



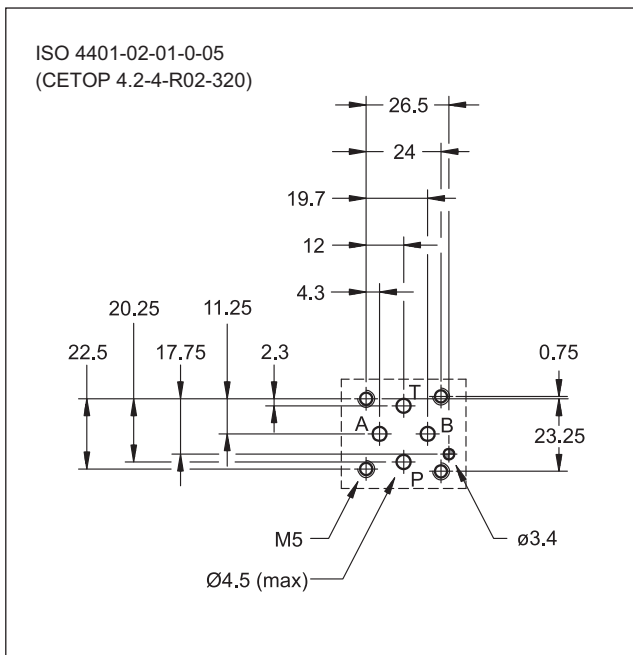
CHM2

PILOT OPERATED CHECK VALVE SERIES 10

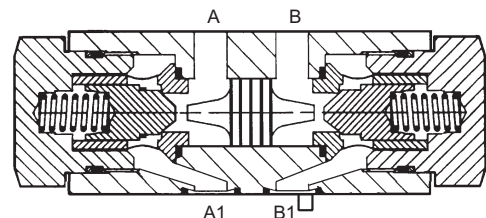
MODULAR VERSION ISO 4401-02 (CETOP R02)

p max 320 bar
Q max 30 l/min

MOUNTING SURFACE



OPERATING PRINCIPLE

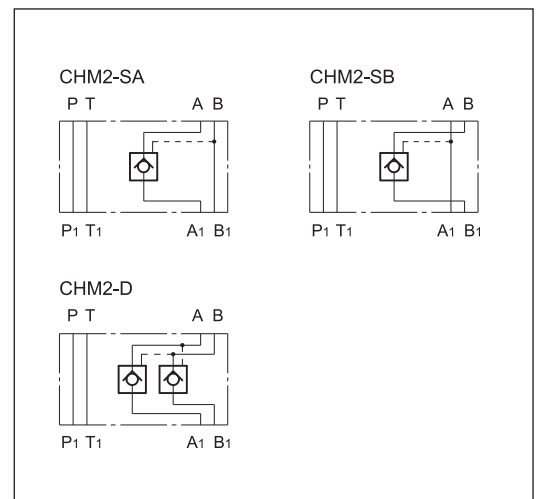


- The CHM2 valve is a hydraulically released check valve with spring closing and with cone on edge seals; the mounting surface is according to the ISO 4401 (CETOP RP 121H) standards.
- Its use allows:
 - prevention of flow in one direction;
 - flow in the same direction, if opened by a pilot pressure;
 - free flow in the other direction.
- The CHM2 valves are always mounted downstream of the DL2 type directional solenoid valves (see cat. 41 100) and can be assembled with all other ISO 4401-02 (CETOP R02) valves.

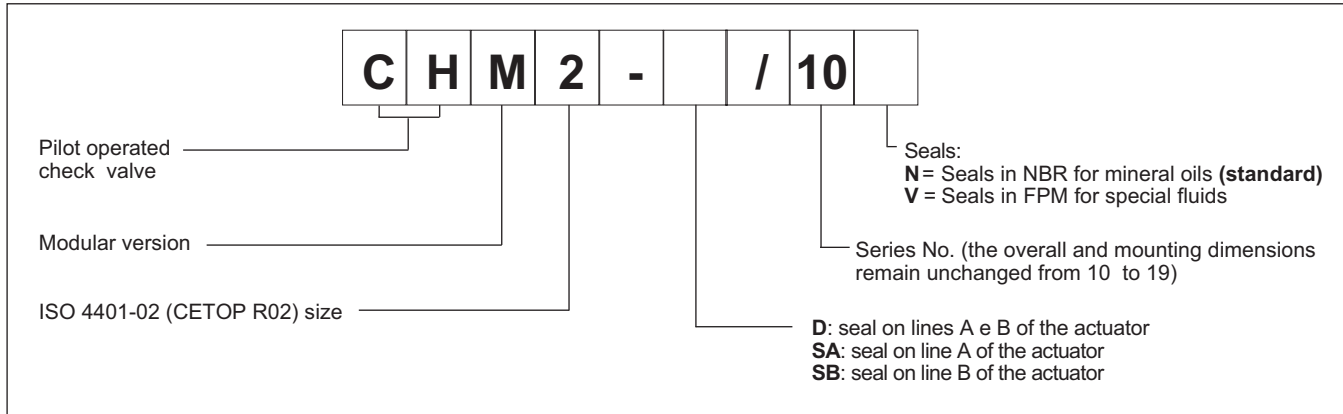
PERFORMANCE RATINGS (measured with mineral oil of viscosity 36 cSt at 50°C)

Maximum operating pressure	bar	320
Maximum flow rate	l/min	30
Ratio between pressure of the sealed chamber and the piloting pressure		3.5:1
Opening pressure	bar	2
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	0.75

HYDRAULIC SYMBOLS

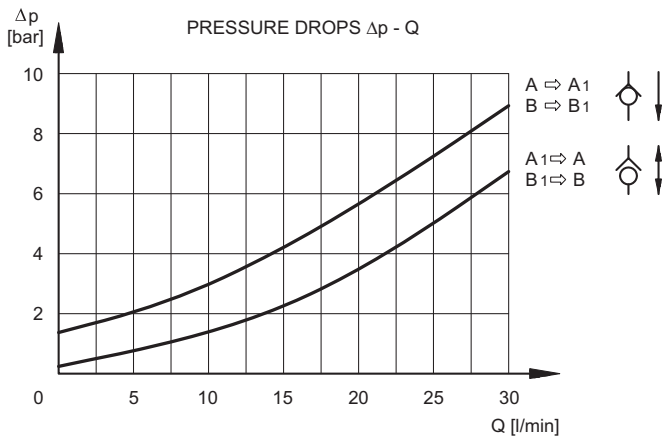


1 - IDENTIFICATION CODE



2 - CHARACTERISTIC CURVES

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



3 - HYDRAULIC FLUIDS

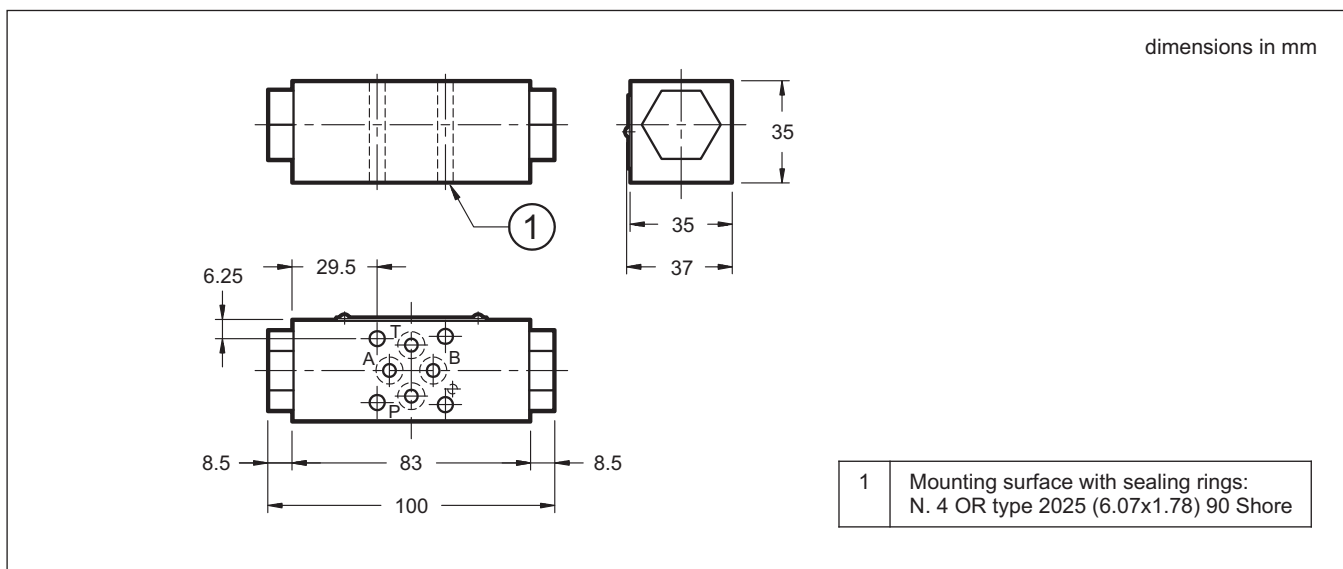
Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. With this kind of fluids, use NBR seals type (code N). With HFDR fluids type (phosphate esters) use FPM seals (code V).

For the use of other fluid types 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 itself and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

4 - OVERALL AND MOUNTING DIMENSIONS





MVR

DIRECT CHECK VALVE

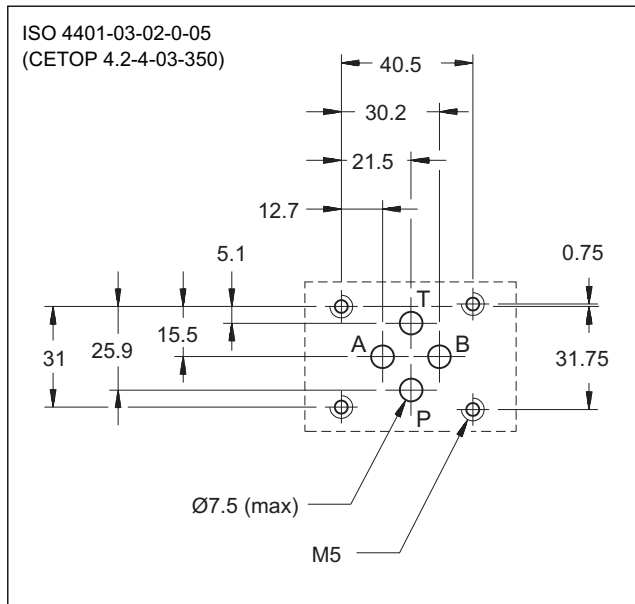
SERIES 51

MODULAR VERSION

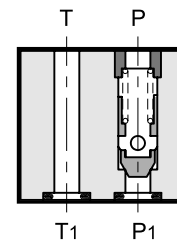
ISO 4401-03 (CETOP 03)

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

MOUNTING INTERFACE



OPERATING PRINCIPLE



- The MVR valve is a direct check valve made as a modular version with mounting surface according to the ISO 4401 (CETOP RP 121H) standards.
- It is used to avoid oil backflows and self-emptying of lines, or to generate back-pressures.
- It can be assembled quickly under the ISO 4401-03 (CETOP 03) directional solenoid valves without the use of pipes, using suitable tie-rods or bolts.
- It is available in versions with the check valve only on single line (P, T, A or B) or on both lines (P and T or A and B).

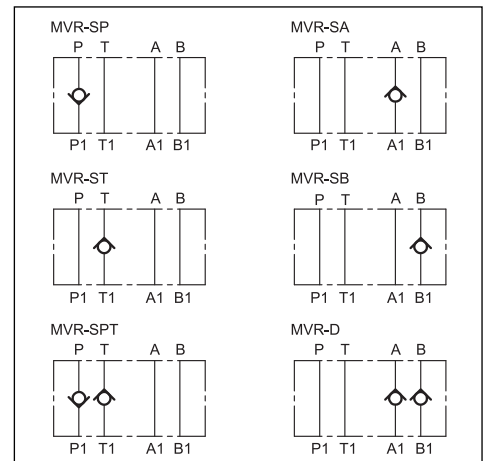
CONFIGURATIONS (see Hydraulic symbols table)

- MVR-SP: check valve on line P.
- MVR-SA: check valve on line A.
- MVR-ST: check valve on line T.
- MVR-SB: check valve on line B.
- MVR-SPT: check valve on lines P and T.
- MVR-D: check valve on lines A and B.

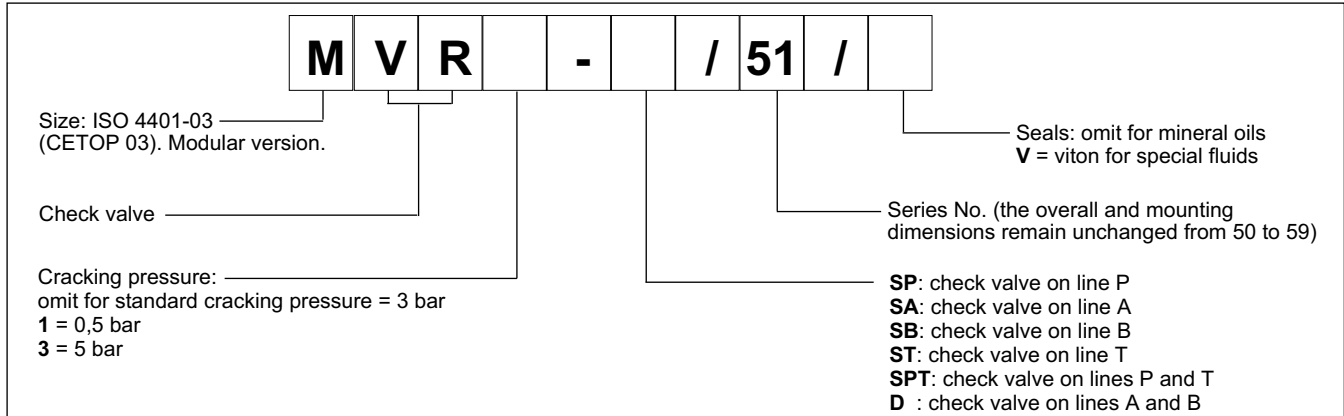
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	350
Check valve cracking pressure		3 - 0,5 - 5
Maximum flow rate in controlled lines	l/min	50
Maximum flow rate in the free lines		75
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	1

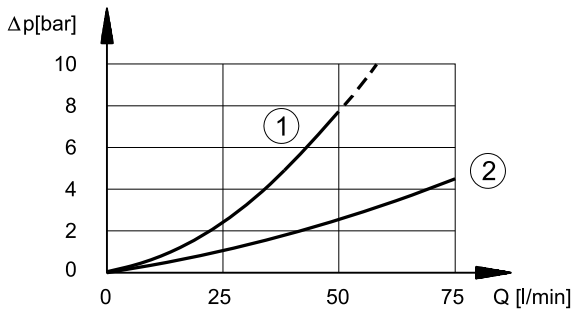
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



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



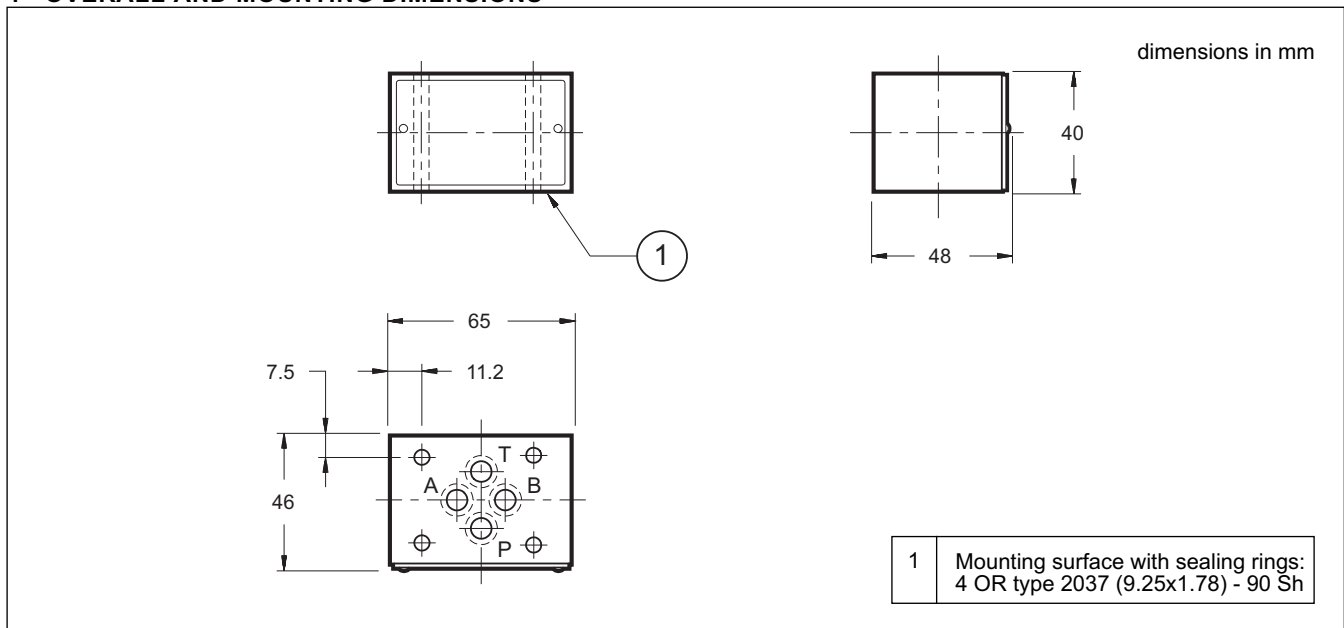
- 1) pressure drops on controlled lines
- 2) pressure drops on free lines

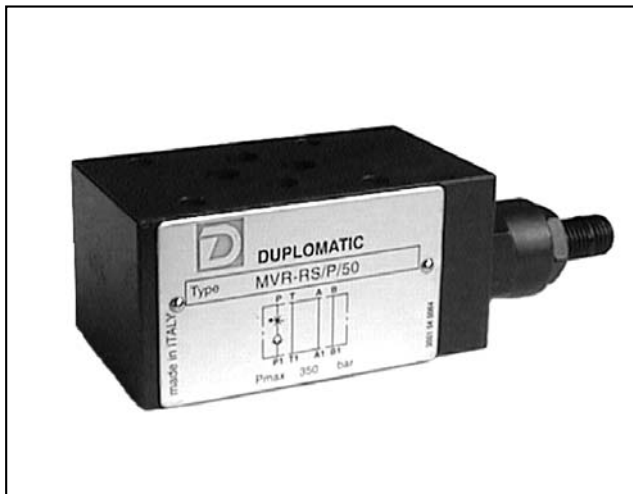
NOTE: check valve cracking pressure must be added to the values indicated in the curve 1 in the diagram

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





MVR-RS/P

DIRECT CHECK VALVE WITH FLOW RESTRICTOR

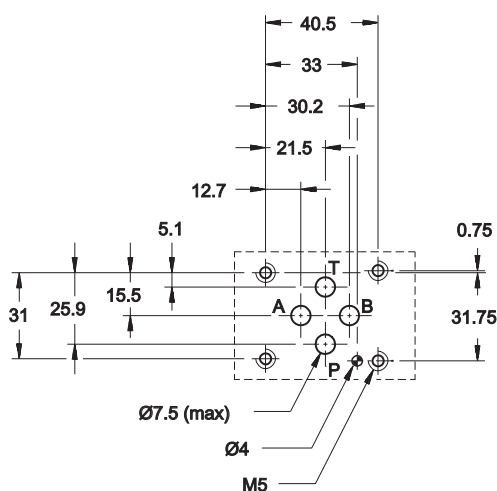
SERIES 50

MODULAR VERSION ISO 4401-03 (CETOP 03)

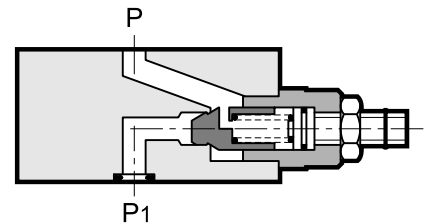
p max **350** bar
Q max (see table of performances)

MOUNTING INTERFACE

ISO 4401-03-02-0-05
(CETOP 4.2-4-03-350)



OPERATING PRINCIPLE

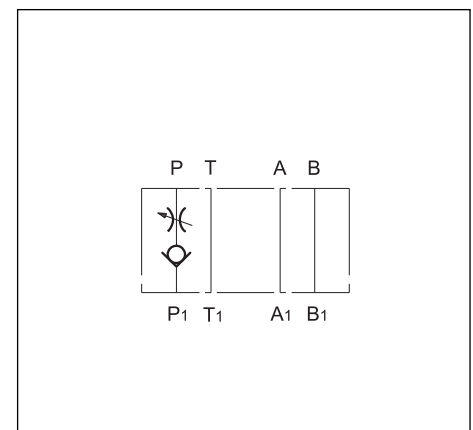


- The MVR-RS/P valve is a check valve that incorporates also the function of flow restriction.
- It is made as a modular version with mounting surface according to the ISO 4401 (CETOP RP 121H) standards.
- It can be quickly assembled under the ISO 4401-03 (CETOP 03) directional solenoid valves and modular valves, without use of pipes and using suitable tie-rods or bolts.
- It is used when it is necessary to control the flow in a direction and to avoid backflows or the self-emptying of the lines in the opposite direction.
- Control of the flow is obtained with a countersunk hex screw with locking nut.

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

Maximum operating pressure	bar	350
Check valve cracking pressure		1
Maximum flow rate in controlled lines	l/min	50
Maximum flow rate in the free lines		75
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	1,1

HYDRAULIC SYMBOL

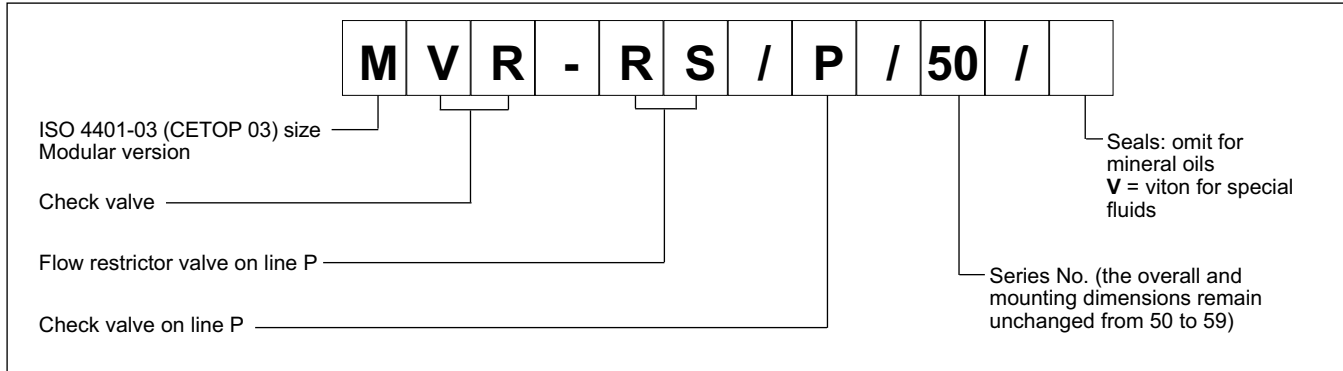




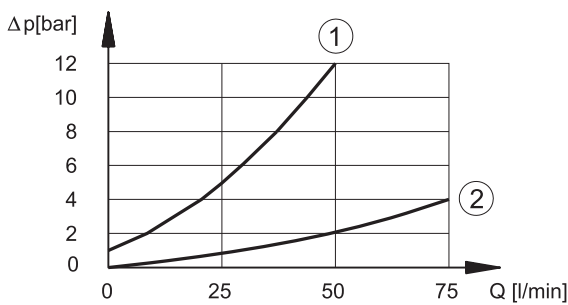
MVR-RS/P

SERIES 50

1 - IDENTIFICATION CODE



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

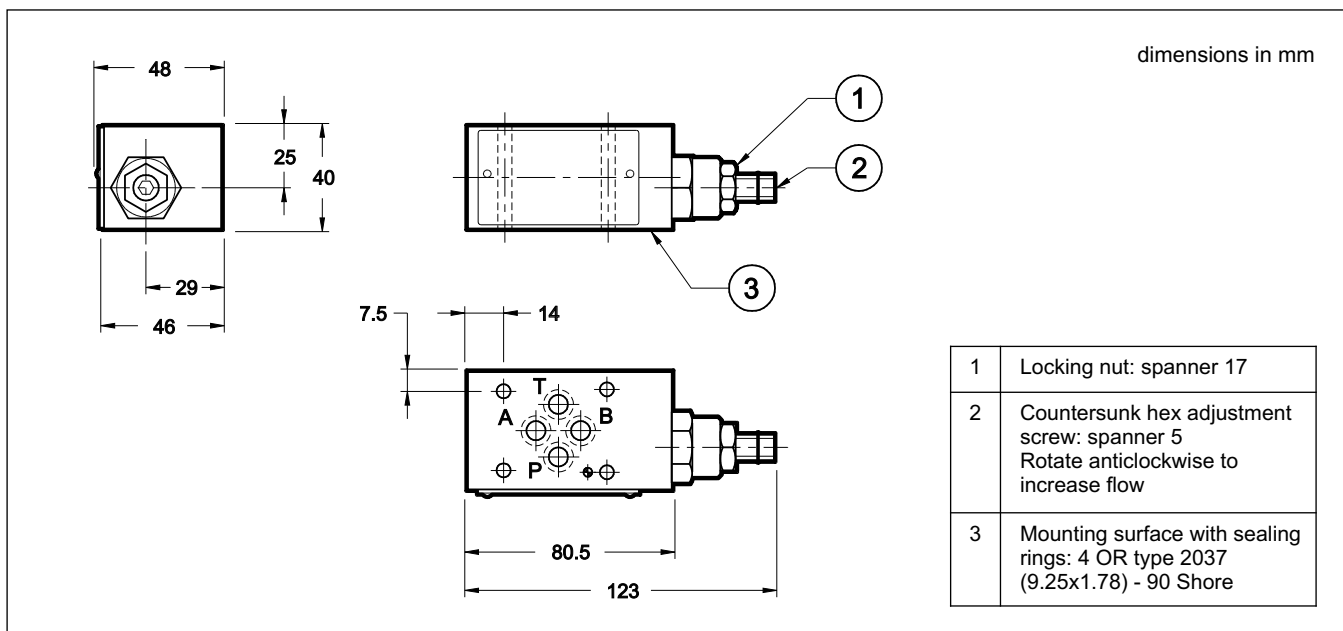


- 1) pressure drops $P_1 \rightarrow P$
- 2) pressure drops on free lines (ex. $A \rightarrow A_1$)

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



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MVPP

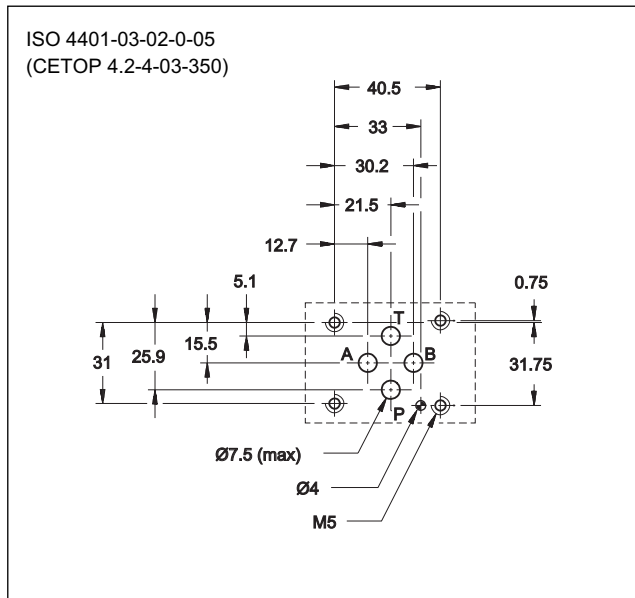
PILOT OPERATED CHECK VALVE

SERIES 50

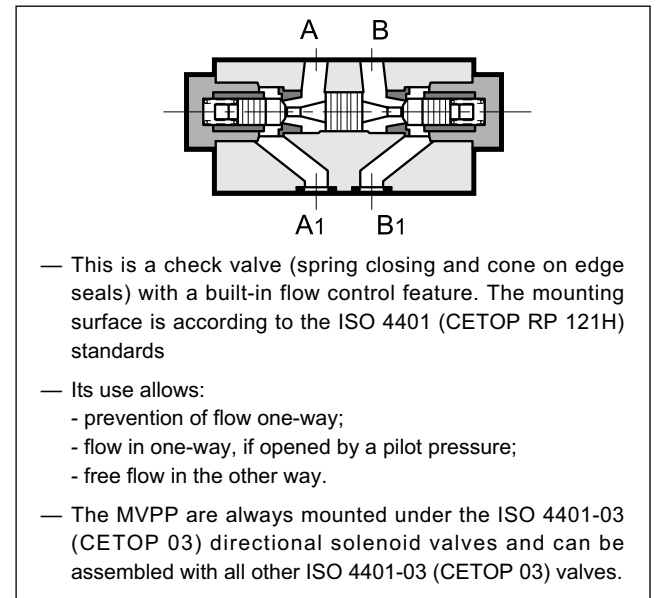
MODULAR VERSION ISO 4401-03 (CETOP 03)

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

MOUNTING INTERFACE



OPERATING PRINCIPLE



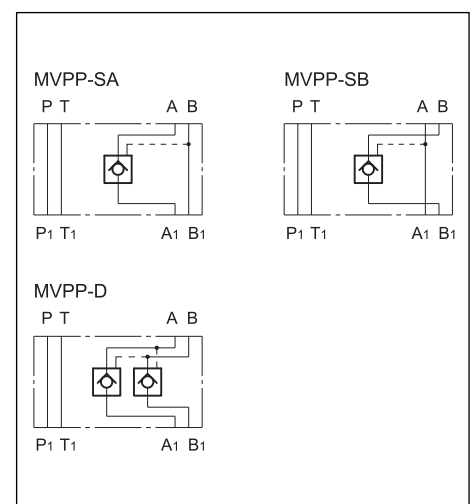
CONFIGURATIONS (see hydraulic symbols table)

- Configurations "SA" - "SB": are used to lock the actuator in one direction.
- Configuration "D": is used to lock the position of the actuator in both directions.

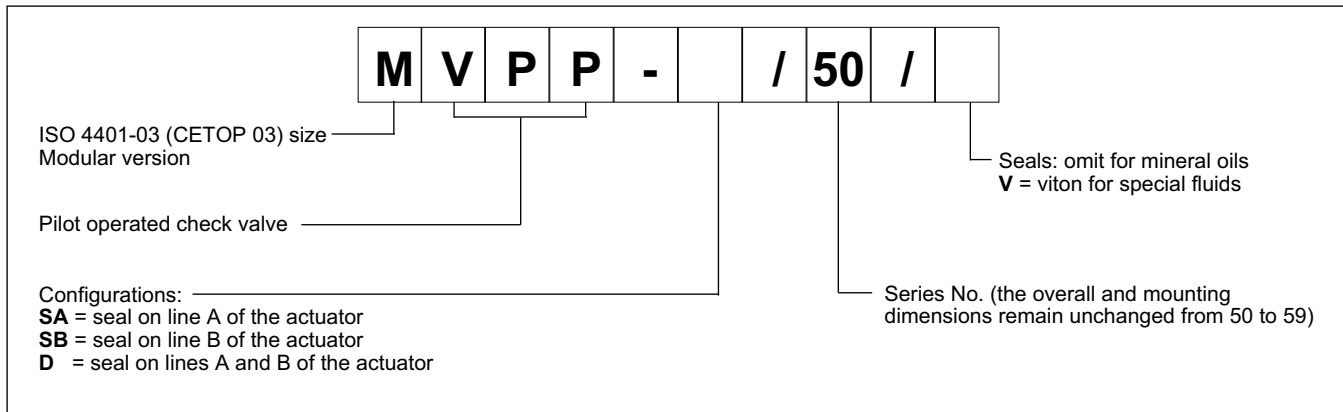
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	350
Check valve cracking pressure		3
Maximum flow rate in controlled lines	l/min	50
Maximum flow rate in the free lines		75
Ratio between the pressure in the locked chambers and the piloting pressure		3,4:1
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	1,3

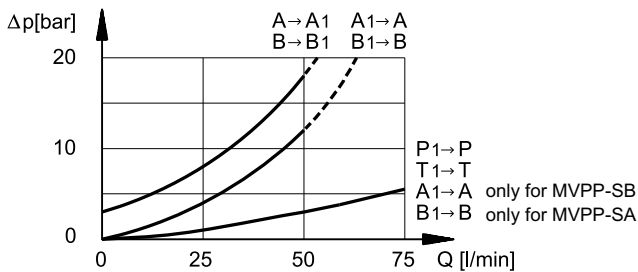
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



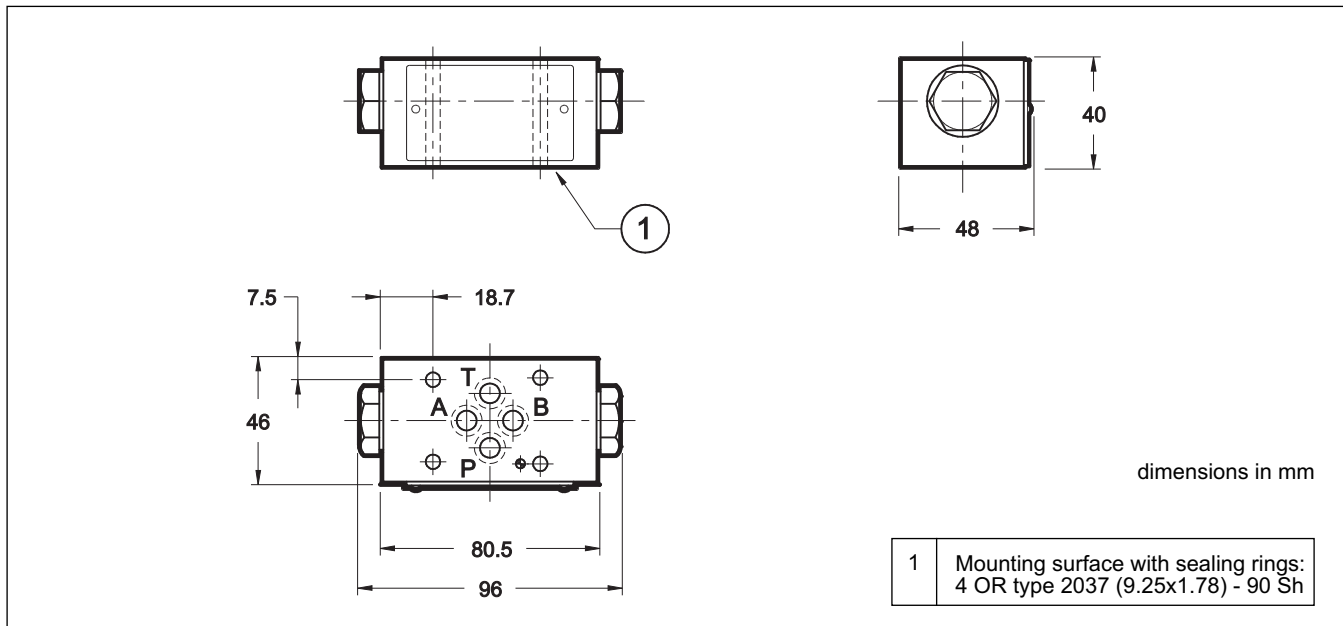
2 - CHARACTERISTIC CURVES (values obtained with viscosity of 36 cSt at 50°C)



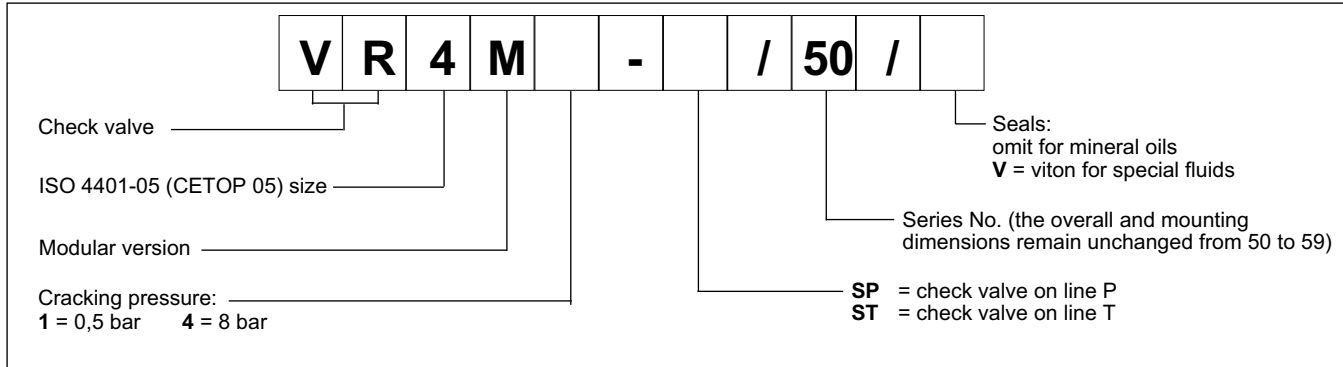
3 - HYDRAULIC FLUIDS

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.

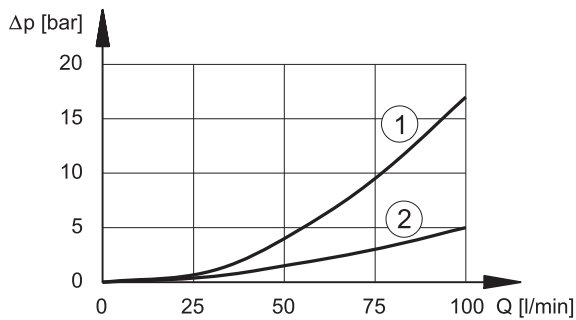
4 - OVERALL AND MOUNTING DIMENSIONS



1 - IDENTIFICATION CODE



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



1) pressure drops $P_1 \rightarrow P$ and $T \rightarrow T_1$ (controlled lines)

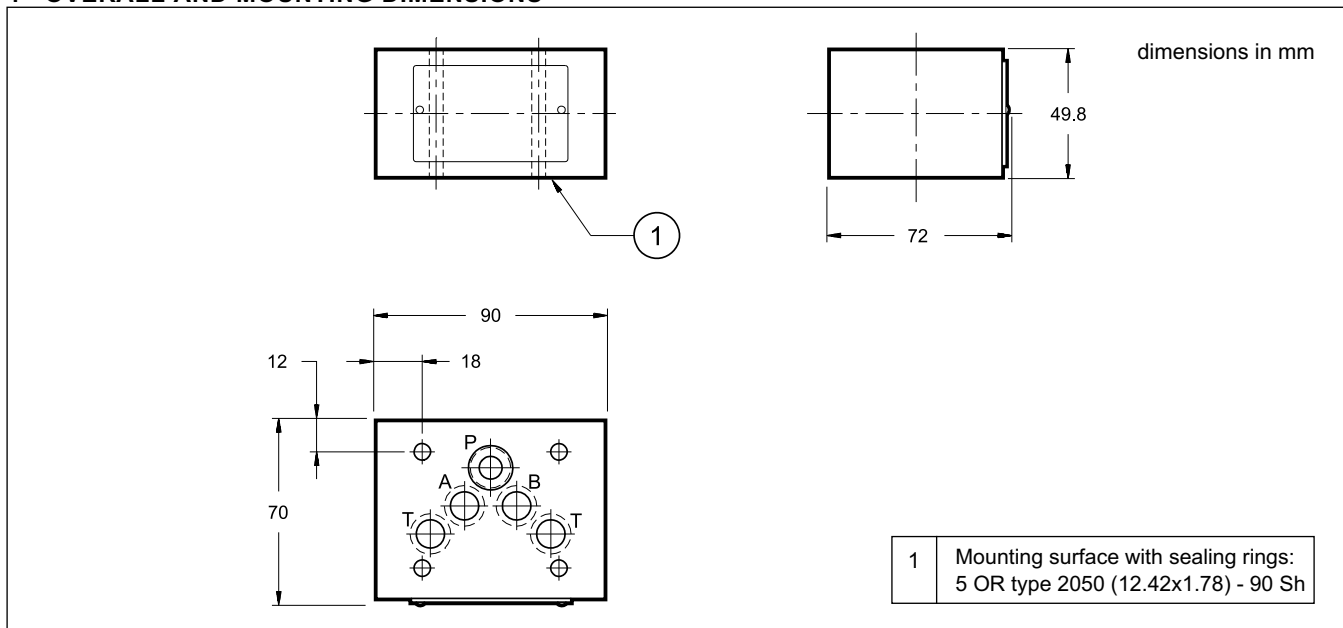
2) pressure drops on free lines (ex. $A \rightarrow A_1$)

NOTE: Add the valve cracking pressure to the values shown by the curve 1 of the diagram

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





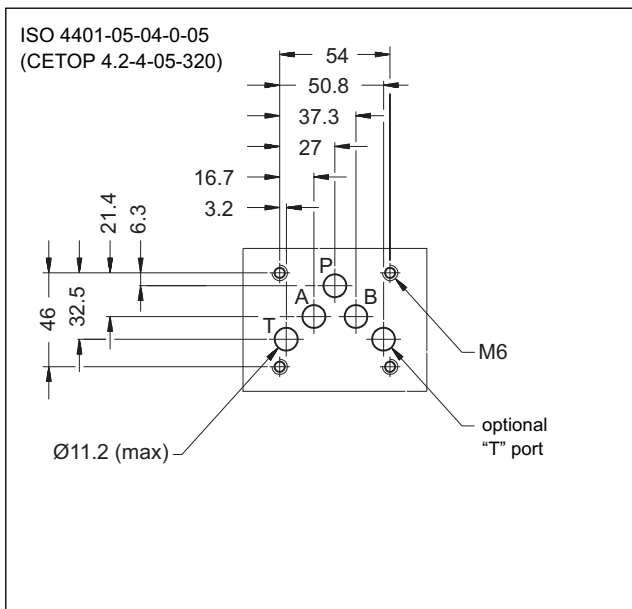
CHM5

PILOT OPERATED CHECK VALVE SERIES 10

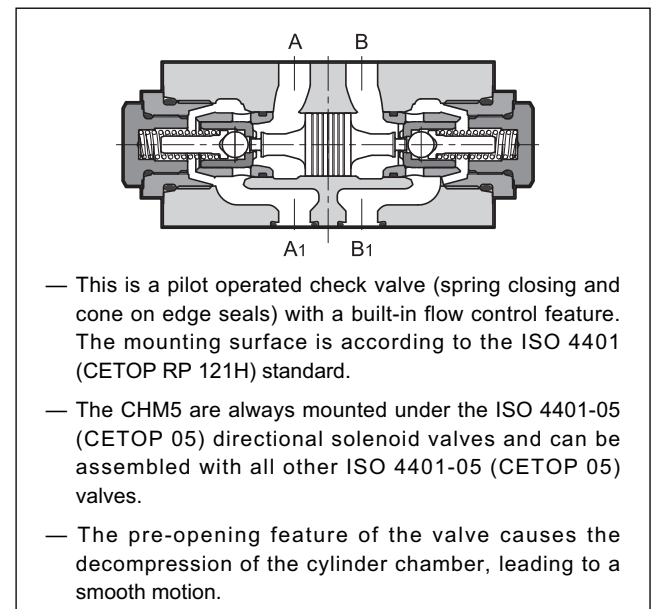
MODULAR VERSION ISO 4401-05 (CETOP 05)

p max 320 bar
Q max 120 l/min

MOUNTING INTERFACE



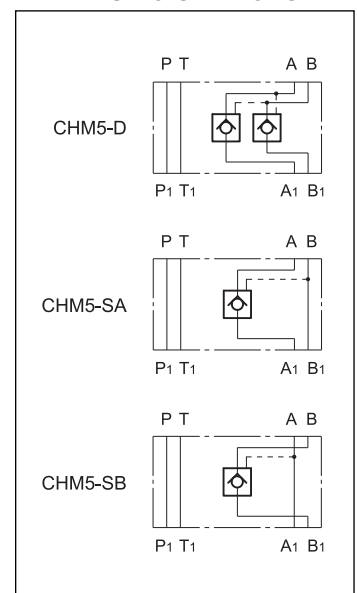
OPERATING PRINCIPLE



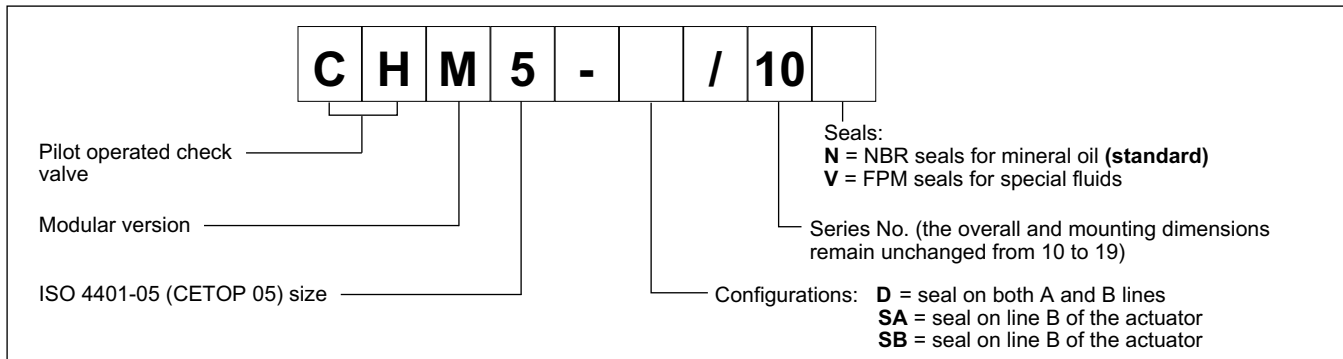
PERFORMANCES (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	320
Maximum flow rate	l/min	120
Decompression ratio		14,9:1
Piloting ratio		2,3:1
Check valve cracking pressure	bar	2
Ambient temperature range	°C	-20 / +50
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: CHM5-D	kg	2,2
CHM5-SA e CHM5-SB		1,9

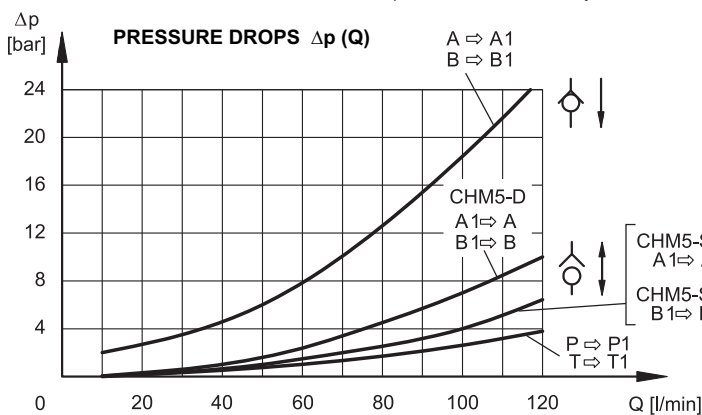
HYDRAULIC SYMBOLS



1 - IDENTIFICATION CODE



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



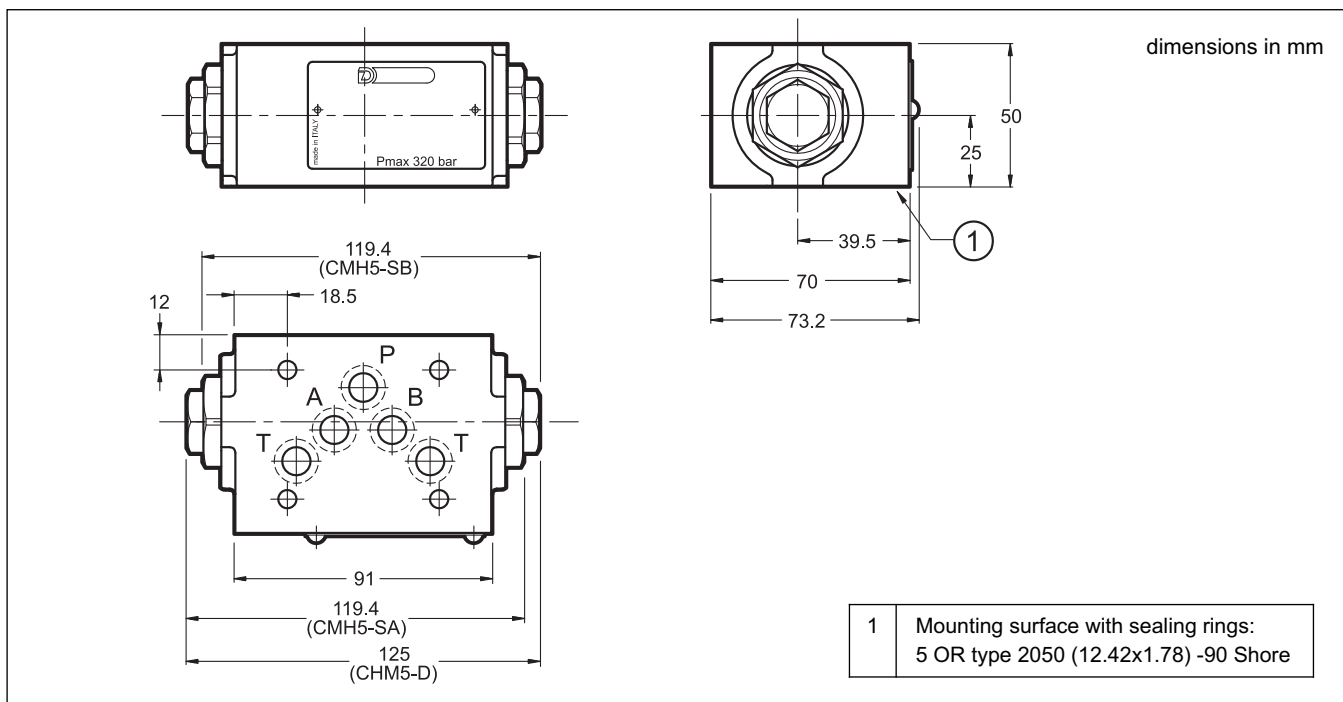
3 - HYDRAULIC FLUIDS

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





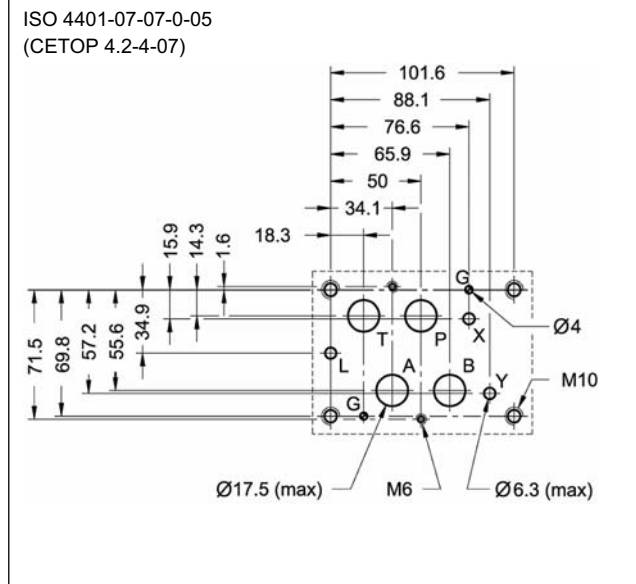
CHM7

PILOT OPERATED CHECK VALVE SERIES 11

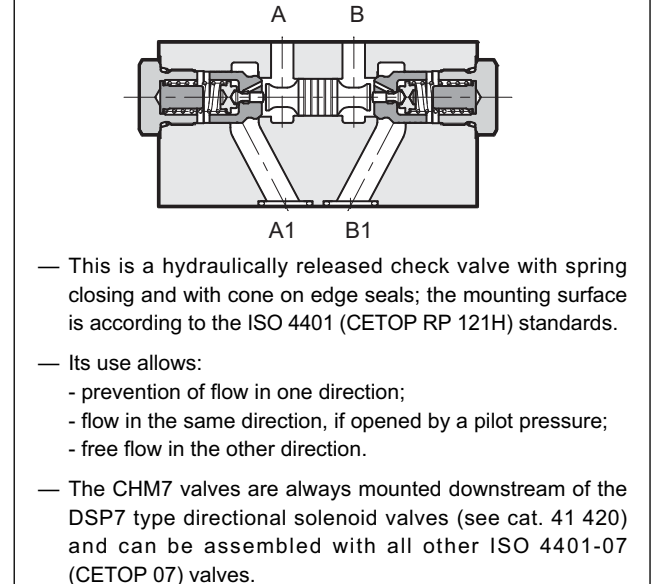
MODULAR VERSION
ISO 4401-07 (CETOP 07)

p max 350 bar
Q max 300 l/min

MOUNTING INTERFACE



OPERATING PRINCIPLE



CONFIGURATIONS (see hydraulic symbols table)

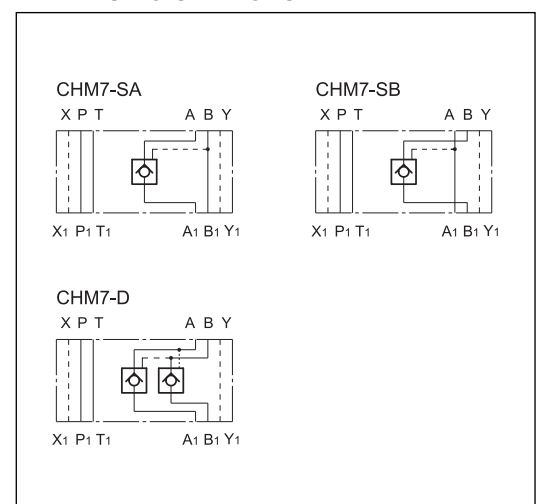
- Configuration "SA" - "SB": is used to lock the actuator in one direction.
- Configuration "D": is used to lock the actuator position in both directions.

The opening of the valve is gradual and occurs with the pre-opening of the main shutter that permits the plant decompression .

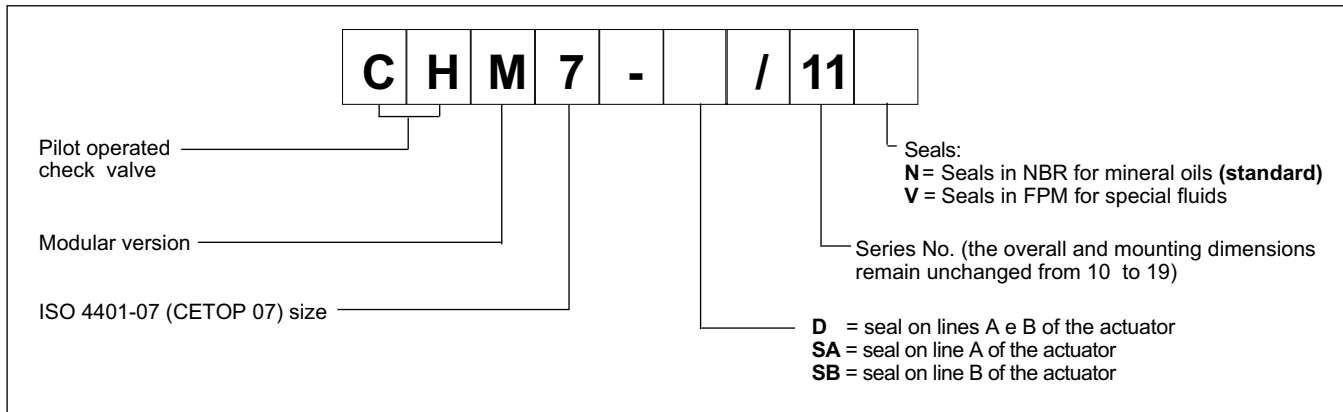
PERFORMANCE RATINGS (measured with mineral oil of viscosity 36cSt at 50°C)

Maximum operating pressure	bar	350
Maximum flow rate	l/min	300
Ratio between pressure of the sealed chamber and the piloting pressure		13:1
Opening pressure	bar	2
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: CHM7-S*	kg	7,6
CHM7-D	kg	7,7

HYDRAULIC SYMBOLS

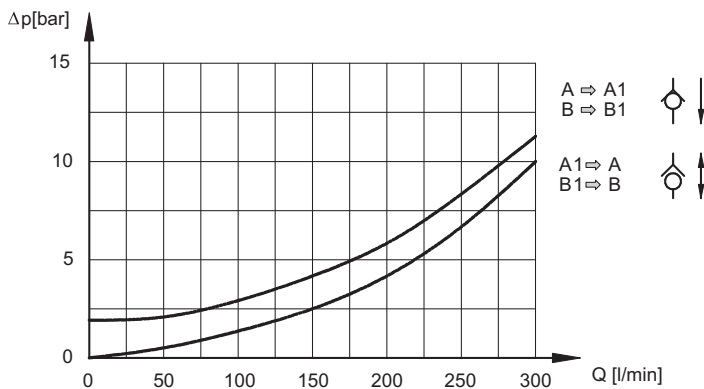


1 - IDENTIFICATION CODE



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. With this kind of fluids, use NBR seals type (code N). With HFDRfluids type (phosphate esters) use FPM seals (code V).

For the use of other fluid types 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 itself and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

4 - OVERALL AND MOUNTING DIMENSIONS

