



RPC1

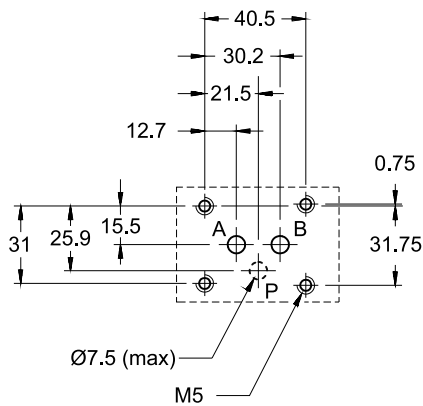
FLOW CONTROL VALVE PRESSURE AND TEMPERATURE COMPENSATED

SUBPLATE MOUNTING ISO 6263-03

p max 250 bar
Q max (see table of performances)

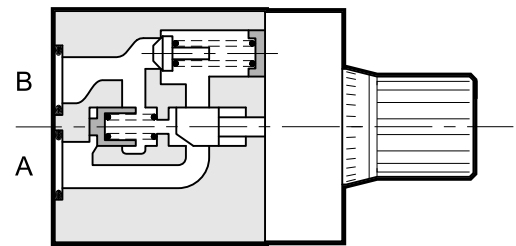
MOUNTING INTERFACE

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



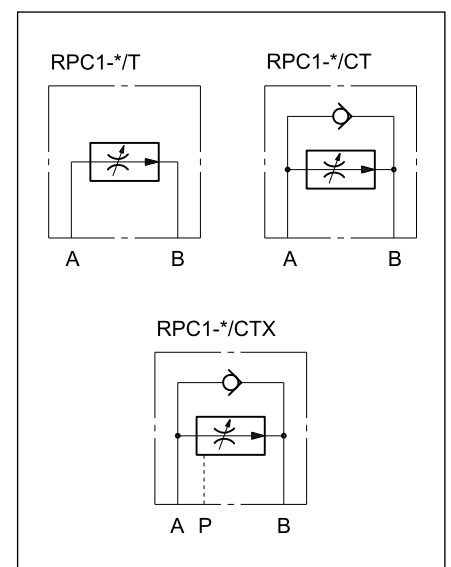
- The RPC1 valve is a pressure and temperature compensated flow control valve.
- Valves are available with three-turn or single turn adjustment knob, with or without check valve for free reverse flow.
- The flow is adjusted by a calibrated knob that modulates the opening of the control gap and can be 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	/		/		/	
--	----------	----------	----------	----------	----------	--	----------	--	----------	----------	--	----------	--	----------	--

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)
42 = for RPC1-*/T and RPC1-*/CT valves
41 = for RPC1-*/CTX valves

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

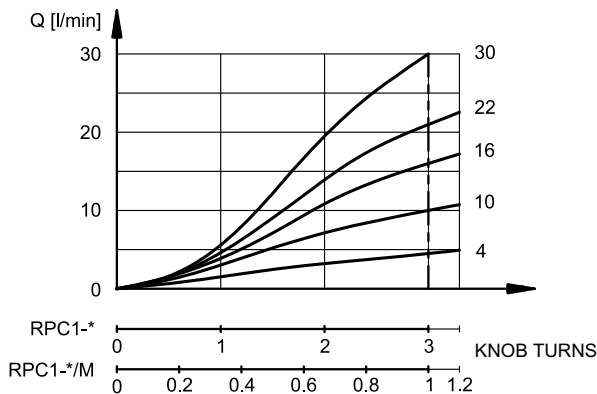
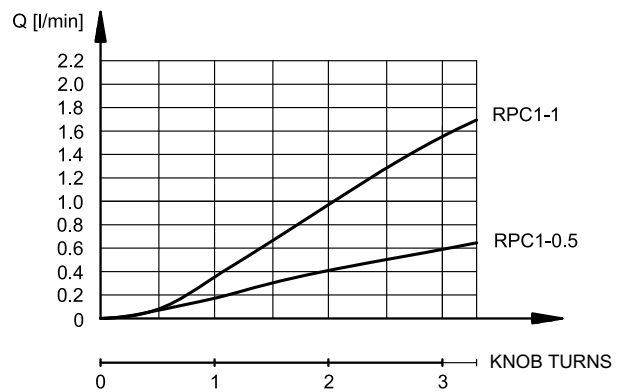
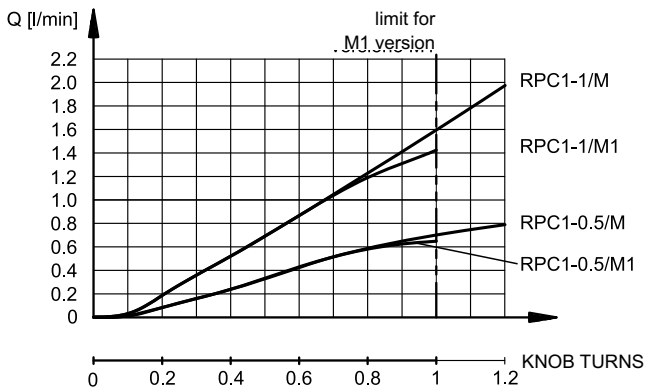
X = with port P for anti-surge pilot signal (available for version with incorporated check valve only)
 Omit if not required.

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

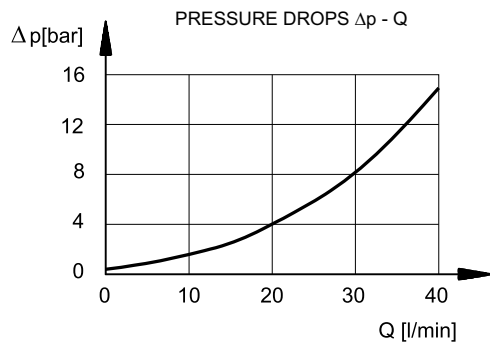
Two throttles in series are in the valve. The first is controlled by the knob mechanism; the second throttle assures a constant pressure drop, controlled by the pressure upstream and downstream the first throttle. In these conditions, the set flow rate value stays constant within a tolerance range of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

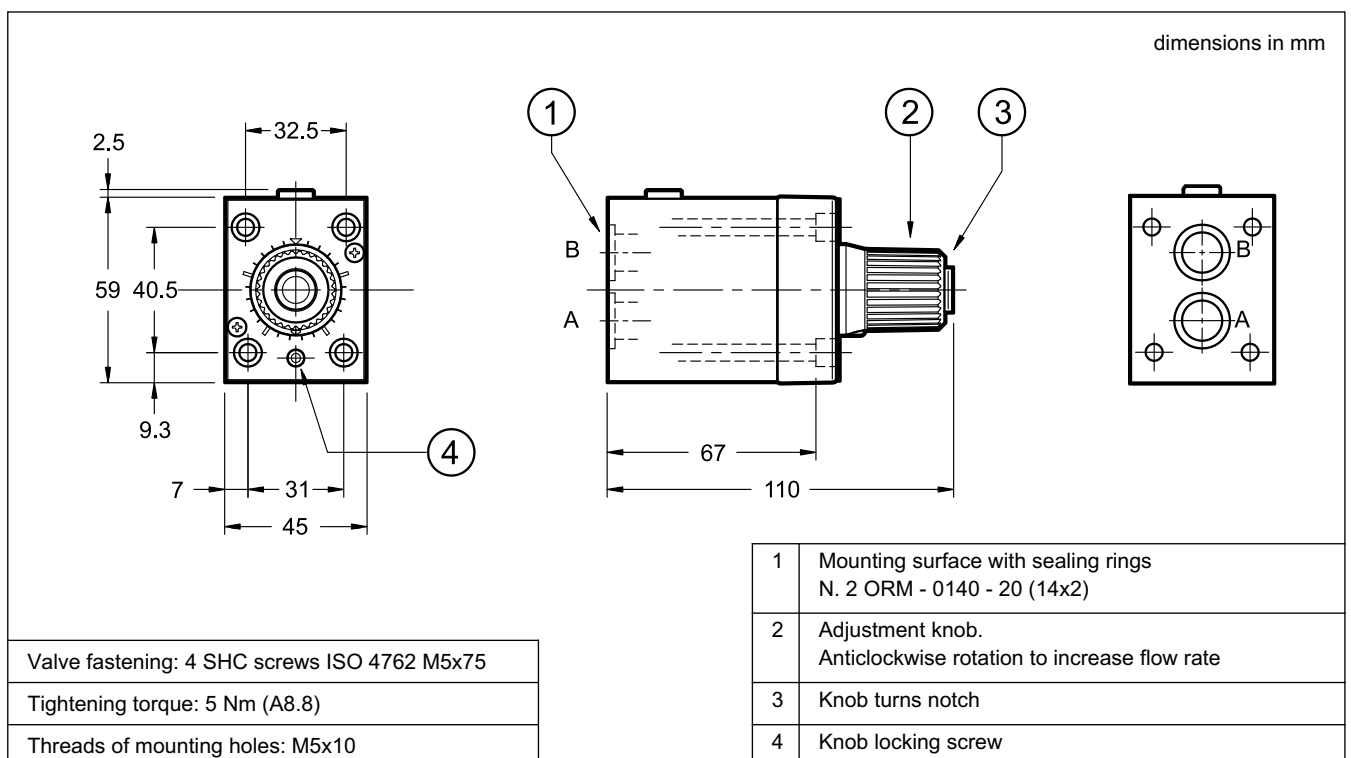


7 - RPC1-*/CTX: HYDRAULIC PILOT SIGNAL

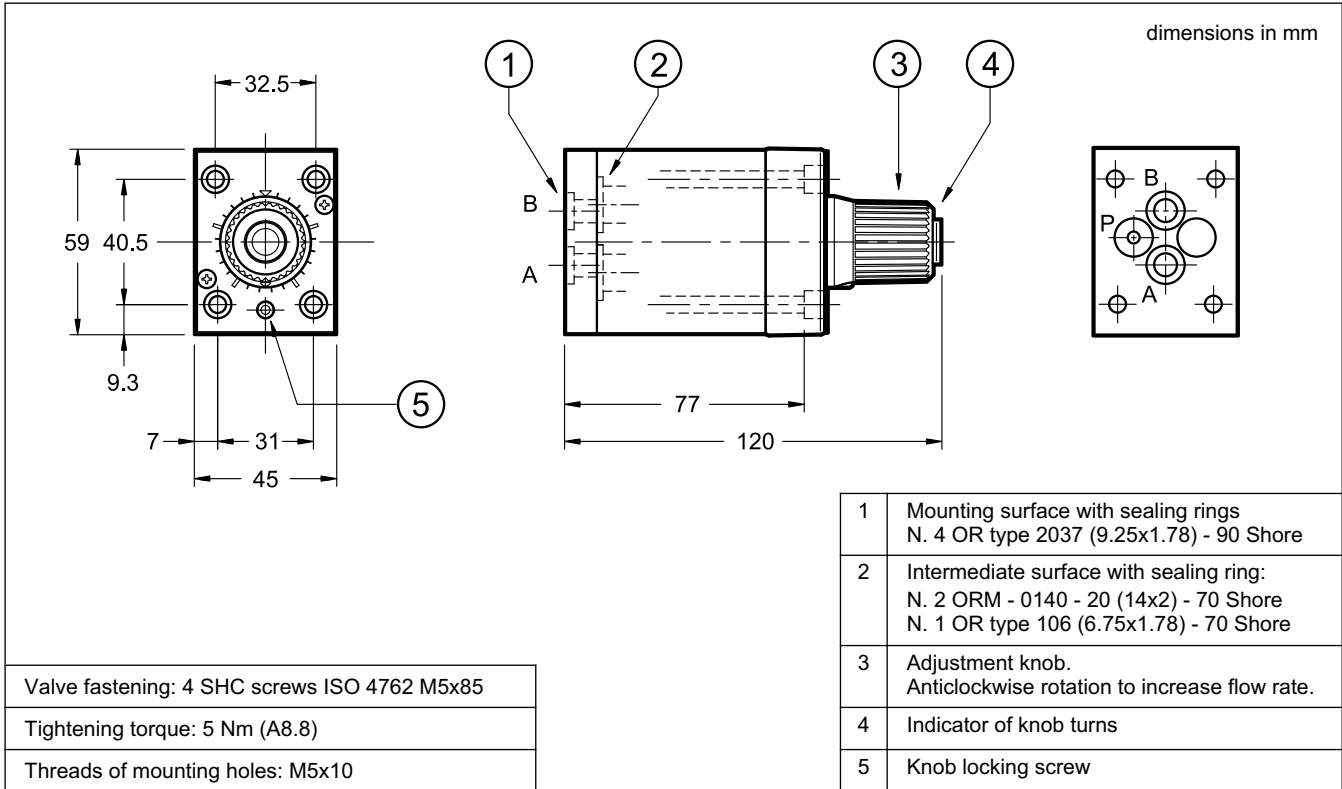
This valve is used for meter-in control and is to be placed downstream of the directional valve.

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, paragraph 11).

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



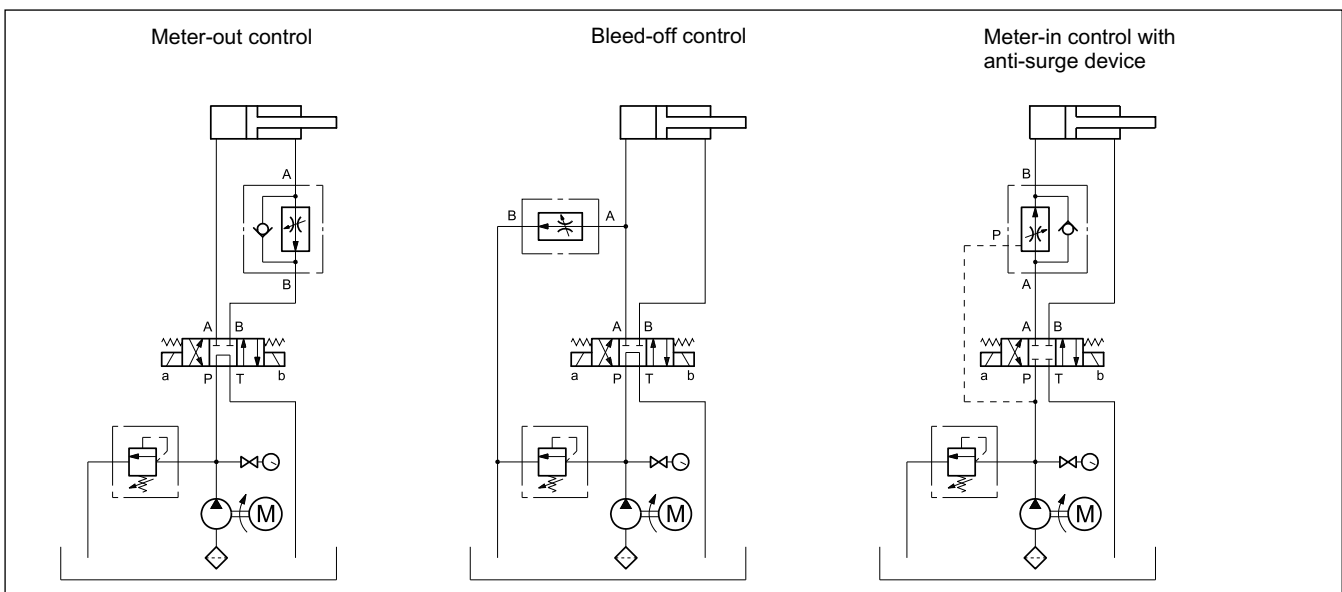
9 - RPC1-*/CTX OVERALL AND MOUNTING DIMENSIONS



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





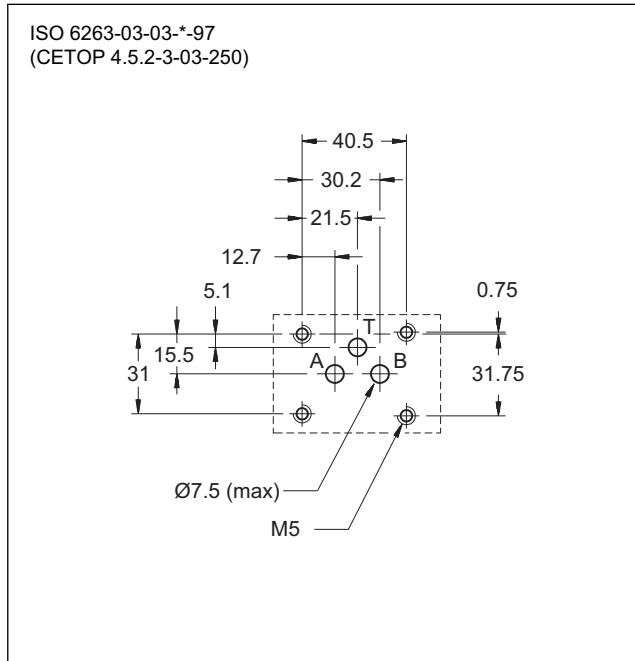
RPC1-T3

PRESSURE AND TEMPERATURE COMPENSATED THREE-WAY FLOW CONTROL VALVE SERIES 41

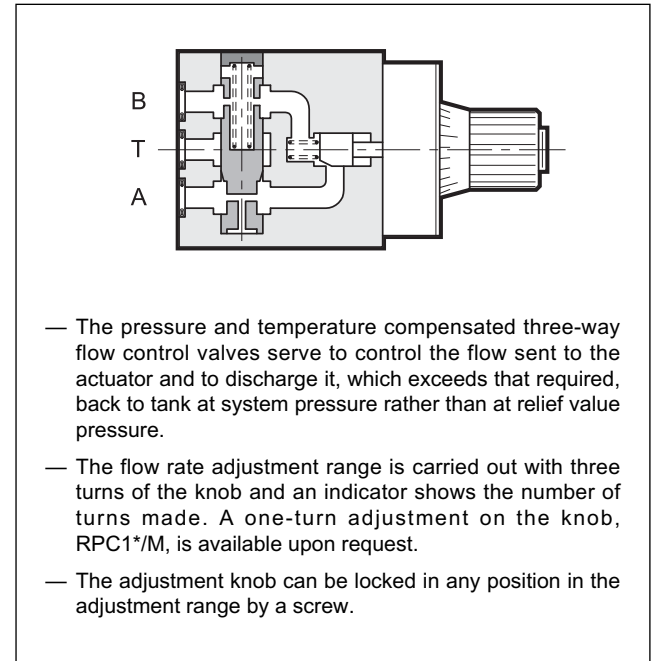
SUBPLATE MOUNTING ISO 6263-03

p max 250 bar
Q max (see table of performances)

MOUNTING INTERFACE



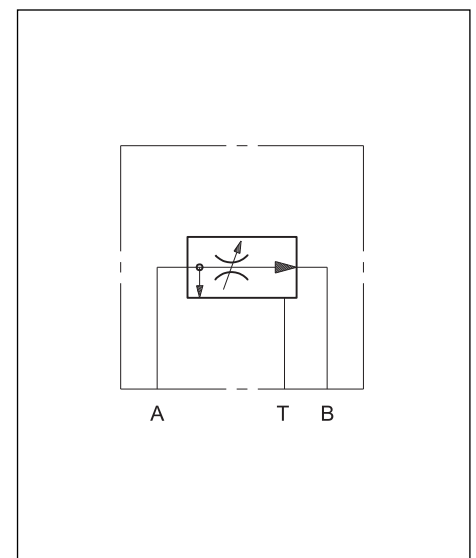
OPERATING PRINCIPLE



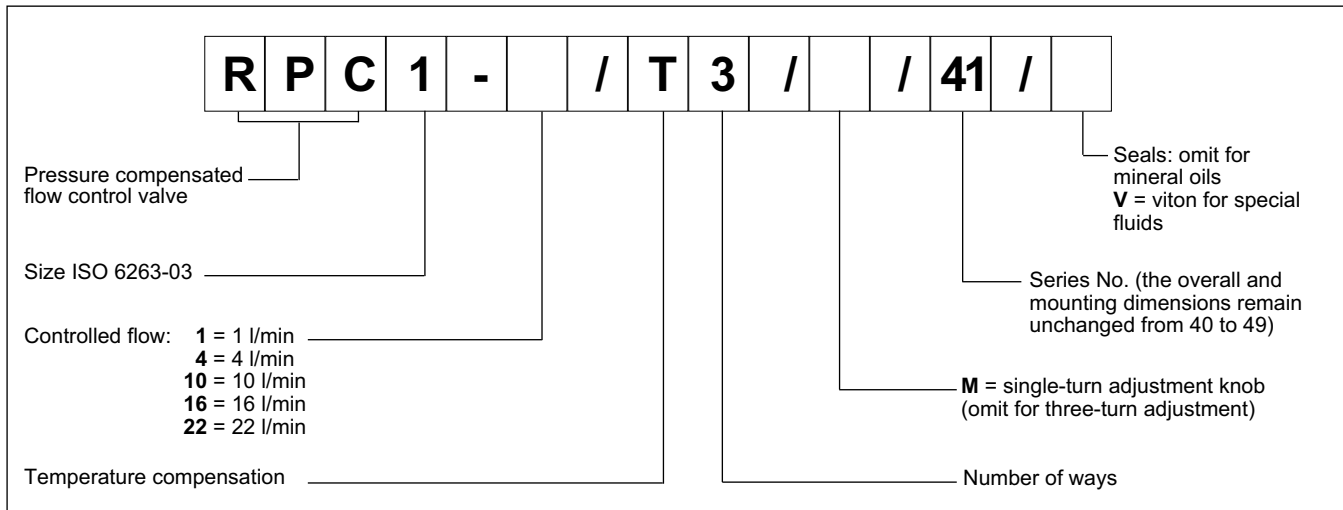
PERFORMANCES (obtained with mineral oil with viscosity of 36 cSt at 50°C)

Maximum operating pressure	bar	250
Minimum pressure difference between A and B		12
Maximum controlled flow rates	l/min	1 - 4 - 10 - 16 - 22
Minimum controlled flow rate (for 1 and 4 l/min)		0,035
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	
Fluid contamination degree for flows < 0,5 l/min	According to ISO 4406:1999 class 18/16/13	
Recommended viscosity	cSt	25
Mass	kg	1,5
Number of adjustment knob turns	RPC1-*/T3	3
	RPC1-*/T3/M	1

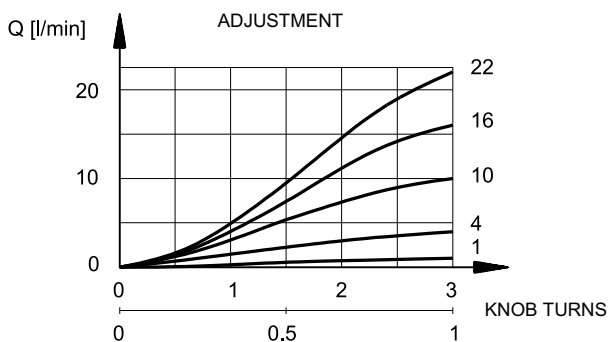
HYDRAULIC SYMBOL



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.

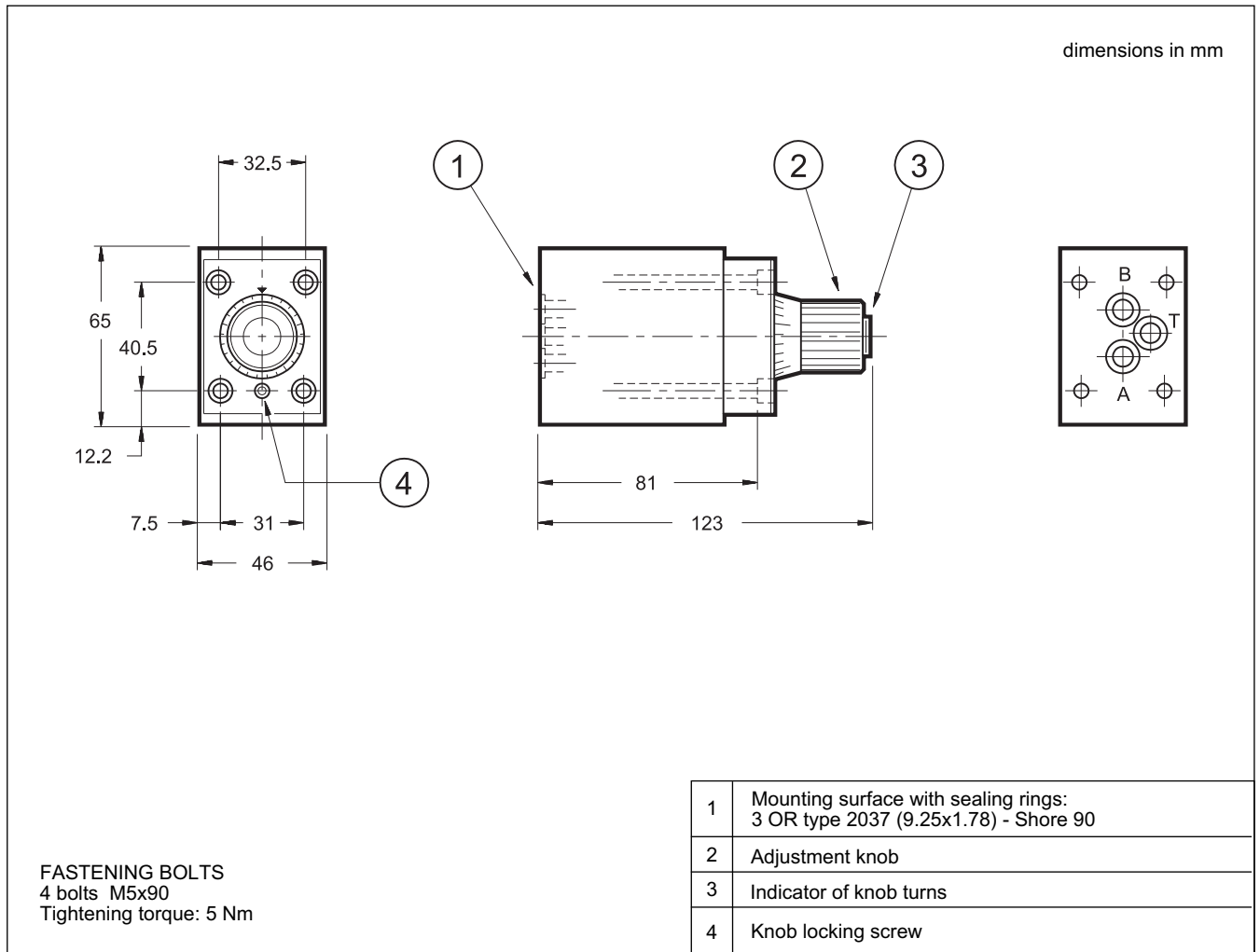
4 - PRESSURE COMPENSATION

Two throttles in series are in the valve. The first is an opening regulated by the knob; the second, piloted by the pressure upstream and downstream of the first throttle, assures a constant pressure drop across the adjustable 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 intake and outlet chambers of the valve.

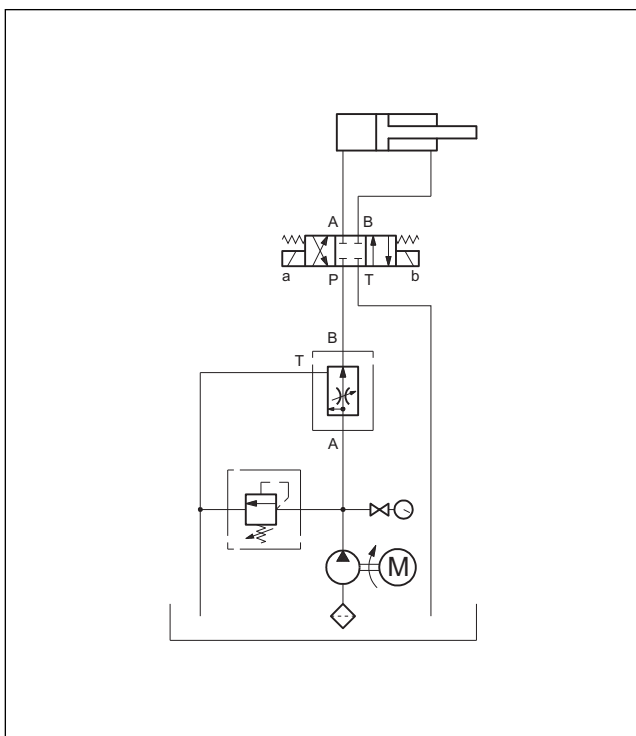
5 - TEMPERATURE COMPENSATION

The valve temperature compensation is obtained with the principle of fluid passage across a thin wall orifice in which the flow rate is not substantially influenced by the oil viscosity fluctuations. 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 increase is about 4% of the maximum flow controlled by the valve.

6 - OVERALL AND MOUNTING DIMENSIONS



7 - APPLICATION EXAMPLE



8 - SUBPLATES (see catalogue 51 000)

Type	PMMD-AI3G with rear ports with user P plugged
Type	PMMD-AL3G with side ports with user P plugged
Port dimension	3/8" BSP



RPC1-T3

SERIES 41



DIPLOMATIC MS S.p.A.

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tel. +39 0331.895.111 ▪ www.diplomatic.com ▪ e-mail: sales.exp@diplomatic.com

RPC*

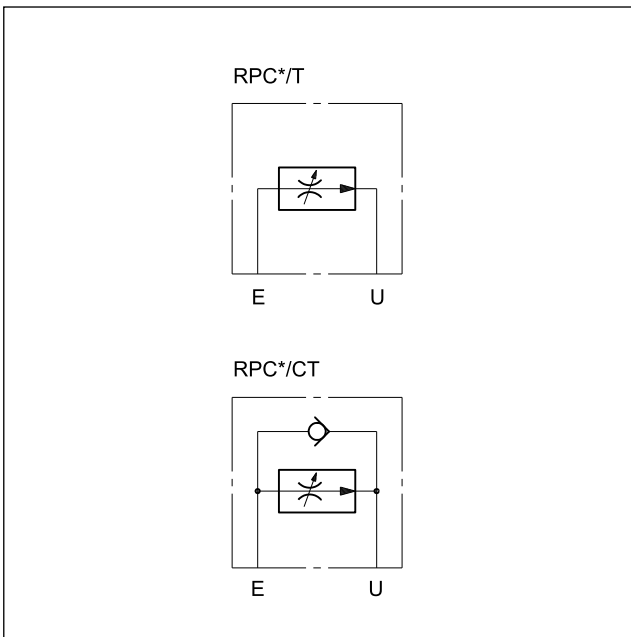
PRESSURE AND TEMPERATURE COMPENSATED FLOW CONTROL VALVES



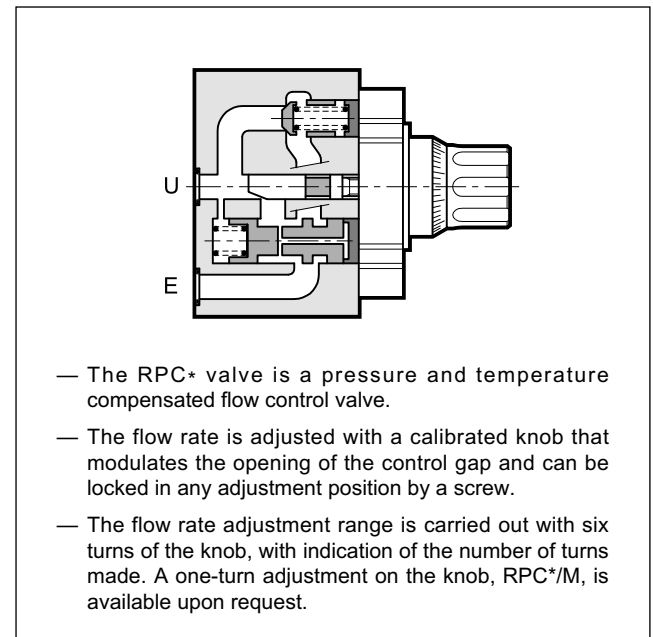
SUBPLATE MOUNTING

RPC2 ISO 6263-06
RPC3 ISO 6263-07

HYDRAULIC SYMBOL



OPERATING PRINCIPLE

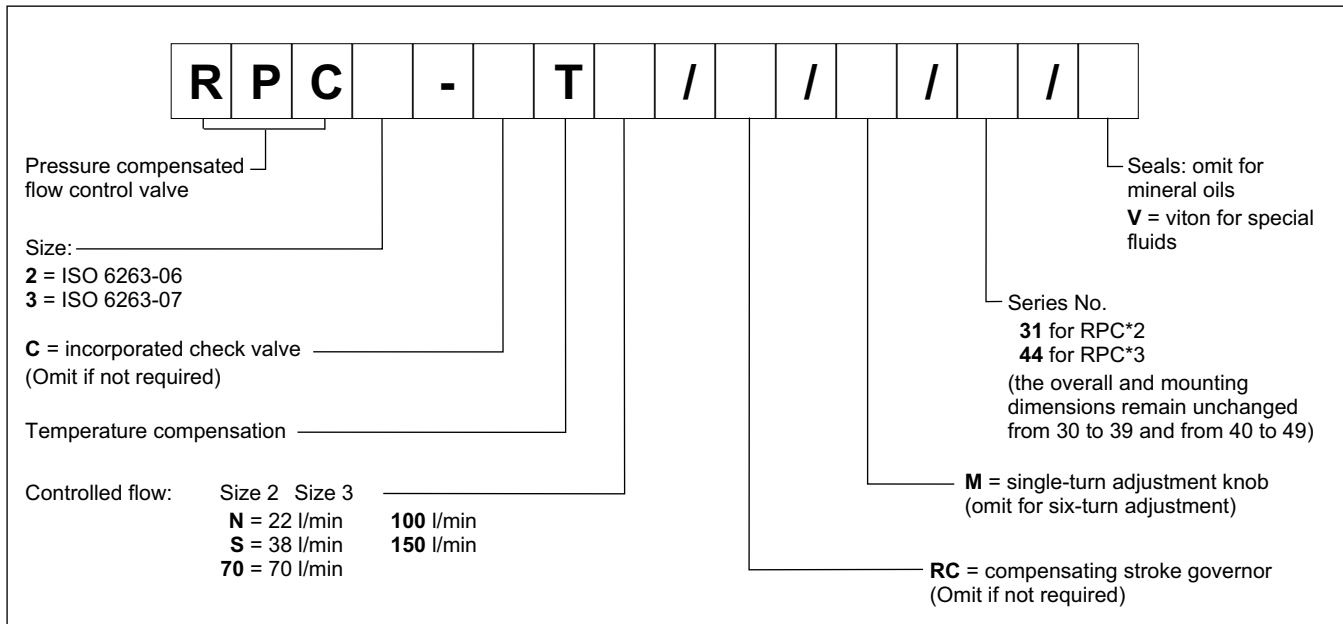


PERFORMANCES

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

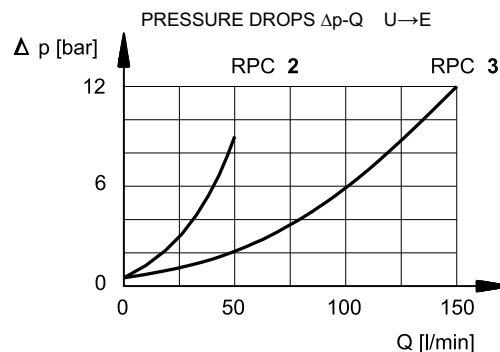
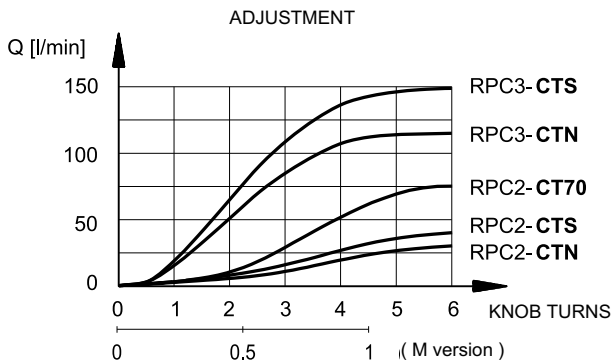
		RPC2	RPC3
Maximum operating pressure	bar	320	250
Check valve cracking pressure		0,5	0,5
Minimum pressure difference between E and U		10	12
Maximum controlled flow rates	l/min	22 - 38 - 70	100 - 150
Minimum controlled flow rate		0,050	0,120
Ambient temperature range	°C	-20 / +60	
Fluid temperature range	°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	3,6	7,8

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 - PRESSURE COMPENSATION

Two throttles in series are in the valve. The first is an opening regulated by the knob; the second, piloted by the pressure upstream and downstream of the first throttle, assures a constant pressure drop across the adjustable throttle.

In these conditions, the set flow rate value stays constant within a tolerance range of $\pm 3\%$ of the maximum flow controlled by the valve for the maximum pressure variation between inlet and outlet chambers of the valve.

5 - TEMPERATURE COMPENSATION

A device located on the first throttle which is sensitive to the temperature fluctuations corrects the position keeping the controlled flow more or less unaltered even should the oil viscosity change.

The fluctuation of the set flow rate stays within $\pm 2,5\%$ of the maximum flow controlled by the valve.

6 - REVERSE FREE FLOW

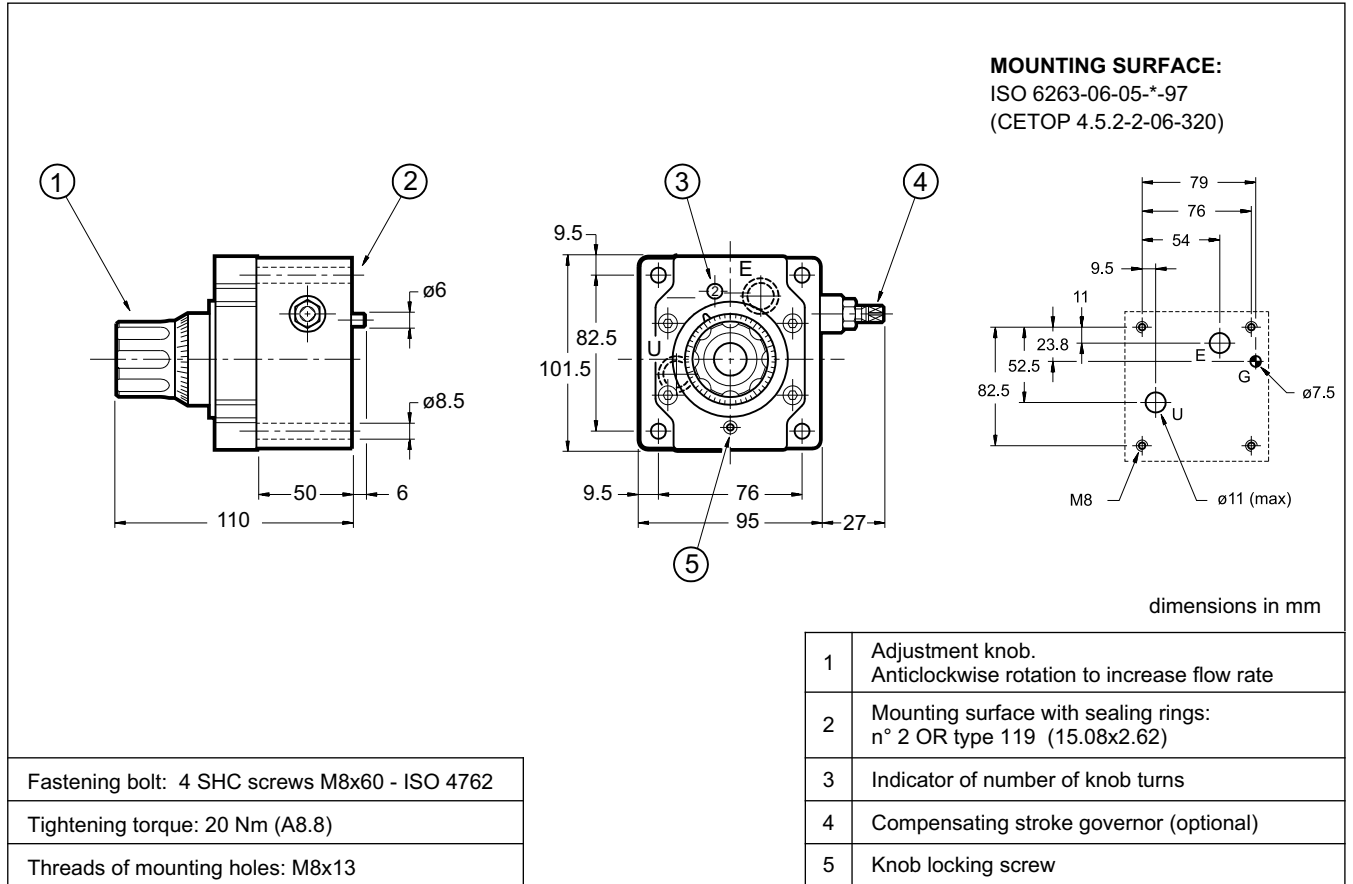
The RPC* valves, upon request, are supplied with an incorporated check valve to allow free flow in the direction opposite of the controlled flow. In this case the valve code becomes RPC*-CT.

7 - COMPENSATING STROKE GOVERNOR

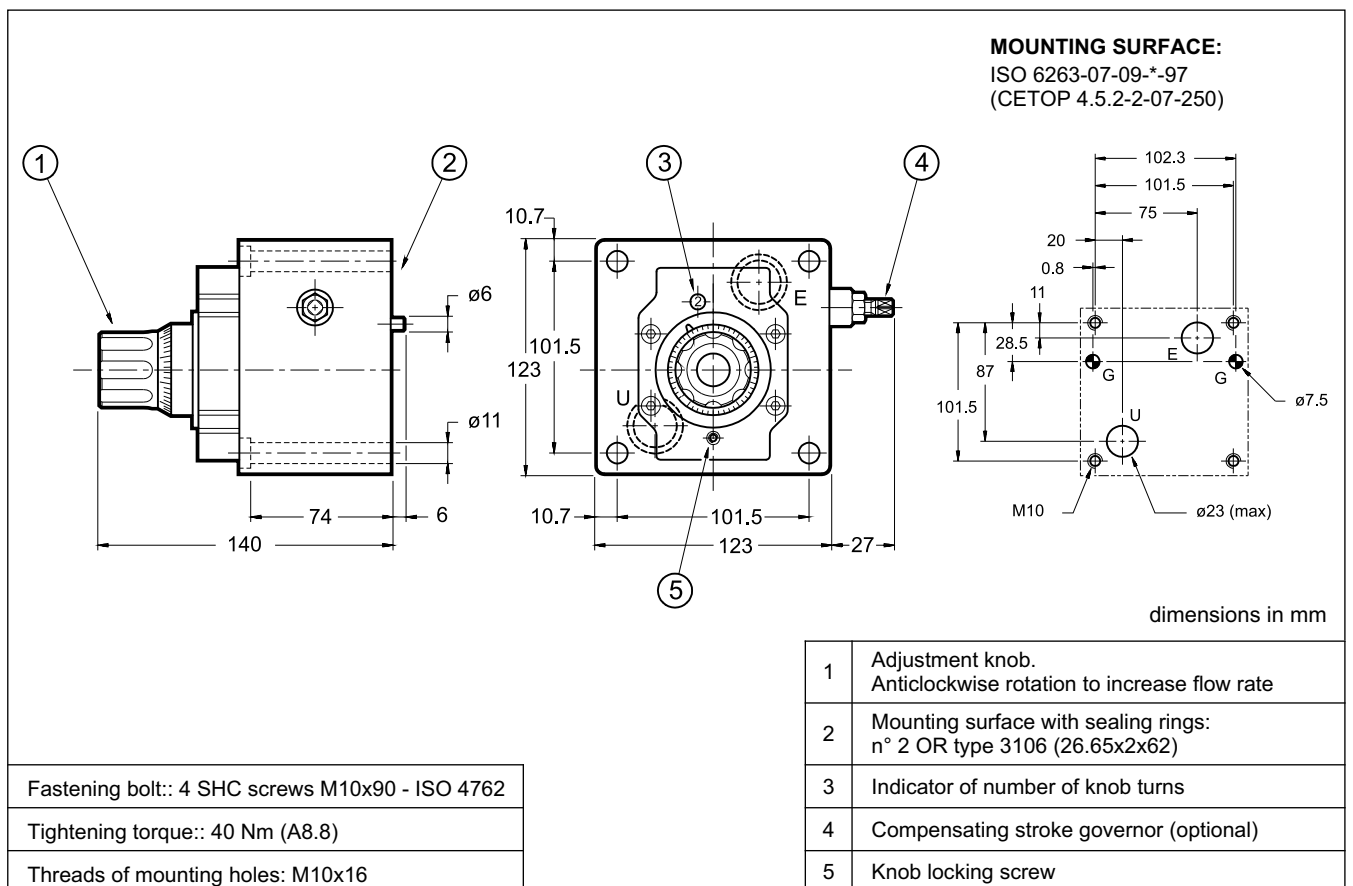
In order to avoid jumps in the actuator when it is started, the RPC valve can be equipped with a special accessory that controls the compensating stroke, thus preventing it from making uncontrolled movements.

Add the suffix **RC** to the identification code to request this governor. See paragraph 1.

8 - RPC2 OVERALL AND MOUNTING DIMENSIONS



9 - RPC3 OVERALL AND MOUNTING DIMENSIONS





10 - SUBPLATES

(see catalogue 51 000)

	RPC2	RPC3
Type	PMRPC2-Al4G rear ports	PMRPC3-Al6G rear ports
Port dimensions	1/2" BSP	1" BSP



RPC*-*T3

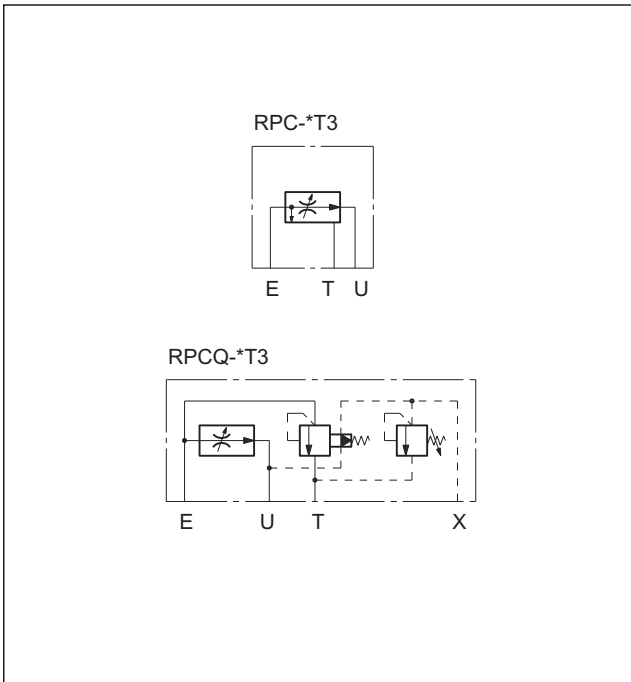
PRESSURE AND TEMPERATURE COMPENSATED THREE-WAY FLOW CONTROL VALVES

SUBPLATE MOUNTING

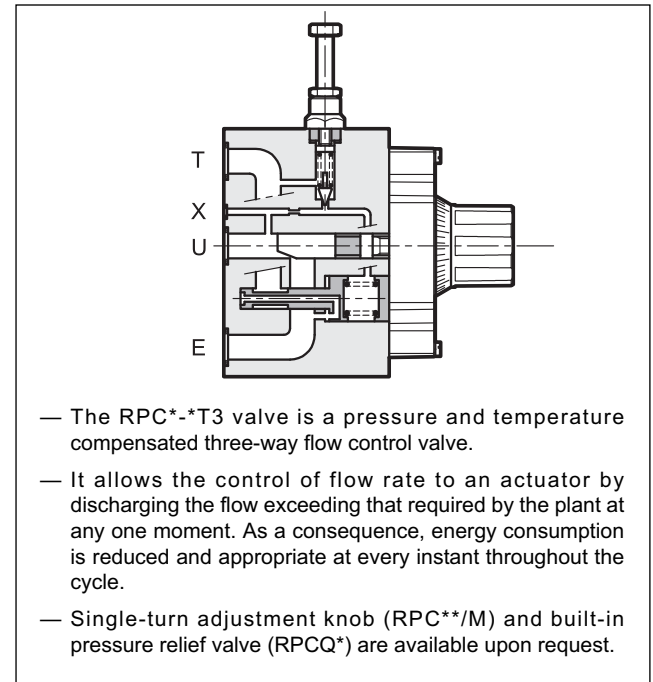
RPC-2T3 ISO 6263-06

RPC-3T3 ISO 6263-07

HYDRAULIC SYMBOLS



OPERATING PRINCIPLE

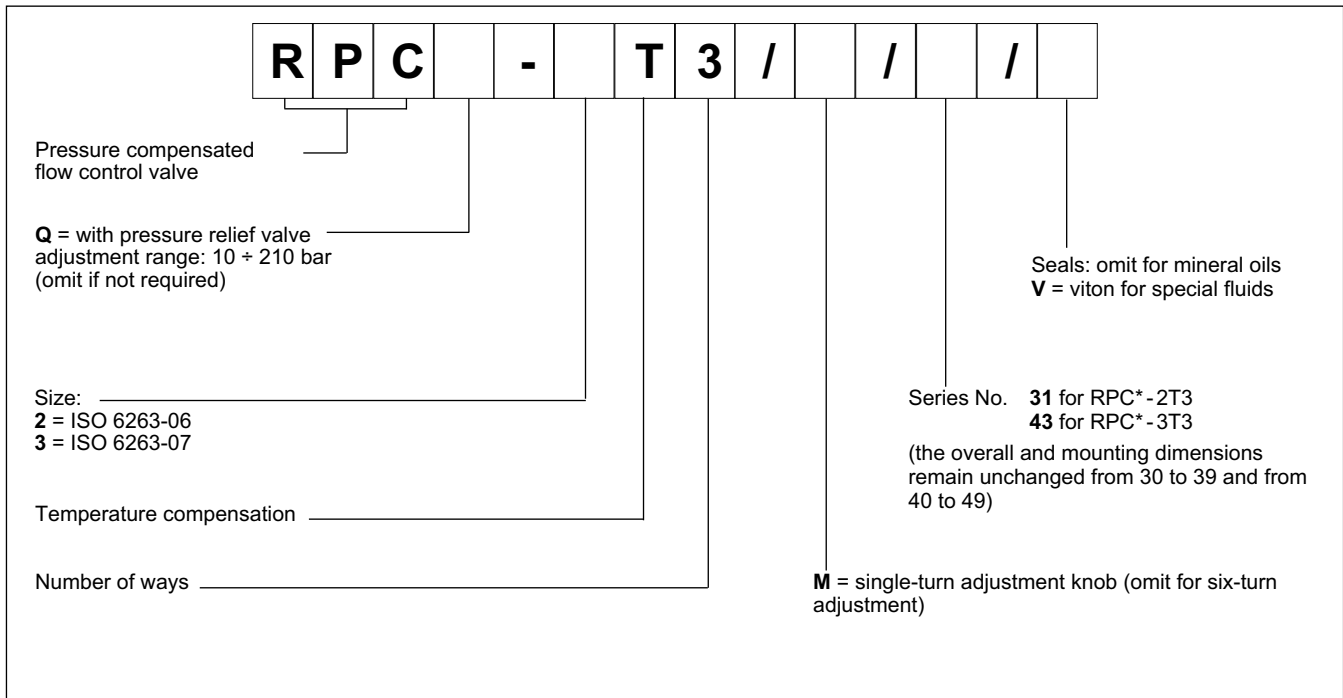


PERFORMANCE RATINGS

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

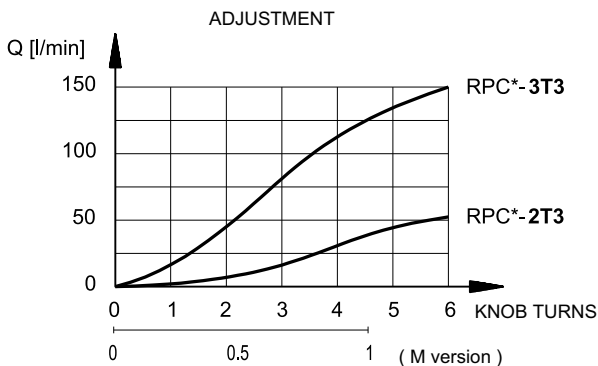
		RPC*-2T3	RPC*-3T3
Maximum operating pressure	bar	320	250
Minimum pressure difference between E and U		10	12
Maximum controlled flow rate	l/min	50	150
Minimum controlled flow rate		0,060	0,130
Ambient temperature range	°C	-20 / +60	
Fluid temperature range	°C	-20 / +80	
Fluid viscosity range	cSt	10 + 400	
Fluid contamination degree		According to ISO 4406:1999 class 20/18/15	
Fluid contamination degree for flow rate <0,5 l/min		According to ISO 4406:1999 class 18/16/13	
Recommended viscosity	cSt	25	
Mass	kg	4,7	9

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 - PRESSURE COMPENSATION

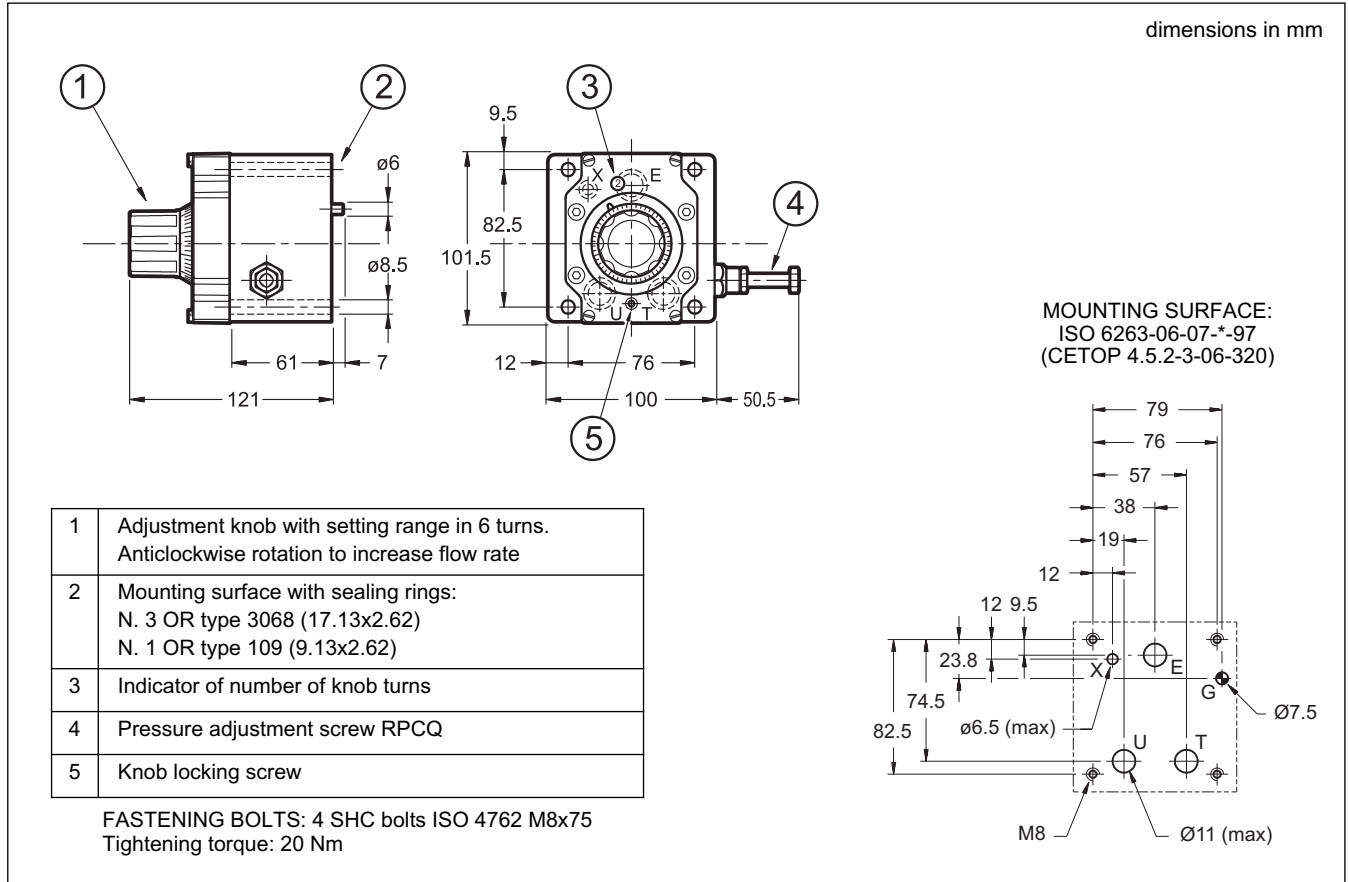
Two throttles in series are in the valve. The first is an opening regulated by the knob; the second, piloted by the pressure upstream and downstream of the first throttle, assures a constant pressure drop across the adjustable throttle. In these conditions, the set flow rate value stays constant within a tolerance range of ±3% of the maximum flow controlled by the valve for maximum pressure variation between the intake and outlet chambers of the valve.

5 - TEMPERATURE COMPENSATION

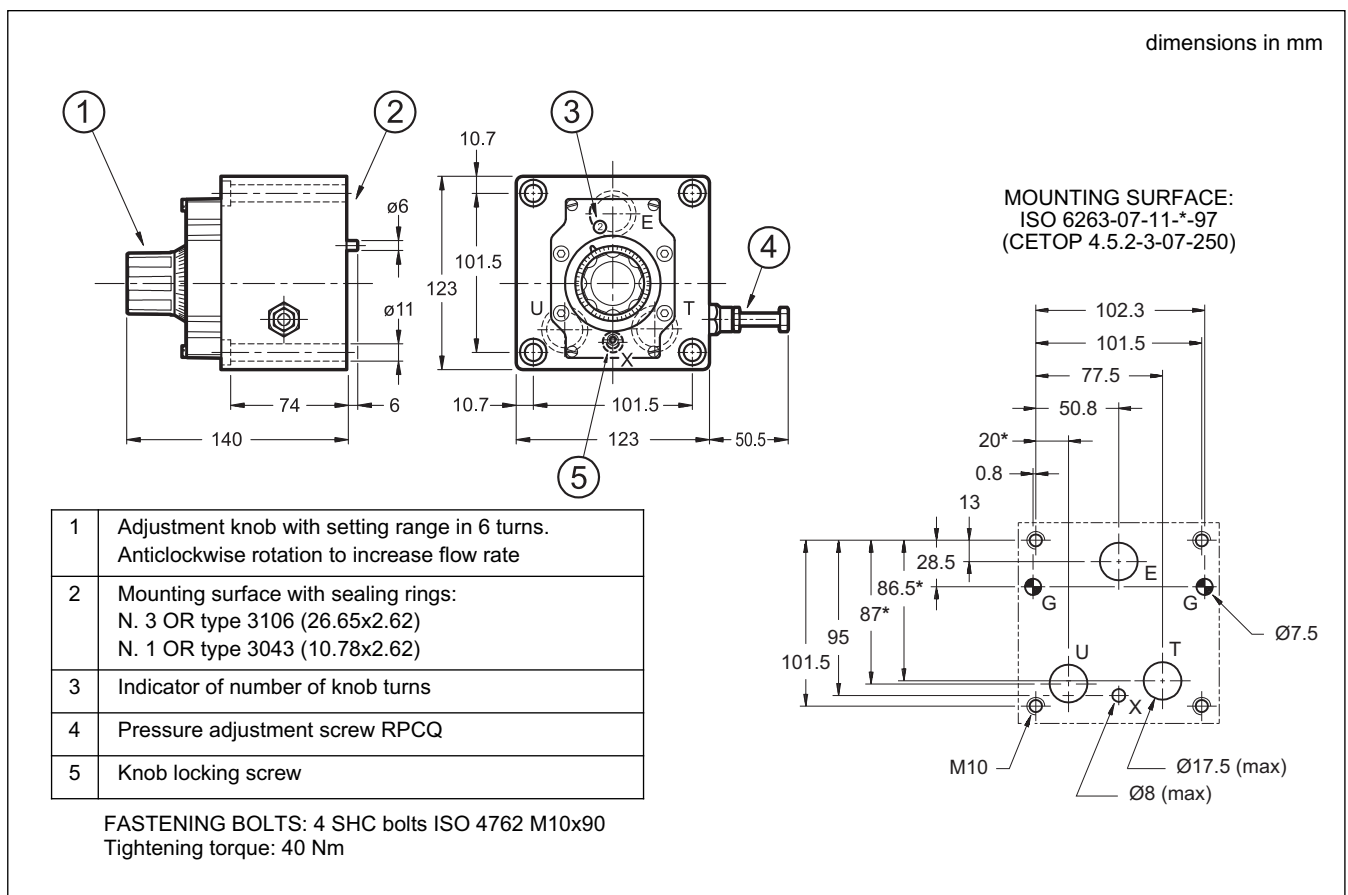
A device located on the first throttle which is sensitive to the temperature fluctuations corrects the position keeping the controlled flow more or less unaltered even should the oil viscosity change.

The fluctuation of the set flow rate stays within ±2,5% of the maximum flow controlled by the valve.

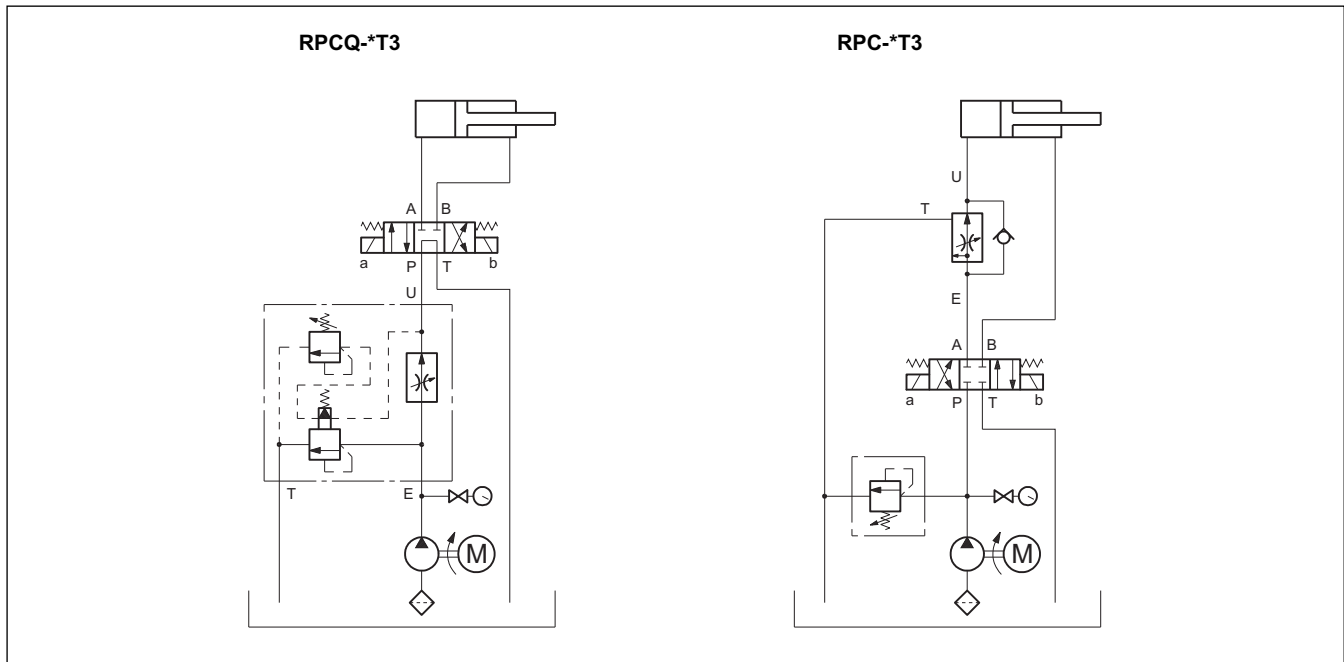
6 - RPC*-2T3 SERIES 31 OVERALL AND MOUNTING DIMENSIONS



7 - RPC*-3T3 SERIES 43 OVERALL AND MOUNTING DIMENSIONS



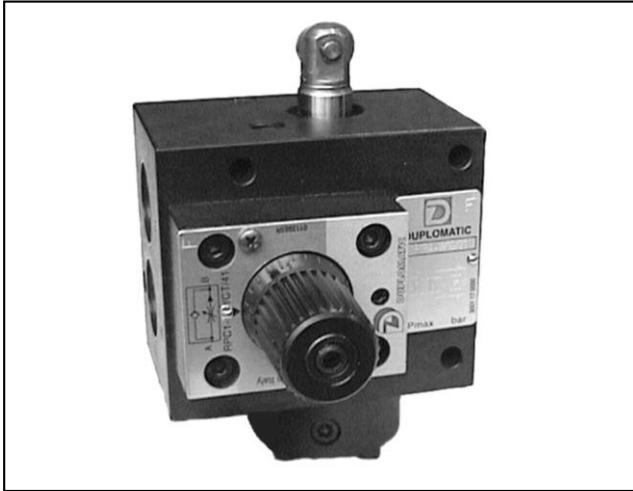
11 - APPLICATION EXAMPLES



12 - SUBPLATES

(see catalogue 51 000)

	RPC* - 2T3	RPC* - 3T3
Type	PMRPCQ2-AI4G rear ports	PMRPCQ3-AI6G rear ports
E, U, T port dimensions	1/2" BSP	1" BSP
X port dimensions	1/4" BSP	1/4" BSP



CP1R*-W
ROLLER OPERATED
FAST/SLOW SPEED
SELECTION VALVE
SERIES 21

THREADED PORTS

p max 70 bar
Q max 40 l/min

OPERATING PRINCIPLE

- The CP1R*-W valve is used for the selection and control of fast/slow speed of hydraulic axis by mechanical roller operation.
- The slow working speed adjustment is obtained by using a pressure compensated flow control valve.
The special shape of the control openings allows fine adjustment even with very low flow rates.
- Adjustment of the flow rate is carried out with three turns of the knob that can be locked in any position with a screw.
- It is available in two configurations:
normally open CP1RA,
normally closed CP1RC.
- It is supplied with an incorporated check valve that allows free passage of the reverse flow.

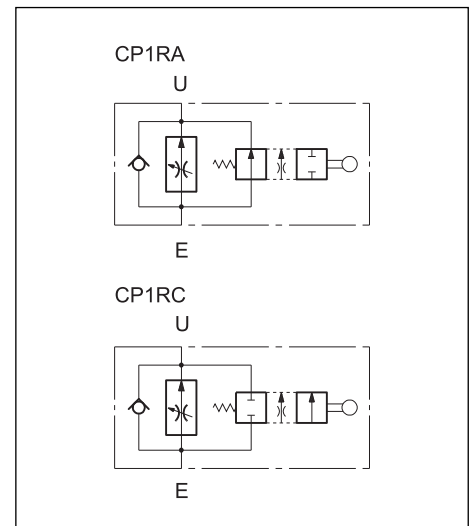
CONFIGURATIONS (see hydraulic symbols table)

- CP1RA-W: normally open - fast movement with roller in rest position and controlled slow movement with roller in operation.
- CP1RC-W: normally closed - controlled slow movement with roller in rest position and fast movement with roller in operation.

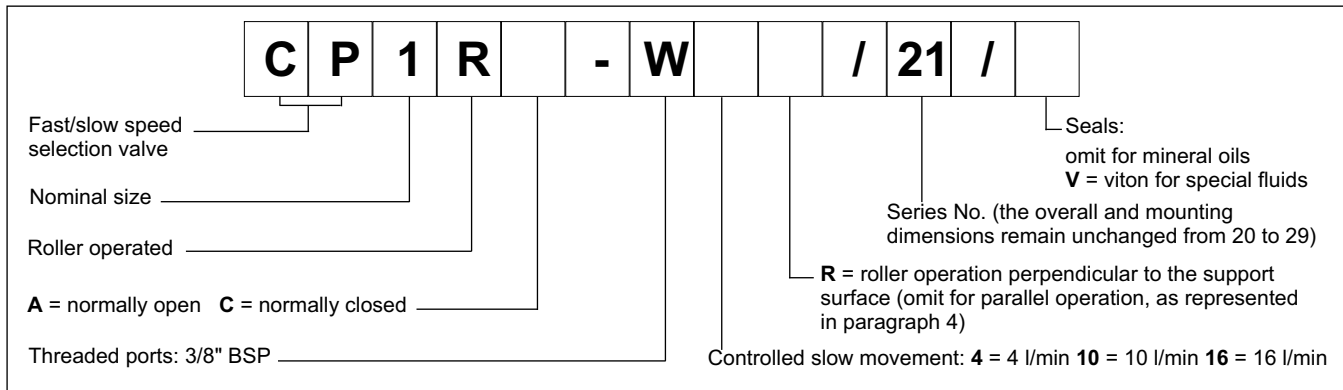
PERFORMANCES (obtained with mineral oil with viscosity of 36 cSt at 50°C)

Maximum operating pressure	bar	70	
Fast movement maximum flow rate	l/min	40	
Controlled slow movement flow rate	max	l/min	4 - 10 - 16
	min	l/min	0,1
Roller working movement	mm	6	
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	3,2	

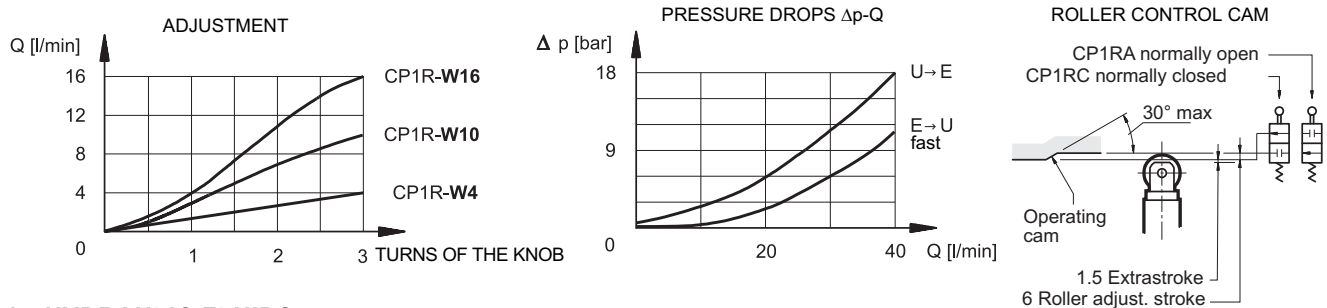
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



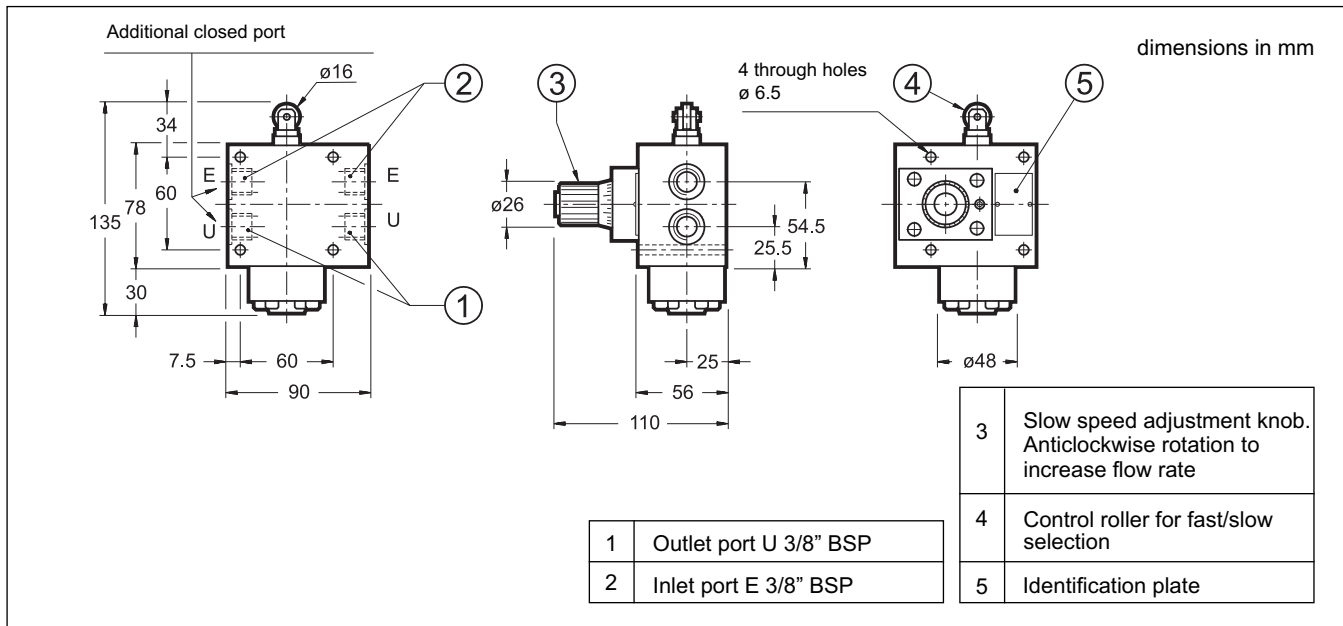
2 - CHARACTERISTIC CURVES (values obtained with viscosity of 36 cSt at 50°C)

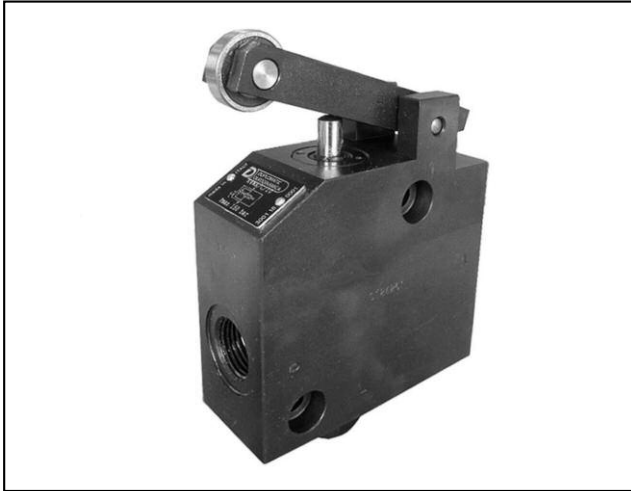


3 - HYDRAULIC FLUIDS

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 - OVERALL AND MOUNTING DIMENSIONS





K4WA/C

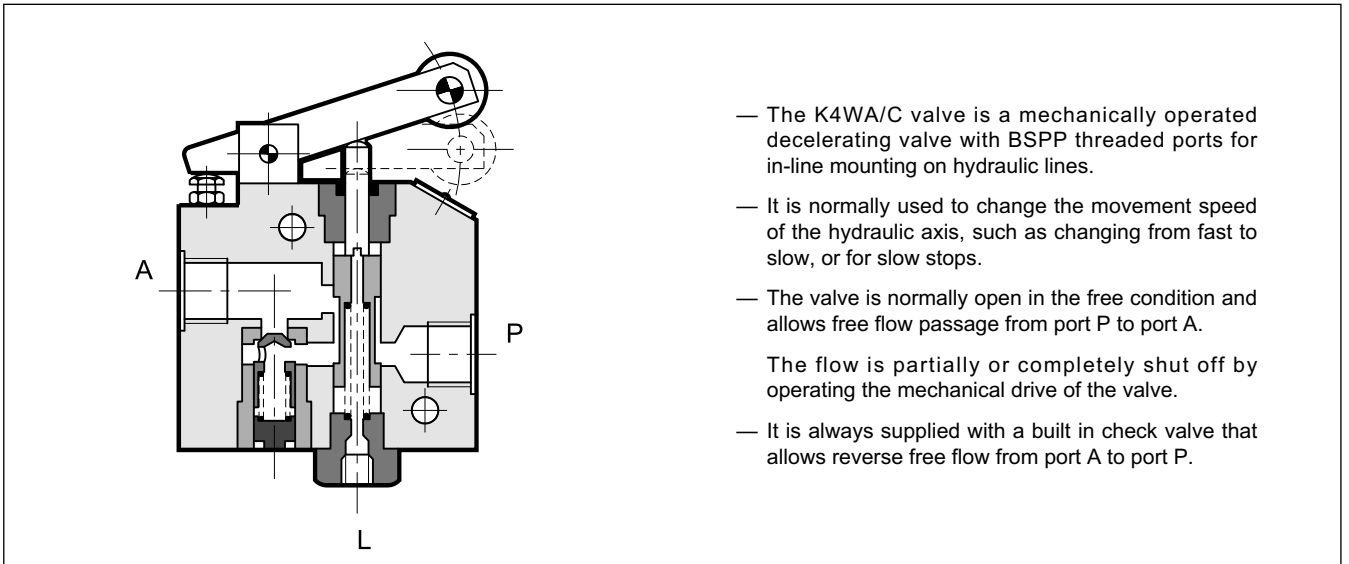
DECELERATION VALVE

SERIES 10

THREADED PORTS

p max 150 bar
Q max 40 l/min

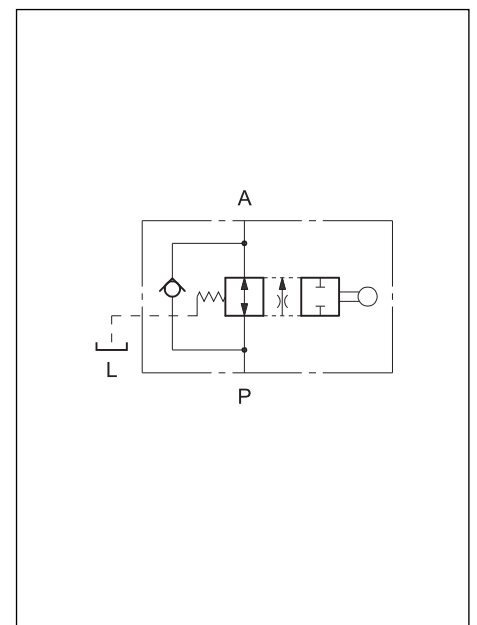
OPERATING PRINCIPLE



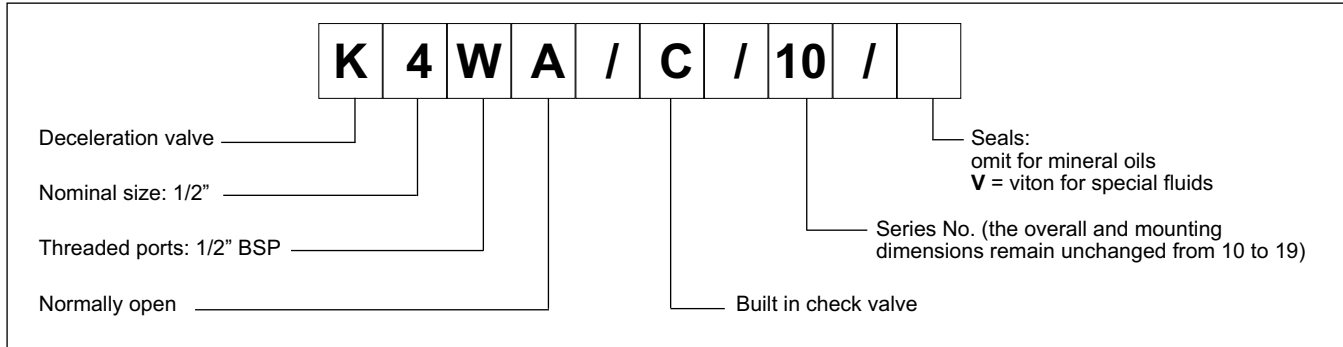
PERFORMANCES (measured with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure	bar	150
Cracking pressure of the check valve	bar	0,5
Maximum flow rate	l/min	40
Needed force on the lever to operate:		
- at beginning	kg	6,8
- at end stroke		12,0
Maximum leakage with closed valve (Δp 100 bar)	l/min	0,05
Stroke (from all open to completely closed)	mm	20
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	2,5

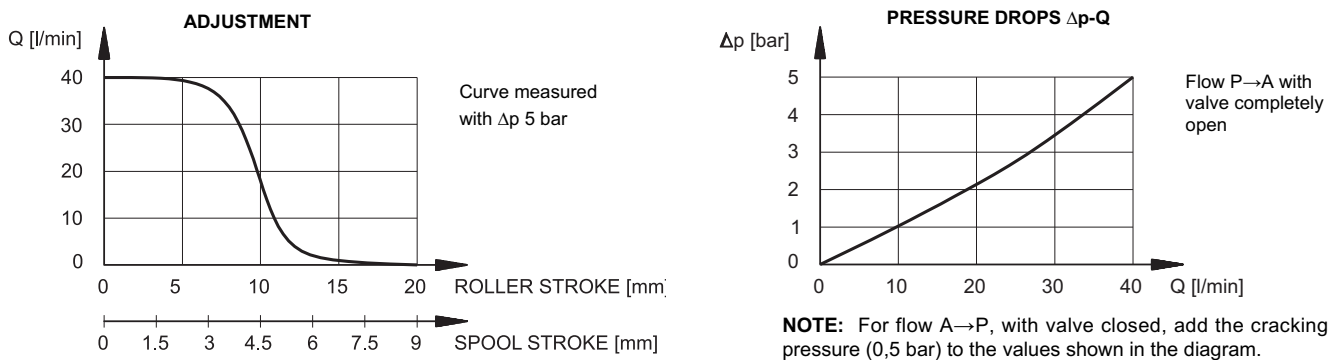
HYDRAULIC SYMBOL



1 - IDENTIFICATION CODE



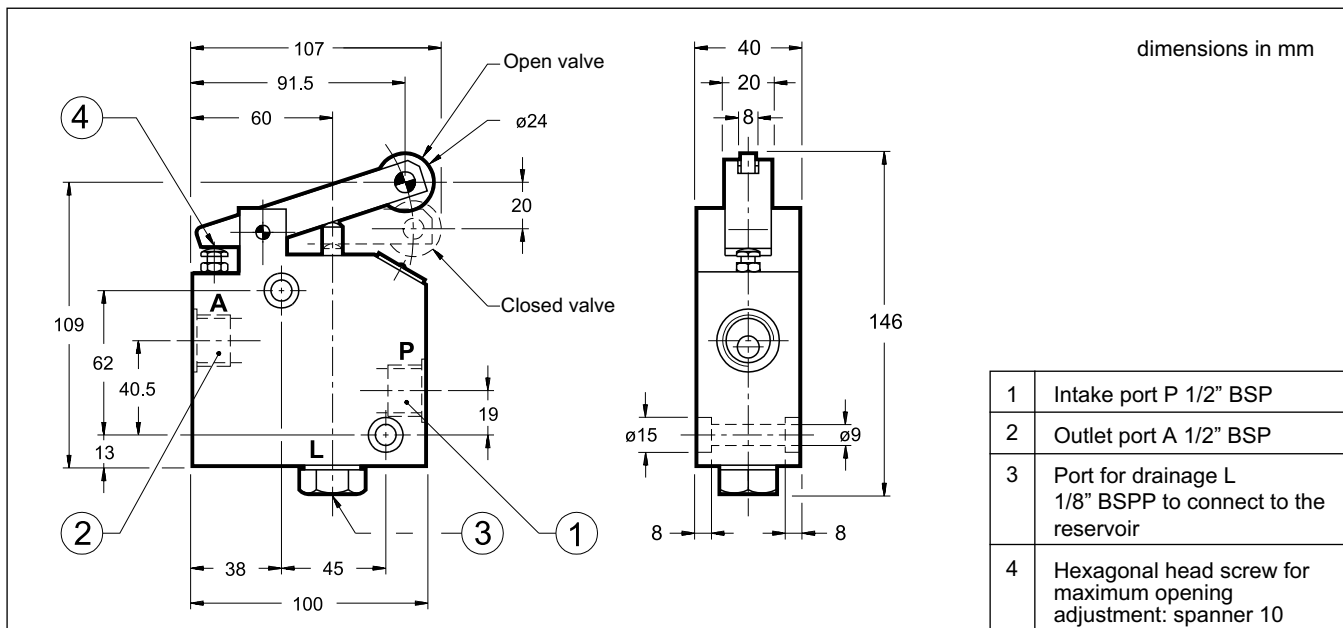
2 - CHARACTERISTIC CURVES (values obtained with viscosity of 36 cSt at 50°C)



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 - OVERALL AND MOUNTING DIMENSIONS





QTM2

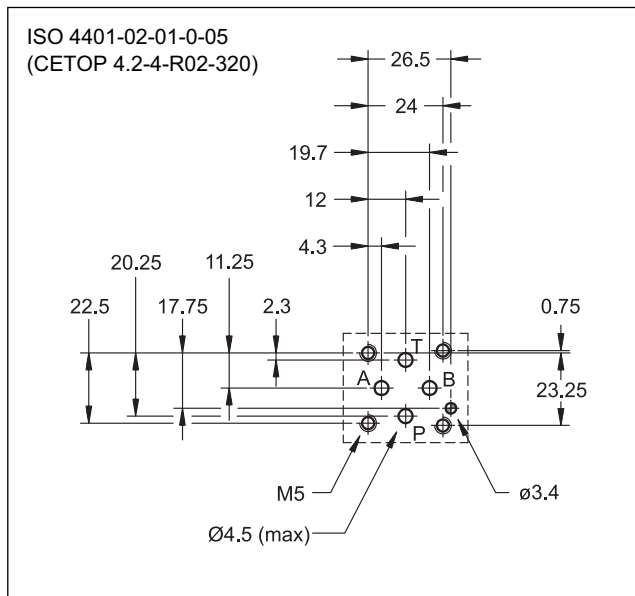
FLOW RESTRICTOR VALVE

SERIES 10

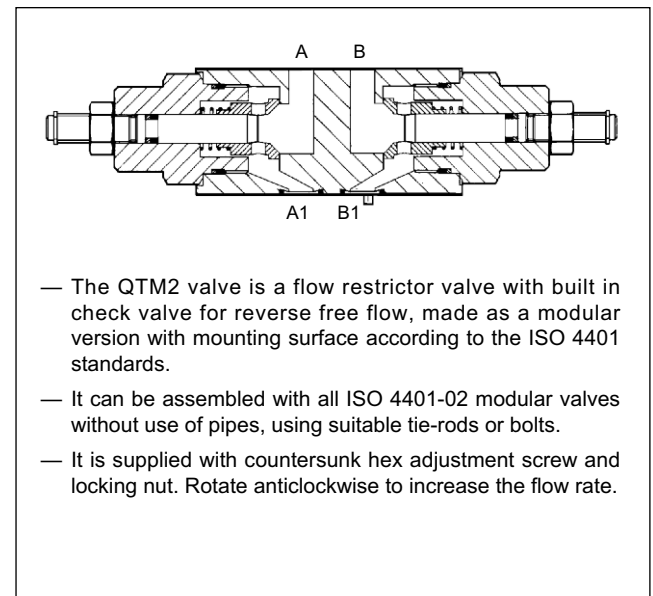
MODULAR VERSION ISO 4401-02

p max 320 bar
Q max 30 l/min

MOUNTING SURFACE



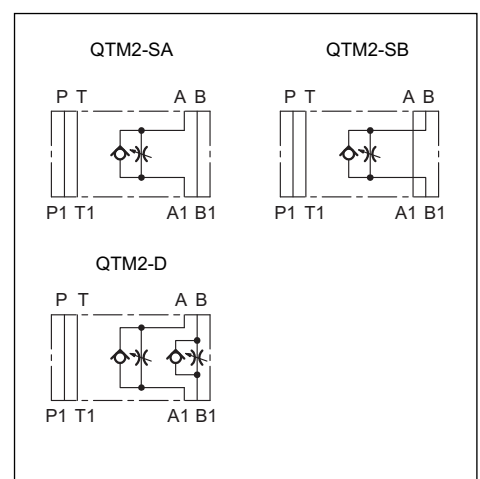
OPERATING PRINCIPLE



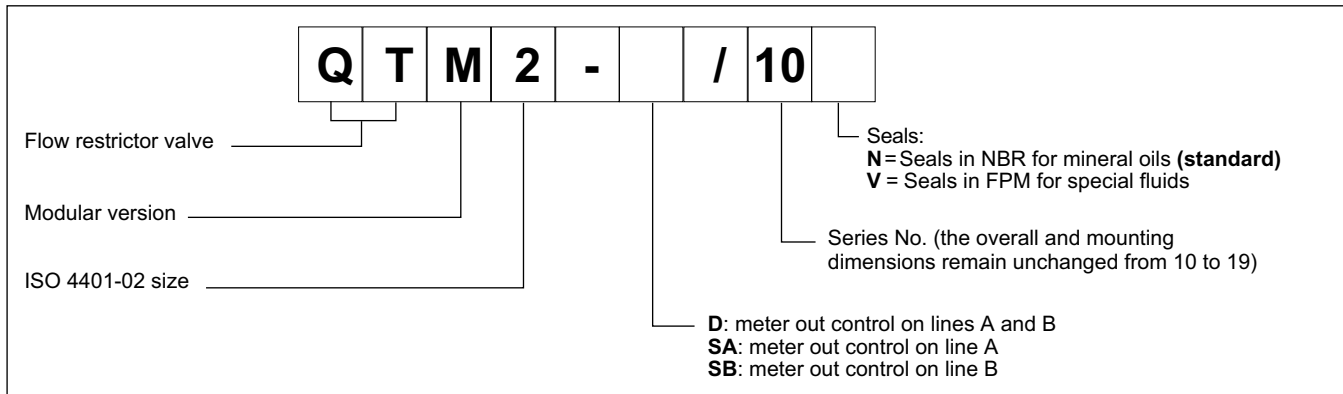
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	320
Maximum flow rate	l/min	30
Ambient temperature range	°C	-20 / +60
Check valve opening pressure	bar	0,4
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	0,8

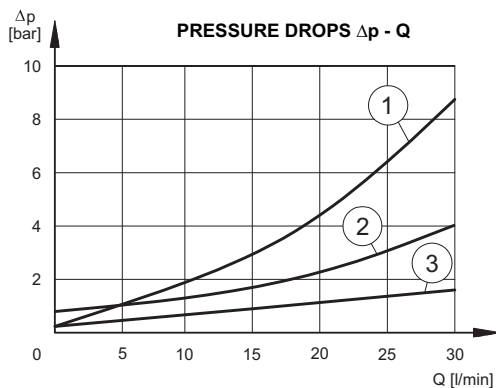
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



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



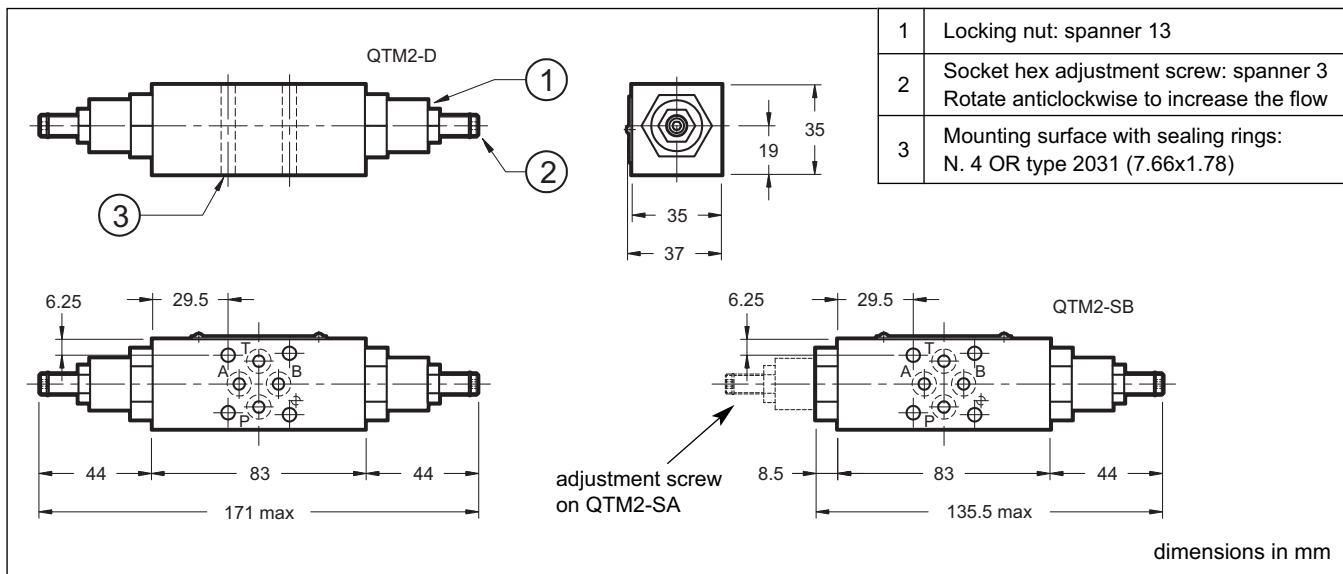
Typical $\Delta p - Q$ curves obtained with QTM2-D valve, with throttling axis at full retraction.

- 1) pressure drops A₁ - A (B₁ - B)
- 2) pressure drops A - A₁ (B - B₁)
- 3) pressure drops through the free ports

3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). 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 - OVERALL AND MOUNTING DIMENSIONS





MERS

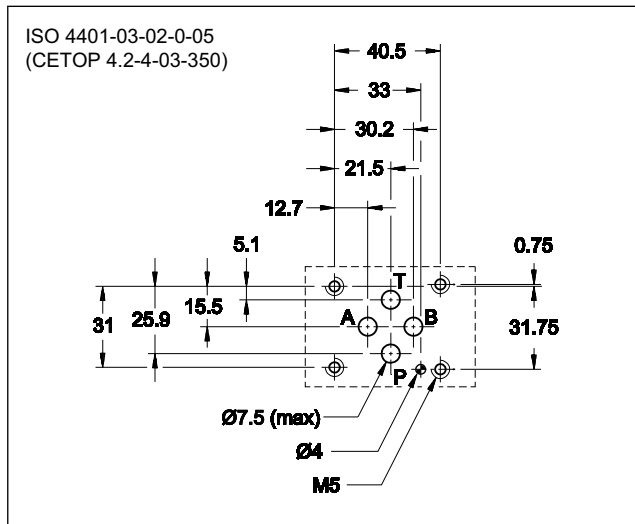
FLOW RESTRICTOR VALVE

SERIES 50

MODULAR VERSION ISO 4401-03

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

MOUNTING INTERFACE



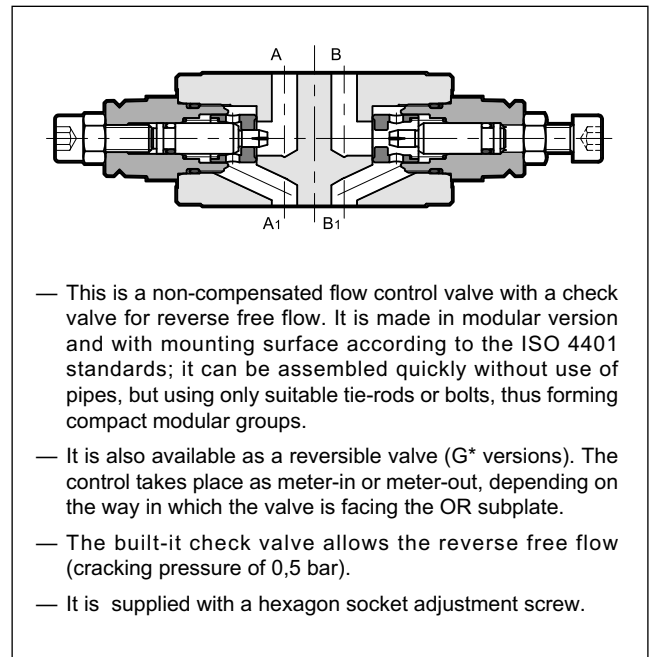
CONFIGURATIONS (see hydraulic symbols table)

- "D": independently controls the output flow from the two actuator chambers.
- "RD": independently controls the inlet flow in the two actuator chambers.
- "SA": controls the output flow from the actuator on line A.
- "SB": controls the output flow from the actuator on line B.
- "G*": reversible valve. See par. 1.

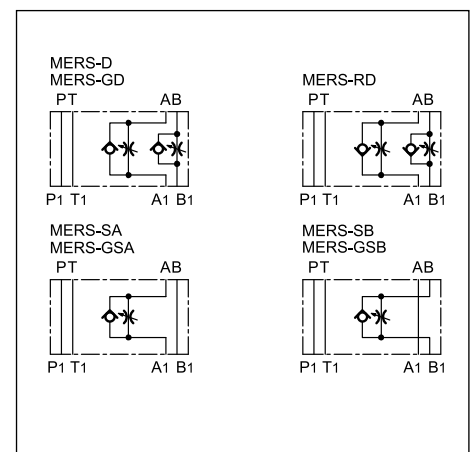
PERFORMANCES (measured with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure	bar	350
Check valve cracking pressure		0,5
Maximum flow rate in the controlled lines	l/min	50
Maximum flow rate in the free lines		75
Min. controlled flowrate with Δp 10 bar		$\leq 0,060$
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	1,3

OPERATING PRINCIPLE



HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE

	M	E	R	S	-		/		/	50	/		
--	----------	----------	----------	----------	----------	--	----------	--	----------	-----------	----------	--	--

ISO 4401-03 size
Modular version

Flow restrictor valve with
check valve for reverse free flow

Configurations:
D: meter-out control in lines A and B (**standard**)
RD: meter-in control in lines A and B
SA: meter-out control in line A
SB: meter-out control in line B

Configurations G* - reversible valve (**NOTE 1**)
GD: control in lines A and B
GSA: control in line A
GSB: control in line A

Option: W7 surface treatment.
Omit if not required (**NOTE 2**)

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

Series No.
(the overall and mounting dimensions
remain unchanged from 50 to 59)

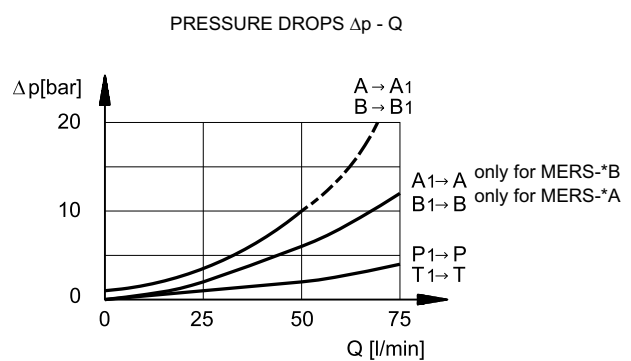
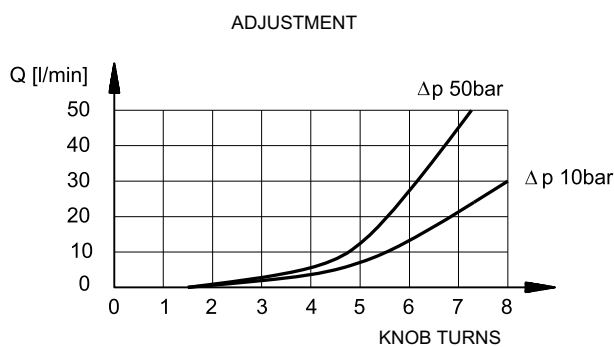
M = Adjustment with SICBLOC knob
(omit for adjustment with hexagonal head adjustment
screw)

NOTE 1: the valve body does not provide the OR seats. The mounting interface is achieved by interposition of an OR subplate. The control of flow (meter-in or meter-out) is depending on the way of assembly the valve on the subplate.

NOTE 2: Upon request we can supply these valves completely with zinc-nickel surface treatment on the body. Add the suffix **/W7** at the end of the identification code.

2 - CHARACTERISTIC CURVES

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



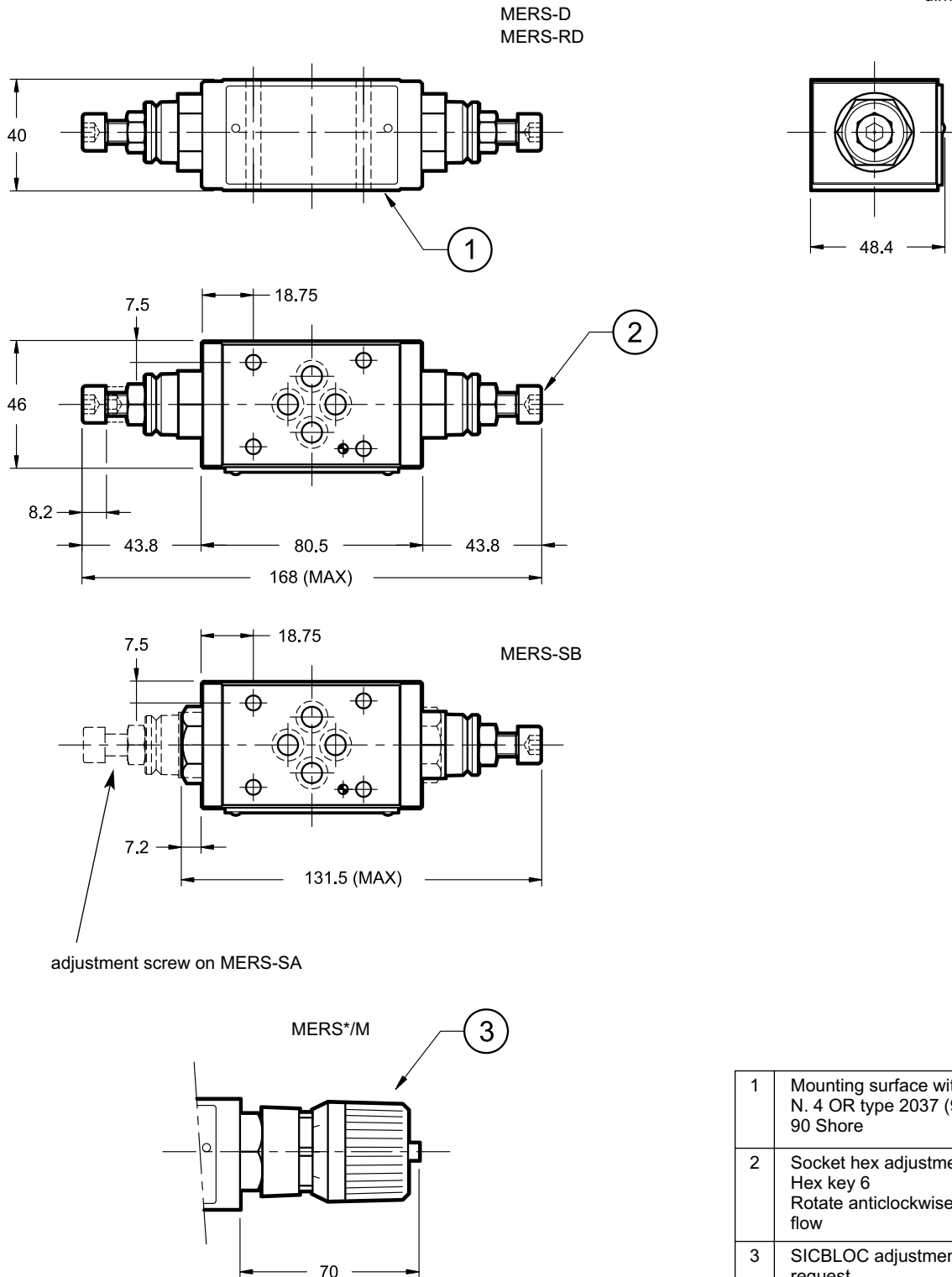
3 - HYDRAULIC FLUIDS

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.

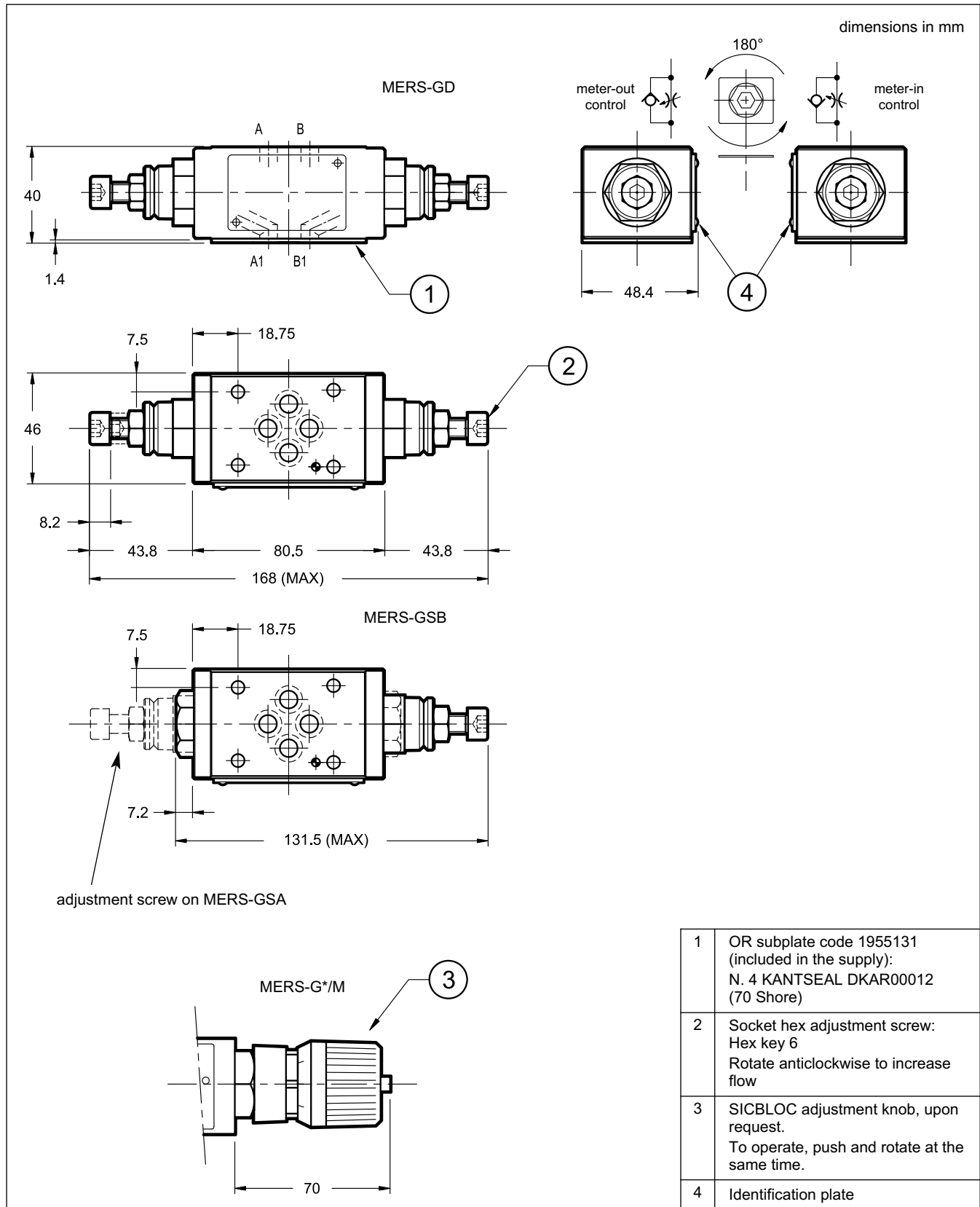
4 - MERS -D, -RD and -S* - OVERALL AND MOUNTING DIMENSIONS

dimensions in mm



1	Mounting surface with sealing rings: N. 4 OR type 2037 (9.25x1.78) 90 Shore
2	Socket hex adjustment screw: Hex key 6 Rotate anticlockwise to increase flow
3	SICBLOC adjustment knob, upon request. To operate, push and rotate at the same time.

4 - MERS-G* - OVERALL AND MOUNTING DIMENSIONS





QTM5

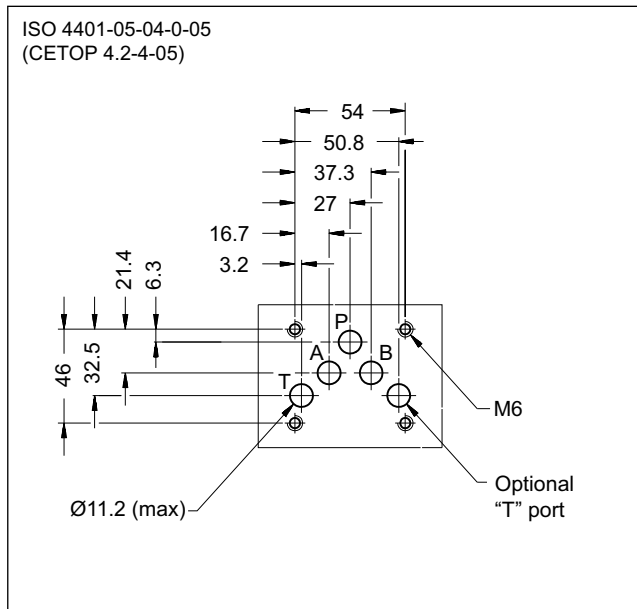
FLOW RESTRICTOR VALVE

SERIES 10

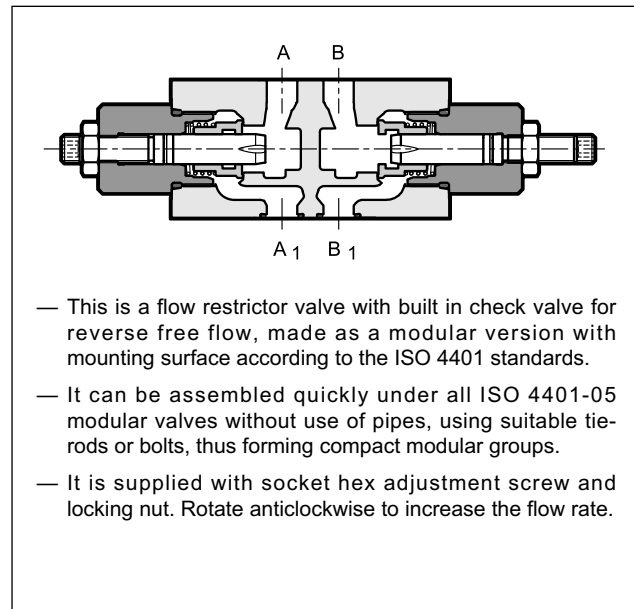
MODULAR VERSION ISO 4401-05

p max 350 bar
Q max 120 l/min

MOUNTING INTERFACE



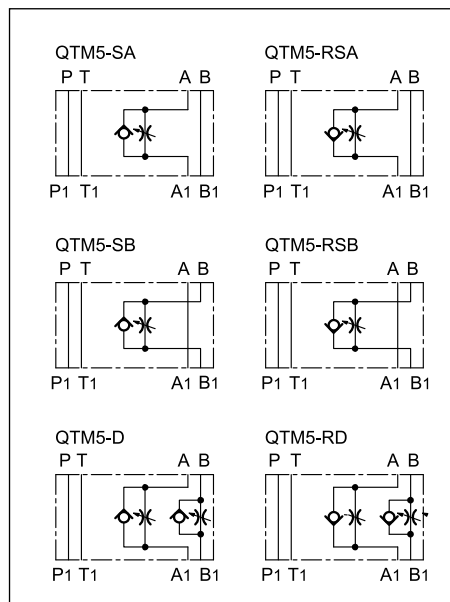
OPERATING PRINCIPLE



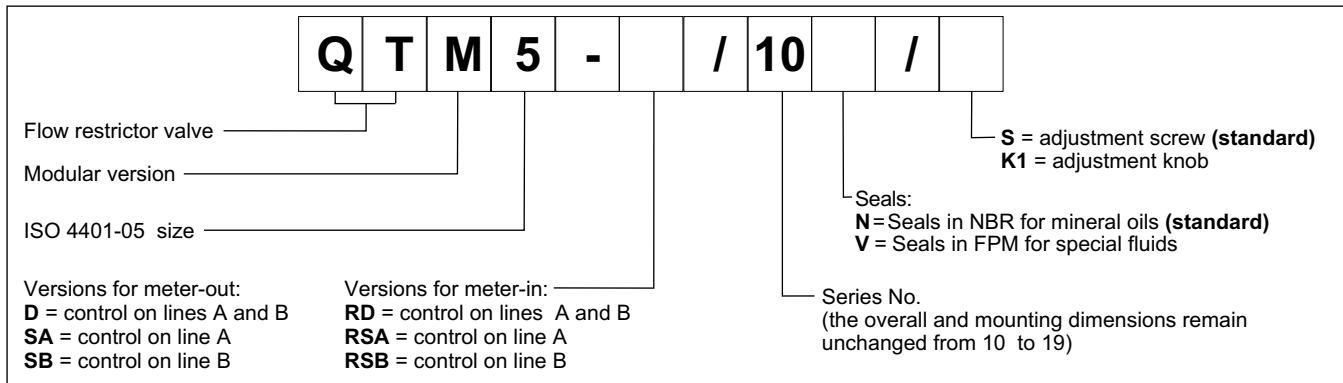
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	350
Maximum flow rate	l/min	120
Cracking pressure	bar	0,5
Ambient temperature range	°C	-20 / +60
Fluid temperature range	°C	-20 / +80
Fluid viscosity range	cSt	10 + 400
Recommended viscosity	cSt	25
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	
Mass: QTM5-SA, -SB, -RSA, -RSB QTM5-D, -RD	kg	2,3 2,5

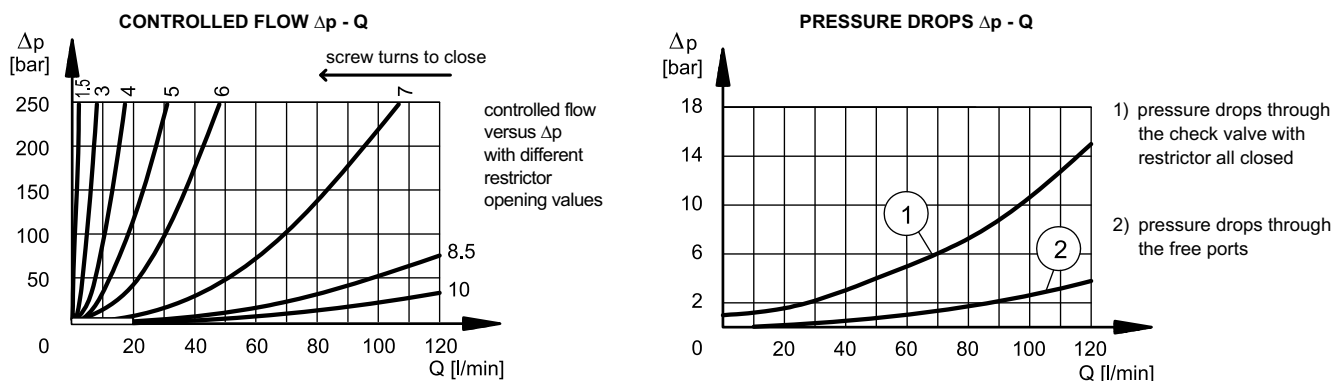
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



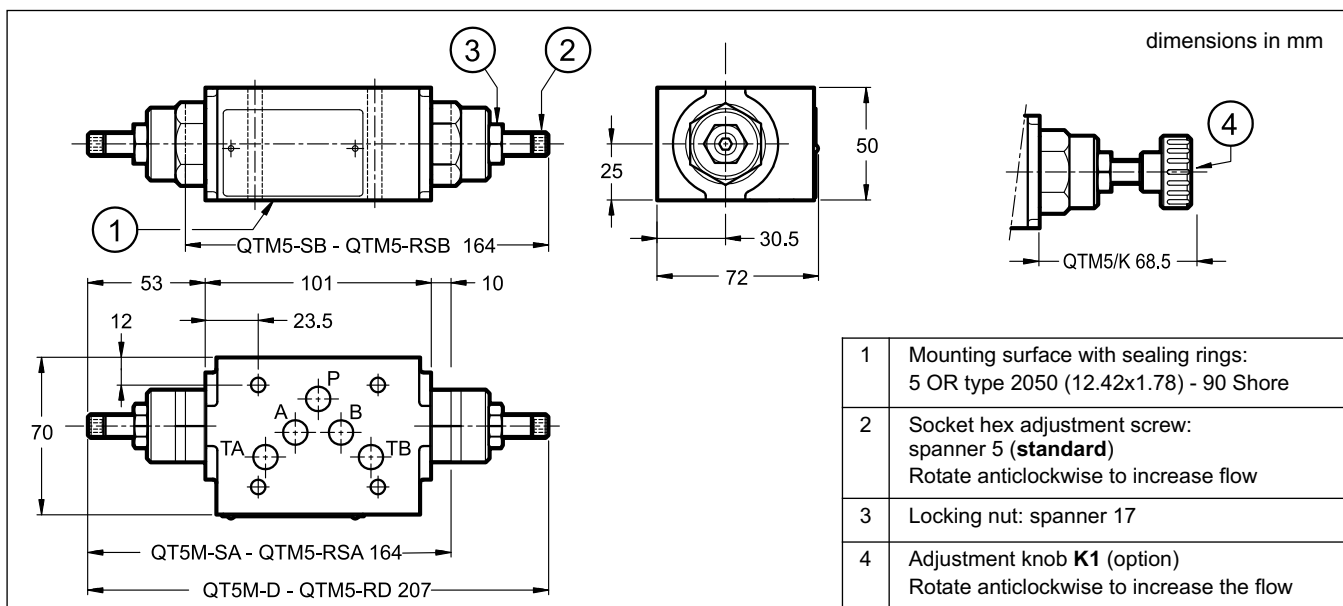
2 - CHARACTERISTIC CURVES (values obtained with viscosity of 36 cSt at 50°C)



3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). 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 - OVERALL AND MOUNTING DIMENSIONS





QTM7

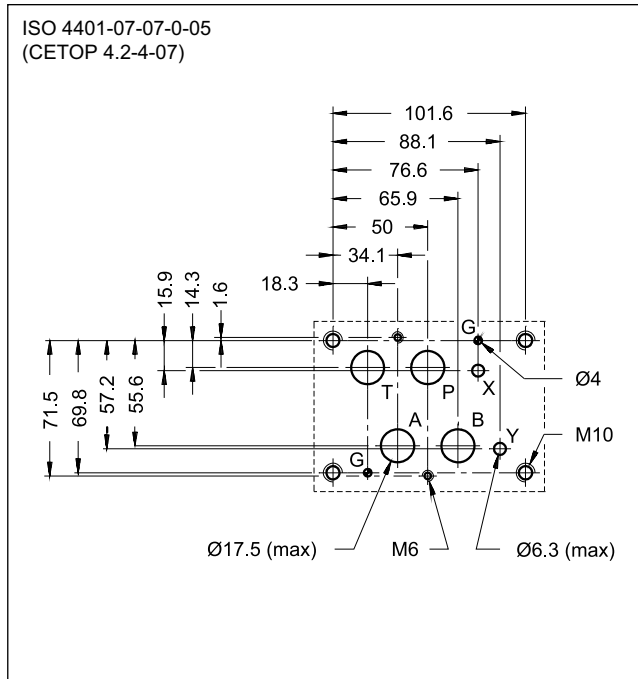
FLOW RESTRICTOR VALVE

SERIES 20

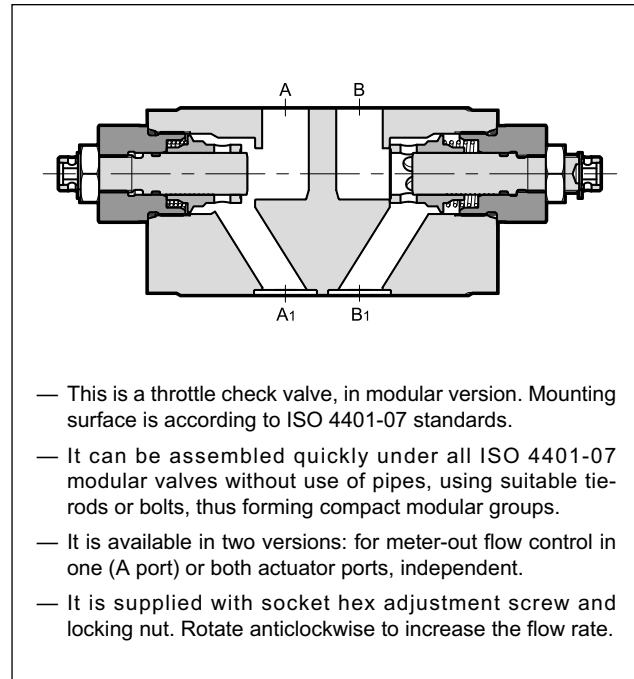
MODULAR VERSION ISO 4401-07

p max 350 bar
Q max 300 l/min

MOUNTING INTERFACE



OPERATING PRINCIPLE

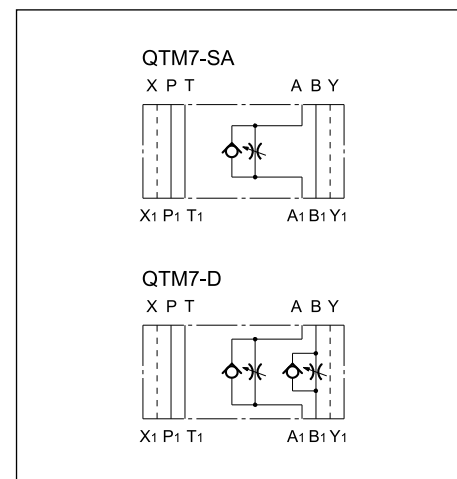


PERFORMANCES

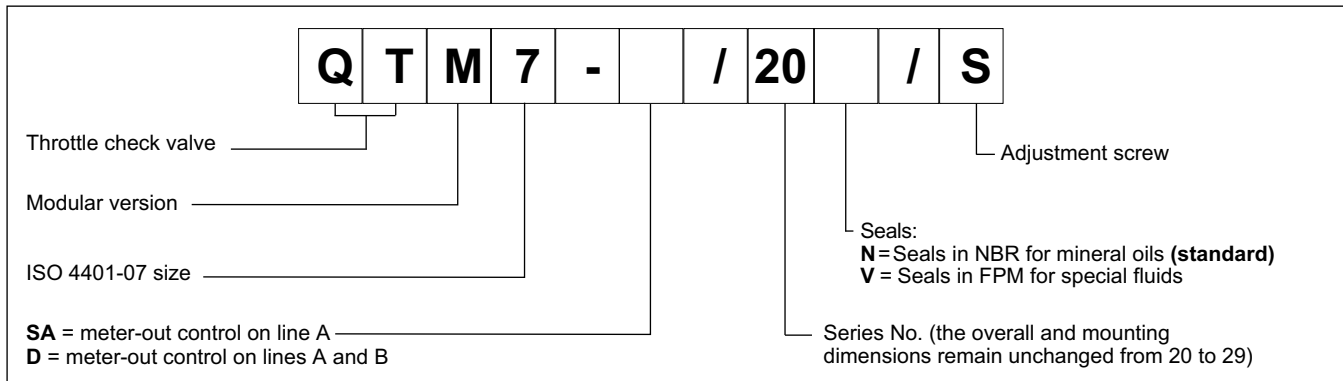
(measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	350
Maximum flow rate	l/min	300
Check valve opening pressure	bar	0,7
Ambient temperature range	°C	-25 / +80
Fluid temperature range	°C	-25 / +80
Fluid viscosity range	cSt	10 ÷ 400
Fluid contamination degree	According to ISO 4406:1999 class 20/18/15	
Recommended viscosity	cSt	25
Mass: QTM7-SA QTM7-D	kg	6.9 7

HYDRAULIC SYMBOLS

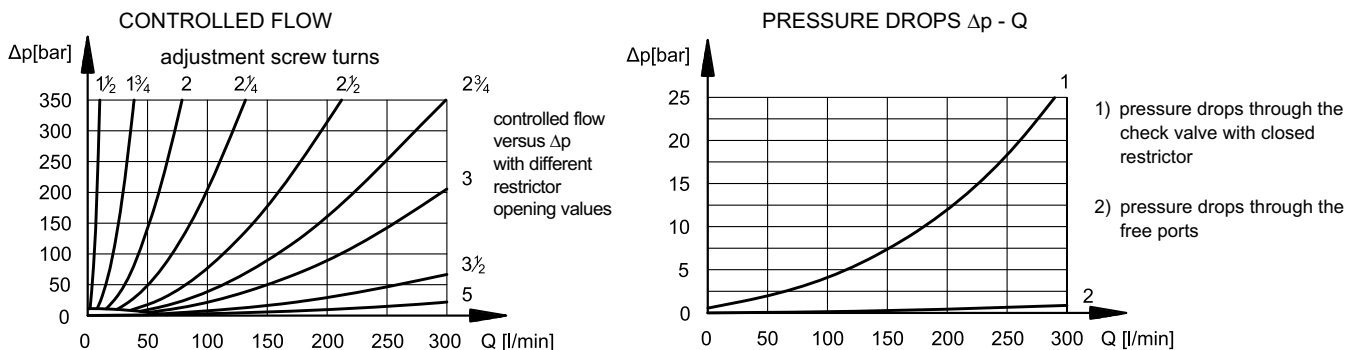


1 - IDENTIFICATION CODE



2 - CHARACTERISTIC CURVES

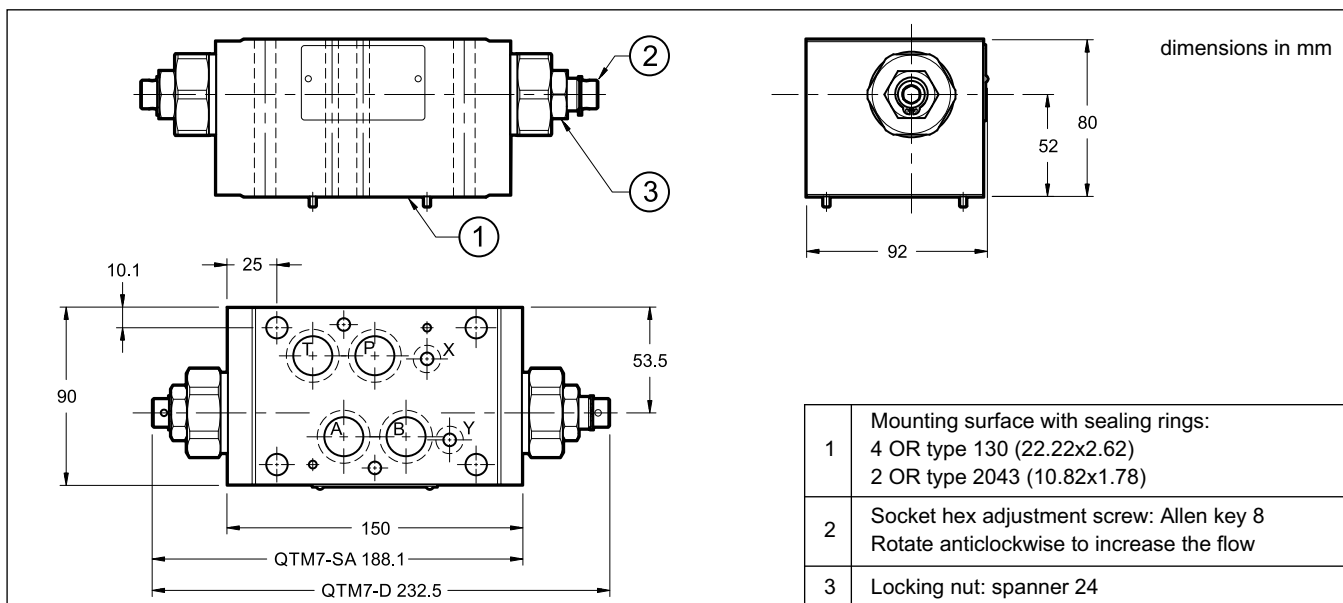
(values obtained with viscosity of 36 cSt at 50°C)

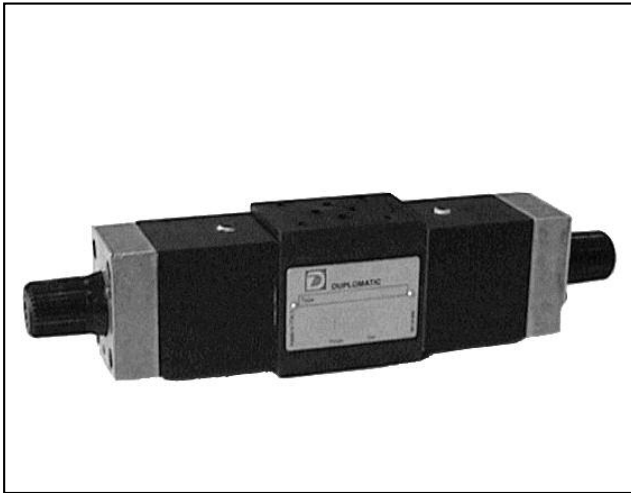


3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). 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 - OVERALL AND MOUNTING DIMENSIONS





RPC1*/M

FLOW CONTROL VALVE

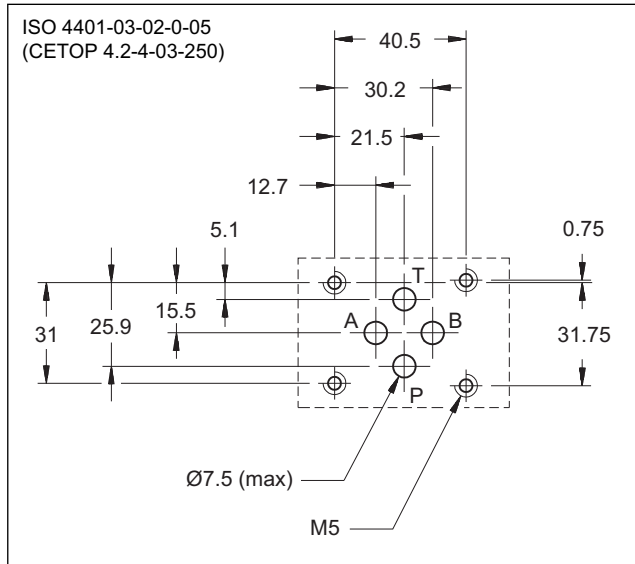
SERIES 10

MODULAR VERSION

ISO 4401-03

p max 250 bar
Q max (see table of performances)

MOUNTING INTERFACE



OPERATING PRINCIPLE

- The RPC1*/M valve is a flow control valve with pressure and temperature compensation, made as a modular version with mounting surface according to the ISO 4401 standards.
- It can be assembled quickly under the ISO 4401-03 directional solenoid valves and allows easy execution of hydraulic circuits where control of the speed of the actuators is required.
- It is available in six flow adjustment ranges up to 30 l/min.
- Combined with MDS3 type solenoid operated directional control valves (see cat. 41 251), it's possible to obtain circuits for the fast/slow control of the work actuators.

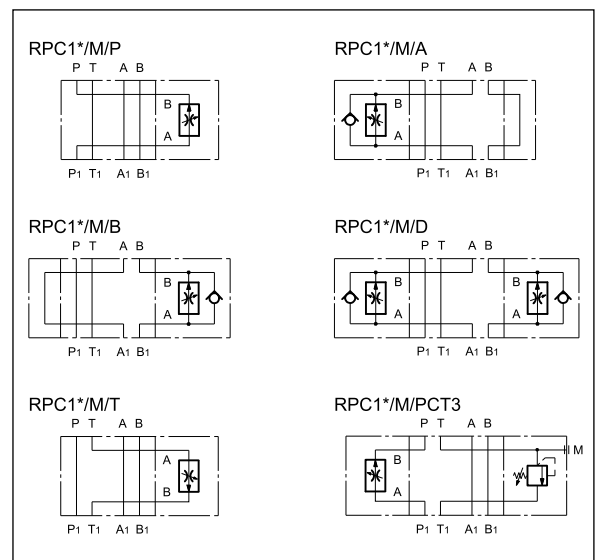
CONFIGURATIONS

(see hydraulic symbols table and identification code - par. 1)

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

Maximum operating pressure	bar	250
Maximum flow rate in controlled lines	l/min	1-4-10-16-22-30
Maximum flow rate in the free lines		
Reverse free flow maximum flowrate		
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	3
RPC1-*/M/ A-B-T-P		4,1
RPC1-*/M/ D		3,7
RPC1-*/M/PCT3		
only modular block ISO 4401-03 without flow control valves:		
RPC1-K/M/*		1,5
RPC1-K/M/PCT3	2,4	

HYDRAULIC SYMBOLS



NOTE: for detailed information regarding the RPC1 flow control valve, see catalogue 32 200



RPC1*/M

SERIES 10

1 - IDENTIFICATION CODE

R	P	C	1	-		/	M	/		-		/	10	/	
----------	----------	----------	----------	----------	--	----------	----------	----------	--	----------	--	----------	-----------	----------	--

Pressure and temperature compensated flow control valve

Flow adjustment range:
1 = 1 l/min **16** = 16 l/min
4 = 4 l/min **22** = 22 l/min
10 = 10 l/min **30** = 30 l/min
K = only ISO 4401-03 modular block supplied without flow control valve

Modular version size ISO 4401-03

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

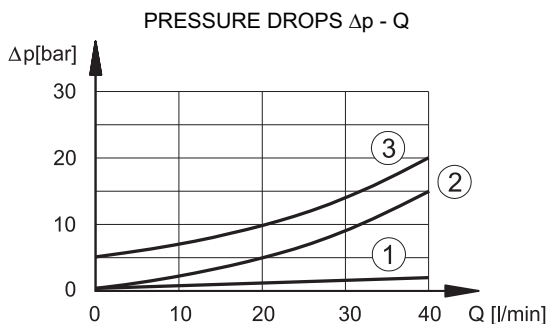
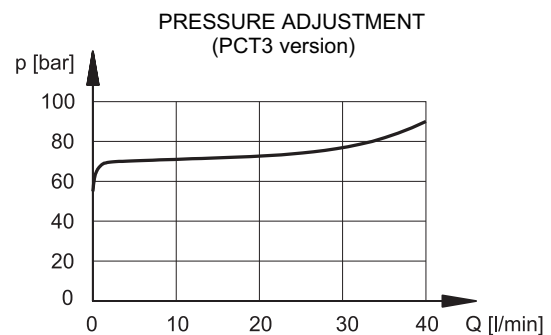
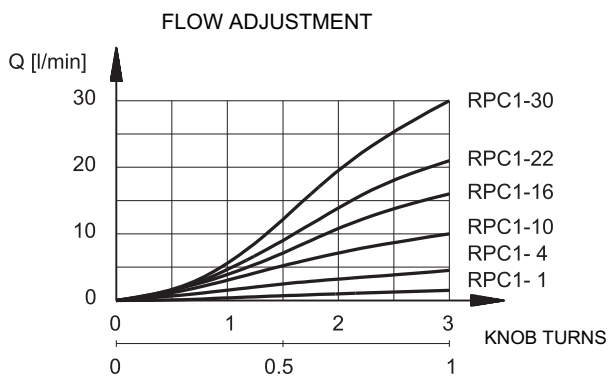
Series No. (the overall and mounting dimensions remain unchanged from 10 to 19)

M1 = adjustment knob only for PCT3 version (omit for adjustment with countersunk hex screw)

Configurations:
P = meter in control on line P
A = control from chamber A of the actuator
B = control from chamber B of the actuator
D = control from chambers A and B of the actuator
T = meter out control on line T
PCT3 = meter in control on line P with backpressure adjustable on line T up to 70 bar (A and B configurations are not available in K version)

2 - CHARACTERISTIC CURVES

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



- 1) pressure drops on free lines
- 2) pressure drops through check valve
- 3) pressure drops through the backpressure valve (PCT3 version)

3 - HYDRAULIC FLUIDS

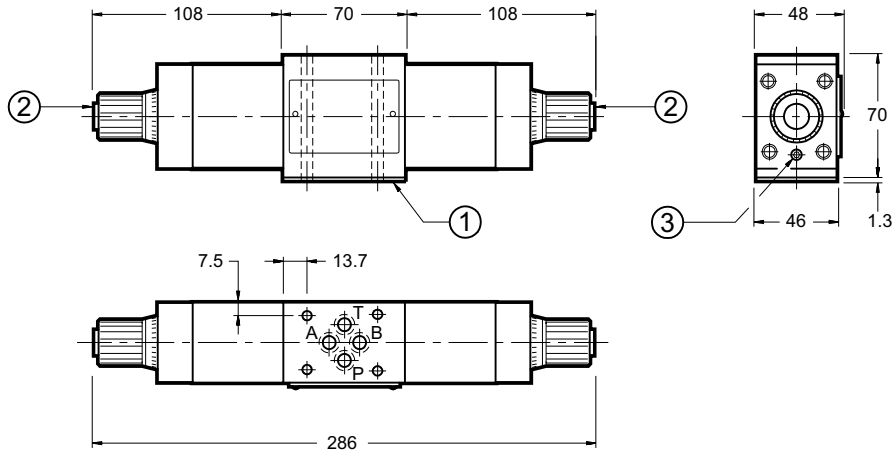
Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

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.

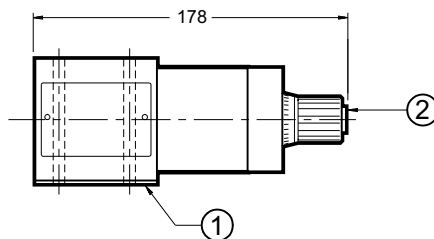
4 - OVERALL AND MOUNTING DIMENSIONS RPC1*/M VALVES

dimensions in mm

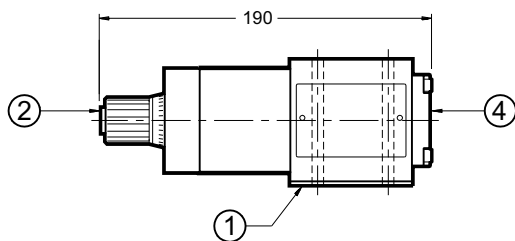
RPC1*/M/D



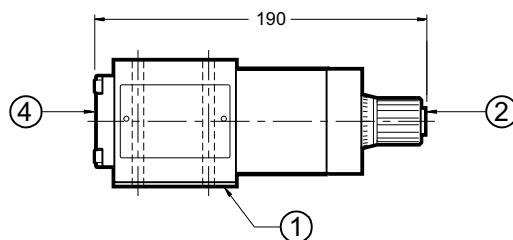
RPC1*/M/P
RPC1*/M/T



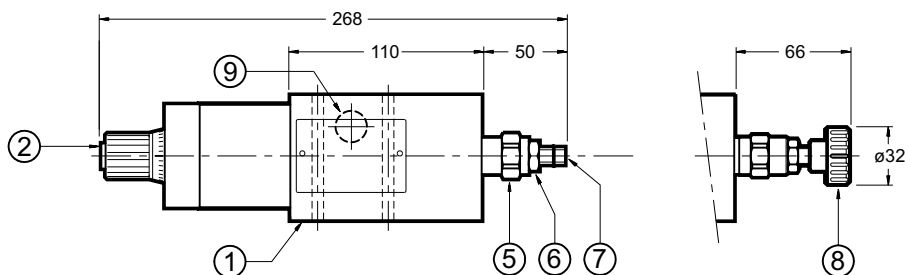
RPC1*/M/A



RPC1*/M/B



RPC1*/M/PCT3

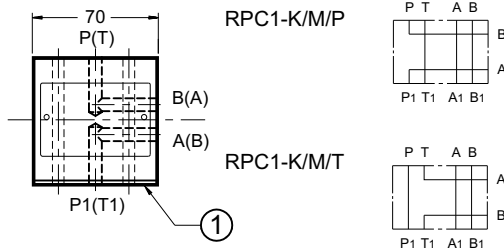
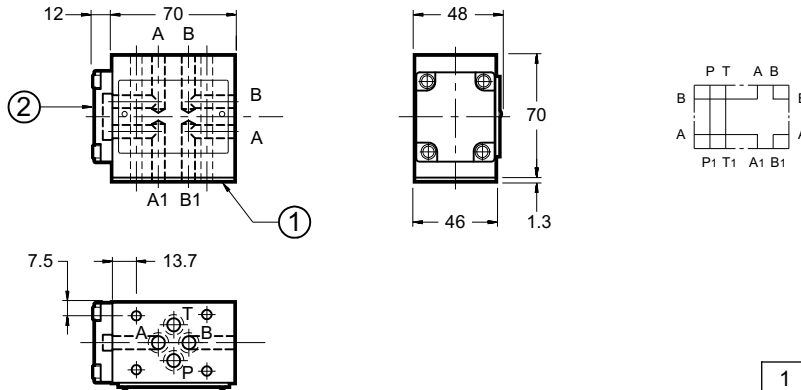


1	Mounting plate with sealing rings: P-OR1L/20N (NBR seals) P-OR1L/20V (Viton seals) For RPC1*/M/PCT3 without mounting plate: 4 OR 2037 (9.25x1.78) - 90 Shore
2	Flow adjustment knob (3 turns total) Rotate anticlockwise to increase flow.
3	Knob locking screw
4	Cross-connection cover
5	Backpressure valve on line T. Pressure adjustment range up to 70 bar
6	Locking nut: spanner 17
7	Countersunk hex screw: spanner 5 Rotate clockwise to increase pressure
8	Adjustment knob: M1
9	Pressure gauge port 1/4" BSP

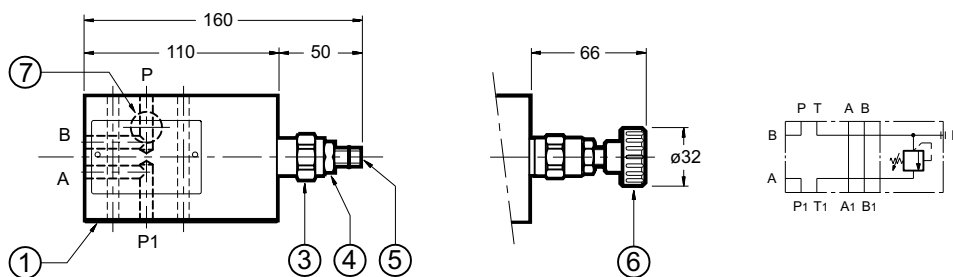
5 - OVERALL AND MOUNTING DIMENSIONS OF BLOCKS WITHOUT FLOW CONTROL VALVE

dimensions in mm

RPC1-K/M/D



RPC1-K/M/PCT3



1	Mounting plate with sealing rings: P-OR1L/20N (NBR seals) P-OR1L/20V (Viton seals) For RPC1-*/M/PCT3 without mounting plate: 4 OR 2037 (9.25x1.78) - 90 Shore
2	Cross-connection cover
3	Backpressure valve on line T. Pressure adjustment range up to 70 bar
4	Locking nut: spanner 17
5	Countersunk hex screw: spanner 5 Rotate clockwise to increase pressure
6	Adjustment knob: M1
7	Pressure gauge port 1/4" BSP

RLM3

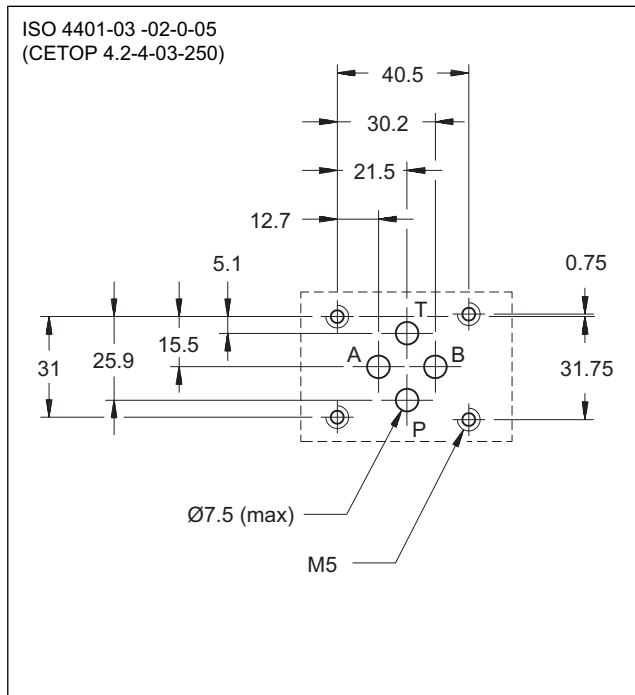
ELECTRIC FAST / SLOW SPEED SELECTION VALVE SERIES 10



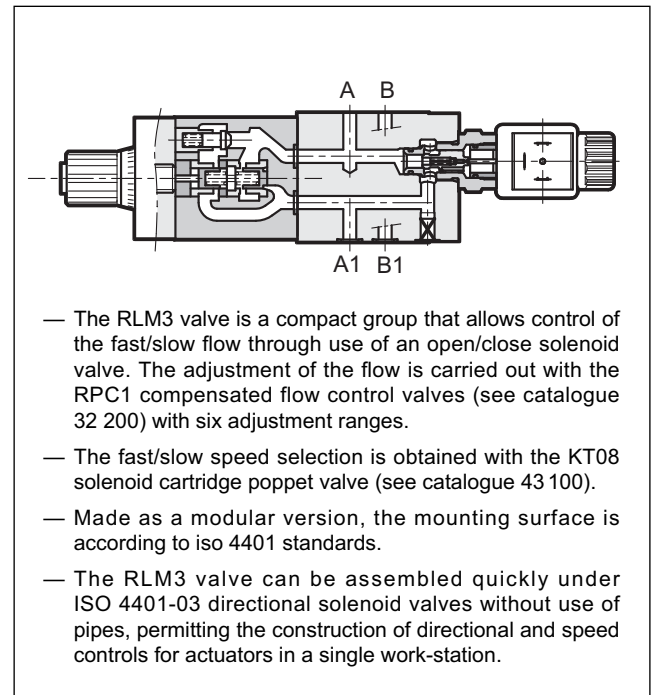
MODULAR VERSION ISO 4401-03

p max 250 bar
Q max (see table of performances)

MOUNTING SURFACE



OPERATING PRINCIPLE



PERFORMANCES

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

Maximum operating pressure	bar	250
Maximum flow rate in controlled lines Maximum flow rate in the free lines	l/min	1 - 4 - 10 - 16 - 22 - 30 65
Minimum controlled flow rate	l/min	0,025
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	3,1

CONFIGURATIONS

(see hydraulic symbols)

- Configuration "A": meter-out control from the actuator on chamber A.
- Configuration "T": control on discharge T of the directional solenoid valve for speed control in both directions of movement.

1 - IDENTIFICATION CODE

R	L	M	3	-		/	10	-		/	
----------	----------	----------	----------	----------	--	----------	-----------	----------	--	----------	--

Electric fast/ slow speed selection valve

Modular version

Size ISO 4401-03

Adjustments:
A = adjustment on chamber A of the actuator;
T = adjustment on discharge T of the directional solenoid valve

A = normally open solenoid valve
C = normally closed solenoid valve

Flow adjustment range:
01 = 1 l/min **16** = 16 l/min
04 = 4 l/min **22** = 22 l/min
10 = 10 l/min **30** = 30 l/min

Series No. (the overall and mounting dimensions remain unchanged from 10 to 19)

See **NOTE 2**

Coil electrical connection:
 (see paragraph 10)
K1 = plug for connector type EN 175301-803 (ex DIN 43650) **(standard)**

For **DC** supply only:
K2 = plug for connector type AMP JUNIOR
K4 = outgoing cables
WK7 = plug DEUTSCH DT04-2P for male connector type DEUTSCH DT06-2S
WK8 = plug for connector type AMP SUPER SEAL

Coil type:
D12 = 12 V } direct current **(standard)**
D24 = 24 V }
R110 = 110 V } rectified current
R230 = 230 V }
D00 = valve without coil (see **NOTE 1**)

Seals:
N = NBR for mineral oils
V = viton for special fluids

NOTE 1: The coil locking ring and the relevant seals are included in the supply.
NOTE 2: The manual override **CM** is available as an option (see paragraph 8).

N.B. : For further information about the flow control valve see catalogue 32 200; for further information about the cartridge poppet valve see catalogue 43 100.

1.1 - Coil identification code

C	14	L3	-			/	10
----------	-----------	-----------	----------	--	--	----------	-----------

Power supply

D12 = 12 V } direct current
D24 = 24 V } **(standard)**

R110 = 110 V } rectified
R230 = 230 V } current

Series no.:
 (the overall and mounting dimensions remain unchanged from 10 to 19)

Coil electrical connection (see paragraph 10)
K1 = plug for connector type EN 175301-803 (ex DIN 43650) **(standard)**

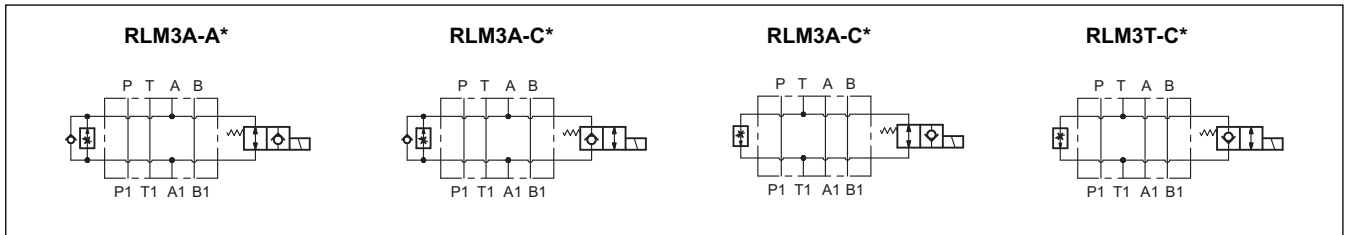
For **D12** and **D24** coils only:
K2 = plug for connector type AMP JUNIOR
K4 = outgoing cables
WK7 = plug DEUTSCH DT04-2P for male connector type DEUTSCH DT06-2S
WK8 = plug for connector type AMP SUPER SEAL

2 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). 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.

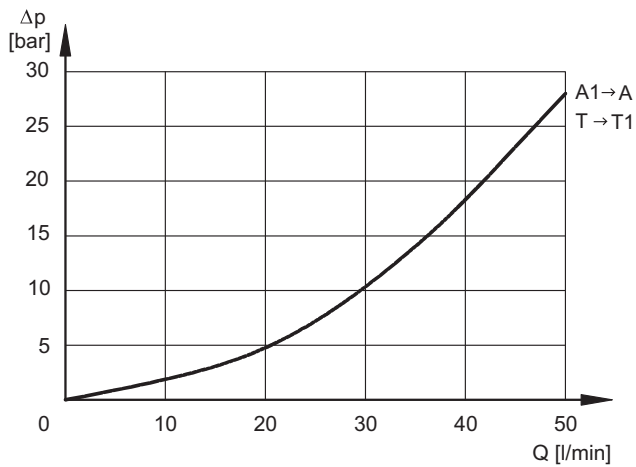
Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

3 - HYDRAULIC SYMBOLS



4 - PRESSURE DROPS $\Delta P-Q$

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



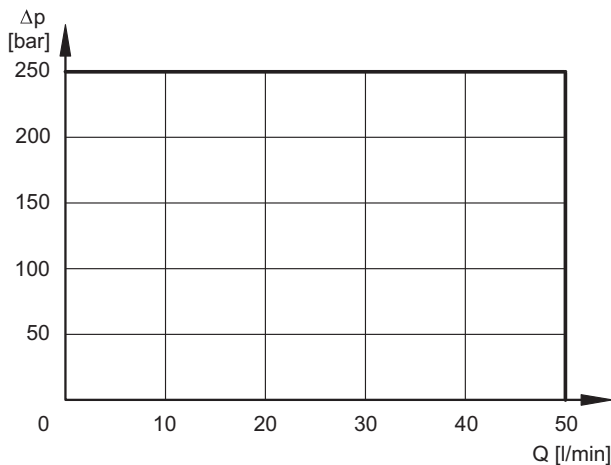
The values in graphs refer to the fast flow through the solenoid valve and are equal for A (normally open) and C (normally closed) versions.

5 - SWITCHING TIME

The values are obtained according to the ISO 6403 standard, with mineral oil at 50°C, with viscosity of 36 cSt.

TIMES [ms]	ENERGIZING	DE-ENERGIZING
RLM3*-A*	85	60
RLM3*-C*	60	85

6 - OPERATING LIMITS



The curves define the flow rate operating fields according to the valve pressure of the different versions.

The values have been obtained according to ISO 6403 norm with solenoids at rated temperature and supplied with voltage equal to 90% of the nominal voltage.

The value have been obtained with mineral oil, viscosity 36 cSt, temperature 50 °C and filtration according to ISO 4406:1999 class 18/16/13.

7 - ELECTRICAL FEATURES

7.1 - Solenoids

These are essentially made up of two parts: tube and coil. The tube is threaded onto the valve body and includes the armature that moves immersed in oil, without wear. The inner part, in contact with the oil in the return line, ensures heat dissipation. The coil is fastened to the tube by a threaded nut, and can be rotated according to the available space.

The interchangeability of coils of different voltages both D or R type is possible without removing the tube.

Protection from atmospheric agents IEC 60529

The IP protection degree is intended for the whole valve. It is guaranteed only with both valve and connector of an equivalent IP degree, correctly connected and installed.

Versions with CM manual override are IP65 always.

Electric connection	IP65	IP66	IP67	IP68	IP69 IP69K (*)
K1 EN 175301-803	x	x			
K2 AMP JUNIOR	x		x		
K4 outgoing cables	x				
WK7 DEUTSCH DT04 male	x		x	x	x
WK8 AMP SUPER SEAL	x	x	x	x	x

(*) The protection degree IP69K is not taken into account in IEC 60529 but it is included in both ISO 20653.

SUPPLY VOLTAGE FLUCTUATION	± 10% Vnom
MAX SWITCH ON FREQUENCY	10.000 ins/hr
DUTY CYCLE	100%
ELECTROMAGNETIC COMPATIBILITY (EMC)	In compliance with 2014/30/EU
LOW VOLTAGE	In compliance with 2014/35/EU
CLASS OF PROTECTION : Coil insulation (VDE 0580) Impregnation:	class H class H

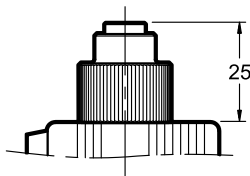
7.2 - Current and absorbed power

In the table are shown current and power consumption values relevant to the different coil types. "R" coil must be used when the valve is fed with AC power supply subsequently rectified by means of rectifier bridge, externally or incorporated in the "D" type connector (see cat. 49 000).

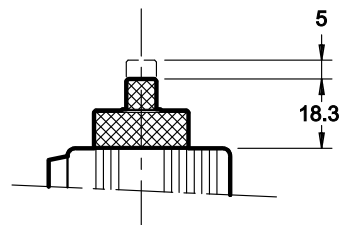
	Resistance at 20°C [Ω] (±1%)	Absorbed current [A] (±5%)	Absorbed power (±5%)		Coil code				
			[W]	[VA]	K1	K2	K4	WK7	WK8
D12	5,4	2,2	26,5		1902740	1902750	1902770	1903510	1903520
D24	20,7	1,16	27,8		1902741	1902751	1902771	1903511	1903521
R110	363	0,25		27,2	1902742				
R230	1640	0,11		26,4	1902743				

8 - MANUAL OVERRIDE

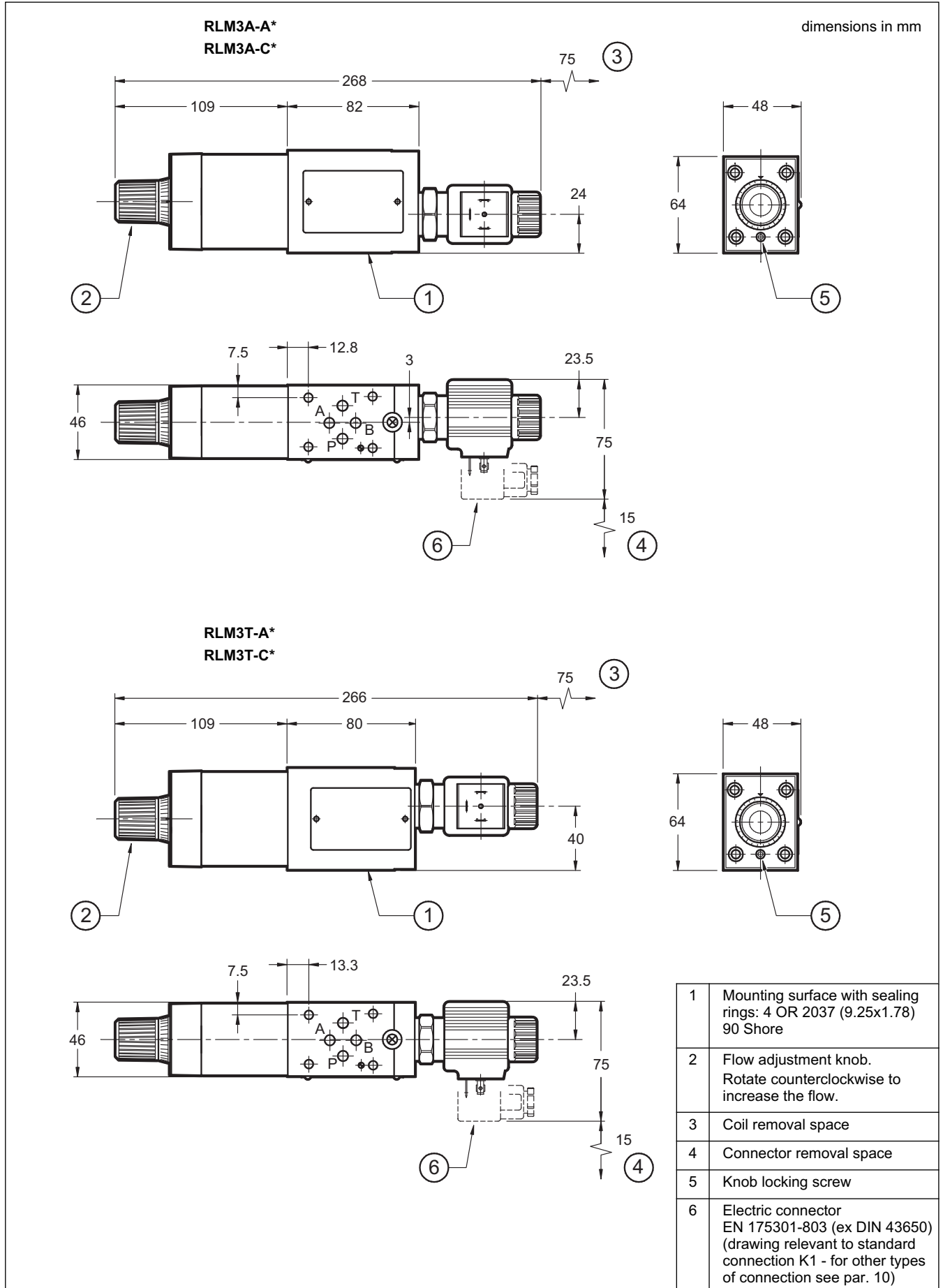
CM for NO version (pushing type)



CM for NC version (screw type)

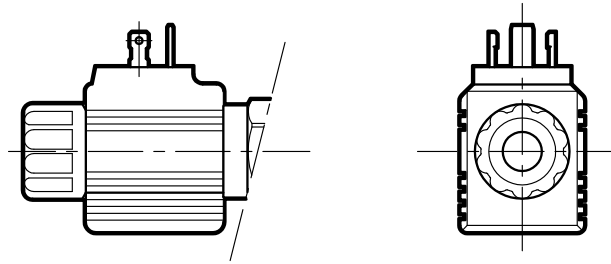


9 - OVERALL AND MOUNTING DIMENSIONS

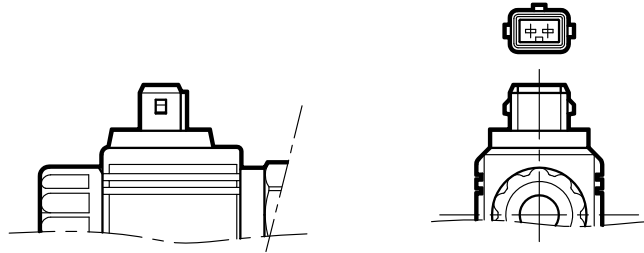


10 - ELECTRIC CONNECTIONS

connection for EN 175301-803
(ex DIN 43650) connector type
code **K1 (standard)**



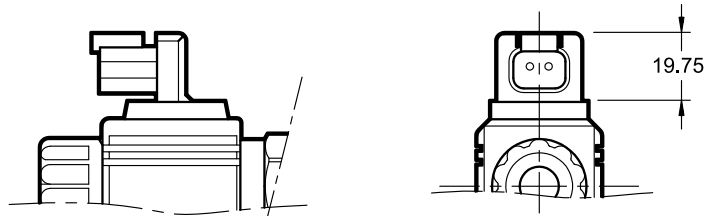
connection for AMP JUNIOR
connector type
code **K2**



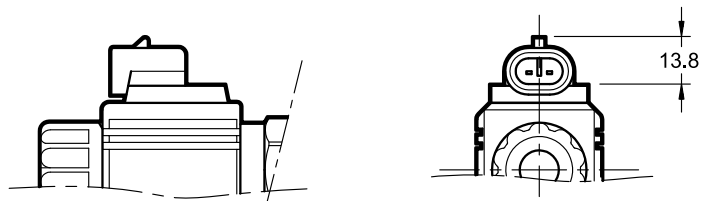
outgoing cable connections
cable length = 1 mt
code **K4**



connection for DEUTSCH DT04-2P
for male connector type DEUTSCH DT06
code **WK7**

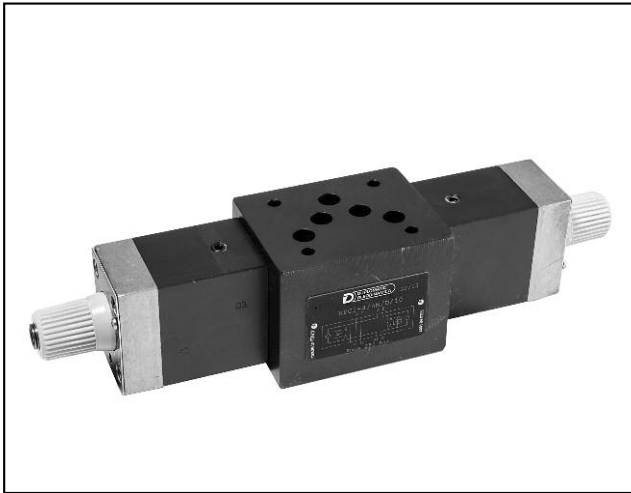


connection for AMP SUPER SEAL
(two contacts) connector type
code **WK8**



11 - ELECTRIC CONNECTORS

Solenoid valves are delivered without connectors. Connectors type EN 175301-803 (ex DIN 43650) for K1 connection can be ordered separately. See catalogue 49 000.



RPC1-*/4M

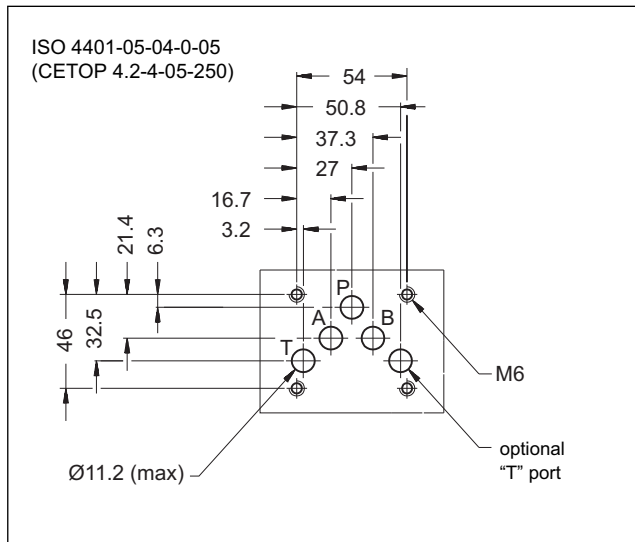
FLOW CONTROL VALVE

SERIES 10

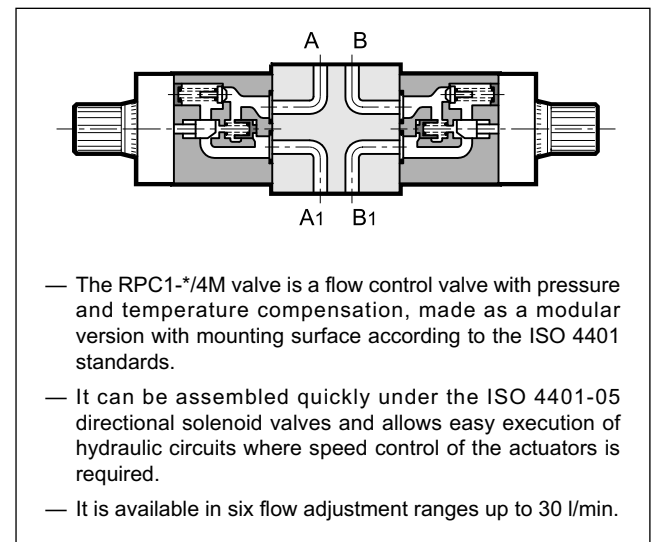
MODULAR VERSION
ISO 4401-05

p max **250** bar
Q max (see table of performances)

MOUNTING INTERFACE



OPERATING PRINCIPLE

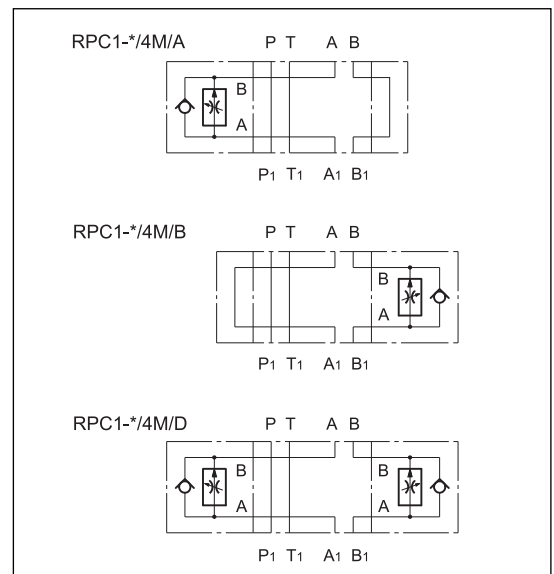


CONFIGURATIONS (see hydraulic symbols table and identification code - par. 1)

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

Maximum operating pressure	bar	250
Maximum flow rate in controlled lines	l/min	1-4-10-16-22-30
Maximum flow rate in the free lines		100
Reverse free flow maximum flow rate		40
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: RPC1-*/4M/ A-B	kg	4,3
RPC1-*/4M/ D		5,6
only modular block ISO 4401-05 without flow control valves: RPC1-K/4M/D		3

HYDRAULIC SYMBOLS



NOTE: Please see catalogue 32 200 for detailed information about the RPC1 flow control valve.



1 - IDENTIFICATION CODE

R	P	C	1	-	/	4	M	/	/	10	/	
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Pressure and temperature compensated flow control valve

Flow adjustment range:

1 = 1 l/min **16** = 16 l/min
4 = 4 l/min **22** = 22 l/min
10 = 10 l/min **30** = 30 l/min
K = only for ISO 4401-05 modular block supplied without flow control valves

Modular version _____
ISO 4401-05 size

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

Series No. (the overall and mounting dimensions remain unchanged from 10 to 19)

A = control from chamber A of the actuator
B = control from chamber B of the actuator
D = control from chambers A and B of the actuator
(A and B configurations are not available in K version)

2 - 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.

3 - OVERALL AND MOUNTING DIMENSIONS

dimensions in mm

RPC1-K/4M/D

1	Mounting surface with sealing rings: 5 OR type 2050 (12.42x1.78) - 90 Shore
2	Adjustment knob. Adjustment in 3 turns of the knob. Rotate anticlockwise to increase flow.
3	Knob locking screw
4	Side locking plate



RS*
**DOUBLE-ACTING THROTTLE
FLOW CONTROL VALVE
SERIES 30**

**THREADED PORTS
CARTRIDGE TYPE**

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

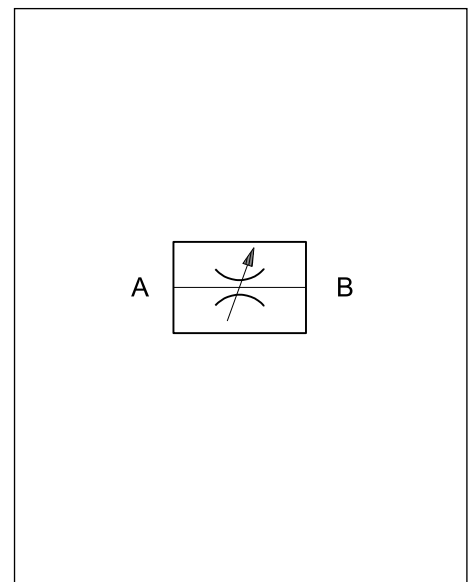
OPERATING PRINCIPLE

- The RS* and RS*-I valves are throttle flow control valves for in-line mounting, directly in the line or as a cartridge complete with threading for in-block mounting.
- Adjustment is obtained with a conical throttle that operates in a cylindrical seat and allows a good linearity of the adjusted flow.
- They are also used as flow shut-off valves since they guarantee good sealing when completely closed.
- The valves are always supplied with an adjustment knob that can be locked in any position with a transverse positioned grub screw, as may be required.

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

Valve code	Port dimensions BSP	Nominal flow rate [l/min]	Mass [kg]	Max. operating pressure [bar]
RS2	1/4"	15	0,2	400
RS3	3/8"	30	0,4	
RS4	1/2"	50	0,6	
RS5	3/4"	80	1,3	
RS6	1"	150	2,6	320
RS7	1 1/4"	200	3,0	
RS8	1 1/2"	220	4,2	
RS2-I	—	15	0,15	320
RS3-I	—	30	0,2	
RS4-I	—	50	0,3	
RS5-I	—	80	0,6	
RS6-I	—	150	1,2	

HYDRAULIC SYMBOL



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

1 - IDENTIFICATION CODE

	R	S	-	/	30	/	
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Throttle flow control valve

Nominal dimension:
 2 = 1/4" 5 = 3/4"
 3 = 3/8" 6 = 1"
 4 = 1/2" 7 = 1 1/4"
 8 = 1 1/2"

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

Series No. (the overall and mounting dimensions remain unchanged from 30 to 39)

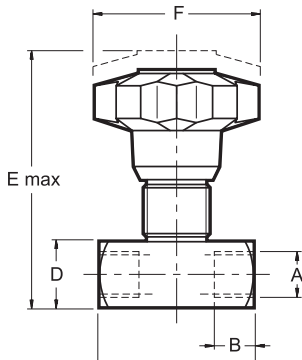
I = In-block cartridge version, available only in dimensions 2-3-4-5-6
 Omit for version with threaded ports

2 - 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.

3 - OVERALL AND MOUNTING DIMENSIONS RS*

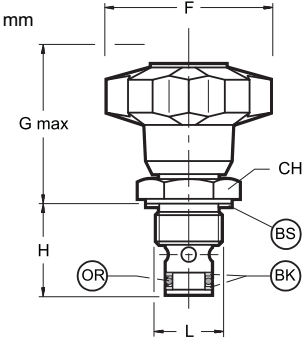
dimensions in mm

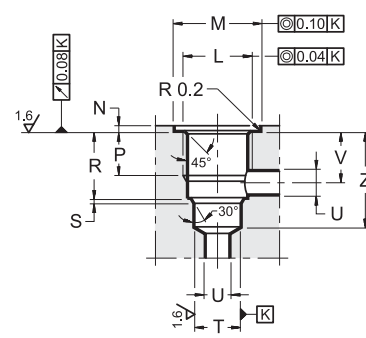


Valve	A BSP	B	C	∅ D	E max	∅ F
RS2	1/4"	12,5	49	20	78	50
RS3	3/8"	12,5	59	25	93	70
RS4	1/2"	15,5	68	30	107	80
RS5	3/4"	17	86	40	132,5	100
RS6	1"	20	105	50	167,5	120
RS7	1 1/4"	22	120	55	172,5	120
RS8	1 1/2"	24	134	65	181	120

4 - OVERALL AND MOUNTING DIMENSIONS RS*-I

dimensions in mm





* "BONDED SEAL"
 seal excluded from the supply

valve	∅F	G max	H	L 6H	∅M + 0.2 0	N	P min	R ±0.2	S + 0.2 0	∅T H8	∅U max	V ±0.2	Z min	CH	OR type	BK type	BS* type
RS2-I	50	49.5	26.5	M20x1.5	27	1	12	16.5	1	14	5	13.3	27	27	2043	2043	400-513
RS3-I	70	57.5	30.5	M20x1.5	27	1	12	20	1.2	16	8	15.2	32	27	2050	2050	400-513
RS4-I	80	66.5	40	M27x2	33	1.3	18	28	1.2	19	10	22	41	32	2062	2062	400-520
RS5-I	100	76.5	44	M33x2	40	1.3	18	30.5	1.2	27	12	23	45.5	41	130	130	400-515
RS6-I	120	102	52.5	M42x2	50	1.3	21.5	36.5	1.5	35	16	28.5	55	50	3118	3118	400-516



RSN*
SINGLE-ACTING THROTTLE
FLOW CONTROL VALVE
SERIES 30

THREADED PORTS
CARTRIDGE TYPE

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

OPERATING PRINCIPLE

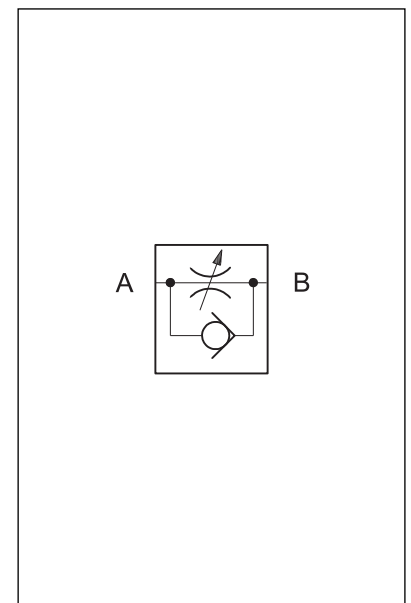
- The RSN* and RSN*-I valves are single-acting throttle flow control valves for in-line mounting, directly in the line or as a cartridge complete with threading for in-block mounting.
- Adjustment is obtained with a conical throttle that operates in a cylindrical seat and allows a good linearity of the adjusted flow.
- They are also used as single direction flow shut-off valves since they guarantee good sealing when completely closed. They also allow a free return in the opposite direction.
- The valves are always supplied with an adjustment knob that can be locked in any position with a transverse positioned grub screw, as may be required.

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

Valve Code	Port dimensions BSP	Nominal flow rate [l/min]	Max. flow with open flow [l/min]	Mass [kg]	Max. operating pressure [bar]
RSN2	1/4"	15	35	0,25	400
RSN3	3/8"	30	80	0,5	
RSN4	1/2"	50	150	0,75	
RSN5	3/4"	80	200	1,6	320
RSN6	1"	150	300	3,05	
RSN7	1 1/4"	200	400	3,75	
RSN8	1 1/2"	220	500	5,75	
RSN2-I	—	15	35	0,13	320
RSN3-I	—	30	80	0,25	
RSN4-I	—	50	150	0,34	
RSN5-I	—	80	200	0,62	

Direct check valve opening pressure	bar	0,35
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

HYDRAULIC SYMBOL



1 - IDENTIFICATION CODE

R	S	N	-	/	30	/	
----------	----------	----------	----------	----------	-----------	----------	--

Single-acting throttle flow control valve

Nominal dimension:
2 = 1/4" **5** = 3/4"
3 = 3/8" **6** = 1"
4 = 1/2" **7** = 1 1/4"
8 = 1 1/2"

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

Series No. (the overall and mounting dimensions remain unchanged from 30 to 39)

I = in-block cartridge version, available only in dimensions 2-3-4-5
Omit for version with threaded ports

2 - 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.

3 - OVERALL AND MOUNTING DIMENSIONS RSN*

OPEN FLOW DIRECTION

dimensions in mm

Valve	A BSP	B	C	∅ D	E max	∅ F
RSN2	1/4"	12,5	66	20	78	50
RSN3	3/8"	12,5	79	25	93	70
RSN4	1/2"	15,5	94,5	30	107	80
RSN5	3/4"	17	115	40	132,5	100
RSN6	1"	20	138,5	50	167,5	120
RSN7	1 1/4"	22	157	55	172,5	120
RSN8	1 1/2"	24	190	65	181	120

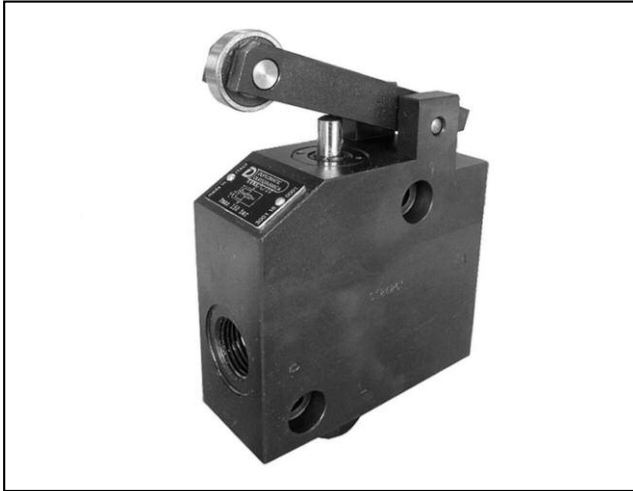
4 - OVERALL AND MOUNTING DIMENSIONS RSN*-I

OPEN FLOW DIRECTION

*“BONDED SEAL” seal excluded from the supply

dimensions in mm

Valve	∅F	G max	H	L 6H	∅M +0.2 0	N	P min	R ± 0.2	S +0.2 0	∅T H8	∅U max	V ± 0.2	Z min	CH	OR type	BK type	BS* type
RSN2-I	50	49	30.5	M20x1.5	27	1	12	20	1.2	16	8	15.2	32	27	2050	2050	400-513
RSN3-I	70	56	40	M27x2	33	1.3	18	28	1.2	19	10	22	41	32	2062	2062	400-520
RSN4-I	80	70	44.5	M33x2	40	1.3	18	30.5	1.2	27	12	23	45.5	41	130	130	400-515
RSN5-I	100	80	52.5	M42x2	50	1.3	21.5	36.5	1.5	35	16	28.5	55	50	3118	3118	400-516



K4WA/C

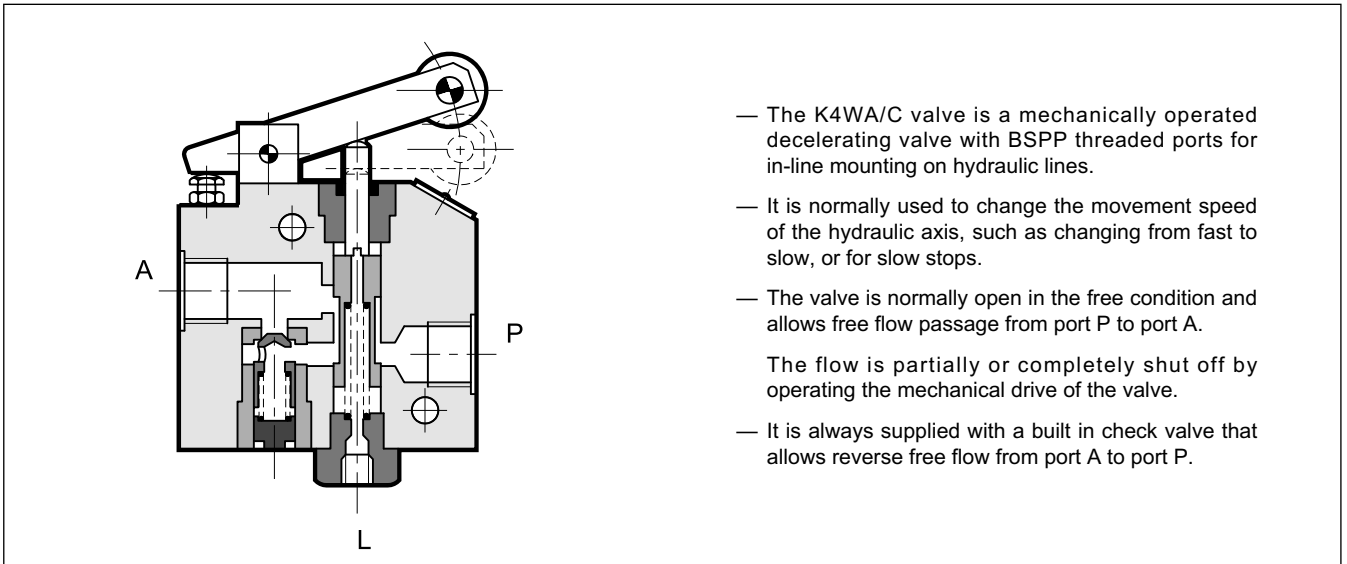
DECELERATION VALVE

SERIES 10

THREADED PORTS

p max 150 bar
Q max 40 l/min

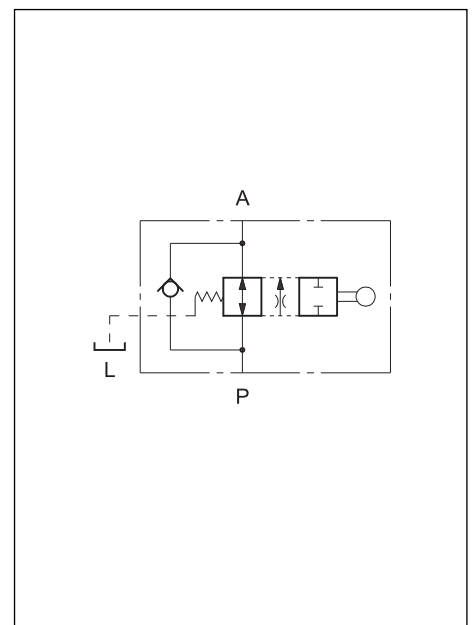
OPERATING PRINCIPLE



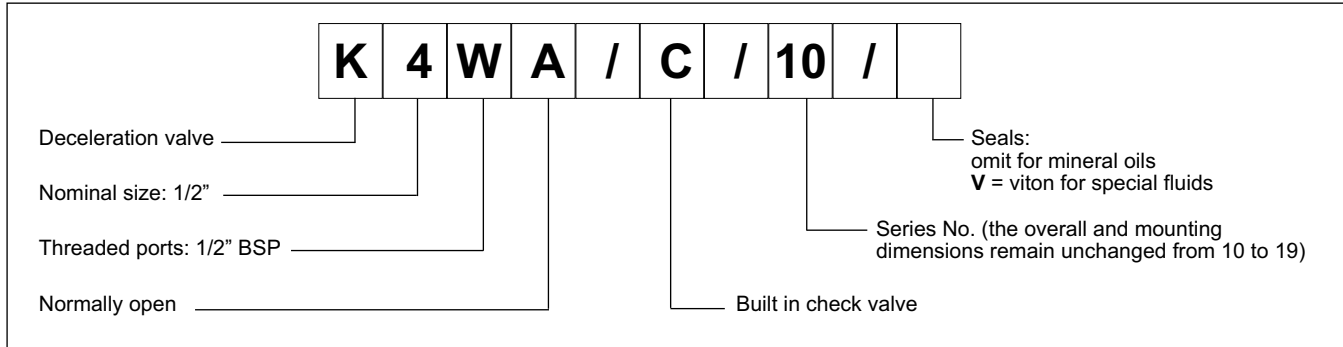
PERFORMANCES (measured with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure	bar	150
Cracking pressure of the check valve	bar	0,5
Maximum flow rate	l/min	40
Needed force on the lever to operate:		
- at beginning	kg	6,8
- at end stroke		12,0
Maximum leakage with closed valve (Δp 100 bar)	l/min	0,05
Stroke (from all open to completely closed)	mm	20
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	2,5

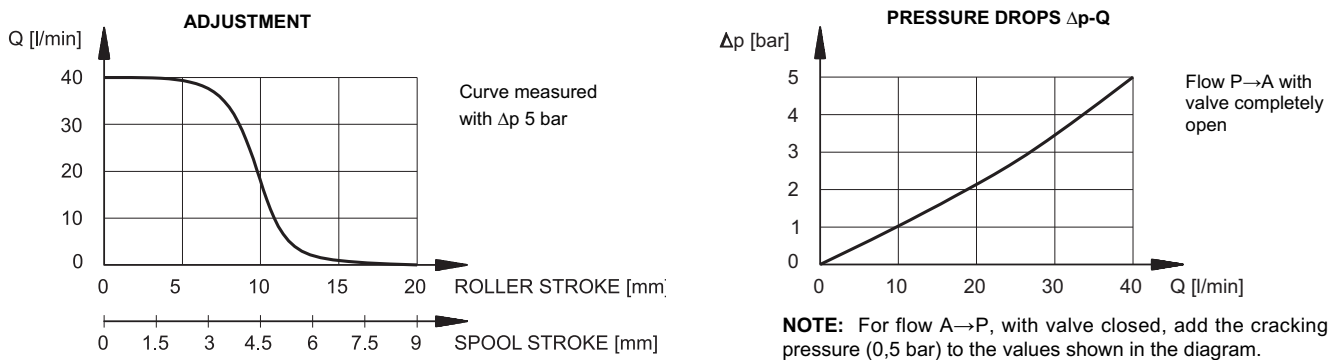
HYDRAULIC SYMBOL



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 - OVERALL AND MOUNTING DIMENSIONS

