

Specification for

Tyre pressure gauges —

Part 3: Inflation gauges for road vehicles

Co-operating organizations

The Instrument Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

British Calibration Service	HEVAC Association
British Electrical and Allied Manufacturers' Association	Institution of Mechanical Engineers*
British Industrial Measuring and Control Apparatus Manufacturers' Association*	Institute of Measurement and Control*
British Mechanical Engineering Confederation*	Institution of Chemical Engineers
British Nautical Instrument Trade Association	Institution of Electrical Engineers*
British Railways Board*	Institution of Heating and Ventilating Engineers
British Steel Industry	Institution of Production Engineers
Council of British Manufacturers of Petroleum Equipment	Meteorological Office
Electrical Research Association	Ministry of Defence (Army)
Electricity Council, The Central Electricity Generating Board, and the area Boards in England and Wales*	Ministry of Defence (Navy)*
Electronic Engineering Association	Ministry of Defence (Air Force)
Engineering Equipment Users' Association	National Coal Board
Gauge and Tool Makers' Association	National Physical Laboratory (Department of Trade and Industry)
	Oil Companies Materials Association*
	Scientific Instrument Manufacturers' Association
	SIRA Institute

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this standard:

Associated Offices Technical Committee	Motor Agents Association Limited
Automobile Association	Royal Automobile Club
British Pressure Gauge Manufacturers' Association	Scientific Instrument Manufacturers Association
Department of Employment and Productivity	Society of Motor Manufacturers and Traders Limited
Gas Council	Tyre Manufacturers Conference (Service Committee)
Hydraulic Association	Water-Tube Boilermakers' Association
Institution of Gas Engineers	One individual manufacturer
Institute of Marine Engineers	Three individual experts
Institute of Weights and Measures Administration	

This British Standard, having been approved by the Instrument Industry Standards Committee, was published under the authority of the Executive Board on 28 July, 1972

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Committee reference JNE/6, JNE/6/A
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Foreword

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, which may be purchased from BSI Sales Department. It may also be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

BS 21, *Pipe threads.*

BS 1133, *Packaging code.*

BS 1780, *Bourdon tube pressure and vacuum gauges.*

BS 1780-1, *Imperial units.*

BS 1780-2, *Metric units.*

BS 3693, *Recommendations for the design of scales and indexes.*

BS 3693-1, *Instruments of bold presentation and for rapid reading.*

BS AU50, *Tyre and wheel data.*

BS AU50-3, *Valves.*

This British Standard for inflation gauges for road vehicles has been prepared under the authority of the Instrument Industry Standards Committee. It is a part of a standard dealing with various types of tyre pressure gauges. Parts 1 and 2 deal with portable gauges for motorists' personal use.

In preparing this standard, particular consideration has been given to the choice of metric units for expressing pressure, especially with regard to the marking of scales of pressure gauges. Of the two metric units, bar¹⁾ and kilonewton per square metre, the former is more widely used at the present time. The standard has accordingly been issued in terms of the bar, but does not preclude the use, if so desired, of the kilonewton per square metre. The question of the unit to be preferred will be reviewed in the light of subsequent international agreements.

NOTE 1 For export purposes it is recognized that it may be necessary to use metric technical units, i.e. pressure measurements in units of kgf/cm² and provision is accordingly made for this.

NOTE 2 Information concerning units is given in BS 350, "Conversion factors and tables", and BS 3763, "The International System of units (SI)".

NOTE 3 Attention is drawn to 10, Tyre connectors.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ 1 bar = 10⁵ N/m² = 100 kN/m² = 1.02 kgf/cm² = 14.5 lbf/in².

1 Scope

This British Standard covers dial and indicating plunger type tyre inflation gauges for road vehicles, calibrated in metric units and imperial units. The standard specifies accuracy requirements and procedures for testing.

The values measured are gauge, i.e. the difference between the pressure inside the tyre and atmospheric pressure. All references apply to indicating pressure gauges utilizing pressure sensitive devices of the Bourdon tube (dial) or indicating plunger type.

NOTE The titles of the British Standards referred to in this standard are listed on page ii.

2 Definitions

For the purposes of this Part of this British Standard the following definitions apply:

2.1

inflation gauge

a gauge which is an integral part of an apparatus inflating tyres, and which measures the pressure inside the tyre before and after inflation

2.2

open end tyre connector

a connector between the air line of the inflating apparatus and the valve stem of the tyre, allowing free passage of air whether engaged with a valve stem or not

2.3

closed end tyre connector

a connector between the air line of the inflating apparatus and the valve stem of the tyre, allowing free passage of air only when engaged with a valve stem

3 Classification

Inflation gauges shall be classified as follows:

- | | | |
|---------|---|--|
| Group A | Dial type used with hand or foot pumps (Figure 1) | } for cars and light commercial vehicles |
| Group B | Dial type used with engine pumping (Figure 2) | |
| Group C | Dial and indicating plunger types with compressed air supply and manual controls (Figure 3) | |
| Group D | Dial type with compressed air supply and automatic control (Figure 4). | |

4 Construction of gauges used with hand or foot pumps (Group A)

The gauge shall be of the Bourdon tube dial type, of nominal size between 40 mm and 100 mm, with numerals at least 1.5 mm high relating to major scale marks.

The gauge shall be attached to the flexible lead of a hand or foot pump or any other manually operated air pump so constructed as to enable an operator to read the gauge from the operating position of the pump. The flexible lead shall be fitted with an open end tyre connector.

On connection of the pump to the tyre valve, the gauge shall instantly register tyre pressure. During inflation of the tyre, the pressure gauge chamber shall be protected from damaging fluctuations of the pressure strokes of the pump. The gauge shall register tyre pressure between strokes of the pump. The pump shall be fitted with a non-return valve to retain air discharged from the pump in the flexible lead at the end of each stroke.

5 Construction of gauges used with engine pumping (Group B)

The gauge shall be of the Bourdon tube dial type, of nominal size between 40 mm and 100 mm, with numerals at least 1.5 mm high relating to major scale marks.

The gauge shall be attached to the flexible lead of an engine operated air pump, and the flexible lead shall be fitted with an open end tyre connector. The air pump shall be constructed for attachment in a spark plug hole of a petrol engine. It shall consist of a valve chamber complete with inlet valve. On connection of the pump to the tyre valve, the gauge shall instantly register tyre pressure. During inflation of the tyre the pressure gauge chamber shall be protected from damaging fluctuations of the pressure strokes of the pump. The gauge shall register pressure between pressure strokes of the pump. The pump shall be fitted with a non-return valve to retain air discharged from the pump in the flexible lead at the end of each stroke.

6 Construction of gauges used with compressed air supply and manual controls (Group C)

6.1 Group C gauges. The gauge shall be connected to an air line control mechanism having an inlet for connection to a source of compressed air. The mechanism shall be attached to a flexible lead having an open end tyre connector. The air line control mechanism shall be capable of operating from a supply pressure of 50 % more than maximum gauge reading.