

Casters / Leveling Mounts

Overview

In Caster Selection

In the Selection Table below

On the product page

Step 1: Select Load
Calculate the maximum value of applicable load, and then select a caster with proper allowable load.
Note that the allowable load per unit is generally calculated based on the following formula in consideration of offset load and some shock.

















































Allowable load per unit = $\frac{\text{The maximum load value}}{\text{Four units} \times 0.8 \text{ (when four casters are used)}}$

Step 2: Select Specifications
Select specifications according to the application.

Step 4: Select Wheel Material
Select wheel material according to applications and road surface condition. See <Features of Wheels by Material> for details.

Step 5: Select Wheel Diameter
Select wheel diameter taking distance from floor to mounting surface into consideration.
The larger the wheel diameter is, the smoother the traveling is. Good for traveling on rough surfaces and overcoming steps.

<Selection Chart>

Allowable Load		Light Load		Light/Medium Load / Medium Load		Medium Load / Heavy Load		Super Heavy Load		Features
RoHS		Compliant		Compliant		Compliant		Compliant		
Running Test Standards (Distance)		JIS (10km)		JIS (10km)		JIS (10km)		JIS (10km)		
-		Similar Products		Similar Products		Similar Products		Similar Products		
Specification	Standards	Direct Mount Plate 							Commonly-used casters directly mounted with plates on carriages and machines.	
		Screw-In 							Can be screwed-in the female threads on a pipe or frame for which direct mount is not possible, or when the mounting surface on the mating material is limited.	
		With Leveling Mounts 							Suitable for firmly securing the equipment for regular use, where relocation is infrequent. The casters can be secured by lowering the integrated leveling mounts.	
	Dual Wheel Casters	Press Formed 							Dual wheel type is excellent in swiveling and capable of making small turns, compared with single wheel type.	
		Design 							Press formed product is excellent in load capacity. Designed product has desirable appearance and is offered at a relatively-low price.	
		Vibration Damping Casters 							Good vibration absorption and less particle generation during moving. Best use for clean environments.	
	Casting 							The type with high durability in harsh environments compared to the press-formed caster products.		
										

For products not listed in Selection Chart, see the catalog listings.

<Features of Wheels by Material> (◎= Excellent, ○= Good, △= Acceptable, ×= Poor)

Item	Rubber	Urethane Rubber	TPE	Nylon (White)	MC Nylon	Polypropylene	Phenol	Special Reinforced Plastic	Electrically Conductive Rubber	Electrically Conductive MC Nylon	Casting
Abrasion Resistance	◎	○	○	○	◎	△	○	△	◎	◎	◎
Oil Resistance	△	○	△	○	◎	◎	○	○	△	◎	◎
Water Resistance	◎	○	◎	◎	◎	◎	○	○	◎	◎	○
Cost	◎	○	○	○	△	◎	△	○	○	△	○
Noise	◎	○	○	×	△	×	△	△	◎	△	×
Allowable Load	△	◎	△	△	◎	△	◎	◎	△	◎	◎
Moving Resistance	△	○	○	○	◎	○	◎	○	△	◎	○
Rubber Hardness Shore A	70±5	90±5	90±5	-	-	-	-	-	75±5	-	-
Operating Temperature	-5~60°C	-20~80°C	-10~100°C	-10~120°C	-20~120°C	0~100°C	-40~180°C	-20~80°C	-5~60°C	-20~120°C	-40~200°C
Features	Most common wheel material. Economical, but not oil resistant, and the black rubber wheels may stain floor surfaces.	Compared with rubber, higher hardness with good starting property. Good oil resistance and non-soiling to floor surfaces.	Has characteristics intermediate between rubber and resin. Running noise is low.	Smooth traveling with high hardness and no deflection. Disadvantages are floor scratching and noise while running.	Good oil resistance like nylon, and mechanical strength is high.	Smooth traveling with high hardness and no deflection like nylon. Relatively low in cost.	Excellent in oil, heat and load resistance. Low starting resistance.	Excellent in mechanical strength and suitable for heavy loads. Relatively low in cost.	SBR rubber compounded with a larger amount of carbon black content, which works as earthing.	Anti-static grease is impregnated. Ideal for environments where dust adhesion is undesired.	Often used under high temperature because of its high resistance against heat and shock. Disadvantage is that handling is troublesome because it is subject to rust and weight itself is heavy.

Cautions on Caster Use

1. Allowable Load

Do not use at loads beyond the allowed loads.
The allowable loads shown in the tables of the catalog indicate the load limits that can be transported by human power on a flat surface.
2. Operating Speed

Operating speed should be walking speed or slower in intermittent usage. Avoid powered pulling (except for some casters) and continuous operation that may cause heat generation.

Wheel Diameter	Operating Speed
75mm or Less	2km/h or Less
100mm or Less	4km/h or Less
3. Stoppers

Note that the performance may degrade without user attention due to wear and damages from long-term operation.
Braking power generally depends on wheel materials.
To ensure safe use, use wheel stops, floor stoppers, etc.
4. Operating Environment

It is normally assumed that the casters are used in a room at ambient temperature (except for some casters)
Avoid unusual environment that might be affected by high temperature, low temperature, high humidity, acidic, alkaline, salt, solvent, oil, seawater and chemical products, etc.
5. How to Mount

①Install the mounting plane horizontally.
②Install a swivel caster with its turning axle vertical.
③Install the fixed casters mutually parallel.
④Mount firmly with proper bolts and nuts.
⑤To install screw-in casters, tighten the hex of the screws at a proper torque. Excessive torque may strain and damage the shafts.
(Reference: Proper Torque for Thread Dia. 12mm is 20 ~ 50N・m)