

4/3 Directional valve elements
with or without secondary relief valves,
with or without LS connections,
and with 2/2 solenoid cartridge valve
B8_5A... (EDB-A-VEI)

RE 18300-58
Edition: 06.2022



- ▶ Size 4
- ▶ Series 00
- ▶ Maximum operating pressure 310 bar (4500 psi)
- ▶ Maximum flow 25 l/min (6.6 gpm)
- ▶ Port connections G 3/8 SAE6 - M16x1.5

General specifications

- ▶ Valve elements with 4 ways and 2 positions.
- ▶ Control spools directly operated by solenoids with removable coils.
- ▶ In the de-energized condition, the control spool is held in the central position by return spring.
- ▶ Wet pin tubes for DC coils, with push rod for mechanical override; burnish surface treatment.
- ▶ Manual override (push-button or screw type) available as option.
- ▶ Additional solenoid cartridge 2/2, NO or NC, single locking or dual locking on port A.

Contents

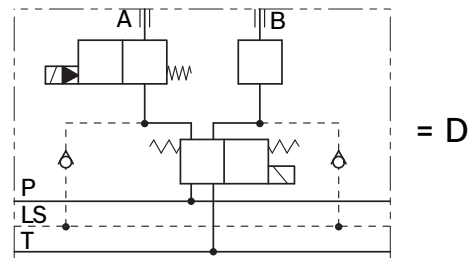
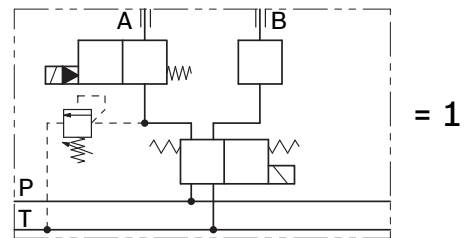
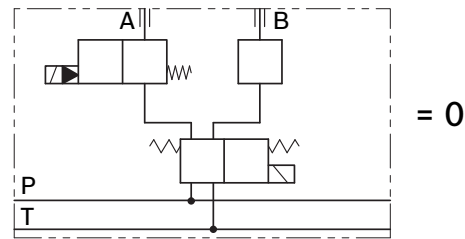
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Ordering details

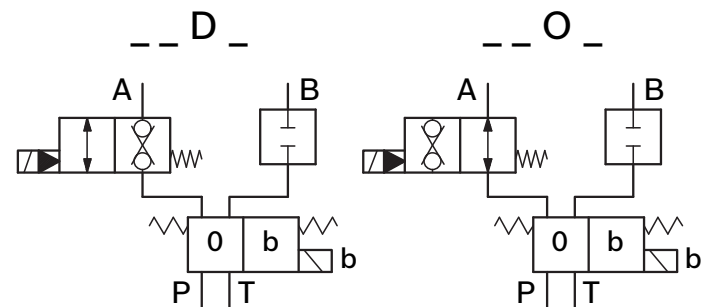
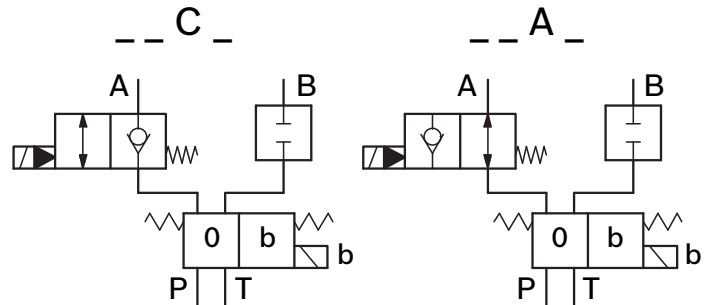
01	02	03	04	05	06	07	08	09	10	11
B	8		5A	E401						
Family										
01	Directional Valve elements EDB									B
Type										
02	Size 4									8
Configuration										
03	Standard									0
	With secondary valve on A									1
	With channels for Load Sensing									D
Coil type										
04	D36									5A
Spool variants										
05	4/2 operated on side b only									E401
Voltage supply										
		31	07	04	03	01	00			
06	Without coil	-	-	-	-	-	●			00
	12 V DC	●	●	●	●	●	-			OB
	24 V DC	●	●	●	●	●	-			OC
	48 V DC	-	●	●	●	●	-			OD
	96 V DC	-	-	-	-	●	-			OU
	205 V DC	-	-	-	-	●	-			AH
Electric connections										
07	Without coils									00
	With coils, without mating connector DIN EN 175301-803									01 ¹⁾
	With coils, with bi-directional diode, without mating connector vertical Amp-Junior									03
	With coils, with bi-directional diode, without mating connector horizontal Amp-Junior									04
	With coils, with bi-directional diode, without mating connector DT04-2P									07
	With coils and bipolar sheathed lead 300mm (11,8 in) long									31
Ports										
08	G 3/8 DIN 3852									3
	M 16x1,5 DIN 3852									U
	9/16-18 UNF 2-B (SAE6)									B
Secondary valves setting ²⁾										
09	50-210 bar (725-3045 psi)									0
	100-310 bar (1450-4500 psi)									1
	25-50 bar (362-725 psi)									2
	Without secondary valve									3
Solenoid screw-in cartridge VEI										
10	Without valve									N
	Normally closed									C
	Normally open									A
	Dual locking normally closed									D
	Dual locking normally open									O
Options										
11	No options									No code
	Standard									0
	Push-button type manual override									P
	Screw type manual override									F

• = Available - = Not available

▼ Symbols



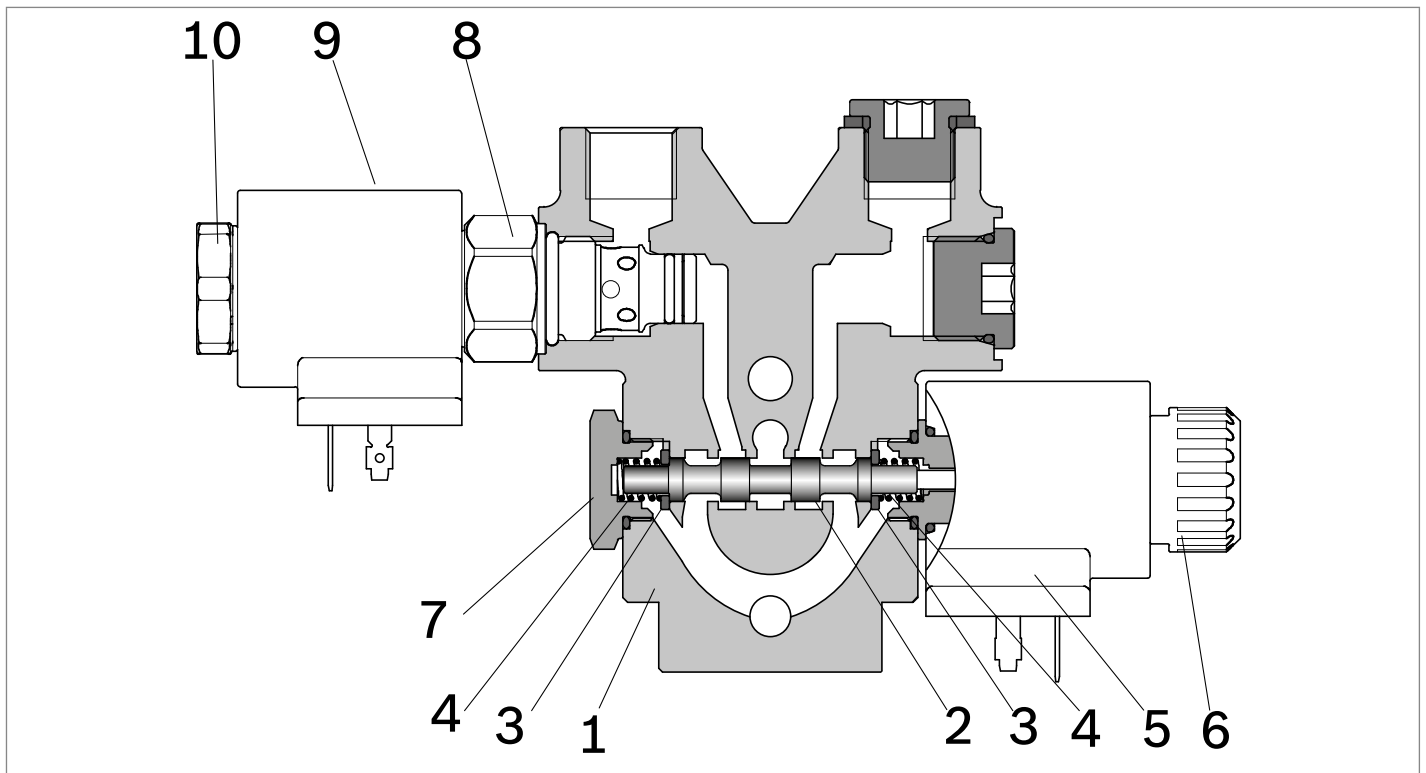
▼ Spool variants



1) For connectors ordering code see data sheet RE 18325-90.

2) VEI solenoid cartridge must be ordered separately.
The secondary valves have a maximum flow capacity of 6 l/min. (1.6 gpm).

Functional description



The sandwich plate design directional valve elements B8_5A... are very compact direct operated solenoid valves which control the start, the direction and the leak free stop of the oil flow. These elements basically consist of a stackable housing (1) with a control spool (2), one solenoid (5), a spring holder plug (7); two return springs (4); a solenoid screw-in cartridge VEI (8) with its coil (9). When energized, the force of the solenoid (5) pushes the control spool (2) from its rest position "0" to the end position "b". If there is a solenoid cartridge VEI (8) type C, A, O, the oil flow goes directly to the port A; if there is a solenoid cartridge VEI (8) type D (Dual locking), it is

necessary to energize the solenoid cartridge as well in order to allow the oil flow to the port A. Once the solenoid (5) is de-energized, the return spring (4) pushes the spool thrust washer (3) back against the housing and the spool (2) returns in its rest position. The leak free holding at port A is provided by energizing (or de-energizing, if the VEI is NC type) the solenoid cartridge. By energizing open the VEI (8) ("C" and "A" versions), the A port is open to tank and downstream flow is possible. The coils are fastened to the respective solenoids (5) and VEI (8) by the ring nuts (6) and (10).

Technical data

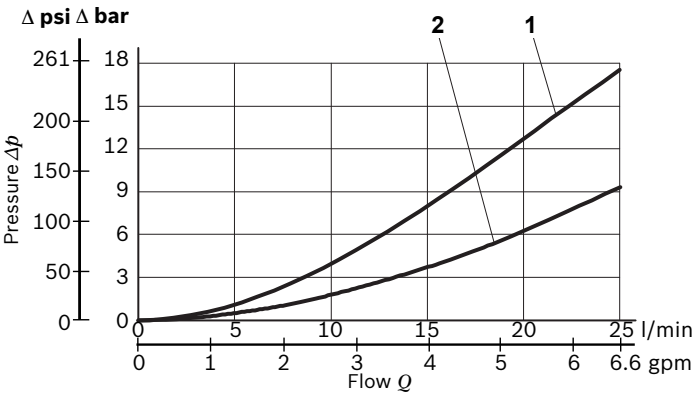
General						
Valve element with solenoid	kg (lbs)	1.8 (3.96)				
Ambient Temperature	°C (°F)	-30....+90 (-22....+194) (NBR seals)				
Hydraulic						
Maximum pressure at P, and A ports	bar (psi)	310 (4500)				
Maximum pressure at T	bar (psi)	250 (3625)				
Maximum inlet flow	l/min (gpm)	25 (6.6)				
Hydraulic fluid		Mineral oil based hydraulic fluids HL (DIN 51524 part 1). Mineral oil based hydraulic fluids HLP (DIN 51524 part 2). For use of environmentally acceptable fluids (vegetable or polyglycol base) please consult us.				
General properties: it must have physical lubricating and chemical properties suitable for use in hydraulic systems such as, for example:						
Fluid Temperature	°C (°F)	-30....+100 (-22....+212) (NBR seals)				
Permissible degree of fluid contamination		ISO 4572: $\beta_{x \geq 75} X=12...15$ ISO 4406: class 20/18/15 NAS 1638: class 9				
Viscosity range	mm²/s	5....420				
Electrical						
Voltage type		DC (AC only with RAC connection)				
Voltage tolerance (nominal voltage)	%	-10 +10				
Duty		Continuous, with ambient temperature $\leq 50^{\circ}\text{C}$ (122°F)				
Coil wire temperature not to be exceeded	°C (°F)	150 (302)				
Insulation class		H				
Compliance with		Low Voltage Directive LVD 73/23/EC (2006/95/EC), 2004/108/EC				
Coil weight with connection EN 175301-803	kg (lbs)	0.18 (0.40)				
Voltage	V	12	24	48	96	205
Voltage type		DC	DC	DC	DC	DC
Power consumption	W	20	20	20	20	20
Current (nominal at 20 °C (68 °F))	A	1.62	0.84	0.45	0.21	0.01
Resistance (nominal at 20 °C (68 °F))	Ω	7.4	28.4	106.4	451	2062

Note

For applications with different specifications consult us

Code	Voltage [V]	Connector type	Coil description	Marking	Coil Mat no.
OB 01	12 DC	EN 175301-803 (Ex. DIN 43650)	D3601 12DC	12V DC	R901393412
OB 03	12 DC	AMP JUNIOR	D3603 12DC	12V DC	R901435507
OB 04	12 DC	AMP JUNIOR Horizontal	D3604 12DC	12V DC	R901395031
OB 07	12 DC	DEUTSCH DT 04-2P	D3607 12DC	12V DC	R901394397
OC 01	24 DC	EN 175301-803 (Ex. DIN 43650)	D3601 24DC	24V DC	R901393577
OC 03	24 DC	AMP JUNIOR	D3603 24DC	24V DC	R901435494
OC 04	24 DC	AMP JUNIOR Horizontal	D3604 24DC	24V DC	R901395035
OC 07	24 DC	DEUTSCH DT 04-2P	D3607 24DC	24V DC	R901394399
OD 01	48 DC	EN 175301-803 (Ex. DIN 43650)	D3601 48DC	48V DC	R901394117
OU 01	96 DC	EN 175301-803 (Ex. DIN 43650)	D3601 96DC	96V DC	R901394229
AH 01	205 DC	EN 175301-803 (Ex. DIN 43650)	D3601 205DC	205V DC	R901394231

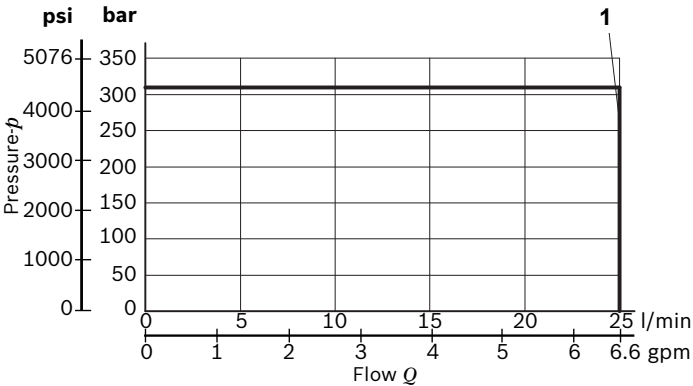
Characteristic curves



Spool Variant	Curve no.	
	B>T	P>A
X301	1	2

Measured with hydraulic fluid ISO-VG32 at 45° ±5 °C (113° ±9 °F); ambient temperature 20 °C (68 °F).

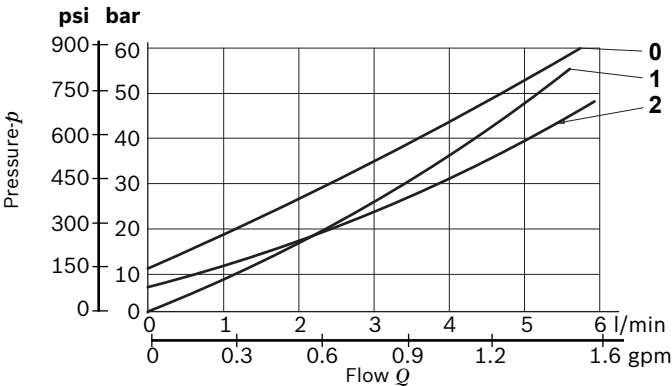
Performance limits



Spool Variant	Curve no.
X401	1

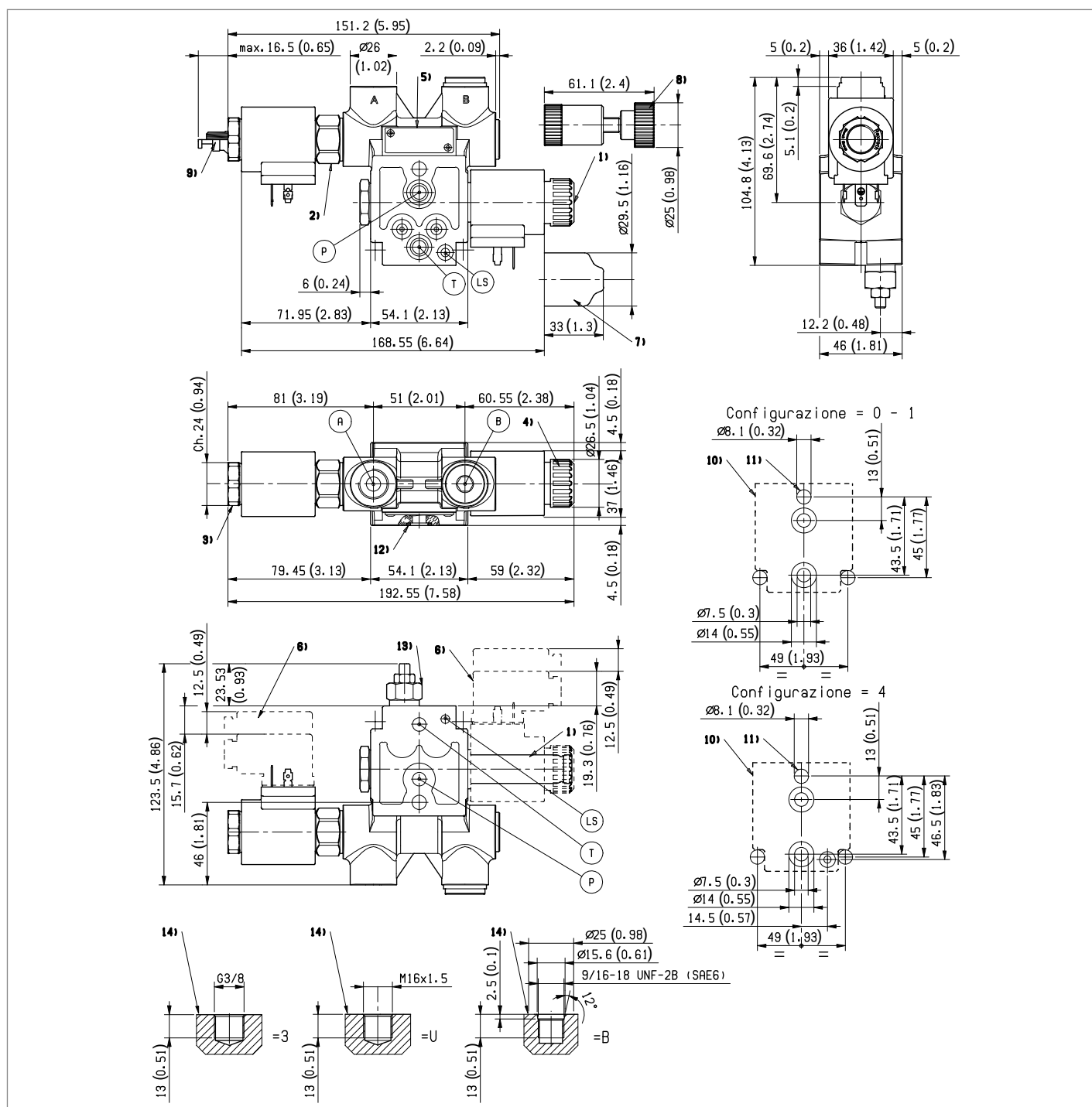
The performance curves are measured with flow going across and coming back, like P>A and B>T, with symmetrical flow areas.
In case of special circuit connections, the performance limits can change.

Lowest pressure setting curve for secondary valves



Secondary valve setting	Curve no.
50-210 bar (700-2950 psi)	0
100-310 bar (1400-4500 psi)	1
25-50 bar (350-700 psi)	2

External dimensions and fittings

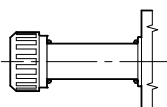
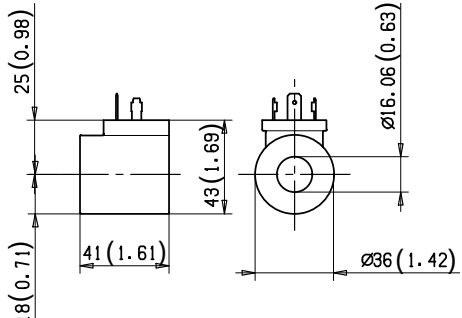
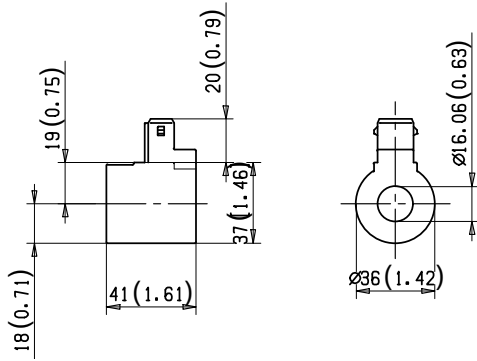
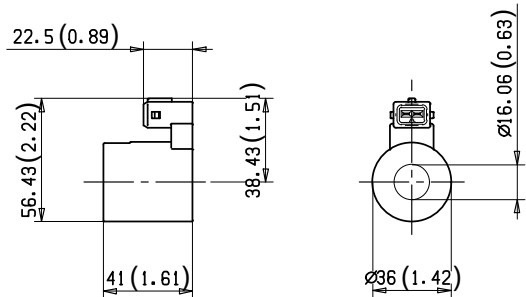
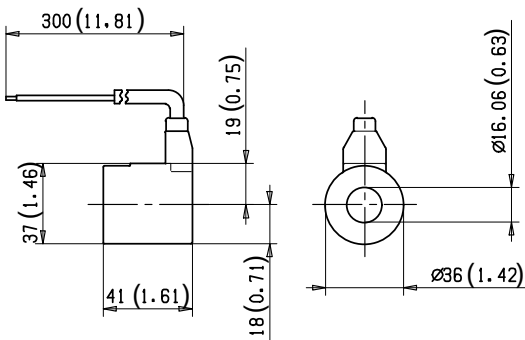
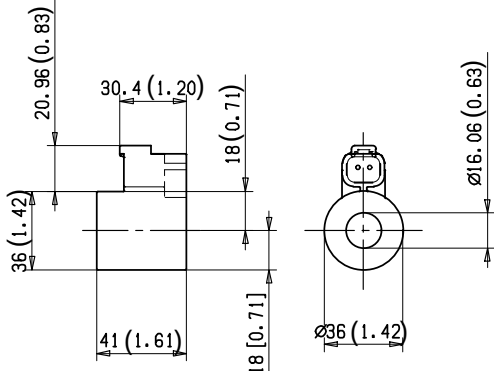


- 1 Solenoid tube $\varnothing 16$ (0.63inch).
- 2 Screw-in solenoid cartridge VEI hex 24mm (0.94inch).
- 3 Ring nut for cartridge coil locking (Ch.24); torque 2-3Nm (1.5-2.2 ft-lb).
- 4 Ring nut for tube coil locking (OD 26.5); torque 3-4Nm (2.2-3 ft-lb).
- 5 Identical label.
- 6 Clearance needed for connector removal.
- 7 Optional push-button manual override, EP type, for spool opening: it is pressure stuck to the ring nut for tube coil locking. Mat no. R930059524.
- 8 Optional screw type manual override, EF type, for spool opening:

it is screwed (torque 5-6Nm (3.7-4.4 ft-lb)) to the tube as replacement of the coil ring nut. Mat no. R930059561.

- 9 Optional manual override for VEI cartridge: it can be push/pull or screw type. Please refer to the VEI catalogue for details.
- 10 Flange specifications for coupling to ED intermediate elements.
- 11 For tie rod and tightening torque information see data sheet RE 18301-90.
- 12 O-Ring for T and P line on ED flange.
- 13 Space needed for secondary valve in configuration 1.
- 14 A and B ports

Electric connection

<p>00</p> 	<p>01</p> 
<p>03 Protection class: IP 65 with female connector properly fitted (see drawing).</p> 	<p>04 Protection class: IP 65 with female connector properly fitted (see drawing).</p> 
<p>31</p> 	<p>07 Protection class: IP 69 K with female connector properly fitted (see drawing).</p> 

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