ADH7... 4/3 AND 4/2
PILOTED VALVES CETOP 7/NG16



Type ADH.7 distributors are intended for interrupting, inserting and diverting a hydraulic system flow. Normally these distributors are composed of a main stage, crossed by the circuit main flow, and of a pilot stage available in several versions.

Various types of controls are available, used either individually or in combination for, among other functions, stroke limitation and main spool movement speed control, in order to optimize the hydraulic system operation where this type of valve is employed.

When using spools to drain the valve (type 02,04,14,28), use external pilot versions (EI, E) with a minimum pressure of 12 bar. In case an internal pilot is used (I, IE), specify in the ordering code the check valve "R", used to create the required pilot pressure

- Mounting surface in accordance with UNI ISO 4401 - 07 - 06 - 0 - 94 standard (ex CETOP R 35 H 4.2-4-07).
- Pilot operated spool, solenoid controller.
- Stroke control of main spool.
- Presetting for pressure reducing valve mounting.
- Presetting for single-acting throttle valve mounting.

A

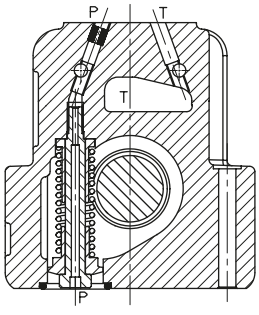
ADH7...		
STANDARD SPOOLS FOR ADH7	SECT. A	60
TECH. SPECIFICATIONS	SECT. A	61
SUBPLATES BSH7...	SECT. A	62
CETOP 3/NG06	SECT. A	10
STANDARD SPOOLS FOR AD3E	SECT. A	12
AD3E...	SECT. A	13
ADC3...	SECT. A	7
"A09" DC COILS	SECT. A	9
"D15" DC COILS	SECT. A	21
"B14" AC SOLENOIDS	SECT. A	21
STANDARD CONNECTORS	SECT. L	15

ORDERING CODE

ADH	Piloted valve - **Pilot valves and any modulating valves should be ordered separately**
7	CETOP 7/NG16
*	Mounting type (see next page)
**	Spool type (see next page)
*	Piloting and draining **I** = X internal / Y internal **IE** = X internal / Y external **EI** = X external / Y internal **E** = X external / Y external (see Tab.1 at side)
R	Check valve incorporated at port P (Tab. 2) Only for **I** and **IE** versions (omit if not required)
**	**00** = No variant **LC** = Main spool stroke limiter
2	Serial No.

TAB. 2 - INTERNAL CHECK ON P

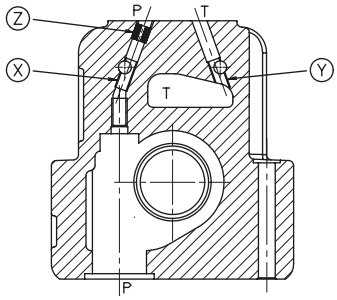
ADH7**R**2 VERSION**



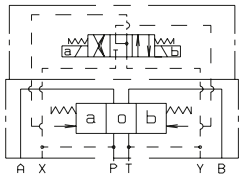
• For the spools 02-04-14-28 the piloting is normally external; the internal piloting is possible only with the internal check valve (R).

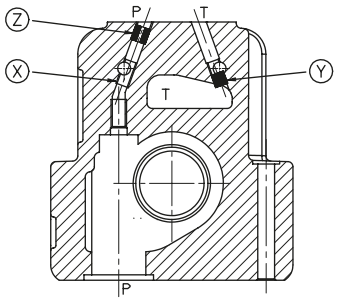
TAB.1 - PLUGS ARRANGEMENT FOR THE PILOT AND DRAIN LINES

Plugs type used: M5x5 both for pilot and drain.
Note: standard M6x6 orifice Ø1,5 insert in the P port (Z)

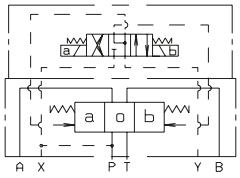


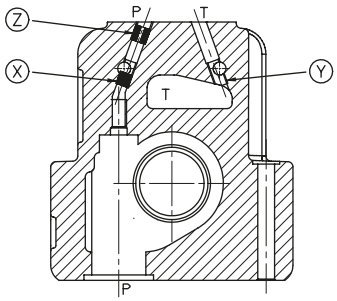
ADH7...I
X internal piloting
Y internal draining



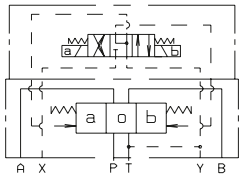


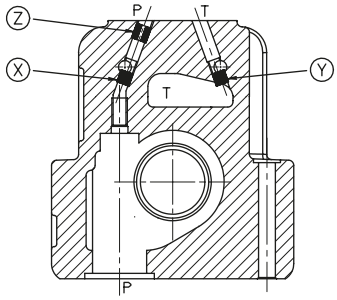
ADH7...IE
X internal piloting
Y external draining



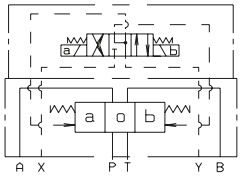


ADH.7...EI
X external piloting
Y internal draining



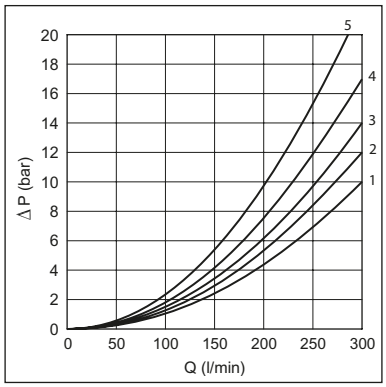


ADH.7...E
X external piloting
Y external draining



ADH7... 4/3 AND 4/2 PILOTED VALVES CETOP 7/NG16

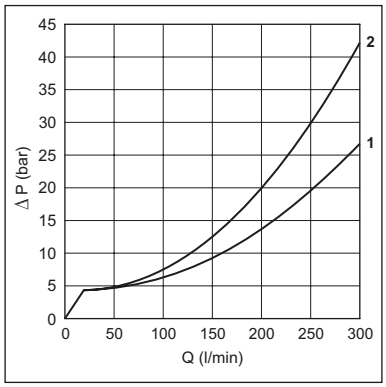
PRESSURE DROPS



The two diagrams show the "Pressure drops" in relation to spools adopted for normal usage (see table).
The fluid used was a mineral based oil with a viscosity of 46 mm²/s at 40° C.

Spool type		Connections				
		P → A	P → B	A → T	B → T	P → T
01	Energized	2	1	3	3	
02	Energized De-Energized	1	1	3	3	2
03	Energized De-Energized	2	1	3	3	
04	Energized De-Energized	2	2	4	4	5
05	Energized De-Energized	1 2	1 2	2	2	
66	Energized De-Energized	1	1	2	3 4	
10	Energized	2	1	3	3	
14	Energized De-Energized	1	1	3	3	4
28	Energized De-Energized	1	1	3	3	4
23	Energized	2	1	3	3	
		Curve No.				

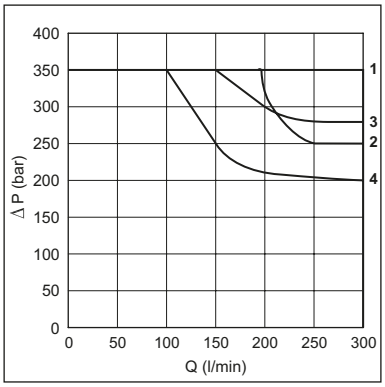
PRESSURE DROPS FOR INTERNAL CHECK ON P VERSION



Spool type	Connections		
	P→A	P→B	P→T
02	1	1	1
04	1	1	2
	Curve No.		

The limit of use test has been carried out with external draining and orifice Ø1,5 insert in the P port (Z). The fluid used was a mineral based oil with a viscosity of 46 mm²/s at 40° C.

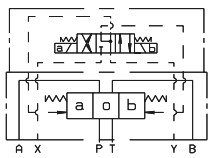
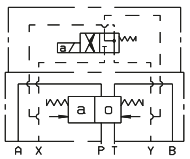
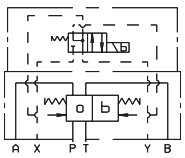
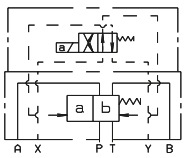
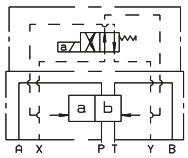
LIMIT OF USE



Spool type	
01	1
02	2
03	1
04	3
05	1
66	1
10	1
14	4
28	4
23	1

(•) For the "E mounting" the locating spring works only with the steady system (* Spools with price increasing)

SPOOLS AND MOUNTING TYPE

	C mounting	A mounting	B mounting	E mounting (•)	P mounting
Pilot Piloted	AD3E03C... ADH7C...	AD3E03E... ADH7A...	AD3E03F... ADH7B...	AD3E16E... ADH7E...	AD3E16E/AD3E16F ADH7P...
Scheme Spool type					
01					
02					
03					
04*					
05					
66					
10*					
14*					
28*					
23*					

PILOT SOLENOID CONTROL VALVE SPECIFICATIONS

FOR DIFFERENT CONTROLS, PLEASE CONTACT OUR TECHNICAL DEPARTMENT

Max. operating pressure ports P/A/B	350 bar
Max. operating pressure port T (int. drainage)	160 bar
Max. operating pressure port T (ext. drainage)	250 bar
Max. piloting pressure	210 bar
Min. piloting pressure*	12 bar
Max flow	300 l/min.
Piloting oil volume for engagement 3 position valves	4 cm^3
Piloting oil volume for engagement 2 position valves	8 cm^3
Hydraulic fluid	mineral oil DIN 51524
Fluid viscosity	2.8 ÷ 380 mm^2/s
Fluid temperature	-20°C ÷ 70°C
Ambient temperature	-20°C ÷ 50°C
Max. contamination level	class 10 in accordance with NAS 1638 with filter $\beta_{25} \geq 75$
Weight ADH7 without pilot valve	7 Kg
Weight ADH7 with pilot valve with 1 AC solenoid	8,2 Kg
Weight ADH7 with pilot valve with 1 DC solenoid	8,4 Kg
Weight ADH7 with pilot valve with 2 AC solenoids	8,5 Kg
Weight ADH7 with pilot valve with 2 DC solenoids	9 Kg

Note: the solenoid valve type **ADC3E...** (with A09 coil) and **AD3E...** (with D15 or B14 coils) could be used both as pilote valve, without any changement of technical features.

* For valves with internal drain (Y), tank pressure on T must be added to min. piloting pressure.

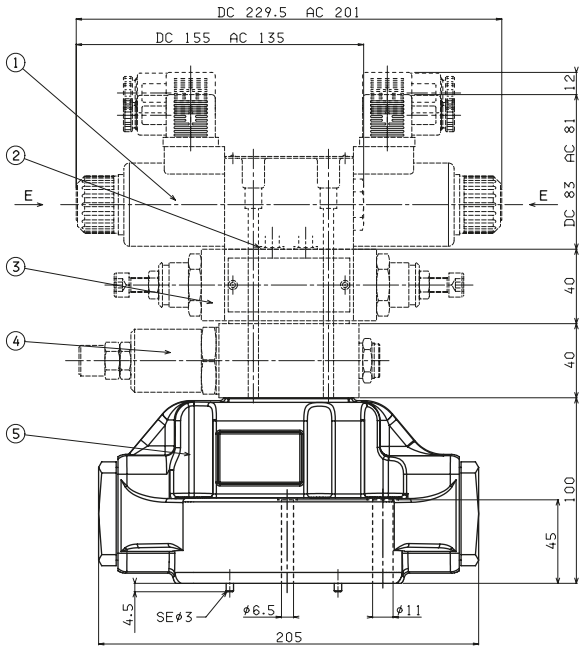
For version "R" with check valve on P, the cracking pressure of 5 bar is obtained with flow rate > 25 l/min.

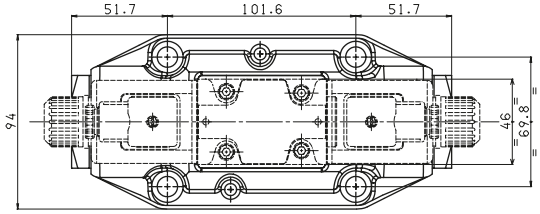
Switching time

Such values refer to a tests carried out with solenoid valve type AD3E03 with P = 100 bar pressure and Q = 100 l/min flow. Orifice ø1.5 mm, insert on piloting port, using a mineral oil at 40°C. with 46 mm^2/s viscosity.

SWITCHING TIMES OF PILOTED VALVES

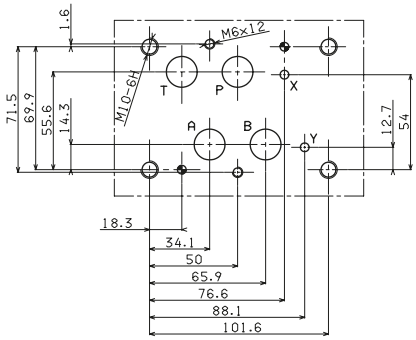
Solenoids	**ENERGIZING** ±10% (ms)			**DE-ENERGIZING** ±10% (ms)	
No. Spool	**01 - 03**			**01 - 03**	
Scheme	2 positions	3 positions		2 positions	3 positions
AC	50	20		25	30
DC	70	35		40	50
No. Spool	**02**	**04**	**02 - 04**	**02 - 04**	
Scheme	2 posit.	2 posit.	3 posit.	2 positions	3 positions
AC	35	60	30	25	25
DC	55	80	40	40	50





1 Piloted solenoid valve type **AD3E...** or **ADC3E... CETOP 3/NG6**
2 Calibrated diaphragms **AD3E...**
3 Flow regulation valve type **AM3QF..C**
4 Pressure reduction valve type **AM3RD..C**
5 Main valve type **ADH7..E**

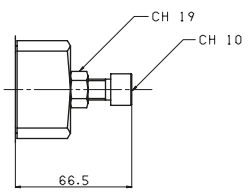
CETOP 7 MOUNTING SURFACE



- Piloted valve fixing:
  n° 4 screws T.C.E.I. M10x60 - Tightening torque 40 Nm
  n° 2 screws T.C.E.I. M6x55 - Tightening torque 8 Nm

- Seals:
  n° 4 OR 2-118 PARKER (type 130)
  n° 2 OR 2-013 PARKER (type 2043)

SPOOL STROKE ADJUSTMENT

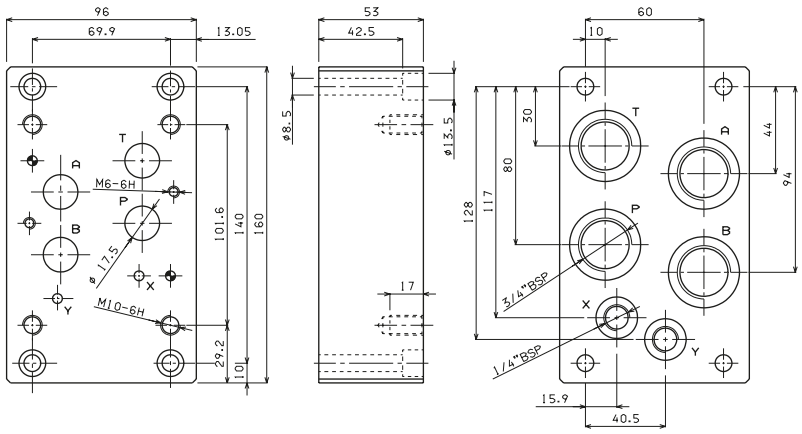


BSH712 WITH P, T, AND A, B REAR 3/4" BSP

BSH	Single plate for piloted valve
7	CETOP 7/NG16
12	3/4" BSP rear connectors
00	No variant
1	Serial No.

Weight: 5,5 Kg

Fixing screws M8x55 ISO 4762

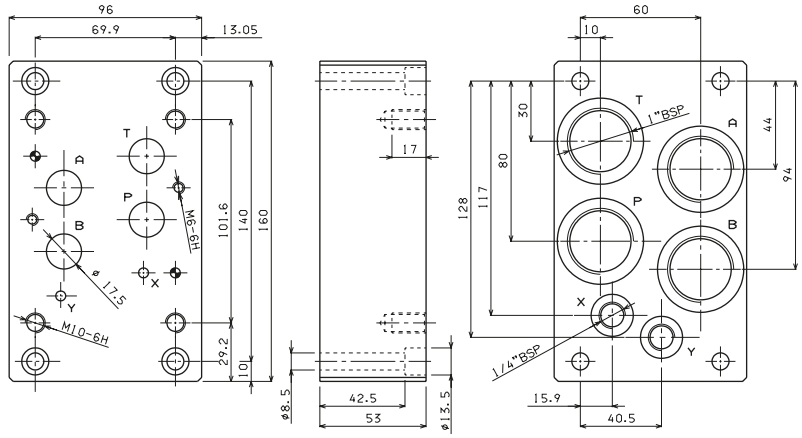


BSH713 WITH P, T AND A,B REAR 1" BSP

BSH	Single plate for piloted valve
7	CETOP 7/NG16
13	1" BSP rear connectors
00	No variant
1	Serial No.

Weight: 4,7 Kg

Fixing screws M8x55 ISO 4762

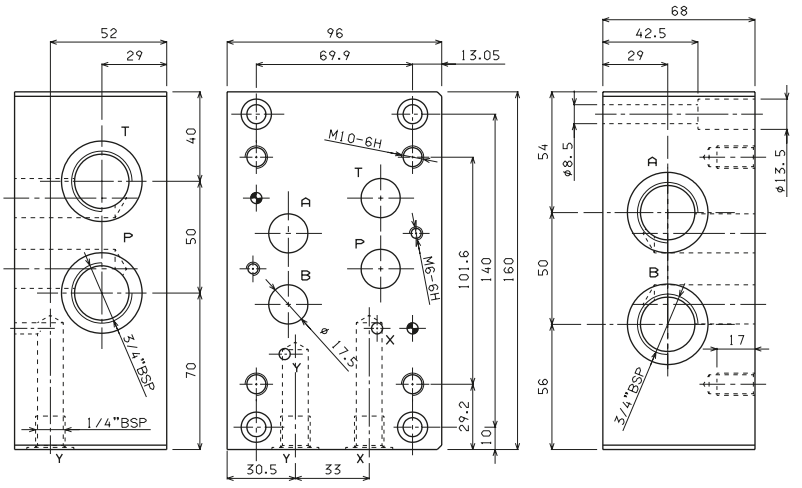


BSH714 WITH P, T AND A, B SIDE 3/4" BSP

BSH	Single plate for piloted valve
7	CETOP 7/NG16
14	3/4" BSP side connectors
00	No variant
1	Serial No.

Weight: 6,3 Kg

Fixing screws M8x55 ISO 4762

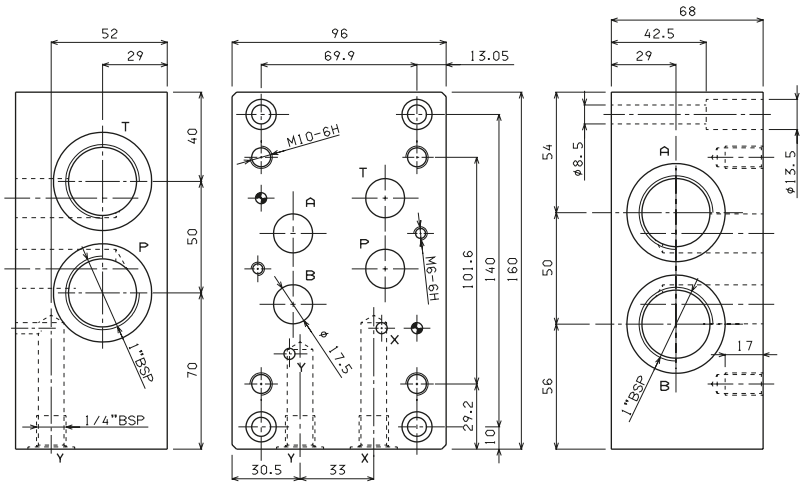


BSH715 WITH P, T AND A, B SIDE 1" BSP

BSH	Single plate for piloted valve
7	CETOP 7/NG16
15	1" BSP side connectors
00	No variant
1	Serial No.

Weight: 6,3 Kg

Fixing screws M8x55 ISO 4762

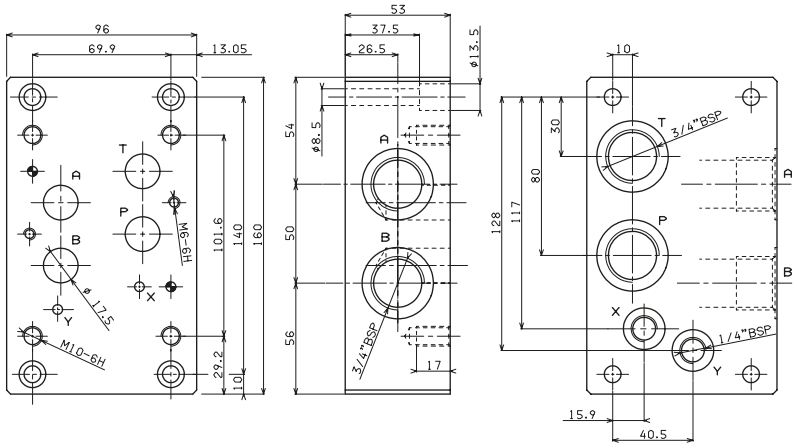


BSH716 WITH P AND T REAR, A AND B SIDE 3/4" BSP, X AND Y REAR

BSH	Single plate for piloted valve
7	CETOP 7/NG16
16	3/4" BSP rear and side connectors
00	No variant
1	Serial No.

Weight: 5,1 Kg

Fixing screws M8x50 ISO 4762



BSH717 WITH P AND T REAR, A AND B SIDE 1" BSP, X AND Y REAR

BSH	Single plate for piloted valve
7	CETOP 7/NG16
17	1" BSP rear and side connectors
00	No variant
1	Serial No.

Weight: 5,3 Kg

Fixing screws M8x55 ISO 4762

