14
			9	1 ½ 2	9H312 9H414	9S312 9S416	3/16	14
			10	2	10H412	10S416	3/16	14
			12	2 2 3/16 3	12H412 12H512 12H614	12S416 12S512 12S616	¼	14
			14	2 3/16 3	14H508 14H614	14S512 14S616	¼	14
			16	3	16H614	16S616	¼	14
			18	3 3 3/16		18S616 18S716	¼	12
			20	3 3 3/16		20S616 20S716	¼	12
			24	3 3/16		24S716	¼	12
E	Babbitt Wood Bronze Ball	Standard steel or Hi' torque	4	1	4H206	—	14 ga.	16 ga.
			6	1 ½	6H308	6S309	12	14
			9	1 ½ 2	9H312 9H412	9S309 9S412	10	14
			10	2	10H412	10S412	10	14
			12	2 2 3/16 3	12H412 12H512 12H614	12S412 12S512 12S616	3/16	14
			14	2 3/16 3	14H508 14H614	14S512 14S616	3/16	14
			16	3	16H614	16S616	3/16	14
			18	3 3 3/16		18S616 18S716	3/16	12
			20	3 3 3/16		20S616 20S716	3/16	12
			24	3 3/16		24S716	3/16	12
F	Hard Iron	Hardened steel Hi' torque	4	1	4H206	—	14 ga.	16 ga.
			6	1 ½	6H312	6S312	12	14
			9	1 ½ 2	9H312 9H414	9S312 9S416	10 10	14 14
			10	2	10H412	10S416	10	14
			12	2 2 3/16 3	12H412 12H512 12H614	12S416 12S512 12S616	3/16	14
			14	2 3/16 3	14H508 14H614	14S512 14S616	3/16	14
			16	3	16H614	16S616	3/16	14
			18	3 3 3/16		18S616 18S716	3/16	12
			20	3 3 3/16		20S616 20S716	3/16	12
			24	3 3/16		24S716	3/16	12

screw feeders

Screw feeders provide a means of removing material from bins or hoppers at a constant and controlled rate of flow. Shrouds are provided beyond the intake opening to form a tubular conveyor housing, which assures consistent flow control.

Applications requiring feeders not covered by this standard series should be referred to our engineering department for recommendations.

Selection

Type 1 screw feeders are intended for applications where fine, free flowing materials are to be conveyed.

Type 2 screw feeders are designed to feed materials containing a large percentage of lumps.

Both feeder types are available in designs that provide removal of material either uniformly across the inlet opening or from the forepart only of the inlet opening.

The above feeder types or designs are available with extension screws of any desired length.

Refer to characteristic tables and diagrams on the following pages and select the type feeder best suited to the application.

Capacity

Refer to the capacity table on the following page which is applicable to the type feeder selected. Find the capacity which equals or just exceeds the required capacity of the feeder in the "capacity at maximum rpm" column. Note the conveyor size corresponding to this capacity and the capacity at one rpm.

When selecting Type 2 feeders, note the maximum lump size listed for the conveyor size selected. If this particle size does not exceed the maximum particle size being conveyed, the selected conveyor size will be adequate. If this tabular value is less than the maximum particle size being conveyed, select a larger conveyor whose maximum lump size equals or exceeds the particle size being conveyed.

Speed

Feeder speed (S_f) can be found from the following equation:

$$S_f = \frac{C_v}{C_{v1}}$$

C_v = Required feeder capacity in cubic feet per hour

C_{v1} = Feeder capacity in cubic feet per hour at one rpm.

Feeder speed may also be found graphically by using the nomograph on page 25. A straight edge placed across any two known values will intersect the third value.

For examples see page 29.

When extension screws are required, refer to the material tables, pages 3-7, and find the recommended percent loading corresponding to the material to be fed. The extension screw size will be found opposite the selected feeder diameter in the column headed by the appropriate percent loading.

Horsepower

Total required horsepower at feeder drive shaft (HP_{tf}) can be determined from the following:

1 Feeders without conveyor extensions Type 1a, 1b, 2a and 2b.

$$HP_{tf_1} = \frac{C_v \quad M \quad F_m \quad F_f}{1{,}000{,}000}$$

$$\text{or} = \frac{C_w \quad F_m \quad F_f}{1{,}000{,}000}$$

2 Feeders with conveyor extensions Type 1c, 1d, 2c and 2d

$$HP_{tf_2} = \frac{HP_t + HP_{tf_1}}{\text{DRIVE EFFICIENCY}}$$

C_v = Feeder capacity in cubic feet per hour.

M = Average material weight in pounds per cubic foot.

F_m = Material horsepower factor from tables, pages 3-7.

F_f = Screw feeder horsepower factor from following table.

C_w = Feeder capacity in pounds per hour.

HP_{tf} = Feeder horsepower.

HP_t = **Total horsepower of extension screw, (from equations, pages 10-14).**

F_f Feeder Horsepower Factor

Type 1 Feeder		Type 2 Feeder	
Diameter	F_f	Diameter	F_f
4	10	4	16
6	13	6	22
9	16	9	24
10	17	10	25
12	18	12	27
14	20	14	29
16	21	16	30
18	22	18	31
20	23	20	32
24	25	24	35

screw feeders

characteristics

Feeder Type		Inlet Opening	Material Removal	Pitch	Feeder Screw Diameter	Extended Screw
1	A	Standard	Uniform Full length of inlet opening	Standard	Tapered	None
	B	Standard	Forepart Only of inlet opening	Standard	Uniform	None
	C	Standard	Uniform Full length of inlet opening	Standard	Tapered	As required
	D	Standard	Forepart Only of inlet opening	Standard	Uniform	As required
2	A	Long	Uniform Full length of inlet opening	Short	Tapered	None
	B	Long	Forepart Only of inlet opening	Short	Uniform	None
	C	Long	Uniform Full length of inlet opening	Short	Tapered	As required
	D	Long	Forepart Only of inlet opening	Short	Uniform	As required

type 1

Feeder Diameter A	Maximum Lump Size	Maximum Speed RPM	Capacity Cubic Feet Per Hour		B	C	D	E	Extended Screw Diameter F		
			At One RPM	At Maximum RPM					Trough Loading %		
									15	30	45
6	⅛"	70	4.8	336	36	12	7	14	12	9	9
9	⅛"	65	17	1105	42	18	9	18	18	14	12
12	⅛"	60	44	2640	48	24	10	22	24	18	16
14	⅛"	55	68	3740	54	28	11	26		20	18
16	⅛"	50	104	5200	56	32	11 ½	30		24	20
18	⅛"	45	150	6750	58	36	12 ⅛	34			24
20	⅛"	40	208	8320	60	40	13 ½	36			
24	⅛"	30	340	10200	64	48	16 ½	44			

type 2

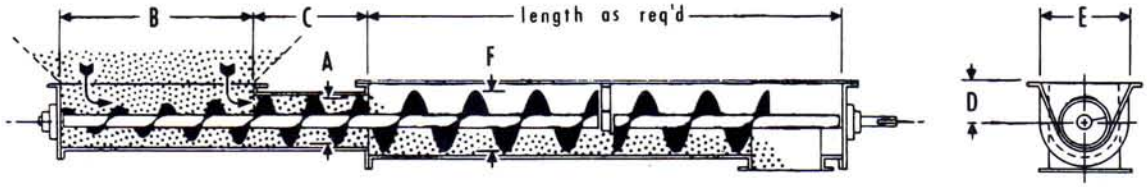
Feeder Diameter A	Maximum Lump Size	Maximum Speed RPM	Capacity Cubic Feet Per Hour		B	C	D	E	Extended Screw Diameter F		
			At One RPM	At Maximum RPM					Trough Loading %		
									15	30	45
6	¾"	70	3.1	217	60	18	7	14	10	9	9
9	1 ½"	65	11	715	66	26	9	18	14	12	10
12	2"	60	29	1740	72	36	10	22	20	16	14
14	2 ½"	55	44	2420	76	42	11	26	24	18	16
16	3"	50	68	3400	78	48	11 ½	30		20	18
18	3"	45	99	4455	80	54	12 ⅛	34		24	20
20	3 ½"	40	137	5480	82	60	13 ½	36			24
24	4"	30	224	6720	86	72	16 ½	44			

screw feeders

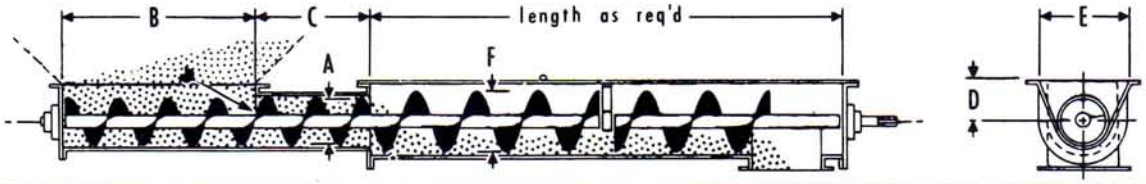
Type 1a

Type 1b

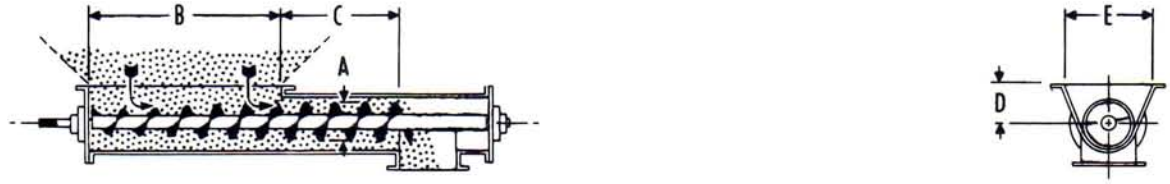
Type 1c



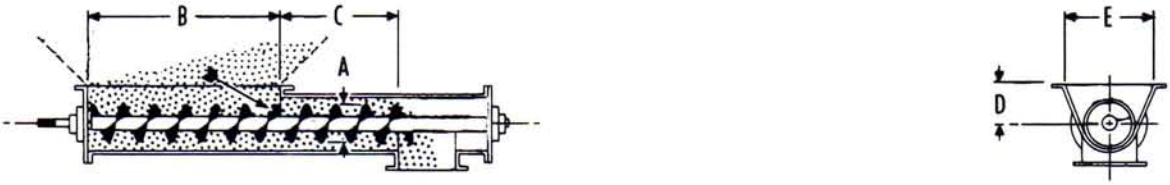
Type 1d



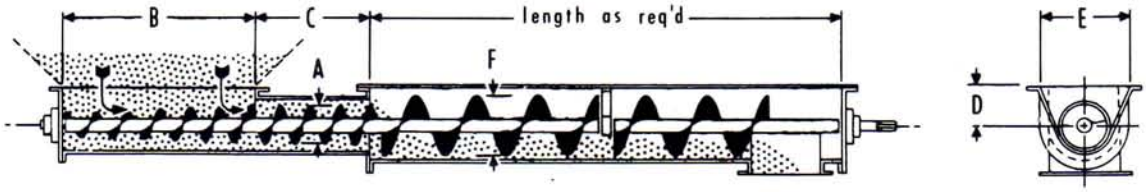
Type 2a



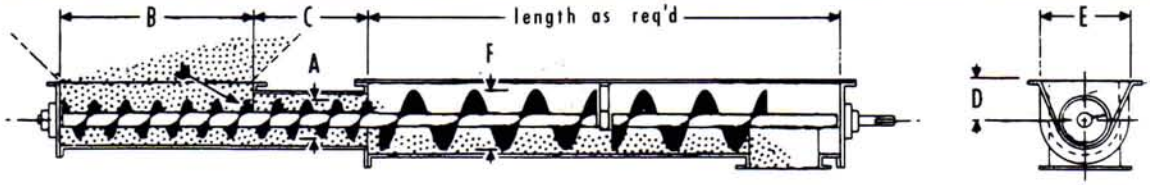
Type 2b



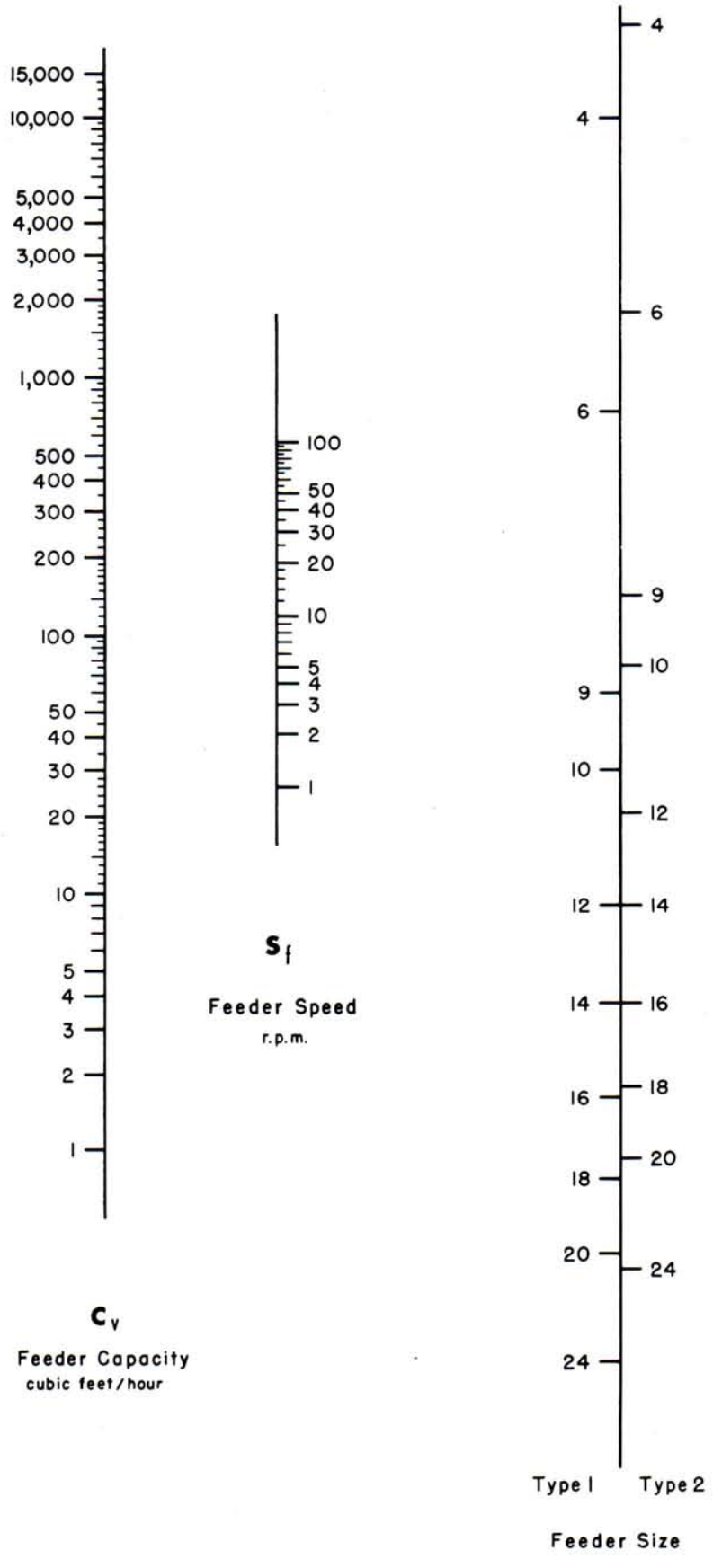
Type 2c



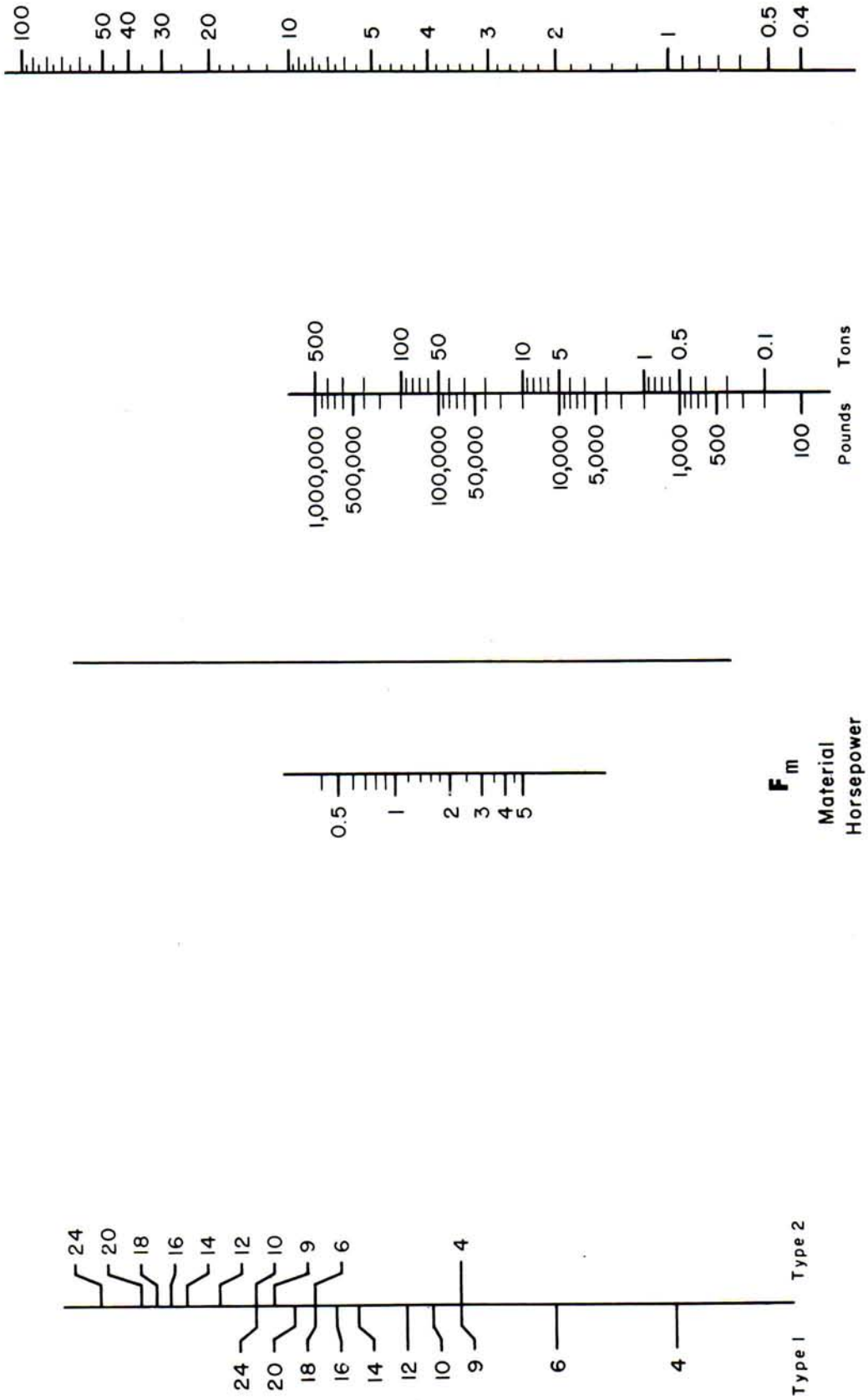
Type 2d



screw feeders



screw feeders



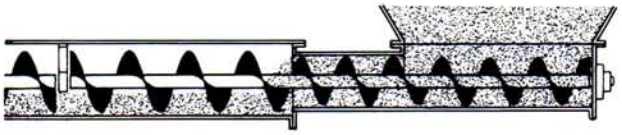
conveyor loading

The degree and method of material loading is of primary importance in the design of a conveyor installation since capacity and horsepower considerations are usually based on a recommended percent loading of less than the actual conveyor cross section. Loading beyond the design capacity will result in accelerated wear of components and overload of driving equipment.

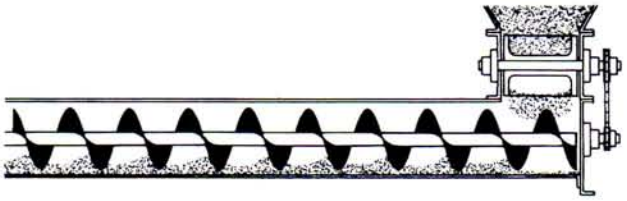
Fixed Input

Positive means of regulating the input of a screw conveyor are to be preferred since readjustment of flow is seldom necessary when starting the system. Processing machines are frequently restricted in maximum output capacity due to their design and therefore usually need no other regulation of flow to the conveyor.

The following feeders may be employed for positive regulation of material flow rate to the conveyor.



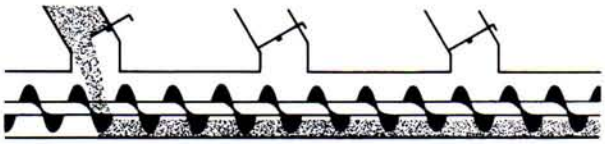
Screw feeders consist of a specially designed conveyor screw enclosed in a tubular housing for material removal at a predetermined rate from storage bins regardless of the existing head of material. See page 26 for screw feeder selection.



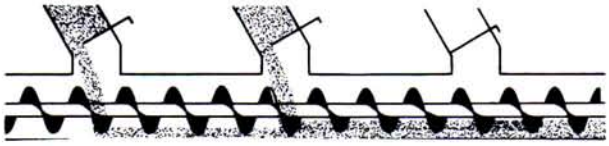
Rotary vane feeders employ a cylindrical rotor with pockets of specific volume which deliver a constant flow of material, the volume of which is determined by the speed of rotation. These units may frequently be driven from the conveyor shaft without the necessity of an additional drive.

Multiple Inlets

Frequently installations require the use of conveyors with multiple inlets which must be adjusted manually.



When only one inlet will be open at any given time, the gate or cut-off device may be restricted to a maximum opening that will not allow overloading of the conveyor.



When more than one inlet will be opened, considerable care must be taken to limit the flow from each so that the total flow is not in excess of the convevor design limits.

The total flow rate must be taken into consideration when multiple inlets will all be required to feed the conveyor simultaneously.

Dead Loads

Screw conveyors loaded directly from storage tanks or bins with free flowing materials are subject to varying dead loads due to the hydrostatic head of material and associated loads created when moving the material from under itself.

The side inlet type gate illustrated below provides a means of regulating or stopping flow while relieving the screw from excessive material pressures. Screw rotation should be toward this inlet opening to ensure a constant flow rate.

Impact Loads

Frequently requirements are such that materials must fall vertically to the conveyor inlet creating the possibility of impact damage or abrasion due to the inertia of the material particles or lumps. This condition may be overcome by the use of deflector plates or cushion chambers in the inlet spout as illustrated below.

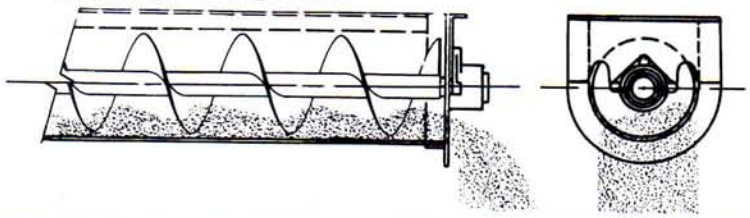
Load Indicator

Proper loading rates may be ensured, when using manually adjusted inlet devices, by the use of a load indicator which is available as an integral part of the motor control station or as a remote unit for mounting at the inlet control.

conveyor discharge

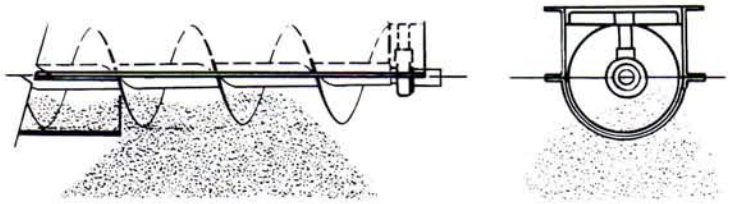
Discharge Trough End

Material is forced straight out the conveyor end without restriction or impedance to flow. The conveyor screw is supported at the end by either a ball, babbitt or roller bearing. Conveyor loading should not exceed 45 per-cent when using this type discharge.



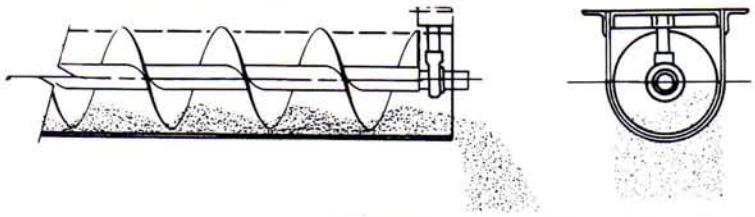
Open Bottom Trough

Distribution of material in storage is faciliated by this method of discharge. The bottom of trough or tubular housing may be omitted for any required length so that material is built up to the exposed conveyor and forms a trough thus allowing material to be conveyed toward the unfilled end.



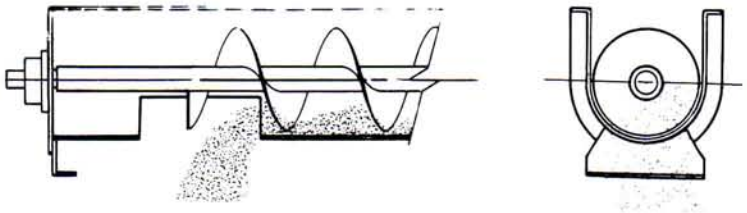
Open End Trough

Conveyors loaded to 100 per cent may be discharged by forcing the material directly out the open trough end with a minimum of restriction. The conveyor screw is supported at the discharge end by any of the standard conveyor hanger bearings.



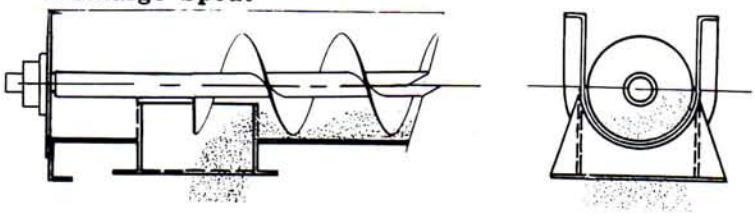
Plain Discharge Opening

This opening provides the most economical means of material discharge. It may also be used for intermediate discharges when it is not necessary to provide cut off of the discharging material. As material from each successive discharge opening builds up to the screw, the material is automatically carried over to the next discharge.



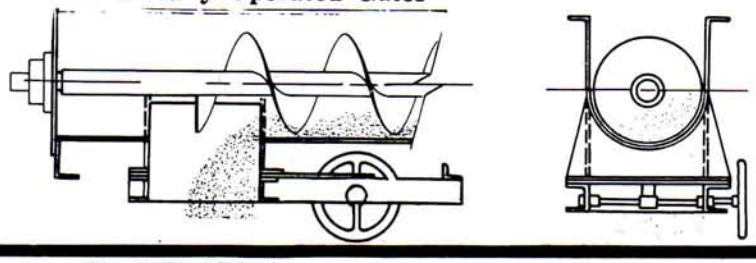
Discharge Spout

This discharge fitting provides means for attachment of spouts or bolting directly to the intake of process machines resulting in a dust tight installation. Hand slide gates or flat rack and pinion slide gates are available for bolting directly to these spouts when material cut off is necessary for intermediate discharge.



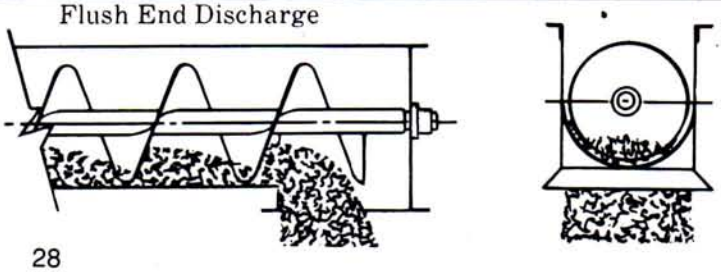
Mechanically Operated Gates

Many devices are available as standard components for cut off or flow control at intermediate discharge points. Manual operation may be by hand, rope or chain wheels and remote or automatic control may be accomplished by the use of pneumatically operated actuators. Dust tight construction is also available.



Flush End Discharge

Similar to the standard spout, except it is located at the extreme end of the conveyor trough or housing. The end of the spout is comprised of a housing end with discharge flange.



selection examples

PROBLEM I

Select a horizontal screw conveyor, tubular type, to meet the following conditions:

Material: Lime, hydrated pulverized and air separated.

Particle Size: Fines

Bulk Density: 40 pounds per cubic foot.

Capacity: 80 tons per hour
160,000 pounds per hour
4,000 cubic feet per hour

Length: 70 feet.

Service: 24 hours per day
365 days per year

A. Conveyor Size Selection

1. Refer to Materials Table, page 5, recommended conveyor loading is 30% and material characteristics, 6 and 8, do not present any undue problem in this installation.
2. Refer to page 9. The capacity at maximum speed for a conveyor loaded at 30%, a capacity which just exceeds the required 4,000 cubic feet per hour is found to be a 20 inch conveyor which has a capacity of 62.4 cubic feet per revolution.

   From the equation on page 8.

$$\text{Conveyor Speed } S_c = \frac{4{,}000}{62.4} = 64.1 \text{ RPM}$$

B Component Selection — Type

From Materials Type, page 5 component group A is recommended and notes 6 and 8 indicate that the material aerates becoming fluid and also tends to pack under pressure.

The selection of tubular conveyor housing will prevent leakage of material since no cover is required and, due to the conveyor length, material will not flow when the conveyor is not running.

If the conveyor is to be fed directly from static storage, provision should be made for insuring continuous flow of the packed material into the conveyor such as air pads, vibrators, etc.

On page 20, the following component specifications are selected:

Hanger Bearings = Ball Type
Coupling Shafts = Standard Steel (to be verified later)
Screw Diameter = 20 inch (from step A)
Shaft Diameter = 3 inch (to be verified later)
Screw Number = Sectional-20S612
Trough (Housing) Thickness = 10 gauge
Cover Thickness = (not required with tubular housing)

C. Horsepower Required

Conveyor friction horsepower, from the equation on page 10:

$$HP_f = \frac{70 \times 64 \times 165 \times 1.0}{1{,}000{,}000}$$

$$= \frac{739{,}200}{1{,}000{,}000} = 0.74$$

Conveyed Material Horsepower, from the equation on page 11:

$$HPm = \frac{4{,}000 \times 40 \times 70 \times 0.6}{1{,}000{,}000} =$$

$$= \frac{6{,}720{,}000}{1{,}000{,}000} = 6.72$$

Conveyor Total Horsepower from the equation on page 11:

$$HP_t = 0.74 + (6.72 \times 1.0) = 7.46 \text{ HP}$$

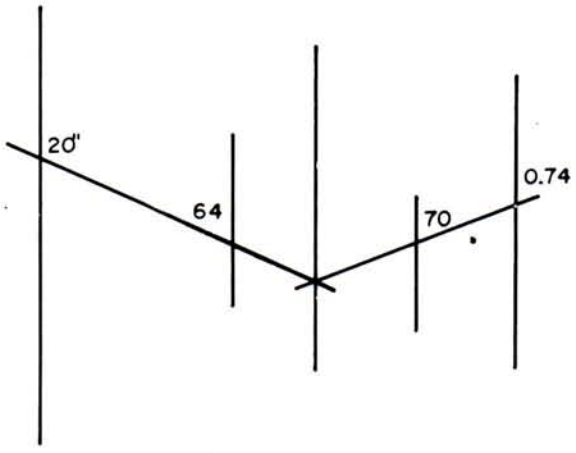
Drive horsepower is determined from efficiency data by the power transmission manufacturer. A drive loss of 20% is assumed in this problem with the result:

$$HP_d = 7.46 \times 1.25 = 9.325 \text{ HP}$$

An electric motor rated at 10 horsepower would be selected.

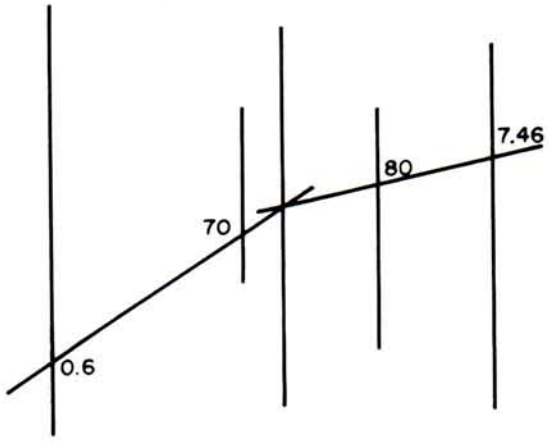
Horsepower Graphic Solution

From the Conveyor Friction Horsepower nomograph on page 12:



selection examples

From the Conveyor Material Horsepower nomograph on page 13.



D. Component Selection — Size

The Component Horsepower Factor is established from the equation on page 14:

$$F_{hp} = \frac{100 \times 7.46}{64} = 11.7$$

From the Conveyor Component Horsepower Table, page 15, it is found that a 20 inch standard conveyor with a 3 inch shaft has the following allowable component horsepower factors.

Standard coupling bolts = 23.0
Standard conveyor shaft = 61.0
Standard conveyor pipe = 37.8

The Horsepower Factor for each component exceeds the required value of 11.7 and are satisfactory for this application.

PROBLEM II

Select a screw feeder to meet the following conditions:

Material: Sulphur
Particle Size: lumps to 2 inch diameter
Bulk Density: 85 pounds per cubic foot
Capacity: 50 tons per hour
100,000 pounds per hour
1,176 cubic feet per hour
Length: minimum
Material removal to be uniform over feeder inlet.

A. Type Selection

Feeder Characteristics Chart, page 23 indicates that a Type 2-A feeder is required due to the required type of material removal at the feeder inlet, large lump size, and due to a minimum length required, no screw conveyor extension is necessary.

B Size Selection

From the Type 2 feeder table, a 12 inch feeder diameter is selected as the minimum size that will feed 2 inch lumps and the capacity at maximum RPM is found to be in excess of the required capacity.

C Feeder Speed

Feeder speed is found by solving the equation:

$$S_f = \frac{1{,}176 \text{ cu. ft.}}{29 \text{ cu. ft per revolution}} = 40.6 \text{ RPM}$$

Similar results may be obtained graphically from the nomograph on page 25.

D Feeder Horsepower

Feeder horsepower is determined from equation 1 on page 22:

$$HP_{tfl} = \frac{100{,}000 \text{ lbs} \times 0.8 \times 27}{1{,}000{,}000}$$

$$= \frac{2{,}160{,}000}{1{,}000{,}000} = 2.16 \text{ HP}$$

This value should be multiplied by the appropriate overload factor, F found by use of the chart on page 13:

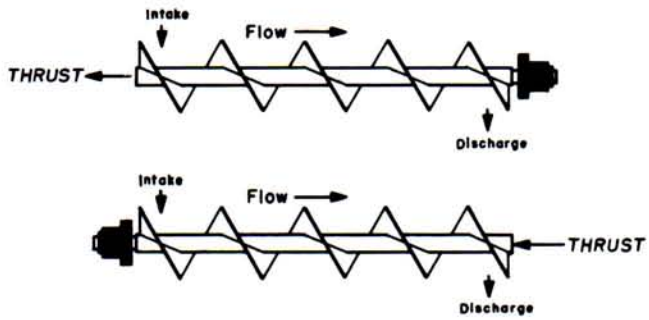
$$2.16 \times 1.5 = 3.24 \text{ HP}$$

For a graphic solution, the nomograph on page 26 may be used.

conveyor bearings

Hanger Bearings

Conveyor hanger bearings are designed for the intermediate support of conveyor screws when two or more screw sections are required. Since thrust loads are always transferred to an appropriate bearing at the conveyor end, hanger bearings are designed for radial loading only. To prevent damage to the hanger bearing by thrust transmitted through the conveyor pipe, proper clearance between the conveyor pipe ends and the hanger bearing shell should be maintained.



End Bearings

In most conveyor installations, several possible end bearing arrangements may be considered which could result in the following bearing loading conditions.

I Radial Loading
II Thrust Loading
III Combined Loading

I Radial Loading

Although radial loading to some degree exists at all end bearings, in normal conveyor applications it may be neglected except in the case of drive ends when overhunt loads exist such as chain, V-belt or gear driven conveyors. Double bearing conveyor ends are available for use at drive ends when heavy overhung loads exist which would be beyond the rating of standard single bearing ends.

Radial drive loads created by shaft mounted and direct coupled drive units are isolated at the drive housing, therefore, are not transferred to the conveyor end bearing.

Radial loads on bearings at the opposite end from the drive are always within the rating of standard end bearings in normal installations.

II Thrust Loading

Due to the nature of screw conveyors, a thrust load exists in the opposite direction from material flow as a resultant of the force necessary to move the material. This thrust reaction must be transferred to the conveyor end through a suitable bearing.

From the diagrams it may be seen that if the thrust bearing is located at the conveyor end in the direction of material flow (discharge end), the entire conveyor is in tension while conveying material.
If the thrust bearing is located at the conveyor end opposite the direction of material flow (intake end), the conveyor is in compression while conveying material.

The existence of compression in the conveyor screw is of little consequence in short or lightly loaded installations. In long conveyor installations, however, compression loads in the screw sections near the drive end may create excessive loading of the hanger bearings due to the tendency of the screws to deflect at the hanger points. Also, when bearing points are widely spaced in special installations, conveyor screws may tend to deflect in the middle more readily when in compression.

These considerations indicate that whenever possible the thrust bearing should be located at the discharge end of heavily loaded or long conveyors. Should this location not be possible, larger conveyor pipe and coupling shafts should be selected.

III Combined Loading

As pointed out in "Thrust Loading," location of the thrust bearing at the discharge end of the conveyor is advantageous in most installations and should be practiced whenever possible.

Although close tolerances are held in the manufacture of screw conveyor components, the small clearances necessary between the coupling bolts and their respective shaft holes allow slight axial movement of the conveyor screws and shafts.

conveyor bearings

Conveyors moving material in one direction only should be assembled with all conveyor sections moved in the direction of the thrust until the end shaft is seated securely in the thrust bearing. Under these conditions no further axial displacement of the conveyor screws and shafts should occur, during operation.

The drive may be placed at the end opposite from the thrust bearing with little danger of the drive shaft moving axially and creating misalignment of the driving equipment. This proceedure allows selection of the drive end bearing without regard for thrust loading.

Reversible conveyors are capable of moving material in either direction and, therefore, require a thrust bearing capable of being loaded in either direction. It may be readily seen that the end shaft opposite the thrust bearing will be subject to axial movement each time the conveyor is reversed. This movement is dependent upon the length of the conveyor and may be of such magnitude as to create an alignment problem at the drive. To prevent this misalignment, the drive should be placed at the thrust bearing end of the conveyor assembly.

When an overhung drive load is placed on the thrust bearing it must be selected for the combined loading, or separate bearings may be used at the drive end for the thrust and radial loads.

End Bearing Selection

Since the life span of individual bearings is too widely varied to economically allow life ratings to be based on the first few to fail, it is necessary to assign a specific life somewhere between the extremes of first and last bearings to fail when operating under identical conditions of load and speed.

A minimum life of approximately 1,000 hours may be expected from 90 percent of a given group of the listed bearings while operating under identical conditions. The average life of these bearings will be approximately 5,000 hours.

However since several types of bearings have been given common ratings, and since conditions such as mounting, lubrication and environment are subject to variation in the field, the life to be expected under field conditions may deviate from the theoretical bearing life given above.

I Radial Loading

When only radial loads are present, establish the radial load factor (B_r) by using the following equation and refer to the left vertical chart column. The smallest bearing size that will meet the load and speed conditions will be found adjacent to the load factor value.

II Thrust Loading

When only thrust loads are present, establish the thrust load factor (B_t) from the following equation and refer to the bottom horizontal chart line. The smallest bearing that will meet the thrust load conditions will be found above the thrust load factor.

III Combined Loading

When both thrust and radial loads are present, compute both the radial load factor (B_r) and thrust load factor (B_t) separately from the following equations. The smallest bearing size that will meet these load conditions will be found at the intersection of the horizontal and vertical lines representing these computed factors.

Bearing Life

Determination of actual operating hours of bearings may be accomplished by use of the following Equipment Operating Time Chart. Consideration should also be given to the percentage of operating time that the conveyor may not be under the full load used in the bearing selection calculations.

Should a minimum life other than 1,000 hours be required, compute the bearing load factors as outlined above and multiply by the bearing life factor (B_h), from the following chart, corresponding to the minimum life required.

$$B_r = \frac{189 \quad HP_t}{S_c \quad d} \quad B_s$$

$$B_t = \frac{400 \quad HP_t}{S_c \quad P_c} \quad B_s$$

B_s = Bearing speed factor from the following table.

HP_t = Total horsepower at conveyor drive shaft.

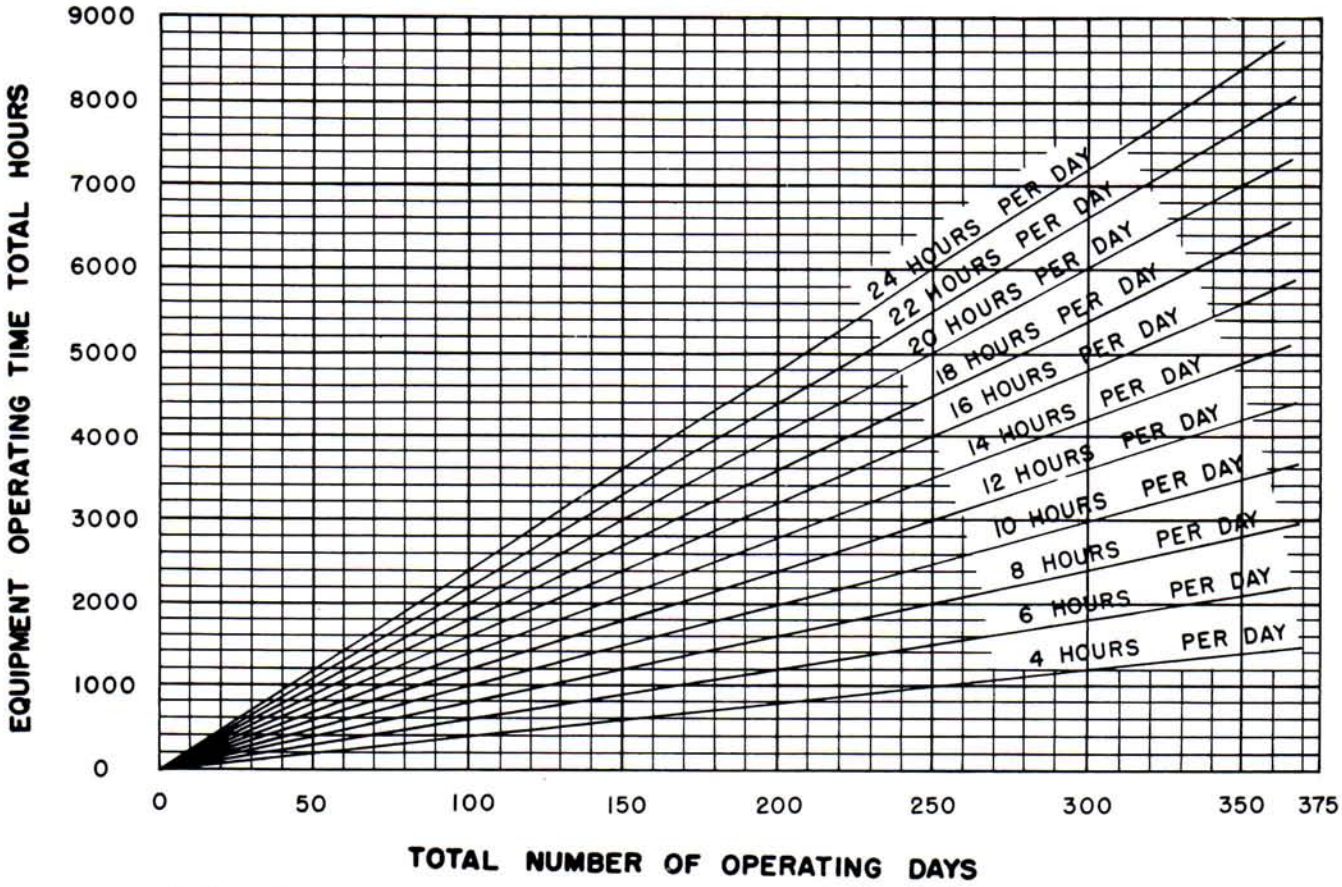
P_c = Conveyor pitch in inches.

d = Pitch diameter of drive shaft sheave or sprocket in inches.

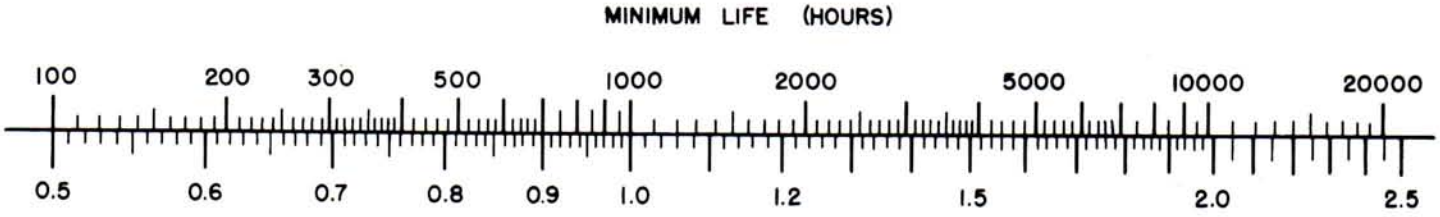
S_c = Conveyor speed in rpm.

conveyor bearings

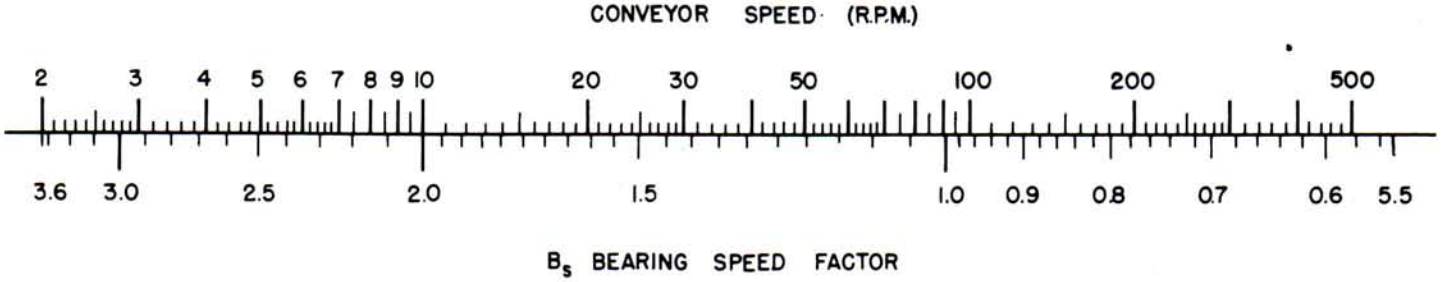
Equipment operating time chart



Bearing life factor B_h



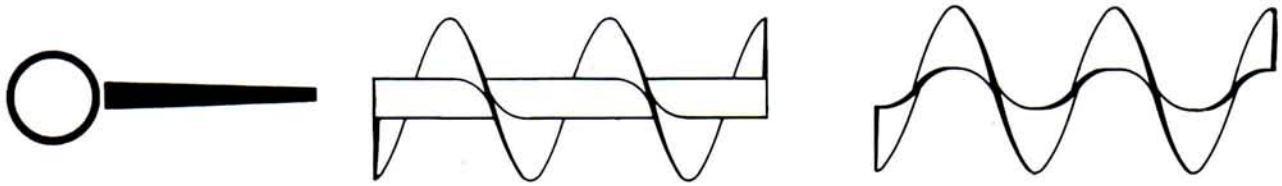
Bearing speed factor B_s



component section

conveyor screws

helicoid



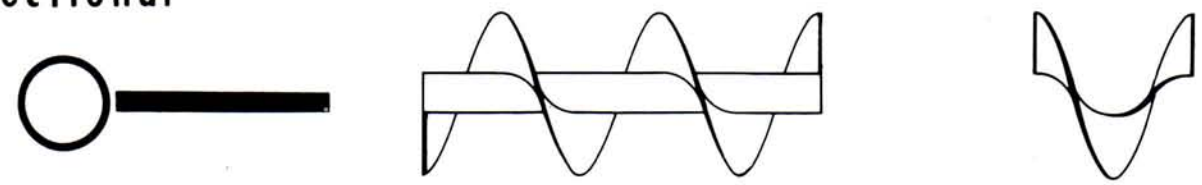
All Thomas Helicoid Screw Conveyor is formed from continuous bar stock to required diameter, pitch and thickness by a special cold rolling process. This process provides the advantages of one piece construction, and absense of laps, rivets, and welds on the carrying face of the flight. Cold rolling also produces an extremely smooth hardened surface on the flight which is inherently abrasion resistant and further reduces friction, thus requiring less power for operation.

Helicoid Flighting is mounted on the pipe, or shaft, with special formed steel lugs welded to both the flight and pipe at either end. Spaced intermediate welds are also provided between the flight and pipe to insure structural stability. The pipe is selected for the maximum torque, and resistance to excessive deflection, encountered for each size of flight.

The pipe ends are bushed with internal collars, permanently inserted and reamed to the appropriate coupling or end shaft diameter for each size of screw conveyor. When assembled, the helicoid screw conveyor possesses high structural stability and its inherent dynamic balance allows operation at high speeds. Helicoid flight conveyors are interchangeable with sectional flight conveyors of the same diameter and shaft size. Comparison tables for Helicoid and Sectional conveyors will be found on page 36.

Numerous deviations from standard helicoid conveyors are available to meet special applications. A partial listing of these special conveyors will be found on page 36. For heavy duty applications the flighting may be continuously welded to the pipe on either or both sides.

sectional



Thomas Sectional Screw Conveyors are individual flights, produced from blanked flat plates, and formed by a cold process into a helix. These flights are buttwelded together to form a continuous flight which is secured to the pipe, or shaft, by formed steel lugs welded to the pipe and flights at each end and by spaced intermediate welds. Sectional conveyor screws with lighter gage flights are provided with end flights of heavier gage to compensate for greater wear encountered at the pick-up and discharge points.

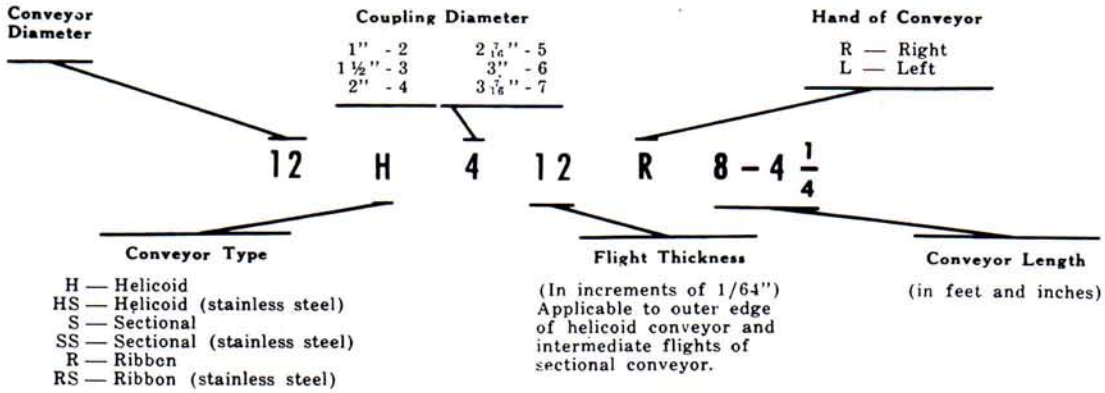
As in helicoid screw conveyors, the pipe is selected to transmit the maximum torque and resist deflection under the maximum operating conditions. The pipe ends are bushed with internal collars which are reamed for the appropriate coupling or end shaft diameters.

Sectional Flight Conveyors are interchangeable with Helicoid Screw Conveyors of the same diameter and shaft size. A comparison table will be found on page 36.

When required, sectional flights may be lap welded together and continuously welded to the pipe on either or both sides for the most severe conveyor applications. For special requirements numerous modifications are possible, some of which are described on page 44.

conveyor screws

designation

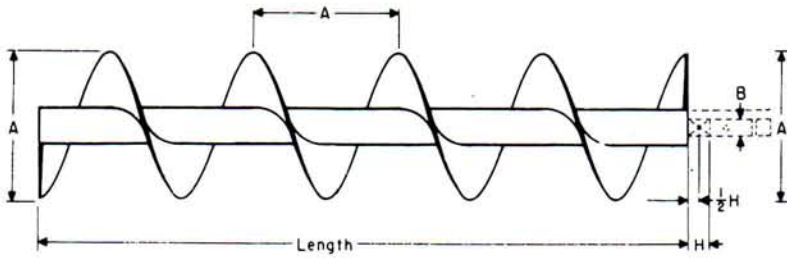


comparison table · helicoid - sectional screws

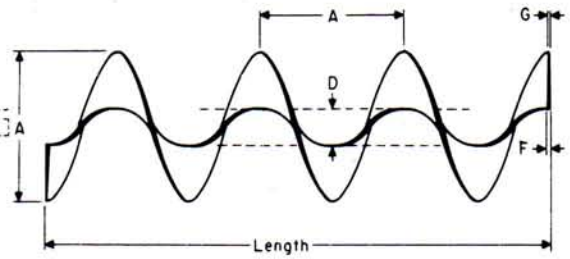
Screw Diam.	Helicoid Part No.	Sectional Part No.	Coupling Diam.	Pipe Size		Flight Thickness			
						Helicoid		Sectional	
				Inside	Outside	Inside	Outside	Intermediate	End
6	6H304	6S304	1½	2	2⅜	⅛	1/16	16 ga.	10 ga.
	6H308	6S309	1½	2	2⅜	¼	⅛	10 ga.	10 ga.
	6H312	6S312	1½	2	2⅜	⅜	3/16	3/16	3/16
9	9H306	9S305	1½	2	2⅜	3/16	3/32	14 ga.	10 ga.
	9H312	9S312	1½	2	2⅜	⅜	3/16	3/16	3/16
	9H406	9S405	2	2½	2⅞	3/16	3/32	14 ga.	10 ga.
	9H412	9S412	2	2½	2⅞	⅜	3/16	3/16	3/16
	9H414	9S416	2	2½	2⅞	7/16	7/32	¼	¼
10	10H306	10S305	1½	2	2⅜	3/16	3/32	14 ga.	10 ga.
	10H412	10S412	2	2½	2⅞	⅜	3/16	3/16	3/16
12	12H408	12S407	2	2½	2⅞	¼	⅛	12 ga.	3/16
	12H412	12S412	2	2½	2⅞	⅜	3/16	3/16	3/16
	12H508	12S507	2 7/16	3	3½	¼	⅛	12 ga.	3/16
	12H512	12S512	2 7/16	3	3½	⅜	3/16	3/16	3/16
	12H614	12S616	3	3½	4	7/16	7/32	¼	¼
14	14H508	14S507	2 7/16	3	3½	¼	⅛	12 ga.	3/16
	14H614	14S616	3	3½	4	7/16	7/32	¼	¼
16	16H610	16S609	3	3½	4	5/16	5/32	10 ga.	3/16
	16H614	*16S616	3	4	4½	7/16	7/32	¼	¼
18	18H610	18S609	3	3½	4	5/16	5/32	10 ga.	3/16

*16S616 Is Mounted on 3½" Pipe.

conveyor screws - helicoid



helicoid conveyor screw



flighting

A Screw Diam.	B Cplng. Diam.	Size Part No. Conveyor Mounted	Size Part No. Flighting Only	D Pipe Size Inside	D Pipe Size Outside	Flight Thickness F Inside	Flight Thickness G Outsd.	H Cplng. Bearing Length	Std. Length Ft.-In.	Average Weight Complete Screw Std. Length	Complete Screw per Ft.	Flighting Only Std. Length	Flighting Only per Ft.
4	1	4H204-*	4HF204-*	1¼	1⅝	⅛	1/16	1½	9-10½	31	4	11	1.1
	1	4H206-*	4HF206-*	1¼	1⅝	3/16	3/32	1½	9-10½	40	5	16	2.0
6	1½	6H304-*	6HF304-*	2	2⅜	⅛	1/16	2	9-10	52	5	14	1.4
	1½	6H308-*	6HF308-*	2	2⅜	¼	⅛	2	9-10	62	6	28	2.8
	1½	6H312-*	6HF312-*	2	2⅜	⅜	3/16	2	9-10	72	7	42	4.3
9	1½	9H306-*	9HF306-*	2	2⅜	3/16	3/32	2	9-10	70	7	31	3.2
	1½	9H312-*	9HF312-*	2	2⅜	⅜	3/16	2	9-10	101	10	65	6.6
	2	9H406-*	9HF406-*	2½	2⅞	3/16	3/32	2	9-10	91	9	30	3.0
	2	9H412-*	9HF412-*	2½	2⅞	⅜	3/16	2	9-10	121	12	60	6.1
	2	9H414-*	9HF414-*	2½	2⅞	7/16	7/32	2	9-10	131	13	70	7.0
10	1½	10H306-*	10HF306-*	2	2⅜	3/16	3/32	2	9-10	81	8	48	4.8
	2	10H412-*	10HF412-*	2½	2⅞	⅜	3/16	2	9-10	130	13	76	7.6
12	2	12H408-*	12HF408-*	2½	2⅞	¼	⅛	2	11-10	140	12	67	5.7
	2	12H412-*	12HF412-*	2½	2⅞	⅜	3/16	2	11-10	180	15	102	8.6
	2 7/16	12H508-*	12HF508-*	3	3½	¼	⅛	3	11-9	168	14	64	5.4
	2 7/16	12H512-*	12HF512-*	3	3½	⅜	3/16	3	11-9	198	17	96	8.2
	3	12H614-*	12HF614-*	3½	4	7/16	7/32	3	11-9	220	18	105	8.8
14	2 7/16	14H508-*	14HF508-*	3	3½	¼	⅛	3	11-9	170	14	84	7.0
	3	14H614-*	14HF614-*	3½	4	7/16	7/32	3	11-9	254	22	132	11.0
16	3	16H610-*	16HF610-*	3½	4	5/16	5/32	3	11-9	228	19	120	10.0
	3	16H614-*	16HF614-*	4	4½	7/16	7/32	3	11-9	270	22	144	12
18	3	18H610-*	18HF610-*	3½	4	5/16	5/32	3	11-9	282	24	167	14.2

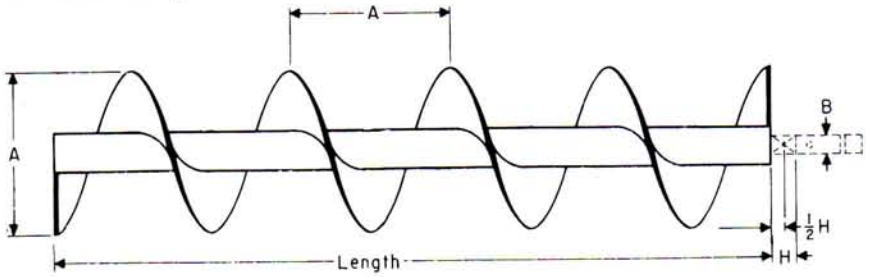
-*R For Right Hand Flight
-*L For Left Hand Flight
-* Length
-*SP Short Pitch (⅔)
-*HP Half Pitch (½)
-*LP Long Pitch (1½)
-*VP1 Variable Pitch (½ to Std.)
-*VP2 Variable Pitch (⅔ to Std.)
-*VP3 Variable Pitch (¼ to Std.)
-*CF Cut Flight
-*CFF Cut & Folded Flight
-*DF Double Flight
-*TF Triple Flight
-*QF Quadruple Flight
-*CW1 Continuous Welded One Side
-*CW2 Continuous Welded Both Sides
-*P With Standard Paddles
-*R Rubber Covered Flight Only On Carrying Side
-*RC Pipe & Flight Full Rubber Covered

-*WS Detachable Wear Shoes
-*T1X Length Taper From Full Dia. to ½ Dia.
-*T2X Length Taper From Full Dia. to ⅔ Dia.
-*HS Standard Hard Surface
-*CP4, 6, 9, etc. Standard Paddles
-*3H Standard (3) Bolt Drilling
-*AR Abrasion Resistant Flights (Sectional Only))
-*G Hot Dip Galvanizing
-*304, 304L, 316, Etc., Stainless Steel Type
-*80, XX, 160, etc. Heavier than Standard Pipe which is SCH40
* Thickness on Sectional Flights Only. In 1/64 increments. Example: .9SF312-12 is 3/16 thick, 9" sectional flight for 2" standard pipe

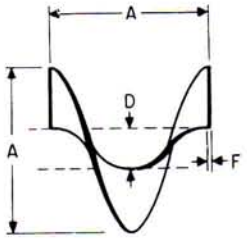
Example: 9H306-R-9'-10"-SP-CF-CW2-T2x5'-0"-304-80. Standard 9" Flighting, R.H., 9'-10" Long Short Pitch (6"). Cut Flight, continuous Welded Both Sides. Taper From 9" Dia. to 6" Dia. in 5'-0". All Type 304 Stainless Steel Mounted On 2" Sch. 80 Pipe.

In Ordering: Specify per above code as much as possible. Specify length from end to end of pipe. If flight shorter than pipe, specify cut back from end of pipe.

conveyor screws - sectional



sectional conveyor screw

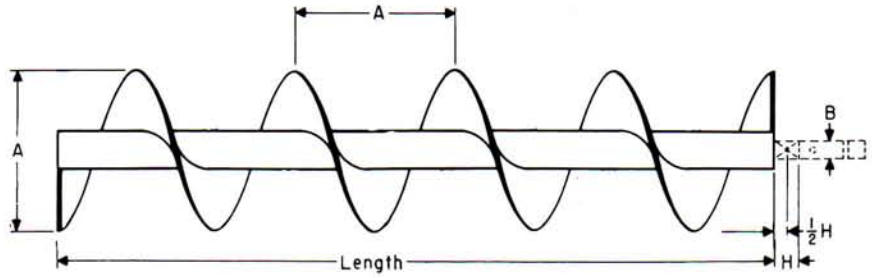


flight

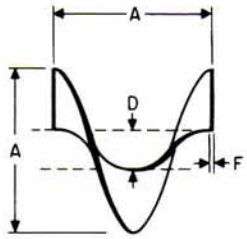
A Screw Diam.	B Coupling Diam.	Size Part No. Mounted Conveyor	Size Part No. Flighting Only	Pipe Size Inside	Pipe Size D Outside	F Flight Thickness	H Cplng. Bearing Length	Std. Length Ft.-In.	Average Weight Std. Length	Average Weight per Ft.	Average Weight Flight Each	Approx. Flights per Ft.
	1½	6 S307-*	6SF307-*	2	2⅜	12 Ga.	2	9-10	62	6.0	1.0	2.0
	1½	▲ 6S 309-*	6SF309-*	2	2⅜	10 Ga.	2	9-10	65	6.5	1.3	2.0
6	1½	▲ 6 S312-*	6SF312-*	2	2⅜	3/16	2	9-10	75	7.5	1.7	2.0
	1½	6 S316-*	6SF316-*	2	2⅜	¼	2	9-10	87.6	8.9	2.4	2.0
	1½	9 S307-*	9SF307-*	2	2⅜	12 Ga.	2	9-10	73	7.5	2.5	1.33
	1½	9 S309-*	9SF309-*	2	2⅜	10 Ga.	2	9-10	80	8.0	3.3	1.33
	1½	▲9 S312-*	9SF312-*	2	2⅜	3/16	2	9-10	95	9.5	4.3	1.33
	1½	9 S316-*	9SF316-*	2	2⅜	¼	2	9-10	116	11.8	5.5	1.33
	1½	9 S324-*	9SF324-*	2	2⅜	⅜	2	9-10	155	15.9	8.8	1.33
	2	9 S407-*	9SF407-*	2½	2⅞	12 Ga.	2	9-10	90	9.0	2.5	1.33
9	2	9 S409-*	9SF409-*	2½	2⅞	10 Ga.	2	9-10	100	10.0	3.3	1.33
	2	▲9 S412-*	9SF412-*	2½	2⅞	3/16	2	9-10	115	11.5	4.3	1.33
	2	▲9 S416-*	9SF416-*	2½	2⅞	¼	2	9-10	130	13.0	5.5	1.33
	2	9 S424-*	9SF424-*	2½	2⅞	⅜	2	9-10	177	18.0	8.8	1.33
	1½	10 S309-*	10SF309-*	2	2⅜	10 Ga.	2	9-10	85	8.5	3.9	1.2
	1½	10 S312-*	10SF312-*	2	2⅜	3/16	2	9-10	108	11.0	5.0	1.2
	1½	10 S316-*	10SF316-*	2	2⅜	¼	2	9-10	132	13.4	7.7	1.2
	1½	10 S324-*	10SF324-*	2	2⅜	⅜	2	9-10	178	18.1	11.6	1.2
10	2	10 S409-*	10SF409-*	2½	2⅞	10 Ga.	2	9-10	107	11.0	3.9	1.2
	2	▲10 S412-*	10SF412-*	2½	2⅞	3/16	2	9-10	120	12.0	5.0	1.2
	2	10 S416-*	10SF416-*	2½	2⅞	¼	2	9-10	153	15.7	7.7	1.2
	2	10 S424-*	10SF424-*	2½	2⅞	⅜	2	9-10	199	21.2	11.6	1.2
	2	12 S409-*	12SF409-*	2½	2⅞	10 Ga.	2	11-10	140	12.0	5.7	1.0
	2	▲12 S412-*	12SF412-*	2½	2⅞	3/16	2	11-10	156	13.0	7.2	1.0
	2	12 S416-*	12SF416-*	2½	2⅞	¼	2	11-10	232	19.6	13.3	1.0
	2	12 S424-*	12SF424-*	2½	2⅞	⅜	2	11-10	306	25.8	19.5	1.0
	2 7/16	12 S509-*	12SF509-*	3	3½	10 Ga.	3	11-9	160	14.0	5.7	1.0
	2 7/16	▲12 S512-*	12SF512-*	3	3½	3/16	3	11-9	178	14.8	7.2	1.0
12	2 7/16	12 S516-*	12SF516-*	3	3½	¼	3	11-9	210	17.5	9.7	1.0
	2 7/16	12 S524-*	12SF524-*	3	3½	⅜	3	11-9	290	24.2•	14.6	1.0
	3	12 S612-*	12SF612-*	3½	4	3/16	3	11-9	184	15.4	7.2	1.0
	3	▲12 S616-*	12SF616-*	3½	4	¼	3	11-9	216	21.4	9.7	1.0
	3	12 S624-*	12SF624-*	3½	4	⅜	3	11-9	280	26.7	12.7	1.0

* See P. 37 For Complete Part Number Information.
▲See Helicoid Equivalent P. 36.

conveyor screws - sectional



sectional conveyor screw

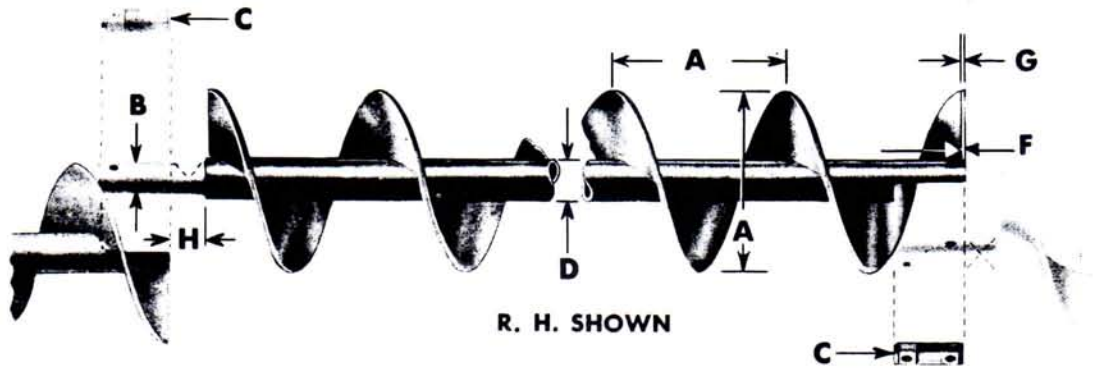


flight

A Screw Diam.	B Coupling Diam.	Size Part No. Mounted Conveyor	Size Part No. Flighting Only	Pipe Size Inside	Pipe Size D Outside	F Flight Thickness	H Cplng. Bearing Length	Std. Length Ft.-In.	Average Weight Std. Length	Average Weight per Ft.	Average Weight Flight Each	Approx Flights per Ft.
	2 7/16	14 S509-*	14SF509-*	3	3½	10GA	3	11-9	185	16	7.1	.86
	2 7/16	14 S512-*	14SF512-*	3	3½	3/16	3	11-9	216	18.0	9.9	.86
	2 7/16	14 S516-*	14SF516-*	3	3½	¼	3	11-9	250	21.3	13.2	.86
14	2 7/16	14 S524-*	14SF524-*	3	3½	3/8	3	11-9	334	28.4	19.8	.86
	3	14 S612-*	14SF612-*	3½	4	3/16	3	11-9	231	19.6	10.9	.86
	3	▲14 S616-*	14SF616-*	3½	4	¼	3	11-9	246	20.5	13.2	.86
	3	14 S624-*	14SF624-*	3½	4	3/8	3	11-9	342	28.5	19.8	.86
	3	▲16 S609-*	16SF609-*	3½	4	10GA	3	11-9	210	18	10	.75
	3	16 S612-*	16SF612-*	3½	4	3/16	3	11-9	234	19.5	14.0	.75
16	3	▲16 S616-*	16SF616-*	3½	4	¼	3	11-9	282	24	18.0	.75
	3	16 S624-*	16SF624-*	3½	4	3/8	3	11-9	365	30.4	25.5	.75
	3	16 S632-*	16SF632-*	3½	4	½	3	11-9	420	36	34.5	.75
	3	18 S612-*	18SF612-*	3½	4	3/16	3	11-9	246	20.5	18.0	.67
	3	18 S616-*	18SF616-*	3½	4	¼	3	11-9	294	24.5	24.0	.67
	3	18 S624-*	18SF624-*	3½	4	3/8	3	11-9	425	35.5	34.5	.67
18	3	18 S632-*	18SF632-*	3½	4	½	3	11-9	530	44	46.0	.67
	3 7/16	18 S712-*	18SF712-*	4	4½	3/16	4	11-8	293	24.4	18.0	.67
	3 7/16	18 S716-*	18SF716-*	4	4½	¼	4	11-8	345	28.8	24.0	.67
	3 7/16	18 S724-*	18SF724-*	4	4½	3/8	4	11-8	470	39.2	34.5	.67
	3 7/16	18 S732-*	18SF732-*	4	4½	½	4	11-8	570	47.5	46.0	.67
	3	20 S612-*	20SF612-*	3½	4	3/16	3	11-9	300	25.0	20.0	.60
	3	20 S616-*	20SF616-*	3½	4	¼	3	11-9	360	30.0	28.0	.60
	3	20 S624-*	20SF624-*	3½	4	3/8	3	11-9	410	33.4	40.0	.60
20	3	20 S632-*	20SF632-*	3½	4	½	3	11-9	506	42.2	56	.60
	3 7/16	20 S712-*	20SF712-*	4	4½	3/16	4	11-8	346	28.8	20.0	.60
	3 7/16	20 S716-*	20SF716-*	4	4½	¼	4	11-8	410	34.2	28.0	.60
	3 7/16	20 S724-*	20SF724-*	4	4½	3/8	4	11-8	455	37.9	40.0	.60
	3 7/16	20 S732-*	20SF732-*	4	4½	½	4	11-8	550	45.9	56	.60
	3 7/16	24 S712-*	24SF712-*	4	4½	3/16	4	11-8	440	37	32.0	.50
24	3 7/16	24 S716-*	24SF716-*	4	4½	¼	4	11-8	510	43	42.0	.50
	3 7/16	24 S724-*	24SF724-*	4	4½	3/8	4	11-8	595	50	63.0	.50
	3 7/16	24 S732-*	24SF732-*	4	4½	½	4	11-8	690	60	84	.50

* See P. 37 For Complete Part Number Information.
▲ See Helicoid Equivalent P. 36.

Quick Removable (QR) Helicoid Conveyor



R. H. SHOWN

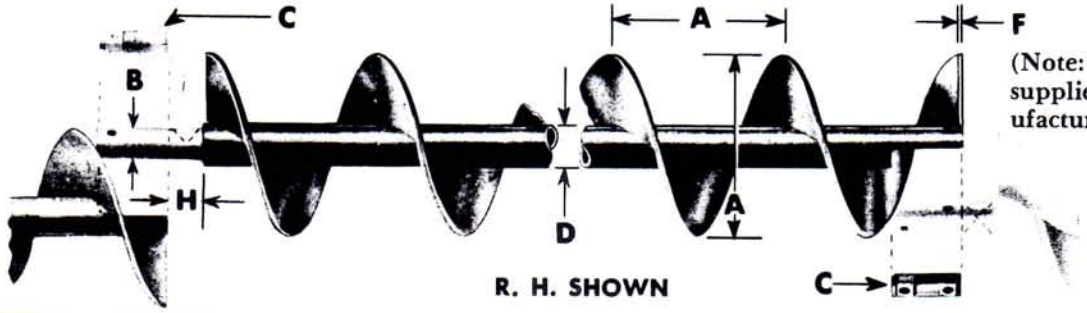
DRIVE LOCATED AT "QR" END

(Note: Insert "C" will be supplied per current manufacturing practice.)

A Nom. Conv. Dia.	Size Part No. Mounted Conveyor	B Coupling Dia.	Std. Lgth. Ft.-In. End to End of Pipe	C Insert Part Number	D Pipe Size Inside	D Pipe Size Outside	Flight Thickness F Inside	Flight Thickness G Outside	H Cplg. Brg. Lgth.	Average Weight Std.. Lgth.	Average Weight Per Ft.
6	6HQR304-*	1½	9'-10	CQR112	2	2⅜	⅛	1/16	2	52	5
	6HQR308-*	1½	9'-10				¼	⅛	2	62	6
	6HQR312-*	1½	9'-10				⅜	3/16	2	72	7
9	9HQR306-*	1½	9'-10	CQR112	2	2⅜	3/16	3/32	2	70	7
	9HQR312-*	1½	9'-10				⅜	3/16	2	101	10
	9HQR406-*	2	9'-10	CQR2	2½	2⅞	3/16	3/32	2	91	9
	9HQR412-*	2	9'-10				⅜	3/16	2	121	12
	9HQR414-*	2	9'-10				7/16	7/32	2	131	13
10	10HQR306-*	1½	9'-10	CQR112	2	2⅜	3/16	3/32	2	81	8
	10HQR412-*	2	9'-10	CQR2	2½	2⅞	⅜	3/16	2	130	13
12	12HQR408-*	2	11'-10	CQR2	2½	2⅞	¼	⅛	2	140	12
	12HQR412-*	2	11'-10				⅜	3/16	2	180	15
	12HQR508-*	2 7/16	11'-9	CQR2716	3	3½	¼	⅛	3	168	14
	12HQR512-*	2 7/16	11'-9				⅜	3/16	3	198	17
	12HQR614-*	3	11'-9	CQR3	3½	4	7/16	7/32	3	220	18
14	14HQR508-*	2 7/16	11'-9	CQR2716	3	3½	¼	⅛	3	170	14
	14HQR614-*	3	11'-9	CQR3	3½	4	7/16	7/32	3	254	22
16	16HQR610-*	3	11'-9	CQR3	3½	4	5/16	5/32	3	228	19
	16HQR614-*	3	11'-9	CQR3-4	4	4½	7/16	7/32	3	270	22
18	18HQR610-*	3	11'-9	CQR3	3½	4	5/16	5/32	3	282	24

*See P. 37 for complete part number information.

Quick Removable (QR) Sectional Spiral Conveyors

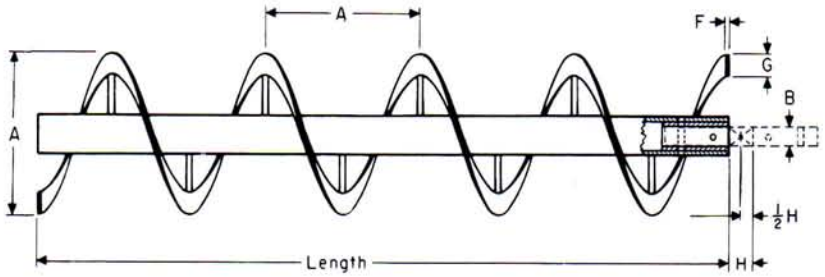


(Note: Insert "C" will be supplied per current manufacturing practice.)

A	Size Part No. Mounted Conveyor	B	Std. Lgth. Ft.-In.	C	D		F	H	Average Weight	
					Pipe Size		Flight Thickness			
Nom. Conv. Dia.		Coupling Dia.	End to End of Pipe	Insert Part Number	Inside	Outside		Cplg. Brg. Lgth.	Std. Lgth.	Per Ft.
6	6SQR307-*	1½	9′-10	CQR112	2	2⅜	12	2	62	6
	▲ 6SQR309-*						10		65	7
	▲ 6SQR312-*						3/16		75	7.5
	6SQR316-*						¼		87.6	8.8
9	9SQR307-*	1½	9′-10	CQR112	2	2⅜	12	2	73	7.3
	9SQR309-*						10		80	8.0
	▲ 9SQR312-*						3/16		95	9.5
	9SQR316-*						¼		116	11.8
	9SQR407-*	2	9′-10	CQR2	2½	2⅞	12	2	90	9
	9SQR409-*						10		100	10
	▲ 9SQR412-*						3/16		115	11.5
	▲ 9SQR416-*						¼		130	13.0
	9SQR424-*						⅜		185	18.5
10	10SQR309-*	1½	9′-10	CQR112	2	2⅜	10	2	85	8.5
	▲10SQR412-*	2	9′-10	CQR2	2½	2⅞	3/16	2	120	12.0
	10SQR416-*						¼		153	15.3
12	12SQR409-*	2	11′-10	CQR2	2½	2⅞	10	2	140	12.0
	▲12SQR412-*						3/16		156	13.0
	12SQR416-*						¼		232	19.4
	12SQR509-*	2 7/16	11′-9	CQR2716	3	3½	10	3	160	13.3
	▲12SQR512-*						3/16		178	15
	12SQR612-*	3	11′-9	CQR3	3½	4	3/16	3	210	17.5
	▲12SQR616-*						¼		216	18.0
	12SQR624-*						⅜		280	23.3
14	14SQR509-*	2 7/16	11′-9	CQR2716	3	3½	10	3	185	15.5
	14SQR512-*						3/16		214	17.7
	14SQR612-*	3	11′-9	CQR3	3½	4	3/16	3	231	19.3
	▲14SQR616-*						¼		246	20.5
	14SQR624-*						⅜		342	28.5
16	▲16SQR609-*	3	11′-9	CQR3	3½	4	10	3	210	18
	16SQR612-*						3/16		234	19.5
	▲16SQR616-*						¼		282	24
	16SQR624-*						⅜		365	30.4
18	18SQR612-*	3	11′-9	CQR3	3½	4	3/16	3	246	20.5
	18SQR616-*						¼		294	24.5
	18SQR624-*						⅜		425	35.5
20	20SQR612-*	3	11′-9	CQR3	3½	4	3/16	3	300	25.0
	20SQR616-*						¼		360	30.0
	20SQR724-*	3 7/16	11′-8	CQR3716	4	4½	⅜	4	462	35
24	24SQR712-*	3 7/16	11′-8	CQR3716	4	4½	3/16	4	440	37
	24SQR716-*						¼		510	43
	24SQR724-*						⅜		595	50

*See P. 37 for complete part number information.
Sectional flight conveyor regularly furnished butt welded. Lap welded construction can be furnished.
▲See Helicoid Equivalent, P. 36.

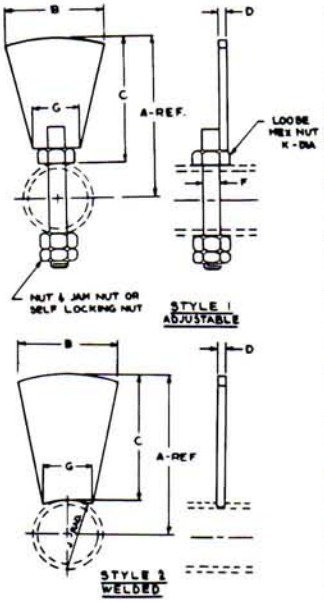
conveyor screws - ribbon & paddle



ribbon conveyor screw

A Screw Diam.	B Cplng. Diam.	Size Part No. Mounted Conveyor	Size Part No. Flighting Only	Pipe Size		Flight Size			H Cplng. Bearing Length	Std. Length Ft.-In.	Average Weight			
						Thickness		G			Complete Screw		Flighting Only	
				Inside	Outside	E	F	Width			Std. Length	per Foot	Std. Length	per Foot
6	1½	6R312 -*	6RF312 -*	2	2⅜	3/16	⅛	1	2	9-10	65	6.5	25	2.5
9	1½	9R316 -*	9RF316-*	2	2⅜	¼	3/16	1½	2	9-10	100	10	50	5.1
10	1½	10R316 -*	10RF316-*	2	2⅜	¼	3/16	1½	2	9-10	110	11	60	6.1
12	2	12R416 -*	12RF416-*	2½	2⅞	¼	3/16	2	2	11-10	180	15	71	6.0
	2	12R424 -*	12RF424-*	2½	2⅞	⅜	¼	2½	2	11-10	216	18	120	10.1
	2 7/16	12R524 -*	12RF524-*	3	3½	⅜	¼	2½	3	11-9	240	20	120	10.2
14	2 7/16	14R516 -*	14RF516-*	3	3½	¼	3/16	2	3	11-9	228	19	84	7.1
	2 7/16	14R524 -*	14RF524-*	3	3½	⅜	¼	2½	3	11-9	264	22	120	10.2
	3	14R624 -*	14RF624-*	3½	4	⅜	¼	2½	3	11-9	288	25	120	10.2
16	3	16R616 -*	16RF616-*	3½	4	¼	3/16	2½	3	11-9	276	24	96	8.2
	3	16R624 -*	16RF624-*	3½	4	⅜	¼	2½	3	11-9	324	28	132	11.2
18	3	18R624 -*	18RF624-*	4	4½	⅜	¼	3	3	11-9	384	33	156	13.3
20	3 7/16	20R724 -*	20RF724-*	4	4½	⅜	¼	3	4	11-8	408	35	168	14.4
24	3 7/16	24R724 -*	24RF724-*	4	4½	⅜	¼	3	4	11-8	424	36	180	15.4

adjustable and weld-on style paddles



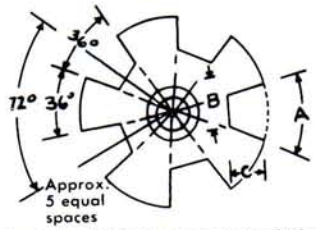
Screw Dia.	Part No. Carbon Steel	Part No. Stainless Steel	Cplng. Dia.	Pipe Size Inside	Pipe Size Outside	A	B	C	D	F	G	K	Wt. Each
4	CP42-*	CP42S-*	1	1¼	1⅝	2	1½	1 3/16	3/16	⅜	⅞	½	.25
6	CP63-*	CP63S-*	1½	2	2⅜	3	2 1/16	1 13/16	¼	½	1 7/16	⅝	.50
9	CP93-*	CP93S-*	1½	2	2⅜	4½	2¾	3 5/16		½	1½	⅝	.50
	CP94-*	CP94S-*	2	2½	2⅞			3 1/16	¼	⅝	1⅝	¾	.75
10	CP103-*	CP103S-*	1½	2	2⅜	5		3 13/16	¼	½	1½	⅝	.75
	CP104-*	CP104S-*	2	2½	2⅞		3⅛	3 9/16		⅝	1⅝	¾	1.00
12	CP124-*	CP124S-*	2	2½	2⅞	6		4 9/16		⅝	1¾	¾	1.50
	CP125-*	CP125S-*	2 7/16	3	3½		3 11/16	4¼	⅜	⅝	1⅞	¾	1.75
	CP126-*	CP126S-*	3	3½	4			4		¾	2	⅞	2.00
14	CP145-*	CP145S-*	2 7/16	3	3½	7		5¼	⅜	⅝	2	¾	2.25
	CP146-*	CP146S-*	3	3½	4		4¼	5		¾	2⅛	⅞	2.50
16	CP166-*	CP166S-*	3	3½	4		4 15/16	6	⅜	¾	2¼	⅞	3.25
	CP166X-*	CP166XS-*	3	4	4½	8		5¾		⅞	2⅜	1	3.50
18	CP186-*	CP186S-*	3	3½	4			7	⅜	¾	2⅛	⅞	4.00
	CP187-*	CP187S-*	3 7/16	4	4½	9	5⅜	6¾		⅞	2¼	1	4.25
20	CP206-*	CP206S-*	3	3½	4	10		8		¾	2 7/16	⅞	4.75
	CP207-*	CP207S-*	3 7/16	4	4½		6⅛	7¾	⅜	⅞	2 9/16	1	5.00
24	CP247-*	CP247S-*	3 7/16	4	4½	12	7⅜	9¾	½	⅞	2 11/16	1	6.75

-*1 is style 1
-*2 is style 2

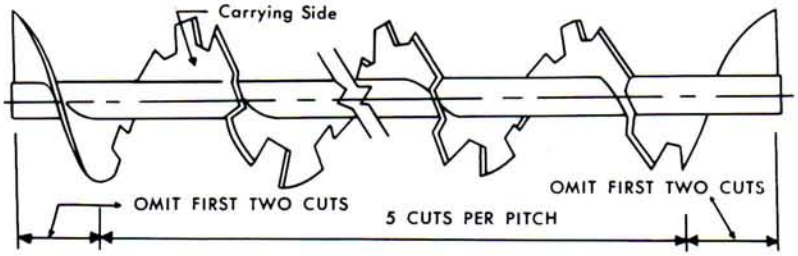
*See P. 37 for complete part number information.

conveyor screws - special

* CUT FLIGHT

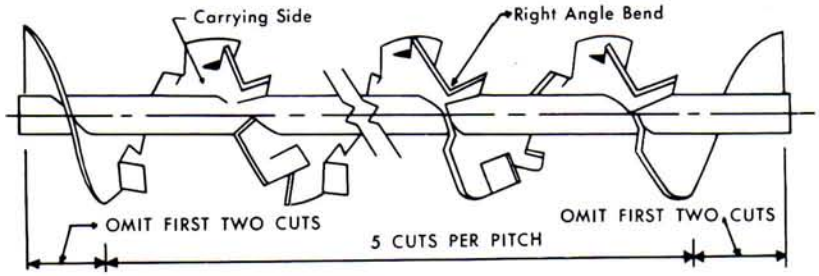


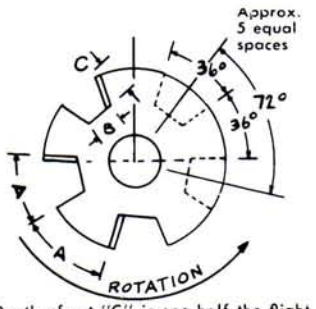
Depth of cut "C" is one half the flight width for normal pipe size.
Lengths "A" & "B" are calculated from the developed O.D. for a standard pitch.



Screw Dia. Inches	A	B	C	Screw Dia. Inches	A	B	C
	Inches				Inches		
4	1⅜	1	⅝	14	4⅝	3⅛	2½
6	2	1½	⅞	16	5¼	3½	3
9	3	2⅛	1½	18	6	3⅞	3⅜
10	3⅜	2¼	1¾	20	6⅝	4¼	3⅞
12	4	2¾	2	24	7⅞	4⅞	4⅞

* CUT AND FOLDED FLIGHT





Depth of cut "C" is one half the flight width for normal pipe size.
Lengths "A" & "B" are calculated from the developed O.D. for a standard pitch.

Screw Dia. Inches	A	B	C	Screw Dia. Inches	A	B	C
	Inches				Inches		
4	1⅜	1	⅝	14	4⅝	3⅛	2½
6	2	1½	⅞	16	5¼	3½	3
9	3	2⅛	1½	18	6	3⅞	3⅜
10	3⅜	2¼	1¾	20	6⅝	4¼	3⅞
12	4	2¾	2	24	7⅞	4⅞	4⅞

STAINLESS STEEL FINISHES

Type 1F. Remove weld splatter and scale. (CEMA I)

Type 2F. Rough grind, if needed. Not sandblast, but cleaned. (CEMA II)

Type 3F. Rough grind and sandblast.

Type 4F. Blend welds. No sandblast, and cleaned. (CEMA III)

Type 5F. Blend welds and sandblast.

Type 6F. Blend welds, complete grind with 120 grit. (Commonly called Sanitary, or, #4 Commercial Finish) — some pits and crevices permissible. (CEMA IV)

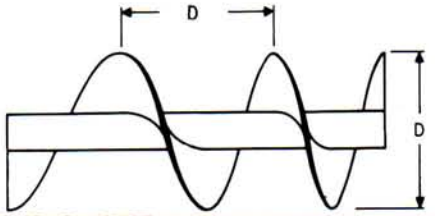
Type 7F. Blend welds, complete grind with 120 grit — plus Scotch Brite Finish (Commonly called Velvety Finish) — no pits or crevices permissible. (CEMA V)

****Most readily available in Type 304 and 316. Type of Finish must be specified. See table above.**

conveyor screws - special

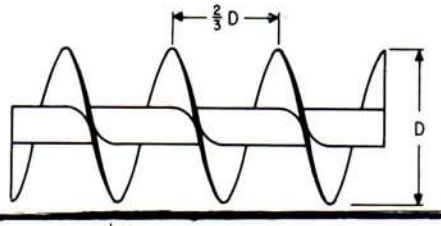
Single Flight Standard Pitch

conveyor screws are considered to be standard and are used for the general conveying of most materials.



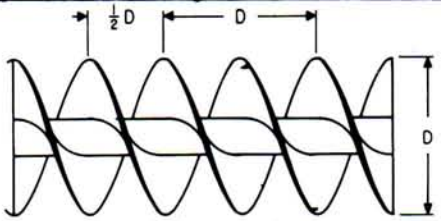
Single Flight Short Pitch

conveyor screws are frequently employed as feeders and are recommended for inclined conveyors in excess of 20 degrees.



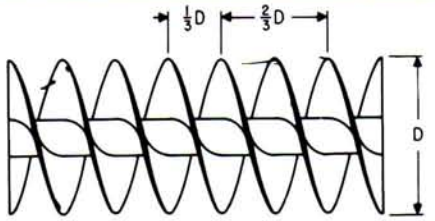
Double Flight Standard Pitch

conveyor screws are frequently required for smooth conveying and discharge of certain materials.



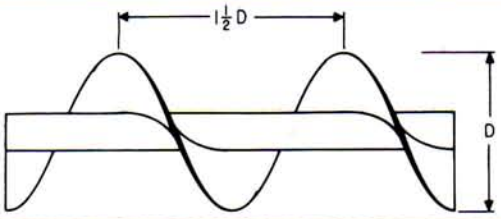
Double Flight Short Pitch

conveyor screws provide an even and regulated flow of materials with fluid characteristics.



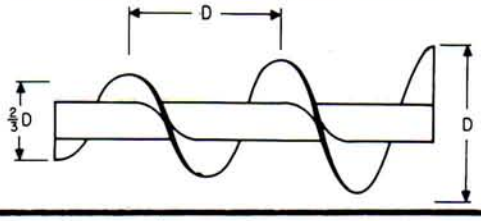
Single Flight Long Pitch

conveyor screws provide a means for the agitation of liquids or the rapid conveying of very free flowing materials.



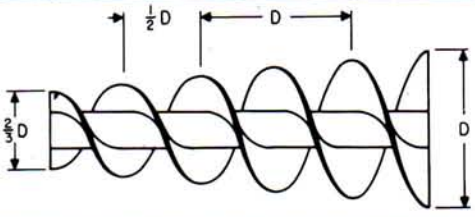
Single Flight Standard Pitch Tapered

conveyor screws are employed for feeding lumpy material from storage. Withdrawal is uniform over full length of feed opening.



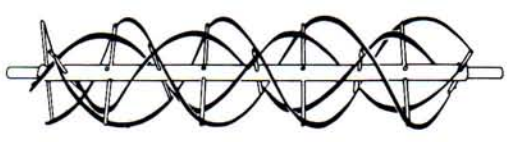
Double Flight Standard Pitch Tapered

conveyor screws are used for feeding free flowing materials from storage with uniform withdrawal for full length of feed opening.



Multiple Ribbon Flight Conveyor Screws

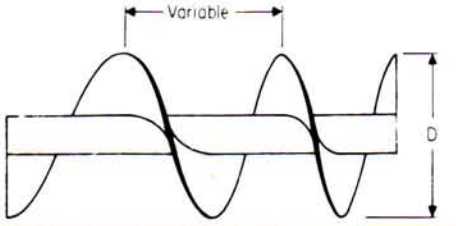
This type of screw consists of two or more ribbon flights of different diameters and opposite hand, mounted one within the other on the same pipe or shaft by rigid supporting lugs. Material is moved forward by one flight and backward by the other, thereby inducing positive and thorough mixing.



conveyor screws - special

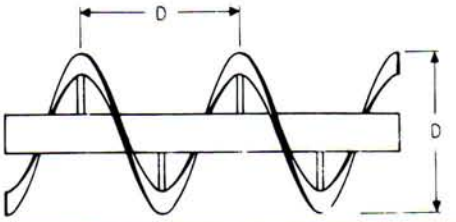
Single Flight Variable Pitch

conveyor screws are required for feeding some very free flowing materials with uniform withdrawal over full length of feed opening.



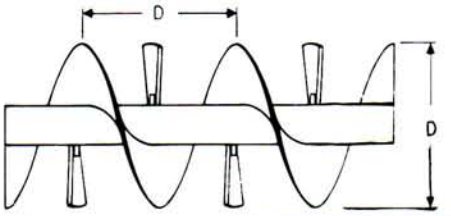
Single Flight Standard Pitch Ribbon

conveyor screws are required for viscous, gummy or sticky materials which tend to adhere to flighting and pipe.



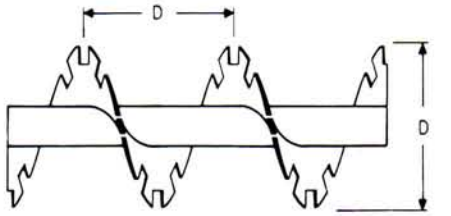
Single Flight Standard Pitch - Paddle

conveyor screws are fitted with adjustable paddles which oppose the flow of material sufficiently to provide moderate mixing in transit.



Single Flight Standard Pitch - Cut Flight

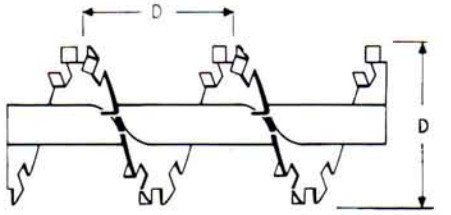
conveyor screws are produced with notches at the outer helicoid edge, providing moderate agitation of material in transit.



Single Flight Standard Pitch - Cut and Folded

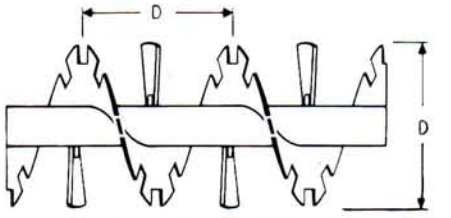
conveyor screws are provided with folded segments at the outer edge which tend to lift and spill the material in transit for aeration and mixing.

Direction Of Material Flow ⟶



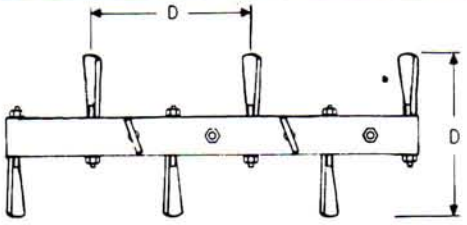
Cut Flight and Paddle

conveyor screws provide a means for a high degree of mixing and aeration of material in transit.



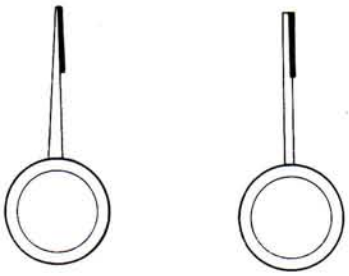
Paddle

conveyor screws permit the control of conveying and mixing action by the angular adjustment of formed steel paddles.



Abrasion-Resistant Screw Conveyors

In conveying applications where extreme abrasion is a problem, hard-surfaced, Abrasion-Resistant conveyor screws afford an effective, practical and economical solution. Hard-surfaced screws have been utilized successfully in numerous types of applications and may be expected to increase normal service life over standard mild steel conveyors by as much as from 500 to 800%. In certain applications an even greater degree of wear life may be obtained. To produce its hard-surfaced conveyors, a special alloy is applied to the carrying area of the flight face. For most typical applications, the alloy may be applied in a standard width (see table). For extreme applications, full-face application is recommended. The conveyor pipe may also be hard-surfaced.



Helicoid *Sectional*

WIDTH OF APPLICATION CHART

Screw Diameter	Width of Application
6	1
9	1½
10	1½
12	2
14	2
16	2½
18	2½
20	3
24	3

Hardness

The crystals contained in hard-surfacing alloy rank just below the diamond in hardness. The alloy applied to a mild steel conveyor results in a surface hardness of 68-72, Rockwell "C"

Impact Resistance

The hard-facing alloy, in combination with the mild steel of the conveyor, results in excellent impact resistance. The alloy will never flake or chip from the conveyor surface. Large, abrasive, lumpy materials may be handled without undue wear, even at the conveyor inlet. Full-face application of the flighting and pipe at the inlet will provide even better wear life.

High carbon steels capable of heat treatment, or abrasion-resistant alloys are used to an ever increasing extent as materials for flights.

Corrosion-resistant conveyor screws

Corrosion is manifested in so many different ways that no one choice of material will suit all requirements. To withstand the effects of corrosion encountered in many fields of industry, conveyor screws are fabricated of stainless steel, copper, brass, bronze, nickel, monel metal, aluminum, and other materials.

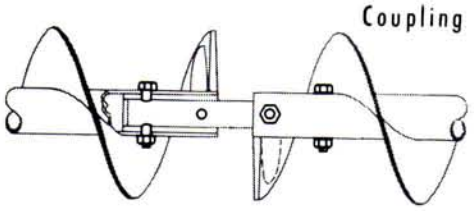
Galvanizing, tinning, chrome plating and other coating methods have proved effective under mildly corrosive conditions. Gray iron conveyor screws serve effectively in many applications. Vulcanized or bonded rubber covering of the entire conveyor is frequently satisfactory for resistance to extremely corrosive action.

Heat-resistant conveyor screws

Conveyor screws for high temperature applications are made of many of the available heat-resistant alloys. Several of the stainless steels and other high-chrome alloys are particularly suitable for this service. Special designed screws are available for high temperature applications.

conveyor screws - components

Coupling Bolts

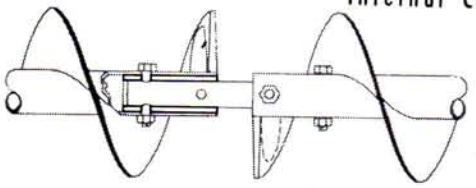


Coupling bolts are specially manufactured from high analysis steel to close tolerances. Due to short thread length, only the bolt shank is in contact with coupling and pipe ensuring full torque capacity and minimum wear.

A special lock type nut is provided with each coupling bolt.

Coupling Diam.	Outside Pipe Diam.	Bolt Size	Part Number			Weight Each Lbs.
			Standard	▲ Stainless	Hi-Torque	
1	1⅝	⅜ x 2 1/16	CCB1	CCBS1	CCBX1	.13
1½	2⅜	½ x 3	CCB112	CCBS112	CCBX112	.25
2	2⅞	⅝ x 3⅝	CCB2	CCBS2	CCBX2	.50
2 3/16	3½	⅝ x 4⅜	CCB2716	CCBS2716	CCBX2716	.56
3	4	¾ x 5	CCB3	CCBS3	CCBX3	.75
3	4½	¾ x 5½	CCB3A	CCBS3A	CCBX3A	.88
3 3/16	4½	⅞ x 5½	CCB3716	CCBS3716	CCBX3716	1.25

Internal Collar

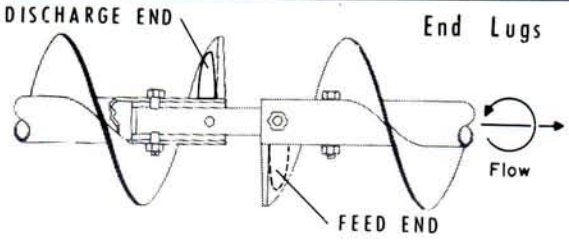


Internal collars are precision machined from high analysis steel tubing for a press fit into the conveyor pipe.

Replacement collars are provided without coupling bolt holes and should be field drilled to match existing bolt holes in pipe.

Coupling Diameter	Inside Pipe Diameter	Part Number		Weight Each Lbs.
		Standard	▲ Stainless	
1	1¼	CIC1	CICS1	.7
1½	2	CIC112	CICS112	2.2
2	2½	CIC2	CICS2	2.4
2 3/16	3	CIC2716	CICS2716	4.1
3	3½	CIC3	CICS3	4.3
3	4	CIC3A	CICS3A	8.3
3 3/16	4	CIC3716	CICS3716	7.3

End Lugs



End lugs are formed with special dies from heavy gauge steel and are welded opposite the carrying face of the conveyor flight ends to prevent their deflection or distortion while presenting minimum obstruction to material flow.

Part numbers are established by hand of conveyor and whether at intake or discharge end of screw.

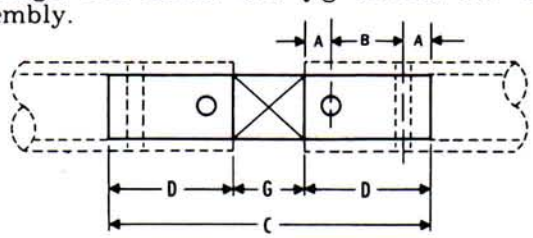
Conveyor Diameter	Part Number				Weight Each Lbs.
	Intake End		Discharge End		
	Standard	▲ Stainless	Standard	▲ Stainless	
6	CEL6I-*	CELS6I-*	CEL6D-*	CELS6D-*	.06
9	CEL9I-*	CELS9I-*	CEL9D-*	CELS9D-*	.15
10	CEL10I-*	CELS10I-*	CEL10D-*	CELS10D-*	.15
12	CEL12I-*	CELS12I-*	CEL12D-*	CELS12D-*	.43
14	CEL14I-*	CELS14I-*	CEL14D-*	CELS14D-*	.43
16	CEL16I-*	CELS16I-*	CEL16D-*	CELS16D-*	.68
18	CEL18I-*	CELS18I-*	CEL18D-*	CELS18D-*	.68
20	CEL20I-*	CELS20I-*	CEL20D-*	CELS20D-*	.68
24	CEL24I-*	CELS24I-*	CEL24D-*	CELS24D-*	.68

-* R For Right Hand Flight.
-* L For Left Hand Flight.
▲ Specify type of Stainless, 304 or 316.

shafts

Coupling

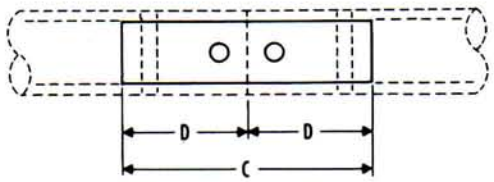
Conveyor coupling shafts are required for connecting adjoining lengths of conveyor screws, to provide rotation and means for support through hanger bearings. All shafts are jig drilled for ease of assembly.



Shaft Diameter	Part Number	A	B	C	D	G	Weight
1	CC1-*	½	2	7 ½	3	1 ½	1.5
1 ½	CC112-*	⅞	3	11 ½	4 ¾	2	5.6
2	CC2-*	⅞	3	11 ½	4 ¾	2	9.8
2 7/16	CC2716-*	1⅛	3	12 ¾	4 ⅞	3	15.4
3	CC3-*	1	3	13	5	3	23.8
3 7/16	CC3716-*	1 ½	4	18	7	4	44.5

Close coupling

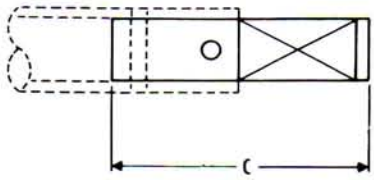
Close coupling shafts provide a means for connecting conveyor screws when it is not desirable to allow space for hanger bearings. Consideration should be given to the total unsupported length of screw to prevent deflection and whipping.



Shaft Diameter	Part Number Standard	C	D	Weight
1	CCC1-*	6	3	1.3
1 ½	CCC112-*	9 ½	4 ¾	4.8
2	CCC2-*	9 ½	4 ¾	8.5
2 7/16	CCC2716-*	9 ¾	4 ⅞	12.9
3	CCC3-*	10	5	20.0
3 7/16	CCC3716-*	14	7	37.0

End

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



Shaft Dia.	Part Number	"C" Babbitt Bearing W/Seal B-B	"C" Babbitt Bearing Without Seal B-A	"C" Ball Bearing W/Seal BB-B □	"C" Ball Bearing Without Seal BB-A	Wt.
1 ½	CES112*	11	9 ¼	10	8 ¼	4.8
2	CES2*	12	10 ¼	10 ⅜	8 ⅜	9.4
2 7/16	CES2716*	13 ⅜	11 ⅞	11 ⅜	9 ⅜	14.9
3	CES3*	14 ⅞	13 ⅛	12 ⅜	10 ⅜	24.0
3 7/16	CES3716*	18 ⅜	16 ⅜	15 ⅜	13 ⅜*	37.0

-* H Hardened
-* HT Hi-Torque
-* S Stellite Brng. Area

-* SS Stainless Steel (Specify Type)
-* 3 for std. Special three bolt connection
-* 4 for std. Special four bolt connection

Example:
CC112-H-3 is conveyor coupling, 1½" diameter, hardened, for std. three bolt connection.

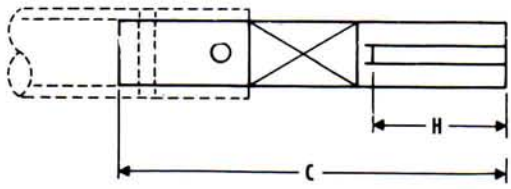
□ Standard. Furnished unless otherwise specified.

B-B for Babbit Bearing, lengthened for seal (see page 70-CSW)
B-A for Babbit Bearing, no seal
BB-B for Ball Bearing, lengthened for seal (see page 70-CSW)
BB-A for Ball Bearing, no seal

shafts

No 1 Drive

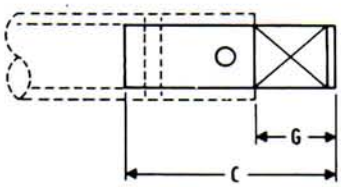
Number 1 drive shafts are the most frequently used means of connecting driving power to a conveyor assembly through all but the outboard type conveyor ends. Diameter and keyway dimensions are held to close tolerances for ease of assembly.



No. 1 Drive		"C"		"C"		H	Wt.
		Babbitt Bearing		Ball Bearing			
Shaft Dia.	Part Number	W/Seal B-B	Without Seal B-A	W/Seal BB-B □	Without Seal BB-A		
1 ½	CD1-112*	14 ¼	12 ½	13 ¼	11 ½	3 ¼	6.5
2	CD1-2*	16 ½	14 ¾	14 ⅞	13 ⅛	4 ½	13.0
2 7/16	CD1-2716*	19 ⅛	17 ⅜	16 ⅞	15 ⅛	5 ½	21.0
3	CD1-3*	20 ⅞	19 ⅛	18 ⅜	16 ⅝	6	36.0
3 7/16	CD1-3716*	25 ⅞	23 ⅝	22 ⅞	20 ⅝	7 ¼	55.0

Hanger end

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



Shaft Diam.	Part Number Standard	C	G	Wt.
1	CEH 1-*	4 5/8	1 5/8	1.0
1 ½	CEH 112-*	6 7/8	2 1/8	3.5
2	CEH 2-*	6 7/8	2 1/8	6.2
2 7/16	CEH 2716-*	8 1/8	3 ¼	10.6
3	CEH 3-*	8 ¼	3 ¼	16.5
3 7/16	CEH 3716-*	11 ¼	4 ¼	29.7

-* H Hardened
-* HT Hi-Torque
-* S Stellite Brng. Area

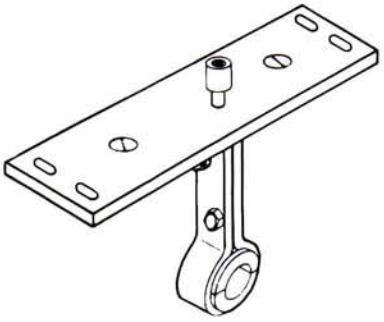
-* SS Stainless Steel (Specify Type)
-* 3 for special three bolt connection
-* 4 for special four bolt connection

Example:
CD1112-HT-3 conveyor drive shaft No. 1, 1½"diameter, high torque, and for three bolt connection.

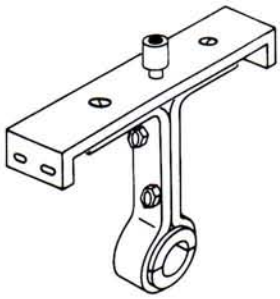
□ Standard. Furnished unless otherwise specified.

B-B for Babbit Bearing, lengthened for seal (see page 70-CSW)
B-A for Babbit Bearing, no seal
BB-B for Ball Bearing, lengthened for seal (see page 70-CSW)
BB-A for Ball Bearing, no seal

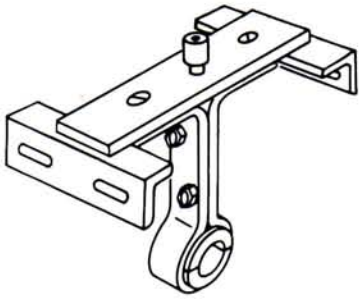
hangers



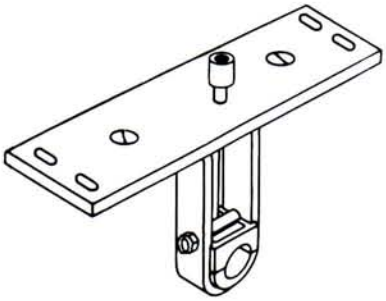
STYLE 220 HANGERS are designed for high volume conveyors. The compact bearing and thin "T" section permit higher conveyor loading with less impedance to flow.



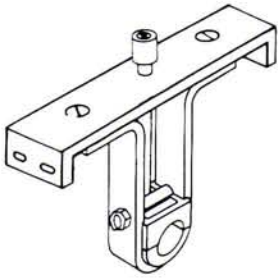
STYLE 226 HANGERS incorporate the advantages of both style 216 and style 220, thus providing high strength, low impedance to material flow, and flush mounting for weather-proof or dust tight requirements.



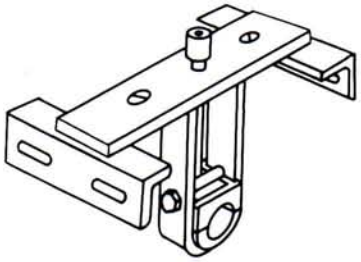
STYLE 326 HANGERS are similar to style 220 with special construction to allow for unequal expansion between trough and conveyor screws.



STYLE 230 HANGERS are constructed for heavy duty conveying service, and project outside the trough cover for maintenance and lubrication accessibility.



STYLE 216 HANGERS are constructed for heavy duty conveying service, and being wholly contained within the conveyor trough, permit weather-proof or dust tight applications.



STYLE 316 HANGERS are designed for heavy duty conveying service and specially constructed to allow for unequal expansion between trough and conveyor screws.

HANGER MATERIAL

- Steel
  Stainless

BEARINGS

- Babbitt
  Bronze
  Oilite
  Nylon
  Arguto
  Stellite
  Teflon
  Nylarton - GS
  White Iron
  Graphite Bronze
  Oil Impregnated Wood

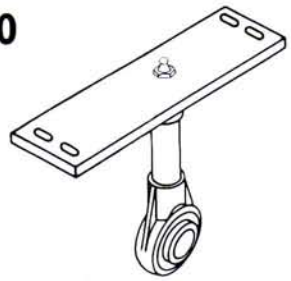
PROTECTIVE FINISH

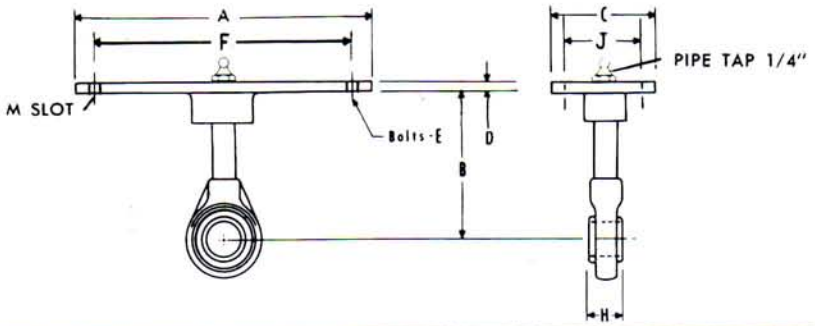
- Enamel
  Chrome
  Cadmium

- **Standard Assembly**

hangers

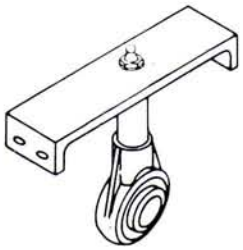
Style 60

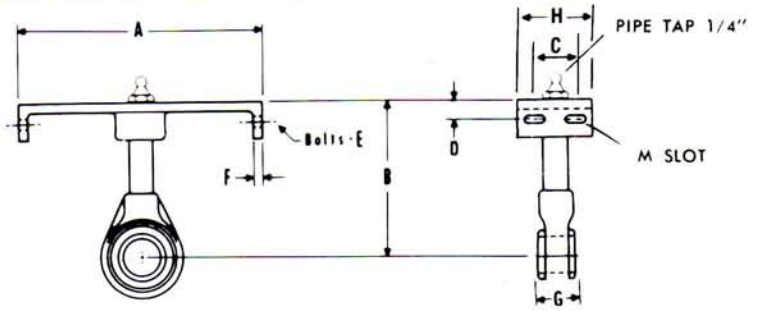




Conveyor Diameter	Coupling Diameter	▲ Part Number	A	B	C	D	E	F	H	J	Weight Each	M Slot
6	1 1/2	CH660112	9 3/4	4 1/2	4	1/4	3/8	8 3/4	1 13/16	2 1/2	7	7/16 x 7/8
9	1 1/2 2	CH960112 CH9602	13 1/2	6 1/8 6 1/8	4	1/4	3/8	12 1/4 12 1/4	1 13/16 2	2 1/2	8 9	7/16 x 7/8
10	1 1/2 2	CH1060112 CH10602	14 1/2	6 3/8 6 3/8	4	1/4	3/8	13 1/4 13 1/4	1 13/16 2	2 1/2	9 10	7/16 x 7/8
12	2 2 7/16 3	CH12602 CH12602716 CH12603	17 1/2	7 3/4 7 3/4 7 3/4	5	3/8	1/2 1/2 1/2	15 3/4 15 3/4 15 3/4	2 2 5/16 3	2 1/2	12 20 30	9/16 x 3/4
14	2 7/16 3	CH14602716 CH14603	19 1/2	9 1/4 9 1/4	5	3/8	1/2	17 3/4 17 3/4	2 5/16 3	2 1/2	21 32	9/16 x 3/4
16	3	CH16603	21 1/2	10 5/8	5	3/8	1/2	19 3/4	3	2 1/2	35	9/16 x 3/4
18	3	CH18603	24 1/2	12 1/8	5	1/2	5/8	22 1/4	3	3 1/2	40	11/16 x 7/8
20	3	CH20603	26 1/2	13 1/2	5	1/2	5/8	24 1/4	3	3 1/2	45	11/16 x 7/8

Style 70

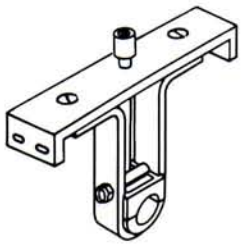


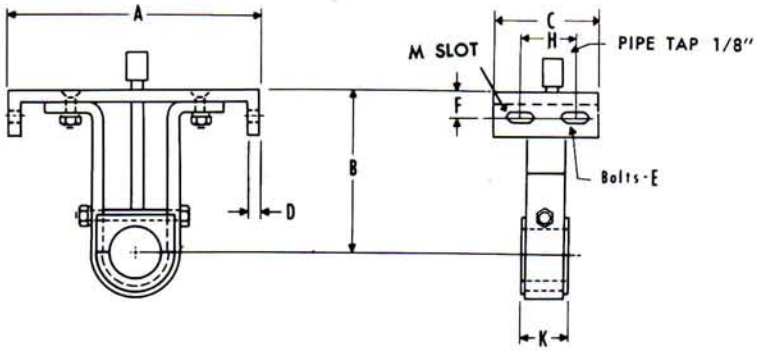


Conveyor Diameter	Coupling Diameter	▲Part Number	A	B	C	D	E	F	G	H	Weight Each	M Slot
6	1 1/2	CH670112	7	4 1/2	2 1/2	3/4	3/8	1/4	1 13/16	4	7	7/16 x 7/8
9	1 1/2 2	CH970112 CH9702	10 10	6 1/8 6 1/8	2 1/2 2 1/2	1 1	3/8 3/8	1/4 1/4	1 13/16 2	4	8 9	7/16 x 7/8
10	1 1/2 2	CH1070112 CH10702	11 11	6 3/8 6 3/8	2 1/2 2 1/2	1 1	3/8 3/8	1/4 1/4	1 13/16 2	4	9 10	7/16 x 7/8
12	2 2 7/16 3	CH12702 CH12702716 CH12703	13 13 13	7 3/4 7 3/4 7 3/4	2 1/2 2 1/2 2 1/2	1 1/4 1 1/4 1 1/4	1/2 1/2 1/2	3/8 3/8 3/8	2 2 5/16 3	5	12 20 30	9/16 x 3/4
14	2 7/16 3	CH14702716 CH14703	15 15	9 1/4 9 1/4	2 1/2 2 1/2	1 3/8 1 3/8	1/2 1/2	3/8 3/8	2 5/16 3	5	21 32	9/16 x 3/4
16	3	CH16703	17	10 5/8	2 1/2	1 3/8	1/2	3/8	3	5	35	9/16 x 3/4
18	3	CH18703	19	12 1/8	3 1/2	1 5/8	5/8	1/2	3	5	40	11/16 x 7/8
20	3	CH20703	21	13 1/2	3 1/2	1 5/8	5/8	1/2	3	5	45	11/16 x 7/8

▲Hanger Frame Assembly can be furnished in fabricated stainless steel. Specify type.

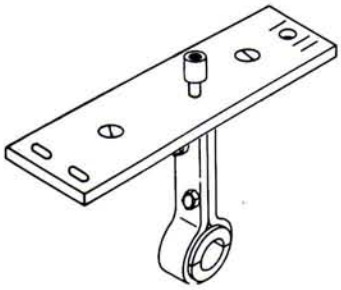
Style 216

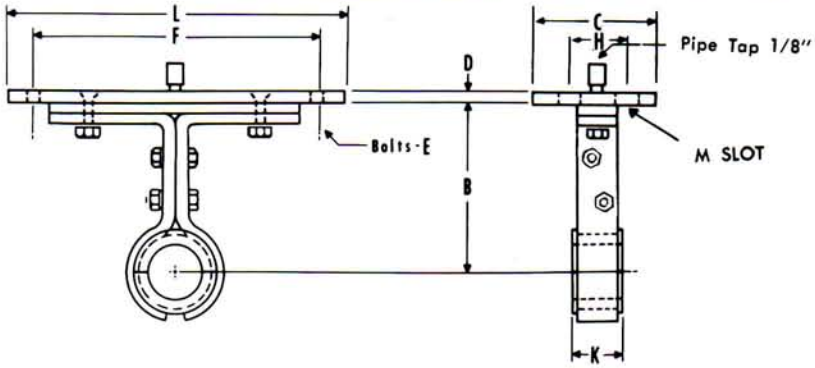




Conveyor Diameter	Coupling Size	▲ Part Number	A	B	C	D	E	F	H	K	M Slot	Weight Each
6	1½	CH6216112-*	7	4½	4	¼	⅜	¾	2½	2	7/16 x ⅞	5
9	1½	CH9216112-*	10	6⅛	4	¼	⅜	1	2½	2	7/16 x ⅞	7
	2	CH92162-*	10	6⅛	4	¼	⅜	1	2½	2		9
10	1½	CH10216112-*	11	6⅜	4	¼	⅜	1	2½	2	7/16 x ⅞	8
	2	CH102162-*	11	6⅜	4	¼	⅜	1	2½	2		10
12	2	CH122162-*	13	7¾	5	⅜	½	1¼	2½	2		14
	2 7/16	CH122162716-*	13	7¾	5	⅜	½	1¼	2½	3	9/16 x ¾	18
	3	CH122163-*	13	7¾	5	⅜	½	1¼	2½	3		21
14	2 7/16	CH142162716-*	15	9¼	5	⅜	½	1⅜	2½	3	9/16 x ¾	23
	3	CH142163-*	15	9¼	5	⅜	½	1⅜	2½	3		25
16	3	CH162163-*	17	10⅝	5	⅜	½	1⅜	2½	3	9/16 x ¾	28
18	3	CH182163-*	19	12⅛	5	½	⅝	1⅝	3½	3	11/16 x ⅞	34
	3 7/16	CH182163716-*	19	12⅛	5	½	⅝	1⅝	3½	4		44
20	3	CH202163-*	21	13½	5	½	⅝	1⅝	3½	3	11/16 x ⅞	36
	3 7/16	CH202163716-*	21	13½	5	½	⅝	1⅝	3½	4		47
24	3 7/16	CH242163716-*	25	16½	5	½	⅝	1¾	3½	4	11/16 x ⅞	53

Style 220



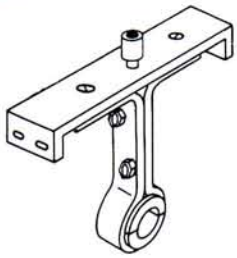


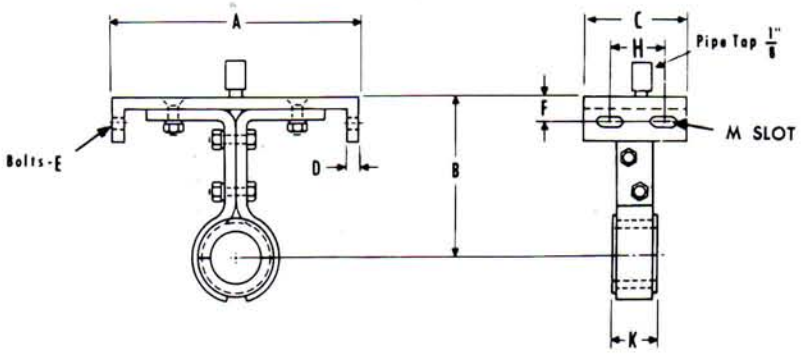
Conveyor Diameter	Coupling Size	▲ Part Number	B	C	D	E	F	H	K	L	M Slot	Weight Each
4	1	CH42201-*	3⅝	4	¼	¼	6¼	2	1½	7¼	5/16 x ½	5
6	1½	CH6220112-*	4½	4	¼	⅜	8¾	2½	2	9¾	7/16 x ⅞	7
9	1½	CH9220112-*	6⅛	4	¼	⅜	12¼	2½	2	13½	7/16 x ⅞	9
	2	CH92202-*	6⅛	4	¼	⅜	12¼	2½	2	13½		11
10	1½	CH10220112-*	6⅜	4	¼	⅜	13¼	2½	2	14½	7/16 x ⅞	10
	2	CH102202-*	6⅜	4	¼	⅜	13¼	2½	2	14½		12
12	2	CH122202-*	7¾	5	⅜	½	15¾	2½	2	17½		16
	2 7/16	CH122202716-*	7¾	5	⅜	½	15¾	2½	3	17½	9/16 x ¾	21
	3	CH122203-*	7¾	5	⅜	½	15¾	2½	3	17½		28
14	2 7/16	CH142202716-*	9¼	5	⅜	½	17¾	2½	3	19½	9/16 x ¾	26
	3	CH142203-*	9¼	5	⅜	½	17¾	2½	3	19½		33
16	3	CH162203-*	10⅝	5	⅜	½	19¾	2½	3	21½	9/16 x ¾	39
18	3	CH182203-*	12⅛	5	½	⅝	22¼	3½	3	24½	11/16 x ⅞	41
	3 7/16	CH182203716-*	12⅛	5	½	⅝	22¼	3½	4	24½		49
20	3	CH202203-*	13½	5	½	⅝	24¼	3½	3	26½	11/16 x ⅞	43
	3 7/16	CH202203716-*	13½	5	½	⅝	24¼	3½	4	26½		51
24	3 7/16	CH242203716-*	16½	5	½	⅝	28¼	3½	4	30½	11/16 x ⅞	57

-*See P. 54 For Complete Part No. Information.
▲ Hangar Frame Assembly Can Be Furnished In Stainless Steel Specify Type.

hangers

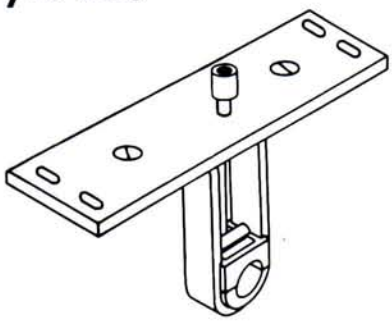
Style 226

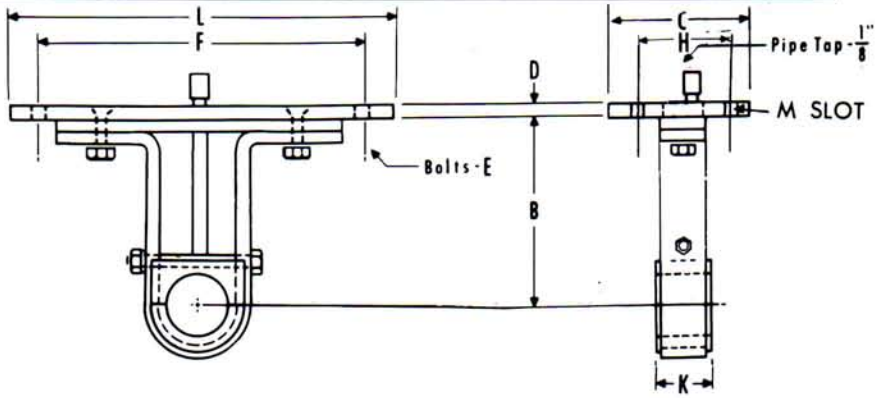




Conveyor Diameter	Coupling Size	▲ Part Number	A	B	C	D	E	F	H	K	M Slot	Weight Each
4	1	CH42261-*	5	3 5/8	4	1/4	1/4	5/8	2	1 1/2	5/16 x 1/2	4
6	1 1/2	CH6226112-*	7	4 1/2	4	1/4	3/8	31/1	2 1/2	2	7/16 x 7/8	6
9	1 1/2	CH9226112-*	10	6 1/8	4	1/4	3/8	1	2 1/2	2	7/16 x 7/8	8
	2	CH92262-*	10	6 1/8	4	1/4	3/8	1	2 1/2	2		9
10	1 1/2	CH10226112-*	11	6 3/8	4	1/4	3/8	1	2 1/2	2	7/16 x 7/8	9
	2	CH102262-*	11	6 3/8	4	1/4	3/8	1	2 1/2	2		11
12	2	CH122262-*	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	2	9/16 x 3/4	13
	2 7/16	CH122262716-*	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	3		18
	3	CH122263-*	13	7 3/4	5	3/8	1/2	1 1/4	2 1/2	3		24
14	2 7/16	CH142262716-*	15	9 1/4	5	3/8	1/2	1 3/4	2 1/2	3	9/16 x 3/4	22
	3	CH142263-*	15	9 1/4	5	3/8	1/2	1 3/4	2 1/2	3		29
16	3	CH162263-*	17	10 5/8	5	3/8	1/2	1 3/4	2 1/2	3	9/16 x 3/4	34
18	3	CH182263-*	19	12 1/8	5	1/2	5/8	1 5/8	3 1/2	3	11/16 x 7/8	35
	3 7/16	CH182263716-*	19	12 1/8	5	1/2	5/8	1 5/8	3 1/2	4		46
20	3	CH202263-*	21	13 1/2	5	1/2	5/8	1 5/8	3 1/2	3	11/16 x 7/8	41
	3 7/16	CH202263716-*	21	13 1/2	5	1/2	5/8	1 5/8	3 1/2	4		52
24	3 7/16	CH242263716-*	25	16 1/2	5	1/2	5/8	1 3/4	3 1/2	4	11/16 x 7/8	63

Style 230



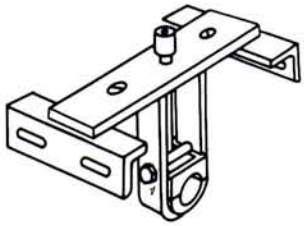


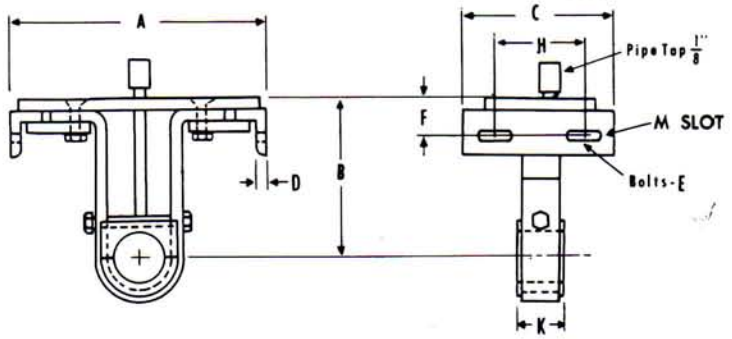
Conveyor Diameter	Coupling Size	▲ Part Number	B	C	D	E	F	H	K	L	M Slot	Weight Each
6	1 1/2	CH6230112-*	4 1/2	4	1/4	3/8	8 3/4	2 1/2	2	9 3/4	7/16 x 7/8	6
9	1 1/2	CH9230112-*	6 1/8	4	1/4	3/8	12 1/4	2 1/2	2	13 1/2	7/16 x 7/8	8
	2	CH92302-*	6 1/8	4	1/4	3/8	12 1/4	2 1/2	2	13 1/2		10
10	1 1/2	CH10230112-*	6 3/8	4	1/4	3/8	13 1/4	2 1/2	2	14 1/2	7/16 x 7/8	9
	2	CH102302-*	6 3/8	4	1/4	3/8	13 1/4	2 1/2	2	14 1/2		11
12	2	CH122302-*	7 3/4	5	3/8	1/2	15 3/4	2 1/2	2	17 1/2		15
	2 7/16	CH122302716-*	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2	9/16 x 3/4	20
	3	CH122303-*	7 3/4	5	3/8	1/2	15 3/4	2 1/2	3	17 1/2		25
14	2 7/16	CH142302716-*	9 1/4	5	3/8	1/2	17 3/4	2 1/2	3	19 1/2	9/16 x 3/4	24
	3	CH142303-*	9 1/4	5	3/8	1/2	17 3/4	2 1/2	3	19 1/2		29
16	3	CH162303-*	10 5/8	5	3/8	1/2	19 3/4	2 1/2	3	21 1/2	9/16 x 3/4	35
18	3	CH182303-*	12 1/8	5	1/2	5/8	22 1/4	3 1/2	3	24 1/2	11/16 x 7/8	34
	3 7/16	CH182303716-*	12 1/8	5	1/2	5/8	22 1/4	3 1/2	4	24 1/2		47
20	3	CH202303-*	13 1/2	5	1/2	5/8	24 1/4	3 1/2	3	26 1/2	11/16 x 7/8	40
	3 7/16	CH202303716-*	13 1/2	5	1/2	5/8	24 1/4	3 1/2	4	26 1/2		49
24	3 7/16	CH242303716-*	16 1/2	5	1/2	5/8	28 1/4	3 1/2	4	30 1/2	11/16 x 7/8	55

-*See P. 54 For Complete Part No. Information.
▲ Hangar Frame Assembly Can Be Furnished In Stainless Steel Specify Type.

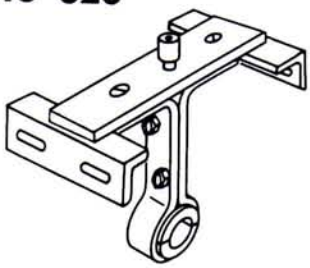
hangers

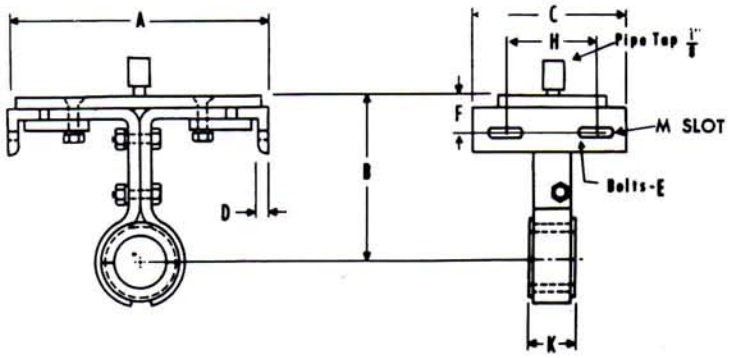
Style 316





Style 326





Conveyor Diameter	Coupling Size	▲ Part Number Style 316	▲ Part Number Style 326	A	B	C	D	E	F	H	K	M Slot
4	1		CH43261	5	3 5/8	5	1/8	1/4	5/8	2	1 1/2	
6	1 1/2	CH6316112-*	CH6326112-*	7	4 1/2	6	1/8	3/8	3/4	2 1/2	2	7/16 x 7/8
9	1 1/2	CH9316112-*	CH9326112-*	10	6 1/8	6	1/8	3/8	1	2 1/2	2	7/16 x 7/8
	2	CH93162-*	CH93262-*	10	6 1/8	6	1/8	3/8	1	2 1/2	2	
10	1 1/2	CH10316112-*	CH10326112-*	11	6 3/8	6	1/8	3/8	1	2 1/2	2	7/16 x 7/8
	2	CH103162-*	CH103262-*	11	6 3/8	6	1/8	3/8	1	2 1/2	2	
12	2	CH123162-*	CH123262-*	13	7 3/4	6 1/2	1/8	1/2	1 1/4	2 1/2	2	1/2 x 3/4
	2 7/16	CH123162716-*	CH123262716-*	13	7 3/4	6 1/2	1/8	1/2	1 1/4	2 1/2	3	
	3	CH123163-*	CH123263-*	13	7 3/4	6 1/2	1/8	1/2	1 1/4	2 1/2	3	
14	2 7/16	CH143162716-*	CH143262716-*	15	9 1/4	6 1/2	1/4	1/2	1 3/8	2 1/2	3	1/2 x 3/4
	3	CH143163-*	CH143263-*	15	9 1/4	6 1/2	1/4	1/2	1 3/8	2 1/2	3	
16	3	CH163163-*	CH163263-*	17	10 5/8	6 1/2	1/4	1/2	1 3/8	2 1/2	3	1/2 x 3/4
18	3	CH183163-*	CH183263-*	19	12 1/8	6 1/2	1/4	5/8	1 5/8	3 1/2	3	11/16 x 7/8
	3 7/16	CH183163716-*	CH183263716-*	19	12 1/8	7	1/4	5/8	1 5/8	3 1/2	4	
20	3	CH203163-*	CH203263-*	21	13 1/2	6 1/2	1/4	5/8	1 5/8	3 1/2	3	11/16 x 7/8
	3 7/16	CH203163716-*	CH203263716-*	21	13 1/2	7	1/4	5/8	1 5/8	3 1/2	4	
24	3 7/16	CH243163716-*	CH243263716-*	25	16 1/2	7	1/8	5/8	1 3/4	3 1/2	4	11/16 x 7/8

▲ Hanger Frame Assembly Can Be Furnished In Stainless Steel. Specify Type.

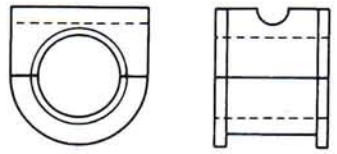
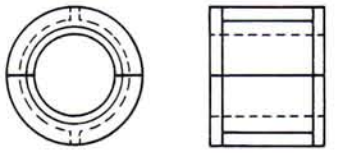
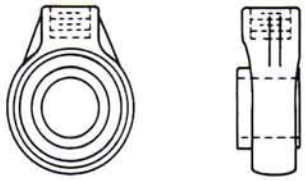
Legend Also For Pages 52, 53.

SS	Stainless Steel (specify type)
B	Babbitt
BR	Bronze
BG	Bronze with Graphite Plugs
OB	Oil Impregnated Bronze
H	Hard Iron
N	Nylon Type
F	Flared trough-Style 220, 226, 230
G	Gatke Grafitex
S	Stellite #90
W	Oil Impregnated Wood Hanger Frame Assembly can also be furnished in fabricated Stainless Steel. Specify Type.

Use Hardened Couplings with Hard Iron and Stellite Bearings. Grease Pipe and Pressure Type Lubrication Fitting Furnished with Babbitt, Bronze and Nylon Type Bearings Only Unless Otherwise Specified.

hanger bearings

Boarings

Hanger type	Bearing	Bore	Part number	Wt.
216 230 316		1	CB 161-*	.50
		1 ½	CB 16112-*	1.6
		2	CB 162-*	2.7
		2 1/16	CB 162716-*	6.2
		3	CB 163-*	8.0
		3 1/16	CB 163716-*	13.7
220 226 326 30 50		1	CBX 1-*	.50
		1 ½	CBX 112-*	1.0
		2	CBX 2-*	2.0
		2 1/16	CBX 2716-*	4.0
		3	CBX 3-*	5.0
		3 1/16	CBX 3716-*	9.0
60 70 80 300A	BALL BEARING 	1	S 1347M-16	2.0
		1 ½	S 1347M-24	3.5
		2	S 1347M-32	5.6
		2 1/16	S 1347M-39	9.0
		3	S 1347M-48	18.0

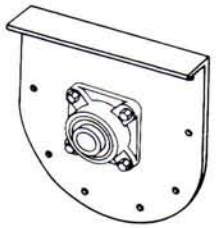
-* B Babbitt -* N Nylon -* S Stellite -* G Gatke Grafitex
-* BR Bronze -* W Wood -* OB Oil Impregnated Bronze -* BG Bronze Graphite Plugs
-* H Hard Iron -* NR Nylatron (White)

trough ends

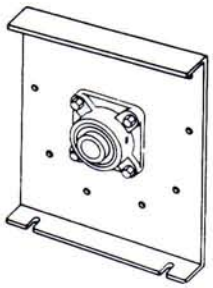
All standard trough ends are fabricated from heavy steel plate and jig drilled to ensure accurate assembly to the standard trough end flange.

Trough ends are available with babbitt, bronze, ball or roller type bearings.

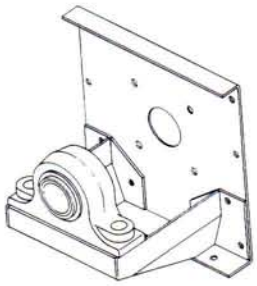
Outside type trough ends are one of the most widely used units and are particularly advantageous when it is necessary to remove the end for disassembly or removal of the screw. The conveyor trough is separately supported by a flange foot or saddle when employing this end.



Outside type trough ends with feet are identical to the plain outside type unit except for the addition of a bottom flange which forms a support for the conveyor without the necessity of using flange feet or saddles.

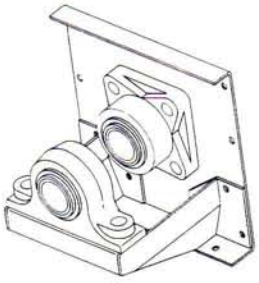


Outboard bearing trough ends have heavy gauge pedestals of welded construction on which are mounted pillow block type bearings. The bearing is located far enough from the trough end plate to allow standard shaft seals or packing glands to be mounted outside the plate end for convenient packing or inspection.

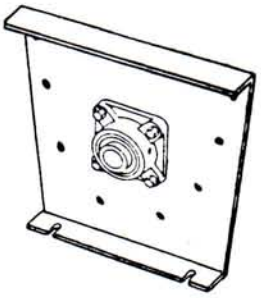


Double bearing trough ends are also provided with a pedestal for mounting an outboard pillow block bearing plus a flanged bearing on the trough end plate, thus providing rigid shaft support for heavy overhung drive loads.

Standard shaft seals may be mounted with the flanged bearing.

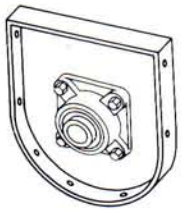


Flared type trough ends consist of heavy steel plate with ball, roller, babbitt, bronze, & other types of bearings. They are available with feet, less feet, & outboard bearing pedestal. Also with many types of seals.

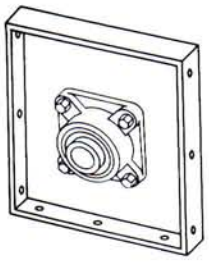


trough ends

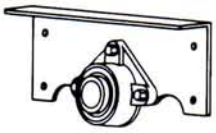
Inside type trough ends are designed to bolt inside the conveyor trough eliminating the standard trough flange. When using this type of trough end it is necessary to support the conveyor trough with saddles or other means.



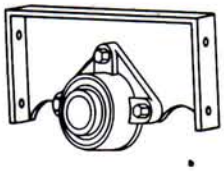
Inside type rectangular trough ends are adaptable to either wood or rectangular steel conveyor troughs. When accessibility is no problem, rectangular troughs are sometimes secured directly to the floor or foundation without the use of feet or other supports.



Outside type discharge trough ends permit the discharge of material directly through the trough end thus eliminating the usual discharge spout. This end is sometimes used for overflow to prevent damage to the conveyor when preceding spouts or discharges are full or inadvertently closed.

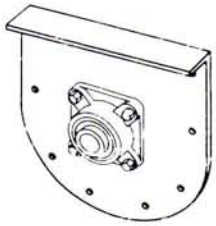


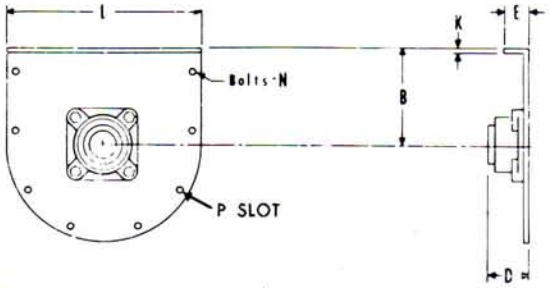
Inside type discharge trough ends find use in the same manner as the outside type. This end may be mounted inside standard trough, rectangular type trough or wooden trough. This unit also provides greater support than hanger bearings when mounted at intermediate bearing points in a conveyor whose carrying capacity is low enough to prevent material building up at the hanger points.



trough ends

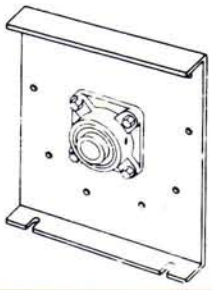
Outside less feet

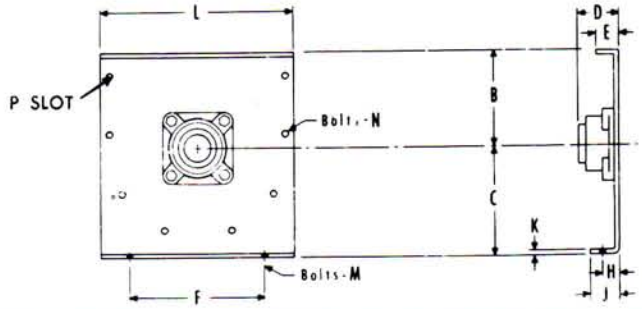




Conveyor Diameter	Shaft Diameter	▲ Part Number	B	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	K	L	N	Wt.**	P Slot
4	1	CE 41-*	3 5/8	2 3/16	1 5/8	—	1 1/16	3/16	7 3/4	3/8	5	7/16 x 9/16
6	1 1/2	CE 6112-*	4 1/2	3 3/16	2 3/16	3 11/16	1 1/2	3/16	9 3/4	3/8	10	7/16 x 9/16
9	1 1/2 2	CE 9112-* CE 92-*	6 1/8 6 1/8	3 1/4 4 1/4	2 3/16 2 1/2	3 11/16 3 13/16	1 5/8 1 5/8	1/4 1/4	13 3/4 13 3/4	3/8 3/8	15 18	7/16 x 9/16
10	1 1/2 2	CE 10112-* CE 102-*	6 3/8 6 3/8	3 1/4 4 1/4	2 3/16 2 1/2	3 11/16 3 13/16	1 3/4 1 3/4	1/4 1/4	14 3/4 14 3/4	3/8 3/8	16 20	7/16 x 9/16
12	2 2 7/16 3	CE 122-* CE 122716-* CE 123-*	7 3/4 7 3/4 7 3/4	4 1/4 5 1/4 6 1/4	2 9/16 2 15/16 3 3/4	3 7/8 4 7/16 4 15/16	2 2 2	1/4 1/4 1/4	17 1/4 17 1/4 17 1/4	1/2 1/2 1/2	29 31 43	9/16 x 3/4
14	2 7/16 3	CE 142716-* CE 143-*	9 1/4 9 1/4	5 5/16 5 5/16	2 15/16 3 3/4	4 7/16 4 15/16	2 2	5/16 5/16	19 1/4 19 1/4	1/2 1/2	36 48	9/16 x 3/4
16	3	CE 163-*	10 5/8	6 5/16	3 13/16	5	2 1/2	5/16	21 1/4	5/8	62	11/16 x 7/8
18	3 3 7/16	CE 183-* CE 183716-*	12 1/8 12 1/8	6 3/8 7 3/8	3 13/16 4 5/16	5 5 9/16	2 1/2 2 1/2	3/8 3/8	24 1/4 24 1/4	5/8 5/8	74 85	11/16 x 7/8
20	3 3 7/16	CE 203 CE 203716-*	13 1/2 13 1/2	6 3/8 7 3/8	3 7/8 4 3/8	5 1/16 5 5/8	2 1/2 2 1/2	3/8 3/8	26 1/4 26 1/4	5/8 5/8	112 124	11/16 x 7/8
24	3 7/16	CE 243716-*	16 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	30 1/4	5/8	156	11/16 x 7/8

Outside with feet





Conv. Diam.	Shaft Diam.	▲ Part Number	B	C	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	F	H	J	K	L	M	N	Wt.**	P Slot
4	1	CEF 41-*	3 5/8	4 5/8	2 3/16	1 5/8	—	1 1/16	5 3/4	1	1 5/8	3/16	7 3/4	3/8	3/8	7	7/16 x 9/16
6	1 1/2	CEF 6112-*	4 1/2	5 5/8	3 3/16	2 3/16	3 11/16	1 1/2	8 1/8	1	1 3/4	3/16	9 3/4	3/8	3/8	12	7/16 x 9/16
9	1 1/2 2	CEF 9112-* CEF 92-*	6 1/8 6 1/8	7 7/8 7 7/8	3 3/16 4 3/16	2 3/16 2 1/2	3 11/16 3 13/16	1 5/8 1 5/8	9 3/8 9 3/8	1 1/2 1 1/2	2 5/8 2 5/8	1/4 1/4	13 3/4 13 3/4	1/2 1/2	3/8 3/8	18 22	7/16 x 9/16
10	1 1/2 2	CEF 10112-* CEF 102-*	6 3/8 6 3/8	8 7/8 8 7/8	3 3/16 4 3/16	2 3/16 2 1/2	3 11/16 3 13/16	1 3/4 1 3/4	9 1/2 9 1/2	1 3/4 1 3/4	2 7/8 2 7/8	1/4 1/4	14 3/4 14 3/4	1/2 1/2	3/8 3/8	20 24	7/16 x 9/16
12	2 2 7/16 3	CEF 122-* CEF 122716-* CEF 123-*	7 3/4 7 3/4 7 3/4	9 5/8 9 5/8 9 5/8	5 5 1/2 5 5/8	2 9/16 2 15/16 3 3/4	3 7/8 4 7/16 4 15/16	2 2 2	12 1/4 12 1/4 12 1/4	1 5/8 1 5/8 1 5/8	2 3/4 2 3/4 2 3/4	1/4 1/4 1/4	17 1/4 17 1/4 17 1/4	5/8 5/8 5/8	1/2 1/2 1/2	36 38 50	9/16 x 3/4
14	2 7/16 3	CEF 142716-* CEF 143-*	9 1/4 9 1/4	10 7/8 10 7/8	5 1/2 5 5/8	2 15/16 3 3/4	4 7/16 4 15/16	2 2	13 1/2 13 1/2	1 5/8 1 5/8	2 7/8 2 7/8	5/16 5/16	19 1/4 19 1/4	5/8 5/8	1/2 1/2	45 57	9/16 x 3/4
16	3	CEF 163-*	10 5/8	12	5 1/16	3 13/16	5	2 1/2	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	75	11/16 x 7/8
18	3 3 7/16	CEF 183-* CEF 183716-*	12 1/8 12 1/8	13 3/8 13 3/8	5 1/4 6 1/16	3 13/16 4 5/16	5 5 9/16	2 1/2 2 1/2	16 16	2 2	3 1/4 3 1/4	3/8 3/8	24 1/4 24 1/4	5/8 5/8	5/8 5/8	• 89 101	11/16 x 7/8
20	3 3 7/16	CEF 203-* CEF 203716-*	13 1/2 13 1/2	15 15	5 3/4 7	3 7/8 4 3/8	5 1/16 5 5/8	2 1/2 2 1/2	19 1/4 19 1/4	2 1/4 2 1/4	3 3/4 3 3/4	3/8 3/8	26 1/4 26 1/4	3/4 3/4	5/8 5/8	142 153	11/16 x 7/8
24	3 7/16	CEF 243716-*	16 1/2	18 1/8	7	4 3/8	5 5/8	2 1/2	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	197	11/16 x 7/8

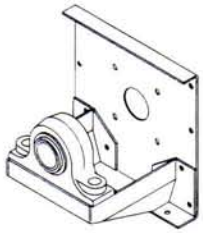
Can be Furnished With CSF, CSW, or CSS Seals. See P. 70 & 71. Trough End Can Be Furnished in Stainless Steel. Specify Type.

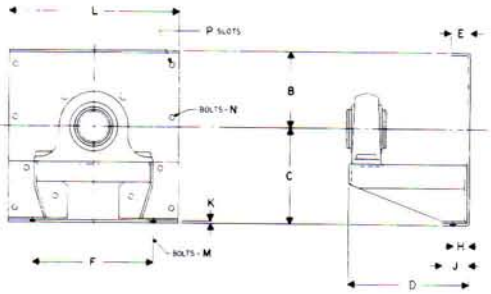
*Weights include ball bearing units.

-*B —Babbitt Brg.
-*BB—Ball Brg.
-*BR—Bronze Brg.
-*BG—Bronze w/Graphite Plugs
-*OB—Oilimpreg. Bronze
-*RB—Roller Bearing
-*P —Less Bearing

pedestal trough ends

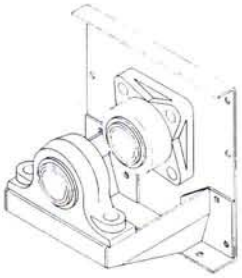
Single bearing

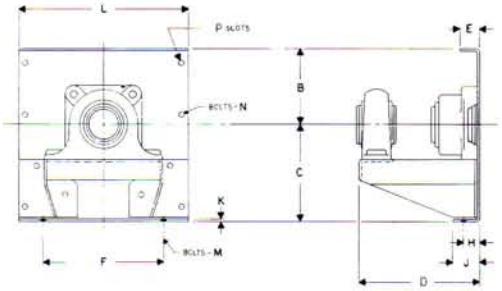




Conveyor Diameter	Shaft Diameter	▲ Part Number	B	C	D	E	F	H	J	K	L	M	N	P Slot	Wt.**
6	1 1/2	CPA6-*	4 1/2	5 5/8	11 3/8	1 1/2	8 1/8	1	1 3/4	3/16	9 3/4	3/8	3/8	7/16 x 9/16	19
9	1 1/2 2	CPA9-*	6 1/8 6 1/8	7 7/8 7 7/8	11 1/2	1 5/8 1 5/8	9 3/8 9 3/8	1 1/2 1 1/2	2 5/8 2 5/8	1/4 1/4	13 3/4 13 3/4	1/2 1/2	3/8 3/8	7/16 x 9/16	27 36
10	1 1/2 2	CPA10-*	6 3/8 6 3/8	8 7/8 8 7/8	11 1/2	1 3/4 1 3/4	9 1/2 9 1/2	1 3/4 1 3/4	2 7/8 2 7/8	1/4 1/4	14 3/4 14 3/4	1/2 1/2	3/8 3/8	7/16 x 9/16	30 37
12	2 2 7/16 3	CPA12-*	7 3/4 7 3/4 7 3/4	9 5/8 9 5/8 9 5/8	12 1/4	2 2 2	12 1/4 12 1/4 12 1/4	1 5/8 1 5/8 1 5/8	2 3/4 2 3/4 2 3/4	1/4 1/4 1/4	17 1/4 17 1/4 17 1/4	5/8 5/8 5/8	1/2 1/2 1/2	9/16 x 3/4	56 59 79
14	2 7/16 3	CPA14-*	9 1/4 9 1/4	10 7/8 10 7/8	12 5/16	2	13 1/2 13 1/2	1 5/8 1 5/8	2 7/8 2 7/8	5/16 5/16	19 1/4 19 1/4	5/8 5/8	1/2 1/2	9/16 x 3/4	68 89
16	3 & 3 7/16	CPA16-*	10 5/8	12	12 13/16	2 1/2	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	11/16 x 7/8	115
18	3 3 7/16	CPA18-*	12 1/8 12 1/8	13 3/8 13 3/8	12 7/8	2 1/2	16 16	2 2	3 1/4 3 1/4	3/8	24 1/4 24 1/4	5/8 5/8	5/8 5/8	11/16 x 7/8	133 145
20	3 3 7/16	CPA20-*	13 1/2 13 1/2	15 15	12 7/8	2 1/2	19 1/4 19 1/4	2 1/4 2 1/4	3 3/4 3 3/4	3/8 3/8	26 1/4 26 1/4	3/4 3/4	5/8 5/8	11/16 x 7/8	205 220
24	3 7/16	CPA24-*	16 1/2	18 1/8	12 7/8	2 1/2	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	11/16 x 7/8	274

Double bearing





Conveyor Diameter	Shaft Diameter	▲ Part Number	B	C	D	E	F	H	J	K	L	M	N	P Slot	Wt.**
6	1 1/2	CPA6-*	4 1/2	5 5/8	11 3/8	1 1/2	8 1/8	1	1 3/4	3/16	9 3/4	3/8	3/8	7/16 x 9/16	19
9	1 1/2 2	CPA9-*	6 1/8 6 1/8	7 7/8 7 7/8	11 1/2	1 5/8 1 5/8	9 3/8 9 3/8	1 1/2 1 1/2	2 5/8 2 5/8	1/4 1/4	13 3/4 13 3/4	1/2 1/2	3/8 3/8	7/16 x 9/16	27 36
10	1 1/2 2	CPA10-*	6 3/8 6 3/8	8 7/8 8 7/8	11 1/2	1 3/4 1 3/4	9 1/2 9 1/2	1 3/4 1 3/4	2 7/8 2 7/8	1/4 1/4	14 3/4 14 3/4	1/2 1/2	3/8 3/8	7/16 x 9/16	30 37
12	2 2 7/16 3	CPA12-*	7 3/4 7 3/4 7 3/4	9 5/8 9 5/8 9 5/8	12 1/4	2 2 2	12 1/4 12 1/4 12 1/4	1 5/8 1 5/8 1 5/8	2 3/4 2 3/4 2 3/4	1/4 1/4 1/4	17 1/4 17 1/4 17 1/4	5/8 5/8 5/8	1/2 1/2 1/2	9/16 x 3/4	56 59 79
14	2 7/16 3	CPA14-*	9 1/4 9 1/4	10 7/8 10 7/8	12 5/16	2 2	13 1/2 13 1/2	1 5/8 1 5/8	2 7/8 2 7/8	5/16 5/16	19 1/4 19 1/4	5/8 5/8	1/2 1/2	9/16 x 3/4	68 89
16	3 & 3 7/16	CPA16-*	10 5/8	12	12 13/16	2 1/2	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	11/16 x 7/8	115
18	3 3 7/16	CPA18-*	12 1/8 12 1/8	13 3/8 13 3/8	12 7/8	2 1/2 2 1/2	16 16	2 2	3 1/4 3 1/4	3/8	24 1/4 24 1/4	5/8 5/8	5/8 5/8	11/16 x 7/8	133 145
20	3 3 7/16	CPA20-*	13 1/2 13 1/2	15 15	12 7/8	2 1/2 2 1/2	19 1/4 19 1/4	2 1/4 2 1/4	3 3/4 3 3/4	3/8 3/8	26 1/4 26 1/4	3/4 3/4	5/8 5/8	11/16 x 7/8	205 220
24	3 7/16	CPA24-*	16 1/2	18 1/8	12 7/8	2 1/2	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	11/16 x 7/8	274

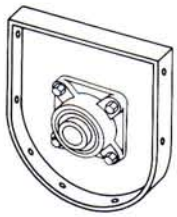
▲ Can be Furnished With CFS, CSS, or CSW Seals, See P. 70 & 71. Trough End Can be Furnished in Stainless Steel. Specify Type.

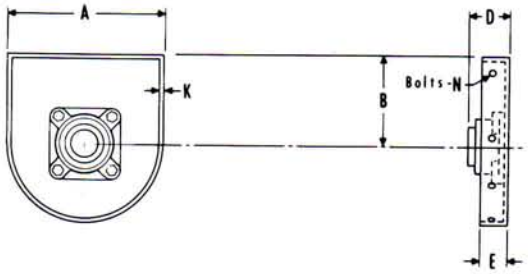
▲▲ Can be Furnished With CSF, CSS, CSW, or SCG. Seals in Place of Flange Bearing. See P. 70 & 71. Trough Ends Can be Furnished in Stainless Steel. Specify type.

**Weights include ball bearing units.
-*B Babbit Brg.
-*BB Ball Brg.
-*BR Bronze Brg.
-*RB Roller Bearing
-*P Less Bearing.

trough ends

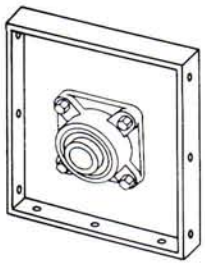
Inside

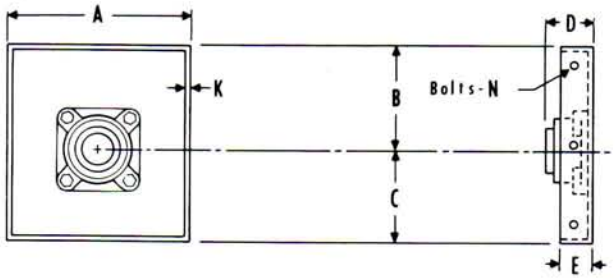




Conveyor Diameter	Shaft Diameter	▲ Part Number	A	B	D			E	K	N	Wt.**
					Friction Bearing	Ball Bearing	Roller Bearing				
4	1	CEI 41-*	5	3 5/8	2 3/16	1 5/8	—	2	3/16	1/4	5
6	1 1/2	CEI 6112-*	7	4 1/2	3 3/16	2 3/16	3 11/16	2	3/16	5/16	11
9	1 1/2	CEI 9112-*	10	6 1/8	3 1/4	2 3/16	3 11/16	2	1/4	3/8	14
	2	CEI 92-*	10	6 1/8	4 1/4	2 1/2	3 13/16	2	1/4	3/8	18
10	1 1/2	CEI 10112-*	11	6 3/8	3 1/4	2 3/16	3 11/16	2	1/4	3/8	15
	2	CEI 102-*	11	6 3/8	4 1/4	2 1/2	3 13/16	2	1/4	3/8	19
12	2	CEI 122-*	13	7 3/4	4 1/4	2 9/16	3 7/8	2	1/4	1/2	27
	2 7/16	CEI 122716-*	13	7 3/4	5 1/4	2 13/16	4 7/16	2	1/4	1/2	29
	3	CEI 123-*	13	7 3/4	6 1/4	3 3/4	4 13/16	2	1/4	1/2	41
14	2 7/16	CEI 142716-*	15	9 1/4	5 5/16	2 13/16	4 7/16	2	5/16	1/2	35
	3	CEI 143-*	15	9 1/4	6 5/16	3 3/4	4 13/16	2	5/16	1/2	47
16	3	CEI 163-*	17	10 5/8	6 5/16	3 13/16	5	2	5/16	5/8	59
18	3	CEI 183-*	19	12 1/8	6 3/8	3 13/16	5	2	3/8	5/8	68
	3 7/16	CEI 183716-*	19	12 1/8	7 3/8	4 5/16	5 9/16	2	3/8	5/8	80
20	3	CEI 203-*	21	13 1/2	6 3/8	3 7/8	5 1/16	2	3/8	5/8	103
	3 7/16	CEI 203716-*	21	13 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	115
24	3 7/16	CEI 243716-*	25	16 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	145

Inside rectangular





Conveyor Diameter	Shaft Diameter	▲ Part Number	A	B	C	D			E	K	N	Wt.**
						Friction Bearing	Ball Bearing	Roller Bearing				
4	1	CEW 41-*	5	3 5/8	2 1/2	2 3/16	1 5/8	—	2	3/16	1/4	6
6	1 1/2	CEW 6112-*	7	4 1/2	3 1/2	3 3/16	2 3/16	3 11/16	2	3/16	5/16	11
9	1 1/2	CEW 9112-*	10	6 1/8	5	3 1/4	2 3/16	3 11/16	2	1/4	3/8	15
	2	CEW 92-*	10	6 1/8	5	4 1/4	2 1/2	3 13/16	2	1/4	3/8	19
10	1 1/2	CEW 10112-*	11	6 3/8	5 1/2	3 1/4	2 3/16	3 11/16	2	1/4	3/8	17
	2	CEW 102-*	11	6 3/8	5 1/2	4 1/4	2 1/2	3 13/16	2	1/4	3/8	21
12	2	CEW 122-*	13	7 3/4	6 1/2	4 1/4	2 9/16	3 7/8	2	1/4	1/2	30
	2 7/16	CEW 122716-*	13	7 3/4	6 1/2	5 1/4	2 13/16	4 7/16	2	1/4	1/2	32
	3	CEW 123-*	13	7 3/4	6 1/2	6 1/4	3 3/4	4 13/16	2	1/4	1/2	43
14	2 7/16	CEW 142716-*	15	9 1/4	7 1/2	5 5/16	2 13/16	4 7/16	2	5/16	1/2	37
	3	CEW 143-*	15	9 1/4	7 1/2	6 5/16	3 3/4	4 13/16	2	5/16	1/2	49
16	3	CEW 163-*	17	10 5/8	8 1/2	6 5/16	3 13/16	5	2	5/16	5/8 •	64
18	3	CEW 183-*	19	12 1/8	9 1/2	6 3/8	3 13/16	5	2	3/8	5/8	73
	3 7/16	CEW 183716-*	19	12 1/8	9 1/2	7 3/8	4 5/16	5 9/16	2	3/8	5/8	84
20	3	CEW 203-*	21	13 1/2	10 1/2	6 3/8	3 7/8	5 1/16	2	3/8	5/8	112
	3 7/16	CEW 203716-*	21	13 1/2	10 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	123
24	3 7/16	CEW 243716-*	25	16 1/2	12 1/2	7 3/8	4 3/8	5 5/8	2	3/8	5/8	157

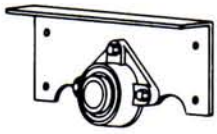
▲ Can be Furnished with CSF, CSW, or CSS Seals, See P. 70 & 71. Trough End Plate Can Be Furnished in Stainless Steel. Specify Type.

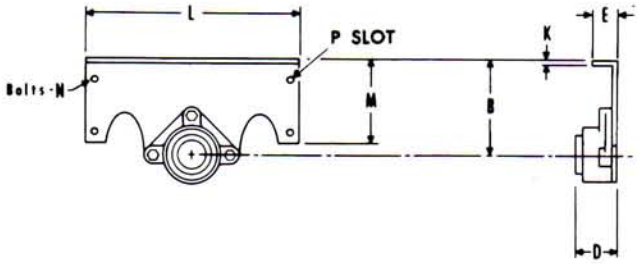
**Weights include ball bearing units.

-*B Babbitt Brg.
-*BB Ball Brg.
-*BR Bronze Brg.
-*RB Roller Bearing
-*P Less Bearing.

trough ends

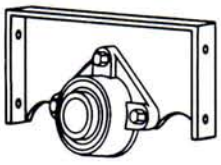
Outside discharge

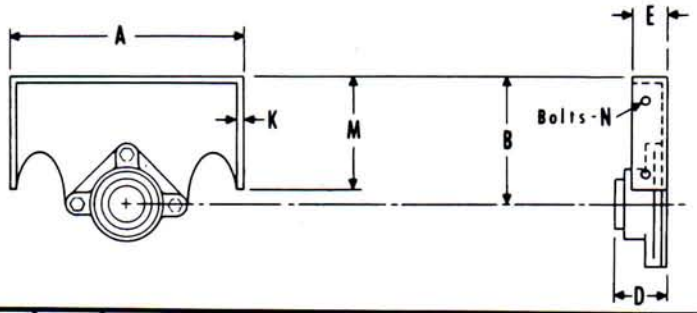




Conveyor Diameter	Shaft Diameter	▲ Part Number	B	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	K	L	M	N	P Slot	Wt.**
4	1	CDO 41-*	3 5/8	2 3/16	1 5/8	—	1 7/16	3/16	8	3 5/8	3/8	7/16 x 9/16	4
6	1 1/2	CDO 6112-*	4 1/2	3 3/16	2 3/16	3 1 1/16	1 1/2	3/16	9 3/4	4 1/2	3/8	7/16 x 9/16	8
9	1 1/2	CDO 9112-*	6 1/8	3 1/4	2 3/16	3 1 1/16	1 5/8	1/4	13 3/4	6 1/8	3/8	7/16 x 9/16	11
	2	CDO 92-*	6 1/8	4 1/4	2 1/2	3 1 3/16	1 5/8	1/4	13 3/4	6 1/8	3/8		14
10	1 1/2	CDO 10112-*	6 3/8	3 1/4	2 3/16	3 1 1/16	1 3/4	1/4	14 3/4	6 3/8	3/8	7/16 x 9/16	11
	2	CDO 102-*	6 3/8	4 1/4	2 1/2	3 1 3/16	1 3/4	1/4	14 3/4	6 3/8	3/8		15
12	2	CDO 122-*	7 3/4	4 1/4	2 9/16	3 7/8	2	1/4	17 1/2	7 3/4	1/2	9/16 x 3/4	21
	2 7/16	CDO 122716-*	7 3/4	5 1/4	2 11/16	4 7/16	2	1/4	17 1/2	7 3/4	1/2		23
	3	CDO 123-*	7 3/4	6 1/4	3 3/4	4 1 3/16	2	1/4	17 1/2	7 3/4	1/2		34
14	2 7/16	CDO 142716-*	9 1/4	5 5/16	2 13/16	4 7/16	2	5/16	19 1/4	9 1/4	5/8	9/16 x 3/4	26
	3	CDO 143-*	9 1/4	6 5/16	3 3/4	4 1 3/16	2	5/16	19 1/4	9 1/4	5/8		38
16	3	CDO 163-*	10 5/8	6 5/16	3 1 3/16	5	2 1/2	5/16	21 1/8	10 5/8	5/8	11/16 x 7/8	47
18	3	CDO 183-*	12 1/8	6 3/8	3 1 3/16	5	2 1/2	3/8	23 1/2	12 1/8	5/8	11/16 x 7/8	54
	3 7/16	CDO 183716-*	12 1/8	7 3/8	4 7/16	5 9/16	2 1/2	3/8	23 1/2	12 1/8	5/8		65
20	3	CDO 203-*	13 1/2	6 3/8	3 7/8	5 1/16	2 1/2	3/8	26 3/4	13 1/2	5/8	11/16 x 7/8	77
	3 7/16	CDO 203716-*	13 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	26 3/4	13 1/2	5/8		89
24	3 7/16	CDO 243716-*	16 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	30 1/2	16 1/2	5/8	11/16 x 7/8	109

Inside discharge





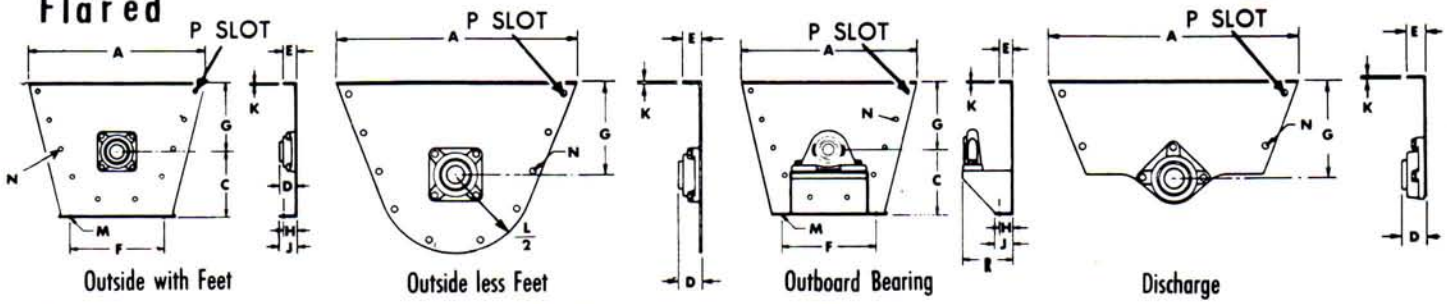
Conveyor Diameter	Shaft Diameter	▲ Part Number	A	B	D Friction Bearing	D Ball Bearing	D Roller Bearing	E	K	M	N	Wt.**
4	1	CDI 41-*	5	3 5/8	2 3/16	1 5/8	—	1 7/16	3/16	3 5/8	3/8	4
6	1 1/2	CDI 6112-*	7	4 1/2	3 3/16	2 3/16	3 1 1/16	1 1/2	3/16	4 1/2	3/8	8
9	1 1/2	CDI 9112-*	10	6 1/8	3 1/4	2 3/16	3 1 1/16	1 5/8	1/4	6 1/8	3/8	11
	2	CDI 92-*	10	6 1/8	4 1/4	2 1/2	3 1 3/16	1 5/8	1/4	6 1/8	3/8	14
10	1 1/2	CDI 10112-*	11	6 3/8	3 1/4	2 3/16	3 1 1/16	1 3/4	1/4	6 3/8	3/8	11
	2	CDI 102-*	11	6 3/8	4 1/4	2 1/2	3 1 3/16	1 3/4	1/4	6 3/8	3/8	15
12	2	CDI 122-*	13	7 3/4	4 1/4	2 9/16	3 7/8	2	1/4	7 3/4	1/2	20
	2 7/16	CDI 122716-*	13	7 3/4	5 1/4	2 11/16	4 7/16	2	1/4	7 3/4	1/2	22
	3	CDI 123-*	13	7 3/4	6 1/4	3 3/4	4 1 3/16	2	1/4	7 3/4	1/2	34
14	2 7/16	CDI 142716-*	15	9 1/4	5 5/16	2 13/16	4 7/16	2	5/16	9 1/4	5/8	25
	3	CDI 143-*	15	9 1/4	6 5/16	3 3/4	4 1 3/16	2	5/16	9 1/4	5/8	37
16	3	CDI 163-*	17	10 5/8	6 5/16	3 1 3/16	5	2 1/2	5/16	10 5/8	5/8	45
18	3	CDI 183-*	19	12 1/8	6 3/8	3 1 3/16	5	2 1/2	3/8	12 1/8	5/8	50
	3 7/16	CDI 183716-*	19	12 1/8	7 3/8	4 7/16	5 9/16	2 1/2	3/8	12 1/8	5/8	62
20	3	CDI 203-*	21	13 1/2	6 3/8	3 7/8	5 1/16	2 1/2	3/8	13 1/2	5/8	72
	3 7/16	CDI 203716-*	21	13 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	13 1/2	5/8	83
24	3 7/16	CDI 243716-*	25	16 1/2	7 3/8	4 3/8	5 5/8	2 1/2	3/8	16 1/2	5/8	103

▲ Trough End Plate Can be Furnished in Stainless Steel. Specify Type.
**Weights include ball bearing units.

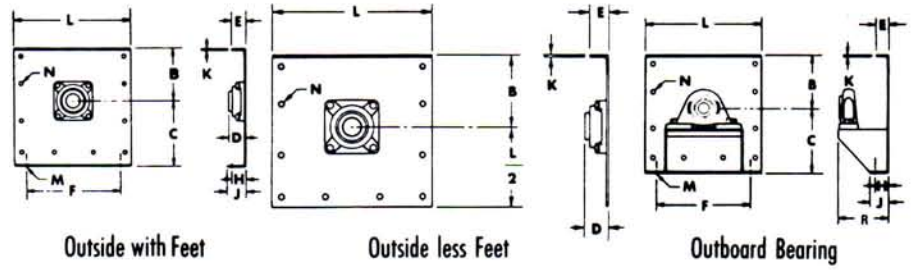
-*B Babbitt Brg.
-*BB Ball Brg.
-*BR Bronze Brg.
-*P Less Bearing

trough ends

Flared



Rectangular



Conv. Dia.	Shaft Dia.	PART NUMBER FLARED								PART NUMBER RECTANGULAR					
		▲Outside With Feet	Wt.	▲Outside Less Feet	Wt.	•Outb'd. Brg	Wt.	Discharge	Wt.	▲Outside With Feet	Wt.	▲Outside Less Feet	Wt.	•Outb'd. Brg.	Wt.
4	1	X	X	X	X	X	X	X	X	CER41W-*	8	CER41-*	6	CER410-*	16
6	1 1/2	CEF6112F-*	15	CE6112F-*	13	CEO6112F-*	22	CDO6112F-**	11	CER6112W-*	13	CER6112-*	11	CER61120-*	20
9	1 1/2	CEF9112F-*	22	CE9112F-*	19	CEO9112F-*	31	CDO9112F-**	15	CER9112W-*	19	CER9112-*	16	CER91120-*	28
	2	CEF92F-*	27	CE92F-*	24	CEO92F-*	36	CDO92F-**	20	CER92W-*	24	CER92-*	21	CER920-*	33
10	1 1/2	CEF10112F-*	24	CE10112F-*	21	CEO10112F-*	33	CDO10112F-**	17	CER10112W-*	28	CER10112-*	23	CER101120-*	38
	2	CEF102F-*	29	CE102F-*	25	CEO102F-*	39	CDO102F-**	22	CER102W-*	32	CER102-*	27	CER1020-*	52
12	2	CEF122F-*	83	CE122F-*	36	CEO122F-*	63	CDO122F-**	28	CER122W-*	39	CER122-*	32	CER1220-*	49
	2 3/16	CEF122716F-*	44	CE122716F-*	37	CEO122716F-*	64	CDO122716F-**	29	CER122716W-*	40	CER122716-*	33	CER1227160-*	60
	3	CEF123F-*	56	CE123F-*	49	CEO123F-*	76	CDO123F-**	41	CER123W-*	58	CER123-*	51	CER1230-*	
14	2 3/16	CEF142716F-*	52	CE142716F-*	43	CEO142716F-*	75	CDO142716F-**	33	CER142716W-*	48	CER142716-*	39	CER1427160-*	71
	3	CEF143F-*	64	CE143F-*	55	CEO143F-*	87	CDO143F-**	45	CER143W-*	66	CER143-*	57	CER1430-*	89
16	3	CEF163F-*	85	CE163F-*	72	CEO163F-*	125	CDO163F-**	56	CER163W-*	85	CER163-*	72	CER1630-*	125
18	3	CEF183F-*	98	CE183F-*	83	CEO183F-*	138	CDO183F-**	63	CER183W-*	94	CER183-*	79	CER1830-*	134
	3 3/16	CEF183716F-*	104	CE183716F-*	89	CEO183716F-*	144	CDO183716F-**	69	CER183716W-*	101	CER183716-*	86	CER1837160-*	141
20	3	CEF203F-*	133	CE203F-*	103	CEO203F-*	196	CDO203F-**	75	CER203W-*	134	CER203-*	104	CER2030-*	197
	3 3/16	CEF203716F-*	139	CE203716F-*	109	CEO203716F-*	202	CDO203716-**	81	CER203716W-*	140	CER203716-*	110	CER2037160-*	203
24	3 3/16	CEF243716F-*	179	CE243716F-*	132	CEO243716F-*	250	CDO243716-**	96	CER243716W-*	179	CER243716-*	138	CER2437160-*	256

		A	B	C	D Friction Brg.	D Ball Brg.	D Roller Brg.	E	F	G	H	J	K	L	M	N	R	P Slot
4	1	X	3 5/8	4 5/8	3	1 5/8	X	1 1/2	5 3/4	X	1	1 5/8	3/16	7 3/4	3/8	3/8	—	7/16 x 9/16
6	1 1/2	16 5/8	4 1/2	5 5/8	4	2 3/16	3 3/4	1 1/2	8 1/8	7	1	1 3/4	3/16	9 3/4	3/8	3/8	6 3/16	7/16 x 9/16
9	1 1/2	21 1/4	6 1/8	7 7/8	4	2 3/16	3 3/4	1 5/8	9 3/8	9	1 1/2	2 5/8	1/4	13 3/4	1/2	3/8	6 3/16	7/16 x 9/16
	2				5	2 1/2	3 7/8										7 1/2	
10	1 1/2	X	6 3/8	8 7/8	4	2 3/16	3 3/4	1 3/4	9 1/2	X	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	6 3/16	7/16 x 9/16
	2				5	2 1/2	3 7/8										7 1/2	
12	2	26 3/8	7 3/4	9 5/8	5	2 9/16	3 7/8	2	12 1/4	10	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	7 1/2	9/16 x 3/4
	2 3/16				5 1/2	2 11/16	4 1/2										8 3/4	
	3				5 5/8	3 3/4	5										9 3/4	
14	2 3/16	28 3/8	9 1/4	10 7/8	5 1/2	2 11/16	4 1/2	2	13 1/2	11	1 5/8	2 7/8	3/16	19 1/4	5/8	1/2	8 3/4	9/16 x 3/4
	3				5 5/8	3 3/4	5										9 3/4	
16	3	32 1/2	10 5/8	12	5 3/4	3 13/16	5	2 1/2	14 7/8	11 1/2	2	3 1/4	3/16	21 1/4	5/8	5/8	9 3/4	11/16 x 7/8
18	3	36 1/2	12 1/8	13 3/8	5 3/4	3 13/16	5	2 1/2	16	12 1/8	2	3 1/4	3/8	24 1/4	5/8	5/8	9 3/4	11/16 x 7/8
	3 3/16				7	4 3/16	5 5/8										11 1/2	
20	3	39 1/2	13 1/2	15	5 3/4	3 7/8	5	2 1/2	19 1/4	13 1/2	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	9 3/4	11/16 x 7/8
	3 3/16				7	4 3/8	5 5/8										11 1/2	
24	3 3/16	45 1/2	16 1/2	18 1/8	7	4 3/8	5 5/8	2 1/2	20	16 1/2	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	11 1/2	11/16 x 7/8

-* B Babbitt Bearing
-* BB Ball Bearing
-* BR Bronze Bearing
-* RB Roller Bearing
-* P Less Bearing

-** B Babbitt Bearing
-** BB Ball Bearing
-** BR Bronze Bearing
** P Less Bearing

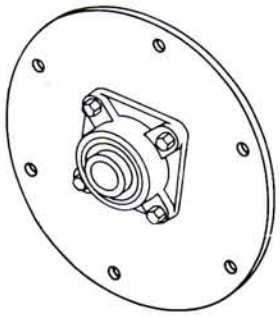
Trough end can be furnished in stainless steel. Specify Type

▲ Can be furnished with CSF, CSW, or CSS seals see p. 70 & 71.
• Can be furnished with CSF, CSW, CSS, or CSG seals see p. 70 & 71.

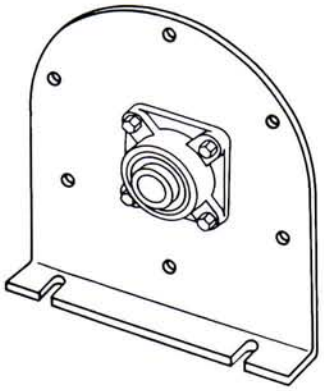
tubular housing - ends

All standard tubular housing ends are fabricated from heavy steel plate and jig drilled to ensure accurate assembly to the standard tubular housing end flange.

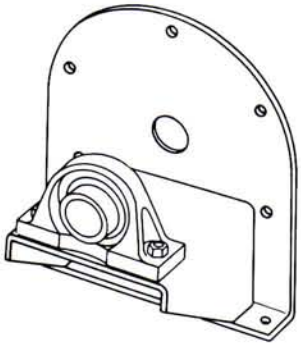
Outside type tubular housing ends are one of the most widely used units and are particularly advantageous when it is necessary to remove the end for disassembly or removal of the screw. The tubular housing is separately supported by a flange foot or saddle when employing this type end.



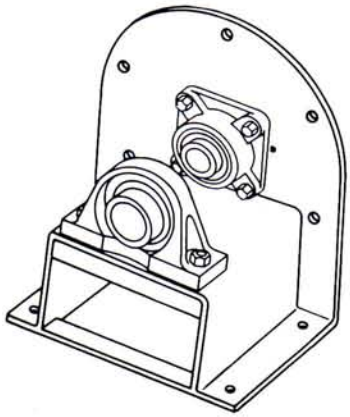
Outside type tubular housing ends with feet are identical to the plain outside type unit except for the addition of a bottom flange which forms a support for the conveyor without the necessity of using flange feet or saddles.



Outboard bearing tubular housing ends have heavy gauge pedestals of welded construction on which are mounted pillow block type bearings. The bearing is located far enough from the trough end plate to allow standard shaft seals or packing glands to be mounted outside the plate end for convenient packing or inspection.

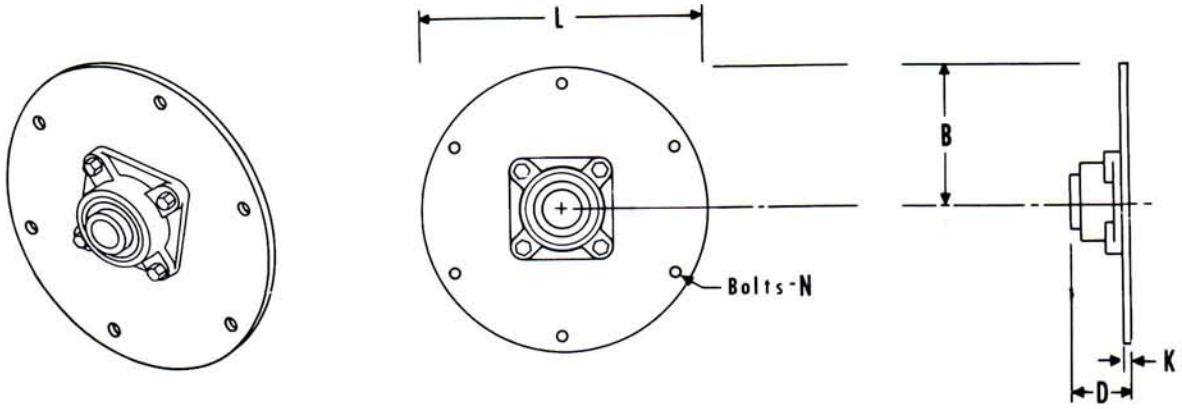


Double bearing tubular housing ends are also provided with a longer pedestal for mounting an outboard pillow block bearing plus a flanged bearing on the housing end plate, thus providing rigid shaft support for heavy overhung drive loads.



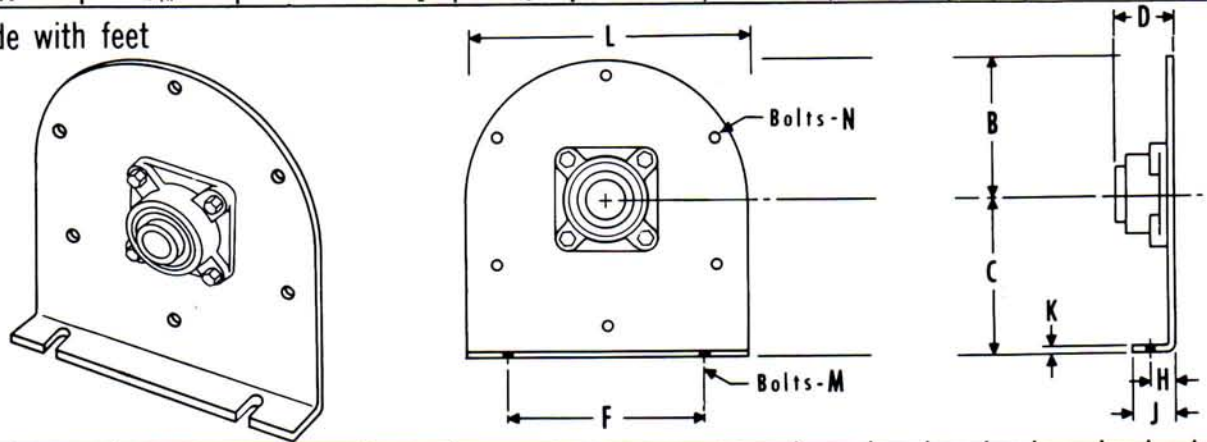
tubular housing - ends

Outside



Conveyor Diameter	Shaft Diameter	Part Number	B	D			K	L	N	Wt ▲
				Friction Bearing	Ball Bearing	Roller Bearing				
4	1	CHE 41 -*	3 7/8	2 3/16	1 5/8		3/16	7 3/4	3/8	4
6	1 1/2	CHE 6112 -*	4 7/8	3 3/16	2 3/16	3 11/16	3/16	9 3/4	3/8	5
9	1 1/2	CHE 9112 -*	6 7/8	3 1/4	2 3/16	3 11/16	1/4	13 3/4	3/8	12
	2	CHE 92 -*	6 7/8	4 1/4	2 1/2	3 13/16	1/4	13 3/4	3/8	15
10	1 1/2	CHE 10112 -*	7 3/8	3 1/4	2 3/16	3 11/16	1/4	14 3/4	3/8	13
	2	CHE 102 -*	7 3/8	4 1/4	2 1/2	3 13/16	1/4	14 3/4	3/8	17
12	2	CHE 122 -*	8 5/8	4 1/4	2 9/16	3 7/8	1/4	17 1/4	1/2	22
	2 7/16	CHE 122716 -*	8 5/8	5 1/4	2 15/16	4 7/16	1/4	17 1/4	1/2	24
	3	CHE 123 -*	8 5/8	6 1/4	3 3/4	4 15/16	1/4	17 1/4	1/2	36
14	2 7/16	CHE 142716 -*	9 5/8	5 5/16	2 15/16	4 7/16	5/16	19 1/4	1/2	30
	3	CHE 143 -*	9 5/8	6 5/16	3 3/4	4 15/16	5/16	19 1/4	1/2	42
16	3	CHE 163 -*	10 5/8	6 5/16	3 13/16	5	5/16	21 1/4	5/8	52
18	3	CHE 183 -*	12 1/8	6 3/8	3 13/16	5	3/8	24 1/4	5/8	63
	3 7/16	CHE 183716 -*	12 1/8	7 3/8	4 5/16	5 5/16	3/8	24 1/4	5/8	74
20	3	CHE 203 -*	13 1/8	6 3/8	3 7/8	5 1/16	3/8	26 1/4	5/8	85
	3 7/16	CHE 203716 -*	13 1/8	7 3/8	4 3/8	5 5/8	3/8	26 1/4	5/8	97
24	3 7/16	CHE 243716 -*	15 1/8	7 3/8	4 3/8	5 5/8	3/8	30 1/4	5/8	115

Outside with feet



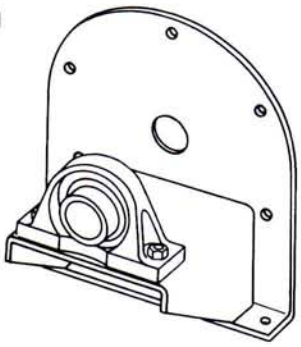
Conv. Diam	Shaft Diam.	Part Number	B	C	D			F	H	J	K	L	M	N	Wt. ▲
					Friction Bearing	Ball Bearing	Roller Bearing								
4	1	CHS 41 -*	3 7/8	4 5/8	2 3/16	1 5/8		5 3/4	1	1 5/8	3/16	7 3/4	3/8	3/8	5
6	1 1/2	CHS 6112 -*	4 7/8	5 5/8	3 3/16	2 3/16	3 11/16	8 1/8	1	1 3/4	3/16	9 3/4	3/8	3/8	11
9	1 1/2	CHS 9112 -*	6 7/8	7 7/8	3 1/4	2 3/16	3 11/16	9 3/8	1 1/2	2 5/8	1/4	13 3/4	1/2	3/8	16
	2	CHS 92 -*	6 7/8	7 7/8	4 1/4	2 1/2	3 13/16	9 3/8	1 1/2	2 5/8	1/4	13 3/4	1/2	3/8	19
10	1 1/2	CHS 10112 -*	7 3/8	8 7/8	3 1/4	2 3/16	3 11/16	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	18
	2	CHS 102 -*	7 3/8	8 7/8	4 1/4	2 1/2	3 13/16	9 1/2	1 3/4	2 7/8	1/4	14 3/4	1/2	3/8	22
12	2	CHS 122 -*	8 5/8	9 5/8	4 1/4	2 9/16	3 7/8	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	32
	2 7/16	CHS 122716-*	8 5/8	9 5/8	5 1/4	2 15/16	4 7/16	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	34
	3	CHS 123 -*	8 5/8	9 5/8	6 1/4	3 3/4	4 15/16	12 1/4	1 5/8	2 3/4	1/4	17 1/4	5/8	1/2	46
14	2 7/16	CHS 142716-*	9 5/8	10 7/8	5 5/16	2 15/16	4 7/16	13 1/2	1 5/8	2 7/8	5/16	19 1/4	5/8	1/2	39
	3	CHS 143 -*	9 5/8	10 7/8	6 5/16	3 3/4	4 15/16	13 1/2	1 5/8	2 7/8	5/16	19 1/4	5/8	1/2	51
16	3	CHS 163 -*	10 5/8	12	6 5/16	3 13/16	5	14 7/8	2	3 1/4	5/16	21 1/4	5/8	5/8	65
18	3	CHS 183 -*	12 1/8	13 3/8	6 3/8	3 13/16	5	16	2	3 1/4	3/8	24 1/4	5/8	5/8	77
	3 7/16	CHS 183716-*	12 1/8	13 3/8	7 3/8	4 5/16	5 5/16	16	2	3 1/4	3/8	24 1/4	5/8	5/8	88
20	3	CHS 203 -*	13 1/8	15	6 3/8	3 7/8	5 1/16	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	116
	3 7/16	CHS 203716-*	13 1/8	15	7 3/8	4 3/8	5 5/8	19 1/4	2 1/4	3 3/4	3/8	26 1/4	3/4	5/8	128
24	3 7/16	CHS 243716-*	15 1/8	18 1/8	7 3/8	4 3/8	5 5/8	20	2 1/2	4 1/8	3/8	30 1/4	3/4	5/8	162

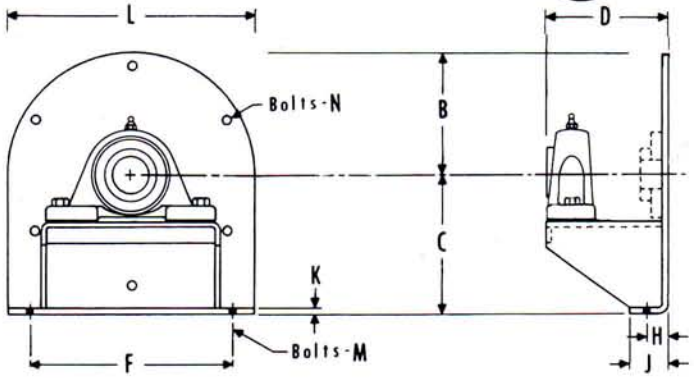
▲ Weights Include Ball Bearing Units

-*See Page 66 for Bearing Type and Page 70 and 71 for seals.

tubular housing · ends

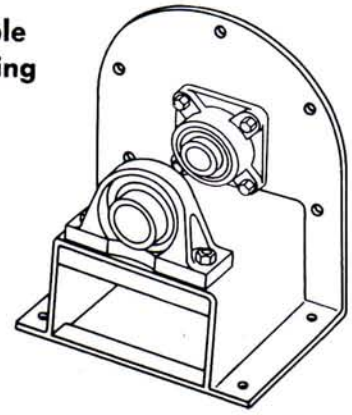
Outboard bearing

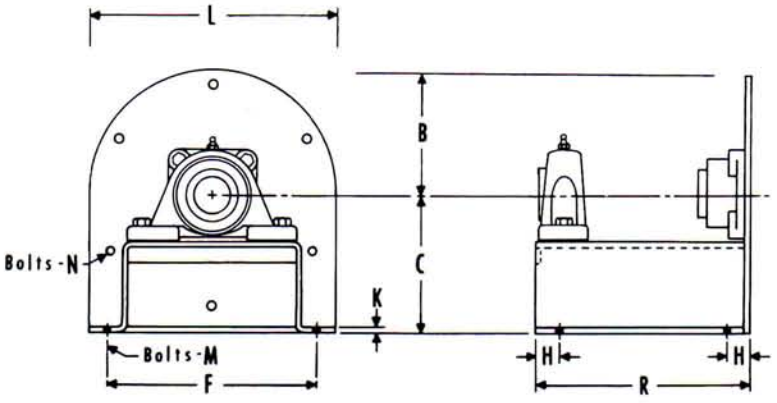




Conveyor Diameter	Shaft Diameter	Part Number	B	C	D	F	H	J	K	L	M	N	Wt. ▲
6	1½	CHB 6112-*	4⅞	5⅝	6 3/16	8⅛	1	1¾	3/16	9¾	⅜	⅜	18
9	1½	CHB 9112-*	6⅞	7⅞	6 3/16	9⅜	1½	2⅝	¼	13¾	½	⅜	25
	2	CHB 92-*	6⅞	7⅞	7½	9⅜	1½	2⅝	¼	13¾	½	⅜	34
10	1½	CHB 10112-*	7⅜	8⅞	6 3/16	9½	1¾	2⅞	¼	14¾	½	⅜	42
	2	CHB 102-*	7⅜	8⅞	7½	9½	1¾	2⅞	¼	14¾	½	⅜	60
12	2	CHB 122-*	8⅝	9⅝	7½	12¼	1⅝	2¾	¼	17¼	⅝	½	85
	2 7/16	CHB 122716-*	8⅝	9⅝	8¾	12¼	1⅝	2¾	¼	17¼	⅝	½	93
	3	CHB 123-*	8⅝	9⅝	9¾	12¼	1⅝	2¾	¼	17¼	⅝	½	131
14	2 7/16	CHB 142716-*	9⅝	10⅞	8¾	13½	1⅝	2⅞	5/16	19¼	⅝	½	104
	3	CHB 143-*	9⅝	10⅞	9¾	13½	1⅝	2⅞	5/16	19¼	⅝	½	143
16	3	CHB 163-*	10⅝	12	9¾	14⅞	2	3¼	5/16	21¼	⅝	⅝	178
18	3	CHB 183-*	12⅛	13⅜	9¾	16	2	3¼	⅜	24¼	⅝	⅝	200
	3 7/16	CHB 183716-*	12⅛	13⅜	11½	16	2	3¼	⅜	24¼	⅝	⅝	230
20	3	CHB 203-*	13⅛	15	9¾	19¼	2¼	3¾	⅜	26¼	¾	⅝	300
	3 7/16	CHB 203716-*	13⅛	15	11½	19¼	2¼	3¾	⅜	26¼	¾	⅝	335
24	3 7/16	CHB 243716-*	15⅛	18⅛	11½	20	2½	4⅛	⅜	30¼	¾	⅝	400

Double bearing





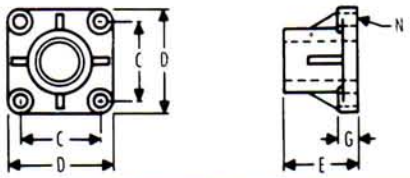
Conveyor Diameter	Shaft Diameter	Part Number	B	C	F	H	K	L	M	N	R	Wt. ▲
6	1½	CHO 6112-*	4⅞	5⅝	8⅛	1	3/16	9¾	⅜	⅜	11	29
9	1½	CHO 9112-*	6⅞	7⅞	9⅜	1½	¼	13¾	½	⅜	11	41
	2	CHO 92-*	6⅞	7⅞	9⅜	1½	¼	13¾	½	⅜	16	57
10	1½	CHO 10112-*	7⅜	8⅞	9½	1¾	¼	14¾	½	⅜	11	27
	2	CHO 102-*	7⅜	8⅞	9½	1¾	¼	14¾	½	⅜	16	34
12	2	CHO 122-*	8⅝	9⅝	12¼	1⅝	¼	17¼	⅝	½	16	53
	2 7/16	CHO 122716-*	8⅝	9⅝	12¼	1⅝	¼	17¼	⅝	½	18½	56
	3	CHO 123-*	8⅝	9⅝	12¼	1⅝	¼	17¼	⅝	½	22	76
14	2 7/16	CHO 142716-*	9⅝	10⅞	13½	1⅝	5/16	19¼	⅝	½	18½	64
	3	CHO 143-*	9⅝	10⅞	13½	1⅝	5/16	19¼	⅝	½	22	85
16	3	CHO 163-*	10⅝	12	14⅞	2	5/16	21¼	⅝	⅝	22	107
18	3	CHO 183-*	12⅛	13⅜	16	2	⅜	24¼	⅝	⅝	22	122
	3 7/16	CHO 183716-*	12⅛	13⅜	16	2	⅜	24¼	⅝	⅝	25	134
20	3	CHO 203-*	13⅛	15	19¼	2¼	⅜	26¼	¾	⅝	22	190
	3 7/16	CHO 203716-*	13⅛	15	19¼	2¼	⅜	26¼	¾	⅝	25	205
24	3 7/16	CHO 243716-*	15⅛	18⅛	20	2½	⅜	30¼	¾	⅝	25	251

▲ Weights include ball bearing units.

-• See Page 66 for Bearing Type and Page 70 and 71 for seals.

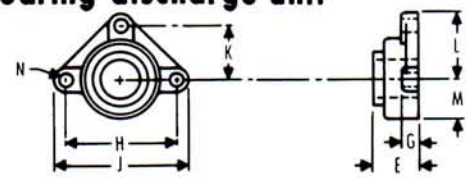
end bearings

babbitted flange unit



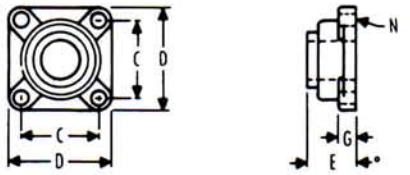
Bore	Part Number	C	D	E	G	N
1	CEB 1 - *	2 3/4	3 3/4	2	7/16	3/8
1 1/2	CEB 112 - *	4	5 3/8	3	3/4	1/2
2	CEB 2 - *	5 1/8	6 1/2	4	7/8	5/8
2 7/16	CEB 2716 - *	5 5/8	7 3/8	5	1	5/8
3	CEB 3 - *	6	7 3/4	6	1 1/8	3/4
3 7/16	CEB 3716 - *	6 3/4	9 1/4	7	1 1/4	3/4

ball bearing discharge unit



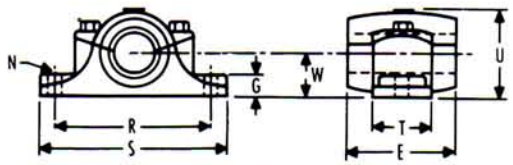
Bore	Part Number	E	G	H	J	K	L	M	N
1	CDB 1 - BB	1 3/8	1/2	3 7/8	5 3/8	1 1/16	2 11/16	2	3/8
1 1/2	CDB 112 - BB	2	5/8	5 5/8	7 1/4	2 1/16	3 5/8	2 1/2	1/2
2	CDB 2 - BB	2 1/8	5/8	6 1/4	8	3 1/8	4	3	1/2
2 7/16	CDB 2716 - BB	2 1/2	11/16	8	9 7/8	4	4 11/16	3 1/2	5/8
3	CDB 3 - BB	3 1/2	7/8	8 1/2	11	4 1/4	5 1/2	4	3/4
3 7/16	CDB 3716 - BB	4	1	9 1/2	12	4 3/4	6	4 1/2	3/4

ball bearing flange unit



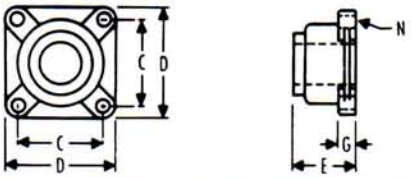
Bore	Part Number	C	D	E	G	N
1	CEB 1 - BB	2 3/4	3 3/4	1 3/8	1/2	3/8
1 1/2	CEB 112 - BB	4	5 1/8	2	9/16	1/2
2	CEB 2 - BB	5 1/8	6 1/2	2 3/8	11/16	5/8
2 7/16	CEB 2716 - BB	5 5/8	7	2 1/2	11/16	5/8
3	CEB 3 - BB	6	7 3/4	3 1/2	7/8	3/4
3 7/16	CEB 3716 - BB	6 3/4	8 7/16	4	1	3/4

babbitted pillow block



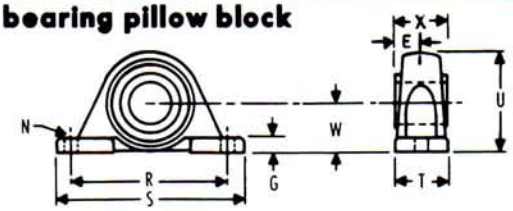
Bore	Part Number	E	G	N	R	S	T	U	W
1	CPB 1 - *	2	7/16	3/8	3 5/8	4 3/4	1 3/8	2 1/16	1
1 1/2	CPB 112 - *	3	3/4	1/2	4 7/8	6 1/4	2	2 11/16	1 3/8
2	CPB 2 - *	4	7/8	5/8	6	7 1/2	2 1/2	3 7/16	1 3/4
2 7/16	CPB 2716 - *	5	1 1/8	5/8	7	8 7/8	3	4 3/16	2 1/8
3	CPB 3 - *	6	1 5/16	3/4	8 1/2	10 3/4	3 1/2	4 7/8	2 1/2
3 7/16	CPB 3716 - *	7	1 1/2	7/8	9 1/4	12	4	5 5/8	2 7/8

roller bearing flange unit



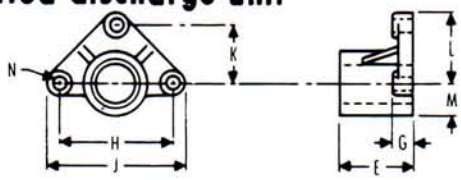
Bore	Part Number	C	D	E	G	N
1 1/2	CEB 112 - R	4 1/8	5 3/8	3 1/2	1 7/16	1/2
2	CEB 2 - R	4 3/8	5 5/8	3 5/8	1 7/16	1/2
2 7/16	CEB 2716 - R	5 3/8	6 7/8	4 7/16	1 1/2	5/8
3	CEB 3 - R	6	7 3/4	4 11/16	1 5/8	3/4
3 7/16	CEB 3716 - R	7	9 1/4	5 1/4	1 7/8	3/4

ball bearing pillow block



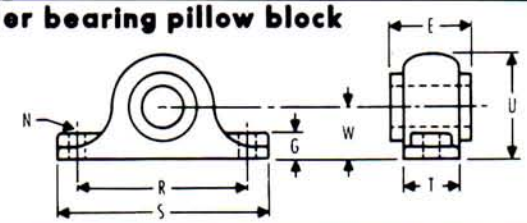
Bore	Part Number	E	G	N	R	S	T	U	W	X
1	CPB 1-B B	11/16	11/16	3/8	4 1/8	5 1/8	1 1/2	3 7/16	1 1/16	1 3/8
1 1/2	CPB 112-B B	1 1/16	1 1/4	1/2	5 3/8	6 5/8	2	4 1/8	2 1/8	1 15/16
2	CPB 2-B B	1 7/16	1 3/8	5/8	6 1/4	7 3/4	2 1/4	4 7/16	2 1/4	2 3/16
2 7/16	CPB 2716-B B	1 7/16	1 5/8	5/8	7 1/4	9	2 1/2	5 1/2	2 3/4	2 5/16
3	CPB 3-B B	1 11/16	2 1/8	7/8	9	11 5/8	3 1/2	7 1/8	3 1/2	3 1/4
3 7/16	CPB 3716-B B	2 1/4	2 3/8	7/8	11 1/8	13 7/8	4 3/8	8 1/4	4	3 3/8

babbitted discharge unit



Bore	Part Number	E	G	H	J	K	L	M	N
1	CDB 1 - *	2	1/2	3 7/8	5 3/8	1 1/16	2 11/16	1	3/8
1 1/2	CDB 112 - *	3	7/16	5 5/8	7 1/4	2 1/16	3 5/8	1 1/4	1/2
2	CDB 2 - *	4	5/8	6 1/4	8	3 1/8	4	1 5/8	5/8
2 7/16	CDB 2716 - *	5	11/16	8	9 7/8	4	4 11/16	1 7/8	5/8
3	CDB 3 - *	6	7/8	8 1/2	11	4 1/4	5 1/2	2 1/8	3/4
3 7/16	CDB 3716 - *	7	1	9 1/2	12	4 3/4	6	2 1/2	3/4

roller bearing pillow block



Bore	Part Number	E	G	N	R	S	T	U	W
1 1/2	CPB 112 - R	3 3/8	1 1/4	1/2	6 1/4	7 7/8	2 3/8	4 1/4	2 1/8
2	CPB 2 - R	3 1/2	1 3/8	5/8	7	8 7/8	2 1/2	4 1/2	2 1/4
2 7/16	CPB 2716 - R	4	1 5/8	5/8	8 1/2	10 1/2	2 7/8	5 1/2	2 3/4
3	CPB 3 - R	4 1/2	1 7/8	3/4	9 1/2	12	3 1/8	6 1/4	3 1/8
3 7/16	CPB 3716 - R	5	2 1/4	7/8	11	14	3 5/8	7 1/2	3 3/4

Also Available In Following Types.

-*B Babbitt Bearing
-*BR Solid Bronze Bearing
-*OB Oilite Bronze Bearing
-*BG Bronze with Graphite Plugs

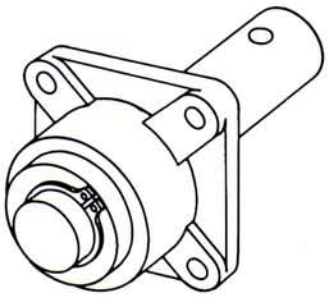
thrust bearings

Bronze washer bearing

Bronze washer thrust bearings are intended for light thrust loads at the intake end of the conveyor. Precision steel washers transfer the conveyor load through a bronze washer to the conveyor end with a minimum of friction.

Provision should be made for frequent lubrication of this bearing and it is not recommended for conveyors carrying abrasive materials.

Type M roller bearing



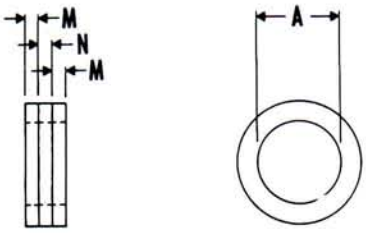
Type M roller bearing thrust units provide an economical anti-friction combination bearing for medium to heavy thrust loads.

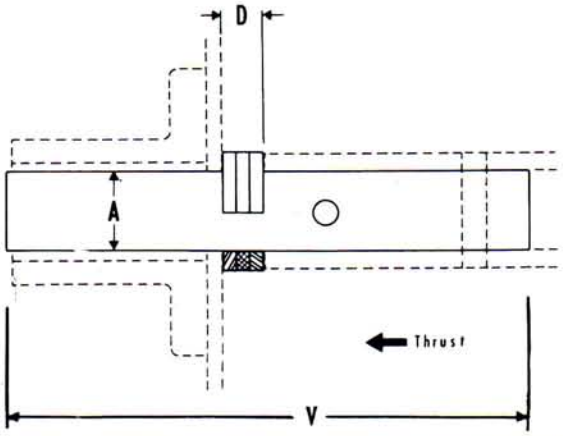
This unit is unidirectional in thrust loading together with relatively great radial capacity.

A separate lip type seal plate is provided for the protection of the bearing from the conveyed material. This plate may be reversed to prevent contamination of the material.

thrust bearings

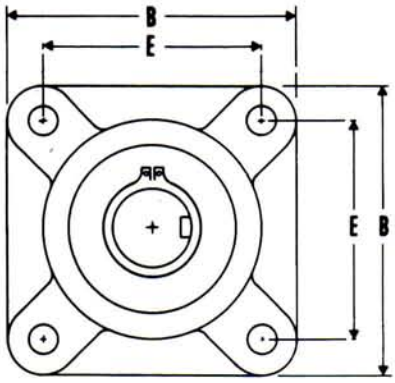
Bronze washer bearing,

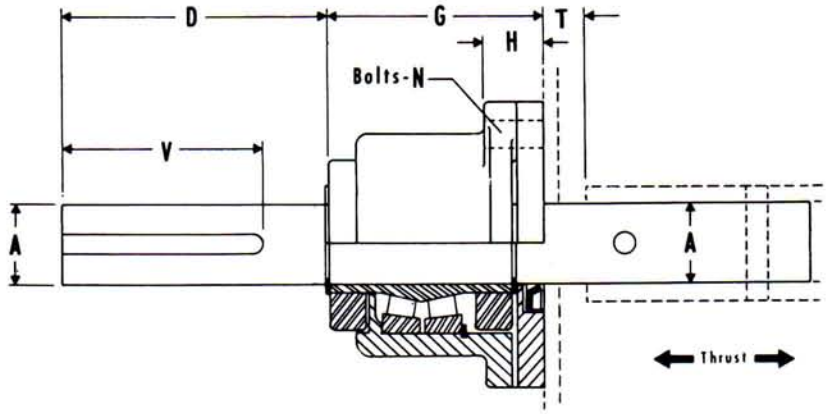




A Shaft Diameter	Part Number	D	M Steel	N Bronze	V	Total Weight
1	CTW 1	5/8	1/4	1/8	6 1/8	1
1 1/2	CTW 112	3/4	1/4	1/4	9 1/4	1
2	CTW 2	3/4	1/4	1/4	10 1/4	1
2 7/16	CTW 2716	7/8	1/4	3/8	11 5/8	1 1/2
3	CTW 3	7/8	1/4	3/8	12 3/4	2
3 7/16	CTW 3716	1	1/4	1/2	15 7/8	3

Type M roller bearing





A Shaft Diameter	Part Number		B	D	E	G	H	N	T_a	T_b	V	Weight	
	Drive Shaft	End Shaft										Drive Shaft	End Shaft
1 1/2	CTR 112-D -*	CTR 112-E -*	5 3/8	4 1/4	4 1/8	4 1/8	1 11/16	1/2	1/2	1 1/4	2 3/4	22	20
2	CTR 2-D -*	CTR 2-E -*	5 5/8	4 3/4	4 3/8	4 1/4	1 11/16	1/2	1/2	1 1/4	3 1/4	32	29
2 7/16	CTR 2716-D -*	CTR 2716-E-*	6 7/8	5 3/4	5 3/8	4 11/16	2 1/8	5/8	9/16	1 11/16	4 1/4 *	50	44
3	CTR 3-D -*	CTR 3-E -*	7 3/4	6 1/4	6	5 5/16	2 1/4	3/4	5/8	1 7/8	4 3/4	73	60
3 7/16	CTR 3716-D -*	CTR 3716-E-*	9 1/4	7 1/4	7	5 7/8	2 1/2	3/4	5/8	2 3/8	5 3/4	111	88

* Specify Tb shaft when using standard length screws and troughs

shaft seals

Waste packing seal

Waste packing seals are intended for sealing conveyors handling abrasive materials which wear lip or gland type seals.

Precision machined faces and jig drilled mounting holes ensure dust tight installation of this seal which is usually bolted between the end bearing and conveyor end with common bolts. However, it may be mounted separately when using outboard bearing type conveyor ends.

An opening is provided at the top of the seal for repacking or oiling, and removable covers may be provided when required for installations in dusty atmospheres.

Plate seal

Flanged Plate seals are the most economical means of protecting material or bearings from contamination.

These units consist of a machined steel plate into which is pressed a commercial lip type seal cartridge. Mounting holes are jig drilled to match standard conveyor end bearings. The plate seal is usually mounted between the end bearing and conveyor end with common bolts, however it may be mounted separately when using outboard bearing type conveyor ends.

Many special seal cartridges may be furnished in place of the standard lip type seal.

Split gland seal

Split gland seals are of the compression packing type and are usually mounted on the inside of conveyor trough or housing ends.

Replacement of the packing is facilitated by the split housing which may be removed from the conveyor shaft without further disassembly of the conveyor.

Adjustment of packing pressure is accomplished from outside the conveyor, by turning two exposed nuts, which pull the entire gland housing against the packing, which in turn is retained by a machined ring bearing on the conveyor end plate.

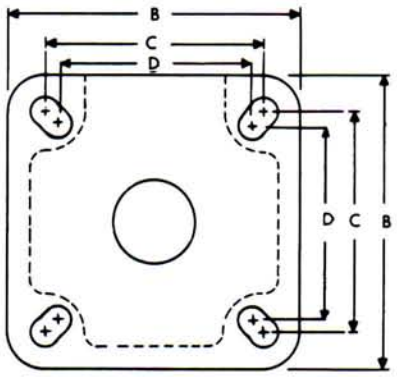
Flanged gland seal

Flanged gland seals are the most effective means of sealing conveyor shafts and are frequently applied to special units requiring up to 70 pounds pressure.

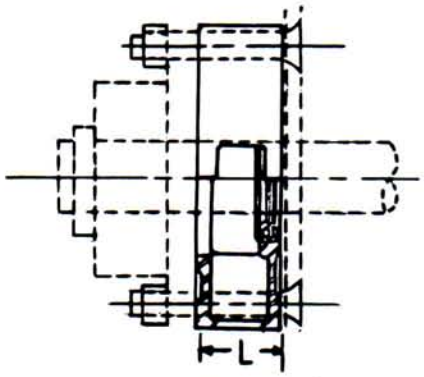
This seal consists of a gland housing into which a packing barrel is screwed to compress the packing.

Turning of the barrel due to shaft rotation is prevented by a locking ring retained by a bolt screwed into the gland housing. Adjustment is rapidly accomplished by removal of this locking bolt and use of a spanner wrench which engages the locking ring bolt holes.

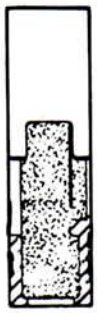
shaft seals



Waste packing seal



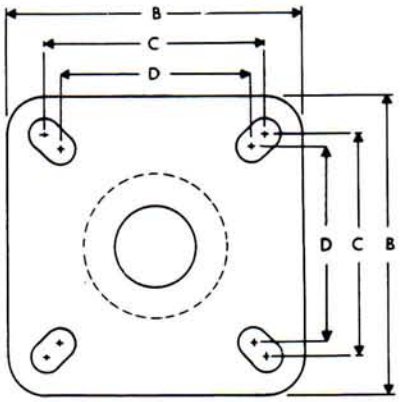
With Lip Seal

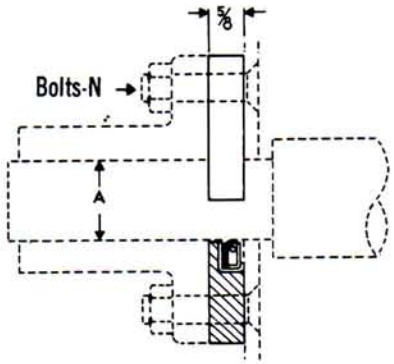


With Waste Packing

A Shaft Diameter	Part Number	B	C	D	N	L	Weight
1½	CSW 112-*	5⅜	4⅛	4	½	1¾	6
2	CSW 2-*	6½	5⅛	4⅜	⅝	1¾	8
2 1/16	CSW 2716-*	7⅜	5⅞	5⅜	⅝	1¾	10
3	CSW 3-*	7¾	6	6	¾	1¾	13
3 1/16	CSW 31716-*	9¼	7	6¾	¾	2¼	16

Plate seal





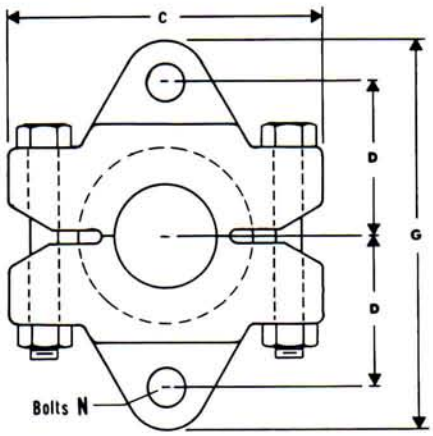
A Shaft Diameter	Part Number	B	C	D	N	Weight
1½	CSF 112-*	5⅜	4⅛	4	½	2
2	CSF 2-*	6½	5⅛	4⅜	⅝	3
2 1/16	CSF 2716-*	7⅜	5⅞	5⅜	⅝	4
3	CSF 3-*	7¾	6	6	¾	5
3 1/16	CSF 3716-*	9¼	7	6¾	¾	8

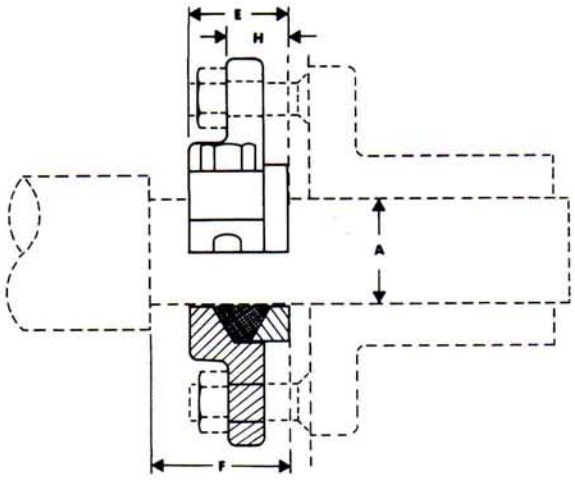
-*W Waste Pack Seal

-*L Lip Seal

shaft seals

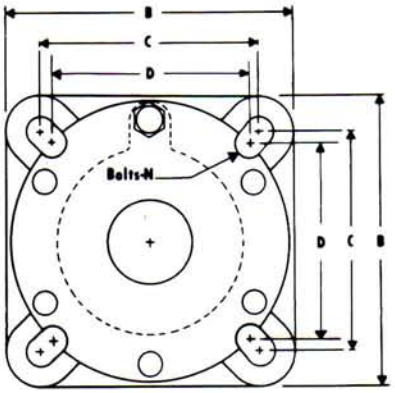
Split Gland Seal

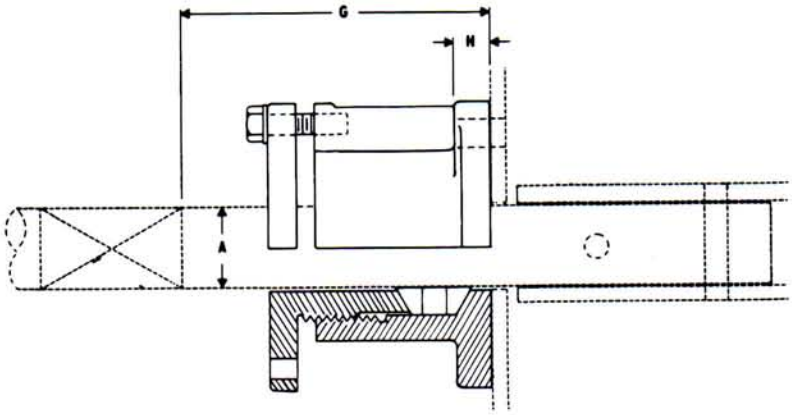




A Shaft Diameter	* Part Number	C	D	E	F	G	H	N	Weight
1 1/2	CSS 112	4 3/16	2 3/16	1 7/16	3	5 5/8	7/8	1/2	5
2	CSS 2	5 3/8	2 5/8	1 1/2	3	6 1/2	7/8	1/2	10
2 7/16	CSS 2716	6 1/8	3 1/16	1 5/8	3	7 5/8	1	5/8	15
3	CSS 3	6 3/4	3 3/16	1 5/8	3	8 5/8	1	5/8	22
3 7/16	CSS 3716	8 3/4	4 1/8	2 1/8	4	10 1/4	1 1/4	3/4	30

Flanged Gland Seal





A Shaft Diameter	* Part Number	B	C	D	G	H	N	Weight
1 1/2	CSG 112	5 3/8	4 1/8	4	8	1/2	1/2	11
2	CSG 2	6 1/2	5 1/8	4 3/8	8	1/2	5/8	11
2 7/16	CSG 2716	7 3/8	5 7/8	5 3/8	8	1/2	5/8	10
3	CSG 3	7 3/4	6	6	8	1/2	3/4	16
3 7/16	CSG 3716	9 1/4	7	6 3/4	8	1/2	3/4	30

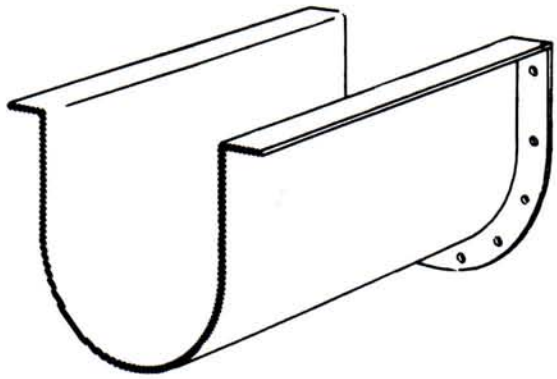
*Braided Rope Graphite Packing is Standard. Other Types, (Asbestos, Nylon, Teflon Etc.) Available on Request.

trough

Flanged

Flanged conveyor trough top flanges are formed from the same sheet as the trough sides resulting in a particularly light weight but rigid section.

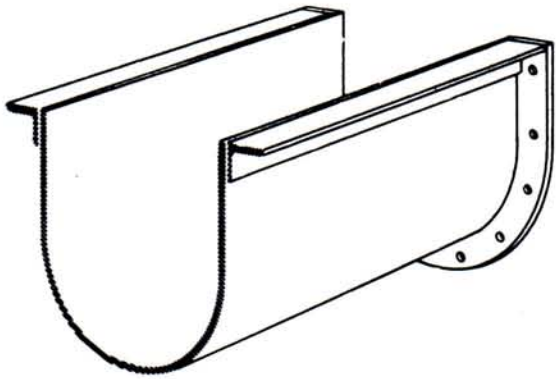
End flanges are attached by continuous welding in jigs to insure perfect alignment of the trough after installation.



Angle flanged

Angle flanged conveyor troughs are formed in the same manner as flanged trough with the exception that standard structural angle sections are jig welded to the trough top to form flanges.

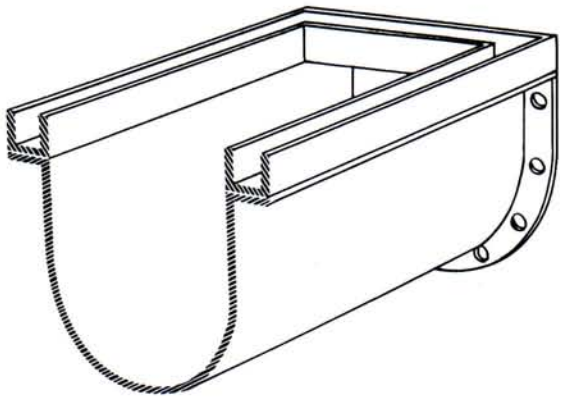
Jig welded end flanges assure trough alignment.



Dust seal

Dust seal conveyor troughs are produced with a continuous channel pocket extending along the sides and across the ends of each trough section. Special covers are required having formed flanges which project down into the channel pockets.

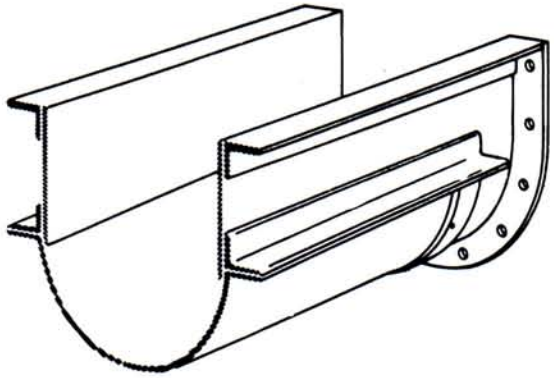
After installation, sand, grease, the material being conveyed or other materials are placed in the channed pockets to effect an efficient dust seal.



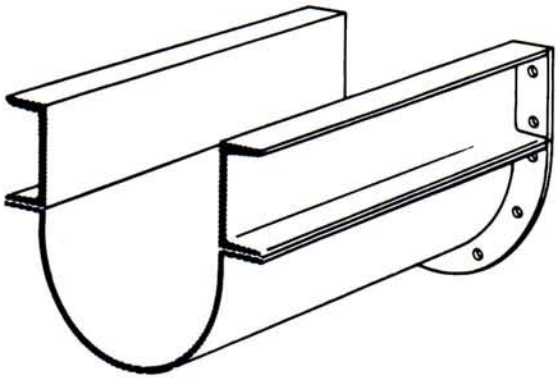
Drop bottom

Drop Bottom conveyor trough is employed when frequent cleaning or access to parts is necessary.

This trough consists of rigid side channel sections to which the curved bottom is usually attached on one side by a continuous hinge and on the other by spring clamps or quick opening cam devices.



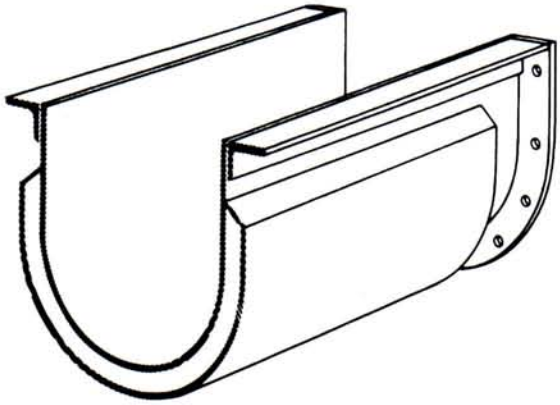
trough



Channel

Channel conveyor troughs are used when long spans between supports are necessary or when frequent replacement of the trough bottom is required due to abrasion..

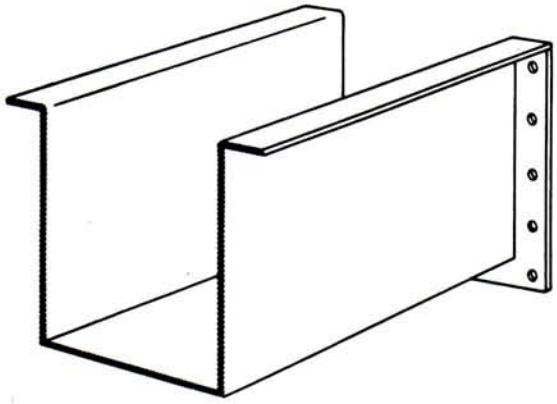
Trough sides are fabricated from standard structural or formed channel sections.. The formed trough bottom may be bolted or spring clamped to the channel sides.



Jacketed

Usual construction consists of a standard type trough to which is welded a formed jacket.

Water at no greater than 65 PSI may be used with jacketed troughs. Pressures greater than 65 are not recommended, and applications for water, steam, or other media at greater pressures voids the warranty.

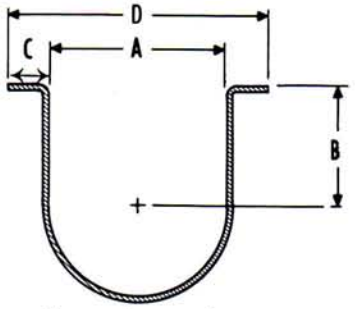


Rectangular

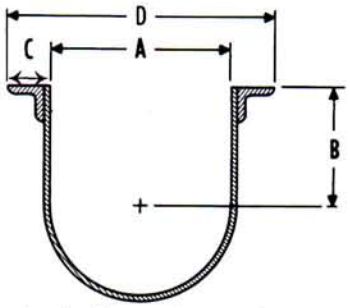
Rectangular conveyor troughs are particularly applicable to the conveying of abrasive materials since conveyed material tends to form its own trough by sliding over the static material in the bottom and corners of the trough thus protecting it from severe wear.

These troughs may be fabricated from one sheet with formed top flanges, or angle top flanges; they may also be constructed with each side and bottom flanged and bolted.

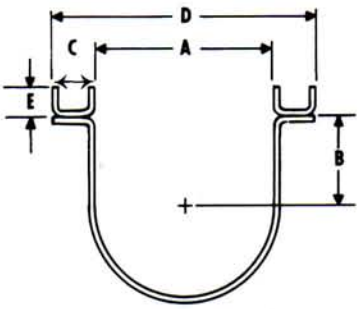
trough



Flanged trough



Angle flanged trough

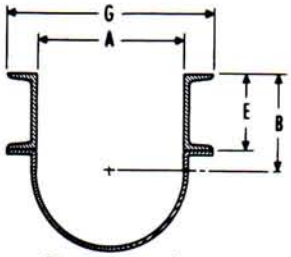


Dust seal trough

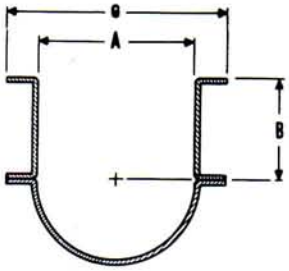
Conv. Diam.	Trough Thickness	Flanged Trough Part Number	Flanged Trough Weight 10'lgth.	Flanged Trough Weight 5'lgth	Angle Flanged Trough Part Number	Angle Flanged Trough Weight 10'lgth.	Angle Flanged Trough Weight 5'lgth	Dust Seal Trough Part Number	Dust Seal Trough Weight 10'lgth.	Dust Seal Trough Weight 5'lgth.	A	B	C	D	E
4	□16 ga.	CTF 416	38	20	CTA 416	50	26	CTD 416	82	45	5	3 5/8	1	7 1/8	1/2
	14	CTF 414	47	25	CTA 414	58	30	CTD 414	89	49				7 3/16	1/2
	12	CTF 412	65	34	CTA 412	73	38	CTD 412	108	58				7 1/4	1/2
6	□16 ga.	CTF 616	53	28	CTA 616	78	40	CTD 616	95	54	7	4 1/2	1 1/4	9 5/8	1/2
	14	CTF 614	65	35	CTA 614	89	47	CTD 614	106	59				9 11/16	1/2
	12	CTF 612	91	48	CTA 612	121	62	CTD 612	128	70				9 3/4	1/2
	3/16	CTF 67	145	75	CTA 67	163	84	CTD 67	180	96				9 7/8	1/2
9	16 ga.	CTF 916	83	47	CTA 916	113	60	CTD 916	123	74	10	6 1/8	1 1/2	13 1/8	3/4
	□14	CTF 914	91	49	CTA 914	120	63	CTD 914	138	81				13 3/16	3/4
	12	CTF 912	130	68	CTA 912	150	78	CTD 912	168	95				13 1/4	3/4
	10	CTF 910	141	74	CTA 910	165	86	CTD 910	197	110				13 5/16	3/4
	3/16	CTF 97	207	107	CTA 97	224	115	CTD 97	231	132				13 3/8	3/4
	1/4	CTF 93	273	140	CTA 93	284	145	CTD 93	297	160				13 1/2	3/4
10	16 ga.	CTF 1016	88	47	CTA 1016	118	62	CTD 1016	129	78	11	6 3/8	1 1/2	14 1/8	3/4
	□14	CTF 1014	97	52	CTA 1014	126	66	CTD 1014	145	85				14 3/16	3/4
	12	CTF 1012	134	69	CTA 1012	157	82	CTD 1012	177	101				14 1/4	3/4
	10	CTF 1010	152	78	CTA 1010	188	97	CTD 1010	201	111				14 5/16	3/4
	3/16	CTF 107	222	114	CTA 107	239	123	CTD 107	245	140				14 3/8	3/4
	1/4	CTF 103	292	149	CTA 103	303	155	CTD 103	318	172				14 1/2	3/4
			12'lgth.	6'lgth.		12'lgth.	6'lgth.		12'lgth.	6'lgth.					
12	□12 ga.	CTF 1212	197	154	CTA 1212	236	124	CTD 1212	255	133	13	7 3/4	2	17 1/4	1
	10	CTF 1210	224	118	CTA 1210	281	146	CTD 1210	303	157				17 5/16	1
	3/16	CTF 127	326	169	CTA 127	353	182	CTD 127	368	190				17 3/8	1
	1/4	CTF 123	428	220	CTA 123	446	229	CTD 123	460	236				17 1/2	1
14	□12 ga.	CTF 1412	219	116	CTA 1412	257	135	CTD 1412	276	145	15	9 1/4	2	19 1/4	1
	10	CTF 1410	248	131	CTA 1410	309	162	CTD 1410	327	170				19 5/16	1
	3/16	CTF 147	365	189	CTA 147	394	204	CTD 147	405	209				19 3/8	1
	1/4	CTF 143	483	248	CTA 143	501	257	CTD 143	513	263				19 1/2	1
16	□12 ga.	CTF 1612	247	131	CTA 1612	285	150	CTD 1612	319	167	17	10 5/8	2	21 1/4	1
	10	CTF 1610	281	148	CTA 1610	345	180	CTD 1610	373	194				21 5/16	1
	3/16	CTF 167	414	215	CTA 167	442	229	CTD 167	458	237				21 3/8	1
	1/4	CTF 163	546	281	CTA 163	565	290	CTD 163	579	297				21 1/2	1
18	□12 ga.	CTF 1812	284	153	CTA 1812	356	189	CTD 1812	373	197	19	12 1/8	2 1/2	24 1/4	1
	10	CTF 1810	323	172	CTA 1810	423	222	CTD 1810	441	231				24 5/16	1
	3/16	CTF 187	473	247	CTA 187	533	277	CTD 187	557	289				24 3/8	1
	1/4	CTF 183	624	323	CTA 183	671	346	CTD 183	684	353				24 1/2	1
20	□10 ga.	CTF 2010	355	189	CTA 2010	460	242	CTD 2010	501	262	21	13 1/2	2 1/2	26 5/16	1
	3/16	CTF 207	521	272	CTA 207	581	302	CTD 207	620	322				26 3/8	1
	1/4	CTF 203	687	355	CTA 203	734	379	CTD 203	762	393				26 1/2	1
24	□10 ga.	CTF 2410	461	244	CTA 2410	531	279	CTD 2410	593	310	25	16 1/2	2 1/2	30 5/16	1
	3/16	CTF 247	617	322	CTA 247	676	352	CTD 247	737	382				30 3/8	1
	1/4	CTF 243	813	420	CTA 243	860	444	CTD 243	897	461				30 1/2	1

□ Standard gauge.

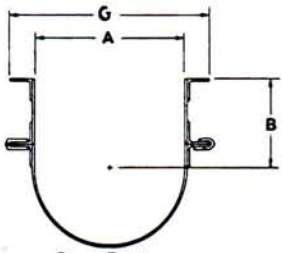
trough



Channel trough

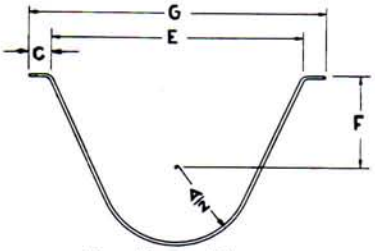


Formed channel trough

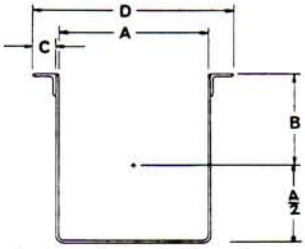


Drop Bottom

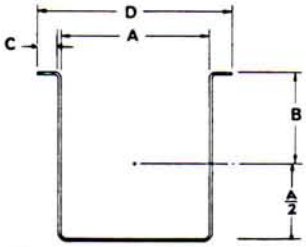
Screw Diam.	Part Number			Thick-ness ga.	A	B	E	G	Weight Per Foot		
	Channel	Formed Channel	Drop Bottom						Channel	Formed Channel	Drop Bottom
6	CTS 612-C	CTS 612-B	CTDB 612	12	7	4½	4	10¼	15.9	10.9	11
9	CTS 912-C	CTS 912-B	CTDB 912	12	10	6⅛	6	13¾	23.5	15.3	17
12	CTS 1212-C	CTS 1212-B	CTDB 1212	12	13	7¾	7	17¼	29.2	20.9	20
14	CTS 1412-C	CTS 1412-B	CTDB 1412	12	15	9¼	9	19¾	37.6	22.5	23
16	CTS 1610-C	CTS 1610-B	CTDB 1610	10	17	10⅝	10	22¼	45.9	31.7	31
18	CTS 1810-C	CTS 1810-B	CTDB 1810	10	19	12⅛	12	25	59.0	38.9	35
20	CTS 2010-C	CTS 2010-B	CTDB 2010	10	21	13½	12	27	60.5	43.3	36
24	CTS 2410-C	CTS 2410-B	CTDB 2410	10	25	16½	15	31¾	90.1	50.8	41



Flared-formed flange



Rectangular angle flanged



Rectangular formed flange

Screw Dia.	Thick-ness Ga.	Part Number						A	B	C	D	E	F	G
		Flared	Wt. Ft.	Rect. Angle Flg'd.	Wt. Ft.	Rect. Formed Flg.	Wt. Ft.							
6	16	—	—	CTR 616A	8.9	CTR 616F	5.1	7	4½	1¼	9 5/8	14	7	16 5/8
	14	CTV 614	7.9	CTR 614A	10.3	CTR 614F	6.6				9 11/16			
	12	CTV 612	10.8	CTR 612A		CTR 612F	9.1				9¾			
9	14	—	—	CTR 914A	13	CTR 914F	9.8	10	6⅛	1½	13 3/16	18	9	21¼
	12	CTV 912	14.6	CTR 912A	16.1	CTR 912F	13.4				13¼			
	10	CTV 910	18.5	CTR 910A	19.2	CTR 910F	17.2				13 5/16			
	3/16	CTV 97	22	CTR 97A	24.8	CTR 97F	22.8				13⅜			
12	14	—	—	CTR 1214A	17.6	CTR 1214F	12.4	13	7¾	2	17 3/16	22	10	—
	12	CTV 1212	14.8	CTR 1212A	21.8	CTR 1212F	17				17¼			26¼
	10	CTV 1210	18.7	CTR 1210A	26	CTR 1210F	21.6				17 5/16			26¼
	3/16	CTV 127	25.7	CTR 127A	31.6	CTR 127F	29.1				17⅜			26⅜
14	14	—	—	CTR 1414A	19.2	CTR 1414F	14	15	9¼	2	19 3/16	24	11	—
	12	CTV 1412	16.4	CTR 1412A	24	CTR 1412F	19.2				19¼			28¼
	10	CTV 1410	20.7	CTR 1410A	28.8	CTR 1410F	24.5				19 5/16			28¼
	3/16	CTV 147	28.4	CTR 147A	35.5	CTR 147F	33				19⅜			28⅜
16	12	—	—	CTR 1612A	26.2	CTR 1612F	21.4	17	10⅝	2	21¼	28	11½	—
	10	CTV 1610	22.7	CTR 1610A	31.6	CTR 1610F	27.3				21 5/16			32¼
	3/16	CTV 167	31.1	CTR 167A	41.1	CTR 167F	37.5				21⅜			32⅜
	¼	CTV 163	32.8	CTR 163A	52.7	CTR 163F	50.2				21½			32½
18	12	—	—	CTR 1812A	31.1	CTR 1812F	24.8	19	12⅛	2½	24¼	31	12⅛	—
	10	CTV 1810	25.2	CTR 1810A	37.3	CTR 1810F	31.5				24 5/16			36¼
	3/16	CTV 187	34.4	CTR 187A	48.2	CTR 187F	43.2				24⅜			36⅜
	¼	CTV 183	45.3	CTR 183A	60.8	CTR 183F	57.6				24½			36½
20'	12	—	—	CTR 2012A	34.6	CTR 2012F	28.3	21	13½	2½	26¼	34	13½	—
	10	CTV 2010	26.7	CTR 2010A	41.8	CTR 2010F	36				26 5/16			39¼
	3/16	CTV 207	36.4	CTR 207A	54.4	CTR 207F	49.5				26⅜			39⅜
	¼	CTV 203	48	CTR 203A	69.8	CTR 203F	66				26½			39½
24	12	—	—	CTR 2412A	43.4	CTR 2412F	37.4	25	16½	2½	30¼	40	16½	—
	10	CTV 2410	30.8	CTR 2410A	53	CTR 2410F	47.5				30 5/16			45¼
	3/16	CTV 247	42	CTR 247A	69.8	CTR 247F	65.3				30⅜			45⅜
	¼	CTV 243	55.7	CTR 243A	90.8	CTR 243F	87				30½			45½

trough flanges

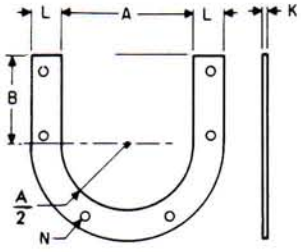
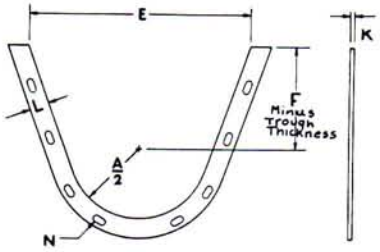
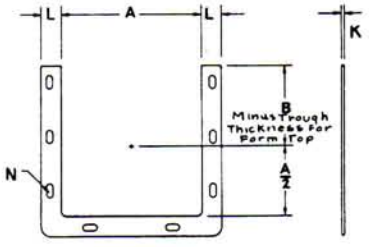


Plate End Flange



Flared End Flange



Rectangular End Flange

Conv. Diam.	Max. Trough Thickness	Part Number: Plate End Flange	Wt.			Plate End Flange Flared	Wt.	Rectangular End Flange	Wt.	Gaskets
4	10 ga. ¼ ga.	CFP 410-U CFP 43-U	0.9			—	—	CFP4R	1.0	CFG4-*-**
6	10 ga. ¼ ga.	CFP 610-U CFP 63-U	1.5			CFP 6V	1.9	CFP 6R	1.7	CFG6-*-**
9	10 ga. ¼ ga.	CFP 910-U CFP 93-U	2.4			CFP 9V	3.0	CFP 9R	2.9	CFG9-*-**
10	10 ga. ¼ ga.	CFP1010-U CFP 103-U	2.6			—	—	CFP10R	3.1	CFG10-*-**
12	10 ga. ¼ ga.	CFP1210-U CFP 123-U	5.6			CFP12V	6.4	CFP12R	6.6	CFG12-*-**
14	10 ga. ¼ ga.	CFP1410-U CFP 143-U	6.5			CFP14V	7.3	CFP14R	7.6	CFG14-*-**
16	10 ga. ¼ ga.	CFP1610-U CFP 163-U	7.4			CFP16V	7.9	CFP16R	8.5	CFG16-*-**
18	10 ga. ¼ ga.	CFP1810-U CFP 183-U	10.2			CFP18V	10.8	CFP18R	12.1	CFG18-*-**
20	10 ga. ¼ ga.	CFP2010-U CFP 203-U	11.3			CFP20V	11.4	CFP20R	13.3	CFG20-*-**
24	10 ga. ¼ ga.	CFP2410-U CFP 243-U	15.5			CFP24V	13.0	CFP24R	15.8	CFG24-*-**

dimensions

For Tubular Plate End Flange Information — See Page 79.

Conv. Diam.	A: Thru 10 ga.*	A: 3/16 and ¼ in.	B	D	E: Up to 10 ga.	E: 3/16 & ¼	F	K	L: Up to 10 ga.	L: 3/16 & ¼	N	S
4	5¼	5⅜	3⅝	1	—	—	—	3/16	1¼	—	⅜	3/16
6	7¼	7⅜	4½	1¼	14¼	14½	7	3/16	1¼	1¼	⅜	3/16
9	10¼	10½	6⅛	1½	18¼	18½	9	3/16	1¾	1½	⅜	3/16
10	11¼	11½	6⅜	1½	—	—	—	3/16	1¾	1½	⅜	3/16
12	13¼	13½	7¾	2	22¼	22½	10	¼	2	2	½	3/16
14	15¼	15½	9¼	2	24¼	24½	11	¼	2	2	½	3/16
16	17¼	17½	10⅝	2	28¼	28½	11½	¼	2	2	⅝	—
18	19¼	19½	12⅛	2½	31¼	31½	12⅛	¼	2½	2½	⅝	—
20	21¼	21½	13½	2½	34¼	34½	13½	¼	2½	2½	⅝	—
24	25¼	25½	16½	2½	40¼	40½	16½	¼	2½	2½	⅝	—

*-U "U" Trough
*-F Flared Trough
*-R Rectangular Trough
**-R Rubber
**-N Neoprene
**-A Asbestos
**-F Felt
**-P Polyurethane (std.)

***Trough Thickness.**

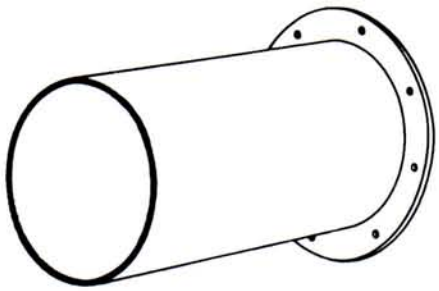
For Bolt Patterns see page 97.

tubular housing

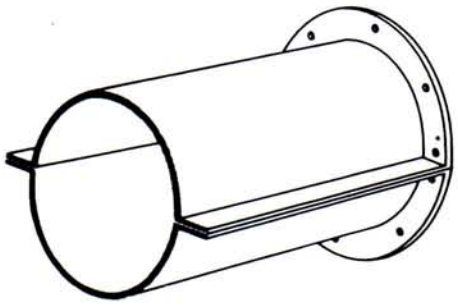
Tubular conveyor housing offers many advantages not found in installations using standard conveyor troughs, some of which are—inherently weather-tight, may be loaded to full cross section, has the natural rigidity of tubular sections and provides greater conveying efficiency when inclined.

Tubular housing is available in steel, aluminum, stainless steel and many other materials.
End flanges are attached in half sections by continuous welding in jigs to ensure perfect alignment of the conveyor assembly after erection.

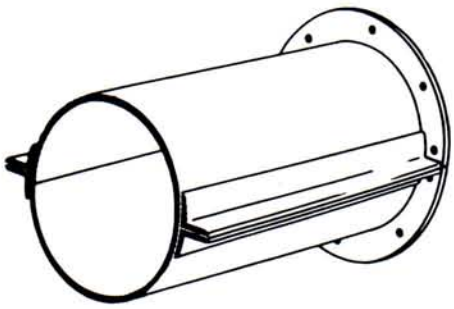
Standard tubular housing is formed from one sheet, and continuously welded at the longitudal seam to provide a light weight, dust tight, hi‡hly rigid tubular sectional.



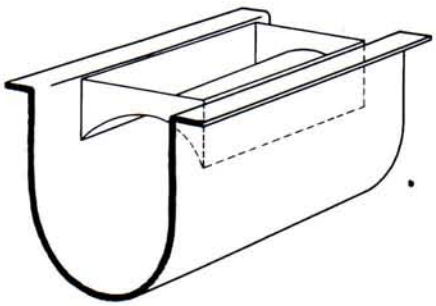
Flanged tubular housing is formed in two halves, the side flanges being formed from their respective tube halves, resulting in a housing possessing both rigid and light weight characteristics.



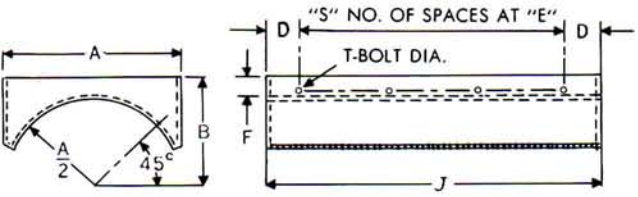
Angle flanged tubular housing is formed in the same manner as flanged housing, with the exception that standard structural angle sections are jig welded to each housing half to form flanges.



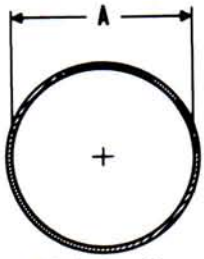
Shrouded cover is designed for application to standard conveyor trough resulting in the many advantages derived from the use of tubular housing. For outside installations, the use of weather-tight cover is recommended. Also used in U-Trough sections of screw feeders to decrease the clearance between the cover and feeder screw to obtain proper feed regulation. Lengths are sufficient to prevent flushing of the majority of materials being handled and gauges are proportioned to trough size and gauge.



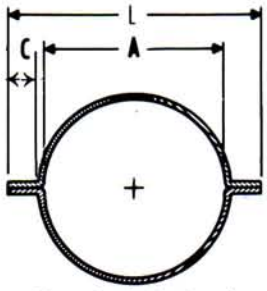
tubular housing



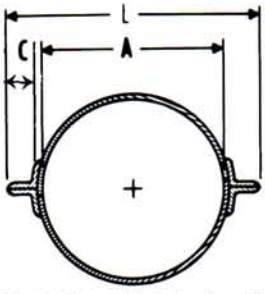
Shrouded trough cover



Tubular housing



Flanged tubular housing



Angle flanged tubular housing

Conveyor Diam.	Trough Thickness	Shrouded Trough Cover Part Number	Shrouded Trough Cover Wt.	Tubular Housing Part Number	Tubular Housing Weight 10 Ft.	Tubular Housing Weight 5 Ft.	Flanged Tubular Housing Part Number	Flanged Tubular Housing Weight 10 Ft.	Flanged Tubular Housing Weight 5 Ft.	Angle Flanged Tubular Housing Part Number	Angle Flanged Tubular Housing Weight 10 Ft.	Angle Flanged Tubular Housing Weight 5 Ft.	A	B	C	L	D	E	S	T	F	J
4	□ 16	CTS 416		CHP 416	35	18	CHF 416	43	22	CHA 416	81	41				7 1/8						
	14*	CTS 414	2.0	CHP 414	43	22	CHF 414	53	27	CHA 414	89	45	5	3 5/8	1	7 3/8	2	4	1	3/8	5/8	8
	12	CTS 412		CHP 412	60	31	CHF 412	74	38	CHA 412	106	54				7 1/4						
6	□ 16	CTS 616		CHP 616	50	27	CHF 616	60	32	CHA 616	110	57				9 5/8						
	14*	CTS 614	3.9	CHP 614	62	33	CHF 614	75	40	CHA 614	122	63				9 1/8						
	12*	CTS 612	5.4	CHP 612	85	44	CHF 612	103	53	CHA 612	145	74	7	4 1/2	1 1/4	9 3/4	3	6	1	3/8	3/4	12
	3/16	CTS 67		CHP 67	145	74	CHF 67	168	86	CHA 67	205	104				9 3/8						
9	16	CTS 916		CHP 916	72	39	CHF 916	84	45	CHA 916	144	75				13 1/8						
	□ 14*	CTS 914	7.8	CHP 914	89	47	CHF 914	104	55	CHA 914	161	83				13 3/8						
	12	CTS 912		CHP 912	122	64	CHF 912	143	75	CHA 912	194	100				13 1/4						
	10	CTS 910		CHP 910	155	80	CHF 910	182	94	CHA 910	227	116	10	6 1/8	1 1/2	13 5/8	3	6	2	3/8	7/8	18
	3/16*	CTS 97	19	CHP 97	208	107	CHF 97	245	126	CHA 97	280	143				13 3/4						
	1/4	CTS 93		CHP 93	275	140	CHF 93	324	165	CHA 93	347	176				13 1/2						
10	16	CTS1016		CHP1016	79	42	CHF1016	91	48	CHA1016	151	78				14 1/8						
	□ 14*	CTS1014	9.4	CHP1014	97	52	CHF1014	112	60	CHA1014	169	88				14 3/8						
	12	CTS1012		CHP1012	133	70	CHF1012	154	81	CHA1012	205	106				14 1/8						
	10	CTS1010		CHP1010	169	88	CHF1010	196	102	CHA1010	241	124	11	6 3/8	1 1/2	14 5/8	2 1/2	5	3	3/8	7/8	20
	3/16*	CTS 107	23	CHP 107	227	117	CHF 107	264	136	CHA 107	299	153				14 3/4						
	1/4	CTS 103		CHP 103	301	154	CHF 103	350	179	CHA 103	373	190				14 1/2						
					12 Ft.	6 Ft.		12 Ft.	6 Ft.		12 Ft.	6 Ft.										
12	□ 12*	CTS1212	19	CHP1212	195	103	CHF1212	231	121	CHA1212	313	162				17 1/4						
	10	CTS1210		CHP1210	248	130	CHF1210	295	153	CHA1210	366	189				17 3/8						
	3/16*	CTS 127	33	CHP 127	329	171	CHF 127	392	202	CHA 127	447	229	13	7 3/4	2	17 3/8	3	6	3	3/8	1 1/8	24
	1/4	CTS 123		CHP 123	434	223	CHF 123	518	265	CHA 123	552	282				17 1/2						
14	□ 12*	CTS1412	26	CHP1412	223	118	CHF1412	259	137	CHA1412	341	177				19 1/4						
	10	CTS1410		CHP1410	282	148	CHF1410	329	172	CHA1410	400	207				19 3/8						
	3/16*	CTS 147	47	CHP 147	327	196	CHF 147	441	227	CHA 147	496	255	15	9 1/4	2	19 3/8	3 1/2	7	3	3/8	1 1/8	28
	1/4	CTS 143		CHP 143	498	256	CHF 143	582	298	CHA 143	616	315				19 1/2						
16	□ 12*	CTS1612	35	CHP1612	254	135	CHF1612	290	153	CHA1612	372	194				21 1/4						
	10	CTS1610		CHP1610	320	168	CHF1610	367	191	CHA1610	438	227				21 3/8						
	3/16*	CTS 167	62	CHP 167	428	222	CHF 167	493	254	CHA 167	546	281	17	10 5/8	2	21 3/8	4	8	3	3/8	1 1/8	32
	1/4	CTS 163		CHP 163	566	291	CHF 163	650	333	CHA 163	684	350				21 1/2						
18	□ 12*	CTS1812	45	CHP1812	290	156	CHF1812	336	179	CHA1812	437	229				24 1/4						
	10	CTS1810		CHP1810	378	193	CHF1810	423	222	CHA1810	511	266				24 3/8						
	3/16*	CTS 187	79	CHP 187	485	253	CHF 187	566	294	CHA 187	632	327	19	12 1/8	2 1/2	24 3/8	4 1/2	9	3	3/8	1 3/8	36
	1/4	CTS 183		CHP 183	639	331	CHF 183	746	384	CHA 183	786	404				24 1/2						
20	□ 10*	CTS2010	71	CHP2010	401	212	CHF2010	458	241	CHA2010	548	286				26 3/8						
	3/16*	CTS 207	99	CHP 207	534	286	CHF 207	612	318	CHA 207	681	352	21	13 1/2	2 1/2	26 3/8	4	8	4	3/8	1 3/8	40
	1/4	CTS 203		CHP 203	702	363	CHF 203	806	415	CHA 203	849	437				26 1/2						
24	□ 10*	CTS2410	104	CHP2410	477	252	CHF2410	534	281	CHA2410	626	327				30 3/8						
	3/16*	CTS 247	144	CHP 247	637	332	CHF 247	713	370	CHA 247	784	406	25	16 1/2	2 1/2	30 3/8	4	8	5	3/8	1 3/8	48
	1/4	CTS 243		CHP 243	837	432	CHF 243	941	484	CHA 243	986	507				30 1/2						

□ Standard gauge.
* Standard shroud gage.

housing flanges

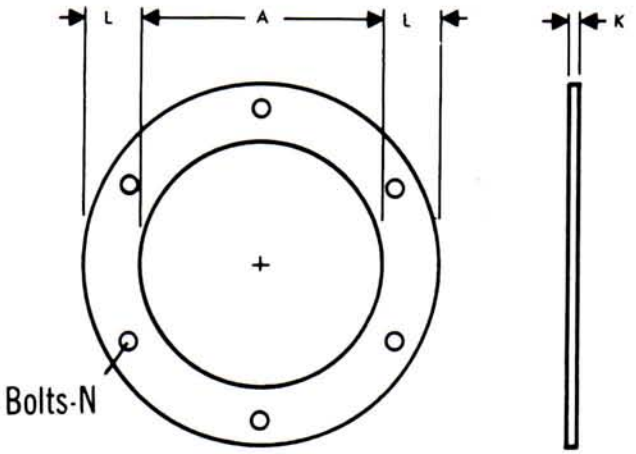
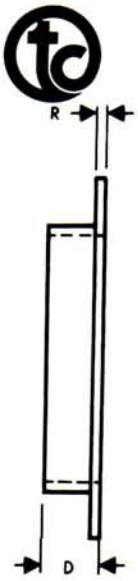


Plate end flange



Conv. Diam.	Max. Thickness *	Part Number		Weight
		Plate End Flange	Gaskets	Plate End Flange
4	10 ga. ¼ ga.	CFP 410-H CFP 43-H	CFG4 -T-*	1.0
6	10 ga. ¼ ga.	CFP 610-H CFP 63-H	CFG6 -T-*	1.8
9	10 ga. ¼ ga.	CFP 910-H CFP 93-H	CFG9 -T-*	3.0
10	10 ga. ¼ ga.	CFP1010-H CFP 103-H	CFG10 -T-*	3.2
12	10 ga ¼ ga.	CFP1210-H CFP 123-H	CFG12 -T-*	6.9
14	10 ga. ¼ ga.	CFP1410-H CFP 143-H	CFG14 -T-*	7.7
16	10 ga. ¼ ga.	CFP1610-H CFP 163-H	CFG16 -T-*	8.6
18	10 ga. ¼ ga.	CFP1810-H CFP 183-H	CFG18 -T-*	12.0
20	10 ga. ¼ ga.	CFP2010-H CFP 203-H	CFG20 -T-*	13.1
24	10 ga. ¼ ga.	CFP2410-H CFP 243-H	CFG24 -T-*	15.3

dimensions

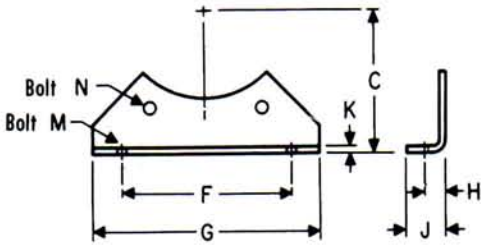
*—R Rubber (Standard)
—N Neoprene
—A Asbestos
—F Felt
—NA Nylon Impregnated Asbestos
—TA Teflon Impregnated Asbestos

Conv. Diam.	A		K	L	N
	Thru. 10 ga. *	3/16 and ¼ in. *			
4	5 ¼	5 ⅜	3/16	1 ¼	⅜
6	7 ¼	7 ⅜	3/16	1 ¼	⅜
9	10 ¼	10 ½	3/16	1 ½	⅜
10	11 ¼	11 ½	3/16	1 ½	⅜
12	13 ¼	13 ½	¼	2	½
14	15 ¼	15 ½	¼	2	½
16	17 ¼	17 ½	¼	2	⅝
18	19 ¼	19 ½	¼	2 ½	⅝
20	21 ¼	21 ½	¼	2 ½	⅝
24	25 ¼	25 ½	¼	2 ½	⅝

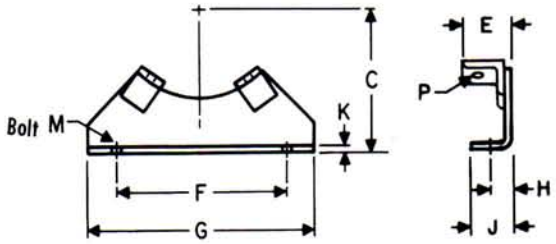
* **Housing Thickness.**

For Bolt Pattern see Page 98

saddles - feet



Flange foot



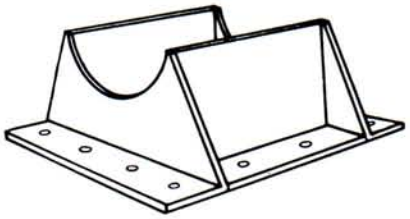
Saddle

Conv. Diam.	Part Number		Weight	
	Saddle	Flange Foot	Saddle	Flange Foot
4	CS 4	CFF 4	1.5	1.5
6	CS 6	CFF 6	2.0	2.0
9	CS 9	CFF 9	4.5	4.5
10	CS10	CFF10	5.0	5.0
12	CS12	CFF12	6.0	6.0
14	CS14	CFF14	7.0	7.0
16	CS16	CFF16	8.0	7.5
18	CS18	CFF18	10	9.5
20	CS20	CFF20	13	12.5
24	CS24	CFF24	15	14.5

dimensions

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

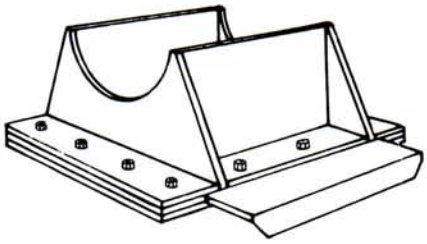
discharge spouts



Fixed

Discharge spouts are shop welded to the conveyor trough or tubular housing.

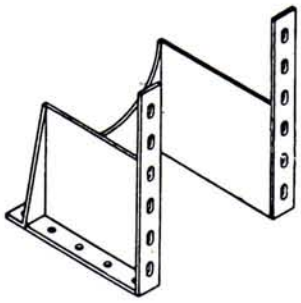
Gauges are proportioned to the size and material thickness of troughs.



Fixed — flat slide

Fixed discharge spouts are available with hand slide gate assemblies.

The slide gate assemblies are bolted to the discharge flange and may be assembled for either side or longitudinal opening. Slide gates are fabricated from the same gauge as the discharge spout.

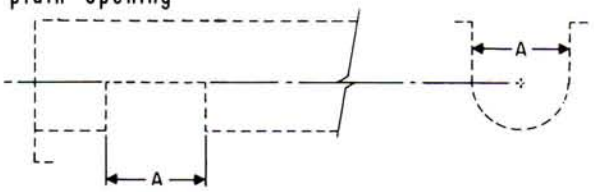


Flush End Discharge Spout

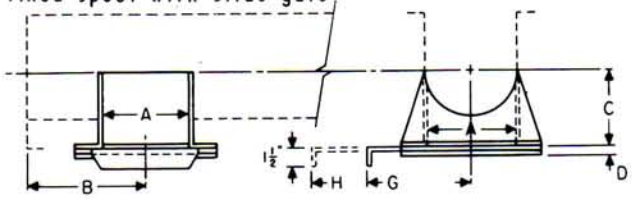
This spout is designed for use at the final discharge point. The end of the spout is comprised of a housing end with bottom flange drilled with standard discharge flange bolt pattern. Because it is located at the extreme end of the conveyor, there is no carryover of material past the final discharge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

discharge spouts

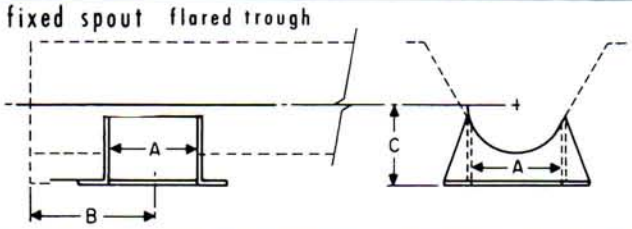
plain opening



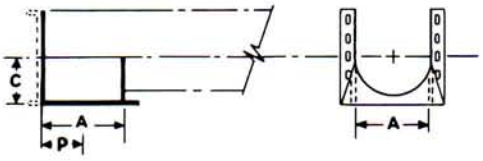
fixed spout with slide gate



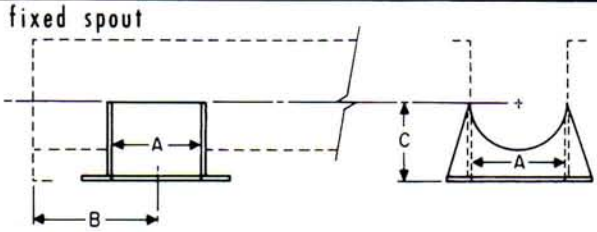
fixed spout flared trough



Flush end Spout



fixed spout



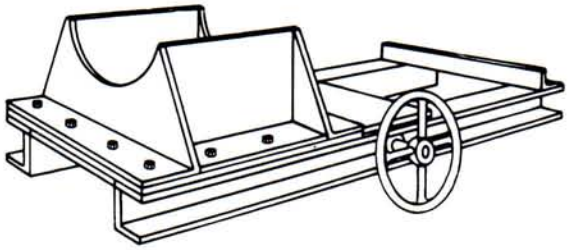
Screw Diameter	A	B minimum	C	D	G	H	P
4	5	4 ½	3 ¾	1/8	5 5/8	11	2½
6	7	6	5	1/8	6 5/8	14	3½
9	10	8	7 1/8	1/8	8	19	5
10	11	9	7 7/8	1/8	8 3/8	20	5½
12	13	10 ½	8 7/8	1/8	10 1/8	24	6½
14	15	11 ½	10 1/8	1/8	11 1/4	27	7½
16	17	13 ½	11 1/8	1/8	12 3/8	30	8½
18	19	14 ½	12 3/8	1/8	13 3/8	33	9½
20	21	15 ½	13 1/8	3/8	14 3/8	36	10½
24	25	17 ½	15 3/8	3/8	16 3/8	42	12½

Screw Diam.	Trough Thickness ga.	Spout and Gate Thickness ga.	Part Number: Fixed Spout Plain	Part Number: Fixed Spout With Slide	Part Number: Flush End Spout	Weight: Fixed Spout Plain	Weight: Fixed Spout Slide	Weight: Flush End Spout
4	14	□ 14	CSD 414	CSD 414 -S	CSD 414 -F	2	6	1.5
	12	12	CSD 412	CSD 412 -S	CSD 412 -F	3	7	2.25
6	14-12	□ 14	CSD 614	CSD 614 -S	CSD 614 -F	4	11	3.0
	3/16	12	CSD 612	CSD 612 -S	CSD 612 -F	6	13	4.50
9	14-12-10	□ 14	CSD 914	CSD 914 -S	CSD 914 -F	8	18	6.0
	3/16-1/4	10	CSD 910	CSD 910 -S	CSD 910 -F	13	22	9.75
10	14-12-10	□ 14	CSD 1014	CSD 1014 -S	CSD 1014 -F	10	21	7.5
	1/8 - 1/4	10	CSD 1010	CSD 1010 -S	CSD 1010- F	16	27	12.0
12	12-10	□ 12	CSD 1212	CSD 1212 -S	CSD 1212 -F	17	36	12.75
	1/8 - 1/4	3/16	CSD 12316	CSD 12316-S	CSD 12316-F	29	48	21.75
14	12-10	□ 12	CSD 1412	CSD 1412 -S	CSD 1412 -F	22	46	16.50
	3/16 - 1/4	1/8	CSD 14316	CSD 14316-S	CSD 14316-F	38	62	28.50
16	12-10	□ 12	CSD 1612	CSD 1612 -S	CSD 1612 -F	21	49	15.75
	3/16 - 1/4	1/8	CSD 16316	CSD 16316-S	CSD 16316-F	40	68	30.0
#18	12-10	□ 12	CSD 1812	CSD 1812 -S	CSD 1812 -F	32	69	24.0
	3/16 - 1/4	1/8	CSD 18316	CSD 18316-S	CSD 18316-F	60	97	45.0
20	10	□ 12	CSD 2012	CSD 2012 -S	CSD 2012 -F	40	91	30.0
	1/8 - 1/4	1/8	CSD 20316	CSD 20316-S	CSD 20316-F	67	118	50.25
24	10	□ 12	CSD 2412	CSD 2412 -S	CSD 2412 -F	52	116	39.0
	1/8 - 1/4	1/8	CSD 24316	CSD 24316-S	CSD 24316-F	87	151	65.25

□ Denotes Standard Gage.

Note: For Bolt Patterns See Page 98

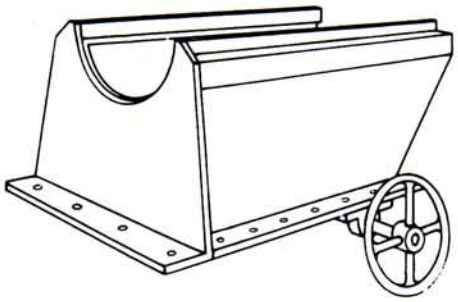
discharge gates



Rack & Pinion — flat slide

Rack and pinion flat slide gates may be fitted to either fixed or detachable discharge spouts. They may be assembled for either side or longitudinal openings.

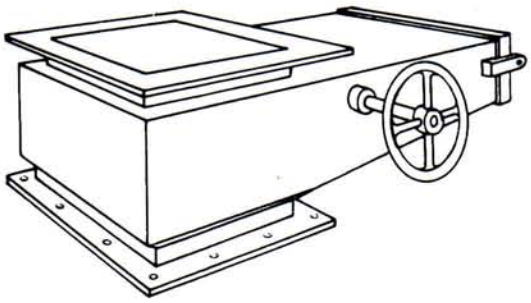
Operation may be by hand wheel, chain wheel, or pneumatic control.



Rack & Pinion — curved slide

Rack and pinion curved slide gates eliminate the pocket formed by flat slide type discharges.

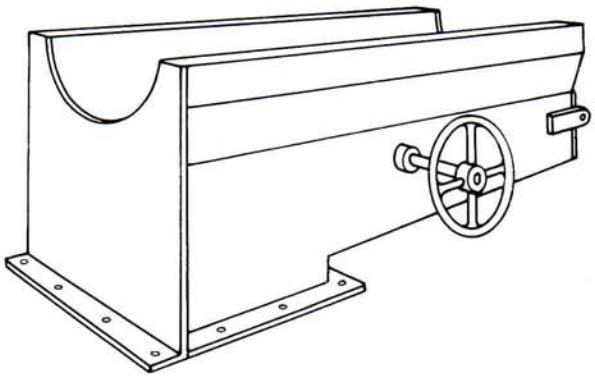
These slide gates open parallel to the conveyor axis. Operation may be by hand wheel, chain wheel or pneumatic control.



Dust Tight Rack & Pinion — flat slide

Dust tight rack and pinion flat slide gates are completely enclosed to prevent contamination.

These gates may be mounted to open either longitudinally or transversely to the conveyor discharge, and may be attached to either fixed or detachable discharge spouts. Hand wheel, chain wheel or pneumatic controls are available.



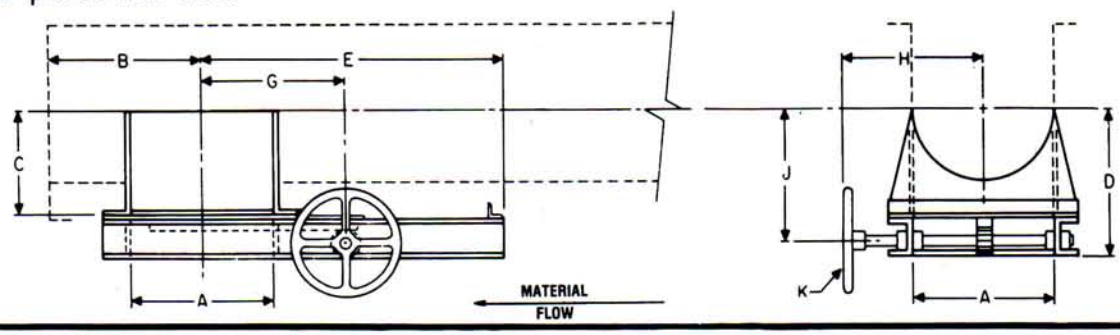
Dust Tight Rack & Pinion — curved slide

Dust tight rack and pinion curved slide gates are completely enclosed and are mounted for operation parallel to the conveyor axis.

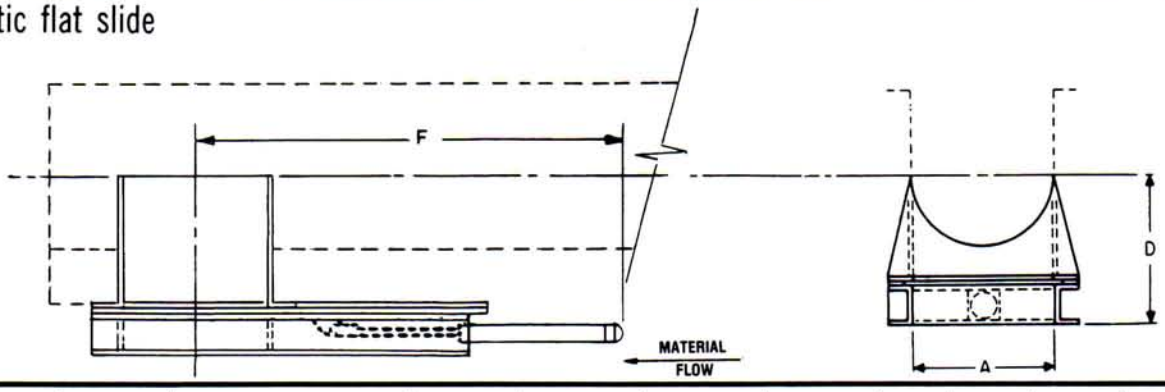
Hand wheel, chain wheel or pneumatic controls are available.

discharge gates

rack and pinion flat slide



pneumatic flat slide



Screw Diam.	A	B Minimum	C	D	E	F	G	H	J	K Diam.
4	5	4 ½	3 ¾	7	20 ¼	20 $\frac{5}{16}$	7 ½	5	5 ½	8
6	7	6	5	8 ¼	23 ¼	25 $\frac{5}{16}$	8 ½	6	6 ¾	8
9	10	8	7 ⅛	10 ⅜	27 ¾	34 ⅞	10	9 ½	8 ⅞	8
10	11	9	7 ⅞	11 ⅛	29 ¼	36 ⅜	10 ½	10	9 ⅞	10
12	13	10 ½	8 ⅞	12 ⅛	32 ¼	41 ⅜	11 ½	12 ¼	10 ⅞	10
14	15	11 ½	10 ⅛	13 ⅜	35 ¼	46 ⅜	12 ½	13 ¼	12	12
16	17	13 ½	11 ⅛	14 ⅜	38 ¼	51 ⅜	13 ½	14 ¼	13	12
18	19	14 ½	12 ⅜	15 ⅝	41 ¼	56 ⅜	14 ½	15 ¾	14 ⅛	12
20	21	15 ½	13 ⅜	16 $\frac{11}{16}$	44 ¼	61 ⅜	15 ½	16 ¾	15 ⅛	12
24	25	17 ½	15 ⅜	18 $\frac{11}{16}$	60 ¼	71 ⅜	17 ½	18 ¾	17 ⅜	12

Screw Diam.	Trough Thickness ga.	Spout and Gate Thickness ga.	Part Number		Weight		Cylinder	
			Rack and Pinion	Pneumatic	Rack and Pinion	Pneumatic	Size	Stroke
4	16-14	□16	CRP 416 -F*	CDP 416 -F	18	24	1⅛	6
	12	12	CRP 412 -F*	CDP 412 -F	21	37		
6	16-14-12	□16	CRP 616 -F*	CDP 616 -F	28	45	1⅛	8
	$\frac{3}{16}$	12	CRP 612 -F*	CDP 612 -F	31	48		
9	16-14-12-10	□14	CRP 914 -F*	CDP 914 -F	49	67	1½	12
	$\frac{3}{16}$ - ¼	10	CRP 910 -F*	CDP 910 -F	54	72		
10	16-14-12-10	□14	CRP 1014 -F*	CDP 1014 -F	56	75	1½	12
	$\frac{3}{16}$ - ¼	10	CRP 1010 -F*	CDP 1010 -F	62	81		
12	12-10	□12	CRP 1212 -F*	CDP 1212 -F	94	114	2	14
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 12316-F*	CDP 12316-F	106	126		
14	12-10	□12	CRP 1412 -F*	CDP 1412 -F	107	132	2	16
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 14316-F*	CDP 14316-F	123	148		
16	12-10	□12	CRP 1612 -F*	CDP 1612 -F	112	142	2	18
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 16316-F*	CDP 16316-F	131	161		
18	12-10	□12	CRP 1812 -F*	CDP 1812 -F	157	192	2	20
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 18316-F*	CDP 18316-F	185	220*		
20	10	□12	CRP 2012 -F*	CDP 2012 -F	185	225	2	22
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 20316-F*	CDP 20316-F	212	252		
24	10	□12	CRP 2412 -F*	CDP 2412 -F	233	278	2	26
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 24316-F*	CDP 24316-F	268	313		

* Handwheel supplied as standard assembly
— C Chain wheel

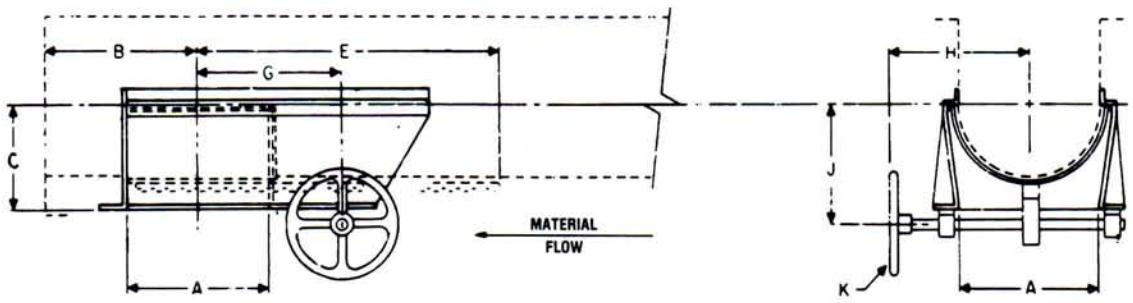
□ Denotes Standard Gages.

For Bolt Pattern See Page 98

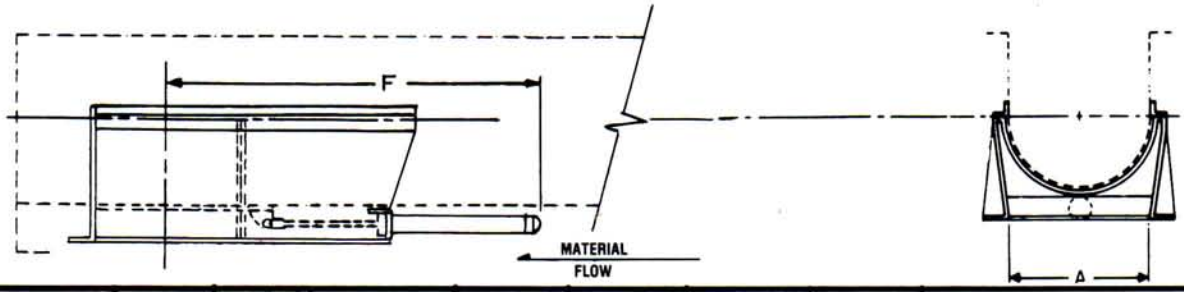
All Rack & Pinion Gates 18" and Larger to Have Double Rack & Pinion.

discharge gates

rack and pinion curved slide



pneumatic curved slide



Screw Diam.	A	B Minimum	C	E	F	G	H	J	K Diam.
4	5	4 ½	3 ¾	20 ¼	20 $\frac{9}{16}$	7 ½	5	6	8
6	7	6	5	23 ¼	25 $\frac{9}{16}$	8 ½	6	6 ¾	8
9	10	8	7 ⅛	27 ¾	34 ⅞	10	9 ½	8 ⅞	10
10	11	9	7 ⅞	29 ¼	36 ⅜	10 ½	10	9 ¾	10
12	13	10 ½	8 ⅞	32 ¼	41 ⅜	11 ½	12 ¼	10 ¾	12
14	15	11 ½	10 ⅛	35 ¼	46 ⅜	12 ½	13 ¼	12	12
16	17	13 ½	11 ⅛	38 ¼	51 ⅜	13 ½	14 ¼	13	12
18	19	14 ½	12 ⅜	41 ¼	56 ⅜	14 ½	15 ¾	14 ⅛	14
20	21	15 ½	13 ⅜	44 ¼	61 ⅜	15 ½	16 ¾	15 ⅛	14
24	25	17 ½	15 ⅜	60 ¼	71 ⅜	17 ½	18 ¾	17 ⅜	14

Screw Diam.	Trough Thickness ga.	Spout and Slide Thickness ga.	Part Number		Weight		Cylinder	
			Rack and Pinion	Pneumatic	Rack and Pinion	Pneumatic	Size	Stroke
4	14	□14	CRP 414 -C*	CDP 414 -C	20	26	1⅛	6
	12	12	CRP 412 -C*	CDP 412 -C	22	38		
6	14-12	□14	CRP 614 -C*	CDP 614 -C	25	48	1⅛	8
	$\frac{3}{16}$	12	CRP 612 -C*	CDP 612 -C	28	44		
9	14-12-10	□14	CRP 914 -C*	CDP 914 -C	46	64	1½	12
	$\frac{3}{16}$ - ¼	10	CRP 910 -C*	CDP 910 -C	54	72		
10	14-12-10	□14	CRP 1014 -C*	CDP 1014 -C	53	72	1½	12
	$\frac{3}{16}$ - ¼	10	CRP 1010 -C*	CDP 1010 -C	62	81		
12	12-10	□12	CRP 1212 -C*	CDP 1212 -C	81	111	2	14
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 12316-C*	CDP 12316-C	97	117		
14	12-10	□12	CRP 1412 -C*	CDP 1412 -C	95	120	2	16
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 14316-C*	CDP 14316-C	114	139		
16	12-10	□12	CRP 1612 -C*	CDP 1612 -C	103	133	2	18
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 16316-C*	CDP 16316-C	116	146		
18	12-10	□12	CRP 1812 -C*	CDP 1812 -C	157	192	2	20
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 18316-C*	CDP 18316-C	187	222		
20	10	□12	CRP 2012 -C*	CDP 2012 -C	175	215	2	22
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 20316-C*	CDP 20316-C	208	248		
24	10	□12	CRP 2412 -C*	CDP 2412 -C	220	265	2	26
	$\frac{3}{16}$ - ¼	$\frac{3}{16}$	CRP 24316-C*	CDP 24316-C	265	310		

* Handwheel supplied as standard assembly
— C Chain wheel

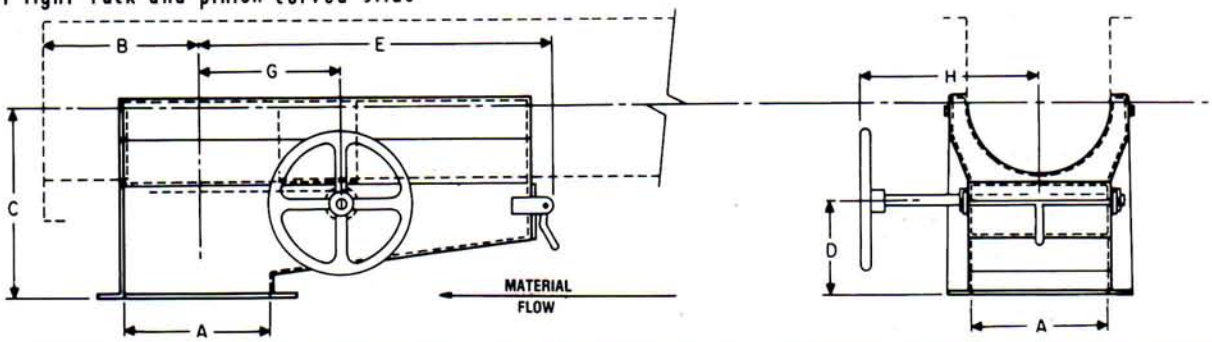
□ Denotes Standard Gages

For Bolt Pattern See Page 98

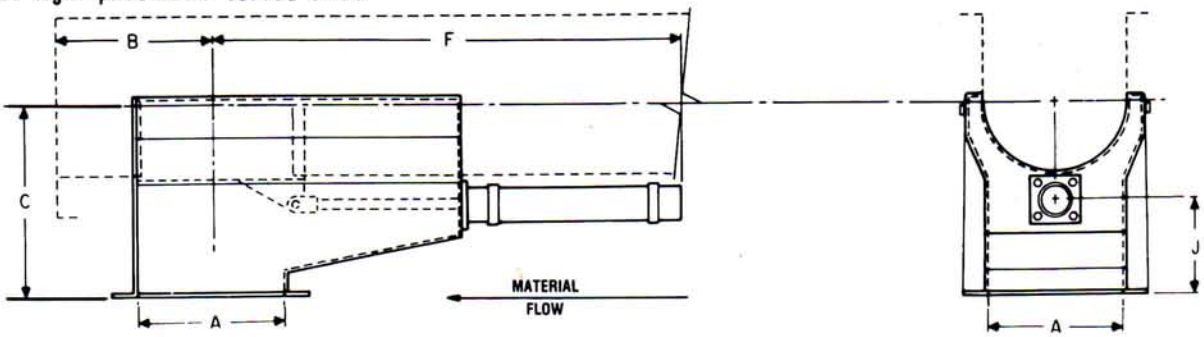
All Rack & Pinion Gates 18" and Larger to Have Double Rack & Pinion.

discharge gates

dust tight rack and pinion curved slide



dust tight pneumatic curved slide



Screw Diam.	A	B Minimum	C	D	E	F	G	H	J	K
4	5	4½	7½	2½	12	23	6	7	2	8
6	7	6	10	4	15½	28½	7½	8	3½	8
9	10	8	12½	5	20	36	9	11	4½	10
10	11	9	13	5	22	39	10	11½	4½	10
12	13	10½	15	5	24½	43½	11½	13	4½	12
14	15	11½	15½	5½	27½	50	12½	14	5½	12
16	17	13½	16½	5½	30½	55	13½	15	5½	12
18	19	14½	18½	6½	35	61½	15	16½	6½	14
20	21	15½	20	7	37	65½	16	17½	7	14
24	25	17½	23	8	44	76½	18	19½	8	14

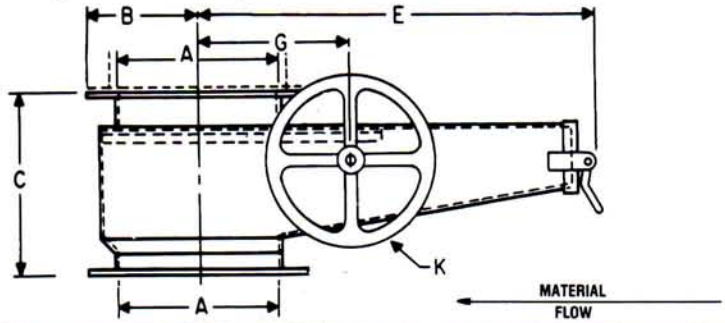
Screw Diam.	Trough Thickness ga.	Spout and Slide Thickness ga.	Part Number		Weight	
			Rack and Pinion	Pneumatic	Rack and Pinion	Pneumatic
4	14	14	CRP 414 -CD*	CDP 414 -CD	30	37
	12	12	CRP 412 -CD*	CDP 412 -CD	35	57
6	14-12	14	CRP 614 -CD*	CDP 614 -CD	46	69
	3/16	12	CRP 612 -CD*	CDP 612 -CD	52	74
9	14-12-10	14	CRP 914 -CD*	CDP 914 -CD	81	103
	3/16 - 1/4	10	CRP 910 -CD*	CDP 910 -CD	89	111
10	14-12-10	14	CRP 1014 -CD*	CDP 1014 -CD	92	115
	3/16 - 1/4	10	CRP 1010 -CD*	CDP 1010 -CD	102	124
12	12-10	12	CRP 1212 -CD*	CDP 1212 -CD	155	176
	3/16 - 1/4	3/16	CRP 12316-CD*	CDP 12316-CD	174	194
14	12-10	12	CRP 1412 -CD*	CDP 1412 -CD	176	204
	3/16 - 1/4	3/16	CRP 14316-CD*	CDP 14316-CD	204	228
16	12-10	12	CRP 1612 -CD*	CDP 1612 -CD	185	219
	3/16 - 1/4	3/16	CRP 16316-CD*	CDP 16316-CD	217	248
18	12-10	12	CRP 1812 -CD*	CDP 1812 -CD	264	296
	3/16 - 1/4	3/16	CRP 18316-CD*	CDP 18316-CD	305	339
20	10	12	CRP 2012 -CD*	CDP 2012 -CD	306	347
	3/16 - 1/4	3/16	CRP 20316-CD*	CDP 20316-CD	350	388
24	10	12	CRP 2412 -CD*	CDP 2412 -CD	385	428
	3/16 - 1/4	3/16	CRP 24316-CD*	CDP 24316-CD	442	482

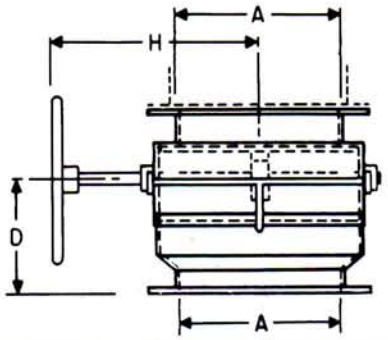
* Handwheel supplied as standard assembly
— C Chain wheel

For Bolt Patterns see page 98.

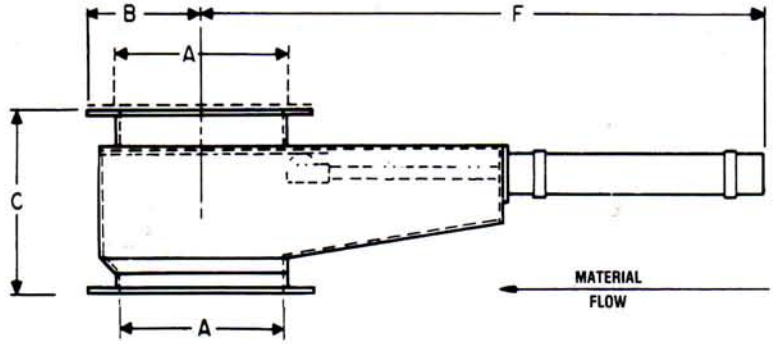
discharge gates

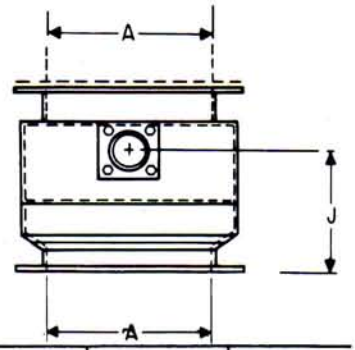
dust tight rack and pinion flat slide





dust tight pneumatic flat slide





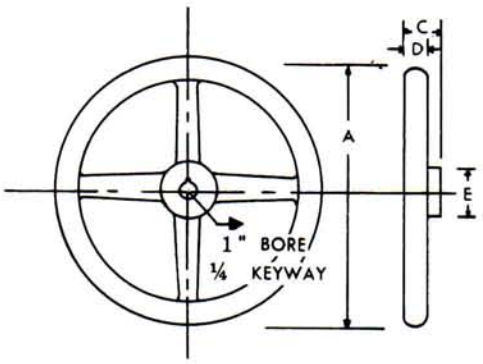
Screw Diam.	A	B	C	D	E	F	G	H	K
4	5	3¾	7½	2½	12	23	6	7	8
6	7	5	9	4	15½	28½	7½	8	8
9	10	6½	10	5	20	36	9	11	10
10	11	7⅛	10½	5	22	39	10	11½	10
12	13	8⅝	10½	5	24½	43½	11½	13	12
14	15	9⅝	10½	5½	27½	50	12½	14	12
16	17	10⅝	10½	5½	30½	55	13½	15	12
18	19	12⅛	11½	6½	35	61½	15	16½	14
20	21	13⅛	12	7	37	65½	16	17½	14
24	25	15⅛	13	8	44	76½	18	19½	14

Screw Diam.	Trough Thickness ga.	Spout and Slide Thickness ga.	Part Number		Weight	
			Rack and Pinion	Pneumatic	Rack and Pinion	Pneumatic
4	14	14	CRP 414 -FD*	CDP 414 -FD	27	34
	12	12	CRP 412 -FD*	CDP 412 -FD	32	52
6	14-12	14	CRP 614 -FD*	CDP 614 -FD	42	63
	3/16	12	CRP 612 -FD*	CDP 612 -FD	47	67
9	14-12-10	14	CRP 914 -FD*	CDP 914 -FD	74	94
	3/16 - ¼	10	CRP 910 -FD*	CDP 910 -FD	81	101
10	14-12-10	14	CRP 1014 -FD*	CDP 1014 -FD	84	105
	3/16 - ¼	10	CRP 1010 -FD*	CDP 1010 -FD	93	113
12	12-10	12	CRP 1212 -FD*	CDP 1212 -FD	141	160
	3/16 - ¼	3/16	CRP 12316-FD*	CDP 12316-FD	158	176
14	12-10	12	CRP 1412 -FD*	CDP 1412 -FD	160	185
	3/16 - ¼	3/16	CRP 14316-FD*	CDP 14316-FD	185	207
16	12-10	12	CRP 1612 -FD*	CDP 1612 -FD	168	199
	3/16 - ¼	3/16	CRP 16316-FD*	CDP 16316-FD	197	225
18	12-10	12	CRP 1812 -FD*	CDP 1812 -FD	240	269
	3/16 - ¼	3/16	CRP 18316-FD*	CDP 18316-FD	277	308
20	10	12	CRP 2012 -FD*	CDP 2012 -FD	278	315
	3/16 - ¼	3/16	CRP 20316-FD*	CDP 20316-FD	318	353
24	10	12	CRP 2412 -FD*	CDP 2412 -FD	350	389
	3/16 - ¼	3/16	CRP 24316-FD*	CDP 24316-FD	402	438

* Handwheel supplied as standard assembly
— C Chain wheel

Note: For Bolt Patterns see page 98.

discharge gate, accessories

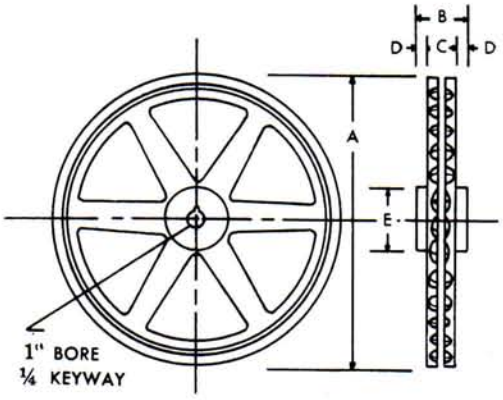


HAND WHEEL

The hand wheel is regularly furnished to rotate the pinion shaft when the slide gate is readily accessible.

DIMENSIONS IN INCHES AND WEIGHT IN POUNDS

Wheel Diameter	Part No.	Weight	C	D	E
10	CRP10-FHW	9	1½	⅝	2
12	CRP12-FHW	11	1½	⅝	2



POCKET WHEEL

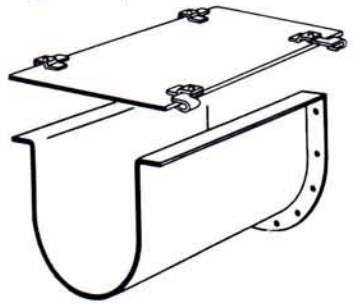
Pocket chain wheels are used to rotate pinion shaft where remote operation is desired. It is designed to be used with number ⅛ pocket chain.

DIMENSIONS IN INCHES AND AVERAGE WEIGHT IN POUNDS

	Part No.	Weight	A	B	C	D	E
Chain Wheel	S10074-CW12	11	12¾	2	1⅜	⅜	2

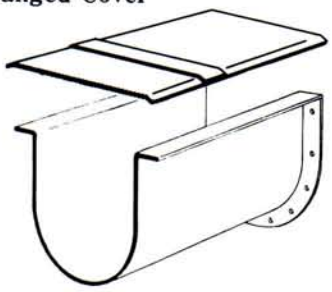
trough cover

Cover w/Spring Clamp



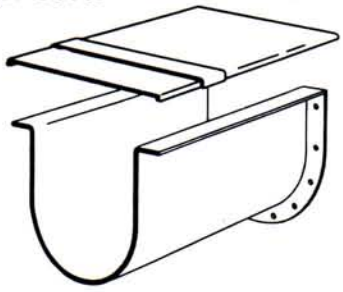
This cover is available with butt straps to cover the joint between cover sections, and with gasket material bonded to the cover for dust tight applications.

Plain semiflanged Cover



Plain semiflanged covers are intended for indoor or general purpose use. Cover edges are slightly flanged to provide more rigidity. A butt-strap is provided at one end which overlaps the succeeding cover section to cover the joint between sections. Covers may be fastened to the trough flange with spring clamps, screw clamps or toggle clamps.

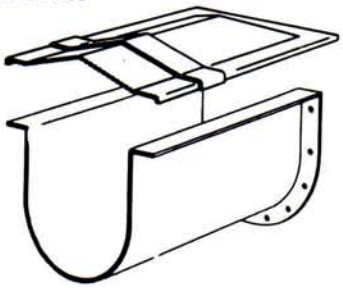
Flanged Cover



Flanged covers provided semi-weather proofing or dust proofing, preventing contamination of the material — particularly when used with gaskets.

Flanged butt-straps are provided at the end of each section to close the joint. These covers may be secured to the trough by bolting, screw clamps or toggle clamps.

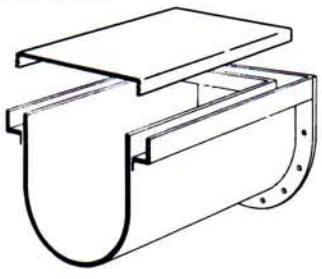
Ridged Cover



Ridged or hip roof covers are recommended for outdoor installations, to shed rain or snow.

Flanged and ridged butt-straps are provided at the end of each section, to close the joint. A welded cap closes the ridged section at ends of the cover.

Dust Seal Cover

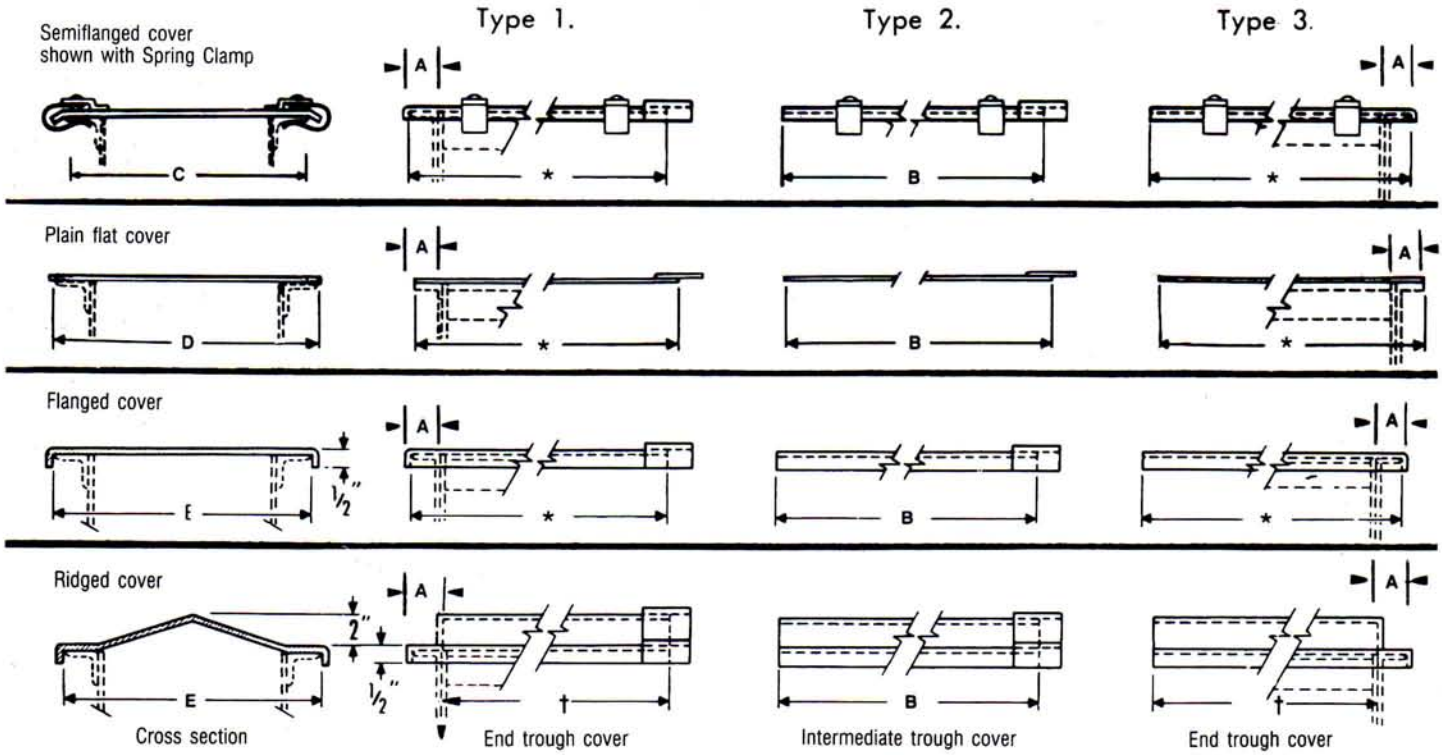


Dust seal covers are flanged down on all four sides to match channel sections fabricated in the special dust seal troughs.

Channels may be filled with sand or other materials to provide the desired seal effect.

trough cover

All conveyor troughs should have some type of cover not only to keep material inside the trough, and to protect material in the trough from outside elements, **but trough should definitely be covered as a safety measure preventing injuries by keeping workers clear of the moving parts inside the conveyor trough.** **See page 100, "Safety."**



Screw Dia.	Thickness Ga.	Semiflanged Cover Part No.	Semiflanged Cover Wt. Per Ft.	Plain Flat Cover Part No.	Plain Flat Cover Wt. Per Ft.	Flanged Cover Part No.	Flanged Cover Wt. Per Ft.	Ridged Cover Part No.	Ridged Cover Wt. Per Ft.	A	B Std.	C	D	E
4	14□	CTC414 -S	2.2	CTC414	2.1	CTC414 -F	2.3	CTC414 -R	2.4	1½	10'-0"	8¼	7⅞	7⅞
	12	CTC412 -S	3.0	CTC412	2.9	CTC412 -F	3.2	CTC412 -R	3.4					
6	14□	CTC614 -S	2.8	CTC614	2.6	CTC614 -F	3.0	CTC614 -R	3.2	1½	10'-0"	10⅞	9⅞	9⅞
	12	CTC612 -S	3.9	CTC612	3.6	CTC612 -F	4.1	CTC612 -R	4.5					
9	14□	CTC914 -S	3.8	CTC914	3.6	CTC914 -F	3.9	CTC914 -R	4.1	1⅝	10'-0"	14⅝	13⅞	13⅞
	12	CTC912 -S	5.3	CTC912	5.1	CTC912 -F	5.4	CTC912 -R	5.7					
10	14□	CTC1014-S	4.0	CTC1014	3.9	CTC1014-F	4.1	CTC1014-R	4.4	1¾	10'-0"	15½	14⅞	14⅞
	12	CTC1012-S	5.7	CTC1012	5.4	CTC1012-F	5.8	CTC1012-R	6.1					
12	14□	CTC1214-S	4.8	CTC1214	4.6	CTC1214-F	4.9	CTC1214-R	5.0	2	12'-0"	18⅜	17½	17½
	12	CTC1212-S	6.7	CTC1212	6.4	CTC1212-F	6.9	CTC1212-R	7.0					
14	14□	CTC1414-S	5.3	CTC1414	5.1	CTC1414-F	5.4	CTC1414-R	5.6	2	12'-0"	20⅜	19½	19½
	12	CTC1412-S	7.5	CTC1412	7.6	CTC1412-F	7.6	CTC1412-R	7.3					
16	14□	CTC1614-S	5.9	CTC1614	5.6	CTC1614-F	6.0	CTC1614-R	6.1	2½	12'-0"	22⅜	21½	21½
	12	CTC1612-S	8.2	CTC1612	7.9	CTC1612-F	8.3	CTC1612-R	8.5					
18	12□	CTC1812-S	9.3	CTC1812	8.9	CTC1812-F	9.4	CTC1812-R	9.6	2½	12'-0"	25⅜	24½	24½
	10	CTC1810-S	12.0	CTC1810	11.5	CTC1810-F	12.1	CTC1810-R	2.3					
20	12□	CTC1212-S	10.0	CTC2012	9.6	CTC2012-F	10.1	CTC2012-R	10.3	2½	12'-0"	27½	26½	26½
	10	CTC2010-S	12.9	CTC2010	12.4	CTC2010-F	13.1	CTC2010-R	13.2					
24	12□	CTC2412-S	11.5	CTC2412	11.1	CTC2412-F	11.6	CTC2412-R	11.8	2½	12'-0"	31⅜	30½	30½
	10	CTC2410-S	14.8	CTC2410	14.3	CTC2410-F	15.0	CTC2410-R	15.1					

For average applications where dust confinement is not a problem, 2'-0" centers of 10 fasteners per 10'-0" section are generally satisfactory. For commercially dust tight 1'-0" centers or 20 fasteners per 10'-0" section are suggested. Top trough angles have holes punched on 12" centers each side.

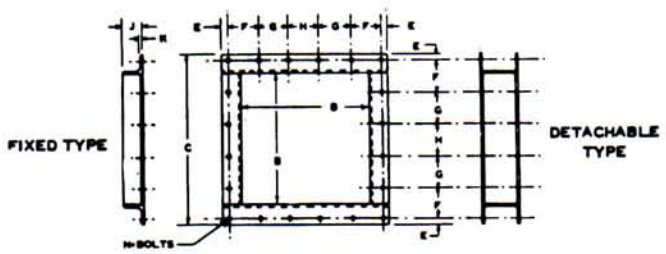
□ Standard gauge.

* Length as req'd to include "A" which is additional length to cover trough ends, one on both ends.
† Length as req'd does not include "A" on ridged cover only.

trough cover - accessories

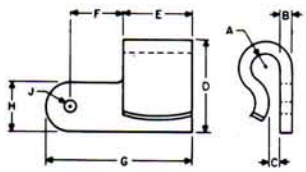
FLANGED CONVEYOR INLETS

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

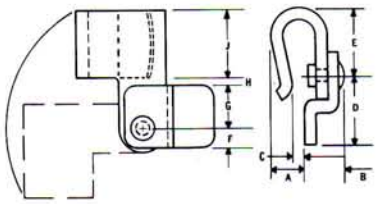


Dimensions In Inches and Weight In Pounds

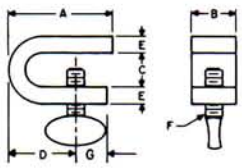
Conveyor Diameter	Part Number		Weight	B	C		E		F	G	H	J	K	N
	Fixed Inlet	Detachable Inlet			Fixed Inlet	Detachable Inlet	Fixed Inlet	Detachable Inlet						
4	CI 4-F	CI 4-D	1.8	5	7½	7½	⅜	⅜	2¼	—	2¼	1¼	1/16	1/4
6	CI 6-F	CI 6-D	5.0	7	10	10	1/2	1/2	2 13/16	—	3	1½	3/16	5/16
9	CI 9-F	CI 9-D	6.8	10	13	13	½	½	4	—	4	1½	3/16	3/4
10	CI10-F	CI10-D	7.4	11	14	14¼	½	5/8	4 5/16	—	4⅜	1½	3/16	3/8
12	CI12-F	CI12-D	12.1	13	17	17¼	¾	⅞	5⅛	—	5¼	2	3/16	3/4
14	CI14-F	CI14-D	13.7	15	19	19¼	¾	⅞	3½	3½	3½	2	3/16	3/8
16	CI16-F	CI16-D	15.3	17	21	21¼	¾	⅞	3¾	4	4	2	¼	3/4
18	CI18-F	CI18-D	29.0	19	24	24¼	1	1⅛	4 7/16	4⅜	4⅜	2½	¼	½
20	CI20-F	CI20-D	31.8	21	26	26¼	1	1⅛	4⅞	4¾	4¾	2½	¼	½
24	CI24-F	CI24-D	37.2	25	30	30¼	1	1⅛	5⅝	5⅝	5½	2½	¼	½



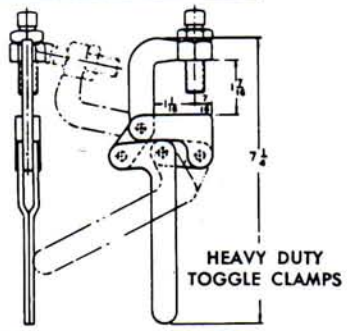
SPRING CLAMPS



SPRING CLAMPS WITH BRACKETS



SCREW CLAMPS



HEAVY DUTY TOGGLE CLAMPS

SPRING CLAMPS are normally used for attaching flat or semi-flanged covers to conveyor troughs. The clamps are riveted to the trough and will pivot to permit removal of cover.
CCA-C

SPRING CLAMPS WITH BRACKETS are attached to the top side of semiflanged covers. Plain spring.
CCA-SB

SCREW CLAMPS are designed especially for attaching flanged cover to conveyor troughs, but can also be used for attaching flat or semi-flanged covers. *Standard and will be furnished unless otherwise specified. CCA-C

HEAVY-DUTY TOGGLE CLAMPS are ordinarily used for drop bottom screw conveyor troughs. Another popular application is for trough covers and panels that require easy access and tight seals. These clamps are readily adjustable to the thickness of the material within the Clamp No. CCA-TH

SPRING CLAMP

Clamp No.	A	B	C	D	E	F	G	H	J
CCA-S1	7/16	10Ga.	¼	1¾	1¼	1¼	3	13/16	¼

SPRING CLAMP WITH COVER BRACKET

Clamp No.	A	B	C	D	E	F	G	H	J
CCA-SB	11/16	⅜	5/16	1¼	1 5/16	⅜	⅞	⅜	1¼

SCREW CLAMP

Clamp No.	A	B	C	D	E	F	G	Wt.
CCA-C1	2¼	1	5/16	1	⅜	⅜	5/16	.42
CCA-C2	2¼	1	1	1	⅜	⅜	⅝	.48

BOLT REQUIREMENTS RELATED TO CONVEYOR TROUGH SIZES

Part Name	Notes	4	6	9	10	12	14	16	18	20	24
Countershaft Ends			6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½			
Covers, Trough (Std. 10 ft.)		10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞	10-⅜ x ⅞
Ends, Trough											
Inside		6-¼ x ¾	6-⅜ x ¾	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1	8-½ x 1 ¼	8-⅝ x 1 ¼	10-⅝ x 1 ¼	10-⅝ x 1 ½	12-⅝ x 1 ½
Inside Discharge		2-¼ x ¾	2-⅜ x ¾	4-⅜ x ⅞	4-⅜ x ⅞	4-½ x 1	4-½ x 1 ¼	4-⅝ x 1 ¼	4-⅝ x 1 ¼	4-⅝ x 1 ½	6-⅝ x 1 ½
Inside Rectangler		5-¼ x ¾	6-⅜ x ¾	8-⅜ x ⅞	8-⅜ x ⅞	10-½ x 1	11-½ x 1 ¼	12-⅝ x 1 ¼	12-⅝ x 1 ¼	12-⅝ x 1 ½	12-⅝ x 1 ½
Outside Type		6-⅜ x ⅞	6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Outside Discharge		2-⅜ x ⅞	2-⅜ x ⅞	4-⅜ x ⅞	4-⅜ x ⅞	4-½ x 1 ¼	4-½ x 1 ¼	4-⅝ x 1 ½	4-⅝ x 1 ½	4-⅝ x 1 ½	6-⅝ x 1 ½
Ends, Tubular Housing		6-⅜ x ⅞	6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Flange Adaptors											
Flange Adpt. Outside Bolts				8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Flange Adpt. Inside Bolts	†		6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	
Flange, Trough		6-⅜ x ⅞	6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Flange, Tubular Housing		6-⅜ x ⅞	6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Flange, Wood Trough	*	6-⅜ x ⅞	6-⅜ x ⅞	8-⅜ x ⅞	8-⅜ x ⅞	8-½ x 1 ¼	8-½ x 1 ¼	8-⅝ x 1 ½	10-⅝ x 1 ½	10-⅝ x 1 ½	12-⅝ x 1 ½
Gates, Discharge											
Flat Slide Attaching Bolts		10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	16-⅜ x 1	16-⅜ x 1	16-½ x 1 ¼	16-½ x 1 ¼	16-½ x 1 ¼
Flange Bolts		12-¼ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	20-⅜ x ⅞	20-⅜ x ⅞	20-½ x 1	20-½ x 1	20-½ x 1
Hanger, Trough											
Style 19B		2-⅜ x 1 ½	2-½ x 2	2-½ x 2	2-½ x 2 ½	2-½ x 2 ½	2-½ x 2 ½	2-⅝ x 2 ¾	2-⅝ x 2 ¾	2-¾ x 2 ¾	2-⅞ x 3
Style 40		4-⅜ x 1	4-⅜ x 1	4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ¾	4-⅝ x 2	4-⅝ x 2 ½
Style 60			2-½ x 2	2-½ x 2	2-½ x 2	2-½ x 2 ½	2-½ x 2 ½	2-⅝ x 2 ¾	2-⅝ x 2 ¾	2-⅝ x 2 ¾	
Style 70			4-⅜ x 1	4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ¾	4-⅝ x 2	
Style 216			4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ½	4-⅝ x 1 ¾	4-⅝ x 2	4-⅝ x 2 ½
Style 220		4-¼ x ⅞	4-⅜ x ⅞	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-⅝ x 1 ¾	4-⅝ x 1 ¾	4-⅝ x 1 ¾
Style 226		4-¼ x 1	4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-⅜ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-½ x 1 ½	4-⅝ x 1 ¾	4-⅝ x 2	4-⅝ x 2 ½
Style 230			4-⅜ x ⅞	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ½	4-½ x 1 ½	4-⅝ x 1 ¾	4-⅝ x 1 ¾	4-⅝ x 1 ¾
Style 300A		4-¼ x ⅞	4-⅜ x ⅞	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ¼	4-½ x 1 ¼	4-⅝ x 1 ½	4-⅝ x 1 ½	4-⅝ x 1 ½
Style 316		4-¼ x ⅞	4-⅜ x ⅞	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ¼	4-½ x 1 ¼	4-⅝ x 1 ½	4-⅝ x 1 ½	4-⅝ x 1 ½
Style 326		4-¼ x ⅞	4-⅜ x ⅞	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ¼	4-½ x 1 ¼	4-⅝ x 1 ½	4-⅝ x 1 ½	4-⅝ x 1 ½
Hanger, Tubular Housing			4-⅜ x 1	4-⅜ x 1	4-⅜ x 1	4-½ x 1 ¼	4-½ x 1 ¼	4-½ x 1 ¼	4-⅝ x 1 ¼	4-⅝ x 1 ¼	4-⅝ x 1 ¼
Saddle - Feet											
Flanged Feet	‡	2-⅜ x 1 ¼	2-⅜ x 1 ¼	2-⅜ x 1 ¼	2-⅜ x 1 ¼	2-½ x 1 ½	2-½ x 1 ½	2-⅝ x 1 ¾	2-⅝ x 1 ¾	2-⅝ x 1 ¾	2-⅝ x 1 ¾
Saddle	† ‡	2-¼ x 1	2-¼ x 1	2-⅜ x 1	2-⅜ x 1	2-½ x 1 ¼	2-½ x 1 ¼	2-½ x 1 ¼	2-⅝ x 1 ¼	2-⅝ x 1 ¼	2-⅝ x 1 ¼
Spouts, Discharge											
Attaching Bolts		8-⅜ x 1 ½	8-⅜ x 1 ½	8-⅜ x 1 ½	8-⅜ x 1 ½	8-⅜ x 1 ½	12-⅜ x 1 ½	12-⅜ x 1 ½	12-½ x 1 ½	12-½ x 1 ½	12-½ x 1 ½
Flange		12-⅜ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	12-⅜ x ⅞	20-⅜ x ⅞	20-⅜ x ⅞	20-½ x 1	20-½ x 1	20-½ x 1
Flange w/Slide		10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	10-⅜ x 1	16-⅜ x 1	16-⅜ x 1	16-½ x 1 ¼	16-½ x 1 ¼	16-½ x 1 ¼

† Flat Head Bolts * Lag Screws Not Furnished. ‡ Anchor Bolts Not Furnished

BOLT REQUIREMENTS RELATED TO SHAFT COUPLING SIZES

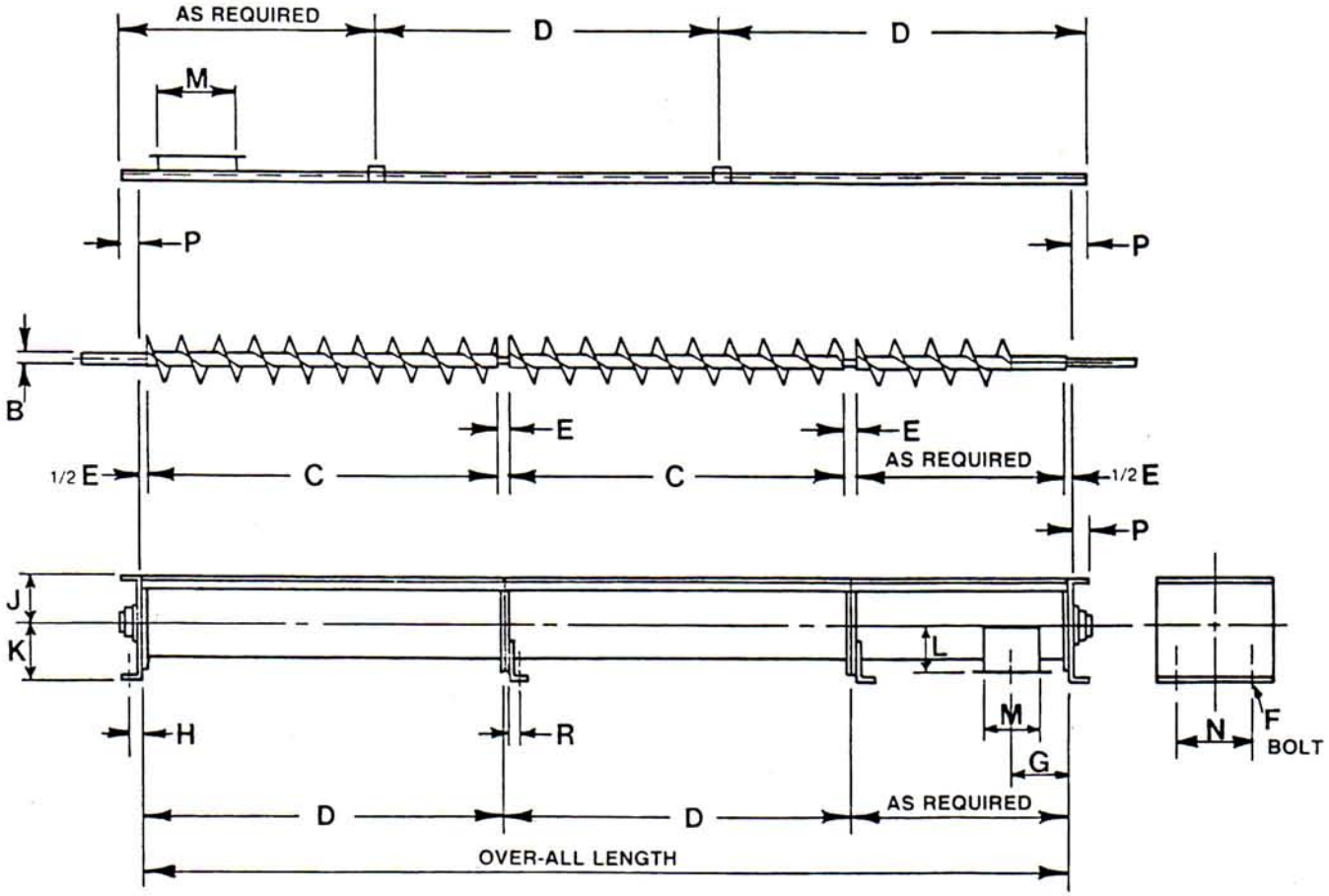
Part Name	Note	1	1 1/4	2	2 7/16	3	3 7/16
Bearings, End							
Discharge Babbit	*	3-3/8 x1 1/4	3-1/2 x1 1/2	3-5/8 x1 3/4	3-5/8 x1 3/4	3-3/4 x2	3-3/4 x2 1/4
Discharge Ball	*	3-3/8 x1 1/4	3-1/2 x1 1/2	3-5/8 x1 1/2	3-5/8 x1 3/4	3-3/4 x2	3-3/4 x2 1/4
Flanged Babbit	*	4-3/8 x1 1/4	4-1/2 x1 1/2	4-5/8 x1 3/4	4-5/8 x1 3/4	4-3/4 x2	4-3/4 x2 1/4
Flanged Ball	*	4-3/8 x1 1/4	4-1/2 x1 1/2	4-5/8 x1 1/2	4-5/8 x1 3/4	4-3/4 x2	4-3/4 x2 1/4
Flanged Roller	*		4-1/2 x2	4-1/2 x2 1/4	4-5/8 x2 1/2	4-3/4 x2 3/4	4-3/4 x3 1/4
Pillow Block Babbit		2-3/8 x1 1/2	2-1/2 x1 3/4	2-5/8 x2	2-5/8 x2 1/4	2-3/4 x2 1/2	2-7/8 x2 3/4
Pillow Block Ball		2-3/8 x1 3/4	2-1/2 x2 1/4	2-5/8 x2 1/2	2-5/8 x2 3/4	2-7/8 x3 1/2	2-7/8 x3 3/4
Pillow Block, Roller			2-1/2 x2 1/4	2-5/8 x2 1/2	2-5/8 x2 3/4	2-3/4 x3	2-7/8 x3 1/2
Bearings, Thrust							
Ball External			4-1/2 x2	4-1/2 x2	4-5/8 x2 1/2	4-3/4 x2 1/2	4-3/4 x2 3/4
Ball Internal			4-1/2 x2	4-1/2 x2	4-5/8 x2 1/2	4-3/4 x2 3/4	4-3/4 x3 1/4
Type "H" Roller			4-3/4 x2 1/2	4-3/4 x2 1/2	4-3/4 x2 3/4	4- 1 x3	4- 1 x3
Type "M" Roller			4-1/2 x2 3/4	4-1/2 x2 3/4	4-5/8 x3 1/4	4-3/4 x3 1/2	4-3/4 x3 3/4
Coupling Bolts	†	3/8 x2 1/16	1/2 x3	5/8 x3 5/8	5/8 x4 3/8	3/4 x5 - 3 1/2" pipe 3/4 x5 1/2 - 4" pipe	7/8 x5 1/2
Seals, Shafts							
Flanged Gland	*		4-1/2 x1 1/2	4-5/8 x1 1/2	4-5/8 x1 1/2	4-3/4 x1 1/2	4-3/4 x1 3/4
Plate w/Ball or Babbit	*		4-1/2 x 2	4-5/8 x2 1/4	4-5/8 x2 1/4	4-3/4 x2 3/4	4-3/4 x 3
Plate w/Roller	*		4-1/2 x2 1/2	4-1/2 x2 3/4	4-5/8 x 3	4-3/4 x3 1/4	4-3/4 x3 1/2
Split Gland	*		2-1/2 x1 1/2	2-1/2 x1 1/2	2-5/8 x1 3/4	2-5/8 x1 3/4	2-3/4 x2 1/4
Waste Pack, w/Ball or Babbit	*		4-1/2 x3 1/4	4-5/8 x3 1/2	4-5/8 x3 3/4	4-3/4 x 4	4-3/4 x3 3/4
Waste Pack, w/Roller	*		4-1/2 x3 3/4	4-1/2 x 4	4-5/8 x4	4-3/4 x4 1/4	4-3/4 x4 1/2

* Flat Head Bolts
† Special Bolts

layout

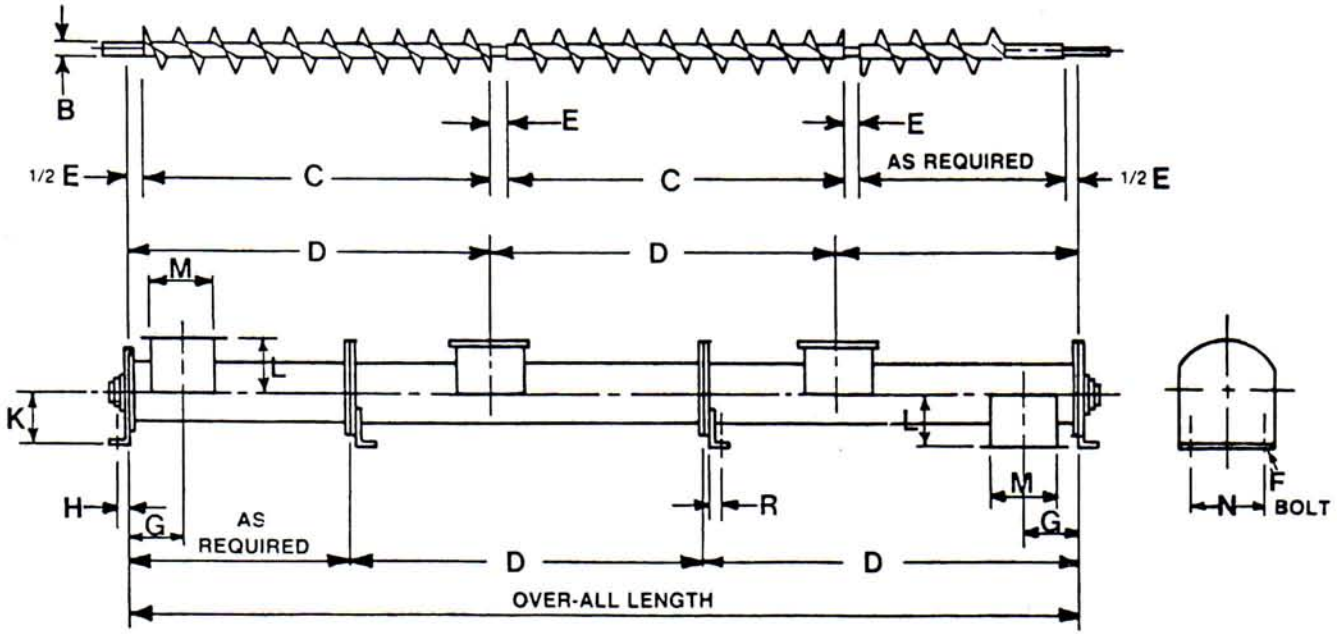
section

conveyor layout · trough type



A Screw Diam.	B Cpling. Diam.	C Length Ft.-In.	D Length Ft.-In.	E	Bolt F	G	H	J	K	L	M	N	P	R
4	1	9-10½	10	1½	⅜	4½	1	3⅝	4⅝	3¾	5	5¾	1 7/16	⅞
6	1½	9-10	10	2	⅜	6	1	4½	5⅝	5	7	8⅛	1½	13/16
9	1½	9-10	10	2	½	8	1½	6⅛	7⅞	7⅛	10	9⅜	1⅝	1 5/16
	2	9-10	10	2	½	8	1½	6⅛	7⅞	7⅛	10	9⅜	1⅝	1 5/16
10	1½	9-10	10	2	⅝	9	1¾	6⅜	8⅞	7⅞	11	9½	1¾	1 9/16
	2	9-10	10	2	⅝	9	1¾	6⅜	8⅞	7⅞	11	9½	1¾	1 9/16
12	2	11-10	12	2	⅝	10½	1⅝	7¾	9⅝	8⅞	13	12¼	2	1⅜
	2 7/16	11-9	12	3	⅝	10½	1⅝	7¾	9⅝	8⅞	13	12¼	2	1⅜
	3	11-9	12	3	⅝	10½	1⅝	7¾	9⅝	8⅞	13	12¼	2	1⅜
14	2 7/16	11-9	12	3	⅝	11½	1⅝	9¼	10⅞	10⅛	15	13½	2	1⅜
	3	11-9	12	3	⅝	11½	1⅝	9¼	10⅞	10⅛	15	13½	2	1⅜
16	3	11-9	12	3	⅝	13½	2	10⅝	12	11⅛	17	14⅞	2½	1¾
18	3	11-9	12	3	⅝	14½	2	12⅛	13⅜	12⅜	19	16	2½	1¾
	3 7/16	11-8	12	4	⅝	14½	2	12⅛	13⅜	12⅜	19	16	2½	1¾
20	3	11-9	12	3	¾	15½	2¼	13½	15	13⅜	21	19¼	2½	2
	3 7/16	11-8	12	4	¾	15½	2¼	13½	15	13⅜	21	19¼	2½	2
24	3 7/16	11-8	12	4	¾	17½	2½	16½	18⅛	15⅜	25	20	2½	2¼

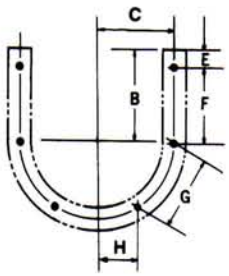
conveyor layout - tubular housing type

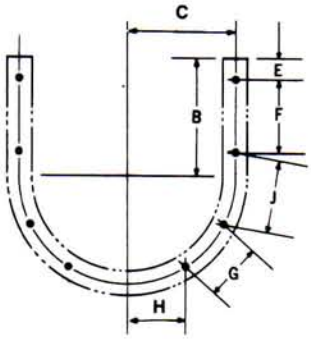


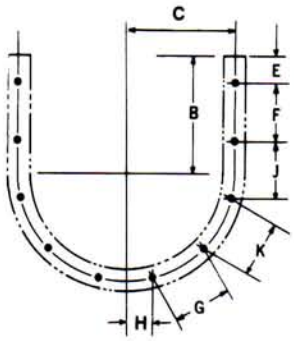
A Screw Diam.	B Cpling. Diam.	C Length Ft.-In.	D Length Ft.-In.	E	Bolt F	G	H	K	L	M	N	R
4	1	9-10 1/2	8	1 1/2	3/8	4 1/2	1	4 5/8	3 3/4	5	5 3/4	7/8
6	1 1/2	9-10	10	2	3/8	6	1	5 5/8	5	7	8 1/8	13/16
9	1 1/2	9-10	10	2	1/2	8	1 1/2	7 7/8	7 1/8	10	9 3/8	1 5/16
	2	9-10	10	2	1/2	8	1 1/2	7 7/8	7 1/8	10	9 3/8	1 5/16
10	1 1/2	9-10	10	2	5/8	9	1 3/4	8 7/8	7 7/8	11	9 1/2	1 9/16
	2	9-10	10	2	5/8	9	1 3/4	8 7/8	7 7/8	11	9 1/2	1 9/16
12	2	11-10	12	2	5/8	10 1/2	1 5/8	9 5/8	8 7/8	13	12 1/4	1 3/8
	2 7/16	11-9	12	3	5/8	10 1/2	1 5/8	9 5/8	8 7/8	13	12 1/4	1 3/8
	3	11-9	12	3	5/8	10 1/2	1 5/8	9 5/8	8 7/8	13	12 1/4	1 3/8
14	2 7/16	11-9	12	3	5/8	11 1/2	1 5/8	10 7/8	10 1/8	15	13 1/2	1 3/8
	3	11-9	12	3	5/8	11 1/2	1 5/8	10 7/8	10 1/8	15	13 1/2	1 3/8
16	3	11-9	12	3	5/8	13 1/2	2	12	11 1/8	17	14 7/8	1 3/4
18	3	11-9	12	3	5/8	14 1/2	2	13 3/8	12 3/8	19	16	1 3/4
	3 7/16	11-8	12	4	5/8	14 1/2	2	13 3/8	12 3/8	19	16	1 3/4
20	3	11-9	12	3	3/4	15 1/2	2 1/4	15	13 3/8	21	19 1/4	2
	3 7/16	11-8	12	4	3/4	15 1/2	2 1/4	15	13 3/8	21	19 1/4	2
24	3 7/16	11-8	12	4	3/4	17 1/2	2 1/2	18 1/8	15 3/8	25	20	2 1/4

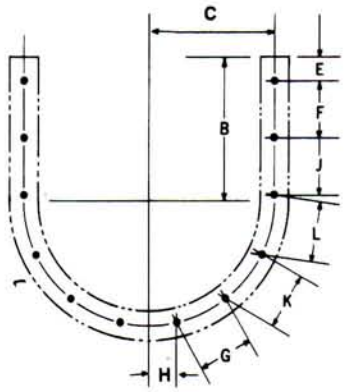
bolt patterns

U-Trough End Flanges





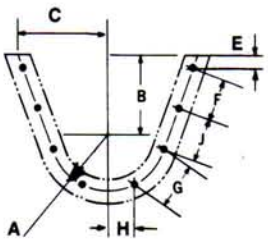


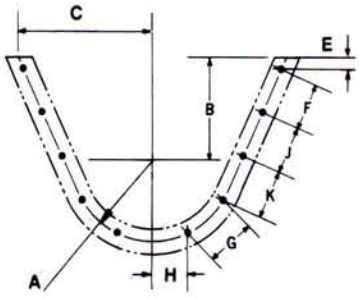


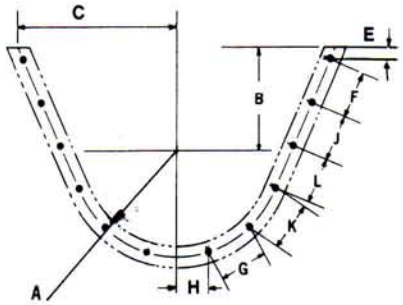
6 Bolts **8 Bolts** **10 Bolts** **12 Bolts**

Screw Dia.	Bolts No.	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	x	x	x
6	6	3/8	4 1/2	4 7/16	1 3/32	4 1/8	4 1/8	2 1/32	x	x	x
9	8	3/8	6 1/8	6 1/4	1 11/16	4 1/8	3 3/4	2 9/16	4 1/8	x	x
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	x	x
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	x	x
14	8	1/2	9 1/4	8 15/16	2 17/32	5 5/8	5 15/16	3	5 15/16	x	x
16	8	5/8	10 5/8	10	2 5/8	6 3/8	6 5/8	3 3/4	6 5/8	x	x
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	x
20	10	5/8	13 1/2	12 3/16	2 25/32	6 1/4	6 11/16	3 11/32	6 11/16	6 11/16	x
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 End Flanges





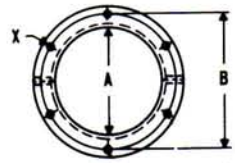


8 Bolts **10 Bolts** **12 Bolts**

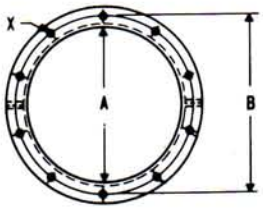
Screw Dia.	Bolts No.	Bolts Dia.	A	B	C	E	F	G	H	J	K	L
6	6	3/8	4 7/16	7	7 3/16	1 27/32	5 1/4	5 1/4	2 1/32	x	x	x
9	8	3/8	6 1/4	9	9 21/32	1 43/64	5	5	2 9/16	5	x	x
12	8	1/2	7 15/16	10	11 13/16	1 13/16	5 3/4	5 3/4	3 7/8	5 3/4	x	x
14	10	1/2	8 15/16	11	12 49/64	2 1/16	5 1/8	5 1/8	3	5 1/8	5 1/8	x
16	10	5/8	10	11 1/2	14 11/16	2 15/64	5 1/2	5 1/2	3 3/4	5 1/2	5 1/2	x
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	x
20	10	5/8	12 3/16	13 1/2	17 7/8	2 9/32	7	7	3 11/32	7	7	x
24	12	5/8	14 1/4	16 1/2	20 61/64	2 5/16	6 7/8	6 7/8	3 5/16	6 7/8	6 7/8	6 7/8

bolt patterns

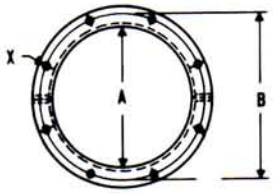
tubular housing flanges



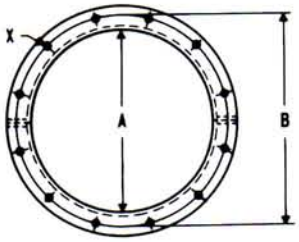
6 bolts



10 bolts

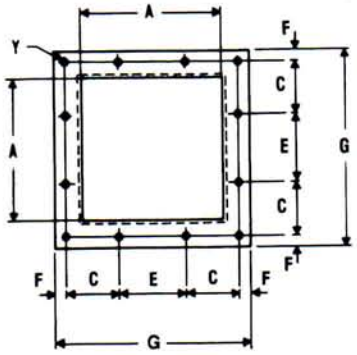


8 bolts

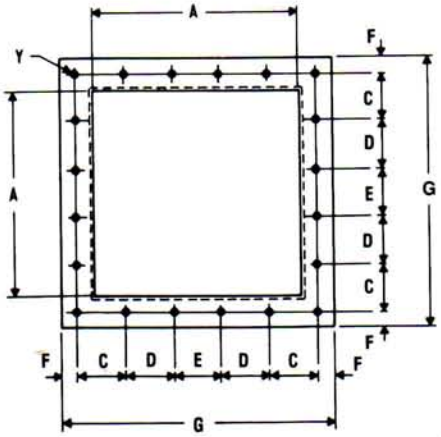


12 bolts

intake & discharge flanges



12 bolts



20 bolts

Screw Size	Flange Bolts		A	B	C	D	E	F	G
	Tubular x	Discharge y							
4	6—⅜	12—¼	5	7	2¼	—	2¼	⅜	7½
6	6—⅜	12—⅜	7	8⅞	2 13/16	—	3	11/16	10
9	8—⅜	12—⅜	10	12½	4	—	4	½	13
10	8—⅜	12—⅜	11	13¼	4 5/16	—	4⅜	⅝	14¼
12	8—½	12—⅜	13	15⅞	5⅛	—	5¼	⅞	17¼
14	8—½	20—⅜	15	17⅞	3½	3½	3½	⅞	19¼
16	8—⅝	20—⅜	17	20	3¾	4	4	⅞	21¼
18	10—⅝	20—½	19	22	4 7/16	4⅜	4⅜	1⅛	24¼
20	10—⅝	20—½	21	24⅜	4⅞	4¾	4¾	1⅛	26¼
24	12—⅝	20—½	25	28½	5⅝	5⅝	5½	1⅛	30¼

installation - maintenance

Screw Conveyor Installation

The necessary components for a completed screw conveyor assembly may be ordered as individual parts or as a complete group which has been shop assembled and match marked before disassembly and shipping in convenient lengths. When individual parts are ordered, no assembly bolts are included unless specified.

More care may be necessary in the selection and alignment of components than when assembling match marked conveyors.

Shop assembled conveyors are prealigned and match marked, resulting in much shorter installation time. All necessary bolts are included.

The following general suggestions should be observed when installing standard conveyor assemblies.

1. Check all components with bill of material and inspect for damage.
2. Arrange conveyor troughs in proper sequence according to match marks or drawing.
3. Connect trough flanges with bolts hand tight.
4. Align the inside trough bottom center lines with a transit or piano wire and tighten trough flange bolts securely.
5. Assemble conveyor end and thrust bearing at the thrust end or, if no thrust end is designated, at the conveyor discharge end.
6. Place the end or drive shaft in the bearing-required, do not tighten bearing set screws
7. Place the first conveyor section in the trough slip the end or drive shaft into the conveyor, insert conveyor coupling bolts and tighten securely.
8. Insert a conveyor coupling in the opposite end of the conveyor section and secure with two conveyor coupling bolts.
9. Place a conveyor hanger bearing on the coupling shaft and clamp temporarily to the trough in such a manner that $\frac{1}{16}$ inch is allowed between the hanger bearing and conveyor pipe end. A clearance of ⅛ inch must also be allowed at the opposite end between the conveyor end plate and conveyor pipe. The conveyor screw should be ½ inch off the trough bottom.
10. Tighten end bearing set screws or clamping device securely against the shaft.
11. Bolt the conveyor hanger bearing to the trough and remove clamp.
12. Insert a coupling shaft in the next conveyor section with conveyor coupling bolts and assemble the opposite end to the existing coupling shaft in the conveyor trough.
13. Place a hanger bearing over the coupling shaft, align in the conveyor trough and clamp securely.
14. Bolt the conveyor hanger bearing to the trough and remove clamp. Repeat the above steps for each successive conveyor section.
15. Assemble the conveyor end shaft in the last conveyor section, and attach to the final coupling shaft in the trough.
16. Slide the end plate and bearing on the end shaft and bolt to the conveyor flange.
17. Lubricate end and hanger bearings if required.
18. Turn the conveyor by hand to insure proper alignment of components. If binding occurs, loosen and realign hanger bearings.

Maintenance

Conveyor end and hanger bearings are available in many types and designs, some of which require lubrication, however others may be intended to operate with no lubrication to prevent material contamination by the lubricant and others may be sealed for life with field lubrication unnecessary.

The frequency of lubrication must be based on each individual installation with due regard to hours of operation and periodic inspection.

Our engineering department may be consulted for specific recommendations with regard to lubrication types and frequency of application.

Periodic inspection of conveyor components is necessary to insure against unexpected failure with the attendant unexpected shut down of the system for repairs.

Inspections should be made at frequent intervals with particular attention to bearing condition, flight thickness at the outside edge, and undue wear at discharge spouts.

One of the drive shaft coupling bolts should be removed periodically and both the bolt and bolt hole inspected for loose fit or bending. The drive shaft bolts transmit more power than any succeeding coupling shaft in the conveyor and will therefore indicate the most severe wear that may be expected.

Safety

It is the responsibility of the contractor, installer, owner, and user to install, maintain and operate the conveyor components and conveyor assemblies manufactured and supplied by Thomas Conveyor Company in such a manner as to comply with the Williams-Steiger Occupational Safety and Health Act, and with all state and local laws and ordinances and the American National Standard Institute Safety Code.

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

1. Conveyors shall not be operated unless the conveyor housing completely encloses the conveyor moving elements and power transmission guards are in place. If the conveyor is to be opened for inspection, cleaning or observation, the motor driving the conveyor is to be locked out electrically in such a manner that it cannot be restarted by anyone, however, remote from the area unless the conveyor housing has been closed, and all other guards are in place.
2. If the conveyor must have an open housing as a condition of its use and application, the entire conveyor is then to be guarded by a railing or fence.
3. Feed openings for shovel, front end loader or other manual or mechanical equipment shall be constructed in such a way that the conveyor opening is covered by grating. If the nature of the material is such that a grating can not be used, then the exposed section of the conveyor is to be guarded by a railing and there shall be warning signs posted.
4. Do not walk on conveyor covers or gratings or power transmission guards.
5. Do not poke or prod material in the conveyor with a bar or stick.
6. Do not place hands or feet in any conveyor opening.
7. Do not overload conveyor or use it for anything but its intended use.
8. Practice good housekeeping.

Thomas Conveyor Company can assist in the selection and design of special devices or equipment that will aid the owner and installer in preparing a safe installation and a safe working place.

A. Overflow devices consisting of a hinged door connected to a limit switch can be arranged to shut off conveyor power when discharge of the conveyor is interrupted or plugged and full.
B. Zero speed switches can be arranged to shut off power in the event the conveyor is stopped due to the presence of foreign material or if for some reason the drive end of the conveyor is still running while the opposite end has stopped.

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

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

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

One or more caution signs as illustrated are attached to conveyor housings.

CAUTION

GUARDS, ACCESS DOORS AND COVERS MUST BE SECURELY FASTENED BEFORE OPERATING THIS EQUIPMENT.

LOCK OUT POWER BEFORE REMOVING GUARDS, ACCESS DOORS AND COVERS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

conversion factors

The principal units are the meter for length, the liter for capacity and the gram for weight. The following prefixes are used for sub-divisions and multiples: milli = 1/000; centi = 1/100; deci = 1/10; deca = 10; hecto = 100; kilo = 1000.

MEASURES OF LENGTH

10 millimeters (mm.)	= centimeter (cm.)
10 centimeters	= 1 decimeter (dm.)
10 decimeters	= 1 meter (m.)
1000 meters	= 1 kilometer (km.)

MEASURES OF WEIGHT

10 milligrams (mg.)	= 1 centigram (cg.)
10 centigrams	= 1 decigram (dg.)
10 decigrams	= 1 gram (g.)
10 grams	= 1 decagram (Dg.)
10 decagrams	= 1 hectogram (Hg.)
10 hectograms	= 1 kilogram (Kg.)
1000 kilograms	= 1 (metric) ton (T.)

SURVEYOR'S SQUARE MEASURE

100 square meters ($m.^2$)	= 1 are (ar.)
100 acres	= 1 hectare (har.)
100 hectares	= 1 sq. kilometer ($Km.^2$)

SQUARE MEASURE

100 sq. millimeters ($mm.^2$)	= 1 sq. centimeter ($cm.^2$)
100 sq. centimeters	= 1 sq. decimeter ($dm.^2$)
100 sq. decimeters	= 1 sq. meter ($m.^2$)

CUBIC MEASURE

1000 cu. millimeters ($mm.^3$)	= 1 cu. centimeter ($cm.^3$)
1000 cu. centimeters	= 1 cu. decimeter ($dm.^3$)
1000 cu. decimeters	= 1 cu. meter ($m.^3$)

DRY AND LIQUID MEASURE

10 milliliters (ml.)	= 1 centiliter (cl.)
10 centiliters	= 1 deciliter (dl.)
10 deciliters	= 1 liter (l.)
100 liters	= 1 hectoliter (Hl.)

1 liter = 1 cubic decimeter = the volume of 1 kilogram of pure water at a temperature of 39.2 degrees F.

LENGTH CONVERSION CONSTANTS FOR METRIC AND U.S. UNITS

Millimeters × .039370 = inches.
Meters × 39.370 = inches.
Meters × 3.2808 = feet.
Meters × 1.09361 = yards.
Kilometers × 3,280.8 = feet.
Kilometers × .62137 = Statute Miles.
Kilometers × .53959 = Nautical Miles.

Inches × 25.4001 = millimeters.
Inches × .0254 = meters.
Feet × .30480 = meters.
Yards × .91440 = meters.
Feet × .0003048 = kilometers.
Statute Miles × 1.60935 = kilometers.
Nautical Miles × 1.85325 = kilometers.

WEIGHT CONVERSION CONSTANTS FOR METRIC AND U.S. UNITS

Grams × 981 = dynes.
Grams × 15.432 = grains.
Grams × .03527 = ounces (Avd.).
Grams × .033818 = fluid ounces (water).
Kilograms × 35.27 = ounces (Avd.).
Kilograms × 2.20462 = pounds (Avd.).
Metric Tons (1000 Kg.) × 1.10231 = Net Ton (2000 lbs.).
Metric Tons (1000 Kg.) × .9842 = Gross Ton (2240 lbs.).

Dynes × .0010193 = grams.
Grains × .0648 = grams.
Ounces (Avd.) × 28.35 = grams.
Fluid Ounces (Water) × 29.57 = grams.
Ounces (Avd.) × .02835 = kilograms.
Pounds (Avd.) × .45359 = kilograms.
Net Ton (2000 lbs.) × .90719 = Metric Tons (1000 Kg.).
Gross Ton (2240 lbs.) × 1.01605 = Metric Tons (1000 Kg.).

AREA CONVERSION CONSTANTS FOR METRIC AND U.S. UNITS

Square Millimeters × .00155 = square inches.
Square Centimeters × .155 = square inches.
Square Meters × 10.76387 = square feet.
Square Meters × 1.19599 = square yards.
Hectares × 2.47104 = acres.
Square Kilometers × 247.104 = acres.
Square Kilometers × .3861 = square miles.

Square Inches × 645.163 = square millimeters.
Square Inches × 6.45163 = square centimeters.
Square Feet × .0929 = square meters.
Square Yards × .83613 = square meters.
Acres × .40469 = hectares.
Acres × .0040469 = square kilometers.
Square Miles × 2.5899 = square kilometers.

VOLUME CONVERSION CONSTANTS FOR METRIC AND U.S. UNITS

Cubic Centimeters × .033818 = fluid ounces.
Cubic Centimeters × .061023 = cubic inches.
Cubic Centimeters × .271 = fluid drams.
Liters × 61.023 = cubic inches.
Liters × 1.05668 = quarts.
Liters × .26417 = gallons.
Liters × .035317 = cubic feet.
Hectoliters × 26.417 = gallons.
Hectoliters × 3.5317 = cubic feet.
Hectoliters × 2.83794 = bushel (2150.42 cu. in.).
Hectoliters × .1308 = cubic yards.
Cubic Meters × 264.17 = gallons.
Cubic Meters × 35.317 = cubic feet.
Cubic Meters × 1.308 = cubic yards.

Fluid Ounces × 29.57 = cubic centimeters.
Cubic Inches × 16.387 = cubic centimeters.
Fluid Drams × 3.69 = cubic centimeters.
Cubic Inches × .016387 = liters.
Quarts × .94636 = liters.
Gallons × 3.78543 = liters.
Cubic Feet × 28.316 = liters.
Gallons × .0378543 = hectoliters.
Cubic Feet × .28316 = hectoliters.
Bushels (2150.42 cu.in.) × .352379 = hectoliters.
Cubic Yards × 7.645 = hectoliters.
Gallons × .00378543 = cubic meters.
Cubic Feet × .028316 = cubic meters.
Cubic Yards × .7645 = cubic meters.

POWER AND HEAT CONVERSION CONSTANTS FOR METRIC AND U.S. UNITS

Calorie × 0.003968 = B.T.U.
Joules × .7373 = foot pounds.
Kilogrammeters × 7.233 = foot pounds.
Cheval Vapeur × .9863 = Horsepower.
Kilowatts × 1.34 = Horsepower.
Kilowatt Hours × 3415 = B.T.U.
(Degrees Cent. × 1.8) + 32 = degrees Fahr.
(Degrees Reamur × 2.25) + 32 = degrees Fahr.

B.T.U. × 252 = calories.
Foot Pounds × 1.3563 = joules.
Foot Pounds × .13825 = kilogrammeters.
Horsepower × 1.014 = Cheval Vapeur.
Horsepower × .746 = kilowatts.
B.T.U. × .00029282 = kilowatt hours.
(Degrees Fahr. — 32) × .555 = degrees Cent.
(Degrees Fahr — 32) × .444 = degrees Reamur.

thomas conveyor company

As one of the founding companies of conveyor manufacturing, Thomas Conveyor has a proud and respected past to live up to.

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