
Diesel engines — Screw-in injection nozzle holders, types 20, 21, 21.1 and 27 for pintle nozzle size “S”, type “B”

Moteurs diesels — Porte-injecteurs vissés des types 20, 21, 21.1 et 27, pour injecteur à téton de taille «S» et de type «B»



Foreword

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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 7026 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 7, *Injection equipment and filters for use on road vehicles*.

This third edition cancels and replaces the second edition (ISO 7026:1990), which has been revised to include injection nozzle holders of type 21.1.

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Diesel engines — Screw-in injection nozzle holders, types 20, 21, 21.1 and 27 for pintle nozzle size “S”, type “B”

1 Scope

This International Standard specifies dimensional requirements for the mounting of injection nozzle holders in compression-ignition (diesel) engines.

The location of the fuel inlet and leak-off connections are not defined since they vary according to the particular application.

This International Standard applies to screw-in injection nozzle holders of types 20, 21, 21.1 and 27.

These nozzle holders are used with the pintle nozzle size “S”, type “B”, specified in ISO 2697¹⁾.

2 Dimensions and tolerances

2.1 Nozzle holders without heat shield

2.1.1 Nozzle holder, type 20, “long”

Injection nozzle holders of type 20 with nozzle protrusion of $1 \text{ mm} \pm 0,2 \text{ mm}$ shall be as shown in figure 1.

2.1.2 Nozzle holder, types 21 and 21.1, “short”

Injection nozzle holders of type 21 and type 21.1 with nozzle protrusion of $13 \text{ mm} \pm 0,2 \text{ mm}$ shall be as shown in figure 2.

2.2 Nozzle holder with integral heat shield, type 27

Injection nozzle holders of type 27 with heat shield protrusion of $14,1 \text{ mm} \pm 0,2 \text{ mm}$ shall be as shown in figure 3.

3 Other specifications

Dimensions and requirements not given in this International Standard are left to the discretion of the manufacturer.

1) ISO 2697:1974, *Road vehicles — Fuels injection nozzles — Size “S”*.

Technical drawing of a hexagonal bolt and nut assembly. The bolt has a hexagonal head with a maximum width across flats of 26.67 mm and a maximum width across flats of 21.4 mm. The head height is 8.5 mm. The bolt shank has a diameter of 14 mm and a length of 20 mm. The nut has a height of 15 mm and a width across flats of 26.5 mm. The drawing includes surface finish requirements for various surfaces, indicated by symbols and values.

Dimensions and Tolerances:

- Head width across flats: $\phi 26,67 \text{ max.}$
- Head width across flats: $\phi 21,4 \text{ h12}$
- Head height: 8,5 min.
- Shank diameter: $\phi 14 \text{ c11}$
- Shank length: $\phi 20 \text{ h11}$
- Nut height: 15 min.
- Nut width across flats: 26,5 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$
- Face B: 1 $\pm 0,2$

Surface Finish Requirements:

- Top surface of head: $0,1 \text{ (M) A (M)}$
- Side surface of head: $\phi 0,2 \text{ (M) A (M)}$
- Shank surface: $\phi 0,1 \text{ (M) A (M)}$

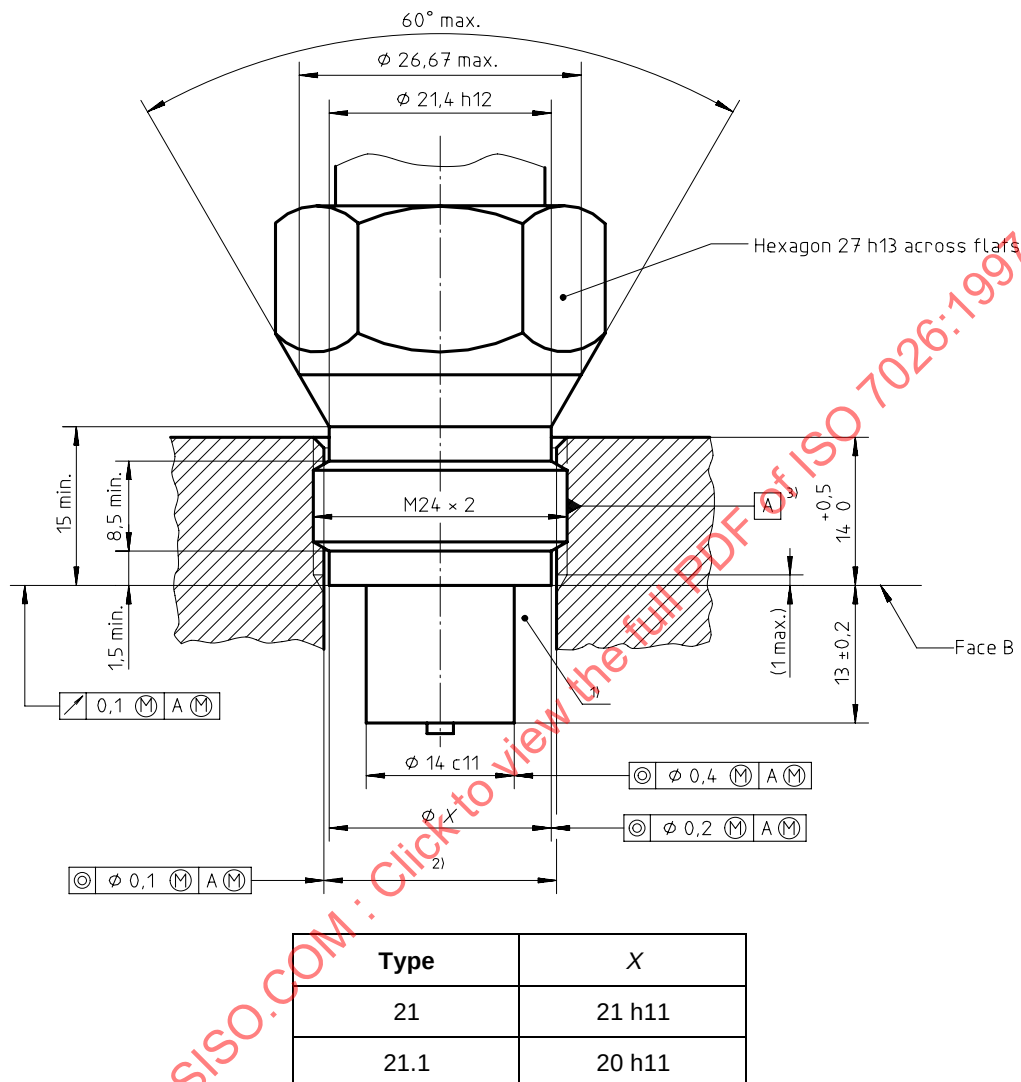
Other features:

- Hexagon 27 h13 across flats
- M24 x 2
- Face B

- 1) The manufacturer shall design an appropriate heat shield or washer such that the distance of face B from the upper face of the cylinder head is achieved.
- 2) The determination of this diameter in the cylinder head is left to the manufacturer's choice. For this purpose, the maximum value for the nozzle retaining nut which is given as a result of the maximum material principle (M) and the maximum tolerance value of the cylinder head hole shall be taken into account. The clearance shall be kept to a minimum to avoid unnecessary heating of the nozzle.
- 3) Datum feature for the datum letter A is the pitch diameter; this refers to the nozzle holder thread as well as to the cylinder head thread.

Figure 1 — Screw-in injection nozzle holder, type 20

Dimensions in millimetres



- 1) The manufacturer shall design an appropriate heat shield or washer such that the distance of face B from the upper face of the cylinder head is achieved.
- 2) The determination of this diameter in the cylinder head is left to the manufacturer's choice. For this purpose, the maximum value for the nozzle retaining nut which is given as a result of the maximum material principle $\textcircled{M}$ and the maximum tolerance value of the cylinder head hole shall be taken into account. The clearance shall be kept to a minimum to avoid unnecessary heating of the nozzle.
- 3) Datum feature for the datum letter A is the pitch diameter; this refers to the nozzle holder thread as well as to the cylinder head thread.

Figure 2 — Screw-in injection nozzle holder, types 21 and 21.1

Technical drawing of a bolt and nut assembly. The drawing shows a cross-section of the assembly with various dimensions and tolerances.

Dimensions and Tolerances:

- Bolt Head:**
 - Top view: $\phi 26,67 \text{ max.}$ (outer diameter), $\phi 21,4 \text{ h12}$ (inner diameter).
 - Side view: 60° max. (head angle).
 - Hexagon 27 h13 across flats.
- Nut:**
 - Thread: M24 x 2.
 - Height: 14,1 $\pm 0,2$.
 - Top view: $\phi 17,4 \text{ h11}$ (inner diameter), $\phi 21,8 \text{ h11}$ (outer diameter).
- Sealing Washer:**
 - Thickness: 1,5 min.
 - Outer diameter: $\phi 17,4 \text{ h11}$.
 - Inner diameter: $\phi 21,8 \text{ h11}$.
- Assembly:**
 - Face B: The surface of the nut.
 - Sealing washer: The washer between the nut and the part.

Surface Finish and Material Requirements:

- Surface finish: $R_a 0,05$ (top surface of the nut).
- Material: 0,1 M A M (bottom surface of the nut).

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- 1) With commercial tolerances (before compression).
- 2) The determination of this diameter in the cylinder head is left to the manufacturer's choice. For this purpose, the maximum value for the heat shield which is given as a result of the maximum material principle (M) and the maximum tolerance value of the cylinder head hole shall be taken into account. The clearance shall be kept to a minimum to avoid unnecessary heating of the nozzle.
- 3) Datum feature for the datum letter A is the pitch diameter; this refers to the nozzle holder thread as well as to the cylinder head thread.

Figure 3 — Screw-in injection nozzle holder, type 27