

Part number:



HYDROMA
HYDRAULICKÉ SYSTÉMY

HIDROMA
SYSTEMS
UKŁADY HYDRAULICZNE

HYDROMA
ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

RPC1

FLOW CONTROL VALVE PRESSURE AND TEMPERATURE COMPENSATED SERIES 43

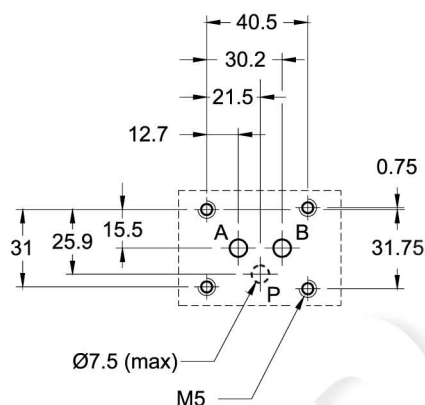
SUBPLATE MOUNTING ISO 6263-03

p max **250** bar

Q max (see table of performances)

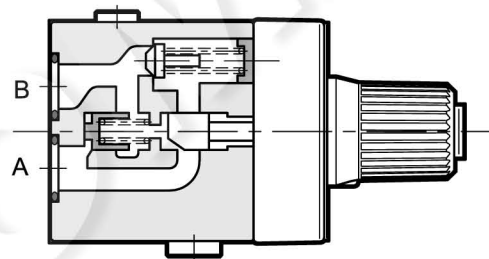
MOUNTING INTERFACE

ISO 6263-03-03-97
(CETOP 4.5.2-2-03-250)



NOTE: Port T must never be made. The port P must be made only for RPC1 - */CTX. Conversion plates are available.

OPERATING PRINCIPLE



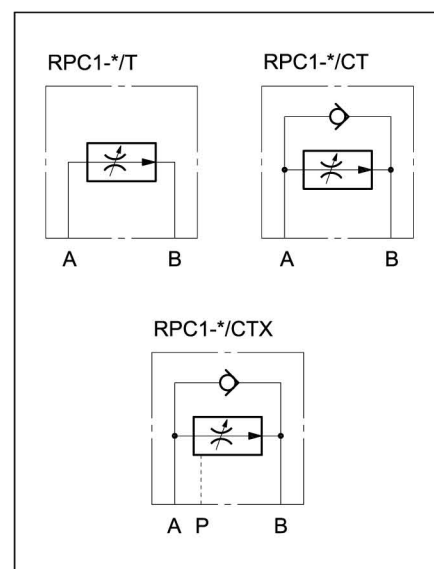
- The RPC1 valve is a pressure and temperature compensated flow control valve.
- Valves are available with three-turn or single turn adjustment knob, with or without check valve for free reverse flow.
- The flow is adjusted by a calibrated knob that modulates the opening of the control gap and can be locked in any adjustment position.
- They are available in seven different flow rate adjustment ranges from 0,5 l/min to 30 l/min.

PERFORMANCE RATINGS

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

Maximum operating pressure	bar	250
Minimum pressure difference between A and B	bar	10
Check valve cracking pressure	bar	0.5
Max. controlled flow rates	l/min	0.5-1-4-10-16-22-30
Min. controlled flow rate (for 0.5, 1 and 4 l/min)	l/min	0.025
Maximum flow rate in free flow direction	l/min	40
Ambient temperature range	°C	-20 / +60
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree for controlled flow = 0,5 l/min for controlled flow > 0,5 l/min	according to ISO 4406:1999 class 20/18/15 class 18/16/13	
Recommended viscosity	cSt	25
Mass	kg	1.3
No. of turns of the adjustment knob	RPC1 RPC1-*/M	3 1

HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE

R	P	C	1	-	/	T	/	/	43	/	
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Pressure compensated flow control valve

Size ISO 6263-03

Controlled flow

0,5 = 0,5 l/min
1 = 1 l/min **16** = 16 l/min
4 = 4 l/min **22** = 22 l/min
10 = 10 l/min **30** = 30 l/min

C = incorporated check valve
 Omit if not required

Temperature compensation

Seals:
 Omit for mineral oils
V = viton for special fluids

Series No.:
 (the overall and mounting dimensions remain unchanged from 40 to 49)

Adjustment knob:
 Omit for three-turn adjustment
M = single-turn (**NOTE**)

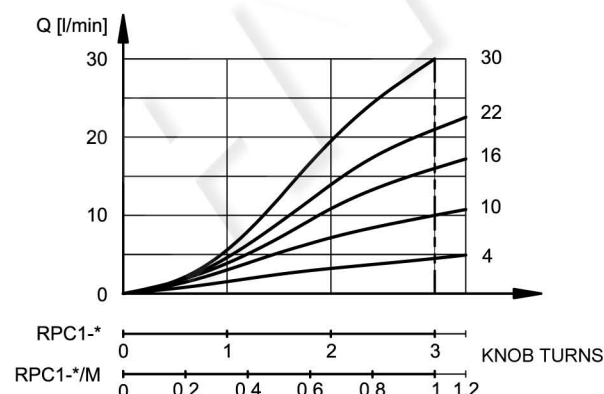
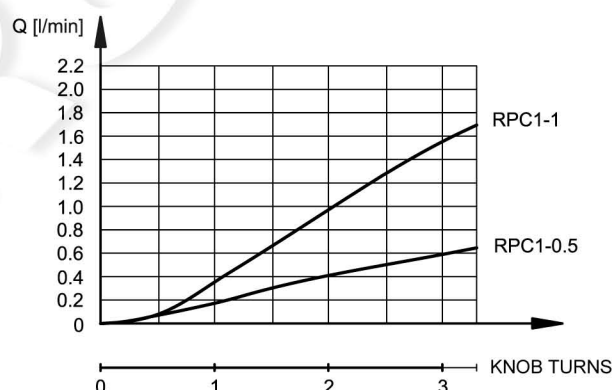
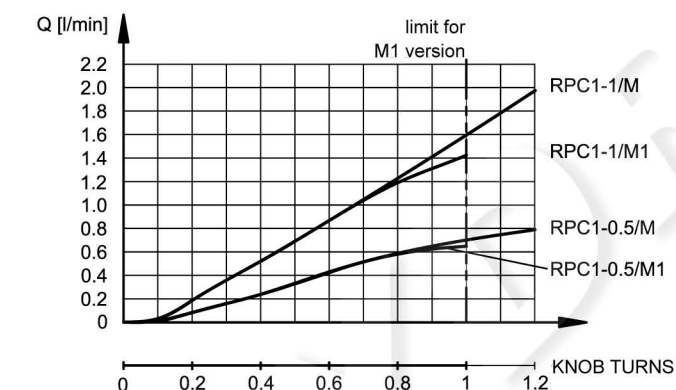
X = with port P for anti-surge pilot signal (available for version with incorporated check valve only)
 Omit if not required.

NOTE: Version **M1** with flowrate limitation is available on request for controlled flow 0.5 and 1 only. Refer to characteristic curves diagrams for flow limits.

2 - CHARACTERISTIC CURVES

(values obtained with viscosity of 36 cSt at 50°C)

ADJUSTMENT



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 - PRESSURE COMPENSATION

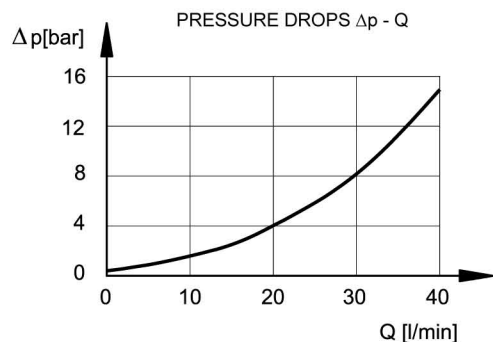
Two throttles in series are in the valve. The first is controlled by the knob mechanism; the second throttle assures a constant pressure drop, controlled by the pressure upstream and downstream the first throttle. In these conditions, the set flow rate value stays constant within a tolerance range of $\pm 2\%$ of the maximum flow controlled by the valve for maximum pressure variation between the inlet and the outlet ports.

5 - TEMPERATURE COMPENSATION

Thermal compensation in the valve is obtained by adopting the principle of restricted fluid passage, so that the fluid is not influenced significantly by variations in oil viscosity. For controlled flows of less than 0,5 l/min and with a temperature difference of 50 °C, flow is increased by about 13% of the set flow value. For higher flow rates, and with the same temperature difference, the flow rise is about 4% of the maximum flow controlled by the valve.

6 - RPC1-*/CT: WITH REVERSE FREE FLOW

The RPC1-*/CT version is equipped with an incorporated check valve to allow free flow in the direction opposite to the controlled flow, B→A.

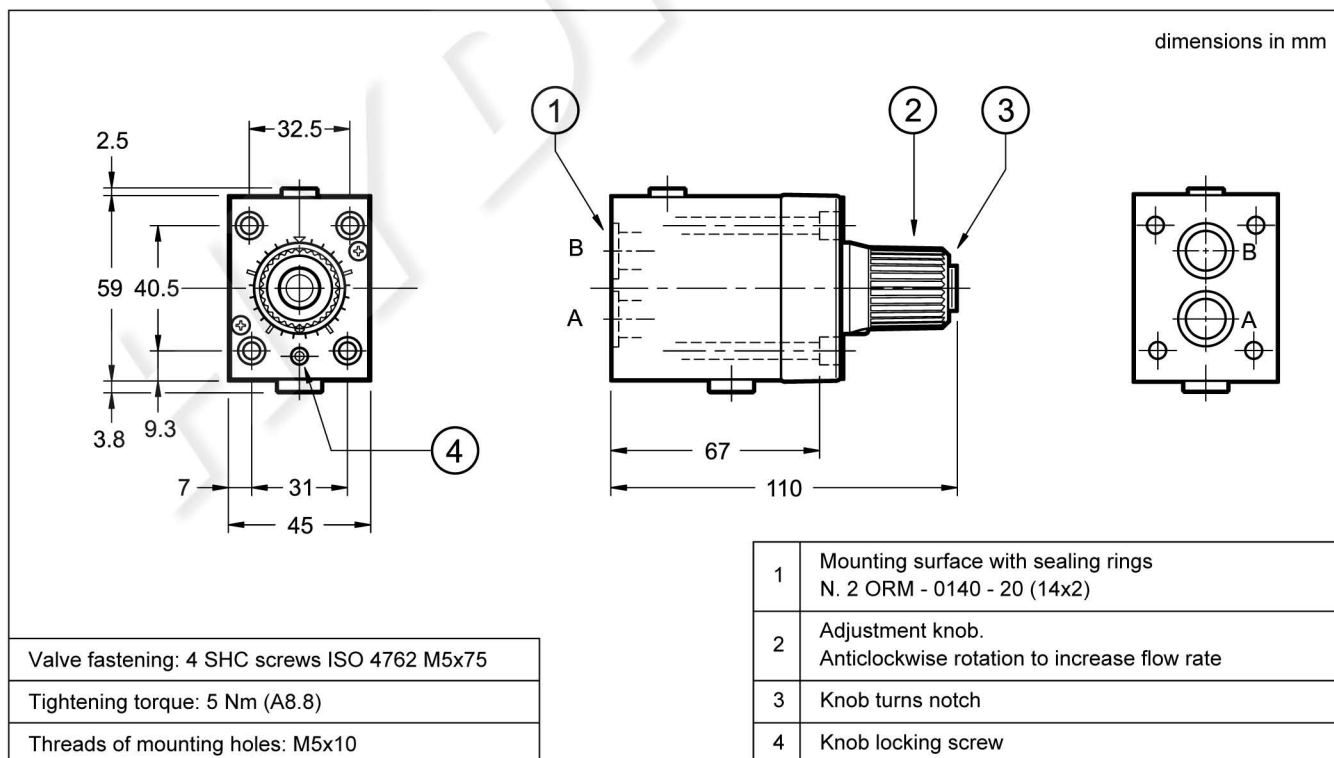


7 - RPC1-*/CTX: HYDRAULIC PILOT SIGNAL

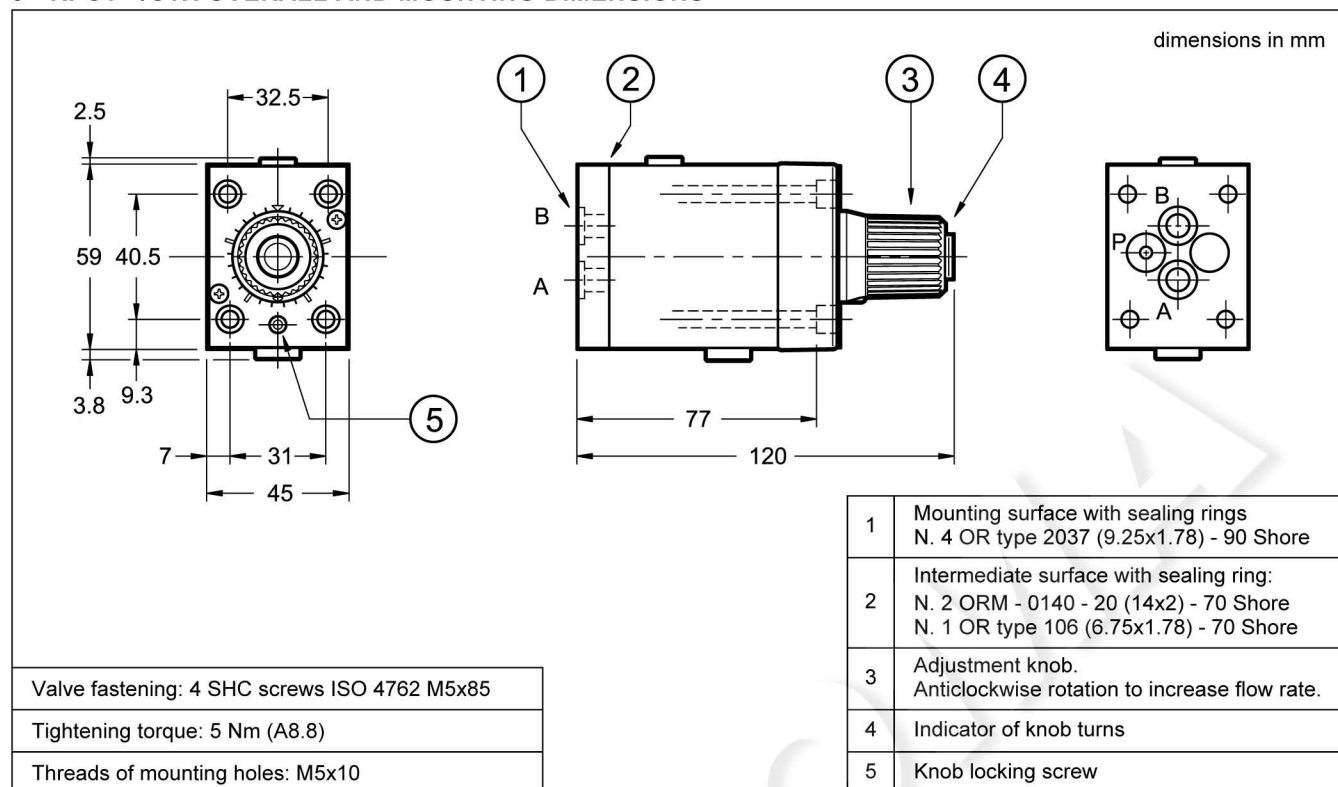
This valve is used for meter-in control and is to be placed downstream of the directional valve.

The pilot signal coming in path P keeps the internal compensator closed thus avoiding the initial flow rate surge that occurs when the directional control valve downstream in the line connects the flow path and the fluid reaches the inlet port of the RPC1 (see the application diagram, point 11).

8 - RPC1-*/T AND RPC1-*/CT OVERALL AND MOUNTING DIMENSIONS



9 - RPC1-*/CTX OVERALL AND MOUNTING DIMENSIONS



10 - SUBPLATES (see catalogue 51 000)

	rear ports 3/8" BSP	side ports 3/8" BSP	ISO 6263 subplate with P and T blind ports
RPC1-*/T, RPC1-*/CT	PMRPC1-AI3G	PMRPC1-AL3G	0113388 P port to be plug (M4)
RPC1-*/CTX	PMMD-AI3G T port to be plug	PMMD-AL3G T port to be plug	-

11 - APPLICATION EXAMPLES

