

# INTERNATIONAL STANDARD

# ISO 6264

Second edition  
1998-03-01

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## Hydraulic fluid power — Pressure-relief valves — Mounting surfaces

*Transmissions hydrauliques — Limiteurs de pression — Plan de pose*

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Reference number  
ISO 6264:1998(E)

## 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 6264 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 6264:1987), 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. Hydraulic valves are typical components in such systems. These devices control the flow direction, pressure or flow rate of liquids in the enclosed circuit.

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# Hydraulic fluid power — Pressure-relief valves — Mounting surfaces

## 1 Scope

This International Standard specifies the dimensions and other data relating to surfaces on which hydraulic pressure-relief valves are mounted in order to ensure interchangeability.

It is applicable to mounting surfaces for hydraulic pressure-relief 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 provisions 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 468:1982, *Surface roughness — Parameters, their values and general rules for specifying requirements.*

ISO 1101:1983, *Technical drawing — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out — Generalities, definitions, symbols, indications on drawings.*

ISO 1219-1:1991, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols.*

ISO 1302:1992, *Technical drawing — Method of indicating surface texture.*

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

## 4 Symbols

4.1 For the purposes of this International Standard, the following symbols apply:

- a) A, B, L, P, T and X designate ports;

- b)  $F_1, F_2, F_3, F_4, F_5$  and  $F_6$  designate threaded holes for fixing bolts;
- c)  $G$  designates pin holes;
- d)  $D$  designates the fixing screw diameter;
- e)  $r_{\max}$  designates mounting surface edge radius.

**4.2** The graphic symbols used in figures 2, 3, 5, 6, 8, 10, 12, 14, 16 and 18 are in accordance with the graphic symbols of ISO 1219-1.

**4.3** The code system used in this International Standard is defined in ISO 5783.

## 5 Tolerances

**5.1** The following values shall be applied to the mounting surface, i.e. the area within the chain thick lines:

- surface roughness:  $R_a \leq 0,8 \mu\text{m}$  (see ISO 468 and ISO 1302);
- surface flatness: 0,01 mm over a distance of 100 mm (see ISO 1101);
- tolerance for diameters of locating pin holes: H12.

**5.2** The following tolerances shall be respected along the x and y axes with respect to the origin:

- pin holes:  $\pm 0,1 \text{ mm}$ ;
- screw holes:  $\pm 0,1 \text{ mm}$ ;
- port holes:  $\pm 0,2 \text{ mm}$ .

For other dimensions, see the figures.

## 6 Dimensions

**6.1** Mounting surface dimensions for hydraulic pressure-relief valves shall be selected from the figures specified in 6.2 to 6.6.

**6.2** Mounting surface dimensions for pressure-relief valves with main ports of 4,5 mm maximum port diameter (code: 6264-02-01-\* -97) are given in figure 1.

**6.3** Mounting surface dimensions for pressure-relief valves with main ports of 7,5 mm maximum port diameter (code: 6264-03-04-\* -97) are given in figure 4.

**6.4** Mounting surface dimensions for pressure-relief valves with main ports of 14,7 mm maximum port diameter (code: 6264-06-09-\* -97) are given in figure 9.

**6.5** Mounting surface dimensions for pressure-relief valves with main ports of 23,4 mm maximum port diameter (code: 6264-08-13-\* -97) are given in figure 13.

**6.6** Mounting surface dimensions for pressure relief valves with main ports of 32 mm maximum port diameter (code: 6264-10-17-\* -97) are given in figure 17.

## 7 Port marking

7.1 The port symbols for pressure-relief valves shall be selected from the figures specified in 7.2 to 7.8.

7.2 Symbols for directly-operated pressure-relief valves with main ports of 4,5 mm maximum port diameter (code: 6264-02-01-\* -97) are given in figure 2.

7.3 Symbols for pilot-operated pressure-relief valves with main ports of 4,5 mm maximum port diameter (code: 6264-02-01-\* -97) are given in figure 3.

7.4 Symbols for directly-operated pressure-relief valves with main ports of 7,5 mm maximum port diameter (code: 6264-03-04-\* -97) are given in figure 5.

7.5 Symbols for pilot-operated pressure-relief valves with main ports of 7,5 mm maximum port diameter (code: 6264-03-04-\* -97) are given in figure 6.

7.6 Symbols for pilot-operated pressure-relief valves with main ports of 14,7 mm maximum port diameter (code: 6264-06-09-\* -97) are given in figure 10.

7.7 Symbols for pilot-operated pressure-relief valves with main ports of 23,4 mm maximum port diameter (code: 6264-08-13-\* -97) are given in figure 14.

7.8 Symbols for pilot-operated pressure-relief valves with main ports of 32 mm maximum port diameter (code: 6264-10-17-\* -97) are given in figure 18.

## 8 Modular stack valves

For modular stack valves, the mounting surfaces and ports marking defined in ISO 4401 shall be used.

## 9 Working pressure

For indication of the maximum limit of the working pressure, see note 1 in figures 1, 4, 9, 13 and 17.

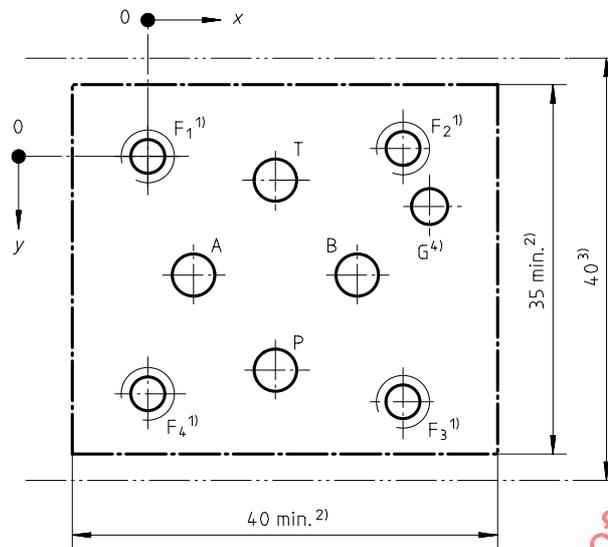
## 10 Identification statement (Reference to this International Standard)

It is strongly recommended that manufacturers use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard:

"Mounting surface dimensions conform to ISO 6264:1998, *Hydraulic fluid power — Pressure-relief valves — Mounting surfaces*."

Code: 6264-02-01-<sup>\*</sup>-97

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws. Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

NOTES

- 1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.
- 2 See figures 2 and 3 for graphic symbols.

Axis	P	A	T	B	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	G
	∅ 4,5 max.	∅ 4,5 max.	∅ 4,5 max.	∅ 4,5 max.	M5	M5	M5	M5	∅ 3,4
x	12	4,3	12	19,7	0	24	24	0	26,5
y	20,25	11,25	2,25	11,25	0	-0,75	23,25	22,5	4,75

Figure 1 — Mounting surface for pressure-relief valves with main ports of 4,5 mm maximum port diameter (size 02)

Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		

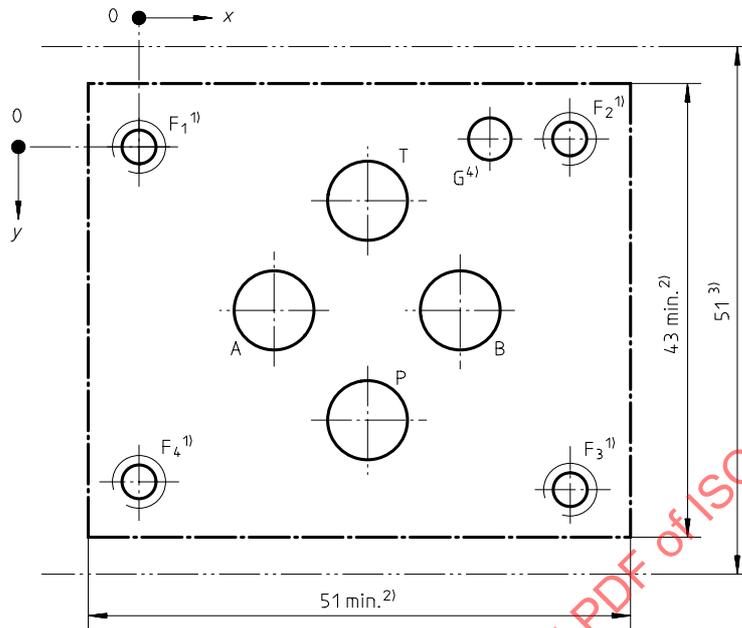
Figure 2 — Directly-operated pressure-relief valves with main ports of 4,5 mm maximum port diameter (code: 6264-02-01-\*97)

Option according to ISO 5783	2
Description	External drain
Pressure-relief valves	
Pressure-relief valves with by-pass check valve	
1) Port for remote-controlled pilot; it may be blocked if not needed.	

Figure 3 — Pilot-operated pressure-relief valves with main ports of 4,5 mm maximum port diameter (code: 6264-02-01-\*97)

Code: 6264-03-04-\* -97

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws.

Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block.

The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

NOTES

1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.

2 See figures 5 and 6 for graphic symbols.

Axis	P	A	T	B	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	Ø 7,5 max.	Ø 4	M5	M5	M5	M5
x	21,5	12,7	21,5	30,2	33	0	40,5	40,5	0
y	25,9	15,5	5,1	15,5	-0,75	0	-0,75	31,75	31

Figure 4 — Mounting surface for pressure-relief valves with main ports of 7,5 mm maximum port diameter (size 03)

Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		

Figure 5 — Directly-operated pressure-relief valves with main ports of 7,5 mm maximum port diameter (code: 6264-03-04-\*97)

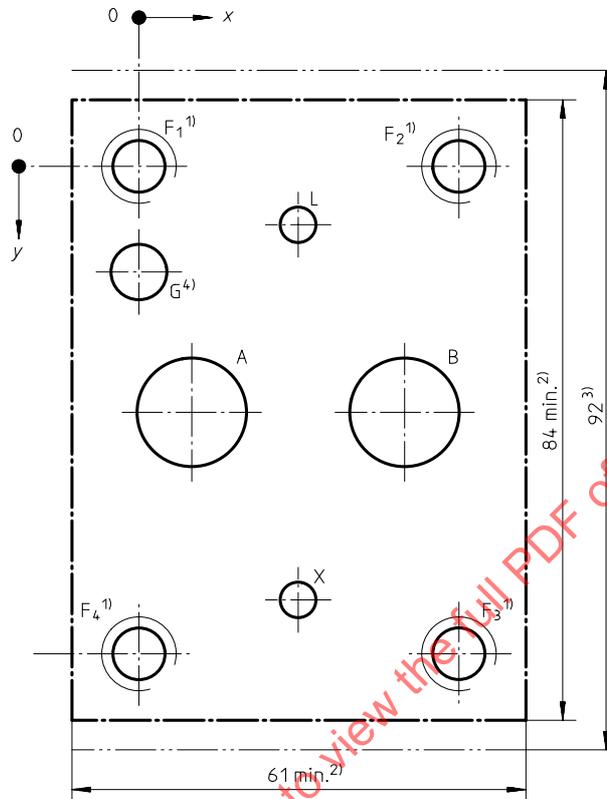
Option according to ISO 5783	2
Description	External drain
Pressure-relief valves	
Pressure-relief valves with by-pass check valve	
1) Port for remote-controlled pilot; it may be blocked if not needed.	

Figure 6 — Pilot-operated pressure-relief valves with main ports of 7,5 mm maximum port diameter (code: 6264-03-04-\*97)

Code: 6264-06-07-\*<sup>-97</sup>

**WARNING** — This mounting surface has become obsolete. It is planned to remove it from this International Standard at the next revision, in approximately five years. Do not use for new designs.

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws.

Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block.

The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

NOTES

1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.

2 See figure 8 for graphic symbols.

Axis	A	B	X	L	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
	∅ 14,7 max.	∅ 14,7 max.	∅ 4,8	∅ 4,8	∅ 7,5	M10	M10	M10	M10
x	7,1	35,7	21,4	21,4	0	0	42,9	42,9	0
y	33,3	33,3	58,7	7,9	14,3	0	0	66,7	66,7

Figure 7 — Mounting surface for pressure-relief valves with main ports of 14,7 mm maximum port diameter (size 06)

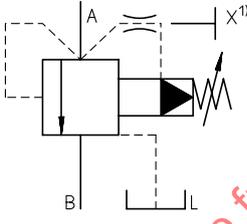
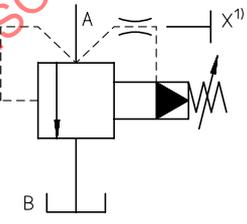
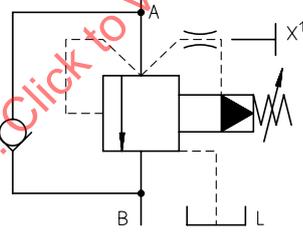
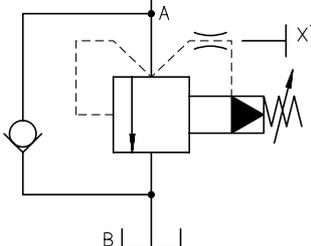
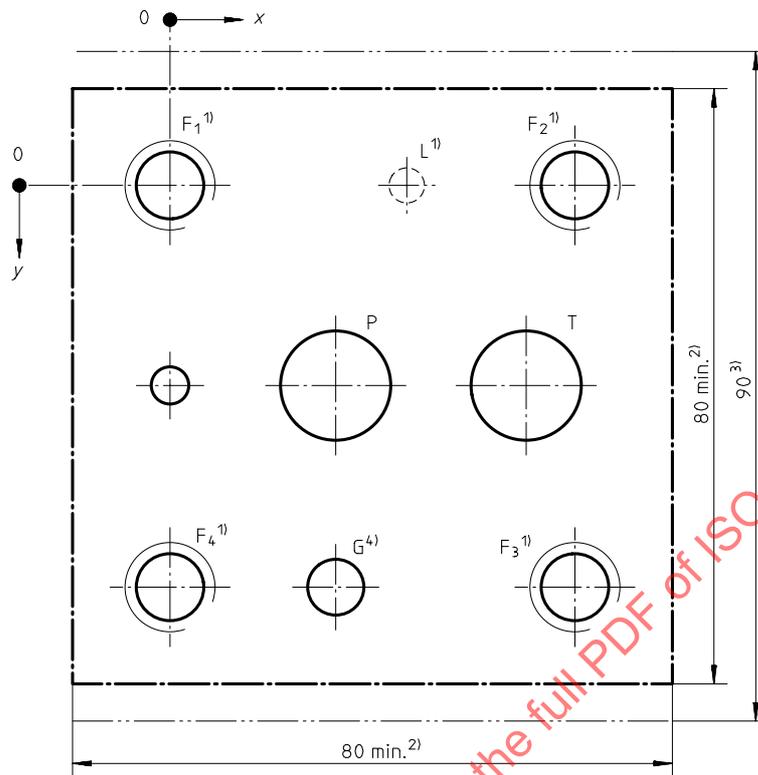
Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		
<p>1) Port for remote-controlled pilot; it may be blocked if not needed.</p>		

Figure 8 — Pilot-operated pressure-relief valves with main ports of 14,7 mm maximum port diameter (code: 6264-06-07-\*-97)

Code: 6264-06-09-<sup>\*</sup>-97

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is 1,25 $D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws. Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

5) This optional port should be provided on the mounting surface only when required by the function of the valve.

NOTES

- 1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.
- 2 See figure 10 for graphic symbols.

Axis	P	T	X	L <sup>1)</sup>	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
	∅ 14,7 max.	∅ 14,7 max.	∅ 4,8	∅ 4,8	∅ 7,5	M12	M12	M12	M12
x	22,1	47,5	0	31,8	22,1	0	53,8	53,8	0
y	26,9	26,9	26,9	0	53,8	0	0	53,8	53,8

1) For code: 6264-06-09-0-97.

Figure 9 — Mounting surface for pressure-relief valves with main ports of 14,7 mm maximum port diameter (size 06)

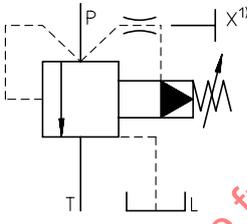
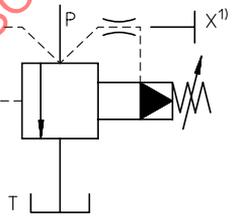
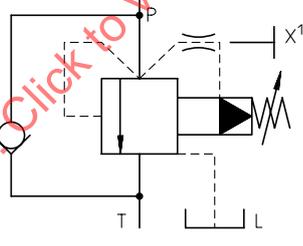
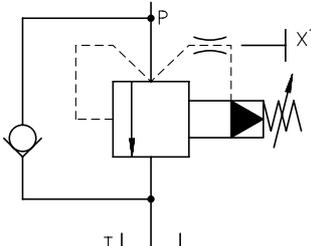
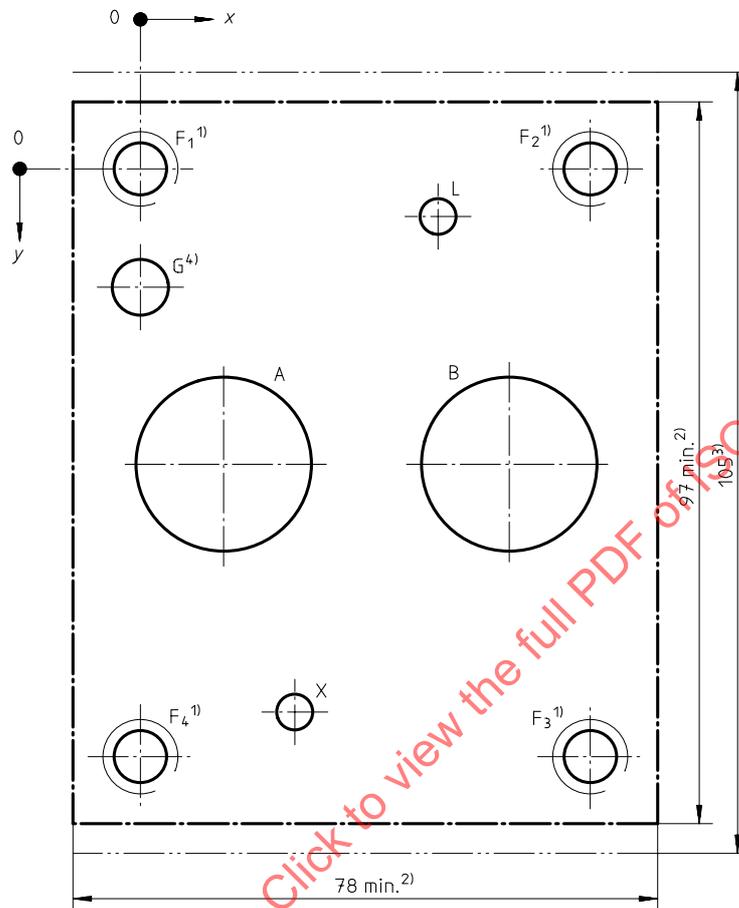
Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		
1) Port for remote-controlled pilot; it may be blocked if not needed.		

Figure 10 — Pilot-operated pressure-relief valve with main ports of 14,7 mm maximum port diameter (code: 6264-06-09-\*<sup>1</sup>-97)

Code: 6264-08-11-\*<sup>-97</sup>

**WARNING** — This mounting surface has become obsolete. It is planned to remove it from this International Standard at the next revision, in approximately five years. Do not use for new designs.

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws.

Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block.

The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accomodate the locating pin on the valves. The minimum depth is 4 mm.

NOTES

- 1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.
- 2 See figure 12 for graphic symbols.

Axis	A	B	X	L	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
	∅ 23,4 max.	∅ 23,4 max.	∅ 4,8	∅ 4,8	∅ 7,5	M10	M10	M10	M10
x	11,1	49,2	20,6	39,7	0	0	60,3	60,3	0
y	39,7	39,7	73	6,4	15,9	0	0	79,4	79,4

Figure 11 — Mouting surface for pressure-relief valves with main ports of 23,4 mm maximum port diameter (size 08)

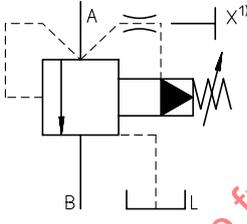
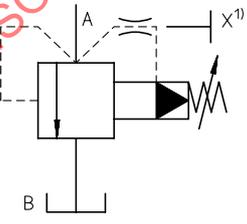
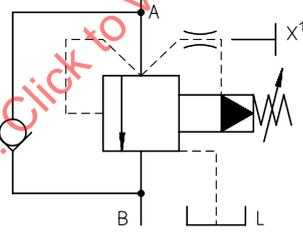
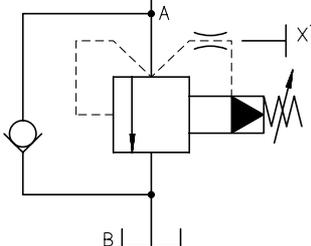
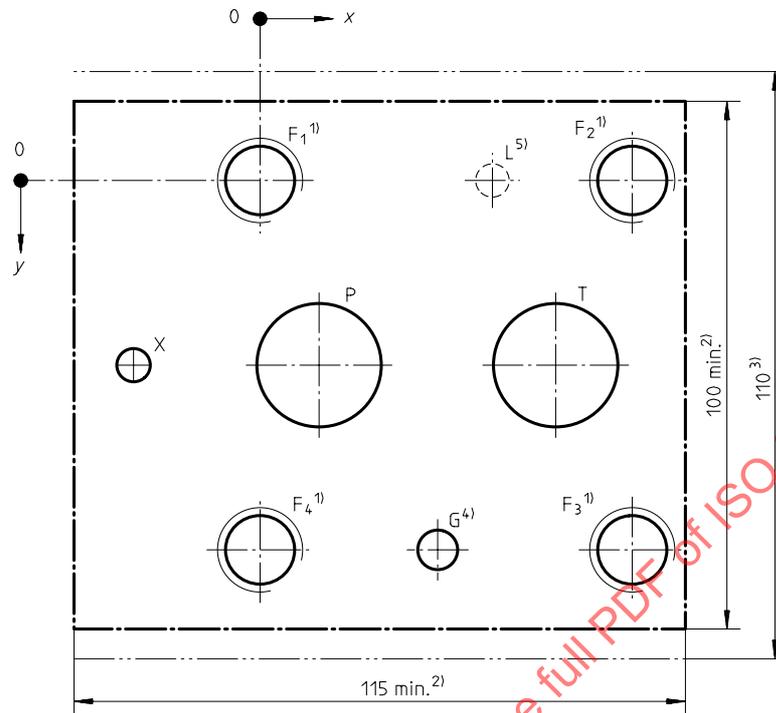
Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		
<p>1) Port for remote-controlled pilot; it may be blocked if not needed.</p>		

Figure 12 — Pilot-operated pressure-relief valves with main ports of 23,4 mm maximum port diameter (code: 6264-08-11-\*97)

Code: 6264-08-13-\* -97

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws. Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

5) This optional port should be provided on the mounting surface only when required by the function of the valve.

NOTES

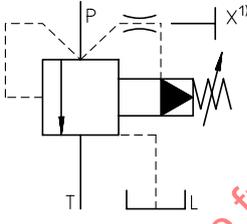
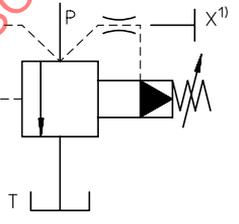
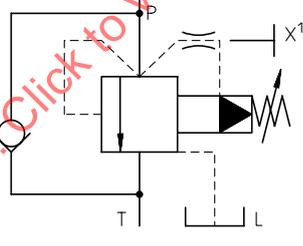
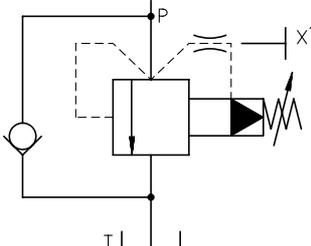
1) The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.

2) See figure 14 for graphic symbols.

Axis	P	T	X	L <sup>1)</sup>	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>
	∅ 23,4 max.	∅ 23,4 max.	∅ 6,3	∅ 6,3	∅ 7,5	M16	M16	M16	M16
x	11,1	55,6	-23,8	43,7	33,4	0	66,7	66,7	0
y	35	35	35	0	70	0	0	70	70

1) For code: 6264-08-13-0-97.

Figure 13 — Mounting surface for pressure-relief valves with main ports of 23,4 mm maximum port diameter (size 08)

Option according to ISO 5783	0	1
Description	External drain	Internal drain
Pressure-relief valves		
Pressure-relief valves with by-pass check valve		

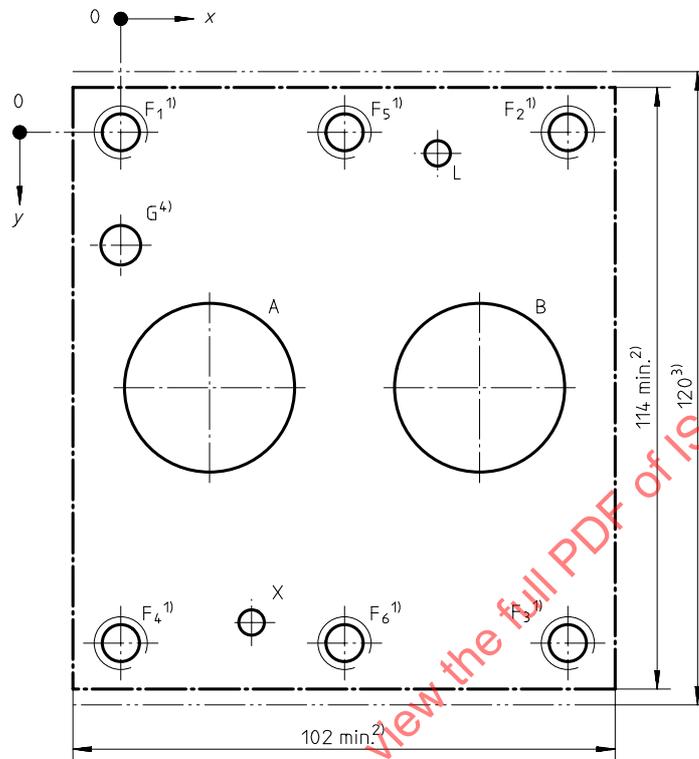
1) Port for remote-controlled pilot; it may be blocked if not needed.

**Figure 14 — Pilot-operated pressure-relief with main ports of 23,4 mm maximum port diameter (code: 6264-08-13-\*·97)**

Code: 6264-10-15-\* -97

**WARNING** — This mounting surface has become obsolete. It is planned to remove it from this International Standard at the next revision, in approximately five years. Do not use for new designs.

Dimensions in millimetres



1) The minimum thread depth is 1,5 times the screw diameter,  $D$ . The recommended full thread depth is  $2D + 6$  mm to facilitate interchangeability of valves and to reduce the number of fixing screw lengths. The recommended engagement of fixing screw thread for ferrous mountings is  $1,25D$ .

2) The dimensions specifying the area within the chain thick lines are the minimum dimensions for the mounting surface. The corners of the rectangle may be radiused to a maximum radius,  $r_{max}$ , equal to the thread diameter of the fixing screws. Along each axes the fixing holes are at equal distances to the mounting surface edges.

3) This dimension gives the minimum space required for a valve with this mounting surface. The dimension is also the minimum distance from centreline to centreline of two identical mounting surfaces placed on a manifold block. The valve manufacturer's attention is drawn to the fact that no part of the width of the complete valve assembly shall exceed this dimension.

4) Blind hole in the mounting surface to accommodate the locating pin on the valves. The minimum depth is 4 mm.

NOTES

- 1 The supplier shall stipulate the maximum working pressure for subplates and manifold blocks.
- 2 See figure 16 for graphic symbols.

Axis	A	B	X	L	G	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>	F <sub>6</sub>
	∅ 32 max.	∅ 32 max.	∅ 4,8	∅ 4,8	∅ 7,5	M10	M10	M10	M10	M10	M10
x	16,7	67,5	24,6	59,6	0	0	84,1	84,1	0	42,1	42,1
y	48,4	48,4	92,9	4	21,4	0	0	96,8	96,8	0	96,8

Figure 15 — Mounting surface for pressure-relief valves with main ports of 32 mm maximum port diameter (size 10)