



rehabilitation, hospital & home care equipment

CASTERS AND WHEELS

Wheels and casters are not the same thing although they are often confused.

Wheel:

This is a round object that rotates on a shaft (axle) that passes through it. Wheels can be solid or spoked and are made from a wide range of materials depending on where they are used.

Wheels that are spoked usually have a material moulded to another material. Most of the time tyres are moulded to a solid core which is the centre or circular disk supporting the tyre. The centre core of the wheel is usually made out of aluminium, iron, steel, nylon or polyolefin. The tyre is usually made out of rubber or polyurethane and can be of varying hardness.

Caster:

A wheel when installed in a frame is a caster. The caster frame is called a caster bracket, rig or fork. The major components of a caster are the wheel and the frame in which it is held.

A caster frame can be either a swivel or rigid frame. A swivel caster is capable of rotating 360 degrees. Most people are familiar with swivel casters on the base of office chairs. Swivel casters allow easy and tight turning of equipment. A rigid caster is used primarily for straight line travel; either forward or backward.

The wheel of a caster, both swivel and rigid, is held in place between the legs of the caster frame by a bolt or axle. Above the frame on a swivel caster is the swivel bearing which allows the caster to rotate through 360 degrees. There is no swivel bearing above the frame of a rigid caster as it does not rotate.

Most swivel casters are attached to equipment by a mounting plate but other common options are round or square metal stems inserted into tubing, threaded stems, grip ring stems, and expanding adaptors. Various metal or plastic adaptors are commonly used to hold caster stems in tubing.

Directional locks:

Some casters have directional locks. These lock the caster swivel. They assist when you want to move an item and have only one set (front or back) of steering casters.

Brakes:

Both wheels and casters can have brakes. Most brakes engage on the tread of the wheel. Total lock brakes are found on some casters. These lock both the wheel and the caster swivel. Wheel and caster brakes should not be used to hold equipment on an incline or slope. They are designed to hold equipment from moving on flat surfaces only.

Selecting the proper caster or wheel for the job:**Load weight:**

Generally the heavier the load the larger the wheel required for the caster. The larger the wheel diameter the easier a wheel rolls. This is an important safety consideration for the prime movers of equipment on casters and wheels - people. (Some modern materials used for wheel manufacture can take very heavy loads with small wheel size). For the easiest load movement, select a caster with the largest wheel your application will allow. It is best to select a caster with a much higher load capacity than you require. This will then allow for shock loads, over loading, operator abuse, obstructions, poor surfaces, etc. Ask the question "Will the caster move the load safely, smoothly and easily?"

Floor conditions:

Make sure the wheel size you select can cope with cracks in the floor, rough surfaces, lift well gaps, mouldings, or other impediments in the environment. Generally the rougher the floor surface the larger the wheel.

Floor protection on linoleum or similar scratchable surfaces may require a softer rubber wheel compared with a hard polyurethane wheel for a carpeted surface. In most Nursing Homes, Hospitals, and similar institutions grey rubber wheels are used on equipment. In such areas low noise, non marking, long life rubber wheels are usually specified.

Generally wheels which travel long distances are best fitted with roller or ball bearings. Bonding agents used in wheel manufacture may be effected by moisture, chemicals or heat conditions. Some different environments may require special wheels and casters.

Attachment style:

Attachment styles include a top plate, threaded stem, grip ring stem, square stem, octagonal stem and round stem. All of these attachment styles fasten the caster to the product it is used on. The most common fastener used and the strongest type is the top plate attachment.

Generally stem type attachments are held in the equipment (pipe or tube) by an adaptor. Adaptors generally expand in the tube when tightened to hold the caster firmly in place. Expanding adaptors are rubber, plastic or similar material and are often made up of two or three parts.

HenryCare supplies a wide range of wheels and casters and can provide advice on the best options for your equipment. Use the "Contact Us" form on this website for queries