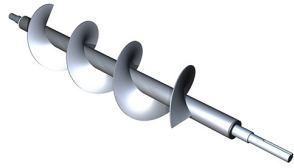
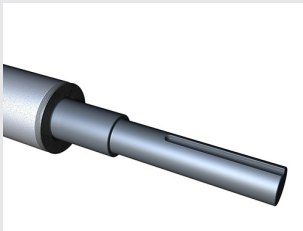




Features & Benefits



Typical Screw for Pulp
& Paper Industry with
Shrink-Fit Shafts on
Both Ends



Drive Shaft is Permanently
Fastened to Center
Pipe of Screw



KWS Manufacturing
3041 Conveyor Drive
Burleson, Texas 76028

Toll Free: (800) 543-6558
Phone: (817) 295-2247
Fax: (817) 447-8528

www.kwsmfg.com

Shrink Fit Shafts

CEMA standard screws utilize internal collars, sometimes referred to as bushings, to effectively reduce the inside diameter of the center pipe. The purpose is to match standard CEMA shaft sizes and to increase the torque rating of the CEMA bolted connection. Special applications require the drive and end shafts to be permanently fastened to the center pipe of the screw, thus eliminating the need for coupling bolts. KWS Manufacturing offers custom shrink-fit shafts that provide a stronger connection and longer life for the screw.

KWS designs the shrink-fit connection between the inside diameter of the center pipe and the outside diameter of the shafts to have an interference fit of 0.002 to 0.005-inches, depending upon pipe size. Instead of plug welding the bushing inside the mating surface, the pipe and shafts are machined to exact tolerances before starting the shrink-fit operation. The pipe is carefully heated and shafts inserted to the specified depth. The pipe is then allowed to air-cool essentially "shrinking" the pipe to form a tight seal around the shaft. KWS certified welders then weld a continuous bead at the end of the pipe to form a water-tight seal and solidify the connection.

For example, food grade applications require that no pits or crevices be present and therefore, the standard CEMA bolted connection is not allowed. Also, in highly corrosive applications such as are present in the pulp & paper and chemical industries, the complete screw assembly must be sealed and shrink fit shafts provide additional protection from the corrosive chemicals.

In addition to the many quantifiable advantages, the torque rating of the shrink-fit shaft-to-pipe connection is stronger than a standard CEMA bolted connection, providing less chance for failure. Prior to shipment, all KWS screws with shrink-fit shafts are straightened to within 0.015-inches TIR at the bearing area of the shafts.

Features

Variety of Applications – KWS shrink-fit shafts are designed for the food processing, chemicals and pulp & paper industries where there is a requirement for no pits or crevices.

Variety of Designs – KWS shrink-fit shafts are designed and constructed for pipe sizes up to 20-inch diameter with shaft sizes as large as 10-inch diameter using stainless, carbon steel, or many special alloys.

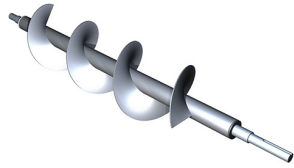
Benefits

Elimination of Contamination or Corrosion – In sanitary or corrosive applications, shrink-fit shafts eliminate crevices where mold, mildew or corrosive chemicals can accumulate.

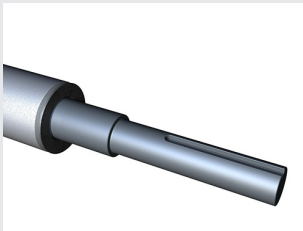
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Features & Benefits



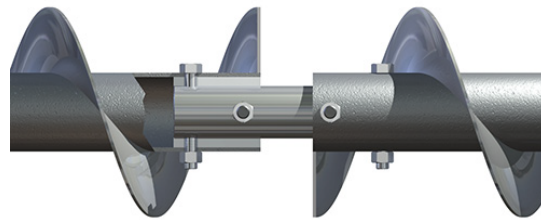
Typical Screw for Pulp & Paper Industry with Shrink-Fit Shafts on Both Ends



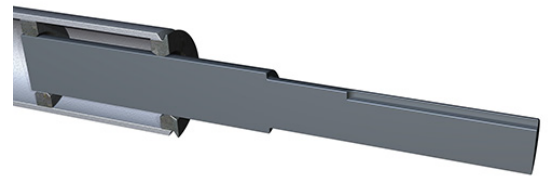
Drive Shaft is Permanently Fastened to Center Pipe of Screw

Shrink Fit Shafts

High Torque Applications – KWS shrink-fit shafts are designed to handle high torque loading for difficult applications such as Lime Mud Feed Screws for the pulp & paper industry.



CEMA Standard Screws Utilize Internal Collars and Coupling Bolts



Section View Shows Shrink-Fit Connection



Shafts are Machined to Very Close Tolerances for Shrink Fit



Pipe is Carefully Heated and Shafts Inserted to Specified Depth



**Design
Engineering
Manufacturing**

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