

SDX060
Bankable solenoid valve
with proportional control

TECHNICAL CATALOG



General informations

Simple, compact and heavy duty designed sectional valves from 1 to 8 sections.

SDX060

- Steel inlet sections, available in several configurations.
- Cast iron working sections.
- Different types of spools.
- Different options to be flanged on the workports side.
- Proportional and on/off solenoid controls.
- Emergency handlever available.

Additional information

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

WARNING!

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

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

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SDX060

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Working conditions

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

SDX060

Nominal flow rating		80 l/min @ 14 bar - 21.1 US gpm @ 203 psi
Flow rate uses	<i>pre compensated section</i>	35 l/min @ 9 bar - 9.2 US gpm @ 131 psi
	<i>non-compensated section</i>	35 l/min @ 14 bar - 9.2 US gpm @ 203 psi
Operating pressure (max.)		300 bar - 4350 psi
Back pressure (max.)	<i>outlet port T</i>	30 bar - 435 psi
	<i>outlet port T, with lever control</i>	30 bar - 435 psi
Internal leakage max. A(B)⇒T	$\Delta p = 100 \text{ bar} - 1450 \text{ psi}$	14 cm ³ /min - 0.85 in ³ /min
Fluid		Mineral based oil
Fluid temperature	<i>with NBR (BUNA-N) seals</i>	from -20°C to 80°C - from -4°F to 176°F
	<i>with FPM (VITON) seals</i>	from -20°C to 100°C - from -4°F to 212°F
Viscosity	<i>operating range</i>	from 15 to 75 mm ² /s - from 15 to 75 cSt
	<i>min.</i>	12 mm ² s - 12 cSt
	<i>max.</i>	400 mm ² s - 400 cSt
Max. contamination level		-/18/15 - ISO 4406 - NAS 1638 - class 10
Ambient temperature for working conditions		from -20°C to 50°C - from -4°F to 122°F

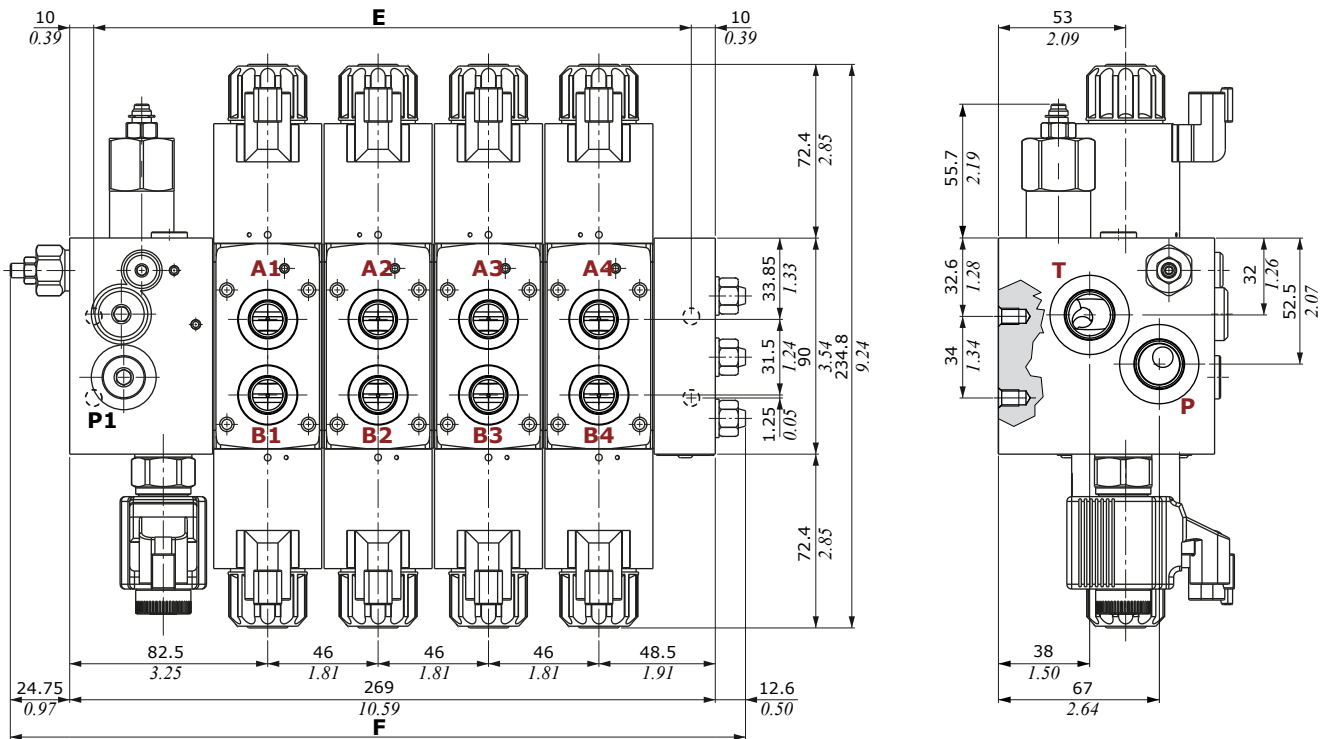
NOTE - for different conditions please contact Sales Dpt.

Standard threads

REFERENCE STANDARD		
	BSP	UN-UNF
THREAD ACCORDING TO	ISO 228/1	ISO 263
	BS 2779	ANSI B1.1 unified
CAVITY DIMENSION ACCORDING TO	ISO	11926
	SAE	J11926
	DIN	3852-2 shape X or Y

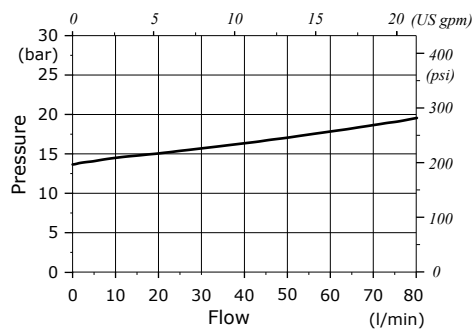
PORT THREADING	BSP	UN-UNF
Inlet P and outlet T	G 1/2	3/4-16 (SAE 8)
Working ports A and B	G 3/8	9/16-18 (SAE 6)
Port P1	G 3/8	9/16-18 (SAE 6)
Port LS	G 1/4	7/16-20 (SAE 4)

This drawing is referred to directional valve with 4 working sections and AN1 type inlet section.

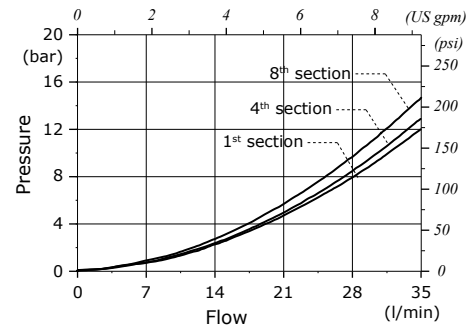


TYPE	AN1 type inlet section (see drawing)				AN2 type inlet section			
	E		F		E		F	
	mm	in	mm	in	mm	in	mm	in
SDX060/1	111	4.37	168.35	6.63	111	4.37	168.35	6.63
SDX060/2	157	6.18	214.35	8.44	157	6.18	214.35	8.44
SDX060/3	203	7.99	260.35	10.25	203	7.99	260.35	10.25
SDX060/4	249	9.80	306.35	12.06	249	9.80	306.35	12.06
SDX060/5	295	11.61	352.35	13.87	295	11.61	352.35	13.87
SDX060/6	341	13.42	398.35	15.68	341	13.42	398.35	15.68
SDX060/7	387	15.23	444.35	17.49	387	15.23	444.35	17.49
SDX060/8	433	17.04	490.35	19.30	433	17.04	490.35	19.30

P⇒T Pressure drop inlet compensator (margin pressure)

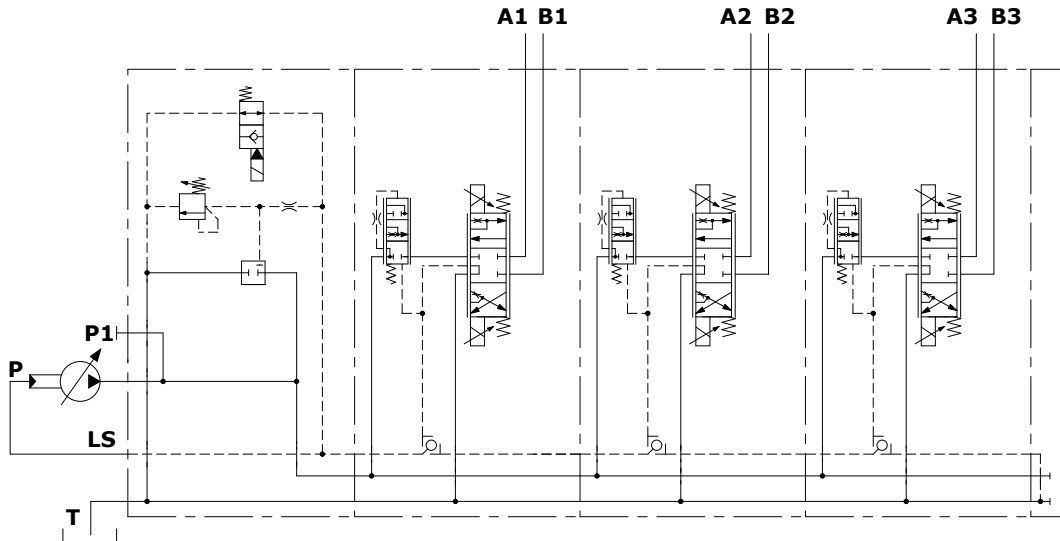


A(B)⇒T pressure drop (type 1 standard spool @ max.stroke)



Hydraulic circuit

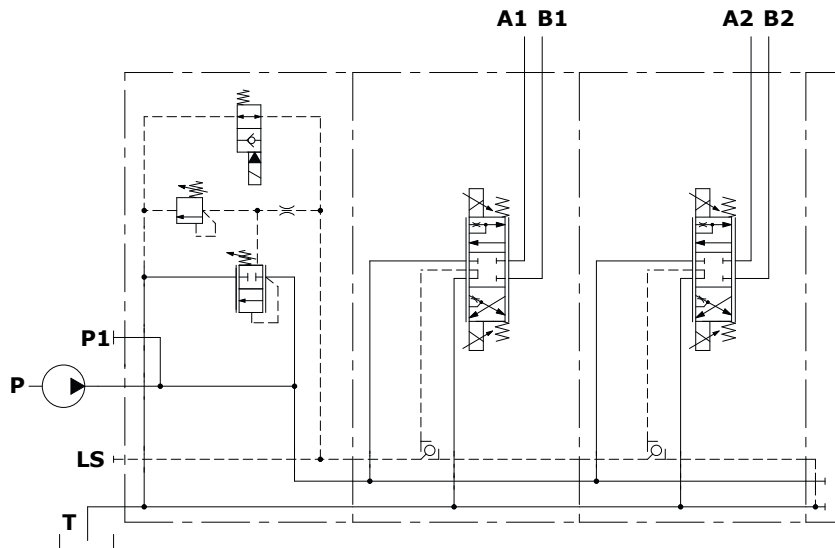
Compensated circuit



Description example:

SDX060/3/AN2(VMP02TR-250/ELN)C-S107(35/35)-8ESZ34/C-S107(35/35)-8ESZ34/
C-S107(35/35)-8ESZ34/RF-12VDC

Non-compensated circuit



Description example:

SDX060/2/AN1(VMP02TR-250/ELN)/D-S105(35/35)-8ESZ34/
D-S105(35/35)-8ESZ34/RF-12VDC

Complete section ordering codes

SDX060/4/AN1(VMP02TS-210/ELN)/D-S105(35/35)8ESZ34/D-S105(35/35)8ESZ34.BPEN3/

Nr. of working sections

1

2

2

4

D-S105(35/35)8ESZ34/D-S105(35/35)8ESZ34.PS3(DC3-160\DC4-200)/RF-.....-12VDC-TAGRS

2

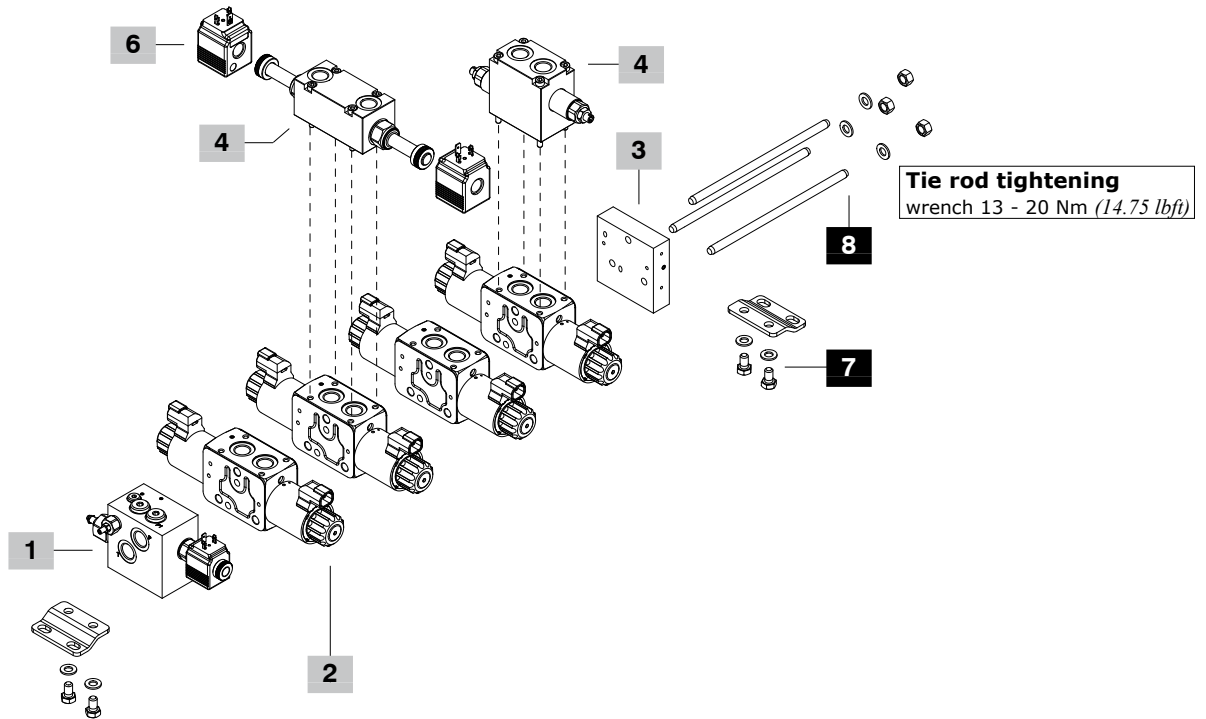
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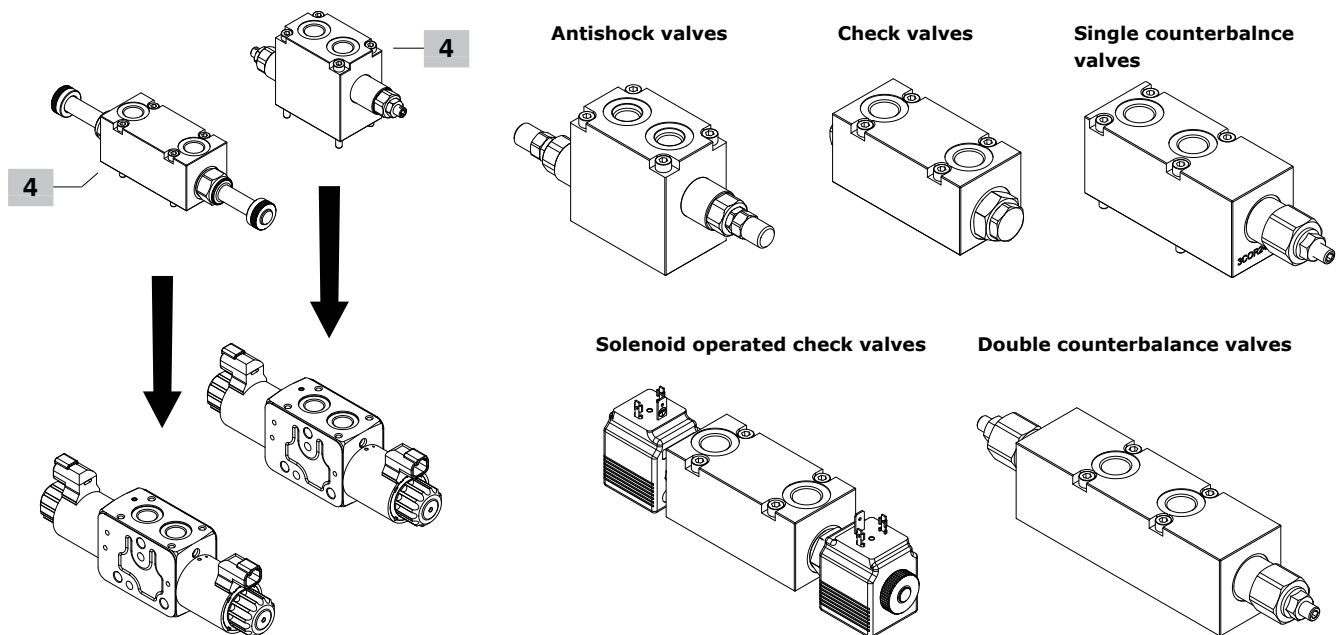
3

5

6



Valve block examples



Complete section ordering codes

1 Complete inlet section * page 9

Section bodies are zinc-plated steel made

Open Center circuit

TYPE: **SDX060/AN1(VMP02TS-150\LT)**

CODE: 61X200009

DESCRIPTION: With pressure relief valve and compensator

TYPE: **SDX060/AN1(VMP02TS-150\ELN)-12VDC**

CODE: 61X200010

DESCRIPTION: With pressure relief valve, compensator and 12VDC unloading valve

Closed Center circuit

TYPE: **SDX060/AN2(VMP02TS-150\LT)**

CODE: 61X200011

DESCRIPTION: With pressure relief valve

TYPE: **SDX060/AN2(VMP02TS-150\ELN)-12VDC**

CODE: 61X200012

DESCRIPTION: With pressure relief valve and 12VDC unloading valve

2 Complete working section * page 14

Section bodies are zinc-plated cast iron made and are arranged for flangeable valve blocks

TYPE: **SDX060/C-S1078ESZ34-12VDC-SAE**

CODE: 61X100002

DESCRIPTION: Compensated section with 12VDC direct proportional electric control, type 1 spool

TYPE: **SDX060/D-S1058ESZ34-12VDC-SAE**

CODE: 61X100004

DESCRIPTION: Non-compensated section with 12VDC direct proportional electric control, type 1 spool

3 Complete outlet section * page 25

Outlet section bodies are steel made

TYPE: **SDX060/RF**

CODE: 3FIA760300

DESCRIPTION: Without ports

4 Complete flangeable valve block

Antishock valvespage 20

Check valvespage 21

Solenoid operated check valves (without coils)page 22

Single counterbalance valvespage 24

Double counterbalance valves.page 24

5 Valve threading

Specify threading always when it is different from BSP standard (see page 4).

6 Coil page 26

Coils voltage specification; for list of available coils see pages of related section

7 Fixing bracket page 28

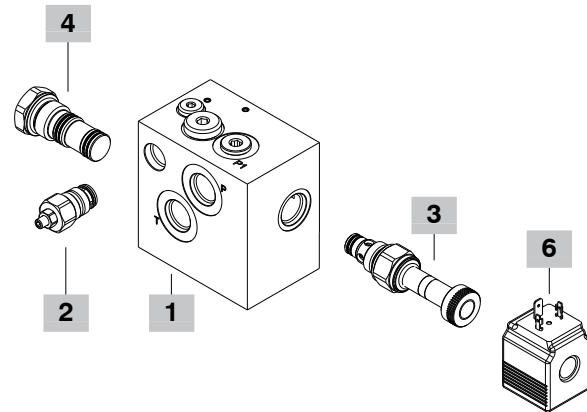
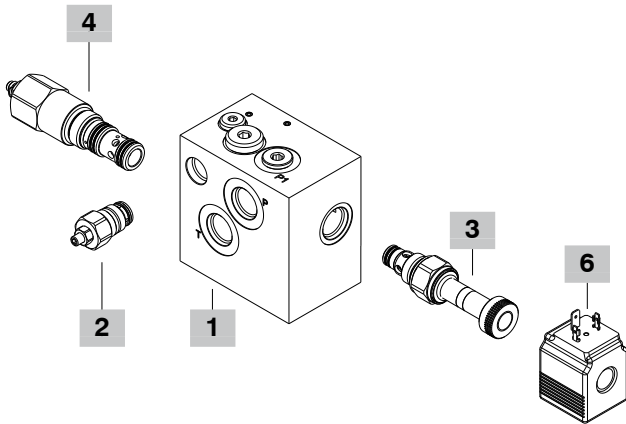
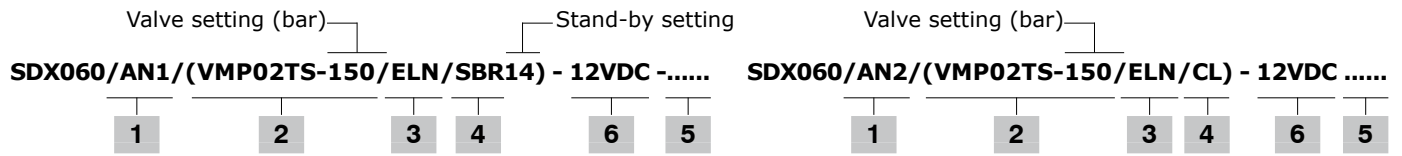
TYPE	CODE	DESCRIPTION
STAF	5STA148065	Brackets with fixing screws

8 Assembling kit

CODE	DESCRIPTION
5TIR108099	For 1 section valve
5TIR108144	For 2 sections valve
5TIR108191	For 3 sections valve
5TIR108236	For 4 sections valve
5TIR108282	For 5 sections valve
5TIR108329	For 6 sections valve
5TIR108375	For 7 sections valve
5TIR108420	For 8 sections valve

NOTE (*) – Codes are referred to **UN-UNF** thread.

Inlet section; part ordering codes



1 Inlet section body kit * page 10

Section bodies are zinc-plated steel made

TYPE	CODE	DESCRIPTION
AN1	5FIA160700	Section body kit for open circuit with compensator
AN2	5FIA160701	Section body kit for close circuit without compensator

2 L.S. pressure relief valve page 12

TYPE	CODE	DESCRIPTION
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For sections AN1-AN2 type

Valve standard setting is referred to 10 l/min (2.6 US gpm) flow, considering the valve mounted on inlet section.

(VMP02TV-50)	1100000100	Range 5-80 bar (75-1160 psi) std setting 50 bar (725 psi)
(VMP02TS-150)	1100000101	Range 50-220 bar (725-3200 psi) std setting 150 bar (2200 psi)
(VMP02TR-250)	1100000102	Range 180-350 bar (2600-5100 psi) std setting 250 bar (3600 psi)

3 Solenoid operated unloading valve page 13

TYPE	CODE	DESCRIPTION
For sections AN1-AN2 type		
ELN	0EF08002000	Without emergency actuation
ELP	0EF08002002	With push-button emergency actuation
ELV	0EF08002003	With screw type emergency actuation
ELT	0EF08002004	With "twist&push" emergency actuation
LT	XTAP510320	Unloading valve blanking plug

4 Compensator kit

TYPE	CODE	DESCRIPTION
For section AN1 type		
SBR14	0LA10Q002002	Compensator with adjustable stand-by; from 8-15 bar (120-220 psi) (standard setting 14 bar with 5 l/min - 205 psi with 1.3 US gpm)

For section AN2 type

CL	XTAP327573	Compensator blanking plug, for Closed Center circuit
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5 Section threading

Specify threading always when it is different from BSP standard (see page 4).

6 Coil page 26

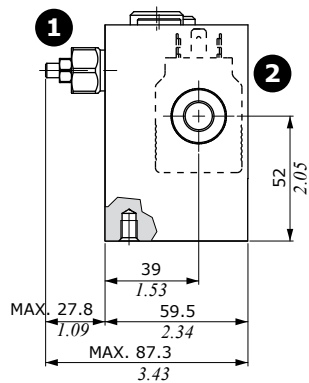
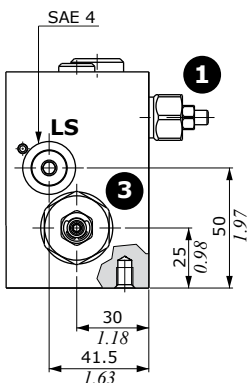
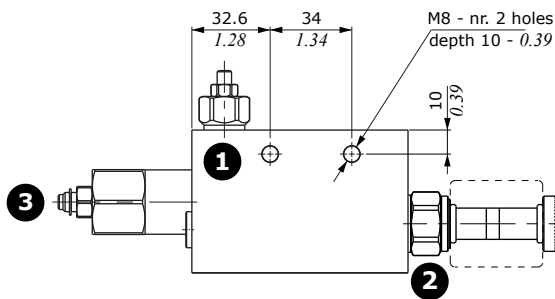
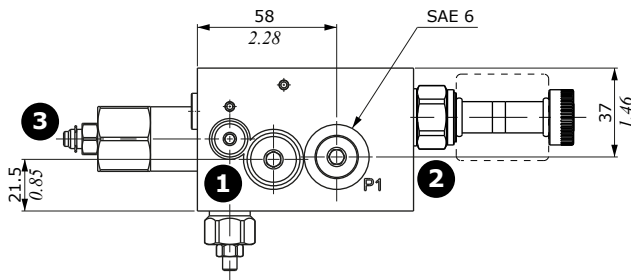
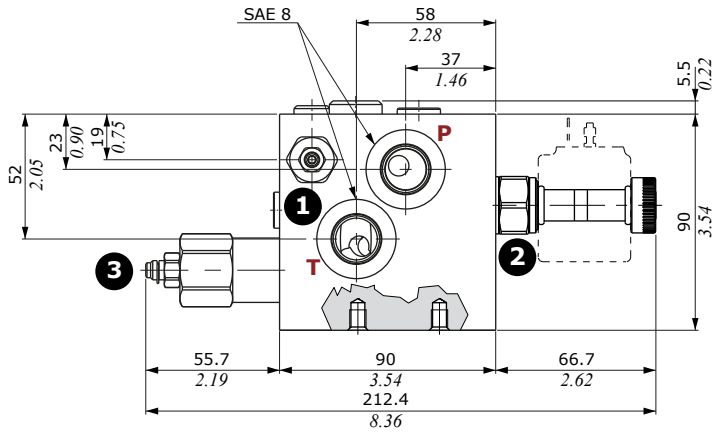
For list of available coils see pages of related section

NOTE (*) - Codes are referred to **UN-UNF** thread.

Inlet section; part ordering codes

AN1 inlet section

AN1 type Open Center

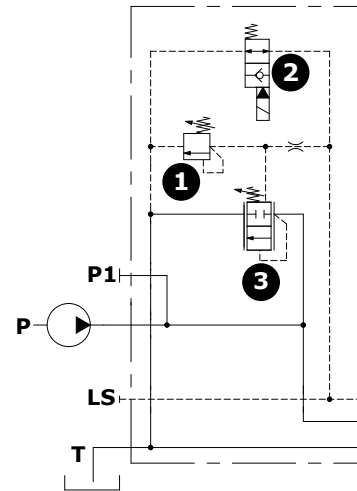


Legenda

- 1: Pressure relief valve
- 2: Solenoid operated unloading valve
- 3: Compensator

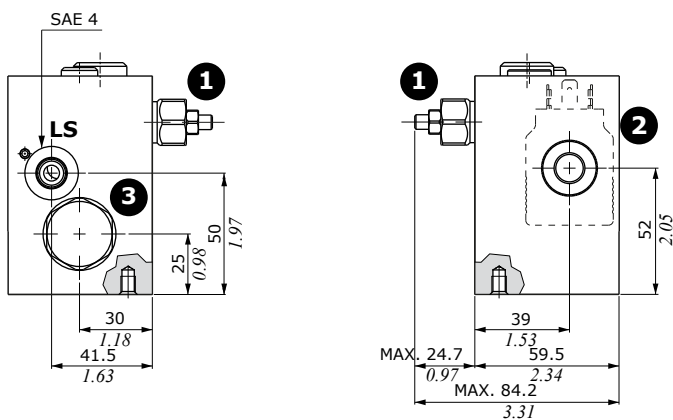
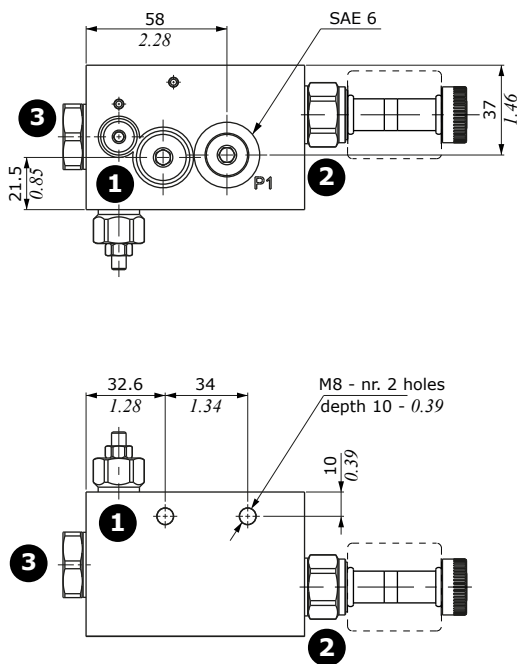
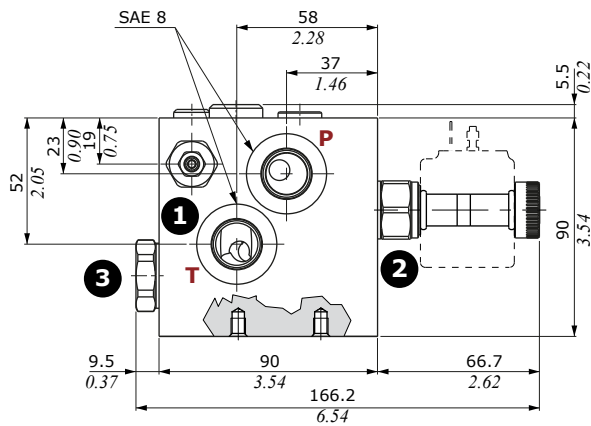
Wrenches and tightening torque

NOTE: for valve wrench and torque see pages 12 and 13



AN2 inlet section

AN2 type Closed Center

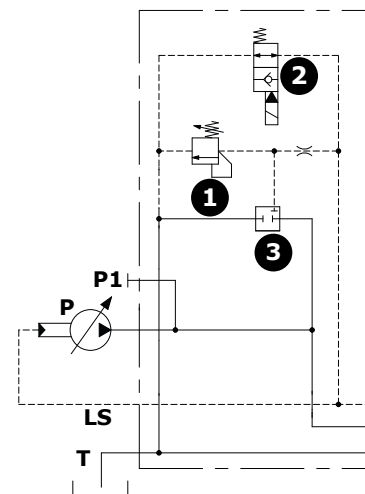


Legenda

- 1: Pressure relief valve
- 2: Solenoid operated unloading valve
- 3: Compensator blanking plug

Wrenches and tightening torque

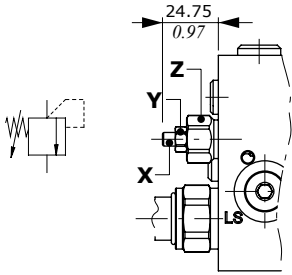
NOTE: for valve wrench and torque see pages 12 and 13



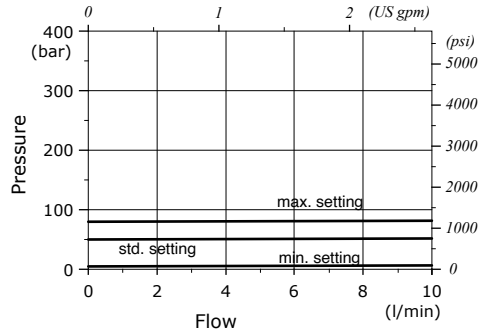
Inlet section: options

L.S. pressure relief valve

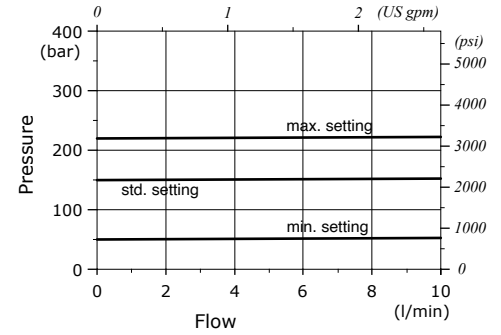
For sections AN1 - AN2 type



Setting range: VMP02TV type



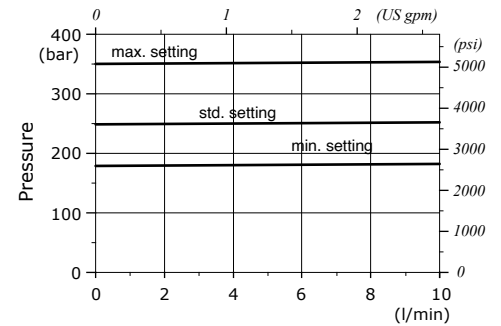
Setting range: VMP02TS type



Wrenches and tightening torque

- Y = wrench 10 - 6.6 Nm (4.9 lbft)
- Z = wrench 19 - 24 Nm (17.7 lbft)
- X = wrench 3

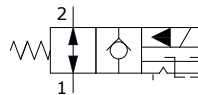
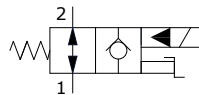
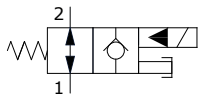
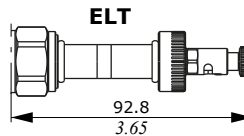
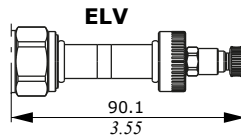
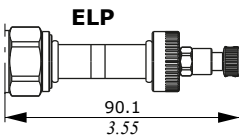
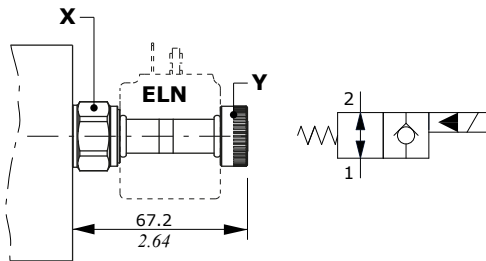
Setting range: VMP02TR type



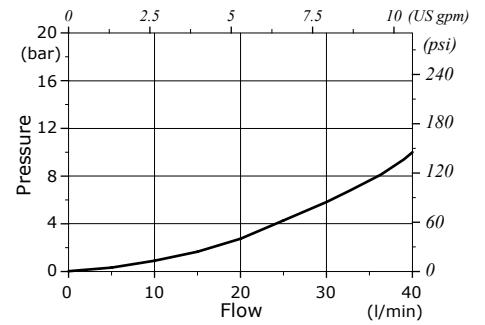
Unloading valve

For sections AN1 - AN2 type

Emergency actuation types



Pressure drop diagram



Legenda

- ELN:** without emergency actuation
- ELP:** push-button type emergency actuation
- ELV:** screw type emergency actuation
- ELT:** "push&twist" type emergency actuation

Wrenches and tightening torque

- X = wrench 24 - 30 Nm (22 lbf^t)
- Y = 5 Nm (3.7 lbf^t)

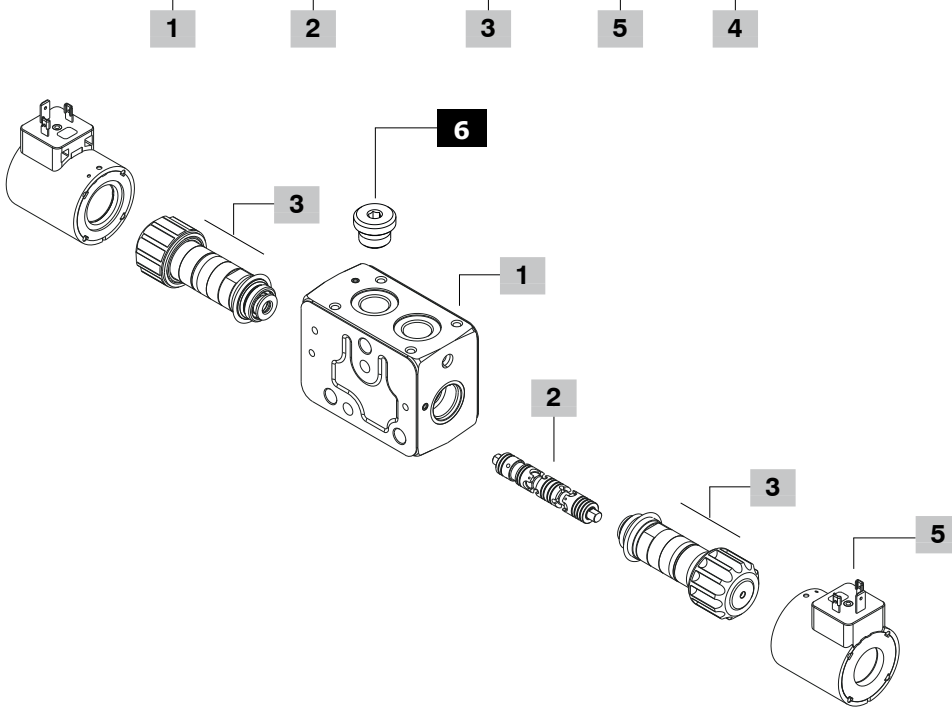
Valve features

- Max. flow: 40 l/min (10.5 US gpm)
 - Max. pressure: 380 bar (5510 psi)
 - Internal leakage: 0,25 cm³/min @ 210 bar
(0.015 in³/min @ 3050 psi)
- For coil features and options see **BER** coil on page 26 and 27

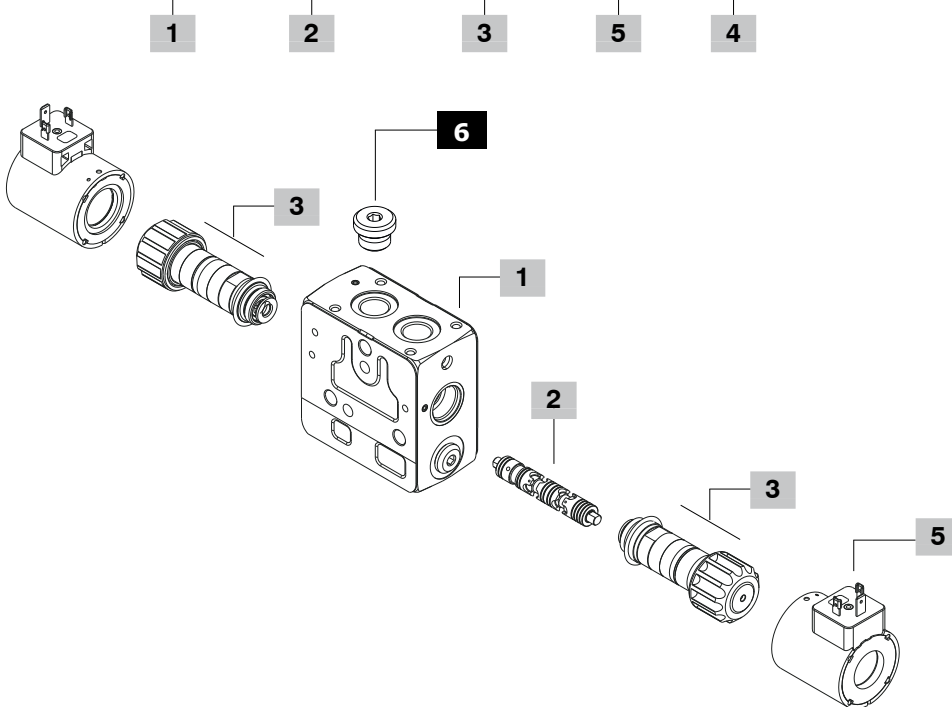
SDX060

Working section: part ordering codes

SDX060 / D - S105(25/25) 8ESZ3 - 12VDC -



SDX060 / C - S107(35/35) 8ESZ3 - 12VDC -



Working section: part ordering codes

1 Working section body kit * page 16**Section bodies are cast iron made**

TYPE	CODE	DESCRIPTION
D	5EL1027001	Non-compensated
C	5EL1027000	Compensated

3 Direct solenoid control page 18**For single acting plug the port not used**

TYPE	CODE	DESCRIPTION
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Proportional control

8ESZ1	5CAN08128	Single acting on port A
8ESZ2	5CAN08128	Single acting on port B
8ESZ3	5CAN08129	Double acting
8ESZ1LHD*	5CAN08130	Single acting on port A with emergency lever operation
8ESZ2LHD*	5CAN08130	Single acting on port B with emergency lever operation
8ESZ3LHD*	5CAN08131	Double acting with emergency lever operation

On/off control

8ES1	5CAN08134	Single acting on port A
8ES2	5CAN08134	Single acting on port B
8ES3	5CAN08135	Double acting
8ES1LHD*	5CAN08132	Single acting on port A with emergency lever operation
8ES2LHD*	5CAN08132	Single acting on port B with emergency lever operation
8ES3LHD*	5CAN08133	Double acting with emergency lever operation

* Special spools required

6 Plug for single actuation

CODE	DESCRIPTION
3XTAP817130	9/16-18 (SAE 6)

4 Section threading

Specify threading always when it is different from BSP standard (see page 4)

5 Coils page 26

For list of available coils see pages of related sections

2 Spool page 17

Flow is referred to 9 bar (130 psi) stand-by (margin pressure)

Spools for control without lever

TYPE	CODE	DESCRIPTION
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Double acting, A and B closed in neutral position

S101	XCU9X810001	5 l/min (1.3 US gpm) flow
S102	XCU9X810002	10 l/min (2.6 US gpm) flow
S103	XCU9X810003	15 l/min (4 US gpm) flow
S104	XCU9X810004	20 l/min (5.3 US gpm) flow
S105	XCU9X810005	25 l/min (6.6 US gpm) flow
S106	XCU9X810006	30 l/min (7.9 US gpm) flow
S107	XCU9X810007	35 l/min (9.2 US gpm) flow

Double acting, A and B to tank in neutral position

S201	XCU9X820001	5 l/min (1.3 US gpm) flow
S202	XCU9X820002	10 l/min (2.6 US gpm) flow
S203	XCU9X820003	15 l/min (4 US gpm) flow
S204	XCU9X820004	20 l/min (5.3 US gpm) flow
S205	XCU9X820005	25 l/min (6.6 US gpm) flow
S206	XCU9X820006	30 l/min (7.9 US gpm) flow
S207	XCU9X820007	35 l/min (9.2 US gpm) flow

Double acting, A and B partially to tank in neutral pos.

S2H01	XCU9X825001	5 l/min (1.3 US gpm) flow
S2H02	XCU9X825002	10 l/min (2.6 US gpm) flow
S2H03	XCU9X825003	15 l/min (4 US gpm) flow
S2H04	XCU9X825004	20 l/min (5.3 US gpm) flow
S2H05	XCU9X825005	25 l/min (6.6 US gpm) flow
S2H06	XCU9X825006	30 l/min (7.9 US gpm) flow
S2H07	XCU9X825007	35 l/min (9.2 US gpm) flow

Spools for control with lever

TYPE	CODE	DESCRIPTION
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Double acting, A and B closed in neutral position

S101	3CU9X810001	5 l/min (1.3 US gpm) flow
S102	3CU9X810002	10 l/min (2.6 US gpm) flow
S103	3CU9X810003	15 l/min (4 US gpm) flow
S104	3CU9X810004	20 l/min (5.3 US gpm) flow
S105	3CU9X810005	25 l/min (6.6 US gpm) flow
S106	3CU9X810006	30 l/min (7.9 US gpm) flow
S107	3CU9X810007	35 l/min (9.2 US gpm) flow

Double acting, A and B to tank in neutral position

S201	3CU9X820001	5 l/min (1.3 US gpm) flow
S202	3CU9X820002	10 l/min (2.6 US gpm) flow
S203	3CU9X820003	15 l/min (4 US gpm) flow
S204	3CU9X820004	20 l/min (5.3 US gpm) flow
S205	3CU9X820005	25 l/min (6.6 US gpm) flow
S206	3CU9X820006	30 l/min (7.9 US gpm) flow
S207	3CU9X820007	35 l/min (9.2 US gpm) flow

Double acting, A and B partially to tank in neutral pos.

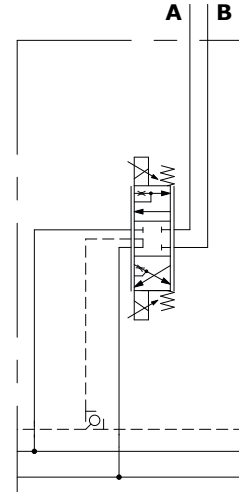
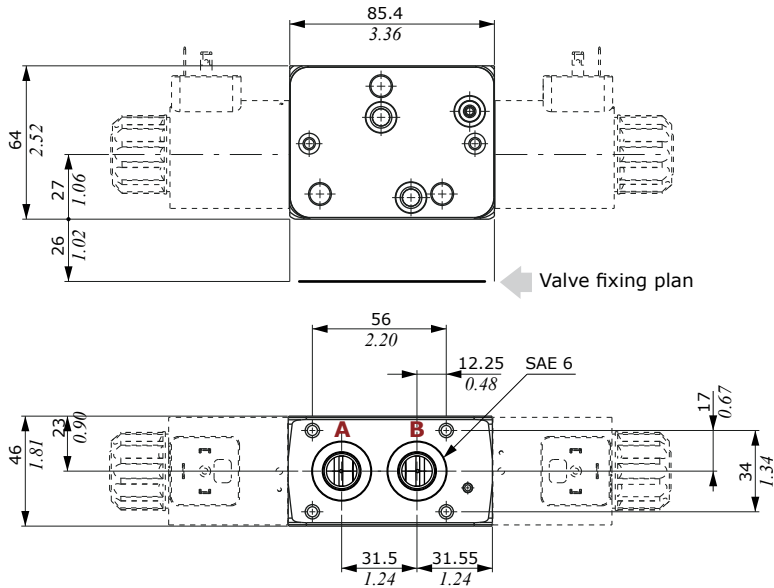
S2H01	3CU9X825001	5 l/min (1.3 US gpm) flow
S2H02	3CU9X825002	10 l/min (2.6 US gpm) flow
S2H03	3CU9X825003	15 l/min (4 US gpm) flow
S2H04	3CU9X825004	20 l/min (5.3 US gpm) flow
S2H05	3CU9X825005	25 l/min (6.6 US gpm) flow
S2H06	3CU9X825006	30 l/min (7.9 US gpm) flow
S2H07	3CU9X825007	35 l/min (9.2 US gpm) flow

NOTE (*) - Codes are referred to **UN-UNF** thread.

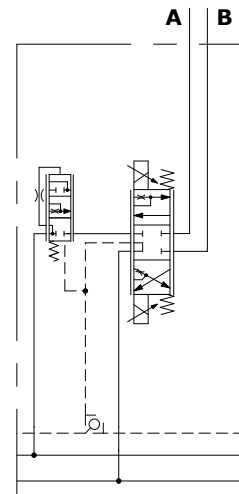
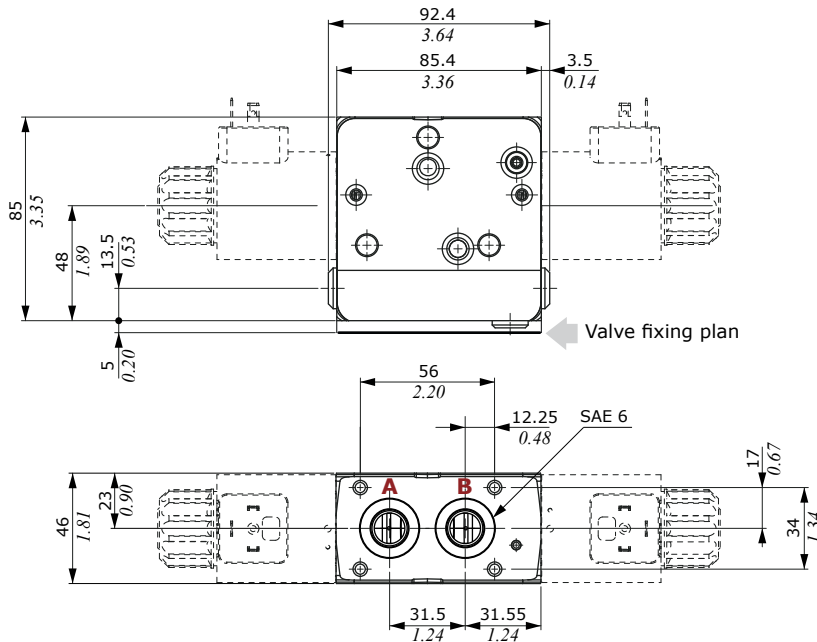
Working section

Dimensions and hydraulic circuit

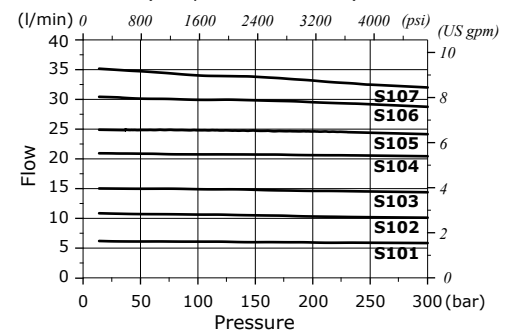
D type working section



C type working section



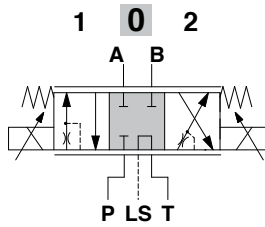
Compensation curves
(compensated section)



Spools

Type 1 (S107)

Double acting, A and B closed in neutral position

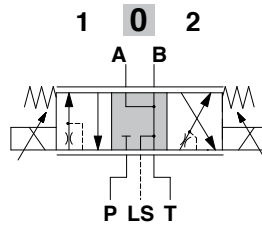


Stroke

position 1: + 3 mm (+0.12 in)
position 2: - 3 mm (-0.12 in)

Type 2 (S207)

Double acting, A and B to tank in neutral position

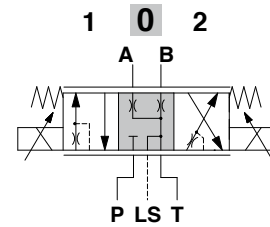


Stroke

position 1: + 3 mm (+0.12 in)
position 2: - 3 mm (-0.12 in)

Type 2H (S2H07)

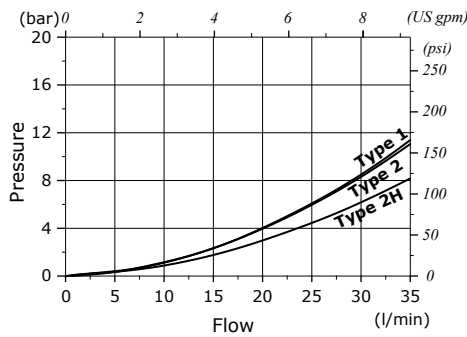
Double acting, A and B partially to tank in neutral position



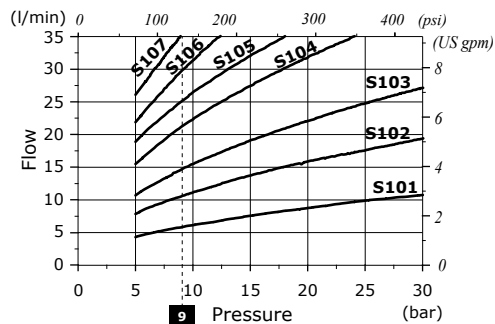
Stroke

position 1: + 3 mm (+0.12 in)
position 2: - 3 mm (-0.12 in)

ut→T pressure drop (compensated section)



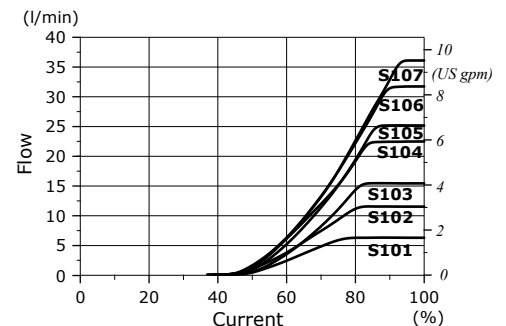
Non-compensated working section Spool flow vs. Stand-by pressure (margin pressure)



Spool nominal flow @ 9 bar (130 psi) stand-by (margin pressure)

- S101 = 5 l/min (1.3 US gpm)
- S102 = 10 l/min (2.6 US gpm)
- S103 = 15 l/min (4 US gpm)
- S104 = 20 l/min (5.3 US gpm)
- S105 = 25 l/min (6.6 US gpm)
- S106 = 30 l/min (7.9 US gpm)
- S107 = 35 l/min (9.2 US gpm)

Spool metering curves (compensated section)

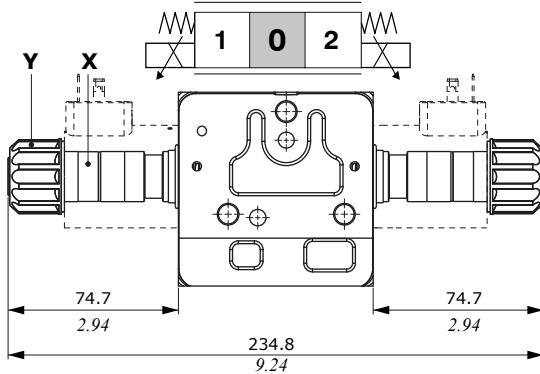


Working section

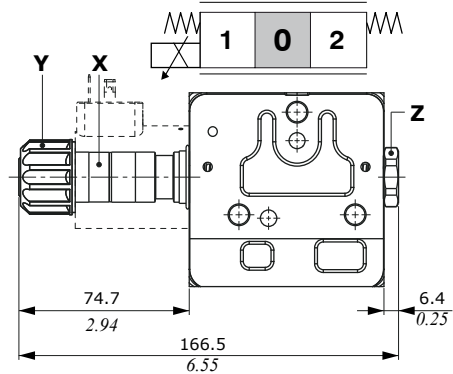
Proportional solenoid control: 8ESZ1 - 8ESZ2 - 8ESZ3 types

When the section is configured with flangeable valve block, the coils on control must be rotated 180°.

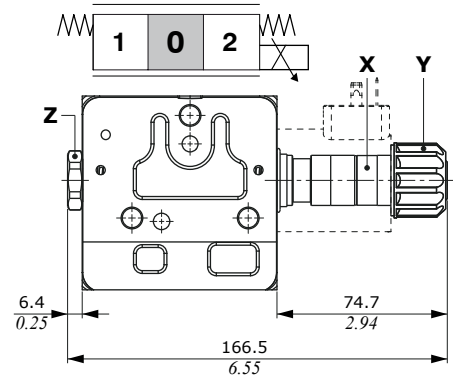
8ESZ3: double acting control kit



8ESZ1: single acting on A control kit



8ESZ2: single acting on B control kit



Wrenches and tightening torque

X = wrench 19 - 24 Nm (17.7 lbft)

Y = 5 Nm (3.69 lbft)

Z = wrench 24 - 24 Nm (17.7 lbft)

For coil options and features see

45 coil on pages 26 and 27.

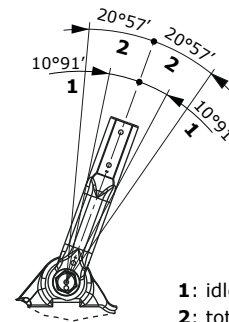
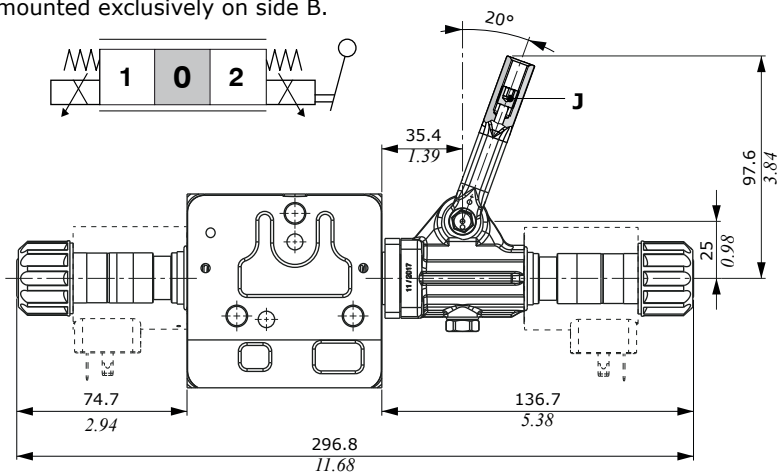
Proportional electric control with lever : 8ESZ3LHD type

When the section is configured with flangeable valve block, the control (with coil) must be rotated 180°.

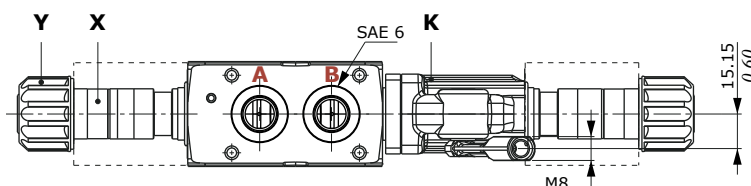
The control needs dedicated spools: see page 15 for list.

IMPORTANT: lever to be used only for emergency operation, not for continuative use.

Note: lever mounted exclusively on side B.



1: idle stroke angles
2: total operation angles



Wrenches and tightening torque

J = wrench 4 - 9.8 Nm (7.2 lbft)

K = wrench 3 - 5 Nm (3.7 lbft)

X = wrench 19 - 24 Nm (17.7 lbft)

Y = 5 Nm (3.7 lbft)

Control features

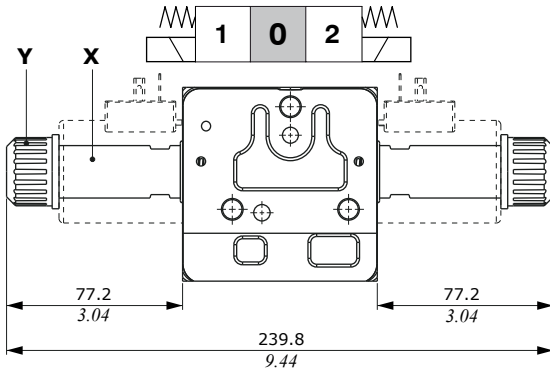
Max. back pressure on T . . . : 30 bar (435 psi)

For coil options and features see **45** coil on pages 26 and 27.

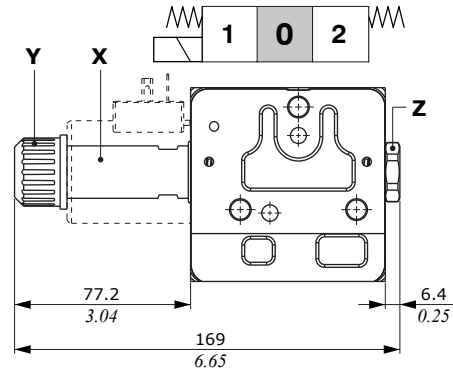
On/off solenoid control: 8ES1 - 8ES2 - 8ES3 types

When the section is configured with flangeable valve block, the coils on control must be rotated 180°.

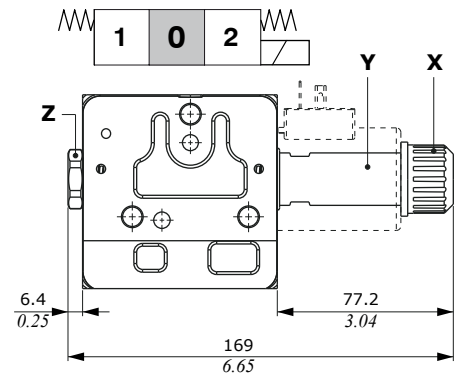
8ES3: double acting control kit



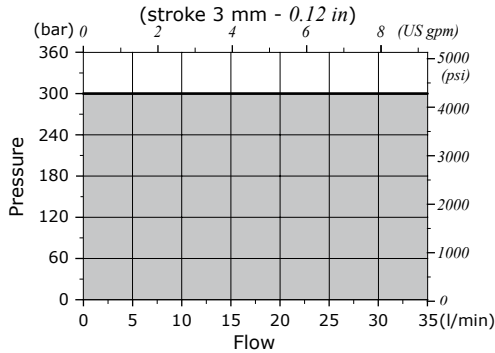
8ES1: single acting on A control kit



8ES2: single acting on B control kit



Operating condition



Wrenches and tightening torque

- X = wrench 20 - 24 Nm (17.7 lbft)
- Y = 6.6 Nm (4.9 lbft)
- Z = wrench 24 - 24 Nm (17.7 lbft)

For coil options and features see **D15 coil** on pages 26 and 27.

On/off solenoid control with lever: 8ES3LHD type

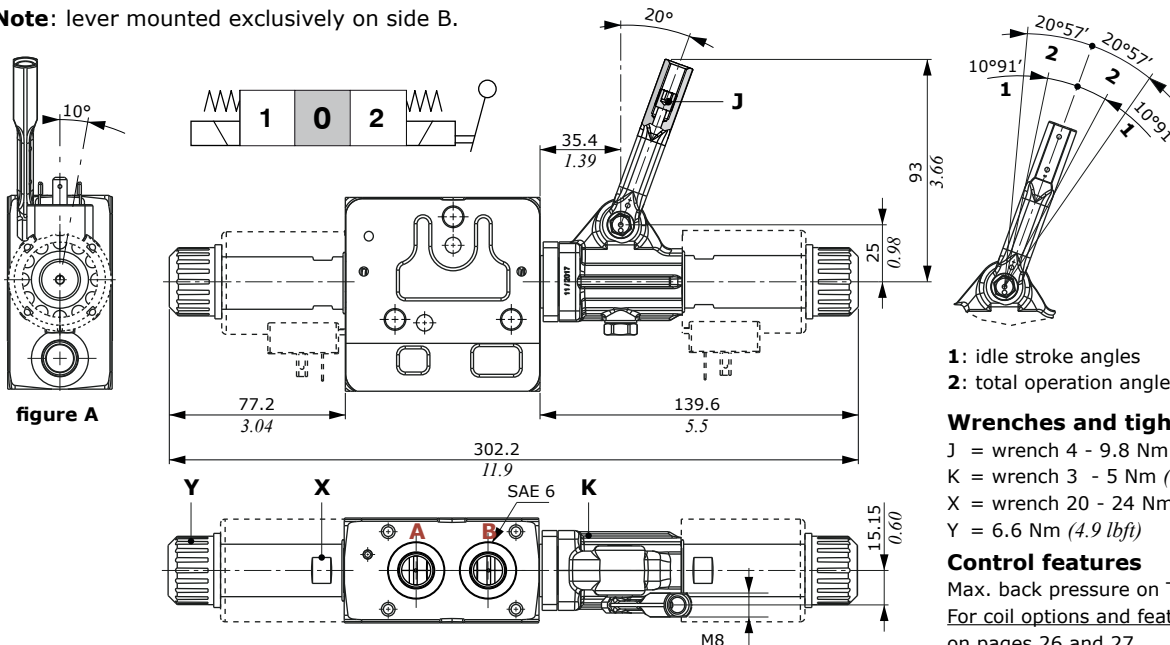
To properly operation the coil on lever side must be rotated 10° (figure A)

When the section is configured with flangeable valve block, the coils on control must be rotated 180°.

The control needs dedicated spools: see page 15 for list.

IMPORTANT: lever to be used only for emergency operation, not for continuative use.

Note: lever mounted exclusively on side B.



- 1: idle stroke angles
- 2: total operation angles

Wrenches and tightening torque

- J = wrench 4 - 9.8 Nm (7.2 lbft)
- K = wrench 3 - 5 Nm (3.7 lbft)
- X = wrench 20 - 24 Nm (17.7 lbft)
- Y = 6.6 Nm (4.9 lbft)

Control features

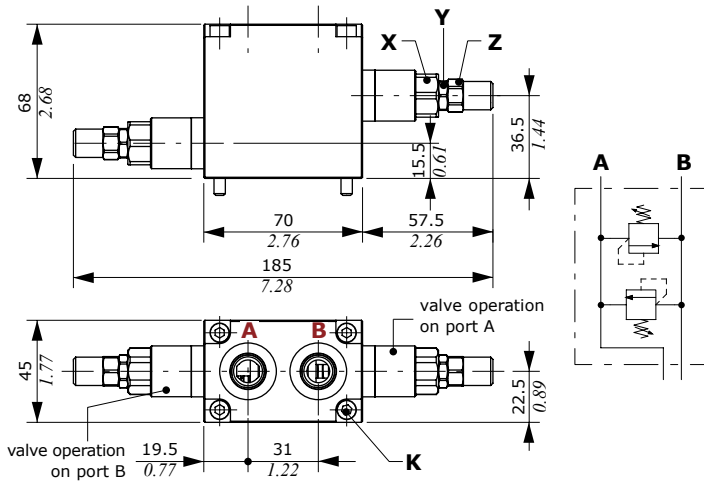
Max. back pressure on T . . . : 30 bar (435 psi)
For coil options and features see **D15 coil** on pages 26 and 27.

Flangeable valve blocks

Antishock valves with cross operation

Solenoid controls (with or without lever operation) must be rotated 180°.

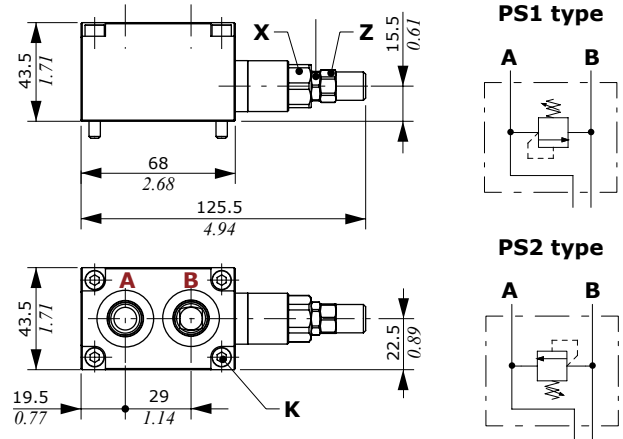
PS3 type: valves on both ports



NOTE: for valve block assembly direction refer to ports name

PS1 or PS2 types: valve on single port

(PS1 type is drawn: PS2 type has the valve mounted on the opposite side and the same dimensions)



Ordering codes

TYPE	CODE	DESCRIPTION
Complete antishock valves		
PS1(DC3-160)	619001000	Valve with operation on port A setting 160 bar (2320 psi)
PS2(DC3-160)	619001000	Valve with operation on port B setting 160 bar (2320 psi)
PS3(DC3-160\DC4-200)	619001103	Valves with operation on port A (160) and B (200)

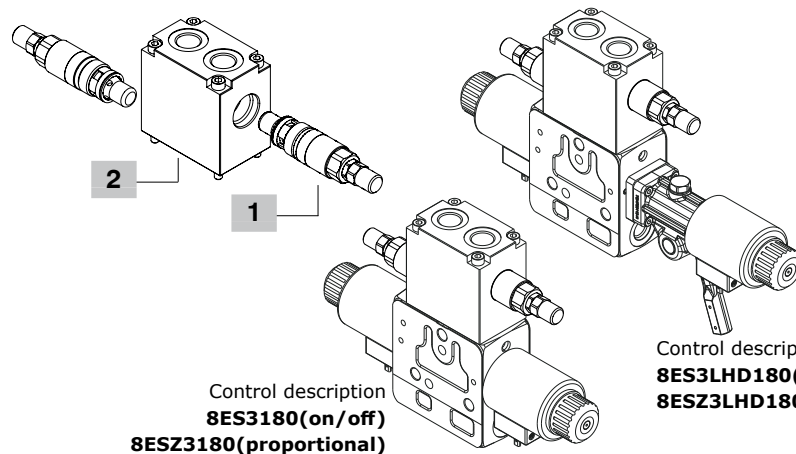
Part #1: Valve kit

Valve standard setting is referred to 5 l/min (1.3 US gpm) flow, considering the valve mounted on block.

(DC2-60)	1100520460	Range 20-80 bar (290-1150 psi) std setting 60 bar (870 psi)
(DC3-160)	1100520408	Range 50-220 bar (725-3200 psi) std setting 160 bar (2300 psi)
(DC4-280)	1100520414	Range 180-350 bar (2600-5100 psi) std setting 280 bar (4050 psi)
PST	XTAP623282	Valve blanking plug

Part #2: Block body kit

PS1-PS2	5COR245682	For single valve on port A or B
PS3	5COR245680	For valves on port A and B



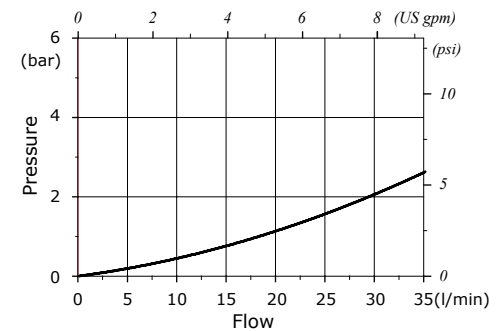
Wrenches and tightening torque

- K = allen wrench 4 - 9.8 Nm (7.2 lbf_t)
- X = wrench 19 - 42 Nm (31 lbf_t)
- Y = wrench 13 - 24 Nm (17.7 lbf_t)
- Z = wrench 13 - 6.6 Nm (4.9 lbf_t)

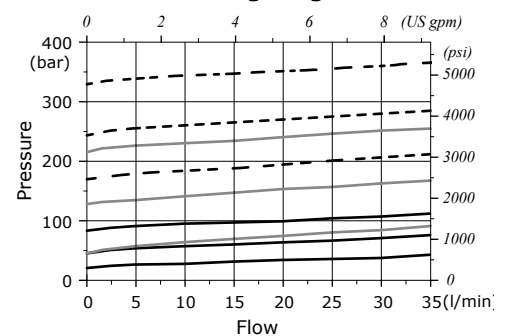
Antishock valve pressure drops

P → port - port → T

(curves are matched - without working sections)



Setting range



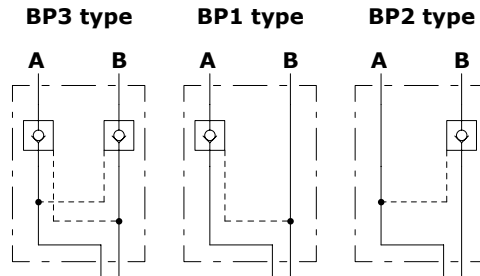
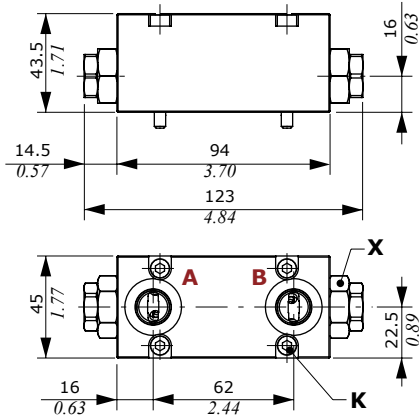
Control description
8ES3LHD180(on/off)
8ESZ3LHD180(proportional)

— Valve type DC2
 — Valve type DC3
 - - - Valve type DC4

Flangeable valve blocks

Check valves

Solenoid controls (with or without lever operation) must be rotated 180°.



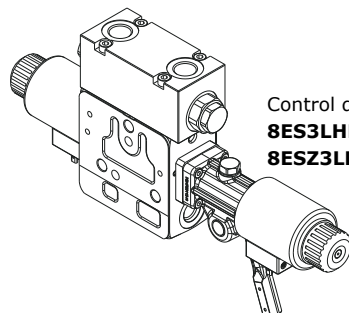
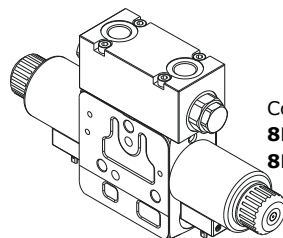
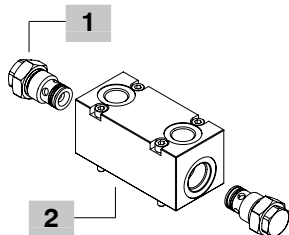
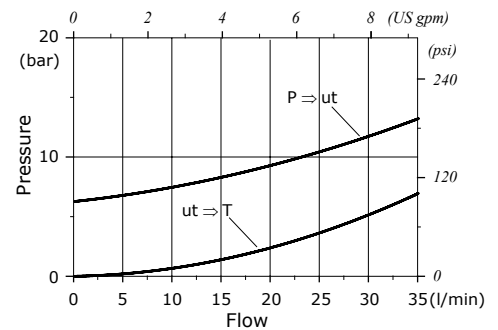
Wrenches and tightening torque

- K = allen wrench 4 - 9.8 Nm (7.2 lbft)
- X = wrench 29 - 42 Nm (31 lbft)

Ordering codes

TYPE	CODE	DESCRIPTION
Complete valve block		
BP1-SAE	619002001	Valve on port A
BP2-SAE	619002001	Valve on port B
BP3-SAE	619002101	Valves on ports A and B
Part #1: Valve kit		
BP	1300020402	Check valve
TBP	XTAP627260	Valve blanking plug
Part #2: Body kit and piston		
	5COR245891	Block body kit
	3PIS214480	Piston

Check valve pressure drop (without working sections)

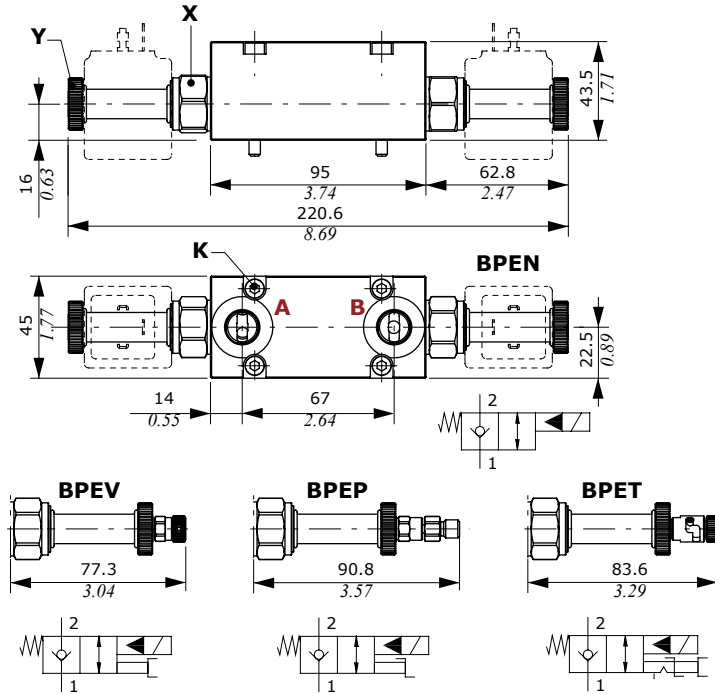


Flangeable valve blocks

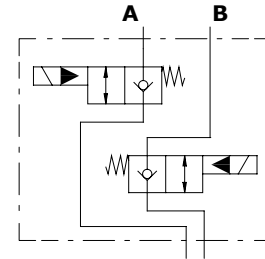
Solenoid operated check valves

Solenoid controls (with or without lever operation) must be rotated 180°.

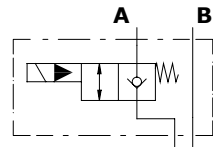
BPE(NC) type: normally closed circuit



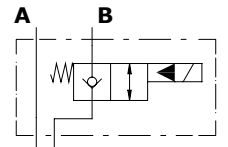
BPEN3(NC) type



BPEN1(NC) type



BPEN2(NC) type



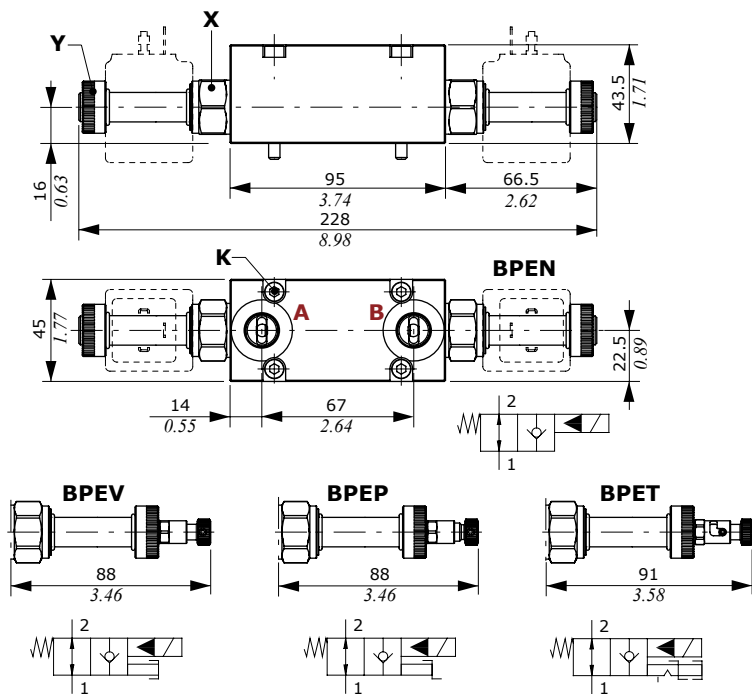
Wrenches and tightening torque

K = allen wrench 4 - 9.8 Nm (7.2 lbf_t)

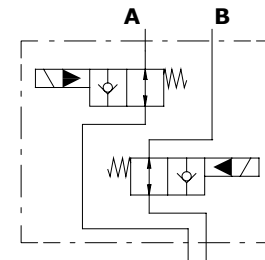
X = wrench 24 - 30 Nm (22 lbf_t)

Y = 5 Nm (3.7 lbf_t)

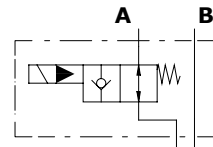
BPE(NA) type: normally open circuit



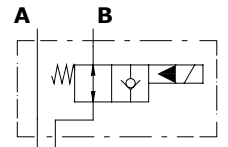
BPEN3(NA) type



BPEN1(NA) type

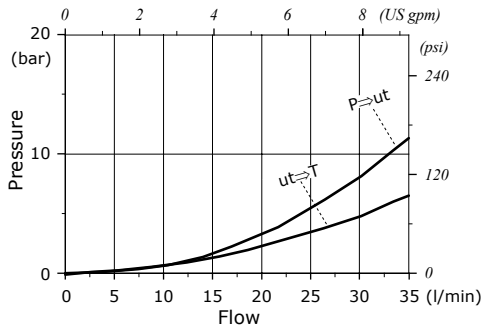


BPEN2(NA) type



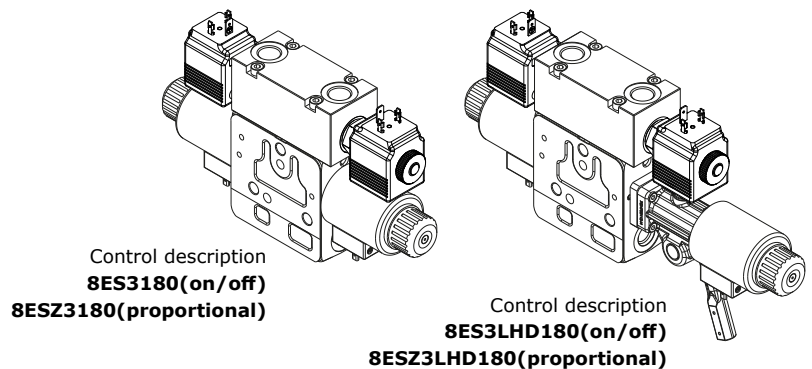
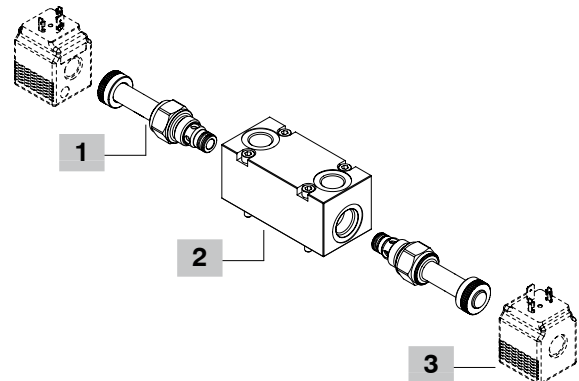
Solenoid operated check valves

Check valve pressure drop
(curves without section)



Ordering codes

TYPE	CODE	DESCRIPTION
Complete valve block, without coil		
BPEN1(NC)-WC-SAE	Y64S367001	On ports A, NC circuit, without manual emergency
BPEN2(NC)-WC-SAE	Y64S367001	As previous, on port B
BPEN3(NC)-WC-SAE	Y64S367000	As previous, on ports A and B
Part #1: Valve kit		
TBPE	3XTAP822150	Valve blanking plug
Normally closed circuit		
BPEN(NC)	0EC08002032	Without manual emergency
BPEV(NC)	0EC08002037	With screw type emergency
BPEP(NC)	0EC08002036	With pull-button emergency
BPET(NC)	0EC08002038	With "pull & twist" emergency
Normally open circuit		
BPEN(NA)	0EC08002031	Without manual emergency
BPEV(NA)	0EC08002034	With screw type emergency
BPEP(NA)	0EC08002033	With push-button emergency
BPET(NA)	0EC08002035	With "push & twist" emerg.
Part #2: Block body kit		
BPE3-SAE	5COR245951	Block body kit
Part #3: Coil		
Valves needs type BER coil, see page 26.		

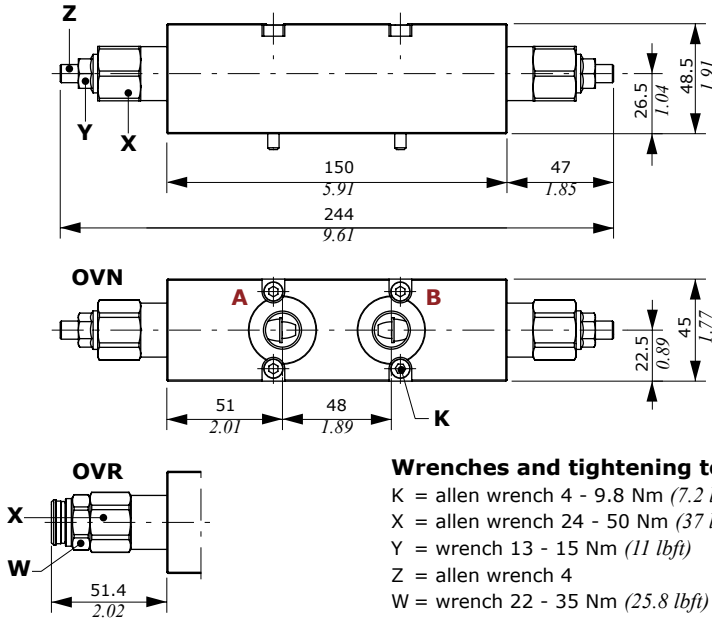


Flangeable valve blocks

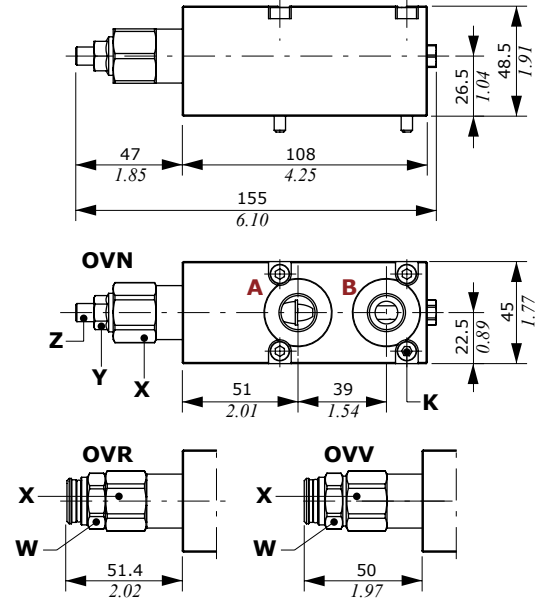
Counterbalance valves

Solenoid controls (with or without lever operation) must be rotated 180°.

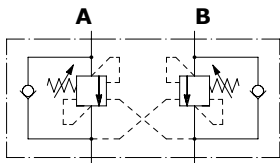
Double acting valve



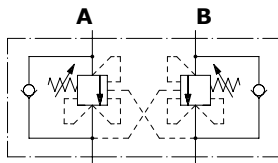
Single acting valve



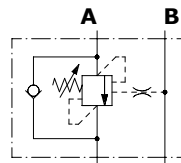
OVN301 type



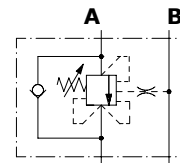
OVR301 type



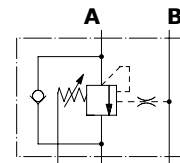
OVN101 type



OVR101 type



OVV101 type



Ordering codes

TYPE	CODE	DESCRIPTION
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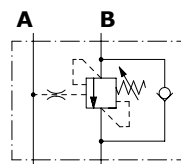
Single counterbalance valves

- | | | |
|-------------------|------------|--|
| OVN101-SAE | 1515322200 | On port A, load sensitive, pilot ratio = 4 |
| OVN201-SAE | 1515322200 | As previous one, on ports B |
| OVR101-SAE | 1515422200 | On port A, relief comp., pilot ratio = 4 |
| OVR201-SAE | 1515422200 | As previous one, on ports B |
| OVV101-SAE | 1515522200 | On port A, vented type, pilot ratio = 4 |
| OVV201-SAE | 1515522200 | As previous one, on port B |

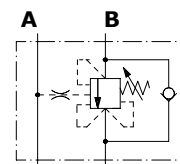
Double counterbalance valves

- | | | |
|-------------------|------------|-------------------------------------|
| OVN301-SAE | 1555222200 | Load sensitive, pilot ratio = 4 |
| OVR301-SAE | 1555322200 | Relief compensated, pilot ratio = 4 |

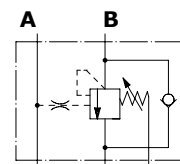
OVN201 type



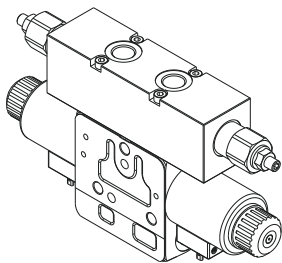
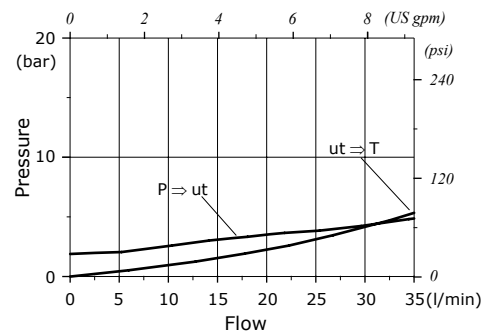
OVR201 type



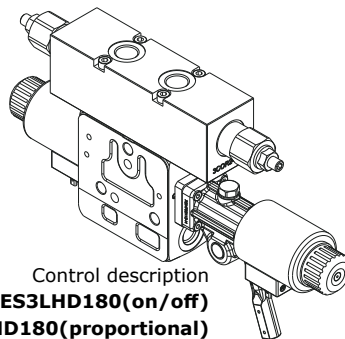
OVV201 type



Counterbalance valves pressure drop (without working sections)



Control description
8ES3180(on/off)
8ESZ3180(proportional)

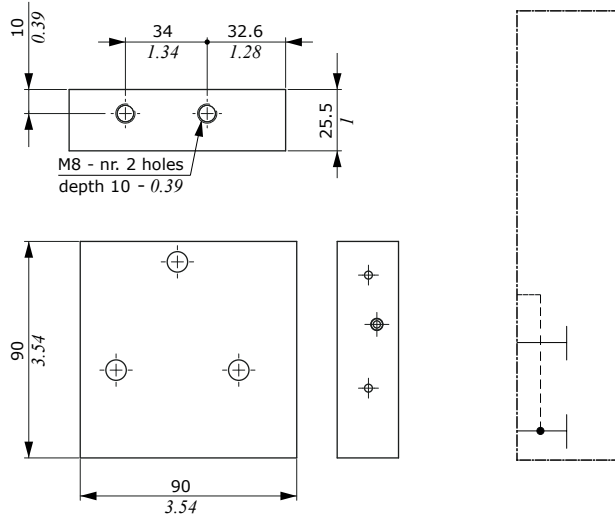


Control description
8ES3LHD180(on/off)
8ESZ3LHD180(proportional)

Dimensions and hydraulic circuit

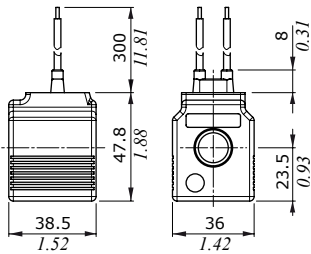
Without port arrangement

RF type

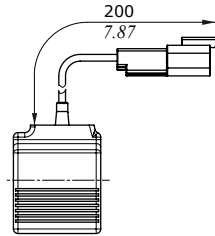


Coils and connectors

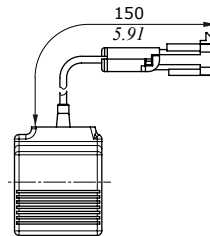
Flying leads



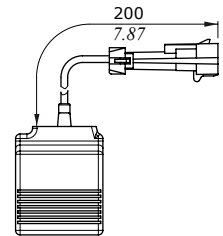
Flying leads with DEUTSCH DT04 connector



Flying leads with PACKARD WEATHER-PACK connector

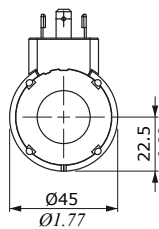
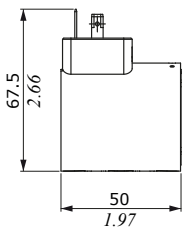


Flying leads with PACKARD METRI-PACK connector

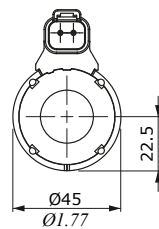
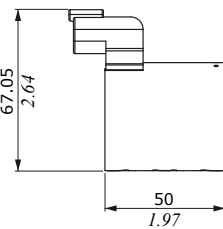


45 type (proportional)

ISO4400 connector



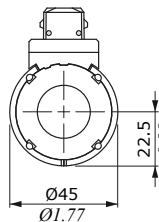
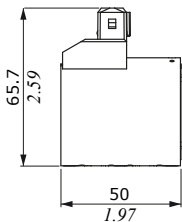
DEUTSCH DT04 connector



Features

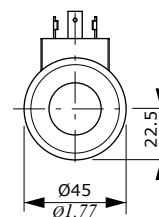
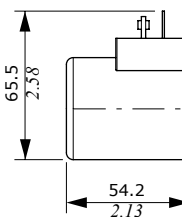
- Nominal voltage tolerance . . . : ±10%
- Power rating : 20.9 W a 12 VDC
: 23.7 W a 24 VDC
- Max. operating current : 1.94 A - 12 VDC
: 1.10 A - 24VDC
- Coil insulation : Classe F (155°C)
- Weather protection : IP65 - ISO4400
: IP69K - Deutsch DT
: IP67 - AMP JPT
- Insertion : Continuous with ambient temperature ≤50°C
- Dither frequency :
low frequency : 100 Hz
high frequency : 80 Hz - 350 mA

AMP JPT connector

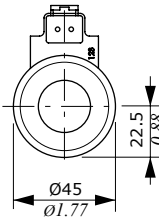
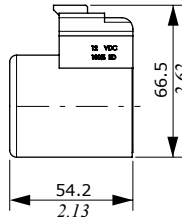


D15C type

ISO4400 connector



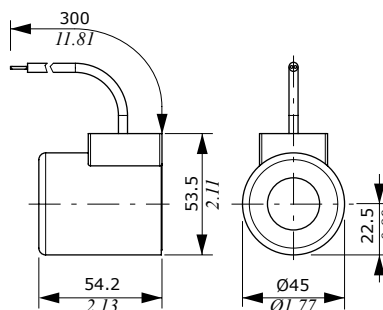
DEUTSCH DT04 connector



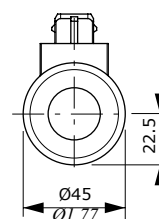
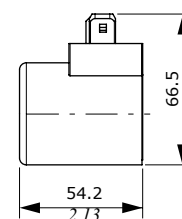
Features

- Nominal voltage tolerance : ±10%
- Power rating : 38 W @
12/14/24/ VDC
- Max. operating current . . . : 3.16 A @ 12 VDC
: 2.75 A @ 14VDC
: 1.58 A @ 24VDC
- Coil insulation : Class H
(180°C - 356°F)
- Weather protection : IP65 - ISO4400
: IP69K - Deutsch DT
: IP65 - AMP JPT
- Insertion : 100%

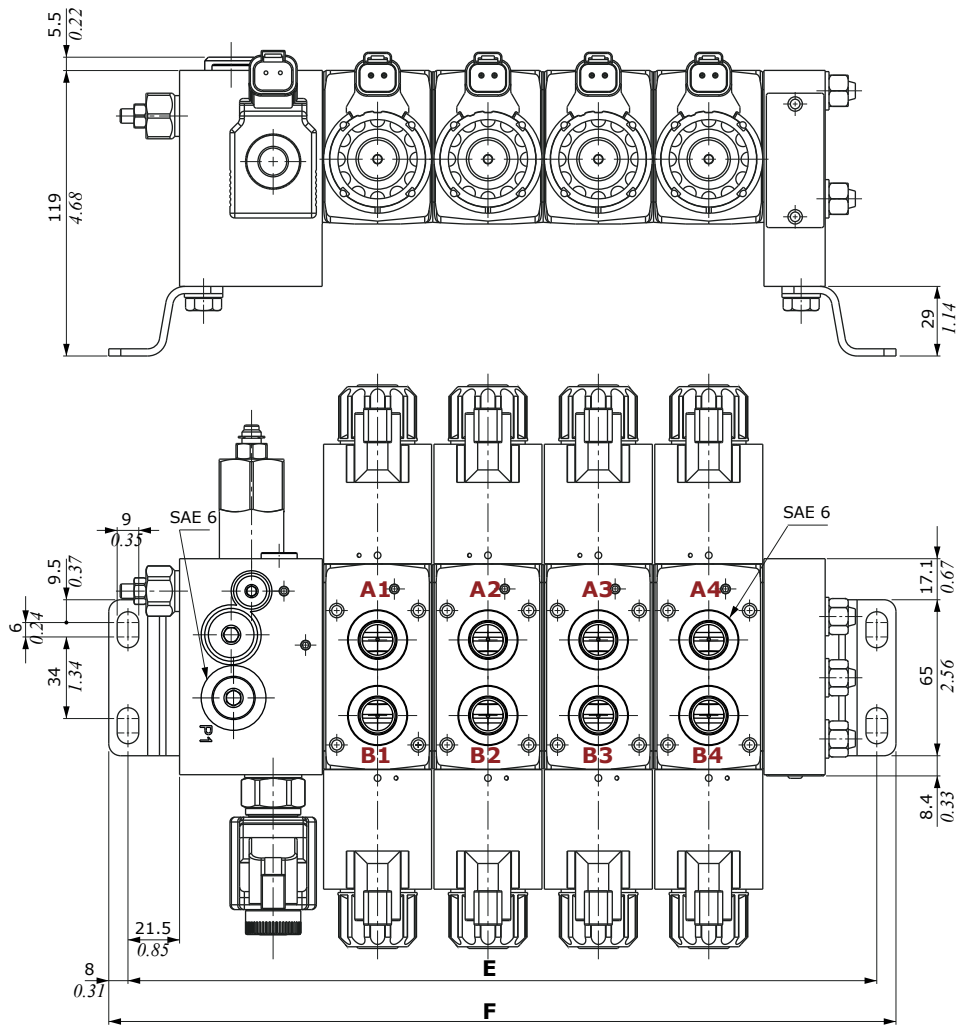
Flying leads



AMP JPT connector



Staffe di fissaggio



TYPE	with section AN1 type (see drawing)				with section AN2 type			
	E		F		E		F	
	mm	in	mm	in	mm	in	mm	in
SDX060/1	174	6.85	190	7.48	174	6.85	190	7.48
SDX060/2	220	8.66	236	9.29	220	8.66	236	9.29
SDX060/3	266	10.47	282	11.10	266	10.47	282	11.10
SDX060/4	312	12.28	328	12.91	312	12.28	328	12.91
SDX060/5	358	14.09	374	14.72	358	14.09	374	14.72
SDX060/6	404	15.90	420	16.53	404	15.90	420	16.53
SDX060/7	450	17.71	466	18.34	450	17.71	466	18.34
SDX060/8	496	19.52	512	20.15	496	19.52	512	20.15

Installation and maintenance

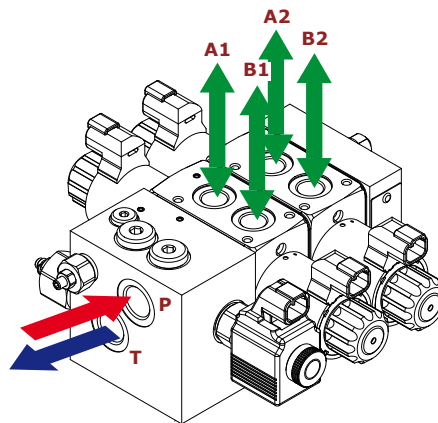
The SDX060 valves are assembled and tested as per the technical specifications of this catalogue.

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

- the valves can be assembled in any position; in order to prevent body deformation and spool sticking, mount the products on a flat surface;
- In order to prevent the possibility of water entering into the spool control kit, do not use high pressure wash down directly on the valves;
- Before painting, ensure plastic port plugs are tightly in their place.

Fittings tightening torque (Nm-lbft)

THREAD TYPE	P-T ports	A-B ports	LS ports
BSP	G 1/2	G 3/8	G 1/4
With O-Ring seal	50 - 37	35-25.8 • 50*-37*	25 - 18.4
With copper washer	60 - 44.3	40-29.5 • 60*-44.3*	30 - 22
With steel and rubber washer	60 - 44.3	30-22 • 60*-44.3*	16 - 11.8
UN-UNF	3/4-16 (SAE 8)	9/16-18 (SAE 6)	7/16-20(SAE 4)
With O-Ring seal	35 - 25.8	30-22 • 35**-25.8**	18-13.3 • 30**-22**



NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finishing. The manufacturer must be consulted.

Notes



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