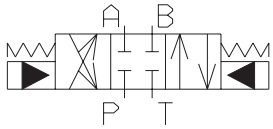
ADPH.5... PILOTED VALVES CETOP 5/NG10 WITH CETOP 2/NG4 PILOT VALVE

These ADPH 5 valves are used primarily for controlling the starting, stopping and direction of fluid flow. These kind of distributors are composed by a main stage crossed by the big flow from the pump (ADPH.5) and by a cetop 2 pilot directional solenoid valve (AD.2.E) available with different mounting type .

When a short response time is requested, a special version of solenoids with high dynamics is available with the code AD.2.E.**.*.*FF.2 (Please, contact our Technical Aron Service).

The interface of the ADPH.5 valves is Cetop 5 in according with RP 121 H-4.2.4.R05, with external draining or piloting not following the ISO rules.

HYDRAULIC SYMBOL



ORDERING CODE

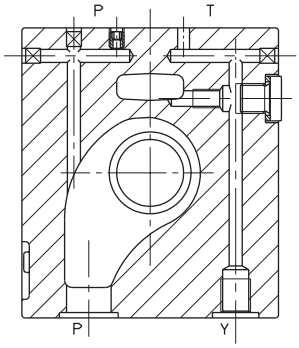
ADPH	Piloted valve **The pilot valves AD.2.E... must be ordered separately**
5	CETOP 5/NG10
******	Spool type (Table next page)
*****	Mounting (Table next page) Standard orifice at port P: ∅ 1mm
*****	Orifice type on Cetop 2 valves (Table 1) **0** = none **A / B / C / D / E / F / G** = orifice on line A **H / I / L / M / N / P / Q** = orifice on line B
*****	Piloting and draining type (Tab.2) **I** = internal piloting internal draining **E** = internal piloting external draining **X** = external piloting internal draining (special body)
00	No variant
1	Serial No.

TAB.1 - ORIFICE ON LINE A/B

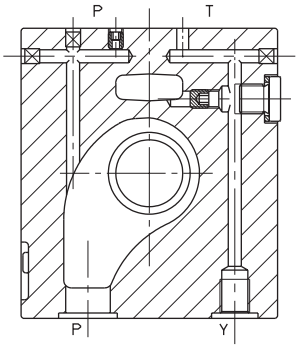
On line A	On line B	ø(mm)
0	**0**	None
A	**H**	0,5
B	**I**	0,6
C	**L**	0,7
D	**M**	0,8
E	**N**	0,9
F	**P**	1
G	**Q**	1,2

TAB.2 - PLUGS DISPOSAL

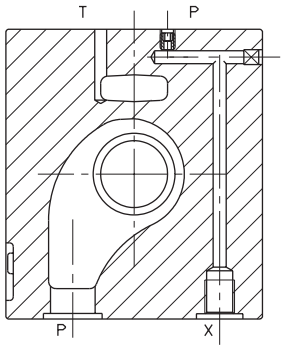
Internal piloting
Internal draining (**I** code)



Internal piloting
External draining (**E** code)



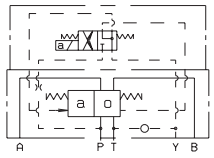
External piloting
Internal draining (**X** code)



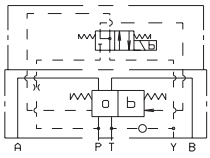
HYDRAULIC SYMBOLS, SPOOLS AND MOUNTING

(* Spools with price increasing)

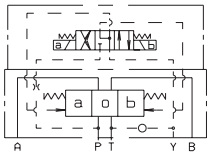
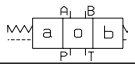
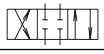
"A" MOUNTING

Pilot Piloted			
Scheme			
Spool type		Covering	Transient position
01		+	
02		-	
03		-	
04*		-	
06		+	
15		-	
16		+	

"B" MOUNTING

Pilot Piloted			
Scheme			
Spool type		Covering	Transient position
01		+	
02		-	
03		-	
04*		-	
06		+	
15		-	
16		+	

"C" MOUNTING

Pilot Piloted			
Scheme			
Spool type		Covering	Transient position
01		+	
02		-	
03		-	
04*		-	
06		+	

PRESSURE DROPS

The diagram at the side shows the pressure drop curves for spools during normal usage. The used fluid is a mineral oil with a viscosity of 46 mm^2/s at 40°C; the tests have been carried out at a fluid temperature of 40°C. For flow rates higher than those in the diagram, the losses will be those expressed by the following formula:

$$\Delta p1 = \Delta p \times (Q1/Q)^2$$

where Δp will be the value for the losses for a specific flow rate Q which can be obtained from the diagram, Δp1 will be the value of the losses for the flow rate Q1 that is used.

Spool type	Connections				
	P→A	P→B	A→T	B→T	P→T
01	4	4	7	7	
02	6	6	8	8	7
03	3	3	8	8	
04	4	4	2	2	3
06	4	4	7	8	
15	2	2	5	5	
16	1	1	2	2	
	Curve No.				

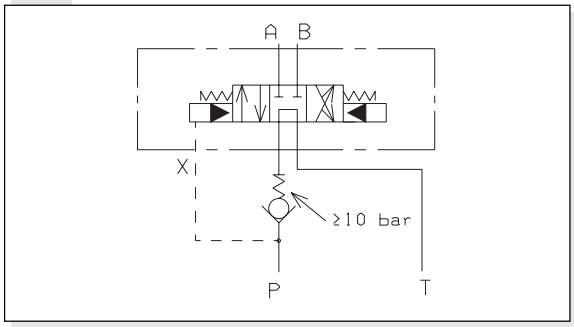
1

SPECIFICATIONS

Max. operating pressure: ports P/A/B	250 bar
Max. operating pressure: port T (dynamic)	70 bar
Max. piloting pressure	250 bar
Min. piloting pressure	10 bar
Max. flow	120 l/min
Switching times (*see note below)	Energizing: 20 ms De-energizing: 50 ms
Piloting oil volume for engagement	1 cm^3
Hydraulic fluid	mineral oil DIN 51524
Fluid viscosity	10 ÷ 500 mm^2/s
Fluid temperature	-20°C ÷ 75°C
Max. contamination level	class 10 in accordance with NAS 1638 with filter $ß_{25} \geq 75$
Mounting	plate
Weight ADPH5 without pilot valve	3,4 Kg
Weight ADPH5 with pilot valve with one solenoid	4,3 Kg
Weight ADPH5 with pilot valve with two solenoids	4,5 Kg

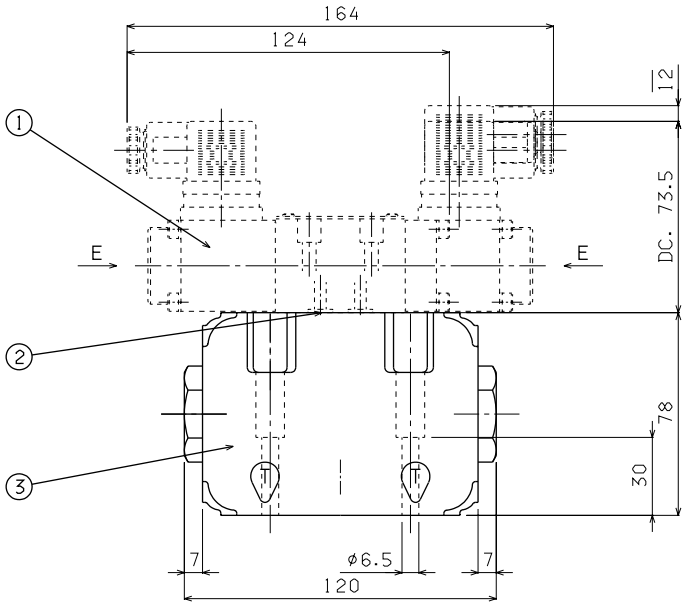
(*) All the tests have been carried out with AD.2.E pilot valve with variant FF, mounting type C, spool 03, flow 100 l/min,pressure 160 bar, back pressure on the T line of 2 bar and oil temperature 40°C.

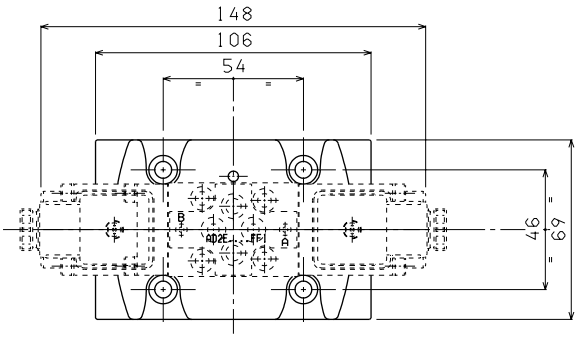
EXTERNAL BACK PRESSURE ON LINE P (FOR SPOOL IN THE CENTER POSITION)



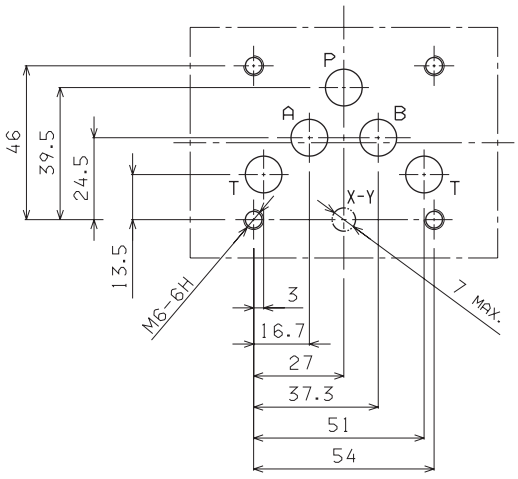
When the main spool connect P to T in the centre position, the minimum pressure of 10 bar is needed to move the main spool (see the “Specifications”); for this reason a check valve on the P line (see the drawing above) is necessary.

OVERALL DIMENSIONS AND MOUNTING SURFACE





Mounting surface



1 Pilot solenoid valve
Cetop 2/NG4 type **AD.2.E...FF variant**

2 Calibrated springs

3 Piloted valve **ADPH.5**

Fixing screws M6x40 UNI 5931

Tightening torque 8 ÷ 10 N / 0,8 ÷ 1 Kgm