



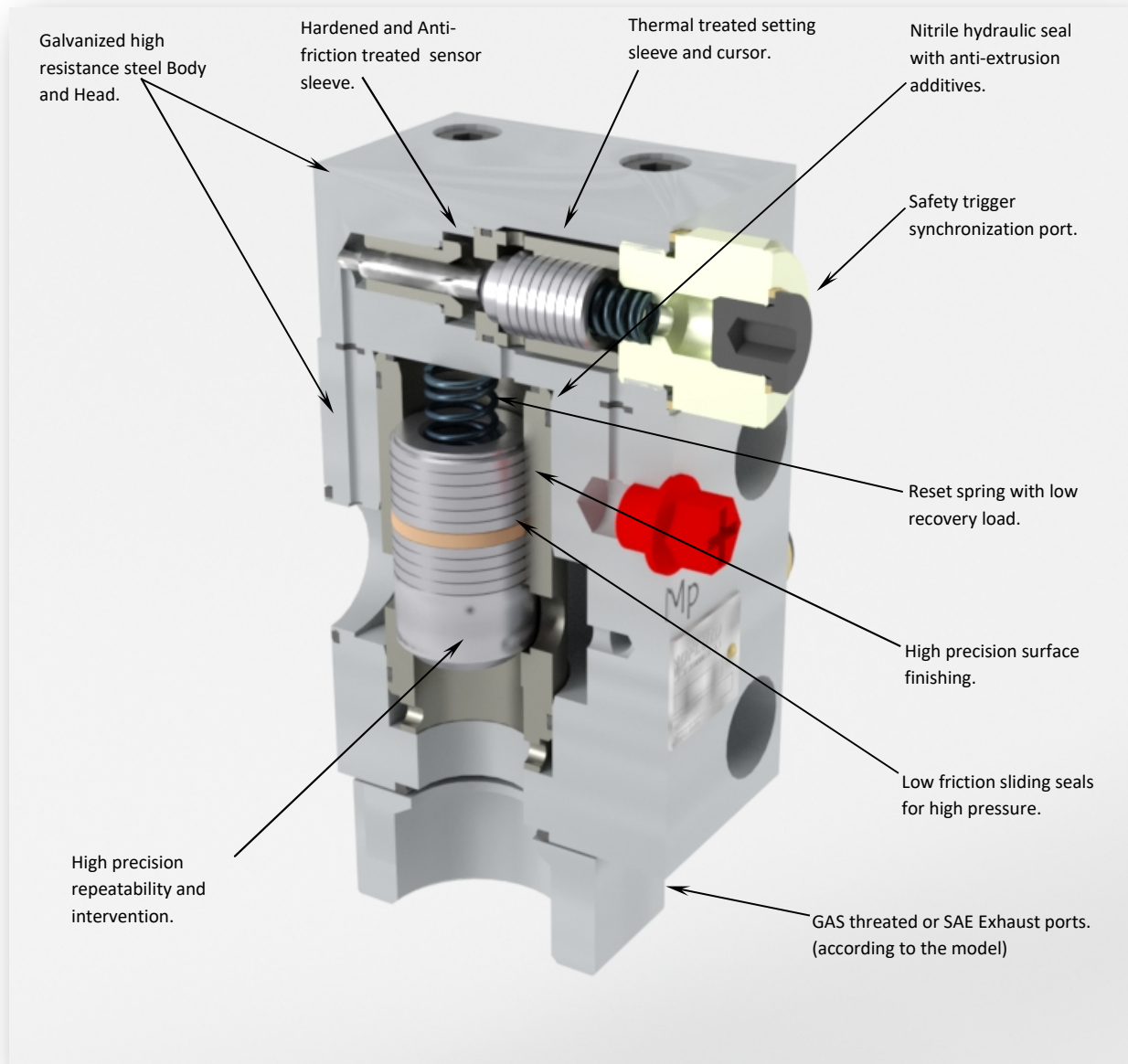
TECNOFLUID
ENGINEERING



OVERLOAD SAFETY VALVES

SV

SV Series Valves Characteristics



General Specifications

- Working Pressure up to 500 bar
- Nominal Diameter from DN 18 to DN 63
- Pre-charge Ratio from 1:1,1 to 1:5
- Feeding ports from 1/4" BSP to 1/2" BSP

Ordering Code Model for Valves SV series

S	Family	→	FIXED													
V	Device	→	FIXED													
...	Valve Size	→	1	18 mm Nominal Diameter	2	25 mm Nominal Diameter	3	32 mm Nominal Diameter	4	40 mm Nominal Diameter	5	50 mm Nominal Diameter	6	63 mm Nominal Diameter		
...	Intervention Ratio	→	K	1/1,1 Ratio	A	1/1,3 Ratio	B	1/1,6 Ratio	C	1/2 Ratio	D	1/3 Ratio	E	1/4 Ratio	F	1/5 Ratio
...	Pilot Options	→	0	Without External Pilot (STANDARD)	1	Electric Pilot Predisposition	2	Intervention NO Electric Pilot	3	Intervention NC Electric Pilot						
...	Discharge Connection Options	→	A	Direct Connection (STANDARD)	B	Discharge with Diffuser COMPACT	C	Discharge with Diffuser INCREASED								
...	Feeding Options	→	0	Feeding via check valve (STANDARD)	1	Feeding without check valve (OPTIONAL)										
...	Fixing Options	→	0	Wall Mounted (STANDARD)	1	Adjustment Plate Mounting (on demand for pre- existing applications)										

Coding example for a Valve with DN 32 Nominal Diameter, 1:2 pre-charge/discharge ratio , electric pilot preparation and Compact discharge diffuser; feeding the cushion via incorporated check valve and standard wall fixing =

SV 3 C 1 B 0 0

System Requirements

The system is composed of one or two SV series valves, obviously all identical.

This device has been designed to withhold the hydraulic pressure coming from the **5G** and **5H** series hydraulic power unit. The use of SV valves is, therefore, subjected to the use of a power unit just mentioned (review the technical documentation of hydraulic power units).

In order to use such a system, it is necessary that the press is armed with hydraulic cushions as show in figure 1; it is also required that the maximum intervention pressure does not exceed 500 bar. For such a task, the hydraulic cushions should be designed in a way that it guarantees the requested pressing loads.

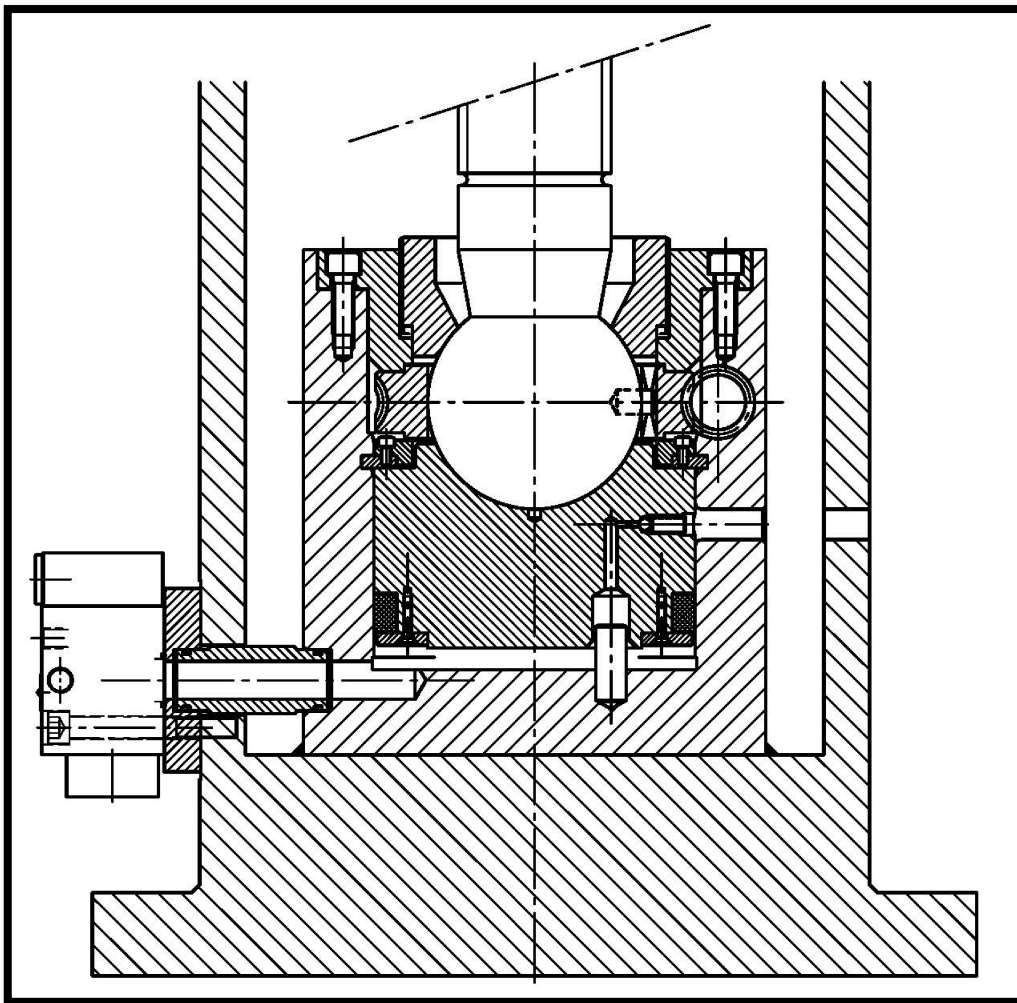


Fig. 1

Characteristics

Aside of the good intervention repetition, the system guarantees extremely short response timings and therefore the pressures peaks are drastically reduced. The particularly high ratio of pre-charge to intervention pressure (up to 1:5) allows the use extremely low pre-charge pressure inside the hydraulic cushions, and consequently, reducing induced stresses on the cushion themselves.

Working Diagram

All SV series valves, aside the size, follow the following working diagram:

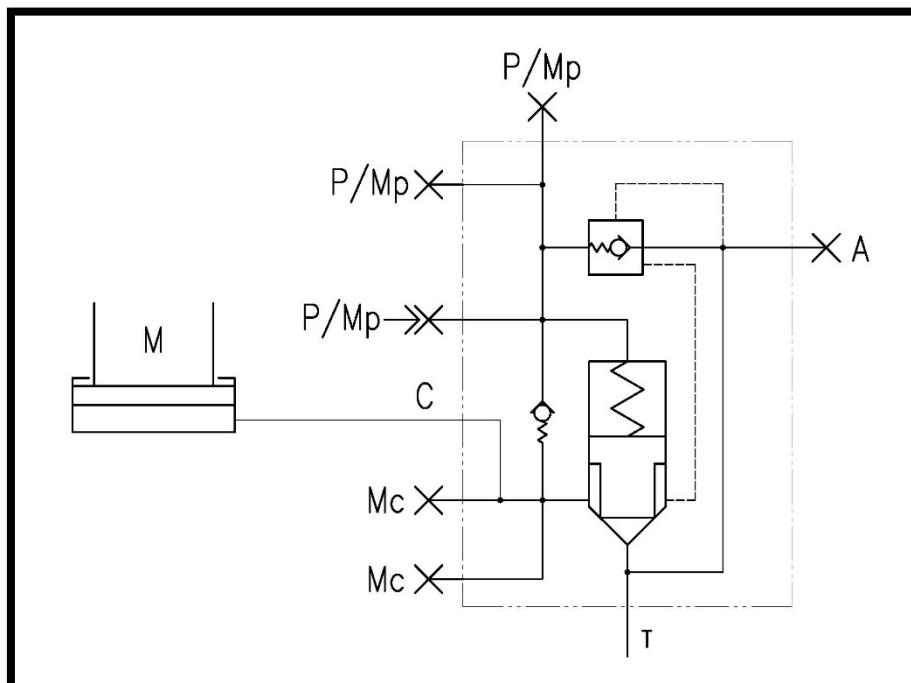


Fig. 2

Figure 2 shows the hydraulic diagram of a SV series valve.

The symbols used are to be understood as:

P = pre-charge (from the hydraulic power unit), T = discharge port, A = pilot, C = connection to the hydraulic cushion, Mc = connection to the hydraulic cushion manometer or trasducer, Mp = connection to the pre-charge line manometer.

Connection Diagram for machines with more pressing points.

Figure 3 shows the connection diagram for a couple of safety valves mounted on a press with two pressing points. This scheme works also for machines with 4 pressing points, in which case the pilot line "A" should be connected in such a way to communicate all other working valves.

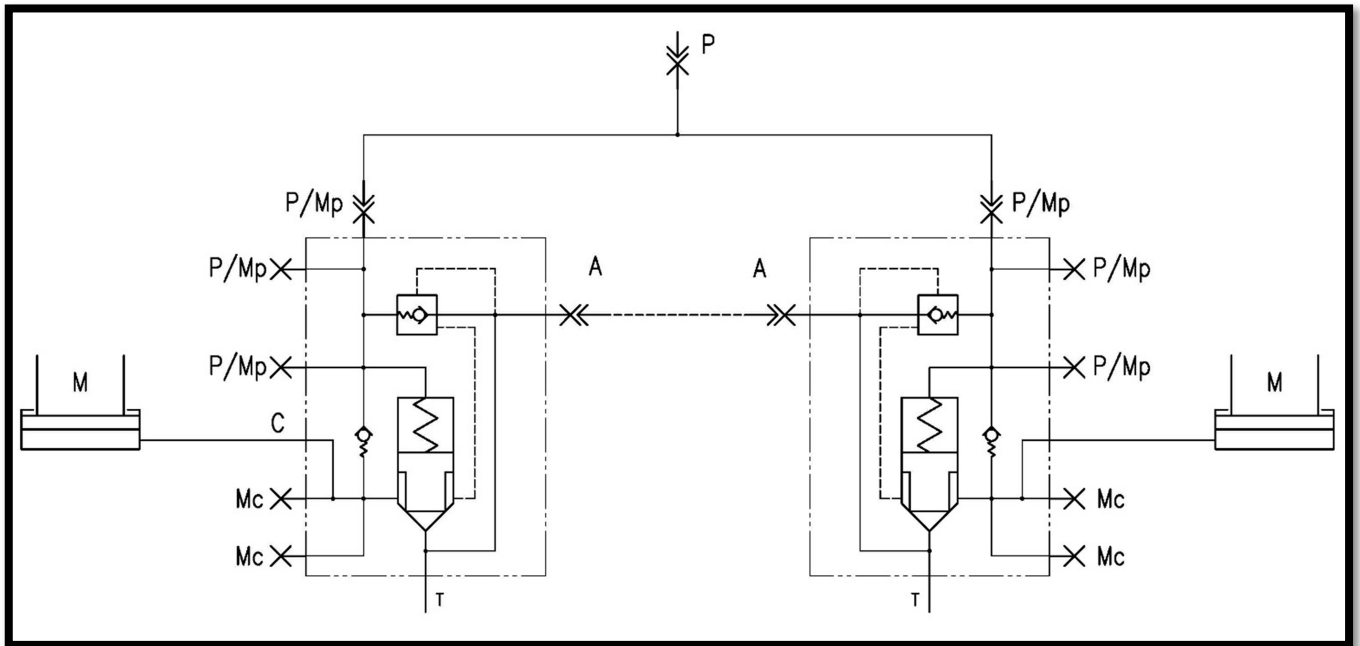


Fig. 3

Connection Diagram from the oleo pneumatic power unit to machines with more pressing points.

Figure 4 shows the connection diagram for a couple of safety valves to a **5G** series oleo pneumatic power unit on a two pressing point press.

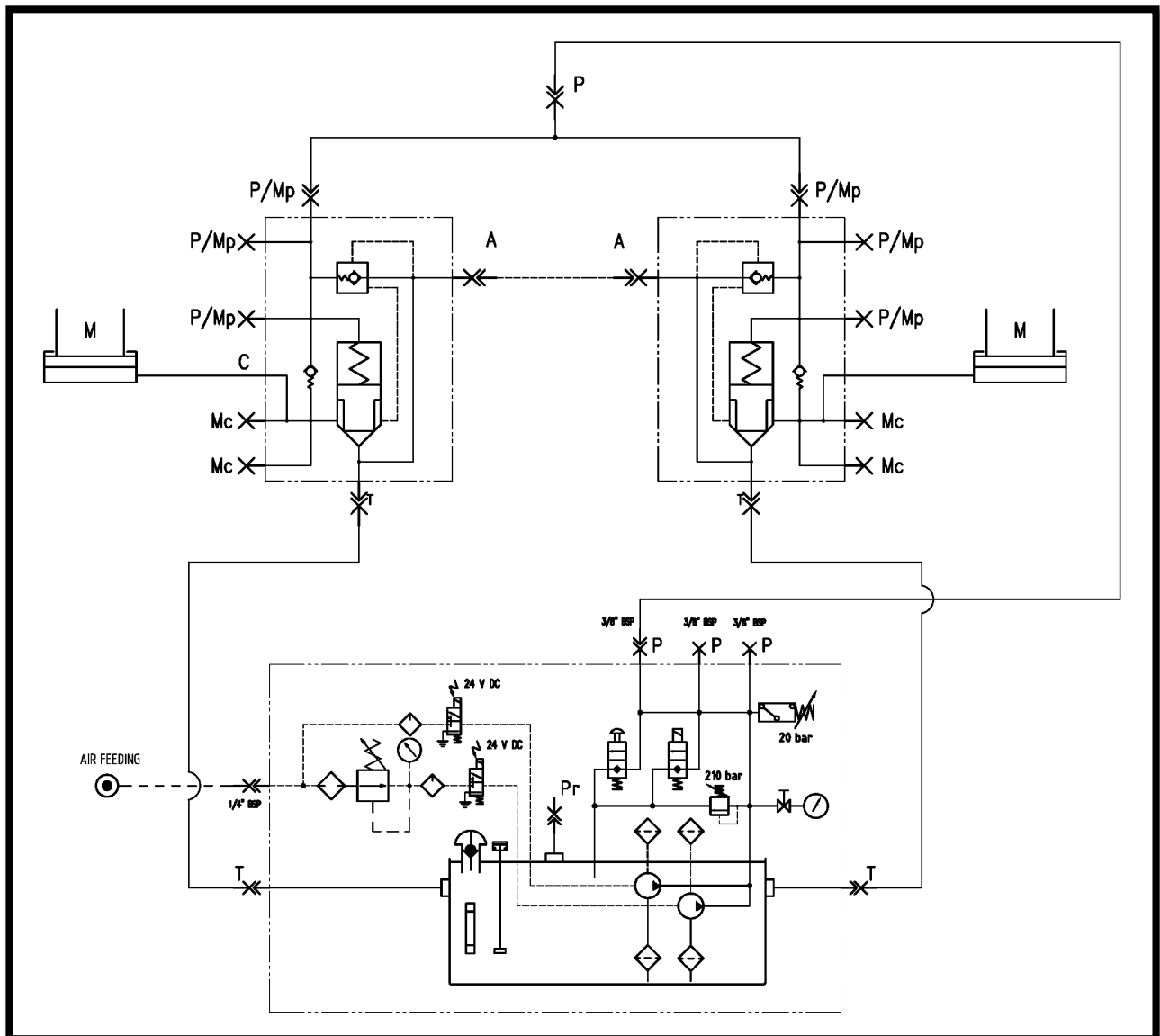


Fig. 4

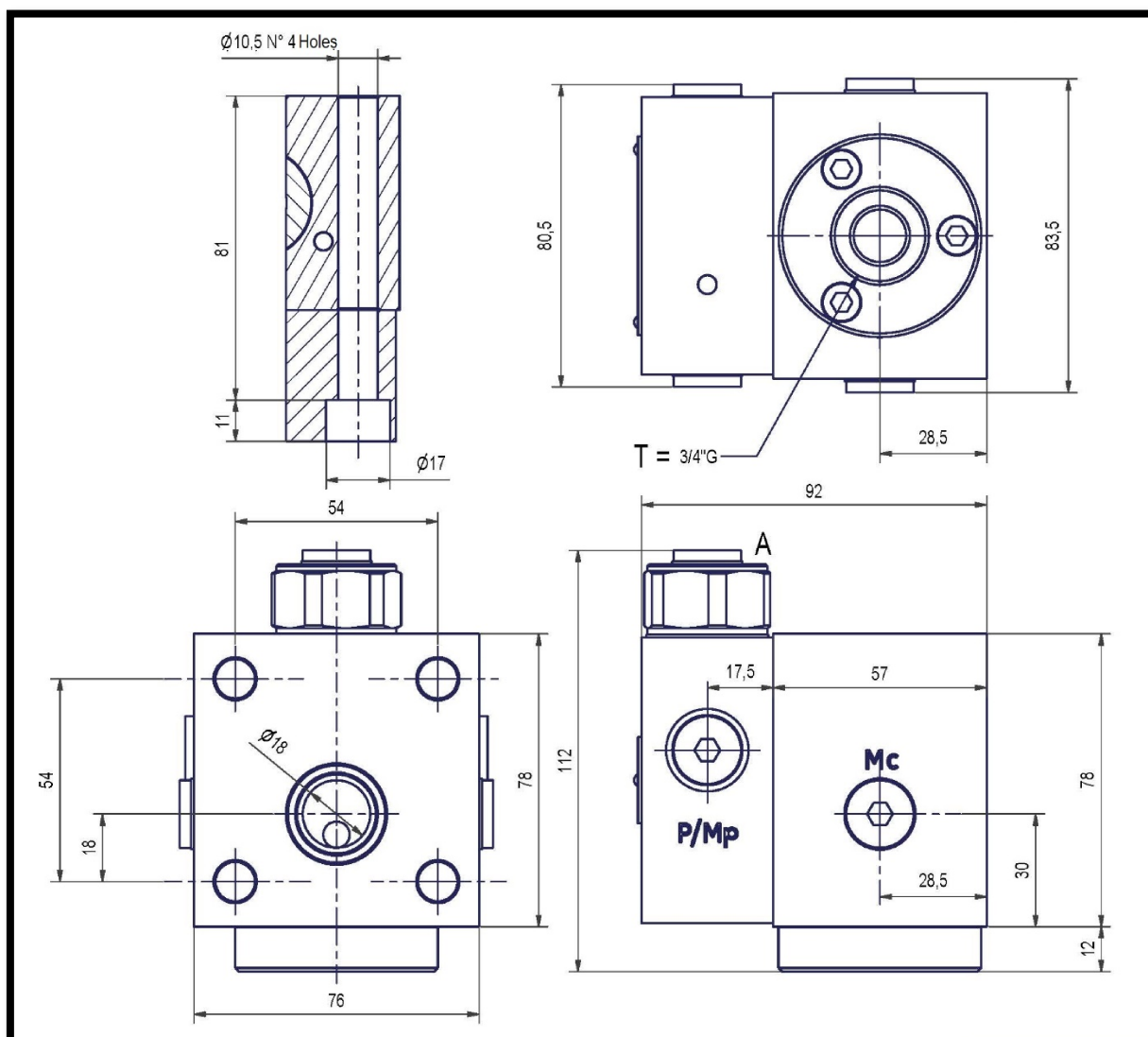
Working Principle

Between rods and the press ram are found the hydraulic cushions (figure 1) that are pre-charged with a pressure P that turns the system rigid.

With each working cycle of the press, the pressure inside the cushions rise to a variable value P_i , that depends on the given type of work.

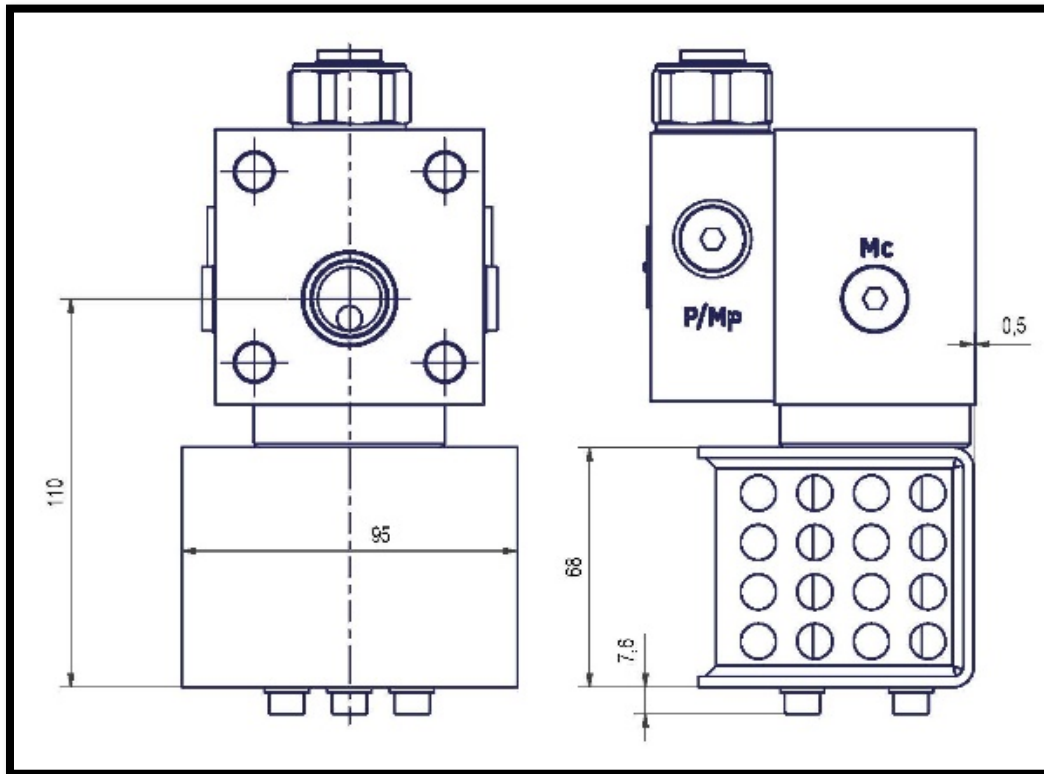
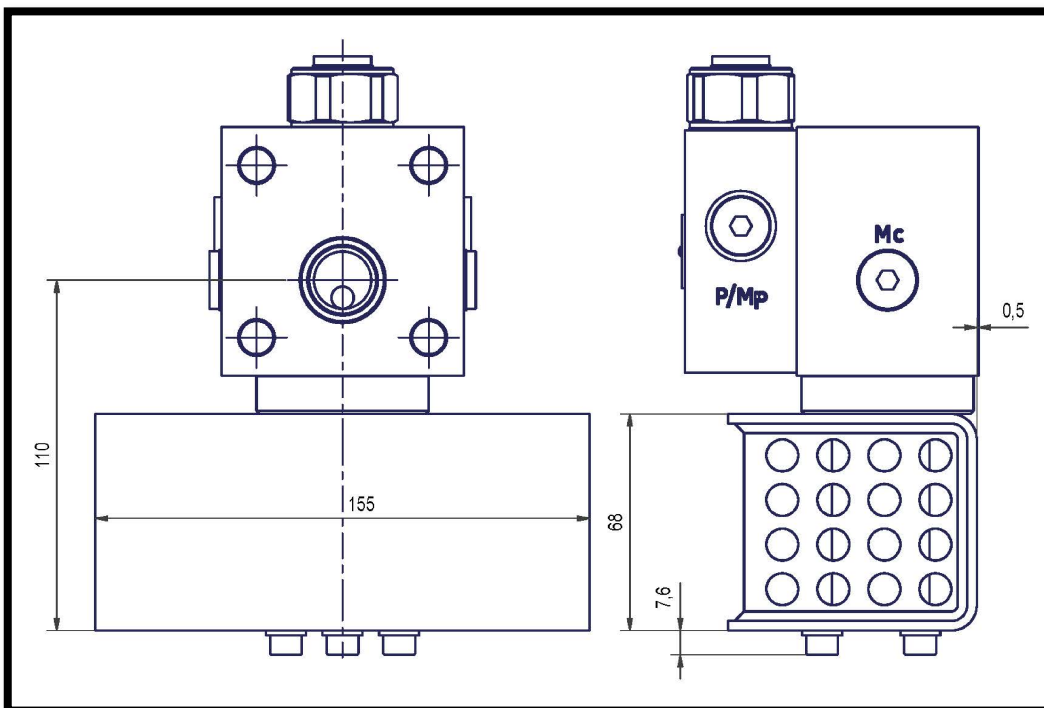
When, accidentally, the pressure inside the cushions rise beyond the maximum set value P_s , the safety valve that senses the overload is commutated to discharge and at the same time sends the signal to other possible safety valves, via pilot A , to do the same. In this way, the cushions are emptied and allow the ram to pass the bottom dead point.

SV 1 Outer Dimensions

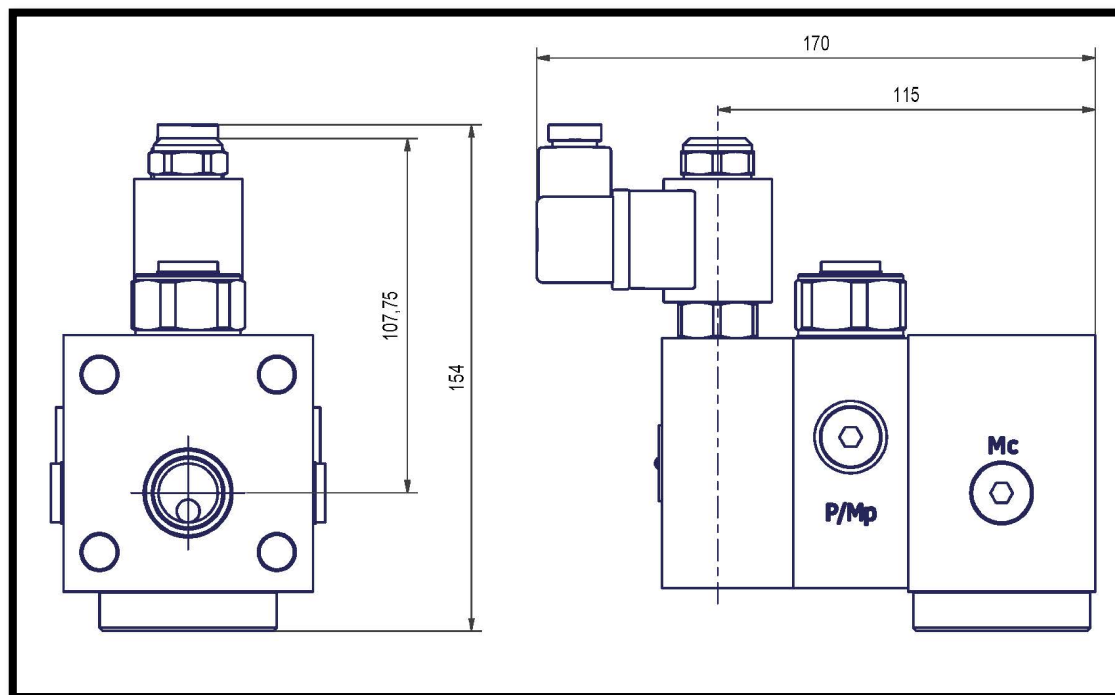


Technical Data

PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUN PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 μ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 μ
OIL MAXIMUN TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" G
VALVE DISCHARGED PORT	3/4" G
VALVE NOMINAL DIAMETER	DN 18

SV 1 * * B * * Outer Dimensions**SV 1 * * C * *** Outer Dimensions

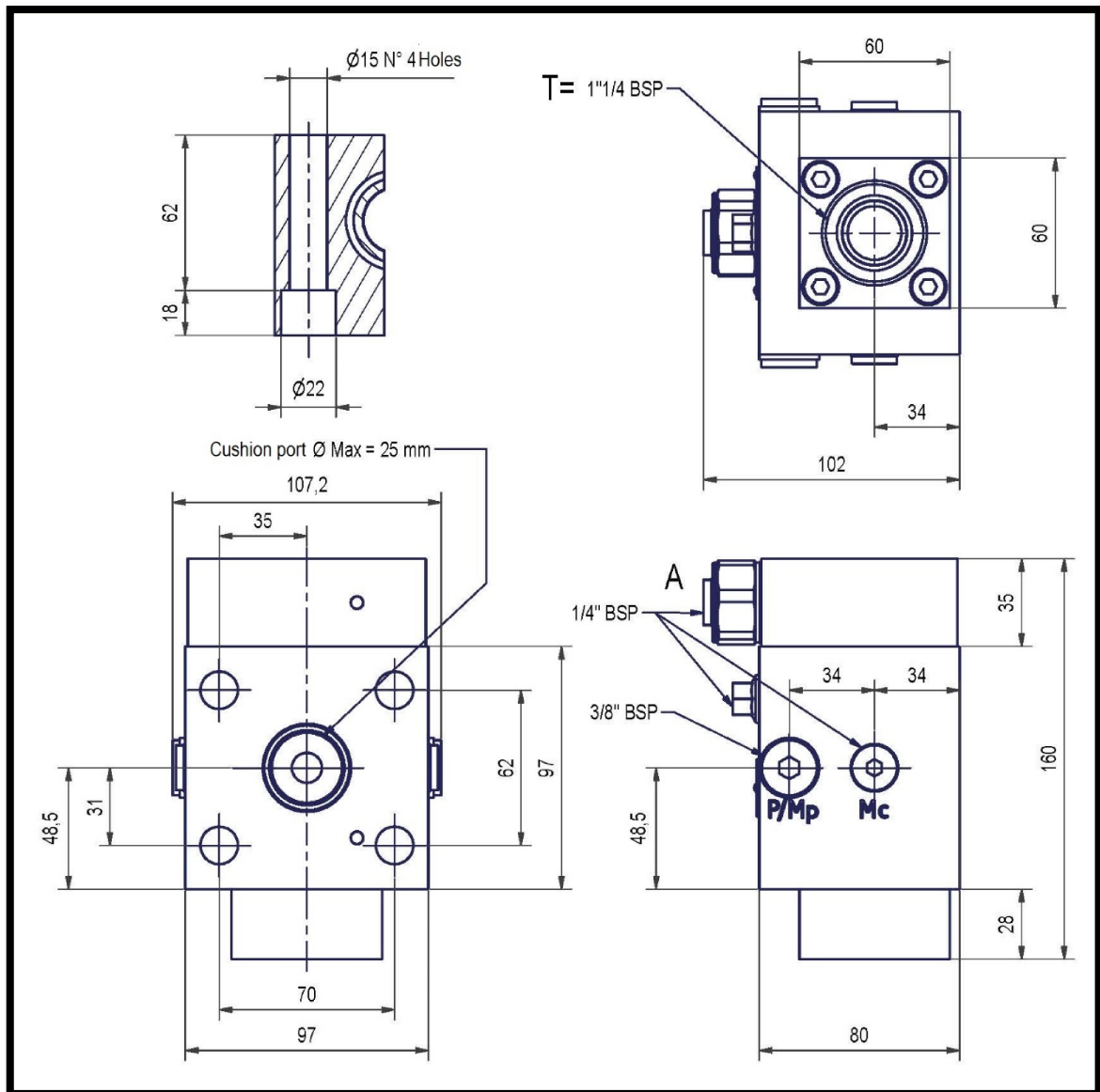
SV 1 * 2 * * * Outer Dimensions



Optional Versions – Technical Data

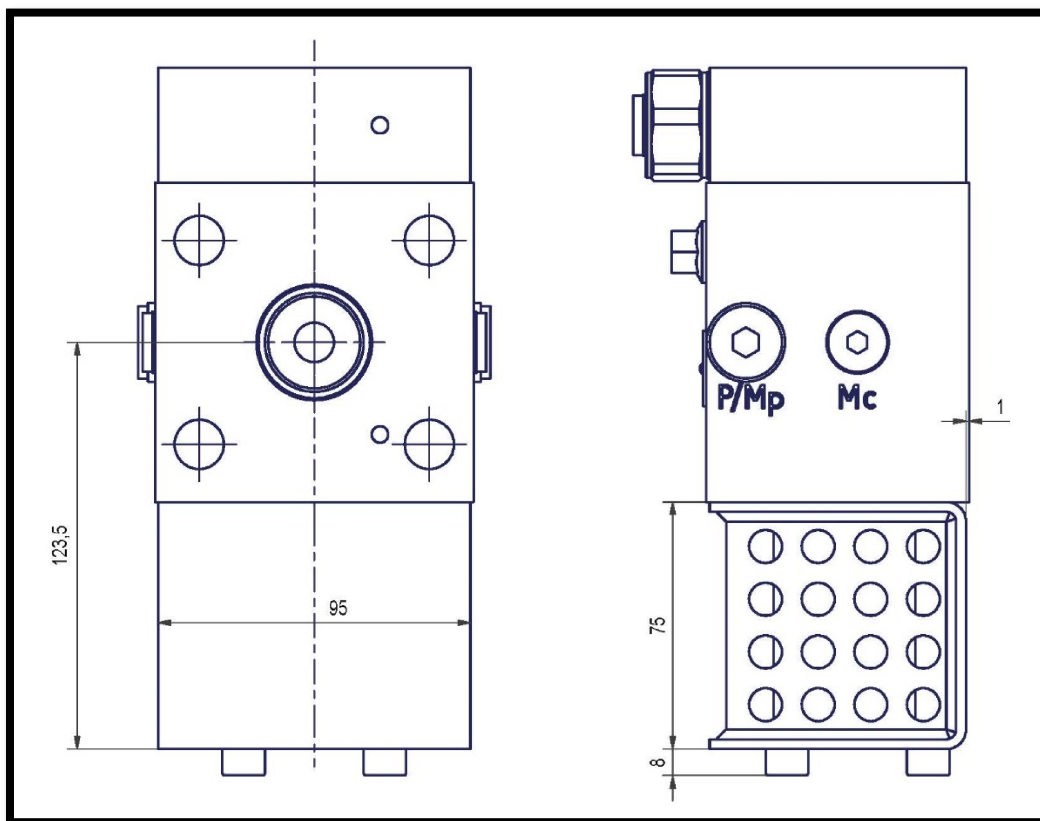
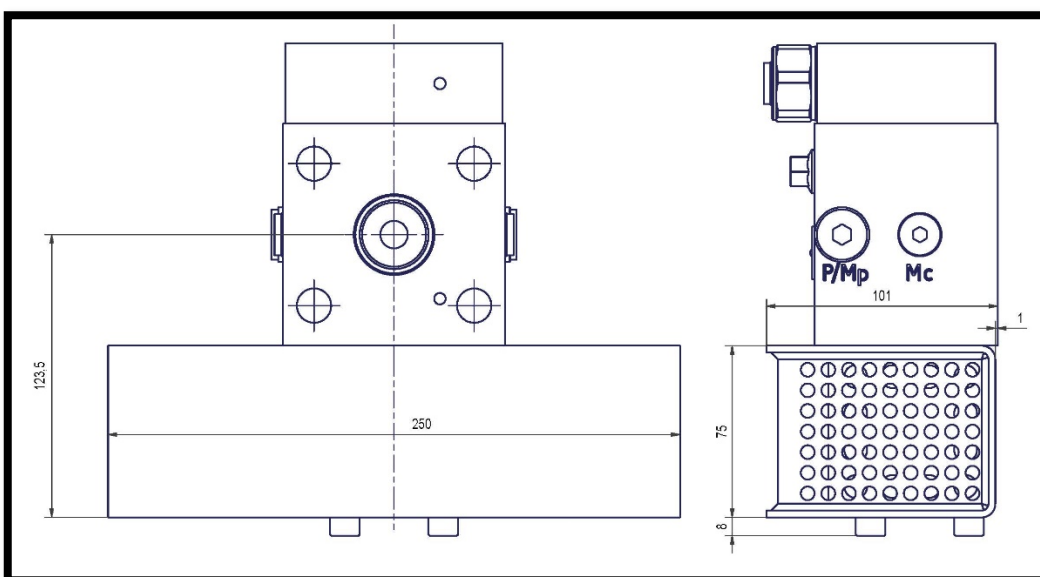
ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

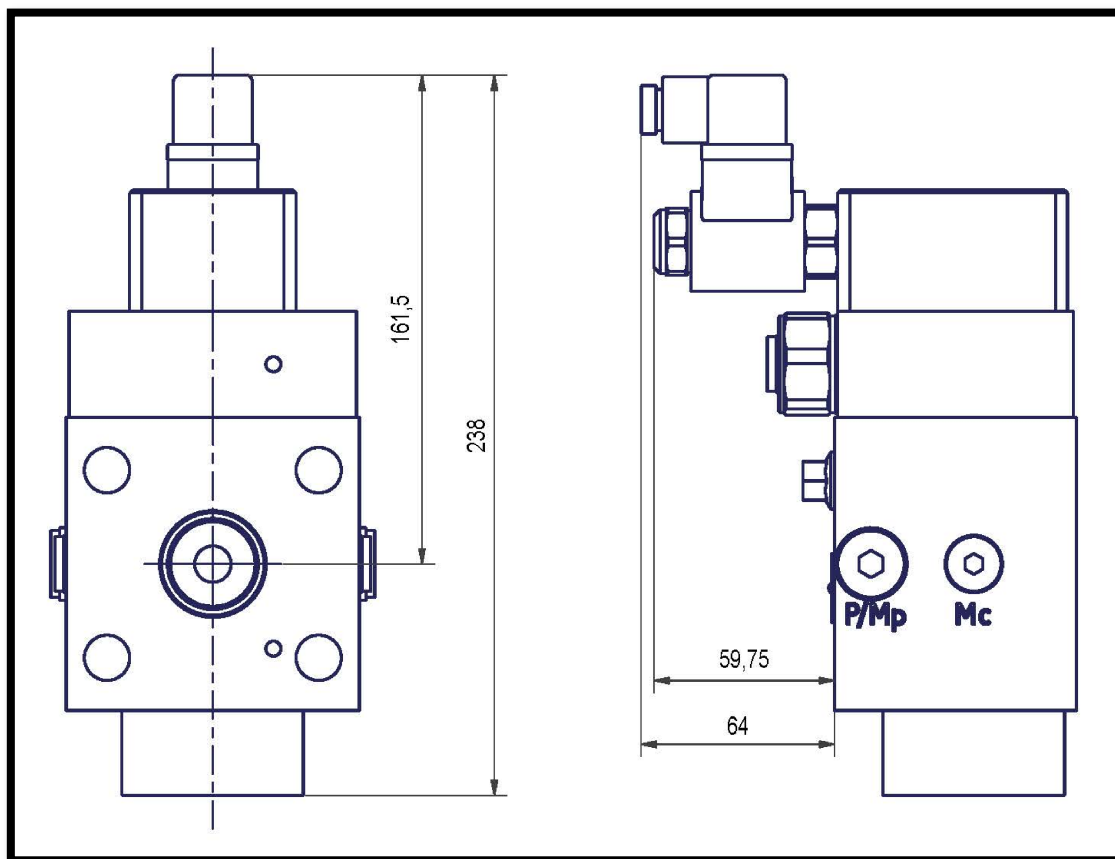
SV 2 Outer Dimensions



Technical Data

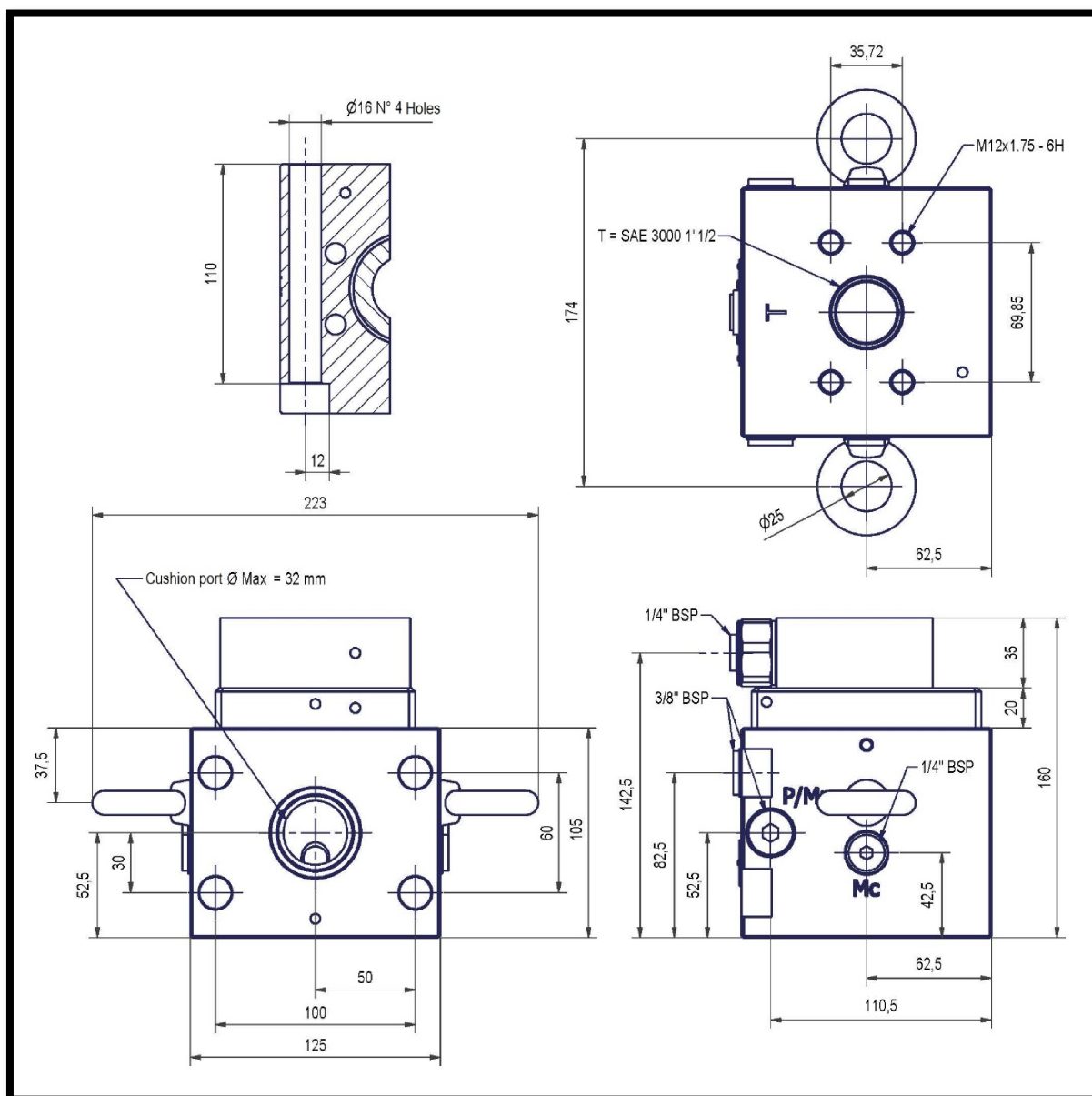
PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUM PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 μ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 μ
OIL MAXIMUM TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" G + 3/8" G
VALVE DISCHARGED PORT	1"1/4 G
VALVE NOMINAL DIAMETER	DN 25

SV 2 * * B * * Outer Dimensions**SV 2 * * C * *** Outer Dimensions

SV 2 * 2 * * * Outer Dimensions**Optional Versions – Technical Data**

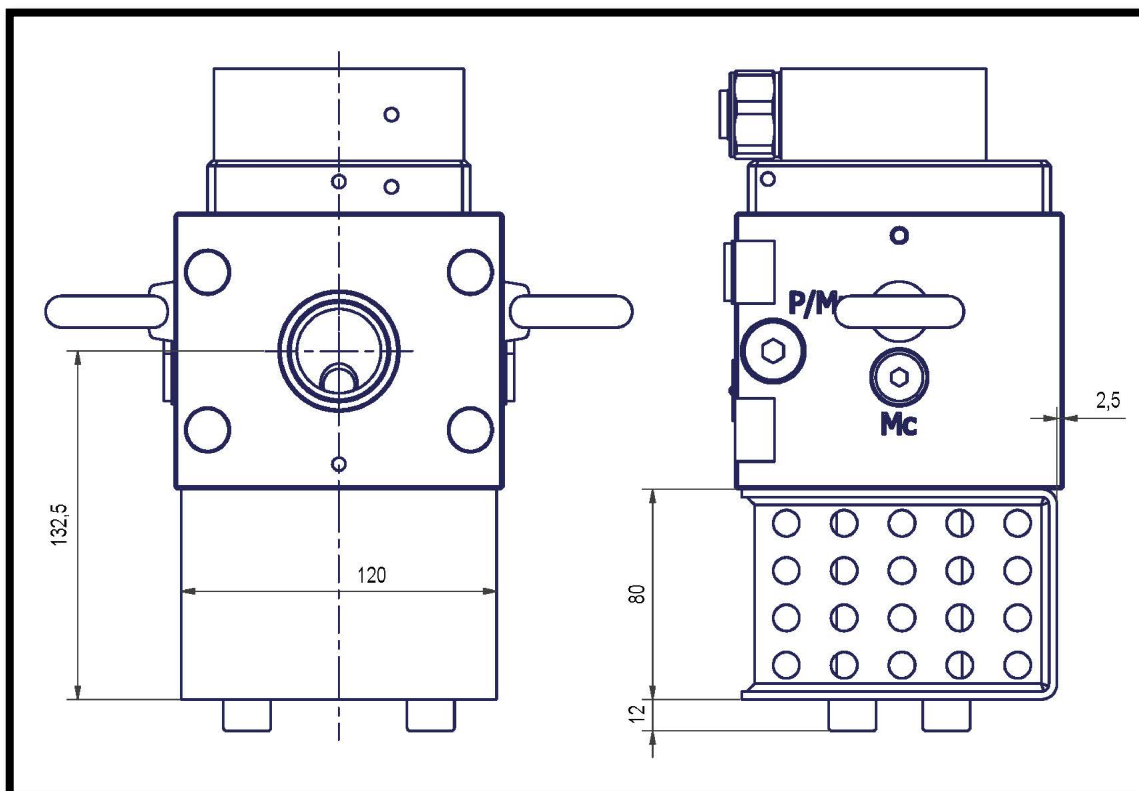
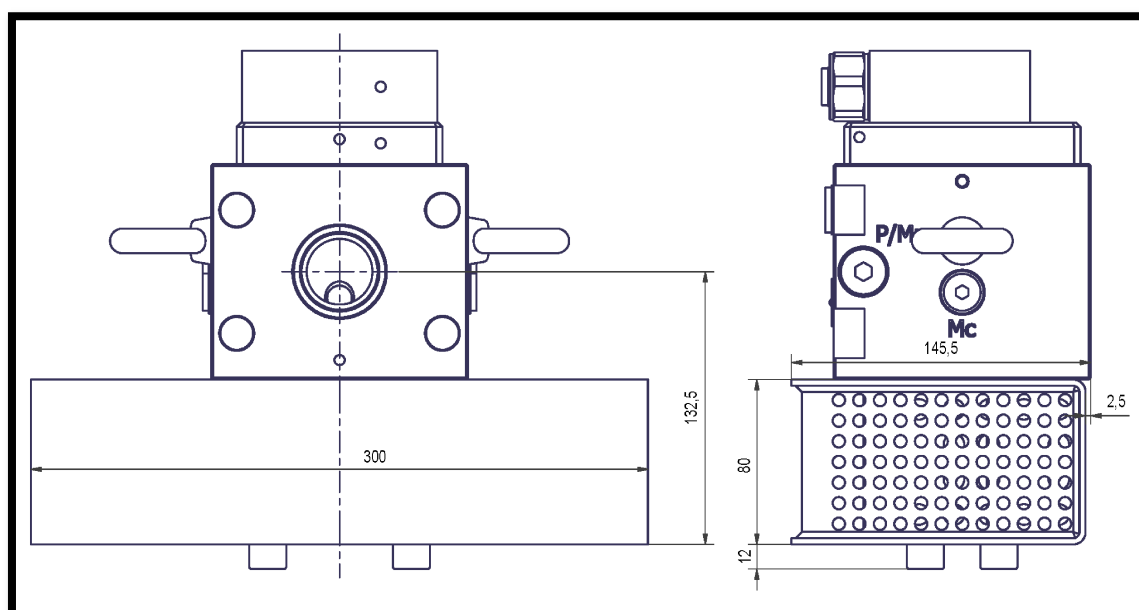
ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

SV 3 Outer Dimensions

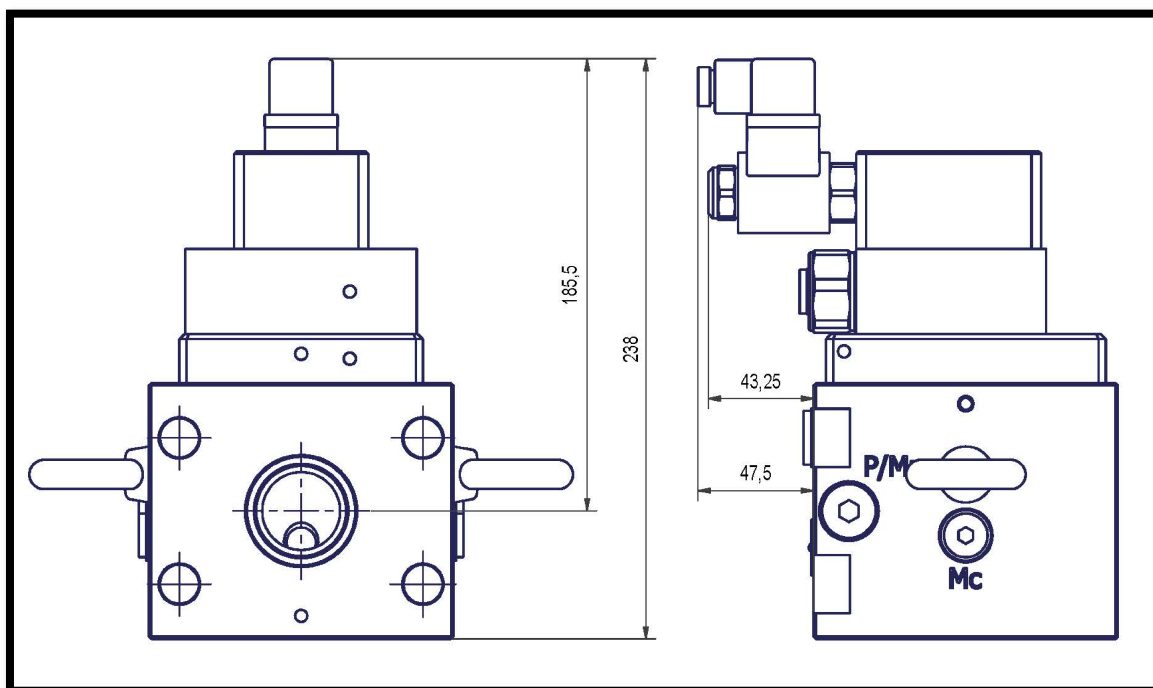


Technical Data

PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUN PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 μ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 μ
OIL MAXIMUN TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" G + 3/8" G
VALVE DISCHARGED PORT	SAE 3000 1"1/2
VALVE NOMINAL DIAMETER	DN 32

SV 3 * * B * * Outer Dimensions**SV 3 * * C * *** Outer Dimensions

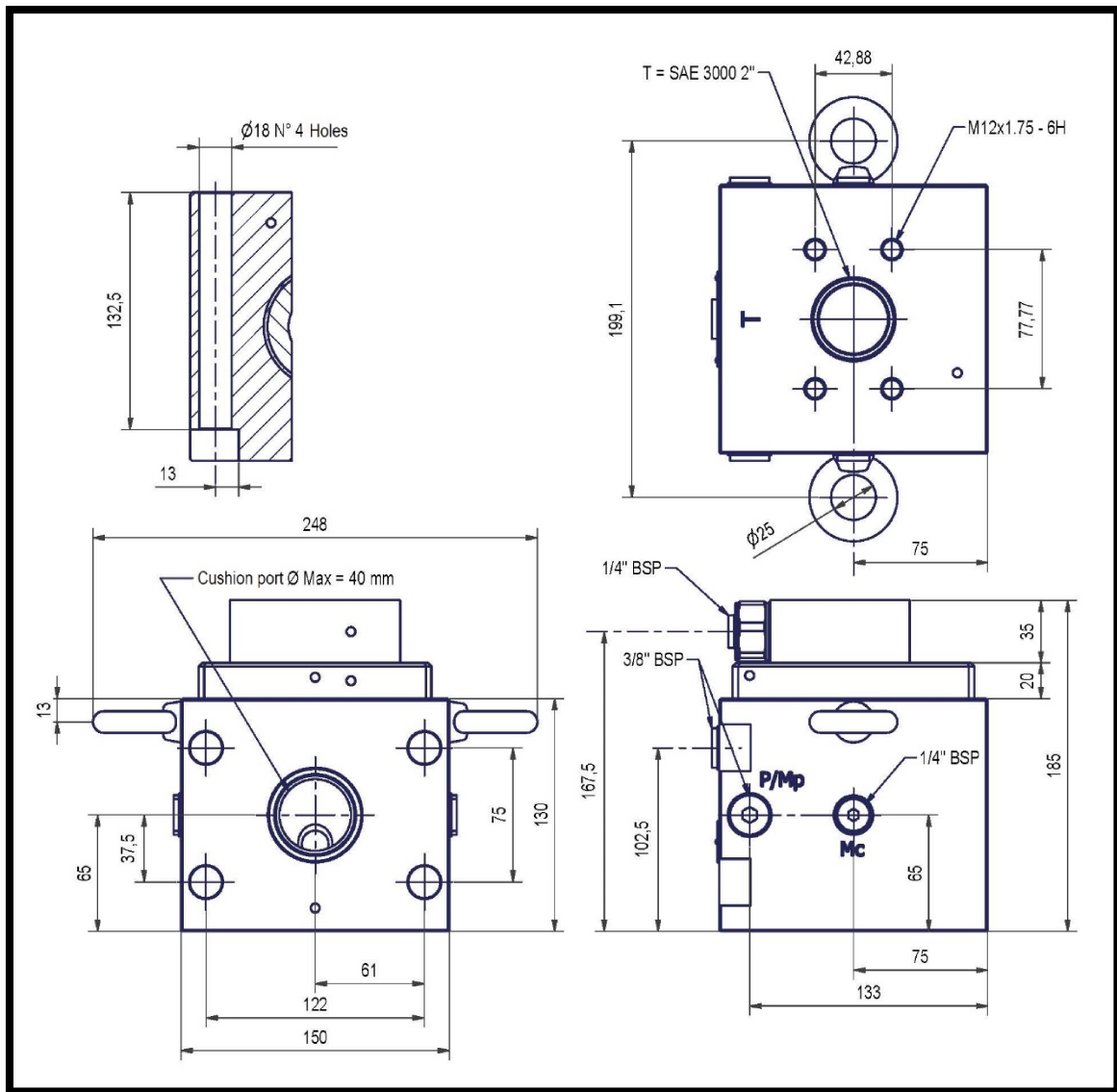
SV 3 * 2 * * * Outer Dimensions



Optional Versions – Technical Data

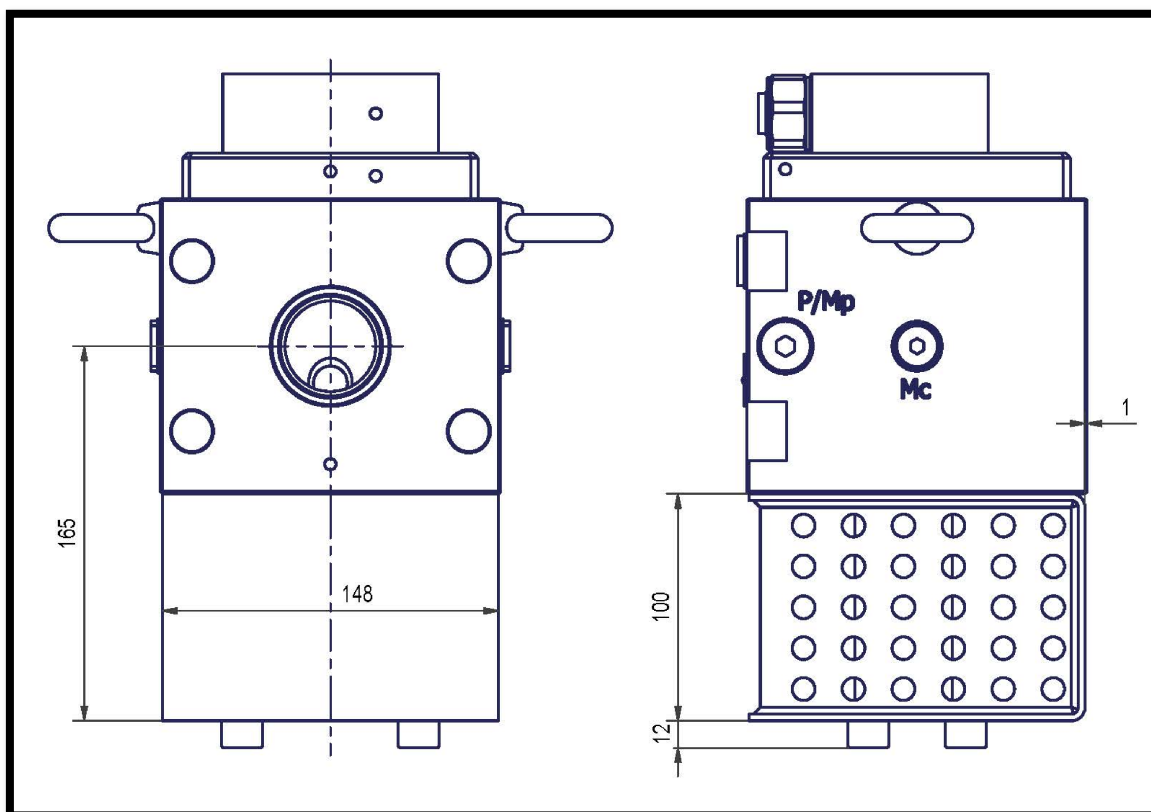
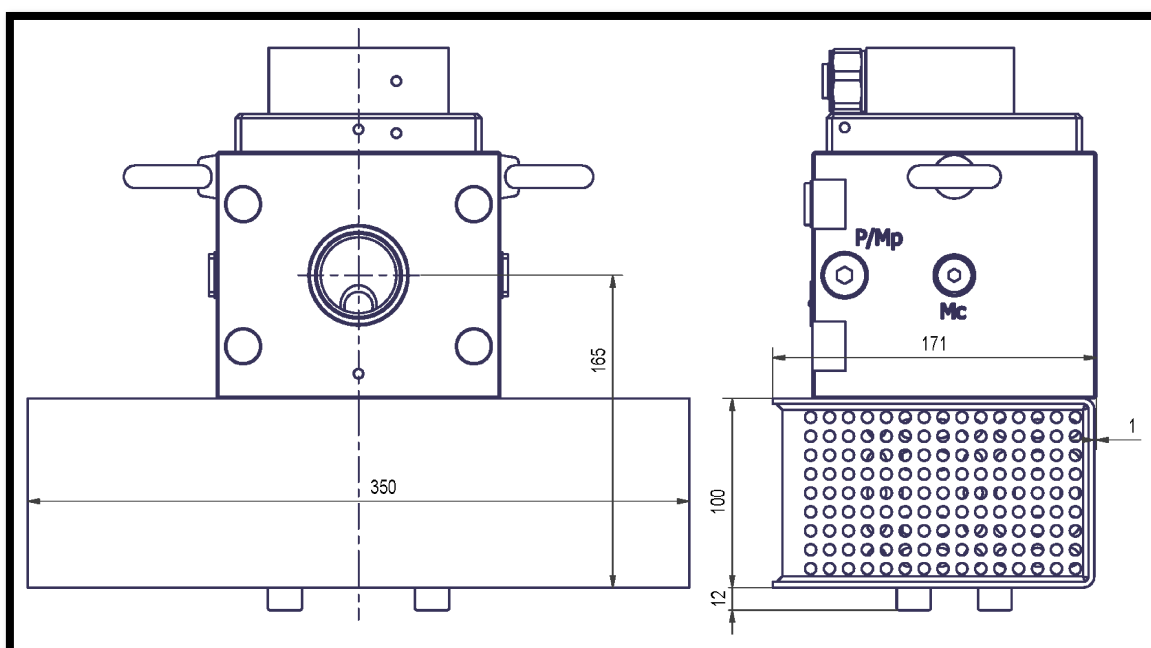
ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

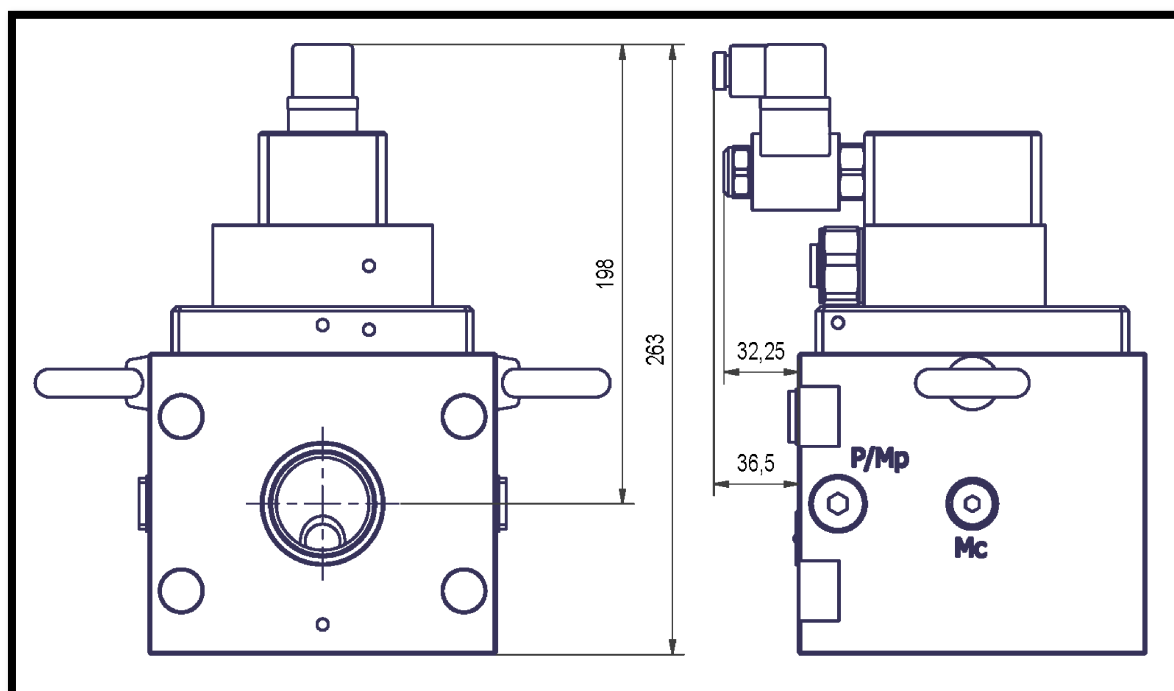
SV 4 Outer Dimensions



Technical Data

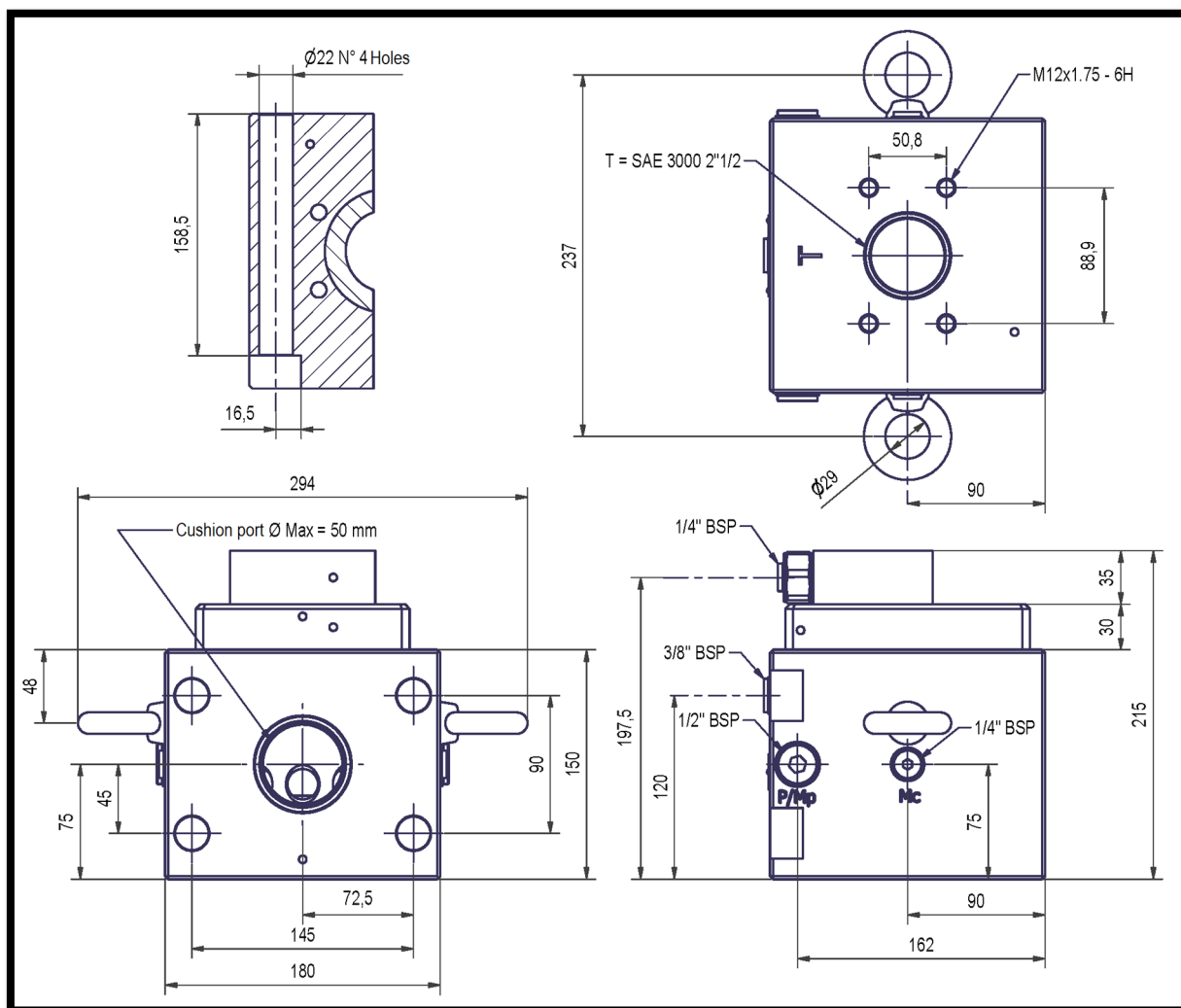
PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUM PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 μ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 μ
OIL MAXIMUM TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" G + 3/8" G
VALVE DISCHARGED PORT	SAE 3000 2"
VALVE NOMINAL DIAMETER	DN 40

SV 4 * * B * * Outer Dimensions**SV 4 * * C * *** Outer Dimensions

SV 4 * 2 * * * Outer Dimensions**Optional Versions – Technical Data**

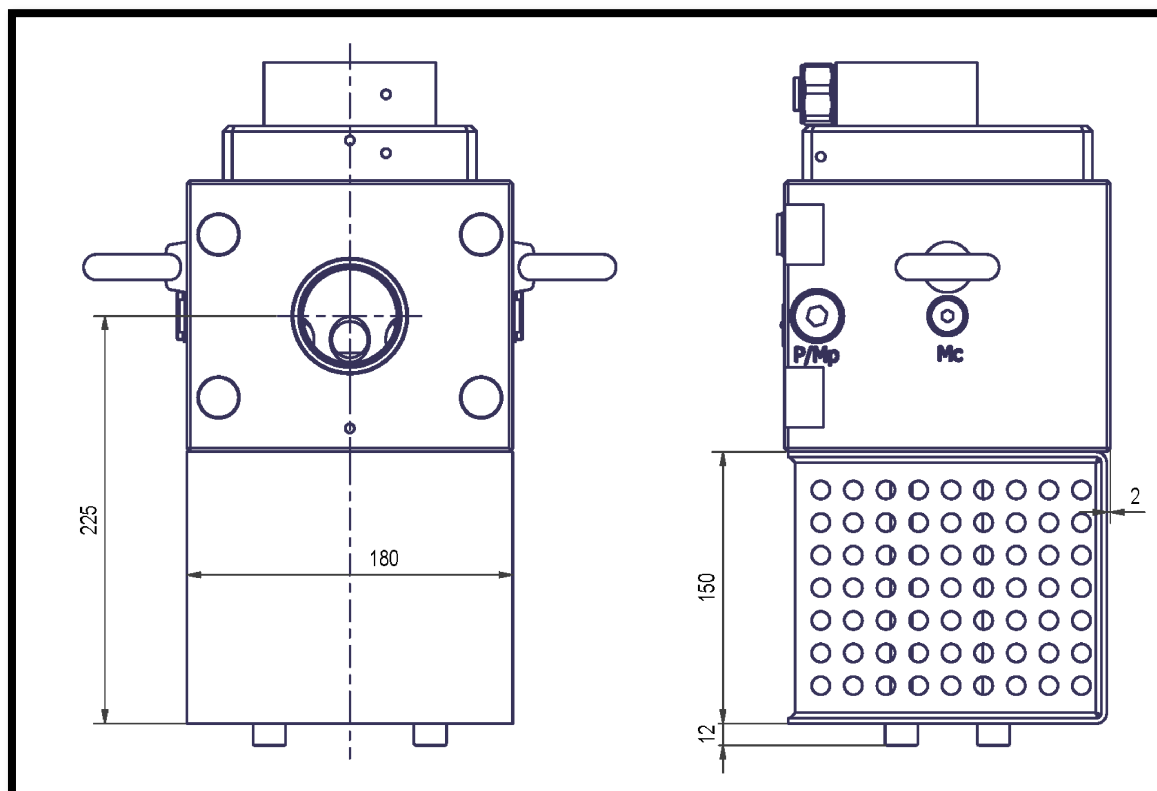
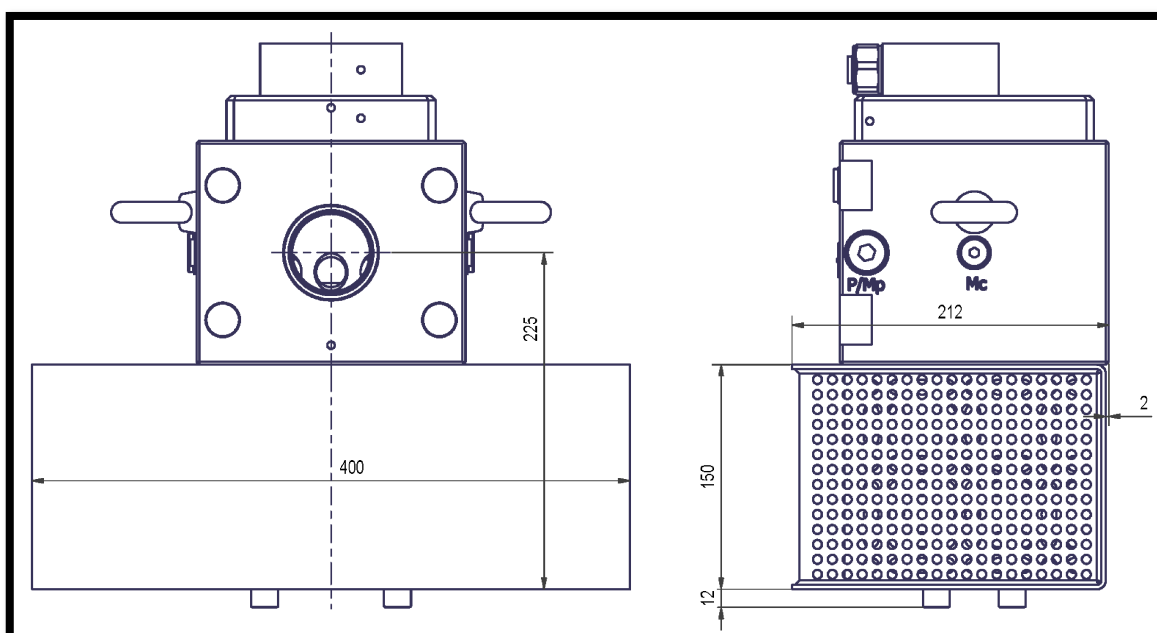
ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

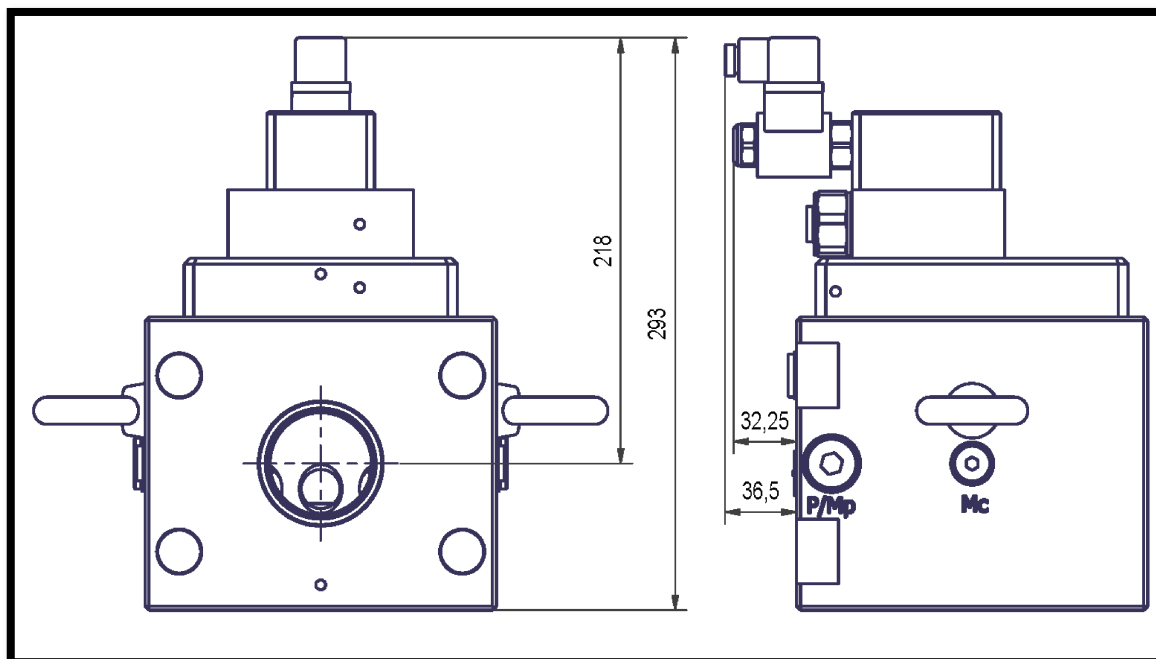
SV 5 Outer Dimensions



Technical Data

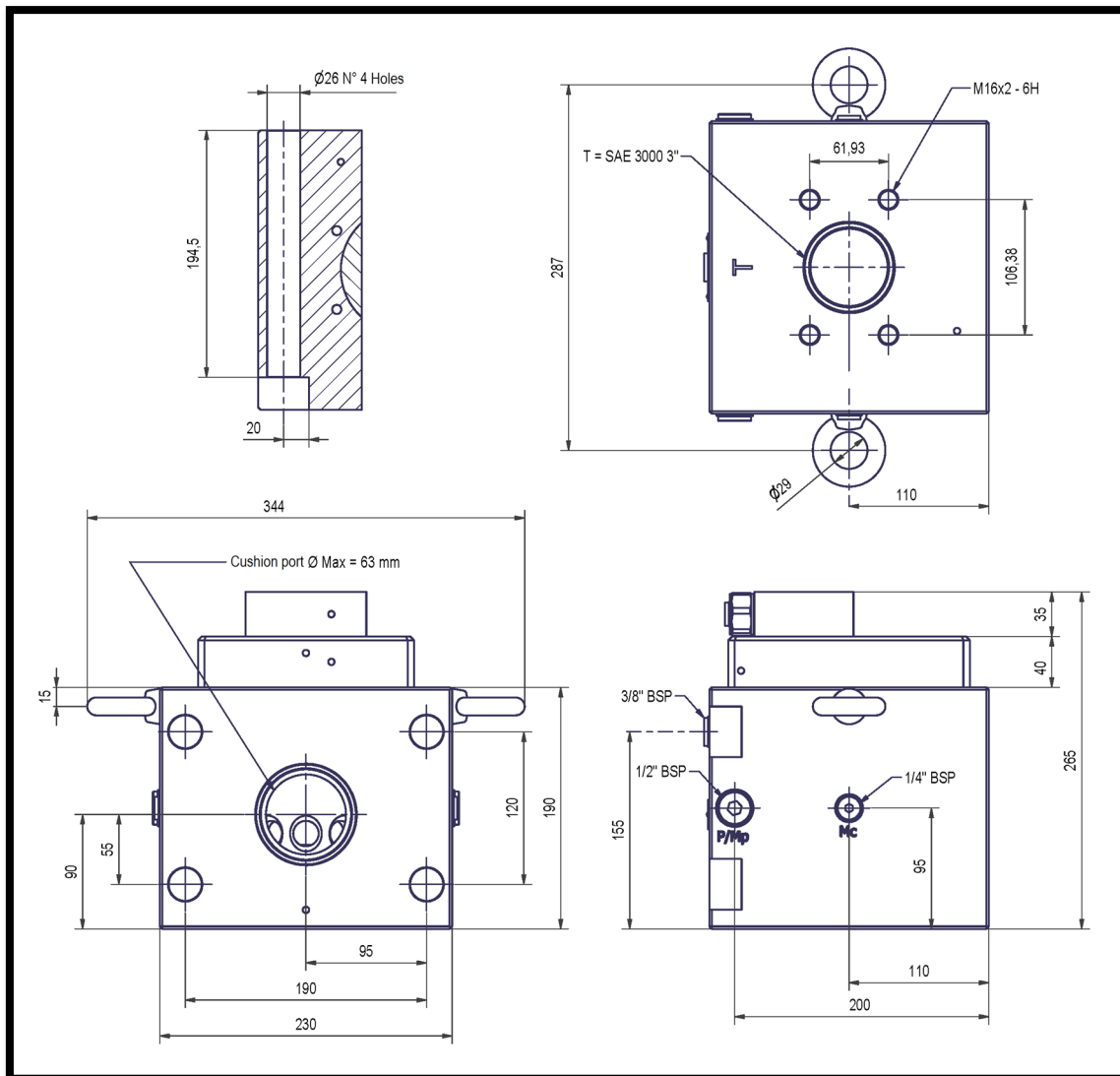
PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUM PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 µ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 µ
OIL MAXIMUM TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" + 3/8"+ 1/2" G
VALVE DISCHARGED PORT	SAE 3000 2"1/2
VALVE NOMINAL DIAMETER	DN 50

SV 5 * * B * * Outer Dimensions**SV 5 * * C * *** Outer Dimensions

SV 5 * 2 * * * Outer Dimensions**Optional Versions – Technical Data**

ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

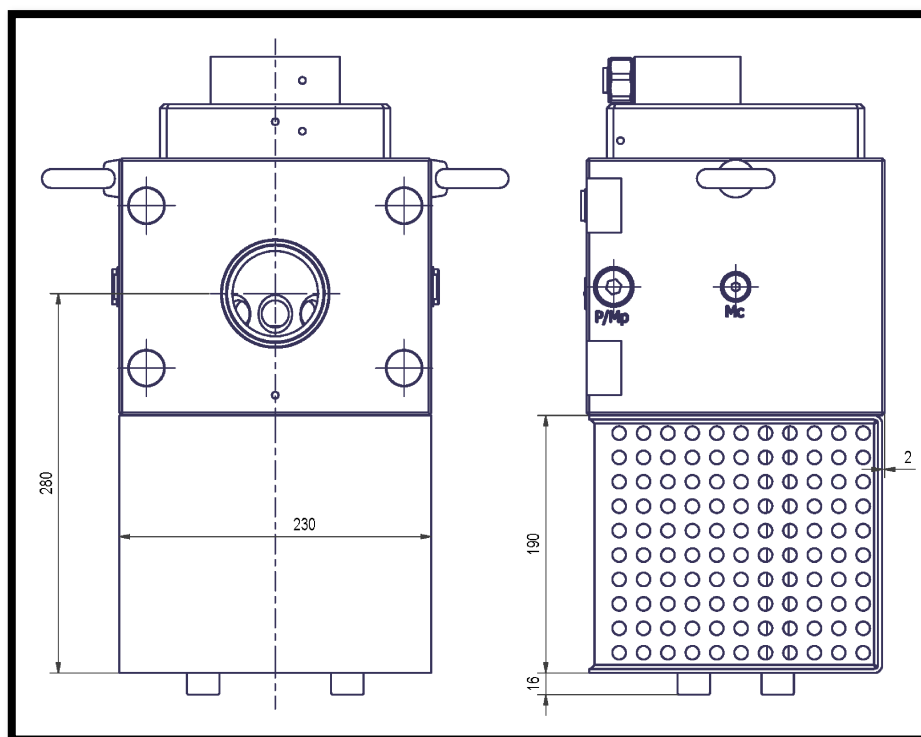
SV 6 Outer Dimensions



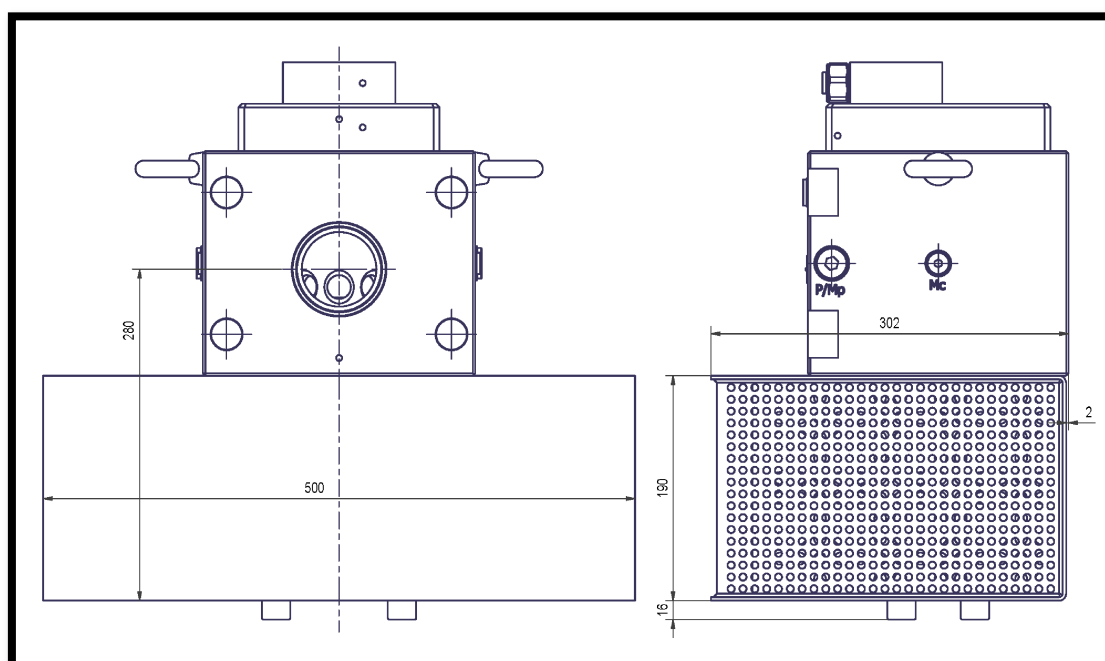
Technical Data

PRE-CHARGE TO DISCHARGE RATIO	1/1.1÷1/5
PEAK MAXIMUN PRESSURE	500 bar
MAXIMUM OIL VISCOSITY	10° Engler
OIL FILTER DEGREE (FOR OPENED INTALATIONS)	20 µ
OIL FILTER DEGREE (INLET FOR CLOSED CISRCUIT INSTALATIONS)	60 µ
OIL MAXIMUN TEMPERATURE	80° C
ROOM TEMPERATURE	-10 +50° C
VALVE PRESSURE INTAKE PORT	1/4" + 3/8"+ 1/2" G
VALVE DISCHARGED PORT	SAE 3000 3"
VALVE NOMINAL DIAMETER	DN 63

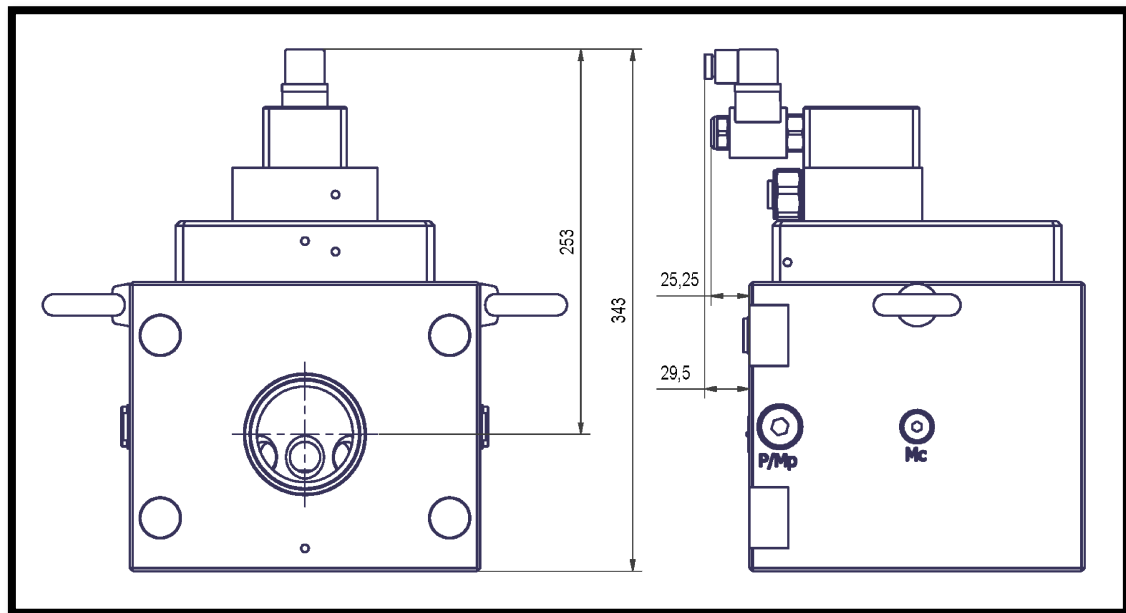
SV 6 * * B * * Outer Dimensions



SV 6 * * C * * Outer Dimensions



SV 6 * 2 * * * Outer Dimensions



Optional Versions – Technical Data

ELECTRIC PILOT TIPOLOGY (STANDARD)	NO
ELECTRIC PILOT TIPOLOGY (ON DEMAND)	NC
ELECTRIC PILOT FEEDING TENSION (STANDARD)	24 V DC
ELECTRIC PILOT FEEDING TENSION (ON DEMAND)	110 V AC
ELECTRO PILOT COIL RESISTANCE	8 Ohm

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