



DF25

Mechanical control monoblock diverter valve

- 3 ways configuration
- Mechanical lever, cam, electrohydraulic, pneumatic controls

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - (46 cSt) viscosity at 40°C - (104°F) temperature.

WORKING CONDITIONS		
N. of available ways		3
Max. flow rating		280 l/min (74 US gpm)
Max. pressure		315 bar (4600 psi)
Internal leakage A(B)⇒T	Δp = 100 bar (1450 psi)	8 cm ³ /min (0.48 in ³ /min)
Fluid		Mineral based oil
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 80°C (from -4°F to 176°F)
	with FPM (VITON) seals	from -20°C to 100°C (from -4°F to 212°F)
Viscosity	operating range	from 15 to 75 mm ² /s (from 15 to 75 cSt)
	min.	12 mm ² /s (12 cSt)
	max.	400 mm ² /s (400 cSt)
Max. level of contamination		21/19/16 - ISO 4406 - NAS 1638 - class 10
Ambient temperature for working conditions	with mechanical controls	from -40°C to 60°C (from -40°F to 140°F)
	with hydraulic and pneumatic controls	from -30°C to 60°C (from -22°F to 140°F)
	with electric controls	from -20°C to 50°C (from -4°F to 122°F)

NOTE - For different working conditions please contact Sales Dept.

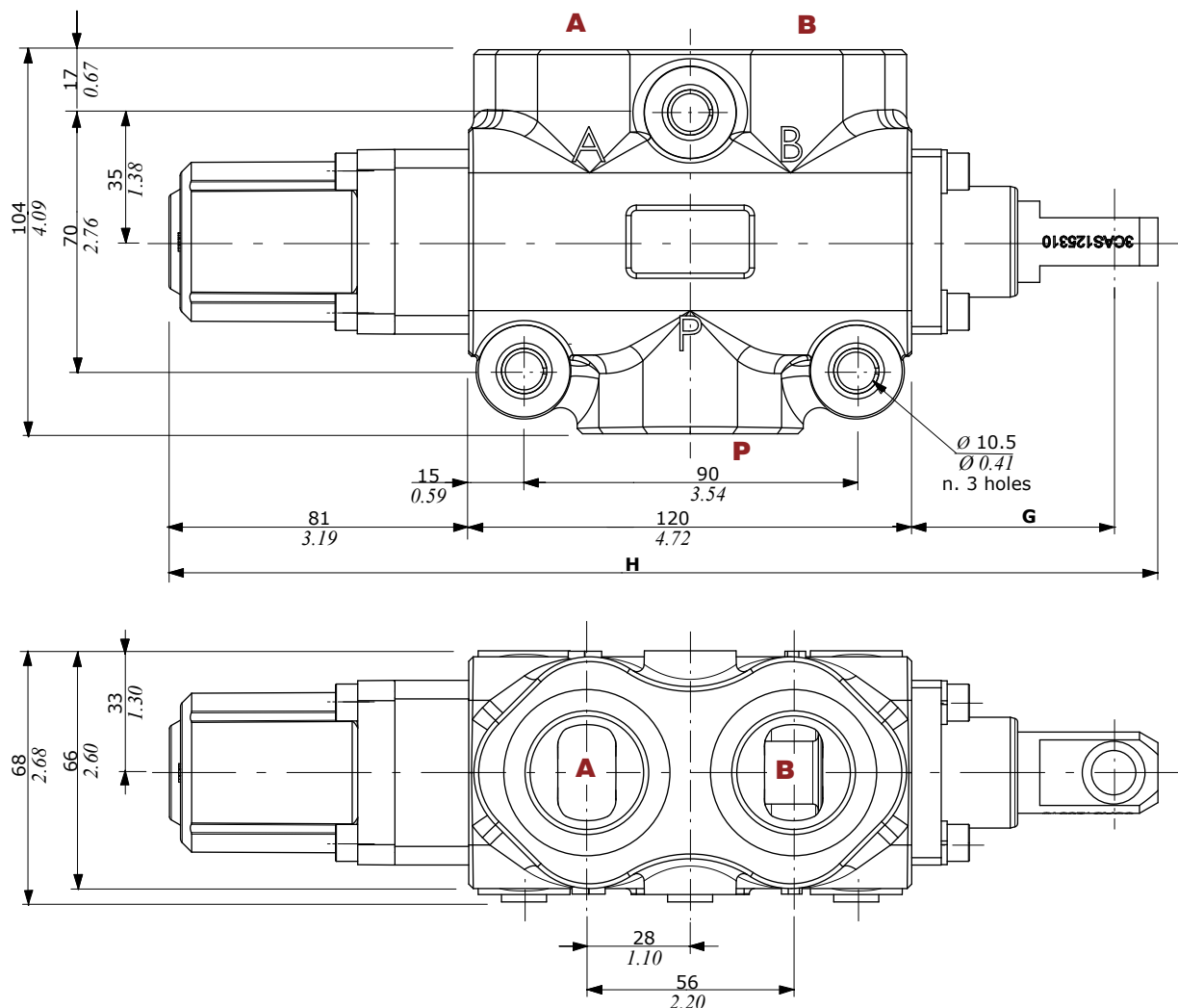
Available threads

PORTS THREAD		
ALL PORTS	BSP	UN-UNF
DF25	G 1	1" 5/16-12 (SAE 16)
PILOT PORTS		
Pneumatic	NPT 1/8-27	NPT 1/8-27
Hydraulic	G 1/4	9/16-18 (SAE 6)

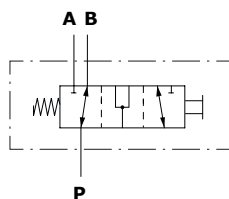
Dimensional data - hydraulic circuit - performance data

3 ways

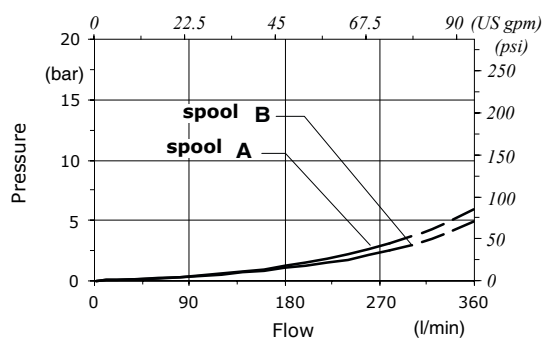
It's possible to obtain 2 ways diverter valve plugging port



	G	H
With spool out	55 mm <i>2.16 in</i>	268 mm <i>10.55 in</i>
With spool in	35 mm <i>1.37 in</i>	248 mm <i>9.76 in</i>



Pressure drop versus flow

$$\mathbf{P} \rightarrow \mathbf{A}(\mathbf{B})$$


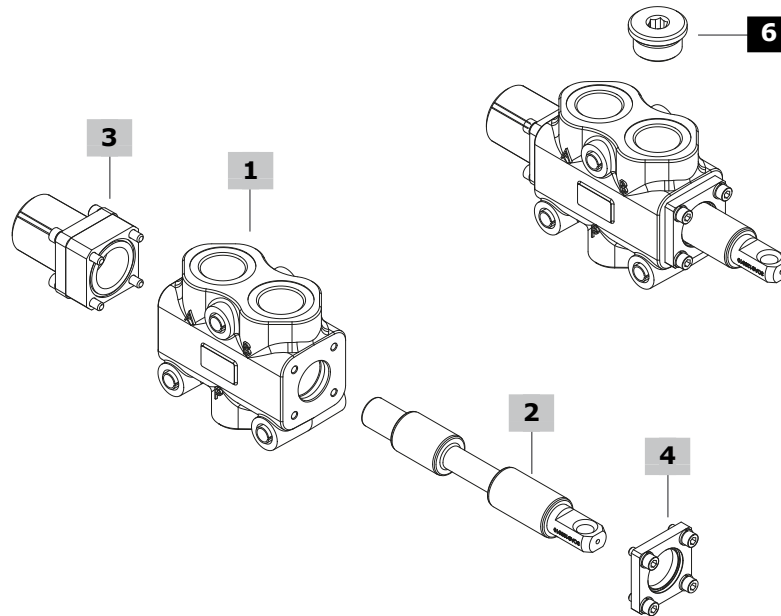
Part ordering codes

Example:

DF25/3 **A** **17** **SLP** - ... - **(CVN)**

1 **2** **3** **4** **5**

Painted with one layer of black Primer antirust

**1 Body kit***

TYPE	CODE	DESCRIPTION
DF25/3	5CO2271300	Standard body kit 3 ways

2 Spools **pag. 58**

TYPE	CODE	DESCRIPTION
A	3CAS125310	Flow in B in pos. 1. Ports connected in transit position
B	3CAS125410	Flow in B in pos. 1. Ports closed in transit position
AC	3CAS125320	As type A, for cam control

3 "A" side spool positioners **pag. 58**

TYPE	CODE	DESCRIPTION
12	5V12125000	Detent in positions 1 and 2
17	5V17125000	Spring return in position 1
17ME	5V17325000	As kit 17, with heavier spring type E
<u>Pneumatic controls: must be coupled to the control kit side B with lever, with plate or cap</u>		
17P	5V17125700	On/off, with spring return in position 1
18P	5V18125700	On/off, with spring return in position 2
<u>Electrohydraulic controls: must be coupled to the control kit side B with lever, with plate or cap</u>		
Control requires collector kit; see page 61		
18E11	5V18125350	Spring return in position 2, 12VDC
	5V18125351	Spring return in position 2, 24VDC

4 "B" side options **pag. 62**

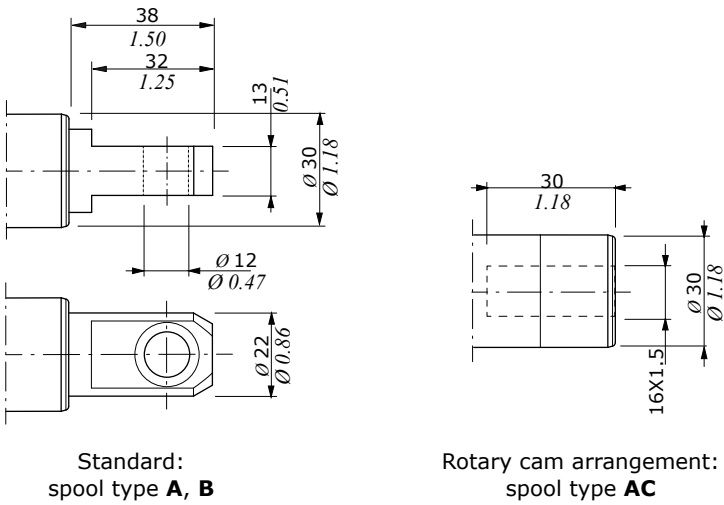
TYPE	CODE	DESCRIPTION
SLP	5COP125000	Without lever box, with dust-proof plate kit
SLC	5COP220000	Without lever box, with cap
L	5LEV120000	Aluminum lever box
CA	5CAM125000	Steel ball bearing cam operation
CB	5CAM125020	Bronze cam operation
<u>Hydraulic controls</u>		
IA2	5IDR520000*	On/off with high pressure pilot, need 17ME control type
IB2	5IDR720000*	On/off with low pressure pilot, need 17ME control type

5 Body threadingSpecify threading always when it is different from **BSP** standard**6 Port plugs***

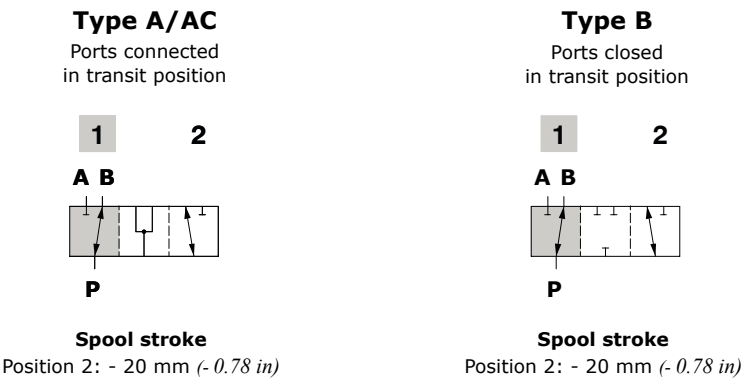
It's possible to obtain 2 ways diverter valve plugging DF25/3 port	
CODE	DESCRIPTION
3XTAP740210	G1" plug

(*) - Codes are referred to **BSP** thread

Spool end



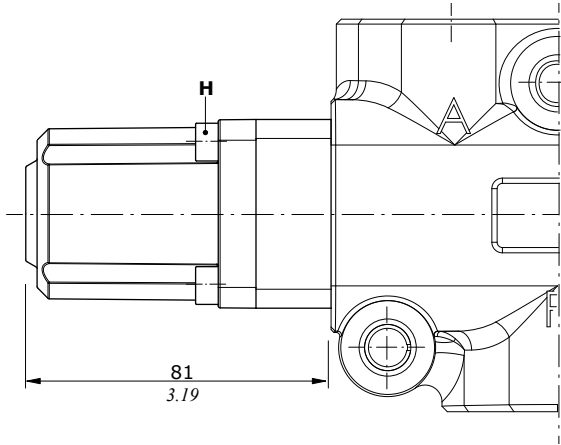
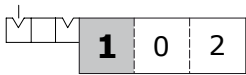
Spool circuits



"A" side spool positioners

With detent

Type 12
Detent in positions 1 and 2



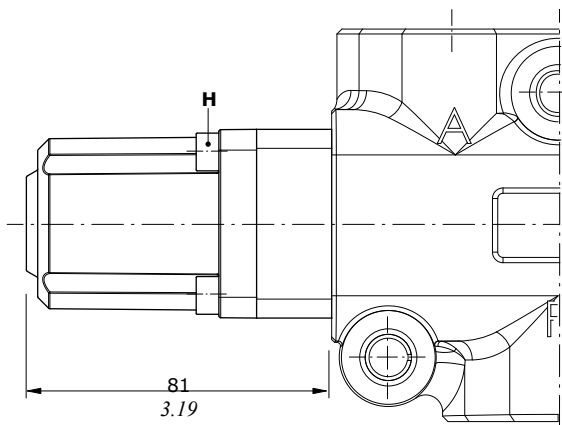
Wrenches and tightening torque
H = wrench 5 - 9.8 Nm (7.2 lbf*ft*)

"A" side spool positioners

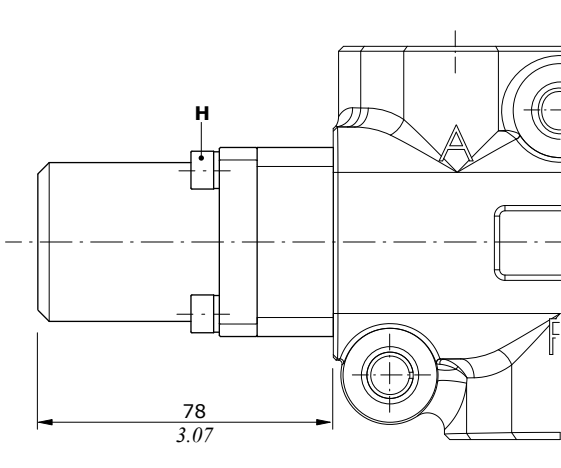
With spring return in position 1

With heavier spring type "E"

Type 17



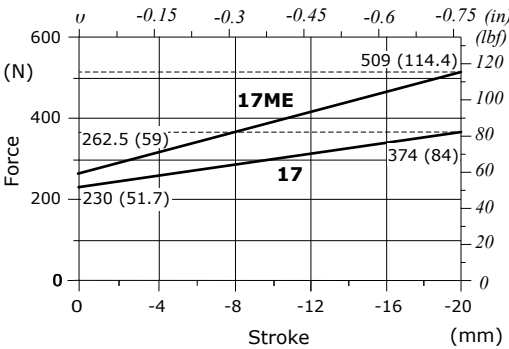
Type 17ME



Wrenches and tightening torque

H = wrench 5 - 9.8 Nm (7.2 lbf)

Force-Stroke diagram

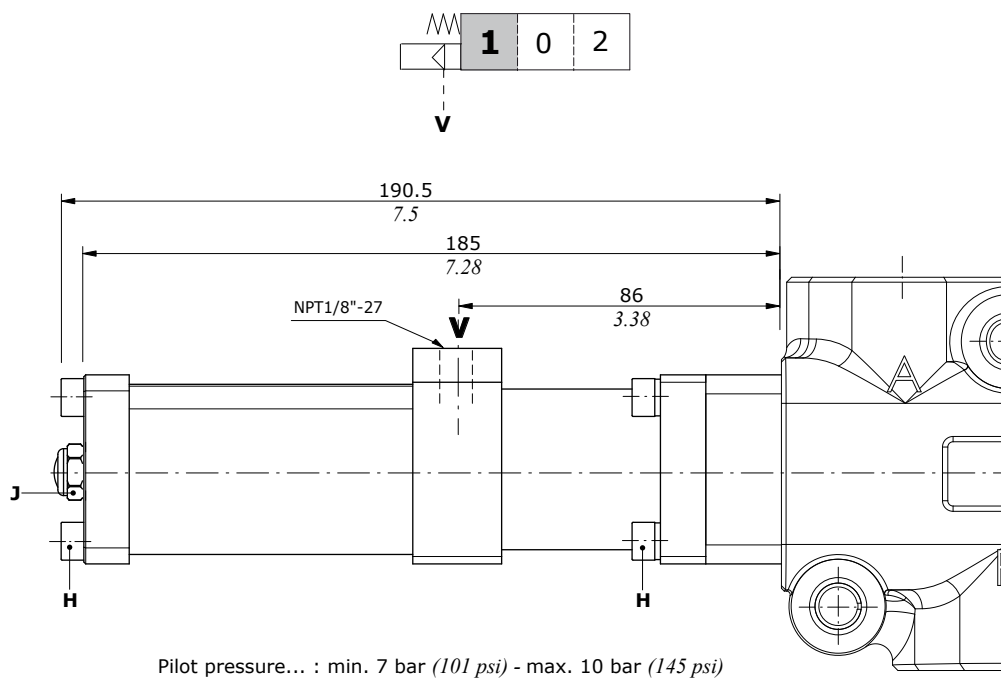


"A" side spool positioners

ON/OFF pneumatic controls

Type 17P

Spring return in position 1



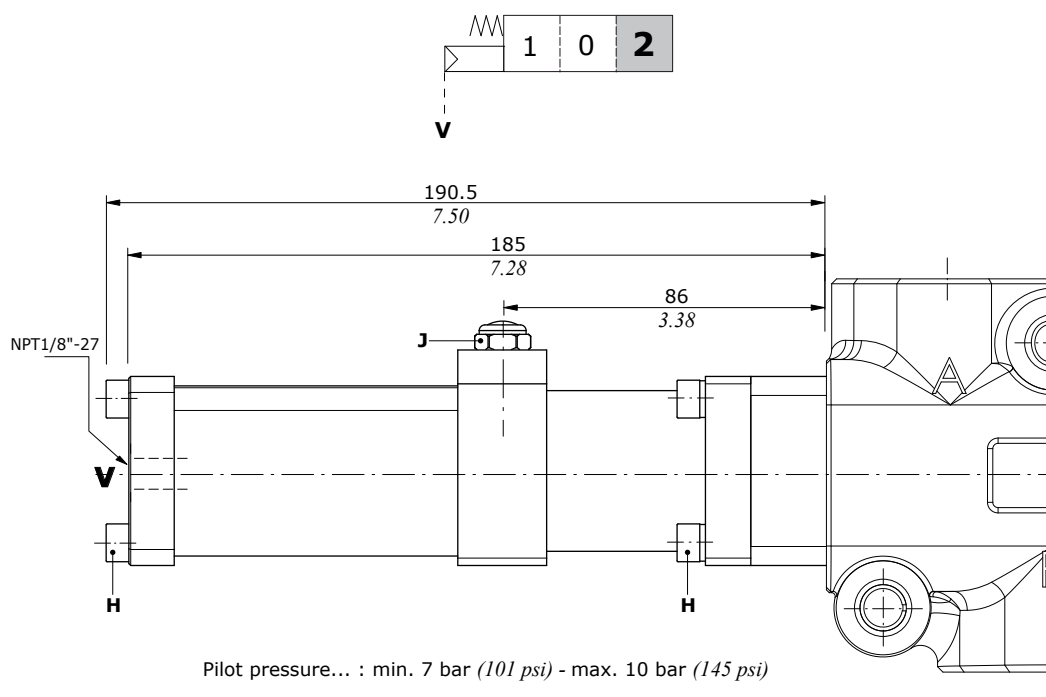
Wrenches and tightening torque

H = wrench 5 - 9.8 Nm (7.2 lbf ft)

J = wrench 13 - 9.8 Nm (7.2 lbf ft)

Type 18P

Spring return in position 2

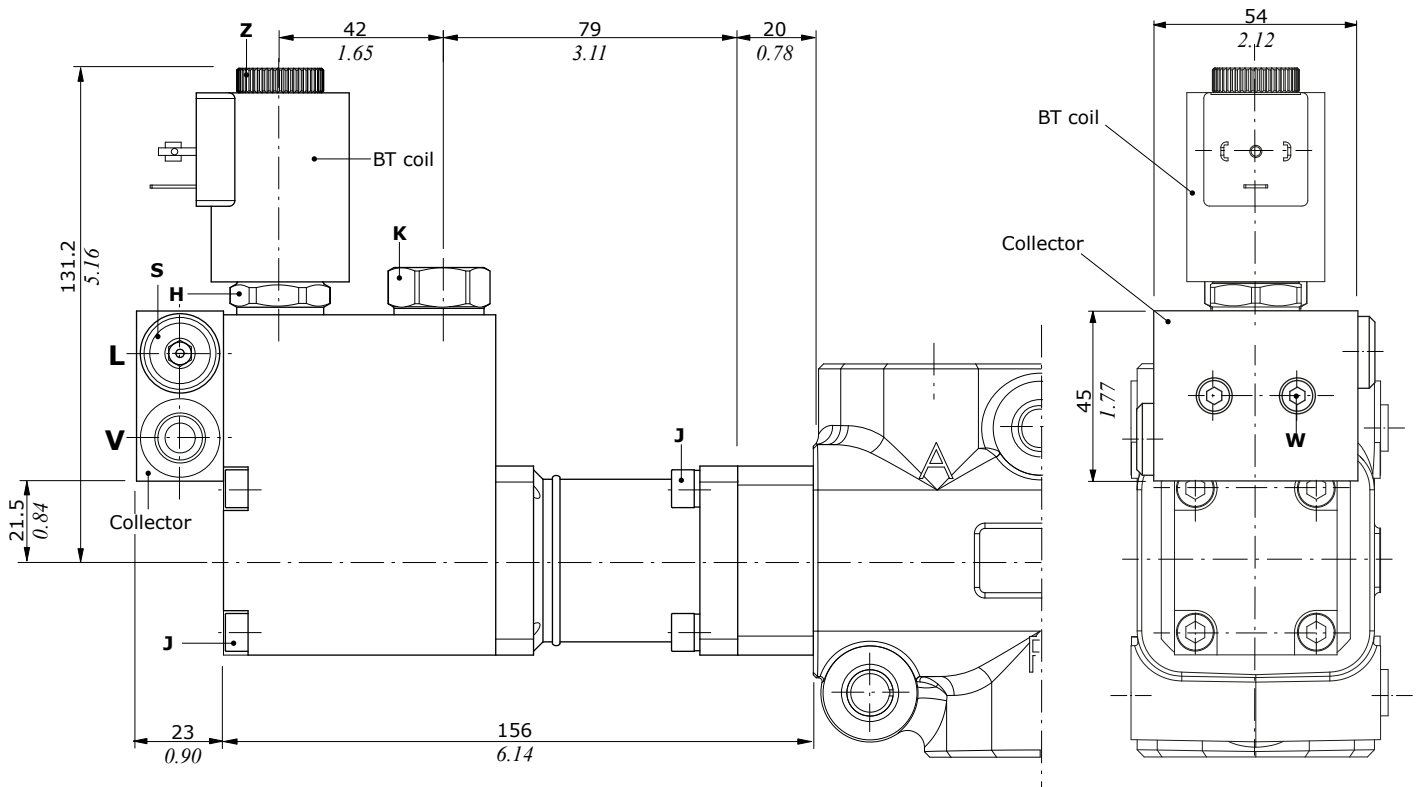
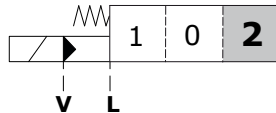


"A" side spool positioners

ON/OFF electrohydraulic control

Type 18E11

Spring return in pos. 2,
with external pilot and drain



Collector kit for external pilot and drain

Wrenches and tightening torque

J = wrench 5 - 9.8 Nm (7.2 lbf ft)
K = wrench 24 - 30 Nm (22.1 lbf ft)
Z = 5 Nm (3.68 lbf ft)
S = wrench 6 - 24 Nm (17.7 lbf ft)
H* = wrench 24 - 9.8 Nm (7.2 lbf ft)
W = wrench 4 - 6.6 Nm (4.9 lbf ft)
(*)Tightening with dynamometric wrench or screwer

Features

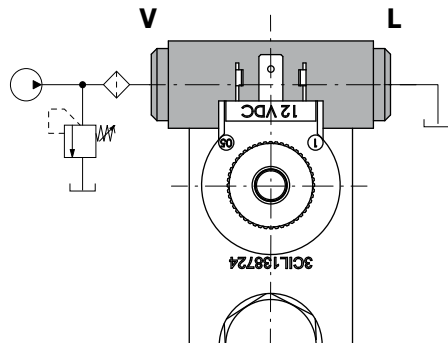
Pilot pressure: : min. 10 bar (145 psi)
: max. 50 bar (725 psi)
Max backpressure on drain L..... : 25 bar (362.5 psi)

Note: for complete available BT coils list and features see page 64

COLLECTOR KIT CODE

Type	Code	Description
KE1S0	5KE1S00030	kit for 1 section

Codes are referred to BSP thread

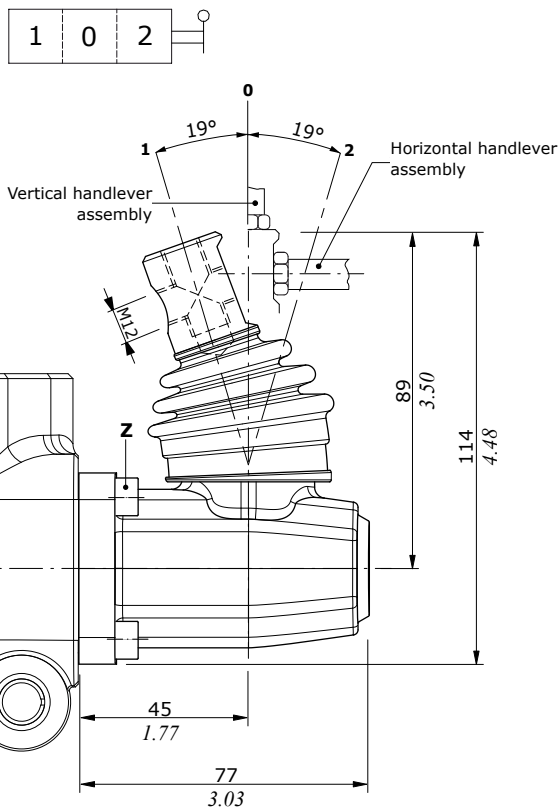


"B" side options

Lever control kit

Aluminium with protection boot lever pivot box; it can be rotated 180° (execution **L180**)

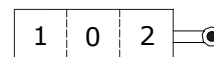
Type L



Cam control kit

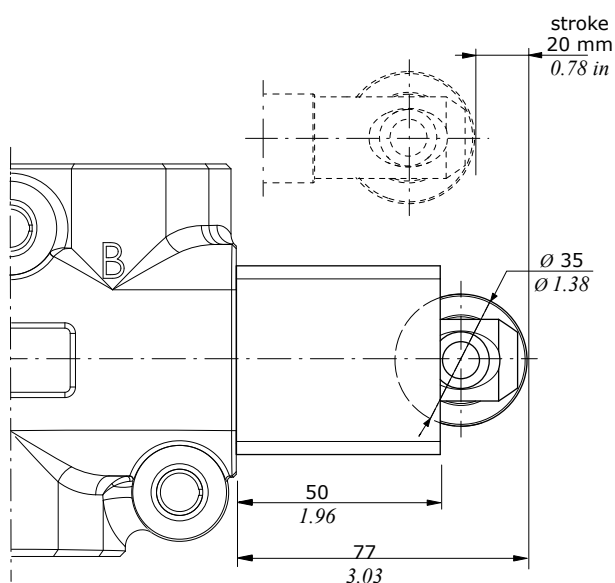
Steel ball bearing cam operation (CA), and bronze cam operation (CB); it must be coupled to 17 control kit

Type CA-CB



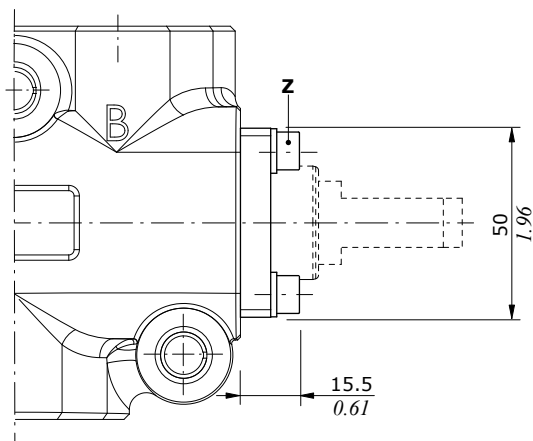
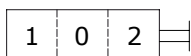
Wrenches and tightening torque

Z = wrench 5 - 9.8 Nm (7.2 lbft)



Without lever, with flange

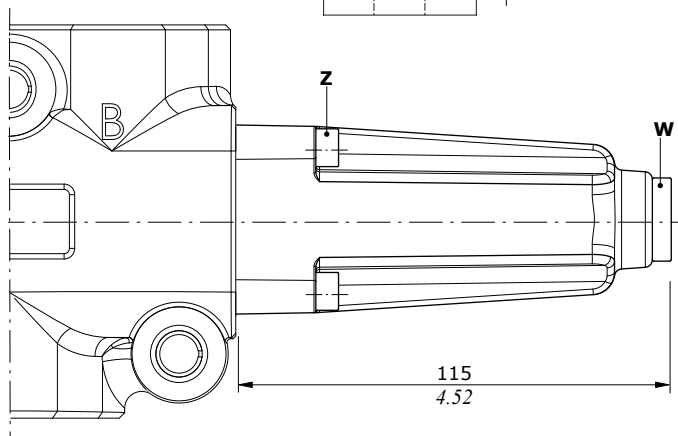
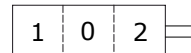
Type SLP



Without lever, with cap

Protection cap to use with pneumatic, hydraulic and electrohydraulic spool positioner kits

Type SLC



Wrenches and tightening torque

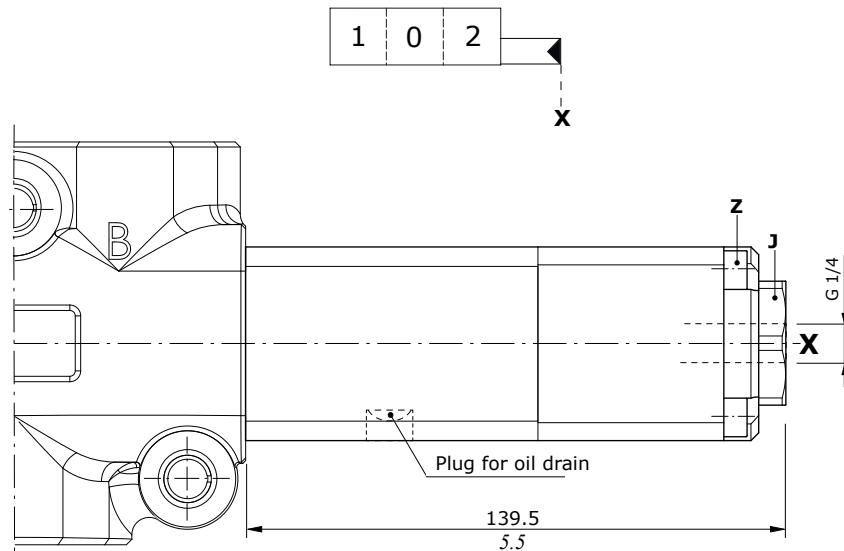
Z = wrench 5 - 9.8 Nm (7.2 lbft)

W = wrench 8 - 24 Nm (17.7 lbft)

"B" side options**Hydraulic controls**

ON/OFF controls with high and low pressure pilot it must be only coupled to 17ME control kit

Type IA2
High pressure pilot



Pilot pressure max. = 250 bar (3620 psi)

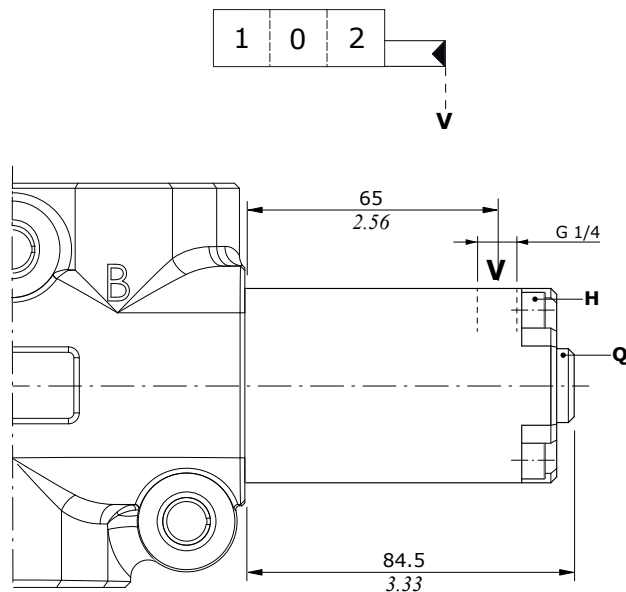
Wrenches and tightening torque

Z = wrench 5 - 9.8 Nm (7.2 lbf ft)

J = wrench 24 - 42 Nm (31 lbf ft)

Q = wrench 6 - 24 Nm (17.7 lbf ft)

Type IB2
Low pressure pilot



Pilot pressure max. = 50 bar (725 psi)

Coils and accessories for 18EI1 control

		Ordering codes					
Type	Voltage	Connector types					
		ISO4400	Deutsch DT	AMP JPT	Packard Weatherpack	Packard Metri-pack	Flying leads without connector
BT	10 VDC	4SL3000100	-	-	-	-	-
	12 VDC	4SL3000120 4SL3000126 ⁽⁴⁾	4SL3000130 ⁽⁶⁾ 4SL3000134 ⁽³⁻⁶⁾ 4SL3000128 ⁽²⁾	4SL3000122 ⁽⁵⁾ 4SL3001200 ⁽³⁻⁵⁾	4SL3000124 ⁽²⁾	4SL3000127 ⁽²⁾	4SL300012C
	24 VDC	4SL3000240 4SL3030240 ⁽¹⁾	4SL3000249 ⁽⁶⁾ 4SL300024C ⁽³⁻⁶⁾	4SL3000248 ⁽⁵⁾	-	-	4SL3000246
	26 VDC	4SL3000260	-	-	-	-	-
	48 VDC	4SL3000480 4SL3030480 ⁽¹⁾	-	-	-	-	-
	110 VDC	4SL3001100 4SL3031100 ⁽¹⁾	-	-	-	-	-
	220 VDC	4SLE022000A 4SLE322000A ⁽¹⁾	-	-	-	-	-
	Mating connectors						
With rectifier		4CN1009995	5CON140031	5CON003	5CON001	5CON017	-
	24 VDC	4CN3010240	-	-	-	-	-
	48 VDC	4CN3010480	-	-	-	-	-
	110 VDC	4CN3011100	-	-	-	-	-
	220 VDC	4CN3012200	-	-	-	-	-

Notes: (1) supply with AC and use only with rectifier connector - (2) with flying leads - (3) with bidirectional diode - (4) with unidirectional diode (5) integrated perpendicular type - (6) integrated parallel type

Features

Nominal voltage tolerance: $\pm 10\%$

Nominal power..... : 19 W - 10 VDC
: 21 W - 12/24/26 VDC
: 20.3 W - 48 VDC
: 17.3 W - 110 VDC
: 17.7 W - 220 VDC

Nominal current..... : 1.9 A @ 10 VDC
: 1.77 A @ 12 VDC
: 0.89 A @ 24VDC
: 0.84 A @ 26 VDC
: 0.43 A @ 48 VDC
: 0.16 A @ 110 VDC
: 0.08 A @ 220 VDC

Insulation..... : Class F (155°C - 311°F)

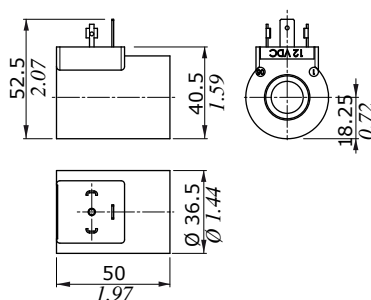
Weather protection... : IP65 - ISO4400 / AMP JPT

: IP69K - Deutsch DT

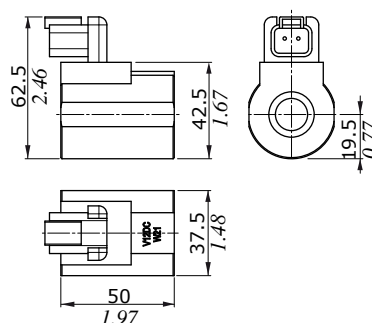
: IP67 - Weatherpack / Metri-pack

Insertion..... : 100%

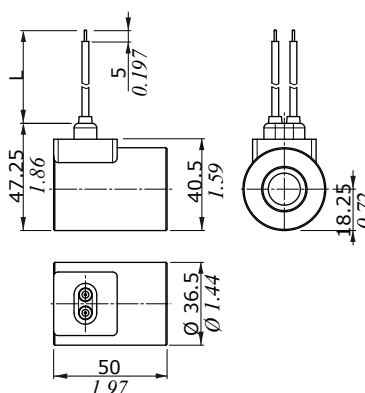
ISO4400 connector



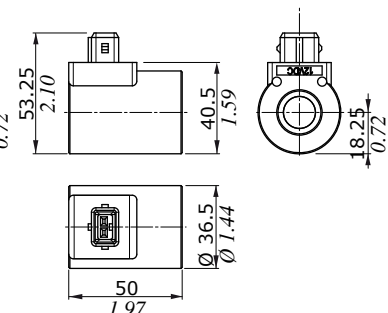
DEUTSCH DT04 connector (Parallel type)



Flying leads



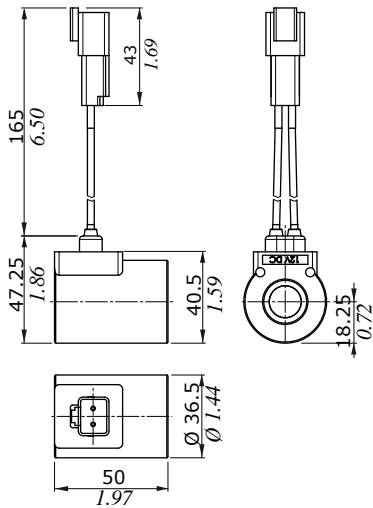
AMP JPT connector (Perpendicular type)



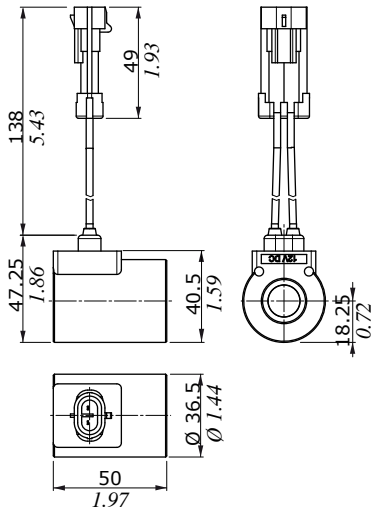
Coil type	L dimension	
	(mm)	(in)
12 VDC	240	9.45
24 VDC	600	23.62

Coils and accessories for 18EI1 control

Flying leads with DEUTSCH DT04 connector



Flying leads with PACKARD METRI-PACK connector



Flying leads with PACKARD WEATHER-PACK connector

