
**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*



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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 documents 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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 7299-2:2009), which has been technically revised.

The main changes compared to the previous edition are as follows:

- three (3) further types of end-mounting flanges (types 8, 9 and 10) are added to the already existing seven (7) types of end-mounting flanges (type 1 to type 7).

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

Modern diesel engines for road vehicles have usually fuel injection systems based on the common rail principle. Such systems have a high-pressure fuel supply pump to supply the rail with highly pressurized fuel. To adapt the high-pressure pump to the engine it is recommended to use one of the mounting flanges for the pump end described in this document.

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Diesel engines — End-mounting flanges for pumps —

Part 2:

High-pressure supply pumps for common rail fuel injection systems

1 Scope

This document specifies dimensional requirements for 10 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

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 terminological 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 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.

4.2 High-pressure supply pumps

4.2.1 Type 1 end-mounting flange

See [Figure 1](#) and [Table 1](#).

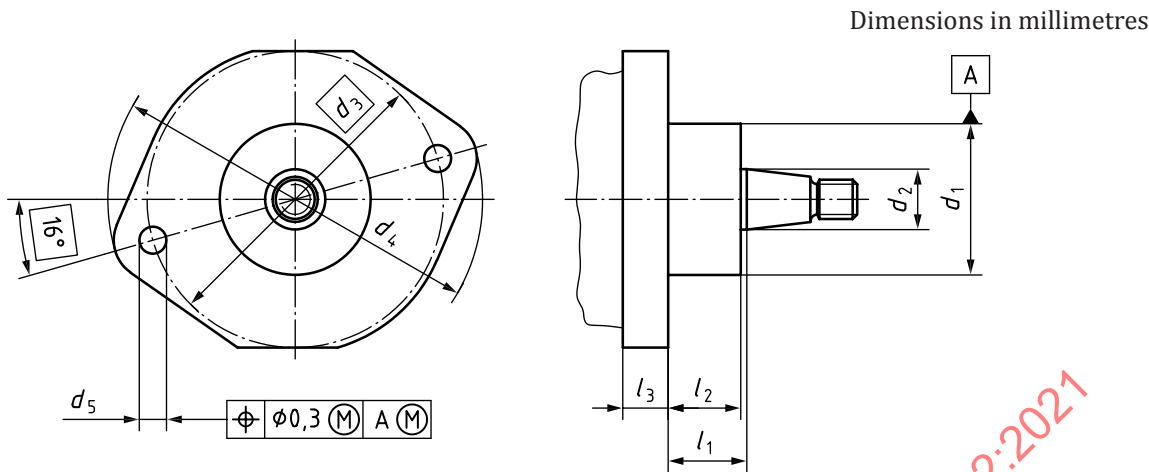


Figure 1 — Type 1 end-mounting flange

Table 1 — Type 1 end-mounting flange dimensions

Dimensions in millimetres

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

4.2.2 Type 2 end-mounting flange (with tang drive)

See [Figure 2](#) and [Table 2](#).

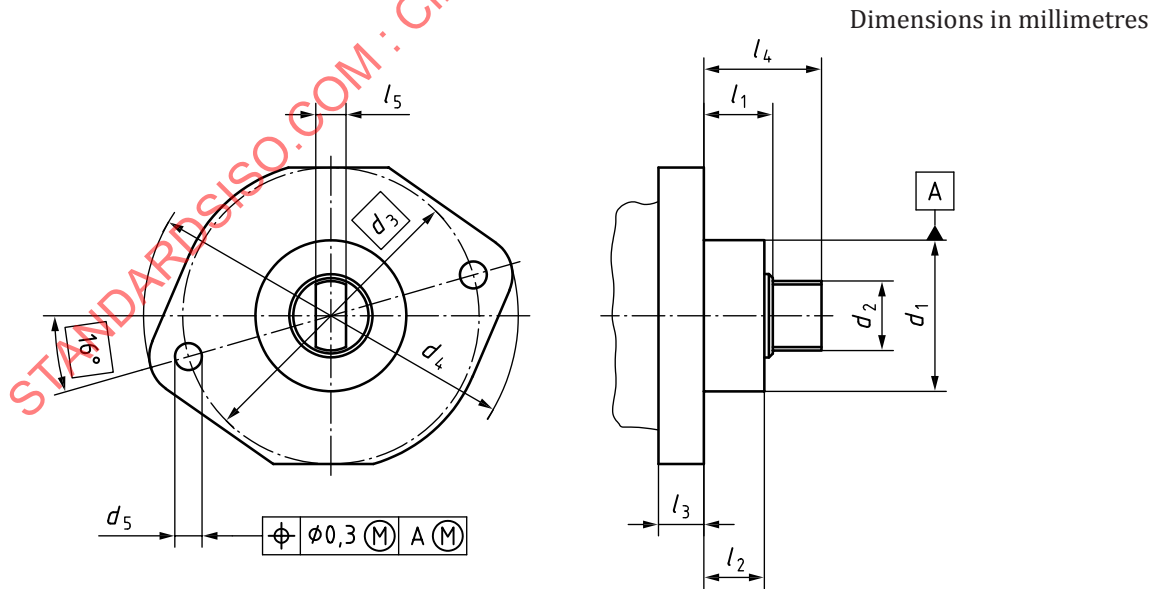
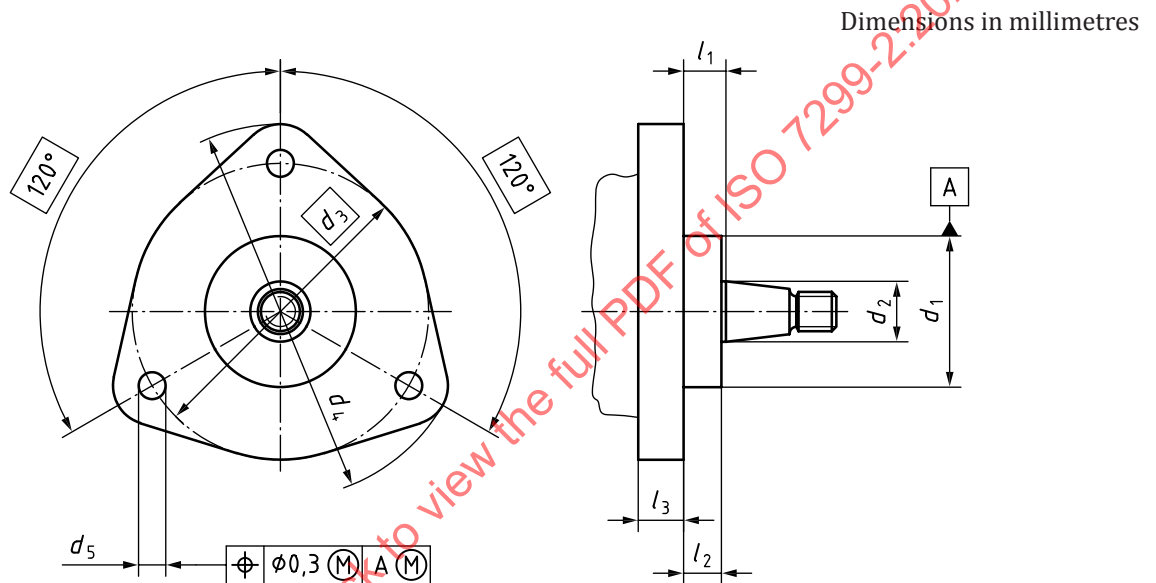


Figure 2 — Type 2 end-mounting flange (with tang drive)

Table 2 — Type 2 end-mounting flange (with tang drive) dimensions

Dimensions in millimetres

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

4.2.3 Type 3 end-mounting flangeSee [Figure 3](#) and [Table 3](#).**Figure 3 — Type 3 end-mounting flange****Table 3 — Type 3 end-mounting flange dimensions**

Dimensions in millimetres

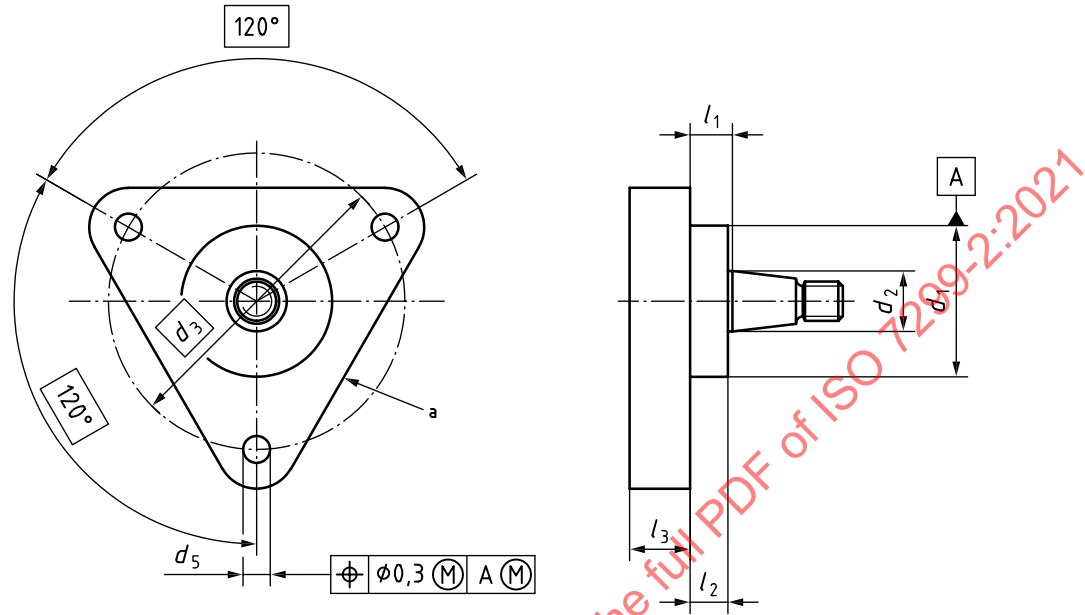
d_1	d_2	d_3	d_4	d_5		l_1	l_2		l_3
				drilled	threaded ^a		min.	max.	
$\emptyset 50$	$\emptyset 20$	$\emptyset 98$	$\emptyset 125$	$\emptyset 8,5$ to $9,3$	—	14	12	13	15
$\emptyset 68$		$\emptyset 90$	$\emptyset 116$	$\emptyset 8,5$ to $9,3$	M8 $\times$ 1,25 – 6H	25,7	18	24	15 or 17

^a Optional.

4.2.4 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 — Type 4 end-mounting flange

Table 4 — Type 4 end-mounting flange dimensions

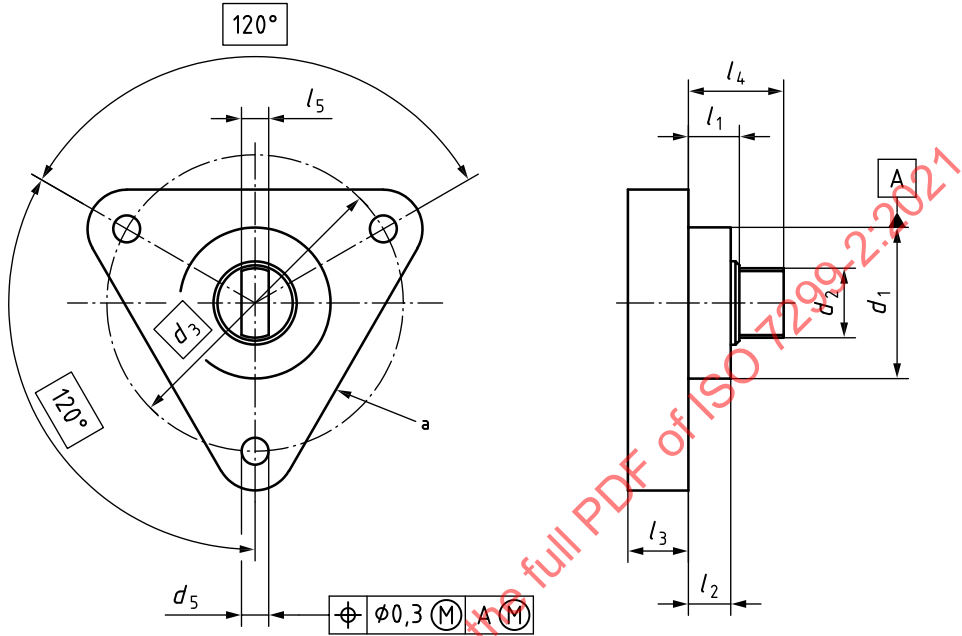
Dimensions in millimetres

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 maximum	11 to 27
∅ 68 or 80	∅ 25				22 to 26,5	24,5 maximum	
∅ 107		12 to 26,5	10,2 to 24,5				
^a Optional.							

4.2.5 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 — Type 5 end-mounting flange (with tang drive)

Table 5 — Type 5 end-mounting flange (with tang drive) dimensions

Dimensions in millimetres

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

4.2.6 Type 6 end-mounting flange

See Figure 6 and Table 6.

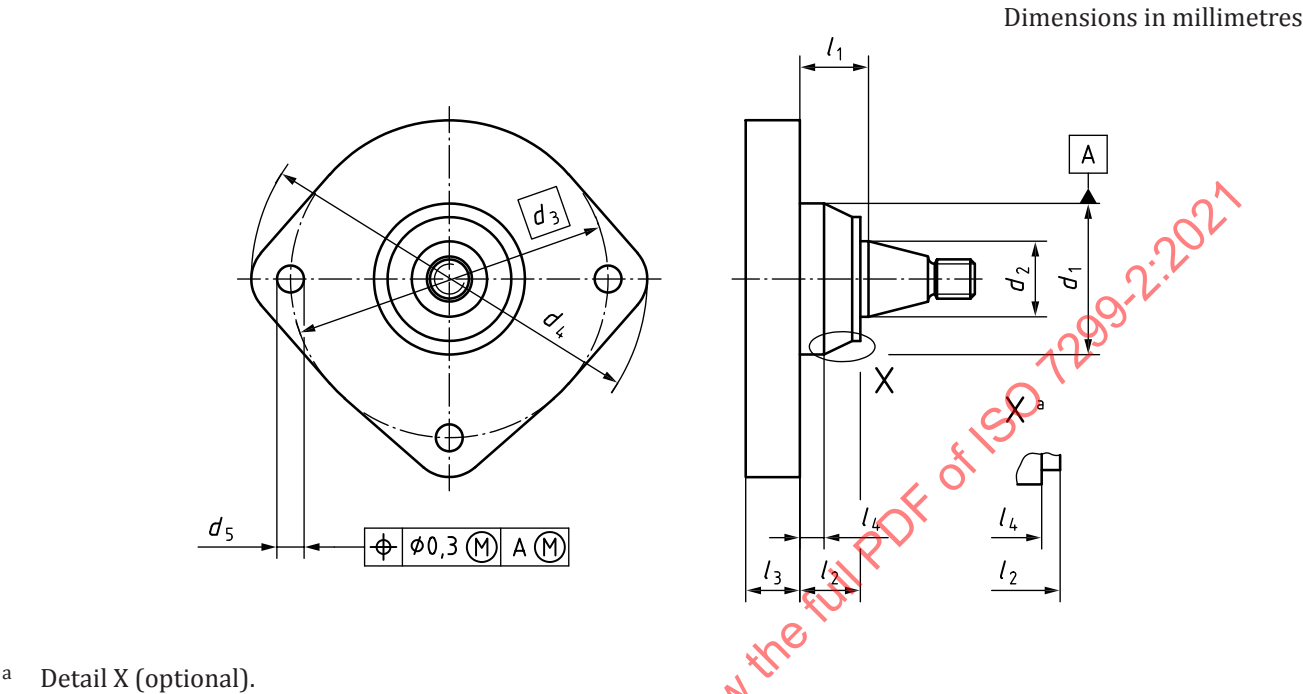


Figure 6 — Type 6 end-mounting flange

Table 6 — Type 6 end-mounting flange dimensions

Dimensions in millimetres

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

4.2.7 Type 7 end-mounting flange

See [Figure 7](#) and [Table 7](#).

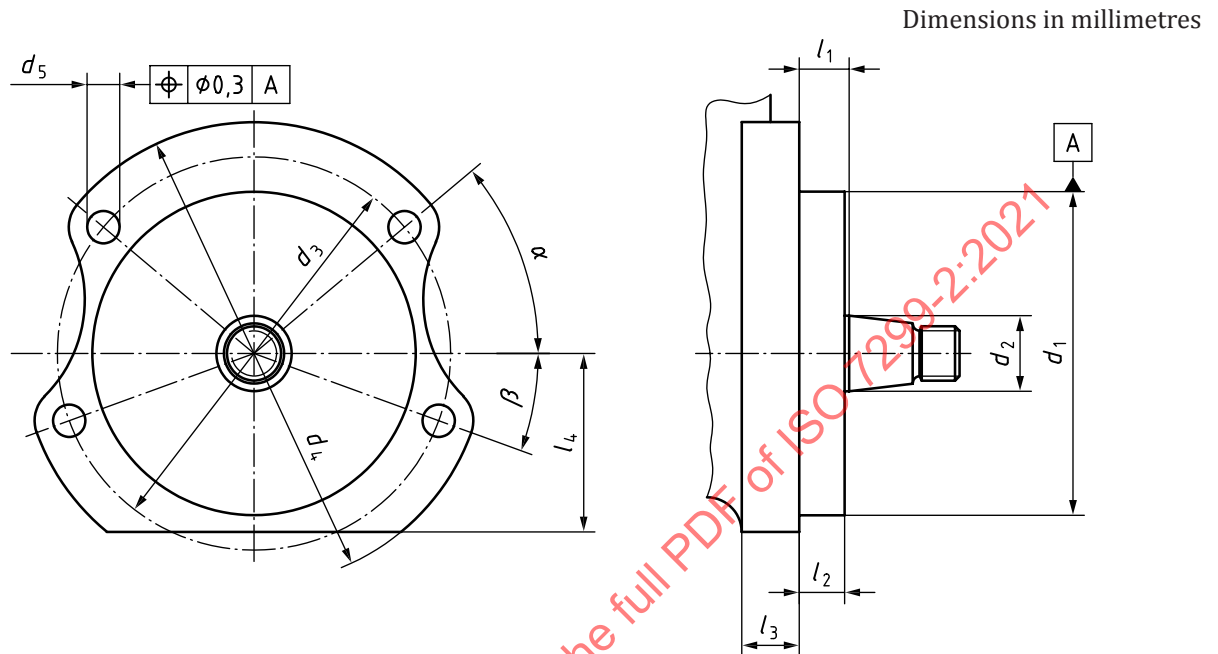


Figure 7 — Type 7 end-mounting flange

Table 7 — Type 7 end-mounting flange dimensions

Dimensions in millimetres
Angles in degrees

d_1 f7	d_2 nom.	d_3 $\pm 0,3$	d_4 max.	d_5	l_1	l_2 min. max.	l_3 nom.	l_4 nom.	α $\pm 0,5$	β $\pm 0,5$
$\emptyset 50$	$\emptyset 25$	$\emptyset 130$	$\emptyset 154$	$\emptyset 10,5$	21,3 to 31,9	18 (Nominal)	18	58	40	4
$\emptyset 107$	$\emptyset 35$	$\emptyset 130$	$\emptyset 154$	$\emptyset 10,5$	21,3 to 31,9	18 (Nominal)	18	60,5	40	40
$\emptyset 107$	$\emptyset 25$	$\emptyset 130$	$\emptyset 155,4$	$\emptyset 10,7$ to $10,9$	16,2 to 16,8	14,5	19	59	40	20
	$\emptyset 30$				13,2 to 13,8	10,5				
	$\emptyset 30$ or 35			$\emptyset 10,5$ to $10,8$	12,9 to 14,2	11,4	18	62	45	30
	$\emptyset 35$							56	40	20
$\emptyset 110$	$\emptyset 35$	$\emptyset 130$	$\emptyset 154$	$\emptyset 10,5$	21,3 to 31,9	18 (Nominal)	18	60,5	40	40

4.2.8 Type 8 end-mounting flange

See [Figure 8](#) and [Table 8](#).

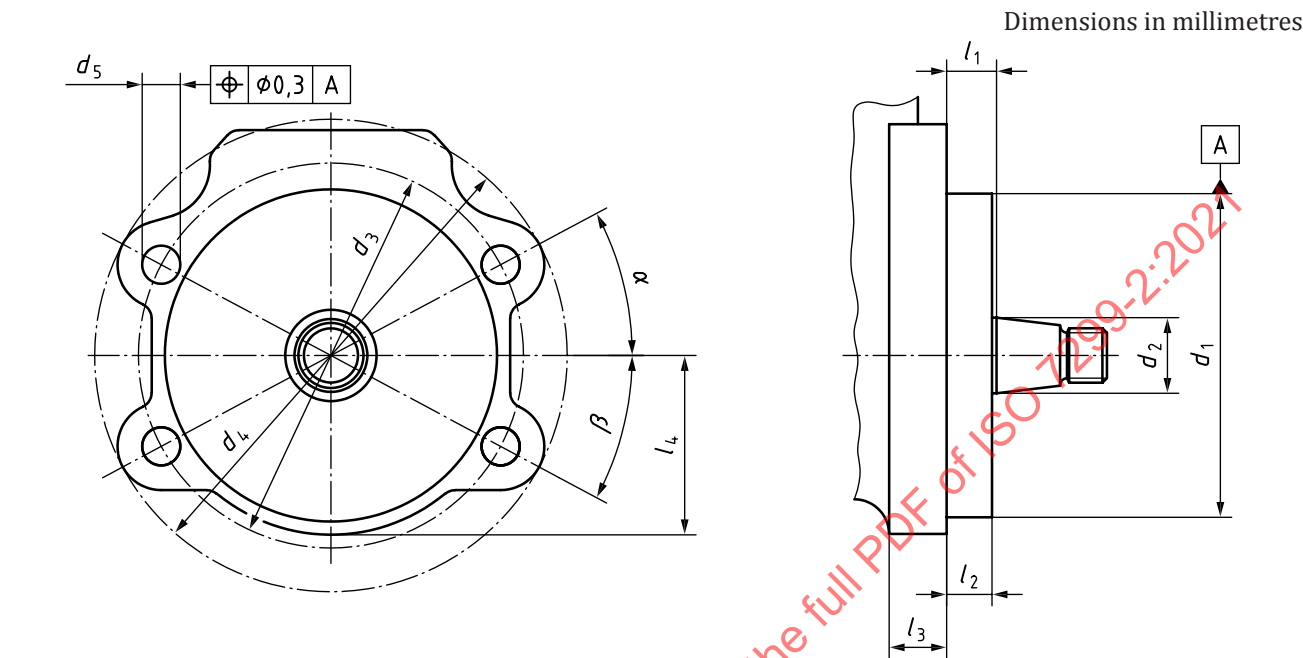


Figure 8 — Type 8 end-mounting flange

Table 8 — Type 8 end-mounting flange dimensions

Dimensions in millimetres
Angles in degrees

d_1	d_2	d_3	d_4	d_5	l_1	l_2		l_3	l_4	α	β
f7	nom.	$\pm 0,3$	max.			min.	max.	nom.	nom.	$\pm 0,5$	$\pm 0,5$
Ø 85	Ø 25	Ø 105	Ø 155	Ø 10,5 to 10,9	10,5 to 11,5	9,5	10,5	16,5	49	28	28