

INTERNATIONAL STANDARD

ISO
7440-2

Second edition
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Road vehicles — Fuel injection equipment testing —

Part 2: Orifice plate flow-measurement

*Véhicules routiers — Essai des équipements d'injection de
combustible —*

Partie 2: Mesurage du débit des pastilles à trou



reference number
ISO 7440-2:1991(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7440-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Sub-Committee SC 7, *Injection equipment and filters for use on road vehicles*.

This second edition cancels and replaces the first edition (ISO 7440-2:1985), of which it constitutes a complete revision.

ISO 7440 consists of the following parts, under the general title *Road vehicles — Fuel injection equipment testing*:

- *Part 1: Calibrating nozzle and holder assemblies*
- *Part 2: Orifice plate flow-measurement*

Annexes A and B of this part of ISO 7440 are for information only.

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Road vehicles — Fuel injection equipment testing —

Part 2: Orifice plate flow-measurement

1 Scope

This part of ISO 7440 specifies the flow-measuring system, including the fixture, to be used for flow-testing the single hole orifice plates used in an orifice plate type nozzle and holder assembly (described in ISO 7440-1) which are intended for testing and setting diesel fuel injection pumps on test benches.

The flow-measuring system and fixture described in this part of ISO 7440 ensure accurate flow-testing of the entire range of orifices from 0,4 mm to 0,8 mm diameter as specified in ISO 7440-1. It is intended primarily for use by the manufacturers of single hole orifice plates.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 7440. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7440 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4113:1988, *Road vehicles — Calibration fluid for diesel injection equipment*.

ISO 7440-1:1991, *Road vehicles — Fuel injection equipment testing — Part 1: Calibrating nozzle and holder assemblies*.

3 Orifice plate flow-measuring system

3.1 General description

Figure 1 shows an orifice plate flow-measuring system comprising:

- a) fluid supply circuit and flow-measuring device (an example is shown in annex A);
- b) orifice plate holding fixture;
- c) flow overcheck device (optional) [This device is for periodic overchecking of the accuracy of the primary flow-measuring device in a) and is specified in annex B.]

The system shall be designed and constructed with particular attention being given to the problems associated with fluid evaporation, contamination, aeration and instability of pressure and temperature.

Flow values obtained by alternative systems shall require correlation with values determined using the system shown in figure 1.

3.2 Orifice plate holding fixture

The functionally critical details and dimensions of the fixture are shown in figure 2. Dimensions not specified and construction techniques are left to the discretion of the manufacturer of the fixture, but shall be such that the fixture has unrestricted and undisturbed flow.