



HRO PHONG

TRADING COMPANY LIMITED

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TECHNOLOGY

COMMITMENT

INDUSTRY | FADER

STATE-OF-THE-ART

PERFORMANCE

QUALITY

CONFIDENCE

VARIFTY



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Suppliers and Agents Guide Map

Head Office



About Us

We are Hao Phong Trading Company Limited — located in Hanoi city in the North of Vietnam. Since 1992, we have provided casters, wheels, handcarts, trollyes for institution, industrial, medical, food, bakery, mart, etc.; for both common and specialized usage.

We are the biggest casters wholesaler in Hanoi. We are Corporate reseller, official/ sole agent of many caster manufacturers and suppliers located both in Vietnam and other countries. At the moment, we are being the North Corporate reseller of Phong Thanh Manu & Trading Co., Ltd, Gia Cuong Thinh Caster, Thuan Duc Phat Caster, Plastic Pacific Co., Ltd; being the agent of Globe Caster, Huashen — Chienshing Rubber in Vietnam.

With the range 1000 kinds of items,

from common usage to high-class and specialized needs for many areas like: hospital, medical, bakery, clean room, lab, chemical factory, factory; from light duty to extra heavy duty, anti-abrasive, anti-static, anti-heat, etc.; we are proud to say: we can serve all your needs!!!

We are very expertise in this area. We also established good relationships with many esteemed enginerring factories, workshops, and precision mechanics & technology transfer companies. By so, we can take customized orders from customers who demand their own designs for their own purposes. We can ensure to provide you all kinds of handcarts, conveyors, working tables, rack systems, etc. that up to your expectation. Our priority is to always provide products and services with the

excellent quality and the most comparative price. We are proud of the experienced engineers who had participated into both domestic and foreign huge projects.

Follow the world's trend, in the future Vietnam will be a giant supplier of industrial components to the world as there's a lot more foreign investment to Vietnam day by day. As a local company with the above advantages and our own capability, we have prepared to grasp these opportunities. We will try our best to serve you.

Please take a moment to explore, if you are ready to make a purchase or have question, call us or visit our "Contact Us" Page at our website below:

www.haophong.vn

GUARANTEE

Based on each suppliers, should you receive diffrent gurantee policies. Even products purchased from one, same supplier will have their own unique gurantee licenses.

For now, every Rubber wheels of Chienshing Caster come with 1 year gurantee. Phong Thanh Caster also offers 1 year gurantee for his Two wheel Hand Truck and plus 1 year more for Four wheel Hand Truck. In the future, we will encourage our suppliers and try to find a gurantee system to apply to all products.

If you find any defect in material and workmanship (unless it has been missused, abused, modified or improperly installed), please inform us. We will then contact suppliers to arrange compensate action for you.

NEW PRODUCT

Thuan Duc Phat Caster: A new Caster company with 3P & PH Series. Focus on customized items and the spirit to try are his two strong points.

Many new Handcart, trolley and conveyor samples from our esteemed engineering partners.

Albion Caster – ranked the 1st caster manufacturer in the world, comes from the USA.

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Basic Guide

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- 3. Bearing types & Swivel Bearings
- 4. Wheel Selection Guide
- 5. Wheel Hardness Chart
- 6. Performa Rubber Chemical Chart
- 7. Caster Combination for Trucks
- 8. How to use and Cautions

Light duty Series

- 1. Phong Thanh Caster General duty & Mark R Caster
- 2. Gia Cuong Thinh Caster Light duty Caster
- 3. Globe Caster 2 Series Caster
- 4. Thuan Duc Phat Caster 3P Series Light duty Caster
- 5. Pacific Caster Institutional Plastic Caster

Medium duty Series

- 1. Phong Thanh Caster L, H Series Caster
- 2. Gia Cuong Thinh Caster G, C, K, T Serie Caster
- 3. Globe Caster 3 Series Caster
- 4. Thuan Duc Phat Caster PH Series Industrial Caster

Heavy duty Series

1. Globe Caster - 4 Series Caster

Extra heavy duty Series

1. Globe Caster - 5 Series Caster

Single Wheel

- 1. Phong Thanh Caster Solid Rubber Wheel
- 2. Gia Cuong Thinh Caster Solid Wheel
- 3. Globe Caster 6, 7 Series Caster
- **4. Chienshing Caster** Hi–TECH Rubber Wheel

Hand Truck

- 1. Phong Thanh Two wheel Hand Truck
- 2. Phong Thanh Four wheel Hand Truck

New Handtrucks, trollyes, etc. from our Business Partners

Back Cover

How to Select the Proper Caster and Wheel

There's no simple formula or rule that can be followed in selecting the proper caster. Many varying and individual factors must be balanced to make the selection which will do the best job for you. The following are several of the most important considerations:

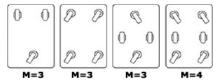
1. Decide the **composition of caster:**Considering on the size of road, obstacle, remaining substances on application areas (such as iron scraps, grease), surrounding conditions (such as high temperature, normal temperature or low temperature) as well as the load capacity of casters should be taken into during the decision — making for the composition of caster.

For example, rubber caster is non-resistant to acids, oils, grease and chemical, while super polyurethane caster, high strength polyurethane caster, nylon caster, steel caster and high heat resistant caster are applicable to different areas. See chart of Page 7-8 for a general description of wheel floor surfaces and operating conditions.

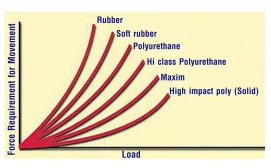
2. Calculate **load capacity**: To calculate the load capacity of various casters, the net weight of transported equipment, maximum load and number of monocaster or caster used must be provided. Load capacity required by a monocaster is calculated as follow:

T = (E + Z)/M

- T: Load capacity required by a caster
- E: Net weight of transported equipment
- Z: Maximum load
- M: Efficient parameter of Caster. M is decided by the number of caster and how they are fixed to the system:







- **3.** Decide **caster diameter:** The larger diameter of caster, the easier the movement and the larger the load ability, which can also protect the floor from any damage. The selection of caster diameter should be decide by the load capacity and the starting thrust of conveyor with load.
- **4. Unusual conditions:** Each wheel has certain characteristics which will give the best results where unusual conditions exit. For example, where acids, oils, chemicals and other conditions harmful to rubber are present, polyurethane, polyolefin, phenolic or steel wheels are recommended. Check conditions, then select caster and wheel.
- **5. Floor conditions:** Make sure the wheel you select is large enough to pass over cracks in the floors, tracks, moldings and other obstructions. For floor protection on linoleum, tile, carpet, etc., use Urethane wheel or one with rubber thread.
- 6. Decide hardness of caster: Super polyurethane, high strength polyurethane caster can meet most of your transportation requirements for indoor and outdoor movement. High strength artificial rubber caster is applicable to hotel, medical equipment, floor, wood flooring and ground paved with ceramic tiles on which movement is required to be quite with low noise. Nylon caster are applicable to light load requirement and ground with soft and uneven surface. For smooth and cushion movement, takes pneumatic rubber wheel.

- 7. Rotary flexibly: The larger the caster, the more energy it saves during rotation. Roller bearings carry heavier loads but reduces rotary flexibility and needs more space when rotate. Ball bearings roll easier but carry less load. When possible, use the largest ball bearing wheel for best results.
- 8. Extreme climates: Room temperatures are no problem for most casters. But extreme cold or heat can be a problem. The operation of caster is greatly affected under low and high temperature. It may destroy composition of the wheel, damage joints, cause abrasively, etc. In such case, just consider to use special heat—resistant nylon (–45 to 260 Celsius degree) or use metal wheel. Phenolic, fiber casters are also OK.

COMMON GUIDE AND ADVICE

Firstly, on our website and browsing this catalog: please surf, do searching. The product pages are quite detailed enough, they will show you most specs of items.

If you are interested in particular products or you have your own requirements, please feel free to call us, fax or email. When possible, we recommend you to pay a visit to us or our sale agents. You will get fast and reliable information from us in no time.



Glossary of Caster and Wheel Terms

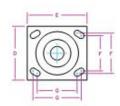
Glossary of Caster Terms

Listed and defined below are common terms used to describe and specify casters and wheels. We provide this information for your convenience.





THE TOP PLATE



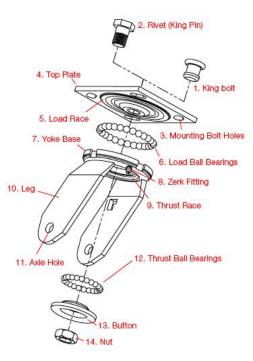
SOLID AXLE & NUT



ANATOMY OF MEDIUM DUTY CASTER

- **1. King Bolt & 2. Rivet (King Pin):** Holds the mounting plate and yoke assembly for a swivel caster together
- **3. Mounting Bolt Holes:** Where the bolts attach the caster to the cart
- **4. Top Plate:** The plate which attaches the caster to the application
- **5. Load Race:** Row of steel balls or rollers that allow the yoke base to swivel
- **6. Load Ball Bearings:** One or two row of steel balls or rollers
- **7. Yoke Base:** Flat part of the yoke which the legs attach to
- **8. Zerk Fitting:** Fitting that is provided for injecting grease into the caster
- **9. Thurst Race:** Holds the thurst bearings in the yoke base
- **10. Legs:** Support the axles
- 11. Axle Hole: Holes that hold the axles
- 12. Thurst Ball Bearings
- **13. Button:** Forms the lower raceway of the Thurst Race
- **14. Kingpin Nut:** Holds the swivel section together

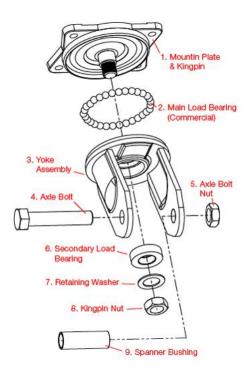
Medium Caster Assembly



ANATOMY OF HEAVY DUTY CASTER

- **1. Mounting Plate and Kingpin:** A flat plate with an Integral Kingpin
- 2. Load Bearing (Commercial): Row of steel balls or rollers that allow the yoke base to swivel
- 3. Yoke Assembly: The yoke base with legs welded on and machined for the Main Load Bearings
- **4. Axle Bolt:** The bolt on which the wheel revolves
- **5. Axle Bolt Nut:** Secures the axle bolt to the yoke assembly to form the axle
- **6. Thrust Bearing:** The row of bearings that operate between the yoke base and the retaining wahser
- **7. Retaining Washer:** keeps the bearings retained
- **8. Kingpin Nut:** Holds the swivel section together
- 9. Spanner Bushing: A tube that spans between the legs, over the axle, on which the roller bearing rides

Heavy duty Caster Assembly



Bearing types

Delrin® Bearing

A DuPont (TM) engineered material,
Derlin is designed for use in
situations in which a self–lubricating
material is optimal and corrosion
cannot be tolerated. Ideal for wash–down
or steam–cleaning applications as well as total
immersion. Maximum temperature range is
70° Celius.



Radial Ball Bearing

Shielded, precision—type bearings. They are uesed in pairs and press fitted into the wheel hub. Maxium temperature range is 120° Celius.



Precision Sealed Ball Bearing

Completely sealed, these precision ground ball bearings are held in a metal spacer ring between two hardened raceways. This bearing never needs to be lubricated, and with the lowest rolling resistance of all bearings offers the most ergonomic situation available. Maximum temperature range is 120° Celius.



Roller bearings are the standard bearing in most caster applications.

1½ and 2 inch (38 and 50 mm) width wheels feature a cage separating hardened steel rollers and a hardened steel split outer race. These bearings must be used on a hardened bushing or shaft. Maximum tempearature range is 177° Celius. All Casters and wheels are rated up tp 2.5 mph operation per the Institute of Caster & Wheel Manufacturers Guidelines.

Annular Ball Bearing

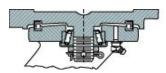
A precision type bearing where the machined outer race and inner race are held together by the bearings. This option offers easy rolling and quite operation for light to medium duty loads. This bearing must be factory installed in the wheel. Maxium temperature range is 120° Celius.

Plain Bearing

In this option, no bearing material is used. The wheel runs directly on the axle or spanner bushing. This is the least expensive bearing option, but also results in a higher rolling reistance.



Swivel Bearings



Precision Unit Load and Thrust

Bearing: Ideal choice for continuous or extra demanding service. A replaceable unit bearing carries the direct thurst (main load), while a precision tapered roller bearing conteracts component thrust.

Commerical Load and Precision
Thrust Bearing: A set of hardened
and polished steel balls rotates in
a machined raceway (flame
hardening recommended for
continuous service). Radial thrust
is absorbed by a precision
tapered roller bearing.



Kingpinless—Style: The top plate and inner raceway are formed from one piece, providing a superior raceway for shocking conditions. The inner and outer raceways are CNC—machined to ensure a uniform depth in hardness, A sealing cap welded to the outer race assures protection from foreign material and keeps grease in the raceway.



Double Ball Race: Two sets of hardened and polished steel balls rotate in machined or pressure—coined raceways. The upper raceway absorbs direct thrust, while the lower raceway surrounds the kingpin to absorb side forces (component thrust). Raceways are hardened as required by load ratings, and kingpins may be made of bolt or rivet type.

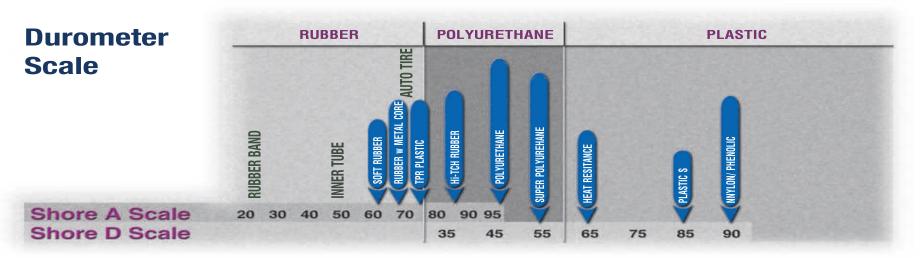
Wheel Selection Guide

This chart is designed to provide the user with a general comparision of our wheel types under a variety of floor surface and operating conditions. For specific applications or unusual conditions, please consult our staff or sales agent.

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Wheel material	Load capacity (kg)	Temperature Resit (°C)	Durometer Scale	Carnes	Brick	Conc	Linois	Asnhau	Terra	Wood		Ribbert	Tile	Water	Steam	Mildo	Oile	Metal	Hint.	Ext.	Anime C	Noise Fa	Floor P	Circle .
Soft Rubber	30 - 150	-20 to 60	40(±5)A		•	•	٠		•	•	٠	•		•	•	•				•	•	•	•	•
Hi strength Artificial Rubber	10 - 600	-20 to 80	70(±5)A							-				•							•	-		
Nylon	10 - 200	-20 to 70	65(±5)D		•	•				•	-			•	-	-	•	•		-	•			
Polyaniline	40 - 450	-20 to 110	70(±5)D							•				•										
Polypropylene	40 - 300	-20 to 99	70(±5)D		•	•				•	•			•	-	-	•	-		•				
PP/ PVC	40 - 350	-20 to 99	65(±5)D							•				•									•	
Polyurethane	10 - 999 ⁺	-20 to 120	70(±5)D		•		•	•	•	•	•	•	•	•		-	•	-	•			-	•	
Super Polyurethane	10 - 999 ⁺	-20 to 120	70(±5)D							•														
Heat resistance	40 - 999 ⁺	-40 to 250	75(±5)D	•	•	•	-	•	•	•	•	•	•	•	-	-	•	•	•			•	•	Г
Rubber with metal core	40 - 350	-10 to 75	70(±5)A							•				•										
Nylon with metal core	50 - 500	-10 to 70	65(±5)D	•	•	•				•	•			•	-	-	•	-		•	•			Г
PU with metal core	99 - 999 *	-10 to 100	70(±5)D																			•	•	
Cast iron	99 - 999 *	-10 to 99 ⁺				•					•	•				-	•	-	•	•				Г
Steel forged	600 - 999 ⁺	-10 to 99 ⁺																						
Pnematic (rubber)	30 - 150	-20 to 50	40(±5)A	•	•	•	•	•	•	•	•	•	•	•	•	-		-		•	•	-	•	•
Hi-TECH Rubber (Performa)	60 - 300	-20 to 85	75(±5)A											•									•	

Floor Surfaces

Operating Conditions



Performa Rubber Chemical Chart

Substance	Rating	Substance	Rating	Substance	Rating	Substance	Rating
Organics & Solvents		Methyl ethyl ketone	F	Acetic, 75%	G	Alkalies	
Acetone	G	Oakite (floor cleaner)	E	Acetic, glacial	G	Tartaric	F
Alcohol, butyl	G	Orangeve	X	Boric	G	Ammonium hydroxide	G
Alcohol, ethyl	G	Naptha	F	Butyric	G		
Alcohol, methyl	G	Nitrobenzene	Χ	Chromic	F	Calcium hydroxide	G
Aniline	G	Phenol	X	Citric	G	Potassium hydroxide	G
Benzene	X	Tuluene	X	Fluoboric	G	Sodium hydroxide	G
Bravo (wax stripper diluted)	E	Trichloroethylene	X	Hydrobromic, 25%	G		
Carbon disulfide	X	Varsol	Χ	Hydrochloric, 10%	G	Acids	
Carbon tetrachloride	X	Vestalene (detergent diluted)	E	Hydrofluoric	F	Acid salts	G-F
Chlorobenzene	X	Urine	E	Lactic	F		
Chloroform	X			Nitric, 5%	G	Alkaline salts	G
Colson 45 lubricant	G	Gases		Nitric, 65%	X	Neutral salts	G
Enclean SS-2 (parts cleaner)	X	Carbon dioxide	G	Oleic	G	Miscellaneous salts:	
Ethyl acetate "	F	Carbon monoxide	G	Oleum	X	Potassium dichromate	G
Ethylene chloride	G	Chlorine, wet	F	Oxalic	G	Potassium permanganate	G
Ethylene dichloride	F	Chlorine, dry	F	Phosphoric, 25%	G	Salt water	G
Ethyl ether	G	Hydrogen sulfide	G	Phosphoric, 85%	G	Sodium cyanide	G
Formaldehyde, 37%	G	Sulfur dioxide, wet	F	Sulfuric, 10%	G	Sodium ferricyanide	G
Gasoline	X	Sulfur dioxide, dry	F	Sulfuric, 78%	F	Sodium hypochlorite	G
Heptane	X	Acids		Tannic	G		
Methylene chloride	X	Acetic, 10-50%	G				

E=Excellent G=Good F=Fair X=Unacceptable

IMPORTANT NOTICE • CHEMICAL RESISTANCE CHART GUIDELINES

This chart lists an extensive range of chemicals, solvents and gases. Examine the listings in this chart to determine if your application is considered compatible with Performa wheels. Ratings are at 72°F. Concentrations of aqueous solutions

are saturated except where noted. Information in this chart is based on laboratory tests and results may vary in actual caster applications. Field testing is recommended to confirm compatibility with your particular application. For information on the compatibility of other fluids and chemicals, please contact the factory.

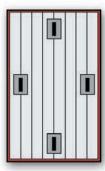
Caster Combination for Trucks

In building, reparing and refurbishing mobile equipment, various effective caster combinations may be used. Several common type of mountings are illustrated below.

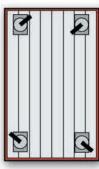
Three Swivel: For barrel dollies and small portable machines.

Affords excellent maneuverability. But be sure to select casters designed to take the weight loads on three casters than the usual four.

Tilt Mounting: A tilt mounting is the most economical, but should be limited to lighter loads. The tilt is best when the load wheels are 1/8" taller than the balance wheels. Not recommended for use on ramps.

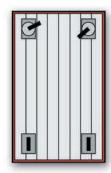


Four Swivel: Where a side motion is frequently needed, the four swivel arrangement is excellent. With brake system, this can be used for ramps. A most versatile arrangement.



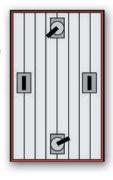
Two Rigid and Swivel:

Most practical and inexpensive arrangement for straight and/ or long distances. Can be used for heavy or medium loads, depending upon the weight capacity of the casters selected.

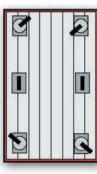


Diamond Mounting:

Two rigid and two swivel casters, but the diamond shaped mounting greatly increases maneuverability. This mounting is not recommended for ramps.



Four Swivel, Two Rigid: Designed for heavy loads and long trucks. The two rigid casters help to distribute and reduce the load on swivel units and there by maintain good maneuverability and easy steering.



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How to use and Cautions

1. Maximum Speed: Caster and wheel should be used on non—powered equipment at a speed not exceeding walking pace and not being under continous motion. For wheel with diameter is or below 75mm, best use with speed below 2km/h. For wheel with diameter below 100mm, speed should not exceed 4 km/h.

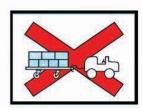
2. The maintenance of caster is usually:

Regressing the axle and swivel bearings, by the retightening of axle and/or adjustable kingpin, when fitted. Should any cleaning agent be used, then these same agents should not contain corrosive or grinding elements.

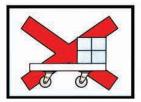
3. For safety and cautions in operating, please take attention to the below part:



Follow the load capacity listed in this catalog. Do not overload.



No traction use



Make sure the loads in the center of trolley. Improper position of loads may results low flexibility or upturning.



Make sure the caster is used for right purpose



No side force to rigid caster



Operate caster with brake or directional lock or other attachment appropriately engaged



No shock loads, curbs



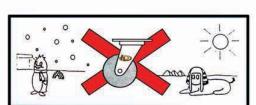
Operate attachments with resonable force



No uneven floor



Operate attachments on even floor



Follow the operating temperatures

www.haophong.un

Product Page

Please download this Part at this address: http://haophong.vn/downloads/Product.pdf

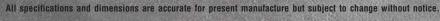
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GAOPROKE

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