

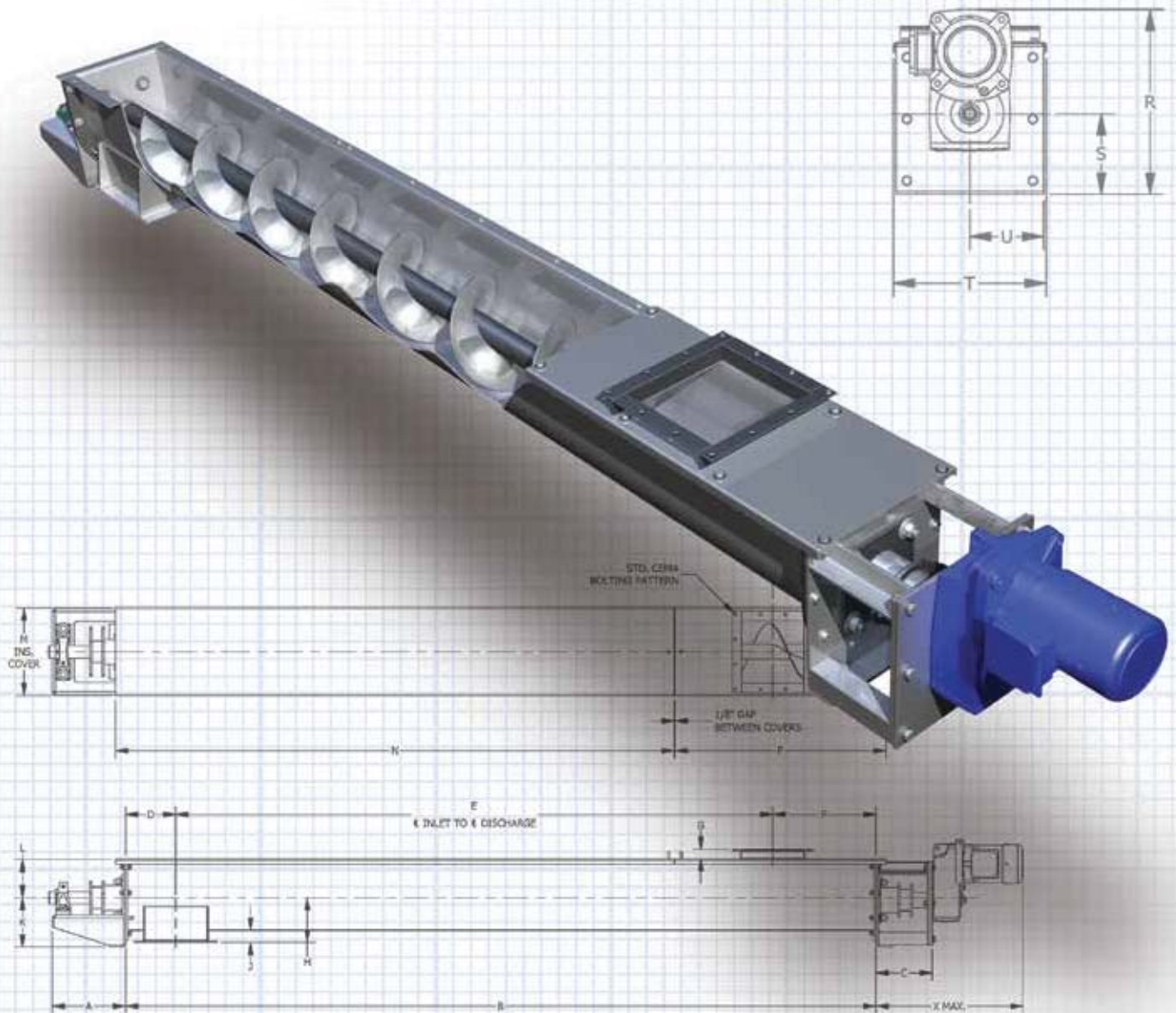


**Design  
Engineering  
Manufacturing**

*Conveying Knowledge, Workmanship, Solutions*

**COMPONENT GUIDE**

# Screw Conveyors



## KWS PROFILE

Founded in 1972, KWS Manufacturing Company, Ltd, is the leader in the design and manufacture of conveying equipment for the bulk material handling industry. Our primary Customers are power transmission distributors, end users, engineering firms, system suppliers and original equipment manufacturers (OEMs).

As an ISO 9001 certified manufacturer, KWS provides the highest quality equipment and service to our Customers. The KWS name stands for Knowledge, Workmanship and Solutions. Our large number of repeat Customers shows our commitment to Customer satisfaction. Our quality system ensures that your equipment is designed and manufactured to rigid specifications and validated by exceeding performance expectations.

We also offer complete system design and engineered solutions for our Customers. KWS is one of the largest conveyor manufacturers in North America and continues to grow every year.

## KWS SCREW CONVEYOR COMPONENT GUIDE

Screw conveyors are a cost effective and reliable method of conveying bulk materials. Thousands of bulk materials are conveyed and processed daily utilizing screw conveyors. The KWS Screw Conveyor Component Guide is an excellent resource for understanding and selecting the proper components for screw conveyors. The component guide is easy to use, with descriptions of every screw conveyor component and their proper use. Recommendations are provided to assist the screw conveyor designer on how to properly select components for a specific application.



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## CARBON STEEL STOCK COMPONENTS

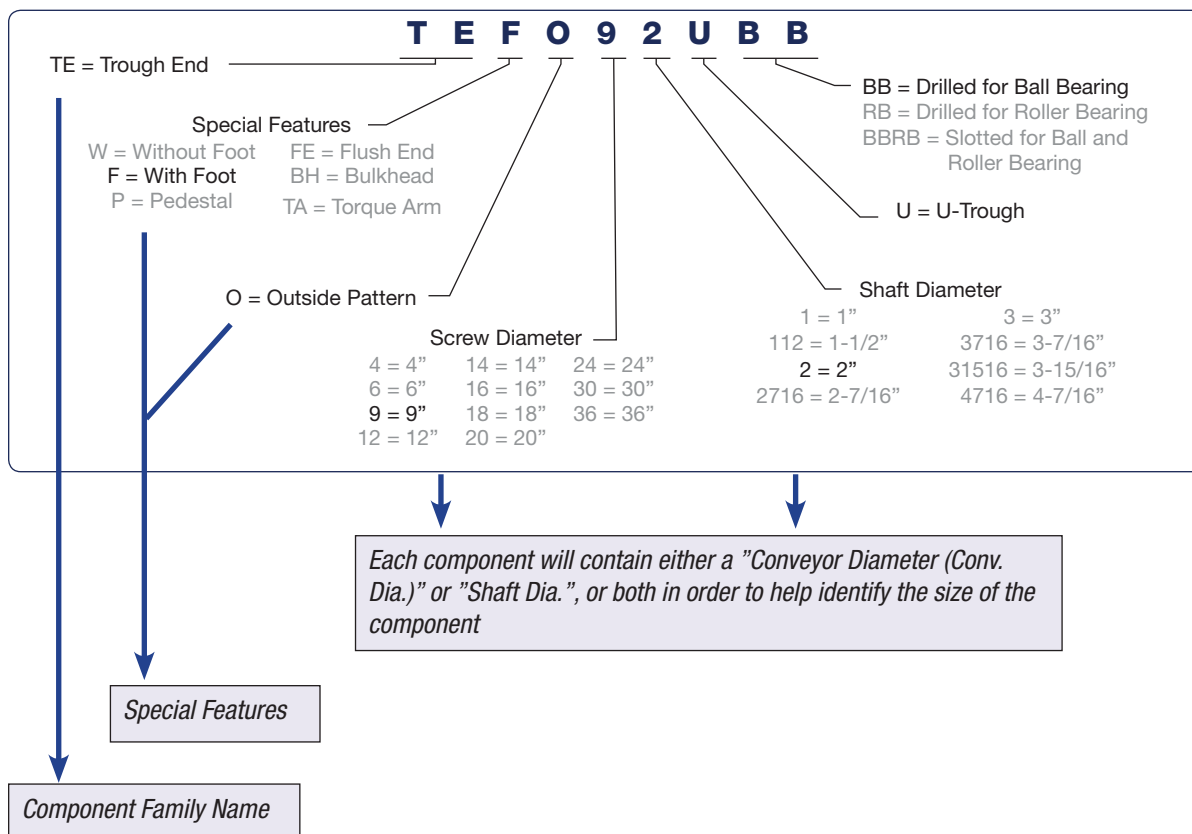
### USING THE KWS SCREW CONVEYOR GUIDE

Each component specified in the KWS Screw Conveyor Component Guide can be used in the design and manufacture of screw conveyors and screw feeders. A very wide selection of components is provided so the engineer or designer can customize each screw conveyor or screw feeder for a specific application or need. Screw conveyors and screw feeders are used throughout the world for conveying and metering thousands of bulk materials and are the most versatile of all mechanical conveying devices.

The KWS Screw Conveyor Component Guide provides a description of each component along with dimensional information, weight and stock availability. KWS also offers the KWS Screw Conveyor Engineering Guide to better understand the design of screw conveyors and screw feeders.

An example of KWS part number nomenclature is shown below. Please note that dimensions and weights of some standard components could change as design improvements are made, so please contact KWS Engineering or your KWS salesperson before finalizing your design.

### NOMENCLATURE





## SCREWS

Screws can be configured for every application. The Basic Conveyor Flight and Pitch Type Section provides descriptions of various types of screws that can be used in a multitude of bulk material conveying and processing applications.

The use of helicoid or sectional screws is dependent upon the requirements of the application and the needs of the end user. In general, helicoid screws are used in light to medium duty applications, and are more cost effective when compared to sectional screws. Sectional screws can be configured for almost every type of application with special features such as ribbon or cut-and-folded flighting. Sectional screws can also be manufactured from special materials such as AR-235 or 316 stainless steel.

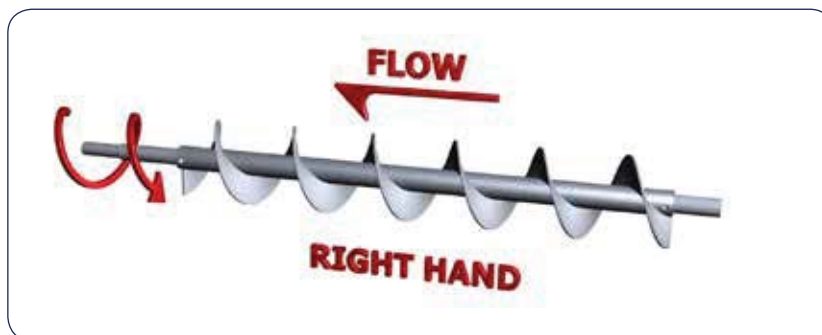
Screw section length is also dependent upon the requirements of the application and the needs of the end user. Standard screw lengths and hanger bearings can be used where the bulk material is non-abrasive and free-flowing. Single length screws are recommended for abrasive, heavy industrial applications.

Screws are available in right and left hand construction. Right hand screws are much more common and are recommended for almost every application. Spare parts are more readily available for right hand screws. The "hand" of a screw along with the direction of rotation of the screw determine the direction of bulk material flow. The diagrams below illustrate the direction of bulk material flow for both right hand and left hand screws when rotated clockwise or counter clockwise. The rotation arrows indicate the location of the motor and gear reducer. The direction of bulk material flow is reversed when the direction of rotation is reversed.

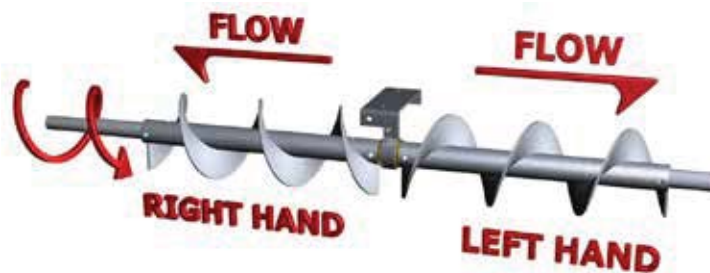
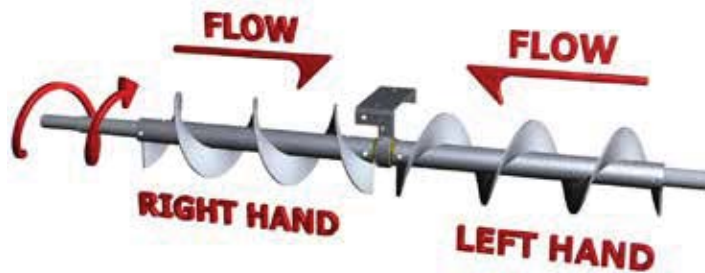
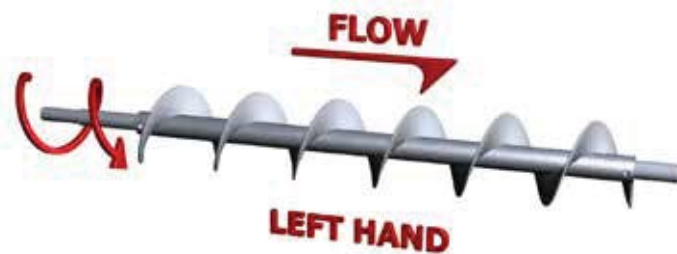
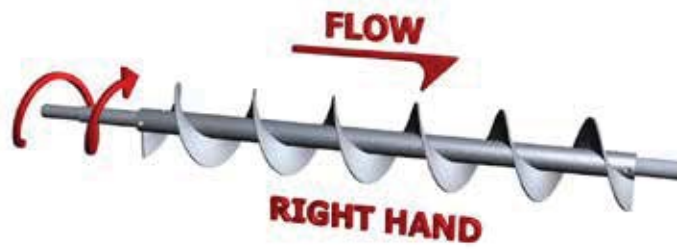
A right hand screw with the motor and gear reducer located on the discharge end pulls the bulk material toward the discharge end and rotates clockwise.

A left hand screw with the motor and gear reducer located on the discharge end pulls the bulk material toward the discharge end and rotates counter-clockwise.

To determine the hand of a screw, observe the slope of the near side of the flighting. If the slope is downward to the right, then the screw is right hand. If the slope is downward to the left, the screw is left hand.

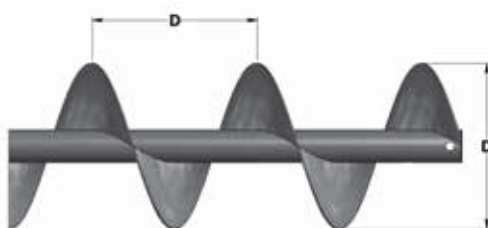


## SCREWS



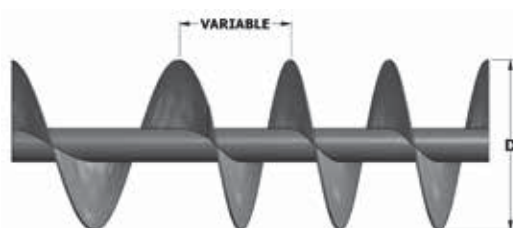
## BASIC CONVEYOR FLIGHT AND PITCH TYPES

STANDARD PITCH, SINGLE FLIGHT



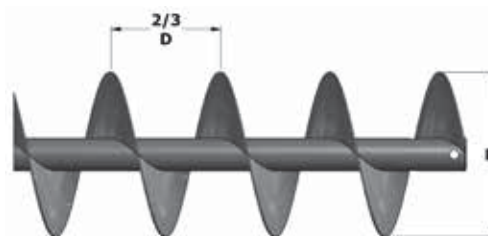
Standard pitch, single flight screws have the outside diameter equal to the pitch and are the most common screw type used for horizontal screw conveyors and inclines up to 10-degrees.

VARIABLE PITCH, SINGLE FLIGHT



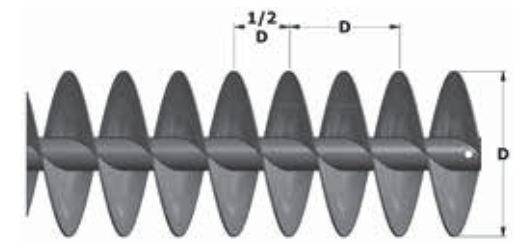
Variable pitch, single flight screws have increasing pitch with every flight and are used in screw feeders to provide uniform withdrawal of free-flowing bulk materials from hoppers, bins or silos.

SHORT PITCH, SINGLE FLIGHT



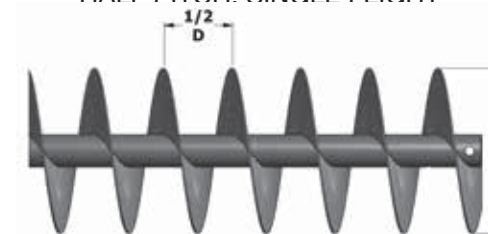
Short pitch, single flight screws have the pitch reduced to  $\frac{2}{3}$  of the diameter and are most commonly used in inclined and vertical screw conveyor applications. Short pitch is also used in some variable pitch screw feeder applications.

STANDARD PITCH, DOUBLE FLIGHT



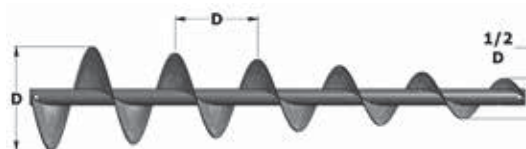
Standard pitch, double flight screws have the outside diameter equal to the pitch, very similar to standard pitch, single flight. A second set of flights is added 180-degrees apart from the first set of flights to provide a more even discharge of bulk materials.

HALF PITCH, SINGLE FLIGHT



Half pitch, single flight screws have the pitch reduced to  $\frac{1}{2}$  of the diameter and are commonly used in inclined and vertical screw conveyor applications.  $\frac{1}{2}$  pitch is also used in some variable pitch screw feeder applications.

STANDARD PITCH, TAPERED SINGLE FLIGHT

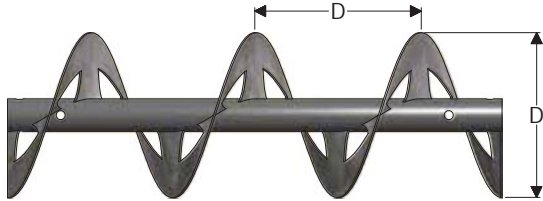


Standard pitch, single tapered flight screws have a tapered outside diameter increasing from  $\frac{1}{2}$  to full diameter and are used in screw feeders to provide uniform withdrawal of free-flowing bulk materials from hoppers, bins or silos.



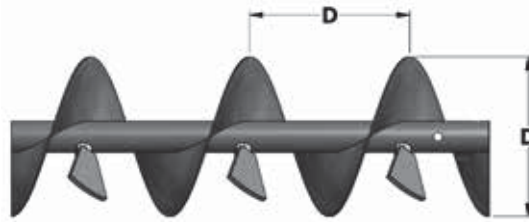
## BASIC CONVEYOR FLIGHT AND PITCH TYPES

STANDARD PITCH, SINGLE RIBBON FLIGHT



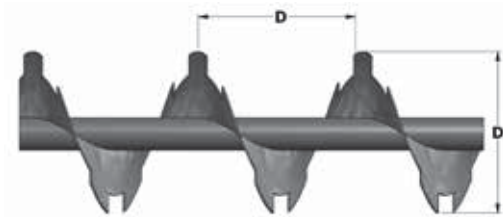
Standard pitch, single ribbon flight screws have a space within the flight and around the center pipe to minimize the collection and buildup of viscous and sticky bulk materials.

STANDARD PITCH, SINGLE FLIGHT WITH PADDLES



Standard pitch, single flight with paddles screws have adjustable paddles located between screw flights. Up to four paddles per pitch can be added for gentle and thorough mixing of bulk materials.

STANDARD PITCH, SINGLE CUT FLIGHT



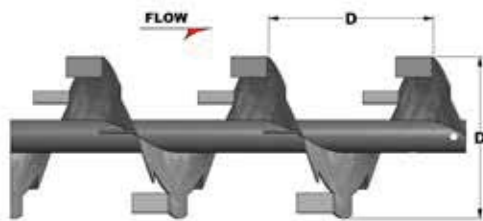
Standard pitch, single cut flight screws are notched at regular intervals on the outer edge to promote mixing and agitation of bulk materials.

STANDARD PITCH, PADDLE



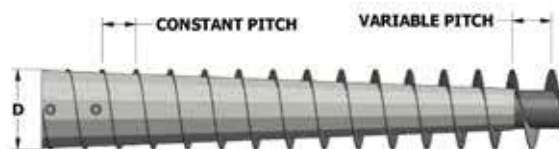
Standard pitch, paddle screws have adjustable paddles located in a helix around the diameter of the center pipe. Up to four paddles per pitch can be used for aggressive mixing and controlled flow of bulk materials.

STANDARD PITCH, SINGLE CUT AND FOLDED FLIGHT



Standard pitch, single cut and folded flight screws are notched at regular intervals on the outer edge and have lifting paddles to promote aggressive mixing and agitation of bulk materials.

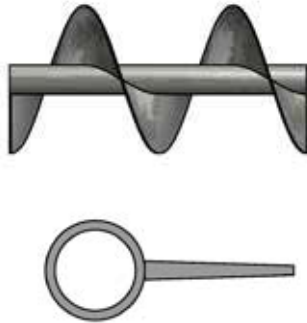
MASS FLOW



Mass flow screws utilize a combination of internal cone and variable pitch to provide increasing volume with every flight and are used in screw feeders to provide uniform withdrawal of bulk materials from hoppers, bins or silos.

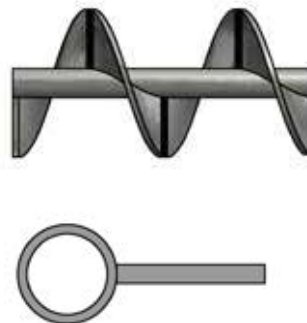
## CONVEYOR SCREWS: HELICOID VERSUS SECTIONAL

### HELICOID FLIGHT SCREW CONVEYORS



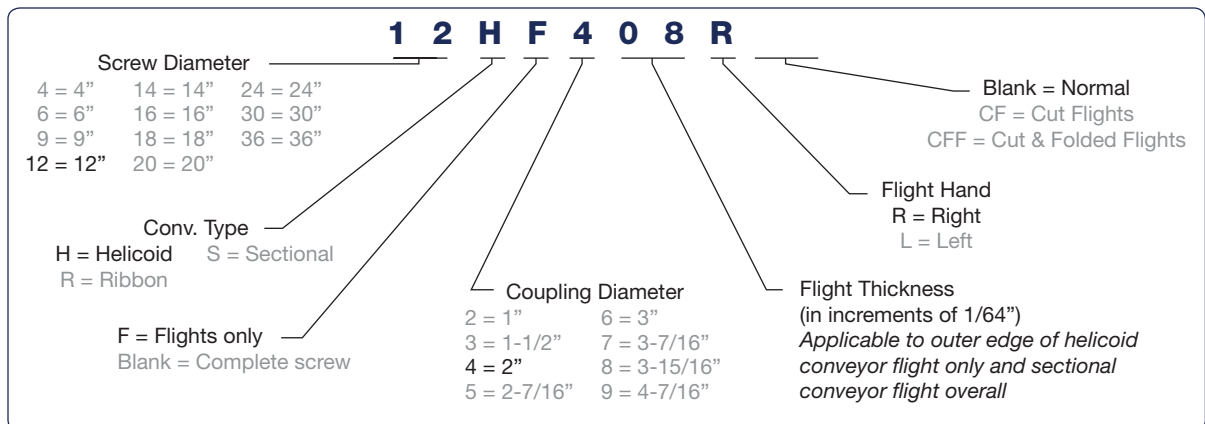
Helicoid flighting is cold rolled from special steel into a continuous helix that produces a work-hardened, smoothly finished flighting surface. It is very cost-effective and provides superior strength with diameter, pitch and thickness closely controlled. Helicoid screws are manufactured by mounting helicoid flighting on a center pipe and fastening by intermittent welds. Continuous welding on the carrying side or both sides is also available. Internal collars are inserted in each end and plug welded to accommodate shafts. Screws are structurally reinforced at the ends by end lugs.

### SECTIONAL FLIGHT SCREW CONVEYORS

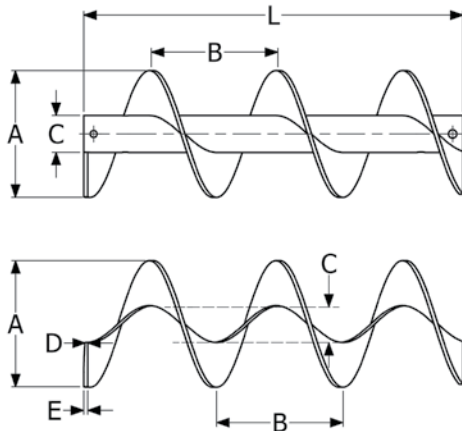


Sectional flighting is manufactured from steel plate and formed into a helix. Sectional flighting is available in heavier thicknesses than helicoid flighting and used in more abrasive applications. Sectional screws are manufactured by mounting sectional flighting on a center pipe, butt welding each flight together and fastening by intermittent welds. Continuous welding on the carrying side or both sides is also available. Internal collars are inserted in each end and plug welded to accommodate shafts. Screws can be structurally reinforced at the ends by end lugs.

## NOMENCLATURE



## HELICOID SCREW AND FLIGHTING

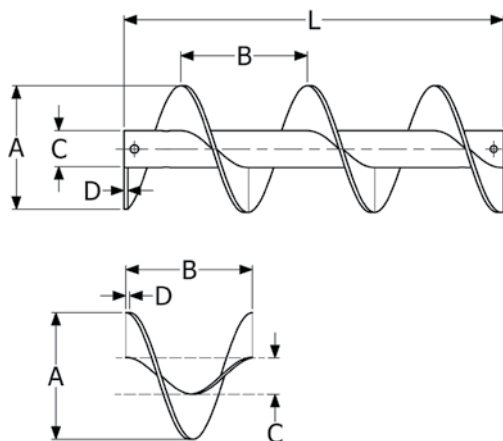


| A             | B     | Part<br>Number | Screw<br>Coupling<br>Dia | Pipe Sch 40 |              | L            | A                     |       | B                  |       | D                | E     | Average Weight<br>Per Ft.<br>(Lbs./Ft.) |                |
|---------------|-------|----------------|--------------------------|-------------|--------------|--------------|-----------------------|-------|--------------------|-------|------------------|-------|---|----------------|
| Screw<br>Dia. | Pitch |                |                          | Size        | C<br>Pipe OD | Std. Length  | Diameter<br>Tolerance |       | Pitch<br>Tolerance |       | Flight Thickness |       | Complete<br>Screw                       | Flight<br>Only |
|               |       |                |                          |             |              |              | Plus                  | Minus | Plus               | Minus | Root             | Tip   |   |                |
| 4"            | 4"    | 4H#206●*       | 1"                       | 1-1/4"      | 1-21/32"     | 9' - 10-1/2" | 1/16"                 | 1/8"  | 1/2"               | 1/4"  | 3/16"            | 3/32" | 4                                       | 2              |
| 6"            | 6"    | 6H#304●*       | 1-1/2"                   | 2"          | 2-3/8"       | 9' - 10"     | 1/16"                 | 3/16" | 1/2"               | 1/4"  | 1/8"             | 1/16" | 5                                       | 2              |
|               |       | 6H#308●*       |                          |             |              |              |                       |       |                    |       | 1/4"             | 1/8"  | 6                                       | 3              |
|               |       | 6H#312●*       |                          |             |              |              |                       |       |                    |       | 3/8"             | 3/16" | 7                                       | 5              |
|               |       |                |                          |             |              |              |                       |       |                    |       |                  |       |   |                |
| 9"            | 9"    | 9H#306●*       | 1-1/2"                   | 2"          | 2-3/8"       | 9' - 10"     | 1/16"                 | 3/16" | 3/4"               | 1/4"  | 3/16"            | 3/32" | 7                                       | 3              |
|               |       | 9H#312●*       |                          |             |              |              |                       | 3/8"  |                    |       | 3/16"            | 10    | 7                                       |                |
|               |       | 9H#406●*       | 2"                       | 2-1/2"      | 2-7/8"       |              |                       | 3/16" |                    |       | 3/16"            | 9     | 3                                       |                |
|               |       | 9H#412●*       |                          |             |              |              |                       | 3/8"  |                    |       | 3/16"            | 12    | 6                                       |                |
|               |       | 9H#414●*       |                          |             |              |              |                       | 7/16" |                    |       | 7/32"            | 13    | 7                                       |                |
| 12"           | 12"   | 12H#408●*      | 2"                       | 2-1/2"      | 2-7/8"       | 11' - 10"    | 1/8"                  | 5/16" | 1"                 | 1/4"  | 1/4"             | 1/8"  | 12                                      | 6              |
|               |       | 12H#412●*      |                          |             |              |              |                       |       |                    |       | 3/8"             | 3/16" | 15                                      | 9              |
|               |       | 12H#508●*      | 2-7/16"                  | 3"          | 3-1/2"       | 11' - 9"     |                       |       |                    |       | 1/4"             | 1/8"  | 14                                      | 6              |
|               |       | 12H#512●*      |                          |             |              |              |                       |       |                    |       | 3/8"             | 3/16" | 17                                      | 8              |
|               |       |                | 12H#614●*                | 3"          | 3-1/2"       | 4"           |                       |       |                    |       | 11' - 9"         | 1/8"  | 3/8"                                    | 1"             |
| 14"           | 14"   | 14H#508●*      | 2-7/16"                  | 3"          | 3-1/2"       | 11' - 9"     | 1/8"                  | 5/16" | 1"                 | 1/4"  | 1/4"             | 1/8"  | 14                                      | 7              |
|               |       | 14H#614●*      | 3"                       | 3-1/2"      | 4"           | 11' - 9"     | 1/8"                  | 3/8"  | 1"                 | 1/4"  | 7/16"            | 7/32" | 22                                      | 11             |
| 16"           | 16"   | 16H#610●*      | 3"                       | 3-1/2"      | 4"           | 11' - 9"     | 1/8"                  | 3/8"  | 1-1/2"             | 1/4"  | 5/16"            | 5/32" | 19                                      | 10             |
|               |       | 16H#614●*      |                          | 4"          | 4-1/2"       |              |                       |       |                    |       | 7/16"            | 7/32" | 24                                      | 13             |

# F = Flighting Only, Blank = Screw • R = Right Hand Flighting, L = Left Hand Flighting

\* Only Right Hand Flighting is a KWS Stock Component

## SECTIONAL SCREW AND FLIGHTING



| A             | B             | Part Number | Screw<br>Coupling<br>Dia | Pipe Sch 40 |              | L              | A                     |       | B                  |       | D                   | Average Weight                  |                              |
|---------------|---------------|-------------|--------------------------|-------------|--------------|----------------|-----------------------|-------|--------------------|-------|---------------------|---------------------------------|------------------------------|
| Screw<br>Dia. | Pitch         |             |                          | Size        | C<br>Pipe OD | Std.<br>Length | Diameter<br>Tolerance |       | Pitch<br>Tolerance |       | Flight<br>Thickness | Complete<br>Screw<br>(Lbs./Ft.) | Flight<br>Only<br>(Lbs./ea.) |
|               |               |             |                          |             |              |                | Plus                  | Minus | Plus               | Minus |                     |                                 |                              |
| 4"            | NOT AVAILABLE |             |                          |             |              |                |                       |       |                    |       |                     |                                 |                              |
| 6"            | 6"            | 6S#307●     | 1-1/2"                   | 2"          | 2-3/8"       | 9' - 10"       | 1/16"                 | 3/16" | 3/8"               | 1/4"  | 12 Ga.              | 6                               | 1                            |
|               |               | 6S#309●     |                          |             |              |                |                       |       |                    |       | 10 Ga.              | 6                               | 2                            |
|               |               | 6S#312●     |                          |             |              |                |                       |       |                    |       | 3/16"               | 7                               | 2                            |
|               |               | 6S#316●*    |                          |             |              |                |                       |       |                    |       | 1/4"                | 8                               | 3                            |
| 9"            | 9"            | 9S#307●     | 1-1/2"                   | 2"          | 2-3/8"       | 9' - 10"       | 1/16"                 | 3/16" | 1/2"               | 1/4"  | 12 Ga.              | 6                               | 3                            |
|               |               | 9S#309●     |                          |             |              |                |                       |       |                    |       | 10 Ga.              | 7                               | 4                            |
|               |               | 9S#312●     |                          |             |              |                |                       |       |                    |       | 3/16"               | 9                               | 5                            |
|               |               | 9S#316●*    |                          |             |              |                |                       |       |                    |       | 1/4"                | 11                              | 6                            |
|               |               | 9S#324●*    |                          |             |              |                |                       |       |                    |       | 3/8"                | 14                              | 9                            |
|               |               | 9S#407●     | 2"                       | 2-1/2"      | 2-7/8"       | 9' - 10"       | 1/16"                 | 3/16" | 1/2"               | 1/4"  | 12 Ga.              | 9                               | 3                            |
|               |               | 9S#409●     |                          |             |              |                |                       | 3/16" |                    |       | 10 Ga.              | 10                              | 4                            |
|               |               | 9S#412●     |                          |             |              |                |                       | 3/16" |                    |       | 3/16"               | 11                              | 5                            |
|               |               | 9S#416●     |                          |             |              |                |                       | 1/4"  |                    |       | 1/4"                | 13                              | 6                            |
|               |               | 9S#424●*    |                          |             |              |                |                       | 1/4"  |                    |       | 3/8"                | 16                              | 9                            |
| 12"           | 12"           | 12S#409●    | 2"                       | 2-1/2"      | 2-7/8"       | 11' - 10"      | 1/8"                  | 5/16" | 3/4"               | 1/4"  | 10 Ga.              | 11                              | 6                            |
|               |               | 12S#412●    |                          |             |              |                |                       |       |                    |       | 3/16"               | 13                              | 7                            |
|               |               | 12S#416●*   |                          |             |              |                |                       |       |                    |       | 1/4"                | 15                              | 14                           |
|               |               | 12S#424●*   |                          |             |              |                |                       |       |                    |       | 3/8"                | 19                              | 20                           |
|               |               | 12S#509●    | 2-7/16"                  | 3"          | 3-1/2"       | 11' - 9"       | 1/8"                  | 5/16" | 3/4"               | 1/4"  | 10 Ga.              | 13                              | 6                            |
|               |               | 12S#512●    |                          |             |              |                |                       |       |                    |       | 3/16"               | 15                              | 7                            |
|               |               | 12S#516●    |                          |             |              |                |                       |       |                    |       | 1/4"                | 17                              | 10                           |
|               |               | 12S#524●*   |                          |             |              |                |                       |       |                    |       | 3/8"                | 21                              | 15                           |
|               |               | 12S#612●    | 3"                       | 3-1/2"      | 4"           | 11' - 9"       | 1/8"                  | 5/16" | 3/4"               | 1/4"  | 3/16"               | 16                              | 7                            |
|               |               | 12S#616●    |                          |             |              |                |                       | 5/16" |                    |       | 1/4"                | 18                              | 10                           |
|               |               | 12S#624●*   |                          |             |              |                |                       | 3/8"  |                    |       | 3/8"                | 22                              | 13                           |
|               |               |             |                          |             |              |                |                       |       |                    |       |                     |                                 |                              |

# F = Flighting Only, Blank = Screw • R = Right Hand Flighting, L = Left Hand Flighting

\* Only Right Hand Flighting is a KWS Stock Component

## SECTIONAL SCREW AND FLIGHTING

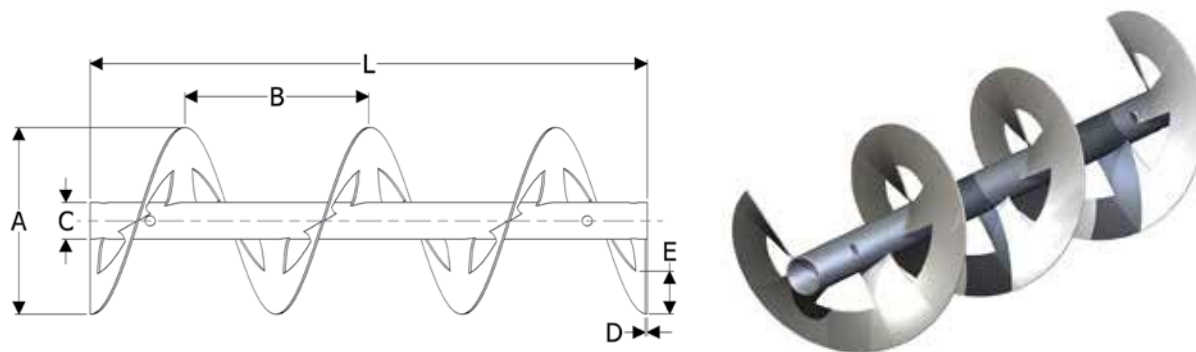
| A          | B     | Part Number | Screw Coupling Dia | Pipe Sch 40 |           | L        | A           |                    | B     |                 | D      | Average Weight   |                           |                        |       |
|------------|-------|-------------|--------------------|-------------|-----------|----------|-------------|--------------------|-------|-----------------|--------|------------------|---------------------------|------------------------|-------|
| Screw Dia. | Pitch |             |                    | Size        | C Pipe OD |          | Std. Length | Diameter Tolerance |       | Pitch Tolerance |        | Flight Thickness | Complete Screw (Lbs./Ft.) | Flight Only (Lbs./ea.) |       |
|            |       |             |                    |             |           |          |             | Plus               | Minus | Plus            |        |                  |                           |                        | Minus |
| 14"        | 14"   | 14S#509●    | 2-7/16"            | 3"          | 3-1/2"    | 11' - 9" | 1/8"        | 5/16"              | 3/4"  | 1/4"            | 10 Ga. | 14               | 7                         |                        |       |
|            |       | 14S#512●    |                    |             |           |          |             |                    |       |                 | 3/16"  | 16               | 10                        |                        |       |
|            |       | 14S#516●*   |                    |             |           |          |             |                    |       |                 | 1/4"   | 19               | 13                        |                        |       |
|            |       | 14S#524●    |                    |             |           |          |             |                    |       |                 | 3/8"   | 23               | 20                        |                        |       |
|            |       | 14S#612●    | 3"                 | 3-1/2"      | 4"        | 11' - 9" | 1/8"        | 5/16"              | 3/4"  | 1/4"            | 3/16"  | 18               | 11                        |                        |       |
|            |       | 14S#616●    |                    |             |           |          |             | 5/16"              |       |                 | 1/4"   | 20               | 13                        |                        |       |
|            |       | 14S#624●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 25               | 20                        |                        |       |
| 16"        | 16"   | 16S#609●    | 3"                 | 3-1/2"      | 4"        | 11' - 9" | 1/8"        | 3/8"               | 3/4"  | 1/4"            | 10 Ga. | 15               | 10                        |                        |       |
|            |       | 16S#612●    |                    |             |           |          |             | 3/8"               |       |                 | 3/16"  | 19               | 14                        |                        |       |
|            |       | 16S#616●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 22               | 18                        |                        |       |
|            |       | 16S#624●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 27               | 26                        |                        |       |
|            |       | 16S#632●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 33               | 35                        |                        |       |
| 18"        | 18"   | 18S#612●    | 3"                 | 3-1/2"      | 4"        | 11' - 9" | 3/16"       | 3/8"               | 3/4"  | 1/2"            | 3/16"  | 20               | 18                        |                        |       |
|            |       | 18S#616●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 23               | 24                        |                        |       |
|            |       | 18S#624●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 29               | 35                        |                        |       |
|            |       | 18S#632●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 36               | 46                        |                        |       |
|            |       | 18S#712●    | 3-7/16"            | 4"          | 4-1/2"    | 11' - 8" | 3/16"       | 3/8"               | 3/4"  | 1/2"            | 3/16"  | 22               | 18                        |                        |       |
|            |       | 18S#716●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 25               | 24                        |                        |       |
|            |       | 18S#724●    |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 31               | 35                        |                        |       |
|            |       | 18S#732●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 37               | 46                        |                        |       |
| 20"        | 20"   | 20S#612●    | 3"                 | 3-1/2"      | 4"        | 11' - 9" | 3/16"       | 3/8"               | 7/8"  | 1/2"            | 3/16"  | 21               | 20                        |                        |       |
|            |       | 20S#616●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 25               | 28                        |                        |       |
|            |       | 20S#624●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 32               | 40                        |                        |       |
|            |       | 20S#632●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 39               | 56                        |                        |       |
|            |       | 20S#712●    | 3-7/16"            | 4"          | 4-1/2"    | 11' - 8" | 3/16"       | 3/8"               | 7/8"  | 1/2"            | 3/16"  | 23               | 20                        |                        |       |
|            |       | 20S#716●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 26               | 28                        |                        |       |
|            |       | 20S#724●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 33               | 40                        |                        |       |
|            |       | 20S#732●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 40               | 56                        |                        |       |
| 24"        | 24"   | 24S#712●    | 3-7/16"            | 4"          | 4-1/2"    | 11' - 8" | 3/16"       | 3/8"               | 7/8"  | 1/2"            | 3/16"  | 25               | 38                        |                        |       |
|            |       | 24S#716●    |                    |             |           |          |             | 3/8"               |       |                 | 1/4"   | 30               | 42                        |                        |       |
|            |       | 24S#724●*   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 38               | 63                        |                        |       |
|            |       | 24S#732●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 46               | 84                        |                        |       |
| 30"        | 30"   | 30S#816●    | 3-15/16"           | 5"          | 5-9/16"   | 11' - 8" | 3/16"       | 3/8"               | 7/8"  | 1/2"            | 1/4"   | 38               | 54                        |                        |       |
|            |       | 30S#824 ●   |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 50               | 70                        |                        |       |
|            |       | 30S#832●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 59               | 83                        |                        |       |
| 36"        | 36"   | 36S#916●    | 4-7/16"            | 6"          | 6-5/8"    | 11' - 7" | 3/16"       | 3/8"               | 7/8"  | 1/2"            | 1/4"   | 47               | 63                        |                        |       |
|            |       | 36S#924●    |                    |             |           |          |             | 3/8"               |       |                 | 3/8"   | 60               | 80                        |                        |       |
|            |       | 36S#932●    |                    |             |           |          |             | 1/2"               |       |                 | 1/2"   | 73               | 98                        |                        |       |

# F = Flighting Only, Blank = Screw • R = Right Hand Flighting, L = Left Hand Flighting

\* Only Right Hand Flighting is a KWS Stock Component



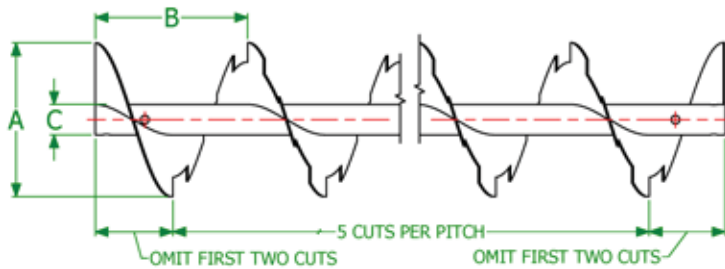
## RIBBON SCREW



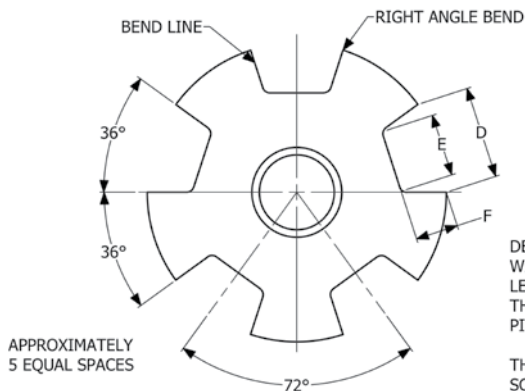
| A             | B             | Part<br>Number | Screw<br>Coupling<br>Dia | Pipe Sch 40 |         | L              | A                     |       | B               |       | D                   | E               | Average Weight                  |                           |
|---------------|---------------|----------------|--------------------------|-------------|---------|----------------|-----------------------|-------|-----------------|-------|---------------------|-----------------|---------------------------------|---------------------------|
| Screw<br>Dia. | Pitch         |                |                          | Size        | C       | Std.<br>Length | Diameter<br>Tolerance |       | Pitch Tolerance |       | Flight<br>Thickness | Flight<br>Width | Complete<br>Screw<br>(Lbs./Ft.) | Flight Only<br>(Lbs./ea.) |
|               |               |                |                          |             | Pipe OD |                | Plus                  | Minus | Plus            | Minus |                     |                 |                                 |                           |
| 4"            | NOT AVAILABLE |                |                          |             |         |                |                       |       |                 |       |                     |                 |                                 |                           |
| 6"            | 6"            | 6R312●         | 1-1/2"                   | 2"          | 2-3/8"  | 9' - 10"       | 1/16"                 | 3/16" | 3/8"            | 1/4"  | 3/16"               | 1"              | 7                               | 2                         |
| 9"            | 9"            | 9R316●         | 1-1/2"                   | 2"          | 2-3/8"  | 9' - 10"       | 1/16"                 | 3/16" | 1/2"            | 1/4"  | 1/4"                | 1-1/2"          | 10                              | 5                         |
|               |               | 9R424●         | 2"                       | 2-1/2"      | 2-7/8"  |                |                       | 1/4"  |                 |       | 3/8"                |                 | 15                              | 8                         |
| 12"           | 12"           | 12R416●        | 2"                       | 2-1/2"      | 2-7/8"  | 11' - 10"      | 1/8"                  | 5/16" | 3/4"            | 1/4"  | 1/4"                | 2"              | 14                              | 13                        |
|               |               | 12R424●        |                          |             |         | 11' - 9"       |                       |       |                 |       | 3/8"                |                 | 3/8"                            | 2-1/2"                    |
|               |               | 12R524●        | 2-7/16"                  | 3"          | 3-1/2"  |                |                       |       |                 |       |                     | 20              |                                 |                           |
|               |               | 12R624●        | 3"                       | 3-1/2"      | 4"      |                |                       | 21    |                 |       |                     | 12              |                                 |                           |
| 14"           | 14"           | 14R524●        | 2-7/16"                  | 3"          | 3-1/2"  | 11' - 9"       | 1/8"                  | 5/16" | 3/4"            | 1/4"  | 3/8"                | 2-1/2"          | 22                              | 19                        |
|               |               | 14R624●        | 3"                       | 3-1/2"      | 4"      |                |                       | 3/8"  |                 |       |                     |                 | 24                              | 19                        |
| 16"           | 16"           | 16R616●        | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 1/8"                  | 3/8"  | 3/4"            | 1/4"  | 1/4"                | 2-1/2"          | 21                              | 17                        |
|               |               | 16R624●        |                          |             |         |                |                       |       |                 |       | 3/8"                |                 | 26                              | 25                        |
| 18"           | 18"           | 18R624●        | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 3/16"                 | 3/8"  | 3/4"            | 1/2"  | 3/8"                | 3"              | 28                              | 34                        |
|               |               | 18R724●        | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       |                       |       |                 |       |                     |                 | 30                              | 34                        |
| 20"           | 20"           | 20R624●        | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 3/16"                 | 3/8"  | 7/8"            | 1/2"  | 3/8"                | 3"              | 31                              | 39                        |
|               |               | 20R724●        | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       |                       |       |                 |       |                     |                 | 32                              | 39                        |
| 24"           | 24"           | 24R724●        | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       | 3/16"                 | 3/8"  | 7/8"            | 1/2"  | 3/8"                | 3"              | 37                              | 62                        |
| 30"           | 30"           | 30R824●        | 3-15/16"                 | 5"          | 5-9/16" | 11' - 8"       | 3/16"                 | 3/8"  | 7/8"            | 1/2"  | 3/8"                | 4"              | 49                              | 69                        |
| 36"           | 36"           | 36R924●        | 4-7/16"                  | 6"          | 6-5/8"  | 11' - 7"       | 3/16"                 | 3/8"  | 7/8"            | 1/2"  | 3/8"                | 4"              | 59                              | 79                        |

• R = Right Hand Flighting, L = Left Hand Flighting

## CUT SCREW / CUT AND FOLDED SCREW



FOR INFORMATION ON TOLERANCES, PIPE SIZES, AND THICKNESSES REFER TO SECTIONAL SCREWS



DEPTH OF CUT "F" IS ONE HALF THE FLIGHT WIDTH FOR NORMAL MAXIMUM PIPE SIZE. LENGTHS "D" & "E" ARE CALCULATED FROM THE DEVELOPED O.D. FOR A STANDARD PITCH.

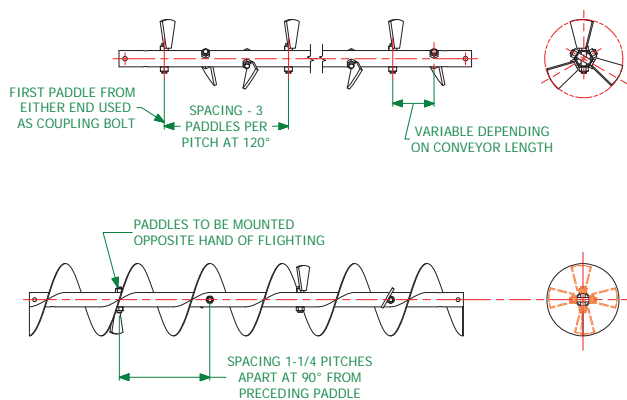
THIS ALSO APPLIES TO CUT AND FOLDED SCREW AS WELL



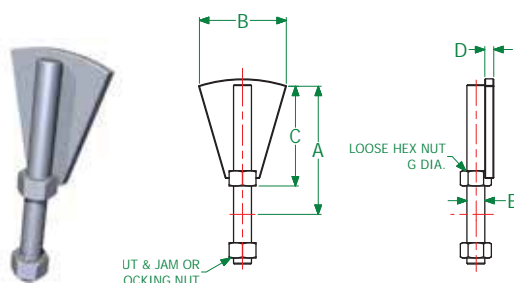
| A             | B             | Part<br>Number | Screw<br>Coupling<br>Dia | Pipe Sch 40 |         | L              | A                     |       | B                  |       | Flight<br>Thickness | D                      | E                      | F               | Average Weight                  |                           |
|---------------|---------------|----------------|--------------------------|-------------|---------|----------------|-----------------------|-------|--------------------|-------|---------------------|------------------------|------------------------|-----------------|---------------------------------|---------------------------|
| Screw<br>Dia. | Pitch         |                |                          | Size        | C       | Std.<br>Length | Diameter<br>Tolerance |       | Pitch<br>Tolerance |       |                     | Length of<br>Upper Cut | Length of<br>Lower Cut | Depth of<br>Cut | Complete<br>Screw<br>(Lbs./Ft.) | Flight Only<br>(Lbs./ea.) |
|               |               |                |                          |             | Pipe OD |                | Plus                  | Minus | Plus               | Minus |                     |                        |                        |                 |                                 |                           |
| 4"            | NOT AVAILABLE |                |                          |             |         |                |                       |       |                    |       |                     |                        |                        |                 |                                 |                           |
| 6"            | 6"            | 6S312●-#       | 1-1/2"                   | 2"          | 2-3/8"  | 9' - 10"       | 1/16"                 | 3/16" | 3/8"               | 1/4"  | 3/16"               | 2"                     | 1-1/2"                 | 7/8"            | 7                               | 2                         |
| 9"            | 9"            | 9S316●-#       | 1-1/2"                   | 2"          | 2-3/8"  | 9' - 10"       | 1/16"                 | 3/16" | 1/2"               | 1/4"  | 1/4"                | 3"                     | 2-1/8"                 | 1-1/2"          | 11                              | 6                         |
|               |               | 9S424●-#       | 2"                       | 2-1/2"      | 2-7/8"  |                |                       | 1/4"  |                    |       | 3/8"                |                        |                        |                 | 16                              | 9                         |
| 12"           | 12"           | 12S416●-#      | 2"                       | 2-1/2"      | 2-7/8"  | 11' - 10"      | 1/8"                  | 5/16" | 3/4"               | 1/4"  | 1/4"                | 4"                     | 2-3/4"                 | 2"              | 15                              | 14                        |
|               |               | 12S424●-#      |                          |             |         |                |                       |       |                    |       | 3/8"                |                        |                        |                 | 19                              | 20                        |
|               |               | 12S524●-#      | 2-7/16"                  | 3"          | 3-1/2"  | 11' - 9"       |                       | 3/8"  |                    |       | 21                  |                        |                        |                 | 15                              |                           |
|               |               | 12S624●-#      | 3"                       | 3-1/2"      | 4"      |                |                       |       |                    |       | 22                  |                        |                        |                 | 13                              |                           |
| 14"           | 14"           | 14S524●-#      | 2-7/16"                  | 3"          | 3-1/2"  | 11' - 9"       | 1/8"                  | 5/16" | 3/4"               | 1/4"  | 3/8"                | 4-5/8"                 | 3-1/8"                 | 2-1/2"          | 23                              | 20                        |
|               |               | 14S624●-#      | 3"                       | 3-1/2"      | 4"      |                |                       | 3/8"  |                    |       |                     |                        |                        |                 | 25                              | 20                        |
| 16"           | 16"           | 16S616●-#      | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 1/8"                  | 3/8"  | 3/4"               | 1/4"  | 1/4"                | 5-1/4"                 | 3-1/2"                 | 3"              | 22                              | 18                        |
|               |               | 16S624●-#      |                          |             |         |                |                       |       |                    |       | 3/8"                |                        |                        |                 | 27                              | 26                        |
| 18"           | 18"           | 18S624●-#      | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 3/16"                 | 3/8"  | 3/4"               | 1/2"  | 3/8"                | 6"                     | 3-7/8"                 | 3-3/8"          | 29                              | 35                        |
|               |               | 18S724●-#      | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       |                       |       |                    |       |                     |                        |                        |                 | 31                              | 35                        |
| 20"           | 20"           | 20S624●-#      | 3"                       | 3-1/2"      | 4"      | 11' - 9"       | 3/16"                 | 3/8"  | 7/8"               | 1/2"  | 3/8"                | 6-5/8"                 | 4-1/4"                 | 3-7/8"          | 32                              | 40                        |
|               |               | 20S724●-#      | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       |                       |       |                    |       |                     |                        |                        |                 | 33                              | 40                        |
| 24"           | 24"           | 24S724●-#      | 3-7/16"                  | 4"          | 4-1/2"  | 11' - 8"       | 3/16"                 | 3/8"  | 7/8"               | 1/2"  | 3/8"                | 7-7/8"                 | 4-7/8"                 | 4-7/8"          | 38                              | 63                        |
| 30"           | 30"           | 30S824●-#      | 3-15/16"                 | 5"          | 5-9/16" | 11' - 8"       | 3/16"                 | 3/8"  | 7/8"               | 1/2"  | 3/8"                | 9-9/32"                | 5-23/32"               | 5-3/4"          | 50                              | 70                        |
| 36"           | 36"           | 36S924●-#      | 4-7/16"                  | 6"          | 6-5/8"  | 11' - 7"       | 3/16"                 | 3/8"  | 7/8"               | 1/2"  | 3/8"                | 11-1/8"                | 7-3/16"                | 6-3/8"          | 60                              | 80                        |

• R = Right Hand Flighting, L = Left Hand Flighting # CF = Cut Flight Screw, CFF = Cut and Folded Flight Screw

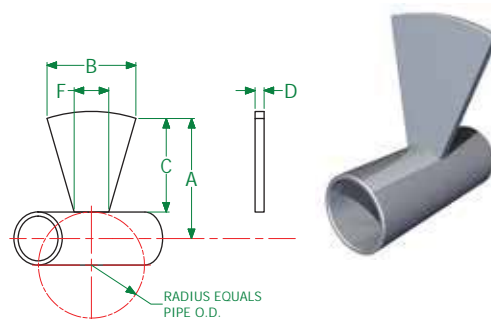
## PADDLE SCREW CONVEYORS



## PADDLES



**STYLE 1: ADJUSTABLE**



**STYLE 2: WELDED**

| Screw Dia. | Part Number | Cplg. Dia. | Pipe Size | A       | B        | C        | D     | E    | F        | G    | Wt. Each Paddle (Lbs.) |
|------------|-------------|------------|-----------|---------|----------|----------|-------|------|----------|------|------------------------|
| 4"         | PAD42       | 1"         | 1-1/4"    | 2"      | 1-1/2"   | 1-3/16"  | 3/16" | 3/8" | 7/8"     | 1/2" | 0.25                   |
| 6"         | PAD63       | 1-1/2"     | 2"        | 3"      | 2-1/16"  | 1-13/16" | 1/4"  | 1/2" | 1-7/16"  | 5/8" | 0.50                   |
| 9"         | PAD93       | 1-1/2"     | 2"        | 4-1/2"  | 2-3/4"   | 3-5/16"  | 1/4"  | 1/2" | 1-1/2"   | 5/8" | 0.50                   |
|            | PAD94       | 2"         | 2-1/2"    |         |          | 3-1/16"  |       | 5/8" | 1-3/4"   | 3/4" | 0.75                   |
| 12"        | PAD124      | 2"         | 2-1/2"    | 6"      | 3-11/16" | 4-9/16"  | 3/8"  | 5/8" | 1-3/4"   | 3/4" | 1.50                   |
|            | PAD125      | 2-7/16"    | 3"        |         |          | 4-1/4"   |       | 5/8" | 1-7/8"   | 3/4" | 1.75                   |
|            | PAD126      | 3"         | 3-1/2"    |         |          | 4"       |       | 3/4" | 2"       | 7/8" | 2.00                   |
| 14"        | PAD145      | 2-7/16"    | 3"        | 7"      | 4-1/4"   | 5-1/4"   | 3/8"  | 5/8" | 2"       | 3/4" | 2.25                   |
|            | PAD146      | 3"         | 3-1/2"    |         |          | 5"       |       | 3/4" | 2-1/8"   | 7/8" | 2.50                   |
| 16"        | PAD166      | 3"         | 3-1/2"    | 8"      | 4-15/16" | 6"       | 3/8"  | 3/4" | 2-1/4"   | 7/8" | 3.25                   |
|            | PAD166      | 3"         | 4"        |         |          | 5-3/4"   |       | 7/8" | 2-3/8"   | 1"   | 3.50                   |
| 18"        | PAD186      | 3"         | 3-1/2"    | 9"      | 5-3/8"   | 7"       | 3/8"  | 3/4" | 2-1/8"   | 7/8" | 4.00                   |
|            | PAD187      | 3-7/16"    | 4"        |         |          | 6-3/4"   |       | 7/8" | 2-1/4"   | 1"   | 4.25                   |
| 20"        | PAD206      | 3"         | 3-1/2"    | 10"     | 6-1/8"   | 8"       | 3/8"  | 3/4" | 2-7/16"  | 7/8" | 4.75                   |
|            | PAD207      | 3-7/16"    | 4"        |         |          | 7-3/4"   |       | 7/8" | 2-9/16"  | 1"   | 5.00                   |
| 24"        | PAD247      | 3-7/16"    | 4"        | 12-1/8" | 7-3/8"   | 9-7/8"   | 1/2"  | 7/8" | 2-11/16" | 1"   | 6.75                   |
| 30"        | PAD308      | 3-15/16"   | 5"        | 15"     | 9-1/2"   | 12"      | 1/2"  | 7/8" | 3-1/4"   | 1"   | 7.50                   |
| 36"        | PAD369      | 4-7/16"    | 6"        | 18"     | 11-3/8"  | 15"      | 5/8"  | 7/8" | 3-9/16"  | 1"   | 9.25                   |

## SCREW CONVEYOR SURFACE FINISHES

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The surface finish of the interior and exterior of a screw conveyor can be very important to the success of the overall bulk material process. Certain bulk materials such as chemicals or food products require special finishes to maintain the integrity of the bulk material and prevent contamination. Understanding the bulk material process is very important to determining the proper surface finish of a screw conveyor.

Most industrial applications such as conveying limestone, biosolids or offal require no special polishing of the welds, flights or pipe on the interior of a screw conveyor. Likewise, the exterior of a screw conveyor requires no special polishing of the welds or surfaces of the troughs, trough ends or covers. Pits and crevices are allowed at welded joints because the bulk material will not contaminate or corrode.

Special industrial applications such as conveying food ingredients or specialty chemicals require special polishing of the welds, flights and pipe on the interior of a screw conveyor. Continuous welding of the flights to both sides of the center pipe is typically required to eliminate any pits or crevices. The surfaces of the flights, welds and pipe are then polished to a specific grit finish to meet the requirements of the application. The exterior of a screw conveyor may require special welding and polishing of the troughs, trough ends and covers. No pits or crevices are allowed at welded joints because the bulk material could be contaminated or cause corrosion.

The KWS screw conveyor surface finishes shown below address the needs of almost every bulk material application. Surface finishes are called out for the interior and exterior of a screw conveyor including the welds, flights, pipe, troughs, trough ends and covers.

The KWS screw conveyor surface finishes are much more comprehensive when compared to the CEMA surface finishes. KWS addresses the surface finish requirements of the welds, flights, pipe, troughs, trough ends and covers while CEMA only addresses the surface finish of the welds on a screw conveyor. The CEMA surface finish call outs are incomplete and can be confusing to the Customer, possibly creating a problem.

Our goal at KWS is to exceed the expectations of our Customers by providing screw conveyors with the proper surface finish for the application and process.

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## SCREW CONVEYOR SURFACE FINISHES

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### **Screw Assembly:**

#### KWS Industrial Finish 1S

Weld: Weld spatter and slag removed, 40 to 50 grit finish, pits and crevices permissible (CEMA II)

Flight Surface: Mill finish, no grinding or polishing on steel surfaces

Pipe: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 2S

Weld: Weld spatter and slag removed, 80 to 100 grit finish, pits and crevices permissible (CEMA III)

Flight Surface: Mill finish, no grinding or polishing on steel surfaces

Pipe: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 3S

Weld: Weld spatter and slag removed, welds as laid, no pits or crevices permissible (No CEMA equivalent)

Flight Surface: Mill finish, no grinding or polishing on steel surfaces

Pipe: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 1SP

Weld, Flight Surface and Pipe: 150 grit finish on all surfaces, no pits or crevices permissible (No CEMA Equivalent)

### **Trough Assembly (Including Trough Ends and Covers)**

#### KWS Industrial Finish 1T – Interior and/or Exterior

Weld: Weld spatter and slag removed, 40 to 50 grit finish, pits and crevices permissible (CEMA II)

Trough Surface: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 2T – Interior and/or Exterior

Weld: Weld spatter and slag removed, 80 to 100 grit finish, pits and crevices permissible (CEMA III)

Trough Surface: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 3T – Interior and/or Exterior

Weld: Weld spatter and slag removed, welds as laid, no pits or crevices permissible (No CEMA equivalent)

Trough Surface: Mill finish, no grinding or polishing on steel surfaces

#### KWS Industrial Finish 1TP – Interior Only

Weld: 150 grit finish, no pits or crevices permissible (CEMA IV)

Trough Surface: Mill finish, no grinding or polishing on 2B surfaces, plate surfaces to be polished to 150 grit finish



## **SCREW CONVEYOR SURFACE FINISHES**

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KWS Industrial Finish 2TP – Interior Only

Weld and Trough Surface: 150 grit finish on all surfaces, no pits or crevices permissible (No CEMA Equivalent)

Standard Exterior Paint Finish for Carbon Steel Components and Assemblies  
(Up to 220-Degrees F)

Surface Preparation: Hand tool clean per SSPC-SP2

Paint: One shop coat of KWS gray enamel, 2 to 3 mils minimum DFT

Standard Exterior Paint Finish for Carbon Steel Components and Assemblies  
(Between 220 and 600-Degrees F)

Surface Preparation: Near white blast per SSPC-SP10

Paint: One shop coat of KWS high temperature paint, 2 to 3 mils minimum DFT

## KWS HARDSURFACING FOR ABRASIVE APPLICATIONS

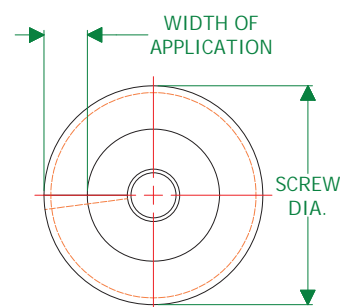
KWS provides screw conveyors manufactured from many commercially available abrasion-resistant materials. Metals such as AR-235, AR-400 and AR-500 plate are used in many abrasive applications. Hardsurfacing, also known as hardfacing, is the application of wear-resistant metals to the flight surface by means of welding. KWS hardsurfaced screws are designed to eliminate excessive wear on flights while conveying abrasive bulk materials. A hardsurface alloy is typically welded to the carrying side of the flighting face. When handling extremely abrasive bulk materials such as glass cullet or wood bark, the non-carrying side and outside diameter of the flight as well as the outer surface of the center pipe can be hardsurfaced to prevent wear of the softer base materials.

Hardsurfacing materials manufactured by Postle Industries, Allied Welding and Stellite are commonly used by KWS. Many other hardsurface alloys are available. The chart provided shows the standard width of hardsurfacing for a specific screw conveyor diameter. Please consult KWS Engineering or your KWS Salesperson to determine the best solution for your application.

Additional consideration must be given to selecting the proper coupling shafts and hanger bearings for an abrasive application. Hard iron bearings and hardened coupling shafts are sufficient for most moderately abrasive applications such as handling crushed limestone or Portland cement. For severely abrasive applications such as handling alumina or flyash, Stellite sleeved bearings and couplings shafts are typically required.

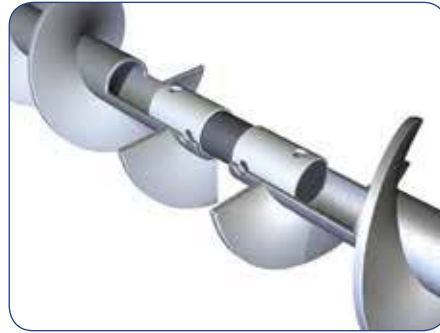
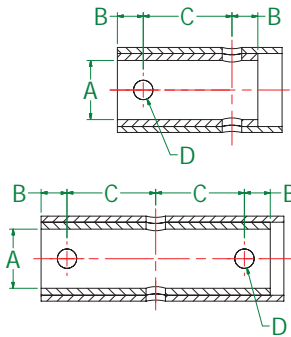


| Screw Dia. | Width of Application |
|------------|----------------------|
| 4"         | 3/4"                 |
| 6"         | 1"                   |
| 9"         | 1-1/2"               |
| 12"        | 2"                   |
| 14"        | 2"                   |
| 16"        | 2-1/2"               |
| 18"        | 2-1/2"               |
| 20"        | 3"                   |
| 24"        | 3"                   |
| 30"        | 4"                   |
| 36"        | 4"                   |



## INTERNAL COLLARS

Internal collars, sometimes referred to as bushings, are used to reduce the inside diameter of the center pipe of a screw to match standard CEMA shaft sizes and to increase the torque rating of the CEMA bolted connection. For standard pipe sizes, internal collars are manufactured from special seamless tubing and match fit to the bore of the pipe of a screw. Internal collars are plug welded in place for a permanent connection. For larger than standard pipe sizes, KWS creates a shrink fit connection between the internal collar and pipe. Then, the internal collars are plug welded in place for a permanent connection.



### NOMENCLATURE

| I C 2 7 1 6 3 4 0 3 B |  |                  |  |               |  |                |  |              |  |
|-----------------------|--|------------------|--|---------------|--|----------------|--|--------------|--|
| IC = Internal Collar  |  | Shaft Diameter   |  | Pipe Schedule |  | Drilling       |  | Pipe Size    |  |
|                       |  | 1 = 1"           |  | 40            |  | Blank = 2 Bolt |  | 114 = 1-1/4" |  |
|                       |  | 112 = 1-1/2"     |  | 80            |  | 3B = 3 Bolt    |  | 312 = 3-1/2" |  |
|                       |  | 2 = 2"           |  |               |  |                |  | 2 = 2"       |  |
|                       |  | 3716 = 3-7/16"   |  |               |  |                |  | 4 = 4"       |  |
|                       |  | 31516 = 3-15/16" |  |               |  |                |  | 212 = 2-1/2" |  |
|                       |  | 2716 = 2-7/16"   |  |               |  |                |  | 5 = 5"       |  |
|                       |  | 4716 = 4-7/16"   |  |               |  |                |  | 6 = 6"       |  |
|                       |  |                  |  |               |  |                |  | 3 = 3"       |  |

| Part Number | A              |        | B                   | C               | D                    | Weight (Lbs.) |        |
|-------------|----------------|--------|---------------------|-----------------|----------------------|---------------|--------|
|             | Bore Dimension |        | Spacing<br>1st Bolt | Bolt<br>Centers | Nominal<br>Bolt Size | 2 Bolt        | 3 Bolt |
|             | Min.           | Max.   |                     |                 |                      |               |        |
| IC111440*   | 1.005"         | 1.016" | 1/2"                | 2"              | 3/8"                 | 3             | 4      |
| IC112240*   | 1.505"         | 1.516" | 7/8"                | 3"              | 1/2"                 | 3             | 4      |
| IC221240*   | 2.005"         | 2.016" | 7/8"                | 3"              | 5/8"                 | 3             | 4      |
| IC2716340*  | 2.443"         | 2.458" | 15/16"              | 3"              | 5/8"                 | 4             | 7      |
| IC331240*   | 3.005"         | 3.025" | 1"                  | 3"              | 3/4"                 | 4             | 7      |
| IC3440*     | 3.005"         | 3.025" | 1"                  | 3"              | 3/4"                 | 4             | 7      |
| IC3716440*  | 3.443"         | 3.467" | 1-1/2"              | 4"              | 7/8"                 | 8             | 12     |
| IC31516540  | 3.943"         | 3.967" | 1-11/16"            | 4"              | 1-1/8"               | 17            | 27     |
| IC4716640   | 4.443"         | 4.467" | 1-7/8"              | 4"              | 1-1/4"               | 35            | 50     |

\* KWS Stock Component in 2-bolt only

## END LUGS

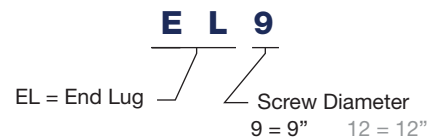
End lugs are used to provide extra support to the first and last flight of a screw section and are located on the non-carrying side of the flight. End lugs are manufactured from heavy-gauge steel and continuously welded to the flight and center pipe of a screw section. End lugs are designed to provide maximum support with the least obstruction of material flow.

| Screw Dia. | Part Number |
|------------|-------------|
| 6" to 9"   | EL9*        |
| 12" to 16" | EL12*       |

\* KWS Stock Component



### NOMENCLATURE



## COUPLING BOLTS

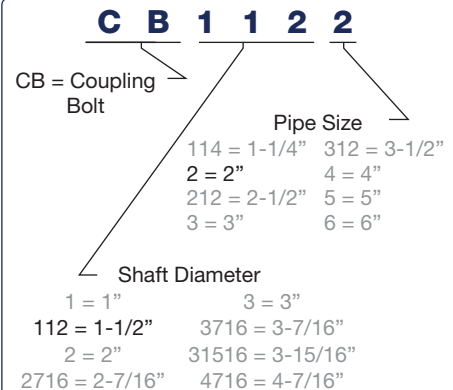
Coupling bolts are manufactured from various high-strength carbon steels and 18-8 stainless steels. KWS stocks Grade 5 carbon steel and 18-8 stainless steel coupling bolts. The shank length of a coupling bolt is equal to the measured outside diameter of the center pipe of the screw to provide maximum shear area and strength. It is very important to only use the correct coupling bolt for corresponding screw and pipe size.

| Cplg. Dia. | Outside Pipe Dia | Pipe Size (Sch 40) | Bolt Size        | Part Number | Wt. Each (Lbs.) |
|------------|------------------|--------------------|------------------|-------------|-----------------|
| 1"         | 1-11/16"         | 1-1/4"             | 3/8" x 2-1/16"   | CB1114*     | 0.13            |
| 1-1/2"     | 2-3/8"           | 2"                 | 1/2" x 3"        | CB1122*     | 0.32            |
| 2"         | 2-7/8"           | 2-1/2"             | 5/8" x 3-5/8"    | CB2212*     | 0.56            |
| 2-7/16"    | 3-1/2"           | 3"                 | 5/8" x 4-3/8"    | CB27163*    | 0.63            |
| 3"         | 4"               | 3-1/2"             | 3/4" x 5"        | CB3312*     | 0.91            |
| 3"         | 4-1/2"           | 4"                 | 3/4" x 5-1/2"    | CB34*       | 1.05            |
| 3-7/16"    | 4-1/2"           | 4"                 | 7/8" x 5-1/2"    | CB37164*    | 1.59            |
| 3-15/16"   | 5-9/16"          | 5"                 | 1-1/8" x 7-1/16" | CB315165    | 3.14            |
| 4-7/16"    | 6-5/8"           | 6"                 | 1-1/4" x 7-1/2"  | CB47166     | 4.62            |

\* KWS Stock Component



### NOMENCLATURE



## HANGERS

Hangers are intermediate support brackets located between screw sections along the length of a screw conveyor. Hangers allow for the use of multiple screw sections. Many different hanger styles are available, depending on the application. Style 216 and 226 hangers are the most widely used and are in stock at KWS. Hangers are generally used when conveying non-abrasive and free-flowing bulk materials. The bulk material must be able to flow around the hanger. Hangers are not recommended when conveying abrasive and sluggish bulk materials.

### NOMENCLATURE

| H G R 1 2 2 2 6 2 7 1 6 |  |  |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|--|--|
| HGR = Hanger            |  |  | Screw Diameter   |  |  |  | Trough Type  |  | Blank = Standard<br>GP = Drilled for use with grease pipe      |
|                         |  |  | 4 = 4"    14 = 14"    24 = 24"<br>6 = 6"    16 = 16"    30 = 30"<br>9 = 9"    18 = 18"    36 = 36"<br>12 = 12"    20 = 20" |  |  |  | Blank = U-Trough<br>F = Flared Trough              |  |  |
|                         |  |  | Style  |  |  |  | Shaft Diameter                                     |  |  |
|                         |  |  | 216    316<br>220    326<br>226    660<br>230    670   |  |  |  | 1 = 1"<br>112 = 1-1/2"<br>2 = 2"<br>2716 = 2-7/16" |  | 3 = 3"<br>3716 = 3-7/16"<br>31516 = 3-15/16"<br>4716 = 4-7/16" |

#### Style 216

Style 216 hangers are an inside flush mounted hanger. The double body bar provides extra rigidity for heavier screw sections in more demanding applications. The flush mounted top bar bolts to the inside of the trough flanges and allows for the use of standard trough covers.



#### Style 220

Style 220 hangers are a top mounted hanger. The combination body bar provides rigidity for light and medium duty applications while allowing minimal obstruction of material flow. The top mounted top bar bolts to the top of the trough flanges and requires the use of special covers.



#### Style 226

Style 226 hangers are an inside flush mounted hanger. The combination body bar provides rigidity for light and medium duty applications while allowing minimal obstruction of material flow. The flush mounted top bar bolts to the inside of the trough flanges and allows for the use of standard trough covers.





## HANGERS



### Style 230

Style 230 hangers are a top mounted hanger. The double body bar provides extra rigidity for heavier screw sections in more demanding applications. The top mounted top bar bolts to the top of the trough flanges and requires the use of special covers.



### Style 316

Style 316 hangers are an inside flush mounted hanger. The top bar is self-adjusting to compensate for thermal expansion in high temperature applications. The double body bar provides extra rigidity for heavier screw sections in more demanding applications. The flush mounted top bar bolts to the inside of the trough flanges and allows for the use of standard trough covers.



### Style 326

Style 326 hangers are an inside flush mounted hanger. The top bar is self-adjusting to compensate for thermal expansion in high temperature applications. The combination body bar provides rigidity for light and medium duty applications while allowing minimal obstruction of material flow. The flush mounted top bar bolts to the inside of the trough flanges and allows for the use of standard trough covers.



### Style 660

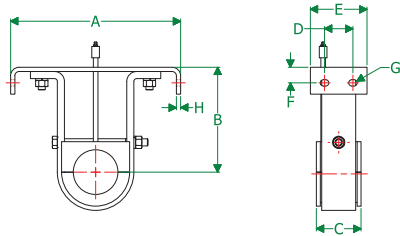
Style 660 hangers are a top mounted hanger. Supplied with a dust-tight sealed ball bearing, style 660 hangers allow for 4-degrees of shaft misalignment and temperatures up to 240-degrees F. The pipe body bar provides rigidity for light and medium duty applications while allowing minimal obstruction of material flow. The top mounted top bar bolts to the top of the trough flanges and requires the use of special covers.



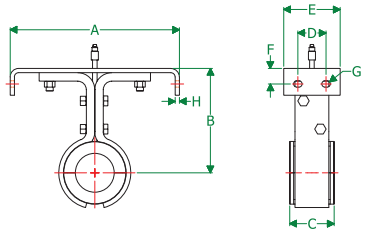
### Style 670

Style 670 hangers are an inside flush mounted hanger. Supplied with a dust-tight sealed ball bearing, style 670 hangers allow for 4-degrees of shaft misalignment and temperatures up to 240-degrees F. The pipe body bar provides rigidity for light and medium duty applications while allowing minimal obstruction of material flow. The flush mounted top bar bolts to the inside of the trough flanges and allows for the use of standard trough covers.

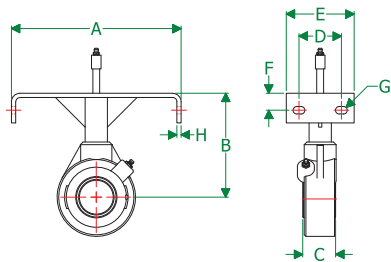
## U-TROUGH HANGERS



**Style 216 for  
U - Trough**



**Style 226 for  
U - Trough**



**Style 670 for  
U - Trough**



| Screw<br>Dia. | Shaft<br>Dia        | A   | B       | C              | D      | E      | F      | G<br>Bolts | H     | Part Number                            | Weight<br>(Lbs.) |                |                |
|---------------|---------------------|-----|---------|----------------|--------|--------|--------|------------|-------|--|------------------|----------------|----------------|
|               |                     |     |         |                |        |        |        |            |       |  | 216              | 226            | 670            |
| 4"            | 1"                  | 5"  | 3-5/8"  | 1-1/2"         | 2"     | 4"     | 5/8"   | 1/4"       | 3/16" | HGR4#1*†•                              | 3                | 5              | 5              |
| 6"            | 1-1/2"              | 7"  | 4-1/2"  | 2"             | 2-1/2" | 4"     | 3/4"   | 3/8"       | 1/4"  | HGR6#112*®                             | 5                | 7              | 7              |
| 9"            | 1-1/2"<br>2"        | 10" | 6-1/8"  | 2"<br>2"       | 2-1/2" | 4"     | 1"     | 3/8"       | 1/4"  | HGR9#112*®<br>HGR9#2*®                 | 7<br>9           | 9<br>11        | 8<br>9         |
| 12"           | 2"<br>2-7/16"<br>3" | 13" | 7-3/4"  | 2"<br>3"<br>3" | 2-1/2" | 5"     | 1-1/4" | 1/2"       | 3/8"  | HGR12#2*®<br>HGR12#2716*®<br>HGR12#3*® | 14<br>18<br>21   | 16<br>21<br>28 | 12<br>20<br>30 |
| 14"           | 2-7/16"<br>3"       | 15" | 9-1/4"  | 3"<br>3"       | 2-1/2" | 5"     | 1-3/8" | 1/2"       | 3/8"  | HGR14#2716*®<br>HGR14#3*®              | 23<br>25         | 22<br>26       | 21<br>32       |
| 16"           | 3"                  | 17" | 10-5/8" | 3"             | 2-1/2" | 5"     | 1-3/8" | 1/2"       | 3/8"  | HGR16#3*®                              | 28               | 39             | 35             |
| 18"           | 3"<br>3-7/16"       | 19" | 12-1/8" | 3"<br>4"       | 3-1/2" | 5"     | 1-5/8" | 5/8"       | 1/2"  | HGR18#3*®<br>HGR18#3716*®              | 34<br>44         | 41<br>49       | 40<br>46       |
| 20"           | 3"<br>3-7/16"       | 21" | 13-1/2" | 3"<br>4"       | 3-1/2" | 5"     | 1-5/8" | 5/8"       | 1/2"  | HGR20#3*®<br>HGR20#3716*®              | 36<br>47         | 43<br>51       | 45<br>52       |
| 24"           | 3-7/16"             | 25" | 16-1/2" | 4"             | 3-1/2" | 5"     | 1-3/4" | 5/8"       | 1/2"  | HGR24#3716*®                           | 53               | 67             | 63             |
| 30"           | 3-15/16"            | 31" | 19-1/2" | 4"             | 3-1/2" | 5-1/2" | 1-3/4" | 3/4"       | 1/2"  | HGR30#31516•®                          | 68               | 79             | 68             |
| 36"           | 4-7/16"             | 37" | 22-1/2" | 5"             | 3-1/2" | 5-1/2" | 1-3/4" | 3/4"       | 1/2"  | HGR36#4716•®                           | 83               | 88             | 83             |

\* KWS Stock Component only for 216 and 226 standard style hangers # = 216, 226, or 670

† Not Available for Style 216

• Not Available for Style 670

® = Blank=Standard, GP=Drilled for grease pipe

## U-TROUGH HANGERS



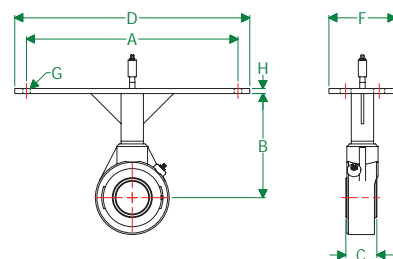
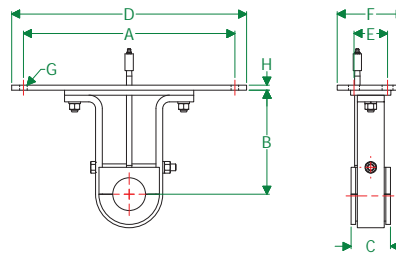
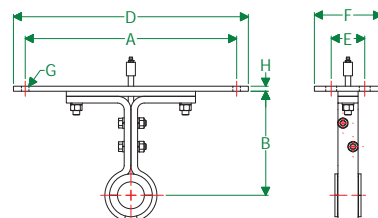
**Style 220 for  
U - Trough**



**Style 230 for  
U - Trough**



**Style 660 for  
U - Trough**

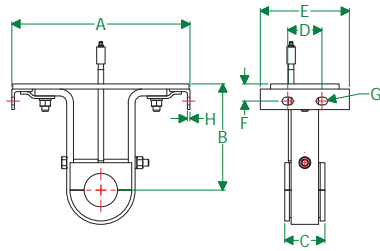


| Screw<br>Dia. | Shaft Dia.          | A       | B       | C              | D       | E      | F      | G<br>Bolts | H    | Part Number                         | Weight<br>(Lbs.) |                |                |
|---------------|---------------------|---------|---------|----------------|---------|--------|--------|------------|------|-------------------------------------|------------------|----------------|----------------|
|               |                     |         |         |                |         |        |        |            |      |                                     | 220              | 230            | 660            |
| 4"            | 1"                  | 6-1/4"  | 3-5/8"  | 1-1/2"         | 7-1/4"  | 2"     | 4"     | 1/4"       | 1/4" | HGR4#1†•                            | 5                | 5              | 5              |
| 6"            | 1-1/2"              | 8-3/4"  | 4-1/2"  | 2"             | 9-3/4"  | 2-1/2" | 4"     | 3/8"       | 1/4" | HGR6#112@                           | 7                | 7              | 7              |
| 9"            | 1-1/2"<br>2"        | 12-1/4" | 6-1/8"  | 2"<br>2"       | 13-1/2" | 2-1/2" | 4"     | 3/8"       | 1/4" | HGR9#112@<br>HGR9#2@                | 9<br>11          | 9<br>11        | 8<br>9         |
| 12"           | 2"<br>2-7/16"<br>3" | 15-3/4" | 7-3/4"  | 2"<br>3"<br>3" | 17-1/2" | 2-1/2" | 5"     | 1/2"       | 3/8" | HGR12#2@<br>HGR12#2716@<br>HGR12#3@ | 16<br>21<br>28   | 16<br>21<br>28 | 12<br>20<br>30 |
| 14"           | 2-7/16"<br>3"       | 17-3/4" | 9-1/4"  | 3"<br>3"       | 19-1/2" | 2-1/2" | 5"     | 1/2"       | 3/8" | HGR14#2716@<br>HGR14#3@             | 26<br>33         | 26<br>33       | 21<br>32       |
| 16"           | 3"                  | 19-3/4" | 10-5/8" | 3"             | 21-1/2" | 2-1/2" | 5"     | 1/2"       | 3/8" | HGR16#3@                            | 39               | 39             | 35             |
| 18"           | 3"<br>3-7/16"       | 22-1/4" | 12-1/8" | 3"<br>4"       | 24-1/2" | 3-1/2" | 5"     | 5/8"       | 1/2" | HGR18#3@<br>HGR18#3716@             | 41<br>49         | 41<br>49       | 40<br>46       |
| 20"           | 3"<br>3-7/16"       | 24-1/2" | 13-1/2" | 3"<br>4"       | 26-1/2" | 3-1/2" | 5"     | 5/8"       | 1/2" | HGR20#3@<br>HGR20#3716@             | 43<br>51         | 43<br>51       | 45<br>58       |
| 24"           | 3-7/16"             | 28-1/4" | 16-1/2" | 4"             | 30-1/2" | 3-1/2" | 5"     | 5/8"       | 1/2" | HGR24#3716@                         | 67               | 67             | 69             |
| 30"           | 3-15/16"            | 36-1/4" | 19-1/2" | 4"             | 38-1/2" | 3-1/2" | 5-1/2" | 3/4"       | 1/2" | HGR30#31516•@                       | 73               | 73             | 75             |
| 36"           | 4-7/16"             | 42-1/4" | 22-1/2" | 5"             | 44-1/2" | 3-1/2" | 5-1/2" | 3/4"       | 1/2" | HGR36#4716•@                        | 88               | 88             | 91             |

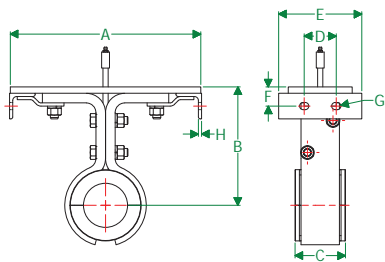
# = 220, 230, or 660 † Not Available for Style 230 • Not Available for Style 660

@ = Blank=Standard, GP=Drilled for grease pipe

## U-TROUGH HANGERS



**Style 316 for  
U - Trough**



**Style 326 for  
U - Trough**



| Screw Dia. | Shaft Dia           | A   | B       | C              | D      | E            | F      | G Bolts | H     | Part Number                         | Weight (Lbs.)  |                |
|------------|---------------------|-----|---------|----------------|--------|--------------|--------|---------|-------|-------------------------------------|----------------|----------------|
|            |                     |     |         |                |        |              |        |         |       |                                     | 220            | 230            |
| 4"         | 1"                  | 5"  | 3-5/8"  | 1-1/2"         | 2"     | 5"           | 5/8"   | 1/4"    | 1/8"  | HGR4#1†@                            | 5              | 5              |
| 6"         | 1-1/2"              | 7"  | 4-1/2"  | 2"             | 2-1/2" | 6"           | 3/4"   | 3/8"    | 1/8"  | HGR6#112@                           | 6              | 6              |
| 9"         | 1-1/2"<br>2"        | 10" | 6-1/8"  | 2"<br>2"       | 2-1/2" | 6"           | 1"     | 3/8"    | 3/16" | HGR9#112@<br>HGR9#2@                | 8<br>10        | 8<br>10        |
| 12"        | 2"<br>2-7/16"<br>3" | 13" | 7-3/4"  | 2"<br>3"<br>3" | 2-1/2" | 6-1/2"       | 1-1/4" | 1/2"    | 3/16" | HGR12#2@<br>HGR12#2716@<br>HGR12#3@ | 15<br>20<br>25 | 15<br>20<br>25 |
| 14"        | 2-7/16"<br>3"       | 15" | 9-1/4"  | 3"<br>3"       | 2-1/2" | 6-1/2"       | 1-3/8" | 1/2"    | 1/4"  | HGR14#2716@<br>HGR14#3@             | 24<br>31       | 24<br>29       |
| 16"        | 3"                  | 17" | 10-5/8" | 3"             | 2-1/2" | 6-1/2"       | 1-3/8" | 1/2"    | 1/4"  | HGR16#3@                            | 36             | 35             |
| 18"        | 3"<br>3-7/16"       | 19" | 12-1/8" | 3"<br>4"       | 3-1/2" | 6-1/2"<br>7" | 1-5/8" | 5/8"    | 1/4"  | HGR18#3@<br>HGR18#3716@             | 36<br>48       | 34<br>47       |
| 20"        | 3"<br>3-7/16"       | 21" | 13-1/2" | 3"<br>4"       | 3-1/2" | 6-1/2"<br>7" | 1-5/8" | 5/8"    | 1/4"  | HGR20#3@<br>HGR20#3716@             | 40<br>51       | 40<br>51       |
| 24"        | 3-7/16"             | 25" | 16-1/2" | 4"             | 3-1/2" | 7"           | 1-3/4" | 5/8"    | 5/16" | HGR24#3716@                         | 58             | 58             |
| 30"        | 3-15/16"            | 31" | 19-1/2" | 4"             | 3-1/2" | 8"           | 1-3/4" | 3/4"    | 3/8"  | HGR30#31516@                        | 63             | 64             |
| 36"        | 4-7/16"             | 37" | 22-1/2" | 5"             | 3-1/2" | 8"           | 1-3/4" | 3/4"    | 3/8"  | HGR36#4716@                         | 80             | 82             |

# = 316 or 326    † Not Available for Style 316    @ = Blank=Standard, GP=Drilled for grease pipe

## FLARED TROUGH HANGERS



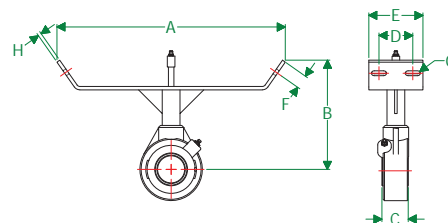
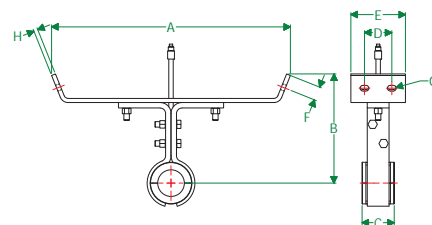
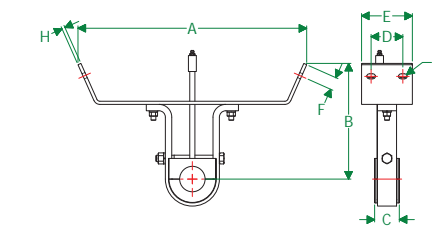
**Style 216 for  
Flared Trough**



**Style 226 for  
Flared Trough**



**Style 670 for  
Flared Trough**



| Screw<br>Dia. | Shaft Dia           | A       | B       | C              | D      | E  | F      | G<br>Bolts | H    | Part Number                            | Weight<br>(Lbs.) |                |                |
|---------------|---------------------|---------|---------|----------------|--------|----|--------|------------|------|--|------------------|----------------|----------------|
|               |                     |         |         |                |        |    |        |            |      |  | 220              | 230            | 660            |
| 4"            | NOT AVAILABLE       |         |         |                |        |    |        |            |      |  |                  |                |                |
| 6"            | 1-1/2"              | 14"     | 7"      | 2"             | 2-1/2" | 4" | 3/4"   | 3/8"       | 1/4" | HGR6#F112@                             | 7                | 8              | 8              |
| 9"            | 1-1/2"<br>2"        | 18"     | 9"      | 2"<br>2"       | 2-1/2" | 4" | 1"     | 3/8"       | 1/4" | HGR9#F112@<br>HGR9#F2@                 | 8<br>10          | 10<br>13       | 9<br>11        |
| 12"           | 2"<br>2-7/16"<br>3" | 22"     | 10"     | 2"<br>3"<br>3" | 2-1/2" | 5" | 1-1/4" | 1/2"       | 3/8" | HGR12#F2@<br>HGR12#F2716@<br>HGR12#F3@ | 15<br>20<br>24   | 18<br>23<br>32 | 14<br>23<br>35 |
| 14"           | 2-7/16"<br>3"       | 24"     | 11"     | 3"<br>3"       | 2-1/2" | 5" | 1-3/8" | 1/2"       | 1/4  | HGR14#F2716†@<br>HGR14#F3†@            | 25<br>28         | 29<br>27       | 24<br>37       |
| 16"           | 3"                  | 28"     | 11-1/2" | 3"             | 2-1/2" | 5" | 1-3/8" | 1/2"       | 1/4  | HGR16#F3†@                             | 31               | 43             | 49             |
| 18"           | 3"<br>3-7/16"       | 31"     | 12-1/8" | 3"<br>4"       | 3-1/2" | 6" | 1-5/8" | 5/8"       | 3/8" | HGR18#F3†@<br>HGR18#F3716†@            | 37<br>50         | 45<br>55       | 45<br>52       |
| 20"           | 3"<br>3-7/16"       | 34"     | 13-1/2" | 3"<br>4"       | 3-1/2" | 6" | 1-5/8" | 5/8"       | 3/8" | HGR20#F3†@<br>HGR20#F3716†@            | 39<br>53         | 47<br>57       | 50<br>58       |
| 24"           | 3-7/16"             | 40"     | 16-1/2" | 4"             | 3-1/2" | 6" | 1-5/8" | 5/8"       | 3/8" | HGR24#F3716†@                          | 59               | 73             | 69             |
| 30"           | 3-15/16"            | 47-3/8" | 19-1/2" | 4"             | 3-1/2" | 7" | 1-5/8" | 3/4"       | 1/2" | HGR30#F31516† @                        | 78               | 95             | 78             |
| 36"           | 4-7/16"             | 54-3/8" | 22-1/2" | 5"             | 3-1/2" | 7" | 1-5/8" | 3/4"       | 1/2" | HGR36#F4716† @                         | 95               | 117            | 95             |

# = 216, 226, or 670    † Requires Top Bar To Be Constructed From Channel    • Not Available For Style 670

@ = Blank=Standard, GP=Drilled for grease pipe

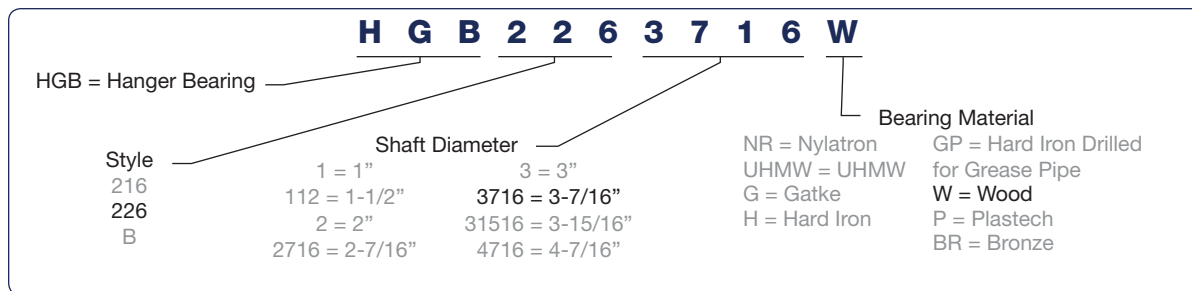


## HANGER BEARINGS

Hanger bearings provide a bearing surface to support a screw section when multiple screw sections are used in a screw conveyor. Hanger bearings are journal or plain type bearings that mount in hangers and are replaceable when worn. Many different hanger bearing materials are available, depending on the application. Style 216 and 226 bearings are the most widely used and are in stock at KWS.

KWS hanger bearing recommendations are listed in the Component Series Table of the KWS Screw Conveyor Engineering Guide for the specific bulk material to be conveyed. The most common hanger bearing materials are described in the table below. Please consult KWS Engineering for specific hanger bearing recommendations.

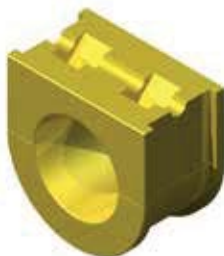
## NOMENCLATURE



| Bearing Material  | RPM Max | Temp Max (°F) | Wear Resist* | Industry Uses   | Comments   |
|-------------------|---------|---------------|--------------|---|--|
| Nylatron (NR)     | 60      | 180           | 3            | Chemical handling, grain, feed                          | Self lubricating, very low load capacity                               |
| UHMW              | 60      | 160           | 6            | Food, Ice   | USDA approved, doesn't swell in water                                  |
| Gatke (G)         | 75      | 250           | 7            | Medium temp applications (alternate for Hard Iron)      | Low load capacity, Food Grade  |
| Hard Iron (H)     | 75      | 400           | 9            | Lime, Cement, Salt, Gypsum                              | Requires hardened shaft, can be noisy, lube req'd in some applications |
| Wood (W)          | 175     | 160           | 4            | Grain, Feed, Fertilizer                                 | Self lubricating, good general purpose                                 |
| Plastech (P)      | 100     | 160           | 6            | Grain, Food   | Food grade   |
| Bronze (BR)       | 150     | 850           | 7            | Grain, Feed, Processing                                 | Self lubricating, high quality bearings, high load capacity            |
| Ball Bearing (BB) | 400     | 180           | 1**          | High speed, low loading                                 | Screw action tends to force product thru seals reducing bearing life   |
| Stellite (S)      | 50      | 1000          | 10           | Very high temp applications, metal processing, ceramics | Requires stellite insert in shaft                                      |

\* 0 = Least, 10 = Highest    \*\* Depending on bearing type and seal arrangement

## HANGER BEARINGS



### Style 216

Style 216 hanger bearings are used in 216, 316, and 230 hangers, and are manufactured to CEMA dimensional standards. Style 216 hangers and hanger bearings offer superior rigidity and are excellent for extra heavy-duty applications.



### Style 226

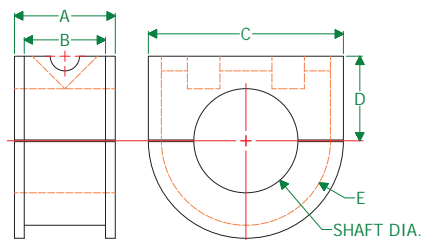
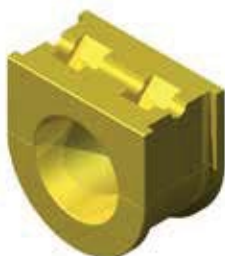
Style 226 hanger bearings are used in 226, 326, and 220 hangers, and are manufactured to CEMA dimensional standards. Style 226 hangers and hanger bearings have clearance for bulk materials to pass and are excellent for normal and heavy-duty applications.



### Style B

Style B hanger bearings are used in 660 and 670 hangers, and are manufactured to CEMA dimensional standards. Style B hanger bearings utilize a self-aligning ball bearing for lower power consumption and quieter operation. The bearing is sealed to minimize contamination.

## STYLE 216 HANGER BEARING

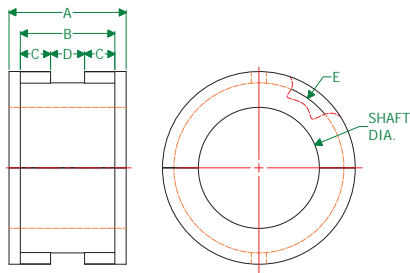


| Shaft Dia. | A             | B       | C       | D        | E (Dia.) | Part Number   | Weight (Lbs.) • |
|------------|---------------|---------|---------|----------|----------|---------------|-----------------|
| 1"         | NOT AVAILABLE |         |         |          |          |               |                 |
| 1-1/2"     | 1-15/16"      | 1-9/16" | 2-3/4"  | 1-3/8"   | 2-1/4"   | HGB216112#*   | 2.0             |
| 2"         | 1-15/16"      | 1-9/16" | 3-3/4"  | 1-5/8"   | 3-1/4"   | HGB2162#*     | 4.0             |
| 2-7/16"    | 2-15/16"      | 2-1/4"  | 4-1/2"  | 2"       | 4"       | HGB2162716#*  | 9.2             |
| 3"         | 2-15/16"      | 2-1/4"  | 5"      | 2-5/16"  | 4-1/2"   | HGB2163#*     | 10.8            |
| 3-7/16"    | 3-15/16"      | 3-1/4"  | 5-1/2"  | 2-7/16"  | 4-7/8"   | HGB2163716#*  | 15.2            |
| 3-15/16"   | 3-15/16"      | 3-1/4"  | 6"      | 2-11/16" | 5-3/8"   | HGB21631516#* | 17.3            |
| 4-7/16"    | 4-15/16"      | 4-1/4"  | 7-3/16" | 3-1/4"   | 6-3/16"  | HGB2164716#*  | 31.7            |

\* KWS Stock Component • All weights are based on hard iron. # Bearing Material (UHMW, Gatke, Hard Iron, Wood, Bronze, Stellite)

Note: Only Hard Iron and Bronze are available in 3-15/16" and 4-7/16".

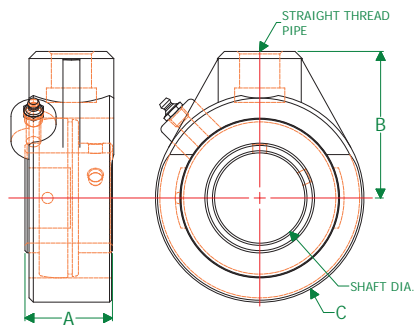
## STYLE 226 HANGER BEARING



| Shaft Dia. | A        | B       | C      | D     | E (Dia.) | Part Number  | Weight (Lbs.) • |
|------------|----------|---------|--------|-------|----------|--------------|-----------------|
| 1"         | 1-7/16"  | 1-1/8"  | 5/16"  | 1/2"  | 1-3/16"  | HGB2261#*    | 2               |
| 1-1/2"     | 1-15/16" | 1-9/16" | 1/2"   | 9/16" | 2-3/16"  | HGB226112#*  | 2               |
| 2"         | 1-15/16" | 1-9/16" | 1/2"   | 9/16" | 2-13/16" | HGB2262#*    | 4               |
| 2-7/16"    | 2-15/16" | 2-1/4"  | 3/4"   | 3/4"  | 3-3/16"  | HGB2262716#* | 9               |
| 3"         | 2-15/16" | 2-1/4"  | 3/4"   | 3/4"  | 4-1/16"  | HGB2263#*    | 11              |
| 3-7/16"    | 3-15/16" | 3-1/4"  | 1-1/4" | 3/4"  | 4-3/4"   | HGB2263716#* | 15              |
| 3-15/16"   | 3-15/16" | 3-1/4"  | 1-1/4" | 3/4"  | 5-1/4"   | HGB22631516# | 17              |
| 4-7/16"    | 4-15/16" | 4-1/4"  | 1-3/4" | 3/4"  | 5-13/16" | HGB2264716#  | 32              |

• All weights are based on hard iron. # Bearing Material (Nylatron, UHMW, GATKE, Hard Iron, Wood, Plastech, Bronze, Stellite) \* KWS Stock Component Note: Only UHMW and Wood are available in the 1" size.

## STYLE B HANGER BEARING



| Shaft Dia. | A        | B      | C      | Straight Thread Pipe D | Part Number | Weight |
|------------|----------|--------|--------|------------------------|-------------|--------|
| 1"         | 1-1/2"   | 2-1/2" | 3-1/8" | 3/4"                   | HGBB1       | 3      |
| 1-1/2"     | 1-15/16" | 2-7/8" | 4"     | 3/4"                   | HGBB112     | 3      |
| 2"         | 1-15/16" | 3-1/4" | 4-5/8" | 3/4"                   | HGBB2       | 4      |
| 2-7/16"    | 2-5/16"  | 4"     | 5-1/2" | 1"                     | HGBB2716    | 7      |
| 3"         | 2-3/8"   | 4-7/8" | 7"     | 1"                     | HGBB3       | 15     |
| 3-7/16"    | 2-9/16"  | 6"     | 8-3/8" | 1-1/2"                 | HGBB3716    | 21     |

TROUGH ENDS

Trough ends are manufactured from heavy gauge steel to very close tolerances. Assembly and mounting holes are precision cut to ensure correct alignment with trough end flanges.

KWS stocks a large inventory of trough ends in both carbon and stainless steel construction that are ready for immediate shipment. Stock trough ends are available with hole patterns for 4-bolt flange mounted ball and roller bearings.

NOMENCLATURE

TE = Trough End

W = Without Foot  
F = With Foot  
P = Pedestal  
FE = Flush End  
BH = Bulkhead  
TA = Torque Arm

O = Outside Pattern  
*Omit for Bulkhead*

Screw Diameter

|               |          |          |
|---------------|----------|----------|
| 4 = 4"        | 14 = 14" | 24 = 24" |
| 6 = 6"        | 16 = 16" | 30 = 30" |
| <b>9 = 9"</b> | 18 = 18" | 36 = 36" |
| 12 = 12"      | 20 = 20" |          |

**T E W O 9 2 U B B**

Shaft Diameter

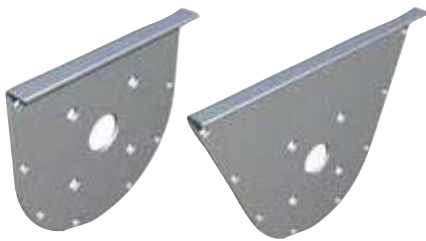
|                |                  |
|----------------|------------------|
| 1 = 1"         | 3 = 3"           |
| 112 = 1-1/2"   | 3716 = 3-7/16"   |
| <b>2 = 2"</b>  | 31516 = 3-15/16" |
| 2716 = 2-7/16" | 4716 = 4-7/16"   |

BB = Drilled for Ball Bearing  
BBRB\* = Slotted for Ball and Roller Bearing  
RB = Drilled for Roller Bearing

U = U-Trough  
F = Flared Trough  
R = Rectangular Trough  
T = Tubular Trough

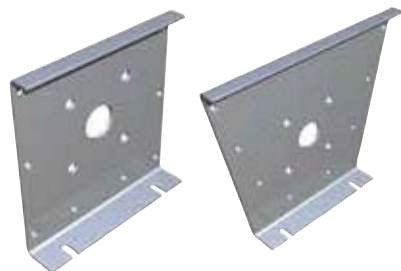
\* Stock trough ends are BBRB, except 2" dia.

Note: Torque Arm Trough Ends include Drive Size before bearing call-out. (i.e: TETAO92U-SK3-RB)



WITHOUT FOOT

Trough ends without feet are typically used in applications where a screw conveyor is suspended above ground and is supported from the top flange.



WITH FOOT

Trough ends with feet are the most commonly used type of trough end, and are typically used in applications where a screw conveyor is mounted directly to the floor or on structural supports.

## TROUGH ENDS

### PEDESTAL

Pedestal trough ends are typically used in heavy and extra-heavy duty applications where a split gland, flanged gland or mechanical seal is required. Pedestal trough ends require the use of a pillow block bearing. The space between the trough end and pillow block bearing prevents contamination of the bearing.



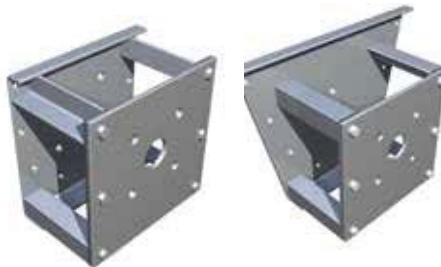
### FLUSH END

Flush End trough ends are used with flush end discharge spouts where overall length needs to be minimized and conveyance length needs to be maximized. The bottom flange of the flush end trough end is drilled to match the discharge flange pattern.



### BULKHEAD

Bulkhead trough ends are used with flange mounted gear reducers on the drive end of a screw conveyor and are typically used in heavy and extra-heavy duty applications where a split gland, flanged gland or mechanical seal is required. The space between the trough end and bulkhead prevents contamination of the gear reducer. A bulkhead drive shaft is required.



### TORQUE ARM

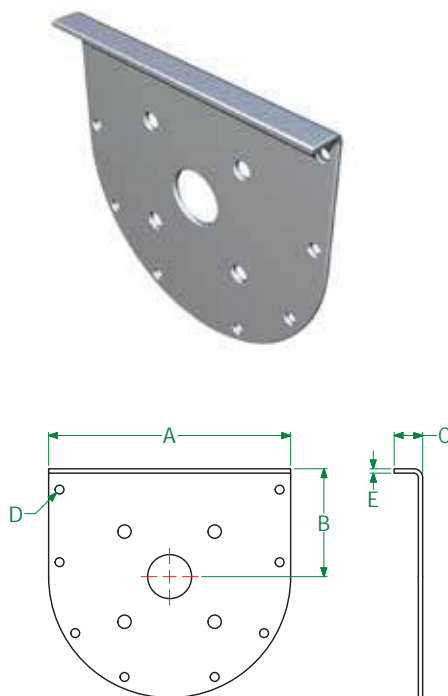
Torque arm trough ends are used with pillow block bearings and shaft-mounted gear reducers on the drive end of a screw conveyor and are typically used in heavy and extra-heavy duty applications where a split gland, flanged gland or mechanical seal is required. The space between the trough end and pillow block bearing prevents contamination of the bearing and gear reducer. The special torque arm design allows the gear reducer to float freely on the drive shaft. A torque arm drive shaft is required.



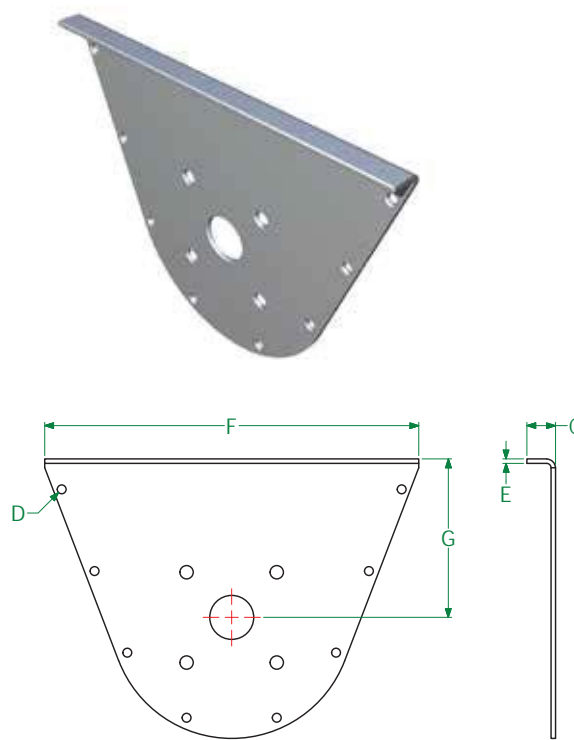


## TROUGH ENDS WITHOUT FEET

U-TROUGH WITHOUT FOOT



FLARED WITHOUT FOOT



| Screw Dia. | Shaft Dia.          | A       | B       | C       | D Bolts | E     | F       | G       | Part Numbers                        | Weight (Lbs.)  |                |
|------------|---------------------|---------|---------|---------|---------|-------|---------|---------|-------------------------------------|----------------|----------------|
|            |                     |         |         |         |         |       |         |         |                                     | U-Trough       | Flared         |
| 4"         | 1"                  | 7-3/4"  | 3-5/8"  | 1-7/16" | 3/8"    | 3/16" | X       | X       | TEW041#                             | 5              | N/A            |
| 6"         | 1-1/2"              | 9-3/4"  | 4-1/2"  | 1-1/2"  | 3/8"    | 3/16" | 16-5/8" | 7"      | TEW06112#                           | 10             | 13             |
| 9"         | 1-1/2"<br>2"        | 13-3/4" | 6-1/8"  | 1-5/8"  | 3/8"    | 1/4"  | 21-1/4" | 9"      | TEW09112#<br>TEW092#                | 18<br>18       | 19<br>24       |
| 12"        | 2"<br>2-7/16"<br>3" | 17-1/4" | 7-3/4"  | 2"      | 1/2"    | 1/4"  | 26-3/8" | 10"     | TEW0122#<br>TEW0122716#<br>TEW0123# | 43<br>43<br>43 | 36<br>37<br>49 |
| 14"        | 2-7/16"<br>3"       | 19-1/4" | 9-1/4"  | 2"      | 1/2"    | 1/4"  | 28-3/8" | 11"     | TEW0142716#<br>TEW0143#             | 48<br>48       | 43<br>55       |
| 16"        | 3"                  | 21-1/4" | 10-5/8" | 2-1/2"  | 5/8"    | 3/8"  | 32-1/2" | 11-1/2" | TEW0163#                            | 62             | 72             |
| 18"        | 3"<br>3-7/16"       | 24-1/4" | 12-1/8" | 2-1/2"  | 5/8"    | 3/8"  | 36-1/2" | 12-1/8" | TEW0183#<br>TEW0183716#             | 84<br>84       | 83<br>89       |
| 20"        | 3"<br>3-7/16"       | 26-1/4" | 13-1/2" | 2-1/2"  | 5/8"    | 3/8"  | 39-1/2" | 13-1/2" | TEW0203#<br>TEW0203716#             | 102<br>102     | 103<br>109     |
| 24"        | 3-7/16"             | 30-1/4" | 16-1/2" | 2-1/2"  | 5/8"    | 3/8"  | 45-1/2" | 16-1/2" | TEW0243716#                         | 128            | 132            |
| 30"        | 3-15/16"            | 38"     | 19-1/2" | 3"•     | 5/8"    | 1/2"• | 47-3/8" | 19-1/2" | TEW03031516#•                       | 250            | 267            |
| 36"        | 4-7/16"             | 44"     | 22-1/2" | 3"•     | 5/8"    | 1/2"• | 54-3/8" | 22-1/2" | TEW0364716#•                        | 340            | 350            |

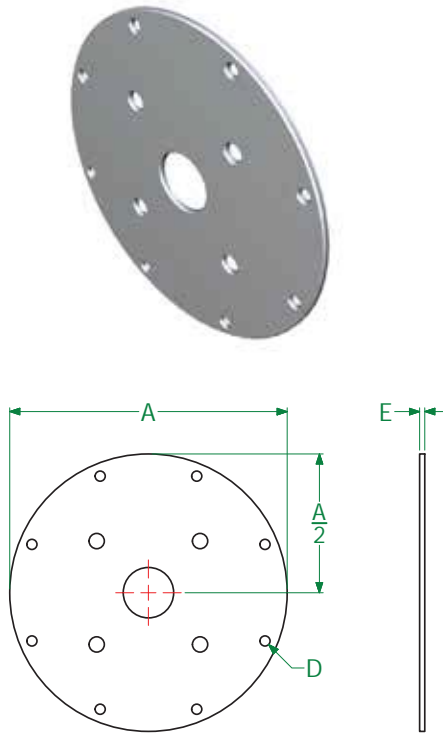
# = Trough and Bearing type; U=U-Trough, F=Flared, BB=Ball Bearing, RB=Roller Bearing, BBRB=Slotted for Roller and Ball Bearing

• Top Flange Must Be Welded On and Not Formed

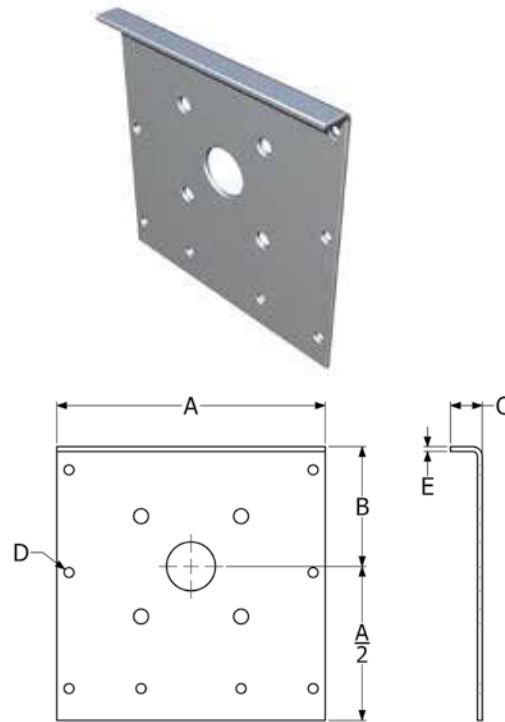


## TROUGH ENDS WITHOUT FEET

### TUBULAR WITHOUT FOOT



### RECTANGULAR WITHOUT FOOT



| Screw Dia. | Shaft Dia.          | A       | B       | C       | D Bolts | E      | Part Numbers                        | Weight (Lbs.)  |                |
|------------|---------------------|---------|---------|---------|---------|--------|-------------------------------------|----------------|----------------|
|            |                     |         |         |         |         |        |                                     | Tubular        | Rectangular    |
| 4"         | 1"                  | 7-3/4"  | 3-5/8"  | 1-7/16" | 3/8"    | 3/16"  | TEW041#                             | 4              | N/A            |
| 6"         | 1-1/2"              | 9-3/4"  | 4-1/2"  | 1-1/2"  | 3/8"    | 3/16"  | TEW06112#                           | 9              | 11             |
| 9"         | 1-1/2"<br>2"        | 13-3/4" | 6-1/8"  | 1-5/8"  | 3/8"    | 1/4"   | TEW09112#<br>TEW092#                | 12<br>15       | 16<br>21       |
| 12"        | 2"<br>2-7/16"<br>3" | 17-1/4" | 7-3/4"  | 2"      | 1/2"    | 1/4"   | TEW0122#<br>TEW0122716#<br>TEW0123# | 29<br>24<br>36 | 32<br>33<br>51 |
| 14"        | 2-7/16"<br>3"       | 19-1/4" | 9-1/4"  | 2"      | 1/2"    | 1/4"   | TEW0142716#<br>TEW0143#             | 30<br>42       | 39<br>57       |
| 16"        | 3"                  | 21-1/4" | 10-5/8" | 2-1/2"  | 5/8"    | 3/8"   | TEW0163#                            | 52             | 72             |
| 18"        | 3"<br>3-7/16"       | 24-1/4" | 12-1/8" | 2-1/2"  | 5/8"    | 3/8"   | TEW0183#<br>TEW0183716#             | 63<br>74       | 79<br>86       |
| 20"        | 3"<br>3-7/16"       | 26-1/4" | 13-1/2" | 2-1/2"  | 5/8"    | 3/8"   | TEW0203#<br>TEW0203716#             | 85<br>97       | 104<br>110     |
| 24"        | 3-7/16"             | 30-1/4" | 16-1/2" | 2-1/2"  | 5/8"    | 3/8"   | TEW0243716#                         | 116            | 138            |
| 30"        | 3-15/16"            | 38"     | 19-1/2" | 3" •    | 5/8"    | 1/2" • | TEW03031516# •                      | 131            | 182            |
| 36"        | 4-7/16"             | 44"     | 22-1/2" | 3" •    | 5/8"    | 1/2" • | TEW0364716# •                       | 237            | 301            |

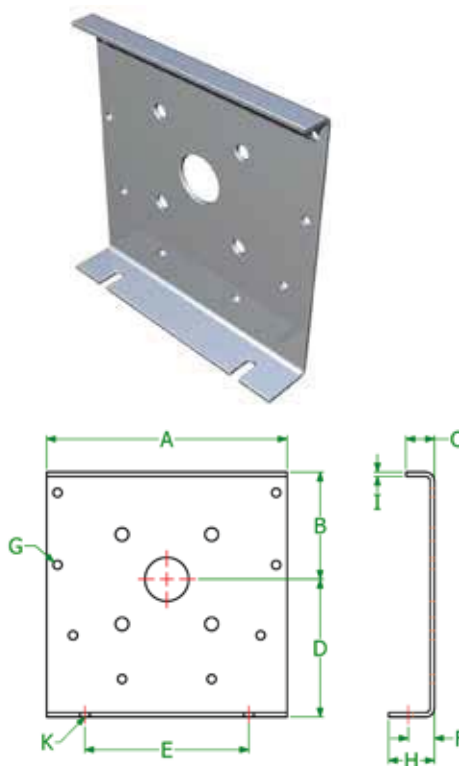
# = Trough and Bearing type; T=Tubular, R=Rectangular, BB=Ball Bearing,

BBRB=Slotted for Ball and Roller Bearing, RB=Roller Bearing

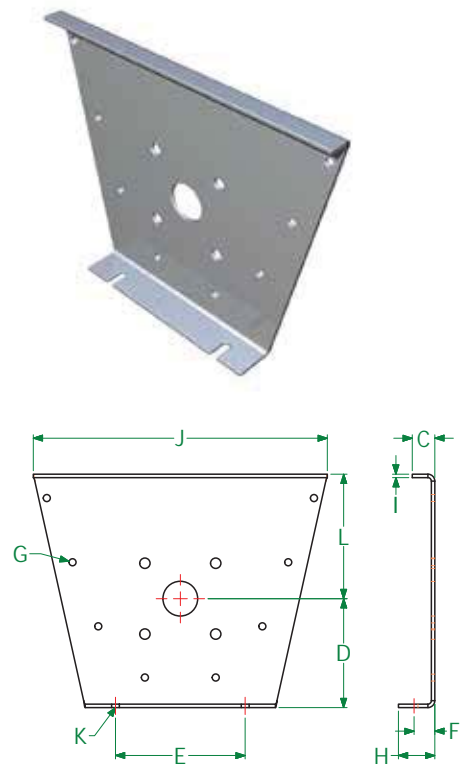
• Top Flange Must Be Welded On and Not Formed

## TROUGH ENDS WITH FEET

### U-TROUGH WITH FOOT



### FLARED WITH FOOT



| Screw Dia. | Shaft Dia.    | A       | B       | C       | D       | E       | F      | G Bolts | H       | I     | J       | K Bolts | L       | Part Numbers  | Weight (Lbs.) |               |
|------------|---------------|---------|---------|---------|---------|---------|--------|---------|---------|-------|---------|---------|---------|---------------|---------------|---------------|
|            |               |         |         |         |         |         |        |         |         |       |         |         |         |               | U-Trough      | Flared Trough |
| 4"         | 1"            | 7-3/4"  | 3-5/8"  | 1-7/16" | 4-5/8"  | 5-3/4"  | 1"     | 3/8"    | 1-5/8"  | 3/16" | X       | 3/8"    | X       | TEF041#*      | 7             | N/A           |
| 6"         | 1-1/2"        | 9-3/4"  | 4-1/2"  | 1-1/2"  | 5-5/8"  | 8-1/8"  | 1"     | 3/8"    | 1-3/4"  | 3/16" | 16-5/8" | 3/8"    | 7"      | TEF06112#*    | 12            | 15            |
| 9"         | 1-1/2"<br>2"  | 13-3/4" | 6-1/8"  | 1-5/8"  | 7-7/8"  | 9-3/8"  | 1-1/2" | 3/8"    | 2-5/8"  | 1/4"  | 21-1/4" | 1/2"    | 9"      | TEF09112#*    | 18            | 22            |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF092#*      | 22            | 27            |
| 12"        | 2-7/16"<br>3" | 17-1/4" | 7-3/4"  | 2"      | 9-5/8"  | 12-1/4" | 1-5/8" | 1/2"    | 2-3/4"  | 1/4"  | 26-3/8" | 5/8"    | 10"     | TEF0122#*     | 36            | 43            |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF0122716#*  | 38            | 44            |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF0123#*     | 50            | 56            |
| 14"        | 2-7/16"<br>3" | 19-1/4" | 9-1/4"  | 2"      | 10-7/8" | 13-1/2" | 1-5/8" | 1/2"    | 2-7/8"  | 1/4"  | 28-3/8" | 5/8"    | 11"     | TEF0142716#*  | 45            | 52            |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF0143#*     | 57            | 64            |
| 16"        | 3"            | 21-1/4" | 10-5/8" | 2-1/2"  | 12"     | 14-7/8" | 2"     | 5/8"    | 3-1/4"  | 3/8"  | 32-1/2" | 5/8"    | 11-1/2" | TEF0163#*     | 75            | 85            |
| 18"        | 3"<br>3-7/16" | 24-1/4" | 12-1/8" | 2-1/2"  | 13-3/8" | 16"     | 2"     | 5/8"    | 3-1/4"  | 3/8"  | 36-1/2" | 5/8"    | 12-1/8" | TEF0183#*     | 89            | 98            |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF0183716#*  | 101           | 104           |
| 20"        | 3"<br>3-7/16" | 26-1/4" | 13-1/2" | 2-1/2"  | 15"     | 19-1/4" | 2-1/4" | 5/8"    | 3-3/4"  | 3/8"  | 39-1/2" | 3/4"    | 13-1/2" | TEF0203#*     | 142           | 153           |
|            |               |         |         |         |         |         |        |         |         |       |         |         |         | TEF0203716#*  | 153           | 169           |
| 24"        | 3-7/16"       | 30-1/4" | 16-1/2" | 2-1/2"  | 18-1/8" | 20"     | 2-1/2" | 5/8"    | 4-1/8"  | 3/8"  | 45-1/2" | 3/4"    | 16-1/2" | TEF0243716#*  | 197           | 213           |
| 30"        | 3-15/16"      | 38"     | 19-1/2" | 3"•     | 21-1/2" | 30"     | 2-1/2" | 5/8"    | 4-1/2"• | 1/2"• | 47-3/8" | 3/4"    | 19-1/2" | TEF03031516#• | 215           | 230           |
| 36"        | 4-7/16"       | 44"     | 22-1/2" | 3"•     | 24"     | 36"     | 2-1/2" | 5/8"    | 4-1/2"• | 1/2"• | 54-3/8" | 3/4"    | 22-1/2" | TEF0364716#•  | 330           | 360           |

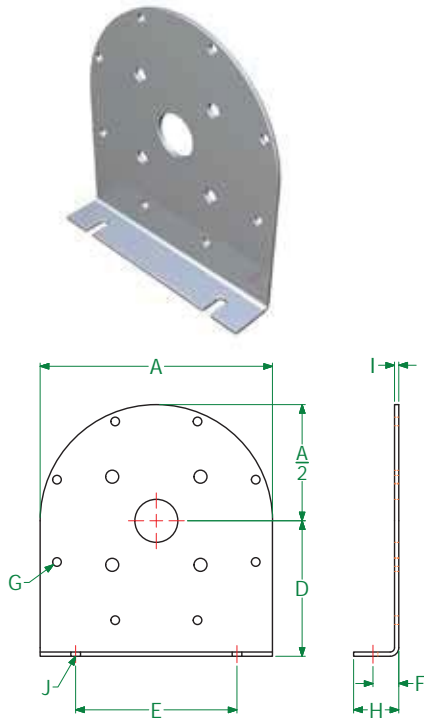
\*KWS Stock Component (U-Trough only. Stock trough ends are BBRB, except 2" dia. which are drilled for Ball Bearing only)

# = Trough and Bearing type; U=U-Trough, F=Flared, BB=Ball Bearing, RB=Roller Bearing, BBRB=Slotted for Roller and Ball Bearing

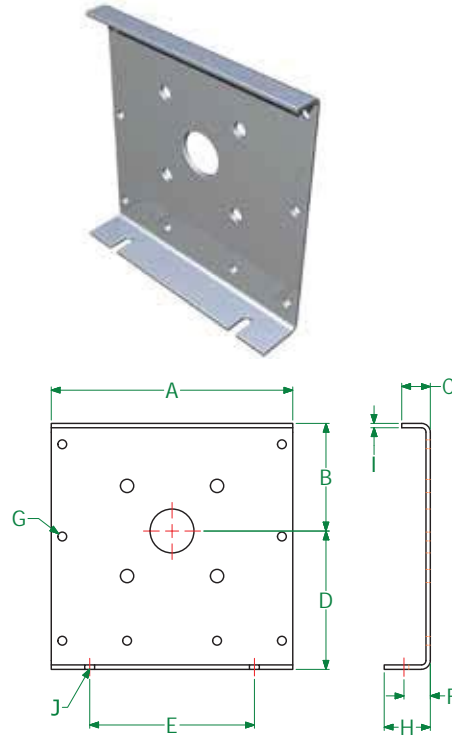
• Flanges Must Be Welded On and Not Formed

## TROUGH ENDS WITH FEET

### TUBULAR WITH FOOT



### RECTANGULAR WITH FOOT

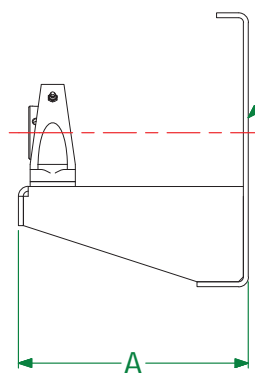
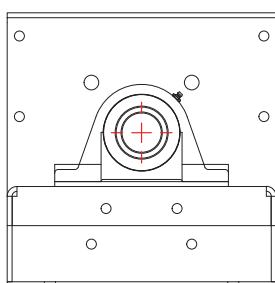
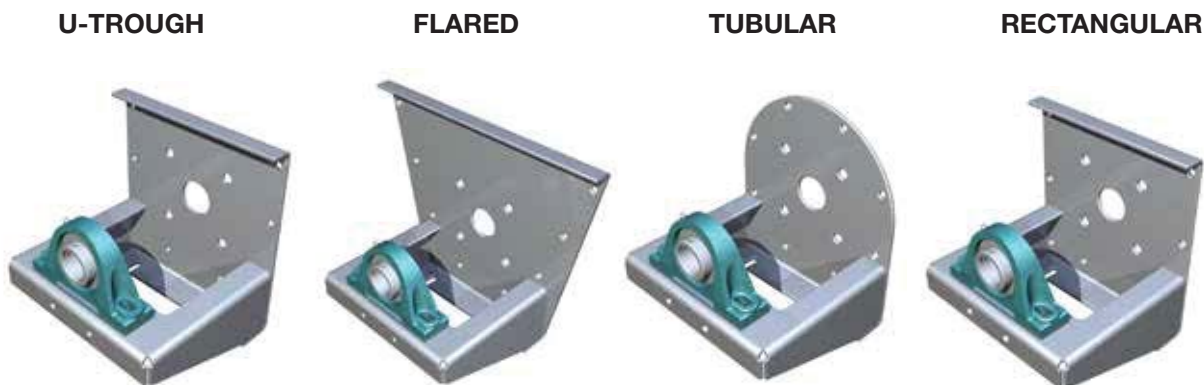


| Screw Dia. | Shaft Dia.          | A       | B       | C      | D       | E       | F      | G Bolts | H       | I     | J Bolts | Part Numbers                        | Weight (Lbs.)  |                |
|------------|---------------------|---------|---------|--------|---------|---------|--------|---------|---------|-------|---------|-------------------------------------|----------------|----------------|
|            |                     |         |         |        |         |         |        |         |         |       |         |                                     | Tubular        | Rectangular    |
| 4"         | 1"                  | 7-3/4"  | X       | X      | 4-5/8"  | 5-3/4"  | 1"     | 3/8"    | 1-5/8"  | 3/16" | 3/8"    | TEF041#                             | 6              | N/A            |
| 6"         | 1-1/2"              | 9-3/4"  | 4-1/2"  | 1-1/2" | 5-5/8"  | 8-1/8"  | 1"     | 3/8"    | 1-3/4"  | 3/16" | 3/8"    | TEF06112#                           | 11             | 13             |
| 9"         | 1-1/2"<br>2"        | 13-3/4" | 6-1/8"  | 1-5/8" | 7-7/8"  | 9-3/8"  | 1-1/2" | 3/8"    | 2-5/8"  | 1/4"  | 1/2"    | TEF09112#<br>TEF092#                | 15<br>18       | 19<br>24       |
| 12"        | 2"<br>2-7/16"<br>3" | 17-1/4" | 7-3/4"  | 2"     | 9-5/8"  | 12-1/4" | 1-5/8" | 1/2"    | 2-3/4"  | 1/4"  | 5/8"    | TEF0122#<br>TEF0122716#<br>TEF0123# | 29<br>31<br>43 | 39<br>40<br>58 |
| 14"        | 2-7/16"<br>3"       | 19-1/4" | 9-1/4"  | 2"     | 10-7/8" | 13-1/2" | 1-5/8" | 1/2"    | 2-7/8"  | 1/4"  | 5/8"    | TEF0142716#<br>TEF0143#             | 39<br>51       | 48<br>66       |
| 16"        | 3"                  | 21-1/4" | 10-5/8" | 2-1/2" | 12"     | 14-7/8" | 2"     | 5/8"    | 3-1/4"  | 3/8"  | 5/8"    | TEF0163#                            | 65             | 85             |
| 18"        | 3"<br>3-7/16"       | 24-1/4" | 12-1/8" | 2-1/2" | 13-3/8" | 16"     | 2"     | 5/8"    | 3-1/4"  | 3/8"  | 5/8"    | TEF0183#<br>TEF0183716#             | 78<br>89       | 94<br>101      |
| 20"        | 3"<br>3-7/16"       | 26-1/4" | 13-1/2" | 2-1/2" | 15"     | 19-1/4" | 2-1/4" | 5/8"    | 3-3/4"  | 3/8"  | 3/4"    | TEF0203#<br>TEF0203716#             | 115<br>127     | 134<br>140     |
| 24"        | 3-7/16"             | 30-1/4" | 16-1/2" | 2-1/2" | 18-1/8" | 20"     | 2-1/2" | 5/8"    | 4-1/8"  | 3/8"  | 3/4"    | TEF0243716#                         | 157            | 179            |
| 30"        | 3-15/16"            | 38"     | 19-1/2" | 3"•    | 21-1/2" | 30"     | 2-1/2" | 5/8"    | 4-1/2"• | 1/2"• | 3/4"    | TEF03031516#•                       | 250            | 270            |
| 36"        | 4-7/16"             | 44"     | 22-1/2" | 3"•    | 24"     | 36"     | 2-1/2" | 5/8"    | 4-1/2"• | 1/2"• | 3/4"    | TEF0364716#•                        | 320            | 340            |

# = Trough and Bearing type; T=Tubular, R=Rectangular, BB=Ball Bearing, BBRB=Slotted for Ball and Roller Bearing, RB=Roller Bearing

• Flanges Must Be Welded On and Not Formed

## PEDESTAL TROUGH ENDS



SEE TEFO DIM STANDARDS  
FOR THE REST OF DIMENSIONS

Note: Dimension shown is the same for each style trough.

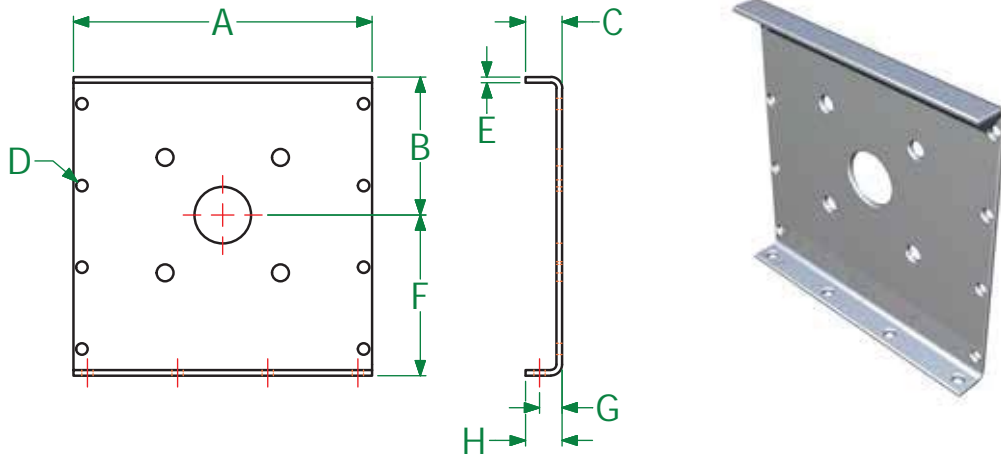
| Screw Dia. | Shaft Dia. | A       | Part Numbers  | Weight (Lbs.) |        |         |             |
|------------|------------|---------|---------------|---------------|--------|---------|-------------|
|            |            |         |               | U-Trough      | Flared | Tubular | Rectangular |
| 4"         | 1"         | 10"     | TEP041#       | 14            | 15     | 13      | 14          |
| 6"         | 1-1/2"     | 10-3/4" | TEP06112#     | 19            | 22     | 18      | 20          |
| 9"         | 1-1/2"     | 10-3/4" | TEP09112#     | 27            | 31     | 24      | 28          |
|            | 2"         | 11-1/4" | TEP092#       | 30            | 36     | 27      | 33          |
| 12"        | 2"         | 11-1/4" | TEP0122#      | 56            | 63     | 49      | 59          |
|            | 2-7/16"    | 13"     | TEP0122716#   | 58            | 64     | 51      | 60          |
|            | 3"         | 12-3/4" | TEP0123#      | 70            | 76     | 63      | 78          |
| 14"        | 2-7/16"    | 13"     | TEP0142716#   | 68            | 75     | 62      | 71          |
|            | 3"         | 12-3/4" | TEP0143#      | 80            | 87     | 74      | 89          |
| 16"        | 3"         | 12-3/4" | TEP0163#      | 115           | 125    | 105     | 125         |
| 18"        | 3"         | 12-3/4" | TEP0183#      | 129           | 138    | 118     | 134         |
|            | 3-7/16"    | 14-1/2" | TEP0183716#   | 139           | 144    | 149     | 141         |
| 20"        | 3"         | 12-3/4" | TEP0203#      | 189           | 196    | 178     | 197         |
|            | 3-7/16"    | 14-1/2" | TEP0203716#   | 195           | 202    | 190     | 203         |
| 24"        | 3-7/16"    | 14-1/2" | TEP0243716#   | 246           | 250    | 234     | 256         |
| 30"        | 3-15/16"   | 14-1/2" | TEP03031516#• | 271           | 296    | 265     | 305         |
| 36"        | 4-7/16"    | 14-1/2" | TEP0364716#•  | 406           | 374    | 400     | 401         |

# = Trough and Bearing type; U=U-Trough, F=Flared, T=Tubular, R=Rectangular, BB=Ball Bearing, RB=Roller Bearing

• Flanges must be welded on and not formed

## FLUSH END DISCHARGE TROUGH ENDS

### U- TROUGH AND RECTANGULAR FLUSH END



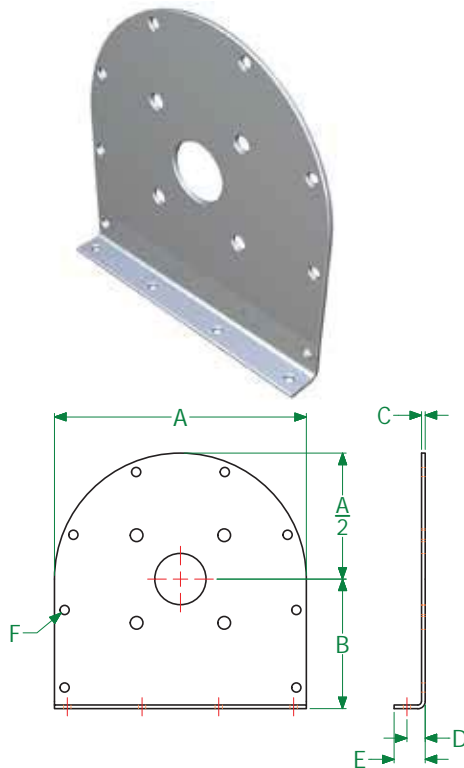
Note: U-Trough and Rectangular Flush End Discharge Trough Ends are dimensionally the same.

| Screw Dia. | Shaft Dia.          | A       | B       | C       | D Bolts | E     | F       | G      | H      | Part Number                            | Weight (Lbs.)  |
|------------|---------------------|---------|---------|---------|---------|-------|---------|--------|--------|--|----------------|
| 4"         | 1"                  | 7-1/2"  | 3-5/8"  | 1-7/16" | 3/8"    | 3/16" | 3-3/4"  | 7/8"   | 1-1/4" | TEFE041#                               | 9              |
| 6"         | 1-1/2"              | 10"     | 4-1/2"  | 1-1/2"  | 3/8"    | 3/16" | 5"      | 13/16" | 1-1/2" | TEFE06112#                             | 13             |
| 9"         | 1-1/2"<br>2"        | 13-1/4" | 6-1/8"  | 1-5/8"  | 3/8"    | 1/4"  | 7-1/8"  | 1"     | 1-5/8" | TEFE09112#<br>TEFE092#                 | 19<br>24       |
| 12"        | 2"<br>2-7/16"<br>3" | 17-1/4" | 7-3/4"  | 2"      | 1/2"    | 1/4"  | 8-7/8"  | 1-1/4" | 2-1/8" | TEFE0122#<br>TEFE0122716#<br>TEFE0123# | 39<br>40<br>58 |
| 14"        | 2-7/16"<br>3"       | 19-1/4" | 9-1/4"  | 2"      | 1/2"    | 1/4"  | 10-1/8" | 1-1/4" | 2-1/8" | TEFE0142716#<br>TEFE0143#              | 48<br>66       |
| 16"        | 3"                  | 21-1/4" | 10-5/8" | 2-1/2"  | 5/8"    | 3/8"  | 11-1/8" | 1-1/4" | 2-1/8" | TEFE0163#                              | 85             |
| 18"        | 3"<br>3-7/16"       | 24-1/4" | 12-1/8" | 2-1/2"  | 5/8"    | 3/8"  | 12-3/8" | 1-1/2" | 2-5/8" | TEFE0183#<br>TEFE0183716#              | 94<br>101      |
| 20"        | 3"<br>3-7/16"       | 26-1/4" | 13-1/2" | 2-1/2"  | 5/8"    | 3/8"  | 13-3/8" | 1-1/2" | 2-5/8" | TEFE0203#<br>TEFE0203716#              | 134<br>140     |
| 24"        | 3-7/16"             | 30-1/4" | 16-1/2" | 2-1/2"  | 5/8"    | 3/8"  | 15-3/8" | 1-1/2" | 2-5/8" | TEFE0243716#                           | 179            |
| 30"        | 3-15/16"            | 38"     | 19-1/2" | 3"•     | 5/8"    | 1/2"• | 18-3/8" | 1-3/4" | 3"•    | TEFE03031516#•                         | 270            |
| 36"        | 4-7/16"             | 44"     | 22-1/2" | 3"•     | 5/8"    | 1/2"• | 21-3/8" | 1-3/4" | 3"•    | TEFE0364716#•                          | 340            |

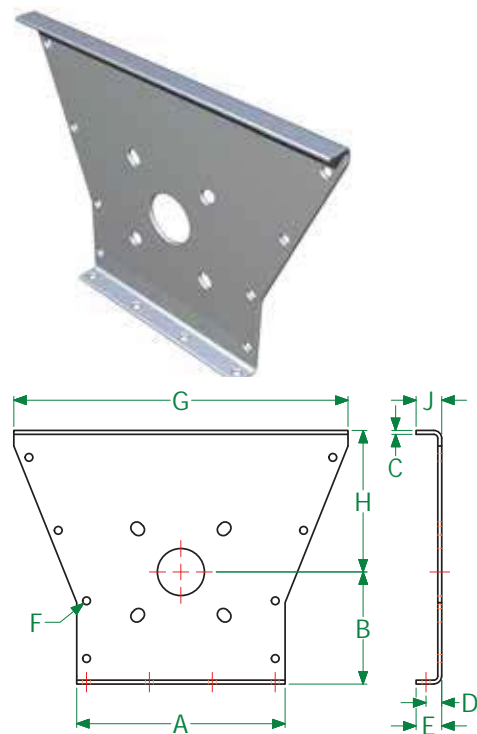
# = Trough and Bearing type; U=U-Trough, F=Flared, T=Tubular, R=Rectangular, BB=Ball Bearing, RB=Roller Bearing,  
BBRB=Slotted for Roller and Ball Bearing • Flanges Must Be Welded On and Not Formed

## FLUSH END DISCHARGE TROUGH ENDS

### TUBULAR FLUSH END



### FLARED FLUSH END



| Screw Dia. | Shaft Dia.          | A       | B       | C     | D      | E       | F Bolts | G       | H       | J      | Part Number                            | Weight (Lbs.)  |                |
|------------|---------------------|---------|---------|-------|--------|---------|---------|---------|---------|--------|--|----------------|----------------|
|            |                     |         |         |       |        |         |         |         |         |        |  | Tubular        | Flared         |
| 4"         | 1"                  | 7-1/2"  | 3-3/4"  | 3/16" | 7/8"   | 1-1/4"  | 3/8"    | X       | X       | X      | TEFE041#                               | 6              | N/A            |
| 6"         | 1-1/2"              | 10"     | 5"      | 3/16" | 13/16" | 1-1/2"  | 3/8"    | 16-5/8" | 7"      | 1-1/2" | TEFE06112#                             | 11             | 13             |
| 9"         | 1-1/2"<br>2"        | 13-1/4" | 7-1/8"  | 1/4"  | 1"     | 1-5/8"  | 3/8"    | 21-1/4" | 9"      | 1-5/8" | TEFE09112#<br>TEFE092#                 | 15<br>18       | 19<br>23       |
| 12"        | 2"<br>2-7/16"<br>3" | 17-1/4" | 8-7/8"  | 1/4"  | 1-1/4" | 2-1/8"  | 1/2"    | 26-3/8" | 10"     | 2"     | TEFE0122#<br>TEFE0122716#<br>TEFE0123# | 29<br>31<br>43 | 37<br>38<br>56 |
| 14"        | 2-7/16"<br>3"       | 19-1/4" | 10-1/8" | 1/4"  | 1-1/4" | 2-1/8"  | 1/2"    | 28-3/8" | 11"     | 2"     | TEFE0142716#<br>TEFE0143#              | 39<br>51       | 45<br>55       |
| 16"        | 3"                  | 21-1/4" | 11-1/8" | 3/8"  | 1-1/4" | 2-1/8"  | 5/8"    | 32-1/2" | 11-1/2" | 2-1/2" | TEFE0163#                              | 65             | 73             |
| 18"        | 3"<br>3-7/16"       | 24-1/4" | 12-3/8" | 3/8"  | 1-1/2" | 2-5/8"  | 5/8"    | 36-1/2" | 12-1/8" | 2-1/2" | TEFE0183#<br>TEFE0183716#              | 78<br>89       | 84<br>89       |
| 20"        | 3"<br>3-7/16"       | 26-1/4" | 13-3/8" | 3/8"  | 1-1/2" | 2-5/8"  | 5/8"    | 39-1/2" | 13-1/2" | 2-1/2" | TEFE0203#<br>TEFE0203716#              | 115<br>127     | 130<br>144     |
| 24"        | 3-7/16"             | 30-1/4" | 15-3/8" | 3/8"  | 1-1/2" | 2-5/8"  | 5/8"    | 45-1/2" | 16-1/2" | 2-1/2" | TEFE0243716#                           | 157            | 181            |
| 30"        | 3-15/16"            | 37-1/4" | 18-3/8" | 1/2"• | 1-3/4" | 3-1/8"• | 5/8"    | 47-3/8" | 19-1/2" | 3"•    | TEFE03031516#•                         | 250            | 196            |
| 36"        | 4-7/16"             | 43-1/4" | 21-3/8" | 1/2"• | 1-3/4" | 3-1/8"• | 5/8"    | 54-3/8" | 22-1/2" | 3"•    | TEFE0364716#•                          | 320            | 306            |

# = Trough and Bearing type; T=Tubular Trough, F=Flared Trough, R=Rectangular Trough, BB=Ball Bearing, RB=Roller Bearing, BBRB=Slotted for Roller and Ball Bearing • Flanges Must Be Welded On and Not Formed



## BULKHEAD TROUGH ENDS

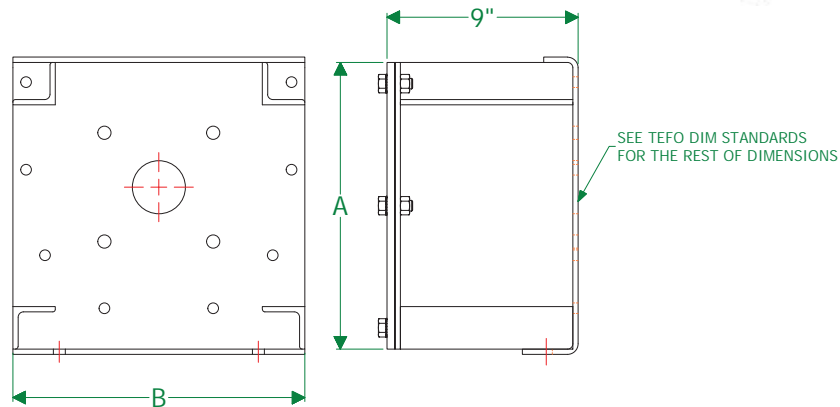
**U-TROUGH/RECTANGULAR**



**FLARED**



**TUBULAR**



Note: Dimensions shown are the same for each style trough.

| Screw Dia. | Shaft Dia.   | A       | B •     | Part Numbers | Weight (Lbs.) |        |         |             |
|------------|--------------|---------|---------|--------------|---------------|--------|---------|-------------|
|            |              |         |         |              | U-Trough      | Flared | Tubular | Rectangular |
| 4"         | 1"           | 7-3/4"  | 7-3/4"  | TEBH41#      | 23            | N/A    | 21      | N/A         |
| 6"         | 1-1/2"       | 9-3/4"  | 9-3/4"  | TEBH6112#    | 32            | 35     | 31      | 33          |
| 9"         | 1-1/2"<br>2" | 13-1/2" | 13-3/4" | TEBH9112#    | 53            | 57     | 50      | 53          |
|            |              |         |         | TEBH92#      | 57            | 62     | 53      | 57          |
| 12"        | 2"           | 16-7/8" | 17-1/4" | TEBH122#     | 96            | 103    | 89      | 96          |
|            | 2-7/16"      |         |         | TEBH122716#  | 98            | 104    | 91      | 98          |
|            | 3"           |         |         | TEBH123#     | 110           | 116    | 103     | 110         |
| 14"        | 2-7/16"      | 19-5/8" | 19-1/4" | TEBH142716#  | 112           | 129    | 116     | 112         |
|            | 3"           |         |         | TEBH143#     | 134           | 141    | 128     | 134         |
| 16"        | 3"           | 21-7/8" | 21-1/4" | TEBH163#     | 195           | 205    | 185     | 195         |
| 18"        | 3"           | 21-7/8" | 21-1/4" | TEBH183#     | 209           | 218    | 198     | 209         |
|            | 3-7/16"      |         |         | TEBH183716#  | 221           | 224    | 209     | 221         |
| 20"        | 3"           | 21-7/8" | 21-1/4" | TEBH203#     | 262           | 273    | 235     | 262         |
|            | 3-7/16"      |         |         | TEBH203716#  | 273           | 289    | 247     | 273         |
| 24"        | 3-7/16"      | 21-7/8" | 21-1/4" | TEBH243716#  | 317           | 333    | 277     | 317         |
| 30"        | 3-15/16"     | 26-1/4" | 26-1/4" | TEBH3031516# | 375           | 390    | 410     | 375         |
| 36"        | 4-7/16"      | 26-1/4" | 26-1/4" | TEBH364716#  | 490           | 520    | 480     | 490         |

# = Trough and Bearing type; U=U-Trough, R=Rectangular Trough, F=Flared Trough, T=Tubular Trough, BB=Ball Bearing, RB=Roller Bearing, BBRB=Slotted for Roller and Ball Bearing • "B" Dimension Is Width Of Drive Plate, Not Trough End Plate

## TORQUE ARM TROUGH ENDS

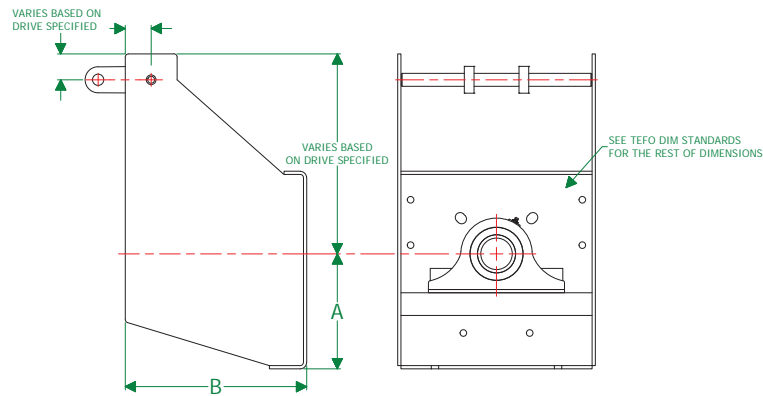
U-TROUGH/RECTANGULAR



FLARED



TUBULAR



Note: Dimensions shown are the same for each style trough.

| Screw Dia. | Shaft Dia.          | A       | B •                       | Part Numbers                           |
|------------|---------------------|---------|---------------------------|--|
| 4"         | 1"                  | 4-5/8"  | 11"                       | TETA041#                               |
| 6"         | 1-1/2"              | 5-5/8"  | 11-3/4"                   | TETA06112#                             |
| 9"         | 1-1/2"<br>2"        | 7-7/8"  | 11-3/4"<br>12-1/4"        | TETA09112#<br>TETA092#                 |
| 12"        | 2"<br>2-7/16"<br>3" | 9-5/8"  | 12-1/4"<br>13"<br>13-3/4" | TETA0122#<br>TETA0122716#<br>TETA0123# |
| 14"        | 2-7/16"<br>3"       | 10-7/8" | 13"<br>13-3/4"            | TETA0142716#<br>TETA0143#              |
| 16"        | 3"                  | 12"     | 13-3/4"                   | TETA0163#                              |
| 18"        | 3"<br>3-7/16"       | 13-3/8" | 13-3/4"<br>15-1/2"        | TETA0183#<br>TETA0183716#              |
| 20"        | 3"<br>3-7/16"       | 15"     | 13-3/4"<br>15-1/2"        | TETA0203#<br>TETA0203716#              |
| 24"        | 3-7/16"             | 18-1/8" | 15-1/2"                   | TETA0243716#                           |
| 30"        | 3-15/16"            | 21-1/2" | 15-3/4"                   | TETA03031516#                          |
| 36"        | 4-7/16"             | 24"     | 16-1/4"                   | TETA0364716#                           |

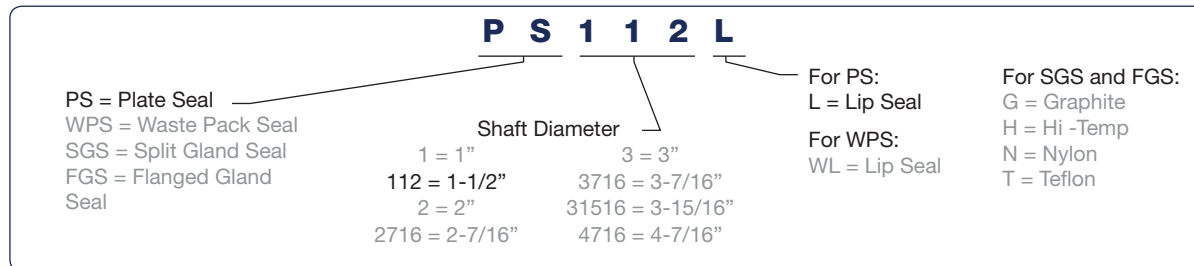
# = Trough and Bearing type; U=U-Trough, R=Rectangular Trough,  
F=Flared Trough, T=Tubular Trough, BB=Ball Bearing, RB=Roller Bearing,  
BBRB=Slotted for Roller and Ball Bearing

• "B" Dimension Is Width Of Drive Plate, Not Trough End Plate

## SEALS

Several types of shaft seals are available to prevent contamination of bulk materials being conveyed or the leakage of bulk materials from screw conveyors. Improper selection of shaft seals could result in the loss of production or exposure of personnel to a harmful bulk material.

### NOMENCLATURE



### PLATE SEAL

Plate seals are economical and effective shaft seals that are mounted between a trough end and a flanged bearing by means of common bolts. Stock plate seals are available with neoprene lip seals. Other types of seal cartridges are also available upon request. Plate seals can also be used with pedestal trough ends and pillow block bearings.



### WASTE PACK SEAL

Waste pack seals are the most common type of screw conveyor shaft seal because of low cost and simple design and are mounted between a trough end and a flanged bearing by means of common bolts. All KWS waste pack seals are available with neoprene lip seal. Other types of seal cartridges are also available upon request. An opening at the top of the seal housing facilitates the packing of loose fiber material called waste packing. The waste packing forms a seal around the diameter of the shaft. The waste packing can be oiled for specific applications. Waste pack seals can also be used with pedestal trough ends and pillow block bearings.



### SPLIT GLAND SEAL

Split gland seals are compression type seals utilizing one ring of rope packing and typically located on the outside of a pedestal trough end. The standard rope packing is graphite impregnated for wear resistance. Other types of rope packing are available including Teflon and Fiberfrax. Split gland seals are easily adjusted by tightening the upper and lower nuts to further compress the packing around the shaft.



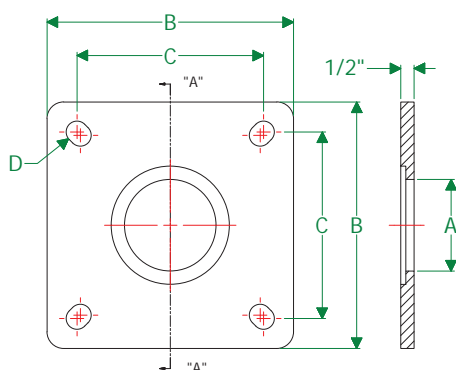
### FLANGED GLAND SEAL

Flanged gland seals are compression type seals utilizing multiple rings of packing and located on the outside of a pedestal trough end. The standard rope packing is graphite impregnated for wear resistance. Other types of rope packing are available including Teflon and Fiberfrax. Flanged gland seals are easily adjusted by tightening the "follower" nuts to further compress the rope packing around the shaft. Many custom designs are available, including air purged, grease purged and split "follower" type.

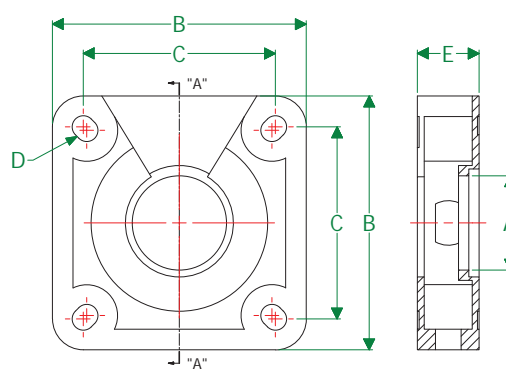


## PLATE AND WASTE PACK SEAL

**PLATE SEAL**



**WASTE PACK SEAL**

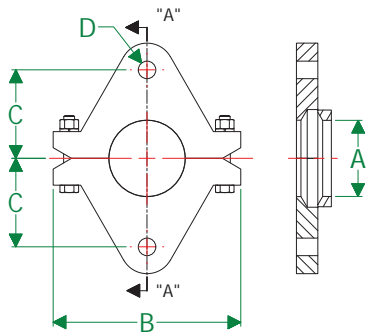


| A<br>Shaft<br>Dia. | B       | C      |        | D<br>Bolts | E      | Part Number |                 | Weight (Lbs.) |                 |
|--------------------|---------|--------|--------|------------|--------|-------------|-----------------|---------------|-----------------|
|                    |         | Min.   | Max.   |            |        | Plate Seal  | Waste Pack Seal | Plate Seal    | Waste Pack Seal |
| 1"                 | 4"      | 2-3/4" | 2-3/4" | 3/8"       | 1-3/4" | PS1L        | WPS1WL          | 2             | 3               |
| 1-1/2"             | 5-3/8"  | 4"     | 4-1/8" | 1/2"       | 1-3/4" | PS112L*     | WPS112WL*       | 4             | 7               |
| 2"                 | 6-1/2"  | 4-3/8" | 5-1/8" | 5/8"       | 1-3/4" | PS2L*       | WPS2WL*         | 6             | 9               |
| 2-7/16"            | 7-3/8"  | 5-3/8" | 5-5/8" | 5/8"       | 1-3/4" | PS2716L*    | WPS2716WL*      | 8             | 11              |
| 3"                 | 7-3/4"  | 6"     | 6"     | 3/4"       | 1-3/4" | PS3L*       | WPS3WL*         | 8             | 12              |
| 3-7/16"            | 9-1/4"  | 6-3/4" | 7"     | 3/4"       | 2-1/4" | PS3716L*    | WPS3716WL*      | 12            | 18              |
| 3-15/16"           | 10-1/4" | 7-3/4" | 7-3/4" | 7/8"       | 2-1/4" | PS31516L    | WPS31516WL      | 14            | 22              |
| 4-7/16"            | 10-7/8" | 8-3/4" | 8-3/4" | 7/8"       | 2-1/4" | PS4716L     | WPS4716WL       | 15            | 24              |

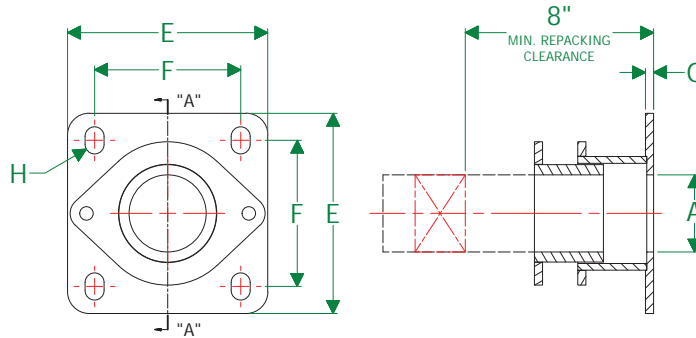
\* KWS Stock Component (Includes Lip Seal Style Only)

## SPLIT GLAND AND FLANGED GLAND SEAL

### SPLIT GLAND SEAL



### FLANGED GLAND SEAL



| A<br>Shaft<br>Dia. | B      | C       | D<br>Bolts | E       | F      | G    | H<br>Bolts | Part Number         |                       | Weight<br>(Lbs.)    |                       |
|--------------------|--------|---------|------------|---------|--------|------|------------|---------------------|-----------------------|---------------------|-----------------------|
|                    |        |         |            |         |        |      |            | Split Gland<br>Seal | Flanged<br>Gland Seal | Split Gland<br>Seal | Flanged<br>Gland Seal |
| 1"                 | 4-1/8" | 1-3/4"  | 3/8"       | 4"      | 2-3/4" | 3/8" | 3/8"       | SGS1#               | FGS1#                 | 4                   | 10                    |
| 1-1/2"             | 4-5/8" | 2-3/16" | 1/2"       | 5-3/8"  | 4"     | 3/8" | 1/2"       | SGS112#*            | FGS112#*              | 5                   | 14                    |
| 2"                 | 5-3/8" | 2-5/8"  | 1/2"       | 6-1/2"  | 5-1/8" | 3/8" | 5/8"       | SGS2#*              | FGS2#*                | 6                   | 18                    |
| 2-7/16"            | 6-1/8" | 3-1/16" | 5/8"       | 7-3/8"  | 5-5/8" | 3/8" | 5/8"       | SGS2716#*           | FGS2716#*             | 8                   | 21                    |
| 3"                 | 6-3/4" | 3-9/16" | 5/8"       | 7-3/4"  | 6"     | 3/8" | 3/4"       | SGS3#*              | FGS3#*                | 9                   | 27                    |
| 3-7/16"            | 8-3/4" | 4-1/8"  | 3/4"       | 9-1/4"  | 6-3/4" | 1/2" | 3/4"       | SGS3716#*           | FGS3716#*             | 13                  | 30                    |
| 3-15/16"           | 9-1/2" | 4-1/2"  | 3/4"       | 10-1/4" | 7-3/4" | 1/2" | 7/8"       | SGS31516#           | FGS31516#             | 14                  | 35                    |
| 4-7/16"            | 10"    | 4-5/8"  | 3/4"       | 10-3/4" | 8-3/4" | 1/2" | 7/8"       | SGS4716#            | FGS4716#              | 15                  | 40                    |

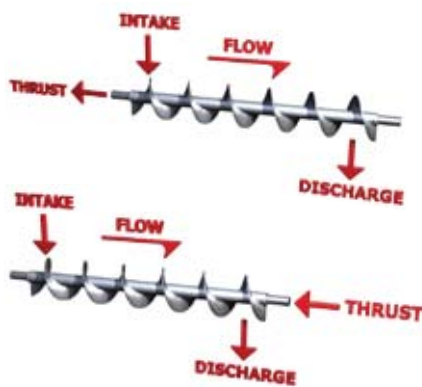
\* KWS Stock Component (Graphite seal material only) #Seal Material; G=Graphite, H=Hi-Temp, N=Nylon, T=Teflon

## END BEARINGS

End bearings provide support at one or both ends of a screw conveyor and must be designed to handle radial and thrust loads as well as shaft runout.

Radial load as measured at the end bearing is half the weight of the last screw section. Radial loads act at right angles to the shaft centerline or bearing axis of rotation. Radial loads are typically negligible at the screw conveyor end shaft. However, end bearings located at the drive end of a screw conveyor are subject to higher radial loading due to the weight of the gear reducer and motor or overhung loads from chain and sprocket drives.

Thrust load is the reaction through the conveyor screws from the movement of a bulk material. Thrust loads are also called axial loads and act parallel to the shaft centerline or bearing axis of rotation. The end bearing on the drive end must prevent axial movement of the screw. Any axial movement of the screw could allow contact



with the hanger bearings or trough ends. KWS recommends locating the drive unit and thrust bearing at the discharge end of a screw conveyor, placing the screws in tension and preventing misalignment when the conveyor is heavily loaded.

Shaft runout occurs when the shaft rotates in an eccentric pattern about the centerline axis. Shaft runout is caused by the minor amount of "bend" inherent in any screw due to the manufacturing process. Shaft runout must be accounted for at the bearings to avoid premature bearing failure. KWS recommends using a fixed thrust bearing at the drive end and a ball or spherical roller bearing at the tail end.

## NOMENCLATURE

|                  |          |          |          |                 |          |          |                  |                     |  |
|------------------|----------|----------|----------|-----------------|----------|----------|------------------|---------------------|--|
|                  | <b>E</b> | <b>B</b> | <b>F</b> | <b>1</b>        | <b>1</b> | <b>2</b> | <b>B</b>         | <b>B</b>            |  |
| EB = End Bearing |          |          |          | Shaft Diameter  |          |          |                  | BB = Ball Bearing   |  |
| F = Flange       |          |          |          | 1 = 1"          |          |          | 3 = 3"           | RB = Roller Bearing |  |
| P = Pillow Block |          |          |          | 112 = 1-1/2"    |          |          | 3716 = 3-7/16"   |                     |  |
|                  |          |          |          | 2 = 2"          |          |          | 31516 = 3-15/16" |                     |  |
|                  |          |          |          | 2716 = 2 -7/16" |          |          | 4716 = 4-7/16"   |                     |  |



### FLANGED ROLLER BEARING

Flanged roller bearings are mounted directly to standard trough ends on the drive end of a screw conveyor. The flanged roller bearing housing contains two sets of tapered bearings that are designed to withstand the thrust of the bulk material being conveyed.



### FLANGED BALL BEARING

Flanged ball bearings are mounted directly to standard trough ends on the tail end of a screw conveyor. The ball bearing housing contains one set of ball bearings that are designed to withstand radial loads only.



### PILLOW BLOCK ROLLER BEARING

Pillow block roller bearings are mounted to pedestal trough ends on the drive end of a screw conveyor. The flanged roller bearing housing contains two sets of tapered or spherical bearings that are designed to withstand the thrust of the bulk material being conveyed.

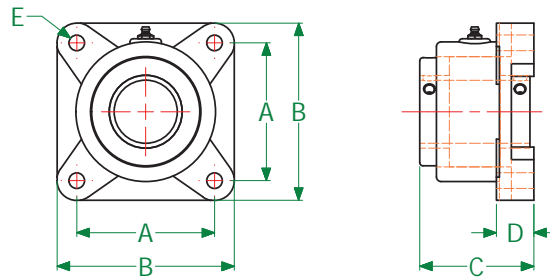


### PILLOW BLOCK BALL BEARING

Pillow block ball bearings are mounted to pedestal trough ends on the tail end of a screw conveyor. The ball bearing housing contains one set of ball bearings that are designed to withstand radial loads only.



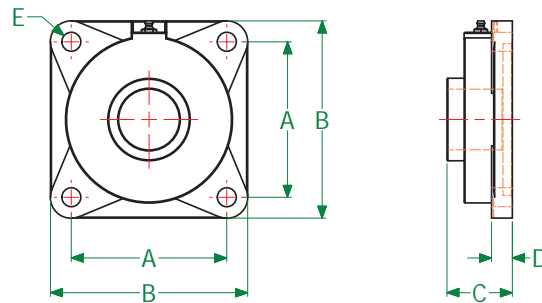
## ROLLER BEARING FLANGE UNIT



| Shaft Dia. | A             | B       | C      | D       | E Bolt Dia. | Part Number | Weight (Lbs.) |
|------------|---------------|---------|--------|---------|-------------|-------------|---------------|
| 1"         | NOT AVAILABLE |         |        |         |             |             |               |
| 1-1/2"     | 4-1/8"        | 5-3/8"  | 3-3/8" | 1-3/16" | 1/2"        | EBF112R*    | 11            |
| 2"         | 4-3/8"        | 5-5/8"  | 3-1/2" | 1-3/16" | 1/2"        | EBF2R*      | 12            |
| 2-7/16"    | 5-3/8"        | 6-7/8"  | 4"     | 1-1/2"  | 5/8"        | EBF2716R*   | 20            |
| 3"         | 6"            | 7-3/4"  | 4-1/2" | 1-5/8"  | 3/4"        | EBF3R*      | 26            |
| 3-7/16"    | 7"            | 9-1/4"  | 5"     | 1-7/8"  | 3/4"        | EBF3716R*   | 50            |
| 3-15/16"   | 7-1/2"        | 10-1/4" | 6-1/4" | 2-1/8"  | 7/8"        | EBF31516R   | 75            |
| 4-7/16"    | 8-3/4"        | 10-7/8" | 7-3/4" | 2-7/16" | 7/8"        | EBF4716R    | 90            |

\* KWS Stock Component

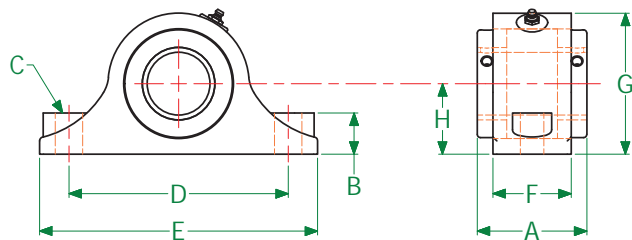
## BALL BEARING FLANGE UNIT



| Shaft Dia. | A             | B       | C       | D      | E Bolt Dia. | Part Number | Weight (Lbs.) |
|------------|---------------|---------|---------|--------|-------------|-------------|---------------|
| 1"         | 2-3/4"        | 3-3/4"  | 1-3/8"  | 1/2"   | 7/16"       | EBF1BB*     | 2             |
| 1-1/2"     | 4"            | 5-1/8"  | 2"      | 1/2"   | 1/2"        | EBF112BB*   | 5             |
| 2"         | 5-1/8"        | 6-1/2"  | 2-1/4"  | 11/16" | 5/8"        | EBF2BB*     | 10            |
| 2-7/16"    | 5-5/8"        | 6-7/8"  | 2-3/8"  | 5/8"   | 5/8"        | EBF2716BB*  | 11            |
| 3"         | 6"            | 7-3/4"  | 3-1/16" | 7/8"   | 3/4"        | EBF3BB*     | 22            |
| 3-7/16"    | 6-3/4"        | 8-7/16" | 3-3/8"  | 1"     | 3/4"        | EBF3716BB*  | 28            |
| 3-15/16"   | NOT AVAILABLE |         |         |        |             |             |               |
| 4-7/16"    | NOT AVAILABLE |         |         |        |             |             |               |

\* KWS Stock Component - All Flange Bearings Include 1/8" Alemite Fitting

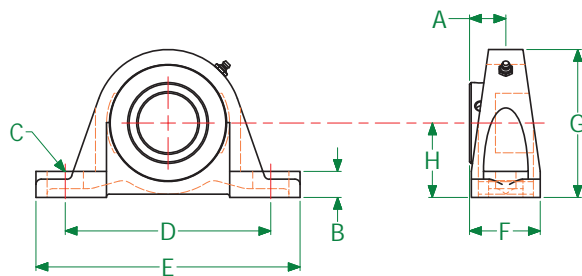
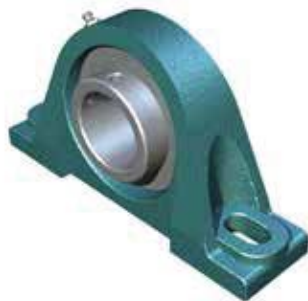
## ROLLER BEARING PILLOW BLOCK



| Shaft Dia. | A             | B       | C Bolt Dia. | D       | E       | F      | G       | H      | Part Number | Weight (Lbs.) |
|------------|---------------|---------|-------------|---------|---------|--------|---------|--------|-------------|---------------|
| 1"         | NOT AVAILABLE |         |             |         |         |        |         |        |             |               |
| 1-1/2"     | 3-3/8"        | 1-1/4"  | 1/2"        | 6-1/4"  | 7-7/8"  | 2-3/8" | 4-1/4"  | 2-1/8" | EBP112R     | 10            |
| 2"         | 3-1/2"        | 1-5/16" | 5/8"        | 7"      | 8-7/8"  | 2-1/2" | 4-1/2"  | 2-1/4" | EBP2R       | 12            |
| 2-7/16"    | 4"            | 1-5/8"  | 5/8"        | 8-1/2"  | 10-1/2" | 2-7/8" | 5-1/2"  | 2-3/4" | EBP2716R    | 20            |
| 3"         | 4-1/2"        | 1-7/8"  | 3/4"        | 9-1/2"  | 12"     | 3"     | 6-1/4"  | 3-1/8" | EBP3R       | 28            |
| 3-7/16"    | 5"            | 2-1/4"  | 7/8"        | 11"     | 14"     | 3-1/2" | 7-1/2"  | 3-3/4" | EBP3716R    | 46            |
| 3-15/16"   | 6-1/4"        | 2-7/16" | 3/4"•       | 12-1/2" | 15-1/4" | 4-1/2" | 8-7/16" | 4-3/4" | EBP31516R•  | 69            |
| 4-7/16"    | 6-3/4"        | 2-3/4"  | 3/4"•       | 13-1/2" | 16-5/8" | 4-5/8" | 9-5/16" | 4-3/4" | EBP4716R•   | 85            |

• Uses a 4 bolt base instead of 2.

## BALL BEARING PILLOW BLOCK



| Shaft Dia. | A             | B       | C Bolt Dia. | D      | E       | F        | G        | H       | Part Number | Weight (Lbs.) |
|------------|---------------|---------|-------------|--------|---------|----------|----------|---------|-------------|---------------|
| 1"         | 3/4"          | 9/16"   | 3/8"        | 4-1/8" | 5-1/2"  | 1-7/16"  | 2-3/4"   | 1-7/16" | EBP1BB      | 2             |
| 1-1/2"     | 1-3/16"       | 15/16"  | 1/2"        | 5-1/2" | 7-1/4"  | 1-15/16" | 4-3/16"  | 2-1/8"  | EBP112BB    | 6             |
| 2"         | 1-3/8"        | 7/8"    | 5/8"        | 7"     | 8-7/8"  | 2-3/8"   | 4-15/16" | 2-1/2"  | EBP2BB      | 9             |
| 2-7/16"    | 1-7/16"       | 15/16"  | 3/4"        | 8"     | 10-3/4" | 2-5/8"   | 6-1/16"  | 3"      | EBP2716BB   | 16            |
| 3"         | 1-1/2"        | 1-1/4"  | 7/8"        | 9"     | 11-3/4" | 3"       | 6-15/16" | 3-1/2"  | EBP3BB      | 21            |
| 3-7/16"    | 1-5/8"        | 1-5/16" | 7/8"        | 11"    | 14"     | 3-3/8"   | 8"       | 4"      | EBP3716BB   | 32            |
| 3-15/16"   | NOT AVAILABLE |         |             |        |         |          |          |         |             |               |
| 4-7/16"    | NOT AVAILABLE |         |             |        |         |          |          |         |             |               |

## SHAFTS

Shafts are designed to transmit rotation and torque between individual conveyor screw sections and provide radial support at the hanger bearings and trough ends. Shafts are manufactured from cold-rolled C-1045 carbon steel as well as 304 and 316 stainless steel; other materials are available upon request. Cold-rolled C-1045 carbon steel shafts are adequate for most applications. However, high-tensile strength materials such as C-4140 may be required for specific applications. Stainless steel shafts may be necessary when corrosive or contaminable materials are to be conveyed. Using a combination of CNC and specially-built jigs, KWS shafts are manufactured to the tightest tolerances available and ensure perfect bolting alignment.

Shaft size is determined based on full motor torque of the drive assembly and the materials of construction of the shafts. Cold-rolled C-1045 carbon steel has a yield strength of 45,000 psi. 304 and 316 stainless steel shafts have a yield strength of 30,000 psi. Please refer to the Engineering Section of the KWS Engineering Guide for further information on shaft selection. A significant safety factor is included in the shaft design calculations.

For information regarding the weights of each shaft, please contact KWS Engineering.

### COUPLING SHAFT

Coupling shafts transmit rotation and torque between screw sections. Clearance is provided between the screw sections for a hanger and hanger bearing support. Hardened shafts are required for hard iron hanger bearings.



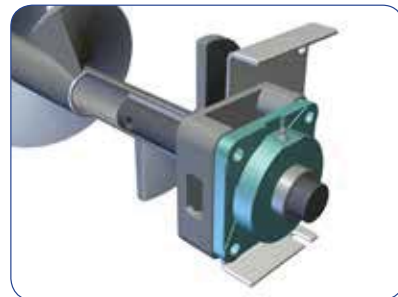
### CLOSE COUPLING SHAFT

Close coupling shafts transmit rotation and torque between screw sections. The screw sections are butted together with no clearance and clocked to form one continuous helix. Close coupled screws are supported by a wear liner or wear bars that are welded into the trough sections.



### END SHAFT

End shafts support the tail end of the screw section at the non-drive end of the screw conveyor. End shafts are typically the same diameter as the coupling and drive shafts. End shaft length is dependent on the type of end bearing, seal and trough end.



## SHAFTS



### HANGER END SHAFT

Hanger end shafts are very similar to end shafts except that a hanger with hanger bearing is used as the end bearing instead of a flanged or pillow block bearing. Hanger end shafts are hardened in the bearing area when using hard iron hanger bearings.



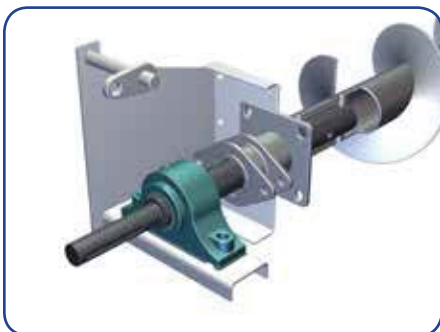
### ROLLER THRUST BEARING DRIVE SHAFT

Roller thrust bearing drive shafts are used with roller thrust bearings. A key-way is provided to couple the drive shaft with the output shaft of a gear reducer or a sprocket with chain. The drive shaft has snap ring grooves on either side of the flanged roller bearing to capture thrust loading in both directions.



### BULKHEAD DRIVE SHAFT

Bulkhead drive shafts are extended shafts that are used with KWS bulkhead trough ends. Standard bulkhead drive shafts can be designed to work with any gear reducer manufacturer.



### TORQUE ARM DRIVE SHAFT

Torque arm drive shafts are extended shafts that are used with KWS torque arm trough ends. Standard torque arm drive shafts can be designed to work with any gear reducer manufacturer.

## COUPLING SHAFT

### NOMENCLATURE

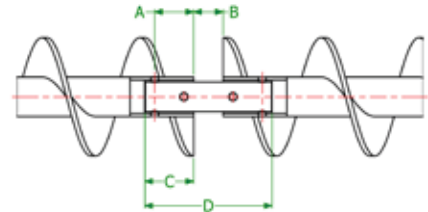
| <b>C S 3 7 1 6 H</b> |  |
|----------------------|--|
| CS = Coupling Shaft  | Shaft Diameter   |
| 1 = 1"               | 3 = 3"   |
| 112 = 1-1/2"         | 3716 = 3-7/16"   |
| 2 = 2"               | 31516 = 3-15/16"   |
| 2716 = 2-7/16"       | 4716 = 4-7/16"   |
|                      | Blank = Standard<br>H = Hardened<br>SS = Stainless Steel |

Note: Also available as a 3-bolt shaft. Dimensions may change for a 3-bolt shaft.

| Shaft Dia. | Part Number | A  | B      | C      | D       |
|------------|-------------|----|--------|--------|---------|
| 1"         | CS1#*       | 2" | 1-1/2" | 3"     | 7-1/2"  |
| 1-1/2"     | CS112#*     | 3" | 2"     | 4-3/4" | 11-1/2" |
| 2"         | CS2#*       | 3" | 2"     | 4-3/4" | 11-1/2" |
| 2-7/16"    | CS2716#*    | 3" | 3"     | 4-7/8" | 12-3/4" |
| 3"         | CS3#*       | 3" | 3"     | 5"     | 13"     |
| 3-7/16"    | CS3716#*    | 4" | 4"     | 7"     | 18"     |
| 3-15/16"   | CS31516#    | 4" | 4"     | 7-3/8" | 18-3/4" |
| 4-7/16"    | CS4716#     | 4" | 5"     | 7-3/4" | 20-1/2" |

\* KWS Stock Component (Made-to-order End Shafts are available upon request)

# Bearing Area; Blank = Standard, H = Hardened or Material; Blank = Standard, SS = Stainless Steel



## CLOSE COUPLING SHAFT

### NOMENCLATURE

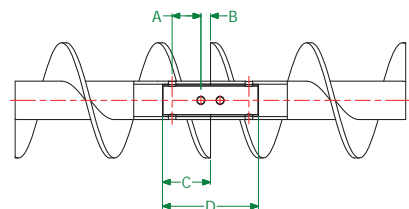
| <b>C C S 3 7 1 6 S S</b>   |  |
|----------------------------|--|
| CCS = Close Coupling Shaft | Shaft Diameter                           |
| 1 = 1"                     | 3 = 3"                                   |
| 112 = 1-1/2"               | 3716 = 3-7/16"                           |
| 2 = 2"                     | 31516 = 3-15/16"                         |
| 2716 = 2-7/16"             | 4716 = 4-7/16"                           |
|                            | Blank = Standard<br>SS = Stainless Steel |

Note: Also available as a 3-bolt shaft. Dimensions may change for a 3-bolt shaft.

| Shaft Dia. | Part Number | A  | B        | C      | D       |
|------------|-------------|----|----------|--------|---------|
| 1"         | CCS1#       | 2" | 1/2"     | 3"     | 6"      |
| 1-1/2"     | CCS112#*    | 3" | 7/8"     | 4-3/4" | 9-1/2"  |
| 2"         | CCS2#*      | 3" | 7/8"     | 4-3/4" | 9-1/2"  |
| 2-7/16"    | CCS2716#*   | 3" | 15/16"   | 4-7/8" | 9-3/4"  |
| 3"         | CCS3#*      | 3" | 1"       | 5"     | 10"     |
| 3-7/16"    | CCS3716#*   | 4" | 1-1/2"   | 7"     | 14"     |
| 3-15/16"   | CCS31516#   | 4" | 1-11/16" | 7-3/8" | 14-3/4" |
| 4-7/16"    | CCS4716#    | 4" | 1-7/8"   | 7-3/4" | 15-1/2" |

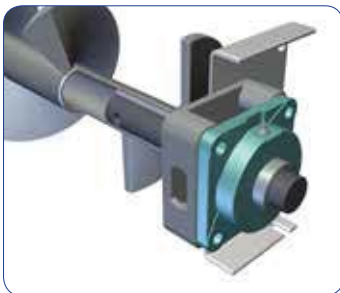
\* KWS Stock Component (Standard Only)

# Material; Blank = Standard, SS = Stainless Steel

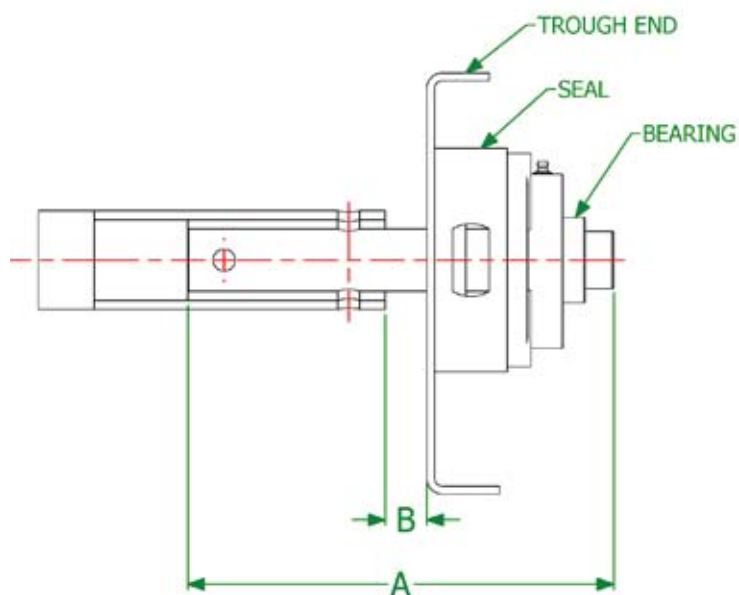


## END SHAFT

### NOMENCLATURE



| <b>E S 1 1 2</b> |                  |
|------------------|------------------|
| ES = End Shaft   | Shaft Diameter   |
| 1 = 1"           | 3 = 3"           |
| 112 = 1-1/2"     | 3716 = 3-7/16"   |
| 2 = 2"           | 31516 = 3-15/16" |
| 2716 = 2-7/16"   | 4716 = 4-7/16"   |



| Shaft Dia. | Drilling | A       | B      | Part Number |
|------------|----------|---------|--------|-------------|
| 1"         | 2-Bolt   | 7-1/2"  | 3/4"   | ES1*        |
| 1-1/2"     | 2-Bolt   | 11-3/4" | 1"     | ES112*      |
| 2"         | 2-Bolt   | 12"     | 1"     | ES2*        |
| 2-7/16"    | 2-Bolt   | 13"     | 1-1/2" | ES2716*     |
| 3"         | 2-Bolt   | 14"     | 1-1/2" | ES3*        |
| 3-7/16"    | 2-Bolt   | 17-3/8" | 2"     | ES3716*     |
| 3-15/16"   | 2-Bolt   | 19-1/4" | 2"     | ES31516     |
| 4-7/16"    | 2-Bolt   | 20-3/4" | 2-1/2" | ES4716      |

\* KWS Stock Component. (Made-to-order End Shafts are available upon request)



## HANGER END SHAFT

### NOMENCLATURE


**H E S 1 1 2 H**

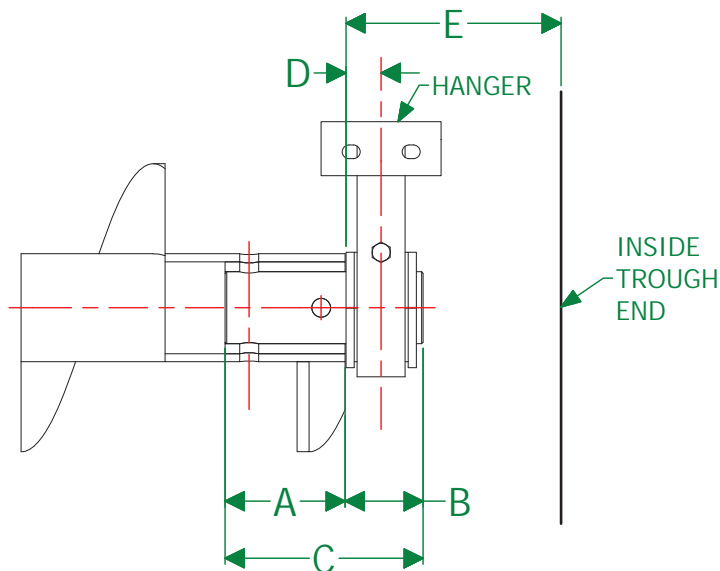
HES = Hanger End Shaft

Shaft Diameter

|                |                  |
|----------------|------------------|
| 1 = 1"         | 3 = 3"           |
| 112 = 1-1/2"   | 3716 = 3-7/16"   |
| 2 = 2"         | 31516 = 3-15/16" |
| 2716 = 2-7/16" | 4716 = 4-7/16"   |

Blank = Standard  
H = Hardened  
SS = Stainless Steel





*Note: Also available as a 3-bolt shaft. Dimensions may change for a 3-bolt shaft.*

| Shaft Dia. | A      | B      | C       | D      | E      | Part Number |
|------------|--------|--------|---------|--------|--------|-------------|
| 1"         | 3"     | 1-5/8" | 4-5/8"  | 3/4"   | 2-3/8" | HES1#       |
| 1-1/2"     | 4-3/4" | 2-1/8" | 6-7/8"  | 1"     | 3-1/8" | HES112#     |
| 2"         | 4-3/4" | 2-1/8" | 6-7/8"  | 1"     | 3-1/8" | HES2#       |
| 2-7/16"    | 4-7/8" | 3-1/4" | 8-1/8"  | 1-1/2" | 4-3/4" | HES2716#    |
| 3"         | 5"     | 3-1/4" | 8-1/4"  | 1-1/2" | 4-3/4" | HES3#       |
| 3-7/16"    | 7"     | 4-1/4" | 11-1/4" | 2"     | 6-1/4" | HES3716#    |
| 3-15/16"   | 7-3/8" | 4-1/4" | 11-5/8" | 2"     | 6-1/4" | HES31516#   |
| 4-7/16"    | 7-3/4" | 5-1/4" | 13"     | 2-1/2" | 7-3/4" | HES4716#    |

*# Bearing Area; Blank = Standard, H = Hardened or Material; Blank = Standard, SS = Stainless Steel*

ROLLER THRUST BEARING SHAFT

NOMENCLATURE



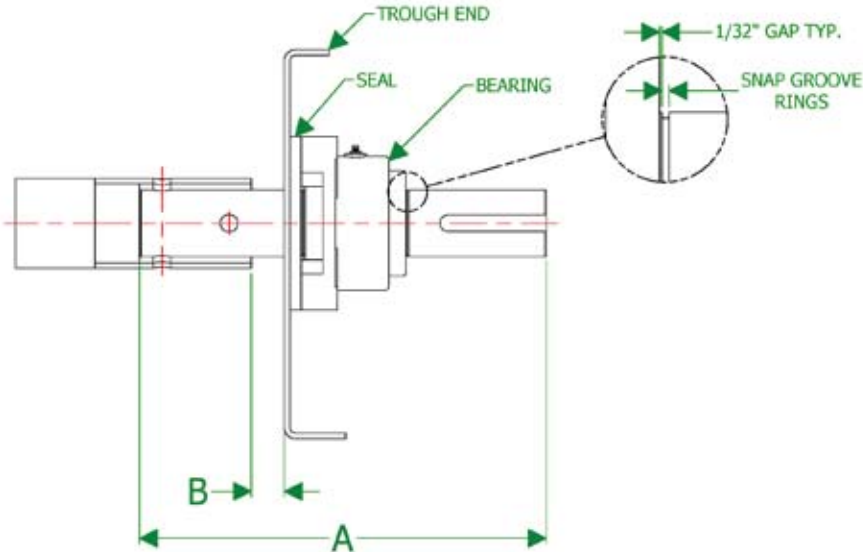
**R** **T** **B** **1** **1** **2**

RTB = Roller Thrust Bearing

Shaft Diameter

1 = 1"  
112 = 1-1/2"  
2 = 2"  
2716 = 2-7/16"

3 = 3"  
3716 = 3-7/16"  
31516 = 3-15/16"  
4716 = 4-7/16"


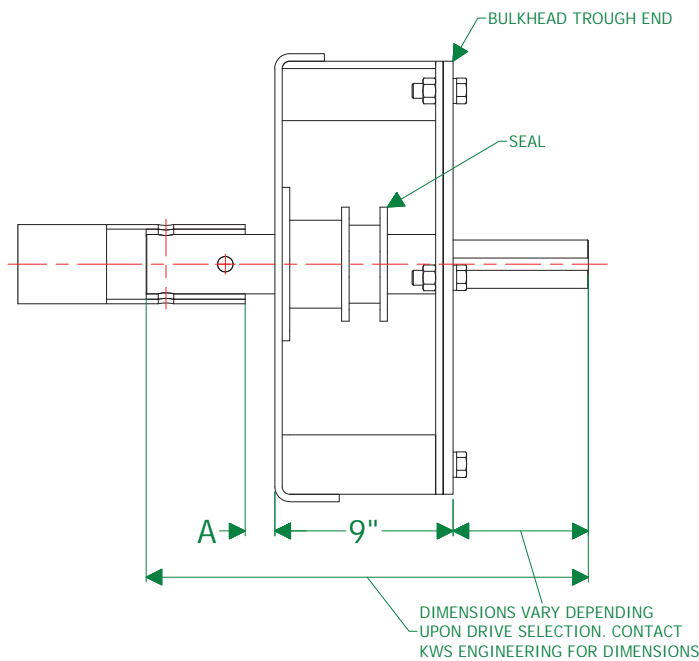


| Shaft Dia. | B             | A (WPS)   | Part Number |
|------------|---------------|-----------|-------------|
| 1"         | Not Available |           |             |
| 1-1/2"     | 1"            | 15-15/32" | RTB112      |
| 2"         | 1"            | 16-1/8"   | RTB2        |
| 2-7/16"    | 1-1/2"        | 18-5/16"  | RTB2716     |
| 3"         | 1-1/2"        | 19-7/16"  | RTB3        |
| 3-7/16"    | 2"            | 24-1/8"   | RTB3716     |
| 3-15/16"   | Contact KWS   |           | RTB31516    |
| 4-7/16"    | Contact KWS   |           | RTB4716     |

## BULKHEAD SHAFT

### NOMENCLATURE

| Q                                   | D | S | - (Varies)     | - | 2 | -                | 2 | B | - | B | H |
|-------------------------------------|---|---|----------------|---|---|------------------|---|---|---|---|---|
| DS = Drive Shaft                    |   |   | 2B = 2 Bolt    |   |   | BH = Bulkhead    |   |   |   |   |   |
| Drive Size / Adapter Style          |   |   | 3B = 3 Bolt    |   |   |                  |   |   |   |   |   |
| Drive Manufacturer:                 |   |   | Shaft Diameter |   |   |                  |   |   |   |   |   |
| N = Nord Drive Shaft                |   |   | 1 = 1"         |   |   | 3 = 3"           |   |   |   |   |   |
| Q = Quantis Drive Shaft             |   |   | 112 = 1-1/2"   |   |   | 3716 = 3-7/16"   |   |   |   |   |   |
| (Other Mfg. drive shafts available) |   |   | 2 = 2"         |   |   | 31516 = 3-15/16" |   |   |   |   |   |
|                                     |   |   | 2716 = 2-7/16" |   |   | 4716 = 4-7/16"   |   |   |   |   |   |

| Shaft Dia. | A      | Part Number      |
|------------|--------|------------------|
| 1"         | 3/4"   | •DS-#-1-#-BH     |
| 1-1/2"     | 1"     | •DS-#-112-#-BH   |
| 2"         | 1"     | •DS-#-2-#-BH     |
| 2-7/16"    | 1-1/2" | •DS-#-2716-#-BH  |
| 3"         | 1-1/2" | •DS-#-3-#-BH     |
| 3-7/16"    | 2"     | •DS-#-3716-#-BH  |
| 3-15/16"   | 2"     | •DS-#-31516-#-BH |
| 4-7/16"    | 2-1/2" | •DS-#-4716-#-BH  |

# = Varies Depending Upon Drive Selection and Number of Bolts

•Drive Manufacturer: N = Nord, Q = Quantis

## TORQUE ARM SHAFT

### NOMENCLATURE



**Q D S - (Varies) - 2 - 2 B - P**

DS = Drive Shaft

Drive Size / Adapter Style

Drive Manufacturer:

N = Nord Drive Shaft

Q = Quantis Drive Shaft

(Other Mfg. drive shafts available)

P = Pedestal

2B = 2 Bolt

3B = 3 Bolt

Shaft Diameter

1 = 1"

3 = 3"

112 = 1-1/2"

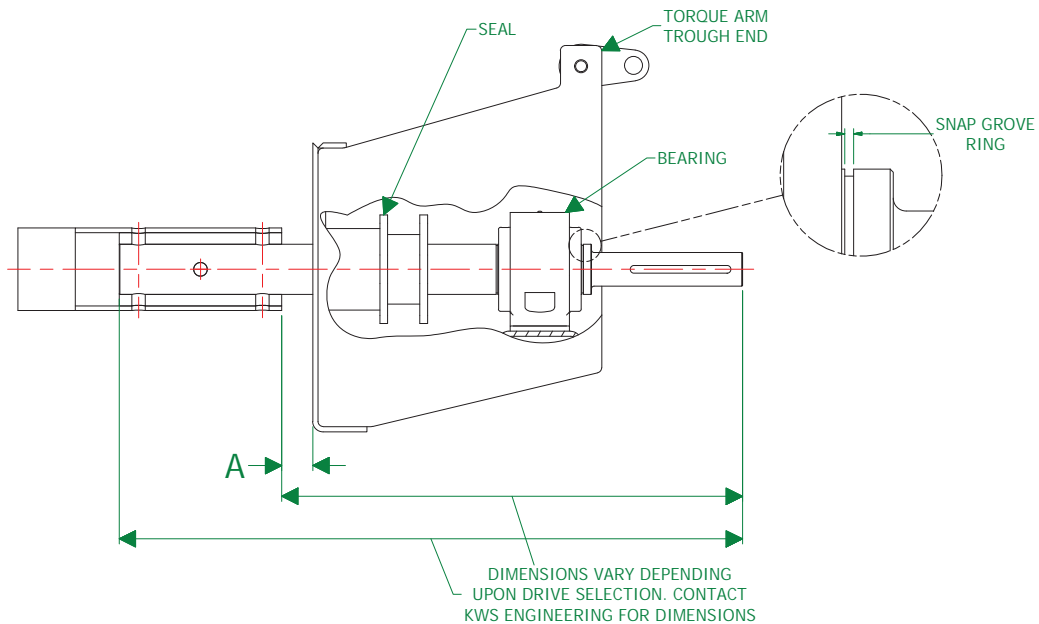
3716 = 3-7/16"

2 = 2"

31516 = 3-15/16"

2716 = 2-7/16"

4716 = 4-7/16"



| Shaft Dia. | A      | Part Number     |
|------------|--------|-----------------|
| 1"         | 3/4"   | •DS-#-1-#-P     |
| 1-1/2"     | 1"     | •DS-#-112-#-P   |
| 2"         | 1"     | •DS-#-2-#-P     |
| 2-7/16"    | 1-1/2" | •DS-#-2716-#-P  |
| 3"         | 1-1/2" | •DS-#-3-#-P     |
| 3-7/16"    | 2"     | •DS-#-3716-#-P  |
| 3-15/16"   | 2"     | •DS-#-31516-#-P |
| 4-7/16"    | 2-1/2" | •DS-#-4716-#-P  |

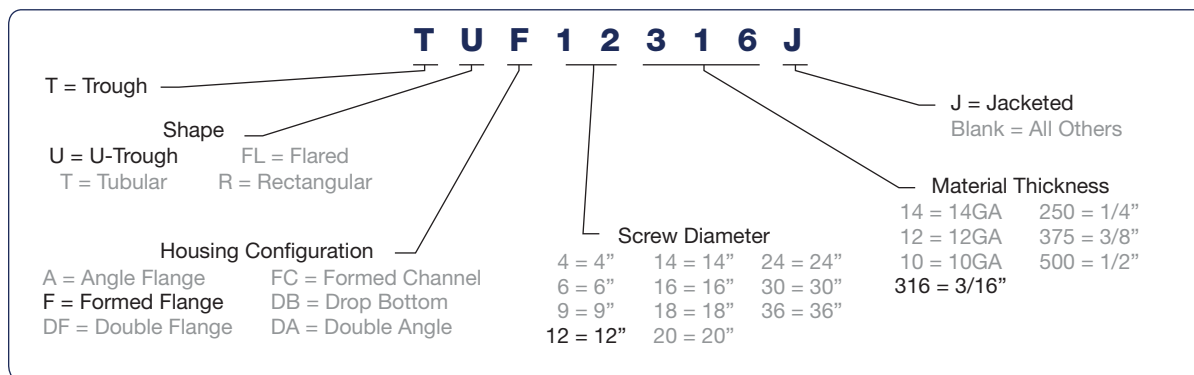
# = Varies Depending Upon Drive Selection and Number of Bolts

• Drive Manufacturer: N = Nord, Q = Quantis

## TROUGHS

KWS designs and manufactures many different types of troughs and tubular housings for every bulk material handling application. All troughs and tubular housings are available in carbon steel construction as well as abrasion-resistant steels, hot-dipped galvanized and stainless steel. KWS can manufacture troughs and tubular housings out of any commercially available metal. Plate end flanges are CNC cut and jig-welded to ensure exact alignment with adjacent trough sections. KWS recommends supporting every trough section with flanged feet or saddles.

### NOMENCLATURE



### U-TROUGHS

U-troughs are the most common type of trough for screw conveyors and screw feeders. The U-trough design is simple, economical and provides access for maintenance.

#### ANGLE FLANGE

Angle flange troughs are manufactured with structural angle top flanges to provide extra rigidity. Stock angle flange troughs utilize thinner gauges of metal and are typically used in light and medium duty applications.



#### FORMED FLANGE

Formed flange troughs are manufactured with formed top flanges. Stock formed flange troughs utilize heavier gauges of steel and are typically used for medium to heavy duty applications. Formed flange troughs are dust-tight.



## TROUGHS



### DOUBLE FORMED FLANGE

Double formed flange troughs are manufactured with two formed top flanges for added rigidity. Double formed flange troughs provide an effective dust-tight seal when used with flanged covers and a compressible gasket material.



### FORMED CHANNEL

Formed channel troughs are manufactured with two formed side channels to provide rigidity for spanning long distances without intermediate supports. The lower, curved trough section is typically bolted to the channel sides and can be replaced when worn.



### DROP BOTTOM

Drop bottom troughs are manufactured with a removable or hinged lower curved trough section. Drop bottom troughs allow access to the screw for clean out or maintenance purposes. Removable drop bottom troughs are bolted on close spacing on both sides of the trough. Hinged drop bottom troughs are hinged on one side with quick-release clamps and safety bolts on the other side.



### JACKETED

Jacketed troughs are manufactured with an outer jacket that is seal-welded to the trough. Bulk materials can be cooled, heated or maintained at a constant temperature with jacketed troughs. Heat transfer mediums such as water, hot oil or steam flow through the jacketed trough to provide heat transfer. ASME coded troughs are available from KWS.



### FLARED TROUGH

Flared troughs are manufactured with formed top flanges. The top opening of a flared trough is wider than a U-trough to allow sticky or viscous bulk materials to enter the trough easier. Many mixing screw conveyors utilize flared troughs because the additional space above the screw creates more room for bulk materials to be mixed.



## TROUGHS

### TUBULAR HOUSINGS

Tubular housings are typically used when a screw conveyor is inclined over 15-degrees. Conveying efficiency is greatly improved with tubular housings because bulk materials are contained and fall back is reduced. Tubular housings are also used for weather-tight applications and used to hold internal pressure in a screw conveyor. ASME coded tubular housings are available from KWS.

#### NON-SPLIT

Non-split tubular housings are manufactured by rolling a cylindrical tube and continuously welding at the seam or cutting down spouting or pipe to length.

#### SPLIT

Split tubular housings are manufactured by rolling two halves and forming flanges on each side. The two halves are then bolted together to form a rigid assembly.



### RECTANGULAR TROUGHS

Rectangular troughs are typically used in applications for conveying abrasive bulk materials. The space between the screw and rectangular trough fills with the bulk material being conveyed forming a static layer. The bulk material being conveyed slides over the static material and eliminates wear on the rectangular trough. Rectangular troughs are also beneficial when utilizing certain abrasion-resistant steels such as AR-400, AR-500 and chromium carbide steel due to their low formability.

#### ANGLE FLANGE

Angle flange rectangular troughs are manufactured with structural angle top flanges to provide extra rigidity similar to U-troughs.

#### FORMED FLANGE

Formed flange rectangular troughs are manufactured with formed angle top flanges similar to U-troughs.

#### ANGLE FLANGE -TOP & BOTTOM

Angle flange – top & bottom rectangular troughs are manufactured with structural angles on both the top and bottom flanges. Some high strength steel plate materials such as AR-400 cannot be formed at 90-degree angles and angle flanges are required.

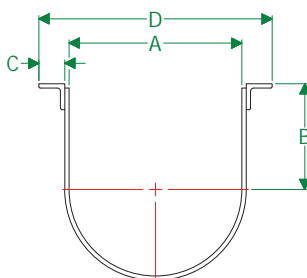
#### FORMED FLANGE -TOP & BOTTOM

Formed flange – top & bottom rectangular troughs are manufactured with formed angles on both the top and bottom flanges.

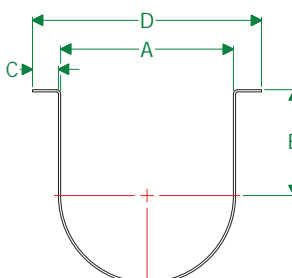


## U-TROUGHS

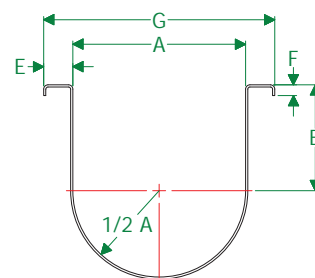
### ANGLED FLANGE



### FORMED FLANGE



### DOUBLE FORMED FLANGE

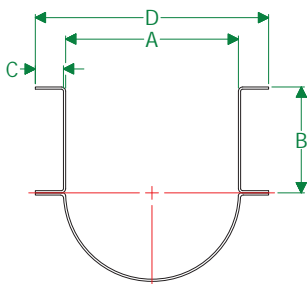


| Screw Dia. | Trough Thk. | A   | B       | C      | D       | E        | F      | G       | Angle Flange |                    | Formed Flange |                    | Double Formed Flange |                    |
|------------|-------------|-----|---------|--------|---------|----------|--------|---------|--------------|--------------------|---------------|--------------------|----------------------|--------------------|
|            |             |     |         |        |         |          |        |         | Part Number  | Wt. Per ft. (Lbs.) | Part Number   | Wt. Per ft. (Lbs.) | Part Number          | Wt. Per ft. (Lbs.) |
| 4"         | 14 Ga.      | 5"  | 3-5/8"  | 1"     | 7-1/4"  | 1-1/4"   | 7/8"   | 7-1/2"  | TUA414*      | 7                  | TUF414        | 5                  | TUDF414              | 6                  |
|            | 12 Ga.      |     |         |        |         |          |        |         | TUA412       | 9                  | TUF412        | 7                  | TUDF412              | 9                  |
|            | 10 Ga.      |     |         |        |         |          |        |         | TUA410       | 12                 | TUF410        | 9                  | TUDF410              | 11                 |
| 6"         | 14 Ga.      | 7"  | 4-1/2"  | 1-1/4" | 9-3/4"  | 1-3/8"   | 7/8"   | 9-3/4"  | TUA614*      | 9                  | TUF614        | 7                  | TUDF614              | 8                  |
|            | 12 Ga.      |     |         |        | 9-3/4"  |          | 7/8"   |         | TUA612       | 13                 | TUF612        | 10                 | TUDF612              | 12                 |
|            | 10 Ga.      |     |         |        | 9-3/4"  |          | 7/8"   |         | TUA610       | 16                 | TUF610        | 13                 | TUDF610              | 15                 |
|            | 3/16"       |     |         |        | 9-7/8"  |          | 1-5/8" |         | TUA6316      | 22                 | TUF6316*      | 19                 | TUDF6316             | 21                 |
|            | 1/4"        |     |         |        | 10"     |          | 1-3/4" |         | TUA6250      | 30                 | TUF6250       | 28                 | TUDF6250             | 30                 |
| 9"         | 14 Ga.      | 10" | 6-1/8"  | 1-1/2" | 13-1/4" | 1-11/16" | 7/8"   | 13-3/8" | TUA914*      | 12                 | TUF914        | 10                 | TUDF914              | 11                 |
|            | 12 Ga.      |     |         |        | 13-1/4" |          | 7/8"   |         | TUA912       | 16                 | TUF912        | 13                 | TUDF912              | 15                 |
|            | 10 Ga.      |     |         |        | 13-1/4" |          | 7/8"   |         | TUA910*      | 21                 | TUF910        | 17                 | TUDF910              | 20                 |
|            | 3/16"       |     |         |        | 13-3/8" |          | 1-5/8" |         | TUA9316      | 27                 | TUF9316*      | 22                 | TUDF9316             | 26                 |
|            | 1/4"        |     |         |        | 13-1/2" |          | 1-3/4" |         | TUA9250      | 39                 | TUF9250       | 34                 | TUDF9250             | 38                 |
| 12"        | 12 Ga.      | 13" | 7-3/4"  | 2"     | 17-1/4" | 2-1/8"   | 7/8"   | 17-1/4" | TUA1212*     | 21                 | TUF1212       | 17                 | TUDF1212             | 19                 |
|            | 10 Ga.      |     |         |        | 17-1/4" |          | 7/8"   |         | TUA1210      | 27                 | TUF1210       | 22                 | TUDF1210             | 25                 |
|            | 3/16"       |     |         |        | 17-3/8" |          | 1-5/8" |         | TUA12316     | 35                 | TUF12316*     | 29                 | TUDF12316            | 33                 |
|            | 1/4"        |     |         |        | 17-1/2" |          | 1-3/4" |         | TUA12250     | 46                 | TUF12250      | 38                 | TUDF12250            | 44                 |
| 14"        | 12 Ga.      | 15" | 9-1/4"  | 2"     | 19-1/4" | 2-1/8"   | 7/8"   | 19-1/4" | TUA1412*     | 23                 | TUF1412       | 19                 | TUDF1412             | 21                 |
|            | 10 Ga.      |     |         |        | 19-1/4" |          | 7/8"   |         | TUA1410      | 30                 | TUF1410       | 25                 | TUDF1410             | 28                 |
|            | 3/16"       |     |         |        | 19-3/8" |          | 1-5/8" |         | TUA14316     | 39                 | TUF14316*     | 33                 | TUDF14316            | 37                 |
|            | 1/4"        |     |         |        | 19-1/2" |          | 1-3/4" |         | TUA14250     | 52                 | TUF14250      | 44                 | TUDF14250            | 50                 |
| 16"        | 12 Ga.      | 17" | 10-5/8" | 2"     | 21-1/4" | 2-1/8"   | 7/8"   | 21-1/4" | TUA1612*     | 26                 | TUF1612       | 22                 | TUDF1612             | 24                 |
|            | 10 Ga.      |     |         |        | 21-1/4" |          | 7/8"   |         | TUA1610      | 33                 | TUF1610       | 28                 | TUDF1610             | 31                 |
|            | 3/16"       |     |         |        | 21-3/8" |          | 1-5/8" |         | TUA16316     | 43                 | TUF16316*     | 37                 | TUDF16316            | 41                 |
|            | 1/4"        |     |         |        | 21-1/2" |          | 1-3/4" |         | TUA16250     | 57                 | TUF16250      | 49                 | TUDF16250            | 55                 |
| 18"        | 10 Ga.      | 19" | 12-1/8" | 2-1/2" | 24-1/4" | 2-5/8"   | 7/8"   | 24-1/4" | TUA1810*     | 38                 | TUF1810       | 32                 | TUDF1810             | 35                 |
|            | 3/16"       |     |         |        | 24-3/8" |          | 1-5/8" |         | TUA18316     | 50                 | TUF18316      | 42                 | TUDF18316            | 46                 |
|            | 1/4"        |     |         |        | 24-1/2" |          | 1-3/4" |         | TUA18250     | 65                 | TUF18250      | 55                 | TUDF18250            | 61                 |
| 20"        | 3/16"       | 21" | 13-1/2" | 2-1/2" | 26-1/2" | 2-5/8"   | 1-5/8" | 26-1/4" | TUA20316*    | 54                 | TUF20316      | 46                 | TUDF20316            | 50                 |
|            | 1/4"        |     |         |        | 26-1/2" |          | 1-3/4" |         | TUA20250     | 71                 | TUF20250      | 61                 | TUDF20250            | 67                 |
| 24"        | 3/16"       | 25" | 16-1/2" | 2-1/2" | 30-3/8" | 2-5/8"   | 1-5/8" | 30-1/4" | TUA24316*    | 63                 | TUF24316      | 55                 | TUDF24316            | 59                 |
|            | 1/4"        |     |         |        | 30-1/2" |          | 1-3/4" |         | TUA24250     | 83                 | TUF24250      | 73                 | TUDF24250            | 79                 |
| 30"        | 3/8"        | 31" | 19-1/2" | 3"     | 37-3/4" | 3-1/8"   | 1-3/4" | 37-1/4" | TUA30375     | 148                | TUF30375      | 134                | TUDF30375            | 142                |
|            | 1/2"        |     |         |        | 38"     |          | X      |         | TUA30500     | 198                | X             | X                  | X                    | X                  |
| 36"        | 3/8"        | 37" | 22-1/2" | 3"     | 43-3/4" | 3-1/2"   | 1-3/4" | 44"     | TUA36375     | 170                | TUF36375      | 156                | TUDF36375            | 164                |
|            | 1/2"        |     |         |        | 44"     |          | X      |         | TUA36500     | 227                | X             | X                  | X                    | X                  |

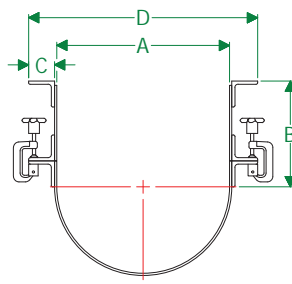
\* KWS Stock Component (In Carbon Steel only)

## U-TROUGHS

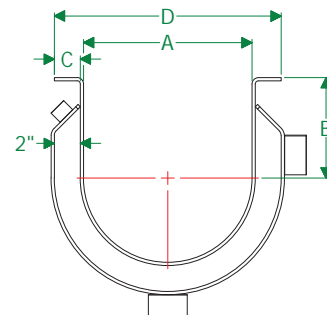
### FORMED CHANNEL



### DROP BOTTOM



### JACKETED

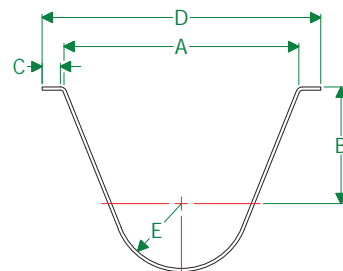


| Screw Dia. | Trough Thk.                                 | A   | B       | C      | D   | Formed Channel Trough                                 |                            | Drop Bottom Trough                                    |                            | Jacketed Trough                                       |                            |
|------------|---|-----|---------|--------|---|---|----------------------------|---|----------------------------|---|----------------------------|
|            |   |     |         |        |   | Part Number   | Wt. Per ft. (Lbs.)         | Part Number   | Wt. Per ft. (Lbs.) †       | Part Number   | Wt. Per ft. (Lbs.) •       |
| 4"         |   |     |         |        |   | NOT AVAILABLE   |                            |   |                            |   |                            |
| 6"         | 14 Ga.<br>12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 7"  | 4-1/2"  | 1-1/4" | 9-3/4"<br>9-3/4"<br>9-3/4"<br>9-7/8"<br>10"         | TUFC614<br>TUFC612<br>TUFC610<br>TUFC6316<br>TUFC6250 | 9<br>12<br>16<br>20<br>26  | TUDB614<br>TUDB612<br>TUDB610<br>TUDB6316<br>TUDB6250 | 14<br>16<br>19<br>23<br>29 | X   | X                          |
| 9"         | 14 Ga.<br>12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 10" | 6-1/8"  | 1-1/2" | 13-1/4"<br>13-1/4"<br>13-1/4"<br>13-3/8"<br>13-1/2" | TUFC914<br>TUFC912<br>TUFC910<br>TUFC9316<br>TUFC9250 | 12<br>16<br>20<br>26<br>30 | TUDB914<br>TUDB912<br>TUDB910<br>TUDB9316<br>TUDB9250 | 18<br>22<br>27<br>33<br>39 | TUF914J<br>TUF912J<br>TUF910J<br>TUF9316J<br>TUF9250J | 19<br>25<br>33<br>43<br>62 |
| 12"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4"           | 13" | 7-3/4"  | 2"     | 17-1/4"<br>17-1/4"<br>17-3/8"<br>17-1/2"            | TUFC1212<br>TUFC1210<br>TUFC12316<br>TUFC12250        | 20<br>26<br>35<br>46       | TUDB1212<br>TUDB1210<br>TUDB12316<br>TUDB12250        | 31<br>28<br>45<br>56       | TUF1212J<br>TUF1210J<br>TUF12316J<br>TUF12250J        | 32<br>41<br>54<br>72       |
| 14"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4"           | 15" | 9-1/4"  | 2"     | 19-1/4"<br>19-1/4"<br>19-3/8"<br>19-1/2"            | TUFC1412<br>TUFC1410<br>TUFC14316<br>TUFC14250        | 22<br>29<br>39<br>51       | TUDB1412<br>TUDB1410<br>TUDB14316<br>TUDB14250        | 33<br>40<br>49<br>62       | TUF1412J<br>TUF1410J<br>TUF14316J<br>TUF14250J        | 36<br>47<br>61<br>82       |
| 16"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4"           | 17" | 10-5/8" | 2"     | 21-1/4"<br>21-1/4"<br>21-3/8"<br>21-1/2"            | TUFC1612<br>TUFC1610<br>TUFC16316<br>TUFC16250        | 25<br>32<br>50<br>56       | TUDB1612<br>TUDB1610<br>TUDB16316<br>TUDB16250        | 36<br>43<br>53<br>67       | TUF1612J<br>TUF1610J<br>TUF16316J<br>TUF16250J        | 41<br>52<br>69<br>91       |
| 18"        | 10 Ga.<br>3/16"<br>1/4"                     | 19" | 12-1/8" | 2-1/2" | 24-1/4"<br>24-3/8"<br>24-1/2"                       | TUFC1810<br>TUFC18316<br>TUFC18250                    | 37<br>49<br>64             | TUDB1810<br>TUDB18316<br>TUDB18250                    | 43<br>65<br>80             | TUF1810J<br>TUF18316J<br>TUF18250J                    | 58<br>77<br>102            |
| 20"        | 3/16"<br>1/4"                               | 21" | 13-1/2" | 2-1/2" | 26-1/2"<br>26-1/2"                                  | TUFC20316<br>TUFC20250                                | 53<br>70                   | TUDB20316<br>TUDB20250                                | 69<br>86                   | TUF20316J<br>TUF20250J                                | 84<br>112                  |
| 24"        | 3/16"<br>1/4"                               | 25" | 16-1/2" | 2-1/2" | 30-3/8"<br>30-1/2"                                  | TUFC24316<br>TUFC24250                                | 63<br>82                   | TUDB24316<br>TUDB24250                                | 78<br>98                   | TUF24316J<br>TUF24250J                                | 100<br>133                 |
| 30"        | 3/8"<br>1/2"                                | 31" | 19-1/2" | 3"     | 37-3/4"<br>38"                                      | TUFC30375<br>X  | 151<br>X                   | TUDB30375<br>TUDB30500                                | 163<br>238                 | TUF30375J<br>X  | 241<br>X                   |
| 36"        | 3/8"<br>1/2"                                | 37" | 22-1/2" | 3"     | 43-3/4"<br>44"                                      | TUFC36375<br>X  | 173<br>X                   | TUDB36375<br>TUDB36500                                | 185<br>260                 | TUA36375J<br>X  | 281<br>X                   |

† Weights do not include clamps • Weights do not include couplings



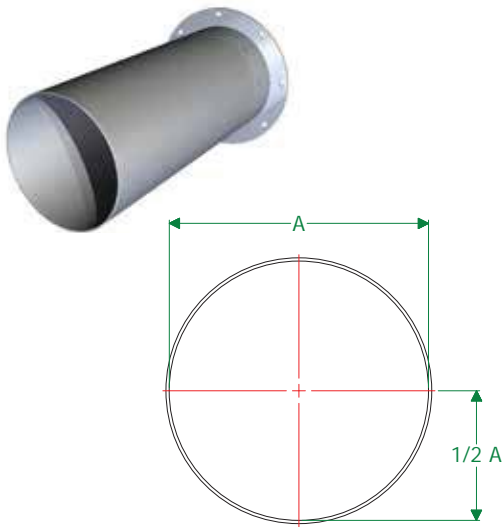
## FLARED TROUGHS



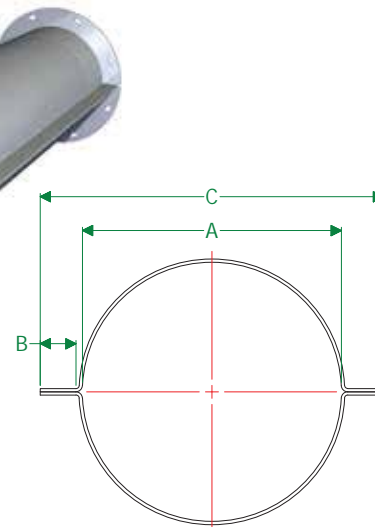
| Screw Dia. | Trough Thk.                       | A             | B       | C      | D  | E       | Part Number                                    | Weight Per Foot (Lbs.) |
|------------|-----------------------------------|---------------|---------|--------|--|---------|--|------------------------|
| 4"         |                                   | NOT AVAILABLE |         |        |  |         |  |                        |
| 6"         | 14 Ga.<br>12 Ga.<br>3/16"<br>1/4" | 14"           | 7"      | 1-1/4" | 16-5/8"<br>16-5/8"<br>16-3/4"<br>16-7/8" | 3-1/2"  | TFLF614<br>TFLF612<br>TFLF6316<br>TFLF6250     | 5<br>8<br>11<br>15     |
| 9"         | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 18"           | 9"      | 1-1/2" | 21-1/4"<br>21-1/4"<br>21-3/8"<br>21-1/2" | 5"      | TFLF912<br>TFLF910<br>TFLF9316<br>TFLF9250     | 10<br>18<br>23<br>37   |
| 12"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 22"           | 10"     | 2"     | 26-1/4"<br>26-1/4"<br>26-3/8"<br>26-3/8" | 6-1/2"  | TFLF1212<br>TFLF1210<br>TFLF12316<br>TFLF12250 | 17<br>22<br>30<br>41   |
| 14"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 24"           | 11"     | 2"     | 28-1/4"<br>28-1/4"<br>28-3/8"<br>28-3/8" | 7-1/2"  | TFLF1412<br>TFLF1410<br>TFLF14316<br>TFLF14250 | 19<br>24<br>33<br>45   |
| 16"        | 12 Ga.<br>10 Ga.<br>3/16"<br>1/4" | 28"           | 11-1/2" | 2"     | 32-1/4"<br>32-1/4"<br>32-3/8"<br>32-1/2" | 8-1/2"  | TFLF1612<br>TFLF1610<br>TFLF16316<br>TFLF16250 | 20<br>26<br>36<br>48   |
| 18"        | 10 Ga.<br>3/16"<br>1/4"           | 31"           | 12-1/8" | 2-1/2" | 36-1/4"<br>36-3/8"<br>36-1/2"            | 9-1/2"  | TFLF1810<br>TFLF18316<br>TFLF18250             | 30<br>40<br>53         |
| 20"        | 3/16"<br>1/4"                     | 34"           | 13-1/2" | 2-1/2" | 39-3/8"<br>39-1/2"                       | 10-1/2" | TFLF20316<br>TFLF20250                         | 43<br>58               |
| 24"        | 3/16"<br>1/4"                     | 40"           | 16-1/2" | 2-1/2" | 45-3/8"<br>45-1/2"                       | 12-1/2" | TFLF24316<br>TFLF24250                         | 51<br>68               |
| 30"        | 3/8"<br>1/2"                      | 48"           | 19-1/2" | 3"     | 55"<br>55-3/8"                           | 15-1/2" | TFLF30375<br>TFLF30500                         | 13<br>184              |
| 36"        | 3/8"<br>1/2"                      | 54"           | 22-1/2" | 3"     | 61-1/8"<br>61-1/2"                       | 18-1/2" | TFLF36375<br>TFLF36500                         | 15<br>213              |

## TUBULAR TROUGHS

NON-SPLIT



SPLIT



| Screw Dia. | Trough Thk. | A (Dia.) | B       | C       | Non-Split   |                     | Split       |                     |
|------------|-------------|----------|---------|---------|-------------|---------------------|-------------|---------------------|
|            |             |          |         |         | Part Number | Wt. Per Foot (Lbs.) | Part Number | Wt. Per Foot (Lbs.) |
| 4"         | 14 Ga.      | 5" •     | 1"      | 7-1/4"  | N/A         | X                   | TTF414      | 5                   |
|            | 12 Ga.      |          |         |         | TT412-DS    | 7                   | TTF412      | 7                   |
|            | 10 Ga.      |          |         |         | N/A         | X                   | TTF410      | 9                   |
| 6"         | 14 Ga.      | 7" •     | 1-1/4"  | 9-3/4"  | TT614-DS    | 7                   | TTF614      | 8                   |
|            | 12 Ga.      |          |         | 9-3/4"  | TT612-DS    | 9                   | TTF612      | 10                  |
|            | 10 Ga.      |          |         | 9-3/4"  | N/A         | X                   | TTF610      | 13                  |
|            | 3/16"       |          |         | 9-7/8"  | N/A         | X                   | TTF6316     | 18                  |
|            | 1/4"        |          |         | 10"     | N/A         | X                   | TTF6250     | 26                  |
|            |             |          |         |         |             |                     |             |                     |
| 9"         | 14 Ga.      | 10" •    | 1-7/16" | 13-3/8" | N/A         | X                   | TTF914      | 11                  |
|            | 12 Ga.      |          |         | 13-3/8" | TT912-DS    | 13                  | TTF912      | 15                  |
|            | 10 Ga.      |          |         | 13-3/8" | TT910-DS    | 17                  | TTF910      | 19                  |
|            | 3/16"       |          |         | 13-3/8" | TT9316-DS   | 22                  | TTF9316     | 25                  |
|            | 1/4"        |          |         | 13-1/2" | TT9250-DS   | 30                  | TTF9250     | 34                  |
|            |             |          |         |         |             |                     |             |                     |
| 12"        | 12 Ga.      | 13"      | 2"      | 17-1/4" | TT1212      | 16                  | TTF1212     | 20                  |
|            | 10 Ga.      |          |         | 17-1/4" | TT1210      | 21                  | TTF1210     | 25                  |
|            | 3/16"       |          |         | 17-3/8" | TT12316     | 28                  | TTF12316    | 33                  |
|            | 1/4"        |          |         | 17-3/8" | TT12250     | 37                  | TTF12250    | 45                  |
| 14"        | 12 Ga.      | 15"      | 2"      | 19-1/4" | TT1412      | 19                  | TTF1412     | 22                  |
|            | 10 Ga.      |          |         | 19-1/4" | TT1410      | 24                  | TTF1410     | 29                  |
|            | 3/16"       |          |         | 19-3/8" | TT14316     | 32                  | TTF14316    | 38                  |
|            | 1/4"        |          |         | 19-1/2" | TT14250     | 43                  | TTF14250    | 50                  |
| 16"        | 12 Ga.      | 17"      | 2"      | 21-1/4" | TT1612      | 21                  | TTF1612     | 25                  |
|            | 10 Ga.      |          |         | 21-1/4" | TT1610      | 28                  | TTF1610     | 32                  |
|            | 3/16"       |          |         | 21-3/8" | TT16316     | 37                  | TTF16316    | 42                  |
|            | 1/4"        |          |         | 21-1/2" | TT16250     | 49                  | TTF16250    | 56                  |
| 18"        | 10 Ga.      | 19"      | 2-1/2"  | 24-1/4" | TT1810      | 31                  | TTF1810     | 36                  |
|            | 3/16"       |          |         | 24-1/2" | TT18316     | 41                  | TTF18316    | 48                  |
|            | 1/4"        |          |         | 24-1/2" | TT18250     | 55                  | TTF18250    | 64                  |
| 20"        | 3/16"       | 21"      | 2-1/2"  | 26-3/8" | TT20316     | 46                  | TTF20316    | 53                  |
|            | 1/4"        |          |         | 26-1/2" | TT20250     | 61                  | TTF20250    | 70                  |
| 24"        | 3/16"       | 25"      | 2-1/2"  | 30-3/8" | TT24316     | 54                  | TTF24316    | 62                  |
|            | 1/4"        |          |         | 30-1/2" | TT24250     | 73                  | TTF24250    | 82                  |
| 30"        | 3/8"        | 31"      | 3"      | 37-3/4" | TT30375     | 136                 | TTF30375    | 153                 |
|            | 1/2"        |          |         | 38"     | TT30500     | 188                 | TTF30500    | 210                 |
| 36"        | 3/8"        | 37"      | 3"      | 43-3/4" | TT36375     | 163                 | TTF36375    | 180                 |
|            | 1/2"        |          |         | 44"     | TT36500     | 224                 | TTF36500    | 245                 |

• Down Spouting Used for Non-Split 4, 6, and 9 inch: "A" Dimension Becomes OD and not ID

## RECTANGULAR TROUGHS

ANGLE FLANGE



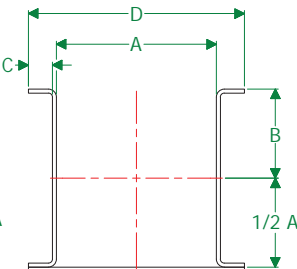
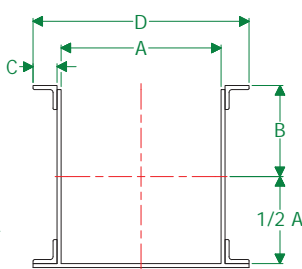
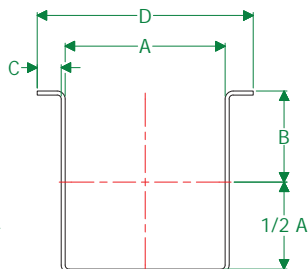
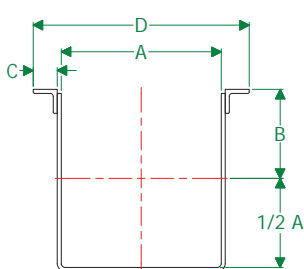
FORMED FLANGE



DOUBLE ANGLE



FORMED CHANNEL



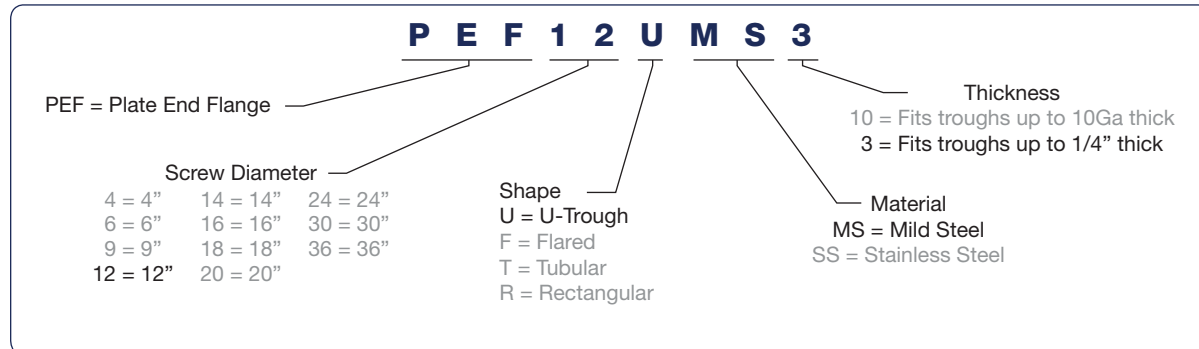
| Screw Dia. | Trough Thk. | A   | B       | C      | D       | Angle Flanged |                | Formed Flanged |                | Double Angle |                | Formed Channel |                |
|------------|-------------|-----|---------|--------|---------|---------------|----------------|----------------|----------------|--------------|----------------|----------------|----------------|
|            |             |     |         |        |         | Part Number   | Wt./Ft. (Lbs.) | Part Number    | Wt./Ft. (Lbs.) | Part Number  | Wt./Ft. (Lbs.) | Part Number    | Wt./Ft. (Lbs.) |
| 4"         |             |     |         |        |         | NOT AVAILABLE |                |                |                |              |                |                |                |
| 6"         | 14 Ga.      | 7"  | 4-1/2"  | 1-1/4" | 9-3/4"  | TRA614        | 8              | TRF614         | 8              | TRDA614      | 9              | TRFC614        | 8              |
|            | 12 Ga.      |     |         |        | 9-3/4"  | TRA612        | 11             | TRF612         | 11             | TRDA612      | 12             | TRFC612        | 11             |
|            | 10 Ga.      |     |         |        | 9-3/4"  | TRA610        | 14             | TRF610         | 14             | TRDA610      | 16             | TRFC610        | 14             |
|            | 3/16"       |     |         |        | 9-7/8"  | TRA6316       | 19             | TRF6316        | 19             | TRDA6316     | 21             | TRFC6316       | 19             |
|            | 1/4"        |     |         |        | 10"     | TRA6250       | 25             | TRF6250        | 25             | TRDA6250     | 28             | TRFC6250       | 25             |
| 9"         | 14 Ga.      | 10" | 6-1/8"  | 1-1/2" | 13-1/4" | TRA914        | 11             | TRF914         | 11             | TRDA914      | 12             | TRFC914        | 11             |
|            | 12 Ga.      |     |         |        | 13-1/4" | TRA912        | 15             | TRF912         | 15             | TRDA912      | 17             | TRFC912        | 15             |
|            | 10 Ga.      |     |         |        | 13-1/4" | TRA910        | 19             | TRF910         | 19             | TRDA910      | 22             | TRFC910        | 19             |
|            | 3/16"       |     |         |        | 13-3/8" | TRA9316       | 26             | TRF9316        | 26             | TRDA9316     | 29             | TRFC9316       | 26             |
|            | 1/4"        |     |         |        | 13-1/2" | TRA9250       | 34             | TRF9250        | 34             | TRDA9250     | 38             | TRFC9250       | 35             |
| 12"        | 12 Ga.      | 13" | 7-3/4"  | 2"     | 17-1/4" | TRA1212       | 19             | TRF1212        | 19             | TRDA1212     | 22             | TRFC1212       | 19             |
|            | 10 Ga.      |     |         |        | 17-1/4" | TRA1210       | 25             | TRF1210        | 25             | TRDA1210     | 28             | TRFC1210       | 25             |
|            | 3/16"       |     |         |        | 17-3/8" | TRA12316      | 31             | TRF12316       | 31             | TRDA12316    | 38             | TRFC12316      | 34             |
|            | 1/4"        |     |         |        | 17-1/2" | TRA12250      | 44             | TRF12250       | 44             | TRDA12250    | 50             | TRFC12250      | 45             |
| 14"        | 12 Ga.      | 15" | 9-1/4"  | 2"     | 19-1/4" | TRA1412       | 22             | TRF1412        | 22             | TRDA1412     | 24             | TRFC1412       | 22             |
|            | 10 Ga.      |     |         |        | 19-1/4" | TRA1410       | 29             | TRF1410        | 29             | TRDA1410     | 32             | TRFC1410       | 29             |
|            | 3/16"       |     |         |        | 19-3/8" | TRA14316      | 38             | TRF14316       | 38             | TRDA14316    | 42             | TRFC14316      | 39             |
|            | 1/4"        |     |         |        | 19-1/2" | TRA14250      | 51             | TRF14250       | 51             | TRDA14250    | 56             | TRFC14250      | 52             |
| 16"        | 12 Ga.      | 17" | 10-5/8" | 2"     | 21-1/4" | TRA1612       | 25             | TRF1612        | 25             | TRDA1612     | 27             | TRFC1612       | 25             |
|            | 10 Ga.      |     |         |        | 21-1/4" | TRA1610       | 32             | TRF1610        | 32             | TRDA1610     | 35             | TRFC1610       | 33             |
|            | 3/16"       |     |         |        | 21-3/8" | TRA16316      | 42             | TRF16316       | 42             | TRDA16316    | 37             | TRFC16316      | 44             |
|            | 1/4"        |     |         |        | 21-1/2" | TRA16250      | 57             | TRF16250       | 57             | TRDA16250    | 50             | TRFC16250      | 58             |
| 18"        | 10 Ga.      | 19" | 12-1/8" | 2-1/2" | 24-1/4" | TRA1810       | 37             | TRF1810        | 37             | TRDA1810     | 40             | TRFC1810       | 37             |
|            | 3/16"       |     |         |        | 24-3/8" | TRA18316      | 49             | TRF18316       | 49             | TRDA18316    | 54             | TRFC18316      | 49             |
|            | 1/4"        |     |         |        | 24-1/2" | TRA18250      | 65             | TRF18250       | 65             | TRDA18250    | 72             | TRFC18250      | 66             |
| 20"        | 3/16"       | 21" | 13-1/2" | 2-1/2" | 26-3/8" | TRA20316      | 54             | TRF20316       | 53             | TRDA20316    | 59             | TRFC20316      | 54             |
|            | 1/4"        |     |         |        | 26-1/2" | TRA20250      | 72             | TRF20250       | 71             | TRDA20250    | 78             | TRFC20250      | 73             |
| 24"        | 3/16"       | 25" | 16-1/2" | 2-1/2" | 30-3/8" | TRA24316      | 63             | TRF24316       | 63             | TRDA24316    | 69             | TRFC24316      | 65             |
|            | 1/4"        |     |         |        | 30-1/2" | TRA24250      | 85             | TRF24250       | 84             | TRDA24250    | 91             | TRFC24250      | 86             |
| 30"        | 3/8"        | 31" | 19-1/2" | 3"     | 37-3/4" | TRA30375      | 154            | TRF30375       | 153            | TRDA30375    | 166            | TRFC30375      | 157            |
| 36"        | 3/8"        | 37" | 22-1/2" | 3"     | 43-3/4" | TRA36375      | 180            | TRF36375       | 178            | TRDA36375    | 192            | TRFC36375      | 183            |



## PLATE END FLANGES

Plate end flanges are continuously welded to the ends of each trough section and used to connect trough sections together. Bolts are located external to the trough for ease of access. Plate end flanges are CNC cut and jig-welded to ensure exact alignment with other adjacent sections.

### NOMENCLATURE



**U-TROUGH PLATE  
END FLANGE**



**TUBULAR TROUGH  
PLATE END FLANGE**



**RECTANGULAR TROUGH  
PLATE END FLANGE**



**FLARED TROUGH  
PLATE END FLANGE**

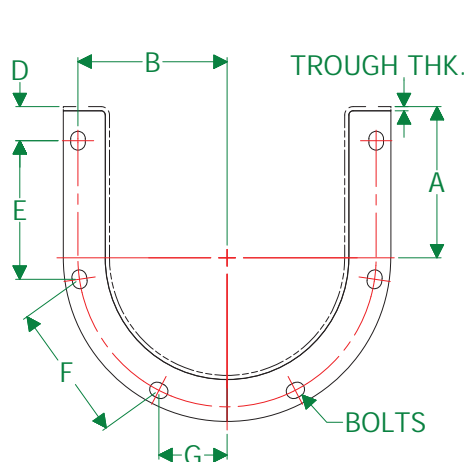


**U-TROUGH / RECTANGULAR  
FLUSH END PLATE  
END FLANGE**

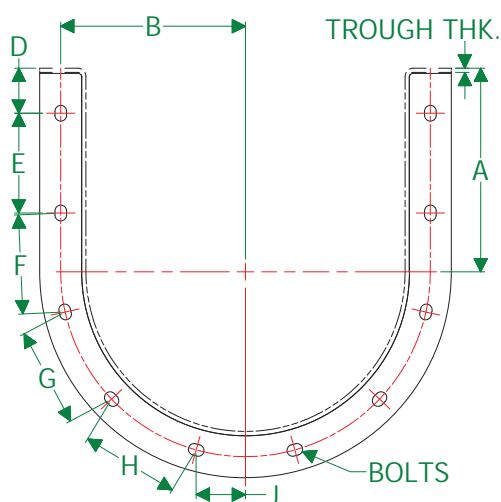


## U-TROUGH PLATE END FLANGES

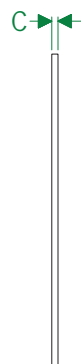
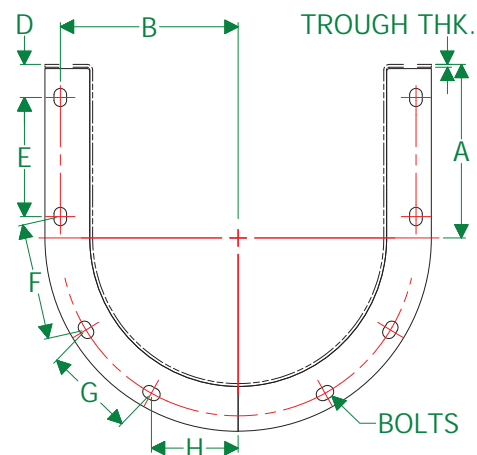
### 6 BOLT FLANGE



### 10 BOLT FLANGE



### 8 BOLT FLANGE



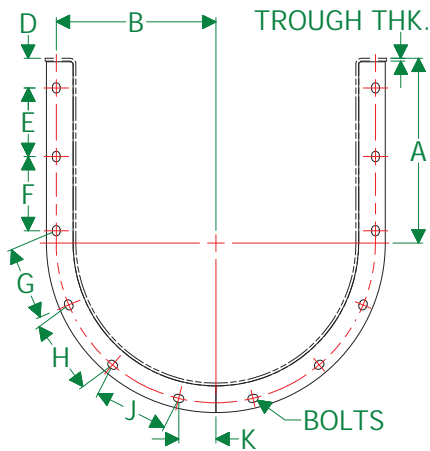
| Screw Dia. | Bolts |      | A       | B        | C Thk. | D        | E        | F        | G        | H        | J        | Part Number | Weight (Lbs.) |
|------------|-------|------|---------|----------|--------|----------|----------|----------|----------|----------|----------|-------------|---------------|
|            | Dia.  | Qty. |         |          |        |          |          |          |          |          |          |             |               |
| 4"         | 3/8"  | 6    | 3-5/8"  | 3-1/2"   | 3/16"  | 1-1/8"   | 3-1/8"   | 3-1/8"   | 1-9/16"  | X        | X        | PEF4U•#     | 1             |
| 6"         | 3/8"  | 6    | 4-1/2"  | 4-7/16"  | 3/16"  | 1-1/32"  | 4-1/8"   | 4-1/16"  | 2"       | X        | X        | PEF6U•#     | 2             |
| 9"         | 3/8"  | 8    | 6-1/8"  | 6-1/4"   | 1/4"   | 1-3/16"  | 4-1/8"   | 4-1/8"   | 3-3/4"   | 2-9/16"  | X        | PEF9U•#     | 4             |
| 12"        | 1/2"  | 8    | 7-3/4"  | 7-15/16" | 1/4"   | 1-1/2"   | 5-5/16"  | 5-3/16"  | 4-1/16"  | 3-7/8"   | X        | PEF12U•#    | 6             |
| 14"        | 1/2"  | 8    | 9-1/4"  | 8-15/16" | 1/4"   | 2-1/2"   | 5-5/8"   | 5-15/16" | 5-15/16" | 3"       | X        | PEF14U•#    | 7             |
| 16"        | 5/8"  | 8    | 10-5/8" | 10"      | 1/4"   | 2-5/8"   | 6-3/8"   | 6-5/8"   | 6-5/8"   | 3-3/4"   | 2-15/16" | PEF16U•#    | 8             |
| 18"        | 5/8"  | 10   | 12-1/8" | 11"      | 1/4"   | 2-11/16" | 5-15/16" | 5-7/8"   | 5-7/8"   | 5-7/8"   | 2-11/32" | PEF18U•#    | 11            |
| 20"        | 5/8"  | 10   | 13-1/2" | 12-3/16" | 1/4"   | 2-3/4"   | 6-1/4"   | 6-11/16" | 6-11/16" | 6-11/16" | 3-3/8"   | PEF20U•#    | 12            |

\* KWS Stock Component (Only Mild Steel) # = Thickness: 10 = Fits troughs up to 10Ga thick, 3 = Fits troughs up to 1/4" thick

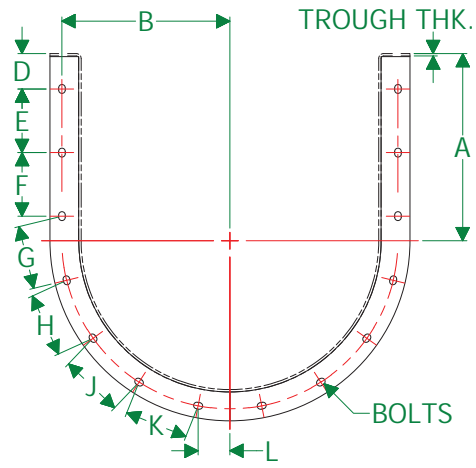
• Material Type; MS = Mild Steel, SS = Stainless Steel

## U-TROUGH PLATE END FLANGES

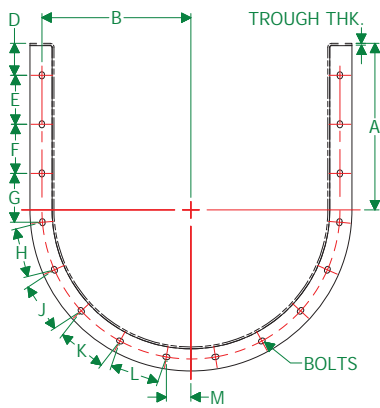
### 12 BOLT FLANGE



### 14 BOLT FLANGE



### 16 BOLT FLANGE



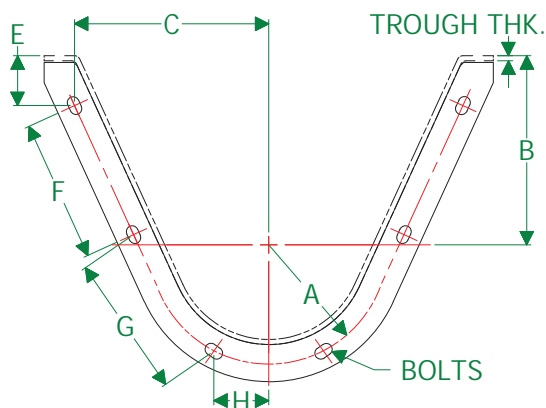
| Screw<br>Dia. | Bolts |      | A       | B       | C<br>Thk. | D       | E      | F      | G      | H      | J      | K       | L       | M       | Part<br>Number | Weight<br>(Lbs.) |
|---------------|-------|------|---------|---------|-----------|---------|--------|--------|--------|--------|--------|---------|---------|---------|----------------|------------------|
|               | Dia.  | Qty. |         |         |           |         |        |        |        |        |        |         |         |         |                |                  |
| 24"           | 5/8"  | 12   | 16-1/2" | 14-1/4" | 1/4"      | 2-5/8"  | 6-1/8" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8" | 3-5/16" | X       | X       | PEF24U•#*      | 14               |
| 30"           | 5/8"  | 14   | 19-1/2" | 17-1/2" | 3/8"      | 3-3/4"  | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8"  | 3-5/16" | X       | PEF30U•#       | 21               |
| 36"           | 5/8"  | 16   | 22-1/2" | 20-1/8" | 3/8"      | 4-5/16" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8" | 6-5/8"  | 6-5/8"  | 3-5/16" | PEF36U•#       | 25               |

\* KWS Stock Component (Only Mild Steel) # = Thickness: 10 = Fits troughs up to 10Ga thick, 3 = Fits troughs up to 1/4" thick

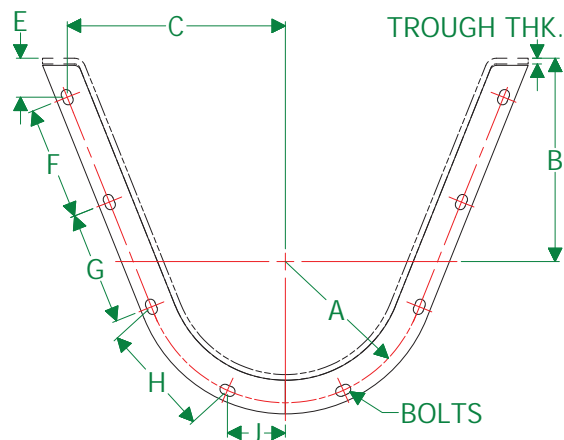
• Material Type; MS = Mild Steel, SS = Stainless Steel

## FLARED TROUGH PLATE END FLANGES

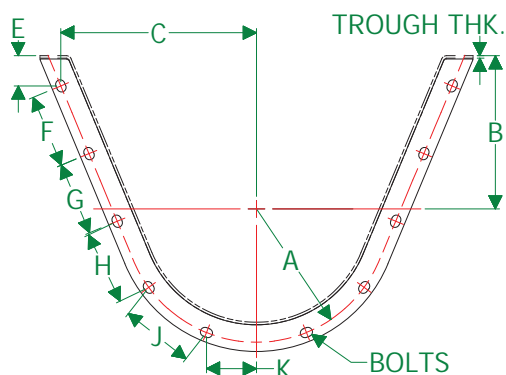
### 6 BOLT FLANGE



### 8 BOLT FLANGE



### 10 BOLT FLANGE

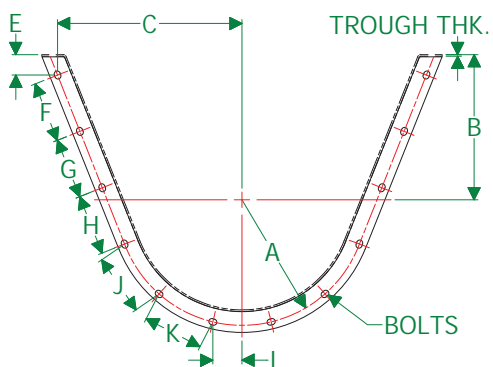


| Screw Dia. | Bolts         |      | A        | B       | C         | D Thk. | E        | F       | G       | H       | J       | K        | Part Number | Weight (Lbs.) |
|------------|---------------|------|----------|---------|-----------|--------|----------|---------|---------|---------|---------|----------|-------------|---------------|
|            | Dia.          | Qty. |          |         |           |        |          |         |         |         |         |          |             |               |
| 4"         | NOT AVAILABLE |      |          |         |           |        |          |         |         |         |         |          |             |               |
| 6"         | 3/8"          | 6    | 4-7/16"  | 7"      | 7-3/16"   | 3/16"  | 1-27/32" | 5-1/4"  | 5-1/4"  | 2-1/32" | X       | X        | PEF6F●      | 3             |
| 9"         | 3/8"          | 8    | 6-1/4"   | 9"      | 9-11/16"  | 1/4"   | 1-3/4"   | 5"      | 5"      | 5"      | 2-9/16" | X        | PEF9F●      | 5             |
| 12"        | 1/2"          | 8    | 7-15/16" | 10"     | 11-13/16" | 1/4"   | 1-13/16" | 5-3/4"  | 5-3/4"  | 5-3/4"  | 3-7/8"  | X        | PEF12F●     | 7             |
| 14"        | 1/2"          | 10   | 8-15/16" | 11"     | 12-3/4"   | 1/4"   | 2-1/16"  | 5-1/8"  | 5-1/8"  | 5-1/8"  | 5-1/8"  | 3"       | PEF14F●     | 8             |
| 16"        | 5/8"          | 10   | 10"      | 11-1/2" | 14-11/16" | 1/4"   | 2-1/4"   | 5-1/2"  | 5-1/2"  | 5-1/2"  | 5-1/2"  | 3-3/4"   | PEF16F●     | 8             |
| 18"        | 5/8"          | 10   | 11"      | 12-1/8" | 16"       | 1/4"   | 2-5/8"   | 6-3/16" | 6-3/16" | 6-3/16" | 6-3/16" | 2-15/16" | PEF18F●     | 11            |
| 20"        | 5/8"          | 10   | 12-3/16" | 13-1/2" | 17-7/8"   | 1/4"   | 2-5/16"  | 7"      | 7"      | 7"      | 7"      | 3-11/32" | PEF20F●     | 12            |

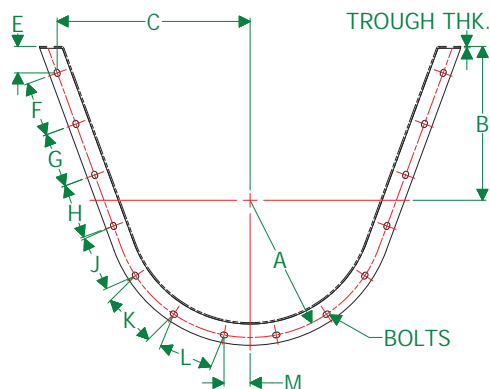
• Material Type; MS = Mild Steel, SS = Stainless Steel

## FLARED TROUGH PLATE END FLANGES

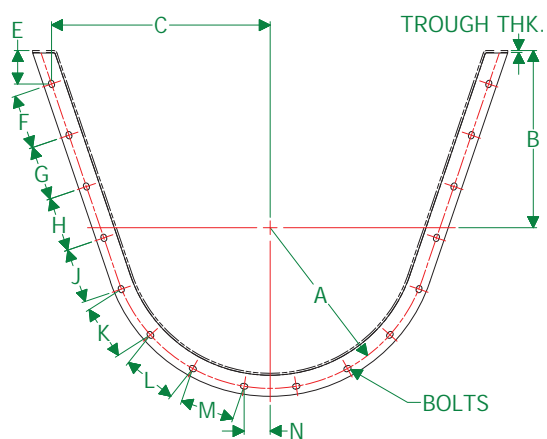
**12 BOLT FLANGE**



**14 BOLT FLANGE**



**16 BOLT FLANGE**

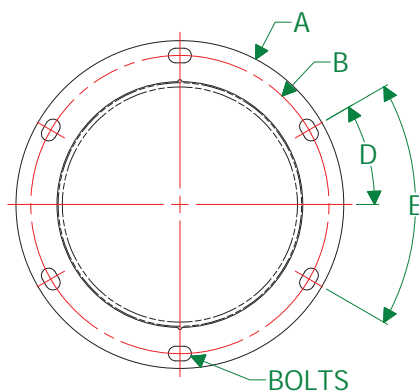


| Screw<br>Dia. | Bolts |      | A       | B       | C         | D<br>Thk. | E       | F      | G      | H      | J      | K      | L       | M      | N      | Part<br>Number | Weight<br>(Lbs.) |
|---------------|-------|------|---------|---------|-----------|-----------|---------|--------|--------|--------|--------|--------|---------|--------|--------|----------------|------------------|
|               | Dia.  | Qty. |         |         |           |           |         |        |        |        |        |        |         |        |        |                |                  |
| 24"           | 5/8"  | 12   | 14-1/4" | 16-1/2" | 20-15/16" | 1/4"      | 2-5/16" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 3-5/16" | X      | X      | PEF24F•        | 15               |
| 30"           | 5/8"  | 14   | 17-1/2" | 19-1/2" | 24-13/16" | 3/8"      | 3-1/2"  | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8"  | 3-1/2" | X      | PEF30F•        | 20               |
| 36"           | 5/8"  | 16   | 20-1/2" | 22-1/2" | 27-15/16" | 3/8"      | 3-1/2"  | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8" | 6-7/8"  | 6-7/8" | 4-1/4" | PEF36F•        | 23               |

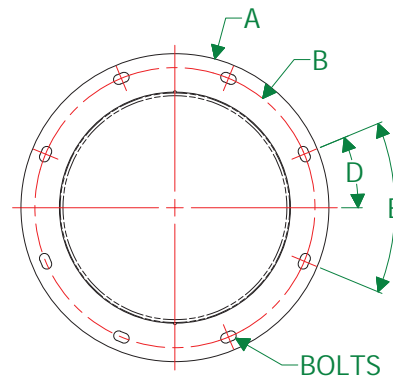
• Material Type; MS = Mild Steel, SS = Stainless Steel

## TUBULAR TROUGH PLATE END FLANGES

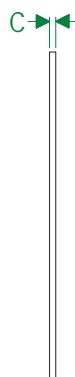
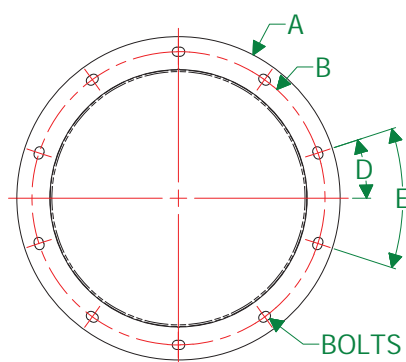
### 6 BOLT FLANGE



### 8 BOLT FLANGE



### 10 BOLT FLANGE



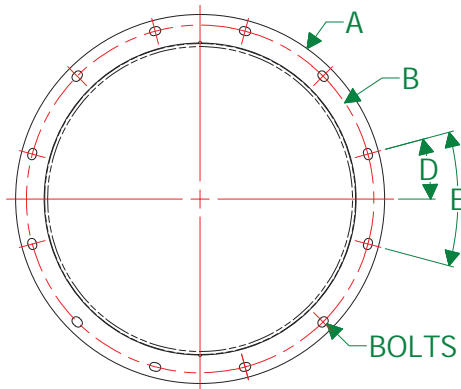
| Screw Dia. | Bolts |      | A Dia.  | B Dia.  | C Thk. | D Angle | E Angle | Part Number | Weight (Lbs.) |
|------------|-------|------|---------|---------|--------|---------|---------|-------------|---------------|
|            | Dia.  | Qty. |         |         |        |         |         |             |               |
| 4"         | 3/8"  | 6    | 7-3/4"  | 7"      | 3/16"  | 30°     | 60°     | PEF4T•      | 2             |
| 6"         | 3/8"  | 6    | 9-3/4"  | 8-7/8"  | 3/16"  | 30°     | 60°     | PEF6T•      | 2             |
| 9"         | 3/8"  | 8    | 13-3/4" | 12-1/2" | 1/4"   | 22.5°   | 45°     | PEF9T•      | 5             |
| 12"        | 1/2"  | 8    | 17-1/4" | 15-7/8" | 1/4"   | 22.5°   | 45°     | PEF12T•     | 8             |
| 14"        | 1/2"  | 8    | 19-1/4" | 17-7/8" | 1/4"   | 22.5°   | 45°     | PEF14T•     | 8             |
| 16"        | 5/8"  | 8    | 21-1/4" | 20"     | 1/4"   | 22.5°   | 45°     | PEF16T•     | 9             |
| 18"        | 5/8"  | 10   | 24-1/4" | 22"     | 1/4"   | 18°     | 36°     | PEF18T•     | 13            |
| 20"        | 5/8"  | 10   | 26-1/4" | 24-3/8" | 1/4"   | 18°     | 36°     | PEF20T•     | 14            |

• Material Type; MS = Mild Steel, SS = Stainless Steel

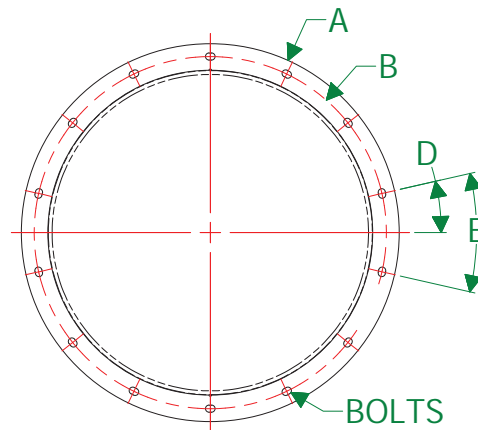


## TUBULAR TROUGH PLATE END FLANGES

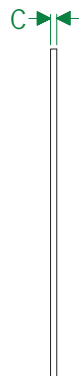
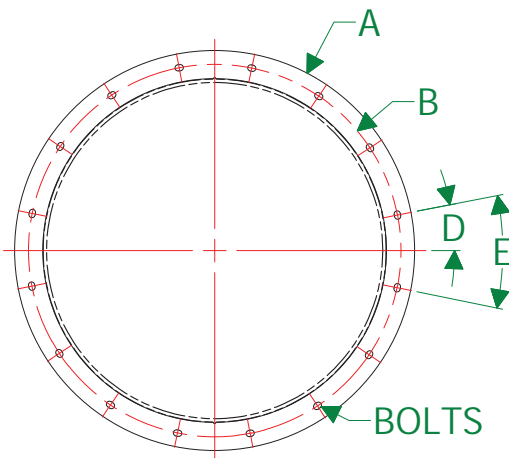
**12 BOLT FLANGE**



**14 BOLT FLANGE**



**16 BOLT FLANGE**

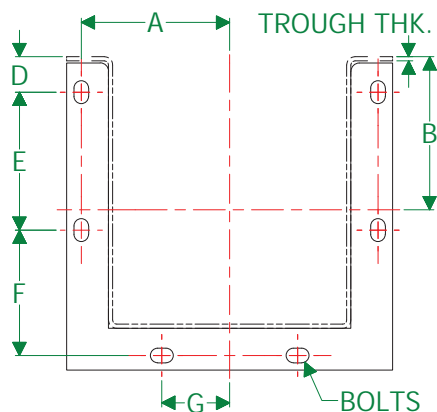


| Screw Dia. | Bolts |      | A Dia.  | B Dia.  | C Thk. | D Angle | E Angle | Part Number | Weight (Lbs.) |
|------------|-------|------|---------|---------|--------|---------|---------|-------------|---------------|
|            | Dia.  | Qty. |         |         |        |         |         |             |               |
| 24"        | 5/8"  | 12   | 30-1/4" | 28-1/2" | 1/4"   | 15°     | 30°     | PEF24T•     | 17            |
| 30"        | 5/8"  | 14   | 37"     | 34-1/2" | 3/8"   | 13°     | 26°     | PEF30T•     | 22            |
| 36"        | 5/8"  | 16   | 44"     | 41"     | 3/8"   | 11.5°   | 23°     | PEF36T•     | 31            |

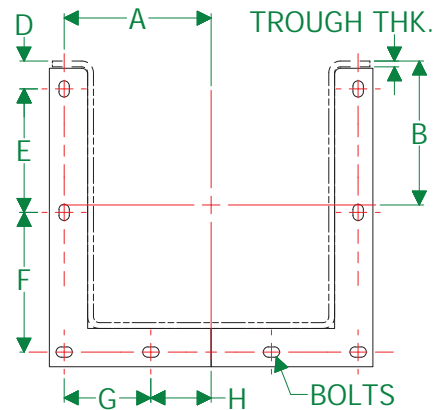
• Material Type; MS = Mild Steel, SS = Stainless Steel

## RECTANGULAR PLATE END FLANGES

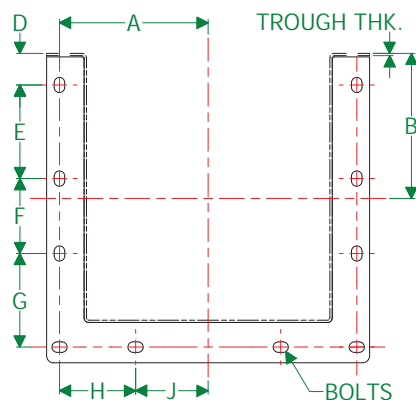
### 6 BOLT FLANGE



### 8 BOLT FLANGE



### 10 BOLT FLANGE

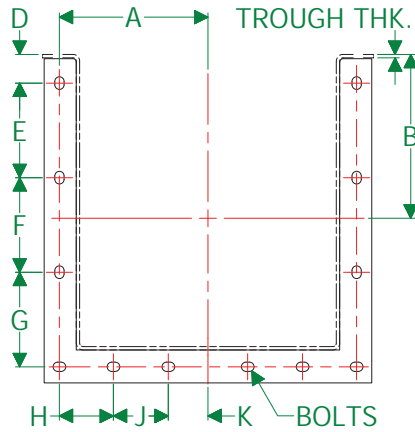


| Screw Dia. | Bolts         |      | A        | B       | C Thick | D        | E      | F        | G        | H        | J      | Part Number | Weight (Lbs.) |
|------------|---------------|------|----------|---------|---------|----------|--------|----------|----------|----------|--------|-------------|---------------|
|            | Dia.          | Qty. |          |         |         |          |        |          |          |          |        |             |               |
| 4"         | NOT AVAILABLE |      |          |         |         |          |        |          |          |          |        |             |               |
| 6"         | 3/8"          | 6    | 4-9/16"  | 4-1/2"  | 3/16"   | 1-1/16"  | 4-1/8" | 3-3/4"   | 2-1/32"  | X        | X      | PEF6R●      | 3             |
| 9"         | 3/8"          | 8    | 6-1/4"   | 6-1/8"  | 1/4"    | 1-3/16"  | 5-1/4" | 5-15/16" | 3-11/16" | 2-9/16"  | X      | PEF9R●      | 4             |
| 12"        | 1/2"          | 10   | 7-15/16" | 7-3/4"  | 1/4"    | 1-11/16" | 5"     | 4"       | 5"       | 4-1/16"  | 3-7/8" | PEF12R●     | 7             |
| 14"        | 1/2"          | 10   | 8-15/16" | 9-1/4"  | 1/4"    | 2-7/16"  | 5-1/4" | 5-1/4"   | 5-1/4"   | 5-15/16" | 3      | PEF14R●     | 8             |
| 16"        | 5/8"          | 10   | 10"      | 10-5/8" | 1/4"    | 2-5/8"   | 6"     | 6"       | 6"       | 6-1/4"   | 3-3/4" | PEF16R●     | 9             |

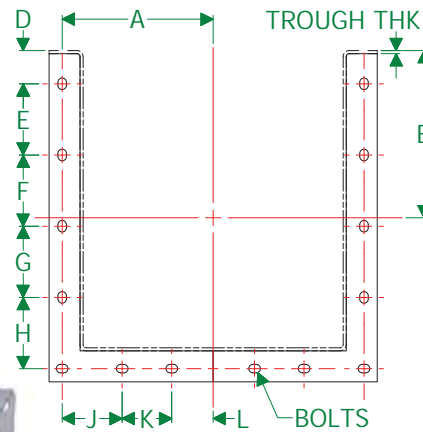
• Material Type; MS = Mild Steel, SS = Stainless Steel

## RECTANGULAR PLATE END FLANGES

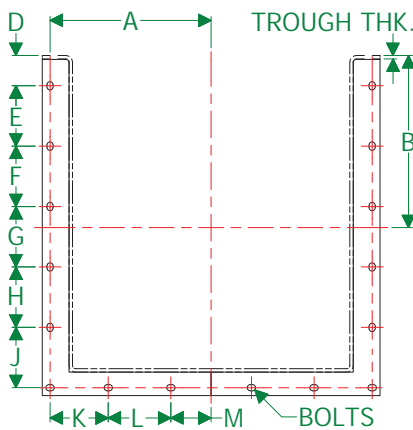
### 12 BOLT FLANGE



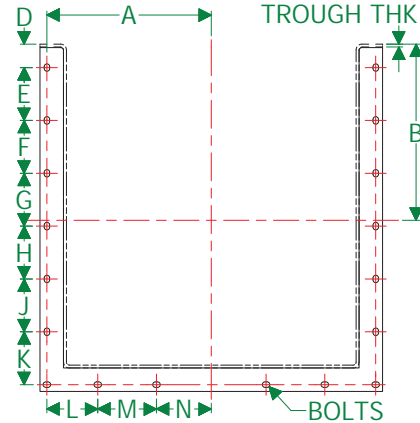
### 14 BOLT FLANGE



### 16 BOLT FLANGE



### 18 BOLT FLANGE

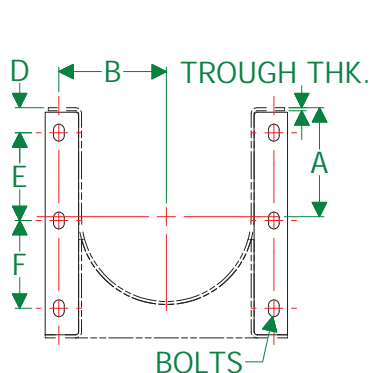


| Screw Dia. | Bolts |      | A        | B       | C Thk. | D        | E      | F      | G      | H      | J        | K        | L        | M      | N  | Part Number | Weight (Lbs.) |
|------------|-------|------|----------|---------|--------|----------|--------|--------|--------|--------|----------|----------|----------|--------|----|-------------|---------------|
|            | Dia.  | Qty. |          |         |        |          |        |        |        |        |          |          |          |        |    |             |               |
| 18"        | 5/8"  | 12   | 11"      | 12-1/8" | 1/4"   | 2-1/8"   | 7"     | 7"     | 7"     | 4"     | 4-1/16"  | 2-15/16" | X        | X      | X  | PEF18R•     | 13            |
| 20"        | 5/8"  | 14   | 12-3/16" | 13-1/2" | 1/4"   | 2-11/16" | 5-3/4" | 5-3/4" | 5-3/4" | 5-3/4" | 4-27/32" | 4"       | 3-11/32" | X      | X  | PEF20R•     | 21            |
| 24"        | 5/8"  | 14   | 14-1/4"  | 16-1/2" | 1/4"   | 2-3/4"   | 7"     | 7"     | 7"     | 7"     | 5-1/2"   | 5-7/16"  | 3-5/16"  | X      | X  | PEF24R•     | 30            |
| 30"        | 5/8"  | 16   | 18"      | 19-1/2" | 3/8"   | 2-15/16" | 6-3/4" | 6-3/4" | 6-3/4" | 6-3/4" | 6-3/4"   | 6-3/4"   | 6-3/4"   | 4-1/2" | X  | PEF30R•     | 36            |
| 36"        | 5/8"  | 18   | 21"      | 22-1/2" | 3/8"   | 3"       | 6-3/4" | 6-3/4" | 6-3/4" | 6-3/4" | 6-3/4"   | 6-3/4"   | 7"       | 7"     | 7" | PEF36R•     | 44            |

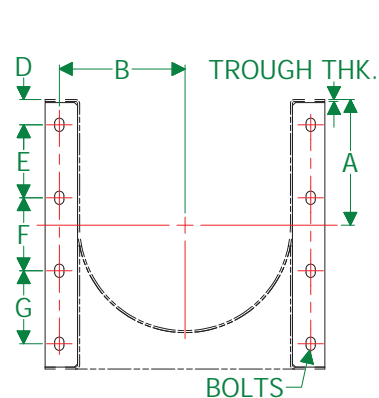
• Material Type; MS = Mild Steel, SS = Stainless Steel

## U-TROUGH AND RECTANGULAR FLUSH END PLATE END FLANGE

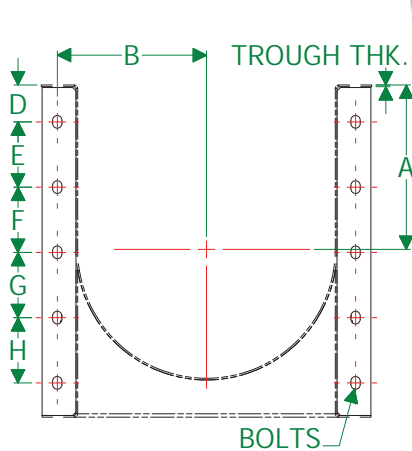
### 6 BOLT FLANGE



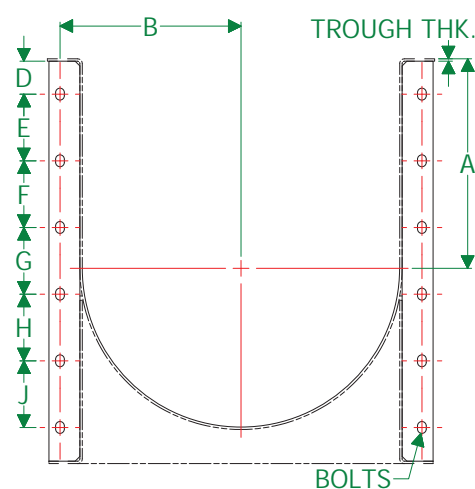
### 8 BOLT FLANGE



### 10 BOLT FLANGE



### 12 BOLT FLANGE



| Screw Dia. | Bolts |      | A       | B        | C Thk. | D        | E        | F        | G        | H        | J      | K      | Part Number | Weight (Lbs.) |
|------------|-------|------|---------|----------|--------|----------|----------|----------|----------|----------|--------|--------|-------------|---------------|
|            | Dia.  | Qty. |         |          |        |          |          |          |          |          |        |        |             |               |
| 4"         | 3/8"  | 6    | 3-5/8"  | 3-3/8"   | 3/16"  | 1-1/4"   | 2-1/2"   | 2-1/2"   | X        | X        | X      | X      | PEF4@•FE    | 2             |
| 6"         | 3/8"  | 6    | 4-1/2"  | 4-7/16"  | 3/16"  | 1-1/16"  | 3-5/8"   | 3-5/8"   | X        | X        | X      | X      | PEF6@•FE    | 2             |
| 9"         | 3/8"  | 8    | 6-1/8"  | 6-1/4"   | 1/4"   | 1-3/16"  | 3-5/8"   | 3-5/8"   | 3-5/8"   | X        | X      | X      | PEF9@•FE    | 3             |
| 12"        | 1/2"  | 8    | 7-3/4"  | 7-15/16" | 1/4"   | 1-1/2"   | 4-5/8"   | 4-5/8"   | 4-5/8"   | X        | X      | X      | PEF12@•FE   | 5             |
| 14"        | 1/2"  | 8    | 9-1/4"  | 8-15/16" | 1/4"   | 2-1/2"   | 4-3/4"   | 4-3/4"   | 4-3/4"   | X        | X      | X      | PEF14@•FE   | 6             |
| 16"        | 5/8"  | 8    | 10-5/8" | 10"      | 1/4"   | 2-5/8"   | 5-1/2"   | 5-1/2"   | 5-1/2"   | X        | X      | X      | PEF16@•FE   | 6             |
| 18"        | 5/8"  | 10   | 12-1/8" | 11"      | 1/4"   | 2-11/16" | 4-13/16" | 4-13/16" | 4-13/16" | 4-13/16" | X      | X      | PEF18@•FE   | 9             |
| 20"        | 5/8"  | 10   | 13-1/2" | 12-3/16" | 3/8"   | 2-27/32" | 5-5/16"  | 5-5/16"  | 5-5/16"  | 5-5/16"  | X      | X      | PEF20@•FE   | 14            |
| 24"        | 5/8"  | 12   | 16-1/2" | 14-1/4"  | 3/8"   | 2-3/4"   | 5-1/4"   | 5-1/4"   | 5-1/4"   | 5-1/4"   | 5-1/4" | X      | PEF24@•FE   | 18            |
| 30"        | 5/8"  | 12   | 19-1/2" | 17-1/2"  | 3/8"   | 2-1/2"   | 6-1/4"   | 6-1/4"   | 6-1/4"   | 6-1/4"   | 6-1/4" | X      | PEF30@•FE   | 27            |
| 36"        | 5/8"  | 14   | 22-1/2" | 20-1/2"  | 3/8"   | 2-1/2"   | 6-1/4"   | 6-1/4"   | 6-1/4"   | 6-1/4"   | 6-1/4" | 6-1/4" | PEF36@•FE   | 32            |

• Material Type; MS = Mild Steel, SS = Stainless Steel @ = U for U-Trough or R for Rectangular Note: 14 Bolt Pattern Not Shown

## DISCHARGE SPOUTS

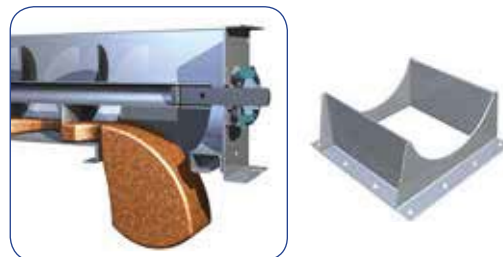
Discharge spouts are typically located at one end of a screw conveyor on the bottom of the trough. Bulk materials exit a screw conveyor through the discharge spout. Multiple discharge spouts with slide gates can be used to distribute bulk materials to various downstream processes. Slide gates should not be used on the final discharge of a screw conveyor because if the slide gate is closed, bulk materials will be compressed against the trough end and cause damage to the screw conveyor.

### NOMENCLATURE

| <b>D S P 1 2 3 1 6 T F E</b> |          |          |                     |            |  |                  |  |  |                               |
|------------------------------|----------|----------|---------------------|------------|--|------------------|--|--|-------------------------------|
| DSP = Discharge Spout        |          |          |                     |            |  |                  |  |  | Discharge Style               |
| Screw Diameter               |          |          | Discharge Thickness |            |  | Shape            |  |  | Blank = Plain (Fixed)         |
| 4 = 4"                       | 14 = 14" | 24 = 24" | 14 = 14GA           | 250 = 1/4" |  | Blank = U-Trough |  |  | HS = Hand Slide               |
| 6 = 6"                       | 16 = 16" | 30 = 30" | 12 = 12GA           | 375 = 3/8" |  | T = Tubular      |  |  | FE = Flush End Formed Trough  |
| 9 = 9"                       | 18 = 18" | 36 = 36" | 10 = 10GA           | 500 = 1/2" |  | F = Flared       |  |  | FEA = Flush End Angled Trough |
| 12 = 12"                     | 20 = 20" |          | 316 = 3/16"         |            |  | R = Rectangular  |  |  |                               |

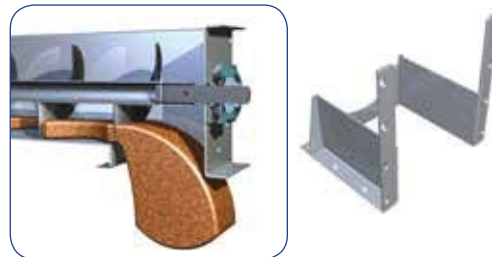
### STANDARD

Standard discharge spouts are continuously welded to the bottom of a U-trough or tubular housing and can be located anywhere along the length of a screw conveyor. A minimum distance is required for the final discharge spout to allow for welding of the plate end flange and discharge spout.



### FLUSH END

Flush end discharge spouts are continuously welded to the end of a U-trough or tubular housing in order to maximize the length of the trough. A special flush end trough end is required with a flush end discharge. The discharge is considered "flush" with the trough end.



### HAND SLIDE

A hand slide gate is the simplest form of slide gate and utilizes a slide plate, spacer and retainer flange bolted to a standard discharge spout.



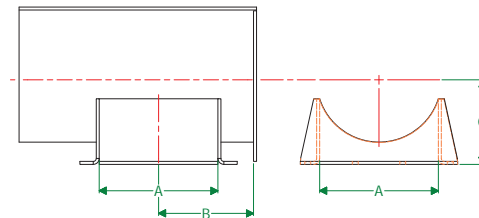
### OPEN END

Open end discharge spouts utilize a hanger, hanger bearing and end shaft to allow bulk materials to discharge out the end of a screw conveyor. Open end discharges allow for maximum conveying distance over the length of the trough.

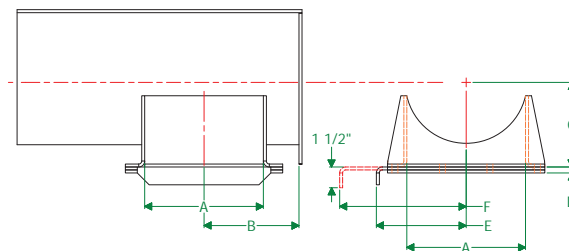


## DISCHARGES

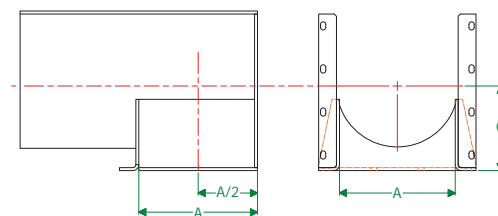
### STANDARD



### WITH HAND SLIDE



### FLUSH END



| Screw Dia. | Thk.   | A   | B Min.  | C       | D     | E       | F   | Standard    |               | With Hand Slide |     | Flush End   |               |
|------------|--------|-----|---------|---------|-------|---------|-----|-------------|---------------|-----------------|-----|-------------|---------------|
|            |        |     |         |         |       |         |     | Part Number | Weight (Lbs.) | Part Number     | Wt. | Part Number | Weight (Lbs.) |
| 4"         | 14 Ga. | 5"  | 4-1/2"  | 3-3/4"  | 5/16" | 5-5/8"  | 11" | DSP414#     | 2             | DSP414#HS       | 5   | DSP414#FE   | 2             |
|            | 12 Ga. |     |         |         |       |         |     | DSP412#     | 3             | DSP412#HS       | 6   | DSP412#FE   | 2             |
|            | 10 Ga. |     |         |         |       |         |     | DSP410#     | 4             | DSP410#HS       | 6   | DSP410#FE   | 3             |
| 6"         | 14 Ga. | 7"  | 6"      | 5"      | 5/16" | 6-5/8"  | 14" | DSP614#     | 4             | DSP614#HS       | 8   | DSP614#FE   | 3             |
|            | 12 Ga. |     |         |         |       |         |     | DSP612#     | 5             | DSP612#HS       | 9   | DSP612#FE   | 4             |
|            | 10 Ga. |     |         |         |       |         |     | DSP610#     | 7             | DSP610#HS       | 1   | DSP610#FE   | 5             |
|            | 3/16"  |     |         |         |       |         |     | DSP6316#    | 8             | DSP6316#HS      | 12  | DSP6316#FE  | 6             |
|            | 1/4"   |     |         |         |       |         |     | DSP6250#    | 10            | DSP6250#HS      | 14  | DSP6250#FE  | 8             |
| 9"         | 14 Ga. | 10" | 8"      | 7-1/8"  | 5/16" | 8"      | 19" | DSP914#     | 7             | DSP914#HS       | 15  | DSP914#FE   | 5             |
|            | 12 Ga. |     |         |         |       |         |     | DSP912#     | 10            | DSP912#HS       | 17  | DSP912#FE   | 7             |
|            | 10 Ga. |     |         |         |       |         |     | DSP910#     | 12            | DSP910#HS       | 20  | DSP910#FE   | 9             |
|            | 3/16"  |     |         |         |       |         |     | DSP9316#    | 16            | DSP9316#HS      | 23  | DSP9316#FE  | 12            |
|            | 1/4"   |     |         |         |       |         |     | DSP9250#    | 20            | DSP9250#HS      | 28  | DSP9250#FE  | 15            |
| 12"        | 12 Ga. | 13" | 10-1/2" | 8-7/8"  | 5/16" | 10-1/8" | 24" | DSP1212#    | 16            | DSP1212#HS      | 29  | DSP1212#FE  | 12            |
|            | 10 Ga. |     |         |         |       |         |     | DSP1210#    | 20            | DSP1210#HS      | 33  | DSP1210#FE  | 15            |
|            | 3/16"  |     |         |         |       |         |     | DSP12316#   | 26            | DSP12316#HS     | 39  | DSP12316#FE | 20            |
|            | 1/4"   |     |         |         |       |         |     | DSP12250#   | 33            | DSP12250#HS     | 46  | DSP12250#FE | 24            |
| 14"        | 12 Ga. | 15" | 11-1/2" | 10-1/8" | 5/16" | 11-1/4" | 27" | DSP1412#    | 20            | DSP1412#HS      | 41  | DSP1412#FE  | 15            |
|            | 10 Ga. |     |         |         |       |         |     | DSP1410#    | 26            | DSP1410#HS      | 47  | DSP1410#FE  | 19            |
|            | 3/16"  |     |         |         |       |         |     | DSP14316#   | 32            | DSP14316#HS     | 54  | DSP14316#FE | 24            |
|            | 1/4"   |     |         |         |       |         |     | DSP14250#   | 41            | DSP14250#HS     | 63  | DSP14250#FE | 31            |
| 16"        | 12 Ga. | 17" | 13-1/2" | 11-1/8" | 5/16" | 12-3/8" | 30" | DSP1612#    | 23            | DSP1612#HS      | 45  | DSP1612#FE  | 17            |
|            | 10 Ga. |     |         |         |       |         |     | DSP1610#    | 30            | DSP1610#HS      | 52  | DSP1610#FE  | 23            |
|            | 3/16"  |     |         |         |       |         |     | DSP16316#   | 38            | DSP16316#HS     | 60  | DSP16316#FE | 29            |
|            | 1/4"   |     |         |         |       |         |     | DSP16250#   | 50            | DSP16250#HS     | 72  | DSP16250#FE | 38            |
| 18"        | 10 Ga. | 19" | 14-1/2" | 12-3/8" | 5/16" | 13-3/8" | 33" | DSP1810#    | 39            | DSP1810#HS      | 5   | DSP1810#FE  | 29            |
|            | 3/16"  |     |         |         |       |         |     | DSP18316#   | 50            | DSP18316#HS     | 76  | DSP18316#FE | 38            |
|            | 1/4"   |     |         |         |       |         |     | DSP18250#   | 64            | DSP18250#HS     | 90  | DSP18250#FE | 48            |
| 20"        | 3/16"  | 21" | 15-1/2" | 13-3/8" | 3/8"  | 14-3/8" | 36" | DSP20316#   | 58            | DSP20316#HS     | 89  | DSP20316#FE | 43            |
|            | 1/4"   |     |         |         |       |         |     | DSP20250#   | 75            | DSP20250#HS     | 106 | DSP20250#FE | 56            |
| 24"        | 3/16"  | 25" | 17-1/2" | 15-3/8" | 3/8"  | 16-3/8" | 42" | DSP24316#   | 75            | DSP24316#HS     | 117 | DSP24316#FE | 56            |
|            | 1/4"   |     |         |         |       |         |     | DSP24250#   | 97            | DSP24250#HS     | 139 | DSP24250#FE | 72            |
| 30"        | 3/8"   | 31" | 20-1/2" | 18-3/8" | 1/2"  | 18-3/8" | 48" | DSP30375#   | 194           | DSP30375#HS     | 253 | DSP30375#FE | 146           |
|            | 1/2"   |     |         |         |       |         |     | DSP30500#   | 259           | DSP30500#HS     | 318 | DSP30500#FE | 194           |
| 36"        | 3/8"   | 37" | 23-1/2" | 21-3/8" | 1/2"  | 20-3/8" | 54" | DSP36375#   | 272           | DSP36375#HS     | 351 | DSP36375#FE | 204           |
|            | 1/2"   |     |         |         |       |         |     | DSP36500#   | 363           | DSP36500#HS     | 442 | DSP36500#FE | 272           |

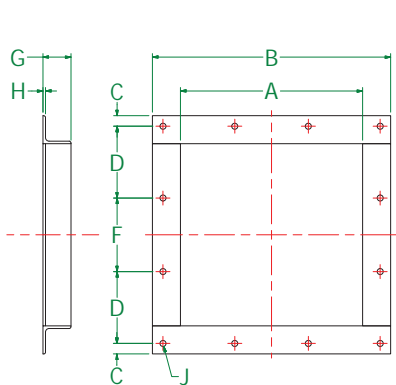
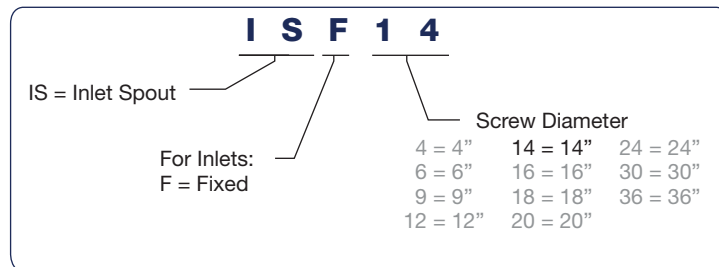
\* KWS Stock Component (U-Trough Only) # = Specify Trough Style: Blank = U-Trough, T = Tubular, F = Flared, R = Rectangular



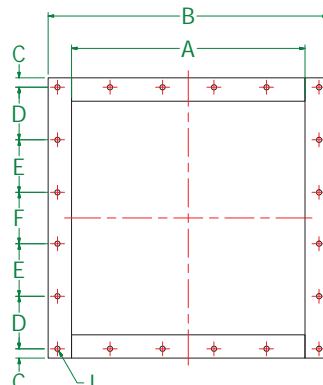
## INLET SPOUTS

Inlet spouts are typically located at one end of a screw conveyor on the top of the cover. Bulk materials enter a screw conveyor through the inlet spout. Multiple inlet spouts can be used to feed a screw conveyor. The screw conveyor must be designed for the total volumetric feed rate of all of the inlets combined.

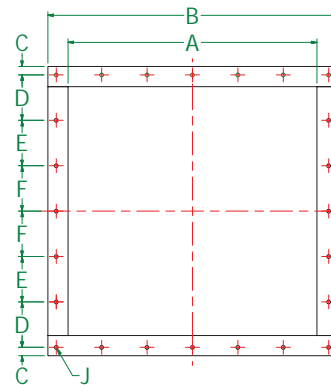
### NOMENCLATURE



12 BOLT



20 BOLT



24 BOLT

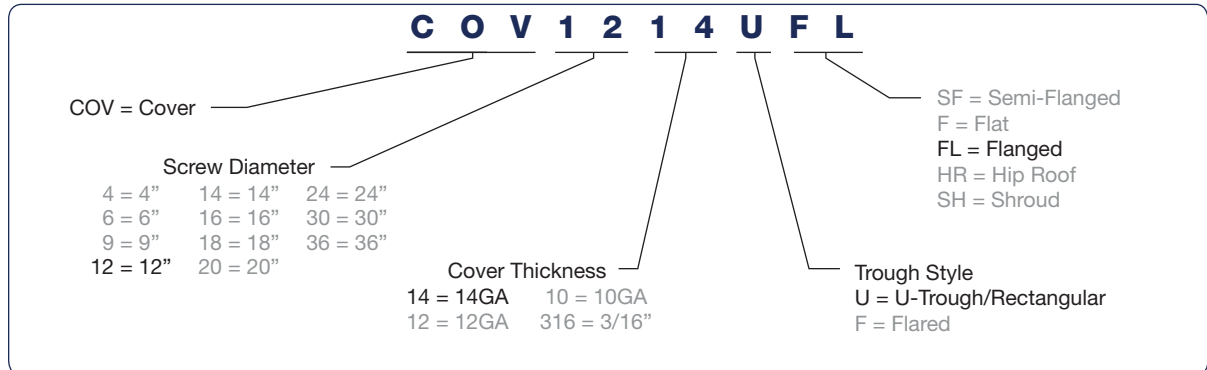
| Screw Dia. | A   | B      |            | C      |            | D        | E      | F      | G      | H     | J    |           | Part Number | Weight (Lbs.) |
|------------|-----|--------|------------|--------|------------|----------|--------|--------|--------|-------|------|-----------|-------------|---------------|
|            |     | Inlets | Discharges | Inlets | Discharges |          |        |        |        |       | Qty. | Bolt Dia. |             |               |
| 4"         | 5"  | 7-1/2" | 7-1/2"     | 3/8"   | 3/8"       | 2-1/4"   | X      | 2-1/4" | 1-1/4" | 1/8"  | 12   | 1/4"      | ISF4*       | 2             |
| 6"         | 7"  | 10"    | 10"        | 11/16" | 11/16"     | 2-13/16" | X      | 3"     | 1-1/2" | 3/16" | 12   | 3/8"      | ISF6*       | 5             |
| 9"         | 10" | 13"    | 13-1/4"    | 1/2"   | 5/8"       | 4"       | X      | 4"     | 1-1/2" | 3/16" | 12   | 3/8"      | ISF9*       | 7             |
| 12"        | 13" | 17"    | 17-1/4"    | 3/4"   | 7/8"       | 5-1/8"   | X      | 5-1/4" | 2"     | 3/16" | 12   | 3/8"      | ISF12*      | 12            |
| 14"        | 15" | 19"    | 19-1/4"    | 3/4"   | 7/8"       | 3-1/2"   | 3-1/2" | 3-1/2" | 2"     | 3/16" | 20   | 3/8"      | ISF14*      | 14            |
| 16"        | 17" | 21"    | 21-1/4"    | 3/4"   | 7/8"       | 3-3/4"   | 4"     | 4"     | 2"     | 1/4"  | 20   | 3/8"      | ISF16*      | 15            |
| 18"        | 19" | 24"    | 24-1/4"    | 1"     | 1-1/8"     | 4-7/16"  | 4-3/8" | 4-3/8" | 2-1/2" | 1/4"  | 20   | 1/2"      | ISF18*      | 29            |
| 20"        | 21" | 26"    | 26-1/4"    | 1"     | 1-1/8"     | 4-7/8"   | 4-3/4" | 4-3/4" | 2-1/2" | 1/4"  | 20   | 1/2"      | ISF20*      | 32            |
| 24"        | 25" | 30"    | 30-1/4"    | 1"     | 1-1/8"     | 5-5/8"   | 5-5/8" | 5-1/2" | 2-1/2" | 1/4"  | 20   | 1/2"      | ISF24*      | 37            |
| 30"        | 31" | 37"    | 36-1/4"    | 1-1/4" | 1-3/8"     | 5-3/4"   | 5-3/4" | 5-3/4" | 3"     | 3/8"  | 24   | 1/2"      | ISF30       | 62            |
| 36"        | 37" | 43"    | 43-1/4"    | 1-1/4" | 1-3/8"     | 6-3/4"   | 6-3/4" | 6-3/4" | 3"     | 3/4"  | 24   | 1/2"      | ISF36       | 73            |

\* KWS Stock Component (Only Includes Fixed Inlets) Note: Above table gives dimensions for the Discharge Flanges also.

## COVERS

Covers are placed over the trough and fastened in place to provide a FIXED enclosure for the bulk material and to provide protection for personnel operating and maintaining the equipment. Standard cover lengths are 10-feet for 4, 6, and 9-inch diameter screw conveyors. Standard cover lengths are 12-feet for screw conveyors 12-inch and larger in diameter. KWS recommends bolting all covers on close centers to prevent access to the screw during operation.

### NOMENCLATURE



### FLANGED

Flanged covers are manufactured with formed flanges on each side to provide extra rigidity. KWS recommends using flanged covers with U, flared and rectangular troughs because covers are held in place by the formed flanges on each side. KWS recommends bolting all covers on close centers to prevent access to the screw during operation.



### FLAT

Flat covers are manufactured from thin gauge flat metal and do not have the rigidity of flanged covers. KWS does not recommend the use of flat covers because flat covers can easily slide off the top of a screw conveyor and cause injury to personnel. KWS recommends bolting all covers on close centers to prevent access to the screw during operation.

## COVERS

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### SEMI-FLANGED

Semi-flanged covers are manufactured with a slight formed flange on each side to provide some rigidity. KWS recommends flanged covers in place of semi-flanged covers in most applications. Cover sections are typically secured using spring clamps. KWS recommends bolting all covers on close centers to prevent access to the screw during operation.



### HIP ROOF

Hip roof or ridged covers are manufactured with a center peak for outdoor applications. Snow or rain runs off the hip roof cover similar to a roof on a house. Formed flanges on both sides of the cover provide extra rigidity. KWS recommends bolting all covers on close centers to prevent access to the screw during operation.



### SHROUD

Shrouds are manufactured to fit in U, flared or rectangular troughs and create a tubular cross section for screw feeders and steeply inclined screw conveyors. Standard covers can be used with shrouds. Shrouds are bolted on both sides of the trough for easy removal and include an integrated batten bar.

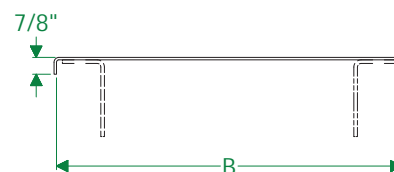


## COVERS

### SEMI-FLANGED



### FLANGED



### FLAT



| Screw Dia. | Cover Thk. | A • (Approx) | B •     | C •     | Semi-Flanged |            | Flanged     |            | Flat        |            |
|------------|------------|--------------|---------|---------|--------------|------------|-------------|------------|-------------|------------|
|            |            |              |         |         | Part Number  | Wt. (Lbs.) | Part Number | Wt. (Lbs.) | Part Number | Wt. (Lbs.) |
| 4"         | 14 Ga.     | 8-3/8"       | 8"      | 7-3/4"  | COV414#SF    | 2          | COV414#FL*  | 3          | COV414#F    | 2          |
| 6"         | 14 Ga.     | 10-7/8"      | 10-1/2" | 9-3/4"  | COV614#SF    | 3          | COV614#FL*  | 4          | COV614#F    | 2          |
| 9"         | 14 Ga.     | 14-3/8"      | 14"     | 13-1/4" | COV914#SF    | 4          | COV914#FL*  | 5          | COV914#F    | 3          |
|            | 12 Ga.     |              |         |         | COV912#SF    | 5          | COV912#FL   | 7          | COV912#F    | 6          |
| 12"        | 14 Ga.     | 18-1/4"      | 18"     | 17-1/4" | COV1214#SF   | 5          | COV1214#FL* | 6          | COV1214#F   | 5          |
|            | 12 Ga.     |              |         |         | COV1212#SF   | 7          | COV1212#FL  | 8          | COV1212#F   | 8          |
| 14"        | 14 Ga.     | 20-1/4"      | 20"     | 19-1/4" | COV1414#SF   | 6          | COV1414#FL* | 6          | COV1414#F   | 5          |
|            | 12 Ga.     |              |         |         | COV1412#SF   | 8          | COV1412#FL  | 9          | COV1412#F   | 9          |
| 16"        | 14 Ga.     | 22-1/4"      | 22"     | 21-1/4" | COV1614#SF   | 6          | COV1614#FL* | 7          | COV1614#F   | 6          |
|            | 12 Ga.     |              |         |         | COV1612#SF   | 9          | COV1612#FL  | 10         | COV1612#F   | 10         |
| 18"        | 12 Ga.     | 25-1/4"      | 25"     | 24-1/4" | COV1812#SF   | 10         | COV1812#FL  | 11         | COV1812#F   | 6          |
|            | 10 Ga.     |              |         |         | COV1810#SF   | 14         | COV1810#FL* | 14         | COV1810#F   | 11         |
| 20"        | 12 Ga.     | 27-1/4"      | 27"     | 26-1/4" | COV2012#SF   | 11         | COV2012#FL  | 12         | COV2012#F   | 7          |
|            | 10 Ga.     |              |         |         | COV2010#SF   | 15         | COV2010#FL* | 15         | COV2010#F   | 12         |
| 24"        | 12 Ga.     | 31-1/4"      | 31"     | 30-1/4" | COV2412#SF   | 12         | COV2412#FL  | 14         | COV2412#F   | 11         |
|            | 10 Ga.     |              |         |         | COV2410#SF   | 17         | COV2410#FL* | 18         | COV2410#F   | 14         |
| 30"        | 10 Ga.     | 39-3/8"      | 39"     | 38-1/2" | COV3010#SF   | 21         | COV3010#FL  | 22         | COV3010#F   | 21         |
| 36"        | 3/16"      | 45-3/8"      | 45"     | 44-1/2" | COV36316#SF  | 32         | COV36316#FL | 33         | COV36316#F  | 32         |

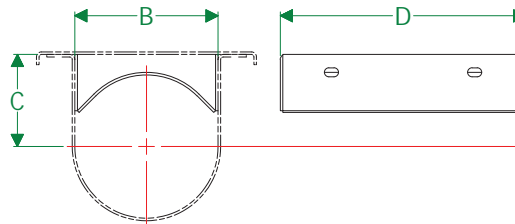
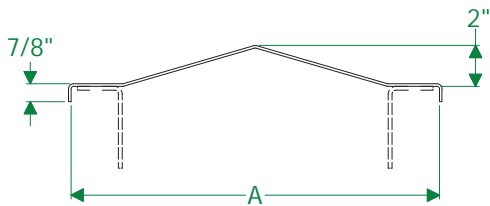
\* KWS Stock Component (U-Troughs only) • Dimensions will change for flared troughs  
 # Trough Style; U = U-Trough/Rectangular, F = Flared

## COVERS

### HIP ROOF



### SHROUD



| Screw Dia. | Cover Thk.                | A •     | B • | C •     | D   | Hip Roof                      |                 | Shroud                     |                 |
|------------|---------------------------|---------|-----|---------|-----|-------------------------------|-----------------|----------------------------|-----------------|
|            |                           |         |     |         |     | Part Number                   | Wt. /Ft. (Lbs.) | Part Number                | Wt. /Ft. (Lbs.) |
| 4"         | 14 Ga.                    | 8"      | 5"  | 3-5/8"  | 8"  | COV414#HR                     | 2               | N/A                        |                 |
| 6"         | 14 Ga.<br>12 Ga.          | 10-1/2" | 7"  | 4-1/2"  | 12" | COV614#HR<br>COV612#HR        | 4<br>4          | N/A<br>COV612#SH*          | 8               |
| 9"         | 14 Ga.<br>12 Ga.<br>3/16" | 14"     | 10" | 6-1/8"  | 18" | COV914#HR<br>COV912#HR<br>X   | 4<br>6<br>X     | N/A<br>N/A<br>COV9316#SH*  | 23              |
| 12"        | 14 Ga.<br>10 Ga.<br>3/16" | 18"     | 13" | 7-3/4"  | 24" | COV1214#HR<br>COV1210#HR<br>X | 5<br>10<br>X    | N/A<br>N/A<br>COV12316#SH* | 41              |
| 14"        | 14 Ga.<br>10 Ga.<br>3/16" | 20"     | 15" | 9-1/4"  | 28" | COV1414#HR<br>COV1410#HR<br>X | 6<br>11<br>X    | N/A<br>N/A<br>COV14316#SH* | 60              |
| 16"        | 14 Ga.<br>10 Ga.<br>3/16" | 22"     | 17" | 10-5/8" | 32" | COV1614#HR<br>COV1610#HR<br>X | 7<br>12<br>X    | N/A<br>N/A<br>COV16316#SH* | 78              |
| 18"        | 12 Ga.<br>10 Ga.<br>3/16" | 25"     | 19" | 12-1/8" | 36" | COV1812#HR<br>COV1810#HR<br>X | 10<br>12<br>X   | N/A<br>N/A<br>COV18316#SH* | 98              |
| 20"        | 12 Ga.<br>10 Ga.<br>3/16" | 27"     | 21" | 13-1/2" | 40" | COV2012#HR<br>COV2010#HR<br>X | 11<br>15<br>X   | N/A<br>N/A<br>COV20316#SH* | 114             |
| 24"        | 12 Ga.<br>10 Ga.<br>3/16" | 31"     | 25" | 16-1/2" | 48" | COV2412#HR<br>COV2410#HR<br>X | 14<br>19<br>X   | N/A<br>N/A<br>COV24316#SH* | 175             |
| 30"        | 10 Ga.<br>3/16"<br>1/4"   | 39"     | 31" | 20-1/4" | 60" | COV3010#HR<br>X<br>X          | 25<br><br>X     | N/A<br>N/A<br>COV30250#SH  | 290             |
| 36"        | 3/16"<br>1/4"             | 45"     | 37" | 24-3/8" | 72" | COV36316#HR<br>X              | 36<br>X         | N/A<br>COV36250#SH         | 330             |

\* KWS Stock Component (U-Troughs only) • Dimensions will change for flared troughs

# Trough Style; U = U-Trough/Rectangular, F = Flared

## BUTTSTRAPS AND BATTEN BARS

Buttstraps fit over the top of the joint between two cover sections. Gasket material is used under the buttstrap to provide a sealed design. The buttstrap is bolted on both sides through the cover and trough flange to create a dust-tight enclosure.

Batten bars are mounted flush with the top of the trough flange and fit under the joint between two cover sections. Gasket material is used over the batten bar to provide a seal. Batten bars can be provided with weld studs or rivnuts for securing the cover sections to the batten bar to create a dust-tight enclosure.

### NOMENCLATURE

**B S 1 2 1 4 U**

BB = Batten Bar  
BS = Buttstrap

Screw Diameter

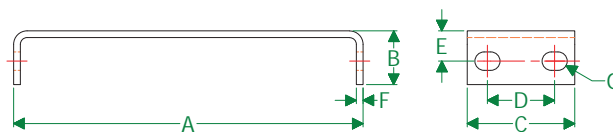
|          |          |          |
|----------|----------|----------|
| 4 = 4"   | 14 = 14" | 24 = 24" |
| 6 = 6"   | 16 = 16" | 30 = 30" |
| 9 = 9"   | 18 = 18" | 36 = 36" |
| 12 = 12" | 20 = 20" |          |

For Buttstrap:  
Thickness  
For Batten Bar:  
Blank

For Buttstrap:  
U = U-Trough  
F = Flared

For Batten Bar:  
Blank

#### BATTEN BAR



#### BUTTSTRAP



| Screw Dia. | A   | B      | C  | D      | E      | F     | G Bolts | H       | Buttstrap   |               | Batten Bar  |               |
|------------|-----|--------|----|--------|--------|-------|---------|---------|-------------|---------------|-------------|---------------|
|            |     |        |    |        |        |       |         |         | Part Number | Weight (Lbs.) | Part Number | Weight (Lbs.) |
| 4"         | 5"  | 1"     | 3" | 2"     | 5/8"   | 3/16" | 3/8"    | 8-3/8"  | BS4#@       | 1             | BB4         | 1             |
| 6"         | 7"  | 1-1/4" | 3" | 2"     | 3/4"   | 3/16" | 3/8"    | 10-7/8" | BS6#@       | 1             | BB6         | 2             |
| 9"         | 10" | 1-1/2" | 4" | 2-1/2" | 7/8"   | 1/4"  | 1/2"    | 14-3/8" | BS9#@       | 1             | BB9         | 4             |
| 12"        | 13" | 2"     | 4" | 2-1/2" | 1-1/8" | 1/4"  | 5/8"    | 18-3/8" | BS12#@      | 2             | BB12        | 5             |
| 14"        | 15" | 2"     | 4" | 2-1/2" | 1-1/8" | 1/4"  | 5/8"    | 20-3/8" | BS14#@      | 2             | BB14        | 6             |
| 16"        | 17" | 2"     | 5" | 2-1/2" | 1-1/8" | 3/8"  | 5/8"    | 22-3/8" | BS16#@      | 2             | BB16        | 11            |
| 18"        | 19" | 2-1/2" | 5" | 3-1/2" | 1-3/8" | 3/8"  | 5/8"    | 25-3/8" | BS18#@      | 3             | BB18        | 13            |
| 20"        | 21" | 2-1/2" | 5" | 3-1/2" | 1-3/8" | 3/8"  | 3/4"    | 27-3/8" | BS20#@      | 4             | BB20        | 14            |
| 24"        | 25" | 2-1/2" | 5" | 3-1/2" | 1-3/8" | 3/8"  | 3/4"    | 31-3/8" | BS24#@      | 4             | BB24        | 17            |
| 30"        | 31" | 3"     | 6" | 3-1/2" | 1-3/4" | 1/4"  | 3/4"    | 39-3/8" | BS30#@      | 7             | BB30 •      | 27            |
| 36"        | 37" | 3"     | 6" | 3-1/2" | 1-3/4" | 1/4"  | 3/4"    | 45-3/8" | BS36#@      | 7             | BB36 •      | 32            |

• Requires a Formed Channel Support Bar # = Thickness Note: Dimensions in the above table are for U-Troughs only.

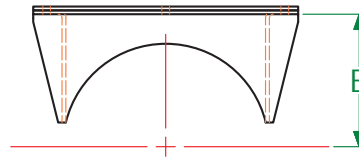
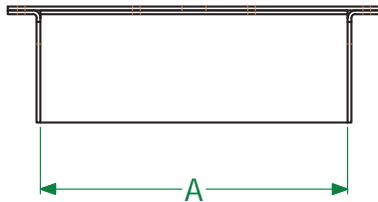
@ = Trough Type; U = U-Trough, F = Flared

## HANGER POCKET

Hanger pockets allow the use of standard U-trough hangers in tubular housings. Hanger pockets are continuously welded on the top of a tubular housing at each hanger bearing location. A hanger bolts to the sides of the hanger pocket and space is allowed for bearing maintenance and replacement. Standard 216 and 226 style hanger bearings can be used with hanger pockets. A bolted cover seals the hanger pocket.

### NOMENCLATURE

| <b>H G P 1 2 3 1 6</b> |          |          |                    |             |  |
|------------------------|----------|----------|--------------------|-------------|--|
| HGP = Hanger Pocket    |          |          | Material Thickness |             |  |
| Screw Diameter         |          |          |                    |             |  |
| 4 = 4"                 | 14 = 14" | 24 = 24" | 14 = 14GA          | 316 = 3/16" |  |
| 6 = 6"                 | 16 = 16" | 30 = 30" | 12 = 12GA          | 250 = 1/4"  |  |
| 9 = 9"                 | 18 = 18" | 36 = 36" | 10 = 10GA          | 375 = 3/8"  |  |
| 12 = 12"               | 20 = 20" |          |                    |             |  |



| Screw Dia. | Part Number | A   | B       | Material Thickness | Weight (Lbs.) |
|------------|-------------|-----|---------|--------------------|---------------|
| 4"         | HGP414      | 12" | 3-3/4"  | 14 Ga.             | 3             |
|            | HGP412      |     |         | 12 Ga.             | 5             |
|            | HGP410      |     |         | 10 Ga.             | 7             |
| 6"         | HGP614      | 18" | 5"      | 14 Ga.             | 5             |
|            | HGP612      |     |         | 12 Ga.             | 7             |
|            | HGP610      |     |         | 10 Ga.             | 9             |
| 9"         | HGP914      | 18" | 7-1/8"  | 14 Ga.             | 8             |
|            | HGP912      |     |         | 12 Ga.             | 10            |
|            | HGP910      |     |         | 10 Ga.             | 13            |
|            | HGP9316     |     |         | 3/16"              | 18            |
| 12"        | HGP1212     | 24" | 8-7/8"  | 12 Ga.             | 15            |
|            | HGP1210     |     |         | 10 Ga.             | 20            |
|            | HGP12316    |     |         | 3/16"              | 27            |
|            | HGP12250    |     |         | 1/4"               | 36            |
| 14"        | HGP1412     | 20" | 10-1/8" | 12 Ga.             | 19            |
|            | HGP1410     |     |         | 10 Ga.             | 24            |
|            | HGP14316    |     |         | 3/16"              | 33            |
|            | HGP14250    |     |         | 1/4"               | 44            |
| 16"        | HGP1612     | 24" | 11-1/8" | 12 Ga.             | 23            |
|            | HGP1610     |     |         | 10 Ga.             | 30            |
|            | HGP16316    |     |         | 3/16"              | 41            |
|            | HGP16250    |     |         | 1/4"               | 55            |

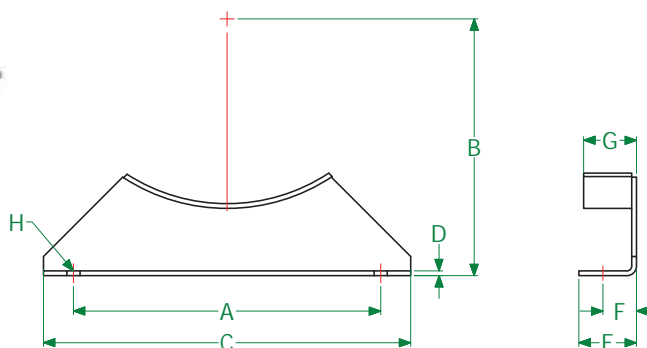
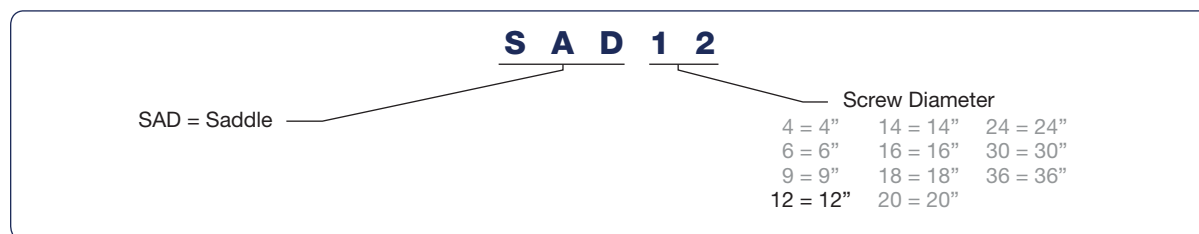
| Screw Dia. | Part Number | A   | B       | Material Thickness | Weight (Lbs.) |
|------------|-------------|-----|---------|--------------------|---------------|
| 18"        | HGP1810     | 26" | 12-3/8" | 10 Ga.             | 37            |
|            | HGP18316    |     |         | 3/16"              | 51            |
|            | HGP18250    |     |         | 1/4"               | 68            |
| 20"        | HGP2010     | 26" | 14"     | 10 Ga.             | 46            |
|            | HGP20316    |     |         | 3/16"              | 63            |
|            | HGP20250    |     |         | 1/4"               | 84            |
| 24"        | HGP2410     | 26" | 17"     | 10 Ga.             | 61            |
|            | HGP24316    |     |         | 3/16"              | 83            |
|            | HGP24250    |     |         | 1/4"               | 111           |
| 30"        | HGP30250    | 32" | 20"     | 1/4"               | 149           |
|            | HGP30375    |     |         | 3/8"               | 182           |
| 36"        | HGP36250    | 34" | 23"     | 1/4"               | 199           |
|            | HGP36375    |     |         | 3/8"               | 235           |



## SADDLES

Saddles provide support for a screw conveyor anywhere along the length of the trough. Saddles are welded to the bottom of a trough section at the desired support location and then fastened to the floor or structural support. A standard saddle will fit U-trough, flared trough, and tubular housings. Rectangular troughs require special saddles.

### NOMENCLATURE



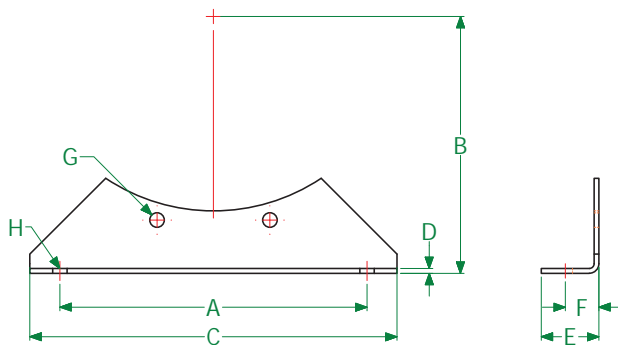
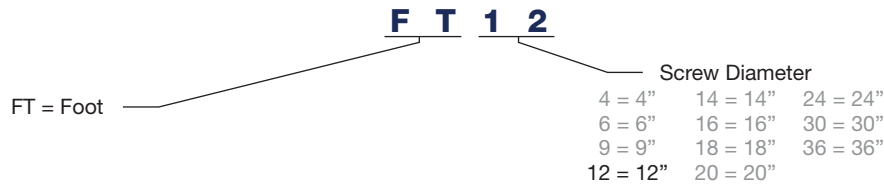
| Screw Dia. | A       | B       | C       | D     | E      | F       | G      | H Bolts | Part Number | Weight (Lbs.) |
|------------|---------|---------|---------|-------|--------|---------|--------|---------|-------------|---------------|
| 4"         | 5-3/4"  | 4-5/8"  | 7-3/8"  | 3/16" | 1-1/2" | 7/8"    | 1-3/8" | 3/8"    | SAD4*       | 2             |
| 6"         | 8-1/8"  | 5-5/8"  | 10"     | 3/16" | 1-1/2" | 13/16"  | 1-3/4" | 3/8"    | SAD6*       | 3             |
| 9"         | 9-3/8"  | 7-7/8"  | 12"     | 3/16" | 2-1/2" | 1-5/16" | 2"     | 1/2"    | SAD9*       | 4             |
| 12"        | 12-1/4" | 9-5/8"  | 15"     | 1/4"  | 2-1/2" | 1-3/8"  | 2-1/4" | 5/8"    | SAD12*      | 6             |
| 14"        | 13-1/2" | 10-7/8" | 16-1/2" | 1/4"  | 2-1/2" | 1-3/8"  | 2-3/4" | 5/8"    | SAD14*      | 8             |
| 16"        | 14-7/8" | 12"     | 18"     | 1/4"  | 3"     | 1-3/4"  | 2-3/4" | 5/8"    | SAD16*      | 10            |
| 18"        | 16"     | 13-3/8" | 19-1/8" | 1/4"  | 3"     | 1-3/4"  | 2-3/4" | 5/8"    | SAD18*      | 11            |
| 20"        | 19-1/4" | 15"     | 22-3/4" | 1/4"  | 3-1/2" | 2"      | 2-3/4" | 3/4"    | SAD20*      | 15            |
| 24"        | 20"     | 18-1/8" | 24"     | 1/4"  | 4"     | 2-1/4"  | 2-3/4" | 3/4"    | SAD24*      | 17            |
| 30"        | 30"     | 21-1/2" | 38"     | 3/8"  | 4-1/2" | 2-1/2"  | 4"     | 3/4"    | SAD30       | 20            |
| 36"        | 36"     | 24"     | 44"     | 1/2"  | 4-1/2" | 2-1/2"  | 4"     | 3/4"    | SAD36       | 25            |

\* KWS Stock Component

## FEET

Feet provide support for a screw conveyor at each trough connection. Feet are bolted through the trough flanges and then fastened to the floor or structural support. A standard foot will fit U-trough, flared trough and tubular trough housing except for 4", 6", 18", and 20" which are unique for tubular housings. Rectangular troughs require special feet.

## NOMENCLATURE



| Screw Dia. | A       | B       | C       | D     | E      | F       | G bolts | H Bolts | Part Number | Weight (Lbs.) |
|------------|---------|---------|---------|-------|--------|---------|---------|---------|-------------|---------------|
| 4"         | 5-3/4"  | 4-5/8"  | 7-3/8"  | 3/16" | 1-1/2" | 7/8"    | 3/8"    | 3/8"    | FT4*        | 2             |
| 6"         | 8-1/8"  | 5-5/8"  | 10"     | 3/16" | 1-1/2" | 13/16"  | 3/8"    | 3/8"    | FT6*        | 3             |
| 9"         | 9-3/8"  | 7-7/8"  | 12"     | 3/16" | 2-1/2" | 1-5/16" | 3/8"    | 1/2"    | FT9*        | 4             |
| 12"        | 12-1/4" | 9-5/8"  | 15"     | 1/4"  | 2-1/2" | 1-5/8"  | 1/2"    | 5/8"    | FT12*       | 6             |
| 14"        | 13-1/2" | 10-7/8" | 16-1/2" | 1/4"  | 2-1/2" | 1-3/8"  | 1/2"    | 5/8"    | FT14*       | 8             |
| 16"        | 14-7/8" | 12"     | 18"     | 1/4"  | 3"     | 1-3/4"  | 5/8"    | 5/8"    | FT16*       | 10            |
| 18"        | 16"     | 13-3/8" | 19-1/8" | 1/4"  | 3"     | 1-3/4"  | 5/8"    | 5/8"    | FT18*       | 11            |
| 20"        | 19-1/4" | 15"     | 22-3/4" | 1/4"  | 3-1/2" | 2"      | 5/8"    | 3/4"    | FT20*       | 15            |
| 24"        | 20"     | 18-1/8" | 24"     | 1/4"  | 4"     | 2-1/4"  | 5/8"    | 3/4"    | FT24*       | 17            |
| 30"        | 30"     | 21-1/2" | 38"     | 3/8"  | 4-1/2" | 2-1/2"  | 5/8"    | 3/4"    | FT30        | 21            |
| 36"        | 36"     | 24"     | 44"     | 1/2"  | 4-1/2" | 2-1/2"  | 5/8"    | 3/4"    | FT36        | 25            |

\* KWS Stock Component

## BOLT REQUIREMENTS

### CONVEYOR DIAMETER: 4" - 14"

| Components Assembled                | Conveyor Diameter |               |    |               |    |               |    |               |    |               |
|-------------------------------------|-------------------|---------------|----|---------------|----|---------------|----|---------------|----|---------------|
|                                     | 4                 |               | 6  |               | 9  |               | 12 |               | 14 |               |
|                                     | No                | Size          | No | Size          | No | Size          | No | Size          | No | Size          |
| Covers (Per Section) on 24" Centers | 12                | 3/8" x 1-1/2" | 12 | 3/8" x 1-1/2" | 12 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" |
| Trough Flange                       |                   |               |    |               |    |               |    |               |    |               |
| U-Trough                            | 6                 | 3/8" x 1-1/2" | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 8  | 1/2" x 2"     | 8  | 1/2" x 2"     |
| Tubular                             | 6                 | 3/8" x 1-1/2" | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 8  | 1/2" x 2"     | 8  | 1/2" x 2"     |
| Flared                              | N/A               | N/A           | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 8  | 1/2" x 2"     | 10 | 1/2" x 2"     |
| Rectangular                         | N/A               | N/A           | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 10 | 1/2" x 2"     | 10 | 1/2" x 2"     |
| Flush Discharge Ends                | 6                 | 3/8" x 1-1/2" | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 8  | 1/2" x 2"     | 8  | 1/2" x 2"     |
| Foot                                |                   |               |    |               |    |               |    |               |    |               |
| U-Trough                            | 2                 | 3/8" x 1-1/2" | 2  | 3/8" x 1-1/2" | 2  | 3/8" x 1-1/2" | 2  | 1/2" x 2"     | 2  | 1/2" x 2"     |
| Tubular                             | 3                 | 3/8" x 1-1/2" | 3  | 3/8" x 1-1/2" | 3  | 3/8" x 1-1/2" | 3  | 1/2" x 2"     | 3  | 1/2" x 2"     |
| Flared                              | N/A               | N/A           | 2  | 3/8" x 1-1/2" | 2  | 3/8" x 1-1/2" | 2  | 1/2" x 2"     | 2  | 1/2" x 2"     |
| Rectangular                         | N/A               | N/A           | 2  | 3/8" x 1-1/2" | 2  | 3/8" x 1-1/2" | 2  | 1/2" x 2"     | 2  | 1/2" x 2"     |
| Pipe Supports                       | 2                 | 3/8" x 1-1/2" | 2  | 3/8" x 1-1/2" | 2  | 1/2" x 2"     | 2  | 5/8" x 2"     | 2  | 5/8" x 2"     |
| Inlet/Discharge                     |                   |               |    |               |    |               |    |               |    |               |
| Square                              | 12                | 1/4" x 1"     | 12 | 3/8" x 1-1/2" | 12 | 3/8" x 1-1/2" | 12 | 3/8" x 1-1/2" | 20 | 3/8" x 1-1/2" |
| Round                               | 6                 | 3/8" x 1-1/2" | 6  | 3/8" x 1-1/2" | 8  | 3/8" x 1-1/2" | 8  | 1/2" x 1-1/2" | 8  | 1/2" x 1-1/2" |
| Hanger/Batten Bar                   | 4                 | 3/8" x 1"     | 4  | 3/8" x 1"     | 4  | 3/8" x 1"     | 4  | 1/2" x 1-1/2" | 4  | 1/2" x 1-1/2" |

### CONVEYOR DIAMETER: 16" - 36"

| Components Assembled                | Conveyor Diameter |               |    |               |    |               |    |               |    |               |    |               |
|-------------------------------------|-------------------|---------------|----|---------------|----|---------------|----|---------------|----|---------------|----|---------------|
|                                     | 16                |               | 18 |               | 20 |               | 24 |               | 30 |               | 36 |               |
|                                     | No                | Size          | No | Size          | No | Size          | No | Size          | No | Size          | No | Size          |
| Covers (Per Section) on 24" Centers | 14                | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" | 14 | 3/8" x 1-1/2" |
| Trough Flange                       |                   |               |    |               |    |               |    |               |    |               |    |               |
| U-Trough                            | 8                 | 5/8" x 2"     | 10 | 5/8" x 2"     | 10 | 5/8" x 2"     | 12 | 5/8" x 2"     | 14 | 5/8" x 2-1/2" | 16 | 5/8" x 2-1/2" |
| Tubular                             | 8                 | 5/8" x 2"     | 10 | 5/8" x 2"     | 10 | 5/8" x 2"     | 12 | 5/8" x 2"     | 14 | 5/8" x 2-1/2" | 16 | 5/8" x 2-1/2" |
| Flared                              | 10                | 5/8" x 2"     | 10 | 5/8" x 2"     | 10 | 5/8" x 2"     | 12 | 5/8" x 2"     | 14 | 5/8" x 2-1/2" | 16 | 5/8" x 2-1/2" |
| Rectangular                         | 10                | 5/8" x 2"     | 12 | 5/8" x 2"     | 14 | 5/8" x 2"     | 14 | 5/8" x 2"     | 16 | 5/8" x 2-1/2" | 18 | 5/8" x 2-1/2" |
| Flush Discharge Ends                | 8                 | 5/8" x 2"     | 10 | 5/8" x 2"     | 10 | 5/8" x 2"     | 12 | 5/8" x 2"     | 12 | 5/8" x 2-1/2" | 14 | 5/8" x 2-1/2" |
| Foot                                |                   |               |    |               |    |               |    |               |    |               |    |               |
| U-Trough                            | 2                 | 5/8" x 2-1/2" | 2  | 5/8" x 2-1/2" | 2  | 5/8" x 2-1/2" | 2  | 5/8" x 2-1/2" | 4  | 5/8" x 3"     | 4  | 5/8" x 3"     |
| Tubular                             | 3                 | 5/8" x 2-1/2" | 3  | 5/8" x 2-1/2" | 3  | 5/8" x 2-1/2" | 3  | 5/8" x 2-1/2" | 4  | 5/8" x 3"     | 4  | 5/8" x 3"     |
| Flared                              | 2                 | 5/8" x 2-1/2" | 2  | 5/8" x 2-1/2" | 2  | 5/8" x 2-1/2" | 4  | 5/8" x 2-1/2" | 4  | 5/8" x 3"     | 4  | 5/8" x 3"     |
| Rectangular                         | 2                 | 5/8" x 2-1/2" | 4  | 5/8" x 2-1/2" | 4  | 5/8" x 2-1/2" | 4  | 5/8" x 2-1/2" | 4  | 5/8" x 3"     | 4  | 5/8" x 3"     |
| Pipe Supports                       | 2                 | 5/8" x 2"     | 2  | 5/8" x 2"     | 2  | 3/4" x 2-1/2" | 2  | 3/4" x 2-1/2" | 2  | 3/4" x 2-1/2" | 2  | 3/4" x 2-1/2" |
| Inlet/Discharge                     |                   |               |    |               |    |               |    |               |    |               |    |               |
| Square                              | 20                | 1/2" x 1-1/2" | 20 | 1/2" x 1-1/2" | 20 | 1/2" x 1-1/2" | 20 | 1/2" x 1-1/2" | 24 | 1/2" x 2"     | 24 | 1/2" x 2"     |
| Round                               | 8                 | 5/8" x 2"     | 10 | 5/8" x 2"     | 10 | 5/8" x 2"     | 12 | 5/8" x 2"     |    |               |    |               |
| Hanger/Batten Bar                   | 4                 | 1/2" x 2"     | 4  | 5/8" x 2"     | 4  | 5/8" x 2"     | 4  | 5/8" x 2-1/2" | 4  | 3/4" x 2-1/2" | 4  | 3/4" x 2-1/2" |

## BOLT REQUIREMENTS

### SHAFT DIAMETER: 1" TO 2-7/16"

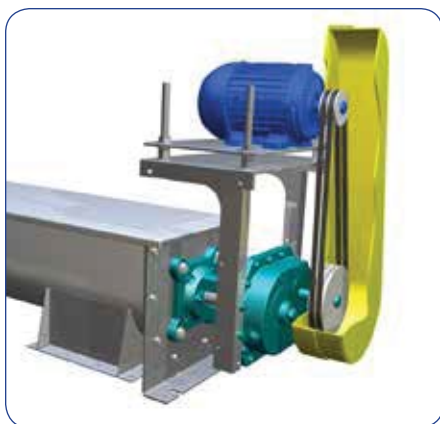
| Components Assembled       | Shaft Diameter |               |        |               |      |               |         |               |
|----------------------------|----------------|---------------|--------|---------------|------|---------------|---------|---------------|
|                            | 1"             |               | 1-1/2" |               | 2"   |               | 2-7/16" |               |
|                            | Qty.           | Size          | Qty.   | Size          | Qty. | Size          | Qty.    | Size          |
| End Bearings To Trough End |                |               |        |               |      |               |         |               |
| SCP Adapter                | X              | X             | 4      | 1/2" x 2"     | 4    | 1/2" X 2"     | 4       | 5/8" X 2-1/2" |
| Ball, Flanged              | 4              | 7/16" x 2"    | 4      | 1/2" x 2"     | 4    | 5/8" x 2-1/2" | 4       | 5/8" x 2-1/2" |
| Roller, Flanged            | X              | X             | 4      | 1/2" x 2-1/2" | 4    | 1/2" X 2-1/2" | 4       | 5/8" X 3"     |
| Ball, Pillow Block         | 2              | 3/8" x 2"     | 2      | 1/2" x 2-1/2" | 2    | 5/8" x 2-1/2" | 2       | 5/8" x 2-1/2" |
| Roller, Pillow Block       | X              | X             | 2      | 1/2" x 2-1/2" | 2    | 5/8" x 3"     | 2       | 5/8" x 3-1/2" |
| Seals to Trough End        |                |               |        |               |      |               |         |               |
| Flanged Gland              | 4              | 3/8" x 2"     | 4      | 1/2" x 2"     | 4    | 1/2" x 2"     | 4       | 5/8" x 2"     |
| Plate                      | 4              | 3/8" x 1-1/2" | 4      | 1/2" x 2"     | 4    | 5/8" x 2-1/2" | 4       | 5/8" x 2-1/2" |
| Plate w/Ball               | 4              | 3/8" x 2-1/2" | 4      | 1/2" x 3"     | 4    | 5/8" x 3"     | 4       | 5/8" x 3"     |
| Plate w/ Roller            | N/A            | N/A           | 4      | 1/2" x 3"     | 4    | 1/2" x 3-1/2" | 4       | 5/8" x 4"     |
| Split Gland                | 2              | 3/8" x 4"     | 2      | 1/2" x 4-1/2" | 2    | 1/2" x 4-1/2" | 2       | 5/8" x 4-1/2" |
| Waste Pack                 | 4              | 3/8" x 3-1/2" | 4      | 1/2" x 3"     | 4    | 5/8" x 3-1/2" | 4       | 5/8" x 3-1/2" |
| Waste Pack w/Ball          | 4              | 3/8" x 3-1/2" | 4      | 1/2" x 4"     | 4    | 5/8" x 4"     | 4       | 5/8" x 4"     |
| Waste Pack w/Roller        | N/A            | N/A           | 4      | 1/2" x 4-1/2" | 4    | 1/2" x 4-1/2" | 4       | 5/8" x 5"     |

### SHAFT DIAMETER: 3" - 4-7/16"

| Components Assembled       | Shaft Diameter |               |         |               |          |               |         |               |
|----------------------------|----------------|---------------|---------|---------------|----------|---------------|---------|---------------|
|                            | 3"             |               | 3-7/16" |               | 3-15/16" |               | 4-7/16" |               |
|                            | Qty.           | Size          | Qty.    | Size          | Qty.     | Size          | Qty.    | Size          |
| End Bearings To Trough End |                |               |         |               |          |               |         |               |
| SCP Adapter                | 4              | 3/4" X 3"     | 4       | 3/4" x 3"     | 4        | 7/8" x 3"     | 4       | 7/8" x 3"     |
| Ball, Flanged              | 4              | 3/4" x 3"     | 4       | 3/4" x 3"     | N/A      | N/A           | N/A     | N/A           |
| Roller, Flanged            | 4              | 3/4" X 3-1/2" | 4       | 3/4" x 4"     | 4        | 7/8" x 4-1/2" | 4       | 7/8" x 5"     |
| Ball, Pillow Block         | 2              | 7/8" x 3-1/2" | 2       | 7/8" x 3-1/2" | N/A      | N/A           | N/A     | N/A           |
| Roller, Pillow Block       | 2              | 3/4" x 4"     | 2       | 7/8" x 4-1/2" | 4        | 3/4" x 4-1/2" | 4       | 3/4" x 5"     |
| Seals to Trough End        |                |               |         |               |          |               |         |               |
| Flanged Gland              | 4              | 3/4" x 2"     | 4       | 3/4" x 2-1/2" | 4        | 7/8" x 3"     | 4       | 7/8" x 3"     |
| Plate                      | 4              | 3/4" x 3"     | 4       | 3/4" x 3"     | 4        | 7/8" x 3"     | 4       | 7/8" x 3"     |
| Plate w/Ball               | 4              | 3/4" x 4"     | 4       | 3/4" x 4"     | N/A      | N/A           | N/A     | N/A           |
| Plate w/ Roller            | 4              | 3/4" x 4-1/2" | 4       | 3/4" x 5"     | 4        | 7/8" x 5-1/2" | 4       | 7/8" x 5-1/2" |
| Split Gland                | 2              | 5/8" x 5"     | 2       | 3/4" x 6"     | 2        | 7/8" x 6"     | 2       | 7/8" x 6"     |
| Waste Pack                 | 4              | 3/4" x 4"     | 4       | 3/4" x 4-1/2" | 4        | 7/8" x 4-1/2" | 4       | 7/8" x 4-1/2" |
| Waste Pack w/Ball          | 4              | 3/4" x 4-1/2" | 4       | 3/4" x 5-1/2" | N/A      | N/A           | N/A     | N/A           |
| Waste Pack w/Roller        | 4              | 3/4" x 5-1/2" | 4       | 3/4" x 6"     | 4        | 7/8" x 7"     | 4       | 7/8" x 7"     |

## DRIVE ARRANGEMENTS

KWS utilizes a variety of drive arrangements and gear reducer manufacturers. Each drive arrangement shown below provides unique advantages for specific applications. KWS designs each drive with a minimum of 1.4 service factor (Class II) to ensure long life and reduced maintenance. Spare parts are available through authorized power transmission distributors all across the U.S. and Canada.



### SCREW CONVEYOR DRIVE

Screw conveyor drives are the most common drive arrangement utilizing a screw conveyor adapter that bolts to the trough end of a screw conveyor. The gear reducer is flange mounted directly to the trough end to provide a simple, rigid assembly.



### BULKHEAD

Bulkhead trough ends are used in applications where there is a need to locate the drive away from the trough end. When conveying bulk materials at high temperatures, the drive must be located away from the source of heat to prevent drive failure. Also, if a special shaft seal is required, bulkhead trough ends provide clearance for the seal. Flanged gland, split gland and mechanical seals are typically used with bulkhead trough ends.



### TORQUE ARM

Torque arm trough ends allow shaft-mounted reducers to "float" to handle shaft run-out. A pillow block bearing is required to support the screw when using a torque arm trough end. Similar to bulkhead trough ends, torque arm trough ends are used in special applications where there is a need to locate the drive away from the trough end. Flanged gland, split gland and mechanical seals are typically used with torque arm trough ends.

[illegible]

[illegible]





Courtesy of:



**Design  
Engineering  
Manufacturing**

### **What makes KWS different from other manufacturers?**

At KWS we understand the needs and exceed the expectations of our Customers. As an ISO-9001 certified company, quality is integrated into every aspect of our processes. Quality is defined by the Customer, and derived from the total KWS Customer experience. It's not just product quality, but quality throughout every step of the Sales, Engineering and Manufacturing processes. Quality starts with our first Customer contact and never ends.

***Conveying Knowledge, Workmanship, Solutions***



**ISO 9001  
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**MADE IN THE USA**

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