



## Drive Shafts and Shaftless Spirals



KWS Shaftless Screw Conveyors are designed with a flanged connection between the spiral and drive shaft. The flanged connection is located as close to the drive endplate as possible to eliminate any restriction to the flow of bulk materials. The drive shaft is directly connected to a gear reducer and motor that provides the power to turn the shaftless spiral. One of the many benefits of a shaftless conveyor is the ability to convey wet, sticky bulk materials efficiently with only the spiral. Shafted screw conveyors require a center pipe to support the screw and to provide a means for rotation. The KWS Shaftless Screw Conveyor design is not compromised by extending a drive shaft into the product flow.

Historically, a coupling plate welded to a drive shaft was typical in the industry. KWS viewed this connection as a potential weak point and certainly a potential source of misalignment with the spiral coupling plate. Any misalignment at this connection induces a cyclical load on the coupling and causes fatigue and eventual failure. KWS has solved this problem by machining the drive shaft and coupling flange from one piece of solid bar. The result is a drive shaft coupling flange that is stronger, truly perpendicular and will not fail.

The one-piece flanged drive shaft is bolted to a coupling plate on the shaftless spiral. The spiral coupling plate is designed with a register fit to the drive shaft coupling flange allowing for easy alignment. The spiral coupling plate is welded to the coupling plate using an alignment fixture to produce a precise connection and true alignment of the drive shaft and spiral.

### Features

**Flanged Coupling** – KWS provides a bolted flanged connection between the drive shaft and spiral. Connection plates are perpendicular to and do not restrict the flow of bulk materials.

**One-Piece Drive Shaft** – KWS machines every shaftless screw conveyor drive shaft from solid bar with a generous radius at the shaft to coupling flange transition to provide an unbreakable connection. A registered fit between the coupling flange faces is standard.

**Materials of Construction** – KWS drive shafts and spirals can be manufactured from a wide range of materials to suit any application. Drive shafts may be C-1045, SAE 4140, stainless steel and spirals may be constructed from carbon steel, micro alloy steel, abrasion resistant steel, stainless steel or as required by the strength, corrosion resistance and abrasion resistant requirements of the application.

### Benefits

**Simplified Spiral Replacement** – Since the coupling faces are perpendicular to the product flow, the spiral can be easily unbolted and removed vertically from the trough without disturbing the drive shaft and gear reducer.

**Elimination of Failure Point** – The KWS one-piece drive shaft will not fail under fatigue or torsional loading. Expensive downtime is minimized, creating a maintenance and worry-free operation.

**Engineered Solution** – KWS is unique and can design each system specifically for the application. We offer a wide range of spiral materials and pioneered the use of high strength structural and abrasion resistant steels to improve component life on difficult applications.



**Design  
Engineering  
Manufacturing**

### KWS Manufacturing

3041 Conveyor Drive  
Burleson, Texas 76028

Toll Free: (800) 543-6558

Phone: (817) 295-2247

Fax: (817) 447-8528

[www.kwsmfg.com](http://www.kwsmfg.com)