

 **walvoil**

**SDS 180**  
**Sectional directional**  
**control valve**

TECHNICAL CATALOGUE



 **walvoil**  
THE QUALITY CONNECTION



## Features

- 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 carryover port.
- A wide range of anti-splash/contamination port valves.
- Order-specific sections for several types of circuit.
- Available manual, pneumatic, electrohydraulic, proportional hydraulic, speed 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 Dept. for more detailed information or exact requests.

### WARNINGS

All specifications of the catalogue refer to the standard product at the time of print, unless to a continuous improvement, reserves the right to discontinue, modify or reuse the specifications, without notice.

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

127 edition December 2018

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## DLS180

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## Working conditions

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

Nominal flow rating	for series 6000	180 l/min	47 US gpm
		140 l/min	37 US gpm
Pilot pressure (1)	for series 6000	100 bar	400 psi
		280 bar	1000 psi
Back pressure (max.)	T outlet port	28 bar	300 psi
Internal leakage (standard) A(B)-T	Δp = 100 bar (1400 psi)	2 cm <sup>3</sup> /min	0.33 in <sup>3</sup> /min
Fluid		Mineral based oil	
Fluid temperature	with ISO (N15M) seals	from -20°C to 80°C	flow 4°F to 176°F
	with NBR (N170) seals	from -20°C to 100°C	flow 4°F to 212°F
Viscosity	operating range	from 13 to 75 mm <sup>2</sup> /s	from 11 to 70 cSt
	min.	12 mm <sup>2</sup> /s	12 cSt
	max.	400 mm <sup>2</sup> /s	400 cSt
Max. contamination level		-18/18 - ISO 4406 (NAS 1638 - class 1)	
Ambient temperature for working conditions	with mechanical devices	from -40°C to 80°C	flow 4°F to 176°F
	with pneumatic and hydraulic devices	from -20°C to 80°C	flow 4°F to 176°F
	with electric devices	from -20°C to 80°C	flow 4°F to 176°F

NOTE: (1) Intermittent pressure of max. 250,000 cycles with specific internal loading.

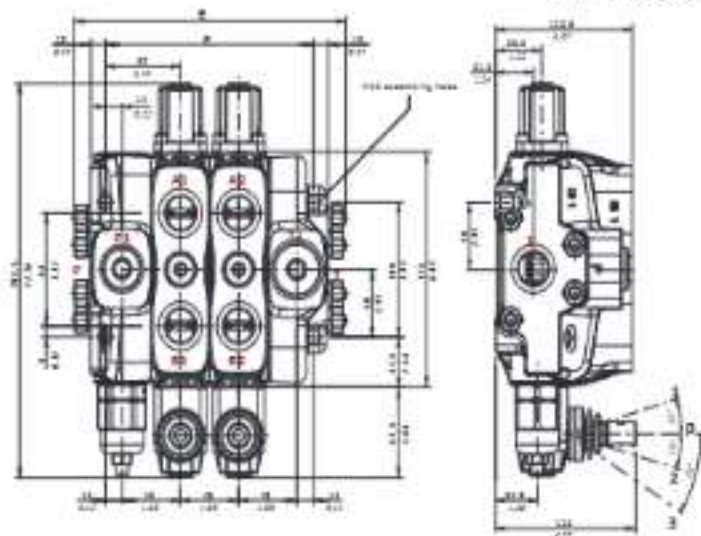
## Standard threads

REFERENCE STANDARD			
	BSF	UN-UNF	NPTF
THREAD ACCORDING TO	ISO 228/1	ISO 261	ANSI B1.20.3
	ISO 22799	ANSI B1.1 Unified	
CAVITY DIMENSION ACCORDING TO	ISO 1179-1	11828-1	
	SAE	11829-1	J475a
	DIN	3852-2 shape X or Y	

## PORTS THREADING

PLUG PORTS		
	BSF	UN-UNF
# inlet	G 3/4	1 1/8-12 (SAE 12)
A and B ports	G 3/4	1 1/8-12 (SAE 12)
T outlet and E vent valve	G 1	1 3/8-12 (SAE 18)
FLUID PORTS		
Hydraulic	G 1/4	9/16-18 (SAE 6)
Pneumatic	NPTF 1/2-27	NPTF 1/2-27

## Dimensional data

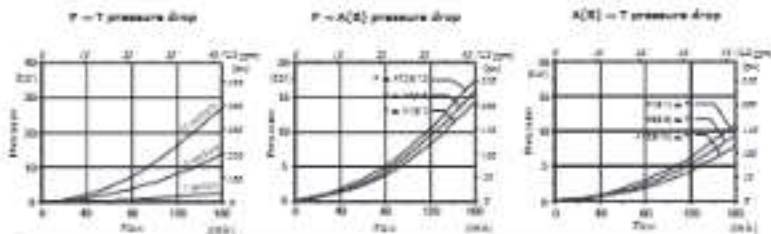


\*NOTE - Drawings and dimensions are referred to SDS closed configuration.

TYPE	Z		F		Weight	
	mm	in	mm	in	kg	lb
SDS180/1	176	6.93	134	5.28	13.8	30.42
SDS180/2	224	8.82	172	6.77	19.2	42.30
SDS180/3	273	10.73	220	8.66	24.6	54.23
SDS180/4	322	12.68	268	10.55	30	66.17
SDS180/5	370	14.57	316	12.44	35.4	78.09
SDS180/6	418	16.46	364	14.33	40.8	90.01

TYPE	Z		F		Weight	
	mm	in	mm	in	kg	lb
SDS180/7	467	18.35	412	16.22	46.2	101.92
SDS180/8	515	20.28	460	18.11	51.6	113.75
SDS180/9	563	22.13	508	20.00	57	125.69
SDS180/10	611	23.98	556	21.89	62.4	137.62
SDS180/11	659	25.93	604	23.78	67.8	149.55
SDS180/12	707	27.79	652	25.67	73.2	161.48

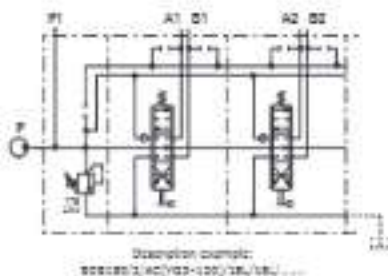
## Performance data



## Hydraulic circuit

## Parallel circuit

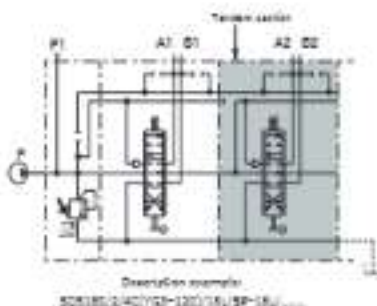
Standard configuration with both centre and side inlet and outlet.



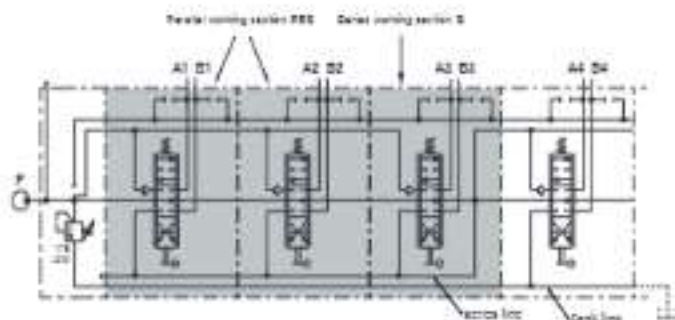
## Series-parallel (tandem) circuit

It needs a special working section kit.

Tandem section is fed from the first flow pressure line; it's excluded when an adjacent section is operated.



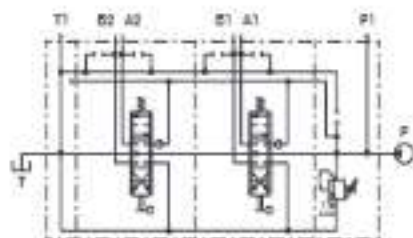
## Series circuit



Description example:

SDS180/4 AC/YG3-120/PDS-1S, PDS-1S, S-1S/1S, /...

## Right inlet directional valve



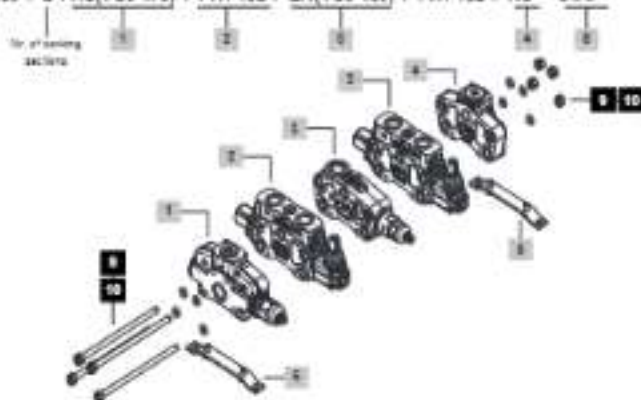
Description example:

SDS180/2 AC/YG3-120/1S/1S/RC

## Complete sections ordering codes

Standard configuration with side inlet and outlet

SDS180 / 2 / AC(YG3-175) / PHT-18L / EI1(YG3-180) / PHT-18L / RC - STAF

**1 Inlet section \*** page 11

TYPE	CODE	DESCRIPTION
TYPE AC(YG3-175)	0004	DESCRIPTION
DESCRIPTION with direct pressure relief valve	0004	DESCRIPTION
TYPE AC000-130	0007	DESCRIPTION
DESCRIPTION with pilot pressure relief valve	0007	DESCRIPTION
TYPE AC00V	0004	DESCRIPTION
DESCRIPTION without pressure relief valve	0004	DESCRIPTION
TYPE AC(YG3-130)R2	0008	DESCRIPTION
DESCRIPTION with direct pressure relief valve and pilot, accumulator	0008	DESCRIPTION
TYPE AC(YG3-130)R2R	0008	DESCRIPTION
DESCRIPTION with direct pressure relief valve and pilot, accumulator	0008	DESCRIPTION
TYPE M(L2M-130)R(W)C	0008	DESCRIPTION
DESCRIPTION with flow control and pilot pressure relief valve	0008	DESCRIPTION
TYPE A03(YG3-130-130-130)	0004	DESCRIPTION
DESCRIPTION with double stage pressure relief valve and pilot valve	0004	DESCRIPTION
TYPE B04M(L2M-130)R(W)C-030C	0004	DESCRIPTION
DESCRIPTION with unloader function, direct lock and pilot pressure relief valve (030C)	0004	DESCRIPTION

**2 Working section \*** page 20

TYPE	CODE	DESCRIPTION
PHT-18L	01010107	Parallel circuit, prearranged for port valves, double acting stand with spring return, lever control
PPHT-18L007	01010108	Parallel circuit, prearranged for valves with flow control
0Q4T-08L	01010101	As previous without cover, prearranged for port valves
0P-18L	01010105	For series-cable (barrier) circuit, prearranged for port valves, double acting stand with spring return, lever control
0-08L	01010101	Series circuit, double acting stand with spring return, lever control

**3 Working section (continued) \*** page 20

TYPE	CODE	DESCRIPTION
PPHT-18M08	01010108	Parallel circuit, prearranged for port valves with proportional hydraulic control
PPC-08L	01010101	Parallel circuit, lever control, in series with series working section (see page 7)
0M02-18L	01010101	As 0Q4T for series-cable (barrier) circuit
0PHT-18M08	01010107	Parallel circuit, prearranged for valves with flow control with proportional hydraulic control
0Q4T-18M08	01010101	As previous, without cover, prearranged for port valves

**3 Intermediate sections \*** page 61

TYPE	CODE	DESCRIPTION
012(YG3)	01040101	With direct pressure relief valve

**4 Outlet section \*** page 62

TYPE	CODE	DESCRIPTION
RC	01020101	With side outlet
RD	01020102	With upper outlet
RE	01020101	With upper outlet and side return over valve
RF	01020104	With upper outlet, closed center
RV	01020103	With lower pressure below 10 bar (10 bar)
RV(R)	01020107	With backpressure valve 0 bar (0 bar)

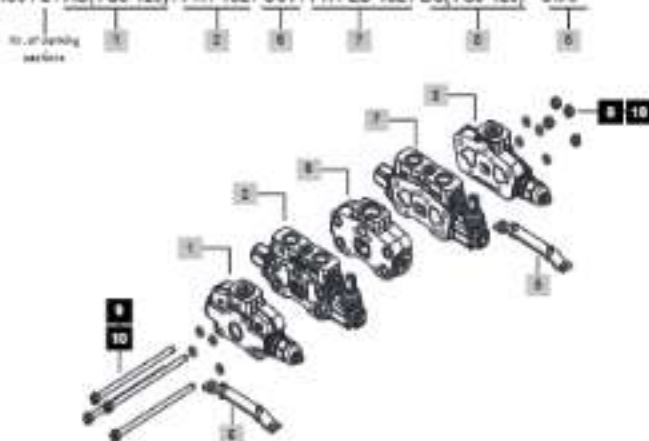
**5 Fixing brackets** page 61

TYPE	CODE	DESCRIPTION
01AF	02010101	0-ports with assembling screw

NOTE (\*) - Codes are referred to 0QP thread

## Configuration with 2 side inlets and mid return manifold

SDS180 / 2 / AC(YG3-120) / PHT-1BL / C51 / PHT-ED-1BL / BC(YG3-120) - STAF

**1** Return manifold <sup>1</sup> page 59

TYPE	CODE	DESCRIPTION
CA	01340101	Mid return manifold

**3** Right inlet working section <sup>1</sup>

TYPE	CODE	DESCRIPTION
PHT-ED-1BL	01001018	Transfer shock, preemerged for sym valves, double acting acid with spring return, lever control
AP-ED-1BL	01011043	As previous with semi-circular (center) shock

**4** Right inlet section <sup>1</sup>

TYPE	CODE	DESCRIPTION
BC(YG3-120)	01001026	Side inlet with direct pressure relief valve
BC(XS-120)	01001028	Side inlet with pilot pressure relief valve
BC(24)	01001027	Side inlet without pressure relief valve
BC(YG3-120)	01001029	Center inlet with direct pressure relief valve

**5** Assemb. kit without intermediate section

CODE	DESCRIPTION
STFA10270	Kit for kit for 2 working sections directional valve
STFA10215	Kit for kit for 3 working sections directional valve
STFA10203	Kit for kit for 4 working sections directional valve
STFA10212	Kit for kit for 4 working sections directional valve
STFA10288	Kit for kit for 5 working sections directional valve
STFA10242	Kit for kit for 6 working sections directional valve
STFA10243	Kit for kit for 7 working sections directional valve
STFA10260	Kit for kit for 8 working sections directional valve
STFA10254	Kit for kit for 9 working sections directional valve
STFA10263	Kit for kit for 10 working sections directional valve
STFA10262	Kit for kit for 11 working sections directional valve
STFA10264	Kit for kit for 12 working sections directional valve

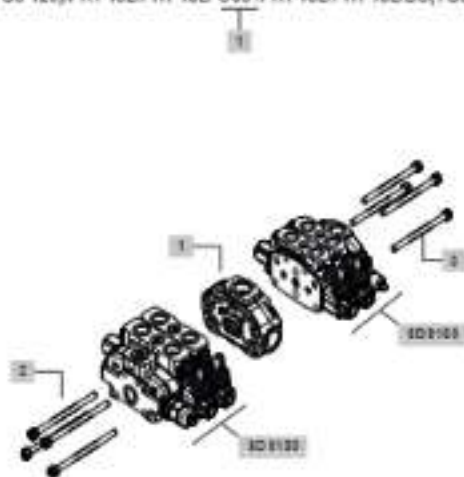
**10** Assemb. kit with intermediate section

CODE	DESCRIPTION
STFA10289	Kit for kit for 2 working sections directional valve
STFA10216	Kit for kit for 3 working sections directional valve
STFA10204	Kit for kit for 4 working sections directional valve
STFA10245	Kit for kit for 5 working sections directional valve
STFA10246	Kit for kit for 6 working sections directional valve
STFA10268	Kit for kit for 7 working sections directional valve
STFA10269	Kit for kit for 8 working sections directional valve
STFA10265	Kit for kit for 9 working sections directional valve
STFA10266	Kit for kit for 10 working sections directional valve
STFA10264	Kit for kit for 11 working sections directional valve
STFA10248	Kit for kit for 12 working sections directional valve

NOTE (\*) - Codes are referred to SAP thread.

Configuration with SDS180 and SDS150 valves coupling together ordering codes

SDS180/2(AC)(YG3-120)/PHT-18L/PHT-18L/ C 53 /PHT-18L/PHT-18L/BC(YG3-120)/SD 5150/2



### 1 Return manifold (\*)

TYPE	CODE	DESCRIPTION
C53	6234120	No return manifold

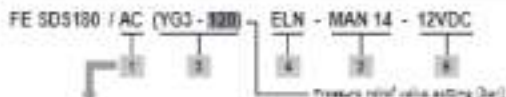
### 2 Accessory kit for SDS180 valve side

CODE	DESCRIPTION
STDA101	Tie rod kit for 1 working section directional valve
STDA102	Tie rod kit for 2 working sections directional valve
STDA103	Tie rod kit for 3 working sections directional valve
STDA104	Tie rod kit for 4 working sections directional valve
STDA105	Tie rod kit for 5 working sections directional valve
STDA106	Tie rod kit for 6 working sections directional valve
STDA107	Tie rod kit for 7 working sections directional valve
STDA108	Tie rod kit for 8 working sections directional valve
STDA109	Tie rod kit for 9 working sections directional valve
STDA110	Tie rod kit for 10 working sections directional valve

### 3 Accessory kit for SDS150 valve side

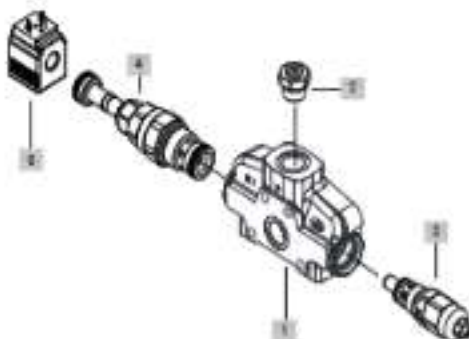
CODE	DESCRIPTION
STDA101	Tie rod kit for 1 working section directional valve
STDA102	Tie rod kit for 2 working sections directional valve
STDA103	Tie rod kit for 3 working sections directional valve
STDA104	Tie rod kit for 4 working sections directional valve

NOTE (\*) - Codes are related to ERP model



## Available configurations

- AC: with wide inlet, for left inlet (standard) directional valve  
 AD: with upper inlet, for left inlet (standard) directional valve  
 BC: with wide inlet, for right inlet directional valve  
 BD: with upper inlet, for right inlet directional valve



## 1 Inlet cover body \* page 12

CODE 240A180LH  
 CONNECTION: Genders both

## 2 Parts \*\*

TYPE	CODE	DESCRIPTION
-	247A710300	SA plug (combined in description)
WAB04	240A020100	01.8 Pressure gauge arrangement
WAB04	240A020100	01.4 Pressure gauge arrangement

## 3 Inlet relief valve options page 13

Standard setting is referred to 10 (min. 10/12 bar)

DV 247A710300 Relief valve blanking plug

## SDS180 / 12VDC / 12VDC / 12VDC / 12VDC / 12VDC

(RG-130) 00720120 Range 60-215 bar (0.7-2.7 MPa)

standard setting 110 bar (1.0 MPa)

(RG-130) 004110010 Ac pressure without filter

## SDS180 / 12VDC / 12VDC / 12VDC / 12VDC / 12VDC

(Y01-00) 240A110110 Range 60-215 bar (0.7-2.7 MPa)

standard setting 60 bar (0.7 MPa)

(Y02-07) 240A110110 Range 100-210 bar (1.0-2.1 MPa)

standard setting 170 bar (1.7 MPa)

(Y06-00) 240A110110 Range 100-210 bar (1.0-2.1 MPa)

standard setting 150 bar (1.5 MPa)

## SDS180 / 12VDC / 12VDC / 12VDC / 12VDC / 12VDC

(Y00-100-100) 1100A4008 Setting 100 and 130 bar (10.0 and 13.0 MPa)

## 4 Inlet valve options page 15

TYPE	CODE	DESCRIPTION
-	247A020410	Relief valve blanking plug (combined in description)
0	247A020200	1100 psi-0.1 MPa valve
5	240A020200	Hydraulically controlled
<b>Standard emergency solenoid valve</b>		
0LR	1070000000	Blue/Off emergency
0LP	1070000000	Red/On emergency
0LV	1070000000	Green/On emergency
0LT	1070000000	Turn and hold type with 24VDC emergency

## 5 Coils page 79

TYPE	CODE	DESCRIPTION
12VDC	4800010000	12VDC, 100VA/200VA connector

For complete coil data see page 79.

NOTE (\*) - Codes are referred to 007 (Inlet)

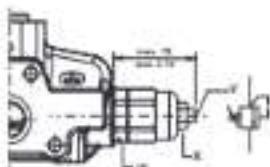


## Direct overpressure relief valve

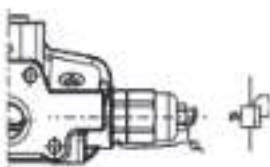
Operation example: Y 0 2-100

Configuration: Y (valve setting (bar))  
0 (spring type)

Configuration 0 type: adjustable with screw



Configuration W type: valve set and sealed



Wrenches and tightening torques

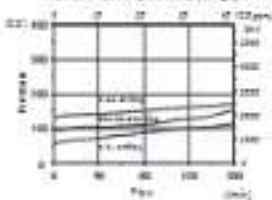
W - wrench T - 24 Nm (177 lbf)

V - allen-wrench 2

W - wrench 26 - 42 Nm (19 lbf)

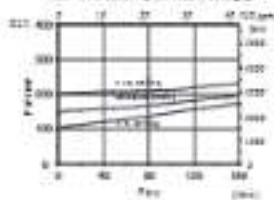
Y62 valve setting range

From 63 to 120 bar (from 900 to 1700 psi)



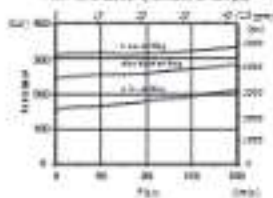
Y63 valve setting range

From 100 to 200 bar (from 1400 to 2900 psi)



Y64 valve setting range

From 100 to 200 bar (from 1400 to 2900 psi)



## Inlet valve options

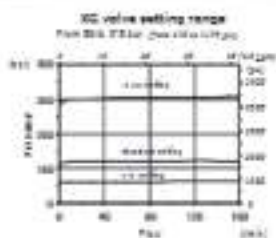
## Pilot operated overpressure relief valve

Operation example: X O N -    
 Configuration:  valve setting (Bar)  
 without filter

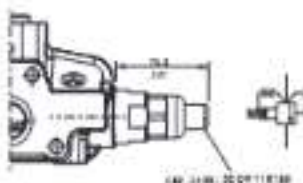
Configuration O type: adjustable nitrogen






Wrenches and tightening torques:  
 X - wrench 12 - 24 Nm (87.5 lb)  
 Y - allen wrench 2  
 W - wrench 20 - 40 Nm (150 lb)

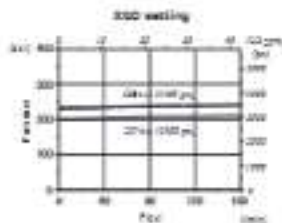
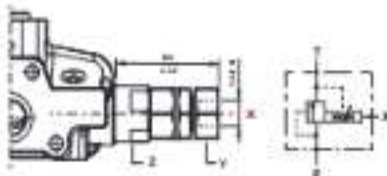


Configuration Z type: valve set and sealed with tamper proof cap



## Double stage relief valve

Operation example: X D D -    
 Wrenches and tightening torques:  Valve setting (Bar)  
 Z - wrench 20 - 40 Nm (150 lb)  
 Y - allen wrench 2



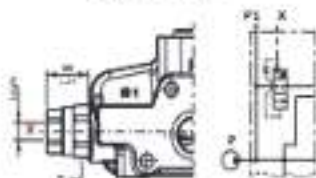
NOTE - valve with 3/8" pilot. For connections with different thread contact the Sales Dept.

## Unloader valves

Operation example: 4G (Y35 - 120) **ELT** - 12/0G

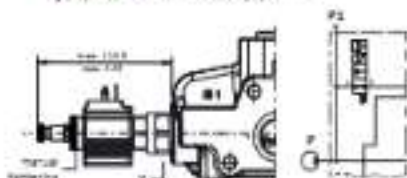
hydraulic operated valve: L  
 solenoid operated valve: ELN Feeding valve  
 ELP for solenoid operated  
 ELV  
 ELT

## Hydraulic operated



## Solenoid operated

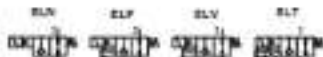
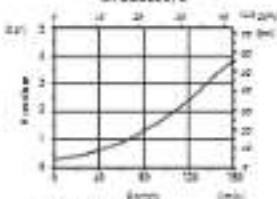
**WARNING** The manual override option is intended for emergency use, not for continuous duty operation.



Wrenches and tightening torques  
 T = wrench 20 - 40 Nm (15 - 30 ft-lb)

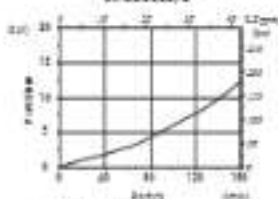
## Legende

ELN: solenoid emergency  
 ELP: push button emergency override  
 ELV: solenoid emergency override  
 ELT: "burst" emergency override

Pressure drop valve L type  
 on SDS180/2

## Valve L type features

Flowing flow ..... 110 l/min (37.7 US gpm)  
 Max. pressure ..... 200 bar (2900 psi)  
 Max. leakage ..... 0.2 l/min @ 200 bar  
 (0.22 US gal @ 2900 psi)

Pressure drop valve EL type  
 on SDS180/2

## Valve EL type features

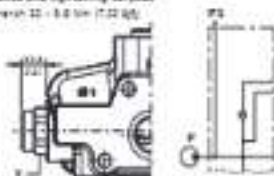
Flowing flow ..... 40 l/min (10.7 US gpm)  
 Max. pressure ..... 200 bar (2900 psi)  
 Max. leakage ..... 0.2 l/min @ 200 bar  
 (0.22 US gal @ 2900 psi)

For 600 ccf see page 79

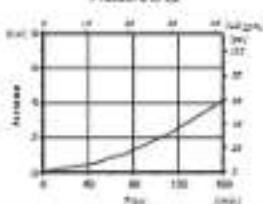
## Anti-cavitation valve

Operation example: 4G (Y35 - 120) F

Wrenches and tightening torques  
 T = wrench 20 - 30 Nm (15 - 22 ft-lb)

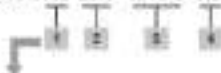


## Pressure drop



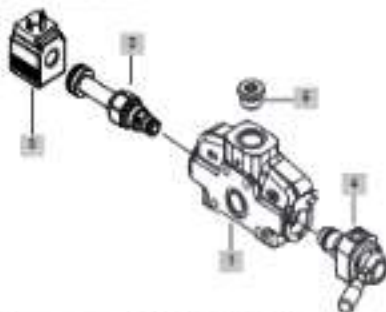
## Configuration with rotary commutator

FE SDS180 / AC ELN - 12VDC - R2



## Available configurations

- AC with side inlet for left inlet (standard) directional valve
- AD with upper inlet for left inlet (standard) directional valve
- BC with side inlet for right inlet directional valve
- BD with upper inlet for right inlet directional valve

**1 Inlet cover body** page 17

CODE: 0204100110

DESCRIPTION: Preprocessor for rotary commutator

**2 Inlet valve options** page 13

Standard setting is referred to as 1 (no. 1) 17 gpm flow

INLET VALVE OPTIONS

TYPE	CODE	DESCRIPTION
DR	0207000100	leaf valve blanking plug
<u>ISO 15011 pilot operated pressure relief valve 2 type</u>		
ORC-430	007711110	range 11-21 bar (170-170 psi) standard setting 110 bar (1700 psi)
ORC-430	004000010	in-line type without filter
<u>ISO 15011 direct operated relief valve 2 type (standard)</u>		
(Y63-60)	0204100010	range 63-110 bar (900-1600 psi) standard setting 80 bar (1170 psi)
(Y63-LF6)	0204100010	range 100-110 bar (1450-1600 psi) standard setting 170 bar (2500 psi)
(Y64-600)	0204100010	range 100-110 bar (1450-1600 psi) standard setting 100 bar (1450 psi)
<u>Backcheck relief valve (standard)</u>		
(X60-100-110)	113004010	setting 107 and 110 bar (1570 and 1570 psi)

INLET VALVE OPTIONS

C	0207000100	Direct-actuation valve
L	0204000100	ISO 15011 operated unloader valve

Directly operated unloader valve

SLR	1070000000	without emergency
SLR	1070000000	push-button emergency
SLV	1070000000	direct type emergency
SLT	1070000004	push and hold type with solenoid emergency

**3 Coil** page 79

TYPE

CODE

DESCRIPTION

12VDC - 45LE01100+ WR type 12 VDC ISO4101 connector  
For complete available coil list see page 79**4 Commutator**

TYPE

CODE

DESCRIPTION

R3 0204010010 Rotary commutator

**5 Parts**

CODE

DESCRIPTION

0207010000 Seal Plug

NOTE (\*) - Codes are referred to B&amp;P Invalve



## Configuration with electric commutator

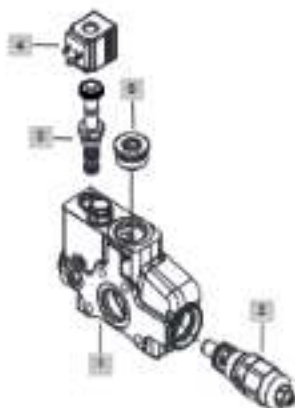
FE SDS180 / AC (YG3 - 820) R2E - 12VDC



## Available configurations

AC with 200 bar inlet for left inlet (standard) directional valve

AD with upper inlet for left inlet (standard) directional valve

**1 Inlet cover body** page 19

CODE: 30741004

DECAOPTION: Preprocessor for electric commutator

**2 Inlet valve options** page 15

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

Type	CODE	DECAOPTION
AV	30741004L2	Ball valve banking plug
D	307410000	Directional valve
L	307410010	Solenoid operated unloader valve

**3 Solenoid operated pressure relief valve 3.200**

(NO-430)	302011110	Range 20-210 bar (290-300 psig) standard setting 110 bar (150 psi)
		As pressure without filter

**(NO-430) 3.200 direct pressure relief valve 3.200 (standard)**

(YC3-80)	3024120011	Range 10-137 bar (150-197 psi) standard setting 60 bar (87 psi)
----------	------------	--

(YG3-175)	3024120012	Range 100-200 bar (145-290 psi) standard setting 175 bar (250 psi)
-----------	------------	---

(Y04-200)	3024120013	Range 100-210 bar (145-300 psi) standard setting 210 bar (300 psi)
-----------	------------	---

**4 Solenoid operated pressure relief valve 3.200 (standard)**

(NO-100-330)	130040401	Setting 100 and 210 bar (145 and 300 psi)
--------------	-----------	---

**3 Inlet valve options (continued)** page 15**Solenoid operated unloader valve**

F19	CODE	DECAOPTION
DLN	100000000	Without emergency
DLP	100000000	Fuel-safety emergency
DLV	100000000	Safety emergency
DLT	100000000	Fuel and fuel-safety with inert emerg

**3 Electric commutator**

F19	CODE	DECAOPTION
R2E	302010040	Electric commutator, ISO403 connector

For complete available code list see page 79

**4 Code** Page 79

F19	CODE	DECAOPTION
12VDC	402011004	12V type, 12VDC, ISO403 connector

For complete available code list see page 79

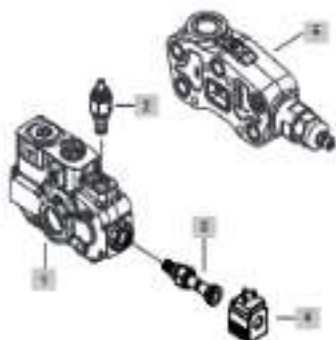
**5 Parts**

CODE	DECAOPTION
307410000	21.4 Plug

NOTE (\*) - Codes are related to 6&amp;P thread



## Configuration with flow cut-out

**1 Inlet cover body \*** page 21

0000 000114070  
 060017000 with flow cut-out

**2 Main relief valve** page 21

Standard setting is referred to 10 mm Ø / 10 gpm flow

Type	Code	Description
L5W(03)	00F110101	range 5-30 bar (70-700 psi) standard setting 20 bar (300 psi)
L5W(04)	00F110111	range 10-120 bar (150-1700 psi) standard setting 120 bar (1700 psi)
L5W(04)	00F110111	range 100-610 bar (1500-10000 psi) standard setting 350 bar (5000 psi)
00	07H010101	relief valve blanking plug

**3 Unloader valve options** page 21

Type	Code	Description
ELN(0)	00F0010100	without manual emergency NO shut
ELN(0)	00F0010101	without manual emergency NC shut
ELN(0)	00F0010104	Push-over manual emergency NO shut
ELN(0)	00F0010105	Push-button manual emergency NO shut
ELN(0)	00F0010106	Push-rod manual emergency NO shut

**4 Coil** page 79

Type	Code	Description
12VDC	40L0010004	668 box, 12VDC, 100W coil connector

To complete available coils (4) see page 79

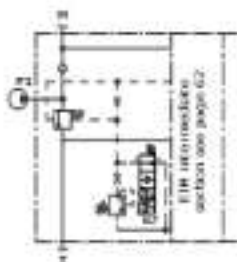
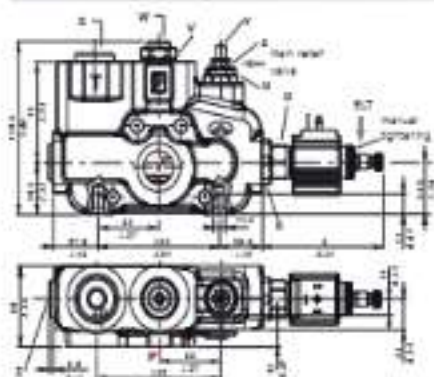
**5 Intermediate section \*** page 62

Type	Code	Description
02W(00-010)	01A010001	intermediate section with pressure relief valve

0270: inlet cover with flow cut-out must be always ordered with the intermediate section. (See page 62)

0270 (\*) - Codes are referred to 00F 01000

## Dimensional data and hydraulic circuit



## Wrenches and tightening torques

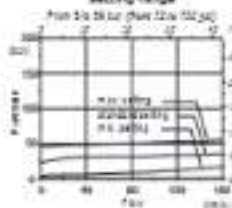
- 1 - wrench 12 - 40 Nm (31 lbf)
- 1 - allen wrench 4
- 6 - wrench 8 - 24 Nm (17.7 lbf)
- 2 - wrench 15 - 24 Nm (17.7 lbf)
- 3 - wrench 27 - 24 Nm (17.7 lbf)
- 4 - wrench 28 - 30 Nm (22.1 lbf)
- 5 - wrench 23 - 42 Nm (31.1 lbf)
- 6 - allen wrench 10

## Legenda

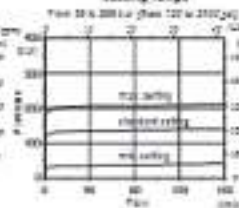
- ELV: without emergency
- ELP: push button emergency override
- ELM: stop emergency override
- ELT: "functional" emergency override
- ELV(NC): without emergency NC circuit



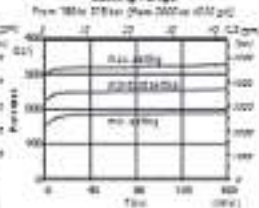
L2M(62) main relief valve setting range



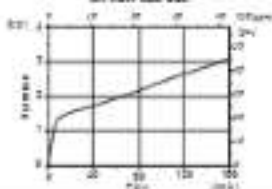
L2M(62) main relief valve setting range



L2M(62) main relief valve setting range



Pressure drop P - T on flow cut-out

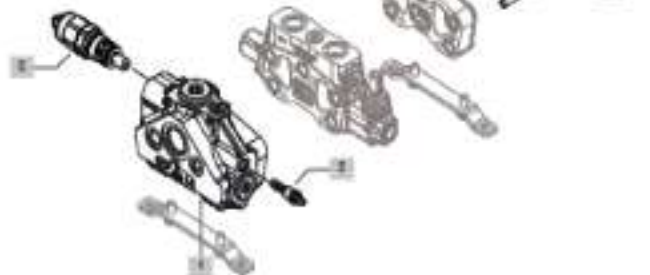


## Configuration with priority valve



## Available configurations

- AC: with side inlet for left inlet (standard) directional valve
- AD: with upper inlet for left inlet (standard) directional valve
- BD: with side inlet for right inlet (standard) directional valve
- SD: with upper inlet for right inlet (standard) directional valve

**1 Inlet cover body** page 23

CODE: 027A / 0220  
 020200701 180 priority valve

**2 L.S. relief valve options** page 23

Code	Description	Standard setting & reference to 12 l/min (2.8 US gal) flow
180	SDA120212	with 200 bar, range 40-120 bar (580-1000 psi) standard setting 60 bar (870 psi)
	SDA120213	40 pressure, range 120-200 bar (1700-2900 psi) standard setting 180 bar (2610 psi)
184	SDA120214	designed for less setting, range 40-120 bar (580-1000 psi) standard setting 60 bar (870 psi)
	SDA120217	40 pressure, range 120-200 bar (1700-2900 psi) standard setting 180 bar (2610 psi)
182	SDA120218	with tandem relief box, range 6-115 bar (87-1660 psi) standard setting 60 bar (870 psi)
	SDA120219	40 pressure, range 120-200 bar (1700-2900 psi) standard setting 180 bar (2610 psi)
27	SD113012	leaf valve blanking plug

**3 Inlet valve options** page 13

Type	Code	Description
CV	SD17025412	leaf valve blanking plug
<b>SD1211 (200 bar) standard relief valve 2 hose</b>		
(180-120)	SD1111120	range 40-120 bar (580-1000 psi) standard setting 120 bar (1700 psi)
(180-120)	SDA110212	40 pressure without filter
<b>SD1211 (120 bar) standard relief valve 2 hose (standard)</b>		
(180-80)	SD1011212	range 40-120 bar (580-1000 psi) standard setting 60 bar (870 psi)
(180-170)	SD1011213	range 100-200 bar (1400-2900 psi) standard setting 170 bar (2440 psi)
(180-200)	SD1011214	range 120-200 bar (1700-2900 psi) standard setting 200 bar (2900 psi)

**Double stage relief valve (inlet port 5AE 6)**  
 (180-200-220) 11200-0002 setting 207 and 220 bar (2970 and 3160 psi)

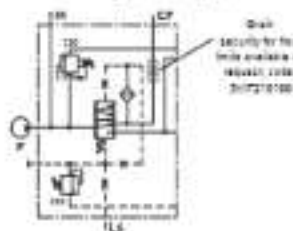
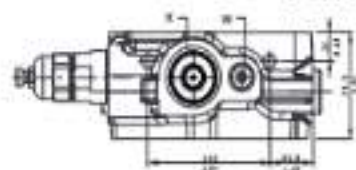
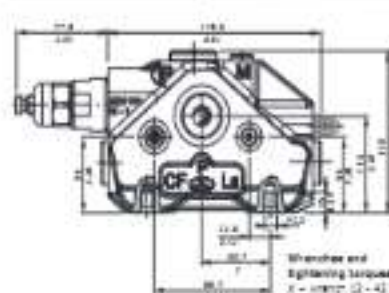
**4 Assembling kit**

Code	0210007104
SD184160	The rod kit for 2 working sectional valve
SD184162	The rod kit for 3 working sectional valve
SD184163	The rod kit for 4 working sectional valve
SD184164	The rod kit for 4 working sectional valve
SD184165	The rod kit for 5 working sectional valve
SD184167	The rod kit for 6 working sectional valve
SD184168	The rod kit for 7 working sectional valve
SD184169	The rod kit for 8 working sectional valve
SD184170	The rod kit for 9 working sectional valve
SD184171	The rod kit for 10 working sectional valve

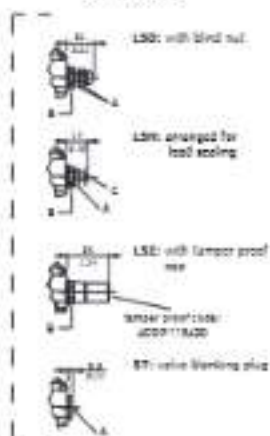
NOTE (\*) - Codes are referred to 02P 11660.

Configuration with priority valve

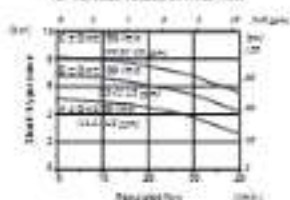
Dimensional data and hydraulic circuit



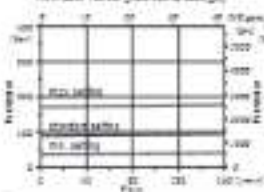
Load Sensing pressure relief valves



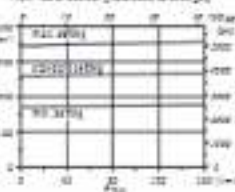
Stand-by pressure vs. regulated flow for various values of inlet flow



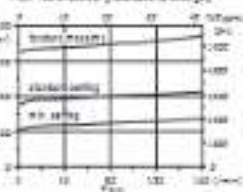
L5M, LSD valve and LSE setting range  
 From 100 to 180 bar (flow 200 to 2000 g/d)



L5M and L5D valve setting range  
 From 100 to 200 bar (flow 2000 to 2000 g/d)



LSE valve setting range  
 From 100 to 200 bar (flow 2000 to 2000 g/d)



Configuration with unloader operation spool type

**1 Inlet cover body \*** page 25

CODE: 371-18375

SDS180PT100 with unloader operation spool type

**2 Main relief valve** page 25

Standard setting in W/No 10	10 min. (24/22 gal./min)	TYPE	CODE	DESCRIPTION
L5W103(PC07)	SD7118100	Range 0-20 bar (0-290 psi)		Standard setting 30 bar (435 psi)
L5W103(PC07)	SD7118101	Range 0-20 bar (0-290 psi)		Standard setting 120 bar (1740 psi)
L5W104(PC07)	SD7118102	Range 0-20 bar (0-290 psi)		Standard setting 200 bar (2900 psi)
WV	37402001	Relief valve opening plug		

**3 Pilot solenoid valve options** page 25

TYPE	CODE	DESCRIPTION
ELN(NO)	327000000	Without manual emergency stop
ELN(ND)	327000001	Without manual emergency stop
ELT(NO)	327000004	Emergency manual emergency stop
ELP(NO)	327000001	Push-button manual emergency stop
ELV(NO)	327000003	Screw-type manual emergency stop

**4 Coils** page 29

TYPE	CODE	DESCRIPTION
24VDC	461803401	MB type, 24VDC, ISO440 connector

For complete details visit us on page 29

SD71 (\*) - Codes are related to SD71 model

## Configuration with unloader operation spool type

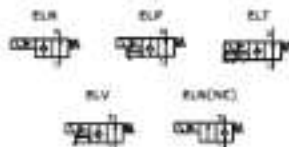
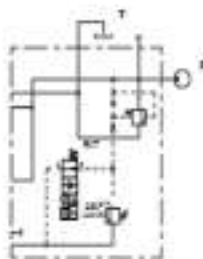
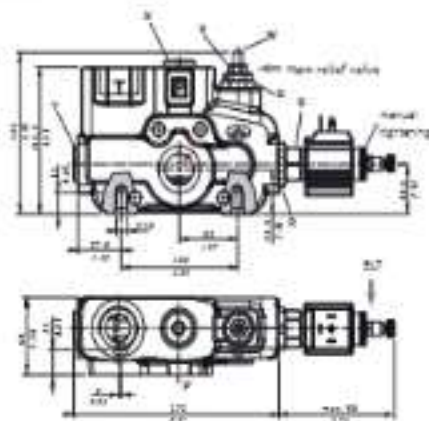
## Dimensional data and hydraulic circuit

## Wrenches and tightening torques

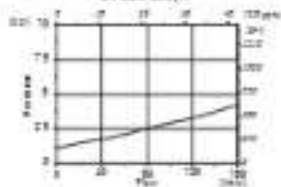
- S = wrench 8 - 24 Nm (57.7 lb)
- T = wrench 12 - 24 Nm (57.7 lb)
- U = allen key 4
- V = allen key 12
- W = wrench 24 - 30 Nm (57.7 lb)
- X = wrench 32 - 42 Nm (81.3 lb)

## Legende

- ELR without emergency override
- ELP push button emergency override
- ELV screw emergency override
- ELT "sun/shield" emergency override



Pressure drop  $P - T$   
with unloader operation spool type  
on SDS 180/4



Parts ordering codes (mechanical control)

EL SDS180 / PHT - 1 8 L P1 (G3 - 1000) — Pressure relief valve setting (bar)

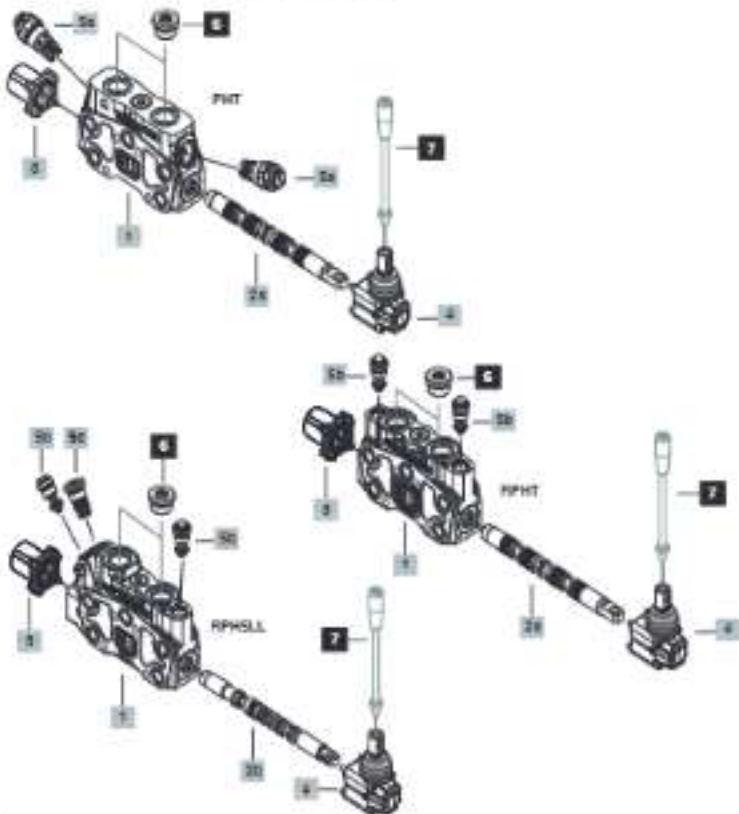
1 28 3 4 38

EL SDS180 / RPHT - 1 8 L U (1000) — Pressure relief valve feed setting (bar)

1 28 3 4 30

EL SDS180 / RPH5LL - 5HFL 8 U (100) — Pressure relief valve feed setting (bar)

1 20 3 4 30



## Parts ordering codes (mechanical control)

Working section			2a Spools (continued)			page 34		
TYP	CODE	DESCRIPTION	TYP	CODE	DESCRIPTION	TYP	CODE	DESCRIPTION
SWT	201100100	For parallel circuit	ATK	201010001	Double acting with A and B closed in neutral position, A partially connected to tank in position 1, A partially connected to tank in position 2; needs .AT section kit	2	201010100	Double acting, 3 positions, with A and B open to tank in neutral position
SPHT	201100101	For parallel circuit with upper arrangement for fixed setting and valve	ATV2	201010002	As previous, B with restricted connection to tank; needs .AT section kit	2H	201010103	Double acting 3 positions, with A and B partially open to tank in neutral position
RQWT	201100102	For parallel circuit without upper arrangement for set valve	3	201010100	Single acting on A, 3 positions, B slugged; needs G34 ring	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring
SP	201100101	For tandem circuit	3	201010100	Double acting equal with A and B closed in neutral position, A positions, with open to, flowing 4" position; need dedicated sealiner kit G34 type and working section kit R3 and SP45 type	4H	201010101	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
	201100101A	As previous, for SP40, SP50, SP6, SP60, SP65 equal positioners	3	201010100	Double acting equal with A and B closed in neutral position, A positions, with open to, flowing 4" position; need dedicated sealiner kit G34 type and working section kit R3 and SP45 type	4H2	201010102	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
C	201100100	For series circuit	4	201010100	Single acting on A, 3 positions, B slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
Q(H2)	201100102	As previous, for SP40, SP50, SP6, SP60, G30, G32 equal positioners	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
HS	201100101	For parallel circuit with floating circuit with upper arrangement for fixed setting and valve	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
SP45	201100100	For parallel circuit with floating circuit with upper arrangement for fixed setting and valve	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
Q2	201100100	For parallel circuit, for valve with series circuit (page 7)	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
PH(H2)	201100103	As SWT, for SP40, SP50, SP6, SP60, G30, G32 equal positioners	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
QPH(H2)	201100103	As previous with upper arrangement for fixed setting and valve	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
RQPH(H2)	201100103	As previous without upper arrangement for set valve	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
PH	201100100	Regenerative control kit, for G30, G30C-G30C or G32/G32C equal positioners	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
PH(H2)	201100100	As previous, for SP40, SP50, SP6, SP60, G30, G32 equal positioners	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
SP45L	201100104	For parallel circuit with floating circuit with upper arrangement for set valve for JTY spool type	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
SP45LL	201100105	For parallel circuit with floating circuit with upper arrangement for set valve for JTY spool type	4	201010100	Single acting on B, 3 positions, A slugged; needs G34 ring	4H2	201010103	Double acting 3 positions, regenerative circuit in 2" position with open to; need dedicated positioners kit
NOTE - (H2) for dedicated G30 positioners, unless it is specified								
2a Spools			2b Low leak spools**			page 34		
TYP	CODE	DESCRIPTION	TYP	CODE	DESCRIPTION	TYP	CODE	DESCRIPTION
4	201010100	Double acting, 3 positions, with A and B closed in neutral position	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4(H2)	201010101	As previous, need G34 spool positioner and dedicated working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4C	201010100	As type 1, sensitive type	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4C(H2)	201010101	Double acting with A and B closed in neutral position, A partially connected to tank in position 1, A partially connected to tank in position 2	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4C(H2)	201010101	As previous, sensitive type	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4A	201010100	Double acting, 3 positions, with A open to tank in neutral position	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4B	201010100	Double acting, 3 positions, with B open to tank in neutral position	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit
4D	201010101	As type 1, sensitive type for flow up to 100 l/min (2.8 US GPM)	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit	4	201010100	Double acting equal, 3 positions, A and B closed in neutral position, A partially connected to tank; needs RPHLL working section kit

NOTE (\*) - Codes are referred to G30 (fixed)

NOTE (\*\*) - Codes feature of the various spool sizes contact our Sales Dept

## Perls ordering codes (mechanical control)

## 3 "A" disc spool positioners (cont.) page 26

Type	Code	Description
8	010810000	With spring return in neutral position
8TL	010810010	As type 8, for female cable control
8P2	010810020	As type 8 with adjustable stroke limiter
81	011110000	Default in position 1 and 2
82	012110000	Default in position 1 and 2
85	011510000	2 positions, default in position 1 and neutral
86	011810000	2 positions, default in position 2 and neutral
882	010010000	With return in position 1 and spring return in neutral position
883	011010000	With return in position 2 and spring return in neutral position
884	011110000	Default in position 1 and 2 and spring return in neutral position
8852/8853	010810000	As type 8, operation with microswitch (MC) in position 1 and 2
8858/8859 (MC/MC2)	010810000	As type 8, operation with 2 microswitch (MC) in position 1 and 2
8862	010410000	12 VDC with electromagnetically return
8863	010410040	24 VDC with electromagnetically return
8864	010710010	As type 8 and 12 VDC electro-hydraulic valve
8865	010710020	As type 8 and 24 VDC electro-hydraulic valve
8866	010010010	12 VDC On/Off electro-hydraulic valve
8867	010010020	24 VDC On/Off electro-hydraulic valve
8868	010810010	12 VDC On/Off electro-hydraulic valve
8869	010810020	24 VDC On/Off electro-hydraulic valve
8870	010810030	12 VDC On/Off electro-hydraulic valve
8871	010810040	24 VDC On/Off electro-hydraulic valve
8872	010810050	12 VDC On/Off electro-hydraulic valve
8873	010810060	24 VDC On/Off electro-hydraulic valve
8874	011310010	With return in position 1 and 2, electromagnetically neutral position
8875	011410010	4 positions, default in 4th position with spring return in neutral position with default cut valve. Needs spool 2 type

## 380000 30 for 886 and 8870, supplementary design.

Types 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Code	Description
88A	010810000 With spring return in neutral position
88B-88C	010010000 With return in position 1 and spring return in neutral position
88D-88E	010010000 On/Off electro-hydraulic
88F-88G	010810010 12 VDC electro-hydraulic On/Off
88H-88I	010810020 24 VDC electro-hydraulic On/Off
88J-88K	010810030 12 VDC electro-hydraulic On/Off
88L-88M	010810040 24 VDC electro-hydraulic On/Off

## 4 "B" disc options page 46

Type	Code	Description
L	020110000	Standard lever box
LF1	020110001	Lever box with steel stroke limiter in position 1
LB	020210000	Steel lever box
LB2	020210001	Steel lever box for 2 positions
LC	020310000	As previous with stroke support
SL	—	Without lever box
SLP	020410000	Without lever box, with adjustable valve
T9	020510000	Telex cable connection for CD valve

## 5a Adjustable part valves page 53

Type	Code	Description
—	020600001	Valve damping plug (limited in operation)
C	020600002	Anti-cavitation valve
<b>Adjustable valve</b>		
P(63)	020600001	Range 0-100 bar (0-140 psi) standard setting 50 bar (700 psi)
P(63)	020600002	Range 0-250 bar (0-360 psi) standard setting 100 bar (1400 psi)
P(64)	020600001	Range 0-100 bar (0-1400 psi) standard setting 50 bar (700 psi)
<b>Fixed hydraulic or electro valve</b>		
FX	020600001	Fixed hydraulic or electro valve
<b>Adjustable and electro-hydraulic valve</b>		
0(52)	021410000	Range 0-50 bar (0-700 psi) standard setting 25 bar (350 psi)
0(53)	021410001	Range 0-250 bar (0-3600 psi) standard setting 100 bar (1400 psi)
0(54)	021410002	Range 0-500 bar (0-7000 psi) standard setting 250 bar (3500 psi)
<b>Fixed electro-hydraulic and electro-hydraulic valve</b>		
0(55)	021410000	Range 0-25 bar (0-350 psi) standard setting 10 bar (140 psi)

NOTE 1) - Needs selected working section 06 (08E) type.  
 2) - Needs selected PRT working section 06 and 02(18) seal type.

## Parts ordering codes (mechanical control)

## Sc Flood setting port valves page 57

Sc SDS180 and SDS180L working section kit		
Type	Code	Description
GP	347933144	Valve bearing plug
C	347933050	Adjustable valve
Flood setting adjust lock and activation valve		
Setting is adjusted to 0.2 bar (0.2 MPa)		
0035	347933015	Setting 25 bar (0.25 MPa)
0036	347933020	Setting 30 bar (0.3 MPa)
0040	347933040	Setting 40 bar (0.4 MPa)
0050	347933050	Setting 50 bar (0.5 MPa)
0043	347933060	Setting 43 bar (0.43 MPa)
0060	347933060	Setting 60 bar (0.6 MPa)
0100	347933100	Setting 100 bar (1.0 MPa)
0115	347933110	Setting 115 bar (1.15 MPa)
0125	347933125	Setting 125 bar (1.25 MPa)
0140	347933140	Setting 140 bar (1.4 MPa)
0150	347933150	Setting 150 bar (1.5 MPa)
0160	347933160	Setting 160 bar (1.6 MPa)
0170	347933170	Setting 170 bar (1.7 MPa)
0180	347933180	Setting 180 bar (1.8 MPa)
0200	347933200	Setting 200 bar (2.0 MPa)
0218	347933210	Setting 218 bar (2.18 MPa)
0230	347933230	Setting 230 bar (2.3 MPa)
0240	347933240	Setting 240 bar (2.4 MPa)
0250	347933250	Setting 250 bar (2.5 MPa)
0260	347933260	Setting 260 bar (2.6 MPa)
0270	347933270	Setting 270 bar (2.7 MPa)
0280	347933280	Setting 280 bar (2.8 MPa)
0290	347933290	Setting 290 bar (2.9 MPa)
0300	347933300	Setting 300 bar (3.0 MPa)
0350	347933350	Setting 350 bar (3.5 MPa)
0400	347933400	Setting 400 bar (4.0 MPa)

## Sc Low leak valves page 57

Sc SDS180 and SDS180L working section kit		
Type	Code	Description
LL	347933002	Low leak valve

## 6 Port plugs A

0000	000000000	
000000000	000000000	000000000

## 7 Optional handovers

Type	Code	Description
HL0/HL0-010	070010100	For L-leak test, L= 100 mm (3.94 in)
HL0/HL0-020	070020100	For L2-leak test, L= 200 mm (7.87 in)

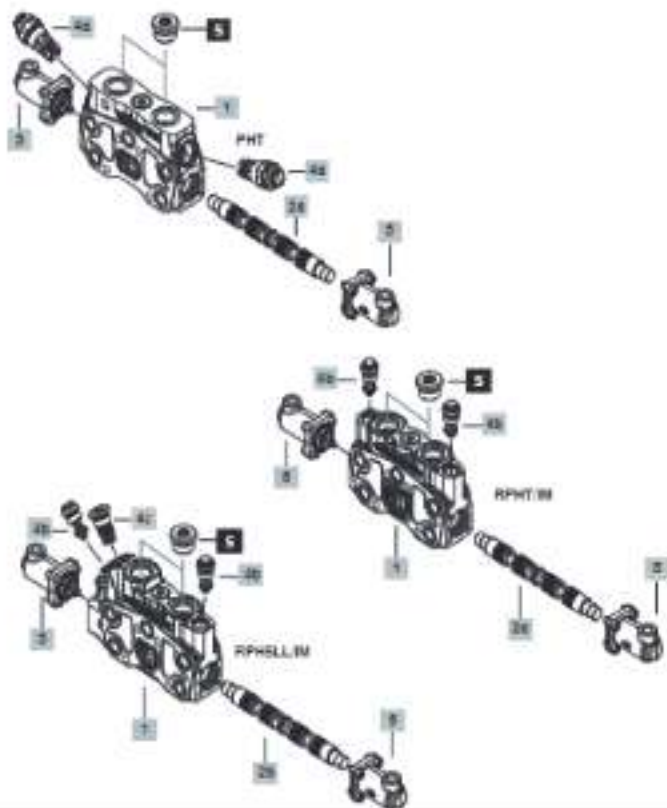
NOTE (7) - Codes are referred to SDP Direct.

Parts ordering codes (proportional hydraulic control)

EL SDS180 / PHT - 11M 81MOH - U1 (G3 - 100) — Pressure relief valve setting (bar)

EL SDS180 / RPHT - 11M 81MOH - U (100) — Pressure relief valve fixed setting (bar)

EL SDS180 / RPH5LL - 5HFL 81MOH - U (100) — Pressure relief valve fixed setting (bar)

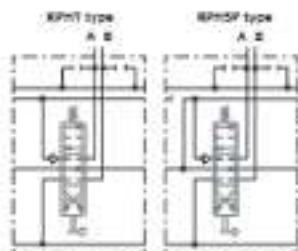
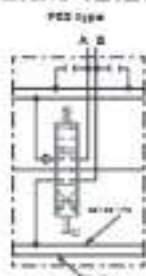
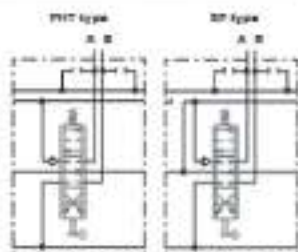
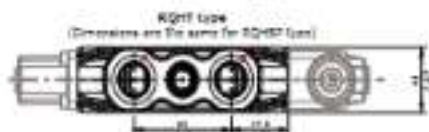
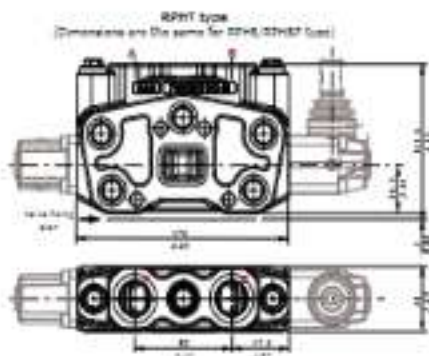
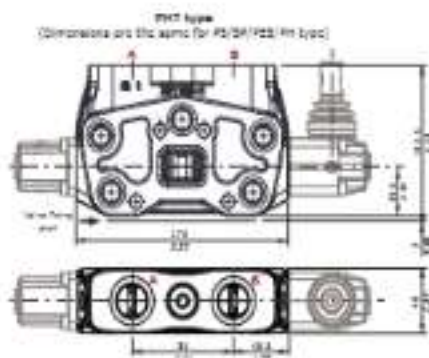


## Parts ordering codes (proportional hydraulic control)

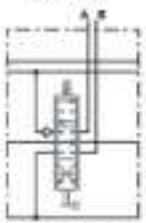
1 Working section KIT * <sup>a</sup> page 32			2b Low leak spools** page 34			
T194	0004	DESCRIPTION	See 2b(1)(1) and 2b(2)(1)(1) working section kit	T194	0004	DESCRIPTION
2b(1)(1)	001100100	For parallel circuit with arrangement for port valves		2b(1)(1)	001100010	Double acting with A and B closed in neutral position need 2b(2)(1)(1) working section and 2b(2)(1) control type
2b(1)(1)	001100101	For parallel circuit with upper arrangement for fixed setting port valves		2b(1)(1)	001100100	Double acting with A and B closed in neutral position need 2b(2)(1)(1) working section and 2b(2)(1) control type
2b(1)(1)	001100102	As previous without upper arrangement for port valves				
2b(1)(1)	001100103	As previous for floating circuit				
2b(1)(1)	001100104	As previous for floating circuit with upper arrangement for fixed setting port valves need 2b(2)(1)(1) spool type and 2b(2)(1) control type				
2b(1)(1)	001100105	For tandem circuit				
2b(1)(1)	001100106	As previous for floating circuit for tandem circuit with floating				
2b(1)(1)	001100107	For tandem circuit with upper arrangement for fixed setting port valves need 2b(2)(1)(1) spool type and 2b(2)(1) control type				
2b(1)(1)	001100108	For tandem circuit without arrangement for port valves				
2b(1)(1)	001100109	For tandem circuit with floating circuit with upper arrangement for fixed setting port valves				
2b(1)(1)	001100110	For parallel circuit and floating circuit with arrangement for low leak valve need 2b(1)(1)(1) spool type and 2b(2)(1) control type				
2b(1)(1)	001100111	For parallel circuit with arrangement for low leak valve need 2b(1)(1)(1) spool type and 2b(2)(1) control type				
NOTE * (1)(1) for proportional hydraulic control, omitted in description						
2a Spools page 34			2c Complete controls * <sup>a</sup> page 48			
T194	0004	DESCRIPTION	Proportional hydraulic control			
104	00010400	Double acting with A and B closed in neutral position	T194	0004	DESCRIPTION	
1040	00010400	As type 104 with direct control and load check valve without power supply at port A: need 2b(2) control type	2b(2)(1)	000100010	Range 3.5-14 bar (0-100 psi) for 2b(2)(1) spool type	
102M	00010400	Double acting with A open to tank in neutral position	2b(2)(1)	000100010	For 2b(2)(1) spool stroke adjusting, range 3.5-14 bar (0-100 psi)	
102M	00010400	Double acting with B open to tank in neutral position	2b(2)(1)(1)	000100100	For low speed center position, range 3.5-14 bar (0-100 psi): need 2b(2)(1) spool type	
240M	00010400	Double acting with A and B partially opened to tank in neutral position	2b(2)(1)	000100100	For floating circuit, range 3.5-14 bar (0-100 psi): need 2b(2)(1) working section and 2b(2)(1) spool type	
104	00010400	Double acting with A and B closed to tank in neutral position	2b(2)(1)(1)	000100100	For floating circuit, range 3.5-14 bar (0-100 psi): need 2b(2)(1) working section and 2b(2)(1) spool type	
204	00010400	Single acting on A, & slapper				
404	00010400	Single acting on B, & slapper				
0204	00010400	Double acting serial with A and B closed in neutral position, closed out floating 4 <sup>th</sup> position: need 2b(2)(1) working section and 2b(2)(1) control type				
104(2b(2)(1))	00010400	As type 104: need 2b(2)(1) control type				

NOTE \*\* - 2106 are referred to 2b(2) spool.

## Dimensional data and hydraulic circuit



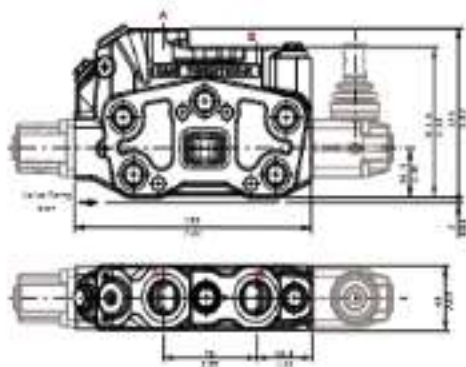
**RQ1T type**  
A B



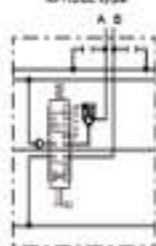
## Dimensional data and hydraulic circuit

RPH5LL type

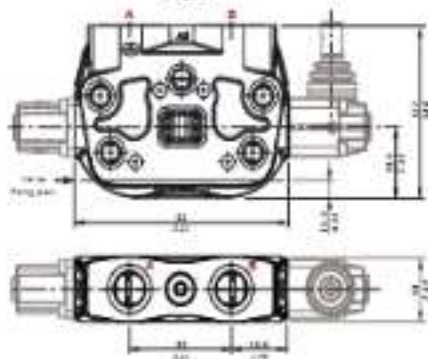
(Dimensions are the same for RPH5L type)



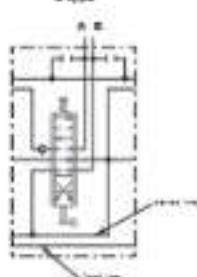
RPH5LL type



Z type



Z type



## Spools

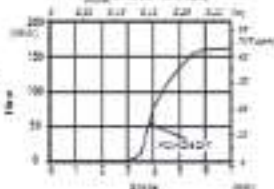
**1 (10/1CS/1(L1A)/10H) spool type**  
 Double ending, 2 positions, with A and B closed in neutral position



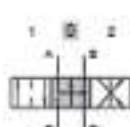
Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**Spool metering Type 1**  
 $C_{1,2} = 100 \text{ (mm}^3/\text{s)} / 2 \text{ (L/200)}$   
 $T_{\text{max}} = 1.18 \text{ (bar)} / 0.17 \text{ (psi)}$



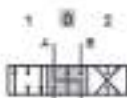
**2 (21H) spool type**  
 Double ending, 2 positions, with A and B open to tank in neutral position



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**1A (1AH) spool type**  
 Double ending, 3 positions, with A open to tank in neutral position



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

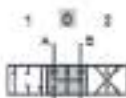
**1B (1BH) spool type**  
 Double ending, 3 positions, with B open to tank in neutral position



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

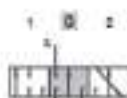
**212H spool type**  
 Double ending, 3 positions, with A and B partially open to tank in neutral position



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**3 (31H) spool type**  
 Single ending on A, 2 positions, B plugged, requires G2+ plug



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**4 (41H) spool type**  
 Single ending on B, 2 positions, plugged, requires G2+ plug



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

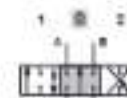
**311P spool type**  
 Double ending, 2 positions, regeneration circuit in 2<sup>nd</sup> position (pos.1) with spool out



Spool stroke

position 1 - 5.7 mm (+ 0.22%)  
 position 2 - 5.7 mm (+ 0.22%)

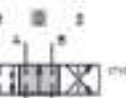
**10SC (10SCH) spool type**  
 Double ending with A and B closed in neutral position, B partially closed to tank in pos. 1, A partially closed to tank in pos. 2



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**11R (11RD) spool type**  
 Double ending with A and B closed in neutral position, partially closed to tank



Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

**111DA spool type**  
 Double ending with A and B closed in neutral position, closed control and load check valve without cover supply on port A



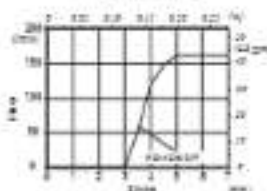
Spool stroke

position 1 - 7 mm (+ 0.22%)  
 position 2 - 7 mm (+ 0.22%)

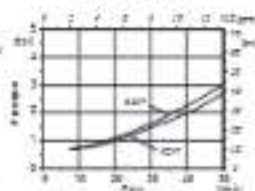
**3 (SDP) and SHPL spool type**  
 Double acting spool with A and B closed in neutral position, 4 positions, with spool in, flowing 4<sup>th</sup> position (pos. 2)



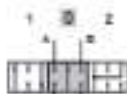
**Type 3 (SDP) spool stroke**  
 position 1 - 8 mm (+0.22 in)  
 position 2 - 8 mm (+0.22 in)  
 position 3 - 12 mm (+0.47 in)



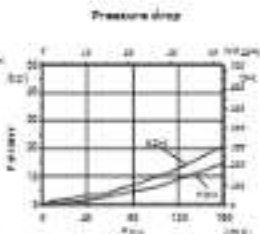
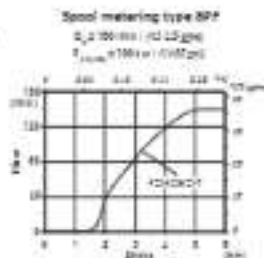
**Spool pressure drop in position 3 - type 3**



**SDP spool type**  
 Double acting, 3 positions, repositioned circuit in 2<sup>nd</sup> position (pos. 2) with spool in

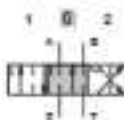


**Spool stroke**  
 position 1 - 8.7 mm (+0.22 in)  
 position 2 - 17 mm (+0.52 in)



## Low leak spools

**1TYALL-1TYELL-1TYM120N spool type**  
 Double acting, 3 positions, with A and B closed in neutral position, A perfectly connected to tank



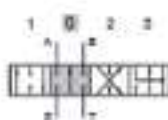
**Spool stroke**  
 position 1 - 7 mm (+0.22 in)  
 position 2 - 7 mm (+0.22 in)

**1TYHCLL spool type**  
 Double acting, 3 positions, with A and B closed in neutral position, with A connected to tank through the relief



**Spool stroke**  
 position 1 - 7 mm (+0.22 in)  
 position 2 - 7 mm (+0.22 in)

**SHPL-SHPL120N spool type**  
 Double acting spool with A and B closed in neutral position, 4 positions, with spool in, flowing 4<sup>th</sup> position (pos. 2)



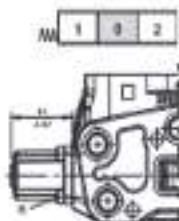
**Spool stroke**  
 position 1 - 8.2 mm (+0.22 in)  
 position 2 - 8.2 mm (+0.22 in)  
 position 3 - 12.2 mm (+0.47 in)

## "A" side spool positioners

## With spring return

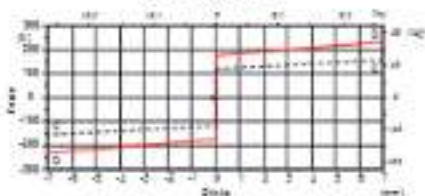
## I type

It is supplied with standard spring D type (see force-stroke diagram) and available with lighter spring C type (BNC code: avr0000000).



Wrenches and tightening torque  
 1 - wrench 2 - 9.8 Nm (7.27 lbf)

Force-stroke diagram

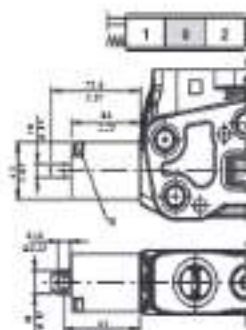


## STL type

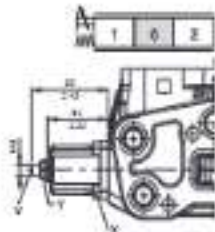
As I type, for flexible cable control.

## SP1 type

With zero-stroke adjustment in position 2 (I or E).

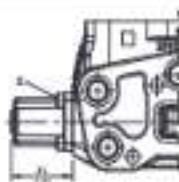


Wrenches and tightening torque  
 1 - wrench 2 - 9.8 Nm (7.27 lbf)



Wrenches and tightening torque  
 1 - wrench 2 - 9.8 Nm (7.27 lbf)  
 3 - wrench (2 - 24 Nm (17.7 lbf))  
 2 - span wrench 4

## With detent

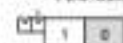


Detents  
 Detent and release force..... 1.000 N (225 lbf)

11 type  
 Detent in positions neutral, 1 and 2



12 type  
 2 positions, detent in positions 1 and neutral

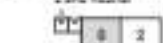


Wrenches and tightening torque  
 1 - wrench 2 - 9.8 Nm (7.27 lbf)

13 type  
 Detent in positions 1 and 2

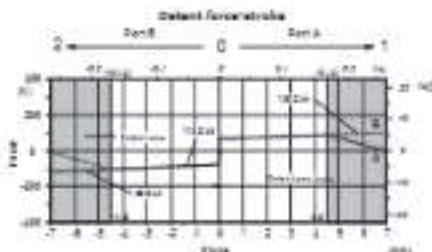
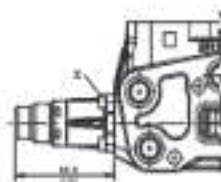


14 type  
 2 positions, detent in positions 2 and neutral



## "A" side spool positioners

WITH DETENT AND SPRING RETURN TO NEUTRAL POSITION FROM EITHER DIRECTIONS



Position 1 - Detent force: 130 N (29.7 lbf)  $\pm$  10% / Release force: 210 N (47.2 lbf)  $\pm$  10%  
Position 2 - Detent force: 145 N (32.6 lbf)  $\pm$  10% / Release force: 200 N (45.1 lbf)  $\pm$  10%

Wrenches and tightening torque

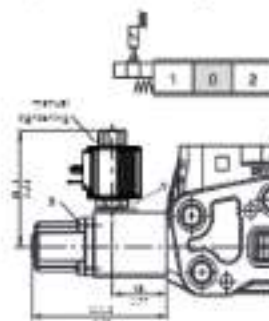
S = wrench S - 2.2 Nm (1.7 lbf ft)

## Solenoid lock device SDBR type

With spring return and solenoid electromechanical lock in neutral position: when coil is fed the spool can be moved.

When combined with the UKY and PK valves, is mounted rotated 180° (configuration: SDBR180).

It's possible to obtain further configurations with several "A" side spool positioners: contact Salco Dept.



Wrenches and tightening torques

S = wrench S - 9.2 Nm (7.2 lbf ft)

T = wrench T4 - 24 Nm (17.7 lbf ft)

Features

For SDB coil and mating connection see page 79

## "A" side spool positioners

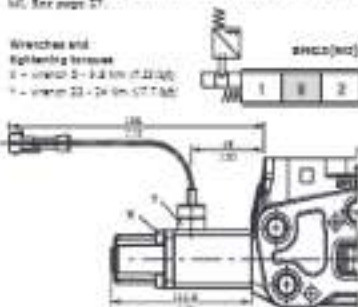
## With microswitch

## SM63 type

With spring return in neutral position and microswitch operated in both directions. Also available SM63 (microswitch operated in position 1) and SM63 (microswitch operated in position 2) configurations. Dimension and the same of SM63 configuration. It requires MG working section kit. See page 27.

## Wrenches and tightening torques

- 0 = wrench 2 - 3.8 Nm (2.7 lbf ft)  
1 = wrench 22 - 24 Nm (17.7 lbf ft)



## Complete controls

## Microswitch operator

Control	position 1 SM63	position 2 SM63	position 1, 2 SM63
(NO)	2/02110000	2/02110070	2/02110100
(NC)	/	/	2/02110000

## Features

## Microswitch

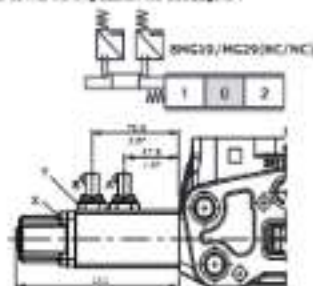
- Actuation life ..... 5x10<sup>7</sup> operations  
Electrical life (relative load) ..... 10<sup>7</sup> cycles - 7A / 12 VDC  
..... 5x10<sup>7</sup> cycles - 10A / 12 VDC  
..... 5x10<sup>7</sup> cycles - 2A / 24 VDC

Connector ..... Report Visma-tech

Wiring connector set: 3030101 not included

## SM615/M629 type

With double microswitch in position 1 and 2. It requires MG working section kit. See page 27.



Position	A	B	Wrenches and tightening torques
0	yes	yes	0 = wrench 5 - 3.8 Nm (2.7 lbf ft) 1 = wrench 22 - 24 Nm (17.7 lbf ft)
1	yes	no	
2	no	yes	

## Features

## Microswitch

- Actuation life ..... 5x10<sup>7</sup> operations  
Electrical life (relative load) ..... 10<sup>7</sup> cycles - 7A / 12 VDC  
..... 5x10<sup>7</sup> cycles - 10A / 12 VDC  
..... 5x10<sup>7</sup> cycles - 2A / 24 VDC

Connector ..... Report Visma-tech

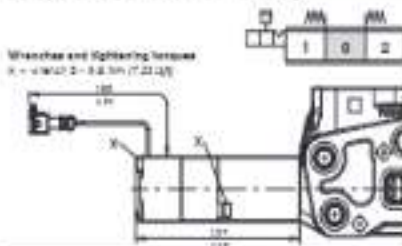
Wiring connector set: 303040047 not included

Backlash parts	Type	Code
	01(NC)	021102201
	01(NO)	021102108
Wiring section kit for SM63 positioner	02(NC)	021102070
	02(NO)	021102060
	04(NC)	021102100

## Electromagnetic detent BRM3 type

## Wrenches and tightening torques

- 0 = wrench 2 - 3.8 Nm (2.7 lbf ft)



## Options

- Rated voltage ..... 12-24 VDC (± 10%)  
Power rating ..... 0.2 W  
Resistance ..... 20-25 Ω @ 12 VDC  
..... 100-110 Ω @ 24 VDC

Duty cycle ..... 100%

Connector ..... Report Visma-tech

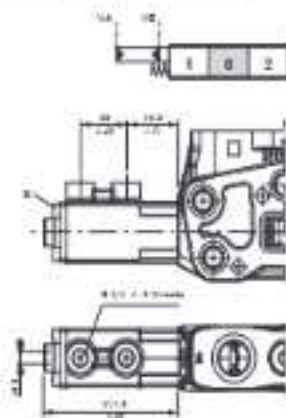
Unloading force ..... 1.800 N (40 lbf)

Wiring connector set: 30301001 not included



## "A" side spool positioners

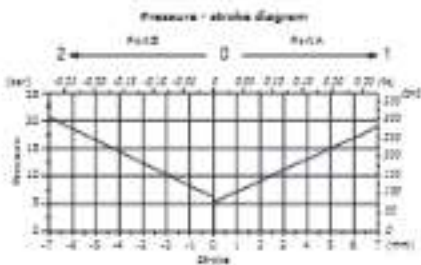
## Unilateral hydraulic proportional spool control kit 812



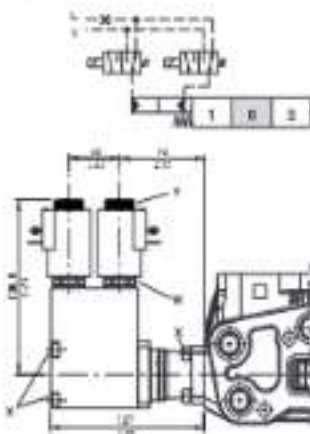
Selected parts	Type	Code
	2/H2	SD1100001
	4/H2	SD1100002
Working section kit for 812 positioner	0047/H2	SD1100070
	0047/H2	SD1100080
	0430	SD1100090

Dimensions and tightening torques  
 1 - wrench 2 - 8.8 mm (7.25 kg)

Features  
 adjustment range: from 0 to 32 bar  
 (from 0 to 310 psi)



## ON/OFF electro-hydraulic control DE13



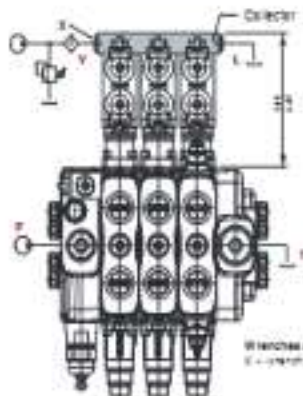
## Features

- Flow capacity: 1.1 l/min (0.29 US gal/min) at 30 bar (435 psi)
- Flow capacity: 0.5 l/min (0.13 US gal/min) at 100 bar (1450 psi)
- For 200 bar (2900 psi) and 300 bar (4350 psi) see page 62

## Wrenches and tightening torques

- Ø = wrench 21 - 0.8 Nm (0.57 lbf·ft)
- 1 = wrench 21 - 0.8 Nm (0.57 lbf·ft)
- Ø = wrench 24 - 0.8 Nm (0.57 lbf·ft)

## Collector kit for external pilot and drain



## COLLECTOR KIT CODES

Type	Code *	Description
Ø100	540100010	kit for one section
Ø120	540201010	kit for 2 sections
Ø130	540301010	kit for 3 sections
Ø140	540401010	kit for 4 sections
Ø150	540501010	kit for 5 sections
Ø160	540601010	kit for 6 sections
Ø170	540701010	kit for 7 sections

(\*) codes are related to SDP thread

## DemecoDem example:

50S180/0/AC/VC-10/0/R2/180135/CC/180135/CC/180135/CC  
 180135/CC 1/3/0/100/VC/02300-132/02

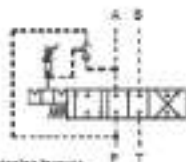


## Particular positioner kits for special spools

## 11A

With detent in position 1 and 2, and automatic release in neutral position.

It requires PWT working section kit and 1(11A). See page 27.



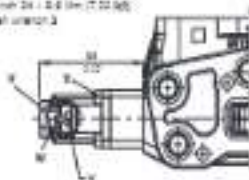
## Wrenches and tightening torques

X = wrench 2 - 2.2 Nm (7.23 lbf)

Y = wrench 2 - 2.2 Nm (7.23 lbf)

Z = wrench 2 - 2.2 Nm (7.23 lbf)

W = spanner 2



Dedicated parts	Type	Code
Spool	11A	SD11A1000
Working section kit	PWT	SD11A1000

## Features

Release pressure from 20 to 180 bar  
(from 290 to 2600 psi)

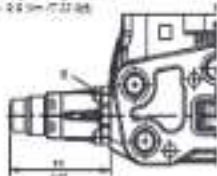
## 13ND

Detent in 4<sup>th</sup> position with spring return in neutral position with detent spool in type.



## Wrenches and tightening torques

O = wrench 2 - 2.2 Nm (7.23 lbf)

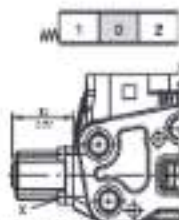


Dedicated parts	Type	Code
Spool	13	SD13N1000
Working section kit with tool	13	SD13N1000
Working section kit right tool	13RD	SD13N1000

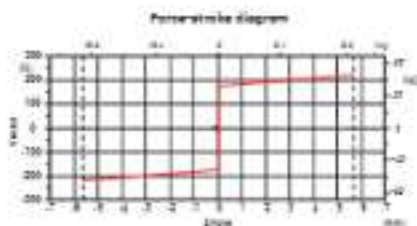
## "A" side spool positioners

Particular positioner kits for regenerative spools

## BCR type



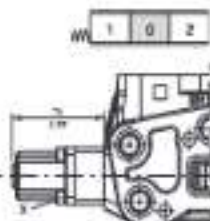
Wrenches and tightening torques  
X - wrench 5 - 5.5 Nm (3.7 lbf ft)



Spool stroke  
position 1 - 5.7 mm (0.22 in) - position 2 - 5.7 mm (0.22 in)

Dedicated parts	Type	Code
Spool	SP	301380111
Working section	WS	301380112

## SBCR-10BCR types

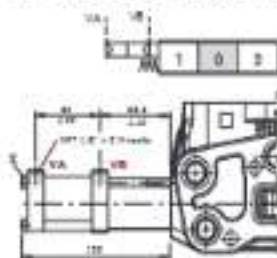


Wrenches and tightening torques  
X - wrench 5 - 5.5 Nm (3.7 lbf ft)

Dedicated parts	Type	Code
Spool	SP	301380111
Working section	WS	301380112

## BPGCR type

It requires the working section kit. See page 27.



## Wrenches and tightening torques

X - wrench 5 - 5.5 Nm (3.7 lbf ft)

Y - wrench 12 - 12 Nm (8.7 lbf ft)

Z - wrench 15 - 5.5 Nm (3.7 lbf ft)

## Features

Max pressure: ..... 16 MPa (232 psi)

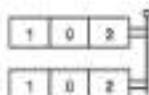
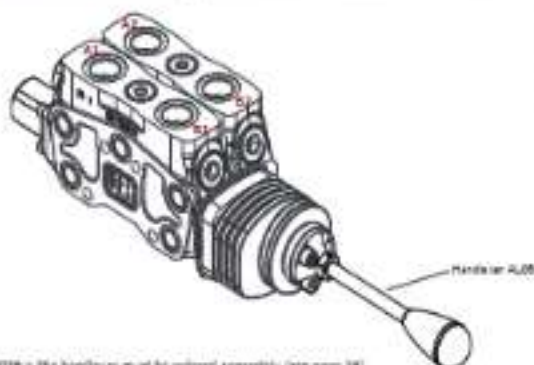
..... 15 MPa (217 psi)

Dedicated parts	Type	Code
Spool	SP	301380111
Working section	WS	301380112



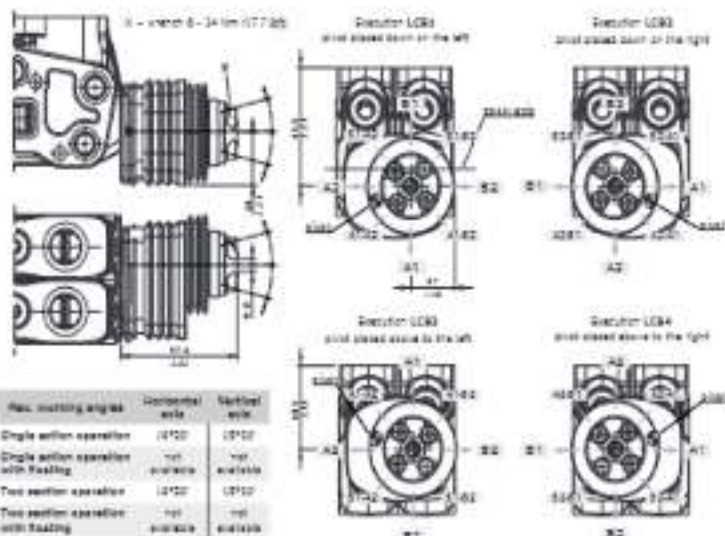


## LCB and LCE mechanical joysticks for two sections control



NOTE - The handle/rod must be ordered separately (see page 28).

## Dimensions and movement scheme for left inlet directional valve



NOTE - Due to limited space in case of LCB3 or LCB4 configuration the assembly of port valves is not possible.

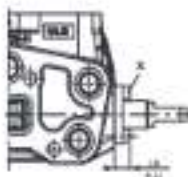
## "B" side options

## SL type



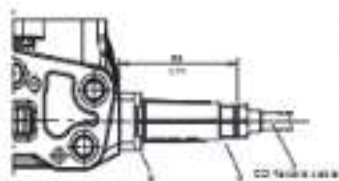
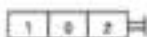
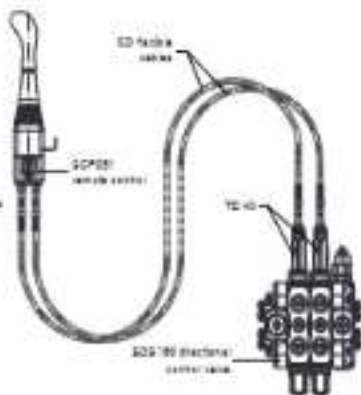
## SLP type

Mechanical control with Sutherland plate kit.

Wrenches and tightening torque  
X = wrench 3 - 6.6 mm (7.22 lb)

## TQ cable remote control kit

Reconfigured for remote control with flexible cable.

Wrenches and tightening torque  
X = wrench 3 - 6.6 mm (7.22 lb)  
Y = allen wrench 24

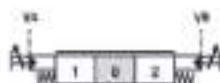
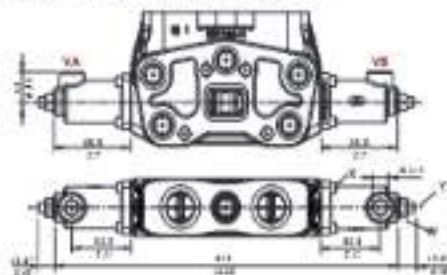
NOTE: For more information about remote cable control, request appropriate documentation with distributor.

## Proportional Hydraulic Controls

Needs dedicated steel and working section kit without steel coils. (See page 21).

## SDMOHF3 type

Configuration with screws for steel stroke adjustment.



## Wrenches and tightening torques

X – wrench 2 – 8.8 Nm (7.23 lb)

Y – allen key 12/14

W – wrench 12 – 24 Nm (17.7 lb)

## SDMOHF3 type features

Adjustment range ..... from 0.3 to 10 bar

(flow 60 l / min (15.7 gal))

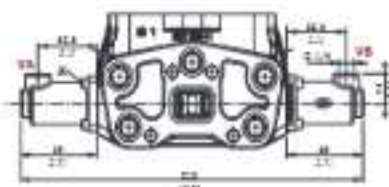
See curve type 022

Flow pressure ..... max. 100 bar (1450 psi)

\* depends on stroke setting

## SDMOH type

Steel control kit.



## Wrenches and tightening torques

X – wrench 2 – 8.8 Nm (7.23 lb)

## SDMOH type features

Adjustment range ..... from 0.4 to 10 bar

(flow 60 l / min (15.7 gal))

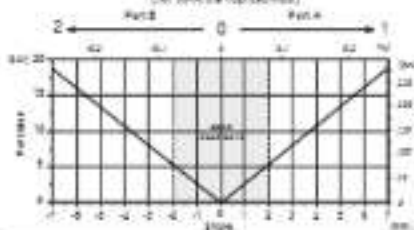
See curve type 022

Flow pressure ..... max. 10 bar (1450 psi)

## Diagram and features of proportional hydraulic controls

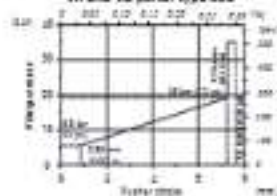
Pressure \* stroke diagram

(for controls represented)



Pressure control curve on

VA and VS ports: type 022



## Features

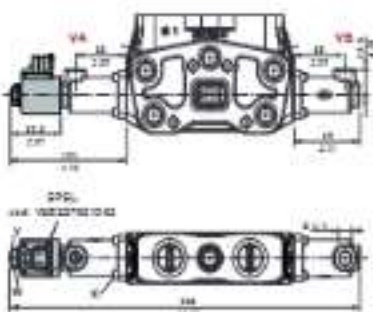
Flow pressure ..... max. 100 bar (1450 psi)

## Complete controls

## Proportional hydraulic control

## SDMSPSL proportional hydraulic kit

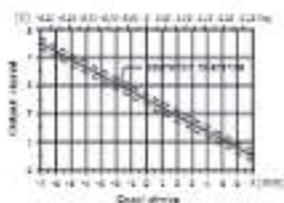
with axial position sensor, for other features see the catalogue ref. 0119000000



Connector 8P4-40T	
Conditions	
Pin	for 5V supply for 8-32V supply
1	+5V signal OUT
2	N.C. GND
3	GND
4	signal OUT not connected

NOTE - these drawings are not to scale with the others included in the catalog

Output Voltage/axial stroke diagram



## Weights and tightening torques

X = weight 2 - 3.0 kg (7.25 lb)

Y = weight 17 - 9.5 kg (21.1 lb)

W = weight 4 - 3.0 kg (7.25 lb)

## Control features

Oil pressure ..... max. 100 bar (1450 psi)

Connector ..... Deutsch DT04-40

Hydraulic connector part 8000140070 not included

## Axial position sensor features

Voltage supply range ..... from 0 to 12 VDC or 5 VDC

Current absorption ..... <math>4.10\text{ mA}</math>

Maximal stroke ..... 500T

Connector type ..... Deutsch DT04-40

Maximal pressure ..... 01 07 - 10 000

Working temperature .....  $-40 \div 100\text{ }^{\circ}\text{C}$

Minimum seal resistance ..... 10.00

Working pressure max ..... 260 bar - 3700psi

Max. mechanical stroke ..... 6.10 mm

Max. electrical stroke ..... 2.10 mm

## Output signal

Range ..... from 0.5 to 4.5 V

Linearity ..... 0.5%

Accuracy neutral .....  $0.5 \pm 0.2\text{ V}$

Max. current ..... 1 mA

## Mechanical vibrations

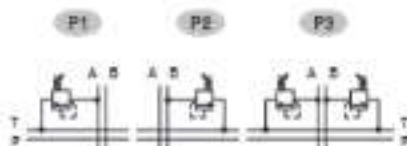
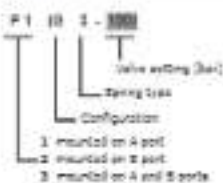
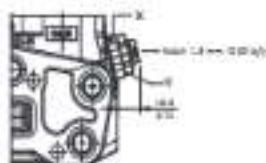
Shock pulse ..... ISO 898-6:2001, 20

SHC compatibility ..... ISO 11785 - ISO 11942





## Antistock valves

Configuration G type  
with 30 bar

Wrenches and tightening torques

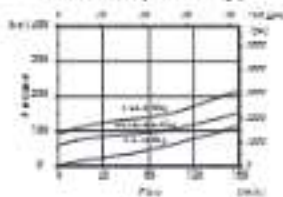
S = wrench 20 - 42 Nm (150 lbf ft)

T = wrench 27 - 24 Nm (20 lbf ft)

Configuration H type  
valve set and closed

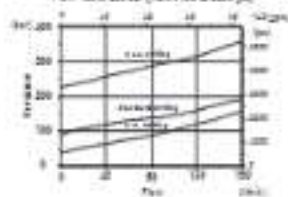
## 02 setting range

From 20 to 120 bar (from 702 to 1700 psi)



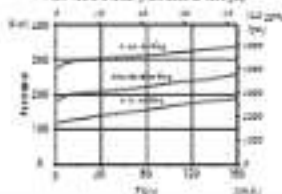
## 04 setting range

From 100 to 210 bar (from 1400 to 3000 psi)



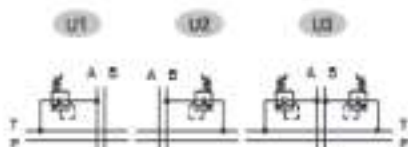
## 04 setting range

From 100 to 210 bar (from 1400 to 3000 psi)

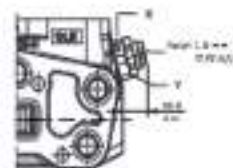


## Port valves

## Antishock and anticavitation valves

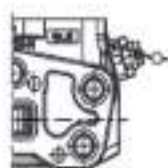


Configuration B type  
 with lock



Wrenches and tightening torques  
 6 - wrench 20 - 42 Nm (15 - 30)  
 7 - wrench 27 - 24 Nm (17.7 - 18)

Configuration H type:  
 valve set and locked

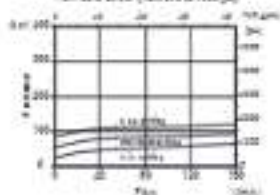


Configuration Z type:  
 with tamper proof  
 (20)



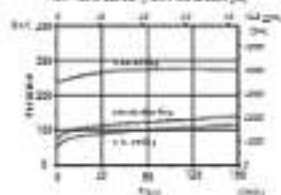
O2 setting range

From 20 to 100 bar (flow 100 to 1000 g/s)



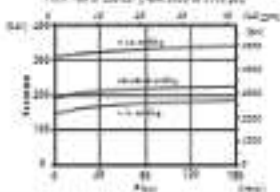
O2 setting range

From 100 to 100 bar (flow 100 to 1000 g/s)

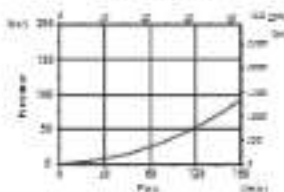


O4 setting range

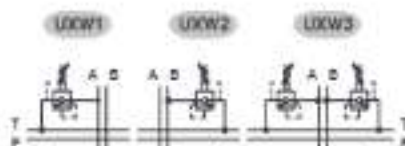
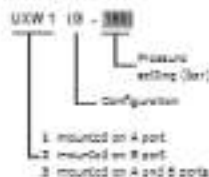
From 100 to 100 bar (flow 100 to 1000 g/s)



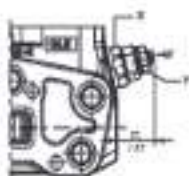
Pressure drop P - T



## Pilot operated anti-shock and anticavitation valves

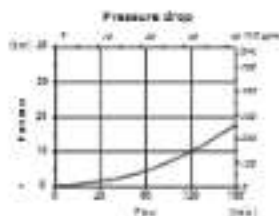
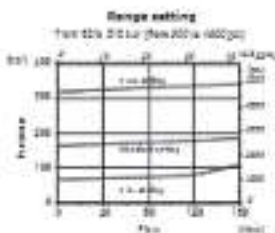
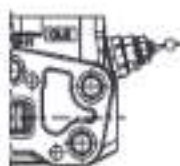


Configuration 0 type:  
with screw



Pressure and tightening screws  
 0 - screw 27 - 40 Nm (0.40)  
 1 - screw 17 - 24 Nm (0.7.05)  
 2 - screw 17 - 24 Nm (0.7.05)

Configuration 1 type:  
with set and lock



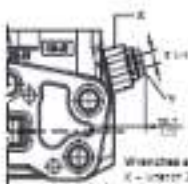
NOTE - The lever control (L type) and the control box device (SWGA type), combined with the UXW valve, are mounted on the UXW configuration: UXW3 and SDS180.

## Port valves

## Proportional hydraulic unloader valve

PX1

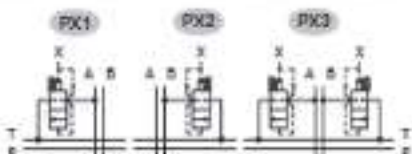
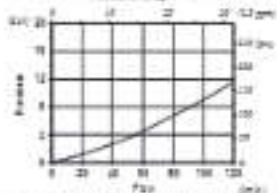
- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



Wrenches and tightening torques  
 X – wrench 22 + 42 Nm (27 lbf ft)  
 Y – wrench 2 + 24 Nm (17.7 lbf ft)

NOTE – For safety reasons the valve is supplied with blanking plug.

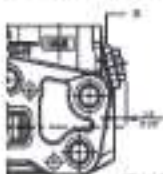
The lever control (L-type) and the solenoid act device (SD225 type), combined with the PX valve, are mounted on the 180° configuration: L180 and SD225180.

Pressure drop  $P \rightarrow T$ 

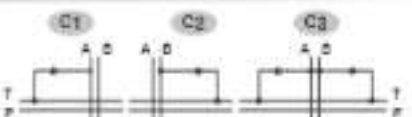
## Anti-cavitation valve

C1

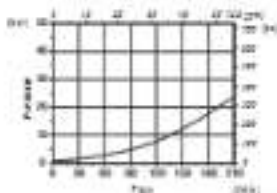
- 1 mounted on A port
- 2 mounted on B port
- 3 mounted on A and B ports



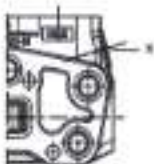
Wrenches and tightening torques  
 X – wrench 22 + 42 Nm (27 lbf ft)  
 Y – wrench 2 + 24 Nm (17.7 lbf ft)



Pressure drop



## Valve blanking plug

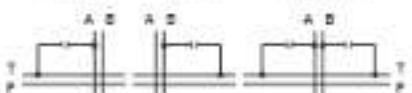


Wrenches and tightening torques  
 X – wrench 22 + 42 Nm (27 lbf ft)

Mounted on port A

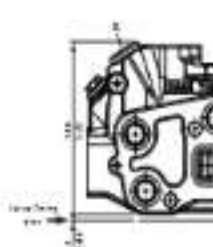
Mounted on port B

Mounted on ports A and B



## Low leak valve

For 22H3L working port.



Wrenches and tightening torques  
 $X = \text{wrench } 2 = 24 \text{ Nm (17.7 lbf)}$

Features  
 Oil leakage:  $2-4 \text{ cm}^3/\text{min}$  (0.0022 cfm)  
 1/8" inch port of 48mm G<sub>L</sub> (M 20) variety at 40°C  
 (104°F) temperature



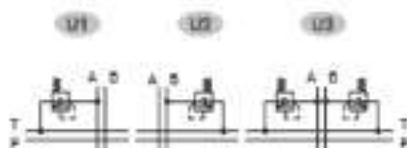
## Fixed setting antishock and anticavitation valves

For 22H3L, 22H7, 22H5, 22H5A, 22PS working port.

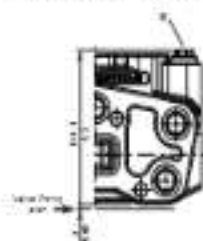
U1 (100)

valve setting (bar)

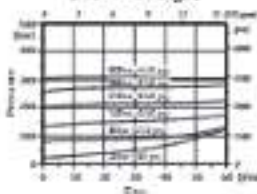
- 1: mounted on A port
- 2: mounted on B port
- 3: mounted on A and B ports



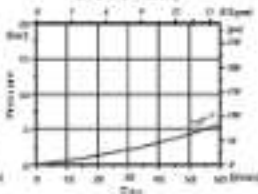
Wrenches and tightening torques  
 $X = \text{wrench } 12 = 24 \text{ Nm (17.7 lbf)}$



Setting example  
 $(12 \text{ l/min} = 2.6 \text{ GPM})$



Pressure drop  
 (in anticavitation)



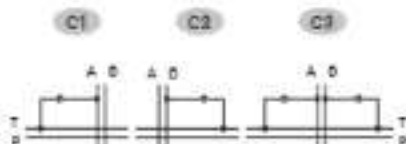
## Port valves

## Anticavitation valve

For SD45L, SD4T, SD4S, SD4ST, SD4S working part.

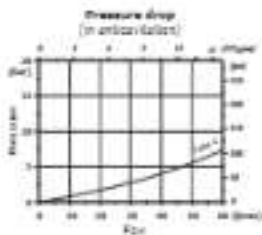
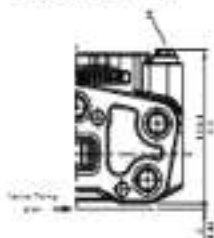
C1

- 1 mounted on A part
- 2 mounted on B part
- 3 mounted on A and B parts



## Wrenches and tightening torques

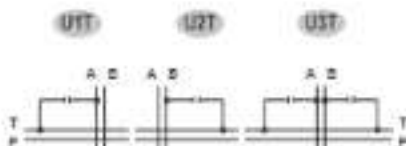
S = wrench 12 x 24 mm (TT 45)



## Valve blanking plug

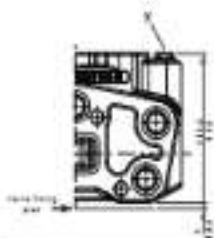
U3T

- 1 mounted on A part
- 2 mounted on B part
- 3 mounted on A and B parts



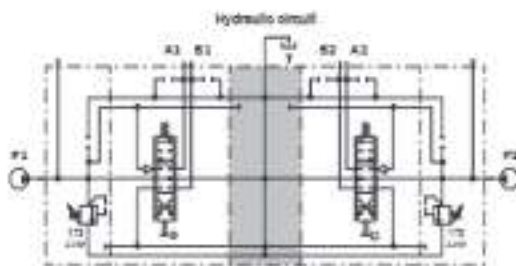
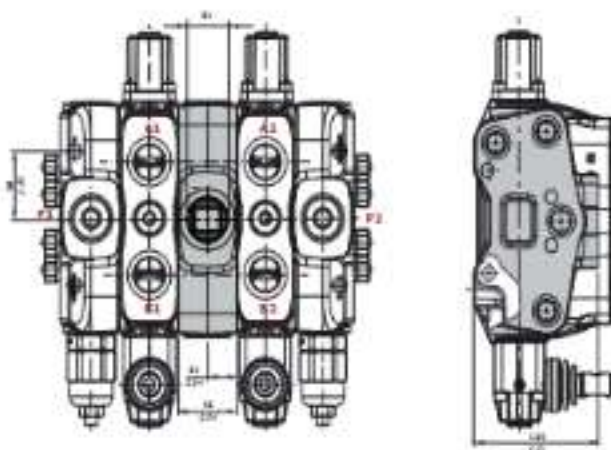
## Wrenches and tightening torques

S = wrench 12 x 24 mm (TT 45)



## CS1 mid return manifold

Mid return manifold for directional valve with left and right inlet (both), they allow 2 independent circuits with common outlet.

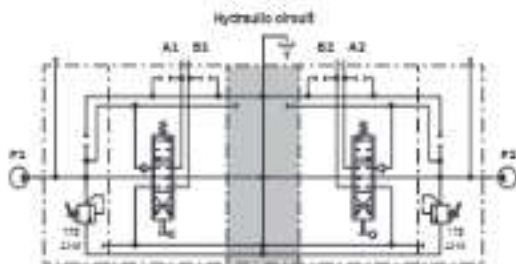
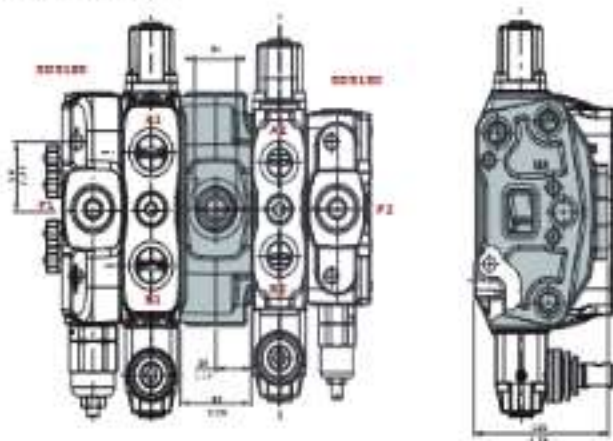


Directional valve:

SDS180/240/180-170/18L/CS1/18L/90/180-170

## CS3 mid return manifold

Mid return manifold for directional valves SDS180 with left mid section and SDS180 with right mid section; they allow 2 independent circuits with common outlet.



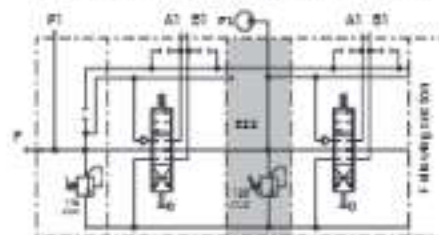
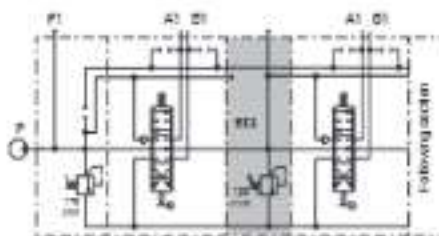
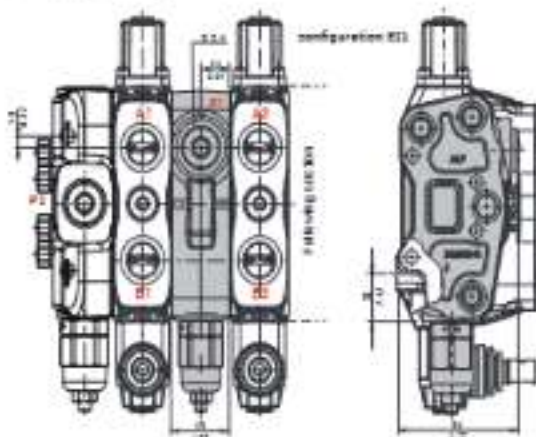
Directional element

SDS180 11A2/1G3/17B/1B/CO2/1B/BC/1G3/17B/SDS180/1

**EE configuration**

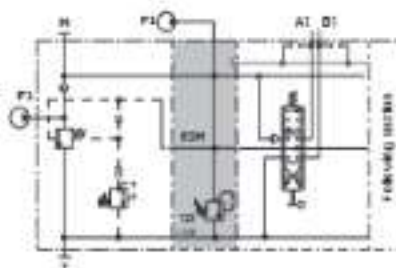
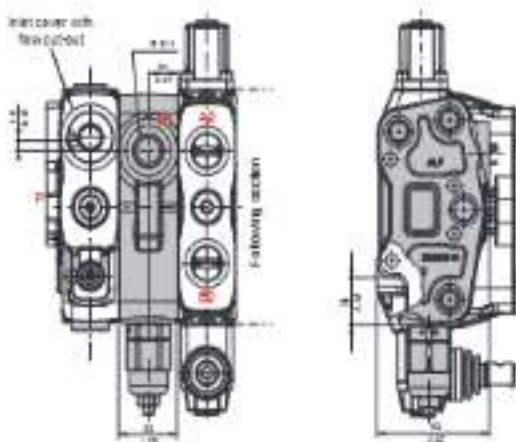
The operation of up stream section include the EE downstream section.

The pressure of the downstream sections should be adjusted at least 22 bar below the relief valve acting. Section EE, without plug, is arranged for a second relief.



## Service relief valve section

## EIM configuration



NOTE - EIM intermediate section must be always assembled with inter cover with flow control. (See page 22)



## Working conditions

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

Nominal flow rating	on F inlet	100 l/min	4" US gpm
	on A and B ports	100 l/min	4" US gpm
Max pressure (1)		31.5 bar	460 psi
Standard rated by		14 bar	200 psi
Internal leakage (standard)	at P = 100 bar (1400 psi)	3 cm <sup>3</sup> /min	0.20 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 FKM (Viton) seals	from -20°C to 120°C / from -4°F to 248°F	
Viscosity	operating range	from 15 to 75 mm <sup>2</sup> s	from 1.1 to 7.0 cSt
	min.	10 mm <sup>2</sup> s	1.0 cSt
	max.	400 mm <sup>2</sup> s	400 cSt
Max. recommended load		-10/18 - 280 4400	145/100 - class 10
Ambient temperature for working conditions		from -40°C to 60°C	from -40°F to 140°F

NOTE - (1) Intermittent pressure of max. 280.000 cycles with specific internal testing.

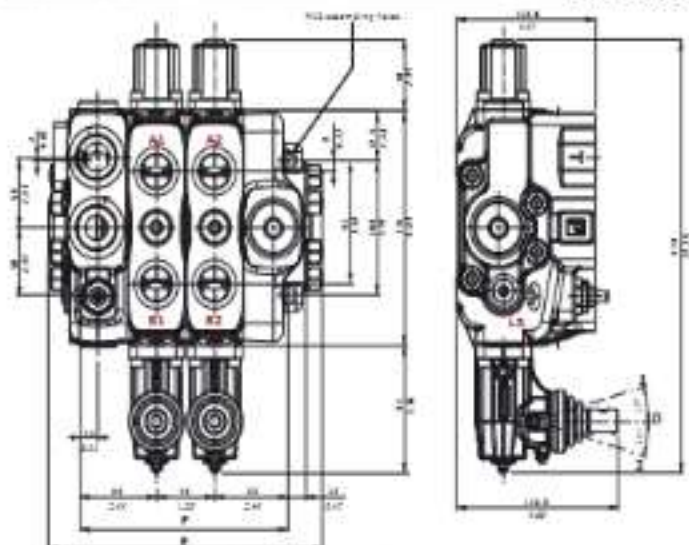
## Standard threads

REFERENCE STANDARD			
	ISO	UN-UNF	NPTF
THREAD ACCORDING TO	ISO 228/1	ISO 261	ISO 81-20.2
	EX 3770	4181 81.2 unified	
ORIFICE DIMENSION ACCORDING TO	ISO 1179-1	11920-1	1475c
	EN 10605-2 stages K or V		

## PORTS THREADING

FACE	ISO	UN-UNF
F inlet - T outlet	G 1	1/2-18-12 (SAE 18)
A and B ports	G 3/8	1/2-18-12 (SAE 18)
LB load sensing	G 1/4	9/16-18 (SAE 6)
FLUT		
hydraulic	G 1/4	9/16-18 (SAE 6)

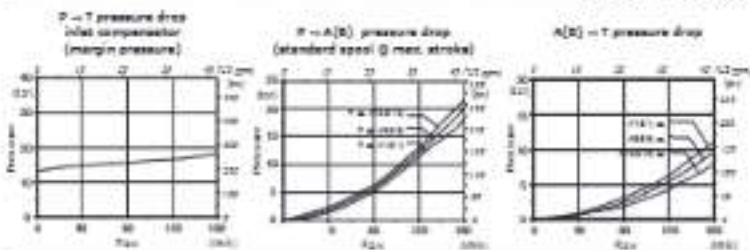
## Dimensional data



NOTE - Drawings and dimensions are referred to BSP thread configuration.

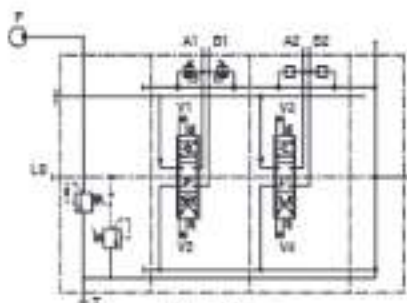
TYPE	E		F		Weight	
	mm	in	mm	in	kg	lb
DLS180/1	177.8	7.00	134	5.32	13.8	30.47
DLS180/2	223.8	8.81	171	6.73	19.1	42.41
DLS180/3	273.8	10.78	210	8.28	24.5	54.11
DLS180/4	321.8	12.67	250	9.84	30	66.16
DLS180/5	369.8	14.56	291	11.46	35.9	79.07
DLS180/6	417.8	16.45	334	13.15	42.8	94.31
DLS180/7	465.8	18.34	377	14.85	49.7	110.01
DLS180/8	513.8	20.23	421	16.58	56.6	125.71
DLS180/9	561.8	22.12	466	18.35	63.5	141.41
DLS180/10	609.8	24.01	511	20.12	70.4	157.11
DLS180/11	657.8	25.90	556	21.89	77.3	172.81
DLS180/12	705.8	27.79	601	23.67	84.2	188.51

## Performance data



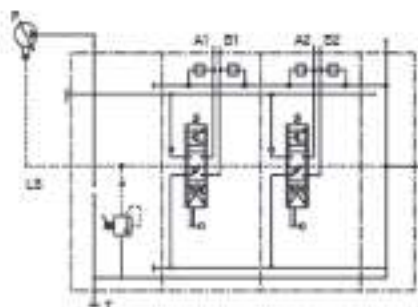
## Hydraulic circuit

For open center circuit (fixed displacement pump)



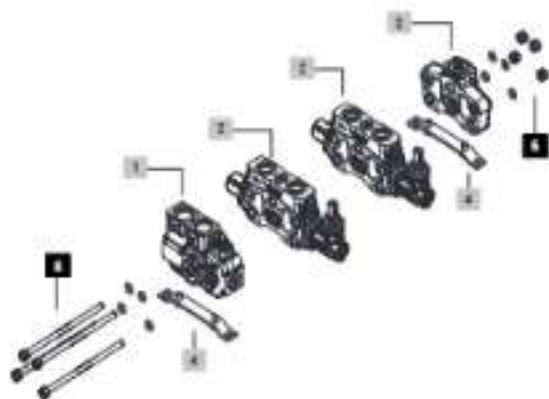
Operation example:  
 DLS180/3/AND(04-122)/S2LPS/S2LPS/SP

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



Operation example:  
 DLS180/3/AND(02-122)/S2LPS/S2LPS/SP

DL5180 / 2 / AMD(G3-120) / 6ZLF3 / 6ZLF3 / RF - STAF

**1 Inlet section** page 68

TYPE	CODE	DESCRIPTION
AMD(G3-120)	61701000	For open center circuit, with U.S. pressure relief valve, upper inlet and outlet
AMD(G3-120)	61701100	As previous with upper outlet closed
AMD(G3-120)	61701000	For closed center circuit, with U.S. pressure relief valve, upper inlet and outlet
AMD(G3-120)	61701100	As previous with upper outlet closed
AMD(GV)	61701000	Without compressor and U.S. pressure relief valve, upper inlet and outlet
AMD(GV)	61701100	As previous with upper outlet closed

**2 Working section** page 70

TYPE	CODE	DESCRIPTION
6ZLF3	61701100	Remote circuit, lever control
6ZLF3/6ZLF3	61701100	Remote circuit, proportional hydraulic control with 2000 stroke limiter

**3 Outlet section** page 76

TYPE	CODE	DESCRIPTION
RF	61801000	With axle plugged
RF	61801014	With upper outlet
RF	61801018	With axle outlet

**4 Fixing brackets** page 81

TYPE	CODE	DESCRIPTION
STAF	61701000	Brackets with assembling screws

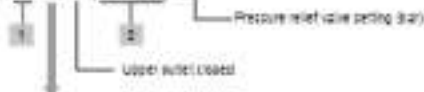
**5 Assembling kit**

CODE	DESCRIPTION
617010170	The nut set for 1 working section directional valve
617010218	The nut set for 2 working sections directional valve
617010258	The nut set for 3 working sections directional valve
617010218	The nut set for 4 working sections directional valve
617010258	The nut set for 5 working sections directional valve
617010410	The nut set for 6 working sections directional valve
617010458	The nut set for 7 working sections directional valve
617010508	The nut set for 8 working sections directional valve
617010554	The nut set for 9 working sections directional valve
617010602	The nut set for 10 working sections directional valve
617010650	The nut set for 11 working sections directional valve
617010698	The nut set for 12 working sections directional valve

NOTE (\*) - Codes are referred to SAP system.

## Parts ordering codes

FE DL 5180 / AM D T (G3 - 120)



## Available configurations

- D: with upper inlet
- E: with side inlet

**1 Inlet cover body** page 69

type	code	description
AM	570410000	For fixed displacement pump, L&R compensator (open centre) with main relief valve arrangement
AM	570410001	For variable displacement pumps (closed centre) with main relief valve arrangement
AM	570410002	For variable displacement pumps (closed centre) without main relief valve arrangement

**2 Main relief valve** page 74

type	code	description
LOW(S1)	587710110	Range 0-20 bar (0-290 psi)
LOW(S2)	587710111	standard setting 30 bar (435 psi)
LOW(S3)	587710112	Range 30-320 bar (435-4580 psi)
LOW(S4)	587710113	standard setting 120 bar (1740 psi)
RV	079400100	Relief valve setting plug

**3 Compensator left**

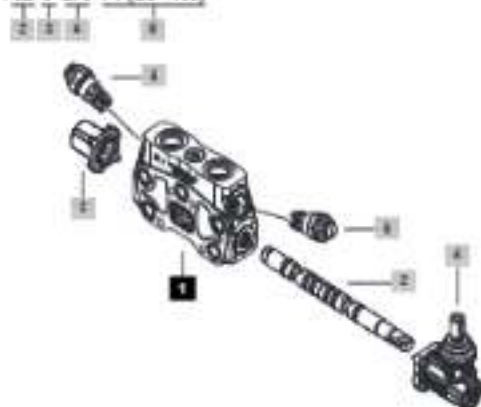
code	description
347010000	Compensator left for AM main cover
347010010	Compensator setting left for AM and AM main covers

CODE (P) = Codes are referred to GCF thread.



## Perls ordering codes (mechanical control)

EL DLS180 16Z 8 LF3 P1 (03-100)

**2** Working section kit <sup>1)</sup> page 72

T16	0008	26620PT000
P	00LS0000	Serial code for hydraulic control

**3** Spools page 72

T16	0008	26620PT000
<b>Working section 2 position, with A and B, closed in neutral position.</b>		
40	00LS0040	02 to 40 l/min (0.27 to 0.27 gpm) flow
60	00LS0060	02 to 60 l/min (0.12 to 0.12 gpm) flow
80	00LS0080	02 to 80 l/min (0.12 to 0.12 gpm) flow
42	00LS0042	02 to 42 l/min (0.30 to 0.30 gpm) flow
<b>Working section 2 position, with A and B, in lock in neutral position.</b>		
70	00LS0070	02 to 70 l/min (0.12 to 0.12 gpm) flow
72	00LS0072	02 to 72 l/min (0.30 to 0.30 gpm) flow

**3** "A" side spool positioners page 73

T16	0008	26620PT000
00T	010T0000	With filter and return for neutral position sensor
01B	010B0000	Detent in position 1 and 2 and spring return in neutral position
003	01000000	Proportional hydraulic control
00C	01000000	With spring return in neutral position (see page 32)
002	01000000	With detent in position 1 and spring return in neutral position (see page 32)
00W2	01000000	With detent in position 2 and spring return in neutral position (see page 32)
01B2	01000000	Detent in position 1 and 2 and spring return in neutral position (see page 32)

**4** "B" side options page 74

T16	0008	26620PT000
L	02V10010-4	Standard gear kit
LS	02V10010-6	Gear kit with speed choice limiter
LA	02V10010-4	Steel gear kit
LS2	02V10010-6	Steel gear kit with speed choice limiter
0LD	00000000	Without gear kit, with dust proof seal
TQ	02V10010-6	Flexible cable (3 m max) for 00LS0000

**5** Adjustable port valves page 53

Valve standard setting is referred to 10 l/min (0.41 gpm) flow.		
T16	0008	26620PT000
-	07A00000	Valve damping plug (limited in operation)
C	000A0000	Anti-cavitation valve
<b>Anti-cavitation valve</b>		
P003	00030000	Range 0-100 bar (0.00-1.00 psi) standard setting 50 bar (0.50 psi)
P002	00020000	Range 0-100 bar (0.00-1.00 psi) standard setting 100 bar (1.00 psi)
P004	00040000	Range 0-100 bar (0.00-1.00 psi) standard setting 100 bar (1.00 psi)

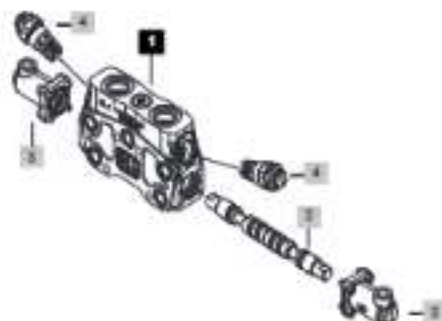
<b>Flow hydraulic anti-cavitation valve</b>		
00	000A0000	Flow hydraulic anti-cavitation valve
<b>Anti-cavitation and anti-ventilation valve</b>		
00S2	00140000	Range 0-60 bar (0.00-0.60 psi) standard setting 30 bar (0.30 psi)
00S3	00140000	Range 0-200 bar (0.00-2.00 psi) standard setting 100 bar (1.00 psi)
00S4	00140000	Range 0-200 bar (0.00-2.00 psi) standard setting 100 bar (1.00 psi)

<b>Flow operated anti-cavitation and anti-ventilation valve</b>		
00W(C)	00140000	Range 0-200 bar (0.00-2.00 psi) standard setting 100 bar (1.00 psi)

0000 (\*) - Codes are referred to 00P 0000.

## Parts ordering codes (proportional hydraulic control)

EL DLS180 / 62M 61M3 P1 (G3 - 100)

**1** Working section kit \* page 72

Type	Code	Description
62M	62M162100	Double-acting spool for hydraulic control

**2** Spools page 72

Type	Code	Description
<b>Double-acting, 3 positions, with A and B closed in neutral position.</b>		
62M	62M162100	Up to 40 l/min (10.7 US gal) flow
62M	62M162100	Up to 40 l/min (10.7 US gal) flow
62M	62M162100	Up to 120 l/min (31.7 US gal) flow
62M	62M162100	Up to 140 l/min (36.8 US gal) flow
<b>Double-acting, 3 positions, with A and B closed in neutral position.</b>		
72M	62M162100	Up to 120 l/min (31.7 US gal) flow
72M	62M162100	Up to 140 l/min (36.8 US gal) flow

**3** Complete controls page 75

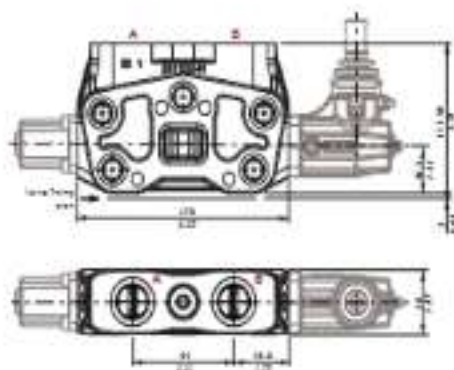
Type	Code	Description
61M3	61M3162100	Flow control range 2.0-10 bar (0-27) psi
61M3P1	61M3162100	Flow control valve with stroke limiter, range 2.0-10 bar (0-27) psi

**4** Adjustable port valves page 53

See page 53.

NOTE (\*) : Codes are referred to 62M162100.

## Dimensional data and hydraulic circuit



Operation example  
S28LP3

## Spools

**sq/sq/sv/sz spool type**

Double acting, 2 positions, with A and B closed in neutral position

**Spool stroke**

position 1: 7 mm (+ 0.28 H)

position 2: 7 mm (+ 0.28 H)

**rv/rz spool type**

Double acting, 2 positions, with A and B to tank in neutral position

**Spool stroke**

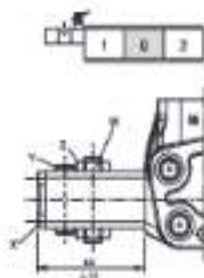
position 1: 7 mm (+ 0.28 H)

position 2: 7 mm (+ 0.28 H)

## "A" side spool positioners

## 7FT type

Web fixation.



Wrenches and tightening torques

Z = wrench Z - manual tightening

X = wrench X - 4.5 Nm (3.3 lbf ft)

Y = wrench Y - 42 Nm (31 lbf ft)

M = Allen wrench M

## BMC type

Spring return.

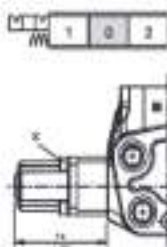


Wrenches and tightening torques

Z = wrench Z - 2.2 Nm (1.7 lbf ft)

## 11R type

Select in positions 1 and 2, spring return to neutral position.

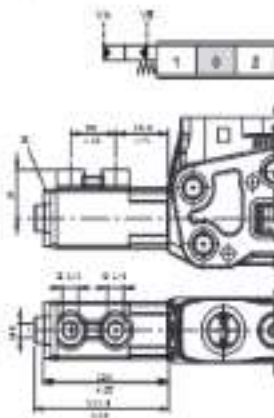


Wrenches and tightening torques

Z = wrench Z - 2.2 Nm (1.7 lbf ft)

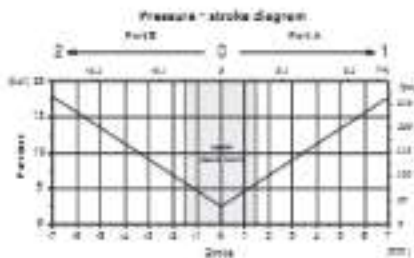
## BCC

Proportional Hydraulic control.



Wrenches and tightening torques

Z = wrench Z - 2.2 Nm (1.7 lbf ft)



## Features

Adjustment range ..... 0 bar to 22 bar  
(see 7.2.2 to 7.2.3)

Flow capacity ..... max. 100 l/min (2.7 gpm)

## "B" side options

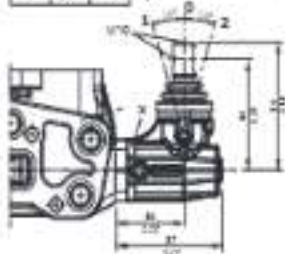
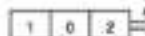
## Lever control

## L type

Aluminum pivot bar with protective rubber rollers.

Wrencher and tightening torque

0 = wrench 0 - 0.8 Nm (0.27 lbf)



## LFS type

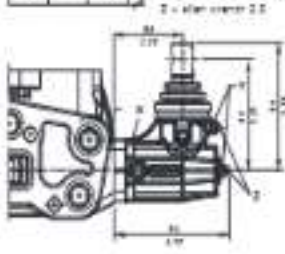
ISO steel stroke adjustment in pos. 1 and 2, (P=0), (P=0).

Wrencher and tightening torque

0 = wrench 0 - 0.8 Nm (0.27 lbf)

1 = wrench 0 - 0.8 Nm (0.27 lbf)

2 = alter wrench 0.0

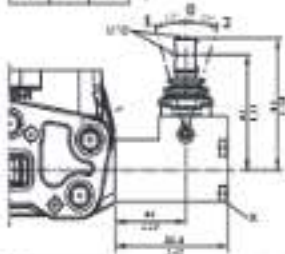


## LA type

Steel execution.

Wrencher and tightening torque

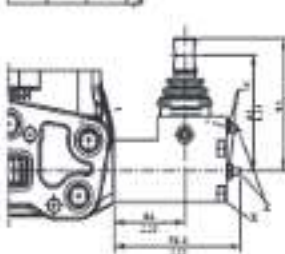
0 = wrench 0 - 0.8 Nm (0.27 lbf)



## LAP3 type

Steel execution with steel stroke adjustment in pos. 1 and 2,

(P=0), (P=0).

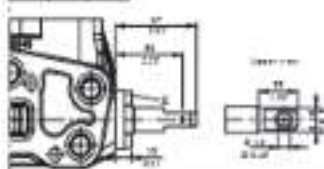


## SLP type

Mechanical control with SMC-prod plate 01.

Wrencher and tightening torque

0 = wrench 0 - 0.8 Nm (0.27 lbf)



Wrencher and tightening torque

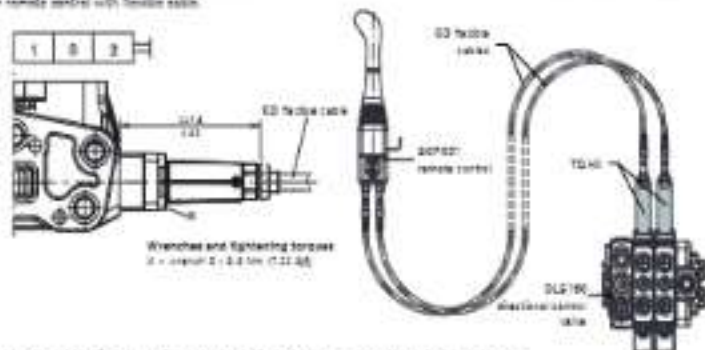
0 = wrench 0 - 0.8 Nm (0.27 lbf)

1 = wrench 0 - 0.8 Nm (0.27 lbf)

2 = alter wrench 0.0

## TQ cable remote control kit

For remote control with flexible cable

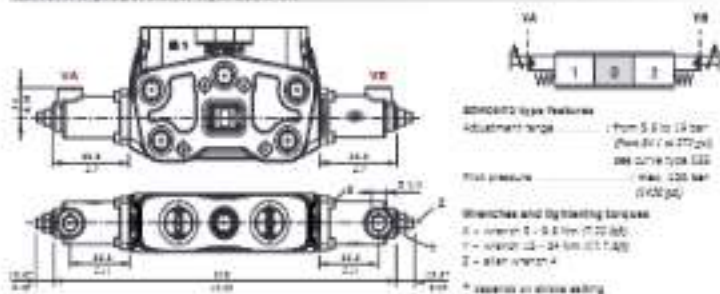


Wrenches and tightening torques  
 1 = wrench 1 - 5.8 Nm (7.22 lbf.ft)  
 2 = wrench 2 - 8.8 Nm (12.24 lbf.ft)

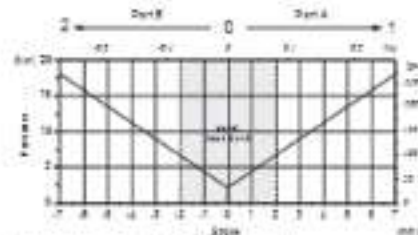
NOTE - For more information about remote cable control, consult appropriate SecurMotion.

Complete controls

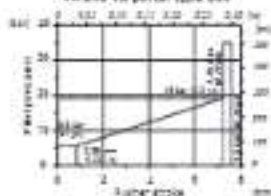
## REMOP3 proportional hydraulic kit



Pressure - stroke diagram



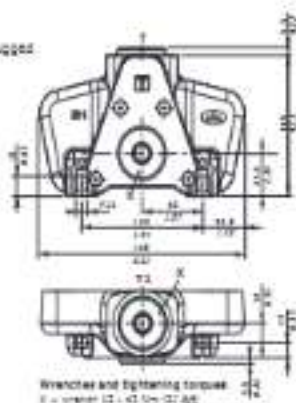
Pressure control curve on VA and VB port type G33



NOTE - For SOMCO complete controls see page 49

## Dimensional data and hydraulic circuit

RF type  
with ports plugged



With RD type  
upper outlet



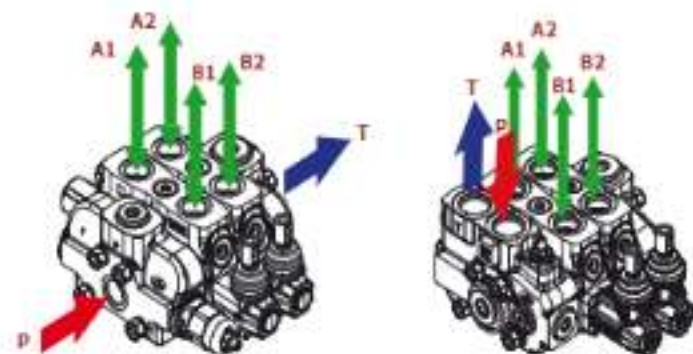
With RC type  
side outlet



## 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 warping water deformation and avoid welding mount the product on a flat surface;
- in order to prevent the possibility of water entering the lever box and avoid control kit, do not use high pressure wash down directly on the valve;
- prior to painting, ensure plastic part plugs are tightly in place.



Fitting tightening torque - Nm (Lb/ft)

THREAD TYPE	P port	A, B ports	T port	Hydraulic pilot
SDP	0.9 (0)	0.9 (0)	0.7 (0)	0.1 (0)
Pin O-Ring seal	20 (14.0)	20 (14.0)	100 (72.5)	20 (13.0)
Pin copper washer	20 (14.0)	20 (14.0)	20 (14.0)	30 (22.0)
Pin steel and copper washer	10 (7.0)	10 (7.0)	100 (72.5)	10 (7.0)
SHARP	1.5 (1.1)	1.1 (0.8)	1.8 (1.3)	0.1 (0)
Pin O-Ring seal	100 (72.5)	40 (29.0)	100 (72.5)	30 (22.0)

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

## Coils

## Types and ordering codes

Coil type	Voltage	Connectors					Flying leads with 50 cm (20 in.)
		ISO 440	Devlet DT	HT DT	Female (M4x10)	Female (M4x20)	
SD	18 VDC	48.201.020A	-	-	-	-	-
	12 VDC	48.201.020A	48.201.020A <sup>(1)</sup>	48.201.020A <sup>(2)</sup>	48.201.020A <sup>(3)</sup>	48.201.020A <sup>(4)</sup>	48.201.020A <sup>(5)</sup>
		48.201.020A <sup>(6)</sup>	48.201.020A <sup>(7)</sup>	48.201.020A <sup>(8)</sup>	48.201.020A <sup>(9)</sup>	48.201.020A <sup>(10)</sup>	48.201.020A <sup>(11)</sup>
		48.201.020A <sup>(12)</sup>	48.201.020A <sup>(13)</sup>	48.201.020A <sup>(14)</sup>	48.201.020A <sup>(15)</sup>	48.201.020A <sup>(16)</sup>	48.201.020A <sup>(17)</sup>
	24 VDC	48.201.020A	48.201.020A <sup>(1)</sup>	48.201.020A <sup>(2)</sup>	-	-	48.201.020A
	48 VDC	48.201.020A	-	-	-	-	-
110 VDC	48.201.020A	-	-	-	-	-	
SD	12 VDC	48.100.020A	48.100.020A <sup>(1)</sup>	48.100.020A <sup>(2)</sup>	48.100.020A <sup>(3)</sup>	48.100.020A <sup>(4)</sup>	48.100.020A <sup>(5)</sup>
	24 VDC	48.100.020A	48.100.020A <sup>(1)</sup>	-	-	-	-
SD	110 VDC	48.101.020A	-	-	-	-	-
	220 VDC	48.101.020A	-	-	-	-	-
	240 VDC	48.101.020A	-	-	-	-	-
BT	18 VDC	48.300.020A	48.300.020A <sup>(1)</sup>	48.300.020A <sup>(2)</sup>	48.300.020A <sup>(3)</sup>	48.300.020A <sup>(4)</sup>	48.300.020A <sup>(5)</sup>
	12 VDC	48.300.020A	48.300.020A <sup>(1)</sup>	48.300.020A <sup>(2)</sup>	48.300.020A <sup>(3)</sup>	48.300.020A <sup>(4)</sup>	48.300.020A <sup>(5)</sup>
	24 VDC	48.300.020A	48.300.020A <sup>(1)</sup>	48.300.020A <sup>(2)</sup>	48.300.020A <sup>(3)</sup>	48.300.020A <sup>(4)</sup>	48.300.020A <sup>(5)</sup>
	36 VDC	48.300.020A	-	-	-	-	-
	48 VDC	48.300.020A	-	-	-	-	-
	110 VDC	48.300.020A	-	-	-	-	-
BT	12 VDC	48.400.020A	-	-	-	-	-
	24 VDC	48.400.020A	-	-	-	-	-
Mating connectors (for connector with rectifier see following table)		48.100.999A	48.101.999A	48.102.999A	48.103.999A	48.104.999A	-

HT02 = (1) dual; with AC and DC only with rectifier connector; (2) with flying leads; (3) with intermediate slide; (4) with intermediate slide; (5) 480 mm (19 in.) length; (6) 480 mm (19 in.) length; (7) 480 mm (19 in.) length; (8) 480 mm (19 in.) length; (9) 480 mm (19 in.) length; (10) 480 mm (19 in.) length; (11) 480 mm (19 in.) length; (12) 480 mm (19 in.) length; (13) 480 mm (19 in.) length; (14) 480 mm (19 in.) length; (15) 480 mm (19 in.) length; (16) 480 mm (19 in.) length; (17) 480 mm (19 in.) length.

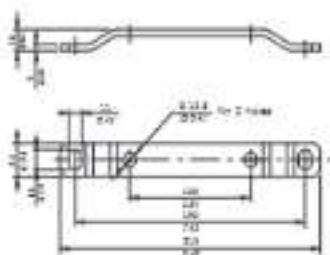
Voltage	ISO 440 mating connector with rectifier			
	SD 120 20	BT 120 20	BT 120 20	SD 120 20
24 VDC	48.101.020A	48.101.020A	-	48.101.020A
48 VDC	48.101.020A	48.101.020A	-	48.101.020A
110 VDC	48.101.020A	48.101.020A	-	48.101.020A
220 VDC	48.101.020A	48.101.020A	-	48.101.020A





## Fixing brackets

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



## Painting

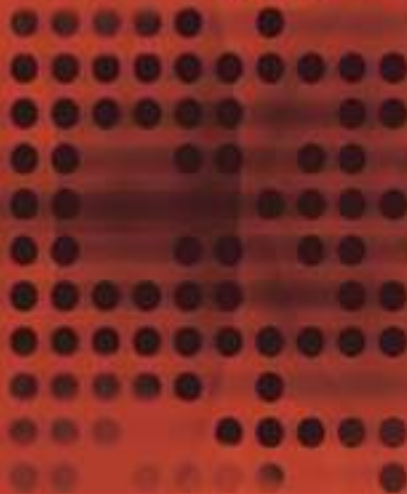
SDS180 valve can be supplied with one coat of black paint (EWH configuration).

Alternative items: SDS180/2/40/180-200/180/180/180-180W

NOTE - For different colour consult Sales Department.







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