



SLOVENSKI STANDARD SIST ISO 3019-2:1998

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Hydraulic fluid power -- Positive displacement pumps and motors -- Dimensions and identification code for mounting flanges and shaft ends -- Part 2: Two- and four-hole flanges and shaft ends -- Metric series

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Transmissions hydrauliques -- Pompes volumétriques et moteurs -- Dimensions et code d'identification des flasques de montage et des bouts d'arbres -- Partie 2: Flasques à deux et quatre trous et bouts d'arbres -- Série métrique

Ta slovenski standard je istoveten z: ISO 3019-2:1986

ICS:

23.100.10 Pumps and motors

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en

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International Standard



3019/2

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Hydraulic fluid power — Positive displacement pumps and motors — Dimensions and identification code for mounting flanges and shaft ends — Part 2: Two- and four-hole flanges and shaft ends — Metric series

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Second edition — 1986-08-15

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UDC 621.225 : 621.651 : 621.8.032

Ref. No. ISO 3019/2-1986 (E)

Descriptors: hydraulic fluid power, hydraulic equipment, pumps, positive displacement pumps, hydraulic motors, retaining flanges, shaft ends, dimensions, designation, codes, metric system.

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3019/2 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*.

This second edition cancels and replaces the first edition (ISO 3019/2-1980), of which it constitutes a technical revision.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Hydraulic fluid power — Positive displacement pumps and motors — Dimensions and identification code for mounting flanges and shaft ends — Part 2: Two- and four-hole flanges and shaft ends — Metric series

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0 Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Pumps are components which convert mechanical power into hydraulic fluid power. Motors are components which convert hydraulic fluid power into mechanical power.

1 Scope and field of application

1.1 This part of ISO 3019 specifies dimensions and establishes an identification code for mounting flanges of positive displacement rotary hydraulic fluid power pumps and motors of the following types:

- two-hole oval flanges;
- four-hole square flanges;
- four-hole rectangular flanges.

NOTE — A series of circular and polygonal flanges, for products having geometry unsuitable for any of the above flanges, is included in ISO 3019/3.

1.2 This part of ISO 3019 also specifies dimensions and establishes an identification code for shaft ends of positive displacement rotary hydraulic fluid power pumps and motors of the following types:

- cylindrical shaft end with key;
- conical shaft end with key and external thread;

— cylindrical shaft end with metric involute spline.

NOTE — Additional shaft sizes required for circular and polygonal flanges are included in ISO 3019/3.

1.3 This part of ISO 3019 establishes a metric series of mounting flanges and shaft ends for positive displacement rotary hydraulic fluid power pumps and motors. The preferred series shall be used for all future pump and motor designs.

The non-preferred series in annex A and the inch-based series in ISO 3019/1 should be avoided whenever possible.

1.4 This part of ISO 3019 provides

- a minimum number of flanges and shaft sizes to cover probable present and future requirements: short and long flange spigot options are included;
- dimensional interchangeability of flange and shaft end mountings;
- a facility for making certain flanges from castings designed originally for sizes specified in ISO 3019/1;
- flange and spigot dimensions which allow for recommended sealing arrangements when sealing is required between a flange and its mating housing (see annex B);
- identification codes for flanges and shaft ends — these codes can be used separately or in combination.

ISO 3019/2-1986 (E)

2 References

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 286, *ISO system of limits and fits.*¹⁾

ISO/R 773, *Rectangular or square parallel keys and their corresponding keyways (Dimensions in millimetres).*

ISO/R 775, *Cylindrical and 1/10 conical shaft ends.*

ISO 1101, *Technical drawings — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 1302, *Technical drawings — Method of indicating surface texture on drawings.*

ISO 3019/1, *Hydraulic fluid power — Positive displacement pumps and motors — Dimensions and identification code for mounting flanges and shaft ends — Part 1: Inch series shown in metric units.*

ISO 3019/3, *Hydraulic fluid power — Positive displacement pumps and motors — Dimensions and identification code for mounting flanges and shaft ends — Part 3: Polygonal flanges (including circular flanges).*

ISO 3912, *Woodruff keys and keyways.*

ISO 4156, *Straight cylindrical involute splines — Metric module, side fit — Generalities, dimensions and inspection.*

ISO 5598, *Fluid power systems and components — Vocabulary.*

3 Definitions

For the purposes of this part of ISO 3019, the definitions given in ISO 5598 apply.

4 Dimensions

4.1 Tolerances

4.1.1 Dimensions shown without tolerances are nominal.

4.1.2 Tolerances of form and of position are shown in accordance with ISO 1101.

4.2 Selection of sizes

4.2.1 Preferred mounting flanges and shaft dimensions for pumps and motors manufactured shall be selected in accordance with this part of ISO 3019 as follows:

- flanges from tables 1 to 3 inclusive;
- shaft ends from 4.6.

4.2.2 If the non-preferred series is required, the selection shall be made as follows:

- flanges from annex A (clause A.1), and tables 8 to 10 inclusive;
- shaft ends from annex A (clause A.2).

4.3 Mounting flanges — Preferred series

Mounting flange dimensions shall be selected from the following tables:

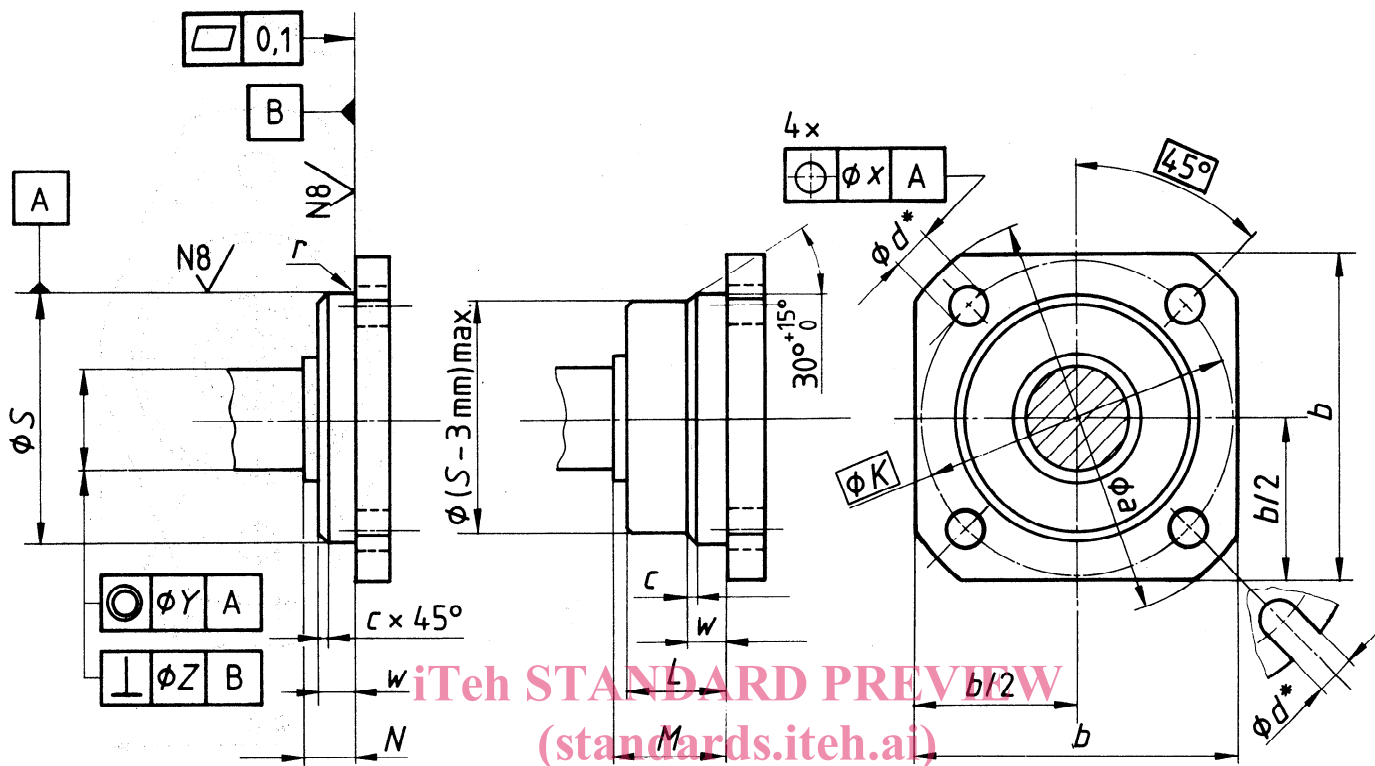
- a) preferred range of oval mounting flanges, table 1, figure 1;
- b) preferred range of square mounting flanges, table 2, figure 2;
- c) preferred range of rectangular mounting flanges, table 3, figure 3.

4.4 Mating components

The dimensions and related tolerances of the mating components shall be compatible with the dimensions and tolerances specified in this part of ISO 3019 so as to avoid undue body strain and transverse loads on shafts in excess of those permitted by the pump or motor manufacturer.

1) At present at the stage of draft. (Revision of ISO/R 286-1962.)

Flatness tolerance in millimetres



Short spigot version

Long spigot version

<https://standards.iteh.ai/catalog/standards/sist/e4a65ec2-b7eb-47d2-8644-19-2-1998>

* Slots may be used instead of holes by agreement between purchaser and supplier

NOTE — Surface roughness is indicated in accordance with ISO 1302.

Figure 2 — Basic layout of square flange

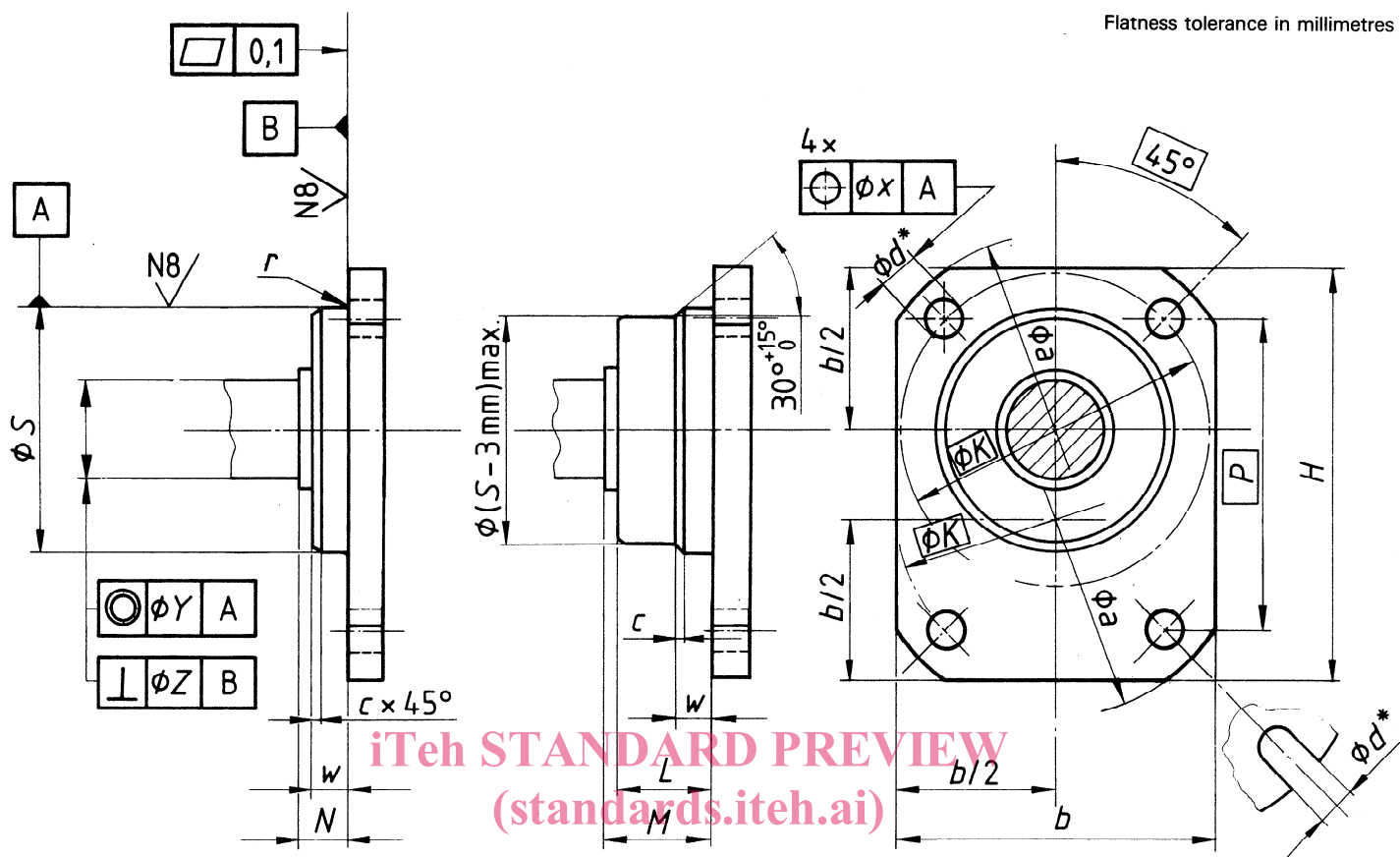
Table 2 — Preferred series of square mounting flanges

Dimensions in millimetres

Short and long spigot versions											Short spigot version	Long spigot version			
S h8 ¹⁾	K	Fixings				a max.	b max.	w $+0,5$ 0	c max.	r max. (r min. = 0)	Y ²⁾	Z ²⁾ mm/mm	N $+1$ 0	M	L max.
		Bolts		Clearance holes (slots)											
		Quantity	Nominal diameter	d H13 ¹⁾	x										
63	85	4	M8	9	0,5	106	80	7	1,5	0,5	0,20	0,0015	8	$20 +1$ 0	19,5
80	103					125	100				0,25				
100	125					160	125				0,30				
125	160		M10	11	1	200	150	9	2,0	1,6	0,35	0,0020	10	$25 +1$ 0	24,5
160	200					250	190				0,40				
200	250					300	236				0,40				
250	315	M12	14	375	301	0,40	0,40	0,40	0,40	0,40	0,0020	10	$50 +1,2$ 0	49,5	

1) For tolerance values, see ISO 286.

2) Tolerances stated are for the unladen condition. (Rigid couplings may require tighter tolerances.)



Short spigot version

Long spigot version

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* Slots may be used instead of holes by agreement between purchaser and supplier.

NOTE — Surface roughness is indicated in accordance with ISO 1302.

Figure 3 — Basic layout of rectangular flange

Table 3 — Preferred series of rectangular mounting flanges

Dimensions in millimetres

Short and long spigot versions													Short spigot version	Long spigot version			
S h8 ¹⁾	K	P	Fixings				a max.	b max.	H max.	w ^{+0,5} ₀	c max.	r max. (r min. = 0)	Y ²⁾	Z ²⁾	N ⁺¹ ₀	M ⁺¹ ₀	L max.
			Bolts		Clearance holes (slots)												
			Quantity	Nominal diameter	d H13 ¹⁾	x							mm/mm				
50	68	72	4	M6	6,6	0,3	82	62	86	7	1,5	0,5	0,15	8	20 ⁺¹ ₀	19,5	
63	85	90		M8	9	0,5	106	80	110				0,20				
80	103	109					125	100	136								0,25
100	125	132		M10	11	160	125	169	9	2,0	1,6	0,30	10	25 ⁺¹ ₀	24,5		
125	160	170		M12	14	200	150	207				0,35		0,0020	32 ⁺¹ ₀	31,5	
160	200	212		M16	18	250	190	261	0,35	0,0020	0,35	0,0020	40 ⁺¹ ₀	39,5			
200	250	265		M20	22	300	236	324					50 ^{+1,2} ₀	49,5			

1) For tolerance values, see ISO 286.

2) Tolerances stated are for the unladen condition. (Rigid couplings may require tighter tolerances.)