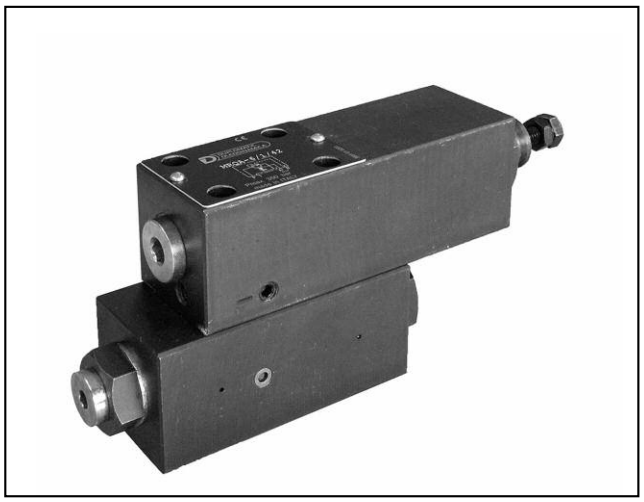


MRQA

UNLOADING VALVE

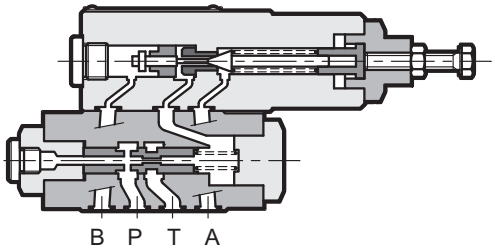
(FOR CIRCUITS WITH ACCUMULATOR)

SERIES 42

SUBPLATE MOUNTING
ISO 4401-03

p max **350** bar
Q max **40** l/min

OPERATING PRINCIPLE



— MRQA is a pressure relief and safety valve with automatic unloading. Upon reaching the set value, the valve freely unloads the pump and puts it under pressure again when the pressure values descend in the circuit to correspond to 63% or 75% of the set value.

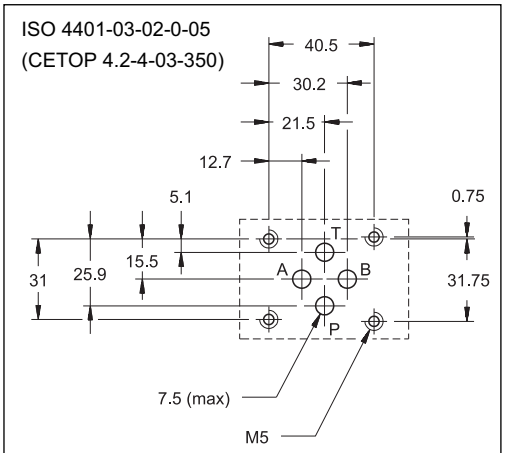
In order to assure this operation, it is necessary to use an accumulator (see hydraulic diagram) that guarantees pressure maintenance in the circuit. A check valve, incorporated in the panel or available as a plate under the valve MRQA/C, prevents the accumulator unloading through the open valve.

This system maintains the pressure in the hydraulic circuit, avoiding heating of the oil and reducing energy consumption.

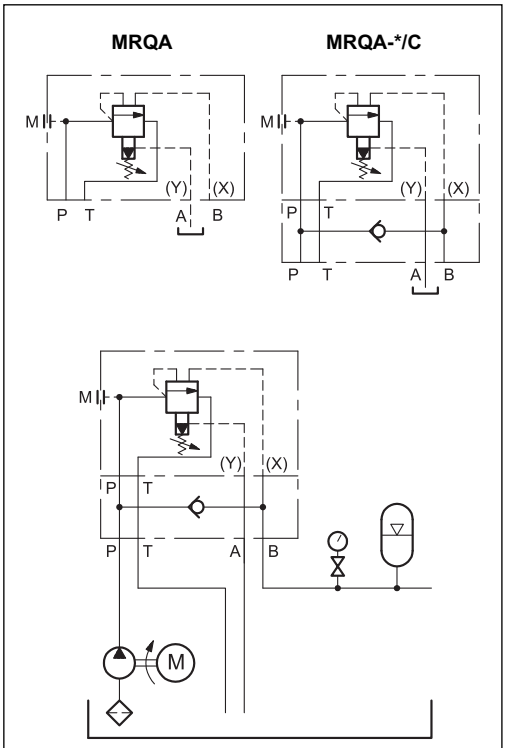
It is recommended to place the accumulator as close as possible to the MRQA, without reducing the connection size.

— The cycle time depends on the pump flow rate, the accumulator capacity and pre-charge, and the flow requirement of the system.

MOUNTING SURFACE



HYDRAULIC SYMBOLS & DIAGRAM



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

Maximum operating pressure	bar	350
Maximum flow rate	l/min	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 21/19/16	
Recommended viscosity	cSt	25
Mass: MRQA MRQA*/C	kg	3,3 4,2

1 - IDENTIFICATION CODE

M	R	Q	A	-		/		/		/		/	42	/	

Size ISO 4401-03

Unloading valve

Automatic unloading for circuits with accumulator

Pressure adjustment range:
3 = 25 ÷ 70 bar
5 = 50 ÷ 210 bar
6 = 100 ÷ 280 bar

Differential pressure (values ± 2.5%)
1 = pump switch on at 75% of adjustment value
2 = pump switch on at 63% of adjustment value

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

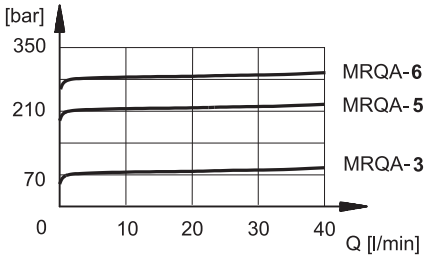
C = Check valve (omit if not required)

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

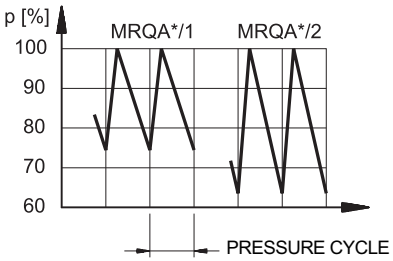
Seals: omit for mineral oils
V = viton for special fluids

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

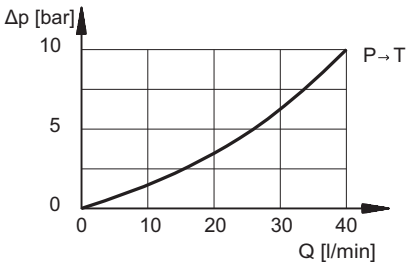
ADJUSTMENT



RESETTING PRESSURES



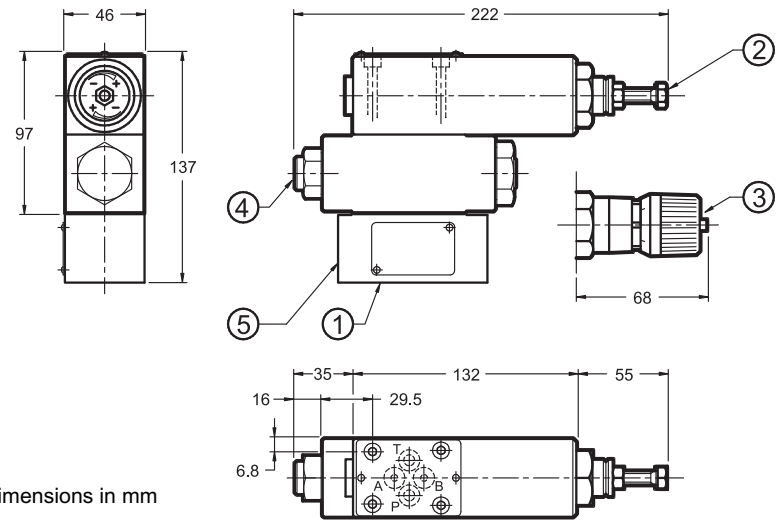
PRESSURE DROPS Δp-Q



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



dimensions in mm

FASTENING SCREWS:
MRQA
4 SHC screws ISO 4762 M5x95
MRQA/C
4 SHC screws ISO 4762 M5x135
Tightening torque: 5 Nm

1	Mounting surface with sealing rings: 4 OR type 2037 (9.25x1.78) - 90 Shore
2	Hexagonal head adjustment screw. Spanner 13. Clockwise rotation to increase pressure
3	SICBLOC adjustment knob. To operate, push and rotate at the same time.
4	Pressure gauge port 1/4" BSP
5	Check valve for version /C

DUPLOMATIC MOTION SOLUTIONS

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