



S*-P
SEQUENCE VALVE

U*-P
UNLOADING VALVE

T*-P
BACKPRESSURE VALVE

X*-P
BALANCING VALVE

SERIES 20

OPERATING PRINCIPLE

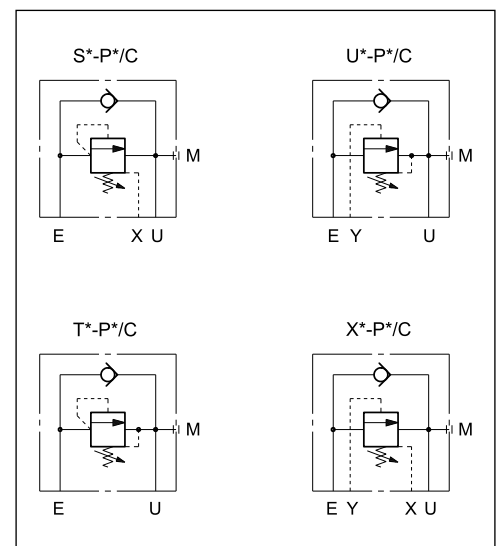
- The S U T X sequence valves are used for pressure control. They are direct-acting and normally closed.
- They are available in two nominal sizes for flows up to 150 l/min and in four pressure adjustment ranges.
- Opening takes place by means of a pilot pressure that, acting on a small piston, resists the force of the adjustment spring.
- The valve can be easily modified to get any one of the four versions **S**, **U**, **T**, **X**, turning the upper and the bottom covers in order to obtain the X and Y internal connections, as indicated in par. 7.

The figure represents the section of a type S valve.

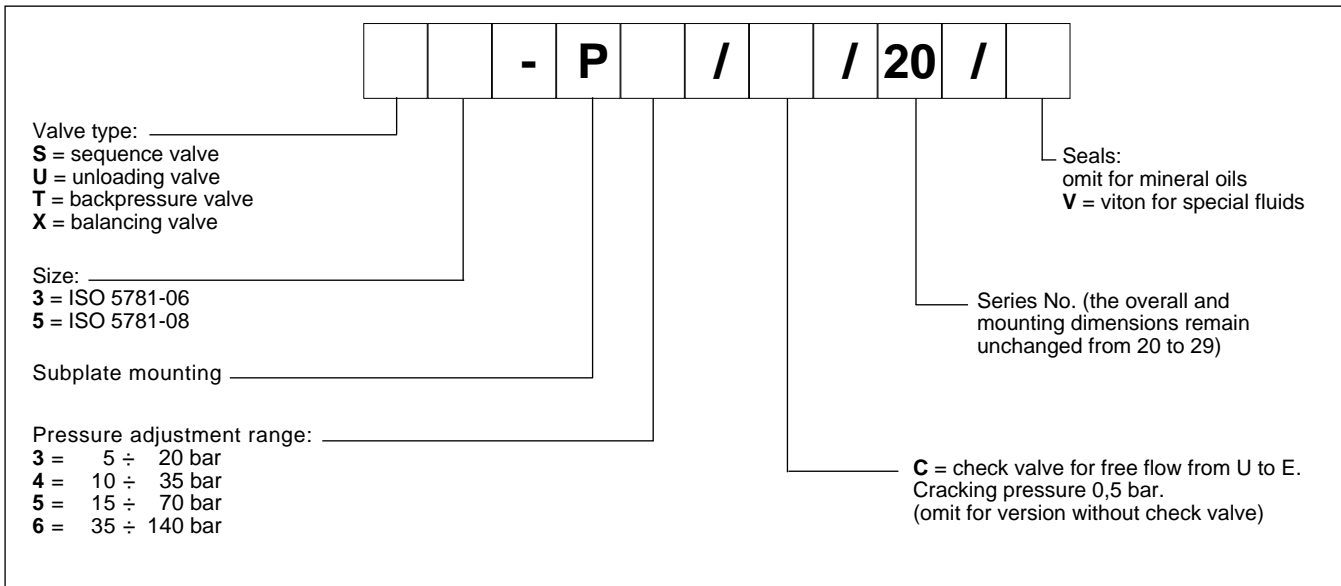
PERFORMANCES (measured with mineral oil of viscosity 36 cSt at 50°C)

		size 3	size 5
Maximum operating pressure	bar	320	250
Maximum flow rate	l/min	60	150
Ambient temperature range	°C	-20 / +60	
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

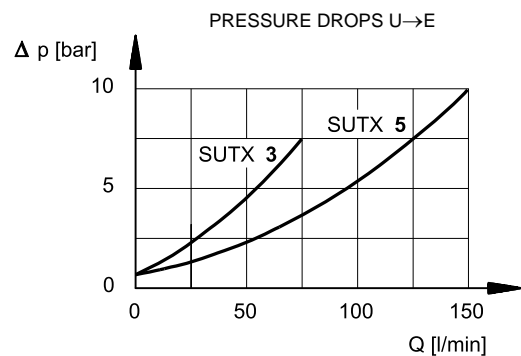
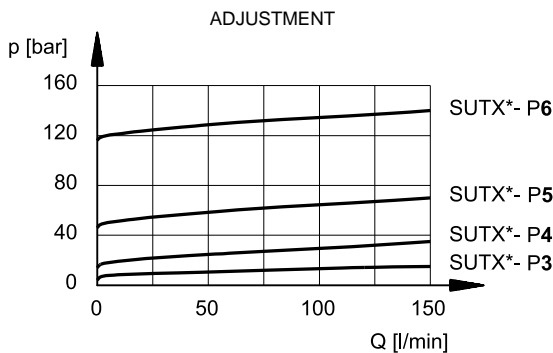
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



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

dimensions in mm

FASTENING BOLTS:
4 bolts M10x70
Tightening torque: 40 Nm

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

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

5 - SUTX 5-P OVERALL AND MOUNTING DIMENSIONS

dimensions in mm

FASTENING BOLTS:
4 bolts M10x70
Tightening torque: 40 Nm

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

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

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

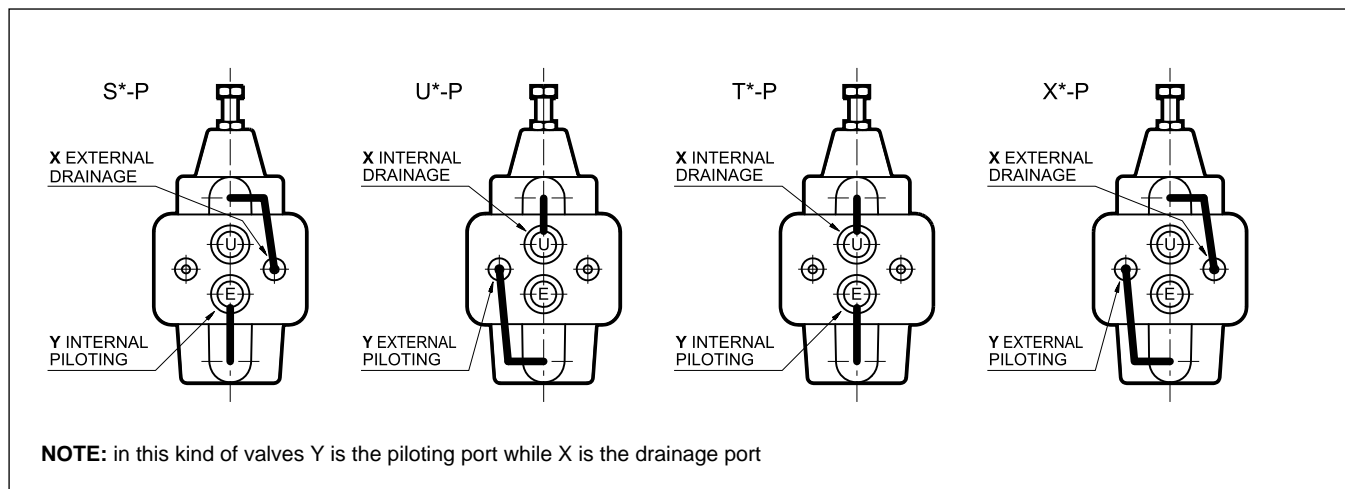
chamber of a high differential cylinder which the directional valve would not be able to drain; in this case the valve piloting is connected to the small chamber of the cylinder.

“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:	E, U X, Y	1" BSP 1/4" BSP

a member of DAIKIN group

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MSD

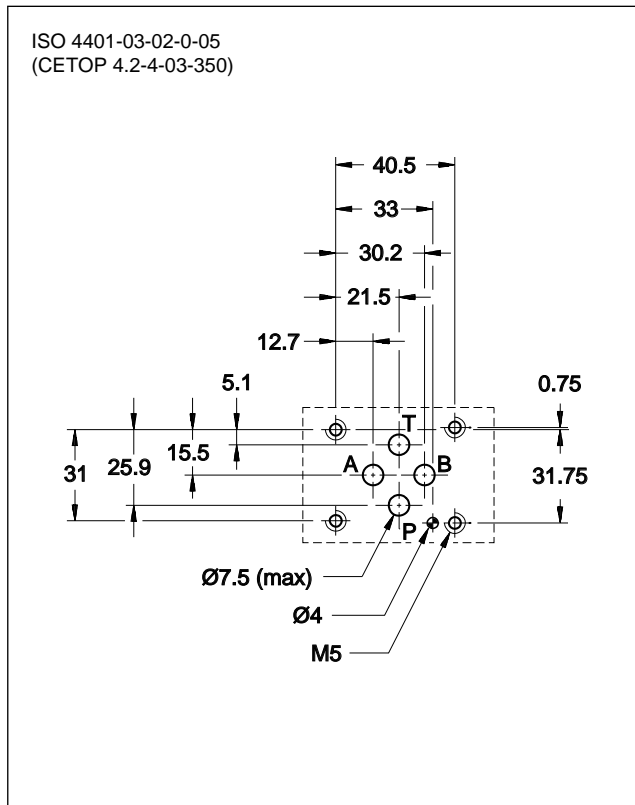
DIRECT OPERATED SEQUENCE VALVE

SERIES 50

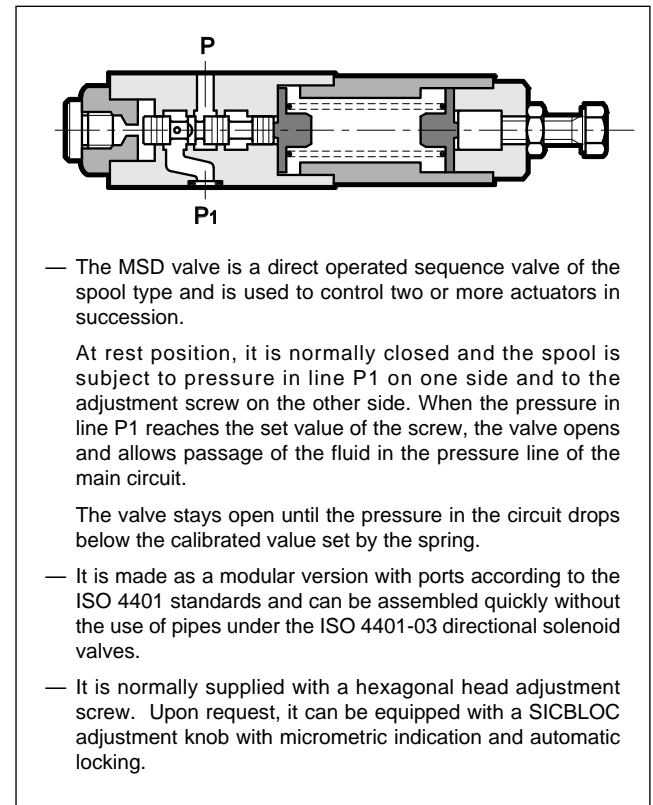
MODULAR VERSION ISO 4401-03

p max 350 bar
Q max (see table of performances)

MOUNTING INTERFACE



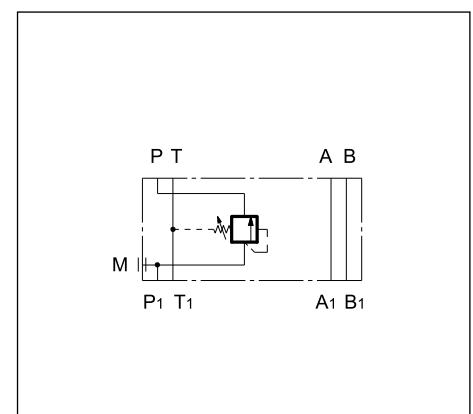
OPERATING PRINCIPLE



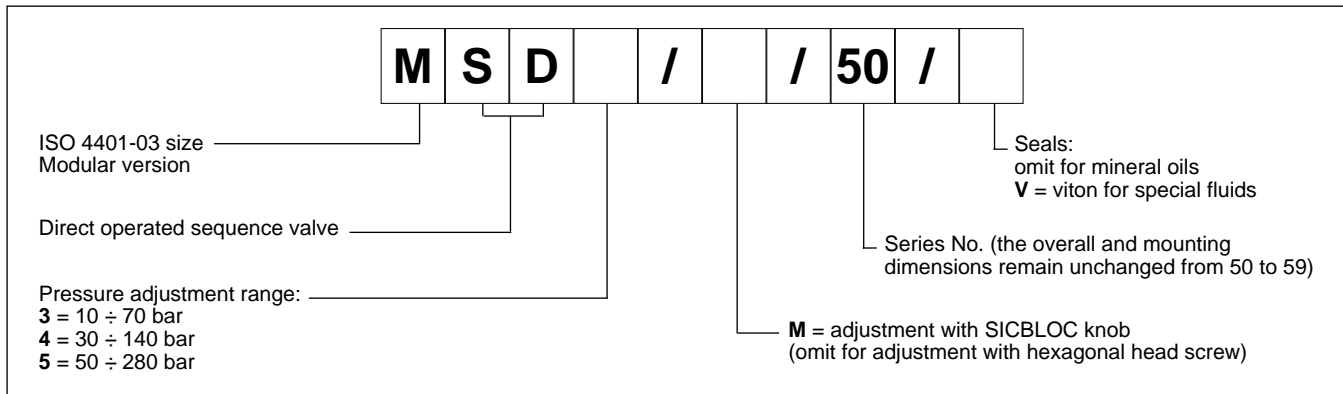
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure maximum pressure on port T	bar	350 10
Maximum flow rate in the controlled lines Maximum flow rate in the free lines	l/min	50 75
Ambient temperature range	°C	-20 / +60
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	1,4

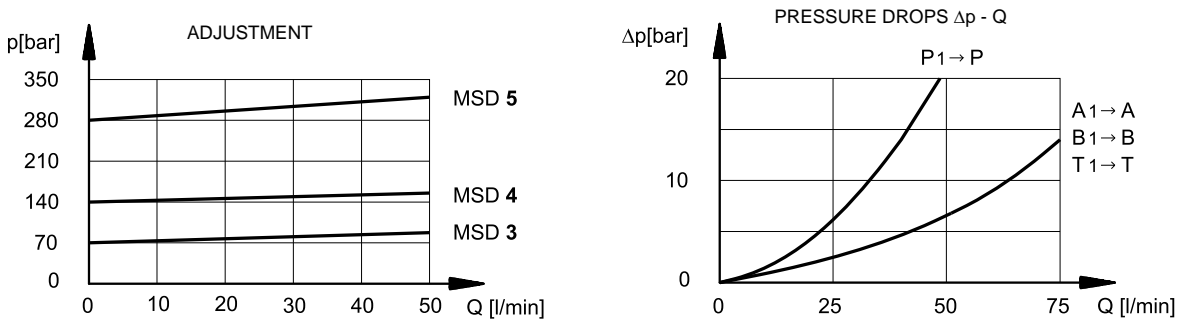
HYDRAULIC SYMBOLS



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

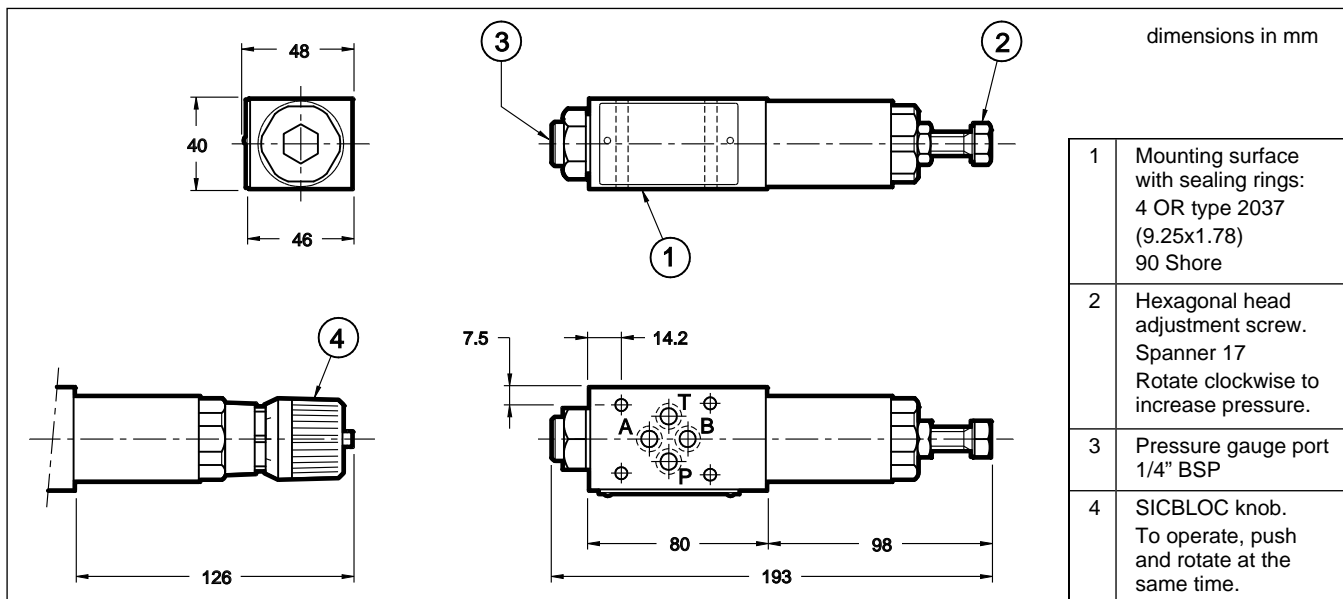


3 - HYDRAULIC FLUIDS

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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 - OVERALL AND MOUNTING DIMENSIONS





SD4M

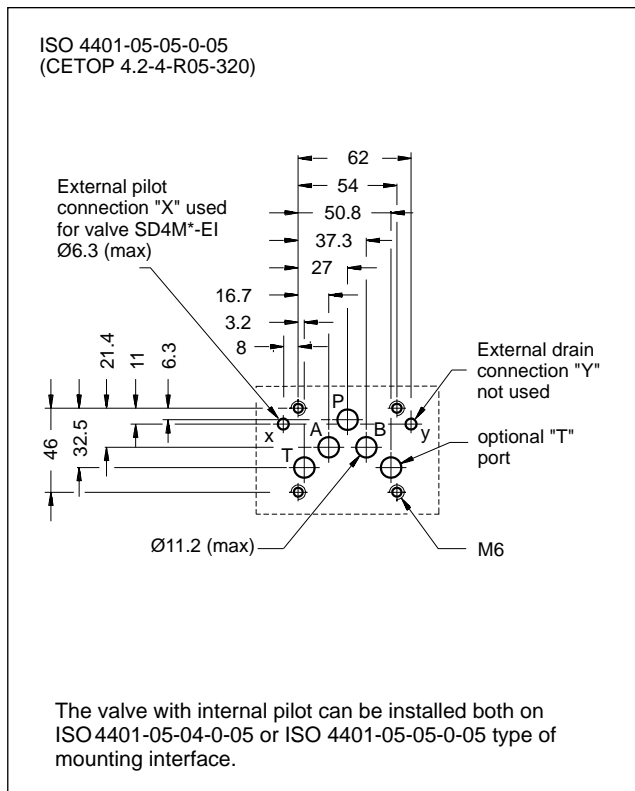
DIRECT OPERATED SEQUENCE VALVE

SERIES 50

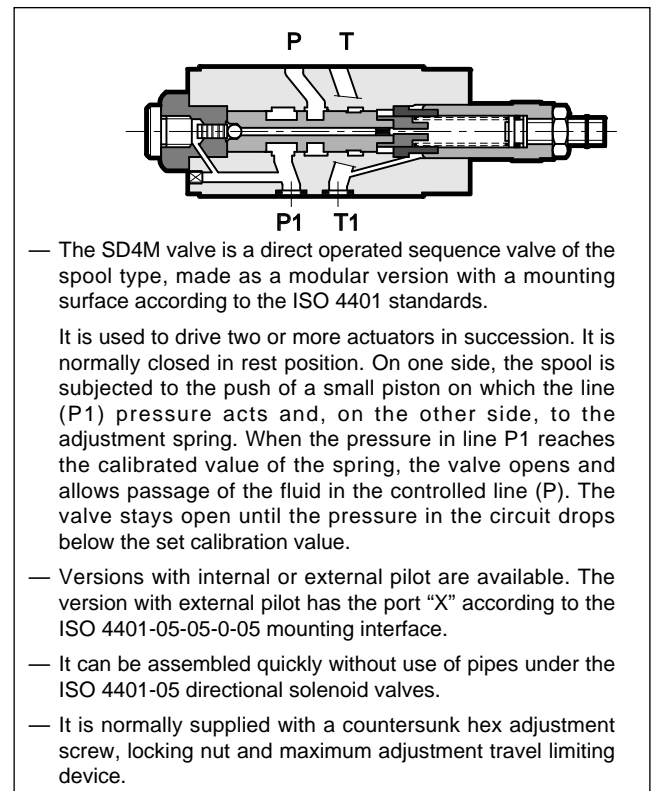
MODULAR VERSION ISO 4401-05

p max 320 bar
Q max (see table of performances)

MOUNTING INTERFACE



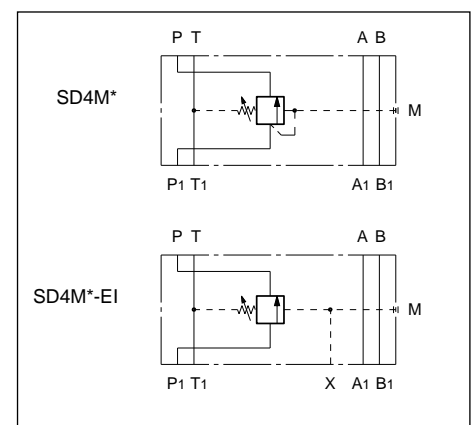
OPERATING PRINCIPLE



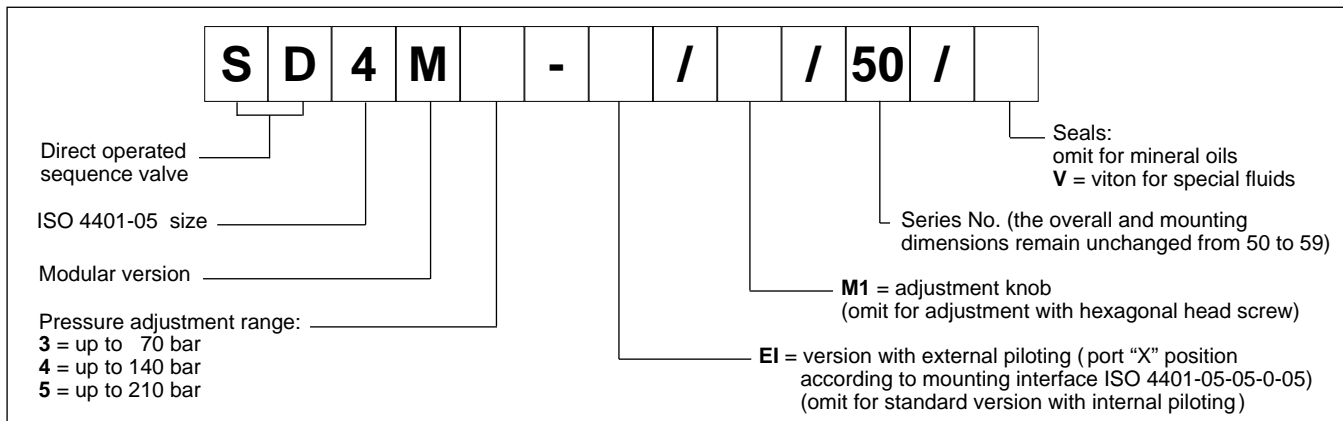
PERFORMANCES (measured with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure maximum pressure on port T	bar	320 10
Maximum flow rate in the controlled lines Maximum flow rate in the free lines	l/min	80 100
Ambient temperature range	°C	-20 / +60
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	2,7

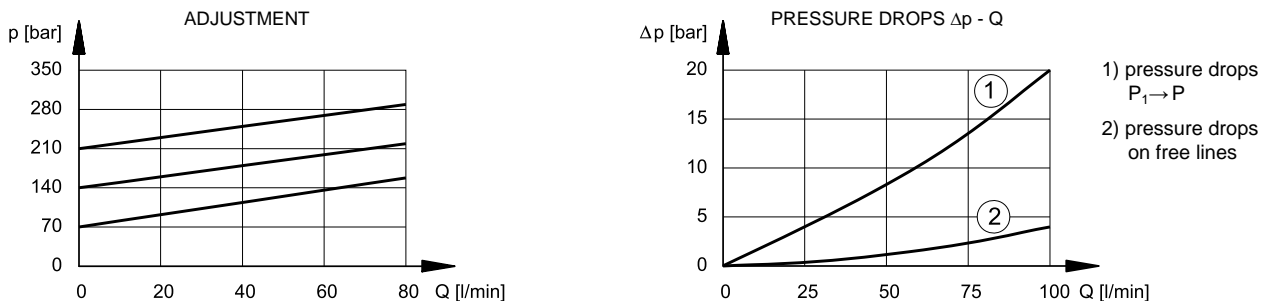
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