KINGPIN VS KINGPINLESS & MAINTENANCE FREE SWIVEL CASTERS

Hear Ye! Hear Ye!

When choosing a swivel section, it's best to understand the application *first* and what you are trying to accomplish. We typically calculate a total load over three casters in a four-caster setup to allow for an ample safety factor when moving on uneven floors.

Knowing a sufficient rating for each caster you need is the best starting point before choosing your swivel section.

Top three swivel sections -

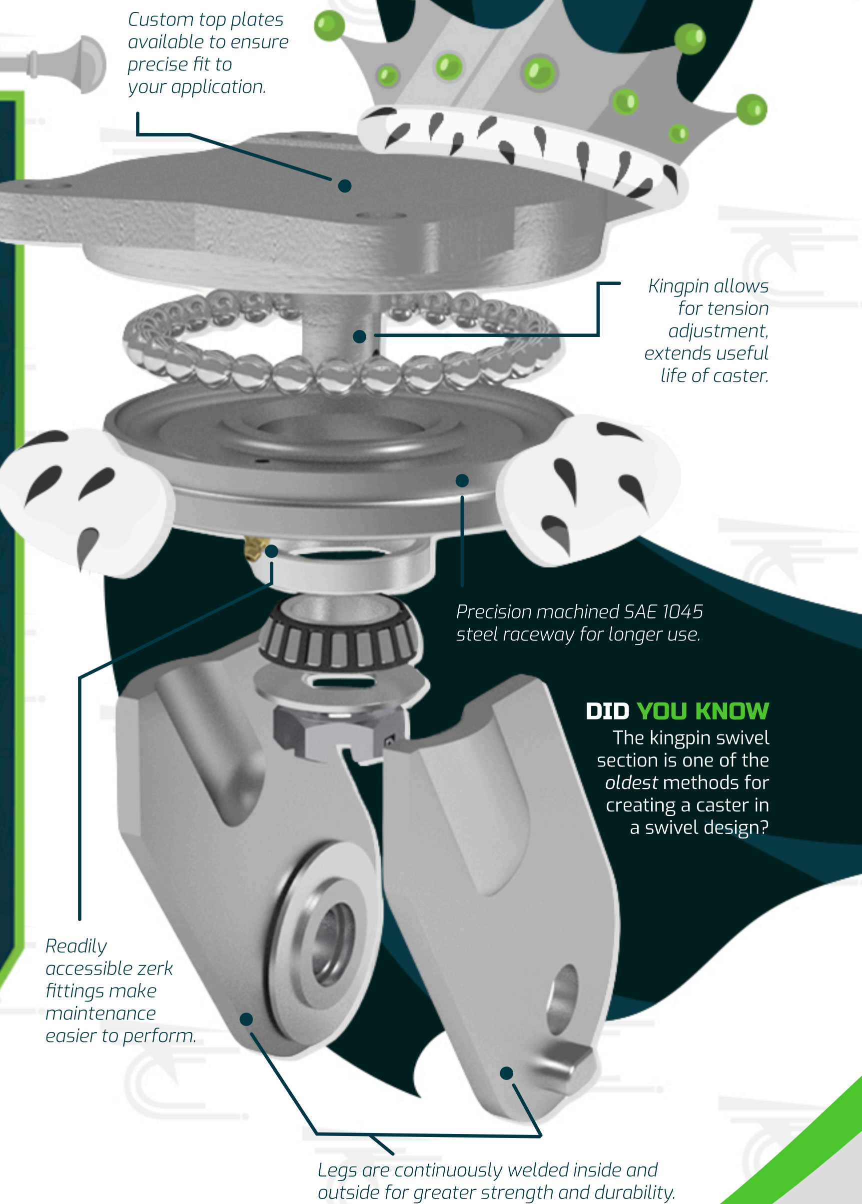
- Kingpin
- Kingpinless
- Maintenance Free

KINGPIN

A threaded kingpin and a slotted nut design are the most standard configuration. Consists of a bolt that runs through the center of the swivel section.

PURPOSE:
Sandwich the load bearings and thrust bearings between a swivel section's top plate and yoke base. Now that other options have come to market, the kingpin is more of a traditional caster.

NOTE:
You will use this style if you plan to maintain the caster. The most common use is for extremely heavy loads where kingpinless or maintenance-free casters cannot handle the high capacity.



DID YOU KNOW
The kingpin swivel section is one of the *oldest* methods for creating a caster in a swivel design?

Kingpin Advantages:

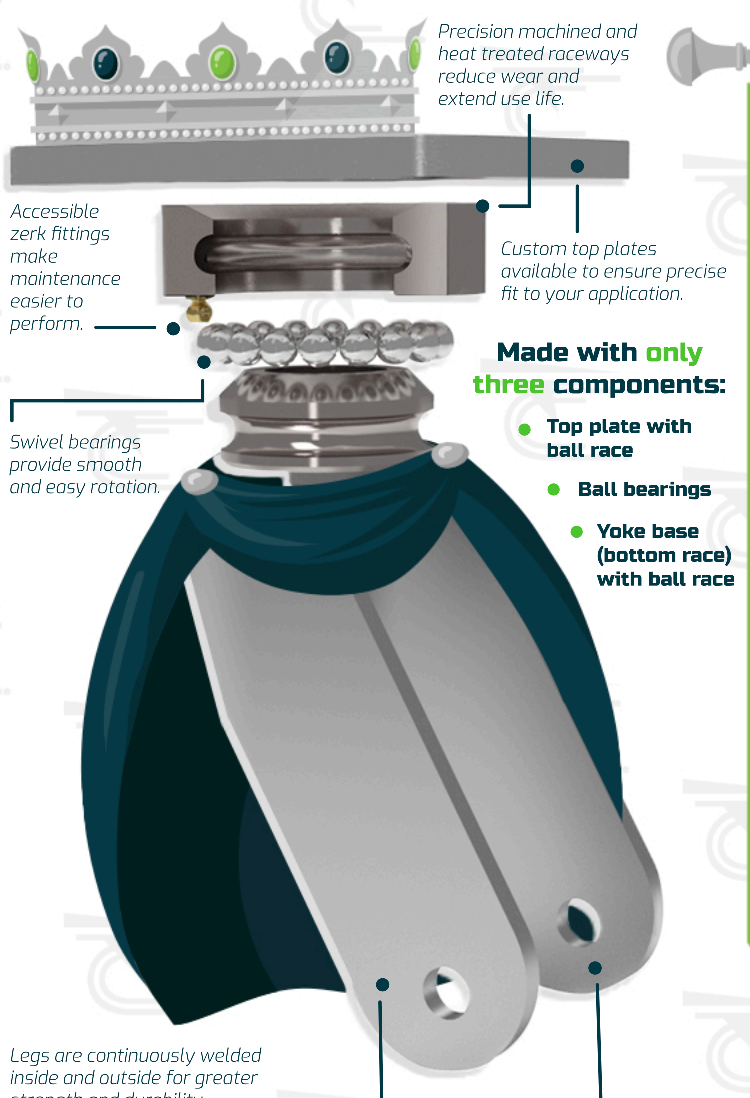
The threaded kingpin-nut design allows you to take apart and perform maintenance to the bearings or to clean the swivel section (if needed). Additionally, the user can tighten the kingpin to vary the levels of swivel resistance as well as controlling flutter conditions. Doing these can prolong the life of the caster.

Kingpin Disadvantages:

Due to most of the thrust loads being transmitted through the kingpin, it often becomes a failure point of the caster.

For this reason, kingpin casters are usually not recommended for high-speed towing applications. The high loads associated with turning at high speeds can greatly reduce the capacity of a kingpin style swivel section.

The kingpinless swivel section is the most commonly used.



Made with only three components:

- Top plate with ball race
- Ball bearings
- Yoke base (bottom race) with ball race

KINGPINLESS

PURPOSE:
Loading carbon steel balls into a load hole fills the ball race so the top plate and yoke don't come apart. This creates a bearing similar to a ball bearing. The result is a free-spinning swivel section that allows for an easy change of direction and utilizes the swivel bearings to spread and distributes the load out over a larger area.

NOTE:
They are designed with a grease fitting for routine maintenance to extend the caster's life. Kingpinless are great for heavy loads and with the correct grease, even perform well in high-temperature applications.

Kingpinless Advantages:

Since this design distributes the load out over a larger area, it can be used in higher speed caster applications.

The kingpinless swivel section also swivels more easily and requires less maintenance since there is no nut that needs to be retightened.

Kingpinless Disadvantages:

This swivel section design makes adjusting the swivel-ability of the caster difficult once the caster has been assembled.

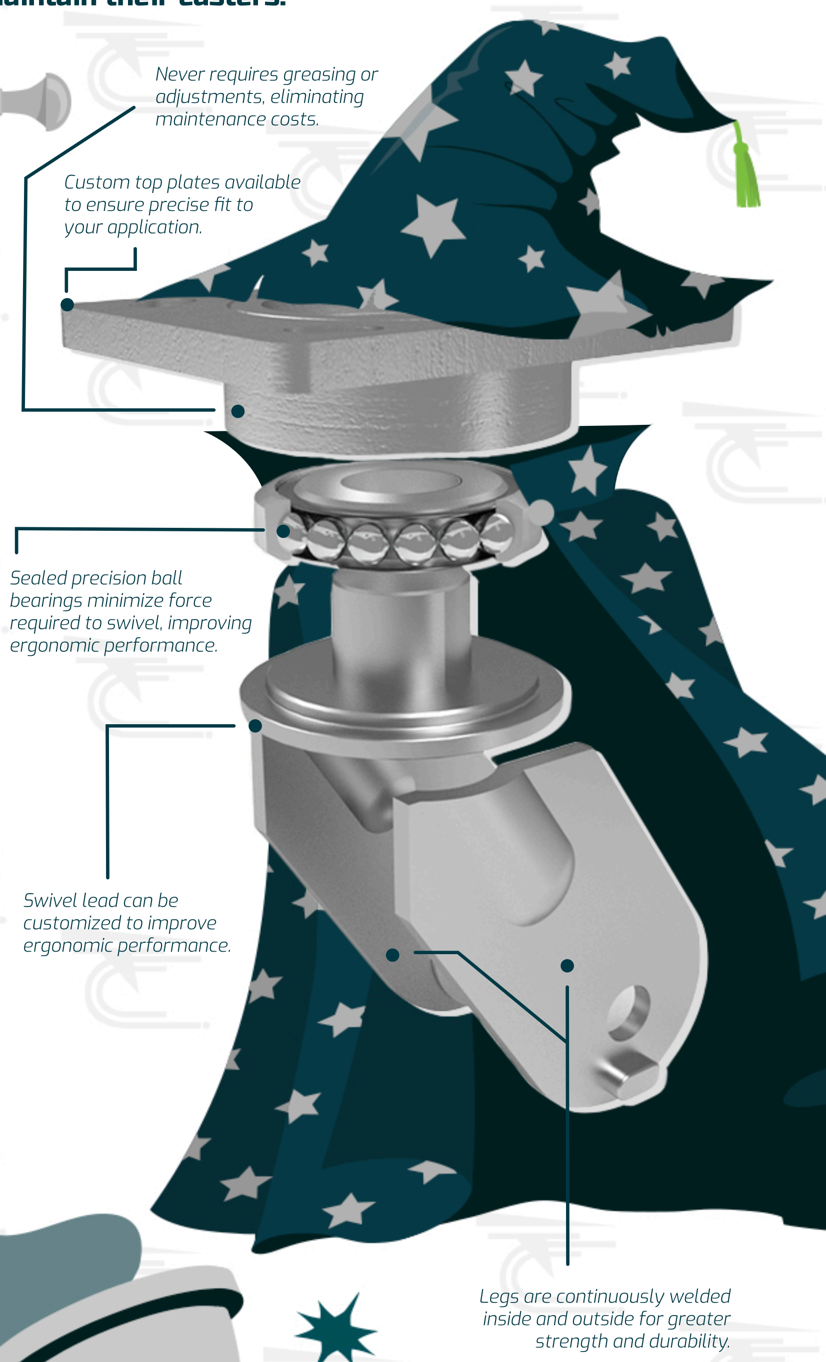
This is because the entire swivel section must be taken apart for a "swivel restrictor" device to be inserted into the raceway. Also, once the caster swivel section raceways have worn, there is no way to adjust the swivel section to retighten.

The perfect solution for people or facilities who don't have the time or means to maintain their casters.

MAINTENANCE FREE

PURPOSE:
Precision sealed ball bearing pressed into a yoke base and the top plate to hold the two pieces together. This design allows for the most consistent and smooth spinning swivel section. The sealed ball bearings prevent dirt from getting in and grease from getting out, resulting in a long caster life while saving time and money from maintenance.

NOTE:
Best for ergonomic improvements as they have the smoothest spinning swivel section and if you don't plan on maintaining the casters on a routine basis.



Maintenance Free Advantages:

Allows our customers to delegate their time to other things instead of doing preventative maintenance on casters. They work well due to the precision alignment of the swivel section and ball bearings. Being sealed at both sections, the bearing raceway must be tight to keep the grease in and foreign debris out. Precision ball bearings also make it easier to roll or maneuver, so if your company is dealing with excessive push/pull forces, consider trying a maintenance-free caster.

In order to properly choose which swivel section is best for the application, it is important to know

loading conditions, speed, duty cycle, jobs/hour, floor conditions, as well as any other environmental concerns.

If you are still unsure what swivel section is going to serve your needs, contact the engineering staff at Caster Concepts to assist with your decision making process.

Proper design of the swivel section, to meet your needs, will provide you with a...

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please view our resources on our website for additonal information.
www.casterconcepts.com

CASTER CONCEPTS
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