INTERNATIONAL STANDARD

ISO 7790

Second edition
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Hydraulic fluid power — Four-port modular stack valves and four-port directional control valves, sizes 02, 03 and 05 — Clamping dimensions

Transmissions hydrauliques — Appareils empilables et distributeurs à quatre orifices, de tailles 02, 03 et 05 — Dimensions de montage

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.

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 7790 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 5, *Control products and components*.

This second edition cancels and replaces the first edition (ISO 7790:1986), of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

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Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Typical components found in such systems are hydraulic valves and hydraulic modular stack valves. These devices control flow direction, pressure or flow rate of liquids in the enclosed circuit.

Hydraulic fluid power — Four-port modular stack valves and four-port directional control valves, sizes 02, 03 and 05 — Clamping dimensions

1 Scope

This International Standard specifies clamping dimensions of four-port modular stack valves and four-port directional control valves, sizes 02, 03 and 05, on mounting surfaces. The dimensions and sizes conform to ISO 4401 so as to ensure interchangeability of these valves and to reduce the number of fixing devices to be used.

It applies to clamping dimensions of four-port modular stack valves and four-port directional control valves which represent current practice. They are generally applicable to industrial equipment.

2 Normative references

The following standards contain provisions which, through reference of this text, constitute provisons of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4401:1994, *Hydraulic fluid power — Four-port directional control valves — Mounting surfaces*.

ISO 5598:1985, *Fluid power systems and components — Vocabulary*.

ISO 5783:1995, *Hydraulic fluid power — Code for identification of valve mounting surfaces and cartridge valve cavities*.

3 Definitions

For the purpose of this International Standard, the definitions given in ISO 5598 apply.

4 Symbols

For the purpose of this International Standard, the following letter symbols apply:

a) H_1 identifies clamping length for the fixing devices on directional control valves;

b) H_2 identifies overall heights of modular stack valves.

5 Tolerances

For tolerances and other data relating to the side of a modular stack valve on which another modular stack valve or a directional control valve is mounted, see ISO 4401.

6 Dimensions

Clamping dimensions for modular stack valves and directional control valves, sizes 02, 03 and 05, in accordance with ISO 5783, with four service ports, are shown in figure 1 and given in table 1. The mounting surface shall be in accordance with ISO 4401.

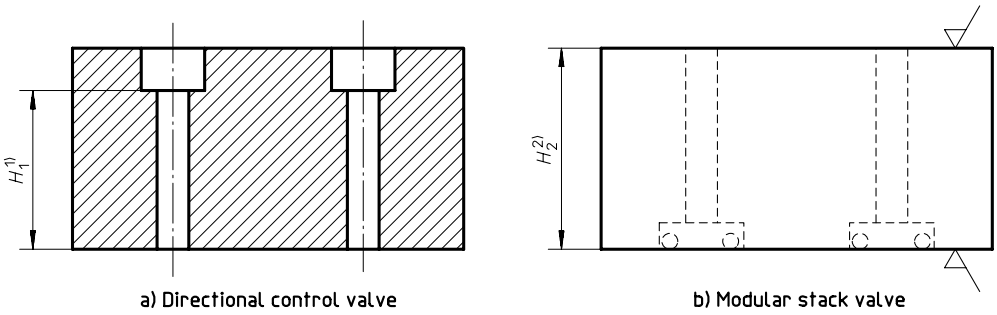
7 Working pressure

For an indication of the maximum limit of the working pressure, see note in table 1.

8 Identification statement (Reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard :

"Modular stack valves and directional control valves clamping dimensions conform to ISO 7790:1997, *Hydraulic fluid power — Four-port modular stack valves and four-port directional control valves, sizes 02, 03 and 05 — Clamping dimensions.*"



1) Dimension H_1 is understood to be the mounting height (clamping length for fixing bolts) where fixing bolts with head are used. Where studs are used, consult sales literature on valve heights before determining the length of these studs.

2) Dimension H_2 is understood to be the overall mounting height of a modular stack valve, including O-ring plate height, if necessary.

Table 1 — Clamping dimensions for four-port directional control valves and modular stack valves, sizes 02, 03 and 05 (mounting surface in accordance with ISO 4401)

Dimensions in millimetres

Valve type	Dimension	Size 02	Size 03	Size 05
Directional control valve	H_1	32^{0}_{-2}	22^{0}_{-2} or 42^{0}_{-2}	30^{0}_{-2} or 50^{0}_{-2}
Modular stack valve	H_2 1)	$30^{0}_{-0,5}$	$40^{0}_{-0,3}$	$50^{0}_{-0,3}$
NOTE — The supplier shall establish the maximum working pressure for valves, subplates and the manifold blocks.				
1) When dimension H_2 is not acceptable for design reasons, it shall be increased or decreased in increments of 10 mm.				

Annex A
(informative)

Bibliography

[1] ISO 129:1985, *Technical drawings — Dimensioning — General principles, definitions, methods of execution and special indications*.

[2] ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*.

[3] ISO 468:1982, *Surface roughness — Parameters, their values and general rules for specifying requirements*.

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

[5] ISO 1101:—[2)], *Geometrical product specification (GPS) — Geometrical tolerancing — Generalities, definitions, symbols, indications on drawings*.

[6] ISO 1302:1992, *Technical drawings — Method of indicating surface texture*.

1) To be published. (Revision of ISO 965-1:1980)
2) To be published. (Revision of ISO 1101:1983)