



DIPLOMATIC
HYDRAULICS

41 620/104 ED



DSA*

PNEUMATICALLY OPERATED DIRECTIONAL CONTROL VALVE

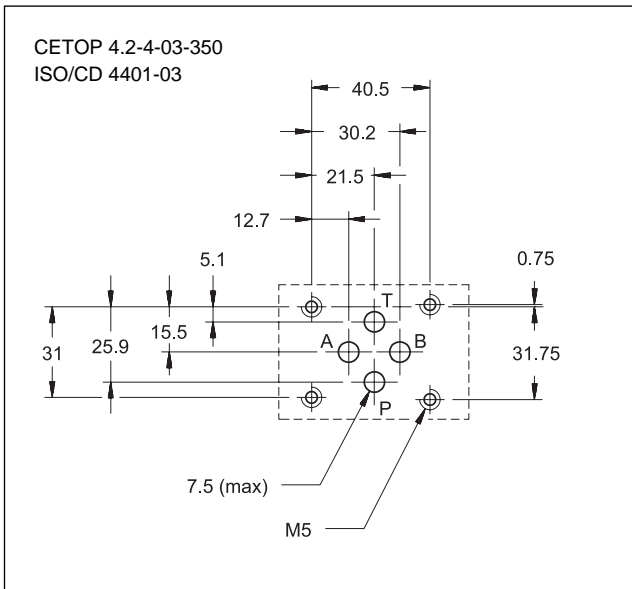
DSA3 CETOP 03 (IN PREPARATION)

DSA5 CETOP R05

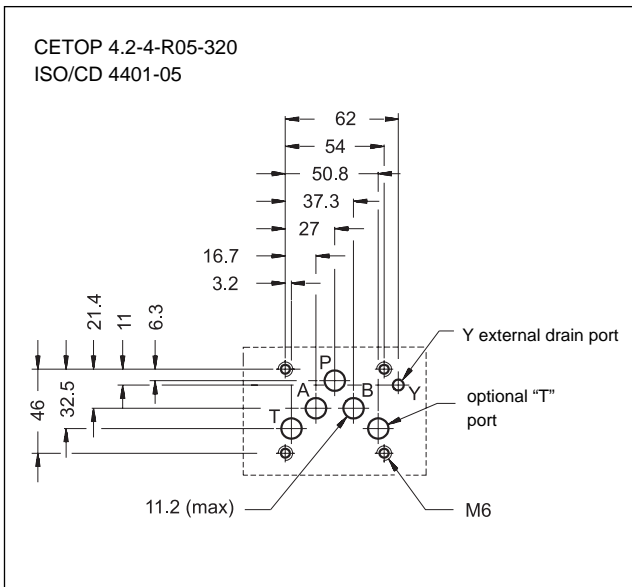
p max (see technical specifications table)

Q nom (see technical specifications table)

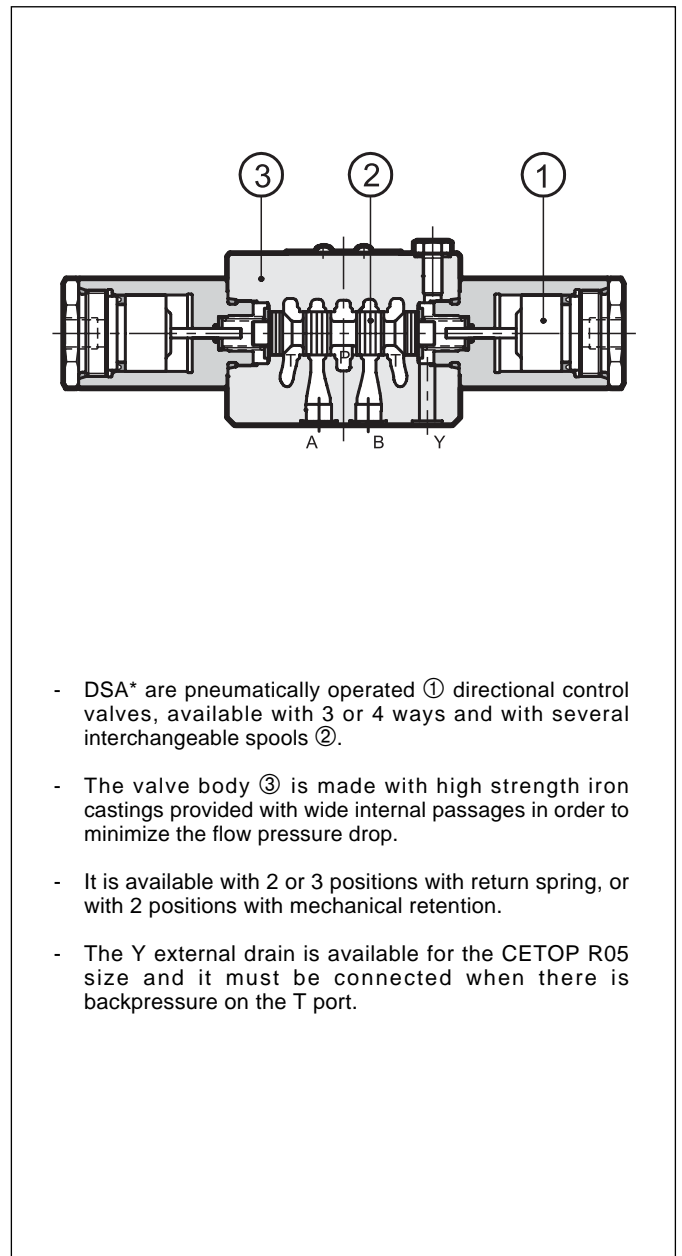
MOUNTING INTERFACE DSA3



MOUNTING INTERFACE DSA5

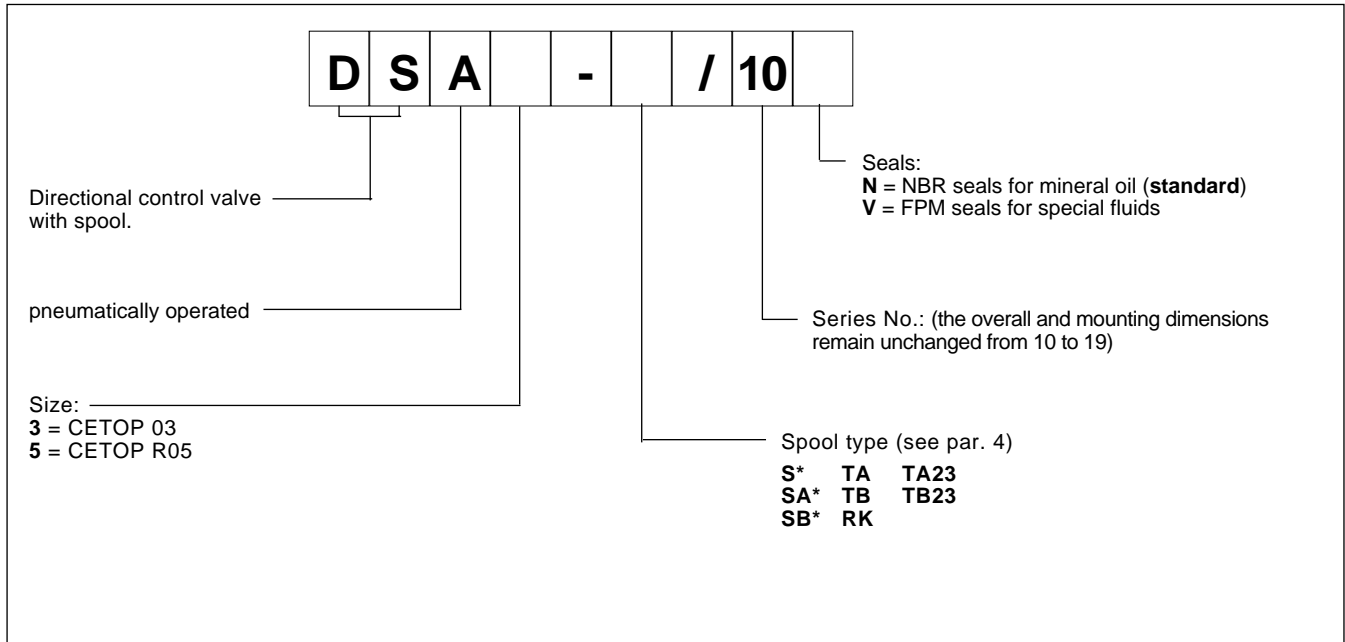


OPERATING PRINCIPLE





1 - IDENTIFICATION CODE



2 - PERFORMANCE RATINGS (working with mineral oil of viscosity 36 cSt at 50°C)		DSA3	DSA5
Maximum working pressure:			
- P A B ports	bar		320
- T port with Y external drain			320
- T port without Y external drain			20
Piloting pressure	bar		2 10
min			
max			
Nominal flow	l/min		120
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 NAS 1638 class 10	
Mass	kg		4,4 5,2
single operation valve			
double operation valve			

3 - HYDRAULIC FLUIDS

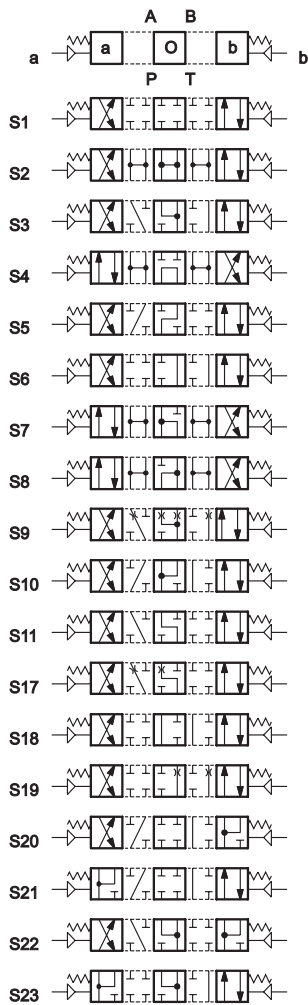
Use mineral oil-based hydraulic fluids HL or HPL type, according to ISO 6743/3.
 For fluids HFD-R type (phosphate esters) use FPM seals (code V).
 For the use of other fluid types as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 70 °C causes a faster degradation of the fluid and of the seals characteristics.
 The fluid must be preserved in its physical and chemical characteristics.

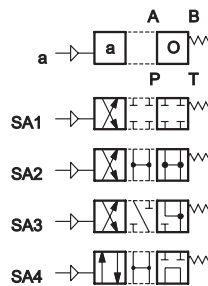


4 - SPOOL TYPE

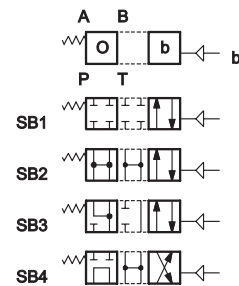
Type S*:
2 operations - 3 positions
with spring centering



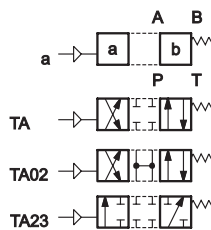
Type SA*:
1 operation side A
2 positions (central + external)
with spring centering



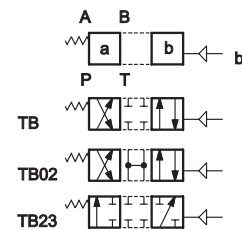
Type SB*:
1 operation side B
2 positions (central + external)
with spring centering



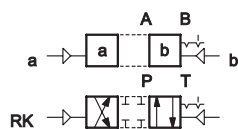
Type TA:
1 operation side A
2 external positions
with return spring



Type TB:
1 operation side B
2 external positions
with return spring



Type RK:
2 operations - 2 positions
with mechanical retention



Besides the diagrams shown, which are the most frequently used, other special versions are available: consult our technical department for their identification and operating limits.



5 - PRESSURE DROPS $\Delta p-Q$ (values obtained with viscosity 36 cSt at 50 °C)

5.1 - Pressure drops $\Delta p-Q$ DSA3

PRESSURE DROPS WITH VALVE IN ENERGIZED POSITION

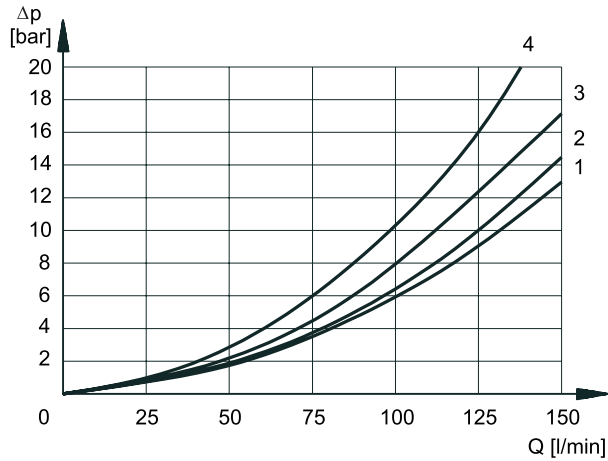
SPOOL TYPE	FLOW DIRECTION			
	P-A	P-B	A-T	B-T
	CURVES ON GRAPH			
S1, SA1, SB1				
S2, SA2, SB2				
S3, SA3, SB3				
S4, SA4, SB4				
S5				
S6, S11				
S7, S8				
S9				
S10				
S17, S19				
S18				
S20, S21				
S22, S23				
TA, TB				
TA02, TB 02				
TA23, TB23				
RK				

PRESSURE DROPS WITH VALVE IN DE-ENERGIZED POSITION

SPOOL TYPE	FLOW DIRECTION				
	P-A	P-B	A-T	B-T	P-T
	CURVES ON GRAPH				
S2, SA2, SB2					
S3, SA3, SB3					
S4, SA4, SB4					
S5					
S6					
S7					
S8					
S9					
S10					
S11					
S17					
S18					
S19					
S22					
S23					

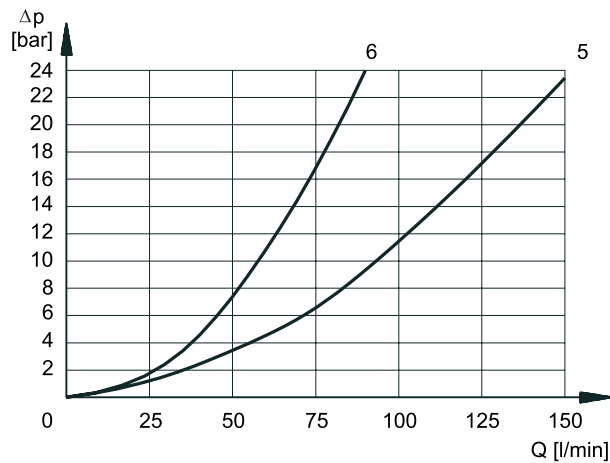


5.2 - Pressure drops Δp -Q DSA5



PRESSURE DROPS WITH VALVE IN ENERGIZED POSITION

SPOOL TYPE	FLOW DIRECTION			
	P-A	P-B	A-T	B-T
	CURVES ON GRAPH			
S1, SA1, SB1	2	2	1	1
S2, SA2, SB2	3	3	1	1
S3, SA3, SB3	3	3	2	2
S4, SA4, SB4	1	1	2	2
S5	2	1	1	1
S6, S11	3	3	2	2
S7, S8	1	1	2	2
S9	3	3	2	2
S10	1	1	1	1
S17, S19	2	2	1	1
S18	1	2	1	1
S20, S21				
S22, S23				
TA, TB	3	3	2	2
TA02, TB 02	3	3	2	2
TA23, TB23	4	4		
RK	3	3	2	2



PRESSURE DROPS WITH VALVE IN DE-ENERGIZED POSITION

SPOOL TYPE	FLOW DIRECTION				
	P-A	P-B	A-T	B-T	P-T
	CURVES ON GRAPH				
S2, SA2, SB2					5
S3, SA3, SB3			6	6	
S4, SA4, SB4					5
S5		3			
S6				6	
S7					
S8					
S9					
S10					
S11			6		
S17					
S18	3				
S19					
S22					
S23					



6 - OPERATING LIMITS

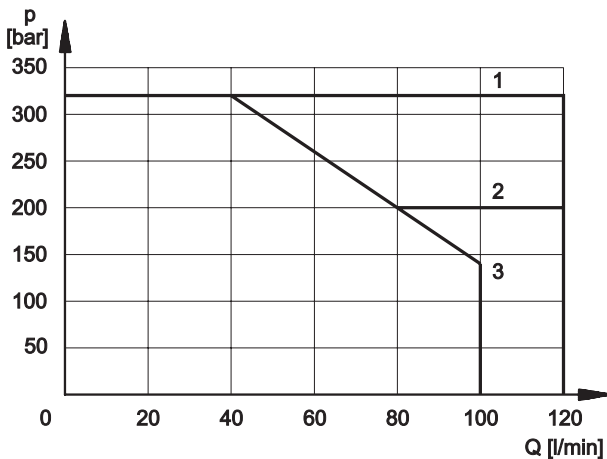
The curves define the flow rate operating fields according to the valve pressure of the different versions. The values have been obtained according to ISO 6403 norm, with mineral oil viscosity 36 cSt at 50 °C and filtration NAS 1638 class 7.

6.1 - Operating limits DSA3

SPOOL TYPE	CURVE	
	P-A	P-B
S1,SA1,SB1		
S2, SA2, SB2		
S3, SA3, SB3		
S4, SA4, SB4		
S5		
S6		
S7		
S8		
S9		
S10		
S11		

SPOOL TYPE	CURVE	
	P-A	P-B
S17		
S18		
S19		
S20		
S21		
S22		
S23		
TA, TB		
TA02, TB02		
TA23, TB23		
RK		

6.2 - Operating limits DSA5



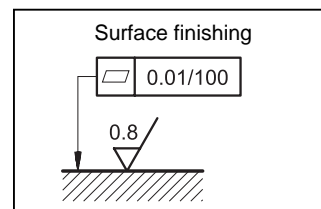
SPOOL TYPE	CURVE	
	P-A	P-B
S1,SA1,SB1	1	1
S2, SA2, SB2	1	1
S3, SA3, SB3	1	1
S4, SA4, SB4	2	2
S5	1	1
S6	1	1
S7	3	3
S8	3	3
S9	1	1
S10	1	1
S11	1	1

SPOOL TYPE	CURVE	
	P-A	P-B
S17	1	1
S18	1	1
S19	1	1
S20		
S21		
S22		
S23		
TA, TB	1	1
TA02, TB02	1	1
TA23, TB23	1	1
RK	1	1

NOTE: The values indicated in the graphs are relevant to the standard valve. The operating limits can be considerably reduced if a 4-way valve is used with port A or B plugged.

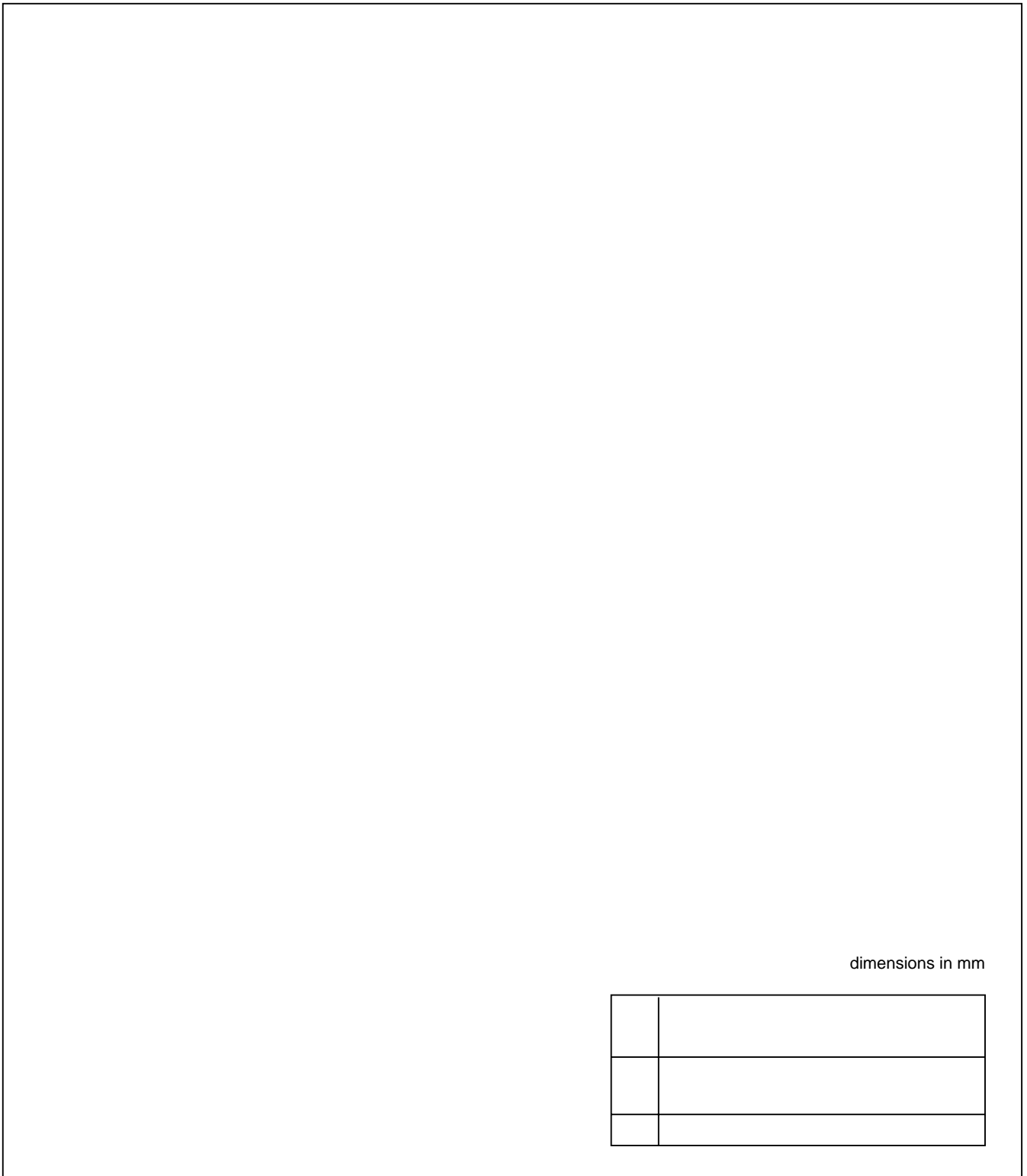
7 - INSTALLATION

Configurations with centering and return springs can be mounted in any position; type RK valves - without springs and with mechanical detent - must be mounted with the longitudinal axis horizontal. Valve fixing is by means of screws or tie rods, with the valve mounted on a lapped surface, with values of planarity and smoothness that are equal to or better than those indicated in the drawing. If the minimum values of planarity and/or smoothness are not met, fluid leakage between valve and mounting surface can easily occur.





8 - OVERALL AND MOUNTING DIMENSIONS DSA3

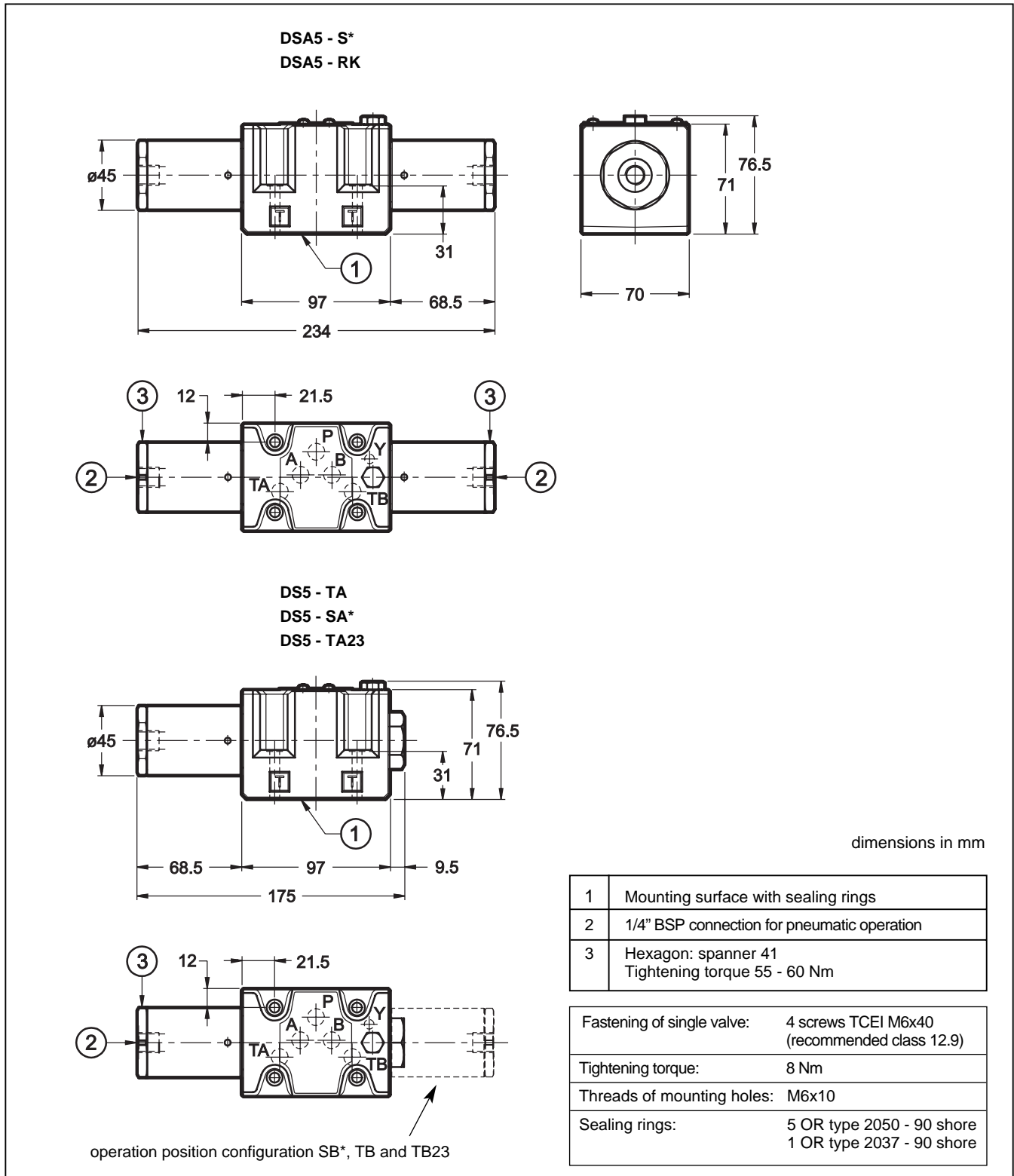


dimensions in mm

9 - SUBPLATES (See catalogue 51 000)	DSA3	DSA5
Type with rear ports	PMMD-AI3G	PMD4-AI4G
Type with side ports	PMMD-AL3G	PMD4-AL4G
P, T, A, B ports threading	3/8" BSP	1/2" BSP



10 - OVERALL AND MOUNTING DIMENSIONS DSA5



	<p>DIPLOMATIC OLEODINAMICA SpA 20025 LEGNANO (MI) - P.le Bozzi, 1 / Via Edison Tel. 0331/472111 - Fax 0331/548328</p>
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