



International Standard

ISO 7299-1

Diesel engines — End-mounting flanges for pumps —

Part 1: Fuel injection pumps

Moteurs diesels — Brides de montage des pompes —

Partie 1: Pompes d'injection de carburant

**Second edition
2024-07**

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 34, *Propulsion, powertrain and powertrain fluids*.

This second edition cancels and replaces the first edition (ISO 7299-1:2007), which has been technically revised.

The main changes are as follows:

- a further geometry of end-mounting flange (type 7) has been added to the already existing geometries.

A list of all parts in the ISO 7299 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Diesel engines for road vehicles usually have fuel injection systems. Such systems have an injection pump or high-pressure supply pump to deliver highly pressurized fuel. To adapt the pump to the engine, it is recommended to use one of the mounting flanges for the pump end described in this document. This provides a proper geometry to the engine side for mounting the pump.

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Diesel engines — End-mounting flanges for pumps —

Part 1: Fuel injection pumps

1 Scope

This document specifies dimensional requirements for nine types of end-mounting flanges for fuel injection pumps (rotary, distributor and in-line fuel injection pumps) for use in diesel (compression-ignition) engines.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

4 Dimensions and tolerances

4.1 General

Engine manufacturers should use the tolerance H8 for the inner diameter of the mounting bore at the engine for the injection pump.

If functionally necessary, the tolerance g8 on the pump spigot diameter ($\varnothing d_1$ in the figures) may be replaced by f7. The tolerance H8 on the inner diameter of the mounting bore of the engine for the injection pump may also be replaced by H7, upon the agreement of the supplier and the engine manufacturer.

The diameter d_2 in the figures and tables corresponds to the diameter d specified in ISO 6519.

NOTE The flange configuration can be rotated relative to the pump housing.

4.2.1 Type 1 end-mounting flange

Dimensions in millimetres



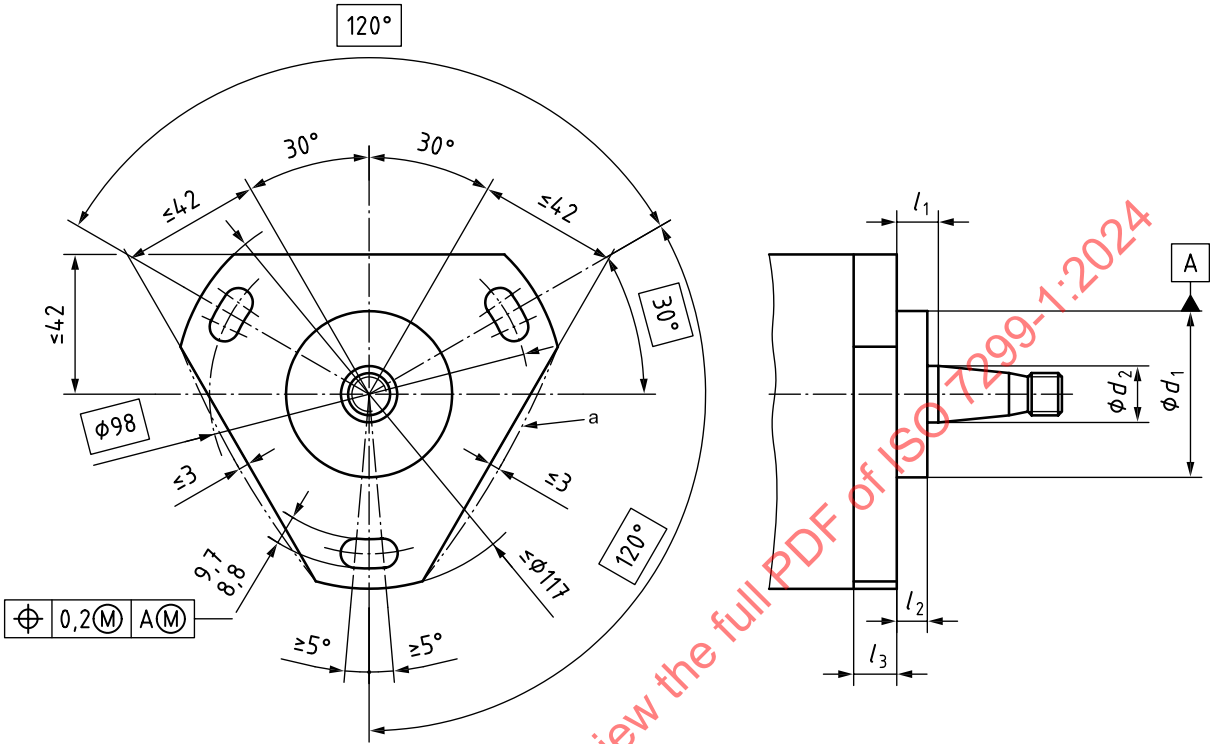
Dimensions in millimetres

2

4.2.2 Type 2 end-mounting flange

See [Figure 2](#) and [Table 2](#) for an example of a typical Type 2 end-mounting flange with dimensions.

Dimensions in millimetres



Key

a This flange outline is optional.

Figure 2 — Fuel injection pumps — Type 2 end-mounting flange

Table 2 — Fuel injection pumps — Type 2 end-mounting flange

Dimensions in millimetres

d_1 g8	d_2 nom	l_1 $\pm 0,5$	l_2 max	l_3	
				min	max
50	17 or 20	12,5	11	13	16
		17,4	16		
		26	24,5		
68	17 or 20 or 25	12,5	11		
		17,4	16		
		26	24,5		

See [Figure 3](#) and [Table 3](#) for an example of a typical Type 3 end-mounting flange with dimensions.

Technical drawing of a mechanical part, showing a top view and a side view.

Top View:

- Central hole diameter: $\phi 105$
- Four smaller holes (likely for screws) arranged in a circle, each with diameter $\phi 128$.
- Distance between the center of the central hole and the center of one of the smaller holes: 111.8 .
- Distance between the centers of two adjacent smaller holes: 101.8 .
- Angle between the line connecting the center of the central hole to the center of one of the smaller holes and the horizontal centerline: 28° .
- Angle between the line connecting the center of the central hole to the center of one of the smaller holes and the vertical centerline: 5° .
- Overall width of the part: $50 \pm$.
- Overall height of the part: $50 \pm$.
- Surface texture symbol: $\sqrt{0.2} \text{ (M)} \text{ A (M)}$.

Side View:

- Overall height of the part: A .
- Distance from the top surface to the center of the central hole: l_1 .
- Distance from the center of the central hole to the bottom surface: l_2 .
- Distance from the bottom surface to the center of the central hole: l_3 .
- Distance from the center of the central hole to the outer edge of the part: ϕd_1 .
- Distance from the center of the central hole to the outer edge of the part: ϕd_2 .

A red stamp is visible over the side view: **150 7299-1:2024**.

Table 3 — Fuel injection pumps — Type 3 end-mounting flange

d_1 g8	d_2 nom	l_1 $\pm 0,5$	l_2 max	l_3	
				min	max
50 or 68	17 or 20	9,5 ^a	8,2 ^a	13	16
		12,5	11		
		17,4	16		
		26	24,5		
^a Non-preferred value; only for interchangeability with certain types of in-line pumps.					

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4.2.4 Type 4 end-mounting flange

See [Figure 4](#) and [Table 4](#) for an example of a typical Type 4 end-mounting flange with dimensions.

Dimensions in millimetres

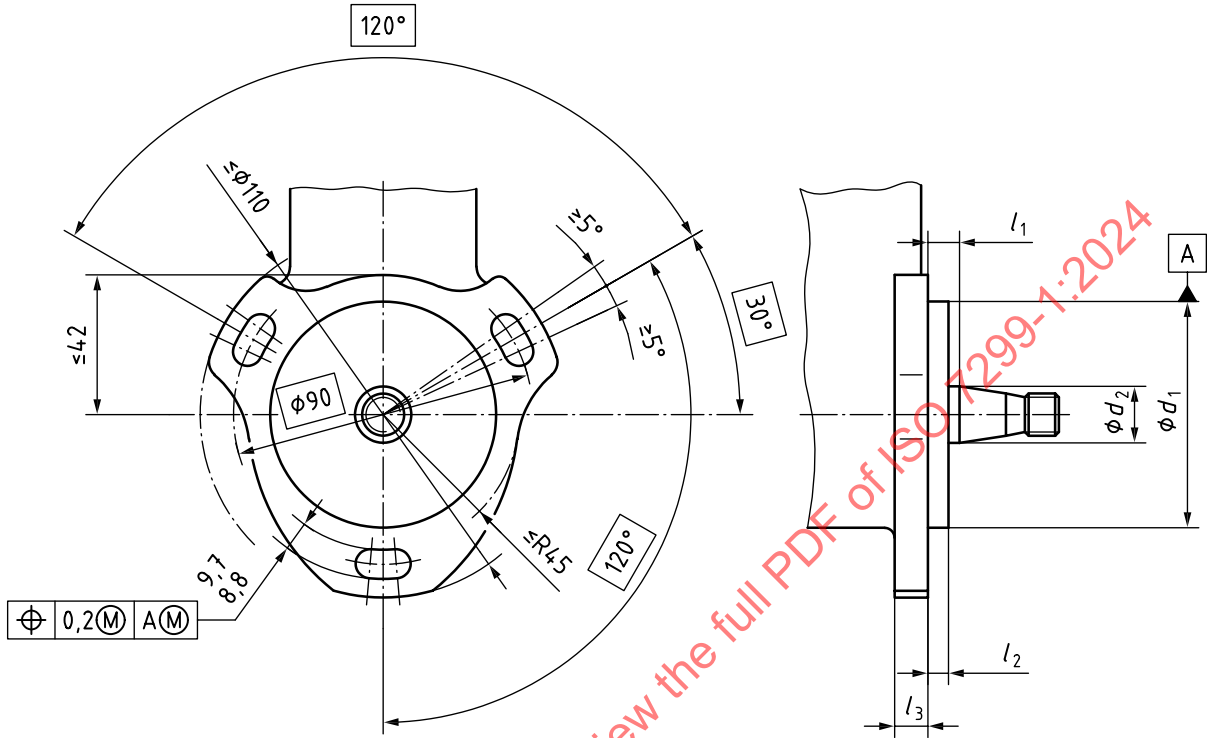


Figure 4 — Fuel injection pumps — Type 4 end-mounting flange

Table 4 — Fuel injection pumps — Type 4 end-mounting flange

Dimensions in millimetres

d_1 g8	d_2 nom	l_1 $\pm 0,5$	l_2 max	l_3	
				min	max
68	17	9,5	8	10	16

4.2.5 Type 5 end-mounting flange

See [Figure 5](#) and [Table 5](#) for an example of a typical Type 5 end-mounting flange with dimensions.

Dimensions in millimetres

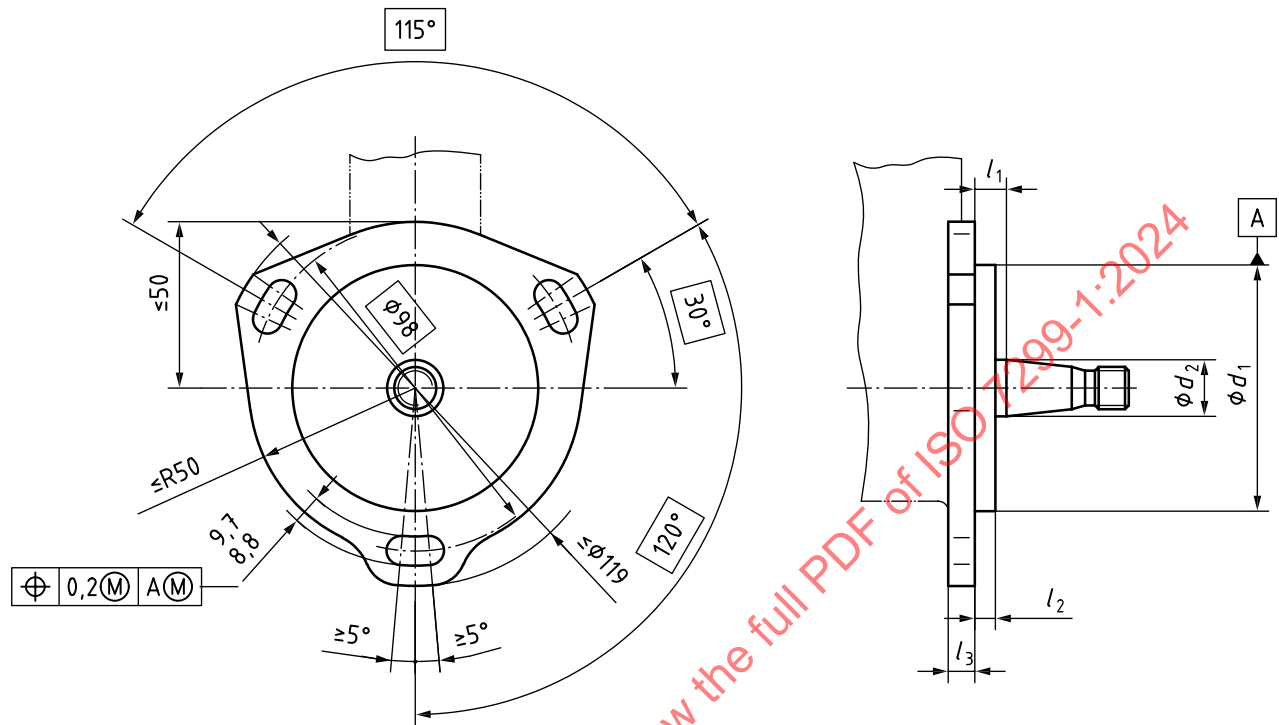


Figure 5 — Fuel injection pumps — Type 5 end-mounting flange

Table 5 — Fuel injection pumps — Type 5 end-mounting flange

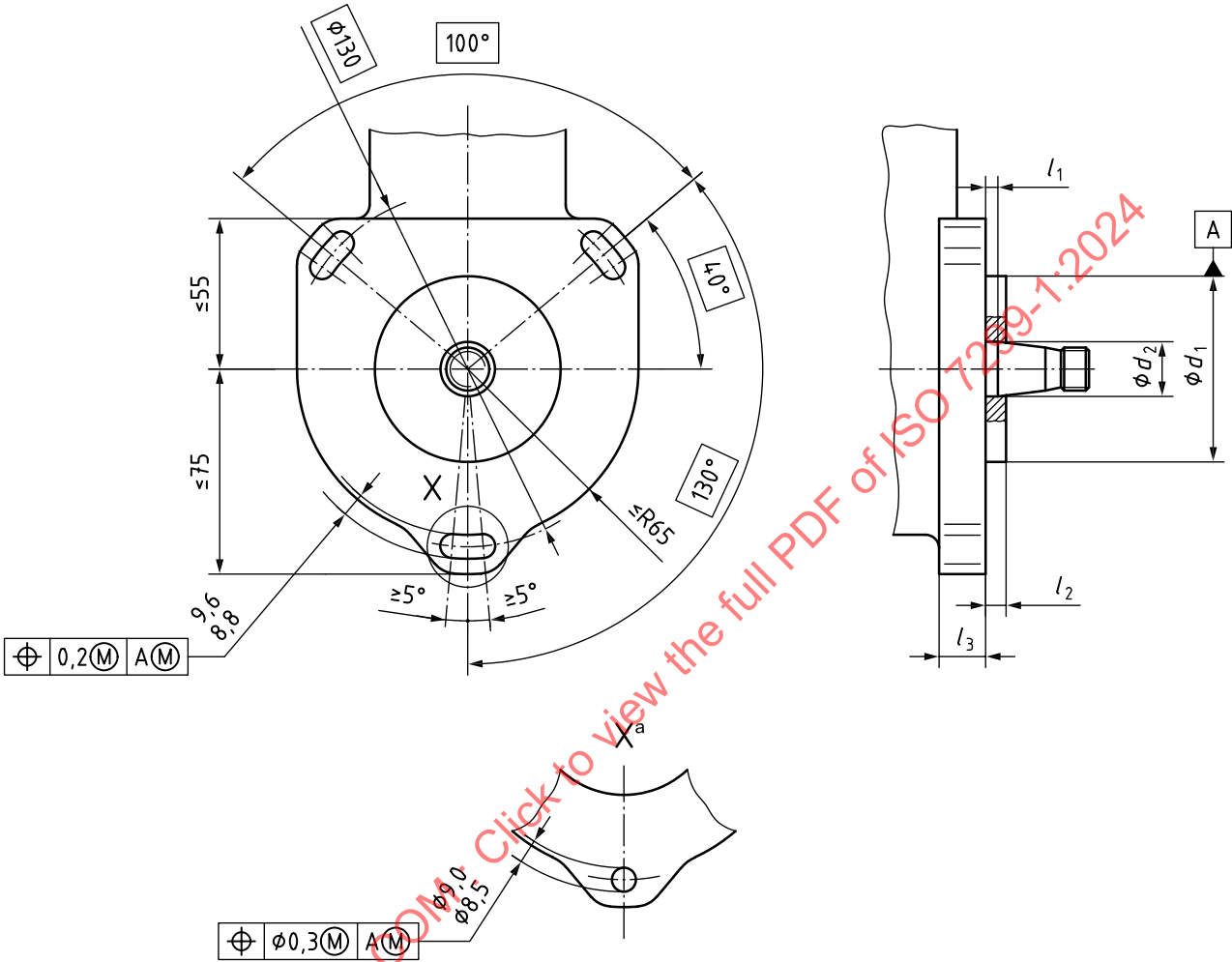
Dimensions in millimetres

d_1 g8	d_2 nom	l_1 $\pm 0,5$	l_2 max	l_3	
				min	max
74 or 76	17	9,5	8	8	10

4.2.6 Type 6 end-mounting flange

See [Figure 6](#) and [Table 6](#) for an example of a typical Type 6 end-mounting flange with dimensions.

Dimensions in millimetres



Key

a This option has three holes

Figure 6 — Fuel injection pumps — Type 6 end-mounting flange

Table 6 — Fuel injection pumps — Type 6 end-mounting flange

Dimensions in millimetres

d_1 g8	d_2 nom	l_1 ±1	l_2 max	l_3	
				min	max
68 or 97 or 112	20 or 22	4,5	7,5	17	18
				24	26

4.2.7 Type 7 end-mounting flange

See [Figure 7](#) and [Table 7](#) for an example of a typical Type 7 end-mounting flange with dimensions.

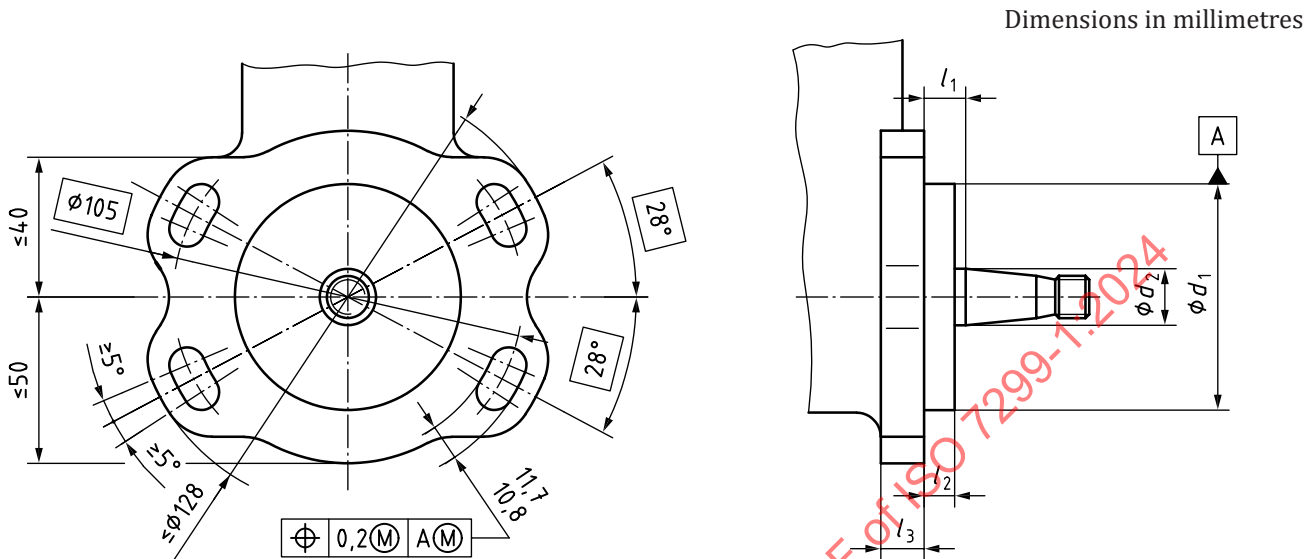


Figure 7 — Fuel injection pumps — Type 7 end-mounting flange

Table 7 — Fuel injection pumps — Type 7 end-mounting flange

Dimensions in millimetres

d_1 g8	d_2 nom	l_1 $\pm 0,5$	l_2 max	l_3	
				min	max
68 or 85	17 or 20 or 22 or 25	4,5	8,2	15	18
		9,5	8,2		
		9,8	8,2	12	20
		12,5	11	15	18
		17,4	16		