INTERNATIONAL STANDARD

**ISO 7299-2**

First edition
2009-02-15

# Diesel engines — End-mounting flanges for pumps —

## Part 2: High-pressure supply pumps for common rail fuel injection systems

*Moteurs diesels — Brides de montage des pompes —*

*Partie 2: Pompes d'alimentation à haute pression pour systèmes d'injection de combustible à rampe commune*

Reference number
ISO 7299-2:2009(E)



ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

# 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 7299-2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 7, *Injection equipment and filters for use on road vehicles*.

This first edition of ISO 7299-2, together with ISO 7299-1:2007, cancels and replaces ISO 7299:1996, which has been technically revised.

ISO 7299 consists of the following parts, under the general title *Diesel engines — End-mounting flanges for pumps*:

— *Part 1: Fuel injection pumps*

— *Part 2: High-pressure supply pumps for common rail fuel injection systems*

# Diesel engines — End-mounting flanges for pumps —

# Part 2: High-pressure supply pumps for common rail fuel injection systems

## 1 Scope

This part of ISO 7299 specifies dimensional requirements for seven types of end-mounting flanges of high-pressure supply pumps for common rail fuel injection systems for use in diesel (compression-ignition) engines.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6519, *Diesel engines — Fuel injection pumps — Tapers for shaft ends and hubs*

## 3 Dimensions and tolerances

### 3.1 General

Engine manufacturers should use the tolerance H7 for the female register diameter.

In the figures and tables, except for Figures 2 and 5 and Tables 2 and 5 (shaft end with tang drive), the diameter $d_2$ corresponds to the diameter $d$ specified in ISO 6519.

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

## 3.2 High-pressure supply pumps

### 3.2.1 Type 1 end-mounting flange

See Figure 1 and Table 1.

Dimensions in millimetres

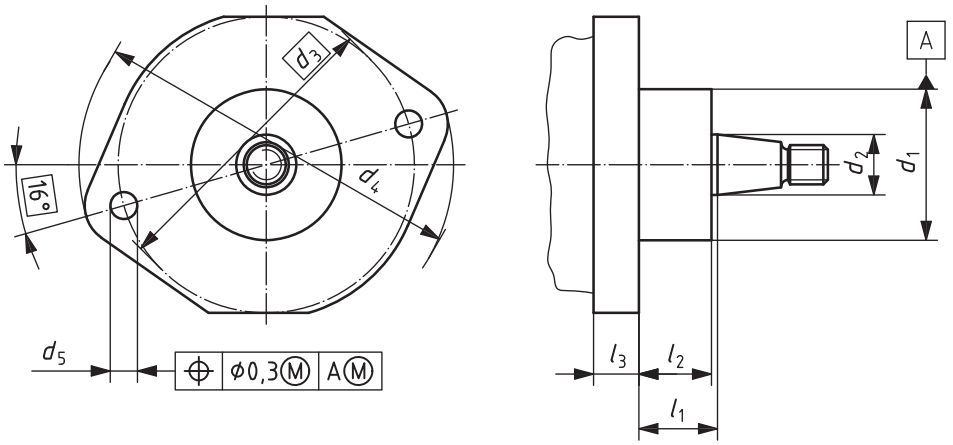



**Figure 1**

**Table 1**

Dimensions in millimetres

| $d_1$ f7 | $d_2$ nom. | $d_3$ nom. | $d_4$ max. | $d_5$ | $l_1$ ± 0,5 | $l_2$ | | $l_3$ nom. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | min. | max. | |
| ∅ 50 | ∅ 20 | ∅ 98 | ∅ 125 | ∅ 8,5 to 9,3 | 26 | 23,5 | 24,5 | 15 |

### 3.2.2 **Type 2 end-mounting flange** (with tang drive)

See Figure 2 and Table 2.

Dimensions in millimetres

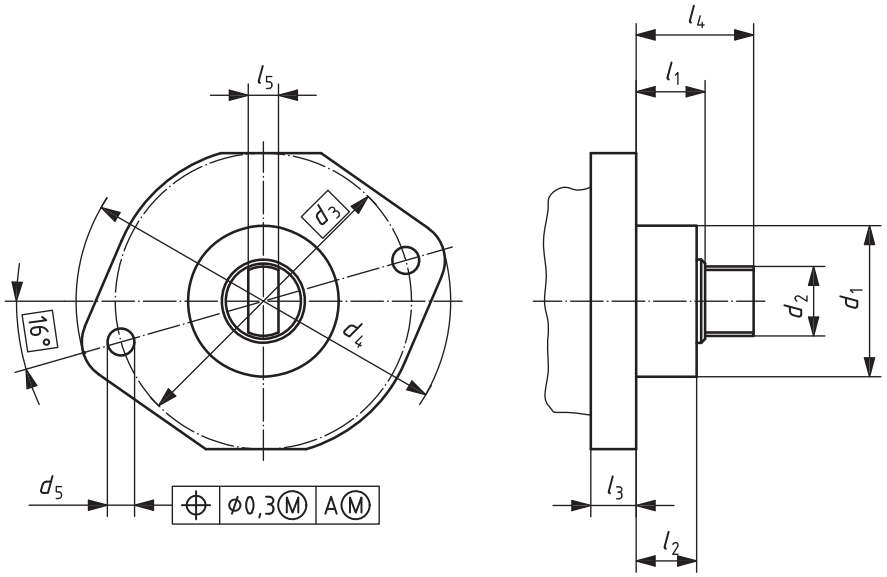



**Figure 2**

**Table 2**

Dimensions in millimetres

| $d_1$ f7 | $d_2$ nom. | $d_3$ nom. | $d_4$ max. | $d_5$ | $l_1$ ± 1 | $l_2$ max. | $l_3$ nom. | $l_4$ ± 1 | $l_5$ f7 |
|---|---|---|---|---|---|---|---|---|---|
| ∅ 50 | ∅ 23 | ∅ 98 | ∅ 125 | ∅ 8,5 to 9,3 | 21,8 | 20,7 | 15 | 38,9 | 10 |

### 3.2.3 Type 3 end-mounting flange

See Figure 3 and Table 3.

Dimensions in millimetres

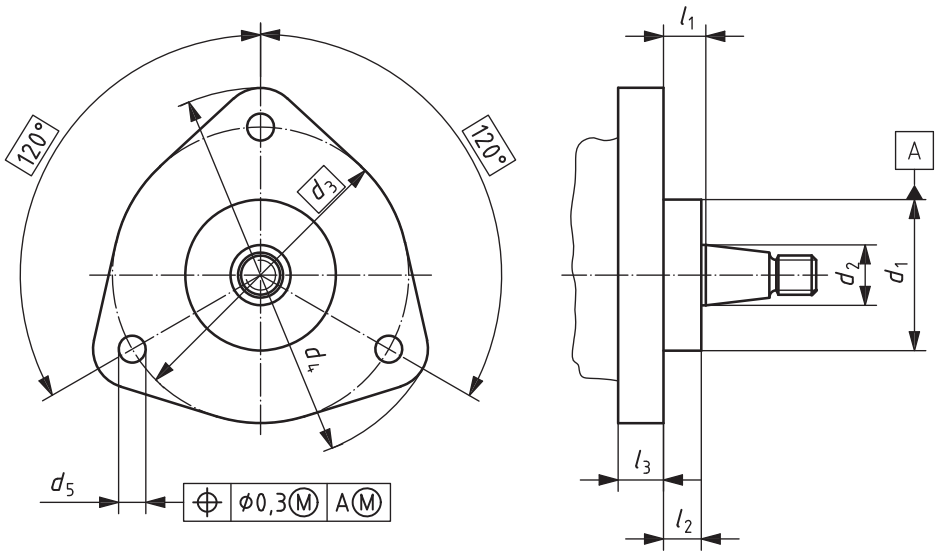



**Figure 3**

**Table 3**

Dimensions in millimetres

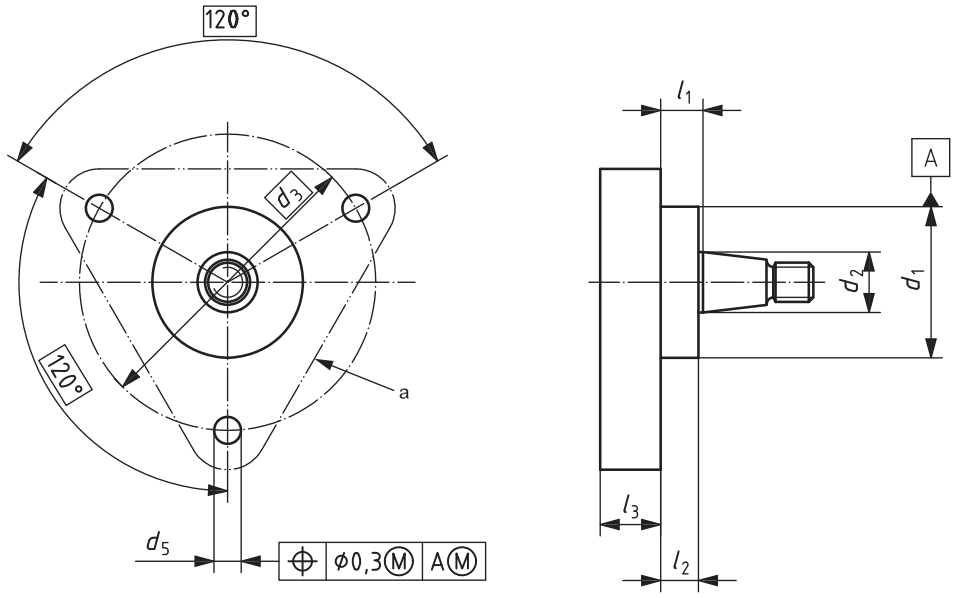
| $d_1$ f7 | $d_2$ nom. | $d_3$ nom. | $d_4$ max. | $d_5$ drilled | $d_5$ threaded [a] | $l_1$ ± 0,5 | $l_2$ min. | $l_2$ max. | $l_3$ nom. |
|---|---|---|---|---|---|---|---|---|---|
| ∅ 50 | ∅ 20 | ∅ 98 | ∅ 125 | ∅ 8,5 to 9,3 | — | 14 | 12 | 13 | 15 |
| ∅ 68 | | ∅ 90 | ∅ 116 | ∅ 8,5 to 9,3 | M8 × 1,25 – 6H | 25,7 | 18 | 24 | 15 or 17 |

[a] Optional.

### 3.2.4 Type 4 end-mounting flange

See Figure 4 and Table 4.

Dimensions in millimetres




[a] This figure shows requirements for the position of the three mounting holes. The actual configuration of the flange depends on design requirements.

**Figure 4**

**Table 4**

Dimensions in millimetres

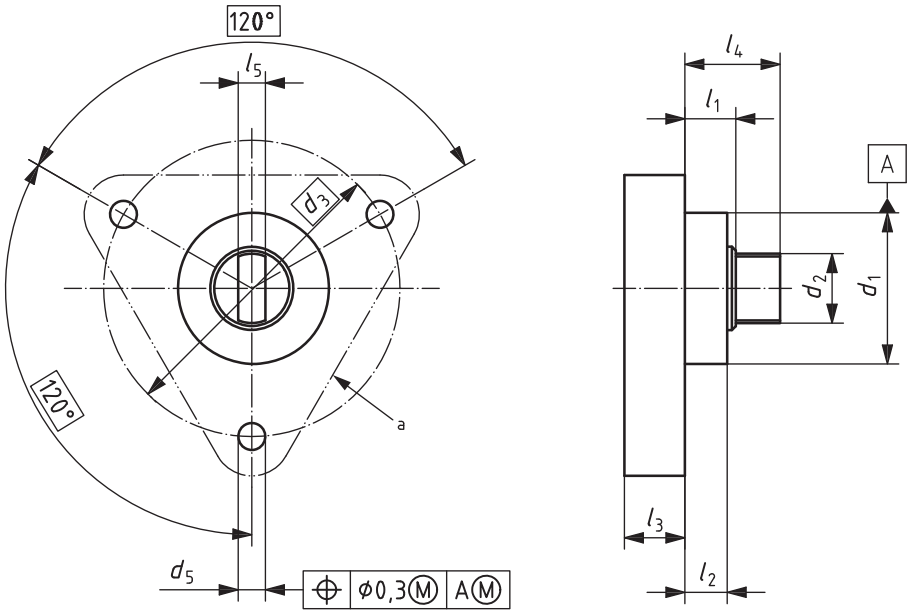
| $d_1$ f7 | $d_2$ nom. | $d_3$ nom. | $d_5$ drilled (nom.) | $d_5$ threaded [a] | $l_1$ nom. | $l_2$ | $l_3$ nom. |
|---|---|---|---|---|---|---|---|
| ∅ 50 or 68 | ∅ 20, 22 or 25 | ∅ 98 | ∅ 8,5 to 9,4 | M8 × 1,25 – 6H | 12 to 14 | 13 max. | 11 to 27 |
| | | | | | 22 to 26,5 | 24,5 max. | |
| ∅ 68 or 80 | ∅ 25 | | | | 12 to 26,5 | 10,2 to 24,5 | |
| ∅ 107 | | ∅ 130 | ∅ 10,5 | | | | |

[a] Optional.

### 3.2.5 **Type 5 end-mounting flange** (with tang drive)

See Figure 5 and Table 5.

Dimensions in millimetres




[a] This figure shows requirements for the position of the three mounting holes. The actual configuration of the flange depends on design requirements.

**Figure 5**

**Table 5**

Dimensions in millimetres

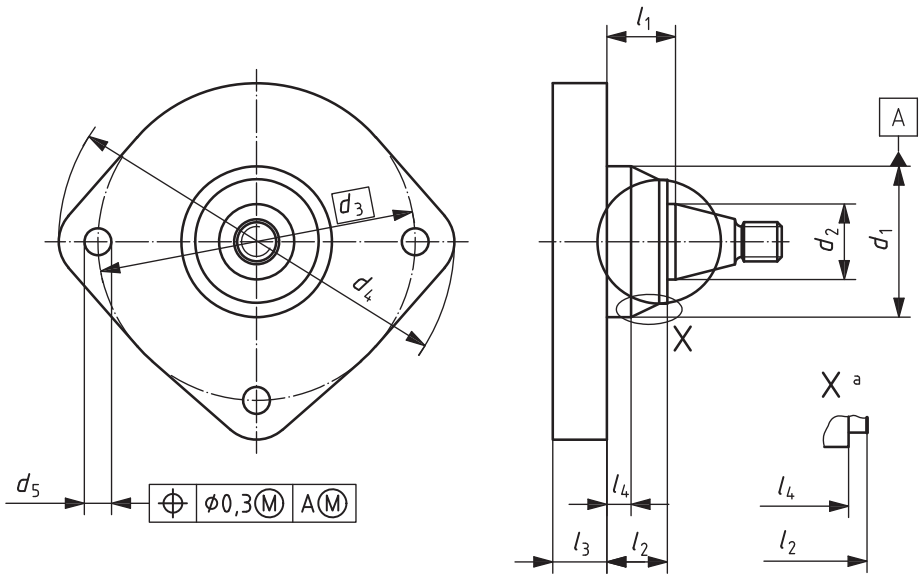
| $d_1$ f7 | $d_2$ nom. | $d_3$ nom. | $d_5$ drilled (nom.) | $d_5$ threaded [a] | $l_1$ nom. | $l_2$ max. | $l_3$ nom. | $l_4$ nom. | $l_5$ f7 |
|---|---|---|---|---|---|---|---|---|---|
| ∅ 50 | ∅ 20 | ∅ 98 | ∅ 9,4 | M6 × 1 – 6H | 16,85 | 14,1 | 19 to 24,5 | 31,5 | 9 |
| | ∅ 20, 22 or 25 | | ∅ 8,5 to 9,4 | M8 × 1,25 – 6H | 21,3 to 23 | 21,1 | | | 8 |
| | | ∅ 82 | ∅ 7,8 | | | | 7,3 | | |

[a] Optional.

### 3.2.6 Type 6 end-mounting flange

See Figure 6 and Table 6.

Dimensions in millimetres




[a] Detail X (optional).

**Figure 6**

**Table 6**

Dimensions in millimetres

| $d_1$ | | $d_2$ nom. | $d_3$ nom. | $d_4$ max. | $d_5$ H13 | $l_1$ ± 0,6 | $l_2$ min. | $l_2$ max. | $l_3$ nom. | $l_4$ min. | $l_4$ max. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ 50 | −0,019<br>−0,065 | ∅ 25 | ∅ 105 | ∅ 131 | ∅ 9 | 21,35 | 19,25 | 20,45 | 17,9 | 6,65 | 8,65 |
| | −0,024<br>−0,070 | | | | | | | | | | |
| | −0,019<br>−0,065 | | | | | 11,05 | 9,25 | 9,85 | | 2,5 | 3,5 |
| | | | | | | 21,35 | | | | | |

### 3.2.7 Type 7 end-mounting flange

See Figure 7 and Table 7.

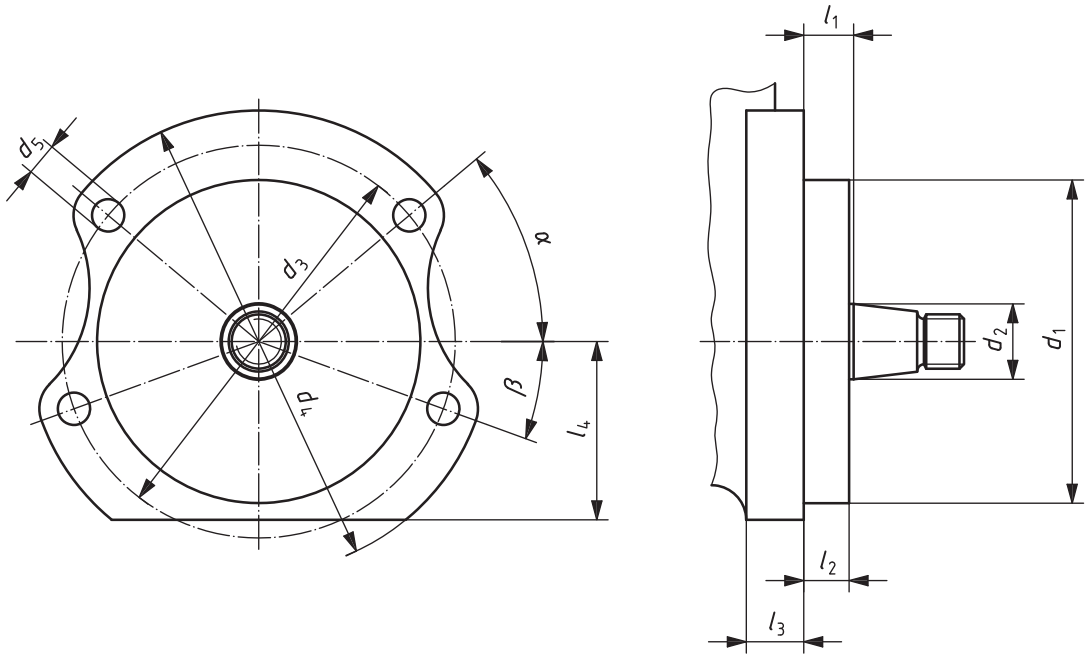



**Figure 7**

**Table 7**

Dimensions in millimetres
Angles in degrees

| $d_1$ f7 | $d_2$ nom. | $d_3$ ± 0,3 | $d_4$ max. | $d_5$ | $l_1$ | $l_2$ min. | $l_2$ max. | $l_3$ nom. | $l_4$ nom. | $\alpha$ ± 0,5 | $\beta$ ± 0,5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ∅ 107 | ∅ 25 | ∅ 130 | ∅ 155,4 | ∅ 10,7 to 10,9 | 16,2 to 16,8 | 14,5 | 15,7 | 19 | 59 | 40 | 20 |
| | ∅ 30 | | | | 13,2 to 13,8 | 10,5 | 12,0 | | | | |
| | ∅ 30 or 35 | | | ∅ 10,5 to 10,8 | 12,9 to 14,2 | 11,4 | 11,8 | 18 | 62 | 45 | 30 |
| | | | | | | | | | | 40 | 20 |
| | ∅ 35 | | | | | | | | 56 | 45 | 30 |

# Bibliography

[1] ISO 261, *ISO general purpose metric screw threads — General plan*

[2] ISO 286-2, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

[3] ISO 965-1, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

**ICS 43.060.40**

Price based on 9 pages