

Screw Conveyor Corporation

Catalog and Engineering Manual



This Screw Conveyor Catalog and Engineering Manual consolidates all pertinent engineering data with completely cataloged product descriptions of components making up the Screw Conveyor Corporation line of Horizontal Screw Conveyors, Inclined Screw Conveyors, Vertical Screw-Lift and Screw Conveyor Feeders.

These units are now used in virtually all industries as well as providing Original Equipment Manufacturers with specialized components to fit their design requirements.

It is sincerely hoped that you will find this manual complete in detail, easy to use and extremely helpful in fulfilling your conveying needs

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Screw conveyors move materials either horizontally, on an incline or vertically. They are used to feed, distribute, collect or mix and can be equipped to either heat or cool while performing this transfer. With the proper cover and gasketing, they are easily made dust or weather tight and rodent proof. Their clean compact design saves valuable space since no return run is required. Screw Conveyors fit in cramped quarters, are simple to support and easy to install . . . and they cost less than most other types of conveyors.

Screw Conveyor Corporation's performance-proved Screw Conveyors are ruggedly built and accurately manufactured to assure complete dependability as well as the versatility required to meet a wide range of job assignments.

Screw Conveyors are performing their assigned tasks in virtually all types of industries and, in addition, special designs are being developed for use as components in machinery and equipment.

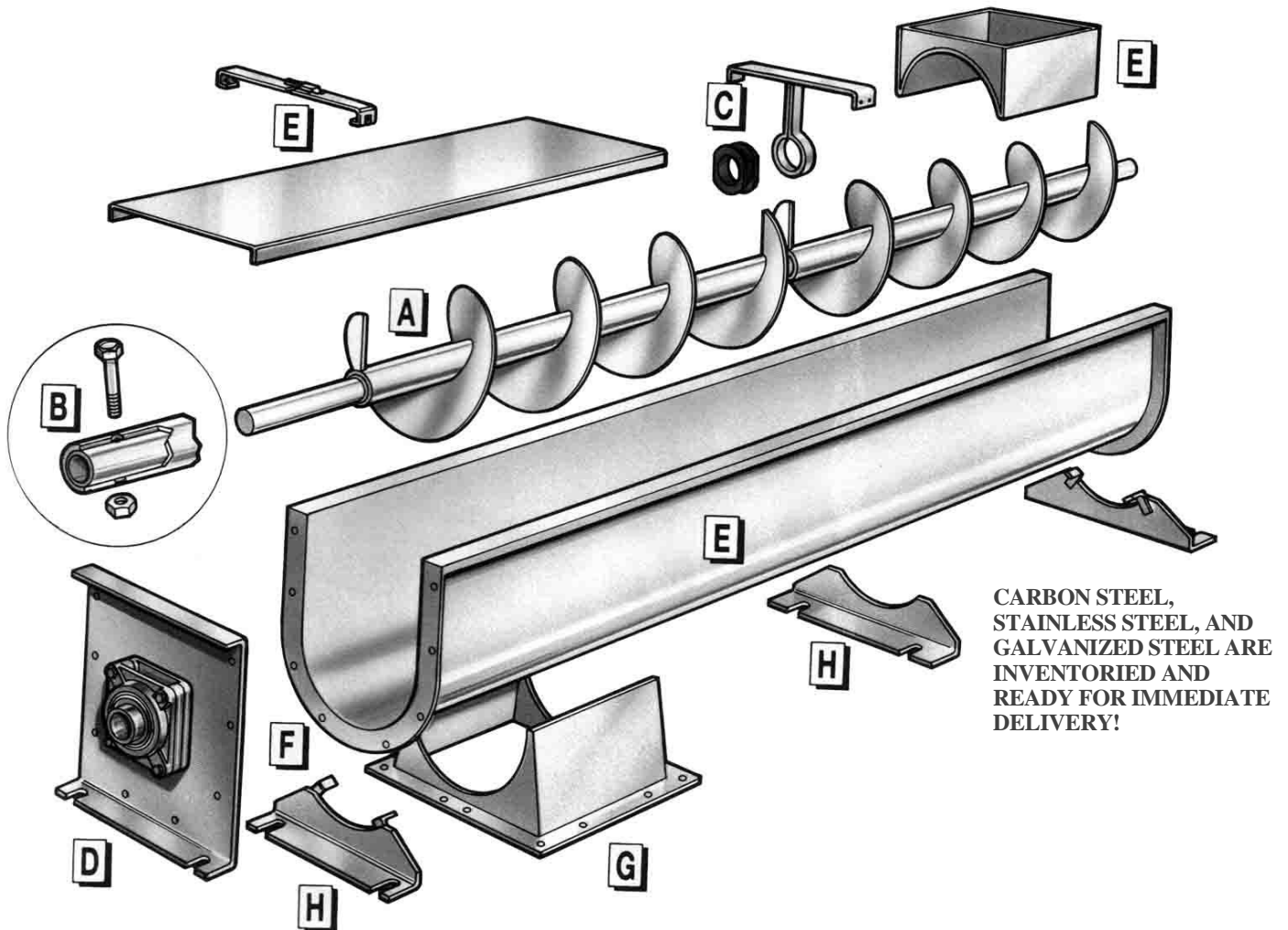


Screw Conveyors are performing their assigned tasks in virtually all types of industries and, in addition, special designs are being developed for use as components in machinery and equipment.



A Wide Choice of Standard Parts

You get the system you need to solve your problem — yet keep cost at a minimum. Select the type of component from our standard line that fits your needs. For special flighting designs to solve a particular problem, please consult with one of our four sales offices.



A Conveyor Screw: Compact, manufactured straight and accurate in helicoid, sectional, ribbon and special designs to meet your requirements.

B Job-Rated Components: Selected to meet the performance required. Precisely worked to insure a longer lasting, truer running unit.

Jig-Drilled Couplings: Assures easy shaft alignment and assembly. Available with "Redi-Change" clamping key for quick disassembly of conveyor screw.

Tem-U-Lac Self-Locking Coupling Bolts: Guards against system damage and costly down-time caused by coupling bolts or nuts working loose.

C Hangers and Bearings: Various styles and bearing materials selected to meet your needs.

D Trough Ends: Several bearing and seal styles are available to match your needs

E Troughs, Covers, Clamps and Shrouds: Ruggedly constructed standard "U" and other styles of troughs including tubular. Covers, clamps and shrouds available for all applications.

F Nu-Weld® Flange: Continuously welded steel flange holds trough in alignment.

G Discharge Spouts: All types available located where you need them...with hand, electric, hydraulic or pneumatic powered gates.

H Supporting Feet and Saddles: Align and fasten the trough to the floor or existing structure.



Applications



Typical installation of screw conveyors at a large grain storage facility.



This Matmaker asphalt finisher uses a Screw Conveyor at the back of the tractor unit to move material outward in both directions and spread it uniformly across the entire paving width.



The Screw-Lift does an efficient elevating job as part of a complete Screw Conveyor system. The Screw-Lift illustrates the compact arrangement possible when space is a concern.



Screw Conveyor system and SCC Bucket Elevators speed grain handling for large facility. Two screw conveyors, running over two rows of tanks,. Has double hanger in center so each half is powered independently. Between the two rows of tanks, a collecting screw conveyor, also with double hanger at center,. System handles whole grains at approximately 100 tons per hour.



Applications



Screw Conveyors can be used to convey multiple materials including wet and dry. This installation demonstrates how liquid material can be conveyed up an incline for ease of loading trucks. All parts of the system are enclosed yet readily accessible.



Special flighting provides fast, clean snow removal. This type of flighting has been used since 1932.



This asphalt fabric filter type dust collector uses Screw Conveyor flighting in the hoppers which return collected fines to the mix.



Partial view of a large outdoor installation employing leveling screws to spread material evenly across the storage area.



Rubber reclaiming operation uses high capacity, compact Screw-Lift and screw conveyor system to transport rubber back and forth between mills and screener.



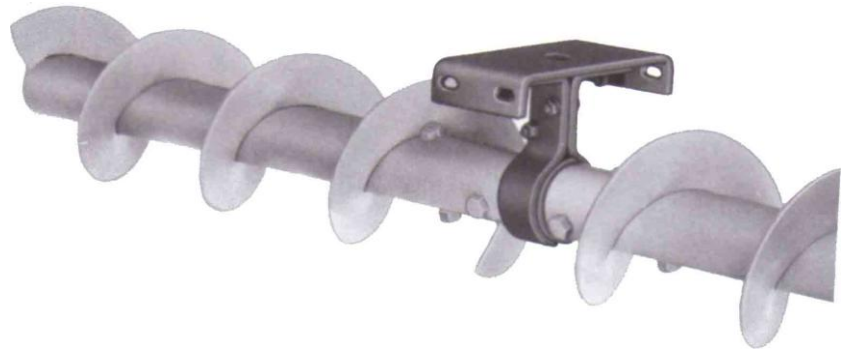
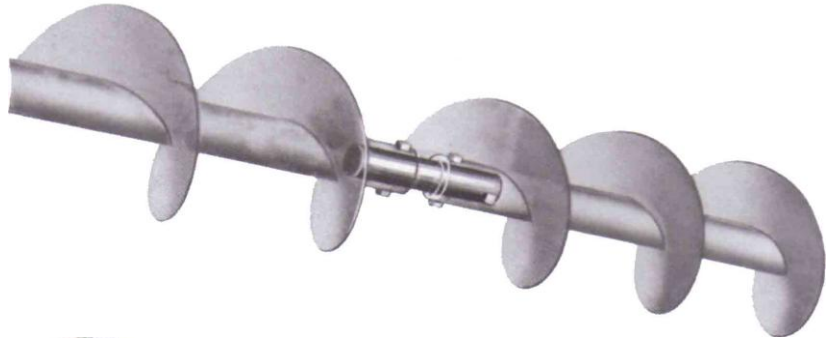
Components of a Screw Conveyor System

The Conveyor Screw imparts a smooth positive motion to the material as it rotates within the trough.

Couplings and Shafts connect and transmit motion to subsequent screw conveyors. Held in place by self-locking Tem-U-Lac bolts.

Redi-Change Sections allow an individual conveyor section to be lifted out without dismantling adjacent parts or components. An optional feature available at extra cost.

Hangers provide support, maintain alignment and serve as bearing surfaces.

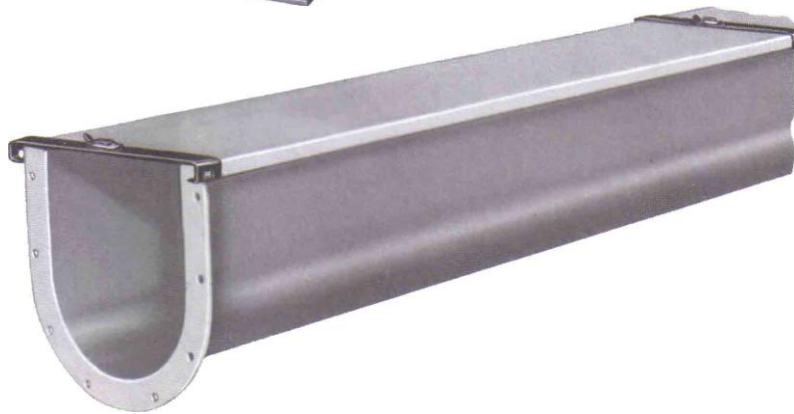




Components of a Screw Conveyor System



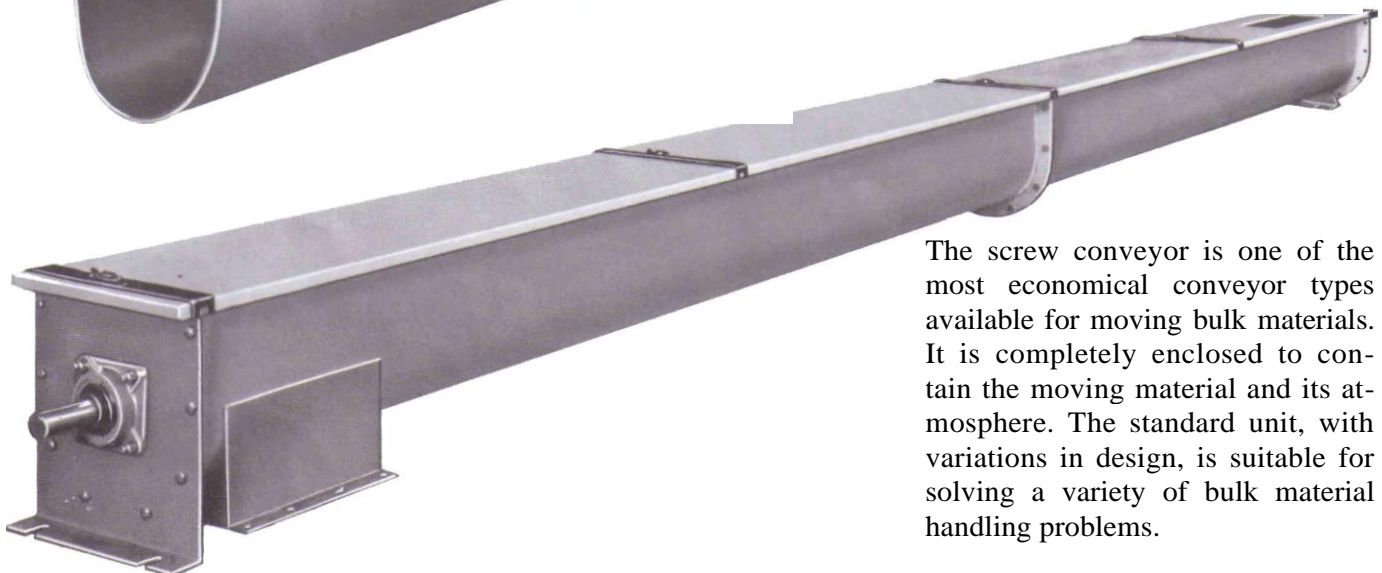
Trough Ends support the conveyor drive and end shafts, maintain trough alignment. May be furnished with choice of bearings or thrust bearings.



Troughs and Covers completely enclose the material being conveyed and the rotating parts. Covers are available in various types and are secured to the trough by Spring, Screw, Tite-Seal or quick-acting Barron Clamps depending on the trough cover combination used.



Inlet and Discharge Openings may be located wherever needed, discharge spouts may be without slides or fitted with either flat or curved slides. These slides may be operated by hand, rack and pinion gears, or by power.

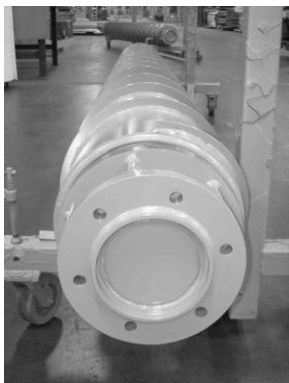
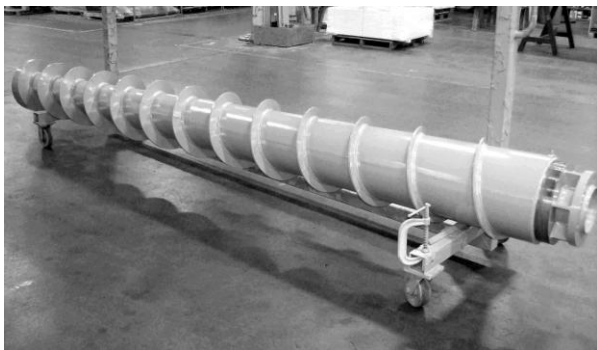


The Complete Screw Conveyor Unit is supported by the trough end and by either Feet or Saddles at intermediate locations.

The screw conveyor is one of the most economical conveyor types available for moving bulk materials. It is completely enclosed to contain the moving material and its atmosphere. The standard unit, with variations in design, is suitable for solving a variety of bulk material handling problems.



Design Data



Engineering and Layout

This section contains all pertinent engineering data and procedures for prescribing and specifying the important features and details of most conveyor installations, however, Screw Conveyor Corporation staff engineers have considerable experience in the proper and successful application of Screw Conveyor design. Please feel free to contact our offices for case studies of your particular problem.

Material Analysis

The initial step in engineering a Screw Conveyor is to analyze the physical characteristics of the material and the rate at which it is to be handled.

The capacity of a Screw Conveyor should be defined in terms of cubic feet per hour. It is also important to determine the maximum capacity the conveyor will be required to handle. This capacity is very often stated in terms of tons or pounds per hour. However, the material to be handled often varies in density. Therefore, the maximum volume or capacity in cubic feet per hour is the maximum pounds per hour of material divided by the minimum possible density of the material. It is volume to be conveyed which determines a conveyor's size and speed. Physical properties of the material to be thoroughly understood are the following:

1. Maximum lump size and the percentage of lumps to the total volume along with the minimum particle size and, if possible, a screen analysis.
2. Flowability characteristics. This is a term related to the angle of repose. See Material Classification, table No. 4, page 11.
3. The abrasive quality of a material can be defined by knowing its hardness on a Moh's scale. If this is not available, compare your material with another known abrasive material
4. Additional factors which affect conveyor operation and design are further discussed on page 10 and are shown in the Material Classification table, page 11.

Please also note that moisture content, while not accounted for in the material tables, will affect the flow characteristics and density of a material. Some materials, when very dry or very wet will tend to have favorable flowability characteristics. Where the moisture content is between these extremes such a material may be quite sluggish and have a high angle of repose. Where this is a possibility, the material should be re-classified. Conveyor design and selection should proceed with the full knowledge of all conditions that can prevail.



No machinery design is complete without considering its usage. A conveyor that will be used intermittently for two hours a day does not have to be built as heavily as one that will operate twenty-four hours per day. Likewise, shock loads will affect the consideration given on gauge of steel used as well as drive equipment. Treatment of these factors and their affect on conveyor design are not discussed here in sufficient detail to prescribe. As mentioned previously, our engineers are available to assist you in every way possible to determine your best conveyor design.

Since the Screw Conveyor selected is based on a maximum volume control of material to be handled, surge loads, overloads and choke feeding must be accounted for in the conveyor design. Screw feeders are popularly used for this control and are discussed in other pages of this catalog.

CLASSIFY YOUR MATERIAL

Materials are classified in table No. 6 on pages 12, 13 and 14. If your material is not listed, it can be classified by comparing it with similar materials that do appear in the table. If necessary, your material can be classified by referring to table No. 4 "Material Classifications", page 11.

ESTABLISH REQUIRED DIAMETER AND SPEED

Knowing your material classification and required capacity, refer to the Capacity Chart, page 15. Your material classification indicates which trough loading applies. Select the size for your capacity using the smallest diameter conveyor that is below the maximum recommended speed. After size is determined then exact conveyor speed is determined by dividing the required capacity in cubic feet per hour by cubic feet per hour at 1 revolution per minute.

Note: If handling a material with hard lumps [lumps that will not break up in the Screw Conveyor] refer below to Table No. 1, "Size of Lumps to Diameter". If the required diameter (as found above) is smaller than the recommended size given in the Lump Chart, use the conveyor diameter from the chart Table #1 and then determine the RPM from Table #7.

Table No. 1 MAXIMUM SIZE OF LUMPS, INCHES

RATIO Lumps to Total Volume	Diameter of Conveyor, Inches									
	4	6	9	10	12	14	16	18	20	24
Lumps 10% or less.	1.0	1.5	2.5	2.5	3.0	3.5	4.0	4.5	5.0	6.0
Lump 20% to 25%	0.5	.75	1.5	1.5	2.0	1.5	3.0	3.0	3.5	3.75
All Lumps	0.3	0.5	.75	.75	1.0	1.25	1.5	2.0	2.0	2.5

COMPONENT GROUP CLASSIFICATION

As shown in the Material table No. 6, pages 12, 13, and 14 each material is assigned to a Component Group. These groups take into account the material's physical characteristics and then match these with the proper conveyor components. A description of these components in each group can be found on page 11, table No. 5.

Please note that Babbitted bearings are considered standard where contamination from the required lubricants is not a factor. Oil impregnated wood or nylon bearings are often recommended where lubricant contamination is a factor. Ball bearings are not recommended for use in conveying gritty or very fine materials which might penetrate the oil seal. For abrasive or applications involving high temperatures, hard iron bearings are normally used. Other types of bearing materials furnished upon request.

ESTABLISH THE "D" FACTOR

The "D" Factor is a constant applied to the particular Component Group of a given conveyor. To establish the "D" Factor, locate your conveyor diameter and bearing material in table No. 2. The figure appearing at this intersection is to be used as "D" in the horsepower formula.

Table No. 2 TABLE OF FACTORS "D"

Size of Conveyor, Inches	TYPE OF HANGER BEARINGS			
	Ball or Roller	Wood, Babbitt,	Self- Lubricating	White Iron or Manganese
3	10	15	24	35
4	12	21	33	50
6	18	33	54	80
9	32	54	96	130
10	38	66	114	160
12	55	98	171	250
14	78	135	255	350
16	106	186	336	480
18	140	240	414	600
20	165	285	510	700
24	230	390	690	950

ESTABLISH THE REQUIRED HORSEPOWER

The formula stated below gives the horsepower (HP) required at the conveyor drive shaft for a standard conveyor.

Additional power will be required for starting under load, overcoming choke loads or other unusual conditions. There is also a loss of power through the drive machinery of from 10% to 15%. To compensate for these factors, the formula for the required motor horsepower is divided by .90. Step No. 1

$$H = \frac{L (PS \text{ plus } QF)}{1,000,000}$$

Where

L = Overall length in feet

D = Bearing Factor (see "D" Factor table) (Table No. 2)

S = Speed in RPM (see Capacity Chart)

Q — Quantity of material being conveyed in lbs./hr.

F — Horsepower factor "F" (see Material Tables)

Step No. 2

Motor Horsepower = H x P

P = 2 when H is less than 1

P = 1.5 when H is between 1 and 2

P = 1.25 when H is between 2 and 4

P = 1.1 when H is between 4 and 5

P = 1 when H is greater than 5

Step No. 3

$$\frac{HP}{.90} = \text{Minimum Recommended Horsepower}$$

CONVEYOR HORSEPOWER RATINGS

One of the factors that must be considered now is to check the required horsepower from the above formula against the torque and horsepower capacity limitation for each conveyor pipe and shaft size.

Use table 3, page 10 which shows the maximum allowable horsepower at various conveyor speeds.

Example: a 9" conveyor mounted on 2" standard pipe, bushed for 1 1/2" diameter couplings, is limited to a maximum of 5 HP at 100 RPM. If, in a given application, a larger motor is required, it is then necessary to use a 9" conveyor mounted on 2 1/2" pipe, bushed for 2" diameter couplings. You will see that this arrangement is rated at 12 HP at 100 RPM or 6 HP at 50 RPM. These ratings are on the basis of two coupling bolts at each end of the conveyor pipe. In some sizes three bolts can be used to increase the drive limitation shown. Consult our Engineering Department for specific recommendations if in doubt.



Design Data

Table No. 3 HORSEPOWER RATINGS

Size of Conveyor, Inches	Pipe Size Inches	Coupling Dia.	Max, HP @125 RPM	Max, HP @100 RPM	Max, HP @ 75 RPM	Max, HP @ 50 RPM
6, 9, and 10	2.0	1 1/2	6.25	5.0	3.75	2.5
9, 10, and 12	2.5	2.0	15.0	12.0	9.0	6.0
12 and 14	3.0	2 7/16	18.75	15.0	11.25	7.5
12, 14, 16 18 and 20	3.5	3.0	30.75	24.6	18.50	12.3
20 and 24	4.0	3 7/16	43.75	35.0	26.25	17.5

SAMPLE PROBLEM

Establish the conveyor size, speed, horsepower and other specifications necessary for conveying 1,800 bushels of dry, clean wheat per hour for a distance of 50 feet.

SOLUTION

Refer to the Material table No. 6, pages 12, 13 and 14. Note: Average weight/cu. ft. of wheat is 45-48 lbs.

The material classification is 47C_{1/2}25N

The recommended types of conveyors are 1A, 1B, 1C

The "F" Factor is .4

The material classification, C_{1/2}25N indicates the material is granular - 1/2" inch and under, very free flowing - angle of repose up to 30°, non-abrasive and contains explosive dust. The recommended types of conveyors, 1A, 1B, 1C indicate the group that is designed for normal service. (See table 5, page 11 and Capacity table 7, page 15.)

Convert the given capacity from bushels per hour to cubic feet per hour. Known: there are 1.25 cubic feet in a bushel of wheat. Therefore, 1,800 x 1.25 equals 2,250 cubic feet per hour. Now, 2,250 cu. ft. per hour X 48 lbs. equals 108,000 lbs./hr. This will be assumed to be the maximum desired capacity. Turn to the Capacity Chart table No. 7, page 15 and establish the conveyor diameter and proper speed. As you will note C25 material class has a 45% recommended trough loading and 2,250 cu. ft./hr. requires a 12" diameter screw conveyor operating at 116 RPM (EXAMPLE: 2,250/19.4 = 115.9 or 116 RPM.) Remember, do not exceed the maximum recommended speed without first consulting with our staff engineers. If hard lumps had been present, we would now consult table No. 1, page 9.

We now know that:

L = 50 feet

D — 96 (see "D" Factor table, {table No. 2) 12" conveyor with wood bearings)

S = 116 RPM [see Capacity Chart) Q - 108,000 lbs./hr.

F = .4 (see Material Tables)

Now, inserting these figures in the formula:

$$H = \frac{50(96 \times 116 + 108,000 \times .4)}{1,000,000}$$

Therefore: H = 2.8

Motor Horsepower equals H x P (see value of P under formula)

Therefore: 2.8 x 1.25 = 3.5

To be assured of having sufficient power, divide the HP by .90. This gives you a minimum recommended horsepower of 3.9. Your minimum choice of motor size would, therefore, be 5 HP.

Now, refer to the Torque Capacity table No. 3 and note the minimum pipe size for a 12" conveyor is 2 1/2". Maximum allowable horsepower for this conveyor's specifications is 15 HP. Since this figure is in excess of our requirements, we can use the computed 5 HP motor.

Additional Screw Conveyor specifications for indoor operation will be:

Group Classification: 1A

Conveyor Size and Speed: 12" at 120 RPM

Conveyor Screw: 12" Standard Helicoid

Conveyor Trough: 12" No. 12 gauge steel, Double Flange Construction, Flanged Cover and Barron Clamps

Type of hanger bearings: 12" x 2" bore, intermediate hanger with babbitted bearings

Refer to page 17 for additional Layout Data and Details.

SPECIAL APPLICATIONS AND SPECIFICATIONS

The selection procedure, outlined above, takes into account the material's physical characteristics, provides for the proper cross-section loading of a conveyor and specifies, through the component tables, the type of conveyor components to be used. Some material's physical characteristics will require additional special features.

ABRASIVE MATERIALS

Abrasive materials tend to cause excessive wear on Screw Conveyor components and should be carried at low cross-sectional loads and at relatively slow conveyor speeds. For conveyors which will handle extremely abrasive materials or will be subjected to heavy or continuous service, heavy-duty components should be specified. Heavier than standard, surface-hardened or abrasive resistant steels are available for this application.

There are also some materials that are normally considered abrasive which may easily become aerated, thus reflecting a minimum density and greater flowability. Here it is possible to use higher speeds and in some cases, higher cross-sectional loads. Judgment and experience, however, will dictate the conditions when this can occur.

CONTAMINABLE MATERIALS

When handling easily contaminable materials, such as food products or some chemicals, it is possible to specify components and other features of construction which were not necessarily included and made a part of the conveyor selection process. These features would include non-lubricating type intermediate hanger bearings, seals under the end bearings, easily removable trough covers and, possibly, drop bottom conveyor trough construction. Accessibility to the internal parts of the conveyor through the use of some of these features means the conveyor can be easily inspected and cleaned out.

Conveyor Flighting may be continuously welded to the conveyor pipe on either/or both sides of the flight. Grinding and cleaning of the welds can remove scale and/or roughness that could contribute to contamination.

CORROSIVE MATERIALS

When handling bulk materials which are corrosive, conveyor components manufactured from stainless steel, aluminum or other special alloys are available, also hot dipped galvanized carbon steel components may be used in non-abrasive applications.

DEGRADABLE MATERIALS

Materials which tend to break or separate easily, affecting quality, may be handled in larger diameter, slower turning Screw Conveyors to reduce agitation.

EXTREME TEMPERATURES

Materials may be heated or cooled while being conveyed in a jacketed conveyor. When handling materials in extreme temperatures, specify Screw Conveyor components of metal alloys designed to meet these conditions.

FLUIDIZING MATERIALS

When agitated, some materials tend to "aerate" and react similar to a liquid. When handling these materials, it is



important to know the aerated density so that conveyor size and speed will be based on the larger aerated volume. When a volumetric type Feeder is used, the horsepower should be based on the design volume and maximum material density.

MIXING MATERIALS

If the materials are to be mixed or agitated while being conveyed, ribbon flights, cut flights, cut and folded flight or one of the above in combination with paddles, may be used.

MATERIALS WHICH PACK AND RESIST DIGGING

Some materials have very strong resistance to digging which means that it is difficult, and in some cases, impossible to shear a pile of the material or to penetrate it with a sharp edge such as in a conveyor flight. Offsetting the conveyor screw and placement of an angle inside the trough on the carrying side will enable some of these materials to be handled.

Occasionally, materials tend to pack under pressure and become hard in the clearance between the conveyor screw and trough. Some of these materials can then be conveyed satisfactorily if the Screw Conveyor is operated at low speeds and the edge of the flight is used as a cutting edge.

HYGROSCOPIC MATERIALS

Materials which readily absorb moisture and hygroscopic. Such materials become less free flowing as they absorb moisture. This factor must be taken into account when determining conveyor size, HP and speed. Some hygroscopic materials can, as they absorb moisture, change in density and angle of repose and thus, effect the material classification number.

TOXIC MATERIALS

If harmful vapors or dust are released by agitation and conveying, the system should be of sealed construction.

VISCOUS OR STICKY MATERIALS

Viscous materials can best be handled by Ribbon Conveyors because they usually have a tendency to stick and adhere to the joint of the conveyor pipe and flight on a standard conveyor.

Table No. 4 MATERIAL CLASSIFICATION

	Material Characteristics	Class Designation
Size	No. 200 Sieve (.0029") And Under	A ₂₀₀
	Very Fine No. 100 Sieve (.0059") And Under	A ₁₀₀
	No. 40 Sieve (.016") And Under	A ₄₀
	Fine No. 6 Sieve (.132") And Under	B ₆
	1/2" And Under	C _{1/2}
	Granular 3" And Under	D ₃
	7" And Under	D ₇
	16" And Under	D ₁₆
	*Lumpy Over 16" to Be Specified	D _x
	X - Actual Maximum Size	E
Irregular Stringy, Fibrous, Cylindrical, Slabs, Etc	E	
Flowability	Very Free Flowing - Flow Function ▶ 10	1
	Free Flowing - Flow Function ▶ 4 But ◀ 10	2
	Average Flowability - Flow Function ▶ 2 But ◀ 4	3
	Sluggish - Flow Function ◀ 2	4
Abrasiveness	Mildly Abrasive - Index 1-17	5
	Moderately Abrasive - Index 18-67	6
	Extremely Abrasive - Index 68-416	7
Miscellaneous Properties Or Hazards	Builds Up and Hardens	F
	Generates Static Electricity	G
	Decomposes - Deteriorates in Storage	H
	Flammability	J
	Becomes Plastic or Tends to Soften	K
	Very Dusty	L
	Aerates and Becomes fluid	M
	Explosiveness	N
	Stickiness-Adhesion	O
	Contaminable, Affecting Use	P
	Degradable, Affecting Use	Q
	Gives Off Harmful or Toxic Gas or Fumes	R
	Highly Corrosive	S
	Mildly Corrosive	T
	Hygroscopic	U
	Interlocks, Mats or Agglomerates	V
	Oils Present	W
	Packs Under Pressure	X
	Very Light and Fluffy - May Be Windswept	Y
	Elevated Temperature	Z

Table No. 5 COMPONENT GROUP SPECIFICATIONS

Screw Size Inches	Coupling Diameter Inches	Screw Number	Trough Thickness	Cover Thickness
Normal Service [▲]				
Component group 1A			●babbitted bearing hangers	
Component group 1B			●wood bearing hangers	
Component group 1C			●ball bearing hangers	
regular trough				
regular flights				
cold rolled steel couplings				
6	1½	6H304	16 ga.	16 ga.
9	1½	9H306	14 ga.	14 ga.
		9H406	14 ga.	14 ga.
12	2 2 ⁷ / ₁₆	12H408	12 ga.	14 ga.
		12H508	12 ga.	14 ga.
14	2 ⁷ / ₁₆	14H508	12 ga.	14 ga.
16	3	16H610	12 ga.	14 ga.
18	3	18H610	10 ga.	12 ga.
20	3	20H610	10 ga.	12 ga.
24	3 ⁷ / ₁₆	24S712	10 ga.	14 ga.
Heavy Service				
Component group 2A [□]			●babbitted bearing hangers	
Component group 2B [□]			●wood bearing hangers	
Component group 2C [□]			●ball bearing hangers	
Component group 2D [▲]			●hard iron bearing hangers	
heavy trough				
heavy flights				
6	1½	6H308	14 ga.	16 ga.
9	1½	9H312	10 ga.	14 ga.
		9H412	10 ga.	14 ga.
12	2 2 ⁷ / ₁₆ 3	12H408	³ / ₁₆	14 ga.
		12H508	³ / ₁₆	14 ga.
		12H614	³ / ₁₆	14 ga.
14	2 ⁷ / ₁₆ 3	14S512	³ / ₁₆	14 ga.
		14H508	³ / ₁₆	14 ga.
16	3	16H614	³ / ₁₆	14 ga.
18	3	18S616	³ / ₁₆	12 ga.
20	3	20S616	³ / ₁₆	12 ga.
24	3 ⁷ / ₁₆	24S712	³ / ₁₆	12 ga.
Extra Heavy Service				
Component group 3A [▲]			●babbitted bearing hangers	
Component group 3D [□]			●hard iron bearing hangers	
extra-heavy trough				
extra-heavy flights				
6	1½	6H312	10 ga.	16 ga.
9	1½	9H312	³ / ₁₆	14 ga.
		9H414	³ / ₁₆	14 ga.
12	2 2 ⁷ / ₁₆ 3	12H412	¼	14 ga.
		12H512	¼	14 ga.
		12H614	¼	14 ga.
14	3	14H614	¼	14 ga.
16	3	16H614	¼	14 ga.
18	3	18S624	¼	12 ga.
20	3	20S624	¼	12 ga.
24	3 ⁷ / ₁₆	24S724	¼	12 ga.

- For use with non-abrasive materials.
- For use with nonabrasive irregular material or lumpy material containing lumps over ½"
- ▲ For use with mildly abrasive material.
- ▲ For use with mildly corrosive materials.
- For use with very abrasive materials.



Material Table

Table No. 6

MATERIAL	WEIGHT LBS. PER CU. FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F	MATERIAL	WEIGHT LBS. PER CU.FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F
Adipic Acid	45	45A10035	2B	0.5	Bronze Chips	30-50	40B645	2D	2
Alfalfa Meal	14-22	18B645WY	2D	0.6	Buckwheat	37-42	40B625N	1A-1B-1C	0.4
Alfalfa Pellets	41-43	42C1/225	2D	0.5	Calcine, Flour	75-85	80A10035	1A-1B-1C	0.7
Alfalfa Seed	10-15	13B615N	1A-1B-1C	0.4	Calcium Carbide	70-90	80D325N	2D	2
Almonds, Broken	27-30	29C1/235Q	2D	0.9	Calcium Carbonate (See Limestone)	--	--	--	--
Almonds, Whole Shelled	28-30	29C1/235Q	2D	0.9	Calcium Fluoride (See Fluorspar)	--	--	--	--
Alum, Fine	45-50	48B635U	1A-1B-1C	0.6	Calcium Hydrate (See Lime, Hydrated)	--	--	--	--
Alum, Lumpy	50-60	55B625	2A-2B	1.4	Calcium Hydroxide (See Lime, Hydrated)	--	--	--	--
Alumina	55-65	58B627MY	3D	1.8	Calcium Lactate	26-29	28D345QTR	2A-2B	0.6
Alumina Fines	35	35A10027YM	3D	1.6	Calcium Oxide (See Lime, unstaked)	--	--	--	--
Alumina Sized or Briquette	65	65D337	3D	2	Calcium Phosphate	40-50	45A10045	1A-1B-1C	1.6
Aluminate Gel (Aluminate Hydroxide)	45	45B635	2D	1.7	Calcium Sulfate (See Gypsum)	--	--	--	--
Aluminum Chips, Dry	7-15	11E45V	2D	1.2	Carbon, Activated, Dry, Fine*	--	--	--	--
Aluminum Chips, Oily	7-15	11E45V	2D	0.8	Carbon, Black, Pelleted*	--	--	--	--
Aluminum Hydrate	13-20	17C1/235	1A-1B-1C	1.4	Carbon, Black, Powder*	--	--	--	--
Aluminum Ore (See Bauxite)	--	--	--	--	Carborundum	100	100D327	3D	3
Aluminum Oxide	60-120	90A10017M	3D	1.8	Casein	36	36B635	2D	1.6
Aluminum Silicate (Andalusite)	49	49C1/235S	3A-3B	0.8	Cashew Nuts	32-37	35C1/245	2D	0.7
Aluminum Sulfate	45-58	52C1/225	1A-1B-1C	1	Cast Iron, Chips	130-200	165C1/245	2D	4
Ammonium Chloride, Crystalline	45-52	49A10045FRS	3A-3B	0.7	Caustic Soda	88	88B635RSU	3D	1.8
Ammonium Nitrate	45-62	54A4035NTU	3D	1.3	Caustic Soda, Flakes	47	47C1/245RSUX	3A-3B	1.5
Ammonium Sulfate	45-58	52C1/235FOTU	1A-1B-1C	1	Celite (See Diatomaceous Earth)	--	--	--	--
Antimony Powder		A10035	2D	1.6	Cement, Clinker	75-95	85D336	3D	1.8
Apple Pomace, Dry	15	15C1/245Y	2D	1	Cement, Mortar	133	133B635Q	3D	3
Arsenic of Lead (See Lead Arsenate)	--	--	--	--	Cement, Portland	94	94A10026M	2D	1.4
Arsenic Oxide (Arsenolite)*	100-120	110A10035R			Cement, Aerated (Portland)	60-75	68A10016M	2D	1.4
Arsenic Pulverized	30	30A10025R	2D	0.8	Cerrusite (See Lead Carbonate)	--	--	--	--
Asbestos-Rock (Ore)	81	81D337R	3D	1.2	Chalk, Crushed	75-95	85D325	2D	1.9
Asbestos-Shredded	20-40	30E46XY	2D	1	Chalk, Pulverized	67-75	71A10025MXY	2D	1.4
Ash, Black Ground	105	105B635	1A-1B-1C	2	Charcoal, Ground	18-28	23A10045	2D	1.2
Ashes, Coal, Dry-1/2"	35-45	40C1/246TY	3D	3	Charcoal, Lumps	18-28	23D345Q	2D	1.4
Ashes, Coal, Dry-3"	35-40	38D346T	3D	2.5	Chocolate, Cake Pressed	40-45	43D325	2B	1.5
Ashes, Coal, Wet -1/2"	45-50	48C1/246T	3D	3	Chrome Ore	125-140	133D336	3D	2.5
Ashes, Coal, Wet -3"	45-50	48D346T	3D	4	Cinders, Blast Furnace	57	57D336T	3D	1.9
Ashes, Fly (See Fly Ash)	--	--	--	--	Cinders, Coal	40	40D336T	3D	1.8
Asphalt, Crushed -1/2"	45	45C1/245	1A-1B-1C	2	Clay (See Bentonite, Diatomaceous Earth, Fuller's Earth, Kaolin & Marl)				--
Bagasse	7-10	9E45RVXY	2A-2B-2C	1.5	Clay, Ceramic, Dry, Fines	60-80	70A10035P	1A-1B-1C	1.5
Bakelite, Fine	30-40	38B625	1A-1B-1C	1.4	Clay, Calcined	80-100	90B636	3D	2.4
Baking Powder	40-55	48A10035	1B	0.6	Clay, Brick, Dry, Fines	100-120	110C1/236	3D	2
Baking Soda (Sodium Bicarbonate)	40-55	48A10025	1B	0.6	Clay, Dry, Lumpy	60-75	68D335	2D	1.8
Barite (Barium Sulphate)+1/2"-3"	120-180	150D336	3D	2.6	Clinker, Cement (See Cement Clinker)	--	--	--	--
Barite, Powder	120-180	150A10035X	2D	2	Clover Seed	45-58	47B625N	1A-1B-1C	0.4
Barium Carbonate	72	72A10045R	2D	1.6	Coal, Anthracite (River & Culm)	55-61	60B635TY	2A-2B	1
Bar, Wood, Refuse	10-20	15E45TVY	3D	2	Coal, Anthracite, Sized-1/2"	49-61	55C1/225	2A-2B	1
Barley, Fine, Ground	24-38	31B635	1A-1B-1C	0.4	Coal, Bituminous, Mined	40-60	50D335LNXY	1A-1B	0.9
Barley, Malted	31	31C1/235	1A-1B-1C	0.4	Coal, Bituminous, Mined, Sized	45-50	48D335QV	1A-1B	1
Barley, Meal	28	28C1/235	1A-1B-1C	0.4	Coal, Bituminous, Mined, Slack	43-50	47C1/245T	2A-2B	0.9
Barley, Whole	36-48	42B625N	1A-1B-1C	0.5	Coal, Lignite	37-45	41D335T	2D	1
Basalt	80-105	93B627	3D	1.8	Cocoa Beans	30-45	38C1/225Q	1A-1B	0.5
Bauxite, Dry, Ground	68	68B625	2D	1.8	Cocoa, Nibs	35	35C1/225	2D	0.5
Bauxite, Crushed - 3"	75-85	80D336	3D	2.5	Cocoa, Powdered	30-35	33A10045XY	1B	0.9
Beans, Castor, Meal	35-40	38B635W	1A-1B-1C	0.8	Coconut, Shredded	20-22	21E45	2B	1.5
Beans, Castor, Whole Shelled	36	36C1/215W	1A-1B-1C	0.5	Coffee, Chaff	20	20B625MY	1A-1B	1
Beans, Navy, Dry	48	48C1/215	1A-1B-1C	0.5	Coffee, Green Bean	25-32	29C1/225PQ	1A-1B	0.5
Beans, Navy, Steeped	60	60C1/225	1A-1B-1C	0.8	Coffee, Ground, Dry	25	25A4035P	1A-1B	0.6
Bentonite, Crude	34-40	37D345X	2D	1.2	Coffee, Ground, Wet	35-45	40A4045X	1A-1B	0.6
Bentonite-100 Mesh	50-60	55A10025MXY	2D	0.7	Coffee, Roasted Bean	20-30	25C1/225PQ	1B	0.4
Benzene Hexachloride	56	56A10045R	1A-1B-1C	0.6	Coffee, Soluble	19	19A4035PUY	1B	0.4
Bicarbonate of Soda (Baking Soda)	--	--	1B	0.6	Coke, Breeze	25-35	30C1/237	3D	1.2
Blood, Dried	35-45	40D345U	2D	2	Coke, Loose	23-35	30D737	3D	1.2
Blood, Ground, Dried	30	30A10035U	1A-1B	1	Coke, Petrol, Calcined	35-45	40D737	3D	1.3
Bone Ash (Tricalcium Phosphate)	40-50	45A10045	1A-1B	1.6	Compost	30-50	40D745TV	3A-3B	1
Boneblack	20-25	23A10025Y	1A-1B	1.5	Concrete, Pre-Mix, Dry	85-120	103C1/236U	3D	3
Bonechar	27-40	34B635	1A-1B	1.6	Copper Ore	120-150	133DX36	3D	4
Bonemeal	50-60	55B635	2D	1.7	Copper Ore, Crushed	100-150	125D336	3D	4
Bones, Whole	35-50	43E45V	2D	3	Copper Sulphate, (Bluestone)	75-95	85C1/235S	2A-2B-2C	1
Bones, Crushed	35-50	45D345	2D	2	Copperas (See Ferrous Sulphate)	--	--	--	--
Bones, Ground	50	50B635	2D	1.7	Copra, Cake Ground	40-45	43B645HW	1A-1B-1C	0.7
Borate of Lime	60	60A10035	1A-1B-1C	0.6	Copra, Cake, Lumpy	25-30	28D335HW	2A-2B-2C	0.8
Borax, Fine	45-55	50B625T	3D	0.7	Copra, Lumpy	22	22E35HW	2A-2B-2C	1
Borax, Screening-1/2"	55-60	58C1/235	2D	1.5	Copra, Meal	40-45	42B635HW	2D	0.7
Borax, 1 1/2"-2" Lump	55-60	58D335	2D	1.8	Cork, Fine Ground	5-15	10B635JNY	1A-1B-1C	0.5
Borax, 2"-3" Lump	60-70	65D335	2D	2	Cork, Granulated	12-15	14C1/235JY	1A-1B-1C	0.5
Boric Acid, Fine	55	55B625T	3D	0.8	Corn, Cracked	40-50	45B625P	1A-1B-1C	0.7
Boron	75	75A10037	2D	1	Corn Cobs, Ground	17	17C1/225Y	1A-1B-1C	0.6
Bran, Rice-Rye-Wheat	16-20	18B635NY	1A-1B-1C	0.5	Corn Cobs, Whole*	12-15	14E35	2A-2B	--
Braunite (Manganese Oxide)	120	120A10036	2D	2	Corn Ear*	56	56E35	2A-2B	--
Bread Crumbs	20-25	23B635PQ	1A-1B-1C	0.6	Corn Germ	21	21B635PY	1A-1B-1C	0.4
Brewer's Grain, Spent, Dry	14-30	22C1/245	1A-1B-1C	0.5	Corn Grits	40-45	43B635P	1A-1B-1C	0.5
Brewer's Grain, Spent, Wet	55-60	58C1/245T	2A-2B	0.8	Corn Meal	32-40	36B635P	1A-1B	0.5
Brick, Ground-1/8"	100-120	110B637	3D	2.2	Bronze Chips	30-50	40B645	2D	2

Material Table

Engineering



Table No. 6

MATERIAL	WEIGHT LBS. PER CU. FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F	MATERIAL	WEIGHT LBS. PER CU.FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F
Corn Oil, Cake	25	25d745HW	1A-1B	0.6	Ice, Shell	33-35	34D3450	1B	0.4
Corn Seed	45	46C1/225PQ	1A-1B-1C	0.4	Ilmenite Ore	140-160	150D337	3D	2
Corn, Shelled	45	46C1/225PQ	1A-1B-1C	0.4	Iron Ore Concentrate	120-180	150A4037	3D	2.2
Corn Sugar	30-35	33B635PU	1B	1	Iron Oxide Pigment	25	25A10036LMP	1A-1B-1C	1
Cottonseed, Cake, Crushed	40-45	43C1/245HW	1A-1B	1	Iron Oxide, Millscale	75	75C1/236	2D	1.6
Cottonseed, Cake, Lumpy	40-45	43D745HW	2A-2B	1	Iron Pyrites (See Ferrous Sulfide)	--	--	--	--
Cottonseed, Dry, Delinted	22-40	31C1/225X	1A-1B	0.6	Iron Sulphate (See Ferrous Sulfate)	--	--	--	--
Cottonseed, Dry, Not Delinted	18-25	22C1/245XY	1A-1B	0.9	Iron Sulfide (See Ferrous Sulfide)	--	--	--	--
Cottonseed, Flakes	20-25	23C1/235HWY	1A-1B	0.8	Iron Vitriol (See Ferrous Sulfate)	--	--	--	--
Cottonseed, Hulls	12	12B635Y	1A-1B	0.9	Kafir (Corn)	40-45	43C1/225	3D	0.5
Cottonseed, Meal, Expeller	25-30	28B645HW	3A-3B	0.5	Kaolin Clay	63	63D325	2D	2
Cottonseed, Meal, Extracted	35-40	37B645HW	1A-1B	0.5	Kaolin Clay-Tale	42-56	49A4035LMP	2D	2
Cottonseed, Meats, Dry	40	40B635HW	1A-1B	0.6	Kryalith (See Cryolite)	--	--	--	--
Cottonseed, Meats, Rolled	35-40	38C1/245HW	1A-1B	0.6	Lactose	32	32A4035PU	1B	0.6
Cracklings, Crushed	40-50	45D345HW	2A-2B-2C	1.3	Lamp Black (See Carbon Black)	--	--	--	--
Cryolite, Dust	75-90	83A10036L	2D	2	Lead Arsenate	72	72A4035R	1A-1B-1C	1.4
Cryolite, Lumpy	90-110	100D1636	2D	2.1	Lead Arsenite	72	72A4035R	1A-1B-1C	1.4
Cullet, Fine	80-120	100C1/237	3D	2	Lead Carbonate	240-260	250A4035R	2D	1
Cullet, Lumpy	80-120	100D1637	3D	2.5	Lead Ore-1/8"	200-270	235B635	3D	1.4
Culm (See Coal, Anthracite)	--	--	--	--	Lead Ore-1/2"	180-230	205C1/236	3D	1.4
Cupric Sulphate (Copper Sulfate)	--	--	--	--	Lead Oxide (Red Lead)-100 Mesh	30-150	90A10035P	2D	1.2
Detergent (See Soap Detergent)	--	--	--	--	Lead Oxide (Red Lead)-200 Mesh	30-180	105A20035LP	2D	1.2
Diatomaceous Earth	11-17	14A4036Y	3D	1.6	Lead Sulphide - 100 Mesh	240-260	250A10035R	2D	--
Dicalcium Phosphate	40-50	45A4035	1A-1B-1C	1.6	Lignite (See Coal Lignite)	--	--	--	--
Disodium Phosphate	25-31	28A4035	3D	0.5	Limante, Ore, Brown	120	120C1/247	3D	1.7
Distiller's Grain-Spent Dry	30	30B635	2D	0.5	Lime, Ground, Unslaked	60-65	63B635U	1A-1B-1C	0.6
Distiller's Grain-Spent Wet	40-60	50C1/245V	3A-3B	0.8	Lime Hydrated	40	40B635LM	2D	0.8
Dolomite, Crushed	80-100	90C1/236	2D	2	Lime, Hydrated, Pulverized	32-40	36A4035LM	1A-1B	0.6
Dolomite, Lumpy	90-100	95DX36	2D	2	Lime, Pebble	53-56	55C1/225HU	2A-2B	2
Earth, Loam, Dry, Loose	76	76C1/236	2D	1.2	Limestone, Agricultural	68	68B635	2D	2
Ebonite, Crushed	63-70	67C1/235	1A-1B-1C	0.8	Limestone, Crushed	85-90	88DX36	2D	2
Egg Powder	16	16A4035MPY	1B	1	Limestone, Dust	55-95	75A4046MY	2D	1.6-2.0
Epsom Salts (Magnesium Sulfate)	40-50	45A4035U	1A-1B-1C	0.8	Lindane (Benzene Hexachloride)	--	--	--	--
Feldspar, Ground	65-80	73A10037	2D	2	Linseed (See Flaxseed)	--	--	--	--
Feldspar, Lumps	90-100	95D737	2D	2	Litharge (Lead Oxide)	--	--	--	--
Feldspar, Powder	100	100A20036	2D	2	Lithopone	45-50	48A32535MR	1A-1B	1
Feldspar, Screenings	75-80	78C1/237	2D	2	Maize (See Milo)	--	--	--	--
Ferrous Sulfide-1/2"	120-135	128C1/226	1A-1B-1C	2	Malt, Dry, Ground	20-30	25B635NP	1A-1B-1C	0.5
Ferrous Sulfide-100M	105-120	113A10036	1A-1B-1C	2	Malt, Dry, Whole	20-30	25C1/235N	1A-1B-1C	0.5
Ferrous Sulphate	50-75	63C1/235U	2D	1	Malt, Meal	36-40	38B625P	1A-1B-1C	0.4
Fish Meal	35-40	38C1/245HP	1A-1B-1C	1	Malt, Sprouts	13-15	14C1/235P	1A-1B-1C	0.4
Fish Scrap	40-50	45D745H	2A-2B-2C	1.5	Magnesium Chloride (Magnesite)	33	33C1/245	1A-1B	1
Flaxseed	43-45	44B635X	1A-1B-1C	0.4	Manganese Dioxide	70-85	78A10035NRT	2A-2B	1.5
Flaxseed Cake (Linseed Cake)	48-50	49D745W	2A-2B	0.7	Manganese Ore	125-140	133DX37	3D	2
Flaxseed Meal (Linseed Meal)	25-45	35B645W	1A-1B	0.4	Manganese Oxide	120	120A10036	2D	2
Flour Wheat	33-40	37A4045LP	1B	0.6	Manganese Sulfate	70	70C1/237	3D	2.4
Flue Dust, Basic Oxygen Furnace	45-60	53A4036LM	3D	3.5	Marble, Crushed	80-95	88B637	3D	2
Flue Dust, Blast Furnace	110-125	118A4036	3D	3.5	Marl, (Clay)	80	80DX36	2D	1.6
Flue Dust, Boiler H. Dry	30-45	38A4036LM	3D	2	Meat, Ground	50-55	53E45HQTX	2A-2B	1.5
Fluorspar, Fine (Calcium Fluoride)	80-100	90B636	2D	2	Meat, Scrap (with bone)	40	40E46H	2D	1.5
Fluorspar, Lumps	90-110	100D736	2D	2	Mica, Flakes	17-22	20B616MY	2D	0.6
Flyash	30-45	38A4036M	3D	2	Mica, Ground	13-15	14B636	2D	0.9
Foundry Sand, Dry (See Sand)	--	--	--	--	Mica, Pulverized	13-15	14A10036M	2D	1
Fuller's Earth, Dry, Raw	30-40	35A4025	2D	2	Milk, Dried, Flake	5-6	6B635PUY	1B	0.4
Fuller's Earth, Oily, Spent	60-65	63C1/2450W	3D	2	Milk, Malted	27-30	29A4045PX	1B	0.9
Fuller's Earth, Calcined	40	40A10025	3D	2	Milk, Powdered	20-45	33B625PM	1B	0.5
Galena (See Lead Sulfide)	--	--	--	--	Milk Sugar	32	32A10035PX	1B	0.6
Gelatine, Granulated	32	32B335PU	1B	0.8	Milk, Whole, Powdered	20-36	28B635PUX	1B	0.5
Gilsonite	37	37C1/235	3D	1.5	Mill Scale (Steel)	120-125	123E46T	3D	3
Glass, Batch	80-100	90C1/237	3D	2.5	Milo Ground	32-36	34B625	1A-1B-1C	0.5
Glue, Ground	40	40B645U	2D	1.7	Milo Maize (Kafir)	40-45	43B615N	1A-1B-1C	0.4
Glue, Pearl	40	40C1/235U	1A-1B-1C	0.5	Molybdenite Powder	107	107B626	2D	1.5
Glue, Veg. Powdered	40	40A4045U	1A-1B-1C	0.6	Monosodium Phosphate	50	50B636	2D	0.6
Gluten, Meal	40	40B635P	1B	0.6	Mortar, Wet	150	150E46T	3D	3
Granite, Fine	80-90	85C1/227	3D	2.5	Mustard Seed	45	45B615N	1A-1B-1C	0.4
Grape, Pomace	15-20	18D345U	2D	1.4	Naphthalene Flakes	45	45B635	1A-1B-1C	0.7
Graphite Flake	40	40B625LP	1A-1B-1C	1	Niacin (Nicotinic Acid)	35	35A4035P	2D	0.8
Graphite Flour	28	28A10035LMP	1A-1B-1C	0.5	Oat Hulls	8-12	10B635NY	1A-1B-1C	0.5
Graphite Ore	65-75	70DX35L	2D	2	Oats	26	26C1/225MN	1A-1B-1C	0.4
Guano, Dry	70	70C1/235	3A-3B	2	Oats, Crimped	19-26	23C1/235	1A-1B-1C	0.5
Gypsum, Calcined	55-60	58B635U	2D	1.6	Oats, Crushed	22	22B645NY	1A-1B-1C	0.6
Gypsum, Calcined, Powdered	60-80	70A10035U	2D	2	Oats, Flour	35	35A10035	1A-1B-1C	0.5
Gypsum, Raw - 1"	70-80	75D325	2D	2	Oats, Rolled	19-24	22C1/235NY	1A-1B-1C	0.6
Hay, Chopped*	8-12	10C1/235JY	2A-2B	1.6	Oleo Margarine (Margarine)	59	59E45HKPWX	2A-2B	0.4
Hexanedioic Acid (See Adipic Acid)	--	--	--	--	Orange Peel, Dry	15	15E45	2A-2B	1.5
Hominy, Dry	35-50	43C1/225D	1A-1B-1C	0.4	Oxalic Acid Crystals-Ethane Diacid Crystals	60	60B635QS	1A-1B	1
Hops, Spent, Dry	35	35D335	2A-2B-2C	1	Oyster Shells, Ground	50-60	55C1/236T	3D	1.6-2.0
Hops, Spent, Wet	50-55	53D345V	2A-2B	1.5	Oyster Shells, Whole	80	80D336TV	3D	2.1-2.5
Ice, Crushed	35-45	40D3350	2A-2B	0.4	Paper Pulp (4% or less)	62	62E45	2A-2B	1.5
Ice, Flaked	40-45	43C1/2350	1B	0.6	Paper Pulp (6% to 15%)	60-62	61E45	2A-2B	1.5
Ice Cubes	33-35	34D3350	1B	0.4	Ice, Shell	33-35	34D3450	1B	0.4



Material Table

Table No. 6

MATERIAL	WEIGHT LBS. PER CU. FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F	MATERIAL	WEIGHT LBS. PER CU.FT.	MATERIAL CLASS	COMPONENT GROUP	H.P. MATERIAL FACTOR F
Paraffin Cake - 1/2"	45-45	45c1/245K	1A-1B	0.6	Slate, Ground-1/8"	82-85	84B636	2D	1.6
Peanuts, Clean, In Shell	15-20	18D335Q	2A-2B	0.6	Sludge, Sewage, Dried	40-50	45E47TW	3D	0.8
Peanut Meal	30-30	30B635p	1B	0.6	Sludge, Sewage, Dry Ground	45-55	50B46S	2D	0.8
Peanuts, Raw, Uncleaned (Unshelled)	15-20	18D336Q	3D	0.7	Soap, Beads or Granules	15-35	25B635Q	1A-1B-1C	0.6
Peanuts, Shelled	35-45	40C1/235Q	1B	0.4	Soap, Chips	15-25	20C1/235Q	1A-1B-1C	0.6
Peas, Dried	45-50	48C1/215NQ	1A-1B-1C	0.5	Soap Detergent	15-50	33B635FQ	1A-1B-1C	0.8
Perlite-Expanded	8-12	10C1/236	2D	0.6	Soap, Flakes	5-15	10B635QXY	1A-1B-1C	0.6
Phosphate Acid Fertilizer	60	60B625T	2A-2B	1.4	Soap, Powder	20-25	23B625X	1A-1B-1C	0.9
Phosphate Disodium (See Sodium Phosphate)	--	--	--	--	Soapstone, Talc, Fine	40-50	45A10045XY	1A-1B-1C	2
Phosphate Rock, Broken	75-85	80Dx36	2D	2.1	Soda Ash, Heavy	55-65	60B636	2D	1
Phosphate Rock, Pulverized	60-60	60B636	2D	1.7	Soda Ash, Light	20-35	28A4036Y	2D	0.8
Phosphate Sand	90-100	95B637	3D	2	Sodium Aluminate, Ground	72	72B636	2D	1
Plaster of Paris (See Gypsum)	--	--	--	--	Sodium Aluminum Fluoride (See Krylite)	--	--	--	--
Plumbago (See Graphite)	--	--	--	--	Sodium Aluminum Sulphate*	75	75A10036	2D	1
Polystyrene Beads	40	40B635PQ	1B	0.4	Sodium Bentonite (See Bentonite)	--	--	--	--
Polyvinyl, Chloride Powder	20-30	25A10045KT	2B	1	Sodium Bicarbonate (See Baking Soda)	--	--	--	--
Polyvinyl, Chloride Pellets	20-30	25E45KPQT	1B	0.6	Sodium Chloride (See Salt)	--	--	--	--
Polyethylene, Resin Pellets	30-35	33C1/245Q	1A-1B	0.4	Sodium Carbonate (See Soda Ash)	--	--	--	--
Potash (Muriate) Dry	70	70B637	3D	2	Sodium Hydrate (See Caustic Soda)	--	--	--	--
Potash (Muriate) Mine Run	75	75Dx37	3D	2.2	Sodium Hydroxide (See Caustic Soda)	--	--	--	--
Potassium Carbonate	51	51B636	2D	1	Sodium Borate (See Borax)	--	--	--	--
Potassium Chloride Pellets	120-130	125C1/225TU	3D	1.6	Sodium Nitrate	70-80	75D325NS	2A-2B	1.2
Potassium Nitrate-1/2"	76	76C1/216NT	3D	1.2	Sodium Phosphate	50-60	55A35	1A-1B	0.9
Potassium Nitrate-1/8"	80	80B626NT	3D	1.2	Sodium Sulfate (See Salt Cake)	--	--	--	--
Potassium Sulfate	42-48	45B646X	2D	1	Sodium Sulfite	96-96	96B646X	2D	1.5
Potato Flour	48	48A20035MNP	1A-1B	0.5	Sorghum Seed (See Kalf or Milo)	--	--	--	--
Pumice-1/8"	42-48	45B646	3D	1.6	Soybean Meal, Cold	40-40	40B635	1A-1B-1C	0.5
Pyrite, Pellets	120-130	125C1/226	3D	2	Soybean Meal, Hot	40-40	40B635T	2A-2B	0.5
Quartz-100 Mesh	70-80	75A10027	3D	1.7	Soybean, Cake	40-43	42D335W	2A-1B-1C	1
Quartz-1/2"	80-90	85C1/227	3D	2	Soybean, Cracked	30-40	35C1/236NW	2D	0.5
Rice, Bran	20	20B635NY	1A-1B-1C	0.4	Soybean, Flake, Raw	18-25	22C1/235Y	1A-1B-1C	0.8
Rice, Grits	42-45	44B635P	1A-1B-1C	0.4	Soybean, Flour	27-30	29A4035MN	1A-1B-1C	0.8
Rice, Polished	30	30C1/215P	1A-1B-1C	0.4	Soybeans Whole	45-50	48C1/226NW	1A-1B-1C	1
Rice, Hulled	45-49	47C1/225P	1A-1B-1C	0.4	Starch	25-50	38A4015M	1A-1B-1C	1
Rice, Hulls	20-21	21B635NY	1A-1B-1C	0.4	Steel Turnings, Crushed	100-150	125D346VW	3D	3
Rice, Rough	32-36	34C1/235N	1A-1B-1C	0.6	Sugar Beet, Pulp, Dry	12-15	14C1/226	2D	0.9
Rosin-1/2"	65-68	67C1/245Q	1A-1B-1C	1.5	Sugar Beet, Pulp, Wet	25-45	35C1/235X	1A-1B-1C	1.2
Rubber, Reclaimed Ground	23-50	37C1/245	1A-1B-1C	0.8	Sugar, Powdered	50-60	55A10035PX	1B	0.8
Rubber, Pelleted	50-55	53D345	2A-2B-2C	1.5	Sugar, Raw	55-65	60B635PX	1B	1.5
Rye	42-48	45B615N	1A-1B-1C	0.4	Sugar, Refined, Granulated Dry	50-55	53B635PU	1B	1.2
Rye Bran	15-20	18B635Y	1A-1B-1C	0.4	Sugar, Refined, Granulated Wet	55-65	60C1/235X	1B	2
Rye Feed	33	33B635N	1A-1B-1C	0.5	Sulphur, Crushed, -1/2"	50-60	55C1/235N	1A-1B	0.8
Rye Meal	35-40	38B635	1A-1B-1C	0.5	Sulphur, Lumpy, -3"	80-85	83D335N	2A-2B	0.8
Rye Middlings	42-42	42B635	1A-1B	0.5	Sulphur, Powdered	50-60	55A4035MN	1A-1B	0.6
Rye, Shorts	32-33	33C1/235	2A-2B	0.5	Sunflower Seed	19-38	29C1/215	1A-1B-1C	0.5
Safflower, Cake	50	50D326	2D	0.6	Talcum Powder	50-60	55A20036M	2D	0.8
Safflower, Meal	50	50B635	1A-1B-1C	0.6	Talcum, -1/2"	80-90	85C1/236	2D	0.9
Safflower Seed	45	45B615N	1A-1B-1C	0.4	Tanbark, Ground	55-55	55B645	1A-1B-1C	0.7
Saffron (See Safflower)	--	--	--	--	Timothy Seed	36-36	36B635NY	1A-1B-1C	0.6
Sal Ammoniac (Ammonium Chloride)	--	--	--	--	Titanium Dioxide (See Ilmenite Ore)	--	--	--	--
Salt Cake, Dry Coarse	85	85B636TU	3D	2.1	Tobacco, Scraps	15-25	20D345Y	2A-2B	0.8
Salt Cake, Dry Pulverized	65-85	75B636TU	3D	1.7	Tobacco, Snuff	30-30	30B645MQ	1A-1B-1C	0.9
Salicylic Acid	29	29B637U	3D	0.6	Tricalcium Phosphate	40-50	45A4045	1A-1B	1.6
Salt, Dry Coarse	45-60	53C1/236TU	3D	1	Triple Super Phosphate	50-55	53B636RS	3D	2
Salt, Dry Fine	70-80	75B636TU	3D	1.7	Trisodium Phosphate	60-60	60C1/236	2D	1.7
Saltpeter - (See Potassium Nitrate)	--	--	--	--	Trisodium Phosphate Granular	60-60	60B636	2D	1.7
Sand Dry Bank (Damp)	110-130	120B647	3D	2.8	Trisodium Phosphate, Pulverized	50-50	50A4036	2D	1.6
Sand Dry Bank (Dry)	90-110	100B637	3D	1.7	Tung Nut Meats, Crushed	28-28	28D325W	2A-2B	0.8
Sand Dry Silica	90-100	95B627	3D	2	Tung Nuts	25-30	28D315	2A-2B	0.7
Sand Foundry (Shake Out)	90-100	95D337Z	3D	2.6	Urea Prills, Coated	43-46	45B625	1A-1B-1C	1.2
Sand (Resin Coated) Silica	104	104B627	3D	2	Vermiculite, Expanded	16-16	16C1/235Y	1A-1B	0.5
Sand (Resin Coated) Zircon	115	115A10027	3D	2.3	Vermiculite, Ore	80-80	80D336	2D	1
Sawdust, Dry	10-13	12B645UX	1A-1B-1C	0.7	Vetch	48-48	48B616N	1A-1B-1C	0.4
Sea-Coal	65	65B636	2D	1	Walnut Shells, Crushed	35-45	40B636	2D	1
Sesame Seed	27-41	34B626	2D	0.6	Wheat	45-48	47C1/225N	1A-1B-1C	0.4
Shale, Crushed	85-90	88C1/236	2D	2	Wheat, Cracked	40-45	43B625N	1A-1B-1C	0.4
Shellac, Powdered or Granulated	31-31	31B635P	1B	0.6	Wheat, Germ	18-28	23B625	1A-1B-1C	0.4
Silicon Dioxide (See Quartz)	--	--	--	--	White Lead, Dry	75-100	88A4036MR	2D	1
Silica, Flour	80	80A4046	2D	1.5	Wood Chips, Screened	10-30	20D345VY	2A-2B	0.6
Silica Gel + 1/2" -3"	45	45D337HKQU	3D	2	Wood Flour	16-36	26B635N	1A-1B	0.4
Slag, Blast Furnace Crushed	130-180	155D337Y	3D	2.4	Wood Shavings	8-16	12E45VY	2A-2B	1.5
Slag, Furnace Granular, Dry	60-85	63C1/237	3D	2.2	Zinc Oxide, Heavy	30-35	33A10045X	1A-1B	1
Slate, Crushed, -1/2"	80-90	85C1/236	2D	2	Zinc Oxide, Light	10-15	13A10045XY	1A-1B	1

*Consult Engineering Department. REFERENCE TO SPECIFIC MATERIALS IN TABLE SHOULD NOT BE CONSTRUED AS INDICATING THAT ALL MATERIALS ARE RECOMMENDED FOR SCREW CONVEYOR APPLICATION.

Capacity Charts

Engineering



How to Use Capacity Charts for Conveyor Size and Speed

1. Find your material class from material table (First letter & last two numbers). This determines trough loading.
2. Determine size by being at or less than maximum cubic feet per hour.
3. Exact conveyor speed is determined by dividing the required capacity in cubic feet per hour by cubic feet per hour at 1 revolution per minute.


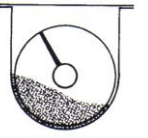
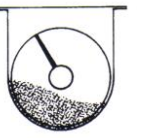
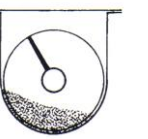
EXAMPLE: from Page #10.

$\frac{2,25}{19.4} = 115.9$ or 116 RPM
conveyor speed

116 RPM is below maximum RPM

4. Refer to Table No. 1, Sizes of Lumps to Diameter, page 9. If the required diameter shown on the Capacity Chart is smaller than the recommended size given in table No. 1, both the diameter and speed must be refigured.

Table 7 Horizontal Screw Conveyor Capacity

Material Class Code	Degree of Trough Loading	Screw Dia. Inch.	Maximum RPM *	Capacity, Cubic Feet Per Hour	
				At Max. RPM	At One RPM
A-15 A-25 B-15 B-25 C-15 C-25	45% 	6 9 12 14 16 18 20 24	165 155 145 140 130 120 110 100	368 1,270 2,820 4,370 6,060 8,120 10,300 16,400	2.23 8.20 19.40 31.20 46.70 67.60 93.70 164.00
A-35 E-35 A-45 E-45 B-35 B-45 C-35 C-45 D-15 D-25 D-35 D-45 E-25 E-15	Non-Abrasive Materials 30% A 	6 9 12 14 16 18 20 24	120 100 90 85 80 75 70 65	180 545 1,160 1,770 2,500 3,380 4,370 7,100	1.49 5.45 12.90 20.80 31.20 45.00 62.50 109.00
A-16 D-16 A-26 D-26 A-36 D-36 A-46 D-46 B-16 E-16 B-26 E-26 B-36 E-36 B-46 E-46 C-16 C-26 C-36 C-46	Abrasive Materials 30% B 	6 9 12 14 16 18 20 24	60 55 50 50 45 45 40 40	90 300 645 1,040 1,400 2,025 2,500 4,360	1.49 5.45 12.90 20.80 31.20 45.00 62.50 109.00
A-17 D-17 A-27 D-27 A-37 D-37 A-47 D-47 B-17 E-17 B-27 E-27 B-37 E-37 B-47 E-47 C-17 C-27 C-37 C-47	15% 	6 9 12 16 18 20 24	60 55 50 50 45 45 40 40	45 150 325 520 700 1,010 1,250 2,180	0.75 2.72 6.46 10.4 15.6 22.5 31.2 54.6

*Maximum recommended R.P.M.



THE EXPERIENCE
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Screw Conveyor Corporation



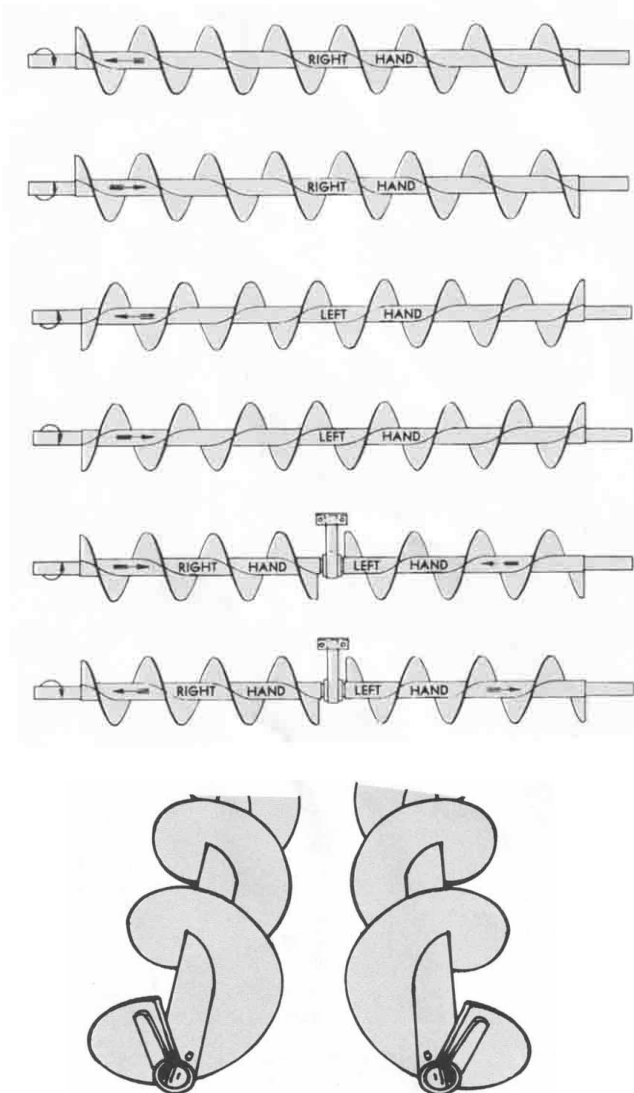
When selecting components for your Screw Conveyor, please refer to the basic layout diagram and accompanying table on page 17 for dimensional standards and recommended arrangements.

SCREW CONVEYOR

Available as either right or left-hand. Right-hand conveyor screws will be supplied unless otherwise specified. See "HAND" OF CONVEYOR, Table No. 8. Use standard length conveyor screws wherever possible. The carrying side of the flighting surface that does the actual job of conveying is free of lugs. The back or non-carrying side of the flight is reinforced at the ends to guard against the flight folding back.

Table No. 8

"HAND" OF CONVEYOR



LEFT HAND

RIGHT HAND

COUPLINGS AND SHAFTS

Coupling, Drive and End shafts connect and transmit the rotary motion to the following conveyor screws.

It is of prime importance that the shafts selected be of sufficient strength to handle the expected horsepower load. See "Horsepower Rating", page 10.

Most conveyor systems are made of standard components, and, in order to replace or renew an intermediate section of conveyor, it is necessary to dismantle the conveyor unit from one end. By incorporating the Redi-Change feature (see page 30) a section can be easily removed from the center of the conveyor without starting from one end and dismantling the entire unit. This saves both time and labor.

HANGERS

Hangers are used as an intermediate support between two sections of conveyor screw. They help maintain alignment and provide a bearing surface for the coupling shaft.

Hangers should be placed clear of inlet openings. They can be placed at trough joints and are designed with spacer bars wide enough for this purpose. Hangers may be fitted with a variety of bearing materials to suit many application requirements.

TROUGH ENDS

Trough Ends support the conveyor screw and the trough and should utilize a thrust bearing. This bearing will hold the rotating conveyor screw in position. This provides for smoother operation, less required power and less wear on the hangers, bearings and other components. The standard duty "Chevron" or the heavy-duty "Hammond" will absorb thrust in either direction, although the preferred location of the drive is on the discharge end.

Seals are used in the trough ends to prevent leakage into or out of the trough. They also give added protection to the end bearings and shafts if abrasive or corrosive materials are being handled.

The shelf-type trough end is very often used when handling hot materials, so that the bearing and drive can be separated by some distance from the heated trough. They are also used for the handling of abrasive or very fine materials which require more effective seals than can be installed under flange bearings. The seal generally used is the split type or for more extreme applications, the pump type (page 45).

TROUGHS AND COVERS

Troughs are available in several standard designs. Standard lengths should be used wherever possible. Differing styles are available for specific applications. When planning a conveyor which will use either "Barren" or "Tite-Seal" clamps, place the cover ends at points other than directly over the hangers. This will allow the grease fittings to be brought up through the cover without interfering with the cover clamps. Gasketing between the trough and the cover is available for dust-tight operation and is standard with either Barren or Tite-Seal covers.



Material Input and Discharge

Care should be exercised in controlling the loading of the conveyor since it is designed to handle a specific maximum volume of material. Problems arise when the conveyor is charged from storage without the benefit of input volume controls. If the rate of material flow is not inherently self-regulating or cannot be regulated by other controls, it is advisable to incorporate a Screw Feeder into the system for handling the surge loads and to deliver a smooth, measured input to the Screw Conveyor.

Input is normally through a square opening cut in the cover but may be through specially built flared spouts designed to fit the bottom of a bin or other machinery. The opening should be kept well back from the nearest hanger to eliminate any possible choking at that point.

Discharge spouts may also be built to fit special machinery and may be flared or longer than standard. The flighting is usually eliminated beyond the midpoint of the last discharge opening to affect complete discharge and reduce the possibility of material carryover. When conveying materials which roll easily, such as soy beans or easily aerated materials such as flour, it may be advisable to install longer than standard discharge spouts. Intermediate trough discharge spouts may be fitted with a variety of discharge control gates or slides. These slides are very often manually operated, although they can also be actuated by rack and pinion gates, hydraulic or pneumatic cylinders, or can be operated with a special electric gear motor complete with limit switches. It is recommended that the discharge spout of units with only one discharge, or the final discharge spout of units with multiple discharges be furnished without slide of any kind.

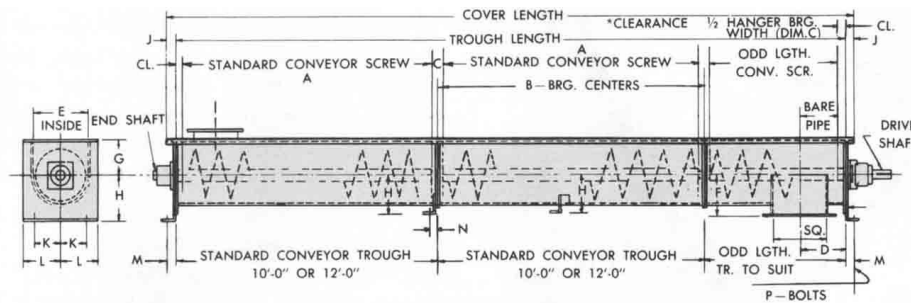


Table No. 9

ASSEMBLY DATA AND RECOMMENDED ARRANGEMENTS

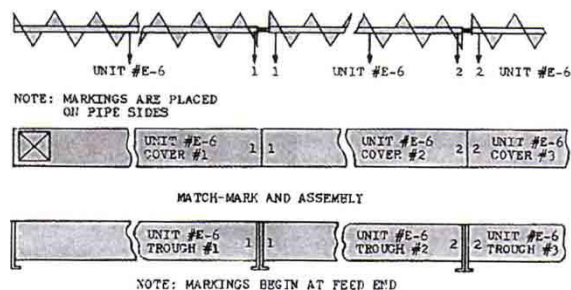
Conveyor Diameter Inches	Shaft and Coupling Diameter	A	B	C	D	E	F	G	H	J	K	L	M	N	P
6	1 1/2	9'-10"	10'-0"	2	6	7	5	4 1/2	5 5/8	1 1/2	4 1/16	4 7/8	1	7/8	3/8
9	1 1/2	9'-10"	10'-0"	2	8	10	7 1/8	6 1/8	7 7/8	1 5/8	4 11/16	6 3/4	1 1/2	1 5/16	1/2
10	2	9'-10"	10'-0"	2	8	10	7 1/8	6 1/8	7 7/8	1 5/8	4 11/16	6 3/4	1 1/2	1 5/16	1/2
	1 1/2	9'-10"	10'-0"	2	9	11	7 1/8	6 3/8	8 7/8	1 3/4	4 3/4	7 1/4	1 3/4	1 9/16	1/2
12	2	9'-10"	10'-0"	2	9	11	7 1/8	6 3/8	8 7/8	1 3/4	4 3/4	7 1/4	1 3/4	1 9/16	1/2
	2	11'-10"	12'-0"	3	10 1/2	13	8 7/8	7 3/4	9 5/8	2	6 1/8	8 5/8	1 5/8	1 3/8	5/8
14	2 7/16	11'-9"	12'-0"	3	10 1/2	13	8 7/8	7 3/4	9 5/8	2	6 1/8	8 5/8	1 5/8	1 3/8	5/8
	3	11'-9"	12'-0"	3	10 1/2	13	8 7/8	7 3/4	9 5/8	2	6 1/8	8 5/8	1 5/8	1 3/8	5/8
16	2 7/16	11'-9"	12'-0"	3	11 1/2	15	10 1/8	9 1/4	10 7/8	2	6 3/4	9 5/8	1 5/8	1 3/8	5/8
	3	11'-9"	12'-0"	3	11 1/2	15	10 1/8	9 1/4	10 7/8	2	6 3/4	9 5/8	1 5/8	1 3/8	5/8
18	3	11'-9"	12'-0"	3	13 1/2	17	11 1/8	10 5/8	12	2 1/2	7 7/16	10 5/8	2	1 3/4	5/8
	3	11'-9"	12'-0"	3	14 1/2	19	12 3/8	12 1/8	13 3/8	2 1/2	8	12 1/8	2	1 3/4	5/8
20	3 7/16	11'-8"	12'-0"	4	14 1/2	19	12 3/8	12 1/8	13 3/8	2 1/2	8	12 1/8	2	1 3/4	5/8
	3	11'-9"	12'-0"	3	15 1/2	21	13 3/8	13 1/2	15	2 1/2	9 5/8	13 1/8	2 1/4	2	3/4
24	3 7/16	11'-8"	12'-0"	4	15 1/2	21	13 3/8	13 1/2	15	2 1/2	9 5/8	13 1/8	2 1/4	2	3/4
	3 7/16	11'-8"	12'-0"	4	17 1/2	25	15 3/8	16 1/2	18 1/8	2 1/2	10	15 1/8	2 1/2	2 1/4	3/4

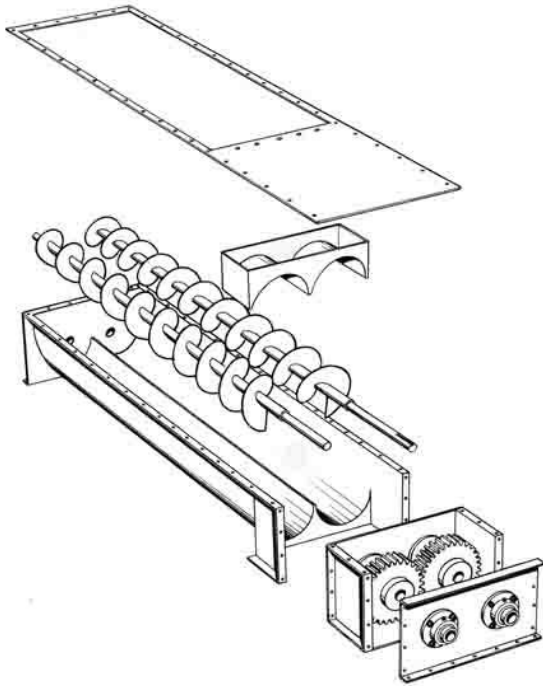
Conveyor Match Marking

The term "Assemble, Fit and Match Mark" is commonly used when specifying individual conveyor assembly. It means that the subject conveyor will be assembled in our shop with all parts match marked before disassembly, painting and shipment. Assembly consists of putting together all conveyor parts and components to make a complete operable unit. The diagram below illustrates the method used to match mark a standard horizontal conveyor unit. Note that all major parts consisting of screws, troughs and covers are marked with the unit number. The assembly part numbers start at the feed or input end of the conveyor and run consecutively to the discharge end. All part numbers are placed at the joint connection of successive parts. Note also that all intermediate hangers are located and bolted in place. Otherwise this must be done in the field.

The conveyor unit is then disassembled and shipped with all couplings and coupling bolts in place in the screw. In some

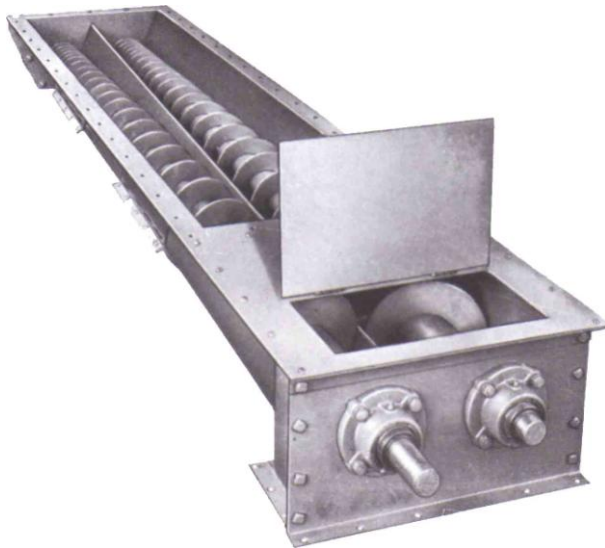
instances, the screws are shipped in their troughs, although it is usually more practical to ship screws, troughs and covers as individual components. Smaller parts, such as hangers, conveyor trough assembly bolts and trough ends are marked with the unit number and separately bundled or boxed.





**TWIN
TAPERED
FEEDER**

- (A) Inlet opening or spout for bolting to the bin or hopper discharge.
- (B) Shroud to guard against material flooding.
- (C) Twin tapered screw conveyor permits even draw off of material for the length of the opening.
- (D) Twin-tapered trough.
- (E) Discharge spout.
- (F) Solid shafting transmits rotary motion to driving gears.
- (G) Driving gears synchronize the action of screw conveyors.



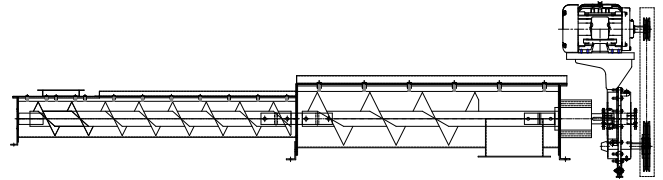
Normally short in length, Screw Feeders are designed to regulate the volumetric rate of material flow from a hopper, bin or storage unit.

The inlet must be flooded with material (100% load capacity) by incorporating changes in the construction of the flighting (diameter, pitch, etc.) and the speed of the feeder screw, the material discharge can be governed to the desired rate. Feeders can be built with variable diameter or stepped pitch or both in units composed of one, two or a multiple number of screws (i.e., Live Bottom Bin) depending on the application. Long conveyors may be designed with special flights at the feed end for controlling the depth of the material to conform with the recommendations made in the Material Tables, pages 12, 13 and 14.

Screw Feeders are normally equipped with a shroud for a short distance beyond the inlet opening. This guards against flooding of the conveyor with material. When handling very free flowing materials, extended shroud covers, tubular housing construction or short pitch flights are occasionally required for positive control.

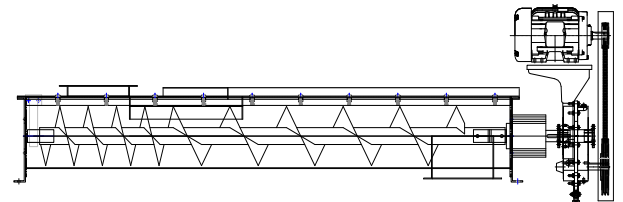
When under a choke load, screw feeders with uniform diameter and pitch normally convey the material from the rear of the inlet opening first. To draw off material evenly across the full length of the inlet, a tapered screw or stepped pitch conveyor screw is required.

While Screw Feeders are available in many designs to fit your particular requirements, several commonly used types are described below.



Multiple Diameter Feeder

This is a combination feeder and conveyor and the physical dimensions are variable on each. The small diameter feed end will operate at a full cross-sectional load. When the material reaches the larger section, the cross-sectional load will reduce to a safe level

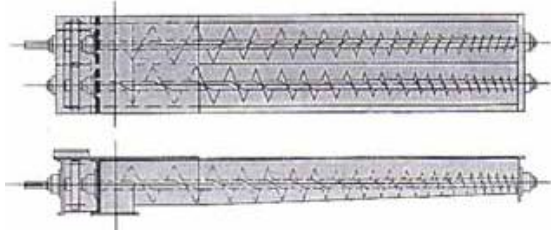


Short Pitch Feeder

This is also a combination feeder and conveyor. The short pitch end will handle full cross-sectional loads. The material is then discharged into the standard section where the cross-sectional load is reduced in proportion to the increase in screw pitch. A section of double flight is pictured on the discharge end of this feeder. This creates a more even discharge from the conveyor.

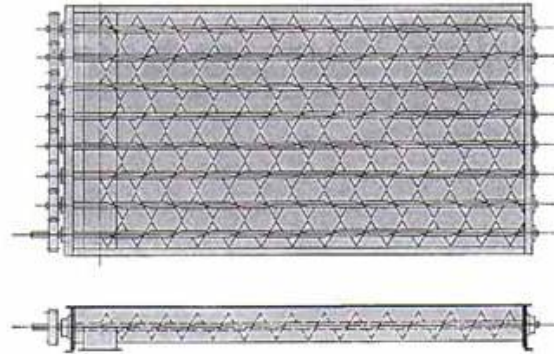


Selecting a Screw Feeder



Variable Pitch Twin-Tapered Feeder

This feeder is popularly used to unload bins or hoppers at a controlled rate. The feed opening under the bin is designed large enough to prevent material bridging and accepts materials uniformly across the length and width of the opening. This eliminates dead areas in the bin and reduces the chance of material bridging or spoiling.



Live Bottom Feeder

Designed for use on straight sided bins, this feeder is composed of a number of feeder screws in tandem which serve as the bottom of the bin. Material is, therefore, drawn out equally from the full width. The Live Bottom Feeder is used to its best advantage on materials which tend to pack or bridge easily.

CAPACITY OF SCREW FEEDERS										
Table No. 10 Figures shown are theoretical capacities in cubic feet per hour per R.P.M, for standard pitch screws.										
Conveyor Diameter	Standard Pipe Sizes									
	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"
4"	1.56	1.44	1.35							
6"			5.30	4.97	4.41					
9"			18.90	18.49	17.85	16.25				
10"			26.28	25.73	25.02	23.49				
12"				45.28	44.42	42.99	41.89			
14"					71.67	70.15	68.73	67.10		
16"						106.35	104.72	102.86		
18"						153.06	151.20	149.10	146.50	
20"							209.50	204.00	201.00	197.50
24"							366.40	363.60	356.40	348.60

The above figures are based on 100% of cross section of actual screw capacity and may be more or less depending upon the material. These figures must be corrected for pitches other than standard.

Screw Feeder Capacity

The accompanying table No. 10 shows Screw Feeder capacities in cubic feet per hour per RPM. This table relates to full pitch or standard conveyors only. Shorter pitch flighting will convey a capacity in direct ratio to the capacity of the full pitch. For instance, a 9" conveyor with standard pitch (9") flighting on a 2 1/2" standard pipe will convey 17.85 cu. ft./hr./RPM. The same conveyor, but with 3" pitch, will convey 1/3 this amount, or 5.95 cu. ft./hr./ RPM. The capacity figure is theoretical. Actual capacity will often vary due to variation in material characteristics as well as variations in diameter and pitch resulting from manufacturing tolerances.

Screw Feeder Speed

The speed of the feeder screw can be determined by dividing the desired capacity in cu. ft./hr. by the figure found

in table No. 10. For maximum efficiency, feeder screw speeds should be slower than standard screw conveyor speeds and allowances must be made for slippage of the material in the screw.

Factors Affecting the Design of A Screw Feeder

1. The material class
2. The material physical characteristics, see page 11
3. The capacity required
4. Material Factor "F"
5. Weight of material resting on the Feeder Screw
6. The dimensions of the feeder opening

In designing a Screw Feeder, virtually every situation is unique in one respect or another. For this reason, we recommend that you consult our staff engineers for proper recommendations concerning your particular needs.



Screw Conveyors can be operated with the flow of material inclined upward. When space allows, this is a very economical method of elevating and conveying. It is important to understand, however, that as the angle of inclination increases, the allowable capacity of a given unit rapidly decreases.

A standard Screw Conveyor inclined 15° upward may only carry 75% of its rated horizontal capacity. At an inclination of 25°, a standard conveyor may only handle 50% of its horizontal capacity. These are estimated figures and will vary with the characteristic of the material being handled. Inclined Screw Conveyor capacities can be increased over short distances if no intermediate hangers are required.

Other aids in conveying on an incline are the use of shorter than standard pitch and/or tubular housings or shrouded conveyor trough covers. Very often it becomes necessary to use high speed to overcome the tendency of material to fall back.

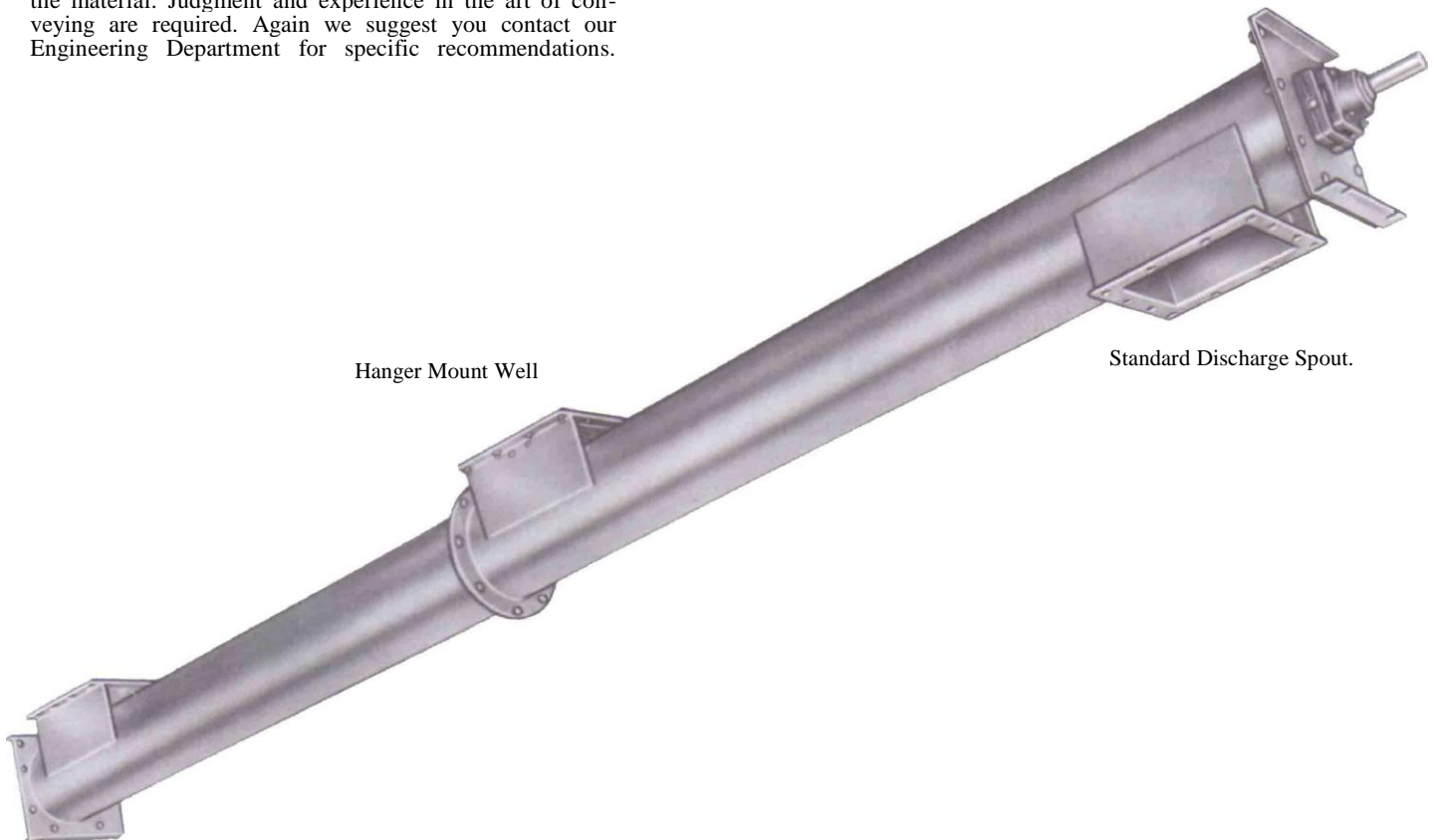
The above aids are resorted to in order to overcome the tendency of a screw conveyor to become less efficient as the angle of incline increases. Vertical conveying by Screw Conveyor, on the other hand, is quite successful and it remains that a 45° incline or angles approaching this figure are the most difficult on which to achieve successful conveying.

Inclined conveyors can seldom be used as metering feeders. If an accurate flow is necessary, a separate horizontal feeder conveyor is required.

Additional power is needed to convey on an incline. This added power is a function of the power required to lift the material. Judgment and experience in the art of conveying are required. Again we suggest you contact our Engineering Department for specific recommendations.



Tubular Trough End Plate



Hanger Mount Well

Standard Discharge Spout.

Typical Drive Assemblies

Screw conveyor drives are available in a wide variety for use in transmitting the necessary rotary motion to the screw. Integral or fractional horsepower motors can be coupled with many different types of gear reducers which, in turn, are directly connected to the screw through a coupling, roller chain or V-belt. Most types of drives provide a constant output speed but variable speed designs may be utilized for particular applications. Both constant or variable speed hydraulic drives are also available.

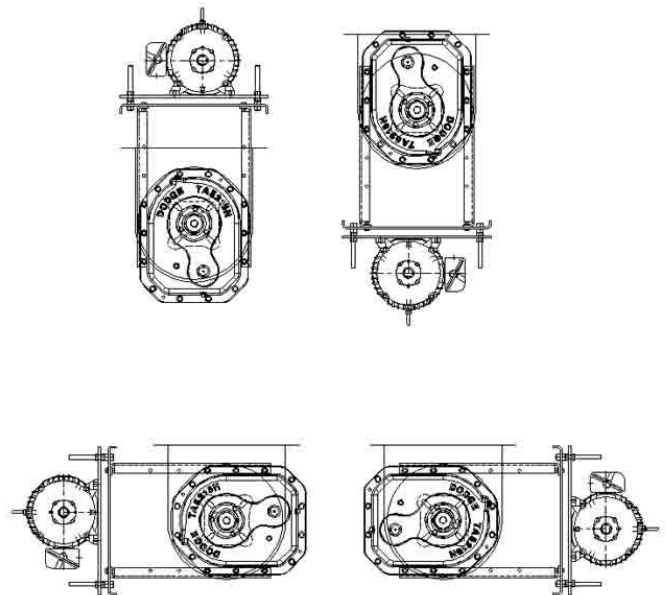
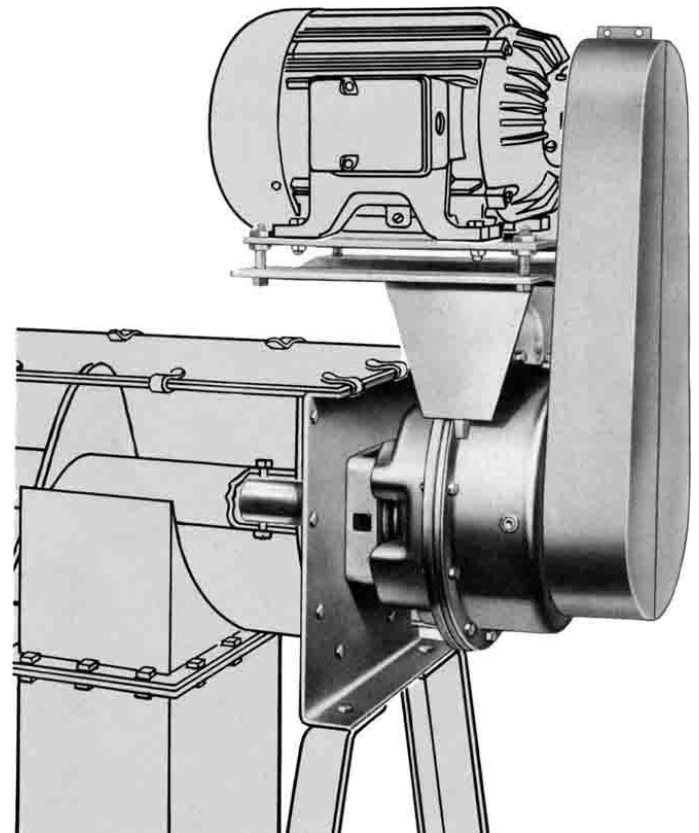
The typical drive arrangement pictured utilizes a modified shaft mount reducer complete with V-belt drive and motor mount. In this assembly, the reducer output shaft, conveyor thrust bearing, end seal and trough end are combined into one complete screw conveyor drive unit. Four different mounting assemblies are available (see below) and variations on these are available to fit virtually all possible requirements. The reducer output shaft bearings, in this case, take the place of the conveyor thrust bearing. A shaft seal adequate for most dust applications between the conveyor and the reducer is also provided. Other types of drives available are:

1. Electric garmotor combination with roller chain drive.
2. Gear reducer connected through roller chain to the screw conveyor. V-belts or couplings connect the reducer input shaft and the motor.
3. Variable speed controlled D.C. motors with any of several types of reducers.
4. Hydraulic drives.
5. Variable pitch pulleys between motor and reducer including the flange mount type pictured.

We do not recommend a direct coupling connection motor to reducer to conveyor. This allows no adjustment in conveyor speed which may sometimes be necessary due to manufacturing tolerances or changes in requirements.

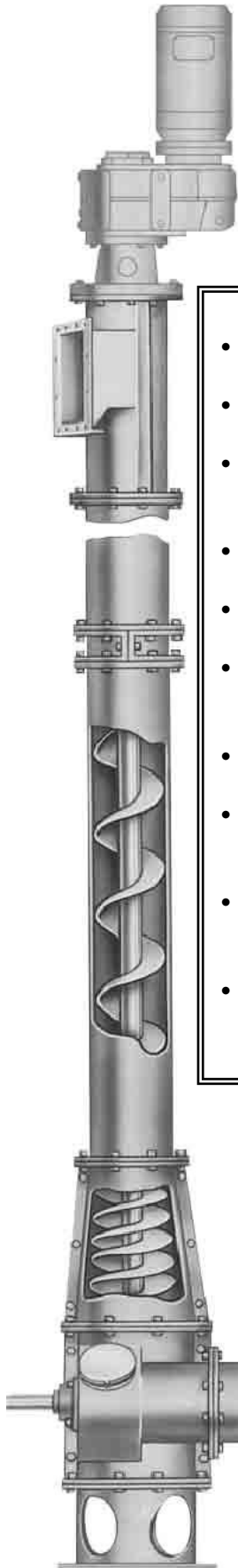
Guards and Chain Casings

Chain casings and guards are fabricated of heavy gauge steel and then are split and hinged for ease of access and installation. All moving parts are totally enclosed to protect both workmen and equipment. When drives are located out of reach of personnel they can often be considered "guarded by location" and complete enclosures may not be necessary.





The Screw-Lift®



- **Motor Mount**
- **High Capacity Thrust Bearing**
- **Discharge Head can be assembled at any angle**
- **Stabilizer Bearing**
- **High Speed Vertical Screw**
- **Special Pitch Tapered Double Flighting**
- **Expander Feeder Junction**
- **Synchronized (horizontal-vertical) Material Transfer**
- **Horizontal Feeder Screw for Metering**
- **Bottom Base**

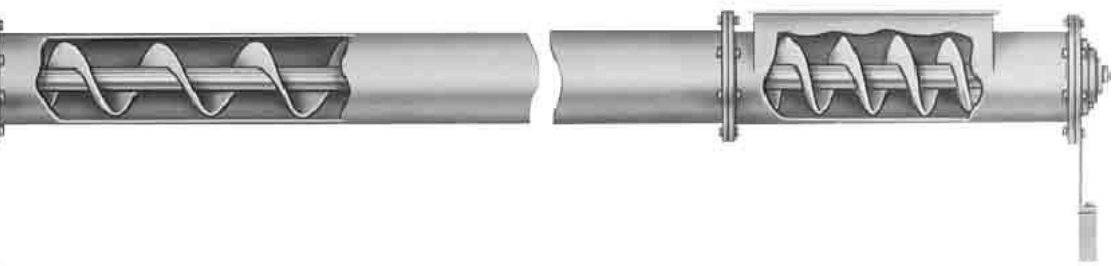
The Screw-Lift is ideal for elevating, distributing and reclaiming bulk materials efficiently in a minimum of costly floor space. Generally speaking, if your material can be conveyed in a Screw Conveyor, it can be elevated in a Screw-Lift . . . and without the many problems inherent in other types of elevating equipment.

The Screw-Lift is also extremely flexible in design and arrangements. There are five basic models and four different sizes available to maximum capacity of 6000 cu. ft. per hr. Besides being flexible to work with your other processing equipment, the Screw-Lift also offers the advantages of:

1. The minimum of stagnant material as often found in a bucket elevator boot.
2. A highly efficient transfer of materials from horizontal to vertical conveying.
3. The savings of valuable floor space and less overall height required.
4. Practical conveying to heights of 70 ft. or even more depending on weight of material being conveyed and the resulting drive requirement. >
5. Positive material discharge in any desired direction.
6. No material segregation or significant degradation throughout the continuing process.

The Screw-Lift can handle a wide variety of materials (from 4 lbs./cu. ft. to 150 lbs./cu. ft.). If the material can be handled in a standard Screw Conveyor it can probably be elevated in a Screw-Lift.

For complete dimension data and description, refer to Catalog.





The Screw-Lift Principle

The Screw-Lift is not just a Screw Conveyor turned on end; it is a combination of standard design parts integrated into one machine for a particular application. This machine operates as a completely closed system carrying a relatively low cross-sectional load of material. It utilizes the centrifugal force generated by the high speed of its vertical screw to actually elevate the material. It does not merely extrude the material upwards by jamming more material in behind. In fact, it is designed to insure against jamming, choking and back-pressure. This provides highly efficient operation and minimizes crushing or degradation of friable materials.

STANDARD DESIGN

Inside the expanded feeder junction, the material flow is changed from the horizontal to the vertical direction. The lower portion of the vertical Screw is a special pitch tapered double flight which starts the material moving upwards away from the feeder. These features eliminate back-pressure, choking and material degradation and are standard on all Screw-Lifts.

Also standard on all Screw-Lifts is the use of conveyor screw with precision internal collars fitted in each end. Coupling bolt holes are jig-drilled to assure positive alignment. Split Stabilizer Bearings keep the conveyor and its housing concentric at all times while offering a minimum of resistance to material flow. This provides for a smooth, quiet running unit—even when empty. The standard design of the stabilizer bearing incorporates high density polyethylene. Special bushing material such as canvas base phenolic, self-lubricating bronze with graphite inserts, graphited cast iron, nylon or standard bronze is available.

The Screw-Lift housing is made in four to six foot lengths for ease of assembly and maintenance. It is then split and flanged vertically for accessibility as well as strength and rigidity. The closely held tolerance of ¼" clearance between the inside of the housing and the screw minimizes material build-up and facilitates clean-out.

Although normally made of carbon steel, Screw-Lifts that handle corrosive materials may be made of stainless steels or other highly resistant metal, or may be hot dipped galvanized. Surface-hardening (fusing an alloy to the flighting surface for protection against abrasion) is also available.

Where sanitation or change of product requires frequent cleaning, the Quick-Opening type Screw-Lift is recommended. Heavy-duty, quick-release clamps make opening the casing fast and easy while gaskets seal the unit for commercially dust-tight operation.

ESTABLISH THE REQUIRED CAPACITY

Under normal conditions, the Screw-Lift will handle the capacities shown at the given speeds.

Table No. 11

Screw-Lift Diameter, Inches	Nominal Rated Capacity Cu. Ft. Per Hour	Screw-Lift Input Speed RPM
6"	300	300
9"	1000	250
12"	2500	250
16"	6000	190

ESTABLISH THE REQUIRED HORSEPOWER

The formula listed below gives the basic horsepower [HP] required for an operating Screw-Lift. Additional power will be required for starting under load and for overcoming any power loss in the drive assembly or in erection misalignment.

$$HP = \frac{7QLF}{1,000,000} + C$$

Q = Pounds per hour at maximum capacity

L = Screw-Lift height in feet

F = Material H.P. factor from table, pages 12,13 and 14

C = 1.0 for Types "E", "G" and "H"

1.3 for Types "C" and "J"

SAMPLE PROBLEM

Establish the Screw-Lift specifications for elevating 25,000 lbs. of soybean meal per hour. The required lift height is 45' and the horizontal feeder length required is 10'.

SOLUTION

Refer to the material table No. 6, pages 12 and 13. Note: Soybean Meal average weight per cu. ft. = 40 lbs. Material class = B26 = (Fine — ½ inch mesh and under, Free-flowing — angle of repose 30° to 45° Non-abrasive). HP Factor .5 Now, dividing 25,000 lbs. per hour, by 40 lbs. per cu. ft., we find the required capacity is 625 cu. ft. per hour. Referring to the Screw-Lift Capacity Chart, we find that a 9" diameter unit will handle this load. By using a horizontal feeder screw under the bottom of the mixer, we will be able to exercise control and so limit the capacity to 625 cu. ft./hr. rather than the maximum that a 9" unit can handle (1,000 cu. ft./hr.). The power requirements can now be figured:

$$HP = \frac{7.0 \times 25,000 \times 45 \times .5}{1,000,000} + 1.3 = 5.3$$

A 7½ HP 900 RPM motor with Vee Belt reduction to 250 RPM screw speed is suggested.

Presuming the popular Type G unit (as pictured) is being used, the feeder is driven separately. The feeder drive is calculated as a normal horizontal Screw Conveyor from the formula shown on page 9.



Dimensional Data and Descriptions

The component section which follows is designed to give you complete dimensional data as well as individual product descriptions so that you may select the exact components to fit your particular needs.

In addition, this section augments the Engineering and Layout sections of this catalog. It is recommended that the basic layout diagram and accompanying table be referred to when selecting components for complete units. See page 17.

We have all the pieces to put together an answer to your bulk material conveying problem. Screw conveyors handle almost any bulk material efficiently and they do it economically compared to other methods. Compact, they fit into tight places, with moving parts enclosed. They're easy to install and simple to maintain. You can run them horizontally, or on an incline, and. With our Screw-Lift, straight up.

We will furnish screw conveyors for you, in component parts or complete systems, with features such as automatic lock nuts at conveyor screw connections, jig-drilling of component parts for easy assembly, double flange troughs, latest designs in cover clamps, bearing materials most suitable to your application and many more Screw Conveyor specialties.

We can meet your application needs in helicoids and sectional flight types with adaptations including ribbon, special pitches and tapered—in various gauges of steel, stainless steel and other alloys, including hardened flight surfaces.

Whether your need is for components or a complete system, you can rely on our years of experience as specialists in the engineering and manufacturing of screw conveyors. Consult our specialist engineers without obligation.

Safety Precautions

Since in its usual application a screw conveyor is enclosed, it is fundamentally a "safe machine." However, as with any power operated equipment, certain precautions should be exercised to insure that the natural safety provisions of a conveyor assembly are utilized. A conveyor assembly and drive is for the most part custom designed to fulfill its application, therefore, the provisions to insure a safe installation will differ from transaction to transaction.

- (1) A conveyor must not be put under power until the trough and cover is in place and secured and power transmission guards in place and closed.
- (2) If the conveyor cover or housing is to be opened, the motor must first be locked out electrically in such a way that it can not be restarted by anyone either in the vicinity or remote from the conveyor.
- (3) If, because of its application, the conveyor must have open housing, then the entire conveyor must be separated from personnel areas by a fence and warning signs posted.

(4) Open feed hoppers or spouts for shovel, front end loader or other manual or mechanical loading must incorporate a grating. If the characteristics of the material being handled is such that a grating can not be used, then the exposed portion of the conveyor must be guarded by a fence and warning signs posted.

(5) Electrical controls, machinery guards, walkways, machinery arrangement, training of personnel, etc., are all necessary considerations in the creation of a safe, practical installation and are generally not a part of our services. It is the responsibility of the Contractor, Installer, Owner, and User to supplement the materials furnished by Screw Conveyor Corporation to result in a safe conveyor installation and to comply with the Williams-Steiger Occupational Safety and Health Act, state or local laws and ordinances, and the American National Standard Institute Safety Code.





Helicoid Conveyor Screws

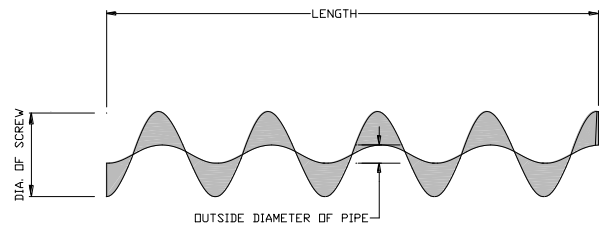
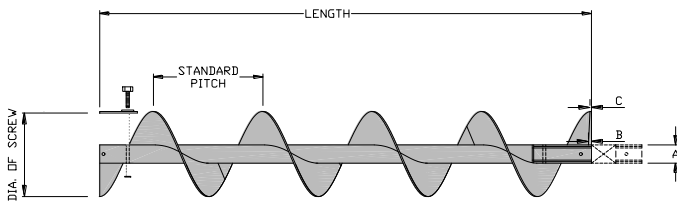
DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS													
Dia of Screw	Size Code	Length of Std. Section	Std. Length Mounted Conveyor			Std. Length Flighting Only			Thickness of Flight		Nominal Pipe I.D.	Outside Dia. of Pipe	Dia. of Coupling "A"
			Part No. Right Hand	Part No. Left Hand	Weight Per Section	Part No. Right Hand	Part No. Left Hand	Weight Per Section	Next to Pipe "B"	Outer Edge "C"			
4"	4H204	9' 10 1/2"	101-0214	111-0212	31	120-0146	125-0141	9.0	1/8	1/16	1 1/4	1 5/8	1
4"	4H206	9' 10 1/2"	101-0354	111-0352	38	120-0211	125-0216	16.0	3/16	3/32	1 1/4	1 5/8	1
6"	6H304	9' 10"	101-0420	111-0428	50	120-0286	125-0281	14.0	1/8	1/16	2	2 3/8	1 1/2
6"	6H308	9' 10"	101-0495	111-0493	64	120-0351	125-0356	28.0	1/4	1/8	2	2 3/8	1 1/2
6"	6H312	9' 10"	101-0560	111-0568	78	120-0427	125-0422	42.0	3/8	3/16	2	2 3/8	1 1/2
9"	9H306	9' 10"	101-0636	111-0634	70	120-0567	125-0497	31.0	3/16	3/32	2	2 3/8	1 1/2
9"	9H312	9' 10"	101-0701	111-0709	101	120-0633	125-0562	62.0	3/8	3/16	2	2 3/8	1 1/2
9"	9H406	9' 10"	101-0776	111-0774	91	120-0708	125-0638	30.0	3/16	3/32	2 1/2	2 7/8	2
9"	9H412	9' 10"	101-0842	111-0840	121	120-0773	125-0703	60.0	3/8	3/16	2 1/2	2 7/8	2
9"	9H414	9' 10"	101-0917	111-0915	131	120-0849	125-0778	70.0	7/16	7/32	2 1/2	2 7/8	2
10"	10H306	9' 10"	101-0982	111-0980	81	120-0914	125-0844	42.0	3/16	3/32	2	2 3/8	1 1/2
10"	10H412	9' 10"	101-1055	111-1053	130	120-0989	125-0919	69.0	3/8	3/16	2 1/2	2 7/8	2
12"	12H408	11' 10"	101-1121	111-1129	140	120-1052	125-0984	67.0	1/4	1/8	2 1/2	2 7/8	2
12"	12H412	11' 10"	101-1196	111-1194	175	120-1128	125-1057	102.0	3/8	3/16	2 1/2	2 7/8	2
12"	12H508	11' 9"	101-1261	111-1269	168	120-1193	125-1123	64.0	1/4	1/8	3	3 1/2	2 7/16
12"	12H512	11' 9"	101-1337	111-1335	200	120-1268	125-1198	96.0	3/8	3/16	3	3 1/2	2 7/16
12"	12H614	11' 9"	101-1402	111-1400	216	120-1334	125-1263	112.0	7/16	7/32	3 1/2	4	3
14"	14H508	11' 9"	101-1477	111-1475	170	120-1409	125-1339	84.0	1/4	1/8	3	3 1/2	2 7/16
14"	14H614	11' 9"	101-1543	111-1541	236	120-1474	125-1404	132.0	7/16	7/32	3 1/2	4	3
16"	16H610	11' 9"	101-1618	111-1616	228	120-1540	125-1479	120.0	5/16	5/32	3 1/2	4	3
16"	16H614	11' 9"	101-1758	111-1756	267	120-1680	125-1610	163.0	7/16	7/32	4	4 1/2	3
18"	18H610	11' 9"	101-1899	111-1897	292	120-1755	125-1685	144.0	5/16	5/32	4	4 1/2	3
20"	20H610	11' 9"	101-1949	111-1947	298	120-1854	125-1701	150.0	5/16	5/32	4	4 1/2	3

• The pitch of flighting approximately equals Conveyor diameter

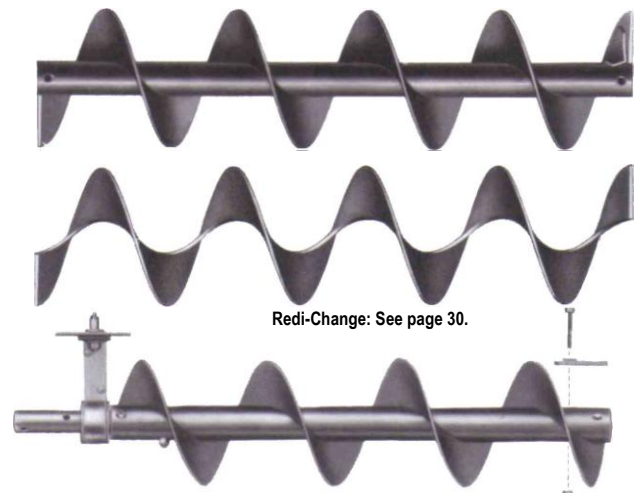
▲ For convenience in specifying listed Helicoid Conveyor Screw, Size Codes have been established to designate the type of Conveyor Screw and flighting, pipe and coupling shaft specifications. The figure at the left of the letter indicates the diameter of the Conveyor Screw, the letter H (for Helicoid) designates the type; the first figure following the letter is twice the coupling diameter and the last two figures the nominal thickness of the flighting at the outer edge in 1/64".

■ When ordering, specify whether right or left hand, also length desired. Example: 9H306 RH - 9'10" or 9H306 RH - 5'6".

Consult SCC for Helicoid Conveyor Screws with heavy pipe or special coupling diameters.



Cold rolling of special analysis strip steel into a continuous helix produces a work-hardened, smoothly finished flighting surface. Helicoid flighting is of superior strength with its diameter, pitch and thickness closely controlled. The flighting is then normally fastened to the pipe by intermittent welds and welded steel end lugs. They may be continuously welded on either one or both sides. The pipe has seamless internal collars inserted in both ends of the pipe to accommodate the shafts. Helicoid and Sectional flighting of the same diameter and shaft size are interchangeable. Refer to pages 30 through 33 for special features available on helicoid conveyor screws.



Redi-Change: See page 30.



Sectional Flight Conveyor Screws

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS									
Diameter of Conveyor	*† Size Code	Length of Standard Section	Part No. Right Hand	Part No. Left Hand	Diameter of Coupling "A"	Gauge or Thickness of Flights "B"	Pipe Size Standard Weight	Weigh Per Section	Length of Hanger Bearings
• 6	6S307	9'10"	104-0146	114-0144	1 1/2	12	2	61	2
• 6	6S309	9'10"	104-0211	114-0219	1 1/2	10	2	64	2
• 6	6S312	9'10"	104-0286	114-0284	1 1/2	3/16	2	73	2
6	6S316	9'10"	104-0351	114-0359	1 1/2	1/4	2	84	2
• 9	9S307	9'10"	104-0427	114-0425	1 1/2	12	2	69	2
• 9	9S309	9'10"	104-0492	114-0490	1 1/2	10	2	77	2
• 9	9S312	9'10"	104-0567	114-0565	1 1/2	3/16	2	89	2
9	9S316	9'10"	104-0633	114-0631	1 1/2	1/4	2	107	2
• 9	9S407	9'10"	104-0708	114-0706	2	12	2 1/2	89	2
• 9	9S409	9'10"	104-0773	114-0771	2	10	2 1/2	98	2
• 9	9S412	9'10"	104-0849	114-0847	2	3/16	2 1/2	109	2
• 9	9S416	9'10"	104-0914	114-0912	2	1/4	2 1/2	123	2
9	9S424	9'10"	104-0955	114-0953	2	3/8	2 1/2	151	2
• 10	10S309	9'10"	104-0989	114-0987	1 1/2	10	2	84	2
10	10S312	9'10"	104-1052	114-1050	1 1/2	3/16	2	100	2
• 10	10S412	9'10"	104-1128	114-1126	2	3/16	2 1/2	118	2
• 12	12S409	11' 10"	104-1193	114-1191	2	10	2 1/2	135	2
• 12	12S412	11' 10"	104-1268	114-1266	2	3/16	2 1/2	158	2
12	12S416	11' 10"	104-1334	114-1332	2	1/4	2 1/2	185	2
• 12	12S509	11' 9"	104-1409	114-1407	2 7/16	10	3	160	3
• 12	12S512	11' 9"	104-1474	114-1472	2 7/16	3/16	3	180	3
12	12S516	11' 9"	104-1540	114-1548	2 7/16	1/4	3	205	3
12	12S524	11' 9"	104-1615	114-1613	2 7/16	3/8	3	260	3
• 12	12S612	11' 9"	104-1680	114-1688	3	3/16	3 1/2	195	3
• 12	12S616	11' 9"	104-1755	114-1753	3	1/4	3 1/2	218	3
12	12S624	11' 9"	104-1821	114-1829	3	3/8	3 1/2	269	3
• 14	14S509	11' 9"	104-1896	114-1894	2 7/16	10	3	173	3
14	14S512	11' 9"	104-1961	114-1969	2 7/16	3/16	3	200	3
• 14	14S612	11' 9"	104-2035	114-2033	3	3/16	3 1/2	213	3
• 14	14S616	11' 9"	104-2100	114-2108	3	1/4	3 1/2	245	3
14	14S624	11' 9"	104-2175	114-2173	3	3/8	3 1/2	308	3
• 16	16S609	11' 9"	104-2241	114-2249	3	10	3 1/2	195	3
• 16	16S612	11' 9"	104-2316	114-2314	3	3/16	3 1/2	222	3
• 16	16S616	11' 9"	104-2381	114-2389	3	1/4	3 1/2	258	3
16	16S624	11' 9"	104-2456	114-2454	3	3/8	3 1/2	326	3
16	16S632	11' 9"	104-2522	114-2520	3	1/2	3 1/2	398	3
18	18S612	11' 9"	104-2597	114-2595	3	3/16	3 1/2	244	3
18	18S616	11' 9"	104-2662	114-2660	3	1/4	3 1/2	286	3
18	18S624	11' 9"	104-2738	114-2736	3	3/8	3 1/2	370	3
18	18S632	11' 9"	104-2803	114-2801	3	1/2	3 1/2	454	3
18	18S712	11' 8"	104-2878	114-2876	3 7/16	3/16	4	264	4
18	18S716	11' 8"	104-2944	114-2942	3 7/16	1/4	4	303	4
18	18S724	11' 8"	104-3017	114-3015	3 7/16	3/8	4	380	4
18	18S732	11' 8"	104-3082	114-3080	3 7/16	1/2	4	460	4

Continued next page



Sectional Flight Conveyor Screws

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS (Continued)

Diameter of Conveyor	*† Size Code	Length of Standard Section	Part No. Right Hand	Part No. Left Hand	Diameter of Coupling "A"	Gauge or Thickness of Flights "B"	Pipe Size Standard Weight	Weigh Per Section	Length of Hanger Bearings
20	20S612	11' 9"	104-3157	114-3155	3	3/16	3 1/2	258	3
20	20S616	11' 9"	104-3223	114-3221	3	1/4	3 1/2	314	3
20	20S624	11' 9"	104-3298	114-3296	3	3/8	3 1/2	398	3
20	20S632	11' 9"	104-3363	114-3361	3	1/2	3 1/2	489	3
20	20S712	11' 8"	104-3439	114-3437	3 7/16	3/16	4	277	4
20	20S716	11*8"	104-3504	114-3502	3 7/16	1/4	4	323	4
20	20S724	11'8"	104-3579	114-3577	3 7/16	3/8	4	410	4
20	20S732	11' 8"	104-3645	114-3643	3 7/16	1/2	4	500	4
24	24S712	11'8"	104-3710	114-3718	3 7/16	3/16	4	325	4
24	24S716	11'8"	104-3785	114-3783	3 7/16	1/4	4	385	4
24	24S724	11' 8"	104-3850	114-3858	3 7/16	3/8	4	505	4
24	24S732	11' 8"	104-3926	114-3924	3 7/16	1/2	4	625	4

† The pitch of flights is approximately equal to the conveyor diameter on all listed specifications see page 32 for special pitch suggestions.

*For convenience in specifying listed Sectional Flight conveyor screw, Size Codes have been established to designate the type of conveyor screw, flights, pipe and coupling shaft specifications. The figure to the left of the letter indicates the diameter of the conveyor screw, the letter "S" (for Sectional Flight) designates the type; the first figure following the letter is twice the coupling diameter and the last two figures the thickness of the flights.

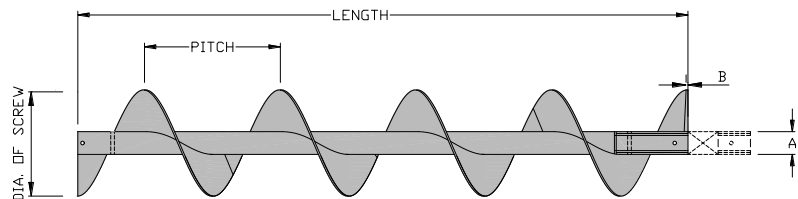
† When ordering, specify whether right or left hand, also length desired.

Example: 12S624 RH -11'8" or 12S624 RH -13'3/4"

• We suggest use of corresponding specifications in Helicoid Conveyor, which can be supplied from stock. We can manufacture Sectional Flight conveyor screws with any special feature desired, such as special diameter, pitch, thickness of flight, pipe size, tubing, solid shaft, etc. Consult us.

Each flight is blanked from a steel plate, formed into a helix and then butt welded together. Sectional flights are formed with a lead longer than their pitch to assure a tight gripping action along the pipe. The flights are then normally fastened to the pipe by intermittent welds and welded steel end lugs. They may be continuously welded on either one or both sides. The pipe has seamless internal collars in each end to accommodate the shafts. Sectional Flight conveyor screws are available in special diameters, thicknesses, pitches and pipe sizes. They also can be obtained in stainless steel, Monel, brass, copper and other metals.

See pages 30 through 33 for special features available on all conveyor screws.



Redi-Change: See page 30



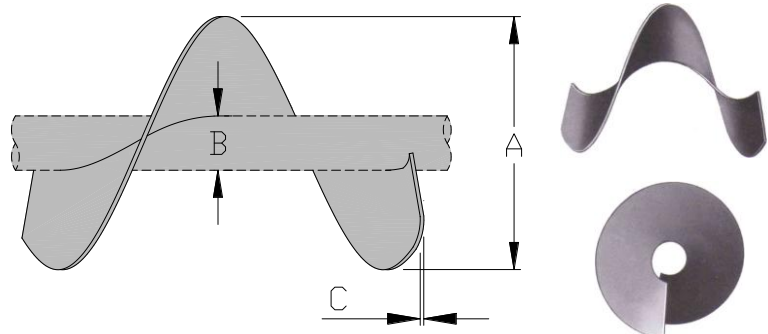


Flights for Sectional Conveyors Screws

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS													
Dia. "A"	Pipe Size	Pipe O.D. "B"	Gauge "C"	STANDARD PITCH					HALF PITCH				
				Size* Code	Part No. Right Hand	Part No. Left Hand	Pitch	Wgt.	Size* Code	Part No. Right Hand	Part No. Left Hand	Pitch	Wgt.
6	2	2 3/8	12	6F307	130-0284	135-0289	6	1.0	6F307H	131-0218	136-0213	3	0.9
6	2	2 3/8	10	6F309	130-0359	135-0354	6	1.3	6F309H	131-0283	136-0288	3	1.1
6	2	2 3/8	3/16	6F312	130-0425	135-0420	6	1.8	6F312H	131-0358	136-0353	3	1.6
6	2	2 3/8	1/4	6F316	130-0490	135-0495	6	2.4	6F316H	131-0424	136-0429	3	2.1
9	2	2 3/8	12	9F307	130-0631	135-0636	9	2.5	9F307H	131-0564	136-0494	4 1/2	2.0
9	2	2 3/8	10	9F309	130-0706	135-0701	9	3.3	9F309H	131-0630	136-0569	4 1/2	2.7
9	2	2 3/8	3/16	9F312	130-0771	135-0776	9	4.4	9F312H	131-0705	136-0635	4 1/2	3.6
9	2	2 3/8	1/4	9F316	130-0847	135-0842	9	6.0	9F316H	131-0770	136-0700	4 1/2	5.0
9	2 1/2	2 7/8	12	9F407	130-1050	135-1055	9	2.4	9F407H	131-0986	136-0841	4 1/2	1.9
9	2 1/2	2 7/8	10	9F409	130-1126	135-1121	9	3.2	9F409H	131-1059	136-0916	4 1/2	2.6
9	2 1/2	2 7/8	3/16	9F412	130-1191	135-1196	9	4.2	9F412H	131-1125	136-0981	4 1/2	3.4
9	2 1/2	2 7/8	1/4	9F416	130-1266	135-1261	9	5.5	9F416H	131-1190	136-1054	4 1/2	4.5
9	2 1/2	2 7/8	3/8	9F424	130-1332	135-1295	9	8.4	9F424H	131-1232	136-1088	4 1/2	6.8
10	2	2 3/8	10	10F309	130-1472	135-1402	10	3.9	10F309H	131-1265	136-1120	5	3.3
10	2	2 3/8	3/16	10F312	130-1548	135-1477	10	5.3	10F312H	131-1331	136-1195	5	4.5
10	2 1/2	2 7/8	3/16	10F412	130-1613	135-1543	10	5.0	10F412H	131-1406	136-1260	5	4.2
12	2 1/2	2 7/8	10	12F409	130-1753	135-1618	12	5.6	12F409H	131-1547	136-1336	6	4.7
12	2 1/2	2 7/8	3/16	12F412	130-1829	135-1683	12	7.5	12F412H	131-1612	136-1401	6	6.4
12	2 1/2	2 7/8	1/4	12F416	130-1894	135-1758	12	10.0	12F416H	131-1687	136-1476	6	8.7
12	3	3 1/2	10	12F509	130-2033	135-1899	12	5.4	12F509H	131-1828	136-1542	6	4.6
12	3	3 1/2	3/16	12F512	130-2108	135-1964	12	7.2	12F512H	131-1893	136-1617	6	6.2
12	3	3 1/2	1/4	12F516	130-2173	135-2038	12	9.6	12F516H	131-1968	136-1682	6	8.5
12	3	3 1/2	3/8	12F524	130-2249	135-2103	12	14.4	12F524H	131-2032	136-1757	6	12.8
12	3 1/2	4	3/16	12F612	130-2314	135-2244	12	7.0	12F612H	131-2172	136-1823	6	6.0
12	3 1/2	4	1/4	12F616	130-2389	135-2319	12	9.1	12F616H	131-2248	136-1898	6	8.0
12	3 1/2	4	3/8	12F624	130-2454	135-2384	12	13.7	12F624H	131-2313	136-1963	6	12.1
14	3	3 1/2	10	14F509	130-2595	135-2525	14	7.3	14F509H	131-2453	136-2102	7	6.5
14	3	3 1/2	3/16	14F512	130-2660	135-2590	14	9.3	14F512H	131-2529	136-2177	7	8.5
14	3 1/2	4	3/16	14F612	130-2876	135-2806	14	9.5	14F612H	131-2594	136-2243	7	7.8
14	3 1/2	4	1/4	14F616	130-2942	135-2871	14	12.7	14F616H	131-2669	136-2318	7	10.5
14	3 1/2	4	3/8	14F624	130-3015	135-2947	14	19.0	14F624H	131-2735	136-2383	7	15.7
16	3 1/2	4	10	16F609	130-3296	135-3226	16	9.7	16F609H	131-2800	136-2458	8	8.3
16	3 1/2	4	3/16	16F612	130-3361	135-3291	16	13.0	16F612H	131-2875	136-2524	8	11.0
16	3 1/2	4	1/4	16F616	130-3437	135-3366	16	17.5	16F616H	131-2941	136-2599	8	15.0
16	3 1/2	4	3/8	16F624	130-3502	135-3432	16	26.0	16F624H	131-3014	136-2664	8	22.5
16	3 1/2	4	1/2	16F632	130-3577	135-3507	16	35.0	16F632H	131-3089	136-2730	8	30.0
18	3 1/2	4	3/16	18F612	130-3643	135-3572	18	18.0	18F612H	131-3220	136-2870	9	14.1
18	3 1/2	4	1/4	18F616	130-3718	135-3648	18	24.0	18F616H	131-3295	136-2946	9	18.8
18	3 1/2	4	3/8	18F624	130-3783	135-3713	18	36.0	18F624H	131-3360	136-3019	9	28.2
18	3 1/2	4	1/2	18F632	130-3858	135-3788	18	48.0	18F632H	131-3436	136-3084	9	37.6
18	4	4 1/2	3/16	18F712	130-3924	135-3853	18	17.0	18F712H	131-3501	136-3159	9	13.0
18	4	4 1/2	1/4	18F716	130-3999	135-3929	18	22.5	18F716H	131-3576	136-3225	9	17.5
18	4	4 1/2	3/8	18F724	130-4062	135-3994	18	33.5	18F724H	131-3642	136-3290	9	27.0
18	4	4 1/2	1/2	18F732	130-4138	135-4067	18	45.0	18F732H	131-3717	136-3365	9	38.0
20	3 1/2	4	3/16	20F612	130-4203	135-4133	20	20.0	20F612H	131-3782	136-3431	10	17.5
20	3 1/2	4	1/4	20F616	130-4278	135-4208	20	28.0	20F616H	131-3857	136-3506	10	23.0
20	3 1/2	4	3/8	20F624	130-4344	135-4273	20	40.0	20F624H	131-3923	136-3571	10	34.5
20	3 1/2	4	1/2	20F632	130-4419	135-4349	20	53.0	20F632H	131-3998	136-3647	10	46.0
20	4	4 1/2	3/16	20F712	130-4559	135-4489	20	19.0	20F712H	131-4061	136-3712	10	17.0
20	4	4 1/2	1/4	20F716	130-4625	135-4554	20	25.5	20F716H	131-4137	136-3787	10	20.5
20	4	4 1/2	3/8	20F724	130-4690	135-4620	20	38.0	20F724H	131-4202	136-3852	10	32.5
20	4	4 1/2	1/2	20F732	130-4765	135-4695	20	51.0	20F732H	131-4277	136-3928	10	44.0
24	4	4 1/2	3/16	24F712	130-4831	135-4760	24	30.0	24F712H	131-4343	136-3993	12	26.0
24	4	4 1/2	1/4	24F716	130-4906	135-4836	24	40.0	24F716H	131-4418	136-4066	12	34.0
24	4	4 1/2	3/8	24F724	130-4971	135-4901	24	60.0	24F724H	131-4483	136-4132	12	51.0
24	4	4 1/2	1/2	24F732	130-5044	135-4976	24	80.0	24F732H	131-4558	136-4207	12	68.0

Size code follow those indicated for Sectional Flight Screw Conveyor on pages 27 and 28 except the first letter "F" indicates "Flight" and the suffix letter "H" indicates "Half -Pitch." Example: 12F62 RH or 12F624H RH. The "RH" indicates Right Hand Flights.

Sectional flights are formed from steel plate with a lead slightly longer than their pitch. This assures a tight gripping action when mounted on your pipe. When ordering flights from the table above please specify part number and hand of screw. See page 16. When ordering special flights, please specify pipe or shaft size, pitch, diameter, hand and thickness.



Ribbon Conveyor Screws



DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS

Dia. of Screw	Size Code	Length of Standard Section	STANDARD MOUNTED			STANDARD FLIGHTING ONLY			Thickness of Flight "C"	Width of Flight "D"	Pipe Size Nominal Pipe I.D.	Outside Diameter of Pipe	Diameter of Coupling "A"
			Part No. Right Hand	Part No. Left Hand	Weight Per Section	Part No. Right Hand	Part No. Left Hand	Weight Per Flight					
6	6R312	9'10"	106-0144	116-0142	60	132-0142	137-0147	2.0	3/16	1	2	2 3/8	1 1/2
9	9R31S	9'10"	106-0219	116-0217	100	132-0217	137-0212	5.0	1/4	1 1/2	2	2 3/8	1 1/2
10	10R316	9'10"	106-0284	116-0282	110	132-0282	137-0287	6.0	1/4	1 1/2	2	2 3/8	1 1/2
12	12R416	11'10"	106-0359	116-0359	180	132-0357	132-0352	9.6	1/4	2	2 1/2	2 7/8	2
12	12R424	11'10"	106-0425	116-0423	204	132-0423	137-0423	12.0	3/8	2 1/2	2 1/2	2 7/8	2
12	12R524	11'9"	106-0490	116-0498	240	132-0498	137-0493	12.0	3/8	2 1/2	3	3 1/2	2 7/16
14	14R524	11'9"	106-565	116-0563	264	132-0563	137-0588	14.4	3/8	2 1/2	3	3 1/2	2 7/16
14	14R624	11'9"	106-0631	116-0639	288	132-0597	137-0592	14.4	3/8	2 1/2	3 1/2	4	3
16	16R616	11'9"	106-0706	116-0704	264	132-0639	137-0634	12.0	1/4	2 1/2	3 1/2	4	3
16	16r624	11'9"	106-0771	116-0779	324	132-0704	137-0709	18.0	3/8	2 1/2	3 1/2	4	3
18	18R624	11'9"	106-0847	116-0845	360	132-0779	137-0774	24.6	3/8	3	3 1/2	4	3
20	20R724	11'8"	106-0912	116-0910	408	132-0845	137-0840	28.2	3/8	3	4	4 1/2	3 7/16
24	24R724	11'8"	106-0987	116-0985	468	132-0910	137-0915	37.2	3/8	3	4	4 1/2	3 7/16

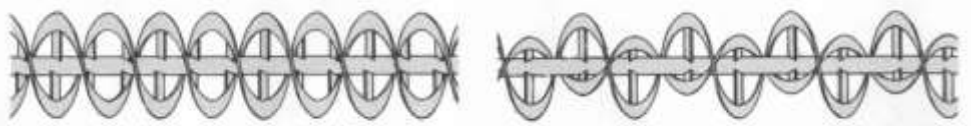
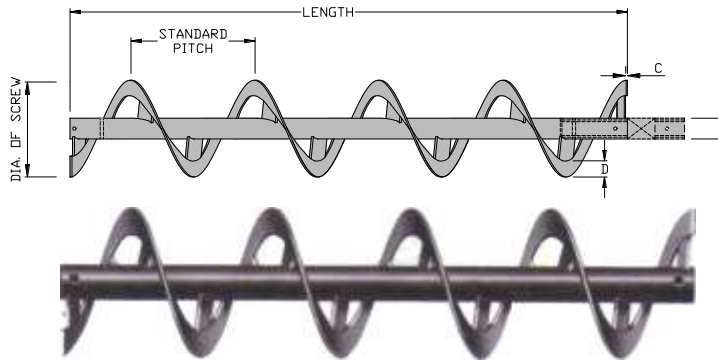
For convenience in specifying, listed Ribbon Flight Conveyor Screw Part Numbers have been established to designate the type of Conveyor Screw flights, pipe and gudgeon specifications.

When ordering Ribbon Flight Conveyor Screw specify Part Number, whether right or left hand and length desired. Example: 16R616 RH-11'9" or 16R61G RH-3'4".

When ordering Ribbon Conveyor Screw Flighting specify as above except add "Flighting Only."

*Horsepower is directly proportional to speed predicated on specified coupling and bolts.

Ribbon conveyor screws are often used in mixing applications, however, their prime application is handling sticky or gummy materials which normally collect where the flights join the pipe. The open design of a ribbon conveyor screw minimizes this problem. When handling dry materials, mixing action results if the cross-sectional load is larger than the face of the flight (dimension D). The ribbon flights are fastened to the pipe by "Nu-Weld" lugs which eliminate the necessity of drilling fastening holes in the mounting pipe and, therefore, assure you of a stronger unit. The pipe has seamless internal collars in each end. Ribbon flight conveyor screws are available in many sizes and specifications other than listed in the table and are available in various materials, stainless steel, Monel, etc. See pages 30 through 33 for special features available on all conveyor screws.

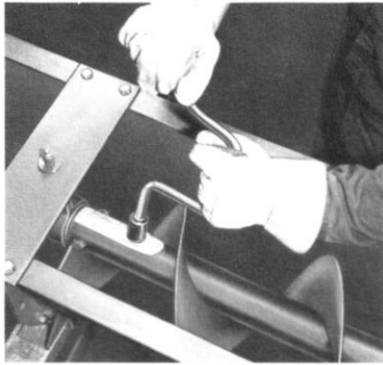


Used to handle sticky materials, the double flight ribbon conveyor screw also provides a more even discharge.

Double flight ribbon mixing conveyor screws consist of an outer ribbon conveyor screw with a smaller diameter inner ribbon of the opposite hand. The pitch of the inner and outer screws is the same. This design moves the material back and forth imparting a thorough mixing action while conveying.



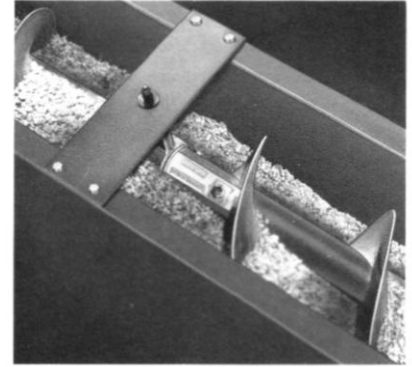
Special Designs Available On All Conveyors Screws



Simply disconnect the REDI-CHANGE section — clamping keys and hanger.



Lift the conveyor section out and perform necessary replacement or repairs.



Replace the conveyor section, bolt the REDI-CHANGE clamping key in place and you are back in production with minimum downtime and expense!

Redi-Change Quick Disconnect Conveyor Screws

The Redi-Change feature allows you to perform conveyor screw changes and repairs without dismantling the entire conveyor. The Redi-Change clamping key is bolted to one end of the conveyor pipe. By disconnecting the Redi-Change section unbolting the clamping keys and hanger a complete conveyor section can be lifted out without disturbing any preceding sections. To replace the section, bolt the Redi-Change clamping keys and the hanger in place and you are back in production.

The Redi-Change feature is available on all types of conveyor screws. Although normally supplied with the Redi-Change clamping key in only one end, conveyor sections with a clamping key in both ends are available on request. When assembling the conveyor, place the end with the Redi-Change clamping key nearest the drive end. This will eliminate any need to remove the drive unit for repairs. When ordering a screw conveyor with the Redi-Change quick disconnect coupling, specify Redi-Change part numbers. Part numbers are for standard length conveyor screw with clamping key on one end.



REDI-CHANGE SCREW PART NUMBER		
HELICOID CONVEYOR SCREW		
Size Code	Part Number Right Hand	Part Number Left Hand
6CH304	103-0147	113-0145
6CH308	103-0212	113-0210
6CH312	103-0287	113-0285
9CH306	103-0352	113-0350
9CH312	103-0428	113-0426
9CH406	103-0493	113-0491
9CH412	103-0568	113-0566
9CH414	103-0634	113-0632
10CH306	103-0774	113-0707
10CH412	103-0774	113-0772
12CH408	103-0840	113-0848
12CH412	103-0915	113-0913
12CH508	103-0980	113-0988
12CH512	103-1053	113-1051
12CH614	103-1129	113-1127
14CH508	103-1194	113-1192
14CH614	103-1269	113-1267
16CH610	103-1335	113-1333
16CH614	103-1400	113-1408
18CH610	103-1475	113-1473
20CH610	103-1533	113-1531
RIBBON CONVEYOR SCREW		
Size Code	Part Number Right Hand	Part Number Left Hand
6CR312	109-4275	111-8215
9CR316	109-4263	111-8223
10CR316	109-4291	111-8231
12CR416	109-4309	111-8249
12CR424	109-4317	111-8256
12CR524	109-4325	111-8264
14CR524	109-4333	111-8272
14CR624	109-4341	111-8280
16CR616	109-4358	111-8298
16CR624	109-4366	111-8306
18CR624	109-4374	111-8314
20CR724	109-4382	111-8322
24CR724	109-4390	111-8330

SECTIONAL CONVEYOR SCREW		
Size Code	Part Number Right Hand	Part Number Left Hand
6CS307	105-0145	115-0143
6CS309	105-0210	115-0218
6CS312	105-0285	115-0283
6CS316	105-0350	115-0356
9CS307	105-0426	115-0424
9CS309	105-0491	115-0499
9CS312	105-0566	115-0564
9CS316	105-0532	115-0630
9CS407	105-0707	115-0705
9CS409	105-0772	115-0770
9CS412	105-0848	115-0846
9CS416	105-0913	115-0911
9CS424	105-0954	115-0952
10CS309	105-0988	115-0986
10CS312	105-1051	115-1059
10CS412	105-1127	115-1125
12CS409	105-1192	115-1190
12CS412	105-1267	115-1265
12CS416	105-1333	115-1331
12CS509	105-1406	115-1406
12CS512	105-1473	115-1471
12CS516	105-1549	115-1547
12CS524	105-1614	115-1612
12CS509	105-1406	115-1406
12CS512	105-1473	115-1471
12CS516	105-1549	115-1547
12CS524	105-1614	115-1612
12CS612	105-1689	115-1687
12CS616	105-1754	115-1752
12CS624	105-1820	115-1828
14CS509	105-1895	115-1893
14CS512	105-1960	115-1968
14CS509	105-1895	115-1893
14CS512	105-1960	115-1968
14CS612	105-2034	115-2032
14CS616	105-2109	115-2107
14CS624	105-2174	115-2172
16CS609	105-2240	115-2248
16CS612	105-2315	115-2313
16CS616	105-2380	115-2388
16CS624	105-2455	115-2453
16CS632	105-2521	115-2529
18CS612	105-2596	115-2594
18CS616	105-2661	115-2669
18CS624	105-2737	115-2735
18CS632	105-2802	115-2800
18CS712	105-2877	115-2875
18CS716	105-2943	115-2941
18CS724	105-3016	115-3014
18CS732	105-3081	115-3089
20CS612	105-3156	115-3154
20CS616	105-3222	115-3220
20CS624	105-3297	115-3295
20CS632	105-3362	115-3360
20CS712	105-3438	115-3436
20CS716	105-3503	115-3501
20CS724	105-3578	115-3576
20CS732	105-3644	115-3642
24CS712	105-3719	115-3717
24CS716	105-3784	115-3782
24CS724	105-3859	115-3857
24CS732	105-3925	115-3923



Special Designs Available On All Conveyor Screws



Additional Types of Abrasion Resistant Conveyor Screws and Accessories

If desired, conveyor screws may be furnished in abrasion resistant metals, such as 40/50 carbon, T-I, nickel steel or may be coated with Stellite, Postalloy, Airco, etc.

When handling abrasive materials, consideration should be given to

protecting conveyor accessories. Hardened couplings, outboard bearings, trough ends and hangers with white iron or hardened surface bearings can be furnished. Troughs of heavy abrasion resistant metals are also available.

Hammond Hard-Surfaced Conveyor Screws

Hammond Hard-Surfaced conveyor screws are designed to prolong the life of flights while handling abrasive materials. An alloy is permanently fused to the carrying side (of a width in relation to the cross-

sectional load, see chart) of the fighting face. As shown in the photo, the alloy is also applied along the ends of the fighting up to the pipe to reduce wear at the hanger joints where some material build-up generally occurs.

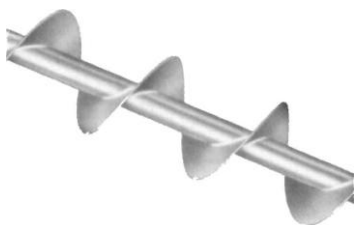
Conveyor Diameter	Width of Hard Surface	Applicable Conveyor Screw ▲
6	1 "	6H304, 6H308, 6H312 6S307, 6S309, 6S312
9	1 ½"	9H3Q6, 9H312, 9H406, 9H412 9S307, 9S309, 9S312, 9S407, 9S409,
to	1 ½"	10H306, 10H412 10H309, 10S312, 10S412
12	2 "	12H408, 12H412, 12H508, 12H512 12S409, 12S412, 12S509, 12S512, 12S612
14	2 "	14H50S 14S5Q9, 14S512, 14S612
16	2 ½"	16H610 16S609, 16S612
18	2 ½"	18H612, 18S712
20	3 "	20S612, 20S712
24	3 "	24S712

▲ For Heavier Flight Thickness We Recommend An Overlay Process Such As Stellite, Postalloy or Airco.

Corrosion Resistant Conveyor Screws

Conveyor screws which must handle corrosive materials may be made of special resistant metals such as stainless steel, Monel, Inconel, Cor-Ten, etc. In addition, they may be hot dip galvanized for protection against mild corrosion.

Stainless Steel Conveyor Screws

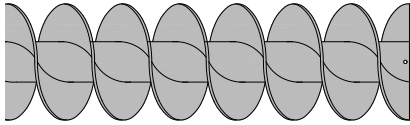


Stainless steel screw conveyors are ideal for use in the food, drug, chemical and virtually all other industries where either sanitation, corrosion or extreme temperatures are a problem. Stainless steel conveyor screws and parts are manufactured to the same specifications as are standard mild steel. The

flights can be welded continuously to one or both sides of the pipe and the weld may then be ground to your specifications. Any analysis of stainless steel may be used in the construction of your screw conveyor. Stainless accessories such as hangers, troughs, etc., are also available.

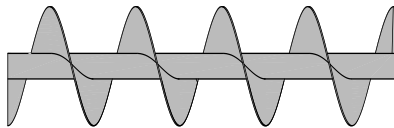


Special Conveyor Screw Designs



Double Flight

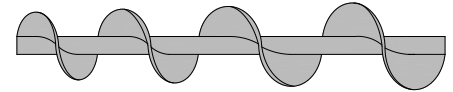
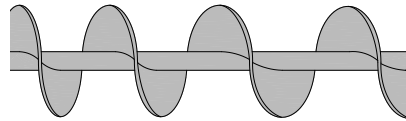
A double flight conveyor screw incorporates two rows of flighting of the same hand wrapped around the conveyor pipe. It creates a more even discharge from the conveyor minimizing surges which is desirable when feeding into a scale hopper. Usually the double flight is required for only the last two or three pitches prior to a discharge to accomplish its purpose.



Short Pitch

Short pitch, usually half pitch, but may be any pitch under standard full pitch, is often used for the full length of inclined conveyors to maintain efficient conveying action.

In horizontal conveyors as half pitch it is fitted under choke feed hoppers to create a lowering of cross section load beyond the feed area permitting the use of intermediate hanger bearings and extended conveyor lengths. A half pitch conveyor will have half the capacity of a full pitch conveyor under the same cross section load and speed.



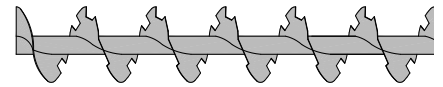
Tapered Diameter

Tapered diameter conveyor screws also create a draw off of material for the length of the opening. This construction is often used in conjunction with half pitch to create greater flexibility in conveyor design. When using tapered diameter the trough should also be tapered to minimize the bed of material in the trough at the feed end.

Conveyor assemblies incorporating the modifications above are pictured on page 18 and 19.

Variable Pitch

Variable pitch conveyor screws are used as feeder screws under a long storage hopper. They permit a draw off of material for the length of the opening. Otherwise material will flow from the extreme feed end of the opening only and if the hopper is never completely emptied material can stagnate.

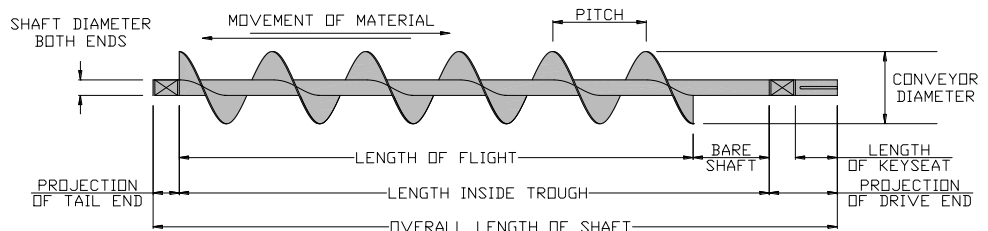


Cut Flights

By cutting deep notches in the flight a very efficient mixing action of dry materials is created particularly at high speeds. The material is chopped and agitated as it is conveyed. This construction is also useful when conveying materials which tend to ball or lump.

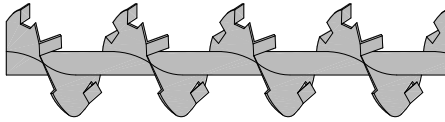
Solid Shaft Conveyor Screw

Solid shaft is generally used only on short conveyors operating under extreme loads requiring extra torque capacity. The diagram shows the data required for ordering.



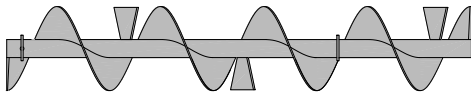


Pipe Bushings and Lugs



Cut and Folded

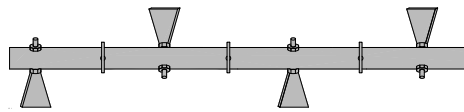
This construction creates an even greater agitation than cut flights alone. It is also useful in cooling or drying light materials in conjunction with dome type covers.



Mixing Paddles

Any standard conveyor screw of either cut flight or cut and folded flight can be fitted with paddles for additional mixing action and to further retard the flow of material.

These paddles are usually welded in place at the hand opposite to the hand of the screw flighting. They can also be adjustable in hand and pitch.



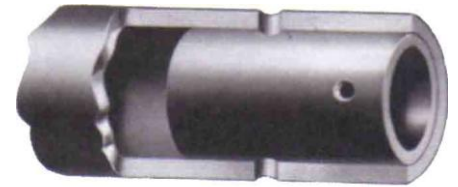
Paddle Conveyor

For the greatest stirring action when conveying efficiency is not important, the flighting can be eliminated entirely resulting in a paddle conveyor as pictured.

The possible variations in conveyor screw, using the constructions described on the opposite page and above are almost limitless. If in question, consult our engineering department for specific recommendations.

Pipe Bushings			
Standard Pipe Size	Shaft Diameter	Part Number	Weight Per 100
1 1/4"	1	141-0224	70
2	1 1/2	141-0331	220
2 1/2	2	141-0448	240
3	2 7/16	141-0554	410
3 1/2	3	141-0661	430
4	3	141-0778	830
4	3 7/16	141-0885	730

Internal collars are normally used in all types of conveyor screws to create a close fit to the end or coupling shafts. When purchased separately, they are not drilled for the coupling bolts since they and the pipe ends are drilled after assembly.



END LUGS						
Size of Conveyor	Nominal Pipe Size	Feed End		Discharge End		Weight Per 100
		Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
6"	2	145-0220	145-1434	145-0881	145-2093	6
9"	2-2 1/2	145-0337	145-1541	145-0098	145-2200	16
10"	2-2 1/2	145-0337	145-1541	145-0998	145-2200	16
12"	2 1/2	145-0444	145-1657	145-1103	145-2317	35
12"	3	145-0444	145-1657	145-1103	145-2317	35
12"	3 1/2	145-0444	145-1657	145-1103	141-2317	35
14"	3	145-0550	145-1764	145-1210	145-2424	53
14"	3 1/2	145-0550	145-1764	145-1210	145-2424	53
16"	3 1/2	145-0550	145-1764	145-1210	145-2424	53
18"	3 1/2-4	145-0667	145-1871	145-0667	145-1871	150
20"	3 1/2-4	145-0667	145-1871	145-0667	145-1871	150
24"	4	145-0667	145-1871	145-0667	145-1871	150

End lugs are made of heavy gauge steel and are designed to provide the greatest amount of support to the conveyor flighting with the least obstruction to the flow of material. When ordering, specify whether lugs are required for the Feed or the Discharge End and whether they are for a Right or Left Hand conveyor.



Formed Steel Lug for Feed End

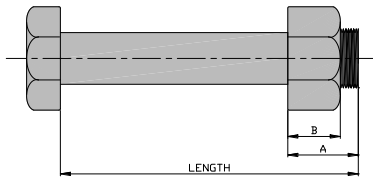


Formed Steel Lug for Discharge End



Bolts and Coupling Shafts

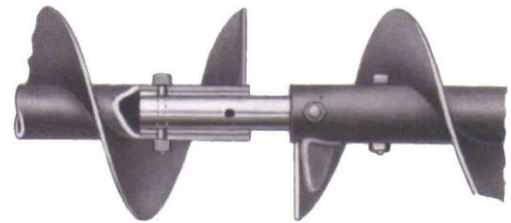
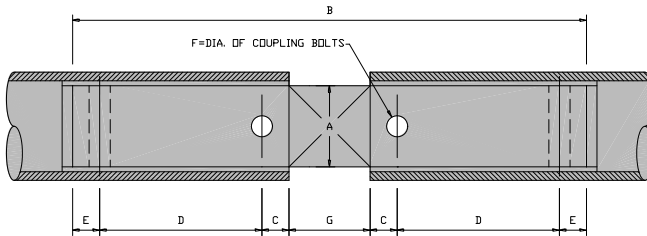
Tem-U-Lac Coupling Shafts



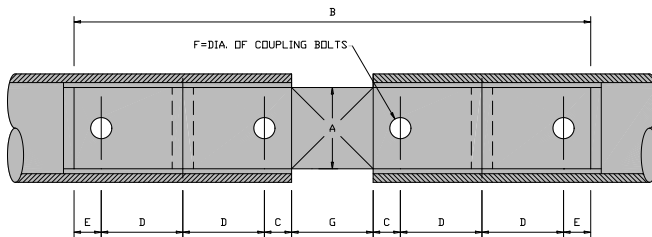
The Tem-U-Lac is a special bolt and nut forged of high analysis steel to give the required toughness for the severe service encountered. It has a hex head and the thread is cut to the proper length so that it does not project into and cut or wear the pipe walls. The self-locking hexagon nut features a stainless steel pin which follows the bolt thread while the nut is being tightened down. This prevents the nut from vibrating or working loose, causing damage and downtime, yet it loosens easily when pressure is applied by an ordinary wrench.

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS						
Shaft Diameter	Pipe Size	Bolt Size	Part Number	Weight Per 100	Dimensions	
					A	B
1"	1 1/4	3/8 x 2 1/8	155-6067	10	1/2	3/8
1 1/2"	2	1/2 x 3	155-6091	25	3/4	1/2
2"	2 1/2	5/8 x 3 5/8	155-6125	45	7/8	5/8
2 7/16"	3	5/8 x 4 3/8	155-6158	52	1	5/8
3"	3 1/2	3/4 x 5	155-6182	86	1 1/8	3/4
3"	4	3/4 x 5 1/2	155-6257	88	1 1/8	3/4
3 7/16"	4	7/8 x 5 1/2	155-6299	92	1 1/8	7/8

Screw Conveyor Couplings



Shaft Size A	PART NUMBER		B	C	D	E	F	G	Wgt.
	Cold Rolled Steel Couplings	Hardened Steel Couplings							
1	147-0228	147-1101	7 1/2	1/2	2	1/2	3/8	1 1/2	1.5
1 1/2	147-0335	147-1218	11 1/2	7/8	3	7/8	1/2	2	5.6
2	147-0442	147-1325	11 1/2	7/8	3	7/8	5/8	2	9.6
2 7/16	147-0558	147-1432	12 3/4	15/16	3	15/16	5/8	3	16.2
3	147-0772	147-1549	13	1	3	1	3/4	3	24.7
3 7/16	147-0889	147-1655	17 1/2	1 1/2	4	1 1/4	7/8	4	44.5



Shaft Size A	PART NUMBER		B	C	D	E	F	G	Wgt.
	Cold Rolled Steel Couplings	Hardened Steel Couplings							
1 1/2	147-0343	147-0350	17 1/2	7/8	3	7/8	1/2	2	8.5
2	147-0459	147-0467	17 1/2	7/8	3	7/8	5/8	2	14.5
2 7/16	147-0566	147-0574	18 3/4	15/16	3	15/16	5/8	3	23.8
3	147-0780	147-1556	19	1	3	1	3/4	3	36
3 7/16	147-0897	147-0905	25 1/2	1 1/2	4	1 1/4	7/8	4	65

Made from selected cold rolled steel shafting, coupling shafts are jig-drilled to assure a match with the jig-drilled conveyor pipe. When handling non-abrasive materials, standard cold rolled steel couplings are recommended. Hardened steel couplings are recommended when handling abrasives and are case-hardened with a tough ductile core.

High Torque Construction

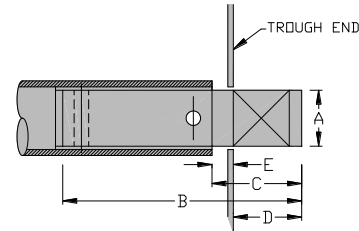
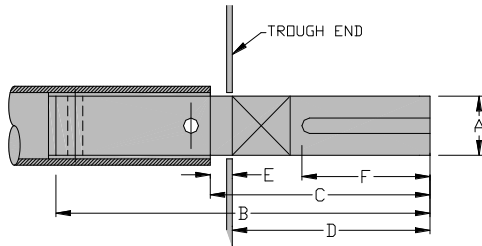
The motor size limitations specified on page 10, can often be increased considerably through the use of three coupling bolts in the end of the conveyor pipe rather than the standard two bolts. The conveyor drive, tail and coupling shafts are jig-drilled to match the three holes in the conveyor pipe. Consult our engineering department for maximum drive sizes.



Drive and End Shafts

DRIVE SHAFTS				
Shaft Diameter	Without End Seal		With End Seat	
	For #100, #101 Trough End	For #102, #103 Trough End	For #100, #101 Trough End	For #102, #103 Trough End
1	152-0352	152-0212	--	--
1 1/2	152-0709	152-0568	152-0774	152-0709
2	152-1053	152-0915	152-1129	152-1053
2 7/16	152-1475	152-1269	152-1541	152-1400
3	152-1897	152-1681	152-1962	152-1822
3 7/16	152-2176	152-2036	152-2242	152-2101

END SHAFTS			
Without End Seal		With End Seat	
For #100, #101 Trough End	For #102, #103 Trough End	For #100, #101 Trough End	For #102, #103 Trough End
150-0354	150-0214	--	--
150-0701	150-0560	150-0842	150-0776
150-1196	150-1055	150-1337	150-1261
150-1758	150-1477	150-1824	150-1618
150-2178	150-1964	150-2244	150-2103
150-2459	150-2319	150-2525	150-2384



DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS

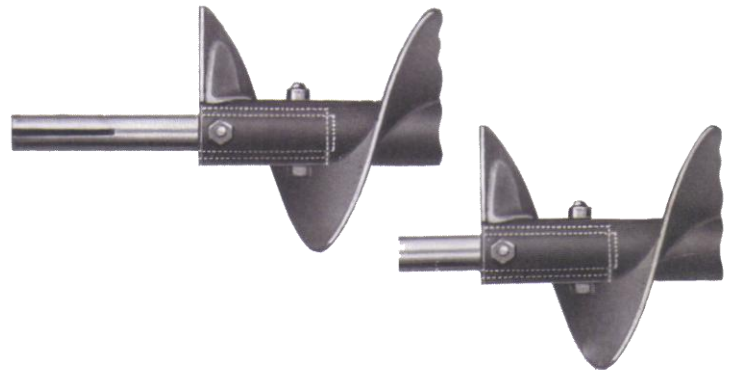
DRIVE SHAFTS								
Shaft Size "A"	Part Number	B	C	D	E	F	Key Seat	Wgt.
1"	152-0212	7 7/8	4 7/8	3 15/16	15/16	2 1/4	1/4 x 1/8	1.8
1"	152-0352	8 3/8	5 3/8	4 7/16	15/16	2 1/4	1/4 x 1/8	1.9
1 1/2"	152-0568	11 1/2	6 3/4	5 1/2	1 1/4	3 1/4	3/8 x 3/16	5.8
1 1/2"	152-0709	13 1/4	8 1/2	7 1/4	1 1/4	3 1/4	3/8 x 3/16	6.7
1 1/2"	152-0774	14 1/4	9 1/2	8 1/4	1 1/4	3 1/4	3/8 x 3/16	7.2
2"	152-0915	13 1/8	8 3/8	7 1/8	1 1/4	4 1/2	1/2 x 1/4	11.7
2"	152-1053	14 7/8	10 1/8	8 7/8	1 1/4	4 1/2	1/2 x 1/4	13.3
2"	152-1129	16 1/2	11 3/4	10 1/2	1 1/4	4 1/2	1/2 x 1/4	14.7
2 7/16"	152-1269	15 1/8	10 1/4	8 7/16	1 13/16	5 1/2	5/8 x 5/16	20
2 7/16"	152-1400	16 7/8	12	10 3/16	1 13/16	5 1/2	5/8 x 5/16	22
2 7/16"	152-1475	17 3/8	12 1/2	10 11/16	1 13/16	5 1/2	5/8 x 5/16	23
2 7/16"	152-1541	19 1/8	14 1/4	12 7/16	1 13/16	5 1/2	5/8 x 5/16	25.4
3"	152-1681	16 5/8	11 5/8	9 3/4	1 7/8	6	3/4 x 3/8	33.3
3"	152-1822	18 3/8	13 3/8	11 1/2	1 7/8	6	3/4 x 3/8	37
3"	152-1897	19 1/8	14 1/8	12 1/4	1 7/8	6	3/4 x 3/8	38.3
3"	152-1962	20 7/8	15 7/8	14	1 7/8	6	3/4 x 3/8	41.8
3 7/16"	152-2036	20 5/8	13 7/8	11 1/2	2 3/8	7 1/4	7/8 x 7/16	60
3 7/16"	152-2101	22 7/8	16 1/8	13 3/4	2 3/8	7 1/4	7/8 x 7/16	66
3 7/16"	152-2176	23 5/8	16 7/8	14 1/2	2 3/8	7 1/4	7/8 x 7/16	68
3 7/16"	152-2242	25 7/8	19 1/8	16 3/4	2 3/8	7 1/4	7/8 x 7/16	75

END SHAFTS						
Shaft Size "A"	Part Number	B	C	D	E	F
1"	150-0214	5 5/8	2 5/8	1 11/16	15/16	1.2
1"	150-0354	6 1/8	3 1/8	2 3/16	15/16	1.4
1 1/2"	150-0560	8 1/4	3 1/2	2 1/4	1 1/4	4.2
1 1/2"	150-0701	9 1/4	4 1/2	3 1/4	1 1/4	4.7
1 1/2"	150-0776	10	5 1/4	4	1 1/4	5.0
1 1/2"	150-0842	11	6 1/4	5	1 1/4	5.5
2"	150-1055	8 5/8	3 7/8	2 5/8	1 1/4	7.6
2"	150-1196	10 1/4	5 1/2	4 1/4	1 1/4	9.1
2"	150-1261	10 3/8	5 5/8	4 3/8	1 1/4	9.2
2"	150-1337	12	7 1/4	6	1 1/4	10.7
2 7/16"	150-1477	9 5/8	4 3/4	2 15/16	1	13.0
2 7/16"	150-1618	11 3/8	6 1/2	4 11/16	1	15.1
2 7/16"	150-1758	11 7/8	7	5 3/16	1	15.8
2 7/16"	150-1824	13 5/8	8 3/4	6 15/16	1	18.2
3"	150-1964	10 5/8	5 5/8	3 3/4	1 7/8	21.0
3"	150-2103	12 3/8	7 3/8	5 1/2	1 7/8	24.5
3"	150-2178	13 1/8	8 1/8	6 1/4	1 7/8	26.0
3"	150-2244	14 7/8	9 7/8	8	1 7/8	29.0
3 7/16"	150-2319	13 3/8	6 5/8	4 1/4	2 3/8	39.2
3 7/16"	150-2384	15 5/8	8 7/8	6 1/2	2 3/8	45.8
3 7/16"	150-2459	16 3/8	9 5/8	7 1/4	2 3/8	48.0
3 7/16"	150-2525	18 5/8	11 7/8	9 1/2	2 3/8	54.0

All shafts normally drilled and keyseated. Keys are not included. If shafts are required with other than standard projection and keyway or with other special specifications details should accompany order.

The conveyor drive shaft transmits the rotary motion from the drive unit to the conveyor screw. They are, therefore, of high-quality, cold-rolled steel and are manufactured to closely controlled tolerances to fit the bearing clearances. Drive Shaft keyways are accurately cut to transmission specifications and coupling bolts holes are jig-drilled to assure perfect alignment with the jig-drilled conveyor pipe.

End Shafts support the conveyor screw and are of selected steel and are manufactured to close tolerances for proper fit with the end bearings. End Shafts are jig-drilled for perfect alignment.





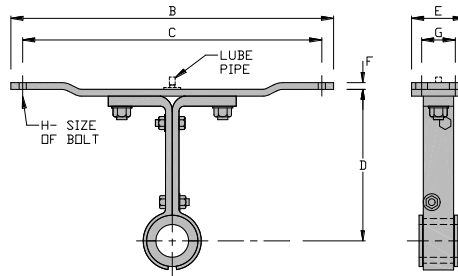
Hangers

DIMENSIONS FOR ALL HANGER STYLES

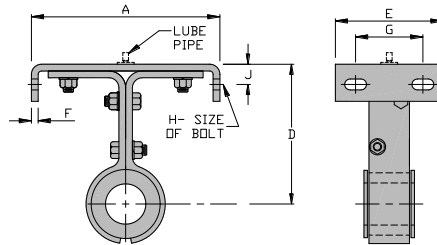
DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS													
Diameter of Conveyor	Bearing Bore	Weight	Bearing Length	A	B	C	D	E	F	G	H	J	K
4	1	4	1 1/2	5	7 3/4	6 3/4	3 5/8	3	1/4	2	3/8	3/4	--
6	1 1/2	6	2	7	9 3/4	8 3/4	4 1/2	4	1/4	2 1/2	3/8	3/4	6
9	1 1/2	8	2	10	13 1/2	12 1/4	6 1/8	4	1/4	2 1/2	3/8	1	6
9	2	9	2	10	13 1/2	12 1/4	6 1/8	4	1/4	2 1/2	3/8	1	6
10	1 1/2	9	2	11	14 1/2	13 1/4	6 3/8	4	1/4	2 1/2	3/8	1	6
10	2	10	2	11	14 1/2	13 1/4	6 3/8	4	1/4	2 1/2	3/8	1	6
12	2	14	2	13	17 1/2	15 3/4	7 3/4	4	3/8	2 1/2	1/2	1 1/4	6 1/2
12	2 7/16	20	3	13	17 1/2	15 3/4	7 3/4	4	3/8	2 1/2	1/2	1 1/4	6 1/2
12	3	22	3	13	17 1/2	15 3/4	7 3/4	4	3/8	2 1/2	1/2	1 1/4	6 1/2
14	2 7/16	23	3	15	19 1/2	17 3/4	9 1/4	4	1/2	2 1/2	1/2	1 3/8	6 1/2
14	3	25	3	15	19 1/2	17 3/4	9 1/4	4	1/2	2 1/2	1/2	1 3/8	6 1/2
16	3	28	3	17	21 1/2	19 3/4	10 5/8	4	1/2	2 1/2	1/2	1 3/8	6 1/2
18	3	29	3	19	24 1/2	22 1/4	12 1/8	5	1/2	3 1/2	5/8	1 5/8	6 1/2
18	3 7/16	31	4	19	24 1/2	22 1/4	12 1/8	5	1/2	3 1/2	5/8	1 5/8	7
20	3	32	3	21	26 1/2	24 1/4	13 1/2	5	1/2	3 1/2	5/8	1 5/8	6 1/2
20	3 7/16	34	4	21	26 1/2	24 1/4	13 1/2	5	1/2	3 1/2	5/8	1 5/8	7
24	3 7/16	40	4	25	30 1/2	28 1/4	16 1/2	5	1/2	3 1/2	5/8	1 3/4	7

These hangers are the most popular styles for the usual conveyor application as they offer the least possible obstruction to the flow of material. The Style 226 is the most popular since it mounts completely inside the trough and, therefore, is more suitable for use with dust-tight or weather-tight covers. Both hangers have wide top bars for greater stability and to permit their mounting across trough flange joints. The standard bearings used are Babbitt, Hard Iron, Arguto Wood, Bronze and Nylon or Nylatron; also available on special order is Bronze Oilite, Gatke, Stellite, Teflon or practically any conceivable bearing material.

Style No. 220



Style No. 226

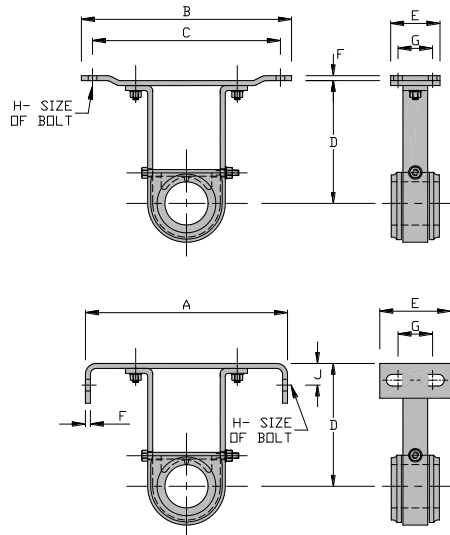


Hangers

Components



These are hangers designed for the most severe abrasive service. The Style 216 is the most popular since it will mount on the inside of the trough and therefore is most suitable for use with dust-tight or weather-tight covers. Both hangers have wide top bars for greater stability and to permit their mounting across trough flange joints. Because of the usual application of these hangers hard iron bearings are standard, however, Arguto Wood bearings are readily available.

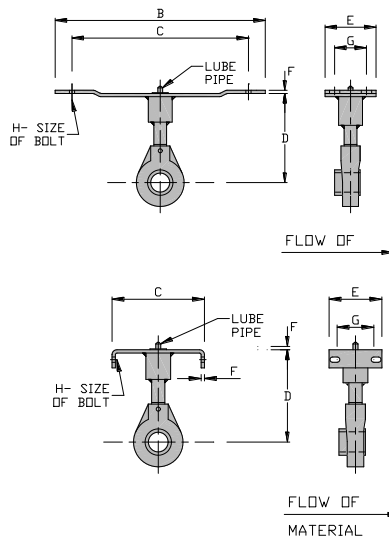


Style No, 230



Style No, 216

These hangers feature a self-aligning ball bearing. This results in lower power requirements and quieter operation. They are, therefore, particularly desirable for use in extremely long conveyors or conveyors operating at higher speeds. The Style 260 or 270 hangers are, however, not recommended for use in handling "dirty", gritty or abrasive materials. Alemite bearings are generally furnished although the bearings can also be considered as "Sealed for Life". The Style 270 hanger is the more popular as it mounts completely inside the trough and is, therefore, more suitable for use with dust-tight or weather-tight covers. Both hangers have wide top bars to permit their mounting across trough joints and to provide greater stability which is particularly important when using self-aligning bearings.

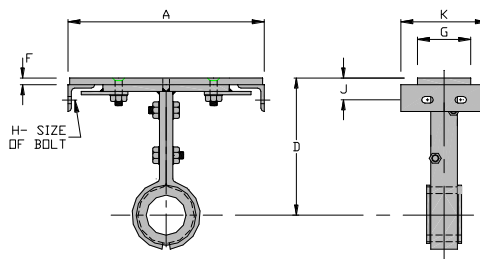


Style No, 260



Style No, 270

Style No. 326 hanger is designed for use where hot materials are being conveyed and the length requires three or more sections of screw conveyor. The hanger top bar is free to slide on the angle guides to compensate for any unequal expansion between the trough and the screw conveyor. The 326 fits inside the trough beneath the cover and is suitable for use with a dust-tight or weather-proof cover. Its design offers a minimum of resistance to material flow and removable bearings made of special materials can be furnished to meet specific requirements. Hard-iron bearings, normally used with hardened steel conveyor couplings, are standard and will be furnished unless otherwise specified.



Note: Dimensional Data shown on page 36.
Part Numbers shown on page 38.



Expansion
Style No. 326



Hangers

PART NUMBERS FOR ALL HANGER STYLES										
Diameter of Conveyor	Bearing Bore	WITH HARD IRON BEARING					WITH WOOD BEARING			
		Style 216 Part Number	Style 230 Part Number	Style 220 Part Number	Style 226 Part Number	Style 326 Part Number	Style 216 Part Number	Style 230 Part Number	Style 220 Part Number	Style 226 Part Number
4	1"	—	—	162-0145	163-0144	—	—	—	162-2612	163-2660
6	1½"	160-0147	161-0146	162-0210	163-0219	164-0143	160-2523	161-1219	162-2661	163-2736
9	1½"	160-0212	161-0211	162-0285	163-0284	164-0218	160-2598	161-1326	162-2737	163-2801
	2"	160-0287	161-0286	162-0350	163-0359	164-0283	160-2663	161-1391	162-2802	163-2876
10	1½"	160-0352	161-0351	162-0426	163-0425	164-0358	160-2739	161-1482	162-2877	163-2942
	2"	160-0428	161-0427	162-0491	163-0490	164-0424	160-2804	161-1557	162-2943	163-3015
12	2"	160-0493	161-0492	162-0566	163-0565	164-0499	160-2879	161-1649	162-3016	163-3080 163-3155 163-3221
	2 7/16"	160-0568	161-0567	162-0632	163-0631	164-0564	160-2945	181-1706	162-3081	
	3"	160-0634	161-0633	162-0707	163-0706	164-0630	160-3018	161-1797	162-3156	
14	2 7/16"	160-0709	161-0708	162-0772	163-0771	164-0705	160-3083	161-1862 161-1938	162-3222 162-3297	163-3296 163-3361
	3"	160-0774	161-0773	162-0848	163-0847	164-0770	160-3158			
16	3"	160-0840	181-0849	162-0913	163-0912	164-0846	160-3224	161-2019	162-3362	163-3437
18	3"	160-0915	161-0914	162-0988	163-0987	164-0911	160-3299	161-2167	162-3438	163-3502
	3 7/16"	160-0980	161-0989	162-1051	163-1050	164-0986	160-3364	161-2209	162-3503	163-3577
20	3"	160-1053	161-1052	162-1127	163-1126	164-1059	160-3430	161-2316	162-3578	163-3643
	3 7/16"	160-1129	161-1128	162-1192	163-1191	164-1125	160-350S	161-2423	162-3644	163-3718
24	3 7/16"	160-1194	161-1193	162-1267	163-1266	164-1190	160-3570	161-2506	162-3719	163-3783
	30	3 15/16" 4 7/16"	160-1236 N/A	160-1236 N/A	162-1291 162-1309	163-1357 163-1365	164-1224 164-1232			

Diameter of Conveyor	Bearing Bore	WITH BABBITT BEARING		WITH BRONZE BEARING		WITH WHITE NYLON BEARING		WITH ANTI-FRICTION BEARING	
		Style 220 Part Number	Style 226 Part Number	Style 220 Part Number	Style 226 Part Number	Style 220 Part Number	Style 226 Part Number	Style 260 Part Number	Style 270 Part Number
4	1"	162-1408	163-1407	162-5045	163-5044	--	--	--	--
8	1½"	162-1473	163-1472	162-5110	163-5119	162-3859	163-3924	166-0141	167-0140
9	1½"	162-1549	163-1548	162-5185	163-5184	162-3925	163-3990	166-0216	167-0215
	2"	162-1614	163-1613	162-5250	163-5259	162-3990	163-4062	166-0281	167-0280
10	1½"	162-1689	163-1688	162-5326	163-5325	162-4063	163-4138	166-0356	167-0355
	2"	162-1754	163-1753	162-5391	163-5390	162-4139	163-4203	166-0422	167-0421
12	2"	162-1820	163-1829	162-5466	163-5465	162-4204	163-4278	166-0497	167-0496
	2 7/16"	162-1895	163-1894	162-5532	163-5531	162-4279	163-4344	166-0562	167-0561
	3"	162-1960	163-1969	162-5607	163-5606	162-4345	163-4419	166-0638	167-0637
14	2 7/16"	162-2034	163-2033	162-5672	163-5671	162-4410	163-4484	166-0703	167-0702
	3"	162-2109	163-2108	162-5748	163-5747	162-4485	163-4559	166-0778	167-0777
16	3"	162-2174	163-2173	162-5813	163-5812	162-4550	163-4625	166-0844	167-0843
18	3"	162-2240	163-2249	162-5888	163-5887	162-4626	163-4690	166-0919	167-0918
	3 7/16"	162-2315	163-2314	162-5953	163-5952	162-4659	163-4732	166-0943	167-0942
20	3"	162-2380	163-2389	162-6027	163-6029	162-4691	163-4765	166-0984	167-0983
	3 7/16"	162-2455	163-2454	162-6092	163-6091	162-4741	163-4799	166-1008	167-1007
24	3 7/16"	162-2521	163-2520	162-6167	163-6166	162-4782	163-4815	166-1057	167-1056

Note: See pages 36 & 37 for dimensional data.



Flared Trough Hanger

Hangers for use in flared troughs may be furnished in any of the fabricated hanger styles shown on pages 36 and 37. A Style 226 modified for a flared trough is pictured. Special hanger designs may be furnished to meet your requirements. Please refer to page 52 for additional information concerning flared troughs. Although normally supplied with babbitted, bronze or hard-iron bearings, Arguto, Nylon, Bronze Oilite or other types of bearings are available.

Replacement Hanger Bearings



Bearing for
Style 220, 226, 326 Hangers



Bearing for
Style 216, 230 Hangers



Bearing for
Style 260, 270 Hangers

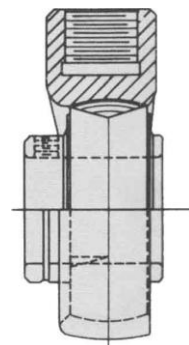
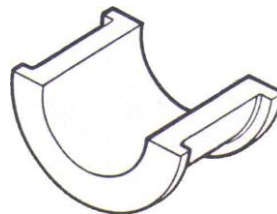
When ordering bearings for screw conveyor hangers, specify the bore diameter, style of hanger and kind of bearing material.

Enduro-Bearings™

Lower half only

Highly efficient bearings and seals, providing long term solutions for operations in tough abrasive environments.

Bearing Dia.	Part Number.
1 1/2"	194-0501
2"	194-0527
2 7/16"	194-0543
3"	194-0568
3 7/16"	194-0584
3 15/16"	194-0600

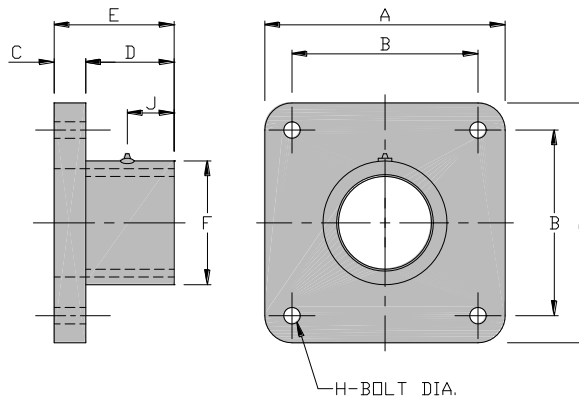


Note: Style 260 and 270 hangers and bearings should be mounted as shown by the "Flow of Material" arrow.



Transmission Flange Bearings

Transmission Flange Bearings are of fabricated steel with the backing and end faces machine finished. Additional clearance is provided at the base of the bolt holes for ease of assembly. The bearings are accurately broached to "transmission" tolerances and the bore is concentric to the flange back. 1/8" Alemite fittings (No. 1610 hydraulic type) are furnished and the bearings are grooved to distribute the lubricant uniformly.



DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS

*Shaft Size	Babbitt Bearing Part Number	Bronze Bearing Part Number	A	B	C	D	E	F	H	J	Weight
1" ★	205-0284 ★	205-1126	4 ★	3 5/16 ★	3/16	1 7/16	1 5/8	2	3/8	-	3.0
1 7/16"	205-0359	205-1191	5 1/8	4	5/16	2 11/16	3	2 3/8	7/16	1 1/16	6.5
1 1/2"	205-0425	205-1266	5 1/8	4	5/16	2 11/16	3	2 3/8	7/16	1 1/16	6.5
1 15/16"	205-0490	205-1332	6 3/8	5 1/8	3/8	3 5/8	4	2 7/8	9/16	1 7/8	13.0
2"	205-0565	205-1407	6 3/8	5 1/8	3/8	3 5/8	4	2 7/8	9/16	1 7/8	13.0
2 7/16"	205-0631	205-1472	6 7/8	5 5/8	3/8	4 5/8	5	3 1/2	9/16	2 3/8	20.0
2 11/16"	205-0706	205-1548	7 3/4	6	1/2	5	5 1/2	4	3/4	2 3/4	28.0
2 15/16"	205-0771	205-1613	7 3/4	6	1/2	5 1/2	6	4	3/4	3	32.0
3"	205-0847	205-1688	7 3/4	6	1/2	5 1/2	6	4	3/4	3	32.0
3 7/16"	205-0912	205-1753	8 7/16	6 3/4	1/2	6	6 1/2	4 1/2	3/4	3 7/16	39.0

*Bores not listed — on application.

★ 1" size not available as Babbitt bearing. 1" size available with 2-hole oil impregnated wood bearing only.



Trough Ends

Components



Styles No. 100 and 101

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS																				
Diameter of Conveyor	Bearing Bore	Style 100		Style 101		A	B		C	D	E	F	G	H	J	K	L	M	N	Style 101 Weight With Bearing
		With Bearing Part Number	Without Bearing Part Number	With Bearing Part Number	Without Bearing Part Number		Without Seal XX	With Seal XX												
4	1	210-1400	264-1405	210-0147	264-0142	8	1 13/16	--	1 7/16	3 5/8	4 5/8	1	1 5/8	3/8	5 3/4	3/16	3 5/16	1 1/8	7/16	8
6	1 1/2	210-1475	264-1470	210-0212	264-0217	9 3/4	3 3/16	4	1 1/2	4 1/2	5 5/8	1	1 3/4	3/8	8 1/8	3/16	4	1 1/4	7/16	13
9	1 1/2	210-1541	264-1546	210-0287	264-0282	13 1/2	3 1/4	5	1 5/8	6 1/8	7 7/8	1 1/2	2 5/8	1/2	9 3/8	1/4	4	1 1/4	7/16	23
9	2	210-1616	264-1611	210-0352	264-0357	13 1/2	4 1/4	6	1 5/8	6 1/8	7 7/8	1 1/2	2 5/8	1/2	9 3/8	1/4	5 1/8	1 5/8	9/16	29
10	1 1/2	210-1681	264-1686	210-0428	264-0423	14 1/2	3 1/4	5	1 3/4	6 3/8	8 7/8	1 3/4	2 7/8	1/2	9 1/2	1/4	4	1 1/4	7/16	26
10	2	210-1756	264-1827	210-0493	264-0498	14 1/2	4 1/4	6	1 3/4	6 3/8	8 7/8	1 3/4	2 7/8	1/2	9 1/2	1/4	5 1/8	1 5/8	9/16	32
12	2	210-1822	264-1892	210-0568	264-0563	17 1/4	4 1/4	6	2	7 3/4	9 5/8	1 5/8	2 3/4	5/8	12 1/4	1/4	5 1/8	1 5/8	9/16	39
12	2 7/16	210-1897	264-1967	210-0634	264-0639	17 1/4	5 1/4	7	2	7 3/4	9 5/8	1 5/8	2 3/4	5/8	12 1/4	1/4	5 5/8	1 5/8	9/16	50
12	3	210-1962	264-2106	210-0709	264-0704	17 1/4	6 1/4	8	2	7 3/4	9 5/8	1 5/8	2 3/4	5/8	12 1/4	1/4	6	2	3/4	64
14	2 7/16	210-2036	264-2171	210-0774	264-0779	19 1/4	5 5/16	7 1/16	2	9 1/4	10 7/8	1 5/8	2 7/8	5/8	13 1/2	5/16	5 5/8	1 5/8	9/16	65
14	3	210-2101	264-2312	210-0840	264-0845	19 1/4	6 5/16	8 1/16	2	9 1/4	10 7/8	1 5/8	2 7/8	5/8	13 1/2	5/16	6	2	3/4	79
16	3	210-2176	264-2387	210-0915	264-0910	21 1/4	6 5/16	8 1/16	2 1/2	10	12	2	3 1/4	5/8	14 7/8	5/16	6	2	3/4	90
18	3	210-2242	264-2452	210-0980	264-0985	24 1/4	6 3/8	8 1/8	2 1/2	12	13 3/8	2	3 1/4	5/8	16	3/8	6	2	3/4	117
18	3 7/16	210-2317	264-2528	210-1053	264-1058	24 1/4	7 3/8	9 5/8	2 1/2	12	13 3/8	2	3 1/4	5/8	16	3/8	6 3/4	2	3/4	135
20	3	210-2382	264-2593	210-1129	264-1124	26 1/4	6 3/8	8 1/8	2 1/2	13	15	2 1/4	3 3/4	3/4	19 1/4	3/8	6	2	3/4	133
20	3 7/16	210-2457	264-2668	210-1194	264-1199	26 1/4	7 3/8	9 5/8	2 1/2	13	15	2 1/4	3 3/4	3/4	19 1/4	3/8	6 3/4	2	3/4	150
24	3 7/16	210-2523	264-2734	210-1269	264-1264	30 1/4	7 3/8	9 5/8	2 1/2	16	18 1/8	2 1/2	4 1/8	3/4	20	3/8	6 3/4	2	3/4	187

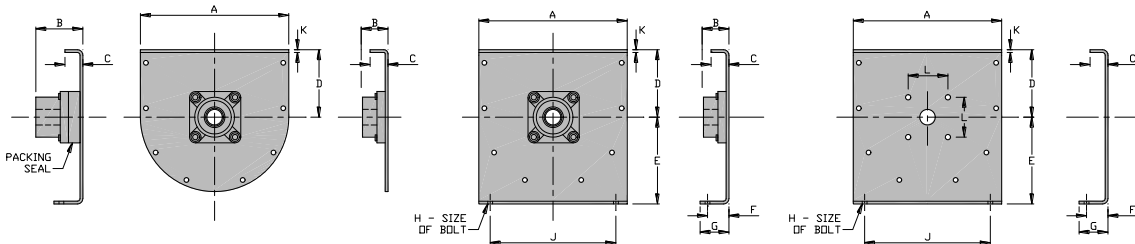
•Babbitt bearings are standard and furnished unless otherwise specified, except 4" size is supplied with two bolt oil impregnated self-aligning bearing only.

▲ A Standard bolt holes centers will be furnished unless otherwise specified.

*Length for trough end without seals will be furnished unless otherwise specified.

Bearings are furnished with 1/8 (no. 1610 Hydraulic type) Alemitte Fitting.

xx Standard seal is packing seal housing as shown on page 45.



These are steel plate trough ends generally fitted with Babbitted Transmission Flange Bearings, although any bearing material may be used such as Bronze, Bronze Oil-ite, Arguto Wood, Nylon, etc. (for anti-friction ball bearing trough ends, see page 42). Replacement Babbitt Bearings are pictured on page 40. In each type the top flange supports the cover of the conveyor. The bottom flange of the Style 101 is for support of the conveyor. When using the style 100 the conveyor must be supported either from above or from a foot on the trough end flange.

Style No. 100



Style No. 101





Trough Ends

Styles No. 102 and 103

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS								
Diameter of Conveyor	Bearing Bore	WITHOUT FEET		WITH FEET		DIMENSIONS		
		•Part †Number	•Weight	•Part †Number	•Weight	B	C	D
4	1	212-2034	6	212-0772	7	1 5/8	3/16	3 3/8
6	1 1/2	212-2109	10	212-0848	12	2 1/4	3/16	4
9	1 1/2	212-2174	18	212-0913	23	2 5/16	1/4	4 1/16
9	2	212-2240	20	212-0988	25	2 9/16	1/4	4 5/16
10	1 1/2	212-2315	20	212-1051	26	2 5/16	1/4	4 1/16
10	2	212-2380	22	212-1127	28	2 9/16	1/4	4 5/16
12	2	212-2455	27	212-1192	34	2 9/16	1/4	4 5/16
12	2 7/16	212-2521	32	212-1267	39	2 15/16	1/4	4 11/16
12	3	212-2596	41	212-1333	48	3 3/4	1/4	5 1/2
14	2 7/16	212-2661	44	212-1408	54	3	5/16	4 3/4
14	3	212-2737	55	212-1473	63	3 13/16	5/16	5 9/16
16	3	212-2802	61	212-1549	74	3 13/16	5/16	5 9/16
18	3	212-2877	85	212-1614	100	3 7/8	3/8	5 5/8
18	3 7/16	212-2943	92	212-1689	107	4 3/8	3/8	6 5/8
20	3	212-3016	97	212-1754	117	3 7/8	3/8	5 5/8
20	3 7/16	212-3081	104	212-1820	124	4 3/8	3/8	6 5/8
24	3 7/16	212-3156	127	212-1895	160	4 3/8	3/8	6 5/8

†Flange bearings are furnished with 1/8" (No. 1610 Hydraulic type) Alemite Fittings.
 •Part numbers and weights do not include seal.
 Standard seal is packing seal shown on page 45.

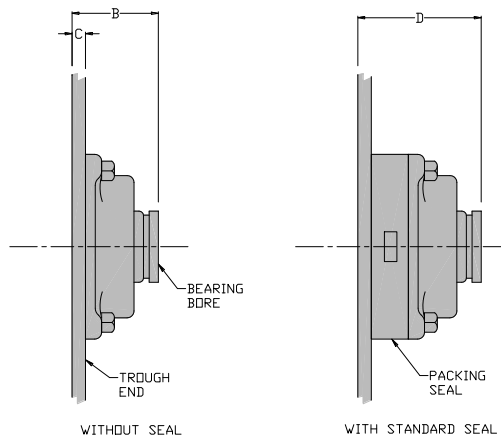
Anti-Friction Style No. 102
pictured without seal



Anti-Friction Style No. 103
pictured with packing seal



Anti-friction trough ends No. 102 and No. 103 are equipped with self-aligning ball bearings which allow for several degrees of end shaft misalignment. Unless for very light duty, these units are not recommended for use with the drive shaft. Chevron end thrusts or another type of rigid bearing support is normally recommended for use with the drive shaft. Refer to page 41 for dimensional data on these style trough ends.

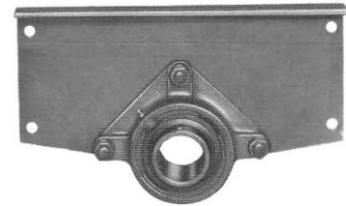
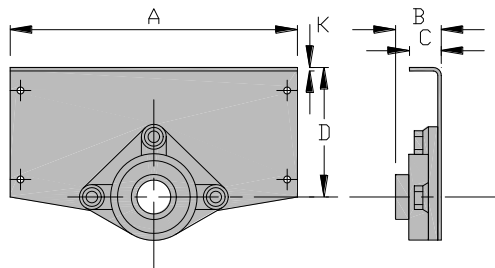


Trough Ends

Components



Styles No. 104, 107, 114 and 115

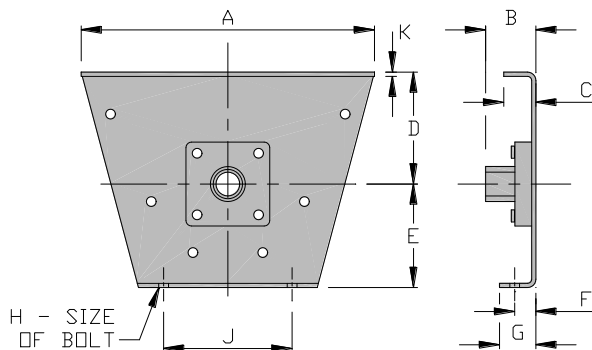


Discharge Trough End
Style No. 104 and Style No. 107

Discharge trough ends are designed for use when the material is to flow out the end of the trough and when the material loading does not exceed 45%.

The Style 104 (pictured above) is fitted with a self-aligning ball bearing. Also available is Style 107 which is fitted with a Babbitted Flange Bearing similar to trough end 100-101 except with a two or three bolt flange depending on bore size. The style 104 of 1 1/2" or 2" bore is a two bolt flange, other sizes are three bolt flanges.

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS										
Diameter of Conveyor	Bearing Bore	Style 104 Part Number	Style 107 Part Number	A	B		C	D	K	Wgt. Style 104
					Style 104	Style 107				
6	1 1/2	220-0145	220-1408	9 3/4	2 1/4	3 3/16	1 1/2	4 1/2	3/16	9
9	1 1/2	220-0210	220-1473	13 1/2	2 5/16	3 1/4	1 5/8	6 1/8	1/4	14
9	2	220-0285	220-1549	13 1/2	2 9/16	4 1/4	1 5/8	6 1/8	1/4	16
10	1 1/2	220-0350	220-1614	14 1/2	2 5/16	3 1/4	1 3/4	6 3/8	1/4	15
10	2	220-0426	220-1689	14 1/2	2 9/16	4 1/4	1 3/4	6 3/8	1/4	17
12	2	220-0491	220-1754	17 1/4	2 9/16	4 1/4	2	7 3/4	1/4	22
12	2 7/16	220-0566	220-1820	17 1/4	2 15/16	5 1/4	2	7 3/4	1/4	27
12	3	220-0632	220-1895	17 1/4	3 3/4	6 1/4	2	7 3/4	1/4	36
14	2 7/16	220-0707	220-1960	19 1/4	3	6 5/16	2	9 1/4	5/16	32
14	3	220-0772	220-2034	19 1/4	3 13/16	6 5/16	2	9 1/4	5/16	41
16	3	220-0848	220-2109	21 1/4	3 13/16	6 5/16	2 1/2	10 5/8	5/16	50
18	3	220-0913	220-2174	24 1/4	3 7/8	6 3/8	2 1/2	12 1/8	3/8	57
18	3 7/16	220-0988	220-2240	24 1/4	4 3/8	7 3/8	2 1/2	12 1/8	3/8	66
20	3	220-1051	220-2315	26 1/4	3 7/8	6 3/8	2 1/2	13 1/2	3/8	63
20	3 7/16	220-1127	220-2380	26 1/4	4 3/8	7 3/8	2 1/2	13 1/2	3/8	70
24	3 7/16	220-1192	220-2455	30 1/4	4 3/8	7 3/8	2 1/2	16 1/2	3/8	100



Diameter of Conveyor	Bearing Bore	Babbitt Bearing Part Number	Ball Brg. Part Number	A	B		B	C	D	E	F	G	H	J	K	Wgt.
					Style 114	Style 115										
6	1 1/2	230-1190	230-0143	16 5/8	3 3/16	2 1/4	2 3/16	1 1/2	7	5 5/8	1	1 3/4	3/8	8 1/8	3/16	30
9	1 1/2	230-1265	230-0218	21 1/4	3 1/4	2 5/16	3 1/4	1 5/8	9	7 7/8	1 1/2	2 5/8	1/2	9 3/8	1/4	41
9	2	230-1331	230-0283	21 1/4	4 1/4	2 9/16	4 1/4	1 5/8	9	7 7/8	1 1/2	2 5/8	1/2	9 3/8	1/4	55
12	2	230-1406	230-0358	26 3/8	4 5/16	2 5/8	4 5/16	2	10	9 5/8	1 5/8	2 3/4	5/8	12 1/4	5/16	75
12	2 7/16	230-1471	230-0424	26 3/8	5 5/16	3	5 5/16	2	10	9 5/8	1 5/8	2 3/4	5/8	12 1/4	5/16	86
12	3	230-1547	230-0499	26 3/8	6 5/16	3 13/16	6 5/16	2	10	9 5/8	1 5/8	2 3/4	5/8	12 1/4	5/16	100
14	2 7/16	230-1612	230-0564	28 3/8	5 5/16	3	5 5/16	2	11	10 7/8	1 5/8	2 7/8	5/8	13 1/2	5/16	96
14	3	230-1687	230-0630	28 3/8	6 5/16	3 13/16	5 5/16	2	11	10 7/8	1 5/8	2 7/8	5/8	13 1/2	3/8	110
16	3	230-1752	230-0705	32 1/2	6 3/8	3 7/8	6 3/8	2 1/2	11 1/2	12	2	3 1/4	5/8	14 7/8	3/8	146
18	3	230-1828	230-0770	36 1/2	6 3/8	3 7/8	6 3/8	2 1/2	12 1/8	13 3/8	2	3 1/4	5/8	16	3/8	167
18	3 7/16	230-1893	230-0846	36 1/2	7 3/8	4 3/8	7 3/8	2 1/2	12 1/8	13 3/8	2	3 1/4	5/8	16	3/8	185
20	3	230-1968	230-0911	39 1/2	6 3/8	3 7/8	6 3/8	2 1/2	13 1/2	15	2 1/4	3 3/4	3/4	19 1/4	3/8	179
20	3 7/16	230-2032	230-0986	39 1/2	7 3/8	4 3/8	7 3/8	2 1/2	13 1/2	15	2 1/4	3 3/4	3/4	19 1/4	3/8	197
24	3 7/16	230-2107	230-1059	45 1/2	7 1/2	4 1/2	7 1/2	2 1/2	16 1/2	18 1/8	2 1/2	4 1/8	3/4	20	1/2	292

* Transmission quality Babbitt of our own specification is used and provides a bearing that has the ability to give excellent service with minimum up-keep. The bearings are accurately broached to "transmission" tolerances and the bore is concentric to the flange back. The Babbitt is grooved to distribute the lubricant uniformly.

† Flange bearings are furnished with 1/8" (No. 1610 Hydraulic type) Alemite Fittings

Flared Trough End
Style No. 114 and Style No. 115

Flared trough Ends are formed with a top flange to support the cover and a bottom flange which serves as feet. Its design fits the contour of the Flared Trough (see page 52). A Flared trough End can be fitted with a babbitted transmission flange bearing (Style No. 114) or an anti-friction self-aligning ball bearing (as shown above, Style No. 115). Flange bearings of Bronze, Arguto Wood, Nylon, Bronze Oilite, etc., are also be fitted with a Chevron or Hammond end thrust.



Bolt On Shelf Trough Ends

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS								
Shaft Size	Part Number*	A	B	C	D	E	F	Wgt.
1 1/2	260-1607	8	3/16	3	4 1/2	7 1/2	9 3/16	9
2	260-1615	8	3/16	3 1/2	4 3/4	8 1/4	9 11/16	11
2 7/16	260-1623	8 1/4	1/4	4	5 1/4	9 1/4	9 3/4	17
3	260-1631	8 1/2	1/4	4 1/2	6 1/4	10 3/4	10 1/4	21
3 7/16	260-1649	8 3/4	1/4	5 1/2	6 3/4	12 1/4	10 3/4	26
3 15/16	260-1656	9 1/2	3/8	5 1/2	7 1/2	13	11 7/8	45
4 7/16	260-1664	10	3/8	6	8 1/2	14 1/2	12 3/8	54
4 15/16	260-1672	10 1/4	3/8	7	9 1/4	16 1/4	12 7/8	65

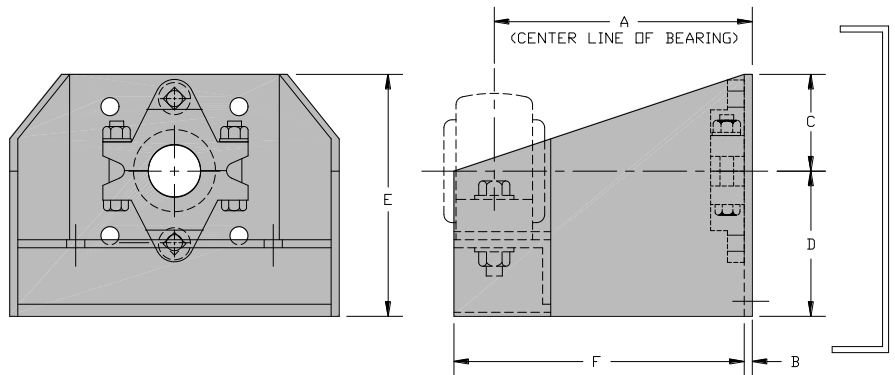
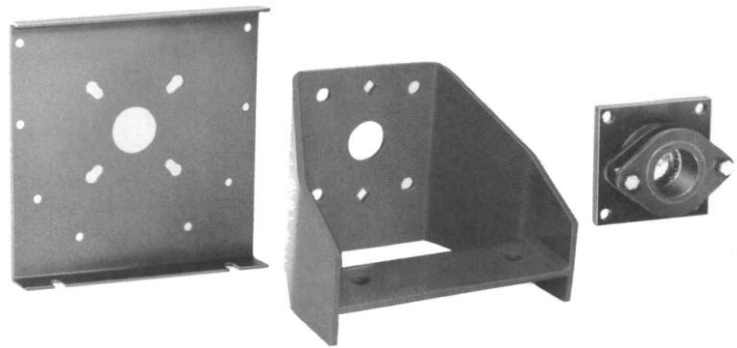
BOLT ON PUMP SEALS	
Shaft Size	Part Number*
1 1/2	271-1406
2	271-1414
2 7/16	271-1422
3	271-1430
3 7/16	271-1448
3 15/16	271-1455
4 7/16	271-1463
4 15/16	271-1471

*Part No. Does Not Include Trough End, Bearing, or Seal.

Screw Conveyor Corporation has developed a universal bolt-on shelf and bolt-on pump type seal to be adaptable to existing trough ends. This provides a cost effective alternative for inventory stocking purchases.

The bolt-on shelf allows for the outboard mounting of the bearing making maintenance easy. The shelf not only offers a solid mount for the bearing but provides stability for drives including chain, v-belt, direct connect or use of a shaft mounted reducer. The drive shaft between the bearing and seal is exposed, so the bearing runs cooler.

The bolt-on pump type seal is available in eight standard bore sizes and is also field adaptable on existing trough ends. In order to maintain maximum flexibility, this shelf and trough end arrangement will also accept the traditional split end seal and waste pack seal.



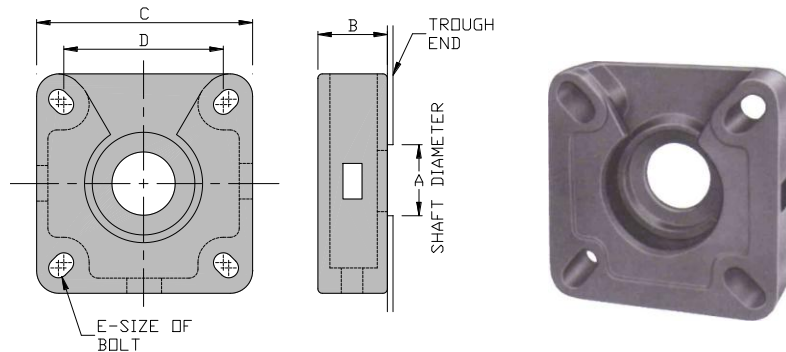
Trough End Dust Seals



WPS Packing Seals

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS							
Shaft Size A	Part Number	Weight	B	C	D	E	WPS PACKING SEAL WITH LIP
							Part Number
1 1/2	270-0144	5.2	1 3/4	5 3/8	4 to 4 5/16	7/16 to 9/16	270-0151
2	270-0219	6.7	1 3/4	6 3/8	4 3/8 to 5 5/16	7/16 to 9/16	270-0227
2 7/16	270-0284	8.0	1 3/4	7 3/8	5 3/8 to 6 1/16	7/16 to 5/8	270-0292
3	270-0359	12.0	1 3/4	7 7/8	6 to 6 7/16	3/4	270-0367
3 7/16	270-0425	17.0	2 1/4	9 1/4	6 3/4 to 7 3/16	3/4	270-0433

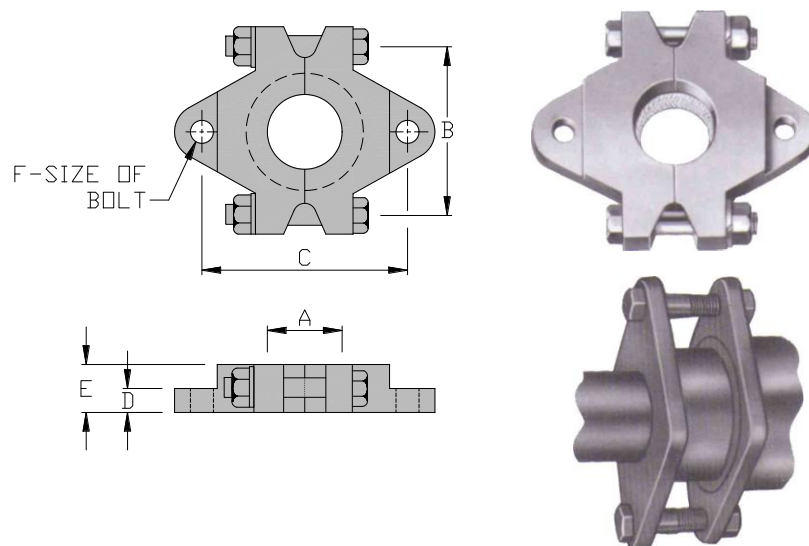
The Packing Seal housing is designed to protect the trough end bearings from material leakage and to protect the material being conveyed from the bearing lubricant. They can be provided with either lip-type or waste pack seals or combination of both. Waste packing is our standard and will be supplied unless otherwise specified.



Split Seal Glands

Shaft Size A	Part Number	B	C	D	E	F	Weight
1 1/2	271-0218	3 5/8	4 1/2	5/8	1 1/4	1/2	4
2	271-0283	4 3/8	5 1/4	5/8	1 1/4	1/2	5
2 7/16	271-0358	5	6 1/4	5/8	1 1/4	5/8	6
3	271-0424	5 3/4	7 1/4	5/8	1 1/4	5/8	8
3 7/16	271-0564	6 7/8	8 1/4	7/8	1 3/4	3/4	10

Split seal glands utilize twisted packing to prevent leakage of material being conveyed and to protect the material from bearing lubricant, moisture or dirt contamination. Generally used on shelf type trough ends, the seal glands are split to facilitate assembly and repacking.



The pump seal is intended for the most severe service, particularly when a positive or negative pressure must be maintained. It may also be fitted with lantern rings and air or gas purge fittings. It can be used only with an outboard shelf type trough end.



Chevron Roller Bearing End Thrust with Trough End

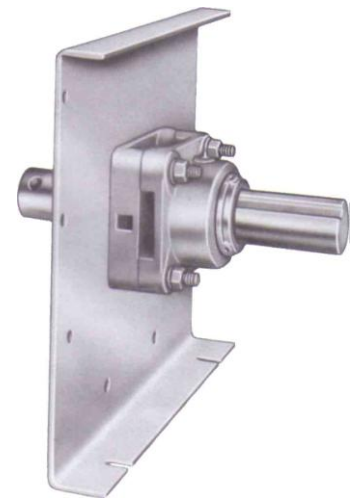
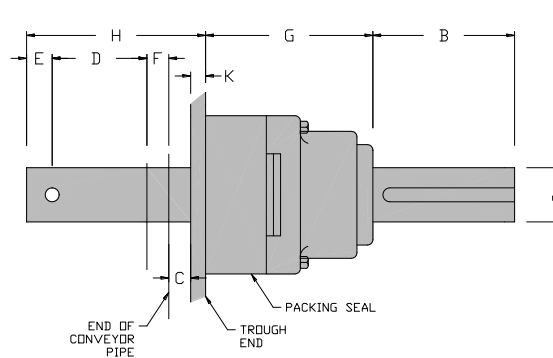
Styles No. 109 and 110

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS									
Diameter Of Conveyor	Shaft Size A	Dimensions		STYLE No. 109 OUTSIDE PATTERN FOR STEEL TROUGH WITHOUT FEET			STYLE No. 110 OUTSIDE PATTERN FOR STEEL TROUGH WITH FEET		
		C	K	Part Number With Drive Shaft	Part Number With End Shaft	Weight With Drive Shaft	Part Number With Drive Shaft	Part Number With End Shaft	Weight With Drive Shaft
6	1 1/2	1 1/16	3/16	242-0149	242-1337	26	240-0141	240-1339	30
6	1 1/2	1 1/16	3/16	242-0149	242-1337	26	240-0141	240-1339	30
9	1 1/2	1	1/4	242-0214	242-1402	35	240-0216	240-1404	40
9	2	1	1/4	242-0289	242-1477	45	240-0281	240-1479	50
10	1 1/2	1	1/4	242-0354	242-1543	37	240-0356	240-1545	43
10	2	1	1/4	242-0420	242-1618	47	240-0422	240-1610	53
12	2	1	1/4	242-0495	242-1683	52	240-0497	240-1685	60
12	2 7/16	1 9/16	1/4	242-0560	242-1758	71	240-0562	240-1750	79
12	3	1 5/8	1/4	242-0636	242-1824	97	240-0638	240-1826	105
14	2 7/16	1 1/2	5/16	242-0701	242-1899	83	240-0703	240-1891	94
14	3	1 9/16	5/16	242-0776	242-1964	109	240-0778	240-1966	120
16	3	1 9/16	5/16	242-0842	242-2038	124	240-0844	240-2030	131
18	3	1 1/2	3/8	242-0917	242-2103	133	240-0919	240-2105	158
18	3 7/16	2	3/8	242-0982	242-2178	180	240-0984	240-2170	205
20	3	1 1/2	3/8	242-1055	242-2244	161	240-1057	240-2246	174
20	3 7/16	2	3/8	242-1121	242-2319	208	240-1123	240-2311	221

General dimensions of the trough end are shown on page 41.

Shaft Size A	B	D	E	F	G	H	J	Standard Keyseat		
								Width	Depth	Length
1 1/2	5	3	7/8	7/8	5 1/4	6	1/2	3/8	3/16	4 3/4
2	5	3	7/8	7/8	5 3/8	6	5/8	1/2	1/4	4 3/4
2 7/16	5	3	15/16	15/16	5 15/16	6 11/16	5/8	5/8	5/16	4 3/4
3	6	3	1	1	6 7/16	6 7/8	3/4	3/4	3/8	5 3/4
3 7/16	7	4	1 1/4	1 1/2	7 1/2	9 1/8	7/8	7/8	7/16	6 5/8

Designed to handle medium to heavy thrust loads, the Chevron End Thrust has adequate radial and thrust capacity for practically any application and can absorb thrust in either direction. When starting a Screw Conveyor, thrust is created in the direction opposite to the flow of material. If this thrust is not contained, the hanger bearings, trough end and screw will wear at an increased rate. The Chevron can be furnished with either a drive or end shaft and it is recommended that the Screw Conveyor be driven through this type of thrust unit rather than a ball bearing (self-aligning) type. See page 41 for trough end dimensional data.



Style No. 110 shown. Style No. 109 is identical except without supporting feet.

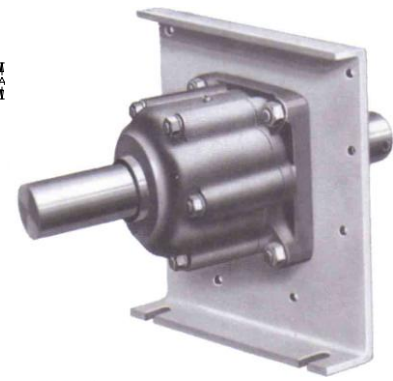
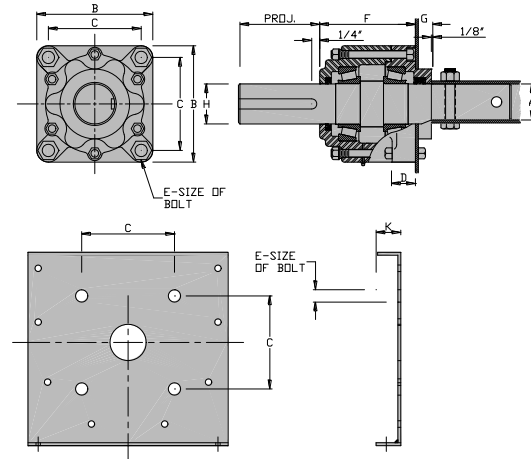
Hammond Roller Bearing End Thrust with Trough End



DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS														
Diameter of Shaft A	WITH DRIVE END SHAFT			WITH END SHAFT		B	C	D	E	F	G	H	J	K
	Std. Proj.	*Part Number	Weight ▲	Part Number	Weight ▲									
1 1/2	4	255-0143	60	255-0465	52	7 1/4	5 3/4	1 1/4	3/4	6 3/4	1 3/8	1 7/16	4 7/8	1 7/16
2	4 1/2	255-0218	65	255-0499	56	7 1/4	5 3/4	1 1/4	3/4	6 3/4	1 3/8	1 15/16	4 7/8	1 7/8
2 7/16	5 1/2	255-0283	80	255-0564	66	8	6 1/4	1 1/4	7/8	6 1/4	1 3/8	2 7/16	5 5/8	1 15/16
3	6	255-0358	145	255-0630	119	10	8	1 3/8	1	8 1/4	1 1/2	2 15/16	6 1/8	2 5/16
3 7/16	7	255-0424	170	255-0705	140	10	8	1 3/8	1	8 1/4	1 1/2	3 7/16	6 1/8	2 3/8

* Includes Roller Bearing End Thrust with defeated drive shaft or standard end shall and 1/8" Alemite Fitting, No. 1610 Hydraulic type.
 ▲ Weight does not include trough end. See page 41 for trough end only specifications.

This dual tapered roller bearing end thrust is designed for extra-heavy radial and thrust loads in either direction. Although the Hammond Roller Bearing Thrust Bearing is normally mounted on a steel plate trough end, the trough end is not furnished unless specified on the order. See pages 41-43 for trough end style and dimension data.



Bronze Washer Type End Thrust

* The assembly consists of one bronze and two steel washers.
 • This assembly consists of one machined bronze washer, one steel washer,

For drive and end shaft dimensions see page 13.
 ▲ This dimension is from the face of trough end hub bearing to the outside of thrust ring

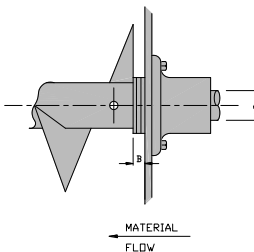
Shaft Size A	STYLE No. BW-1		STYLE No. BW-2		B	▲C	Washer Thickness Each
	Part Number	Weight Per Set	Part Number	Weight Per Set			
1	275-0149	3/4	275-0560	1/2	0.75	0.549	1/4
1 1/2	275-0214	1	275-0636	3/4	0.75	0.560	1/4
2	275-0289	1 1/2	275-0701	1	0.75	0.572	1/4
2 7/16	275-0354	2 1/4	275-0776	1 1/2	0.75	0.591	1/4
3	275-0420	3	275-0842	2	0.75	0.608	1/4
3 7/16	275-0495	3	275-0917	2	0.75	0.608	1/4

the Tru-arc Ring and precision machined ring groove in shaft.

groove on the end shaft.

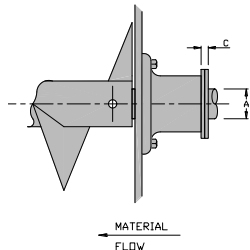
Inside Style No. BW-1

Mounted inside the conveyor trough at the inlet end, this inexpensive assembly handles light to moderate compression thrust loads. It consists of a transmission bronze washer flanked on each side by a machined steel washer.



Outside Style No. BW-2

Mounted at the discharge end of the conveyor, this assembly handles light tension thrust loads. The transmission bronze washer is held in place, between the faced trough end bearing hub and a machined steel washer, by a Tru-Arc Thrust Ring.

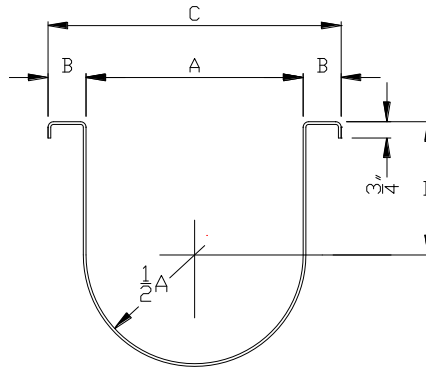




Double Flanged Trough

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS										
Diameter Of Conveyor	Trough Thickness	Size Code	5 ft. Part Number	10 ft. Part Number	A	B	C	D	Wgt. Per Foot	
4	16	4DF16	301-0931	301-0998	5	1 9/16	8 1/8	3 5/8	4	
4	14	4DF14	301-1053	301-1103	5	1 9/16	8 1/8	3 5/8	5	
6	16	6DF16	301-0220	301-1210	7	1 7/16	9 7/8	4 1/2	5	
6	14	6DF14	301-1319	301-1327	7	1 7/16	9 7/8	4 1/2	6	
6	10	6DF10	301-1384	301-1434	7	1 7/16	9 7/8	4 1/2	11	
9	14	9DF14	301-0337	301-1541	10	1 13/16	13 5/8	6 1/8	9	
9	12	9DF12	301-1640	301-1657	10	1 13/16	13 5/8	6 1/8	12	
9	10	9DF10	301-1756	301-1764	10	1 13/16	13 5/8	6 1/8	15	
10	14	10DF14	301-1822	301-1871	11	1 13/16	14 5/8	6 3/8	9	
10	12	10DF12	301-1939	301-1988	11	1 13/16	14 5/8	6 3/8	13	
			6 Ft. Part Number	12 Ft. Part number						
12	12	12DF12	301-0667	301-2861	13	2 1/4	17 1/2	7 3/4	15	
12	10	12DF10	301-2960	301-2978	13	2 1/4	17 1/2	7 3/4	19	
14	12	14DF12	301-0774	301-3083	15	2 1/4	19 1/2	9 1/4	18	
14	10	14DF10	301-3117	301-3190	15	2 1/4	19 1/2	9 1/4	23	
16	12	16DF12	301-0881	301-3307	17	2 1/4	21 1/2	10 5/8	20	
16	10	16DF10	301-3406	301-3414	17	2 1/4	21 1/2	10 5/8	25	
18	12	18DF12	301-3463	301-3497	19	2 3/4	24 1/2	12 1/8	23	
18	10	18DF10	301-3513	301-3521	19	2 3/4	24 1/2	12 1/8	28	
20	10	20DF10	301-3620	301-3638	21	2 3/4	26 1/2	13 1/2	31	
24	10	24DF10	301-2655	301-3745	25	2 3/4	30 1/2	16 1/2	37	

The unique design of the Double Flanged Trough adds considerably to its strength and structural rigidity without adding to its weight. In addition, this construction provides an effective dust-tight seal when used with the "Barren" Flanged Cover. Double Flanged Troughs are available in sizes up to 24" and in gauges up to 10. They can be formed of stainless steel or other alloys. Nu-Weld end flanges are continuously jig-welded on each end to assure alignment and tight connecting joints. If supporting feet are needed, they are spaced at the flange joints. Trough saddles are also available, see page 56.



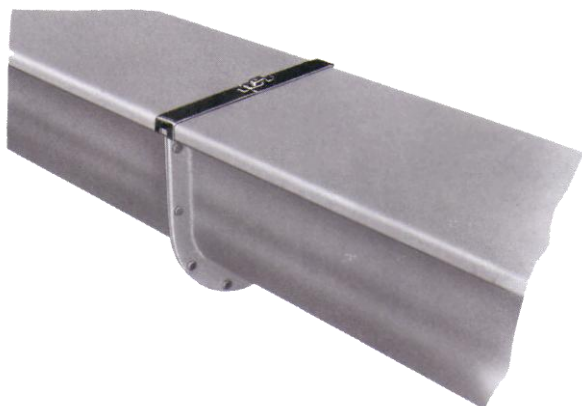
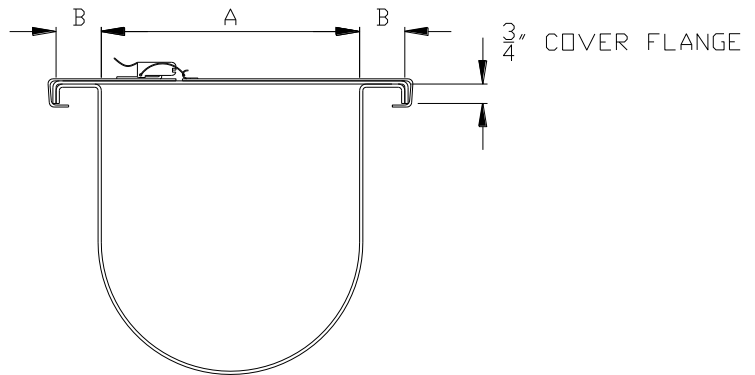


Barren Flanged Covers

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS								
Size of Conveyer	"BARRON" COVER COMPLETE WITH CLAMPS AND GASKET							"BARRON" CLAMPS ONLY
	Gauge of Steel	Site Code	5 ft. Part Number	10 ft. Part Number	A	B	Wgt. Per ft.	Part Number
4	16	4BC16	310-0286	310-3107	5	1 5/8	2	320-0227
6	16	6BC16	310-3033	310-3124	7	1 1/2	2.5	320-0334
9	14	9BC14	310-3181	310-3231	10	1 7/8	4	320-0441
10	14	10BC14	310-0617	3103348	11	1 7/8	4.2	320-0557
			6 Ft. Part Num.	.12 Ft. Part Number				
12	14	12BC14	310-3355	310-3454	13	2 5/16	5	320-0664
14	14	14BC14	310-1185	310-3561	15	2 5/16	5.5	320-0771
16	14	16BC14	310-3686	310-3678	17	2 5/16	6	320-0888
18	12	18BC12	310-1409	310-3785	19	2 13/16	9.5	320-0995
20	12	20BC12	310-1508	310-3892	21	2 13/16	10.2	320-1217

The Barron Cover is designed for use with a double flanged trough.

It is not weather-tight but the gaskets between the cover and trough and under the Barron clamps do provide a degree of weather protection. For greater protection batens can be mounted lapping the cover joints. The cover should then be bolted or screw clamped. Flanged covers can also be used with angle troughs in which case they should be bolted or screw clamped.

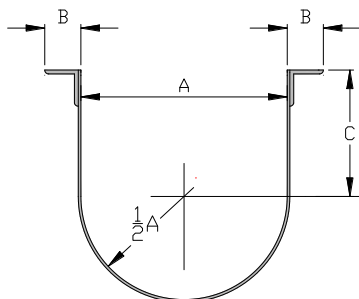




Angle Trough

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS								
Size Of Conveyor	Trough Thickness	Size Code	5 Ft. Part Number	10 Ft. Part Number	Wgt. Per Ft.	A	B Size of Angles	C
4	14	4AT14	305-1315	305-1323	7	5	1 1/4" x 1 1/4" x 3/16	3 5/8
6	14	6AT14	305-1521	305-1547	9	7	1 1/4" x 1 1/4" x 3/16	4 1/2
	10	6AT10	305-1638	305-1653	12			
	3/16	6AT07	305-1695	305-1703	15			
9	14	9AT14	305-1745	305-1760	11	10	1 1/2" x 1 1/2" x 3/16	6 1/8
	12	9AT12	305-1828	305-1877	14			
	10	9AT10	305-1901	305-1984	17			
	3/16	9AT07	305-2057	305-2099	22			
	1/4	9AT03	305-2149	305-2156	27			
10	14	10AT14	305-2180	305-2206	12	11	1 1/2" x 1 1/2" x 3/16	6 3/8
	12	10AT12	305-2289	305-2313	15			
	3/16	10AT07	305-2404	305-2420	23			
4	14	4AT14	305-1315	305-1323	7	5	1 1/4" x 1 1/4" x 3/16	3 5/8
			6 Ft. Part Number	12 Ft. Part Number				
12	12	12AT12	305-3972	305-3964	19	13	2 x 2 x 3/16	7 3/4
	10	12AT10	305-4087	305-4079	22			
	3/16	12AT07	305-4137	305-4186	28			
	1/4	12AT03	305-4251	305-4293	36			
14	12	14AT12	305-0994	305-4400	21	15	2 X 2 X 3/16	9 1/4
	10	14AT10	305-4459	305-4517	25			
	3/16	14AT07	305-4608	305-4624	32			
	1/4	14AT03	305-4681	305-4731	41			
16	12	16AT12	305-1109	305-4848	23	17	2 X 2 X 3/16	10 5/8
	10	16AT10	305-4905	305-4954	28			
	3/16	16AT07	305-5027	305-5068	36			
	1/4	16AT03	305-5142	305-5175	46			
18	12	18AT12	305-5241	305-5258	28	19	2 1/2 X 2 1/2 X 1/4	12 1/8
	10	18AT10	305-5274	305-5282	34			
	3/16	18AT07	305-5381	305-5399	43			
	1/4	18AT03	305-5480	305-5506	54			
20	10	20AT10	305-5589	305-5613	37	21	2 1/2 X 2 1/2 X 1/4	13 1/2
	3/16	20AT07	305-5688	305-5720	47			
	1/4	20AT03	305-5803	305-5837	60			
24	10	24AT10	305-5902	305-5944	42	25	2 1/2 X 2 1/2 X 1/4	16 1/2
	3/16	24AT07	305-6009	305-6058	55			
	1/4	24AT03	305-6116	305-6165	70			

Angle Trough is fitted with structural steel angles along the top edge of the trough to provide excellent strength and rigidity in all trough sizes and gauges. "Nu-Weld" end flanges are continuously jig-welded to each end to assure alignment and tight connecting joints. Angle Trough can be formed of hot rolled steel, stainless steel or other alloys in all sizes and gauges, and may be hot dip galvanized. Trough modification such as a perforated bottom, a drop bottom for sanitary installations, jacketing for heating or cooling, etc., are available. Although normally furnished with a Tite-Seal Cover other types such as the Dome, Flanged, Hip Roof, etc., are available (see page 54). If supporting feet are needed, they are mounted at the flange joints. Trough saddles are also available, see page 56.





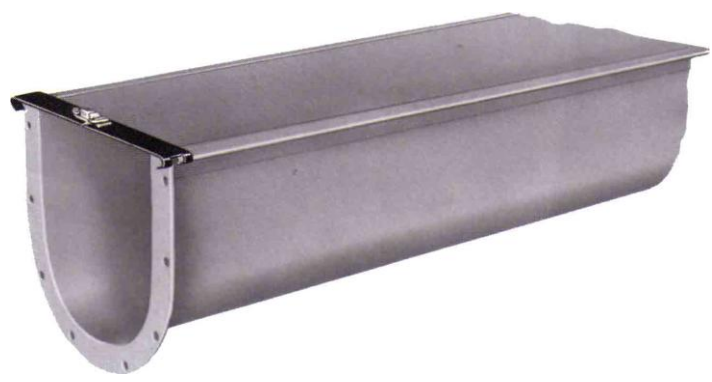
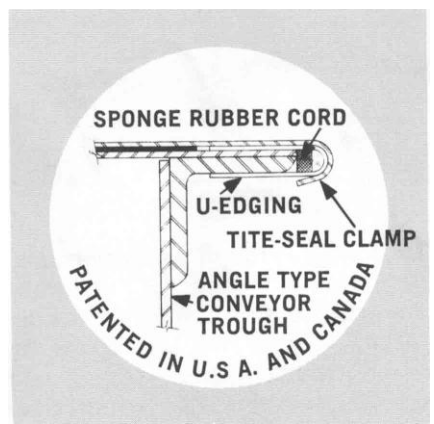
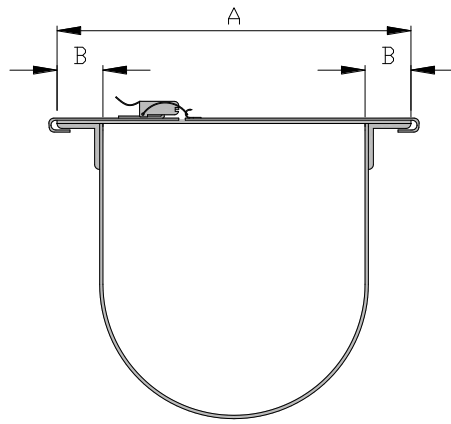
Tite-Seal Covers

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS

Size of Conveyer	TITE-SEAL COVER COMPLETE WITH CLAMPS AND "U" EDGING							TITE-SEAL CLAMPS ONLY	"U" EDGING ONLY	
	Gauge of Steel	Size Code	5 ft. Part Number	10 ft. Part Number	A	B	Wgt. Per ft.	Part Number	Size Number	Part Number
4	16	4TS16	312-0185	312-2017	7 3/4	1 1/4	1.6	322-0225	1	330-0142
6	16	6TS16	312-0300	312-2124	9 3/4	1 1/4	2.0	322-0332	1	330-0142
9	14	9TS14	312-2165	312-2231	13 1/4	1 1/2	3.4	322-0449	1	330-0142
10	14	10TS14	312-0508	312-2348	14 1/4	1 1/2	3.7	322-0555	1	330-0142
			6 Ft. Part Numb.	.12 Ft. Part Number						
12	14	12TS14	312-1027	312-2454	17 1/4	2	4.6	322-0662	1	330-0217
14	14	14TS14	312-1183	312-2561	19 1/4	2	5.2	322-0779	1	330-0217
16	14	16TS14	312-1274	312-2678	21 1/4	2	5.8	322-0886	1	330-0217
18	12	18TS12	312-1407	312-2785	24 1/4	2 1/2	8.7	322-0993	2	330-0357
20	12	20TS12	312-1506	312-2892	26 1/4	2 1/2	9.5	322-1108	2	330-0357
24	12	24TS12	312-1621	312-2900	30 1/4	2 1/2	11.1	322-1215	2	330-0357

* For trough thickness 16 Ga. through 10 Ga. For use with trough thickness of 3/16" through 1/4" increase 1/4".

Tite-Seal Covers are designed for - use with Angle Trough. They provide a high degree of dust protection. The flat cover is held securely in place by a continuous formed steel "U" edging along both sides of the trough. This "U" edging is fitted with sponge rubber and seals the cover to the trough. Tite-Seal quick-release cover clamps hold the entire assembly in place and yet allow quick access to the trough interior. A gasket attached to the underside of the cover clamp seals the joint between lengths of cover

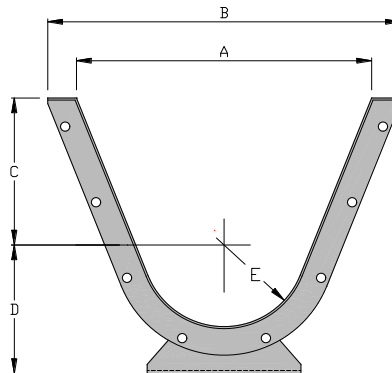




Flared Trough

Size Of Conveyor	Trough Thickness	Size Code	Part Number 10 Ft.	A	B	C	D	E	Wgt. Per Foot
6	14	6FT14	308-0223	14	16 5/8	7	5 5/8	3 1/2	8
	3/16	6FT07	308-0330	14	16 5/8	7	5 5/8	3 1/2	19
9	14	9FT14	308-0447	18	21 1/2	9	7 7/8	5	11
	10	9FT10	308-0553	18	21 1/2	9	7 7/8	5	19
	3/16	9FT07	308-0660	18	21 1/2	9	7 7/8	5	26
	1/4	9FT03	308-0777	18	21 1/2	9	7 7/8	5	34
		Part Number 12 Ft.							
12	12	12FT12	308-0884	22	26 1/2	10	9 5/8	6 1/2	21
	10	12FT10	308-0991	22	26 1/2	10	9 5/8	6 1/2	27
	3/16	12FT07	308-1106	22	26 1/2	10	9 5/8	6 1/2	37
	1/4	12FT03	308-1213	22	26 1/2	10	9 5/8	6 1/2	49
14	12	14FT12	308-1320	24	28 1/2	11	10 7/8	7 1/2	23
	10	14FT10	308-1437	24	28 1/2	11	10 7/8	7 1/2	30
	3/16	14FT07	308-1544	24	28 1/2	11	10 7/8	7 1/2	41
	1/4	14FT03	308-1650	24	28 1/2	11	10 7/8	7 1/2	55
16	12	16FT12	308-1767	28	32 1/2	11 1/2	12	8 1/2	26
	10	16FT10	308-1874	28	32 1/2	11 1/2	12	8 1/2	33
	3/16	16FT07	308-1981	28	32 1/2	11 1/2	12	8 1/2	44
	1/4	16FT03	308-2096	28	32 1/2	11 1/2	12	8 1/2	59
18	10	18FT10	308-2203	31	36 1/2	12 1/8	13 3/8	9 1/2	36
	3/16	18FT07	308-2310	31	36 1/2	12 1/8	13 3/8	9 1/2	49
	1/4	18FT03	308-2427	31	36 1/2	12 1/8	13 3/8	9 1/2	65
20	10	20FT10	308-2534	34	39 1/2	13 1/2	15	10 1/2	38
	3/16	20FT07	308-2641	34	39 1/2	13 1/2	15	10 1/2	52
	1/4	20FT03	308-2757	34	39 1/2	13 1/2	15	10 1/2	69
24	10	24FT10	308-2864	40	45 1/2	16 1/2	18 1/8	12 1/2	44
	3/16	24FT07	308-2971	40	45 1/2	16 1/2	18 1/8	12 1/2	60
	1/4	24FT03	308-3086	40	45 1/2	16 1/2	18 1/8	12 1/2	79

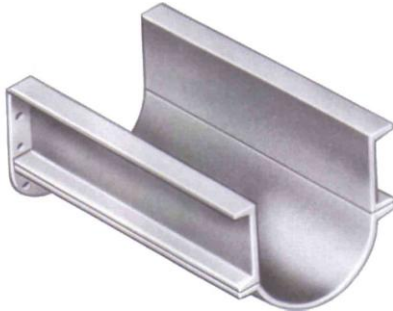
The Flared Trough is designed to allow the standard 1/2" clearance between the screw and the trough bottom. The flared sides of the trough improve the feeding and conveying action particularly on materials that are not entirely free-flowing or material in large slabs or pieces. The top edges are flanged to provide cover support and Nu-Weld steel end flanges are continuously jig-welded to each end to assure alignment and tight joints. Where conditions require special construction, Flared Troughs may be furnished in stainless steel, Monel or other alloys. Covers are usually bolted on or furnished with screw or spring clamps and may be flat for interior or hip roof for exterior installations.





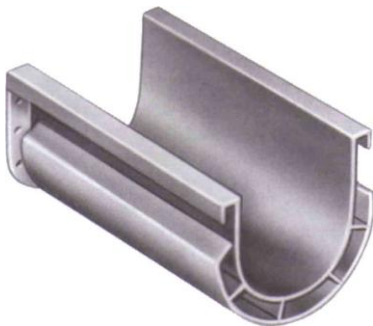
Special Trough Designs

Channel Trough



Channel Trough is made with a separate rolled or formed steel bottom for use where severe abrasion or corrosion factors require frequent trough replacements. The bottom is bolted to the structural steel side channels making a very rigid unit that can be used where trough supports are necessarily widely spaced.

Jacketed Trough

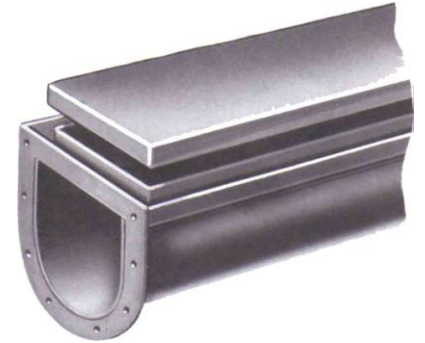


Jacketed troughs are not designed or constructed to be pressure vessels.

The Jacketed Trough is used to carry an agent for heating, cooling or drying the material while it is being conveyed. A former jacket is continuously welded to a standard trough. This trough may be built to various standards; therefore, please consult our staff engineers before ordering.

Dust Seal Trough

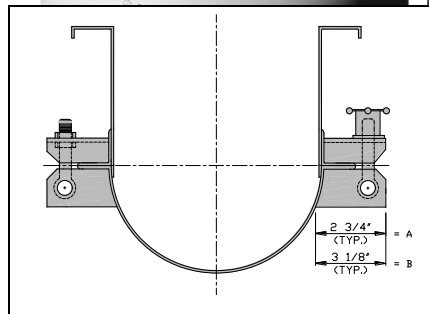
Dust Seal Troughs are formed with "Z" bars along the top sides and channels across the top width. This forms a continuous pocket into which the flanged (all four sides) cover fits. This pocket can then be filled with sand, sponge rubber or the material being conveyed, to provide a dust-tight seal that will allow quick access to the trough interior.



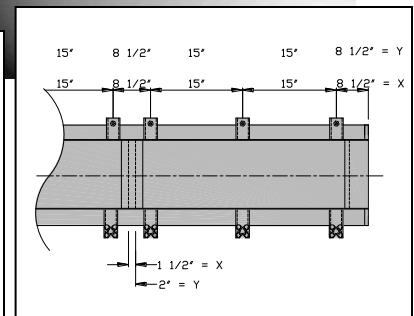
Tite-Seal™ Drop Bottom Trough

The Tite-Seal Drop Bottom Trough is designed to facilitate quick access to the Screw Conveyor and trough interior where frequent cleaning is required to combat infestation and contamination or build-up of some materials. The trough is equipped with a hinged bottom section that swings open when the clamps are disengaged. The edges of the opening are gasketed to seal when closed. The Tite-Seal Drop Bottom Trough may be of single or double flanged type construction and fitted with your choice of cover.

- Hinge side and latch side are adjustable to secure seal.
- Product pressure points are reinforced to prevent leakage.
- Drop bottom fits standard troughs of 10 Ga. and heavier thickness.



A = Dimensions for 6", 9", 10" and 12" units
 B = All larger sizes



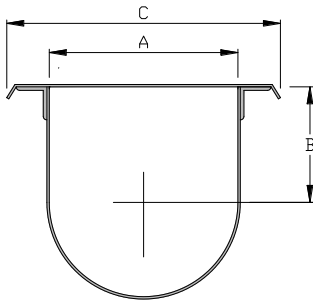
X = Dimensions for 6", 9", 10" and 12" units.
 Y = Dimensions for 12", 14", 16", 18", 20", and 24" units.



Additional Trough Covers & Shrouds

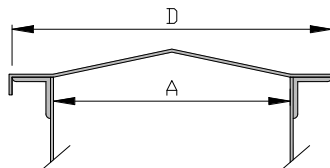
DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS															
Diameter Of Conveyor	SEMI-FLANGED FLAT COVER				HIP ROOF COVER			SHROUDS				A	B	C	D
	5 Ft. Part Number	10 Ft. Part Number	Weight Per Foot	Gauge of Steel	5 Ft. Part Number	10 Ft. Part Number	Weight Per Foot	Length	Part Number	Gauge of Steel	Weight				
4"	314-0167	314-0225	1.6	16	316-0173	316-0223	2	8"	318-0254	12	3.8	5	3 5/8	8 5/8	8 1/4
6"	314-0274	314-0332	2.0	16	316-0306	316-0330	2.5	12"	318-0023	12	7.5	7	4 1/2	10 1/2	10
9"	314-0381	314-0449	3.4	14	316-0579	316-0553	4	18"	318-0049	10	20.5	10	6 1/8	14 1/2	13 3/4
10"	314-0613	314-0662	3.7	14	316-0629	316-0660	4.2	20"	318-0544	10	24.0	11	6 3/8	15 1/4	14 3/4
	6 Ft. Part Number	12 Ft. Part Number			6 Ft. Part Number	12 Ft. Part Number									
12"	314-0688	314-0779	4.6	14	316-0751	316-1106	5	24"	318-0080	10	35	13	7 3/4	18 1/8	17 5/8
14"	314-0803	314-0886	5.2	14	316-0850	316-1213	5.5	28"	318-0767	10	49	15	9 1/4	20 1/8	19 5/8
16"	314-0936	314-0993	5.8	14	316-0959	316-1320	6	32"	318-0841	10	65	17	10 5/8	22 1/8	21 5/8
18"	314-1041	314-1108	8.7	12	316-1023	316-1437	9.5	36"	318-0981	10	85	19	12 1/8	25 1/8	24 5/8
20"	314-1157	314-1215	9.5	12	316-1502	316-1544	10.2	40"	318-1096	10	105	21	13 1/2	27 1/8	26 5/8
24"	314-1264	314-1322	11.1	12	316-1635	316-1650	11.2	48"	318-1203	10	153	25	16 1/2	31 1/8	30 5/8

SEMI-FLANGED COVERS



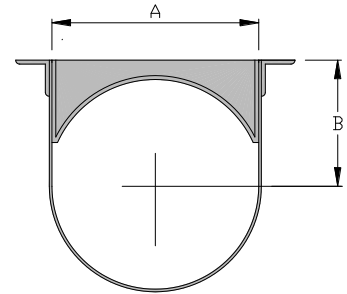
Semi-Flanged covers are flat covers with a slight crimp on both sides for greater strength and rigidity. They can be fastened by bolts, spring or screw clamps. They are not considered weather-proof but through the addition of gaskets and battens at the cover joints a reasonably tight construction can be obtained.

HIP ROOF COVERS



Hip Roof covers are intended for outdoor applications. The cover is flanged down on both sides and fitted with battens at the cover joints. Rubber gaskets are usually furnished all around. Fastening is usually by bolting but screw clamps can also be supplied.

SHROUDS



Shrouds are incorporated in feeder conveyors to baffle the flow of material. Shrouds are also designed to fit inside a standard trough to create a tubular effect for inclined operation. Covers of any construction are then used over shrouds as required.

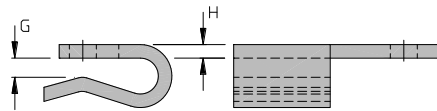
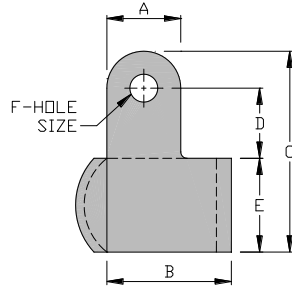
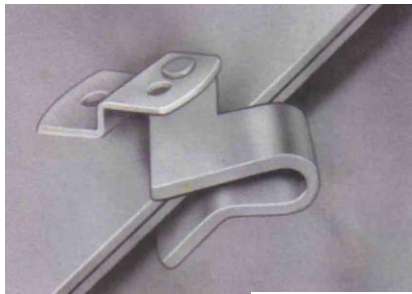
Note: Standard designs are not intended to be weather, rain, air, or pressure tight. For special design requirements, contact your nearest sales office



Trough Cover Clamps

Spring Cover Clamp

Steel Spring Cover Clamps are commonly used to fasten flat or semi-flanged covers to the conveyor trough. For dust-tight applications, they may also be fitted over a gasketed cover. Spring Cover Clamps are usually located on 2'6" centers, if gasketed, 15" centers, or closer to suit.

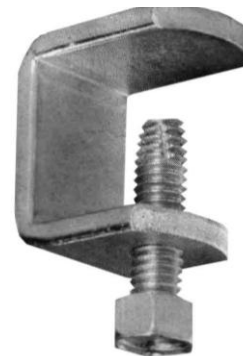
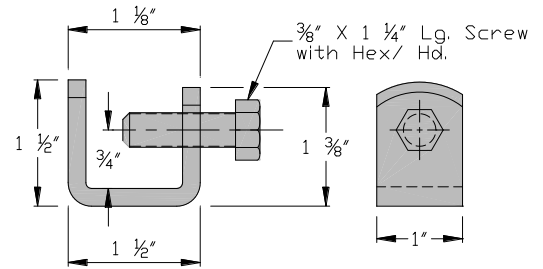


Size Code	Part Number	A	B	C	D	E	F	G	H	Wgt. Per C
1SC	325-0669	7/8	15/16	2 7/8	1 3/16	1 1/4	9/32	5/32"	3/16	34
2SC	325-1105	1 1/8	1 15/16	3 1/4	1 1/8	1 1/2	13/32	1/4"	3/16	51

* Part Numbers shown are for clamps for riveting to side angle of trough, if to include bracket for welding to cover as pictured add suffix "B"

Screw Cover Clamp

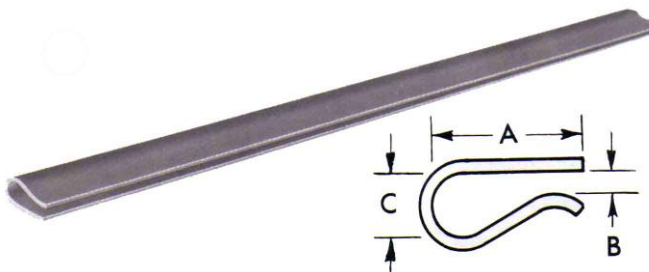
Screw Clamps may be used for flat or other special trough covers and are usually located on 30" centers or if gasketed, 15" centers, or closer to suit. Screw Clamps are also often used to clamp the bottom of drop bottom troughs.



Part Number	Weight Per C
323-0711	25#

Continuous Cover Clamps

The Continuous Cover Clamp is a heavy-gauge spring clamp furnished in 5' lengths. It is ideally suited to fastening a flat cover to the conveyor trough or for fastening a drop-bottom or quick-opening trough or casing section. The Continuous Clamp can be supplied in black iron or stainless steel, with or without locking pins on the ends.



Size Code	Part Number	A	B	C	Weight Each
4CC 5'-0" Length	323-0554	1 1/4	3/16	1/2	6

Quick-Release Clamps

See pages 49 and 51 for "Barron" and "Tite-Seal" cover clamps.



"BARRON" Cover Clamp



TITE-SEAL" COVER CLAMP



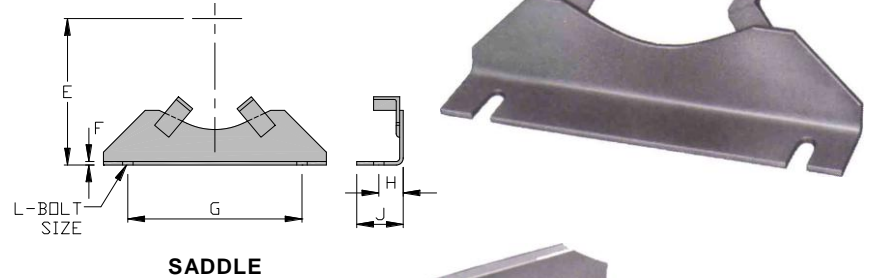
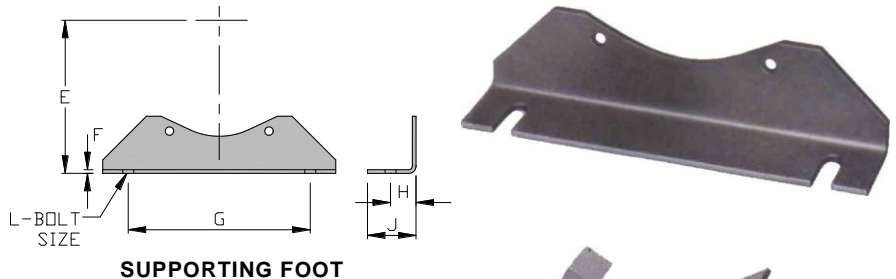
Supporting Feet and Saddles

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS																			
Diameter of Conveyor	NU-WELD END FLANGE			SUPPORTING FOOT		SADDLE		A	B	C	D	E	F	G	H	J	L	M	
	Part No. Light Trough	Part No. Heavy Trough	Wgt.	Part Number	Wgt.	Part Number	Wgt.											Size	No.
4	332-0223	--	1 1/2	335-0147	1 1/2	337-0145	1 1/2	5 1/4	8	3 5/8	3/16	4 5/8	3/16	5 3/4	7/8	1 1/2	3/8	3/8	6
6	332-0330	332-1757	2	335-0212	2	337-0210	2	7 1/4	9 3/4	4 1/2	3/16	5 5/8	3/16	8 1/8	7/8	1 1/2	3/8	3/8	6
9	332-0447	332-1874	3	335-0287	4 1/2	337-0285	4 1/2	10 1/4	13 1/2	6 1/8	3/16	7 7/8	3/16	9 3/8	15/16	2 1/2	1/2	3/8	8
10	332-0553	332-1981	4	335-0352	5	337-0350	5	11 1/4	14 1/2	6 3/8	3/16	8 7/8	3/16	9 1/2	19/16	2 11/16	1/2	3/8	8
12	332-0660	332-2096	5	335-0428	6	337-0426	6	13 1/4	17 1/4	7 3/4	1/4	9 5/8	3/16	12 1/4	1 3/8	2 1/2	5/8	1/2	8
14	332-0777	332-2203	6 1/2	335-0493	7	337-0491	7	15 1/4	19 1/4	9 1/4	1/4	10 7/8	1/4	13 1/2	1 3/8	2 1/2	5/8	1/2	8
16	332-0884	332-2310	7 1/2	335-0568	7 1/2	337-0566	8	17 1/4	21 1/4	10 5/8	1/4	12	1/4	14 7/8	1 3/4	3	5/8	5/8	8
18	332-1320	332-1320	10 1/2	335-0634	9 1/2	337-0632	10	19 1/4	24 1/4	12 1/8	1/4	13 3/8	1/4	16	1 3/4	3	5/8	5/8	10
20	332-1437	332-1437	11 1/2	335-0709	12 1/2	337-0707	13	21 1/4	26 1/4	13 1/2	1/4	15	1/4	19 1/4	2	3 1/2	3/4	5/8	10
24	332-1544	332-1544	13 1/2	335-0774	14 1/2	337-0772	15	25 1/4	30 1/4	16 1/2	1/4	18 1/8	1/4	20	2 1/4	4	3/4	5/8	12

• When ordering for conveyor trough 3/16" thick or heavier, show part number and specify "for heavy trough".

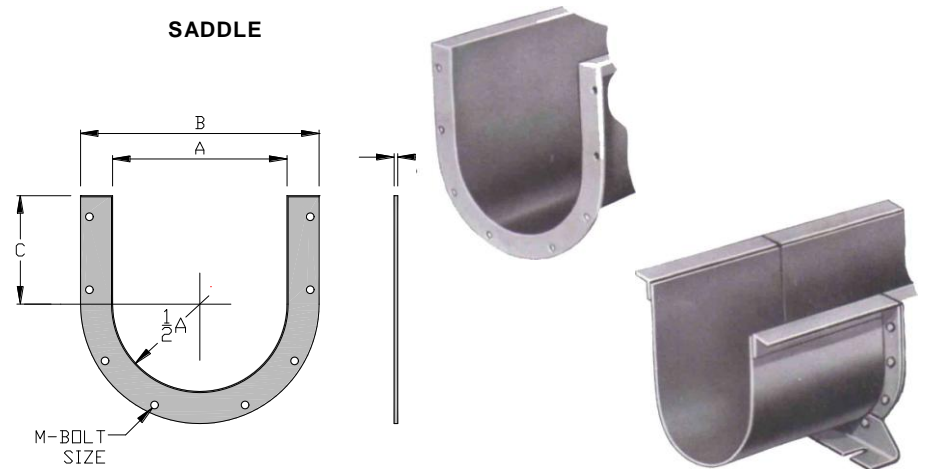
Supporting feet provide the means of aligning and fastening the trough to the floor or existing structure at the trough joints. The trough end height is accurately maintained and the feet permit the removal of a trough end without disturbing the entire unit.

Saddles are used to support the trough between the trough sections and fasten to the floor or existing structures. The total height from the floor is the same as for a trough end with feet.



Flanges

Nu-Weld End Flanges are made of heavy-gauge steel to assure a close accurate fit with the conveyor trough and the trough ends or the following end flange. Bolt holes are jig-punched to assure accurate alignment.



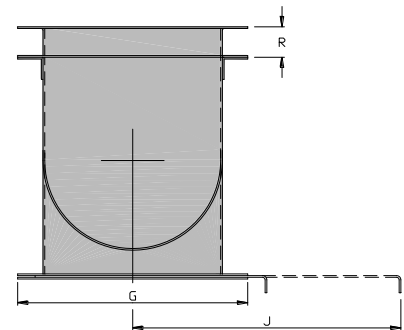
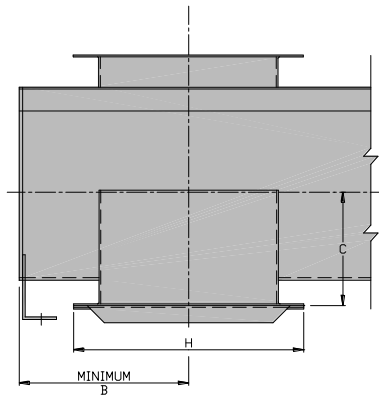
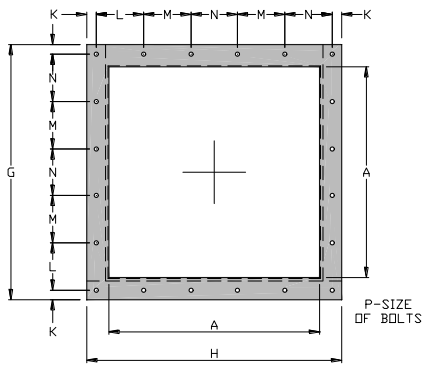


Feed and Discharge Spouts

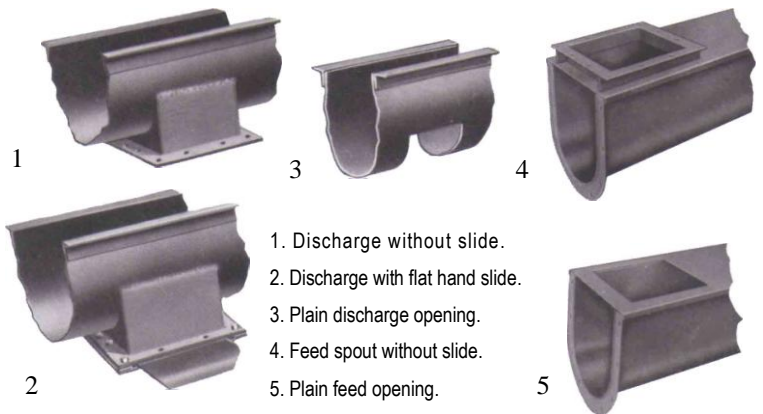
DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS

Diameter of Conveyor	Gauge Of Steel	Without HAND SLIDE		With HAND SLIDE		A	B	C	G-H	J	K	L	M	N	P	R
		Part Number	Wgt.	Part Number	Wgt.											
4	14	342-0148	2	342-1823	6	5	4 1/2	3 3/4	7 1/2	11 1/8	3/8	2 1/4		2 1/4	1/4	1 1/8
6	14	342-0213	4	342-1898	10	7	6	5	10	14 1/8	2/3	2		3	3/8	1 3/8
9	14	342-0353	7	342-1963	16	10	8	7 1/8	13	18 3/4	1/2	4		4	3/8	2
	10	342-0429	12	342-2037	21	10	8	7 1/8	13	18 3/8	1/2	4		4	3/8	2
10	14	342-0494	8	342-2102	19	11	9	7 7/8	14 1/4	20 1/8	5/8	4		4 3/8	3/8	2 1/4
	10	342-0569	14	342-2177	25	11	9	7 7/8	14 1/4	20 1/8	5/8	4		4 3/8	3/8	2 1/4
12	12	342-0635	15	342-2243	33	13	10 1/2	8 7/8	17 1/4	24 1/2	7/8	5 1/8		5 1/4	3/8	2 1/4
	3/16	342-0700	27	342-2318	45	13	10 1/2	8 7/8	17 1/4	24 1/2	7/8	5 1/8		5 1/4	3/8	2 1/4
14	12	342-0775	19	342-2383	41	15	11 1/2	10 1/8	19 1/4	27 5/8	7/8	3 1/2	3 1/2	3 1/2	3/8	2 1/2
	3/16	342-0841	34	342-2458	56	15	11 1/2	10 1/8	19 1/4	27 5/8	7/8	3 1/2	3 1/2	3 1/2	3/8	2 1/2
16	12	342-0916	23	342-2524	49	17	13 1/2	11 1/8	21 1/4	30 3/4	7/8	3 3/4	4	4	3/8	2 1/2
	3/16	342-0981	38	342-2599	64	17	13 1/2	11 1/8	21 1/4	30 3/4	7/8	3 3/4	4	4	3/8	2 1/2
18	12	342-1054	30	342-2664	64	19	14 1/2	12 3/8	24 1/4	33 3/4	1 1/8	47/16	4 3/8	4 3/8	1/2	2 3/4
	3/16	342-1120	52	342-2730	86	19	14 1/2	12 3/8	24 1/4	33 3/4	1 1/8	47/16	4 3/8	4 3/8	1/2	2 3/4
20	12	342-1195	34	342-2805	84	21	15 1/2	13 3/8	26 1/4	36 3/4	1 1/8	4 7/8	4 3/4	4 3/4	1/2	2 3/4
	3/16	342-1260	59	342-2870	109	21	15 1/2	13 3/8	26 1/4	36 3/4	1 1/8	4 7/8	4 3/4	4 3/4	1/2	2 3/4
24	12	342-1336	44	342-2946	108	25	17 1/2	15 3/8	30 1/4	42 7/8	1 1/8	5 5/8	5 5/8	5 1/2	1/2	3
	3/16	342-1401	76	342-3019	140	25	17 1/2	15 3/8	30 1/4	42 7/8	1 1/8	5 5/8	5 5/8	5 1/2	1/2	3

• Part Numbers shown apply to discharge spouts only.
 For feed spout indicate size & gauge EXAMPLE: one 12", 3/16" thk. feed spout or 14" 12 GA. feed spout.



Stub spouts with or without slide gates are fitted to conveyor trough or cover openings. The slide may be mounted on either a feed or discharge spout and may be operated parallel to the trough or at right angles, as required. Spouts of special dimensions, gauges and materials can be supplied to suit installation needs.





Rack and Pinion Gates

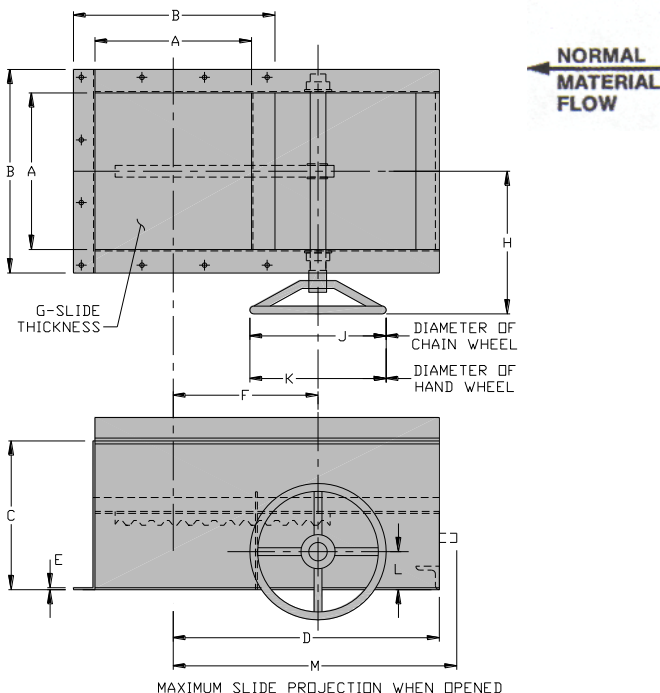
Diameter of Conveyor	Gauge Of Steel	CURVED SLIDE		A	B	C	D	E	F	G (Ga.)	H	J	K	L	M
		Part Number	Wgt.												
6	14	350-0212	38	7 1/4	10 1/4	8	11 5/8	14	7 5/8	12	11 3/8	12	12	2 7/16	15 5/8
	12	350-0287	40	7 1/4	10 1/4	8	11 5/8	12	7 5/8	12	11 3/8	12	12	2 7/16	15 5/8
9	12	350-0352	48	10 1/4	13 1/4	9 1/2	13 1/8	12	9 1/8	12	12 15/16	12	12	2 7/16	20 1/8
	10	350-0428	53	10 1/4	13 1/4	9 1/2	13 1/8	10	9 1/8	12	12 15/16	12	12	2 7/16	20 1/8
10	12	350-0493	61	11 1/4	14 1/4	10	13 5/8	12	9 5/8	10	13 7/16	12	12	2 7/16	21 5/8
	10	350-0568	66	11 1/4	14 1/4	10	13 5/8	10	9 5/8	10	13 7/16	12	12	2 7/16	21 5/8
12	10	350-0634	81	13 1/4	17 1/4	11	15 5/8	10	10 5/8	10	14 7/16	12	12	2 7/16	24 5/8
	3/16	350-0709	94	13 1/4	17 1/4	11	15 5/8	3/16	10 5/8	10	14 7/16	12	12	2 7/16	24 5/8
*14	10	350-0774	99	15 1/4	19 1/4	10 13/16	17 5/8	10	11 5/8	10	15 7/16	12	12	2 5/8	27 5/8
	3/16	350-0840	118	15 1/4	19 1/4	10 13/16	17 5/8	3/16	11 5/8	10	15 7/16	12	12	2 5/8	27 5/8
*16	10	350-0915	115	17 1/4	21 1/4	11 13/16	20 5/8	10	12 5/8	10	16 7/16	12	12	2 5/8	30 5/8
	3/16	350-0980	138	17 1/4	21 1/4	11 13/16	20 5/8	3/16	12 5/8	10	16 7/16	12	12	2 5/8	30 5/8
*18	10	350-1053	150	19 1/4	24 1/4	12 13/16	22 5/8	10	13 5/8	10	17 7/16	12	12	2 5/8	33 5/8
	3/16	350-1129	170	19 1/4	24 1/4	12 13/16	22 5/8	3/16	13 5/8	10	17 7/16	12	12	2 5/8	33 5/8
*20	10	350-1194	160	21 1/4	26 1/4	13 7/8	24 5/8	10	14 5/8	3/16	18 7/16	12	12	2 5/8	36 5/8
	3/16	350-1269	183	21 1/4	26 1/4	13 7/8	24 5/8	3/16	14 5/8	3/16	18 7/16	12	12	2 5/8	36 5/8
*24	10	350-1335	202	25 1/4	30 1/4	15 7/8	29 5/8	10	16 5/8	3/16	20 7/16	12	12	2 5/8	42 5/8
	3/16	350-1400	235	25 1/4	30 1/4	15 7/8	29 5/8	3/16	16 5/8	3/16	20 7/16	12	12	2 5/8	42 5/8

• These sizes furnished with double rack and pinions.

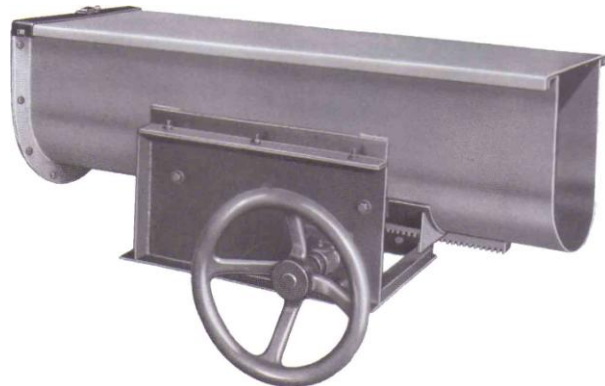
Curved Slide

Rack and Pinion discharge gates with curved slides have cut tooth racks welded to the curved slide plate. This engages a cut tooth pinion mounted on a pinion shaft. Operation of the gate is by means of a hand wheel as illustrated. Chain wheels with chain can be supplied if desired. Curved slides conform with the contour of the trough and eliminate all pockets that might trap the material in a spout above a flat slide.

These slides can also be power operated through electric motors or air or hydraulic cylinders. Consult our engineering department for details.



See page 57 for flange punching.

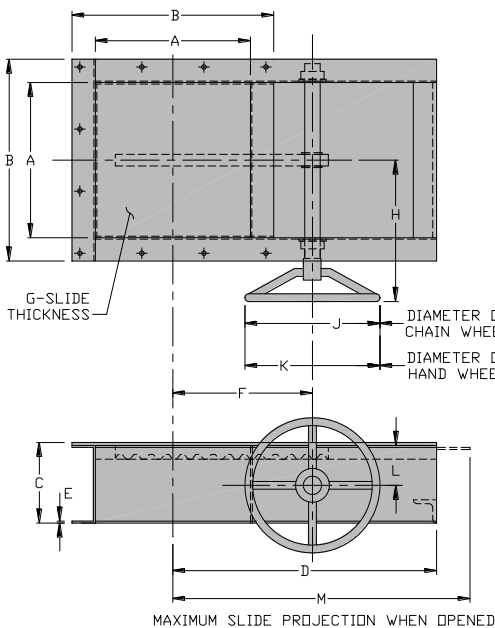




Rack and Pinion Gates

Diameter of Conveyor	Gauge Of Steel	FLAT SLIDE GATE		A	B	C	D	E	F	G (Ga.)	H	J	K	L	M
		Part Number	Wgt.												
4	14	350-1541	35	5	7 1/2	5	10 1/2	14	6 1/2	10	10 3/8	12	12	2	12 1/2
6	14	350-1681	41	7	10	5	11 1/2	14	7 1/2	10	11 3/8	12	12	2	15 1/2
9	14	350-1756	52	10	13	5	13	14	9	10	10 15/16	12	12	2	20
	10	350-1822	64	10	13	5	13	10	9	10	10 15/16	12	12	2	20
10	14	350-1897	56	11	14 1/4	5	13 1/2	14	9 1/2	10	13 7/16	12	12	2	21 1/2
	10	350-1962	70	11	14 1/4	5	13 1/2	10	9 1/2	10	13 7/16	12	12	2	21 1/2
12	12	350-2036	79	13	17 1/4	5	15 1/2	12	10 1/2	3/16	14 7/16	12	12	2	24 1/2
	3/16	350-2101	105	13	17 1/4	5	15 1/2	3/16	10 1/2	3/16	14 7/16	12	12	2	24 1/2
*14	12	350-2176	94	15	19 1/4	5	17 1/2	12	11 1/2	3/16	15 7/16	12	12	2	27 1/2
	3/16	350-2242	125	15	19 1/4	5	17 1/2	3/16	11 1/2	3/16	15 7/16	12	12	2	27 1/2
*16	12	350-2317	106	17	21 1/4	5	20 1/2	12	12 1/2	3/16	16 7/16	12	12	2	30 1/2
	3/16	350-2382	150	17	21 1/4	5	20 1/2	3/16	12 1/2	3/16	16 7/16	12	12	2	30 1/2
*18	12	350-2457	131	19	24 1/4	5	22 1/2	12	13 1/2	3/16	17 7/16	12	12	2	33 1/2
	3/16	350-2523	147	19	24 1/4	5	22 1/2	3/16	13 1/2	3/16	17 7/16	12	12	2	33 1/2
*20	12	350-2598	152	21	26 1/4	5	24 1/2	12	14 1/2	3/16	18 7/16	12	12	2	36 1/2
	3/16	350-2663	202	21	26 1/4	5	24 1/2	3/16	14 1/2	3/16	18 7/16	12	12	2	36 1/2
*24	12	350-2739	176	25	30 1/4	5	29 1/2	12	16 1/2	3/16	20 7/16	12	12	2	42 1/2
	3/16	350-2804	240	25	30 1/4	5	29 1/2	3/16	16 1/2	3/16	20 7/16	12	12	2	42 1/2
4	14	350-1541	35	5	7 1/2	5	10 1/2	14	6 1/2	10	10 3/8	12	12	2	12 1/2
6	14	350-1681	41	7	10	5	11 1/2	14	7 1/2	10	11 3/8	12	12	2	15 1/2

• These sizes furnished with double rack and pinions.



See page 57 for flange punching.

Flat Slide

Rack and Pinion discharge gates with flat slides have cut tooth racks welded to the slide plate. This engages a cut tooth pinion which is mounted on a pinion shaft. Operation of the gate is by means of a hand wheel, as illustrated, but chain wheels with chain can be supplied if desired. Flat slides allow operation in any one of the four positions if clearance is adequate. These slides can also be power operated through electric motors, air or hydraulic cylinders, Consult our engineering department for details.

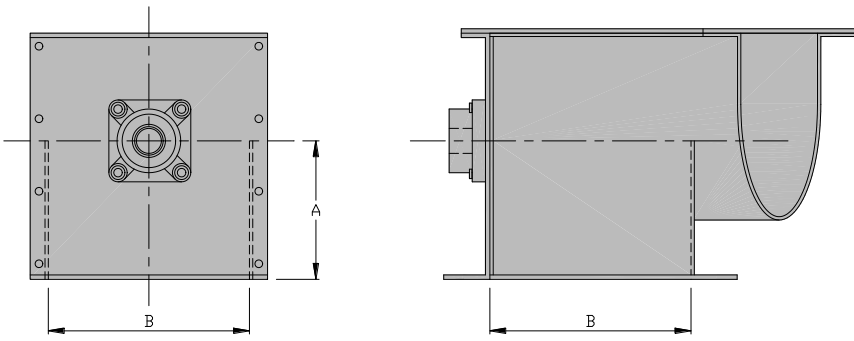




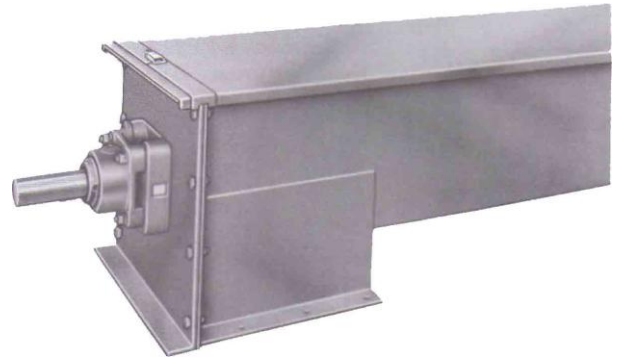
Flush End Discharge

DIMENSIONS IN INCHES					
Diameter Of Conveyor	A	B	Diameter Of Conveyor	A	B
4	3 3/4	5	14	10 1/8	15
6	5	7	16	11 1/8	17
9	7 1/8	10	18	12 3/8	19
10	7 7/8	11	20	13 3/8	21
12	8 7/8	13	24	15 3/8	25

A discharge assembly as shown on page 57 can be undesirable, if material has a tendency to build up between the edge of the discharge opening and the inside of the trough end plate at the extreme end of the conveyor. To overcome this, the spout can be mounted flush with the end of the trough and the trough end modified to act as the fourth side of the discharge spout. The trough end may be any of the types shown on pages 41 through 44.



Standard Trough Ends



Standard Spouts

Hanger Mounting Well

Tubular Conveyors

As mentioned on page 20, tubular conveyors are usually used in in-
cline operations for the round trough shape results in greater effi-
ciency on the incline. They are also used when greater air tightness is
desired as the cover joints are completely eliminated. The design pic-
tured utilizes standard conveyor screw, hangers, trough ends, and
spouts as shown in this catalog for

the greatest possible economy and availability. The housing, just as a
"U" trough, is available in a wide range of steel thicknesses and can
be made split for accessibility and drop bottom or top for cleaning.

Assembly Bolts

Components



Coupling Bolts are normally "Tem-U-Lac" as pictured on page 34.

Assembly Bolts for hangers, trough flanges, trough ends, bolted covers and supporting feet are normally hex head machine bolts with lock washers and hex nuts.



CONVEYOR AND BOLT SIZES																
CONVEYOR PART	4 x 1		6 x 1 1/2		9 x 1 1/2		9 x 2		10 x 1 1/2		10 x 2		12 x 2		12 x 2 7/16	
	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No
Conveyor Coupling	3/8 x 2 1/8	4	1/2 x 3	4	1/2 x 3	4	5/8 x 3 5/8	4	1/2 x 3	4	5/8 x 3 5/8	4	5/8 x 3 5/8	4	5/8 x 4 3/8	4
326 Hanger	3/8 x 1	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4
216 Hanger	3/8 x 1	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4
220 Hanger	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4
226 Hanger	3/8 x 1	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4
230 Hanger	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4
260 Hanger			3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	3/8 x 1	4	1/2 x 1 1/4	4	1/2 x 1 1/4	4
270 Hanger			3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	3/8 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4
Trough Flange	3/8 x 1	6	3/8 x 1	6	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	3/8 x 1	8	1/2 x 1 1/4	8	1/2 x 1 1/4	8
Trough End	3/8 x 1	6	3/8 x 1	6	3/8 x 1 1/4	8	3/8 x 1 1/4	8	3/8 x 1 1/4	8	3/8 x 1 1/4	8	1/2 x 1 1/2	8	1/2 x 1 1/2	8
Bolted Cover	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10
Supporting Foot	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	3/8 x 1 1/4	2	1/2 x 1 1/2	2	1/2 x 1 1/2	2

CONVEYOR AND BOLT SIZES																
CONVEYOR PART	12 X 3		14 x 2 7/16		14 x 3		16 x 3		18 x 3		20 x 3		20 x 3 7/16		24 x 2 7/16	
	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No	Bolt	No
Conveyor Coupling	3/4 x 5	4	5/8 x 4 3/8	4	3/4 x 5	4	3/4 x 5	4	3/4 x 5	4	3/4 x 5	4	7/8 x 5 1/2	4	7/8 x 5 1/2	4
326 Hanger	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4
216 Hanger	1/2 x 1 1/2	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4
220 Hanger	1/2 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4
226 Hanger	1/2 x 1 1/2	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4
230 Hanger	1/2 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4
260 Hanger	1/2 x 1 1/4	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	1/2 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4	5/8 x 1 1/2	4
270 Hanger	1/2 x 1 1/2	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	1/2 x 1 3/4	4	5/8 x 1 3/4	4	5/8 x 1 3/4	4				
Trough Flange	1/2 x 1 1/4	8	1/2 x 1 1/4	8	1/2 x 1 1/4	8	5/8 x 1 3/4	8	5/8 x 1 3/4	10	5/8 x 1 3/4	10	5/8 x 1 3/4	10	5/8 x 1 3/4	12
Trough End	1/2 x 1 1/2	8	1/2 x 1 1/2	8	1/2 x 1 1/2	8	5/8 x 1 3/4	8	5/8 x 1 3/4	10	5/8 x 1 3/4	10	5/8 x 1 3/4	10	5/8 x 1 3/4	12
Bolted Cover	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10	5/16 x 1	10
Supporting Foot	1/2 x 1 1/2	2	1/2 x 1 1/2	2	1/2 x 1 1/2	2	5/8 x 1 3/4	2	5/8 x 1 3/4	2	5/8 x 1 3/4	2	5/8 x 1 3/4	2	5/8 x 1 3/4	2



Weights & Dimensions

PIPE SIZES NORMALLY USED IN ASSEMBLY OF CONVEYOR SCREW

STANDARD WEIGHT STEEL PIPE

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS									
Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot	Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot
	OD	ID				OD	ID		
1/8	.405	.269	.068	.244	5	5.563	5.047	.258	14.617
1/4	.540	.364	.088	.424	6	6.625	6.065	.280	18.974
3/8	.675	.493	.091	.567					
1/2	.840	.622	.109	.850	*7	7.625	7.023	.301	23.544
					8	8.625	8.071	.277	24.696
3/4	1.050	.824	.113	1.130	8	8.625	7.981	.322	28.554
1	1.315	1.049	.133	1.678	*9	9.625	8.941	.342	33.907
1 1/4	1.660	1.380	.140	2.272					
1 1/2	1.900	1.610	.145	2.717	10	10.750	10.192	.279	31.201
					10	10.750	10.136	.307	34.24
2	2.375	2.067	.154	3.652	10	10.750	10.020	.365	40.483
2 1/2	2.875	2.469	.203	5.793	*11	11.750	11.000	.375	45.557
3	3.500	3.068	.216	7.575					
3 1/2	4.000	3.548	.226	9.109	12	12.754	12.090	.33	43.773
					12	12.750	12.000	.375	49.562
4	4.500	4.026	.237	10.790					
* 4 1/2	5.000	4.506	.247	12.538					

EXTRA HEAVY STEEL PIPE

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS									
Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot	Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot
	OD	ID				OD	ID		
1/8	.405	.215	.095	.314	5	5.563	4.813	0.375	20.778
1/4	.540	.302	.119	.535					
3/8	.675	.423	.126	.738	6	6.625	5.761	0.432	28.573
1/2	.840	.546	.147	1.087					
3/4	1.050	.742	.154	1.473	*7	7.625	6.625	.500	38.048
1	1.315	.957	.179	2.171	8	8.625	7.625	.500	43.388
1 1/4	1.660	1.278	.191	2.996					
1 1/2	1.900	1.500	.200	3.631	*9	9.625	8.625	.500	48.728
2	2.375	1.939	.218	5.022	10	10.750	9.750	.500	54.735
2 1/2	2.875	2.323	.276	7.661					
					*11	11.750	10.750	.500	60.075
3	3.500	2.900	.300	10.252					
3 1/2	4.000	3.364	.318	12.505	12	12.750	11.750	.500	65.415
4	4.500	3.826	.337	14.983					
* 4 1/2	5.000	4.290	.355	17.611					

* These sizes are listed but not commonly used.
 Δ Subject to standard mill tolerance variations.

† Permissible variations in weight is plus or minus 5%.

DOUBLE EXTRA HEAVY STEEL PIPE

DIMENSIONS IN INCHES AND AVERAGE WEIGHTS IN POUNDS									
Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot	Nominal Pipe Size	Δ ACTUAL SIZE		Wall Thickness	†Weight Per Foot
	OD	ID				OD	ID		
1/2	.840	.252	.294	1.714	4	4.500	3.152	.674	27.541
3/4	1.050	.434	.308	2.440	*4 1/2	5.000	3.580	.710	32.530
1	1.315	.599	.358	3.659	5	5.563	4.063	.750	38.552
1 1/4	1.660	.896	.382	5.214					
1 1/2	1.900	1.100	.400	6.408	6	6.625	4.897	.864	53.160
2	2.375	1.503	.436	9.029	*7	7.625	5.875	.875	63.079
2 1/2	2.875	1.771	.552	13.695					
					8	8.625	6.875	.875	72.424
3	3.500	2.300	.600	18.583					
3 1/2	4	2.728	.636	22.850					

* These sizes are listed but not commonly used.
 Δ Subject to standard mill tolerance variations.

† Permissible variations in weight is plus or minus 5%.

Weights & Dimensions

Supplementary
Data



STANDARD SHEET GAUGES

DIMENSIONS IN INCHES AND WEIGHTS IN POUNDS PER SQUARE FOOT									
Gauge	MFR'S STD.-STEEL SHEETS U.S. STD.-REVISED			BIRMINGHAM WIRE (BWG) STUBBS IRON WIRE		Galvanized Sheet	STAINLESS SHEETS OLD U.S. STD.		
	Fractional	Decimal	Weight	Decimal	Weight		Decimal	Chr. Iron	Chr. Nickel
8	11/64	.1644	6.875	.165	6.7320				
9	5/32	.1495	6.250	.148	6.0384				
10	9/64	.1345	5.625	.134	5.4672	5.781	.1406	5.794	5.906
11	1/8	.1196	5.000	.120	4.8960	5.156	.1250	5.150	5.250
12	7/64	.1046	4.375	.109	4.4472	4.531	.1094	4.506	4.594
13	3/32	.0897	3.750	.095	3.8760	3.906	.0938	3.863	3.938
14	5/64	.0747	3.125	.083	3.3864	3.281	.0781	3.219	3.281
15	9/128	.0673	2.812	.072	2.9376	2.969	.0703	2.897	2.953
16	1/16	.0598	2.500	.065	2.6510	2.656	.0625	2.575	2.625
17	9/160	.0538	2.250	.058	2.3664	2.406	.0563	2.318	2.363
18	1/20	.0478	2.000	.049	1.9992	2.156	.0500	2.060	2.100
19	7/160	.0418	1.750	.042	1.7126	1.906	.0438	1.803	1.838
20	3/80	.0359	1.500	.035	1.4280	1.656	.0375	1.545	1.575
21	11/320	.0329	1.375	.032	1.3056	1.531	.0344	1.416	1.444
22	1/32	.0299	1.250	.028	1.1424	1.406	.0313	1.288	1.313
23	9/320	.0269	1.125	.025	1.0206	1.281	.0281	1.159	1.181
24	1/40	.0239	1.000	.022	.8970	1.156	.0250	1.030	1.050
25	7/320	.0209	.875	.020	.8160	1.031	.0219	0.901	0.919
26	3/160	.0179	.750	.018	.7344	.906	.0188	0.773	0.788
27	11/640	.0164	.687	.016	.6528	.844	.0172	0.708	0.722
28	1/64	.0149	.625	.014	.5712	.781	.0156	0.644	0.656
29	9/640	.0135	.562	.013	.5304	.719	.0141	0.579	0.591
30	1/80	.0120	.500	.012	.4896	.656	.0125	0.515	0.525

WEIGHTS OF STEEL PLATES

DIMENSIONS IN FRACTIONAL INCHES AND WEIGHTS IN POUNDS PER SQUARE FOOT							
STEEL PLATES				STAINLESS STEEL PLATES			
Thickness	Weight	Thickness	Weight	Thickness	Weight	Thickness	Weight
3/16	7.65	1.125	45.90	3/16	8.295	0.4375	18.810
1/4	10.20	1.25	51.00	13/64	8.984	0.46875	20.155
5/16	12.75	1.375	56.10	7/32	9.677	0.5	21.498
3/8	15.30	1.5	61.20	15/64	10.369	0.5625	24.185
7/16	17.85	1.625	66.30	1/4	10.956	0.625	26.614
1/2	20.40	1.75	71.40	17/64	11.641	0.6875	29.276
9/16	22.95	2	81.60	9/32	12.442	0.75	31.937
5/8	25.50	2.25	91.80	5/16	13.437	0.8125	34.599
3/4	30.60	2.5	102.00	11/32	14.779	0.875	37.260
7/8	35.70	2.75	112.20	3/8	16.123	0.9375	39.922
1	40.80	3	122.40	13/32	17.467	1	42.582

WEIGHTS OF ROUND AND SQUARE STEEL BARS

Size in Inches	Round Weight in Lbs.	Square Weight in Lbs.	Size in Inches	Round Weight in Lbs.	Square Weight in Lbs.	Size in Inches	Round Weight in Lbs.	Square Weight in Lbs.
3/16	.904	.120	1 1/8	3.380	4.303	3	24.03	30.60
7/32	.1277	.1620	1 3/16	3.766	4.795	3 1/4	28.21	35.91
1/4	.167	.213	1 1/4	4.172	5.313	3 1/2	32.71	41.65
9/32	.2133	.2676	1 5/16	4.600	5.857	3 3/4	37.55	47.81
5/16	.261	.332	1 3/8	5.049	6.428	4	42.73	54.40
11/32	.3137	.3992	1 7/16	5.518	7.026	4 1/4	48.23	61.41
3/8	.376	.478	1 1/2	6.008	7.650	4 1/2	54.07	68.85
13/32	.4377	.5562	1 9/16	6.519	8.301	4 3/4	60.25	76.71
7/16	.511	.651	1 5/8	7.051	8.978	5	66.76	85.00
1/2	.688	.850	1 3/4	8.178	10.413	5 1/4	73.60	93.71
9/16	.845	1.076	1 7/8	9.388	11.953	5 1/2	80.78	102.85
5/8	1.043	1.328	2	10.681	13.600	5 3/4	88.29	112.41
11/16	1.262	1.607	2 1/8	12.058	15.353	6	96.13	122.40
3/4	1.502	1.913	2 1/4	13.519	17.213	6 1/2	112.82	143.65
13/16	1.763	2.245	2 3/8	15.062	19.178	7	130.85	166.60
7/8	2.044	2.603	2 1/2	16.690	21.250	7 1/2	150.21	191.25
15/16	2.347	2.988	2 5/8	18.400	23.428	8	170.90	217.60
1	2.670	3.400	2 3/4	20.195	25.713	8 1/2	192.93	245.65
1 1/16	3.015	3.838	2 7/8	22.072	28.103	9	216.30	275.40

AREAS AND VOLUMES

Circumference of circle = 3.1416 x diameter
 Diameter of circle = 0.3183 x circumference
 Side of a square of equal area = 0.8862 x diameter
 Diameter of a circle of equal area = 1.1284 x side of square
 Area of a circle = 0.7854 x square of the diameter
 Diameter of a circle = 1.1284 x square root of the area
 Surface area of a sphere = 3.1416 x square of the diameter
 Volume of a sphere = 0.5236 x cube of diameter
 Volume of cylinder or prism = area of base x height
 Volume of cone or pyramid = 1/3 x area of base x height
 Volume of the frustum of a cone or pyramid = 1/3 x height x (area of upper base + area of lower base + $\sqrt{\text{area of upper base} \times \text{area of lower base}}$)
 Doubling the diameter of a pipe increases its volume four times; generalizing, increasing the diameter "n" times increases the volume "n²" or "n x n" times.



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