



**S\*-P**  
SEQUENCE VALVE

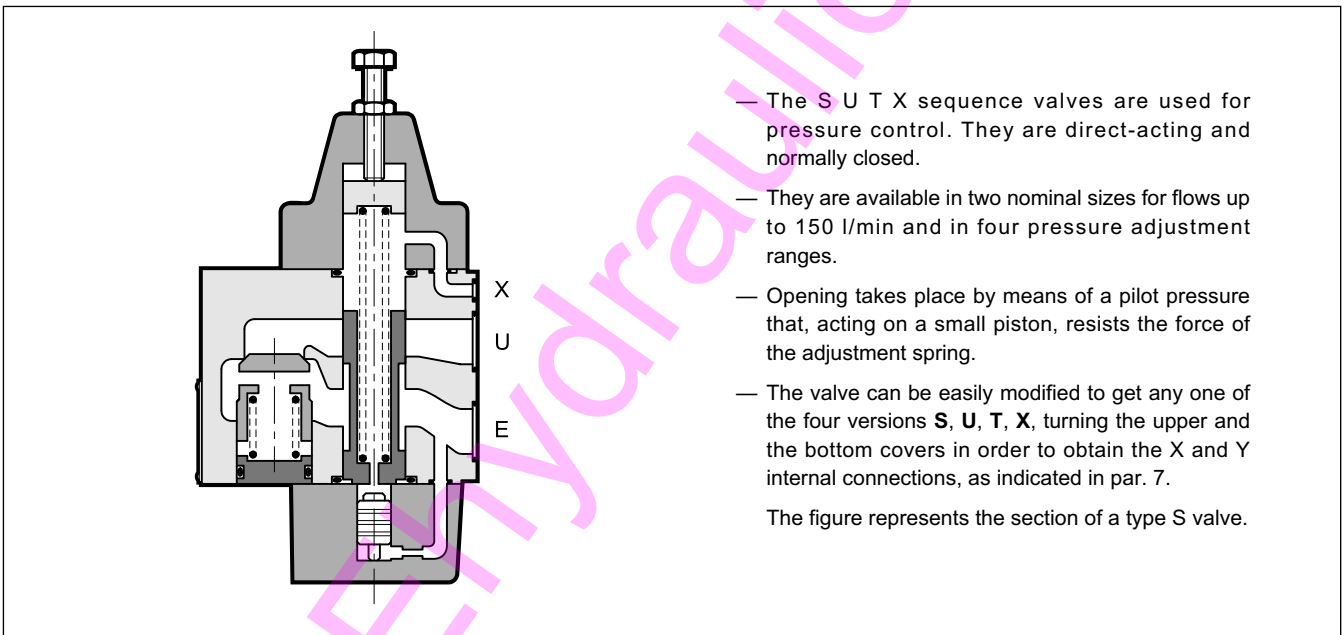
**U\*-P**  
UNLOADING VALVE

**T\*-P**  
BACKPRESSURE VALVE

**X\*-P**  
BALANCING VALVE

**SERIES 20**

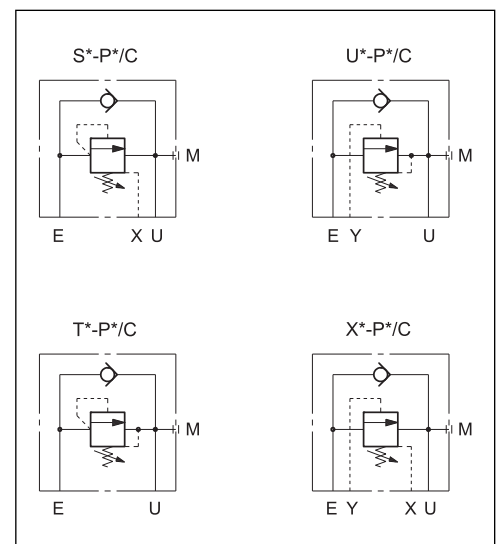
**OPERATING PRINCIPLE**



**PERFORMANCES** (measured with mineral oil of viscosity 36 cSt at 50°C)

		<b>size 3</b>	<b>size 5</b>
Maximum operating pressure	bar	320	250
Maximum flow rate	l/min	4060	150
Ambient temperature range	°C	-20 / +50	
Fluid temperature range	°C	-20 / +80	
Fluid viscosity range	cSt	10 ÷ 400	
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15		
Recommended viscosity	cSt	25	
Mass	kg	5,8	6,7

**HYDRAULIC SYMBOLS**





## 1 - IDENTIFICATION CODE

		<b>- P</b>		/		/ 20 /	
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Valve type: \_\_\_\_\_

**S** = sequence valve  
**U** = unloading valve  
**T** = backpressure valve  
**X** = balancing valve

Size: \_\_\_\_\_

**3** = ISO 5781-06 (CETOP 06)  
**5** = ISO 5781-08 (CETOP 08)

Subplate mounting \_\_\_\_\_

Pressure adjustment range: \_\_\_\_\_

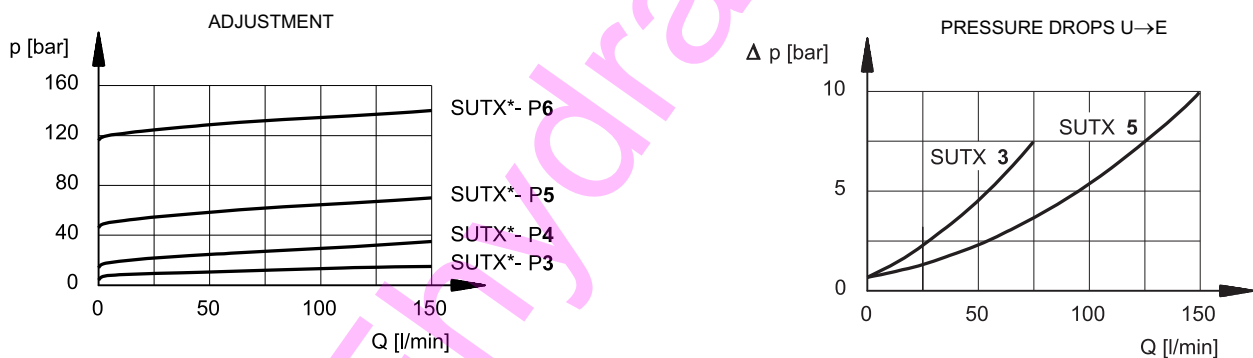
**3** = 5 ÷ 20 bar  
**4** = 10 ÷ 35 bar  
**5** = 15 ÷ 70 bar  
**6** = 35 ÷ 140 bar

Seals:  
omit for mineral oils  
**V** = viton for special fluids

Series No. (the overall and mounting dimensions remain unchanged from 20 to 29)

**C** = check valve for free flow from U to E.  
Cracking pressure 0,5 bar.  
(omit for version without check valve)

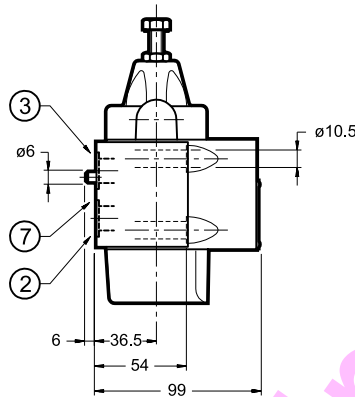
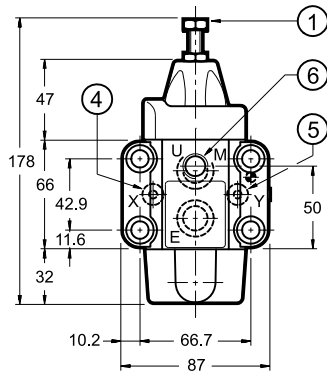
## 2 - CHARACTERISTIC CURVES (values obtained with viscosity of 36 cSt at 50°C)



## 3 - HYDRAULIC FLUIDS

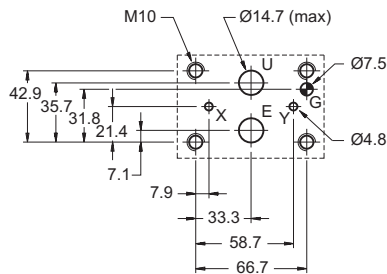
Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

## 4 - SUTX 3-P OVERALL AND MOUNTING DIMENSIONS



FASTENING BOLTS:  
4 bolts M10x70  
Tightening torque: 40 Nm

MOUNTING SURFACE:  
ISO 5781-06-07-\*00 (CETOP 4.4.4-2-06-320)

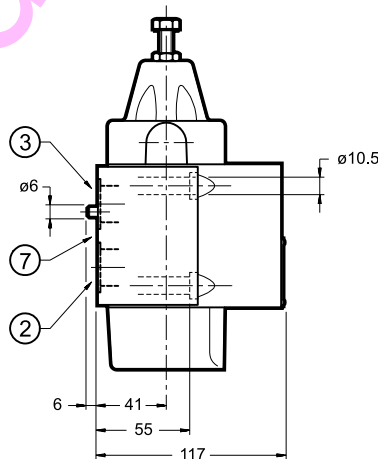
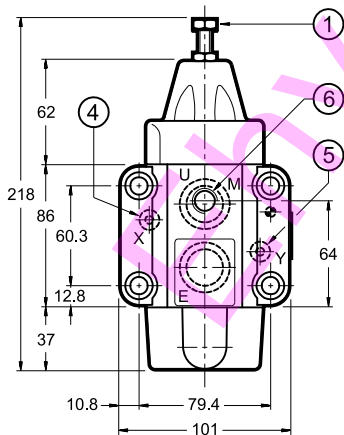


**NOTE:** the positions of the X and Y ports are reversed from the requirements of the ISO Standard

dimensions in mm

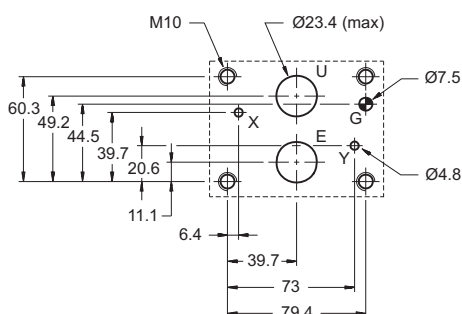
1	Hexagonal head adjustment screw. Spanner 13.
2	Intake port
3	Outlet port
4	External drainage port
5	External piloting port
6	Pressure gauge port 1/4" NPT
7	Mounting surface with sealing rings: N. 2 OR type 3068 (17.13x2.62) - 90 Shore N. 2 OR type 2021 (5.28x1.78) - 90 Shore

## 5 - SUTX 5-P OVERALL AND MOUNTING DIMENSIONS



FASTENING BOLTS:  
4 bolts M10x70  
Tightening torque: 40 Nm

MOUNTING SURFACE:  
ISO 5781-08-10-\*00 (CETOP 4.4.5-2-08-320)



**NOTE:** the positions of the X and Y ports are reversed from the requirements of the ISO Standard

dimensions in mm

1	Hexagonal head adjustment screw. Spanner 13.
2	Intake port
3	Outlet port
4	External drainage port
5	External piloting port
6	Pressure gauge port 1/4" NPT
7	Mounting surface with sealing rings: N. 2 OR type 3100 (25.07x2.62) - 90 Shore N. 2 OR type 2021 (5.28x1.78) - 90 Shore

### 6 - APPLICATIONS

**“S”** The type “S” sequence valve is normally used to successively command two or more actuators: when the pressure in the primary circuit reaches the set value on the valve, it opens and allows the fluid to feed the second circuit branch, keeping the pressure in the first branch.

The valve remains open until the pressure at the intake falls below the set value; under these conditions, the maximum pressure setting on the first circuit branch will be achieved also at the outlet.

It is also used to keep a circuit under pressure when simultaneous supply of various users, requiring the total delivery of the pump, would make the pressure value decrease.

**“U”** This is normally used in automatic circuits (high-low pressure) for unloading the low pressure pump; this occurs when the pressure in the circuit reaches the set value of the valve.

In this manner it is possible to utilize the total flow of the two pumps for fast movements at low pressure, with electric power saving, using high pressure only for working movements.

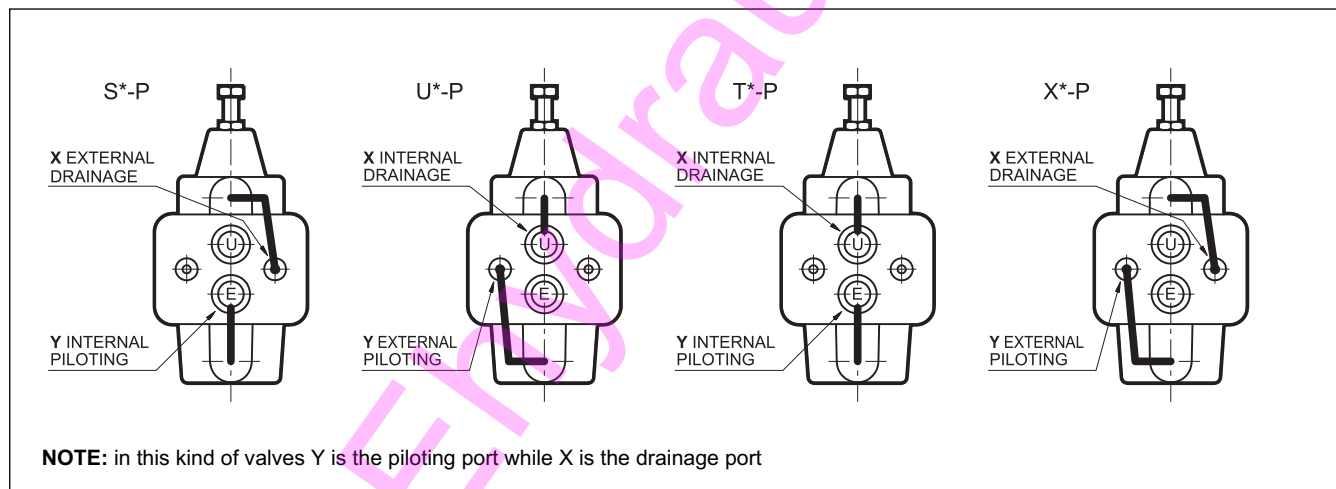
Furthermore, it is used to allow quick discharge of the large chamber of a high differential cylinder which the directional valve would not be able to drain; in this case the valve piloting is connected to the small chamber of the cylinder.

**“T”** Normally this is used to create hydraulic resistance (back pressure) to prevent uncontrolled movements, especially in the case of suspended loads.

The valve, normally closed, opens only when the set pressure is reached, and thus the descent of the load occurs in a controlled manner and the descending speed depends on the delivery of the pump.

**“X”** This is mainly used for load balancing. The piloting pressure can be taken from any point in the plant. The valve stays closed until the pilot pressure reaches the set value.

### 7 - COVER ORIENTATION FOR ALL THE VERSIONS S, U, T, X



### 7 - SUBPLATES (see catalogue 51 000)

	SIZE 3	SIZE 5
Type with rear ports	PMSZ3-AI4G	PMSZ5-AI5G
Ports dimensions:	1/2" BSP 1/4" BSP	1" BSP 1/4" BSP



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