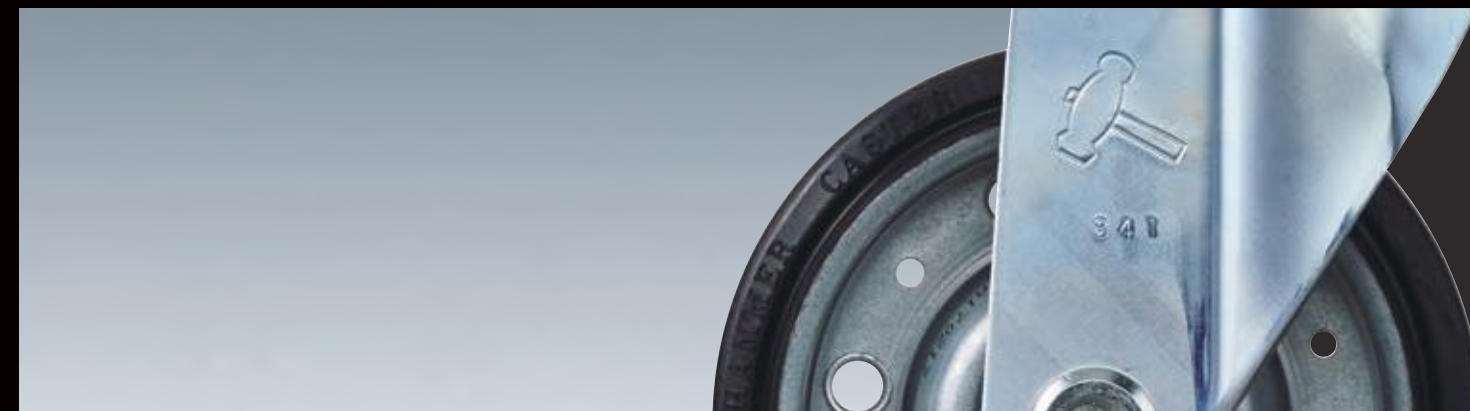


Caster Guide

 **ハンマーキャスター株式会社**
<https://www.hammer-caster.com>



- For industry -

English Edition

 **HAMMER CASTER**

Key Word

Precise Product Making Comprehensive Customer Support



Essential phrases to know HAMMER CASTER.

Hammer Caster has started their own caster production when casters are not even commonly spread in Japan. Kept in a different form, the founder's sincere attitude towards the product making has been steadily taken over to next generations for over a century.

Caster Selection

step 1 Select by Body Material

Steel

Steel is a commonly used material for industrial casters. Surface treatment can also be applied to a wide range of applications, including plating that meets environmental regulations and heat treatment to improve durability.

STS (Stainless steel)

Stainless steel is excellent in water resistance and corrosion resistance, and is often used in kitchen equipment that requires resistance against rust and chemicals that contains solvents.

Synthetic resin (Plastic)

The plastic body softens the cold impression of metal. Because of its high design and low noise, it is suitable for indoor use in hospitals and offices.

step 2 Specification Design

Attachment fitting

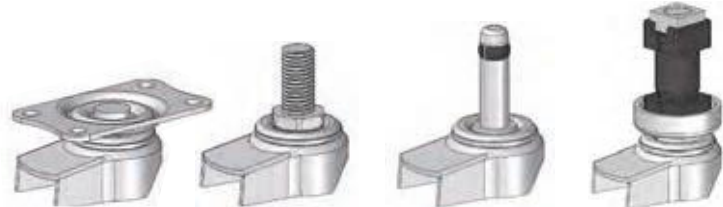
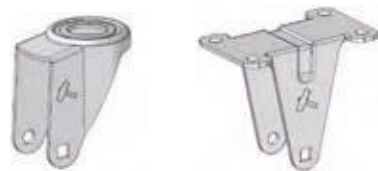


Plate type Threaded stem type Plain stem type Expander stem type

Swivel section



Swivel type Fixed type

Stopper type

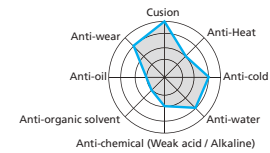


Side-stopper type Total Lock type
*Stopper system that brake the wheel and lock the swivel at once.



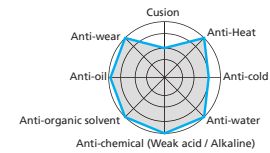
step 3 Select by Wheel

Rubber [Rubber wheel]



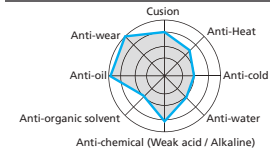
Rubber wheel has excellent cushioning properties and can run stably on uneven surfaces. Other than the solid type, wheel centers can be made of Nylon or pressed iron to give rigidity to the entire wheel. Some types have resin bushings or bearings at wheel bore.

MC Nylon [MC Nylon wheel]



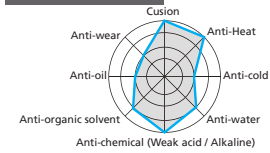
MC Nylon wheel is a high-performance plastic material to replace metal. All performance in general is excellent and particularly the heat resistance can bear up to 120°C.

Thermosetting Urethane [Thermosetting Urethane wheel]



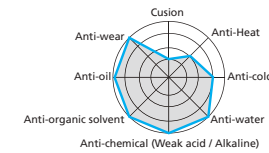
Urethane material cured by heat, being excellent wear resistance and oil resistance. It can be combined with many casters because of the non-marking to the floor.

Elastomer [Elastomer wheel]



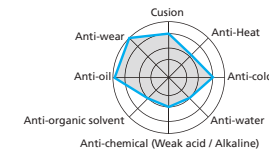
A cushioning material equivalent to rubber. It has excellent heat resistance, weather resistance and chemical resistance.

Nylon [Nylon wheel]



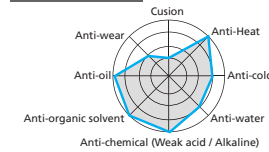
Recommended for applications requiring strength. Nylon wheel has excellent abrasion resistance, water resistance, oil resistance and chemical resistance. Also suitable for combination with heavy duty casters or all-stainless steel casters that is resistant to rust and corrosion.

Thermoplastic Urethane [Thermoplastic Urethane wheel]



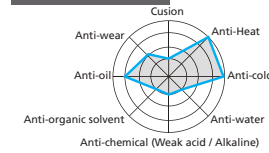
Urethane material softens by heating and hardens at low temperature, being excellent in wear resistance and oil resistance. It can be used with many casters because of the non-marking to the floor.

Phenol [Phenol wheel]



A material called bakelite. Although it is not suitable for applications need soft wheel, it has extremely high oil and chemical resistance, particularly heat resistance can bear up to 180°C, and is resistant to high-temperature and dry environments.

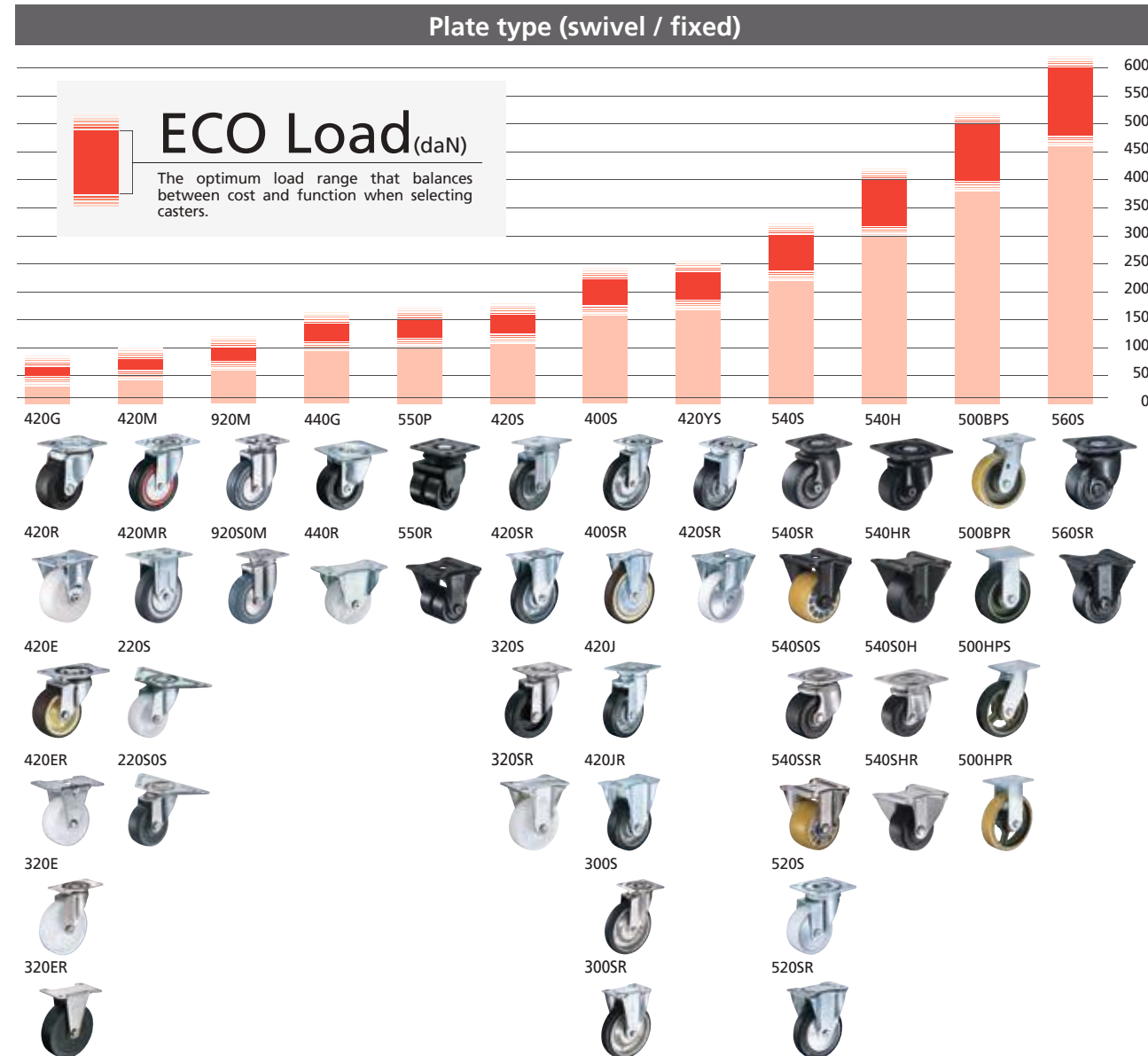
Cast iron [Cast iron wheel]



Material with excellent load resistance, heat resistance and cold resistance. It is useful for transporting super heavy materials. However, the wheel is heavy itself and causes travelling noise, which may require consideration.

Caster Selection

step 4 Select by Load Capacity

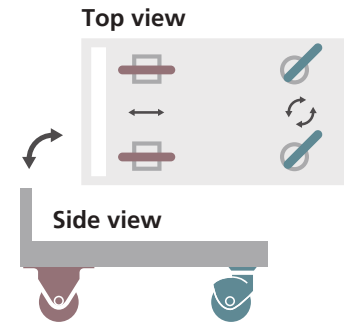


Caster Combination Examples

Combinations of Swivel type & Fixed type

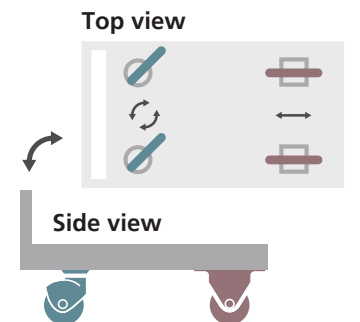
● 2 Swivel (at front) x 2 Fixed (at handle side)

This combination is commonly used in factories and distribution warehouses and is ideal for carrying light packages. By placing a fixed type on the handle side, the driving direction is stabilized, so that the push cart does not shake from side to side. It is not suitable for transporting heavy objects because a large force is required for turning.



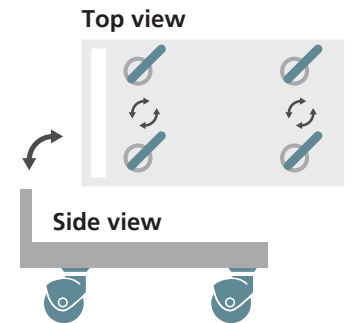
● 2 Fixed (at front) x 2 Swivel (at handle side)

It is a combination used when carrying a large load or heavy load. By arranging the swivel type on the handle side, the lever principle is applied and the direction can be easily changed. When carrying an empty load or a light object, the straight movement operation is less than that of the "2 fixed (at handle side)".



● 4 Swivel casters

It is a combination used in shopping carts and flat carts. By making all four wheels swivel, it has the advantage of being able to move in the desired direction from a spot, and it is convenient for lateral movements. Easy to operate on a flat floor but goes less straight on a road surface with a slight slope.



Casters for Special Enviroments

Resistant to Freezing Cold!

- Food factories, freezers, etc.



Resistant to Extreme Heat!

- Automotive plants, drying furnaces, etc.



Heat and cold resistant temperature range (Wheel material general characteristic table)

	0	+100	+200
Rubber wheels (Natural Rubber / Butadiene Rubber)	-40°C	+80°C	
Nylon wheels	-40°C	+70°C	
Thermosetting urethane wheels	-20°C	+85°C	
Thermoplastic urethane wheels	-40°C	+80°C	
Phenol wheels	-40°C	+80°C	+180°C
MC Nylon wheels	-40°C	+80°C	+120°C
Cast iron wheels	-40°C	+80°C	+200°C
Heat-resistant rubber wheels (ARB)	-40°C	+120°C	

● Standard range ● Heat-resistant range (Dry heat)

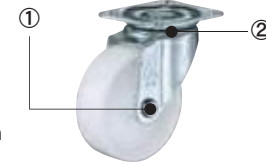
COLD-RESISTANT CASTERS

"Cold-resistance"

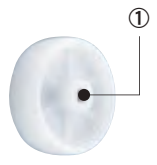
In case of using wheels or casters in a cold environment, it is necessary to change the specification to cold-resistant. In addition, it is necessary to use it in a manner suitable for low-temperature environments. Please consult our sales office for details.

- Parts that need to be changed in case of cold weather resistant specifications.

- For casters
 - ① Grease to bearing bore
 - ② Grease to swivel section



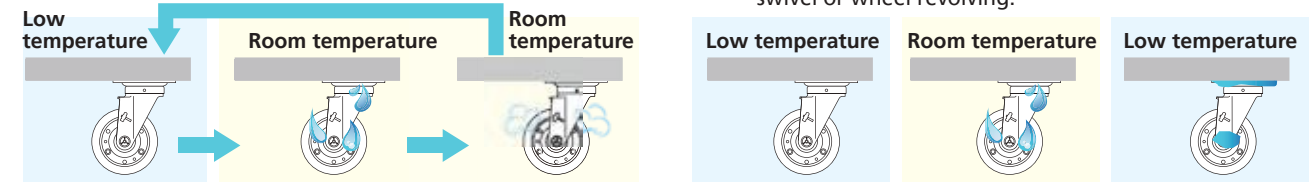
- For wheels
 - ① Grease to bearing bore



Be careful of condensation.

- Make sure to dry thoroughly for a while after using in the cold environment.

- ✗ If the caster is used again in a cold environment without being sufficiently dried, the water droplets from condensation may freeze, causing improper swivel or wheel revolving.



*Regardless of the specifications, physical properties decrease in a low temperature environment, and breakage and defects are likely to occur.

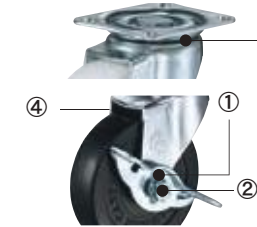
HEAT-RESISTANT CASTERS

"Heat-resistance"

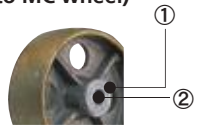
In case of using wheels or casters in a high-temperature environment, it is necessary to change the specifications to heat-resistant. In addition, there are specifications suitable for each environment depending on conditions such as maximum temperature, dry heat, and wet heat. Please consult our sales office for details.

- Parts that need to be changed in the case of heat resistant specifications.

- For casters
 - ① Bushings (Not Applicable to MC wheel)
 - ② Grease to bearing bore
 - ③ Grease to swivel section & dust seal
 - ④ Brake pad (for side-brake type)



- For wheels
 - ① Bushings (Not applicable to MC wheel)
 - ② Grease to bearing bore



- Cast iron wheel —max. 200°C



- Phenol wheel —max. 180°C



- MC Nylon wheel —max. 120°C



- Heat resistant rubber wheel —max. 120°C



Conductive Casters / Antistatic Casters

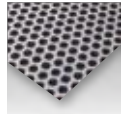
Eliminating static electricity keeps dust out of casters and prevents problems caused by static electricity.

Conductive Casters

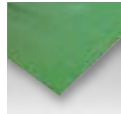
Electric resistance: $1 \times 10^4 \Omega$ or less
(For both rubber wheel and Nylon wheel)



Floor Material (Examples)

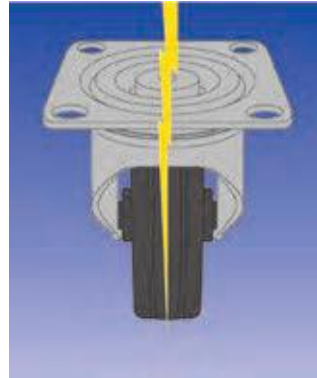


Metal



Conductive Floor

It plays the role of earth to let the electricity from equipment and machinery escape to the floor.



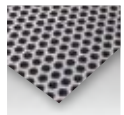
*The load capacity should be about 60% of the standard specification.

Antistatic Casters

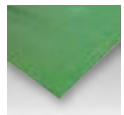
Volume resistivity / $10^7 \sim 10^{10} \Omega \text{ cm}$
(For urethane tread and rubber tread)



Floor Material (Examples)



Metal



Conductive Floor



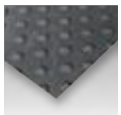
Tile



Flooring



Bricks



Rubber

It temporarily discharges the charged electricity into the atmosphere. It is used in a wide range of fields regardless of floor materials.



*The load capacity should be about 60% of the standard specification.



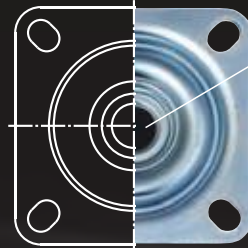
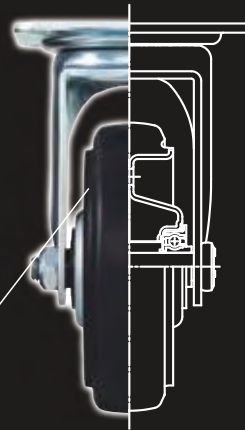
420 2S | Cost Performance Model

■ Light weight caster with new rubber wheel, based on 420S series. Suitable to roll boxes and pallets.



Swivel type /
Uni-chrome finished.

RB & FR wheel /
Affordable and high-performance
wheels with ball bearing.



Weight reduction by eliminating
the king pin.

Cost reduction and weight reduction
were realized by reviewing parts of
the body and wheel structure.

MOUNTING HEIGHT	132 · 168 · 190mm
WHEEL SIZE	100 · 125 · 150mm
WHEEL TYPE	RUBBER

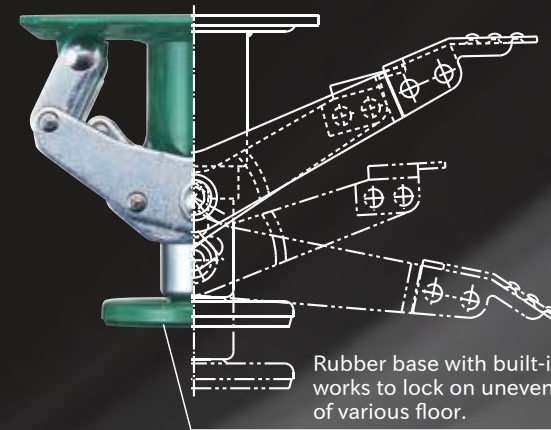


420 2S-1R 125mm

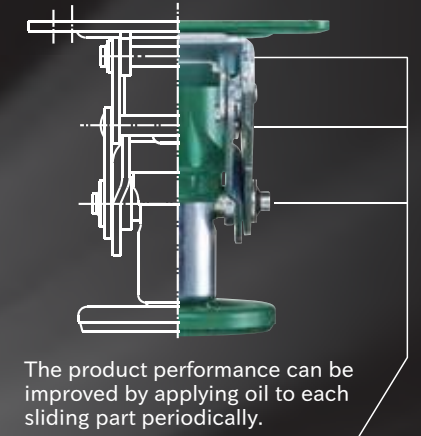


Hammer Lock | Reliable Stopper System

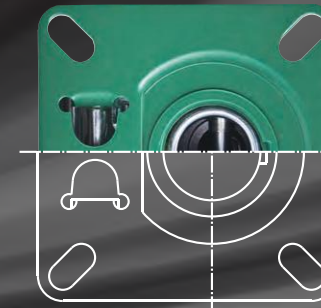
■ A floor-locking device that has superior operability and durability. Popularly used in transport carts and equipment.



Rubber base with built-in spring
works to lock on uneven surfaces
of various floor.

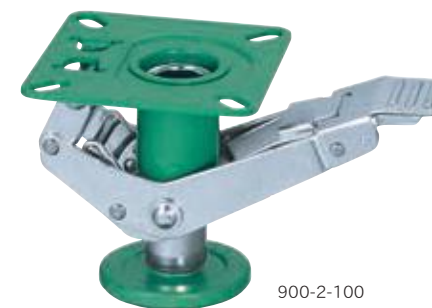


The product performance can be
improved by applying oil to each
sliding part periodically.



Body : Baking coated

PROPER MOUNTING HEIGHT	142 · 202 · 240mm
MAX HEIGHT	150 · 210 · 248mm
MAX LOADING WEIGHT	200 · 300 · 350 daN



900-2-100



520YS | Refined Durability Model

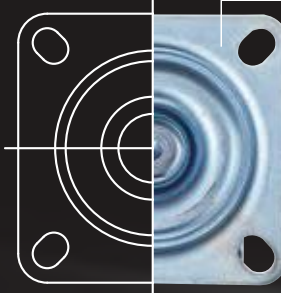
■By heat treating to special steel, durability is increased and thus the service life is extended.



Swivel type /
Uni-chrome finished.

Wide wheels provide
excellent driving stability.

Further heat treatment of thin special steel sheet
enables weight reduction and strength improvement at once.



With selected materials the quality and
specification overturns the standards of
industrial casters and contributes to labor
saving.

MOUNTING HEIGHT	137·171·196mm
WHEEL SIZE	100·125·150mm
WHEEL TYPE	RUBBER·NYLON URETHANE·MC-NYLON

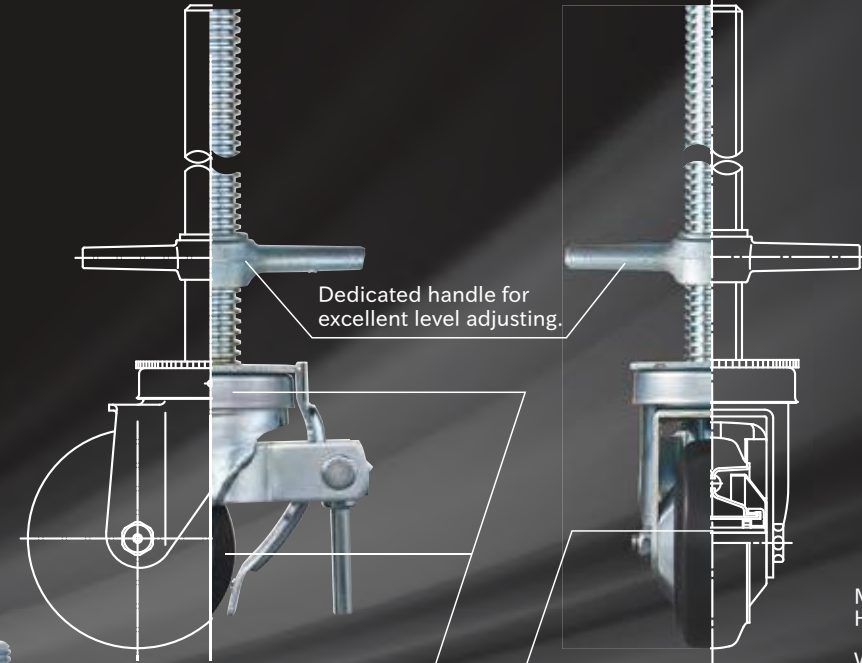


520YS-HBN 100mm

■Load capacity
180~370daN

515 SA | Robust Supporter for Scaffolds

■Large size caster for scaffolding scenes with a total lock mechanism that is useful for construction sites and buildings cleaning.



Dedicated handle for
excellent level adjusting.

Total lock mechanism that brakes
the wheel and lock the swivel at once.

Built-in bearing at wheel bore
allows smooth movement even
under high-load.

MOUNTING HEIGHT	171·196·240mm
WHEEL SIZE	125·150·200mm
WHEEL TYPE	RUBBER·URETHANE



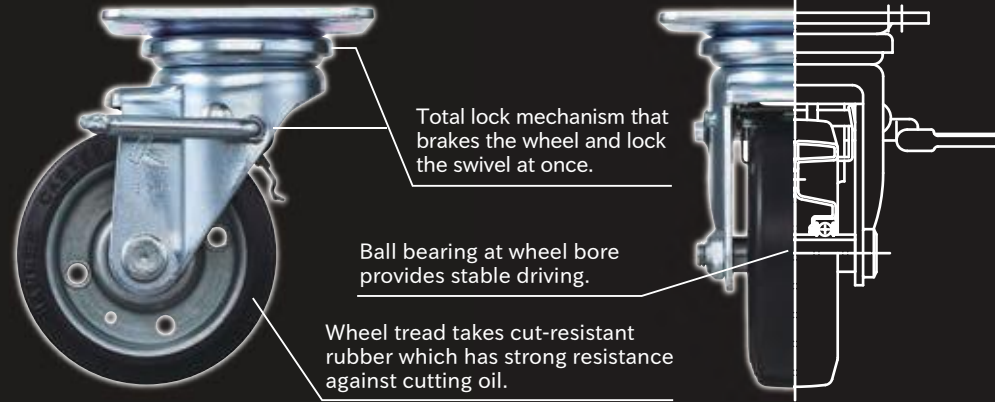
515SA-RB150

■Load capacity
180~250daN



413J-XRZ | Metal Cut Resistant Model

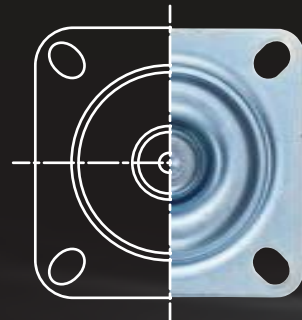
■Caster with special rubber wheel that is cut-resistant, prevents metal chips from sticking to the tread.
Popularly used in metal-cutting workshops.



Total lock mechanism that brakes the wheel and lock the swivel at once.

Ball bearing at wheel bore provides stable driving.

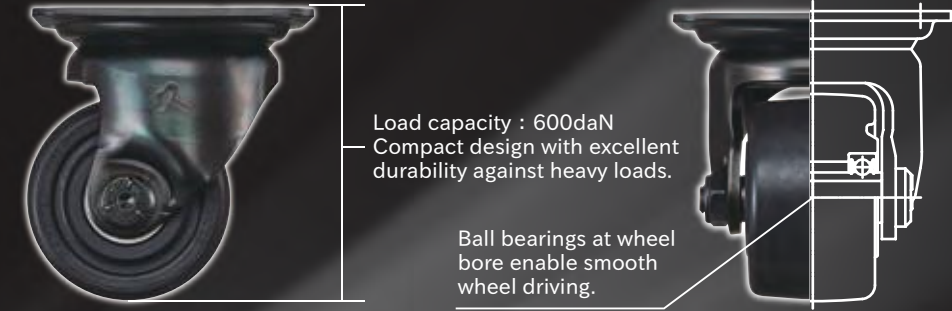
Wheel tread takes cut-resistant rubber which has strong resistance against cutting oil.



MOUNTING HEIGHT	140·174·199mm
WHEEL SIZE	100·125·150mm
WHEEL TYPE	RUBBER·URETHANE

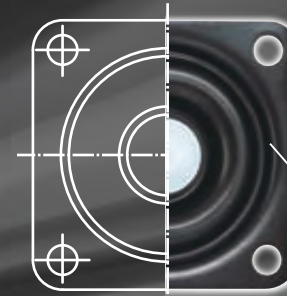
560S | Low Fitting Guardian of Industry

■Ideal caster for large machines that require stability of low fitting height and high-load capacity.



Load capacity : 600daN
Compact design with excellent durability against heavy loads.

Ball bearings at wheel bore enable smooth wheel driving.



Body : Black galvanized
Heat treatment improves durability and swiveling.

MOUNTING HEIGHT	95·105mm
WHEEL SIZE	65·75mm
WHEEL TYPE	NYLON·PHENOL



413J-XRZ 150mm



560S-NRB 75mm



500BPS | Technology Based Highload Model

■ Manufactured by welding extreme pressure materials to achieve high durability and high load capacity. Suitable for large machines and large transport vehicles.

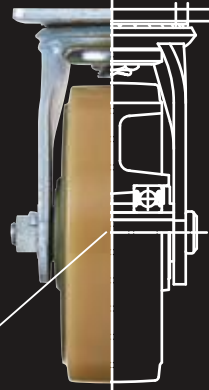
ARB | Heat Resistant Model

■ Suitable to use in environments that require heat sterilization and drying processes.

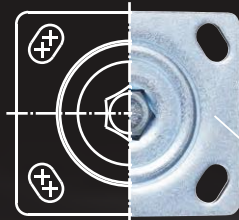


Easy maintenance with grease nipples.

High durability and high load capacity achieved with extremely thick metal body.



Improved running stability with built-in ball bearings.



Swivel type / Uni-chrome finished.

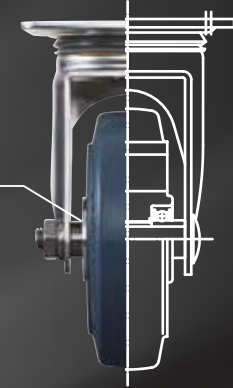
MOUNTING HEIGHT	142 · 164 · 187 · 246mm
WHEEL SIZE	100 · 125 · 150 · 200mm
WHEEL TYPE	RUBBER · URETHANE



Ball bearing at wheel bore provides stable driving.

Heat-resistant rubber can bear up to 120°C.

*Some specifications may need to be arranged due to the heat resistant condition.



Load Capacity : 120~160daN
All stainless steel is excellent in corrosion resistance and water resistance.

MOUNTING HEIGHT	132 · 168 · 190mm
WHEEL SIZE	100 · 125 · 150mm
WHEEL TYPE	NITRILE-RUBBER



500BPS-HBN 150mm

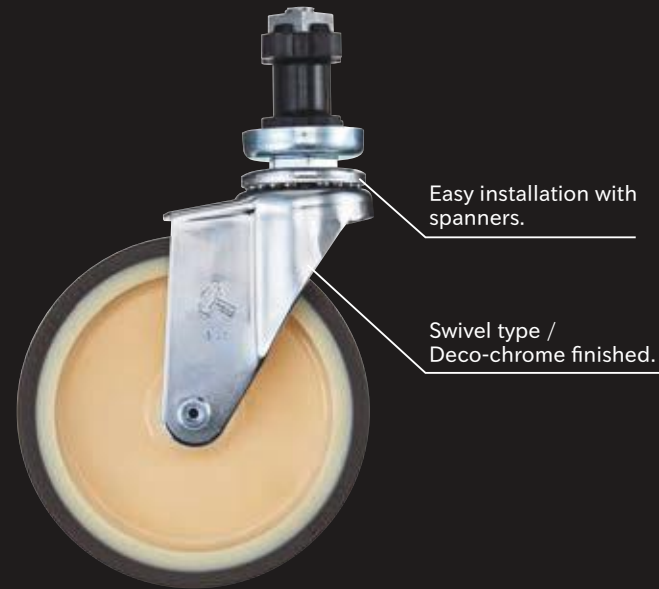


320S-ARB 125mm



420 EN | Easy Fitting to Various Pipes

■Caster for pipe mounting which can be easily detached.



Easy installation with spanners.

Swivel type / Deco-chrome finished.



Can be attached to large, small, round and square pipes.

MOUNTING HEIGHT	60·68·85·95·107·126·152·180mm
WHEEL SIZE	40·50·65·75·85·100·125·150mm
WHEEL TYPE	RUBBER·NYLON·URETHANE·ELASTMER·MC-NYLON

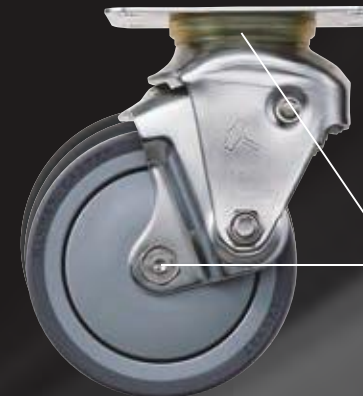


420 2EN-PR 100mm

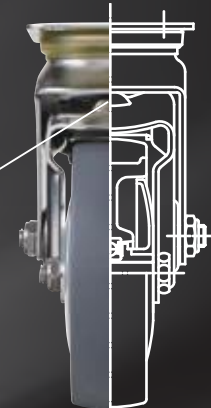


940 SOE | Gentle Protector of Precious Goods

■All stainless cushion caster that absorbs vibration and impact from travelling.



Ball bearings are installed to swivel section and wheel bore. Silent mechanism for travel noise reduction.



The built-in spring absorbs shock.



All stainless steel is excellent in corrosion resistance and water resistance.

MOUNTING HEIGHT	143~135·169~160mm
WHEEL SIZE	100·125mm
WHEEL TYPE	RUBBER·URETHANE



940 SOE-FR 100mm

■Suitable set load 6~24daN



Automatic Tracking Vehicle

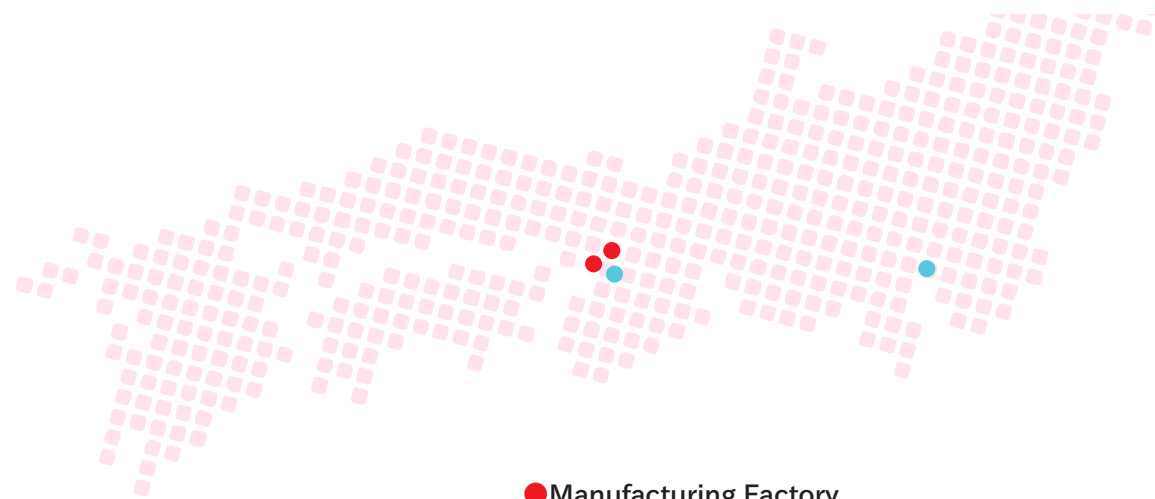


Automatic Tracking Cart





NETWORK



● Manufacturing Factory
● Hammer Caster Sales Co.Ltd. (as Sales company)

● Manufacturing Factory

Headquarters factory

4-7-35, Nishi-Iwata, Higashi-Osaka, Osaka 578-0947 Japan

Hirakata factory

Shodaitajika, Hirakata, Osaka 573-1132 Japan

● Hammer Caster Sales Co.Ltd. (as Sales company)

Tokyo Branch

6-5-4, Sinbashi, Minato-ku, Tokyo 105-0004 Japan

Osaka Branch

10-35, Shinjyo-Nishi, Higashi-Osaka, Osaka 578-0964 Japan

■ Please feel free to ask for any caster consultancy.

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