

TECHNICAL NOTE 260908

ORCA™ Motor Octagon Shaft Collars Increased Travel for Compact Installations



ORCA™ Motor Octagon Shaft Collars: Increased Travel for Compact Installations

Overview

ORCA motor octagon shaft collars are optional mechanical accessories designed to increase the usable travel of compatible [ORCA™ Series Smart Linear Motors](#) without increasing shaft length.

ORCA motors ship with standard round shaft collars, which clamp to the cylindrical portion of the shaft. Because the shaft cannot travel through the motor stator beyond the collar, the portion of the shaft occupied by the collar limits motor travel.

The ORCA motor octagon shaft collar clamps directly to the octagonal shaft crimp at the end of the shaft, leaving the full cylindrical portion of the shaft available for travel. This provides an additional 28mm of usable travel while maintaining the same shaft length.

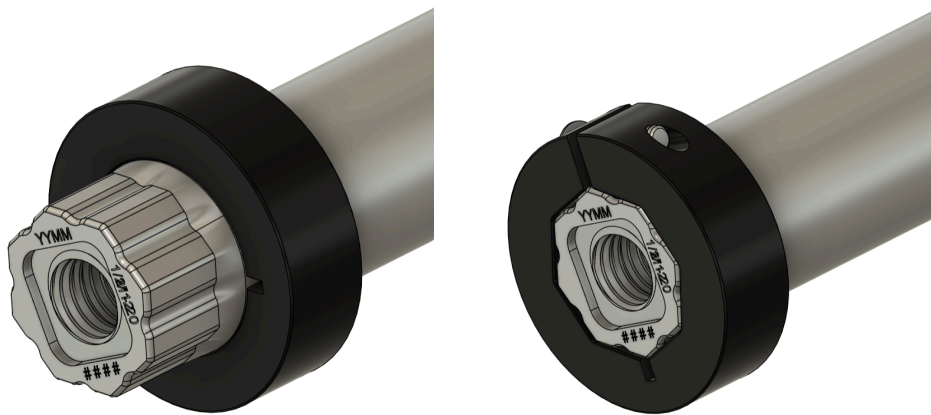


Figure 1 – Standard Shaft Collar vs. ORCA Motor Octagon Shaft Collar installation

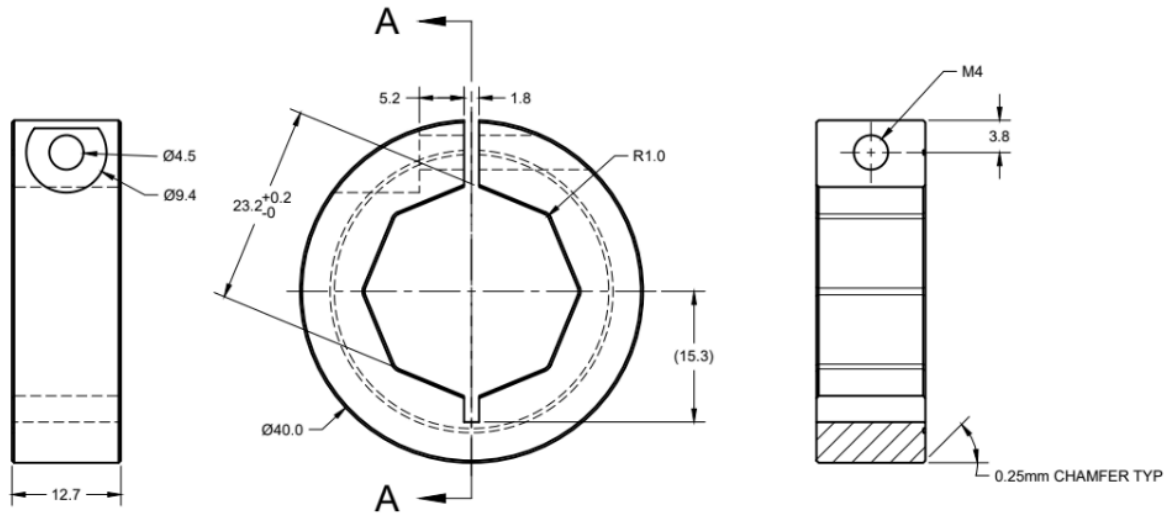


Figure 2 - ORCA Motor Octagon Collar Dimensions

When to Use an ORCA Motor Octagon Shaft Collar

ORCA motor octagon shaft collars are particularly useful when maximum travel is required within a limited installation envelope. They should be considered when:

- Increasing the shaft length would exceed the available installation space.
- Additional travel is required from an existing ORCA motor shaft configuration.
- Minimizing the overall installation envelope is important.
- An adjustable mechanical limit is not required at the end of the shaft.



Figure 3 – Standard Shaft Collar (left) and ORCA Motor Octagon Shaft Collar (right)

Installation and Operation

The ORCA motor octagon shaft collar replaces the standard collar at the applicable end of the shaft and clamps directly to the octagon shaft crimp.

No firmware changes are required when switching to the octagon shaft collar. After installation, zero the ORCA motor using the same procedure as a standard shaft collar.

An octagon shaft collar may be installed on one end of the shaft while retaining a standard round shaft collar on the opposite end. This configuration provides increased travel at one end while maintaining an adjustable mechanical limit at the other.

Compatibility

ORCA motor octagon shaft collars are compatible with ORCA motors using the current crimped shaft design, introduced in 2025.

They are not compatible with earlier shaft designs that do not incorporate the required octagonal crimp geometry.

Design Considerations

Unlike a standard round collar, an ORCA motor octagon shaft collar cannot be repositioned along the shaft. Its location is determined by the shaft crimp geometry. Applications requiring an adjustable mechanical limit should retain a standard collar at the applicable end.

The ORCA motor octagon shaft collar provides holding strength equivalent to or greater than that of the standard shaft collar.

