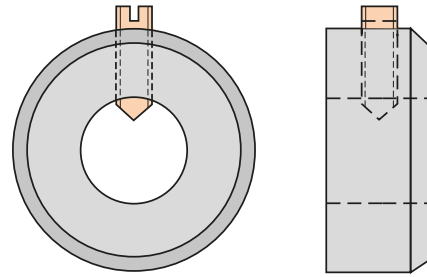




Shaft collars play an important role in power transmission applications and machinery. Like gear sprockets and bearings, they are designed to fit around a shaft and ensure that it runs smoothly. They are small metal or plastic discs that fit on to a shaft.



Applications and benefits

The main purpose of shaft collars is to ensure that crucial components like sprockets and bearings stay in place while the machinery is running. They will ensure that vibrations will be minimised and secure key components in things like gearbox assemblies and motors. This is extremely important because any deviation in spinning components like gears and pulleys can cause machine failure.

In summary, the roles of a shaft collar are to:

- Secure components in place
- Ensure enough space between key components
- Minimise vibrations on a spinning shaft

There are many different types of shaft collars with different working mechanisms. It is important to choose the correct ones for your application. Choosing incorrect shaft collars could damage the shaft or other important mechanical parts.

Failure of set screw shaft collars

One common cause of failure in set screw shaft collars is the material of the set screw being softer than that of the shaft. The shaft collar's main connection to the shaft collar is through the set screw.

If the set screw material is softer or weaker than the shaft material, the connection would not be that strong since the screw would deform. As a result, set screw shaft collars are not suitable for hardened steel shafts (these usually have a hardness of Rockwell C 48-55). Ensure you check with the manufacturer that the set screw material is suitable for your application.

Another common cause for failure would be that the set screw material is not suitable for the environment it is operating in (i.e. corrosion resistance). Set screws that are plated with zinc (you can find them on Milsons here) will have better corrosion resistance.

Set Screw Shaft Collars

One of the first types of shaft collars, set screw shaft collars secure the collar on to the shaft through a set screw at the top. When the screw is fully tightened, it will dig into the shaft and hold the collar in place on the shaft.

Set screw shaft collars are great because they offer a secure connection to the shaft with the set screw. They are good for light-weight applications with smaller rotational forces. However, since the set screw digs into the shaft, they are not appropriate for applications where you want the shaft's to be unaffected. Hence, set screw shaft collars are best for applications that are permanent.

You can find the set screw shaft collars offered by Milsons here. For a secure connection, the material of the collar and set screw need to be stronger than the shaft material. Another important factor is the thread engagement between the shaft and set screw.

Choosing a shaft collar

Here are some factors to consider when choosing a shaft collar:

- Dimensions: Inner and outer diameter (ID & OD) and respective tolerances.
- Weight of shaft collar
- Material of the set screw and shaft: As stated above, the material of the shaft cannot be harder than that of the set screw. You can use the Rockwell hardness scale to determine this. Usually, set screw collars are not suitable for hardened shafts.
- Material of shaft collar (Milsons offers SUS304 that has good corrosion and heat resistance)
- Surface finish (Milsons offers yellow zinc that has superior corrosion resistance).

ⓘ The data provided in this document is for general guidance only and should not be solely relied upon when working to stringent specifications. We recommend consulting with qualified experts regarding any technical queries. This information may change without written notice.