

## CARACTERISTICS

### Hydraulic :

Cetop 3.  
Maximum pressure in service : 315 Bar.  
Nominal flow. : 60 l/mn.  
37 hydraulic symbols.

### Electric :

Protection index : IP 66.  
Standards : USA NEC NFPA 70, Class I, Div. 1-2, Group B.  
Temperature range : T5.



4 ED6 D5X/UL 24-DC-T5 05 PA

## DESCRIPTION OF FUNCTION

Directional control valves type ED 6 are solenoid operated directional spool valves.  
They control start, stop and direction of an oil flow.

These valves basically consist of the housing (1), one or two solenoids (2), the control spool (3), and return springs (4).

In unoperated condition the control spool (3) is held in the neutral or starting position by the return springs (4) (except for type O and OF).

The operation of the control spool is by means of oil immersed solenoids (2).

The force of the solenoid (2) acts via the plunger (5) on the control spool (3) and pushes it from its rest position into the required end position.

When the solenoid is de-energised (2), the control spool (3) is returned to its original by the return springs (4).

An hand emergency button, allows movement of the control spool (3) without solenoid energisation.

### TYPE : ED6 C or D 5X/O

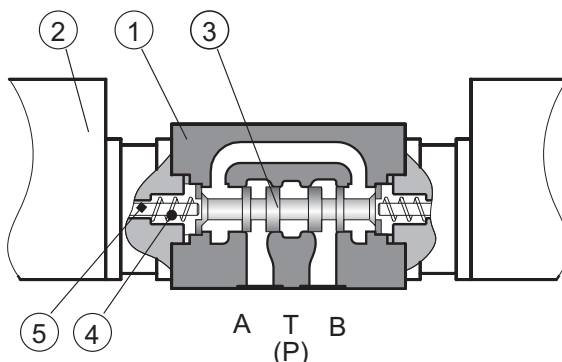
these are directional valves with 2 switching positions and 2 solenoids without locking.  
When the solenoid is energised there is no median position (without return springs).

### TYPE : ED6 C or D 5X/OF

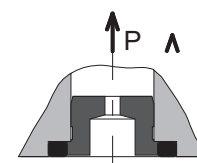
these are directional valves with 2 switching positions and 2 solenoids with locking in position.

### CARDRIDGE THROTTLE

Use of the cardridge throttle is necessary when, because of the given operating conditions, flow larger than that allowed by the valve operating limits arise during spool cross-over.



Throttle cartridge fitted in "P" line of the hydraulic valve.



.. ED6 ...5X ...B0..

## SOLENOID

### GENERALITY

Oil immersed direct current solenoid (1) impervious to 100 bar maximum pressure, its mechanical impact strength is approved by the CENELEC for explosion proof equipment.

Insulation to IP 66, it can work in tropical climates.

The plunger operate in oil to reduce friction, dissipate heat and cushions and drives control spool.

Direct current solenoid has the advantages of :

- slow movement of the control spool.
- energized maintenance of the control valve in intermediary position, is not detrimental to the solenoid.

The solenoid housing can be oriented in steps of 90° on directional control valve.

### ELECTRIC CONNECTION

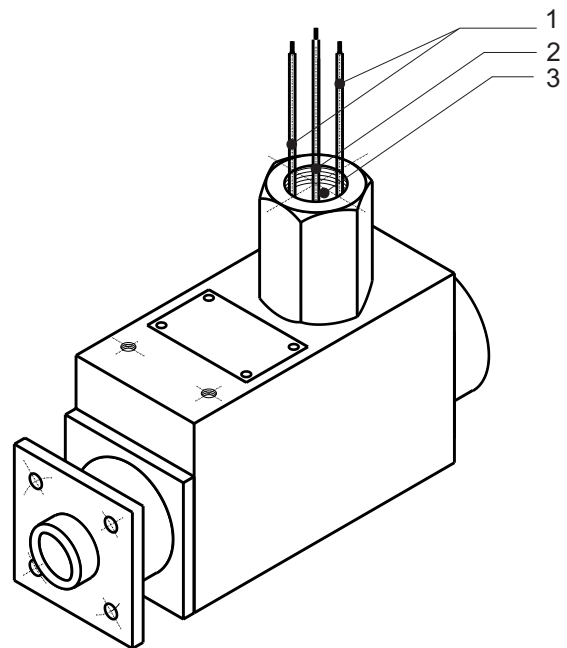
An explosion proof connexion can be made on the solenoid housing by rigid conduit threaded 1/2"NPT.

Seal integrated in the housing.

The lead wire (1) length normally supplied is 1,5 meter.






Active lead wire (1), Earth lead wire (2).

Threaded hole 1/2"NPT (3).



## CARACTERISTICS

### HYDRAULIC

Maximum operating pressure : Ports A, B, P.	Bar	Up to ... 315	
Maximum operating pressure : Port T.	Bar	Up to ... 100	
With spool type A and B, port T must be used as a drain port, if the operating pressure lies above 100 Bar.			
Maximum flow	L/Mn	(see operating curves of pressure drop)	
Hydraulic fluid	.	Mineral oils	
Viscosity range	mm <sup>2</sup> /s	2,8 .....380	
Fluid temperature range	(°C)	-30° .....+70	
Weight :	- valve with 1 solenoid (Kg) - valve with 2 solenoids (Kg)	4 7	
Mounting position :	- 3 Positions - 2 Positions	Optional. Optional - Horizontal preferred.	
Standard symbol :	- 2 positions	 <b>D</b>	 <b>Y</b>
	- 3 positions	 <b>E</b>	 <b>J</b>
		 <b>G</b>	
<b>32 others symbols (see page 6)</b>			

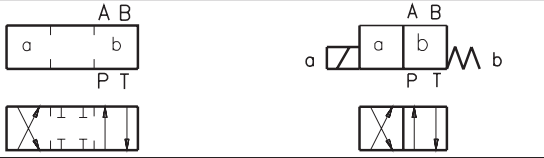
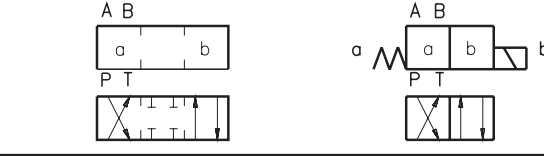
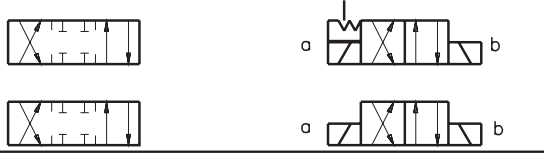
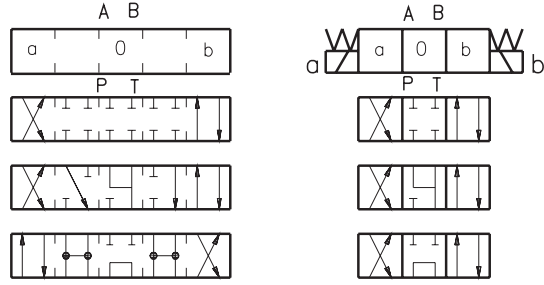
### ELECTRICAL

Continous voltages available.	V/DC	24												
Temperature range with ambiente 40°C.	T	T5												
Power requirement.	VA	16,4												
Protection index.		IP 66 / Tropicalised												
Duty cycle.		100 %												
Maximum coil temperature.	(°C).	130°C												
Outlet connection		1/2"NPT												

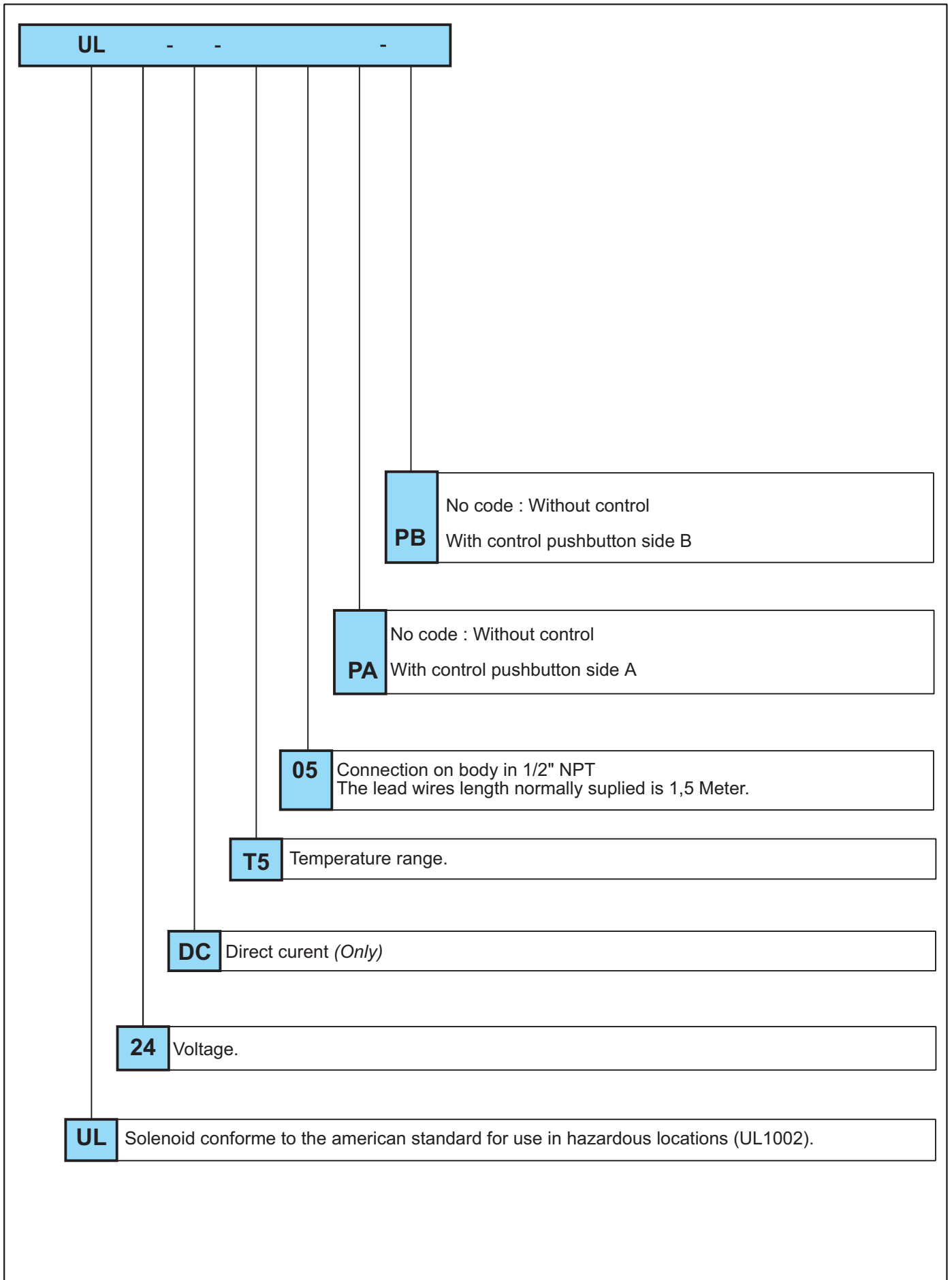
### STANDARD

National electrical code	NEC NFPA 70
Approval number Underwriters Laboratories®	UL® LISTED 34X6
File Number	E 119 438 (N)

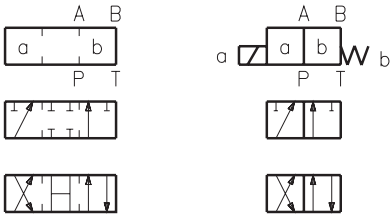
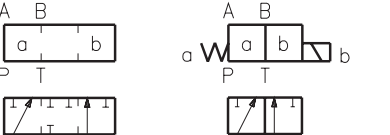
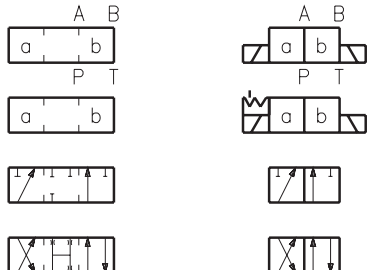
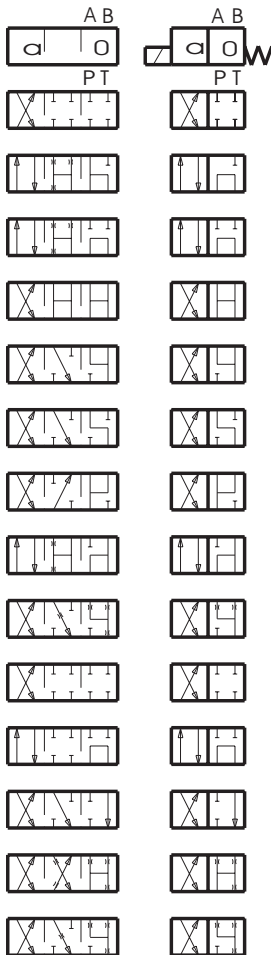
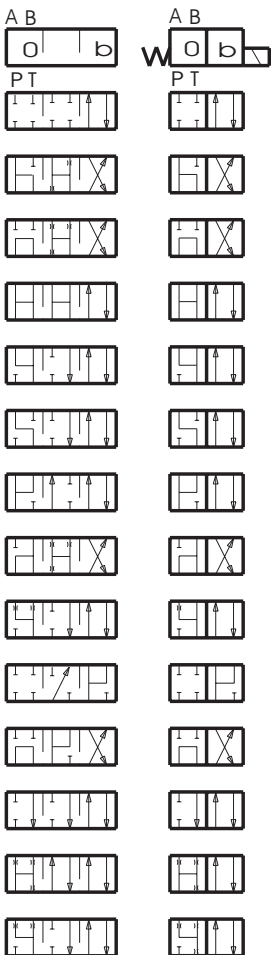
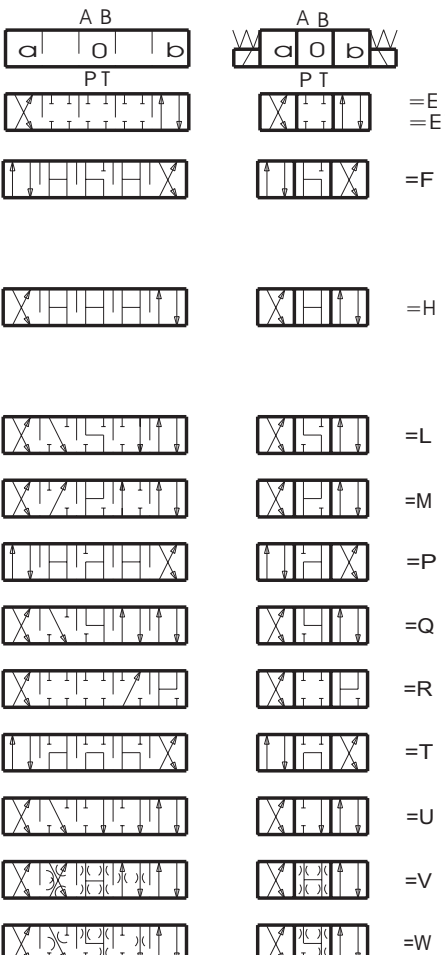
# HYDRAULIC CODE

<b>REFERENCES</b>	<b>ED6</b>	<b>5X</b>			
3 service ports 4 service ports	<b>3</b> <b>4</b>				
	<b>D</b>				
	<b>Y</b>				
	<b>D</b> <b>D</b>				
 <p style="text-align: center;">Middle Position                  Normal position</p>	<b>E</b> <b>J</b> <b>G</b>				
Hydraulic housing series number.		<b>5X</b>			
<p><b>The above refer to symbols D, Y only.</b></p> <p>Without return spring, with locking control spool.</p> <p>Without return spring.</p> <p>With return springs</p>			<b>OF</b> <b>O</b>		
<p><b>The above refer to E, J, G, ... Ect.</b></p> <p>With one solenoid side A.</p> <p>With one solenoid side B.</p> <p>With one solenoid side A and side B.:</p>				<b>A</b> <b>B</b>	
<p><i>For use when the flow is greater than the valve capacity, fitted in P line.</i></p>					<b>B08</b> <b>B10</b> <b>B12</b>
					Throttle Ø 0.8 MM : Throttle Ø 1,0 MM : Throttle Ø 1,2 MM : Without throttle : No code

## ELECTRICAL CODE

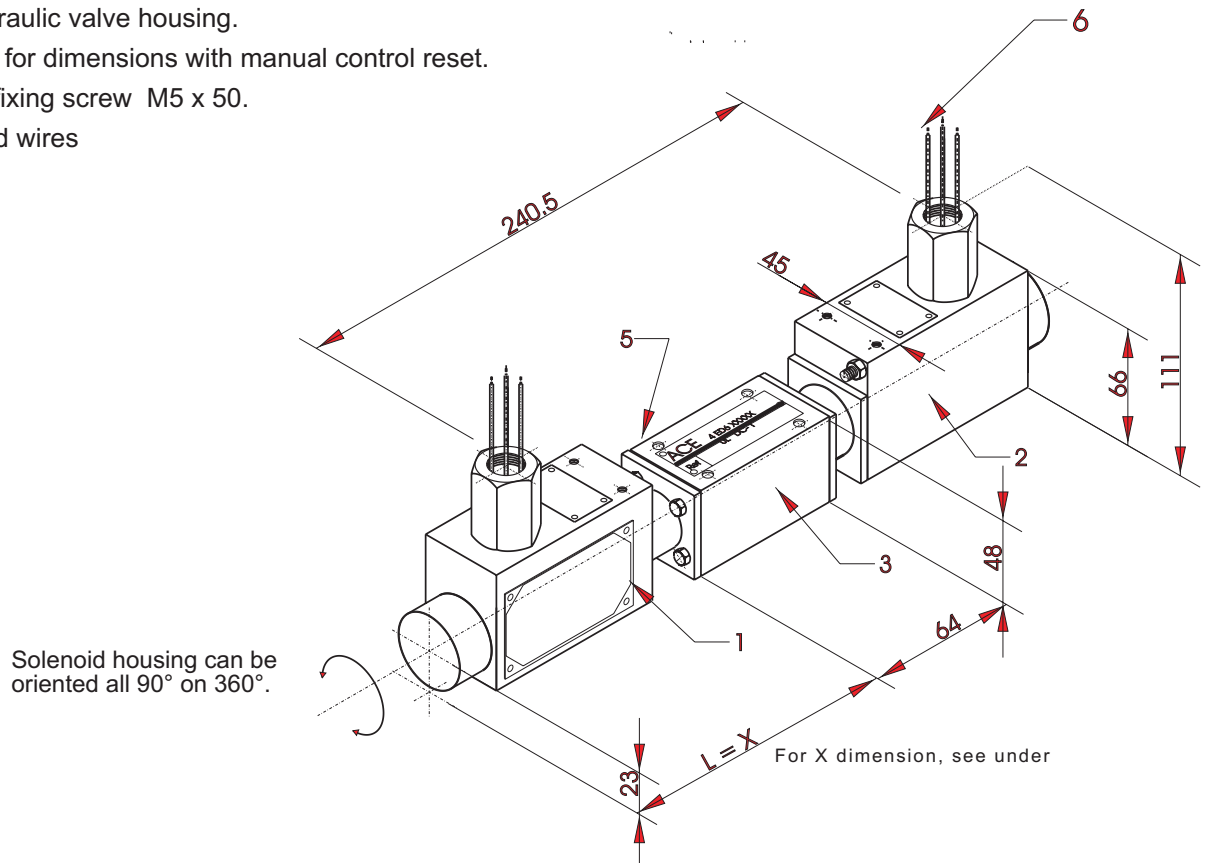


## HYDRAULIC VARIATION SYMBOLS

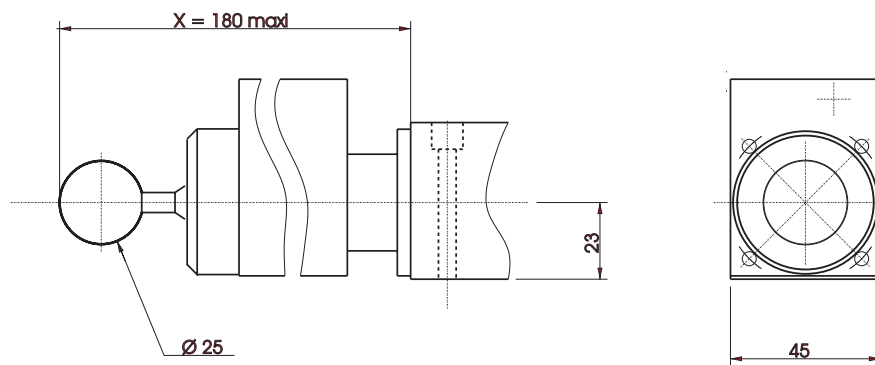
		<p>2 positions with one solenoid side A.</p> <p>With return spring.</p>
		<p>2 positions with one solenoid side B.</p>
		<p>2 positions with solenoid side A and side B.</p> <p>Without return spring.</p> <p>With locking control spool.</p>
<p>2 positions with one solenoid side A.</p> 	<p>2 positions with one solenoid side B.</p> 	<p>3 positions with one solenoid side A &amp; B.</p> 

## DIMENSIONS (In mm)

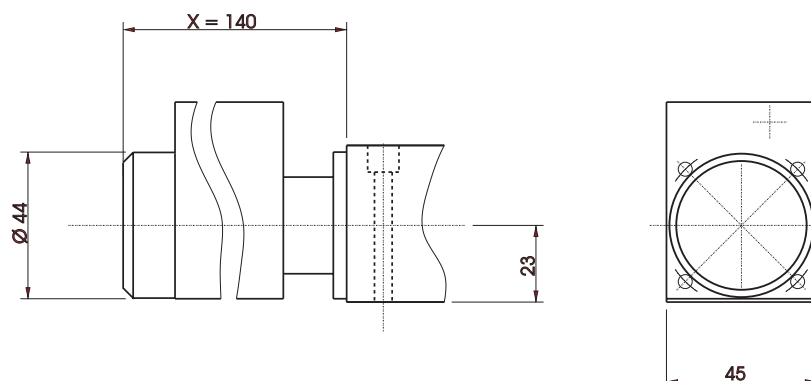
- 1 : Side A solenoid housing.
- 2 : Side B solenoid housing.
- 3 : Hydraulic valve housing.
- 4 : See for dimensions with manual control reset.
- 5 : 4 x fixing screw M5 x 50.
- 6 : Lead wires



### With control pushbutton



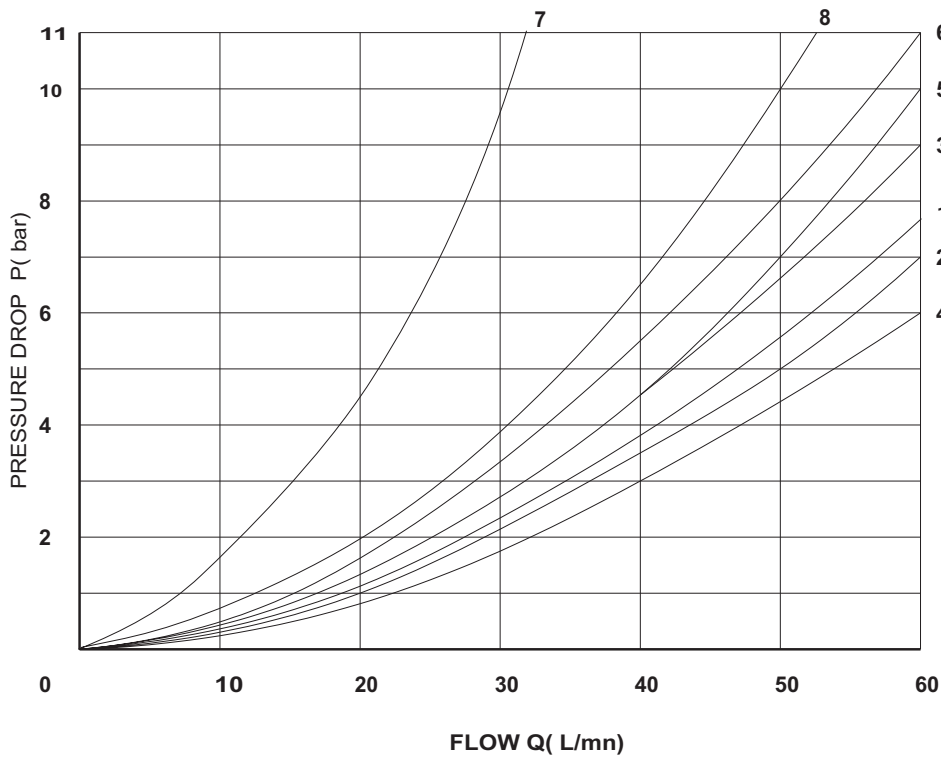
### Without control pushbutton



## CURVES OF PRESSURE DROP

CURVE 7 : SYMBOL "R" IN SWITCHING POSITION : B - A

CURVE 8 : SYMBOL "G" IN NEUTRAL POSITION : P - T



Mesured at  $V : 36 \text{ mm}^2 / \text{S}$  ,  $t : 50^\circ\text{C}$

SYM-BOL	FLOW DIRECTION			
	P-A	P-B	A-T	B-T
A	3	3	-	-
B	3	3	-	-
C	1	1	3	1
D	5	5	3	3
E	3	3	1	1
F	2	3	3	5
G	5	3	6	6
H	2	4	2	2
J	1	1	2	1
L	1	1	2	2
M	2	4	3	3
P	2	3	3	5
Q	1	1	2	1
R	5	3	4	-
T	5	3	6	6
U	3	1	3	3
V	1	2	1	1
W	1	1	2	2
Y	5	6	5	3

## HYDRAULIC VALVE CONNECTION CETOP3

