



# DLS180

Sectional directional control valve

## Features

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Simple, compact and heavy duty designed sectional valve from 1 to 12 sections for open and closed centre hydraulic systems.

- Fitted with a main pressure relief valve and a load check valve on every working section
- Available with parallel, tandem or series circuit.
- Optional carry-over port.
- A wide range of antishock+anticavitation port valves.
- Intermediate sections for several types of circuit.
- Available manual, pneumatic, electrohydraulic, proportional hydraulic, spool control kits.
- Diameter 20 mm (*0.79 in*) interchangeable spools.

### Additional information

This catalogue shows the product in the most standard configurations.  
Please contact our Sales Dpt. for more detailed information or special requests.

### WARNING!

All specifications of this catalogue refer to the standard product at this date.  
Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

**WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.**

8<sup>th</sup> edition June 2015

**DLS180**

- Valve general informations
  - Working conditions . . . . . page 62
  - Standard threads . . . . . page 62
  - Dimensional data . . . . . page 63
  - Performance data . . . . . page 63
  - Hydraulic circuit . . . . . page 64
  - Complete sections ordering codes . . . . . page 65
- Inlet section
  - Parts ordering codes . . . . . page 66
  - Dimensional data and hydraulic circuit . . . . . page 67
- Working section
  - Parts ordering codes (mechanical control) . . . . . page 68
  - Parts ordering codes (prop. hydraulic control) . . . . . page 69
  - Dimensional data and hydraulic circuit . . . . . page 70
  - Spools . . . . . page 70
  - "A" side spool positioners . . . . . page 71
  - "B" side options . . . . . page 72
  - Complete controls . . . . . page 73
- Outlet section
  - Dimensional data and hydraulic circuit . . . . . page 74
  
- Installation and maintenance . . . . . page 75
- Accessories . . . . . page 76

### Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46mm<sup>2</sup>/s - 46 cSt viscosity at 40°C - 104°F temperature.

Nominal flow rating	on inlet P	180 l/min	47 US gpm
	on ports A and B	160 l/min	42 US gpm
Max pressure <sup>(1)</sup>		315 bar	4600 psi
Standard stand by		14 bar	203 psi
Internal leakage (standard) A(B)⇒T	Δp = 100 bar (1450 psi)	5 cm <sup>3</sup> /min	0.30 in <sup>3</sup> /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 <sup>2</sup> /s	from 15 to 75 cSt
	min.	12 mm <sup>2</sup> s	12 cSt
	max.	400 mm <sup>2</sup> s	400 cSt
Max. contamination level		-/19/16 - ISO 4406	NAS 1638 - class 10
Ambient temperature for working conditions		from -40°C to 60°C	from -40°F to 140°F

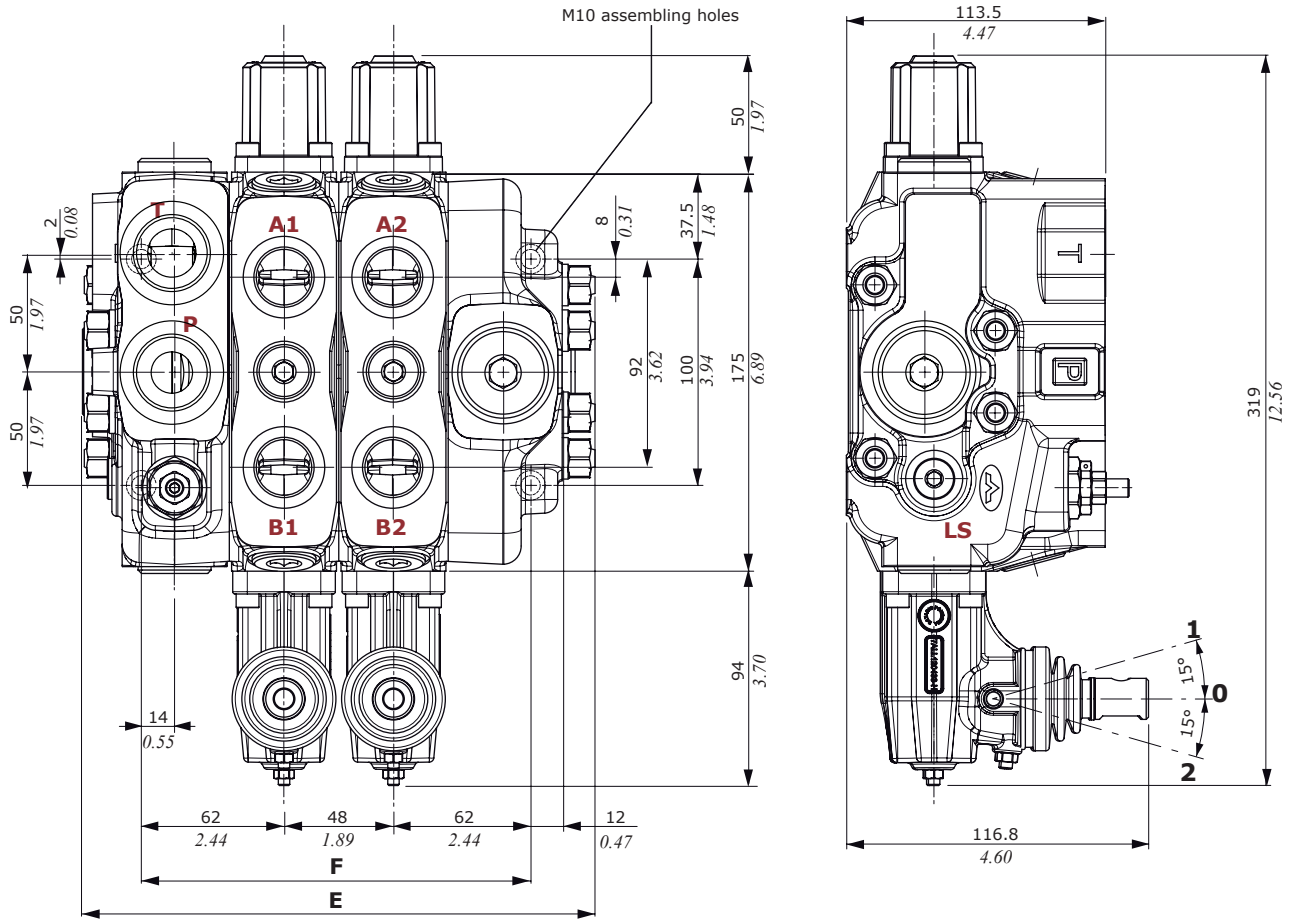
NOTE - <sup>(1)</sup> Intermittent pressure at max. 250,000 cycles with specific internal testing.

### Standard threads

REFERENCE STANDARD				
		BSP	UN-UNF	NPTF
THREAD ACCORDING TO		ISO 228/1	ISO 263	NSI B1.20.3
		BS 2779	ANSI B1.1 unified	
CAVITY DIMENSION ACCORDING TO	ISO	1179-1	11926-1	
	SAE		J1926-1	J476a
	DIN	3852-2 shape X or Y		

PORTS THREADING			
MAIN		BSP	UN-UNF
Inlet <b>P</b> - Outlet <b>T</b>		G 1	1 5/16-12 (SAE 16)
Ports <b>A</b> and <b>B</b>		G 3/4	1 1/16-12 (SAE 12)
Load sensing <b>LS</b>		G 1/4	9/16-18 (SAE 6)
PILOT			
Hydraulic		G 1/4	9/16-18 (SAE 6)

Dimensional data



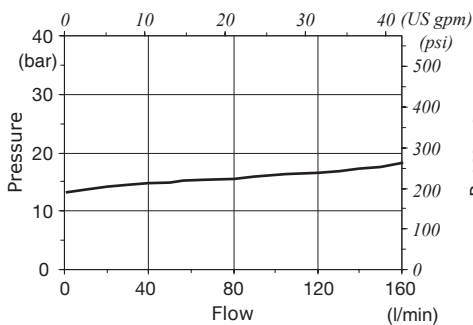
NOTE – Drawings and dimensions are referred to **BSP** thread configuration.

TYPE	E		F		Weight	
	mm	in	mm	in	Kg	lb
DLS180/1	177.8	7.00	124	4.88	13.8	30.42
DLS180/2	225.8	8.89	172	6.77	19.2	42.33
DLS180/3	273.8	10.78	220	8.66	24.6	54.23
DLS180/4	321.8	12.67	268	10.55	30	66.14
DLS180/5	369.8	14.56	316	12.44	35.4	78.04
DLS180/6	417.8	16.45	364	14.33	40.8	89.95

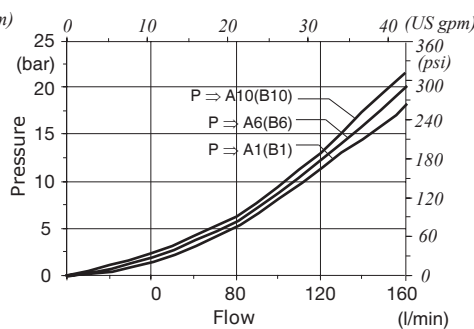
TYPE	E		F		Weight	
	mm	in	mm	in	Kg	lb
DLS180/7	465.8	18.34	412	16.22	46.2	101.85
DLS180/8	513.8	20.23	460	18.11	51.6	113.76
DLS180/9	561.8	22.12	508	20.00	57	125.66
DLS180/10	609.8	24.01	556	21.89	62.4	137.57
DLS180/11	657.8	25.90	604	23.78	67.8	149.47
DLS180/12	705.8	27.76	652	25.67	73.2	161.38

Performance data

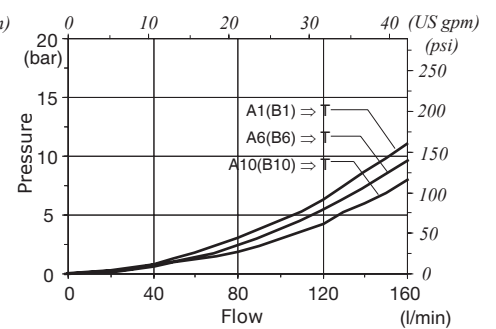
P ⇒ T pressure drop inlet compensator (margin pressure)



P ⇒ A(B) pressure drop (standard spool @ max. stroke)

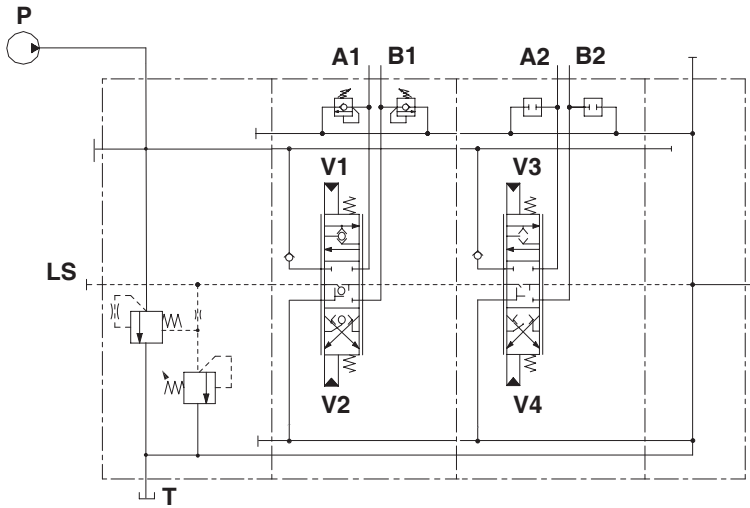


A(B) ⇒ T pressure drop



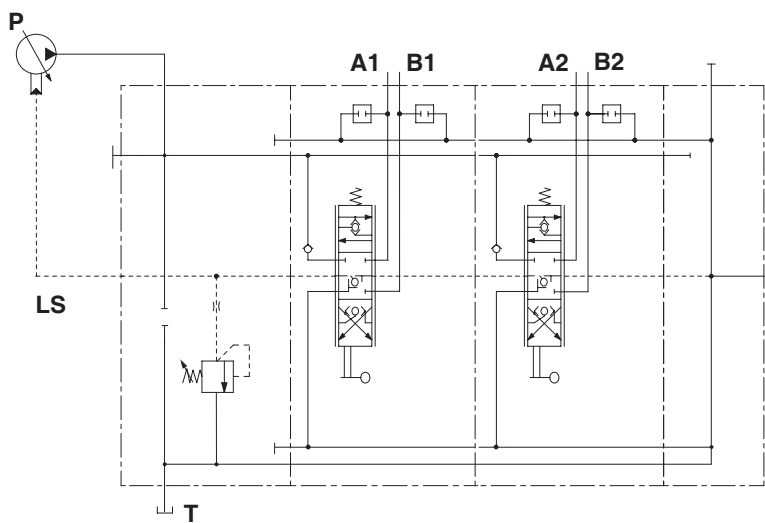
Hydraulic circuit

For open center circuit (fixed displacement pump)



Description example:  
DLS180/2/AMD(G4-210)/6ZM8IMF3.U3(G3-170)/6ZM8IMF3/RF

For closed center circuit (variable displacement pump with Load-Sensing compensator)

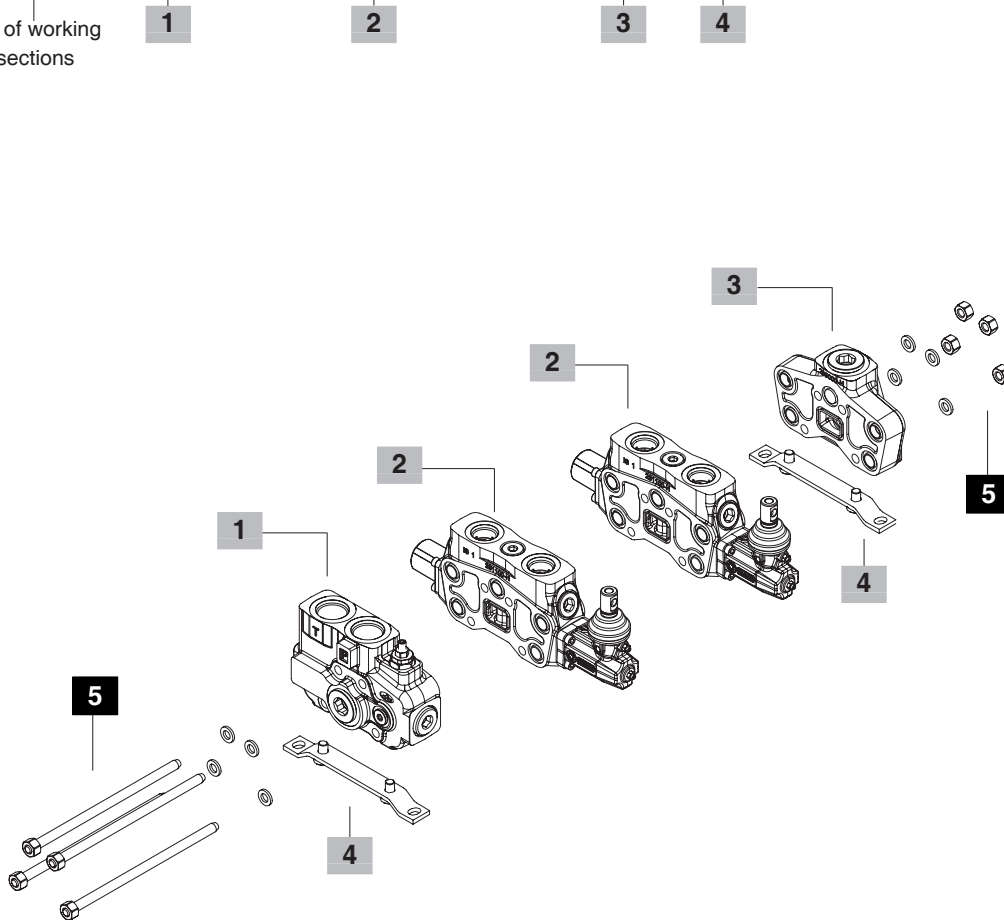


Description example:  
DLS180/2/AND(G3-120)/6ZLF3/6ZLF3/RF

Complete sections ordering codes

DLS180 / 2 / AMD(G3-120) / 6ZLF3 / 6ZLF3 / RF - STAF

Nr. of working sections

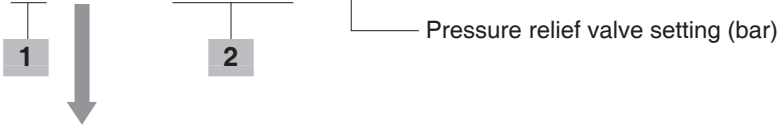


1 Inlet section * page 66			4 Fixing brackets page 79		
TYPE	CODE	DESCRIPTION	TYPE	CODE	DESCRIPTION
<b>AMD(G3-120)</b>	61F331000	For open centre circuit, with L.S. pressure relief valve	<b>STAF</b>	5STA125220	Brackets with assembling screws
<b>AMDT(G3-120)</b>	61F311002	As previous with upper outlet closed	<b>5 Assembling kit</b>		
<b>AND(G3-120)</b>	61F332000	For closed centre circuit, with L.S. pressure relief valve	CODE	DESCRIPTION	
<b>ANDT(G3-120)</b>	61F312002	As previous with upper outlet closed	5TIR110170	Tie rod kit for 1 working section directional valve	
<b>APD(SV)</b>	61F333000	Without compensator and L.S. pressure relief valve	5TIR110218	Tie rod kit for 2 working sections directional valve	
<b>APDT(SV)</b>	61F313002	As previous with upper outlet closed	5TIR110266	Tie rod kit for 3 working sections directional valve	
<b>2 Working section * page 68</b>			5TIR110316	Tie rod kit for 4 working sections directional valve	
TYPE	CODE	DESCRIPTION	5TIR110368	Tie rod kit for 5 working sections directional valve	
<b>6Z8LF3</b>	61F131601	Parallel circuit, lever control	5TIR110410	Tie rod kit for 6 working sections directional valve	
<b>6ZM8IMHF3</b>	61F131602	Parallel circuit, proportional hydraulic control with spool stroke limiter	5TIR110458	Tie rod kit for 7 working sections directional valve	
<b>3 Outlet section * page 74</b>			5TIR110506	Tie rod kit for 8 working sections directional valve	
TYPE	CODE	DESCRIPTION	5TIR110554	Tie rod kit for 9 working sections directional valve	
<b>RF</b>	618301008	With ports plugged	5TIR110602	Tie rod kit for 10 working sections directional valve	
<b>RD</b>	618301014	With upper outlet	5TIR110650	Tie rod kit for 11 working sections directional valve	
<b>RC</b>	618301013	With side outlet	5TIR110698	Tie rod kit for 12 working sections directional valve	

NOTE (\*) – Codes are referred to **BSP** thread.

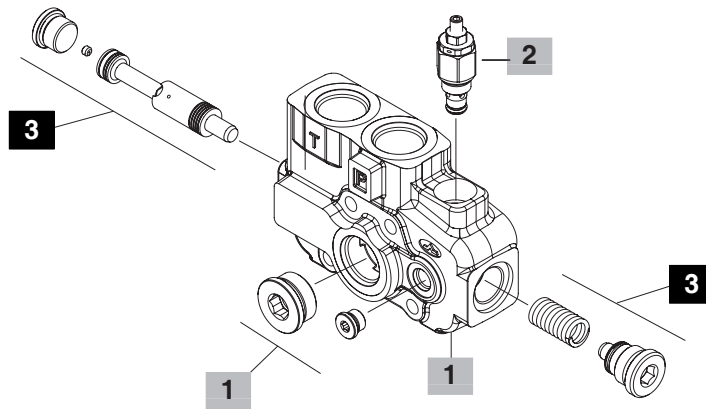
## Parts ordering codes

FE DLS180 / AM D T (G3 - 120)



### Available configurations

- D: With side inlet port closed
- C: With upper inlet port closed



### 1 Inlet cover body \* page 67

TYPE	CODE	DESCRIPTION
AM	5FIA318300	For fixed displacement pump, L.S. compensator (open centre) with main relief valve arrangement
AN	5FIA318301	For variable displacement pump, (closed centre) with main relief valve arrangement
AP	5FIA318302	For variable displacement pump, (closed centre) without main relief valve predisposition

### 3 Compensator kit

CODE	DESCRIPTION
5KIT018300	Compensator kit, for AM section
5KIT018310	Compensator blanking kit, for AN and AP section

### 2 Inlet relief options page 21

Standard setting is referred to 10 l/min (2.6 US gpm) flow.

TYPE	CODE	DESCRIPTION
SV	XTAP525320	Relief valve blanking plug

#### Load Sensing main relief valve

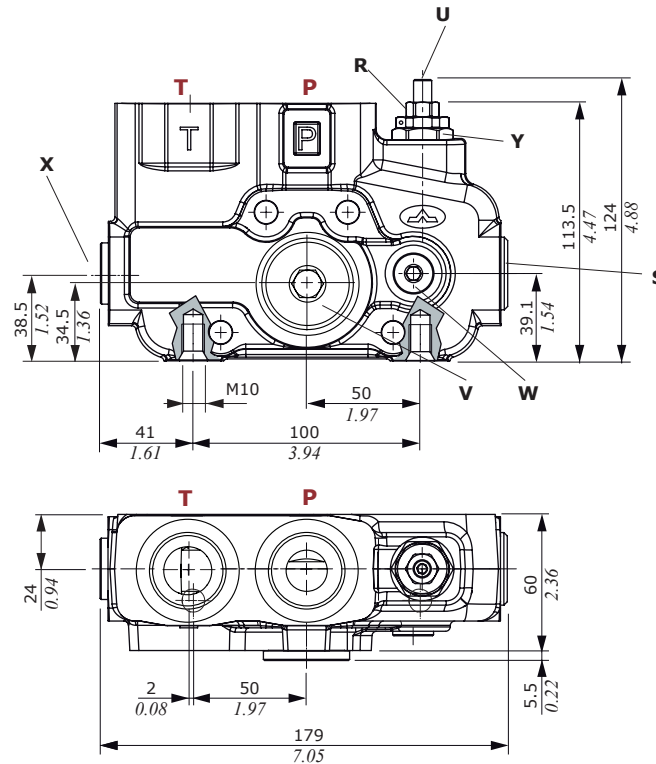
LSW(G2)	5KIT118110	Range 5-50 bar (72-720 psi) standard setting 30 bar (400 psi)
LSW(G3)	5KIT118111	Range 50-200 bar (720-3200 psi) standard setting 150 bar (2150 psi)
LSW(G4)	5KIT118112	Range 180-315 bar (2600-4550 psi) standard setting 250 bar (3600 psi)

NOTE (\*) – Codes are referred to **BSP** thread.

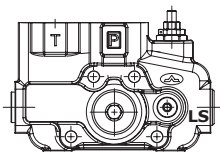
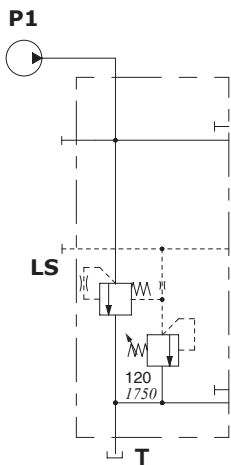


Dimensional data and hydraulic circuit

- X = wrench 10 - 24 Nm (17.7 lbf<sup>t</sup>)
- Y = wrench 24 - 30 Nm (22.13 lbf<sup>t</sup>)
- W = wrench 6 - 24 Nm (17.7 lbf<sup>t</sup>)
- V = wrench 12 - 42 Nm (31 lbf<sup>t</sup>)
- U = allen wrench 4
- R = allen wrench 13
- S = wrench 12 - 42 Nm (31 lbf<sup>t</sup>)

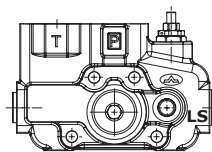
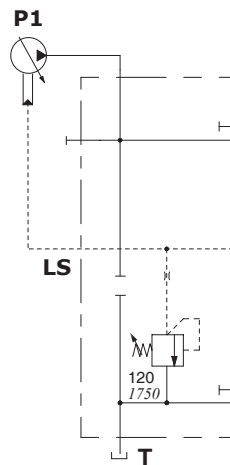


For fixed displacement pump, L.S. compensator (open centre) with main relief valve



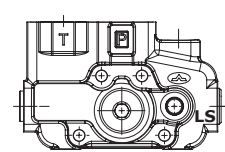
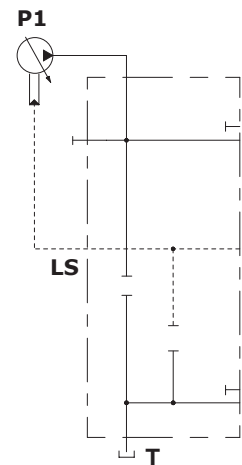
Description example:  
**AMD(G3-120)**

For variable displacement pump, (closed centre) with main relief valve



Description example:  
**AND(G3-120)**

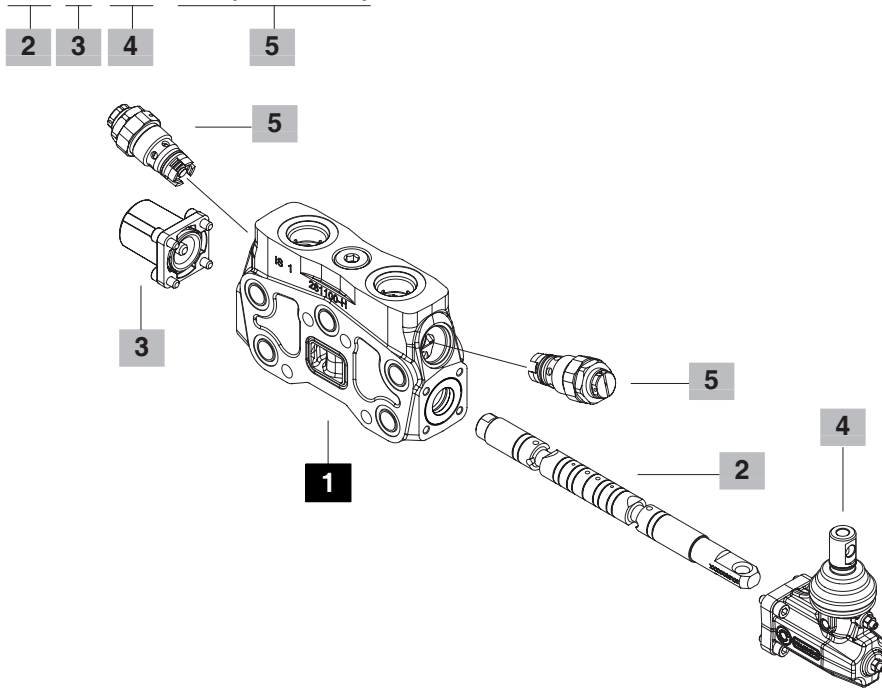
For variable displacement pump, (closed centre) without main relief valve



Description example:  
**APD(SV)**

## Parts ordering codes (mechanical control)

EL DLS180 / 6Z 8 LF3 P1 (G3 - 100)



### 1 Working section kit \* page 70

TYPE	CODE	DESCRIPTION
P	5EL5183000	Parallel circuit for hydraulic controls

### 2 Spools page 70

TYPE	CODE	DESCRIPTION
<b>Double acting, 3 positions, with A and B closed in neutral position.</b>		
6Q	3CU3610040	Up to 40 l/min (10.57 US gpm) flow
6O	3CU3610080	Up to 80 l/min (21.13 US gpm) flow
6V	3CU3610120	Up to 120 l/min (31.70 US gpm) flow
6Z	3CU3610140	Up to 140 l/min (36.98 US gpm) flow
<b>Double acting, 3 positions, with A and B to tank in neutral position.</b>		
7V	3CU3625120	Up to 120 l/min (31.70 US gpm) flow
7Z	3CU3625140	Up to 140 l/min (36.98 US gpm) flow

### 3 "A" side spool positioners page 71

TYPE	CODE	DESCRIPTION
7FT	5V07210100	With friction and notch for neutral position sensor
8MC	5V08210000	With spring return in neutral position
9BZ	5V09110030	With detent in position 1 and spring return in neutral position
10BZ	5V10110030	With detent in position 2 and spring return in neutral position
11BZ	5V11110030	Detent in positions 1 and 2 and spring return in neutral position
8IZ	5V08110800	Proportional hydraulic control

### 4 "B" side options page 72

TYPE	CODE	DESCRIPTION
L	5LEV110110-H	Standard lever box
LF3	5LEV110115-H	Lever box with spool stroke limiter
LA	5LEV110125-H	Steel lever kit
LAF3	5LEV110120-H	Steel lever kit with spool stroke limiter
SLP	5COP110000	Without lever box, with dust-proof plate
TQ	5TEL118100-H	Flexible cable connection; for CD cables

### 5 Port valves page 51

Valves standard setting is referred to 10 l/min (2.64 USgpm) flow.

TYPE	CODE	DESCRIPTION
-	XTAP530361	A and B ports valve blanking plugs, (omitted in description)
C	3XCAR416100	Anti-cavitation valve

#### Anti-shock valve

P(G2)	XCAR216115	Range 50-120 bar (725-1750 psi) standard setting 63 bar (900 psi)
P(G3)	XCAR216116	Range 100-250 bar (1450-3600 psi) standard setting 100 bar (1450 psi)
P(G4)	XCAR216117	Range 160-315 bar (2300-4600 psi) standard setting 200 bar (2900 psi)

#### Pilot hydraulic unloader valve

PX	XCAR416301	Pilot hydraulic unloader valve
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#### Anti-shock and anti-cavitation valve

U(G2)	X011411099	Range 35-90 bar (510-1300 psi) standard setting 60 bar (870 psi)
U(G3)	X011411100	Range 100-250 bar (1450-3600 psi) standard setting 100 bar (1800 psi)
U(G4)	X011411101	Range 180-350 bar (2600-5100 psi) standard setting 200 bar (2900 psi)

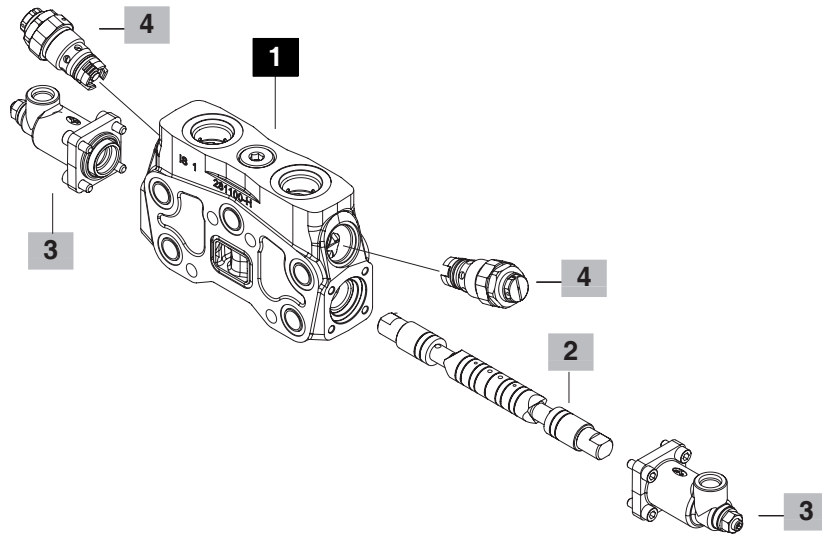
#### Pilot operated anti-shock and anti-cavitation valve

UXW(G)	X01141B160	Range 63-315 bar (900-4600 psi) standard setting 160 bar (2300 psi)
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NOTE (\*) - Codes are referred to **BSP** thread.

Parts ordering codes (proportional hydraulic control)

EL DLS180 / 6ZM 8IMF3 P1 (G3 - 100)



**1 Working section kit \*** page 70

TYPE	CODE	DESCRIPTION
<b>P/IM</b>	5EL5183000A	Parallel circuit for hydraulic controls

**2 Spools** page 70

TYPE	CODE	DESCRIPTION
<b>Double acting, 3 positions, with A and B closed in neutral position.</b>		
<b>6QM</b>	3CU3550040	Up to 40 l/min (10.57 US gpm) flow
<b>6OM</b>	3CU3550080	Up to l/min (21.13 US gpm) flow
<b>6VM</b>	3CU3550120	Up to 120 l/min (31.70 US gpm) flow
<b>6ZM</b>	3CU3550140	Up to 140 l/min (36.98 US gpm) flow
<b>Double acting, 3 positions, with A and B to tank in neutral position.</b>		
<b>7VM</b>	3CU3555120	Up to 120 l/min (31.70 US gpm) flow
<b>7ZM</b>	3CU3555140	Up to 140 l/min (36.98 UU gpm) flow

**3 Complete controls** page 73

<b>Proportional Hydraulic control</b>		
TYPE	CODE	DESCRIPTION
<b>8IM</b>	5IDR216300	Zama control kit. Range 5.8-19 bar (84-270 psi)
<b>8IMF3</b>	5IDR216303	Zama control kit with stroke limiters. Range 5.8-19 bar (84-270 psi)
<b>8IMO</b>	5IDR216000	Steel control kit. Range 5.8-19 bar (84-270 psi)
<b>8IMOHF3</b>	5IDR216303-H	Steel control kit with stroke limiters. Range 5.8-19 bar (84-270 psi)

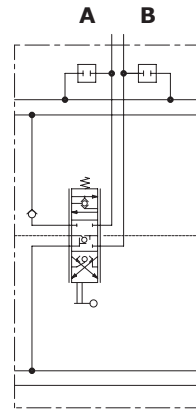
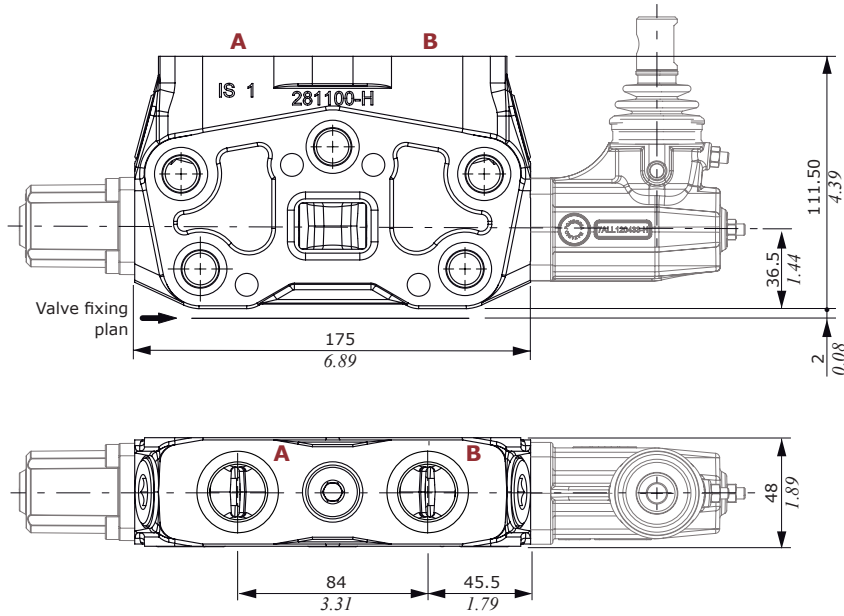
**4 Port valves** page 51

Valves standard setting is referred to 10 l/min (2.64 USgpm) flow.

TYPE	CODE	DESCRIPTION
-	XTAP530361	A and B ports valve blanking plugs, (omitted in description)
<b>C</b>	3XCAR416100	Anti-cavitation valve
<b>Anti-shock valve</b>		
<b>P(G2)</b>	XCAR216115	Range 50-120 bar (725-1750 psi) standard setting 63 bar (900 psi)
<b>P(G3)</b>	XCAR216116	Range 100-250 bar (1450-3600 psi) standard setting 100 bar (1450 psi)
<b>P(G4)</b>	XCAR216117	Range 160-315 bar (2300-4600 psi) standard setting 200 bar (2900 psi)
<b>Pilot hydraulic unloader valve</b>		
<b>PX</b>	XCAR416301	Pilot hydraulic unloader valve
<b>Anti-shock and anti-cavitation valve</b>		
<b>U(G2)</b>	X011411099	Range 35-90 bar (510 -1300 psi) standard setting 60 bar (870 psi)
<b>U(G3)</b>	X011411100	Range 100-250 bar (1450-3600 psi) standard setting 100 bar (1800 psi)
<b>U(G4)</b>	X011411101	Range 180-350 bar (2600-5100 psi) standard setting 200 bar (2900 psi)
<b>Pilot operated anti-shock and anti-cavitation valve</b>		
<b>UXW(G)</b>	X01141B160	Range 63-315 bar (900-4600 psi) standard setting 160 bar (2300 psi)

NOTE (\*) – Codes are referred to **BSP** thread.

Dimensional data and hydraulic circuit

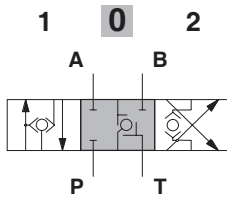


Description example:  
**6Z8LF3**

Spools

**Type 6Q/6O/6V/6Z spool**

Double acting, 3 positions, with A and B closed in neutral position

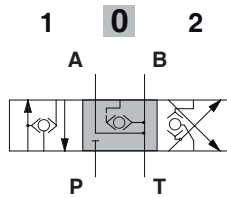


**Spool stroke**

position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

**Type 7V/7Z spool**

Double acting, 3 positions, with A and B to tank in neutral position



**Spool stroke**

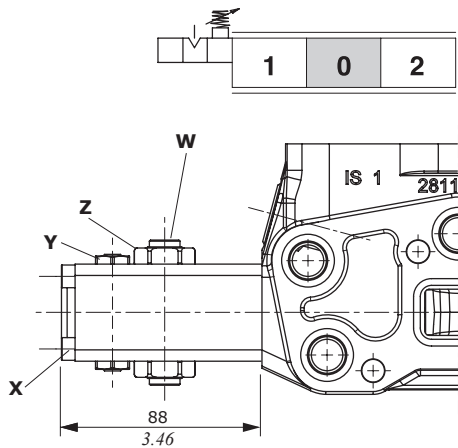
position 1: + 7 mm (+ 0.28 in)  
position 2: - 7 mm (- 0.28 in)

"A" side spool positioners

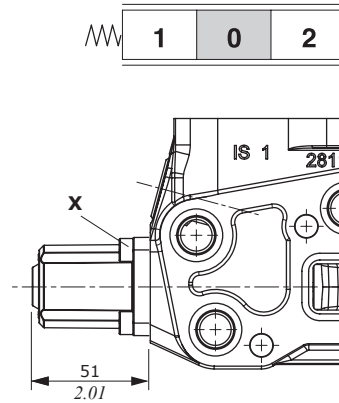
For "A" side spool positioners 9BZ, 10BZ and 11BZ see page 37

With friction 7FT type

With 8MC type spring return

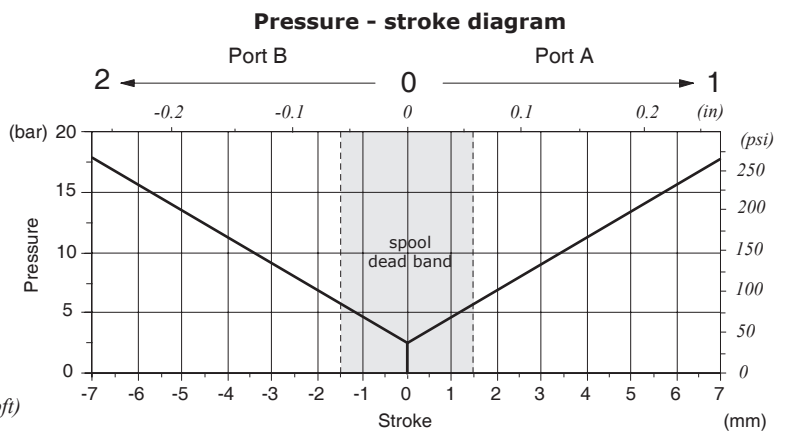
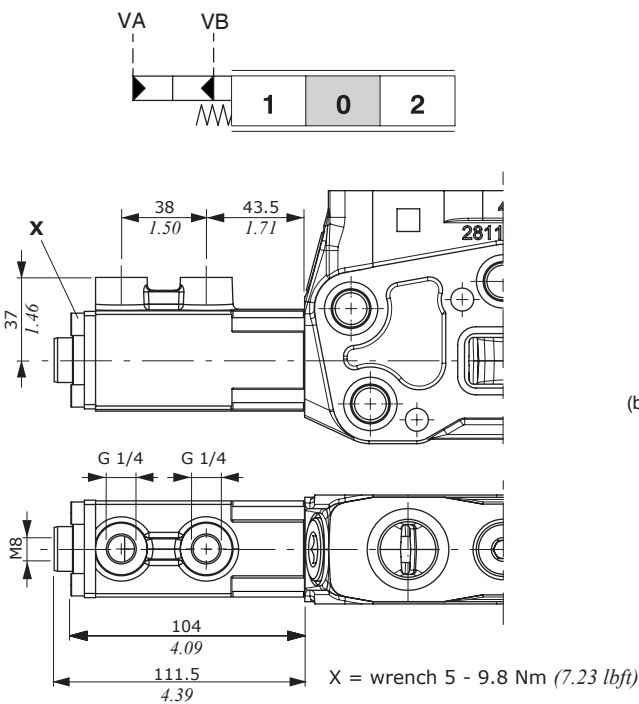


- Z = wrench 24 - manual tightening
- X = wrench 5 - 9.8 Nm (7.23 lbft)
- Y = wrench 15 - 42 Nm (31 lbft)
- W = allen wrench 4



- X = wrench 5 - 6.6 Nm (4.87 lbft)

8IZ proportional hydraulic control



Features

Pilot pressure . . . . . : max. 100 bar (1450 psi)

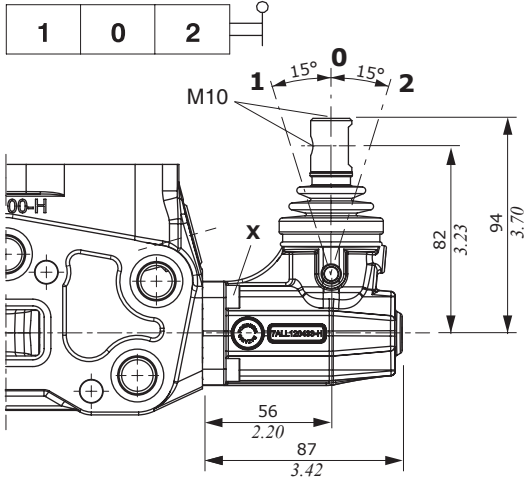
### "B" side options

#### Lever control

##### L type

Aluminium pivot box with protective rubber bellow.

X = wrench 5 - 9.8 Nm (7.23 lbft)



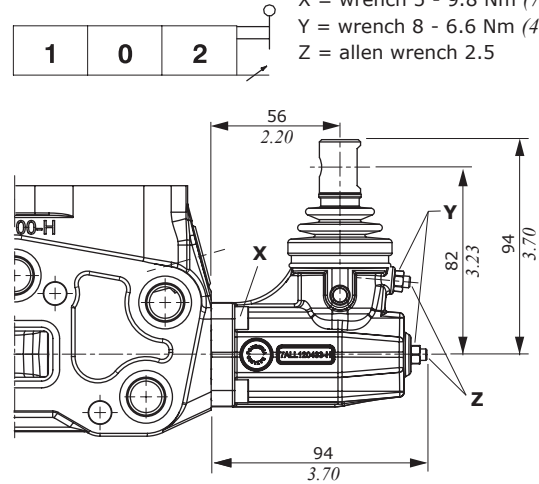
##### LF3 type

With spool stroke adjustments in pos.1 and 2, (P→A), (P→B).

X = wrench 5 - 9.8 Nm (7.23 lbft)

Y = wrench 8 - 6.6 Nm (4.87 lbft)

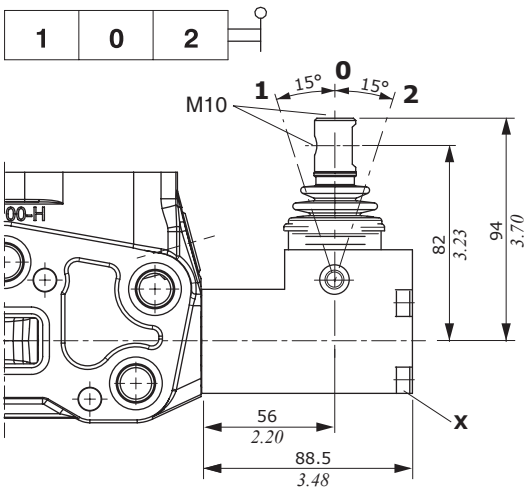
Z = allen wrench 2.5



##### LA type

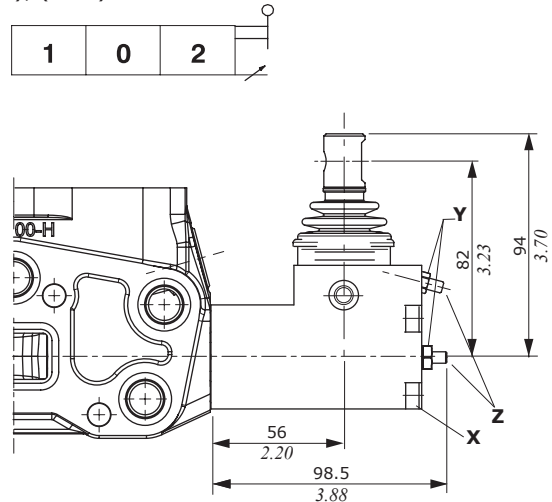
Steel execution.

X = wrench 5 - 9.8 Nm (7.23 lbft)



##### LAF3 type

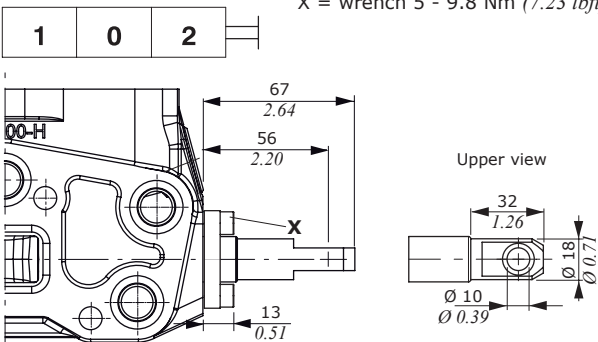
Steel execution with spool stroke adjustments in pos.1 and 2, (P→A), (P→B).



##### SLP type

Mechanical control with dust-proof plate kit.

X = wrench 5 - 9.8 Nm (7.23 lbft)



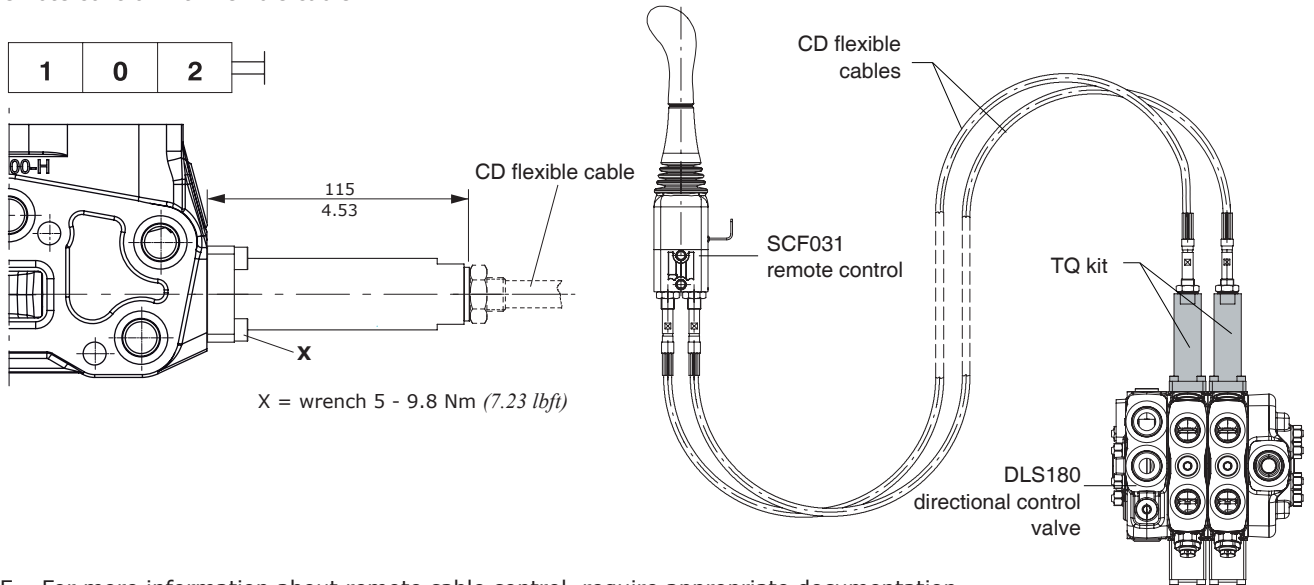
X = wrench 5 - 9.8 Nm (7.23 lbft)

Y = wrench 8 - 6.6 Nm (4.87 lbft)

Z = allen wrench 2.5

**TQ cable remote control kit**

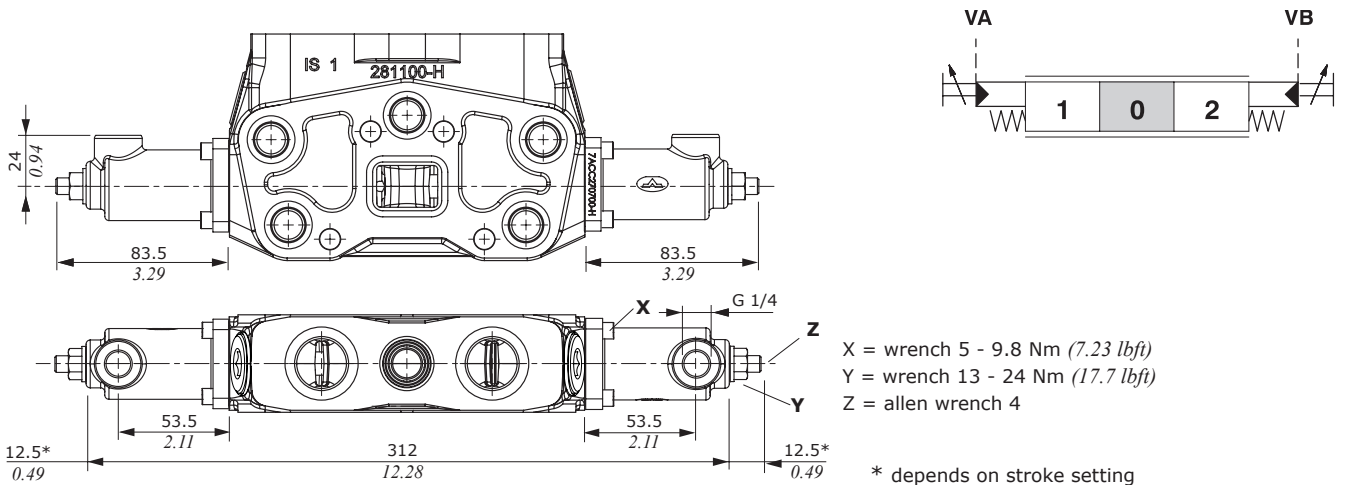
For remote control with flexible cable.



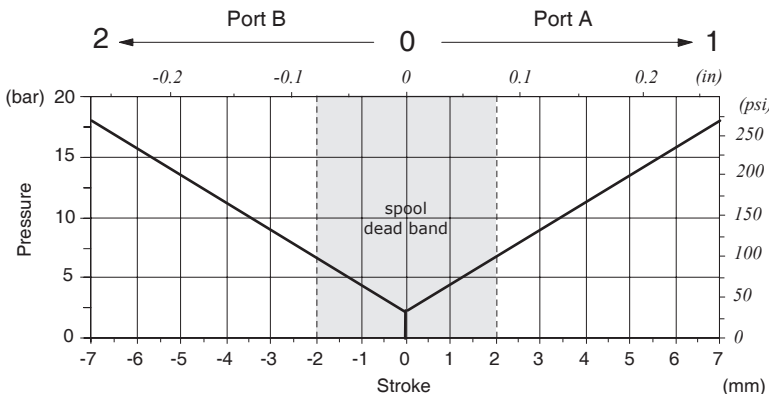
NOTE - For more information about remote cable control, require appropriate documentation.

**Complete controls**

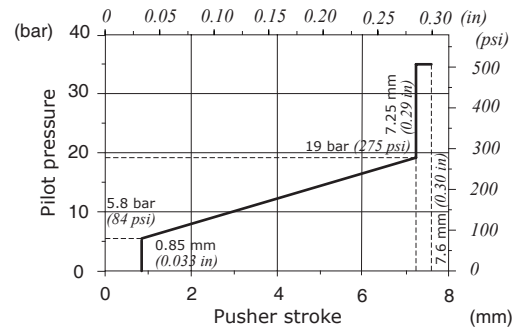
**8IMOHF3 proportional hydraulic kit**



**Pressure - stroke diagram**



**Pressure control curve on port VA and VB: type 033**



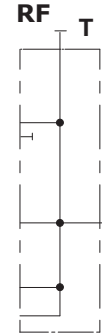
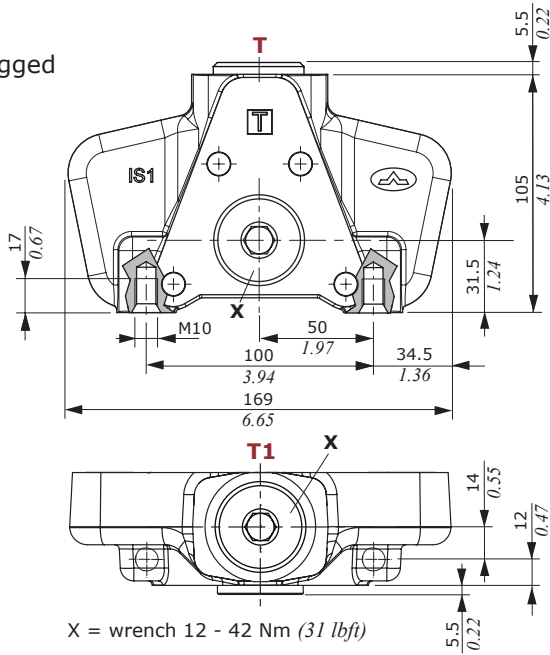
**Features**

Pilot pressure . . . . . : max. 100 bar (1450 psi)

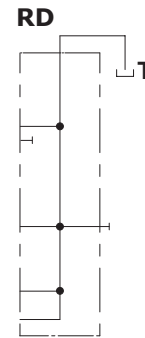
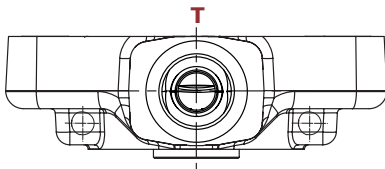
NOTE - For 8IM, 8IMF3 and 8IMO complete controls see page 47

## Dimensional data and hydraulic circuit

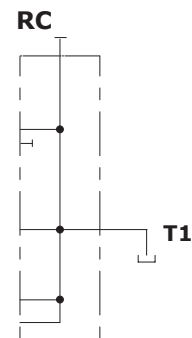
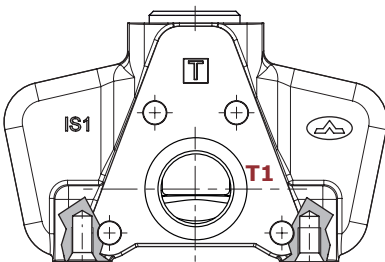
**RF type**  
with ports plugged



**With RD type**  
upper outlet



**with RC type**  
side outlet



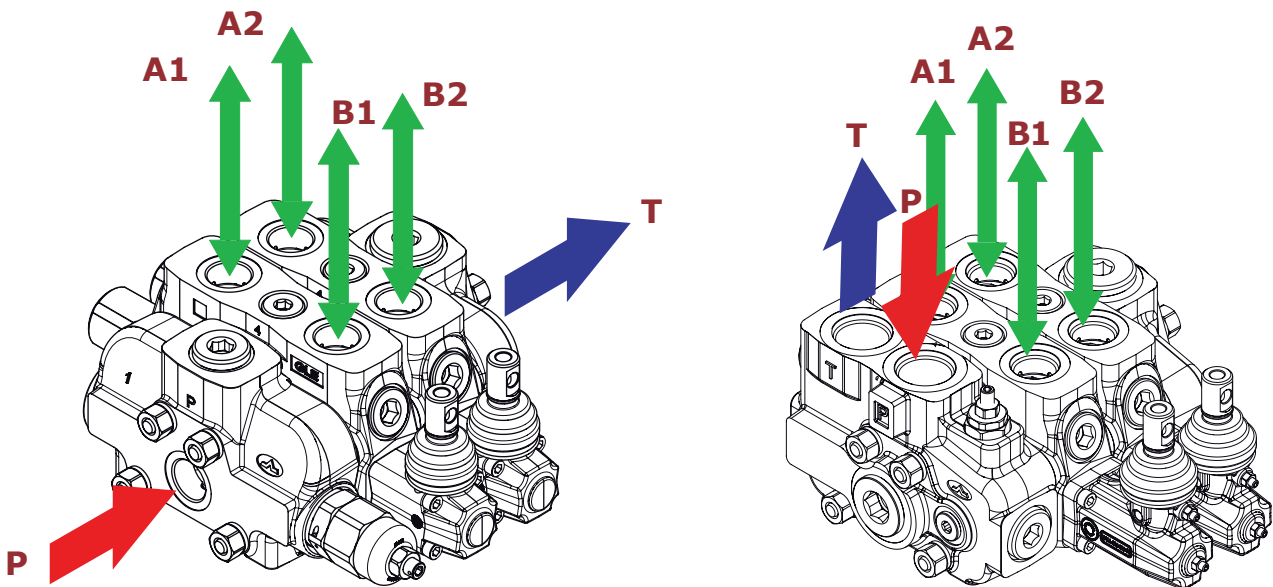


## Installation and maintenance

The SDS180 and DLS180 valves are assembled and tested as per the technical specification of this catalogue.

Before the final installation on your equipment, follow the below recommendations:

- the valve can be assembled in any position; order to prevent working section deformation and spool sticking mount the product on a flat surface;
- In order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place.



Fitting tightening torque - Nm (lbft)				
THREAD TYPE	port P	ports A, B	port T	Hydraulic pilot
BSP	G 3/4	G 3/4	G 1	G 1/4
With O-Ring seal	90 (66.4)	90 (66.4)	100 (73.7)	25 (18.4)
With copper washer	90 (66.4)	90 (66.4)	90 (66.4)	30 (22.1)
With steel and rubber washer	70 (51.6)	70 (51.6)	100 (73.7)	16 (11.8)
UN-UNF	1 5/16-12 (SAE 16)	1 1/16-12 (SAE 12)	1 5/16-12 (SAE 16)	9/16-18 (SAE 6)
With O-Ring seal	150 (110.6)	95 (70.1)	150 (110.6)	30 (22.1)

NOTE - These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.

### Coils

#### Types and ordering codes

Coil type	Voltage	Connectors					
		ISO4400	Deutsch DT	AMP JPT	Packard Weatherpack	Packard Metri-pack	Flying leads (without conn.)
BER	10 VDC	4SLE001000	-	-	-	-	-
	12 VDC	4SLE001200	4SLE001201 <sup>(5)</sup>	4SLE001203 <sup>(5)</sup>	4SLE001210 <sup>(2)</sup>	4SLE001214 <sup>(2)</sup>	4SLE001207
		4SLE001217 <sup>(3)</sup>	4SLE001209 <sup>(3-5)</sup>	4SLE001211 <sup>(3-5)</sup>	-	-	-
		4SLE002400	4SLE001202 <sup>(6)</sup>	4SLE001206 <sup>(2)</sup>	-	-	-
		4SLE002408 <sup>(3)</sup>	4SLE002401 <sup>(5)</sup>	4SLE002403 <sup>(5)</sup>	-	-	4SLE002404
	4SLE302400 <sup>(1)</sup>	4SLE002407 <sup>(3-5)</sup>	-	-	-	-	
4SLE002402 <sup>(6)</sup>	-	-	-	-	-		
48 VDC	4SLE004800	-	-	-	-	-	
4SLE304800 <sup>(1)</sup>	-	-	-	-	-	-	
110VDC	4SLE011000	-	-	-	-	-	
4SLE311000 <sup>(1)</sup>	-	-	-	-	-	-	
220 VDC	4SLE022000	-	-	-	-	-	
4SLE322000 <sup>(1)</sup>	-	-	-	-	-	-	
BE	12 VDC	4SL1000120	4SL1000123 <sup>(6)</sup>	-	-	-	4SL1000122
	24 VDC	4SL1000240	4SL1000140 <sup>(3-6)</sup>	-	-	-	-
		4SL1030240 <sup>(1)</sup>	4SL1000124 <sup>(2)</sup>	4SL1002401 <sup>(6)</sup>	-	-	-
	110 VDC	4SL1011100	-	-	-	-	-
4SL1031100 <sup>(1)</sup>	-	-	-	-	-	-	
220 VDC	4SL1022200	-	-	-	-	-	
4SL1032200 <sup>(1)</sup>	-	-	-	-	-	-	
BT	10 VDC	4SL3000100	-	-	-	-	-
	12 VDC	4SL3000120	4SL3000130 <sup>(6)</sup>	4SL3000122 <sup>(5)</sup>	4SL3000124 <sup>(2)</sup>	4SL3000127 <sup>(2)</sup>	4SL300012C
		4SL3000126 <sup>(4)</sup>	4SL3000134 <sup>(3-6)</sup>	4SL30001200 <sup>(3-5)</sup>	-	-	-
		4SL3000128 <sup>(2)</sup>	4SL3000249 <sup>(6)</sup>	4SL3000248 <sup>(5)</sup>	-	-	4SL3000246
	24 VDC	4SL3000240	4SL300024C <sup>(3-6)</sup>	-	-	-	-
	4SL3030240 <sup>(1)</sup>	-	-	-	-	-	-
26 VDC	4SL3000260	-	-	-	-	-	
48 VDC	4SL3000480	-	-	-	-	-	
4SL3030480 <sup>(1)</sup>	-	-	-	-	-	-	
110 VDC	4SL3001100	-	-	-	-	-	
4SL3031100 <sup>(1)</sup>	-	-	-	-	-	-	
220 VDC	4SL3002200	-	-	-	-	-	
4SL3032200 <sup>(1)</sup>	-	-	-	-	-	-	
BPV	12 VDC	4SLA001200	-	-	-	-	-
	24 VDC	4SLA002400	-	-	-	-	-
<b>Mating connectors</b> (For connector with rectifier see following table)		4CN1009995	5CON140031	5CON003	5CON001	5CON017	-

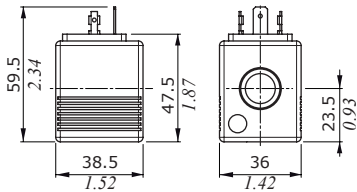
NOTES - <sup>(1)</sup> supply with AC and use only with rectifier connector - <sup>(2)</sup> with flying leads - <sup>(3)</sup> with bidirectional diode - <sup>(5)</sup> with unidirectional diode <sup>(5)</sup> integrated perpendicular type - <sup>(6)</sup> integrated parallel type

Voltage	ISO 4400 mating connector with rectifier			
	BER type coil	BT type coil	BPV type coil	BE type coil
24 VDC	4CN1010240	4CN3010240	-	4CN1010240
48 VDC	4CN1010480	4CN3010480	-	4CN1010480
110 VDC	4CN1011100	4CN3011100	-	4CN1011100
220 VDC	4CN1012200	4CN3012200	-	4CN1012200

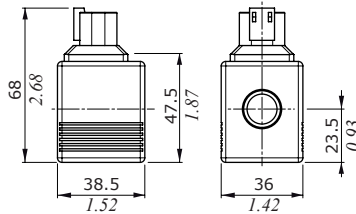
Dimensions and features

BER type

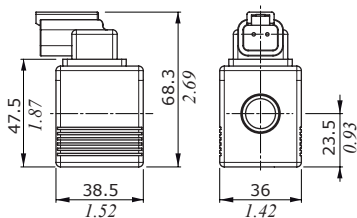
ISO4400 connector



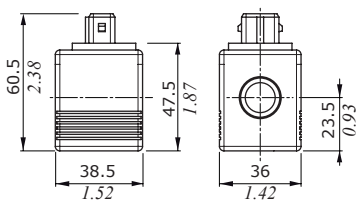
DEUTSCH DT04 connector (perpendicular type)



DEUTSCH DT04 connector (parallel type)



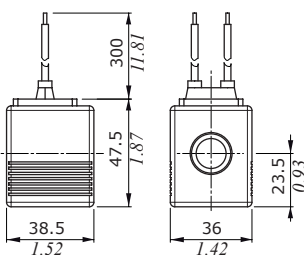
AMP JPT connector



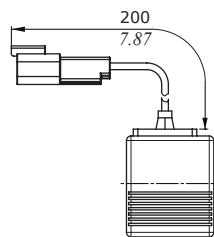
Features

- Nominal voltage tolerance : ±10%
- Power rating . . . . . : 19.2 W - 10/12/24/48/110/220 VDC  
: 19 W - 24/110/220 RAC  
: 19.2 W - 48 RAC
- Max. operating current . . . : 1.9 A - 10 VDC  
: 1.61 A - 12 VDC  
: 0.80 A - 24 VDC  
: 0.40 A - 48 VDC  
: 0.17 A - 110 VDC  
: 0.09 A - 220 VDC  
: 0.89 A - 24 RAC  
: 0.45 A - 48 RAC  
: 0.19 A - 110 RAC  
: 0.09 A - 220 RAC
- Coil insulation . . . . . : Class H (180°C-356°F)
- Weather protection . . . . . : IP65 - ISO4400  
: IP69K - Deutsch DT  
: IP65 - AMP JPT  
: IP67 - Weatherpack  
: IP67 - Metri-pack
- Insertion . . . . . : 100%

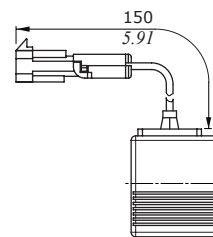
Flying leads



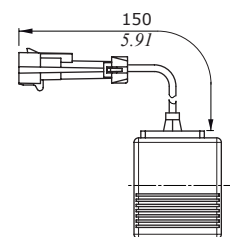
Flying leads with DEUTSCH DT04 connector



Flying leads with PACKARD WEATHER-PACK connector

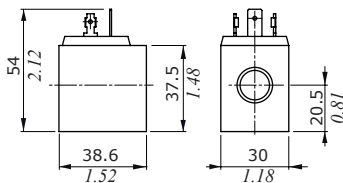


Flying leads with PACKARD METRI-PACK connector

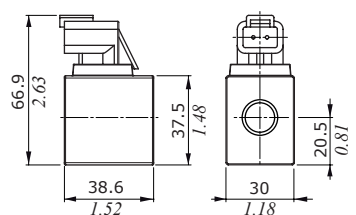


BE type

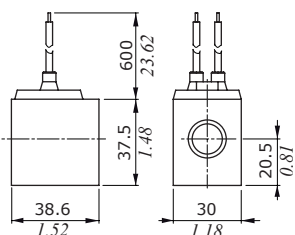
ISO4400 connector



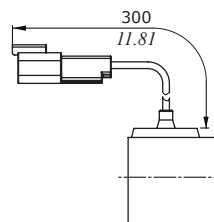
DEUTSCH DT04 connector



Flying leads



Flying leads with DEUTSCH DT04 connector



Features

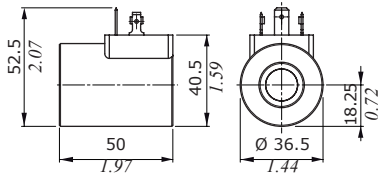
- Nominal voltage tolerance : ±10%
- Power rating . . . . . : 18.7 W - 12 VDC  
: 18.6 W - 24 VDC  
: 17.3 W - 110 VDC  
: 15.7 W - 220 VDC  
: 18.3 W - 24 RAC  
: 16 W - 110 RAC  
: 16 W - 220 RAC
- Max. operating current . . . : 1.56 A - 12 VDC  
: 0.77 A - 24 VDC  
: 0.157 A - 110 VDC  
: 0.08 A - 220 VDC  
: 0.85 A - 24 RAC  
: 0.16 A - 110 RAC  
: 0.08 A - 220 RAC
- Coil insulation . . . . . : Class F (155°C-311°F)
- Weather protection . . . . . : IP65 - ISO4400  
: IP69K - Deutsch DT
- Insertion . . . . . : 100%

## Coils

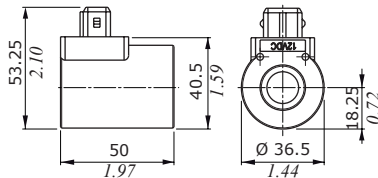
### Dimensions and features

#### BT type

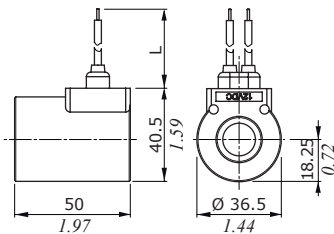
##### ISO4400 connector



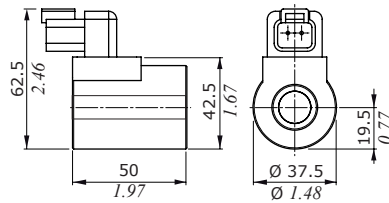
##### AMP JPT connector



##### Flying leads



##### DEUTSCH DT04 connector

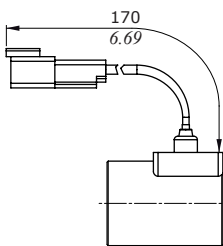


Coil type	Dimension L	
	(mm)	(in)
12VDC	247	9.72
24VDC	307	12.09

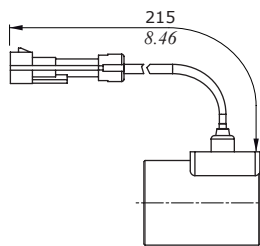
#### Features

- Nominal voltage tolerance : ±10%
- Power rating . . . . . : 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
- : 19.9 W - 24 RAC
- : 20.7 W - 48 RAC
- : 20 W - 110 / 220 RAC
- Max. operating 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
- : 0.93 A - 24 RAC
- : 0.47 A - 48 RAC
- : 0.18 A - 110 RAC
- : 0.09 A - 220 RAC
- Coil insulation . . . . . : Class F (155°C-311°F)
- Weather protection . . . . : IP65 - ISO4400
- : IP69K - Deutsch DT
- : IP65 - AMP JPT
- : IP67 - Weatherpack
- : IP67 - Metri-pack
- Insertion . . . . . : 100%

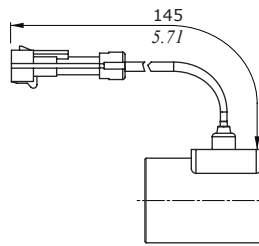
##### Flying leads with DEUTSCH DT04 connector



##### Flying leads with PACKARD WEATHER-PACK connector

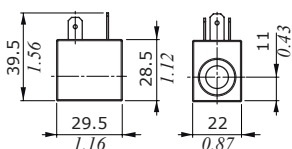


##### Flying leads with PACKARD METRI-PACK connector

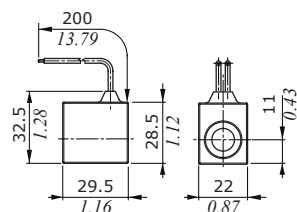


#### BPV type

##### ISO4400 connector



##### Flying leads

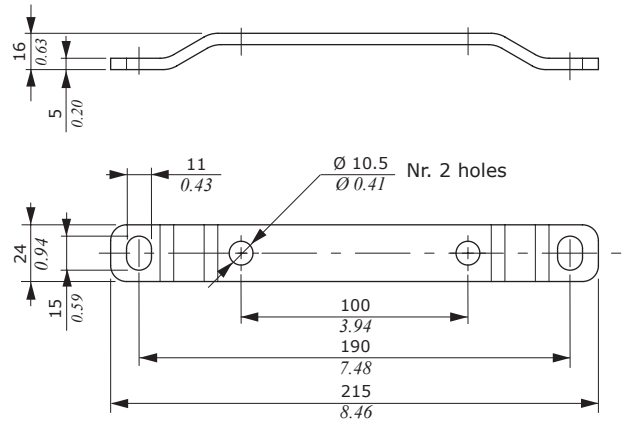
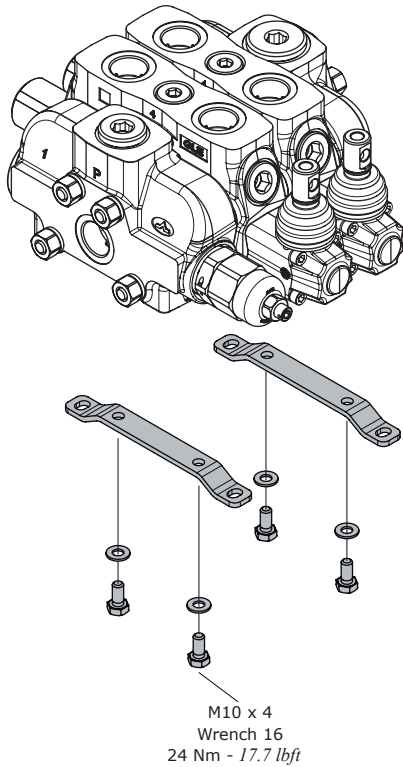


#### Features

- Nominal voltage tolerance : ±10%
- Power rating . . . . . : 8 W - 12/24 VDC
- Max. operating current . . : 0.67 A - 12 VDC
- : 0.33 A - 24VDC
- Coil Insulation . . . . . : Class H (180°C-356°F)
- Weather protection . . . . : IP65 - ISO4400
- Insertion . . . . . : 100%

**Fixing brackets**

They are available for SDS180/DLS180 directional valves and they are zinc plated steel, complete with mounting screws.



**Painting**

SDS180 valve can be supplied with one coat of black paint (**CVN** configuration).

Description example: SDS180/2/AC(YG3-120)/18L/18L/RC-**<CVN>**

NOTES - For different colour consult Sales Department.

8<sup>th</sup> edition June 2015

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D1WWEB01E

