

INCH-POUND

A-A-55617B

29 May 1998

SUPERSEDING

A-A-55617A

20 December 1996

## COMMERCIAL ITEM DESCRIPTION

## CASTER, INDUSTRIAL, MEDIUM DUTY

This General Services Administration has authorized the use of this Commercial Item Description for all federal agencies.

1. **SCOPE:** This Commercial Item Description (CID) covers industrial medium duty rigid or swivel casters suitable for nonpowered material transport equipment.

2. **SALIENT CHARACTERISTICS:**

2.1 Casters furnished under this CID shall be flat mounted plate type rigid casters or double ball-bearing swivel casters. Rigid or swivel casters shall conform to the dimensions and load rating as specified in Table I and figures below.

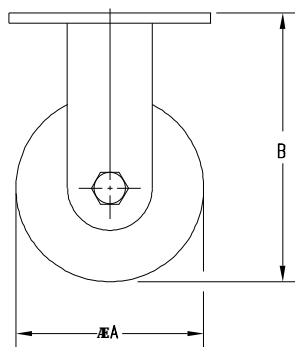


FIG. 1. RIGID CASTER

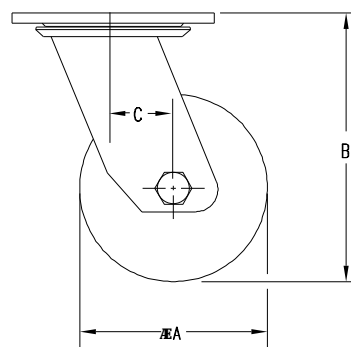


FIG. 2. SWIVEL CASTER

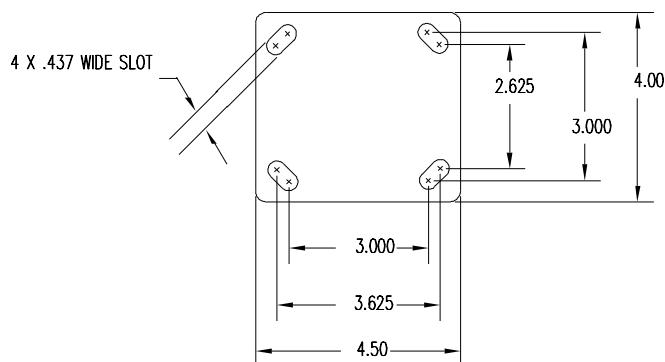


FIG. 3. MOUNTING PLATE FOR RIGID OR SWIVEL CASTERS

BENEFICIAL COMMENTS, RECOMMENDATIONS, ADDITIONS, DELETIONS, CLARIFICATIONS, ETC., AND DATA WHICH MAY IMPROVE THIS DOCUMENT SHOULD BE SENT TO: DEFENSE INDUSTRIAL SUPPLY CENTER, ATTN: DISC-EED, 700 ROBBINS AVENUE, PHILADELPHIA, PA 19111-5096.

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TABLE I. DASH NUMBERS AND DIMENSIONS.

DASH NO.	ØA	WHEEL WIDTH	WHEEL MATERIAL	MIN. LOAD CAPACITY (LBS)	OVERALL HEIGHT B	MOUNTING BOLT DIAMETER	SWIVEL OFFSET C ±.12
4	4.00	1.50	RUBBER	200	5.63 ±.06	.375	1.50
			METAL	500			
			PHENOLIC	600			
			POLYURETHANE	600			
6	6.00	2.00	RUBBER	400	7.50 ±.12	.375	1.80
			PHENOLIC	800			
			POLYURETHANE	800			
			METAL	800			
8	8.00	2.00	RUBBER	500	9.50 ±.12	.375	2.00
			PHENOLIC	900			
			POLYURETHANE	900			
			METAL	900			

2.1.1 Rigid caster. Rigid caster has a rigid horn and wheel assembly permitting only straight line travel.

2.1.2 Swivel caster. Swivel caster has a swivel horn and wheel assembly that will rotate freely through 360°.

2.2 Mounting plate and horn assembly. The mounting plate and horn assembly shall be made of steel plate, cast or forged steel, or aluminum. The horn legs shall be either an integral part of the horn plate or welded thereto. The area adjacent to mounting holes shall have sufficient clearance to allow mounting hardware installation to provide for clearance for all intended operations.

2.2.1 Finish. Except for aluminum, exposed metal surfaces of the caster assemblies shall be zinc plated per ASTM B633, Type II or III, SC2.

2.2.2 Kingpin. The kingpin for swivel casters shall be constructed of steel with minimum .625 inch diameter. The kingpin shall be secured with rivet, or nut and bolt designed that will maintain the proper relationship of swivel bearing components for the life of the caster under normal operating conditions.

2.2.3 Swivel assembly. The ball bearing assembly shall be bi-level with a smooth non-binding operation. The raceways shall be smooth and full-case hardened and shall be filled to capacity with commercial quality steel ball bearings.

2.2.4 Axle. The axle shall be constructed of steel and shall secure the wheel by means of a locknut or slotted nut and Pins. During operation, the axle shall not rotate loose or bind the wheel.

2.2.5 Wheel bearing. The wheel bearing shall be commercial type ball or roller bearings designed and manufactured in accordance with the best standard manufacturing practice for the intended purpose.

2.2.6 Wheel hardness. Except for metal and phenolic wheels, the hardness of treads shall be 70 ±5 points for rubber and 92 ±5 points for polyurethane, as measured on the face of the treads by a type A shore durometer. Electrically conductive treads shall have a hardness of 80 ± 5 points.

2.2.7 Metal wheel. Metal wheel shall be fine grain cast iron, steel or aluminum alloy.

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2.2.8 Swivel lock. When specified, a four position plunger type swivel lock shall be furnished. When engaged, the swivel lock shall prevent the caster from swiveling while rolling or shall prevent rolling while at right angles to the normal path of the equipment. When disengaged, the swivel lock shall permit full 360° free swiveling.

2.2.9 Brake. When specified, a manually operated with side or front mounted control lever parking brake shall be provided. The brake shall be tread contact type with, using a combination of pressure and friction to prevent wheel rotation. The control lever shall be readily accessible for operation, permitting quick and easy brake application and release. The control lever shall be capable of ensuring brake contact surface has a clearance of at least .062 inch off the wheel tread surface.

2.2.10 Lubrication fitting. The swivel assembly and wheel assembly shall have pressure lubrication fittings and shall be prelubricated with water repellent grease having a -32°C to +71°C (-10°F to +160°F) operating temperature range.

2.2.11 Electrical Conductivity. The electrical conductive wheels shall be of such composition that the average electrical resistance shall be less than 250,000 ohms, and the maximum individual electrical resistance reading shall be less than 1,000,000 ohms when tested as described in 2.3.4.

2.3 Casters as a minimum, shall be able to withstand the following tests:

2.3.1 Static load test. The caster shall be able to withstand four (4) times its rated capacity for one (1) minute minimum without damage.

2.3.2 Endurance test. The casters shall be loaded to rated capacity and shall be run continuously (see 4.3) at three (3) mph minimum on an endless belt or drum type testing machine with a smooth, uninterrupted running surface for a minimum period of forty (40) hours. At the completion of the test, there shall be no indication of excess wear on the bearing races, looseness of bearings, scuffing of tires, or looseness of tire tread.

2.3.3 Brake Test. For caster furnished with a brake, the brake must prevent wheel rotation from a horizontal pulling force equal to 103 percent (%) of the force required to initiate movement of the equipment under rated load with brakes disengaged. The test shall be conducted on a level concrete floor by applying a horizontal pulling force on a rated load evenly distributed over four (4) casters, two of which will have the brakes engaged. The test should be repeated a minimum of four (4) times.

2.3.4 Electrical Conductivity Test. For caster furnished with electrical conductive tread, the wheel shall be tested while supporting a load equal to 25 percent (%) of its rated load. The caster to be tested shall be rolled onto a clean, dry, flat metal plate. The metal plate and the metal parts of the caster shall form the electrodes for the test. If the caster is tested while supporting equipment, all other casters under the equipment shall be insulated from the floor on which the metal electrode plate is placed. The resistance between the electrodes shall be measured by any resistance measuring apparatus of suitable range, which has an open circuit direct voltage (D.C.) of approximately 500 volts. For the safety of the operator, the maximum current, which can be delivered by the apparatus through a resistance of 500 ohms, should be less than 10 milliamperes. Measurements shall be made with 5 separate areas of the tire successively in contact with the plate, and the average and the maximum values shall be determined.

### 3. QUALITY ASSURANCE PROVISIONS.

3.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and the quality assurance practices, and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

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4. NOTES.

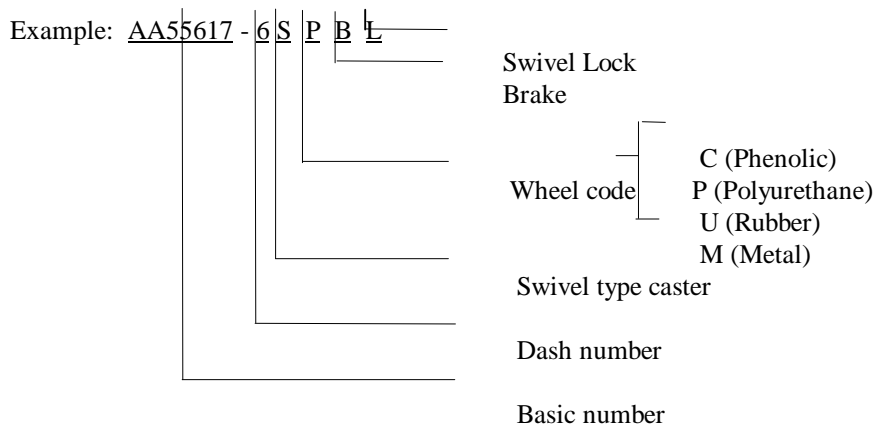
4.1 Unless otherwise specified, all dimensions are in inches.

4.2 Unless otherwise specified in the contract or purchase order, packaging shall be in accordance with ASTM D3951.

4.3 "Continuously" shall mean 45 minutes of rolling operation for each hour of work. The cycling of the stop and go periods shall be at the option of the manufacturer.

4.4 Unless otherwise specified, tolerance: .xx ± .09, .xxx ± .030.

4.5 The part identification number (PIN) shall consist of the basic commercial item description number followed by a dash number from Table I, "R" for rigid caster or "S" for swivel caster and a code letter for wheel material. Add "B" for brake (optional) and/or "L" for swivel lock (optional) and/or "E" for electrical conductive tread (optional for code "U" only) after PIN number.



## Military Interests:

## Custodians:

Army - AR  
Navy - AS  
Air Force - 99

## Review Activity:

Army - MI  
Air Force - 82

## Civil Agency Coordination Activity:

GSA-FSS

## Preparing Activity:

DLA-IS

(Project 5340-2452)