COMPONENTS, ENGINEERING DEVELOPMENT, AND MANUFACTURING

SDP/SI
STOCK DRIVE PRODUCTS/STERLING INSTRUMENT

SHAFTLOC®

A Superior Way to Fasten Rotating Components

Our Certifications

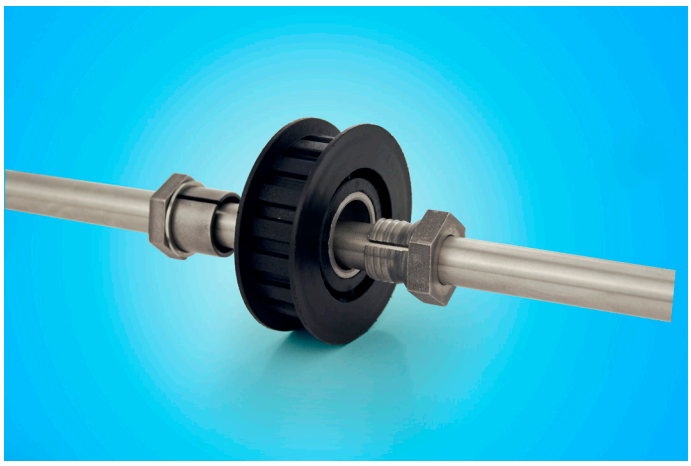
ISO 9001 + AS9100

ITAR Compliant-DDTC Registered

DFARS Compliant

RoHS & R.E.A.C.H. Compliant

NIST SP 800-171 Compliant



The two-piece fastener outperforms other fastening methods. Its asymmetric thread geometry produces a greater clamping force, is vibration resistant, and is infinitely adjustable with a quick lock and release action.

Typical Fastening Methods Used to Fasten Rotating Components

Tapered split bushing. The axial force from tightening the bolts translates into amplified radial forces that close the split bushing. The main disadvantage of this method is that the component must have a tapered bore. The process can be modified, however, by adding a transition plate with a tapered bore (**see Fig. 1**). In this case, the component can have a plain bore.

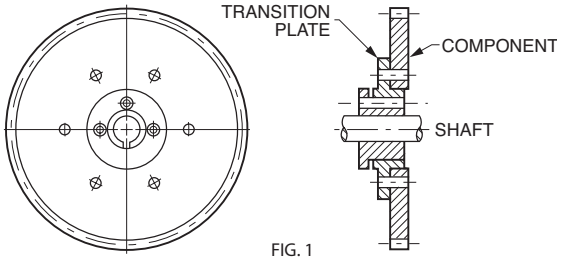


FIG. 1

Another method involves a series of rings. Two solid rings are assembled around two spit rings with bolts (**see Fig. 2**). Tightening the bolts causes the inner split ring to contract and the outer split ring to expand producing large forces in the direction of both the component and the shaft. As a result, the two are held in place with respect to one another.

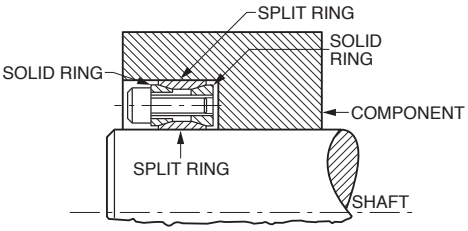


FIG. 2

A third method used for smaller components uses a slotted inner sleeve and slotted outer sleeve (**see Fig. 3**). The inner threaded sleeve is moved axially when the nut around it is tightened. Because both surfaces are tapered, the axial motion produces radial forces in both the direction of the component and the direction of the shaft.

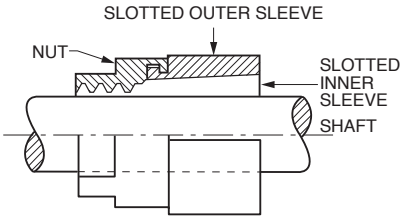


FIG. 3

The last method, like the third, uses a slotted and threaded inner sleeve and a split outer sleeve (**see Fig. 4**). However, this one has parallel, side-by-side inclined grooves instead of a continuous conical surface. Also, the nut has additional set screws around it that produce relative displacement between the inner and outer sleeves. In turn, this displacement produces axial forces that translate into radial forces and fasten the component to the shaft. This method is only suitable for larger sized components, where the nut can accommodate several set screws.

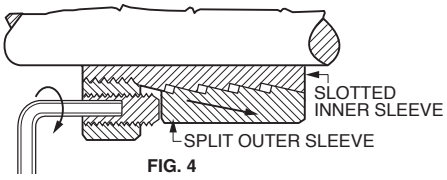


FIG. 4

Shaftloc® is a registered trademark of Designatronics and is a patented fastening device (United States Patent No.5,067,846 and No.6,000,875) manufactured by SDP/SI.

ENGINEERED SOLUTIONS FOR A WORLD IN MOTION

Designatronics Inc.

- Ease of assembly
- Does not damage or mar the shaft
- Easy repositioning or synchronizing of rotating components
- Applicable for small shaft diameters
- All stainless-steel construction
- Low cost

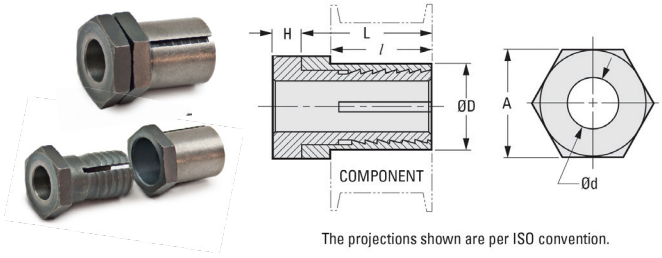
What Makes the Shaftloc® Design Superior to Other Fastening Methods?

Simplicity of Design, Only Two Parts, a slotted outer sleeve and a slotted inner sleeve, both of which have hexagonal heads. The outer sleeve is cylindrical on its outside diameter and threaded on its inside diameter. Conversely, the inner sleeve is threaded on its outside diameter, and cylindrical on its inside diameter.

The Thread Profile is Unique in that it is not symmetrical, which creates a continuous inclined surface. The shallow angle of the thread produces large amplifications of forces, resulting in substantial torque transmission capability between the component and the shaft.

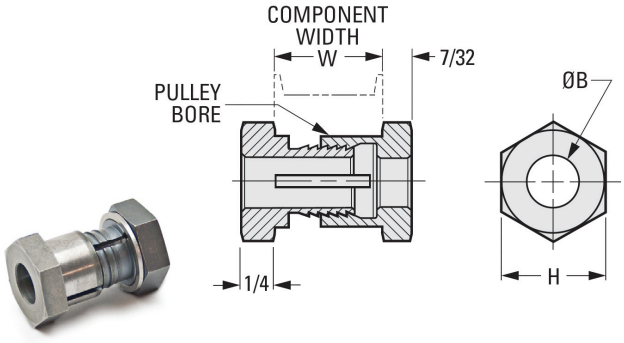
Available Shaftloc® Styles

Single Ended – A 7Z39-… and A 7Z39M… Series, like the Double Ended style, tightening the sleeves will cause the outer one to expand and the inner one to contract. In this case, the hexes are oriented on the same side, leaving the face of the fastened component unobstructed.

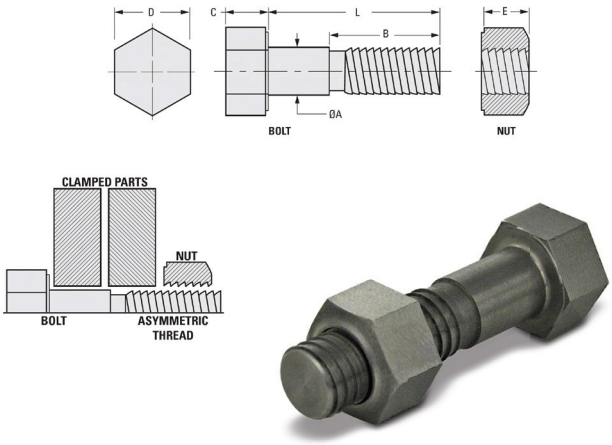


The projections shown are per ISO convention.

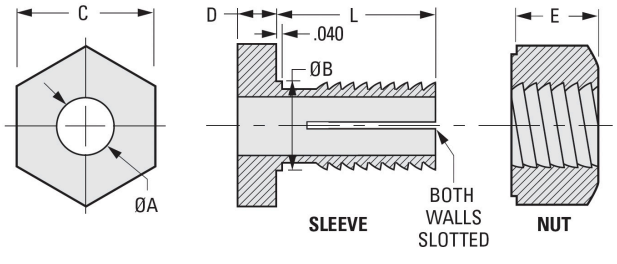
Double Ended – A 7Z37-… Series, the hexes are oriented on opposite sides, clamping the component between them. Tightening the sleeves will cause the outer one to expand and the inner one to contract.

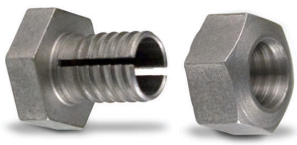


A-Type – A 7Z38-… Series and A 7Z38M… Series, like the M-Type, the asymmetric threads create a tight, self-locking wedge that reduces vibrations in the clamped components.



M-Type – A 7Z36-… and A 7Z36M… Series, consists of a slotted hex bolt and a hex nut. Used as a locking device for rigidly mounting mechanical components on a shaft. The asymmetric threads create a constant inclined contact generating large radial clamping forces.





Explore the Shaftloc product line!

SDP/SI STOCK DRIVE PRODUCTS/STERLING INSTRUMENT
QBC QUALITY BEARINGS & COMPONENTS
QTC METRIC GEARS