

About Muvtons



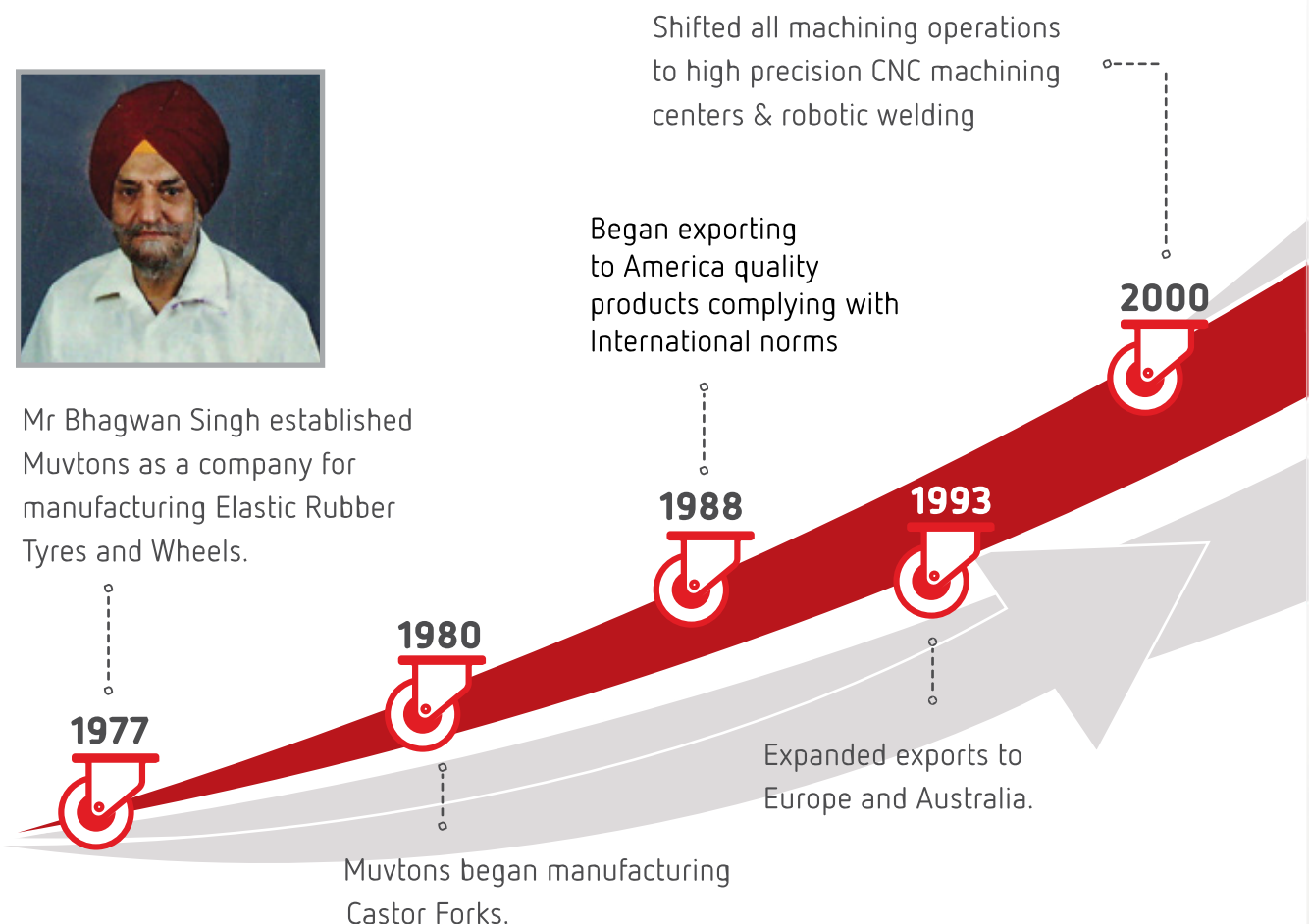
Muvtons Castors was established by Mr. Bhagwan Singh in 1977 with one simple vision: To manufacture wheels & castors that surpass all expectations of quality and performance. Today, having grown to become industry leaders in wheels & castors, we remain committed to that vision as strongly as ever.

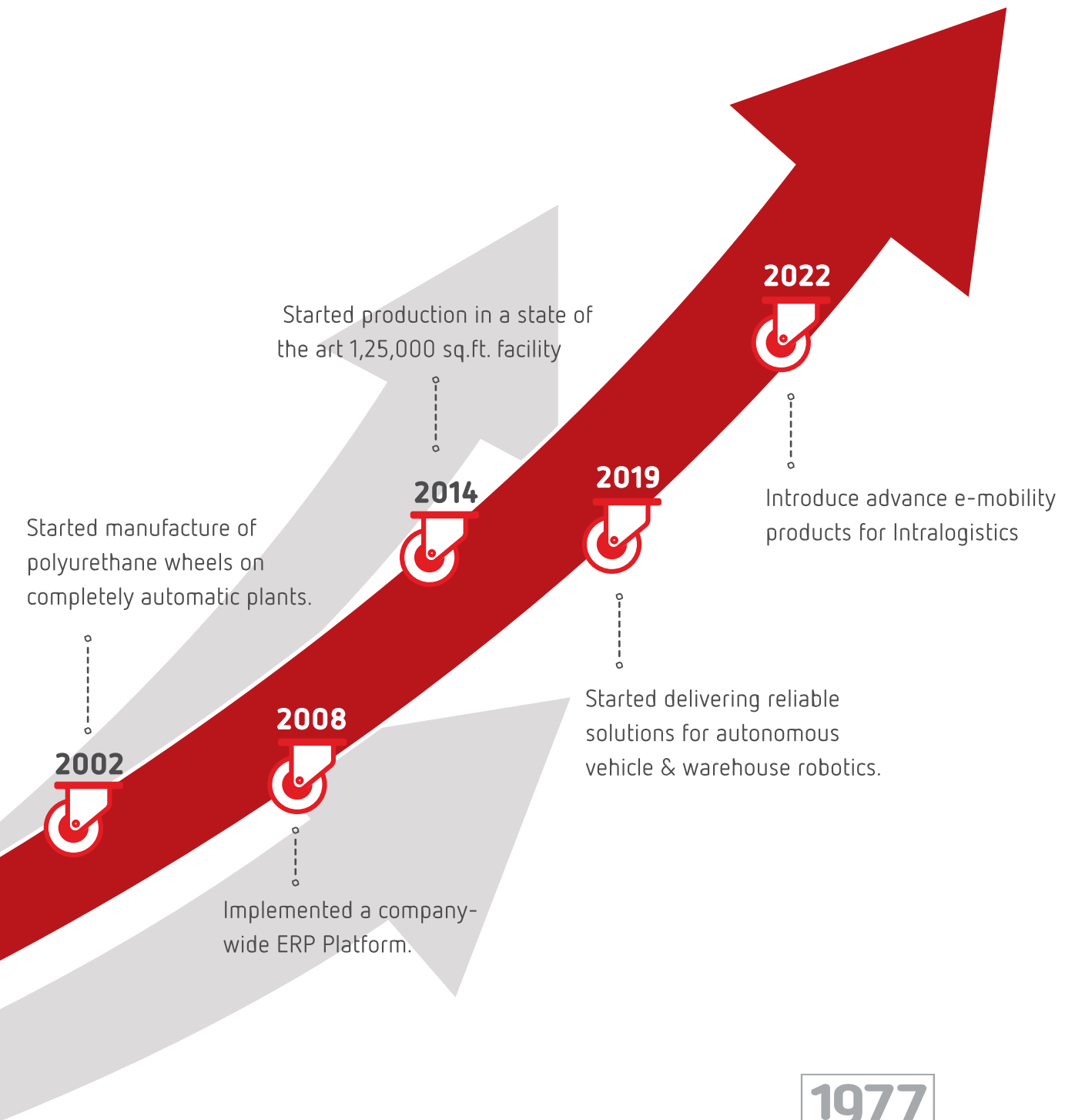
We offer the most comprehensive range of solutions for our customers; our products can ferry loads from 100 Kg up to 50 tonnes, and are available in a variety of materials and configurations to fulfil every tenable requirement.

We perform an application study before recommending mobility solutions, employ automated machinery and advanced manufacturing processes, and undertake rigorous in-house product testing to ensure that your investment performs impeccably for years to come.



Mr Bhagwan Singh established Muvtons as a company for manufacturing Elastic Rubber Tyres and Wheels.





Moving tons...
So easily...



Product Knowledge

Castors

What is a castor?

The first and most important question that comes to mind is, "What is a castor?" Let's explore this...



Muvtons GGSE Series Castor



A Castor

A castor is made of two parts: the bracket that supports or holds the wheel and the wheel itself. It's attached to the bottom of larger objects like carts or dollies, making it simple to move them around.

Castors are available in different wheel sizes, load capacities, tread widths, and heights, enhancing your equipment's mobility in various work environments.



Product Knowledge

Is there a difference between 'castor' and 'caster'?

Both terms essentially refer to the same thing. Castor is a British term for castor wheel, whereas Caster is an American term for castor wheel. We at Muvtons, use 'castor' for all our communication purposes when we need to define 'castor'.

What is the Difference Between Castors and Wheels?

Many people might not be familiar with the word 'castor,' but when they see one, they often just call it a wheel.

But a castor is more than just a wheel!

In materials handling, automotive, textile or as in many other industries, when it comes to looking for a certain product, you have to be very specific in naming what you want. And knowing the correct name of the product is key there.

So let's define exactly what the difference between a castor and a wheel...

Wheels

We're all familiar with the wheel, a round object with a hole in the centre connected to a shaft.

It enables movement in vehicles and industrial machinery. One might also define it as a circular cylinder of greater or lesser width that spins around on an axle, much like the wheels on a car and for many mechanical purposes.



A Muvtons' Wheel

For more information on wheel please visit here
<https://en.wikipedia.org/wiki/Wheel>



Product Knowledge

Bracket (Rig / Fork / Horn)

Now, let's look at another important component that defines a castor – the Bracket, also known as a rig, fork or horn. The part of the castor that is made up of top plate, a base and a pair of forks and includes everything in a castor except for the wheel.



A Muvtons' Bracket

Castor

As mentioned earlier, a castor consists of two parts: the bracket that supports the wheel and the wheel itself. A castor does include a wheel, but it's more than just a wheel.

It's an assembly that includes both a wheel and a bracket and this bracket that contains it is what separates it from the regular wheel.



Bracket

+



Wheel

=



Castor

For more information on wheel please visit here
<https://en.wikipedia.org/wiki/Caster>



Product Knowledge

Types of Castors

There are two types of castors: **Rigid or Swivel.**

Rigid Castor

A rigid castor, also referred to as a fixed castor, is a wheel attached to a set of forks that doesn't rotate or turn. Consequently, rigid castors are designed to move objects forward and backward in a straight line, but they cannot be used for steering.

Highlights of Rigid Castor

- Easier to control and no steering required
- Ideal for moving materials in straight lines
- Great for heavy loads



GHKE Series Castor

Swivel Castor

Swivel castors rotate 360° and can respond immediately to changes in direction. A swivel castor incorporates a wheel mounted to a fork, but an additional swivel joint above the fork allows the fork to freely rotate about 360. These castors swivel on ball bearings to keep the wheel turning even under heavy loads.

Highlights of Swivel Casto

- Able to swivel 360 degrees so they can move in any direction
- Best suited for turning tight corners & in small spaces
- Some come with swivel locks to make straight-line & long-distance travelling easier



GHKE Series Castor



Product Knowledge

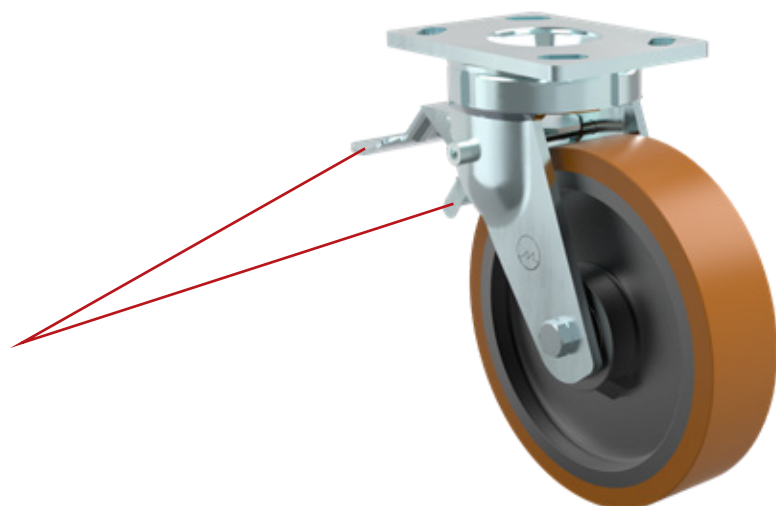
Castor Break

A castor with an added accessory to stop one or more types of movement. Many brakes engage with the castor wheel to prevent wheel rotation, thus preventing forward/backward motion. As the swivel mechanism is not engaged, under enough lateral pressure, the castor could still rotate. Brakes will engage with the castor wheel and the swivel mechanism to prevent any motion. We call this style **Total Lock** brakes.

Swivel Castor with Total Lock (TL)

Swivel Castor with TL are valuable in heavy-duty tasks, especially when dealing with substantial loads that can be tricky to move safely. When you engage a castor total lock, it allows for improved control and the ability to move items in a straight line. After you've transported the item to its destination, you can disengage the total lock, enabling you to move it more freely and position it precisely where needed.

Total Lock (TL)

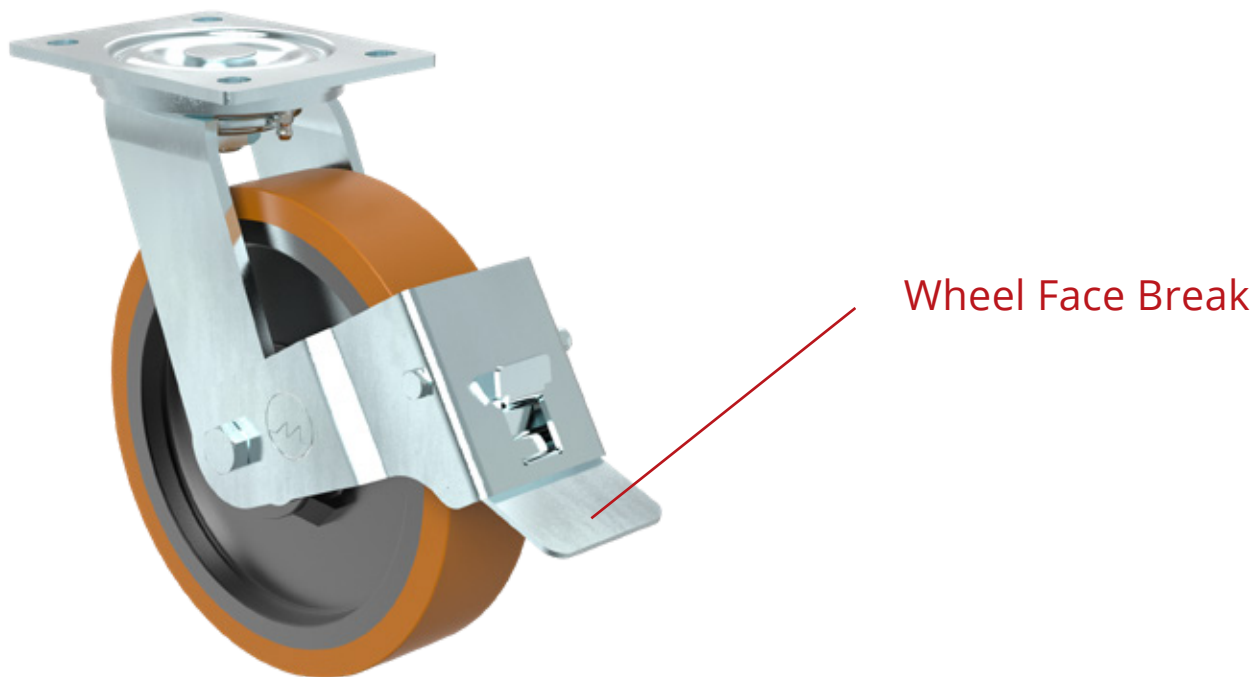




Product Knowledge

Swivel Castor with Break

Swivel Castor with break are also valuable in heavy-duty tasks, and brakes are an important component of heavy duty castors and have many benefits. As a backup to operator strength and to reduce strain, they can be used to slow and stop a cart. And they can help prevent carts or racks from moving unexpectedly, preventing both damage to the product and injury to employees.



Load Rating / Capacity

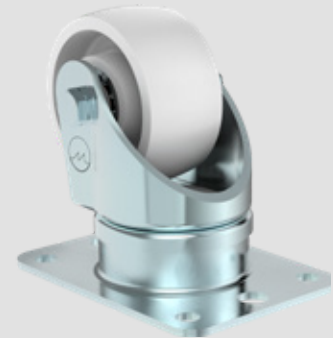
Castors are also classified based on their strength ratings, which indicate their ability to bear weight and its durability.



Product Knowledge

Light-duty

It supports loads up to 250 kg



BMS Air Cargo

Medium-duty

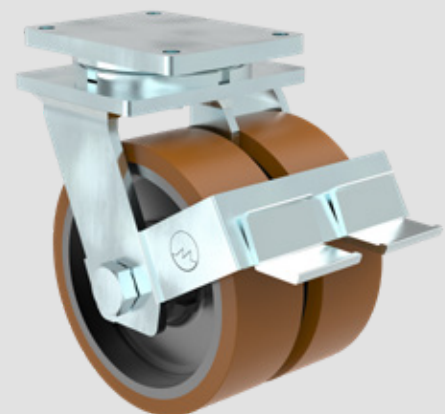
These are suitable for weights ranging from 250 to 900 kg



GHKE Kingpinless Castor

Heavy-duty

These are designed for loads exceeding 7500 kg



DABE-75

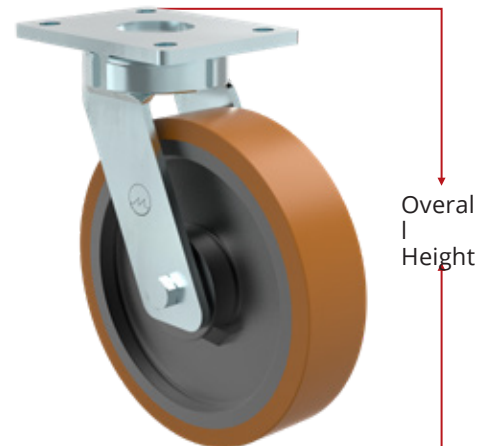
NOTE - Please remember that each castor is rated for its own weight capacity, whether it's a swivel or rigid type, and not for the combined weight of all the castors. Also refer to Muvtons catalogue to know more on castors and wheels series in order to get better understanding.



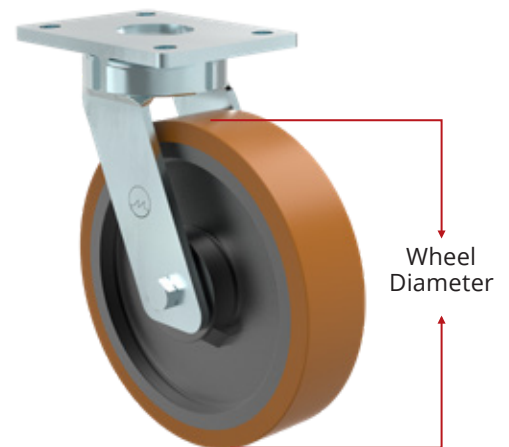
Product Knowledge

Terminologies of a Castor

Overall Height - The total height of the castor from the bottom of the wheel to the top of the top plate.



Wheel Diameter - The diameter of the wheel used in the castor.



Swivel Radius - The distance from the centre of the fastening to the outermost point of the castor. This specifies the minimum clearance required for a mounted castor to swivel a full 360 degrees.

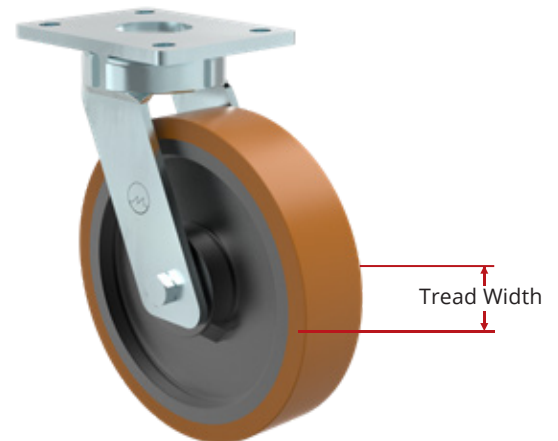




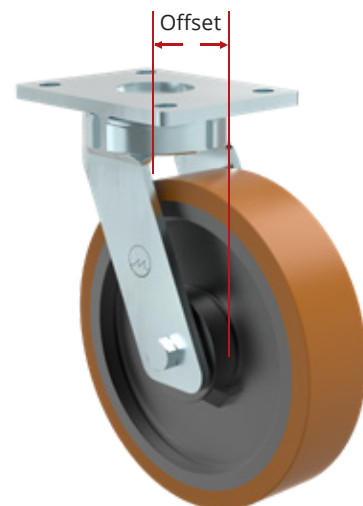
Product Knowledge

Terminologies of a Castor

Tread Width - The distance between the outer and inner edge of the circumference of the wheel.



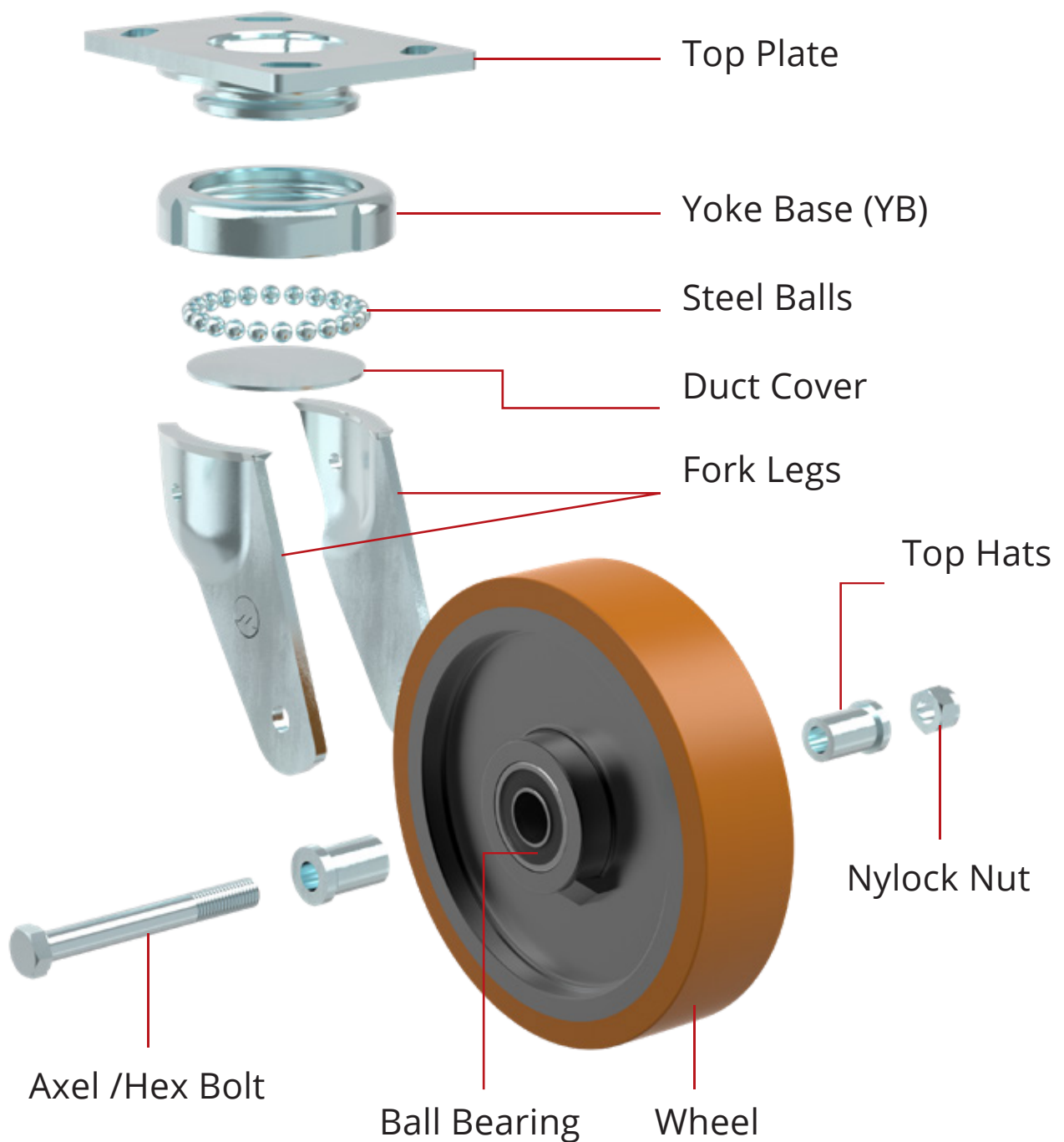
Offset - The distance between the central axis on the top plate and that of the wheel used in a castor.





Product Knowledge

Anatomy / Components of a castor

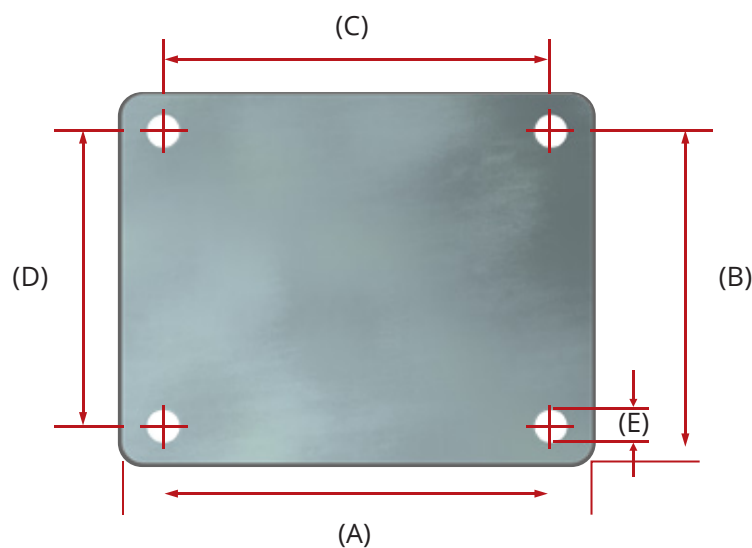




Product Knowledge

Top Plate - The top of the castor is called the top plate. It's usually rectangular, with four holes, one in each corner, use to mount the castor on trolley.

Top plate of a rigid castor



AxB = Castor Top Plate
Outer Dimensions
CxD = Bolt Hole Centres
E = Bolt Hole Diameter

Yoke Base (YB) - Base for welding of fork legs.

Fork Legs - Forged metal strips to hold wheel.

Wheel - The bottom of the castor is the wheel. Its job is to roll and enable the equipment to move.



Guide to choose the right castor

There are a few main factors that need to be taken into consideration when searching for the ideal castor wheel for your specific use and application: Load capacity, Roll resistance, and the Environment in which the application will be used.

Load Capacity

Load capacity is one of the most important factors to consider when choosing the right castor wheel for your application. The load capacity of a castor wheel determines how much weight it can support. It's important to choose a castor wheel with a load capacity that is high enough to support the weight of your application, as well as any dynamic loads that may occur.

If you choose a castor wheel with too low of a load capacity, it could fail and cause serious damage or injury. Conversely, if you choose a castor wheel with too high of a load capacity, it could be unnecessarily expensive and may not perform as well as a castor with a more appropriate load capacity.

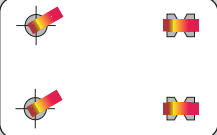
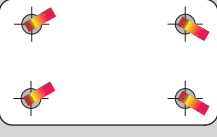
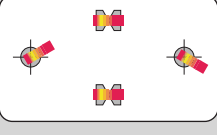
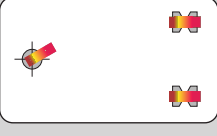
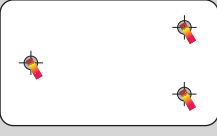
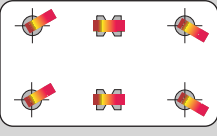




Capacities given in our product catalogue (please refer to the catalogue) are based on normal working conditions on reasonably level floors free from grooves, breaks, door sills, lift entrances and other hazards. They are also based on a maximum speed of 4km/h unless otherwise stated as per ISO 22883. Although Muvtons Wheels and Castors have high capacity reserves, we recommend the use of the following general formula to determine the load capacity:

$$\frac{\text{Weight of transport equipment} + \text{load}}{3}$$

CALCULATION OF TOTAL LOAD CAPACITY FOR DIFFERENT CASTOR ARRANGEMENT

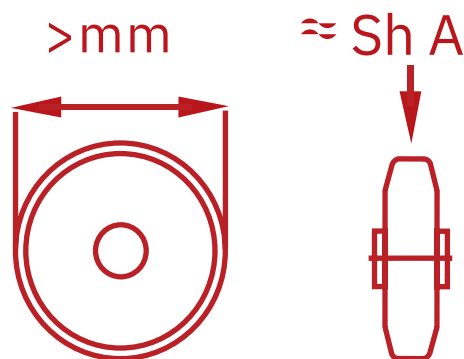
| TYPE OF CASTOR ARRANGEMENT | CASTOR TYPE WHEEL | LOAD CALCULATION |
|---|------------------------------------|---------------------------|
|  | 2 Swivel Castors & 2 Fixed Castors | $\frac{\text{Load}}{3}$ |
|  | 4 Swivel Castors | $\frac{\text{Load}}{3}$ |
|  | 2 Swivel Castors / 2 Fixed Castors | $\frac{\text{Load}}{2}$ |
|  | 1 Swivel Castor & 2 Fixed Castors | $\frac{\text{Load}}{2.5}$ |
|  | 3 Swivel Castors | $\frac{\text{Load}}{2.5}$ |
|  | 4 Swivel Castors & 2 Fixed Castors | $\frac{\text{Load}}{2}$ |



Roll Resistance

When a wheel rolls, there's always some resistance due to friction. The amount of resistance created by the friction depends on the material of the wheel and the surface it's rolling on.

For example, a rubber wheel will have more roll resistance than a plastic wheel. The type of surface also affects roll resistance. A smooth concrete floor will offer less resistance than a rough gravel path. By taking roll resistance into account, you can ensure that your castor wheels provide the level of support and stability you need.



The diameter of the wheel, the shape of the tread as well as the material and hardness of the tread have a significant impact on maneuverability, rolling resistance and swivel resistance.

Uneven surface = larger wheel and softer tread

The rule of thumb is: the more uneven the surface, the larger the wheel and the softer the tread should be. For a flat surface and good conditions, you can choose the tread more freely.

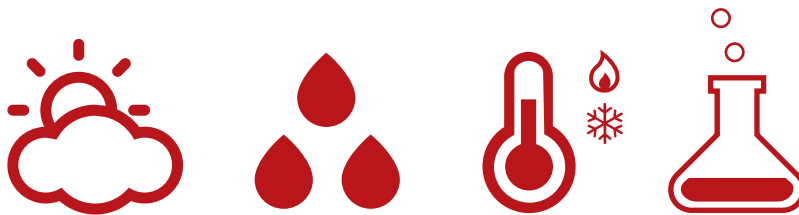


Environment

It's important to consider a number of environmental factors.

For example, if you need a castor wheel that can withstand high temperatures, then you will need to choose a model made from heat-resistant materials. If you need a wheel that can roll smoothly over rough terrain, then you will need to choose a model with a large diameter and wide tread.

And if you need a wheel that can resist damage from oils and liquids, then you will need to choose a model with a smooth, non-porous surface. By taking all of these factors into account, you can be sure to choose the right castor wheel for your needs.



Castor according to environmental conditions

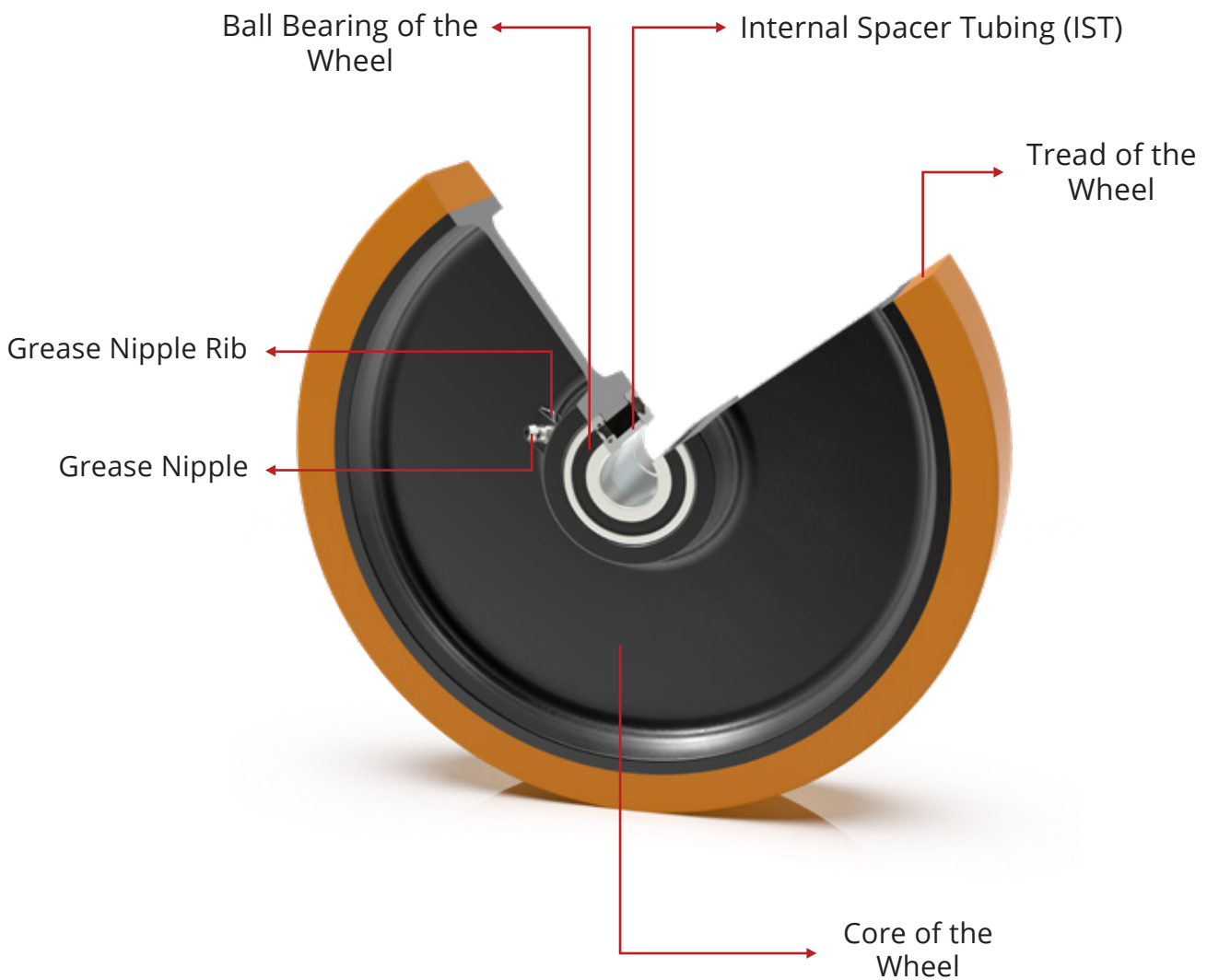
If the castor is to be used outdoors, in humid environments, at high or low temperatures, or if the castor comes into contact with chemicals, this should be taken into account when selecting the castor. In case of an untreated or absorbent floor material kindly pay attention to the choice of tread material.



Muvtons Wheels

Muvtons offers a wide range of wheel materials tailored to meet every customer requirements regarding load capacity, speed, floor types, and ergonomic preferences.

Let's look at the sectional view of a Muvtons' wheel and understand the components of it.





Muvtons Wheels

Wheels Diameter

Muvtons provides wheels ranging from 80 mm to 700 mm in diameter.

Among these, 150 mm and 200 mm are the most commonly used sizes in about 95% of applications. Larger wheels enhance mobility, easy obstacle navigation, and ensure consistent levelling.

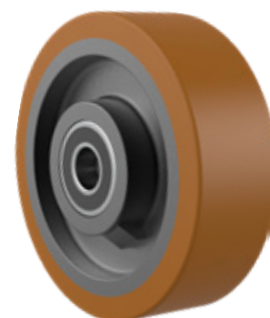
Types & Materials of Wheels

Polyurethane (PU) Materials - Polyurethane wheels are ideal for outdoor use with high wear and tear resistance. They handle uneven surfaces well, offer customizable hardness, low rolling resistance, and leave no marks on floors. These wheels come in varying levels of hardness, which can be customised to meet specific customer needs.

Some of the Muvtons (PU) Wheels

SAS- Polyurethane wheels

Material Polyurethane 93°±3° Shore A
 Core Cast Iron
 Bearings Sealed Precision Ball Bearings /
 Tapered Roller Bearings
 Temperature -20°C to +85°C
 Tread Options Anti Static • ESD Polyurethane
 Usage Epoxy Coated & smooth Cement Concrete floors
 Highlights Non-marking • Noiseless Running • Low Rolling
 Resistance • Abrasion Resistant



ME- Polyurethane wheels

Material Polyurethane 93°±3° Shore A
 Core Aluminium
 Bearings Sealed Precision Ball Bearings
 Temperature -20°C to +85°C
 Tread Options Anti Static • ESD Polyurethane
 Usage Epoxy or smooth Cement Concrete floors
 Highlights Ergonomic Design with a Curved Tread
 Non Corrosive





Muvtons Wheels

MEJ Medium Duty Polyurethane (PU) Wheels

Material Polyurethane 93°±3° Shore A
Core Aluminium
Bearings Sealed Precision Ball Bearings
Temperature -20°C to +85°C
Tread Options Anti Static • ESD Polyurethane
Usage Epoxy or smooth Cement Concrete floors
Highlights Ergonomic Design with a Curved Tread



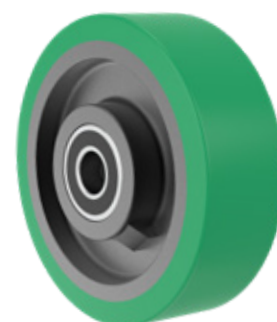
SFS- Solid Elastomer (PU) Wheels

Material Polyurethane 73°±3° Shore D
Core Aluminium
Bearings Sealed Precision Ball Bearings /
Stainless Steel Bearings
Temperature -20°C to +85°C
Tread Options Anti Static • ESD Polyurethane
Usage Ideal for moving extremely heavy loads on smooth
Cement Concrete and Epoxy coated floors
Highlights 'Real Solid' reinforced Elastomer • Non-corrosive



SZS- Elastic Polyurethane (PU) Wheels

Material Elastic Polyurethane 83°±3° Shore A
Core Cast Iron
Bearings Sealed Precision Ball Bearings
Temperature -20°C to +85°C
Tread Options Anti Static • ESD Polyurethane
Usage In-plant Tar Roads, Epoxy Coated & Cement
Concrete floors • Manual and/or power towing
Highlights 'Lively' Polyurethane provides a 'cushioning effect' •
Flex and Roll over Debris without picking up objects •
High Tractive Resistance



*Please refer to Muvtons Catalogue for full details on Muvtons's wheel.



Muvtons Wheels

Nylon (NY) - Nylon wheels are often used in industries like food production and textile industry where hygiene matters. Nylon is resistant to a wide range of aggressive substances, has good rolling properties on smooth floors and is available in a variety of versions, dimensions and four colors. This offers low push-pull efforts.

Some of the Muvtons Nylon (NY) Wheels

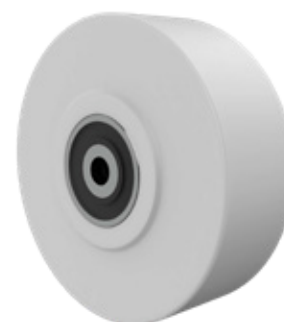
NY- Injection Moulded Nylon Wheel Series

| | |
|--------------------|---|
| Material | Injection Moulded Nylon |
| Bearing | Plain Bore, Roller Bearing, Ball Bearing |
| Temperature | -20°C + 80°C |
| Hardness | Shore D 70 |
| Colour | White & Yellow |
| Usage | Ideal for Textile & Food industry |
| | Low Rolling Resistance & High Abrasion Resistance |
| Highlights | |



MCNY- Cast Polyamide Wheel

| | |
|--------------------|--|
| Material | Cast Polyamide |
| Bearings | Sealed Precision Ball Bearings / Tapered Roller Bearings / Spherical Roller Bearings |
| Temperature | -30°C to +80°C |
| Highlights | Ideal for extremely high loads · High Impact Resistance · Low Rolling Resistance |



*Please refer to Muvtons Catalogue for full details on Muvtons's wheel.



Muvtons Wheels

Rubber - Rubber wheels are versatile and suitable for tar roads, this ensures a comfortable operation, even on challenging floor surfaces.

Muvtons Rubber (SEB) Wheel

SEB - Elastic Rubber Wheels

| | |
|---------------------|---|
| Material | Elastic Rubber 75°±5° Shore A |
| Core | Cast Iron |
| Bearings | Sealed Precision Ball Bearings / Tapered Roller Bearings |
| Temperature | -20°C to +75°C |
| Tread Options | Anti Static / Conductive Treads |
| Usage | Cement Concrete floors and In-plant Tar Roads · Power towing |
| Highlights | Smooth & silent running · Highly Resilient Tread |



*Please refer to Muvtons Catalogue for full details on Muvtons's wheel.

Metallic - Cast iron wheels consist of iron or steel and possess excellent resistance to abrasion. They require minimal effort to start rolling. These wheels are renowned for their durability, designed to handle heavy-duty tasks, and can endure high temperatures.

Muvtons Cast Iron (MCI) Wheel

MCI - Cast Iron Wheels

| | |
|-------------------|--|
| Material | Cast Iron |
| Tread | Fully machined crown treads |
| Bearings | Sealed Precision Ball Bearings / Tapered Roller Bearings |
| Temperature | -100°C to +600°C |
| Usage | Ideal for rough conditions and high temperatures |
| Highlights | Extremely easy to manoeuvre under high loads · Abrasion Resistant · Oil Resistant |



*Please refer to Muvtons Catalogue for full details on Muvtons's wheel.



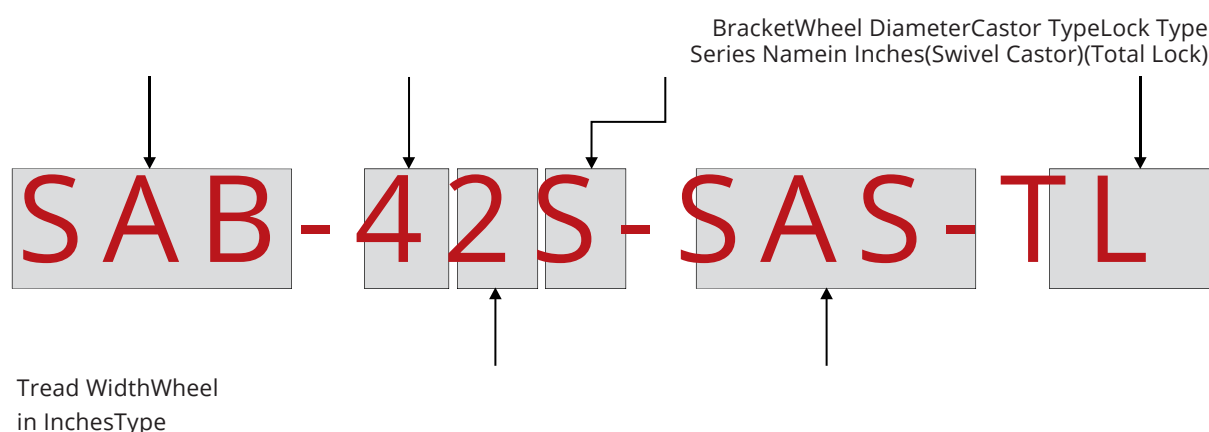
Nomenclature of Muvtons' Products from Catalogue

Let's explore the nomenclature of Muvtons products with example from our catalogue. As you navigate through Muvtons' product catalogue, you'll discover comprehensive information about our castors and wheels.

You can locate the '**SAB Forged Precision Bearing Kingpin Type Castors**' in our product catalogue. Please refer to the snapshot of this product from catalogue given below.

| Material | Polyurethane 93°±3° Shore A | | | | | | | |
|------------------------|---|------------------|---------------------|--------------------|-----------------------|-------------------------|--------------------------|--|
| Core | Cast Iron | | | | | | | |
| Bearings | Sealed Precision Ball Bearings / Tapered Roller Bearings | | | | | | | |
| Temperature | -20°C to +85°C | | | | | | | |
| Tread Options | Anti Static · ESD Polyurethane | | | | | | | |
| Usage | Epoxy Coated & smooth Cement Concrete floors · Power Towing | | | | | | | |
| Highlights..... | Non-marking · Noiseless Running · Low Rolling Resistance · Abrasion Resistant | | | | | | | |
| | | | | | | | | |
| Max Load Capacity (Kg) | Wheel Diameter (mm) | Tread Width (mm) | Overall Height (mm) | Swivel Radius (mm) | Sw. Rad. with TL (mm) | Rigid Castor (Part No.) | Swivel Castor (Part No.) | Swivel Castor with Total Lock (Part No.) |
| | | | | | | | | |
| 400 | 100 | 50 | 150 | 96 | 98 | SAB-42R-SAS | SAB-42S-SAS | SAB-42S-SAS-TL |
| 550 | 125 | 50 | 175 | 120 | 120 | SAB-52R-SAS | SAB-52S-SAS | SAB-52S-SAS-TL |
| 750 | 150 | 50 | 200 | 130 | 145 | SAB-62R-SAS | SAB-62S-SAS | SAB-62S-SAS-TL |
| 1000 | 200 | 50 | 250 | 156 | 156 | SAB-82R-SAS | SAB-82S-SAS | SAB-82S-SAS-TL |
| 1200 | 250 | 50 | 300 | 198 | 198 | SAB-102R-SAS | SAB-102S-SAS | SAB-102S-SAS-TL |

Let's decipher the name '**SAB-42S-SAS-TL**' and understand its meaning





Why Muvtons' Castors

First, let's delve into the challenges linked to non-engineered castors.

POOR ERGONOMICS

Every year, millions of workers suffer from back injuries due to poor ergonomics caused by non-engineered castors





Why Muvtons' Castors

FLOOR DETERIORATION

Non-engineered castors and wheels mark the expensive epoxy shop floors and damage the floor within months

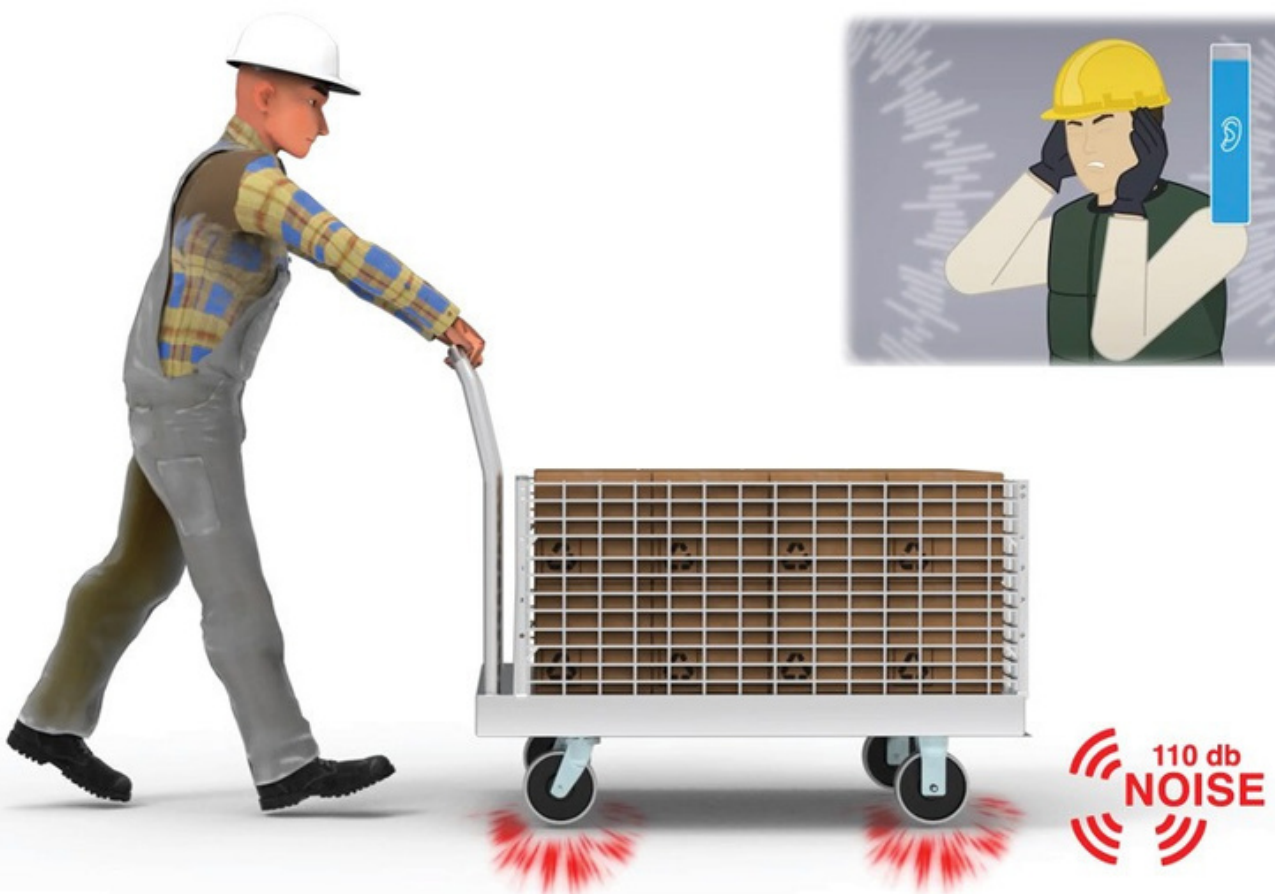




Why Muvtons' Castors

HIGH IN-PLANT NOISE LEVELS

Irritating noises emitted from trolley movements become a nuisance in a plant or warehouse due to non-engineered castors and wheels





Why Muvtons' Castors

COMPONENTS PRONE TO SHOCKS AND VIBRATIONS

Major damage arises to components being transported due to shock and vibration caused by poor-quality castors during material transportation





Muvtons USP (Unique Selling Points)

MUVTONS SOLUTION

Muvtons Castors Offers:

- ✓ **Excellent ergonomics leading to a reduction in push-pull efforts**
- ✓ **Floor friendly wheels**
- ✓ **Reduction of in-plant noise levels by up to 45 dB**
- ✓ **Protection of materials being transported against shock & vibrations**





Applications of Castors Wheels & Industry Segment

You wouldn't have a car without the wheels. Likewise, you wouldn't have a trolley, dolly or platform truck without castors. Heavy-duty castors and wheels are essential for successful operation of these kinds of material-handling equipment.

In homes, you'll often find standard light-duty castors and wheels used for moving and supporting furniture and appliances. For instance, shelving units like TV stands and desks can be equipped with decorative castors.

On the other hand, heavy-duty castors and wheels are typically found in industrial plants, warehouses, textile & automotive industries and other large objects that need mobility.

**Please note that Muvtons specialises primarily in manufacturing medium-duty and heavy-duty castors.*

Let's examine and gain insights from some images showcasing the applications of castor wheels across various industry segments.



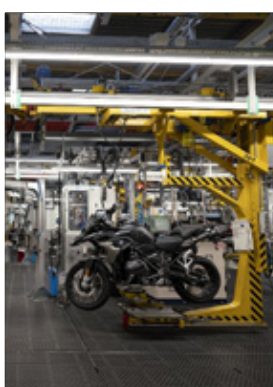
Automotive
Car Segment



Automotive
Truck Segment



Automotive
Tractor Segment



Automotive
Two Wheeler Segment



Textile
Industry Segment



Food Processing
Industry Segment



Tyre Manufacturing
Segment



Material Handling
Segment



Aviation & Airports
Logistics Segment



E-Commerce &
Logistics Segment