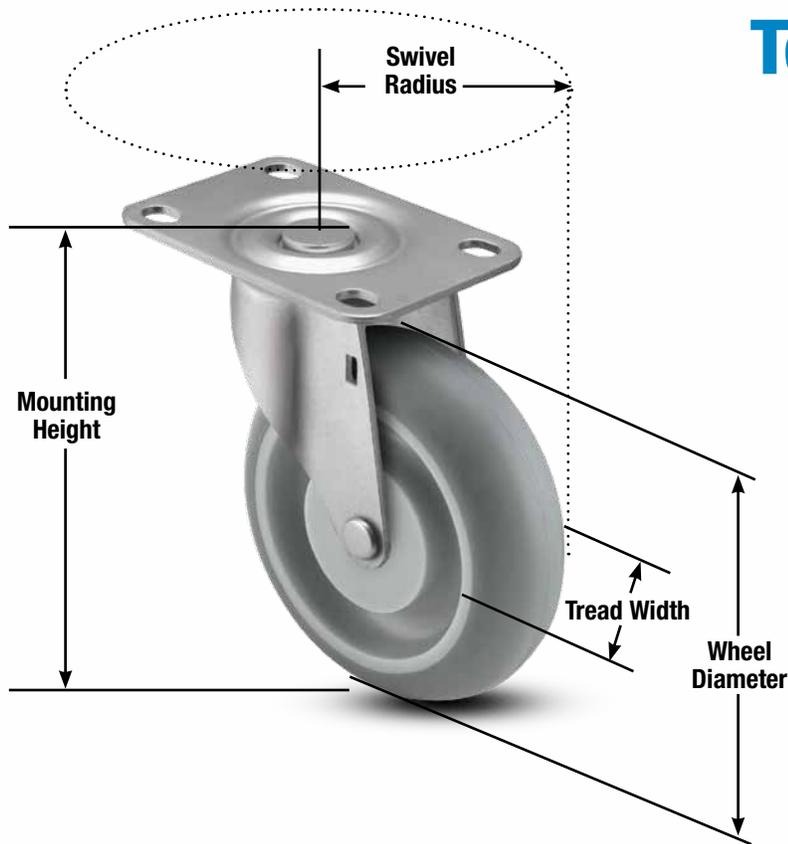


Caster Terms



Terms & Definitions

Swivel Radius – The distance from the center of the fastening to the outer most point of the caster. This specifies the minimum clearance required for a mounted caster to swivel 360 degrees.

Wheel Diameter – The vertical measurement from the bottom to the top of the wheel (wheel diameter also commonly refers to the size of the caster). Generally, the larger the wheel diameter, the easier it will roll.

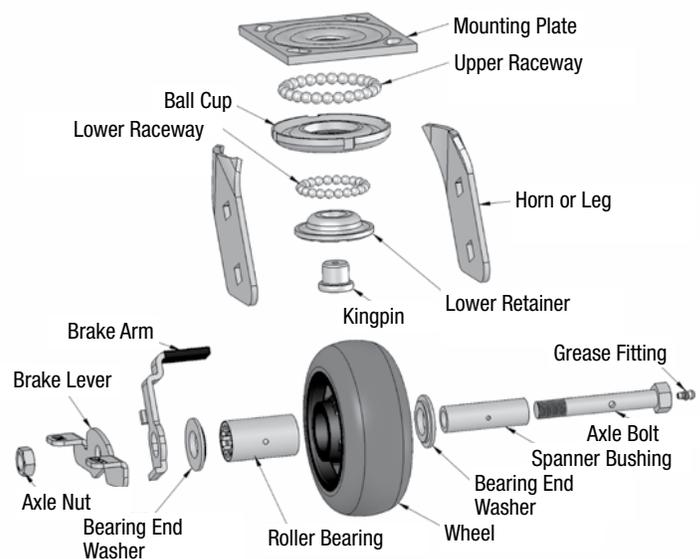
Mounting Height – The total distance the caster raises the unit off the floor when assembled. It is ideally the measurement from the bottom of the wheel to the top of the fastening (does not include stem within the unit).

Dynamic Load – The calculated load a caster has been designed to support while in use. This dynamic calculation is determined by static load, durability and impact factors—and is assigned on a per caster basis. To determine the load required based on the number of casters on the unit, divide the fully loaded product weight by the number of casters.

Other Important Selection Considerations:

- **Load capacity:** divide the fully loaded product weight by the number of casters to determine the dynamic load rating required per caster.
- **Floor conditions:** hard treads usually provide greater capacity, but are louder and can damage some floors. Soft treads are quieter, more floor protective, more shock absorbing, and roll more easily over obstructions.
- **Rollability:** the right bearing and wheel material can make a big difference. Precision ball bearings reduce the effort needed to initiate and sustain rolling—while larger diameter, crowned and hard tread wheels also generally help with improved rollability.
- **Brakes:** a host of brake options are available, some designed for economic solutions (Side and Friction), others for a positive locking wheel brake (Tread Locks and Top Locks), and others to ensure safety by positively locking both wheel and swivel (Total Locks).
- **Mounting methods:** many considerations come into selecting the right fastening method. With hundreds of options available, we have the experience to ensure you utilize the proper method.
- **Maintenance considerations:** various bearing types are available to provide maintenance free operation.
- **Unusual conditions:** are frequent washings, salt water, high heat, or non-magnetic requirements present? We have you covered if so.

Caster Assembly Parts



Glossary of Caster and Wheel Terms

Caster Parts

Axel Nut

The nut on the side of the leg that holds the thrust washers, spanner bushings, and bolt or lube axles together.

Caster/Castor

A pivoting roller attached to the bottom of furniture or trucks or portable machines to make them movable.

Cotter Pin

A small metal pin used to keep other parts from changing their position, such as to keep a nut from turning, fastened in place by spreading apart its ends after it is inserted

Fork Base

The flat part at the top of the fork from which the legs extend. Serves as lower raceway for main load bearing and may provide a seat or upper raceway for secondary load bearing.

Fork/Horn/Yoke

The caster part which is comprised of legs plus a base (fork base of swivel caster or mounting plate of rigid).

Kingpin

A rivet, or threaded stud or bolt with nut, that holds the mounting plate and fork assembly of a swivel caster together. Forged as an integral part of mounting plate on higher quality casters

Main Load Bearing

The row of steel balls or rollers that swivels the fork base in relation to the mounting plate of a swivel caster and counteracts direct thrust.

Mounting Plate

The flat base, usually with four bolt holes, that forms the top of a caster and permits attachment by bolting or welding to a flat surface.

Raceway

A surface in which bearing balls or rollers rotate.

Rig

A swivel or rigid caster assembly less wheel, that may or may not include axle, nut or spanner bushing.

Secondary Load Commercial/Industrial Bearing

The row of steel balls that rides in the raceway between the fork base and secondary bearing retainer of a swivel caster to counteract component thrust. It is this bearing that characterizes the popular "double ball race" caster.

Secondary Load Precision Bearing

A precision self-contained bearing, usually a tapered roller bearing, operating between the fork base and the kingpin of a swivel caster. Constitutes the most efficient means of assisting swivel action by counteracting component thrust.

Kingpin Nut

The nut on the bottom of a threaded kingpin or bolt that permits the disassembly or adjustment of swiveling components; a maintenance feature of better casters not found with rivet-type kingpins.

Legs

The axle-support brackets extending down from the fork base of a swivel caster, or from the mounting plate of a rigid caster.

Lube Bolt Axle

An axle used to attach the wheel to the fork legs of a caster, containing a lubrication hole allowing for lubrication of the spanner bushing without disassembling the wheel from the fork legs.

Lubrication Fitting

A fitting place into higher quality casters that allows for lubrication of the bearings without disassembling the fork base, main, and load bearings.

Spanner Bushing

A non-rotating sleeve of seamless steel tubing that fits over the axle in many casters. Serves the dual purpose of providing a smooth inner raceway for the wheel bearings and strengthening the caster by permitting the legs to be tightened against it.

Standard/ Solid Bolt Axle

An axle used to attach the wheel to the fork legs of a caster.

Thrust Washer/Retaining Washer/Combination Seal

A steel washer between the hub ends of the wheel and the inside of the caster legs. A steel washer pressed into the hub ends of some roller bearing wheels to hold the bearing in place.

Wheel

A round structure, solid disk or a rigid circular ring, that is designed to turn around a center, normally an axle passed through the center of the structure. Caster wheels come in a wide variety of materials, sizes and treads. Often Caster wheel type is synonymous with the material makeup or specialized tread pattern exhibited by the wheel.

Dimensional Caster Parts

Bolt Hole Spacing

Bolt hole spacing is the distance measured from the center of the bolt hole to the opposite center of the other bolt hole.

Bore Diameter

Bore diameter is the distance measured through the center of the wheel.

Overall Height

Overall height is the vertical distance between floor and mounting plate. (NOTE: Casters with threaded stems are measured to the top washer and do not include the length of the threaded stem).

Plate Dimension

Plate dimension is the measured distance from one edge of the top plate to the

Capacity

The maximum recommended load per caster or wheel based on intermittent operation over smooth floors at speeds not exceeding 3 m.p.h., with no shock loading or adverse environmental conditions.

*Gross weight of a truck or dolly should be divided by the number of casters or wheels on which the weight is distributed.

Caster Size

A loose term for classifying casters, based on the nominal diameter of the wheel. For example, a "6 inch caster" is any caster having a 6 inch diameter wheel.

Hub Length

Hub length is the widest part of the hub (including bearing assembly and thread guards).

Offset/Swivel Lead

The perpendicular distance between the vertical centerlines of the kingpin and the axle of a swivel caster. Larger offsets afford easier swiveling, shorter offsets greater strength.

opposite side and the distance from the other edge of the top plate to the opposite side.

Swivel Lead

Swivel lead is the horizontal distance between vertical centerlines through kingpin and wheel center.

Swivel Radius

A swivel radius is the horizontal distance from vertical centerline of kingpin to outside edge of wheel tread. Specifies minimum clearance required for mounted caster to swivel 360 degrees.

Tread Width/Face

The outer surface of the wheel, in contact with the ground. The width of the wheel tread cross-section, measured at the base of the tread rather than at the point of floor contact.

Wheel Diameter

Wheel diameter is the outer nominal diameter of the wheel.

Caster Measurements

Component Thrust

Designates side forces exerted on a swivel caster and properly counteracted by the secondary load bearing.

Direct Thrust

Designates those downward forces exerted on a caster by the load and counteracted by the main load bearing.

Durometer

A measure of the hardness of resilient tread wheels.

Rollability

Ease of starting and rolling, measured by drawbar pull. This is determined by load, floor conditions, and type and size of wheels and bearings.