Casters
Overview

■Caster Selection Table

Allowable Load / Specification	Light Load	Light / Medium Load	Medium Load	Low Profile	Medium and Heavy Load	Heavy Load	Super Heavy Load	Ultra Heavy Load	Properties
	80~400N	300~1800N	800~3000N	1600~3200N	3000N	3000~6000N	4000~9000N	~15000N	
Direct Mount Plate (Plate Mount)									Commonly-used casters directly mounted with plates on carriages and machines.
	P.1001	P.1005	P.1006	P.1009	P.1011	P.1011	P.1012	P.1012	
Screw-In (Screw-in Mount)									Just screw into pipes, frames, etc., to mount.
	P.1015	P.1015	P.1017	P.1018	-	-	-	-	
With Leveling Mounts (With Adjuster)									Integrated leveling mounts secure the casters on the floor.
	P.1019	P.1019	P.1021	P.1021	P.1023	P.1023	P.1024	-	
Dual Wheels (Dual Wheels) — Press Formed									Dual Wheel Type excellent in swiveling and capable of making small turns.
	-	P.1014	-	-	-	P.1014	-	-	
Design									
	P.1029~1031	P.1029	-	-	-	-	-	-	
Vibration Absorption (Vibration Damping)									Good vibration absorption and less particle generation during moving. Best use for clean environments.
	P.1025	-	-	-	-	-	-	-	
Casting (Cast Frame)									The type with high durability in harsh environments compared to the press-formed caster products.
	-	-	-	-	-	-	P.1027	P.1038	

■Cautions on Caster Use

1. Allowable Load

The allowable loads shown in the tables of the catalog indicate the limit load that can be transported by human power on a flat surface. Calculate loaded weight, then select a caster with proper allowable load. Even when 4 casters are used, total load might be supported at 3 points, therefore limit of total load is generally calculated by the following formula.

(Ex.) Using 4 Casters
Limit of Total Load = Allowable Load per Caster x4 pcs. x0.8
Caution: When different sizes of casters are used in combination, calculation should be based on the caster with the smallest load capacity.

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 assumed that the casters are used in normal temperature. (Excluding 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.

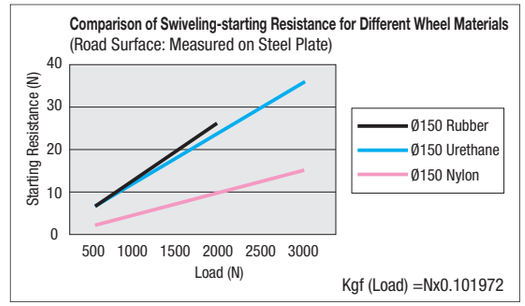
5. How to Mount

①Install the mounting plate 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 screw's hexagon part with the proper torque. Excessive torque may strain and damage the shafts.
(Reference: Proper Torque for Thread Dia. 12mm is 20~50N·m)

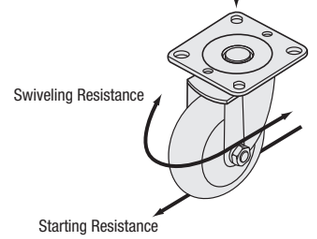
6. Points of Casters Selection

Load : Selection must be based on loading weight.
Wheel Diameter : The bigger, the smoother in traveling. Good for traveling on roughness or deference in level.
Wheel Material : Selection must be based on material properties.

Rubber Wheels — Most common wheel material. Soft operating feel and good running characteristics. Economical, but not oil resistant, and the black rubber wheels may stain floor surfaces.
Urethane Wheels — Compared with rubber, higher hardness with good starting property. Good oil resistance and non-soiling to floor surfaces.
Nylon Wheels — High hardness and smooth traveling with no deflection. Disadvantages are floor scratching, noise, and larger traveling resistance on rough surfaces due to its minimal deflection.



The above data are for reference.



■Comparison of Wheel Performance (◎= Excellent, ○= Good, △= Acceptable, ×= Poor)

Item	Synthetic Rubber	Urethane Rubber	MC Nylon	Nylon(White)	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	-	-	-	-	75±5	-	-
Operating Temperature	-5~60°C	-20~80°C	-20~120°C	-10~120°C	-40~180°C	-20~80°C	-5~60°C	-20~120°C	-40~200°C
Feature	Natural rubber SBR, BR etc. are combined in the ideal formulas and are the most standard type as general wheels.	Excellent in abrasion and oil resistance. Low running resistance.	Excellent in oil resistance and load capacity. Low starting and running resistances.	Excellent in oil and water resistances. Low starting and running resistances.	Excellent in oil, heat and load resistance. Low starting resistance.	Wider footprint than conventional wheels, 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.	Excellent in abrasion, heat and corrosion resistance.