CD.3.*.E... DIRECTIONAL CONTROL STACKABLE VALVE WITH D15 COILS

OFF-HIGHWAY MACHINERY

Directional control stackable valve body is available in two different sizes: G3/8" or 9/16-18UNF (SAE 6).
The operation of the directional valve is electrical. The centring is achieved by means of calibrated length springs which immediately reposition the spool in the neutral position when the electrical signal is shut off. To improve the valve performance, different springs are used for each spool. The solenoids, constructed with a protection class of IP66 in accordance with DIN 40050 standards, are available in direct current form and different voltage. The electrical supply connectors meet DIN 43650 ISO 4400 standards; AMP Junior, AMP Junior and integrated diode, flying leads, Deutsch DT 04 - 2P coil type, connectors are also available with built in rectifiers or pilot lights.

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Max. pressure ports P/A/B/T	250 bar
Max flow	40 l/min
Max excitation frequency	3 Hz
Duty cycle	100% ED
Fluid viscosity	10 ÷ 500 mm²/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 $\beta_{25} \geq 75$
Weight with one DC solenoid	1,389 Kg
Weight with two DC solenoids	1,778 Kg

ORDERING CODE

CD	Directional control stackable valve (with D15 coil)
3	Size
*	Body type (tab. 1)
E	Electrical operator
**	Spool (tab.2) For series connection use spool 04 only
*	Mounting (tab.3)
*	Voltage (tab.4)
**	Variants (tab.5)
1	Serial No.

For series connection configuration, a special individual stackable valve CD.3.*.E.04..PT.1 (A B or G parallel body type only, with spool 04 type, PT variant) must always be used as first element. For other individual stackable valve must use body D E or H connector series type with spool 04 only.**

TAB.1 - BODY TYPE

A	Ports G3/8" parallel
B	Ports 9/16 - 18UNF parallel
D*	Ports G3/8" series
E*	Ports 9/16 - 18UNF series
G	Attachment style, parallel presetting for modular valves
H*	Attachment style, series presetting for modular valves
L	Ports G3/8" parallel - LS vers.
M	Attachment style, parallel-LS vers. presetting for modular valves

(*) For series connection configuration see note below ordering code

TAB.2 - STANDARD SPOOLS

TWO SOLENOIDS, SPRING CENTRED "C" MOUNTING			
Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04*		-	

ONE SOLENOID, SIDE A "E" MOUNTING			
Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04*		-	
15		-	
16		+	

ONE SOLENOID, SIDE B "F" MOUNTING			
Spool type		Covering	Transient position
01		+	
02		-	
03		+	
04*		-	
15		-	
16		+	

* SPOOL WITH PRICE INCREASING

TAB.4 - D15 COIL (DC - 30W)

L	12V	115Vac/50Hz 120Vac/60Hz with rectifier
M	24V	
V	28V*	
N	48V*	
Z	102V*	230Vac/50Hz 240Vac/60Hz with rectifier
P	110V*	
X	205V*	
W	Without DC coils or connectors	

Voltage codes are not stamped on the plate, their are readable on the coils.

* Special voltage

• AMP Junior (with or without diode) and Deutsch and with flying leads coils, are available in 12V or 24V DC voltage only.
• Plastic type coils are available in 12V, 24V, 28V or 110V DC voltage only.

TAB.5 - VARIANTS TABLE

No variant	00
Viton	V1
Pilot light	X1
Rectifier	R1
Emergency button	E1
Rotary emergency button	P1
Rotary emergency button (180°)	P5
Solenoid valve without connectors	S1
First element for series connection	PT
AMP Junior connection	AJ
AMP Junior and integrated diode	AD
Coil with flying leads (length 175 mm)	SL
Coil with Deutsch DT04-2P conn.	CZ
Palstic type coil	BR
Viton + Pilot light	VX
Viton + Rectifier	VR
Pilot light + Rectifier	XR

Other variants relate to a special design

TAB.3 MOUNTING

STANDARD	
C	
E	
F	
SPECIALS (WITH PRICE INCREASING)	
G	
H	

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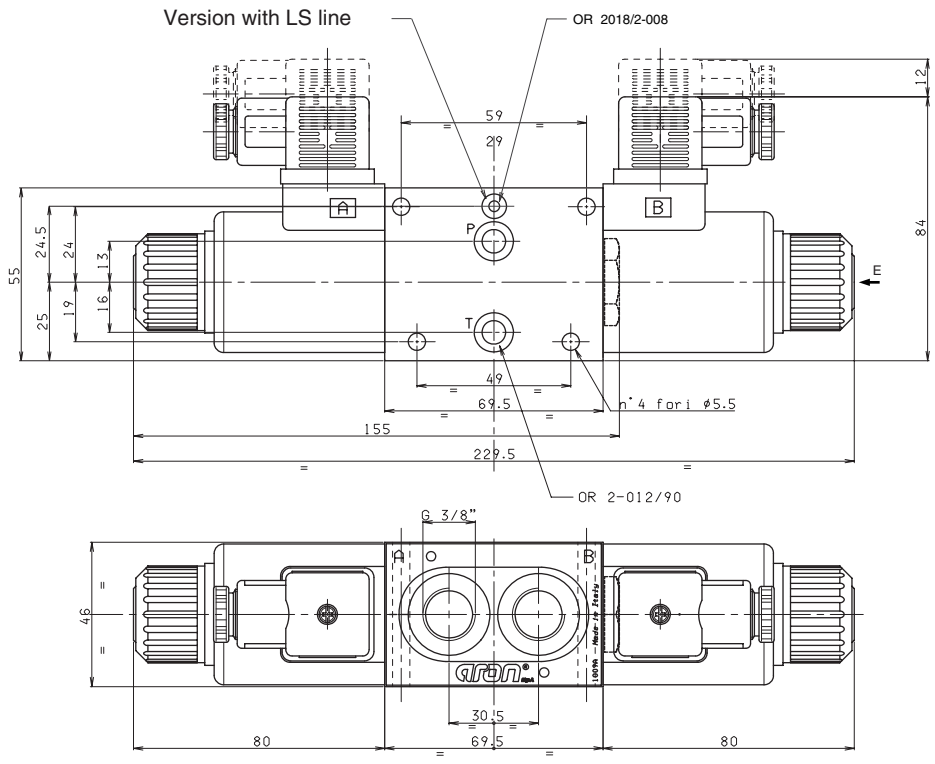
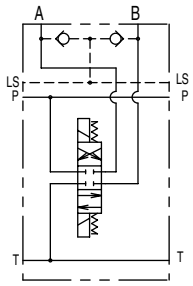
OVERALL DIMENSIONS



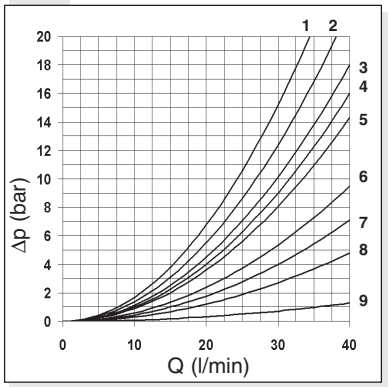
E = Manual override

Parallel body version with LS line



G 3/8" fittings, max. tightening torque = **36 Nm / 3.6 kgm**

PRESSURE DROPS
DIRECTIONAL CONTROL STACKABLE VALVE



Spool type	Connections					
	P →A	P →B	A →T	B →T	P →T	P/ T passing
01	4	4	4	4	/	9
02 (p*)	5	5	5	5	7	9
02 (s*)	5	5	6	6	8	/
03	4	4	5	5	/	9
04 (p*)	1	1	2	2	5	9
04 (s*)	5	5	4	4	6	/
15-16 F	5	3	5	2	/	9
15-16 E	3	5	2	5	/	9
	Curve No.					

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 mm²/s at 40 C°; the tests have been carried out at a fluid temperature of 40 C°..

(p*) Parallel connections
(s*) Series connections

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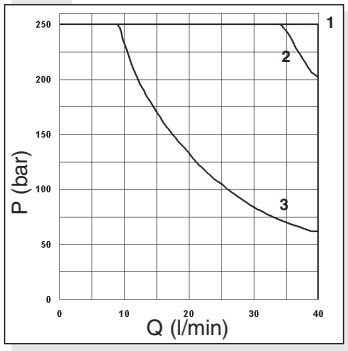
LIMITS



Spool type	n° curve
01	1
02	1
03	1
04	2
15	3
16	1(3*)

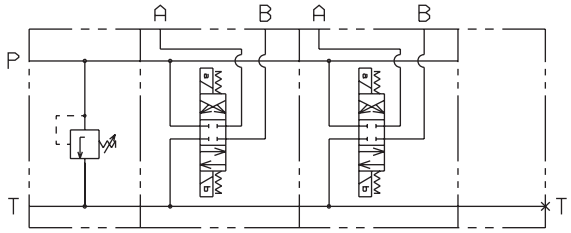
The tests have been carried out with solenoids at operating temperature and a voltage 10% less than rated voltage with a fluid temperature of 50 C°. The fluid used was a mineral oil with a viscosity of 46 mm²/s at 40 degrees C. The values in the diagram refer to tests carried out with the oil flow in two directions simultaneously (e.g. from P to A and at the same time B to T).

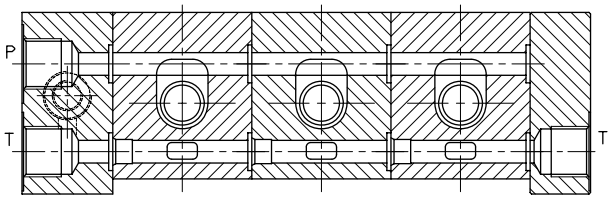
In the cases where valves 4/2 and 4/3 are used with the flow in one direction only, the limits of use could have variations which may even be negative (See curve No 3 and Spool No 16 used as 2 or 3 ways). The tests were carried out with a counter-pressure of 2 bar at T port.

(3*) = 16 spools used as 2 or 3 way, follow the curve n°3

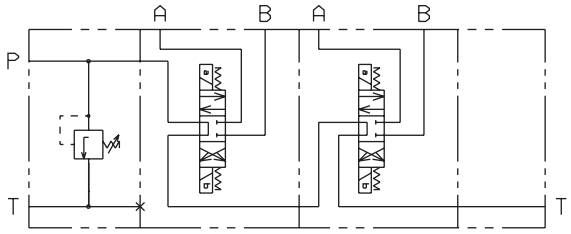
HYDRAULIC SYMBOLS AND INSTRUCTION OF CONNECTION

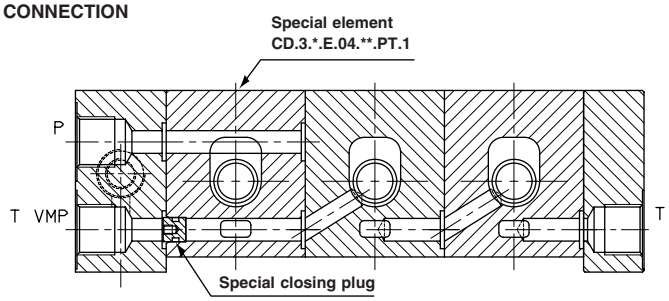
PARALLEL CONNECTION





SERIES CONNECTION

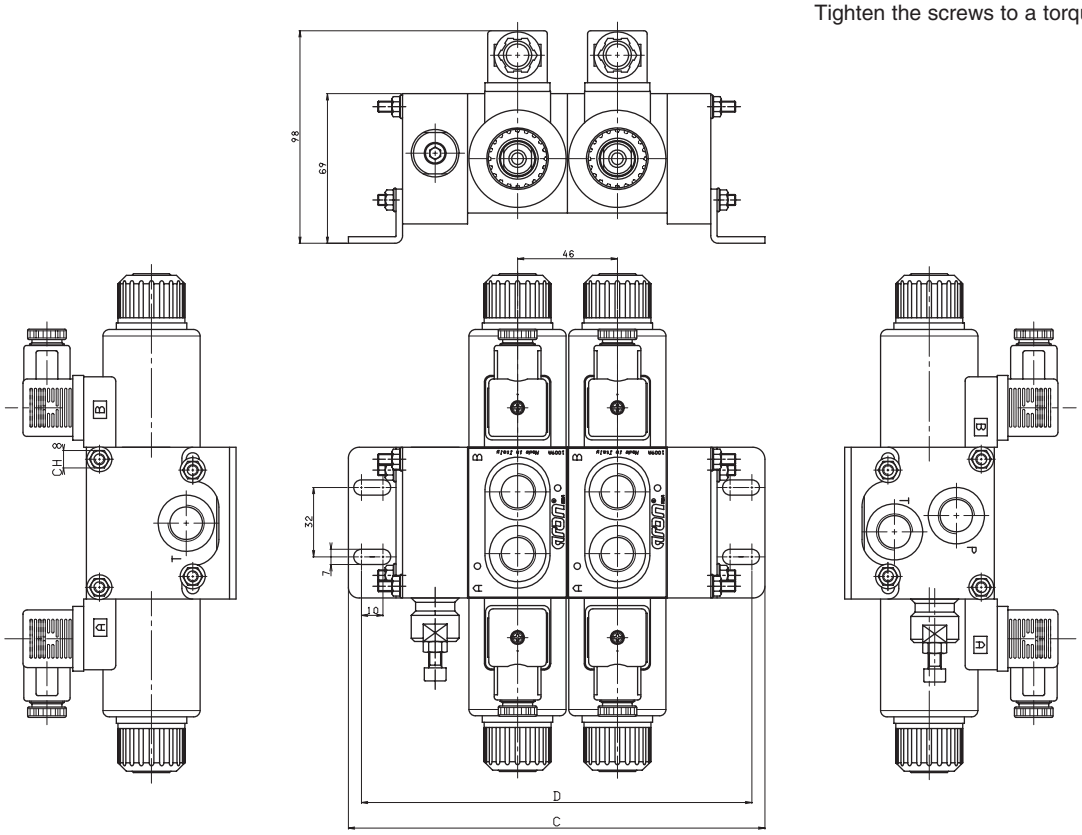




For series connection configuration, a special individual valve bank section (CD.3.*.E.04..PT.1) must always be used as first element (see ordering code)**

OVERALL DIMENSIONS

Tighten the screws to a torque of **5 Nm**



No. Elements	FE02-FE Inlet module C	Length (mm)	D	FE 10 Inlet module C	Length (mm)	D
2	192		180	202		190
3	238		226	248		236
4	284		272	294		282
5	330		318	340		328
6	376		364	386		374

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