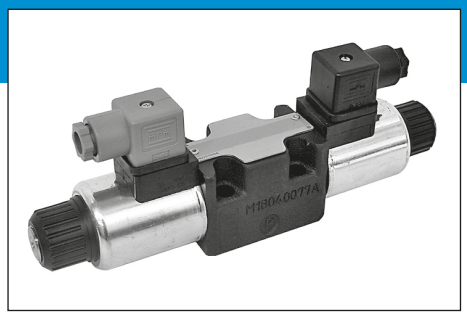
DIRECTIONAL CONTROL VALVES CETOP 3/NG6



CETOP 3/NG06

STANDARD SPOOLS	SECT. A	12
AD3E...	SECT. A	13
AD3E...*S	SECT. A	14
AD3E...KJ	SECT. A	15
AD3V...	SECT. A	16
AD3L...	SECT. A	17
OTHER OPERATOR	SECT. A	18
AD3P...	SECT. A	19
AD3O...	SECT. A	19
AD3M...	SECT. A	20
AD3D...	SECT. A	20
"D15" DC COILS	SECT. A	21
"B14" AC SOLENOIDS	SECT. A	21
STANDARD CONNECTORS	SECT. L	15
"LE" VARIANTS	SECT. A	22
L.V.D.T.	SECT. A	23
MICROSWITCH	SECT. A	24

INTRODUCTION

The directional control valves NG6 are designed for subplate mounting with an interface in accordance with UNI ISO 4401 - 03 - 02 - 0 - 94 standard (ex CETOP R 35 H 4.2-4-03), and can be used in all fields on account of their high flow rate and pressure capacities combined with compact overall dimensions.

The use of solenoids with wet armatures allows a very practical, safe construction completely dispensing with dynamic seals; the solenoid tube is screwed directly onto the valve chest whilst the coil is kept in position by means of a lock nut.

The special, precise construction of the ports and the improvement of the spools enables relatively high flow rates to be accommodated with a minimal pressure drop (Δp).
The operation of the directional valves may be electrical, pneumatic, oleodynamic, mechanical or lever.

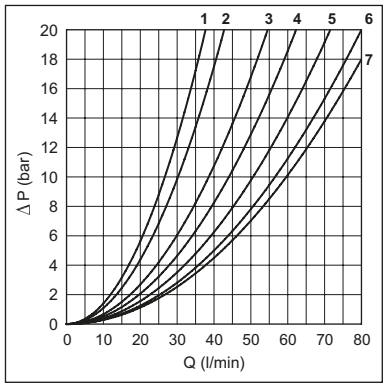
The centre position is obtained by means of calibrated length springs which reposition the spool in the centre or end of travel position once the action of the impulse is over.

The solenoids are constructed with a protection class of IP66 to DIN 40050 standards and are available in either AC or DC form in different voltage and frequencies.
The new type DC coil "D15", of cause their high performance, allows to increasing the limits of use respect to last series.
All types of electrical control are available, on request, with different types of manual emergency controls.

The solenoid coils are normally arranged for DIN 43650 ISO 4400 type connectors; is available on request these variant coils: with AMP Junior connections, with AMP junior and integrated diode, with Deutsch DT04-2P connections or solenoid with flying leads. Connectors with built in rectifiers or pilot lights are also available.

The valves are designed for use with DIN 51524 standard hydraulic mineral oils and it is recommended that filters should be fitted to ensure a maximum contamination level of class 10 in accordance with NAS 1638, $ß_{25} \geq 75$.

PRESSURE DROPS



The diagram at the side shows the pressure drop curves for spools during normal usage. The fluid used 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 higher flow rates 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.

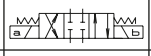
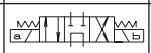
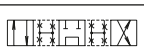
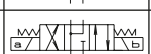
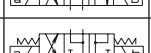
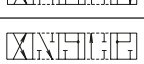
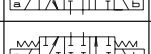
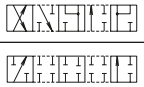
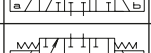
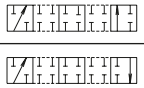
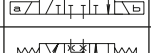
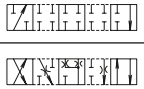
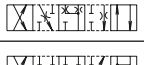
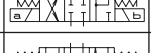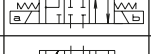
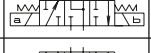
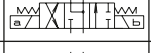
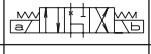
Spool type	Connections				
	P→A	P→B	A→T	B→T	P→T
01	5	5	5	5	
02	7	7	7	7	6
03	5	5	6	6	
04	2	2	2	2	4
44	1	1	2	2	3
05	7	7	5	5	
06	5	5	7	5	
66	5	5	5	7	
07		2	6		
08	6	6			
09		5		5	
	Curve No.				

Spool type	Connections				
	P→A	P→B	A→T	B→T	P→T
10	5	5	5	5	
11	5			5	
22		5	5		
12		5		6	
13		5	6	6	
14	4	3	3	3	4
28	3	4	3	3	4
15-19*	5	5	6	6	
16	5	5	4	4	
17-21*	3	4			
20*	4	4	4	4	
	Curve No.				

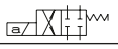
(*) Value with energized solenoid

DIRECTIONAL CONTROL VALVES
STANDARD SPOOLS CETOP 3/NG6

TWO SOLENOIDS, SPRING CENTRED "C" MOUNTING

Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04		-	
44		-	
05 (1)		+	
66 (1)		+	
06 (1)		+	
07 (1)		+	
08 (1)		+	
09 (1)		+	
10 (1)		+	
22		+	
11 (1)		+	
12 (1)		+	
13 (1)		+	
14 (1)		-	
28 (1)		-	

ONE SOLENOID, SIDE A "E" MOUNTING

Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04		-	
44		-	
05 (1)		+	
66 (1)		+	
06 (1)		+	
08 (1)		+	
10 (1)		+	
12 (1)		+	
15		-	
16		+	
17 (1)		+	
14 (1)		-	
28 (1)		-	

NOTE

(1) Upon request

- With spools **15** / **16** / **17** only mounting **E** / **F** are possible
- **16 / 19** / **20** / **21** spool not planned for **AD3E...*S**
- For lever operated the spools used are different.
Available spools for this kind of valve see AD3L..

ONE SOLENOID, SIDE B "F" MOUNTING

Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04		-	
44		-	
05 (1)		+	
66 (1)		+	
06 (1)		+	
08 (1)		+	
09 (1)		+	
10 (1)		+	
22 (1)		+	
12 (1)		+	
13 (1)		+	
07 (1)		+	
15		-	
16		+	
17 (1)		+	
14 (1)		-	
28 (1)		-	

TWO SOLENOIDS "D" MOUNTING

Spool type		Covering	Transient position
19		-	
20		+	
21 (1)		+	

AD3L... LEVER OPERATED CETOP 3/NG6



AD3L...	
STANDARD SPOOLS	SECT. A 12
MICROSWITCH	SECT. A 24

Max. pressure ports P/A/B	320 bar
Max. pressure port T	160 bar
Max. flow	60 l/min
Lever angle	2 x 17°
Fluid viscosity	10 ÷ 500 mm^2/s
Fluid temperature	-25°C ÷ 75°C
Ambient temperature	-25°C ÷ 60°C
Max. contamination level	class 10 in accordance with NAS 1638 with filter $ß_{25} \geq 75$
Weight	1,2 Kg
Weight M1 variant	1,8 Kg

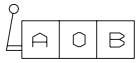
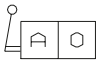
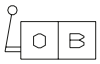
ORDERING CODE

AD	Directional valve
3	CETOP 3/NG6
L	Lever operation
**	Spool type (see table 1) Spool symbol see SECT. A 12
*	Mounting type (see table 2)
*	**Z** = Valve with lever **X** = Valve without lever
*	Variants (see table 3)
4	Serial No.

TABLE 1 - SPOOLS TYPE

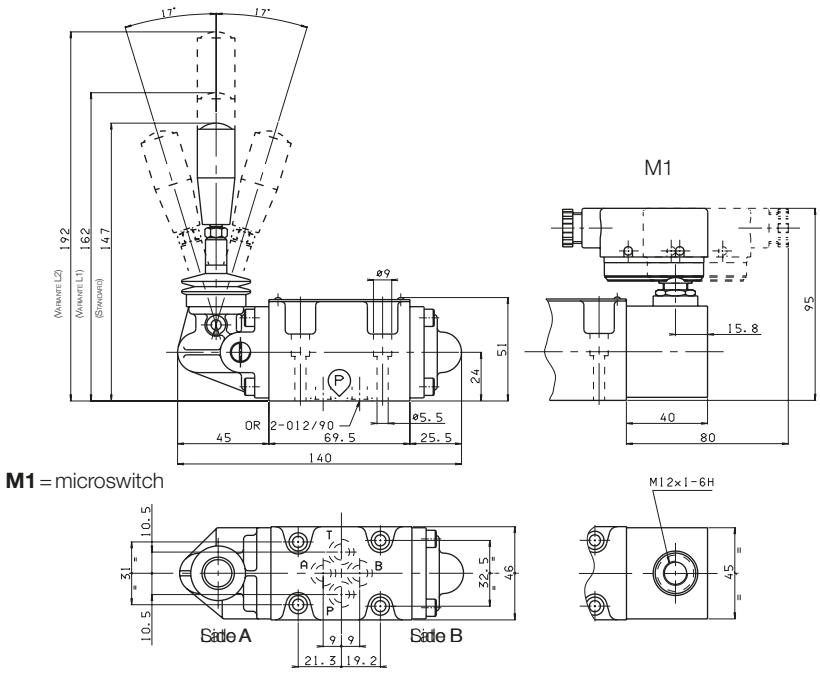
- Available spools:
  01 / 02 / 03 / 04 / 15
- Spools upon request:
  05 / 06 / 66 / 13 / 16 / 17

TABLE 2 - MOUNTING TYPE

C	
E	
F (1)	

(1) For spools 15-16-17 the lever is mounted on site B

OVERALL DIMENSIONS



Fixing screws ISO 4762 M5x30
with material specifications min. 8.8
Tightening torque 5 Nm / 0.5 Kgm

Support plane specifications

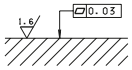


TABLE 3 - VARIANTS TABLE

VARIANTS	CODE (♦)
No variant	00
FKM	V1
Preset for microswitch Microswitch type MK code 1319098 must be ordered separately.	M1 (♦)
With detent (*) (mechanical connection)	D1 (♦)
Preset for microswitch + Detent (*)	MD (♦)
Lever length 162 mm	L1
Lever length 192 mm	L2

♦ Variant codes stamped on the plate
(*) max. 150.000 cycles.