UDC 629·113·012·556·3-87

(Reaffirmed 1995)

Indian Standard

SPECIFICATION FOR FOOT TYRE INFLATORS FOR ROAD VEHICLES

Automotive Vehicles Sectional Committee, EDC 38 [Ref: Doc: EDC 38 (966)]

1. Scope — Specifies the general requirements for foot tyre inflators for cars and trucks.

2. Nomenclature — Shall be as given in Fig. 1.

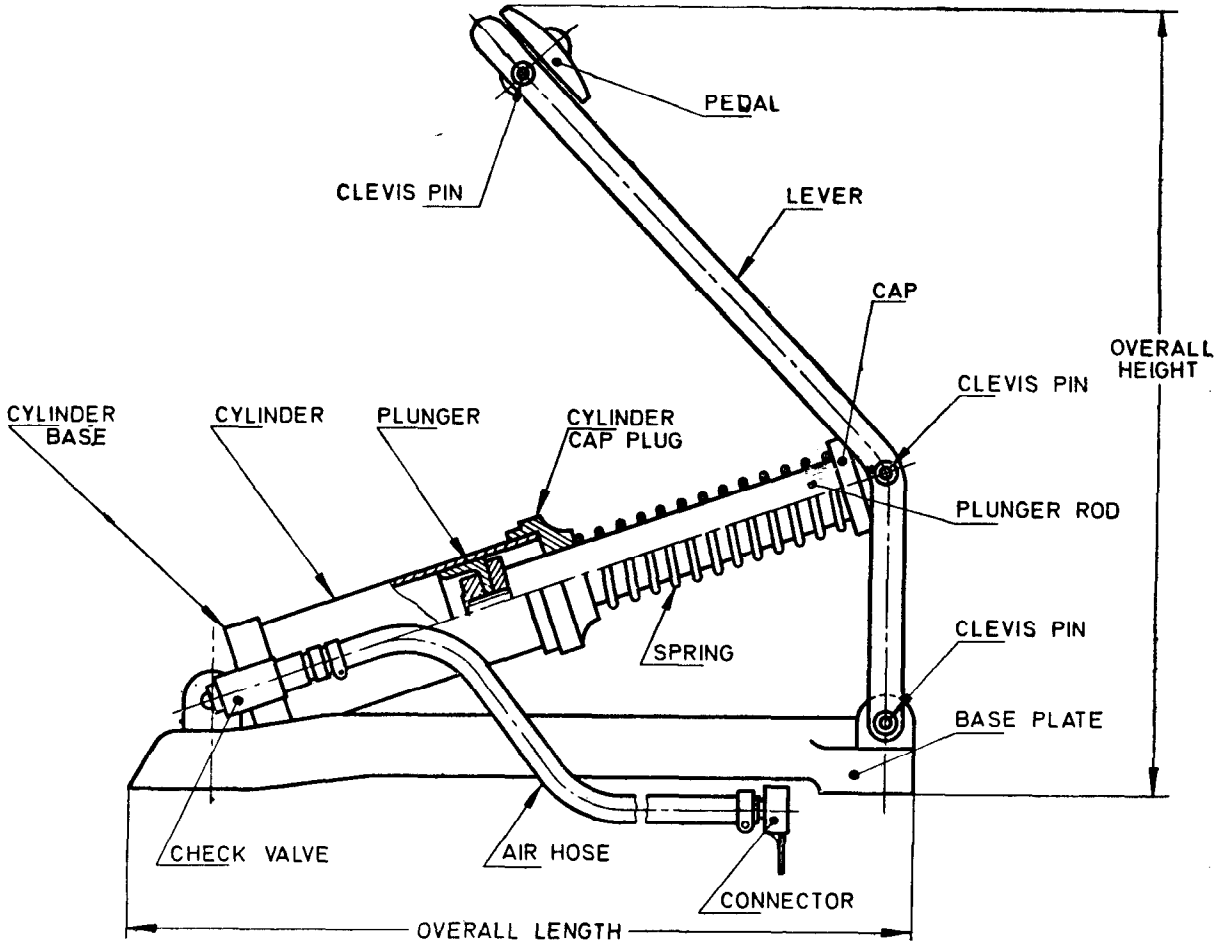

FIG. 1 NOMENCLATURE FOR FOOT TYRE INFLATORS FOR ROAD VEHICLES

3. Types

3.1 *Car Type* — Meant for light duty, such as for inflating the tyres of cars and other light vehicles.

3.2 *Truck Type* — Meant for heavy duty, such as for inflating the tyres of trucks, lorries and other heavy vehicles.

4. Material

Component(s)	*Material*
Cylinder and plunger rod	Solid drawn brass tubes to IS : 407-1966 ' Specification for brass tubes for general purposes (*second revision*) '
Plunger	Vegetable tanned hydraulic leather to IS : 581-1962 ' Specification for vegetable tanned hydraulic leather (*revised*) '

Adopted 1 April 1977

Price Rs. 1.00

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Component(s)	*Material*
Cylinder base and cylinder cap plug	Grade 1, 2 or 3 brass castings to IS : 292-1961 ' Specification for brass ingots and castings (*revised*) '
Check valve and hose tyre connector	Stainless steel or leaded brass alloys Type I or Type II to IS : 319-1974 ' Specification for free-cutting brass rods and sections (*third revision*) '
Air hose	Rubber with braided textile reinforcement to IS : 911-1968 ' Specification for air hose of rubber with braided textile reinforcement (*second revision*) '
Spring	Steel wire to IS : 4454 (Part I)-1975 ' Specification for steel wires for cold formed springs: Part I Patented and cold drawn steel wires — unalloyed (*first revision*) '
Clevis pins	Steel C40 to IS : 5517-1969 ' Specification for steels for hardening and tempering '
Levers	Steel C40 to IS : 5517-1969
Base plate	Steel to IS : 226-1975 ' Specification for structural steel (standard quality) (*fifth revision*) '

5. Dimensions — The overall dimensions of the inflators shall be within the following limits:

Dimension	*Car Type*	*Truck Type*
	mm	mm
a) Overall length	370	400
b) Overall width	135	160
c) Overall height	140	150

6. Construction

6.1 The inflator cylinder shall be made of solid drawn brass tubing having a wall thickness of not less than 0·8 mm. The cylinder base and cylinder cap plug shall be screwed on to the respective ends of the inflator cylinder. An oil hole shall be provided to lubricate the plunger.

6.2 The plunger rod shall be made of solid drawn brass tubing having a wall thickness of not less than 0·8 mm. It shall have brass cap of sufficiently heavy section. The brass cap shall have a suitable integral extension for fixing the lever by means of a clevis pin conforming to IS : 6862-1973 ' Specification for clevis pins ' or IS : 6863-1973 ' Specification for clevis pins with head '.

6.3 The plunger shall be cup type made of oil-treated leather and supported on each face by steel washers not less than 2 mm thick. It shall be secured by a threaded removable steel nut and shall not contact any position of the cylinder base at the bottom stroke.

6.4 The cylinder shall be of sufficiently heavy section brass and shall be suitably attached to the steel base plate.

6.5 The cylinder cap plug shall be of sufficiently heavy section brass having an integral piston rod guide with an effective bearing length of not less than 16 mm. The top of the cylinder cap plug shall have a deeply knurled or serrated outer surface suitable for providing a grip for its removal from the cylinder.

6.6 The check valve body shall be either of brass or of stainless steel and may have a steel ball type of air check. The check valve shall be in a vertical position adjacent to and parallel with the cylinder and shall bear on a seat of the cylinder base with a fibre washer interposed between the valve body and cylinder base. The base plate end of the valve shall have three or more exterior stepped corrugations to grip the inside wall of the rubber hose tightly.

6.7 The rubber hose shall be of either synthetic or natural rubber and conform to IS : 911-1968. It shall be of suitable dimensions and shall withstand a working pressure of 100 kPa. The hose shall be connected to the check valve by means of hose clamps.

6.8 Clevis pins, wherever used shall conform to either IS : 6862-1973 or IS : 6863-1973.

6.9 The spring shall conform to IS : 7906 (Part II)-1975 ' Helical compression springs: Part II Specification for cold coiled springs made from circular section wire and bar '.

6.10 The hose tyre connector shall be either of brass or of stainless steel, of two-piece construction, arranged to permit the tyre valve end to rotate freely and provided with a substantial metal valve-core depressor for automatically unseating the tyre valve. There shall be a hard fibre gasket at the junction of the two members of the connector arranged to prevent loss of air. The hose end of the connector shall have three or more exterior stepped corrugations to grip the inside wall of the hose.

7. Requirements

7.1 The inflator shall be easily operable by a force of 500 N (approx) applied vertically from a distance of 175 to 180 mm by foot.

7.2 The angle between the horizontal line and the line joining the lever pivot with the face of the foot plate shall be between 55° and 65°.

7.3 The inflator shall be capable of resisting shocks.

7.4 A provision shall be made for the fitment of the pressure gauge to the inflator and this shall be capable of being suitably plugged in when not in use.

7.5 A satisfactory arrangement shall be made for the lubrication of the moving parts.

8. Finish — The inflators shall be neatly finished and shall be free from unevenness, flaws, cracks and other defects.

9. Accessories and Fitments — An appropriate pressure gauge may be provided along with each inflator.

10. Marking

10.1 The foot tyre inflators shall be stamped with manufacturer's name or trade-mark and the type. The inflators may also be marked with the year of manufacture.

10.2 *ISI Certification Marking* — Details available with the Indian Standards Institution.

11. Tests

11.1 *Drop Test* — The inflator unit shall be dropped 3 times from a height of 1 metre on to a hard concrete surface so as to strike the base. After this test there shall be no cracks in the body of the inflator unit.

11.2 *Leakage Test* — The inflator skirt, rubber hose and fittings shall be immersed in water and compressed air at a pressure of 700 kPa in case of truck type and 530 kPa in case of car type inflators shall be passed through them. No part shall show any leakage.

11.3 *Displacement Test* — The inflator shall be capable of developing a pressure of 700 kPa in case of truck type and 530 kPa in case of car type by the application of normal force on the inflator pedal by an average man.

11.4 *Performance Test* — The inflator shall be able to build up the specified pressure with the number of strokes prescribed below:

Type	*Tyre Size*	*Number of Strokes*	*Pressure Built up* kPa
Car type	7·00—15	1 750	520
Truck type	9·00—20	1 750	550

EXPLANATORY NOTE

The units of pressure given in this standard are kPa. The relationship between SI units and technical metric units is given below:

$$1 \text{ kPa} \simeq 0{\cdot}01 \text{ kgf/cm}^2$$

In the preparation of this standard, assistance has been derived from the following standards:

JIS D 8001-1955 Tyre pump for automobile. Japanese Standards Association.

XX-P-746 D-1975 Pump, inflating, manual (for rubber tyres). US Federal Supply Service.

Printed at Neelkamal Printers, Delhi, India