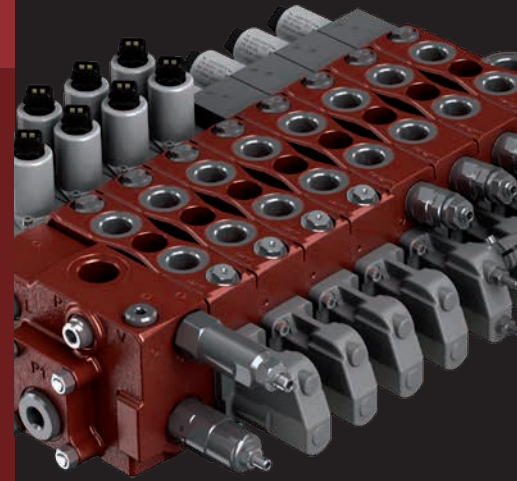




SDS140

Sectional directional control valves

Features

SDS140

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

- Working section type Q and P (with direct and pilot port relief valves).
- Flow unloader system.
- Proportional electrohydraulic controls.
- Load Sensing circuit available.
- Spool position sensors option.

Additional information

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

WARNING!

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

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

3rd edition March 2016

SDS140

- Valve general information
 - Working conditions page 4
 - Standard threads page 4
 - Dimensional data page 5
 - Performance data page 5
 - Hydraulic circuit page 6
 - Complete sections ordering codes page 7
- Inlet section
 - Part ordering codes page 8
 - Dimensional data and hydraulic circuit page 10
 - Main pressure relief valves page 13
 - Pressure reducing valve page 15
 - Inlet valve options page 16
- Working section
 - Part ordering codes page 18
 - Dimensional data and hydraulic circuit page 21
 - Spools page 23
 - Electrohydraulic controls page 24
 - Port valves page 29
- Outlet section
 - Part ordering codes page 30
 - Dimensional data and hydraulic circuit page 30
 - Circuit option page 31
- Installation and maintenance page 32
- Accessories page 33
- Appendix A page 35

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.

Nominal flow rating	standard	90 l/min	24 US gpm
	for AN and AM inlet sections	120 l/min	32 US gpm
Max. pressure		315 bar	4600 psi
Back pressure (max.) on T outlet port	with mechanical devices	10 bar	145 psi
	with hydraulic/pneumatic devices	30 bar	435 psi
	with electrohydraulic devices	10 bar	145 psi
Internal leakage A(B)⇒T (standard)	Δp = 100 bar / 1450 psi	max. 10 cm ³ /min	max. 0.61 in ³ /min
	With port valves Δp = 100 bar / 1450 psi	max. 15 cm ³ /min	max. 0.91 in ³ /min
Fluid		Mineral base oil	
Fluid temperature	with NBR (BUNA-N) seals	from -20°C to 80°C	from -4°F to 176°F
	with FPM (VITON) seals	from -20°C to 100°C	from -4°F to 212°F
Viscosity	operating range	from 15 to 75 mm ² /s	from 15 to 75 cSt
	min.	12 mm ² /s	12 cSt
	max.	400 mm ² /s	400 cSt
Max. contamination level		-/19/16 - ISO 4406	NAS 1638 - class 10
Environmental temperature for working conditions	with mechanical devices	from -40°C to 60°C	from -40°F to 140°F
	with hydraulic/pneumatic devices	from -30°C to 60°C	from -22°F to 140°F
	with electrohydraulic devices	from -30°C to 50°C	from -4°F to 122°F
Tie rod tightening torque (wrench 13)		30 Nm	22 lbft

NOTE - For different conditions please contact our Sales Dept.

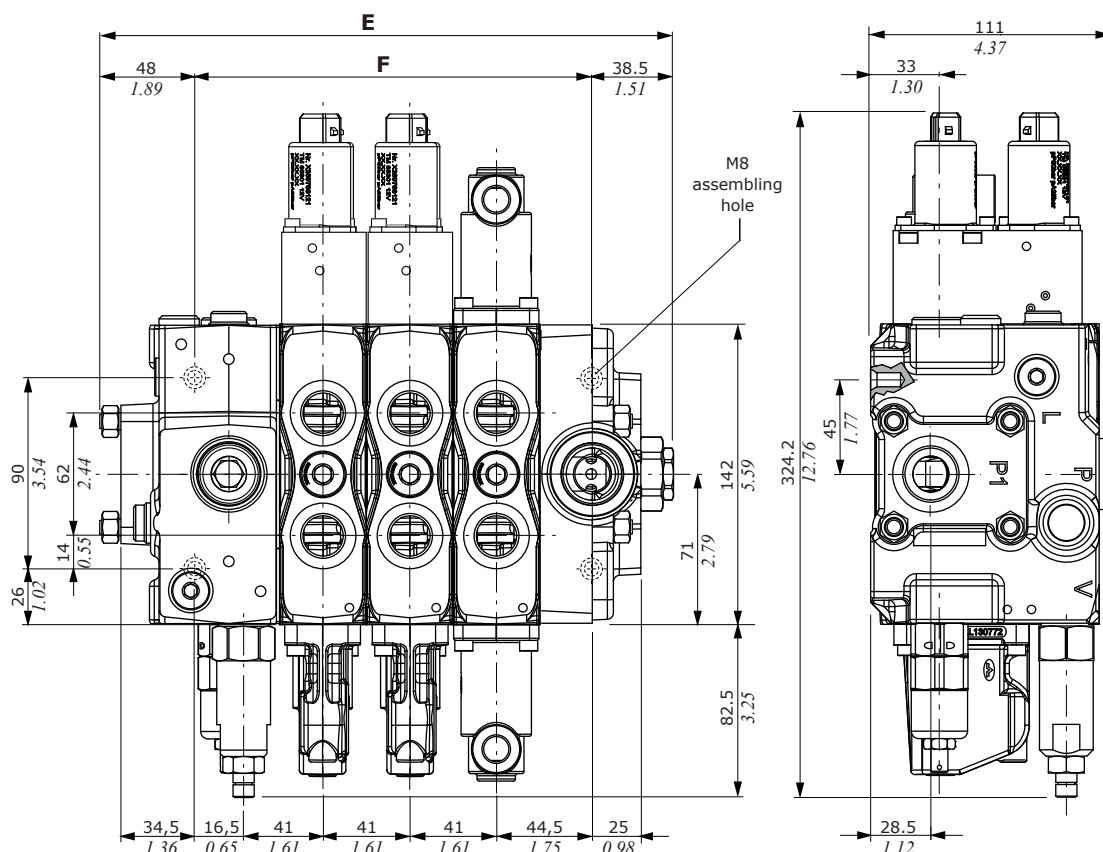
Standard threads

REFERENCE STANDARD					
	BSP	UN-UNF	METRIC (*)	METRIC ISO (*)	NPTF
THREAD	ISO 228/1	ISO 263	ISO 262	ISO 262	ANSI B1.20.3
ACCORDING TO	BS 2779	ANSI B1.1 unified			
CAVITY	ISO 1179-1	11926-1	9974-1	6149	
DIMENSION	SAE	J1926-1		J2244	J476a
ACCORDING TO	DIN 3852-2, X or Y shape		3852-2, X or Y shape	3852-1, X or Y shape	

NOTE (*) - Metric threading is available on request.

PORT THREADING			
MAIN PORTS	BSP	UN-UNF	METRIC
P inlet	G 3/4	7/8-14 (SAE 12)	M27x2
A and B ports	G 1/2	3/4-16 (SAE 8)	M22x1.5
T outlet and C carry-over	G 3/4	1 1/6-12 (SAE 12)	M27x2
PILOT PORTS			
Hydraulic	G 1/4	9/16-18 (SAE 6)	G 1/4
Pneumatic	NPTF 1/8-27	NPTF 1/8-27	NPTF 1/8-27

Dimensional data

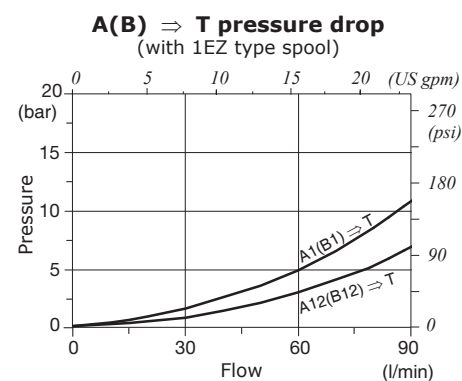
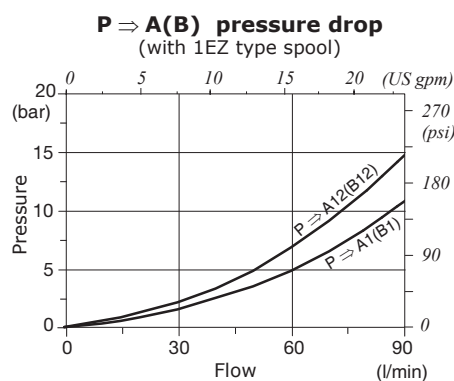
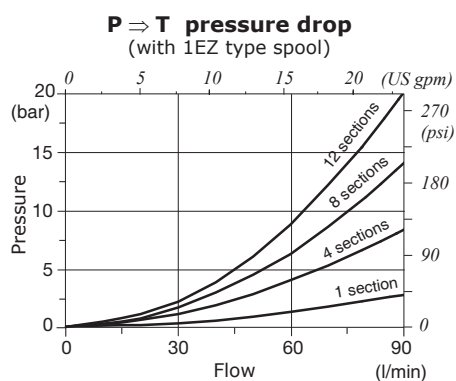


NOTES - Drawings and dimensions are referred to **BSP** thread configuration.
For assembling hole of different inlet sections see related pages.

TYPE	E		F		Weight	
	mm	in	mm	in	Kg	lb
SDS140/1	188.5	7.42	102	4.01	15.2	33.51
SDS140/2	229.5	9.03	143	5.63	19.4	42.77
SDS140/3	270.5	10.65	184	7.24	23.6	52.03
SDS140/4	311.5	12.26	225	8.86	27.8	61.29
SDS140/5	352.5	13.88	266	10.47	32	70.55
SDS140/6	393.5	15.49	307	12.09	36.2	79.81

TYPE	E		F		Weight	
	mm	in	mm	in	Kg	lb
SDS140/7	434.5	17.11	348	13.7	40.4	89.07
SDS140/8	475.5	18.72	389	15.23	44.6	98.33
SDS140/9	516.5	20.33	430	16.93	48.8	107.58
SDS140/10	557.5	21.95	471	18.54	53	116.84
SDS140/11	598.5	23.56	512	20.16	57.2	126.1
SDS140/12	639.5	25.18	553	21.77	61.4	135.36

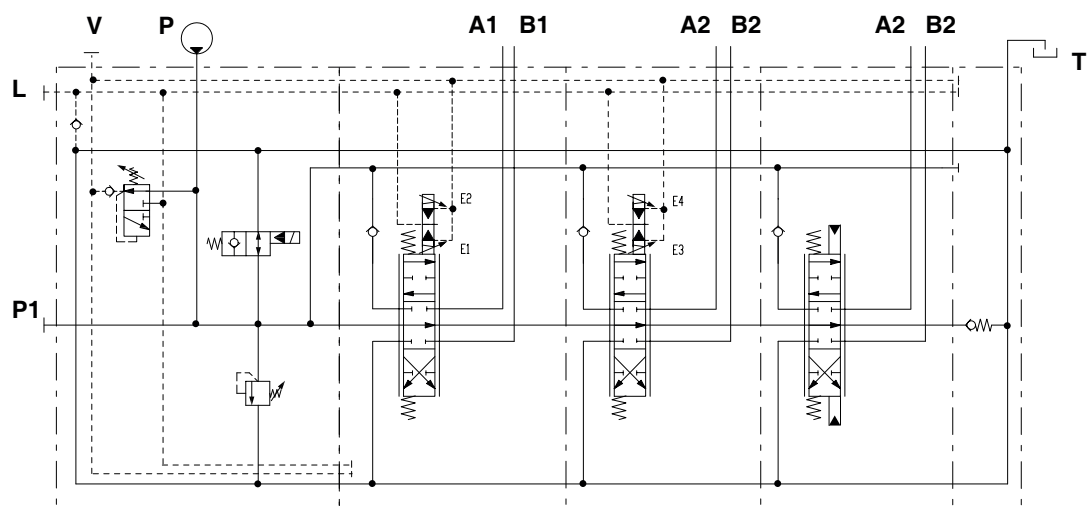
Performance data



Hydraulic circuit

Parallel circuit

Example of configuration, open centre circuit.

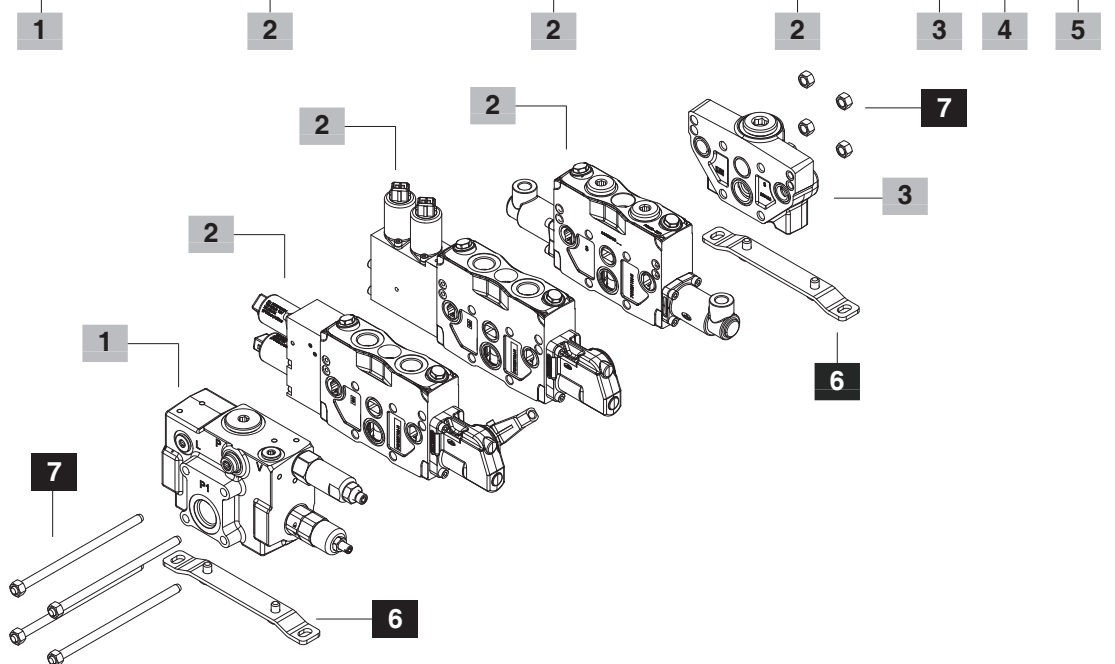


Description example:

SDS140/3/AD(YG3-175/ELNW)/QZ-1EZ8EZH3SLCQ/QZ-1EZ8EZH3SLCQ/QA-1M8IM/RVC-12VDC

Complete section ordering codes

SDS140 / 3 / AC(YG3-175) / PZ-1EZ8EZH3LQ.U3T / PZ-1EZ8EZ3SLCQ.U3T / PA1M8IM.U3T / RVC - - 12VDC

Nr. of working
sections**1 Inlet section *** **page 8**

TYPE: **AC(YG3-175)** CODE: 61D201000
 DESCRIPTION: Side inlet port, with direct pressure relief valve and pressure reducing valve, pilot V and drain L ports plugged

TYPE: **ADT(SV)** CODE: 61D201001
 DESCRIPTION: With upper inlet and side outlet ports, without pressure relief valve, with pressure reducing valve, pilot V and drain L ports plugged

TYPE: **AP-D(0.7)-SB8-Q40(XGM-270\ELNW)-12VDC** CODE: 61D201002
 DESCRIPTION: With LS priority valve, pilot pressure relief valve, pressure reducing valve, unloading valve, upper inlet port and LS port open, pilot V and drain L ports plugged

TYPE: **AM(TGW3-175\ESFPW(NC)-12VDC** CODE: 61D201003
 DESCRIPTION: With compensator for open centre circuit, upper inlet and outlet port open, with LS relief valve, pressure reducing valve, unloading valve, pilot V and drain L ports plugged

3 Outlet section * **page 30**

TYPE	CODE	DESCRIPTION
RF	61D301000	With side and upper outlet ports plugged
RFC	61D301004	As RF for M inlet section
RC	61D301001	With side port open, upper port plugged
RVC	61D301002	With back pressure valve, upper port open
RVE	61D301003	With back pressure valve, side carry-over sleeve, upper port open

6 Fixing bracket ** **page 35**

TYPE	CODE	DESCRIPTION
STAF	5STA125190	For AC, AD, ADT and AP inlet sections, with fixing screws
STAF	5STA125191	For AN and AM inlet sections with fixing screws

NOTES (*) - Codes are referred to **BSP** thread.
 (**) - For fixing bracket of AN and AM inlet section please contact our Sales Dept
 For right inlet section please contact our Sales Dept.

2 Working section * **page 18**

TYPE: **PZ-1EZ8EZH3LQ.U3T-12VDC** CODE: 61D101000
 DESCRIPTION: Parallel circuit arranged for port valves, horizontal electrohydraulic control, with lever

TYPE: **QZ-1EZ8EZH3SLCQ-12VDC** CODE: 61D101001
 DESCRIPTION: Parallel circuit, without port valves, vertical electrohydraulic control, without lever

TYPE: **PZ-1EZ8EZ3SLCQ.U3T-12VDC** CODE: 61D101002
 DESCRIPTION: Parallel circuit arranged for port valves, vertical electrohydraulic control, without lever

TYPE: **PA-1M8IM.U3T** CODE: 61D101003
 DESCRIPTION: Parallel circuit arranged for port valves, proportional hydraulic control

4 Valve threading

Specify only if it is different from BSP standard (see page 4)

5 Voltage **page 33**

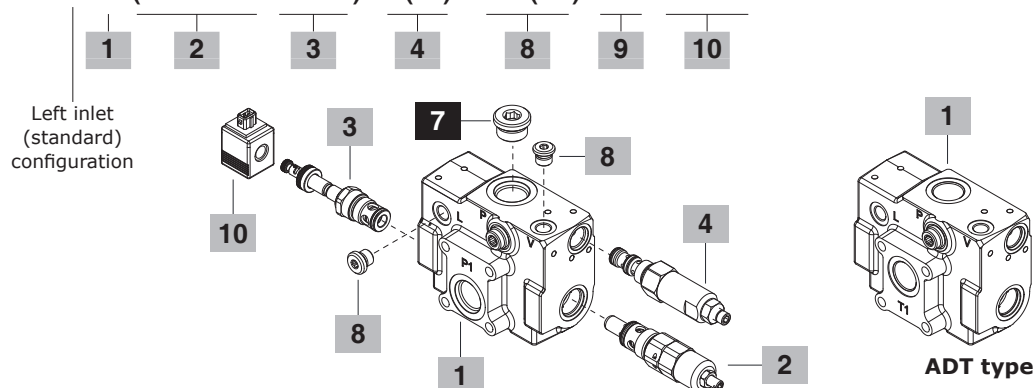
Coils voltage specification; for list of available coils see related pages

7 Assembling kit

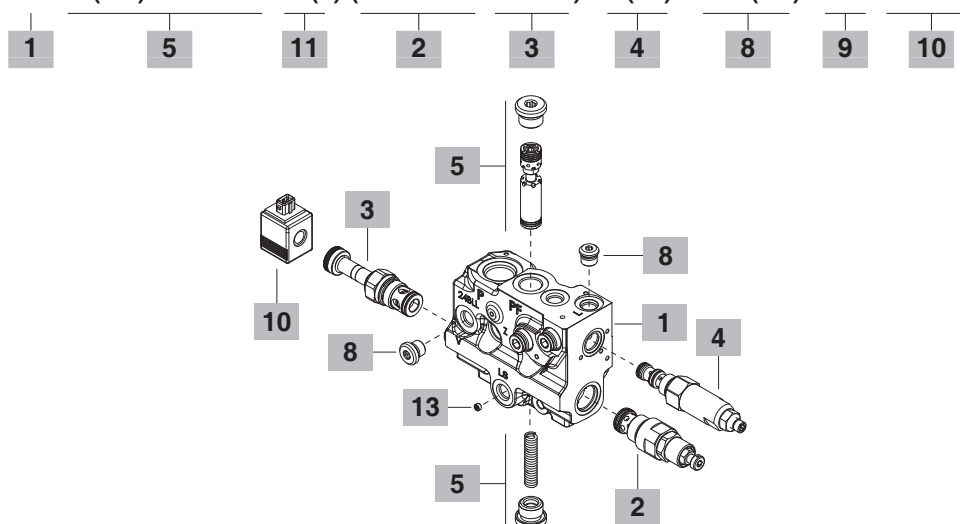
CODE	DESCRIPTION	CODE	DESCRIPTION
For AD, AC, ADT, AN and AM inlet sections			
5TIR108169	For 1 section valve	5TIR108415	For 7 sections valve
5TIR108210	For 2 sections valve	5TIR108456	For 8 sections valve
5TIR108251	For 3 sections valve	5TIR108497	For 9 sections valve
5TIR108292	For 4 sections valve	5TIR108538	For 10 sections valve
5TIR108333	For 5 sections valve	5TIR108579	For 11 sections valve
5TIR108374	For 6 sections valve	5TIR108620	For 12 sections valve
For AP inlet section			
5TIR108138	For 1 section valve	5TIR108382	For 7 sections valve
5TIR108177	For 2 sections valve	5TIR108424	For 8 sections valve
5TIR108220	For 3 sections valve	5TIR108465	For 9 sections valve
5TIR108262	For 4 sections valve	5TIR108506	For 10 sections valve
5TIR108301	For 5 sections valve	5TIR108547	For 11 sections valve
5TIR108342	For 6 sections valve	5TIR108588	For 12 sections valve

Part ordering codes

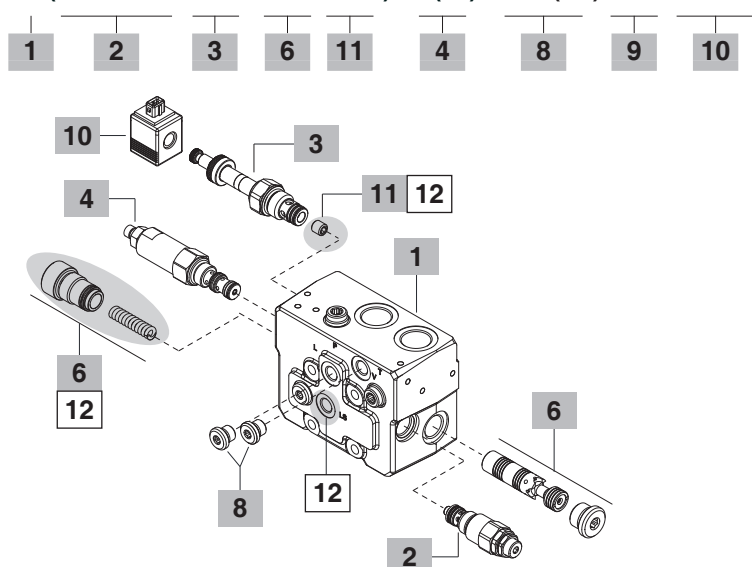
FE SDS140 / A C (YG3-175 \ ELTW) - R(32) - TAP(VL) - - 12VDC



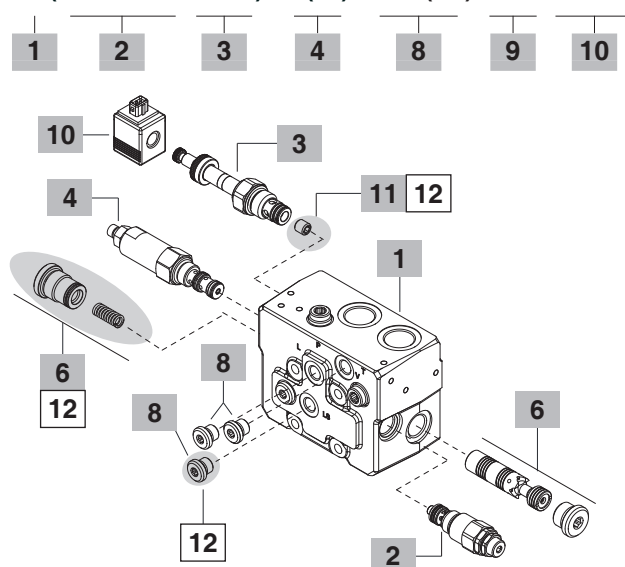
FE SDS140 / A P - D(0.7)-SB8-Q40-LS(1) (XGM-270 / ELNW) - R(32) - TAP(VL) - - 12VDC



FE SDS140 / A
N (TGW3-175/ESFP/SB20/FC3) - R(32) - TAP(VL) - - 12VDC



FE SDS140 / A
M (TGW3-175/ESFF) - R(32) - TAP(VL) - - 12VDC



Part ordering codes

1 Inlet section body kit* page 10

TYPE: **SDS140/C-D** CODE: 5FIA113300
 DESCRIPTION: With side and upper inlet ports, V pilot and L drain ports, arranged for pressure relief valve, unloading valve, pressure reducing valve

TYPE: **SDS140/DT** CODE: 5FIA113301
 DESCRIPTION: As previous one, with upper inlet and side outlet ports

TYPE: **SDS140/P** CODE: 5FIA113302
 DESCRIPTION: With upper inlet port, V pilot, L drain and LS ports, arranged for priority valve, pressure relief valve, unloading valve, pressure reducing valve

TYPE: **SDS140/M-N** CODE: 5FIA1133A0
 DESCRIPTION: With upper inlet and outlet port, V pilot, L drain and LS ports, arranged for LS pressure relief valve, unloading valve, pressure reducing valve

2 Main pressure relief valve page 13**For C, D, DT inlet sections**

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

TYPE	CODE	DESCRIPTION
SV	XTAP526340	Relief valve blanking plug

Y type direct operated

(YG2-125)	3XCAR110212	Range 80-160 bar (1160-2300 psi) standard setting 125 bar (1800 psi)
(YG3-175)	3XCAR110213	Range 100-250 bar (1450-3600 psi) standard setting 175 bar (2500)
(YG4-250)	3XCAR110214	Range 200-315 bar (2900-4600 psi) standard setting 250 bar (3600 psi)

X type pilot operated

(XGA-200)	X006211350	Range 20-315 bar (290-4600 psi) standard setting 200 bar (2900 psi)
------------------	------------	--

For M, N inlet sections

Valves standard setting is referred to 5 l/min (1.3 US gpm) flow.

TYPE	CODE	DESCRIPTION
SV	XTAP524340	Relief valve blanking plug

Pilot operated type

(TGW2-80)	OMC09002000	Range 10-120 bar (145-1750 psi) std setting 80 bar (1160 psi)
(TGW3-175)	OMC09002001	Range 40-220 bar (580-3200 psi) std setting 175 bar (2550 psi)
(TGW4-250)	OMC09002002	Range 200-350 bar (2900-5100 psi) std setting 250 bar (3600 psi)
(TGW5-300)	OMC09002003	Range 290-385 bar (4200-5600 psi) std setting 300 bar (4350 psi)

7 Plug*

CODE	DESCRIPTION
3XTAP732200	G3/4 plug for C, D and DT section

8 Plug*

CODE	DESCRIPTION
3XTAP719150	G1/4 plug for V, L and LS ports

For V pilot and L drain ports description are:

TYPE	DESCRIPTION
TAP(VL)	Plugs (2 pieces), standard: omitted in description
NOTAP(L)	Plug (1 piece)
NOTAP(V)	Plug (1 piece)
NOTAP(VL)	Without plugs

12 Circuit conversion kit

CODE	DESCRIPTION
5KIT530000	Circuit conversion from closed center to open center
5KIT530001	Circuit conversion from open center to closed center

3 Inlet valve options page 16**For C, D, DT inlet sections**

TYPE	CODE	DESCRIPTION
LT	XTAP526340	Valve blanking plug
F	3XCAR410200	Inlet anti-cavitation valve
L	XCAR410311	Hydraulic operated unloader valve

Solenoid operated unloading valve

ELNW	0EFW0062001	Without emergency
ELTW	0EFW0062000	Push & twist type with detent emergency
ELPW	0EFW0062002	Push-button emergency

For P inlet section

TYPE	CODE	DESCRIPTION
Solenoid operated unloading valve		
ELNW	0EFW0062001	Without emergency
ELTW	0EFW0062000	Push & twist type with detent emergency
ELPW	0EFW0062002	With push-button emergency

For N and M inlet section

TYPE	CODE	DESCRIPTION
LT	3XTP3544200	Valve blanking plug
Solenoid operated unloading valve (NC)		
ESFNW(NC)	0EF10002011	Without emergency
ESFTW(NC)	0EF10002013	Pull & twist with detent emergency
ESFVW(NC)	0EF10002012	With screw emergency
ESFPW(NC)	0EF10002010	With pull-button emergency

4 Pressure reducing valve page 15

TYPE	CODE	DESCRIPTION
R(32)	4AC9539900	Valve with standard setting @ 32 bar (464 psi). Type omitted in description; specify only if it different from standard
(RT)	3XTP3535100	Valve blanking plug (SAE 8/3)

5 Priority valve kit

TYPE: **D(0.7)-SB8-Q40** CODE: 5KIT440370
 DESCRIPTION: Stand-by 8 bar (116 psi), regulated flow = 40 l/min (10.5 US gpm)

6 Compensator kit

TYPE	CODE	DESCRIPTION
SB4	5CAS318083	Standard 4 bar (58 psi) for M inlet section
SB25	5CAS318084	Standard 25 bar (362 psi) for N inlet section

Specify in description when it is different from standard.

9 Section threading

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

10 Coils page 33

TYPE	CODE	DESCRIPTION
12VDC	4SLE001203	BER type , 12 VDC, AMP JPT connector

For complete available coil list please see page 33.

11 Metering hole

TYPE	CODE	DESCRIPTION
FC3.9	3VT2710108	Standard for N inlet section
FC5	3VT2710106	Standard for M inlet section

Specify in description when it is different from standard.

13 LS restrictor

TYPE	CODE	DESCRIPTION
NFC	-	Without restrictor (omitted in description)
LS(1)	3VT2700065	Restrictor 1 mm diameter on LS port

Specify in description when it is different from standard. Different diameter are available, please contact our Sales Dpt.

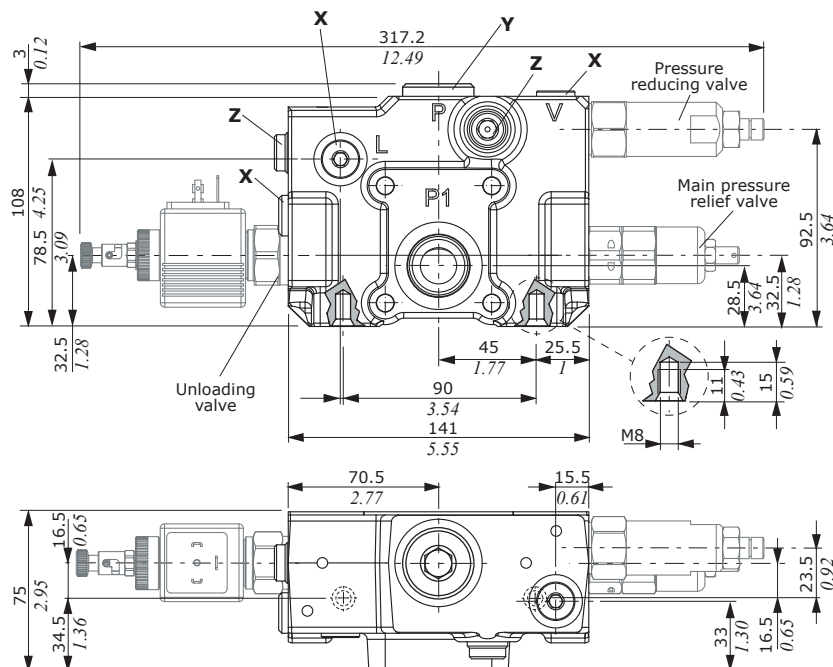
NOTE (*) - Codes are referred to **BSP** thread.

Dimensional data and hydraulic circuit

Standard inlet cover configuration

AC inlet section

dimensions are the same for AD inlet section



Wrenches and tightening torques

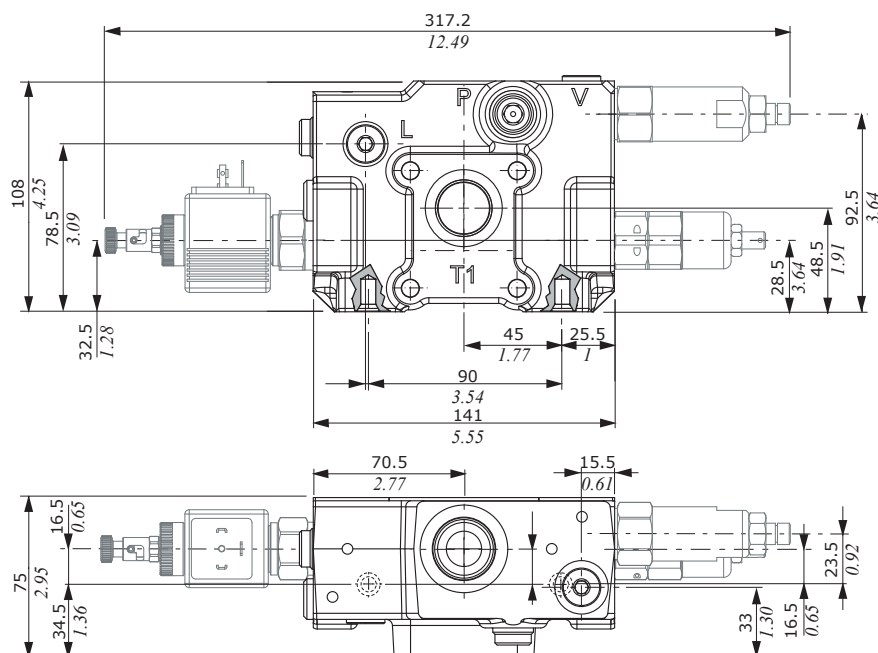
X = allen wrench 6 - 24 Nm (17.7 lbft)

Y = allen wrench 12 - 42 Nm (31 lbft)

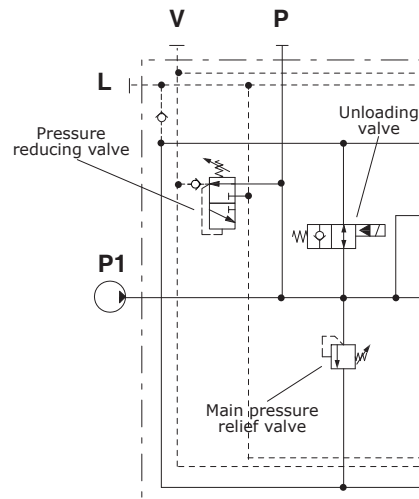
Z = wrench 8 - 42 Nm (31 lbft)

NOTE - for wrenches and tightening torques about valves, please see dedicated pages.

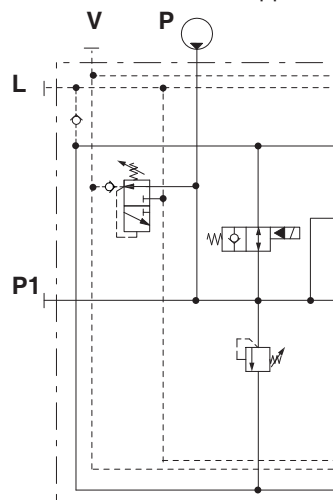
ADT inlet section



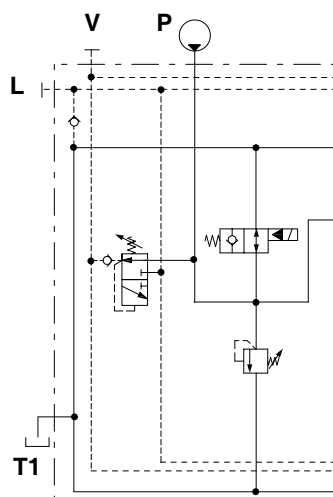
AC inlet section with side inlet



AD inlet section with upper inlet

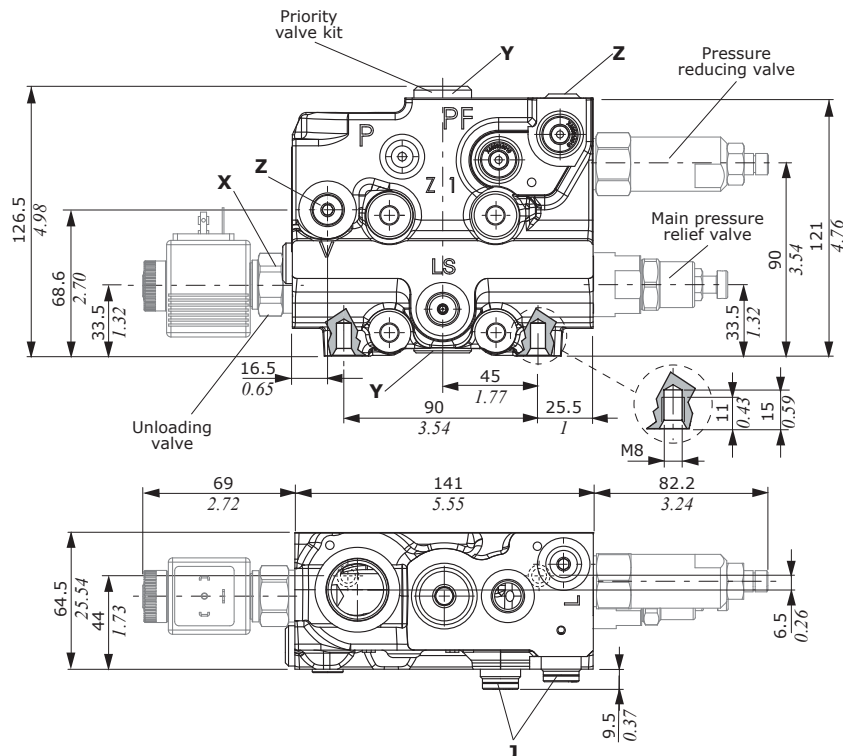


ADT inlet section with upper inlet and side outlet



Dimensional data and hydraulic circuit

Configuration with priority valve

**Wrenches and tightening torques**

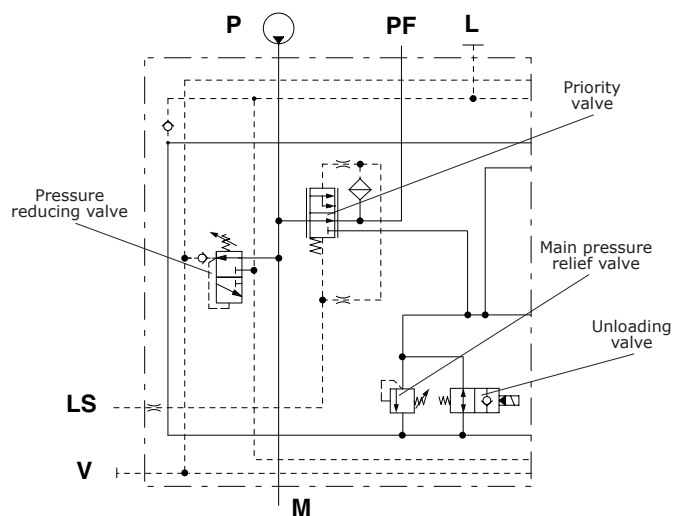
X = allen wrench 6 - 24 Nm (17.7 lbft)

Y = allen wrench 8 - 24 Nm (17.7 lbft)

Z = allen wrench 6 - 24 Nm (17.7 lbft)

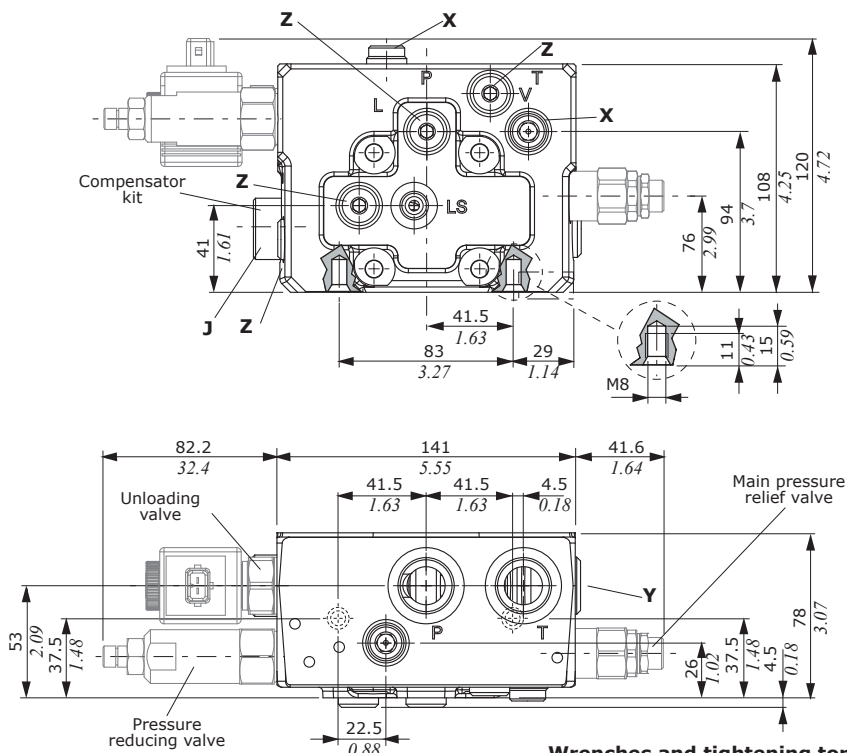
J = wrench 8 - 42 Nm (31 lbft)

NOTE - for wrenches and tightening torques about valves, please see dedicated pages.

AP inlet section with priority valve

Dimensional data and hydraulic circuit

Inlet section configuration with flow unloader option



Wrenches and tightening torques

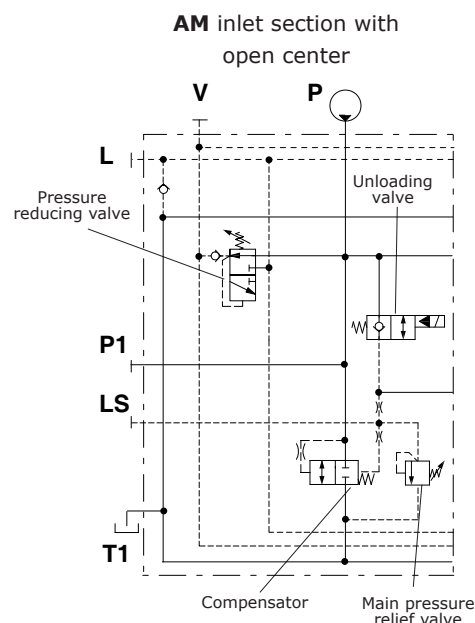
X = wrench 8 - 42 Nm (31 lbft)

Y = allen wrench 8 - 24 Nm (17.7 lbft)

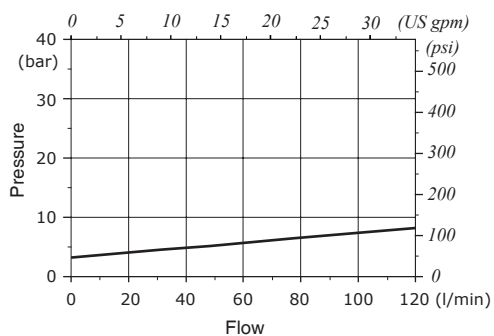
Z = allen wrench 6 - 24 Nm (17.7 lbft)

J = allen wrench 10 - 42 Nm (31 lbft)

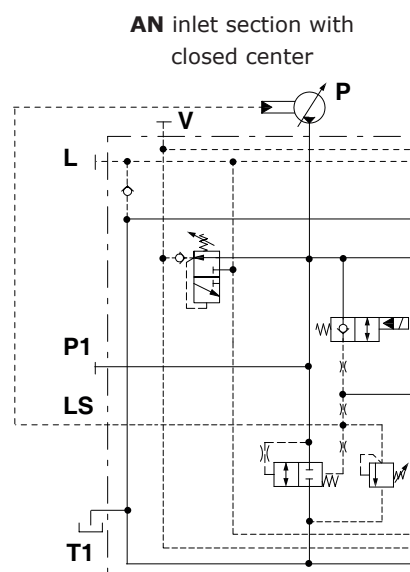
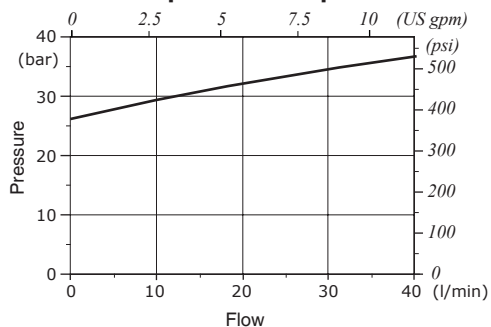
NOTE - for wrenches and tightening torques about valves, please see dedicated pages.



M compensator kit with unloading pressure drop



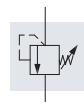
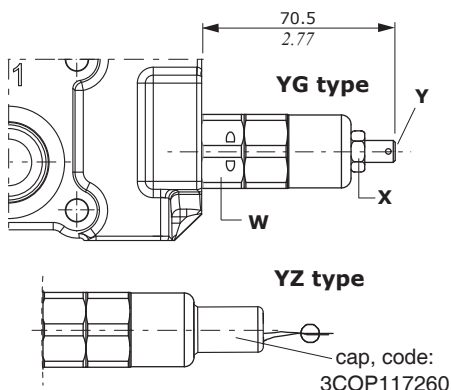
N compensator kit with unloading pressure drop



Main pressure relief valves

Y.. type direct operated

Configuration type:



Legenda

G: adjustable with screw
Z: valve set and locked with tamper proof cap

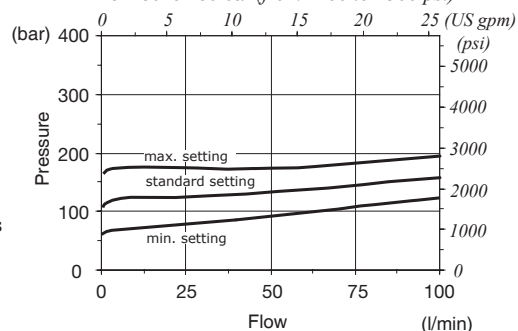
Wrenches and tightening torques

X = wrench 13 - 24 Nm (17.7 lbft)
Y = allen wrench 4
W = wrench 27 - 42 Nm (31 lbft)

NOTE - Not for N and M inlet section.

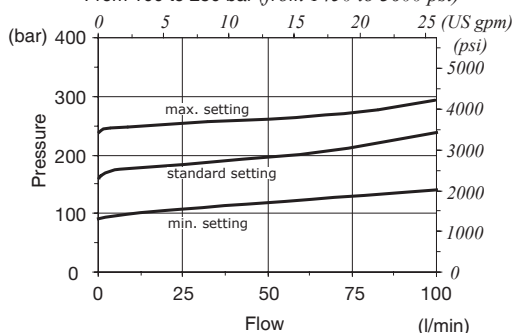
YG2 valve setting range

From 80 to 160 bar (from 1160 to 2300 psi)



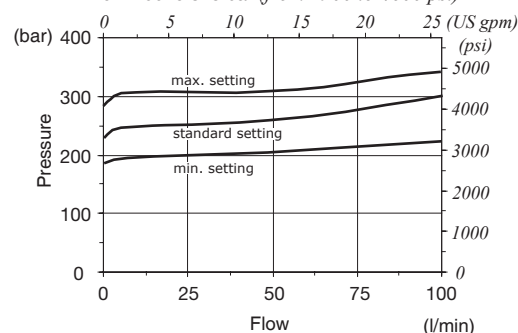
YG3 valve setting range

From 100 to 250 bar (from 1450 to 3600 psi)



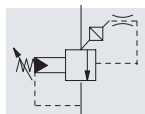
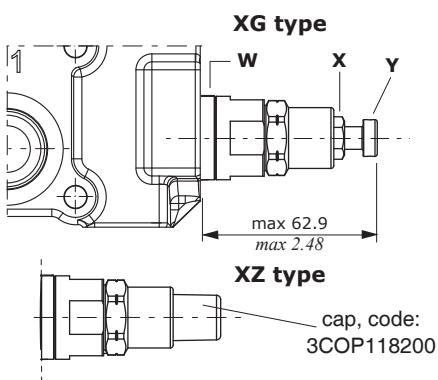
YG4 valve setting range

From 200 to 315 bar (from 2900 to 4600 psi)



X..A type pilot operated

Configuration type:



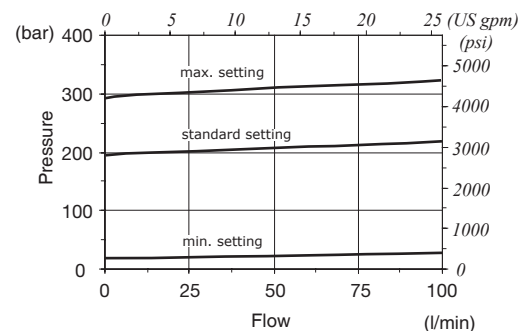
Legenda

G: adjustable with screw
Z: valve set, with tamper proof cap

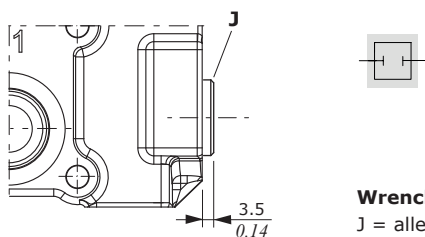
Wrenches and tightening torques

X = wrench 13 - 24 Nm (17.7 lbft)
Y = wrench 6
W = wrench 27 - 42 Nm (31 lbft)

Valve setting range



SV relief valve blanking plug



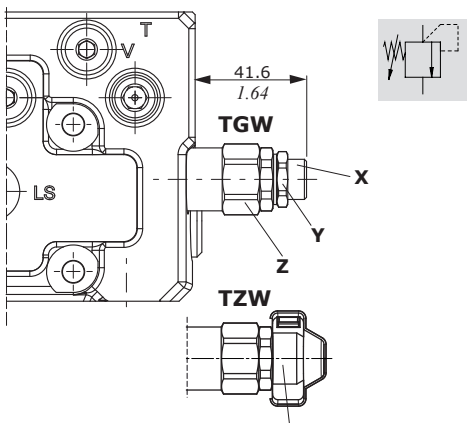
Wrenches and tightening torques

J = allen wrench 10 - 24 Nm (17.7 lbft)

Main pressure relief valves

T type pilot operated

For AM and AN inlet sections setting types



Legenda

TGW: free setting
TZW: valve set with
 tamper proof cap

Wrenches and tightening torques

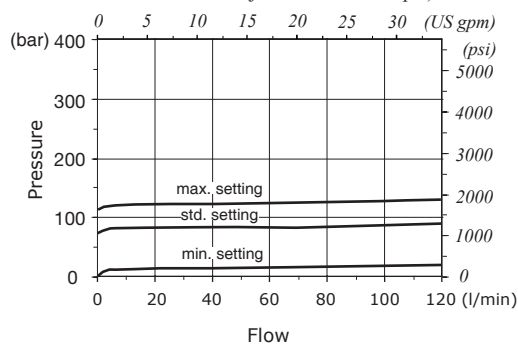
X = allen wrench 5
 Y = wrench 19 - 20 Nm (14.7 lbf)
 Z = wrench 24 - 42 Nm (31 lbf)

cap, code:
 4COP126301, n.2 pcs
 RAL3003 pigmented

Pressure relief valve setting example on type M inlet section

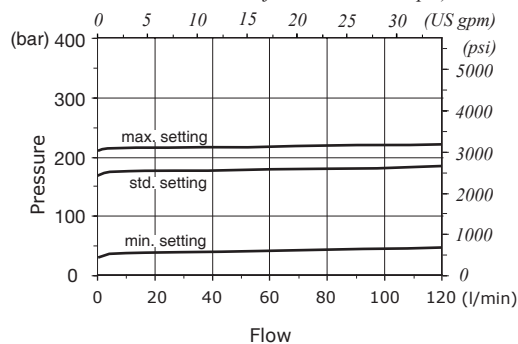
Setting range: TGW2 type

From 10 to 120 bar (from 145 to 1740 psi)



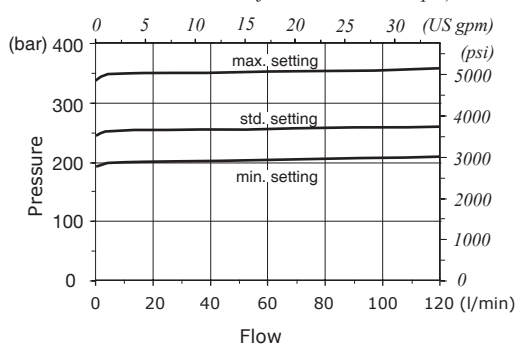
Setting range: TGW3 type

From 40 to 220 bar (from 580 to 3190 psi)



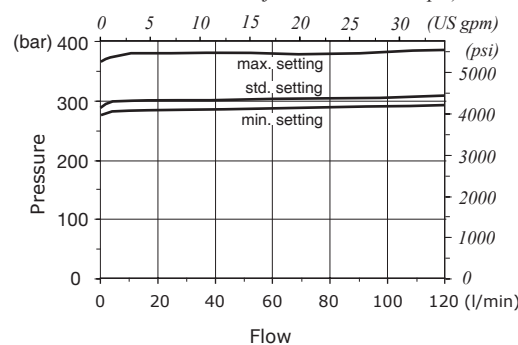
Setting range: TGW4 type

From 200 to 350 bar (from 2900 to 5070 psi)



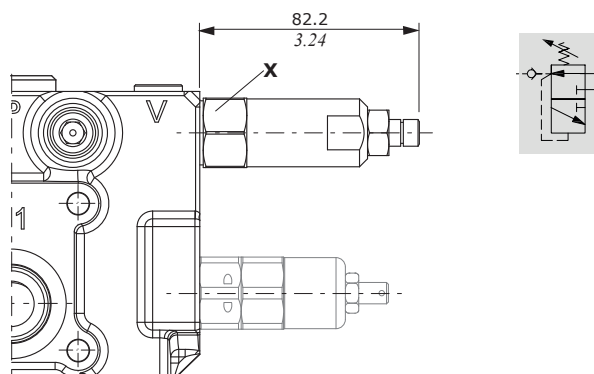
Setting range: TGW5 type

From 290 to 385 bar (from 4200 to 5580 psi)



Pressure reducing valve

R(32) type



Wrenches and tightening torques

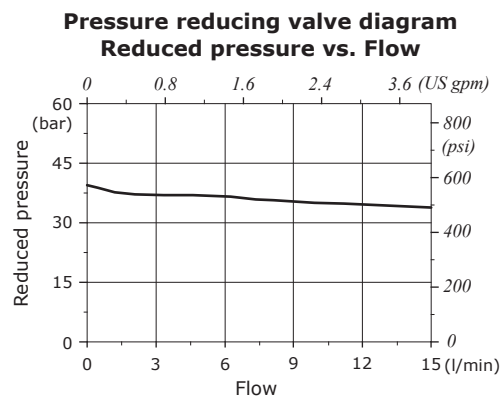
X = wrench 24 - 30 Nm (22 lbft)

Pressure reducing valve features

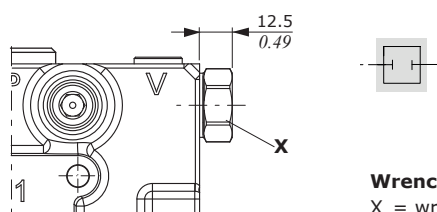
Reduced press. range . : from 3.5 to 35 bar
(from 50 to 500 psi)

Max. inlet pressure . . . : 420 bar (5500 psi)

Nominal flow : 15 l/min (4 US gpm)



RT valve blanking plug

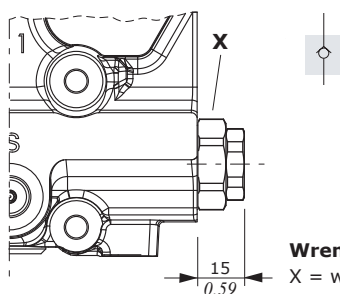


Wrenches and tightening torques

X = wrench 24 - 30 Nm (22 lbft)

Inlet valve options

F anti-cavitation valve



Wrenches and tightening torques

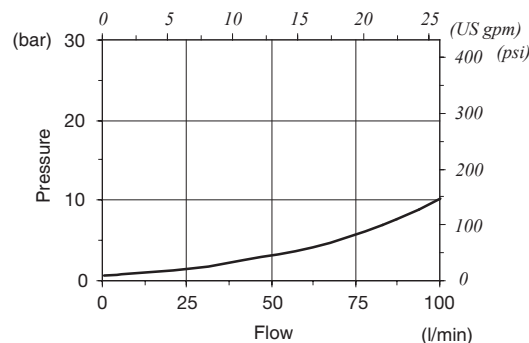
X = wrench 27 - 42 Nm (31 lbft)

Features

Nominal flow 90 l/min (23.77 US gpm)

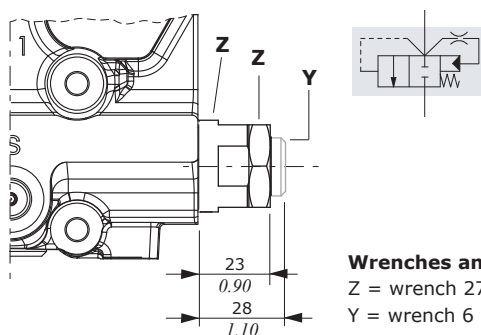
Internal leakage 2 cm³/min @ 100 bar (0.122 in³/min @ 1450 psi)

Pressure drop from T to P



Unloading valves

Hydraulic operated



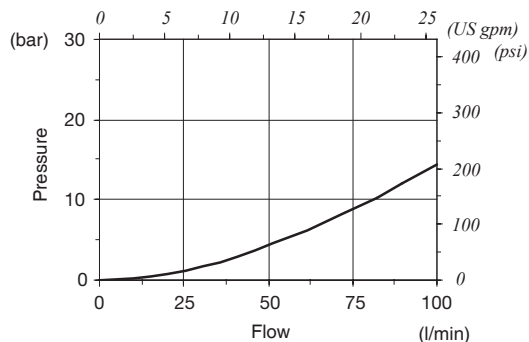
Wrenches and tightening torques

Z = wrench 27 - 42 Nm (31 lbft)

Y = wrench 6 - 24 Nm (17.7 lbft)

NOTE - For safety reasons the valve is supplied with blanking plug

Pressure drop valve



Valve L type features

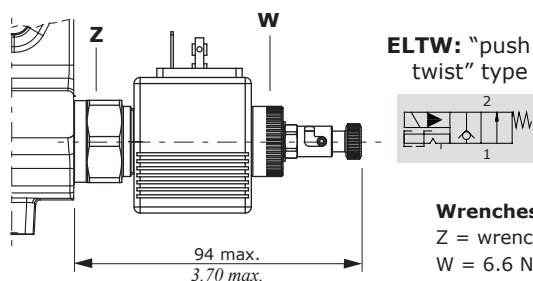
Nominal flow 90 l/min (24 US gpm)

Internal leakage.. . . . 18 cm³/min @ 100 bar
(1.1 in³/min @ 1450 psi)

Solenoid operated

Emergency with push button and spring return; for detent position turn the button after press it.

WARNING: the manual override option is only for emergency operation, not for continuative operation.

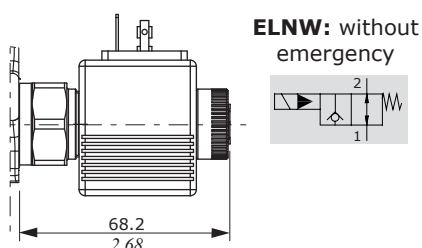


ELTW: "push & twist" type

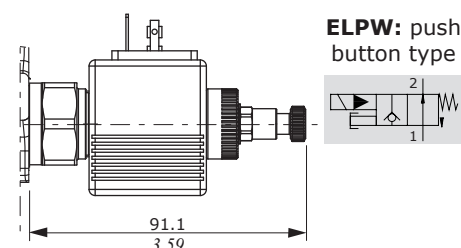
Wrenches and tightening torques

Z = wrench 27 - 42 Nm (31 lbft)

W = 6.6 Nm (4.87 lbft)

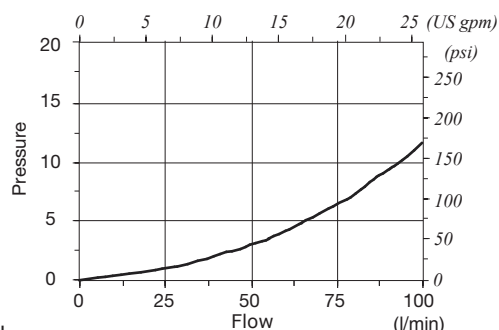


ELNW: without emergency



ELPW: push button type

Pressure drop valve



Features

Nominal flow 100 l/min (26.4 US gpm)

Max. pressure. 315 bar (4600 psi)

Internal leakage.. . . . 1 cm³/min @ 100 bar
(0.061 in³/min @ 1450 psi)

For **BER** coils features and options see page 33

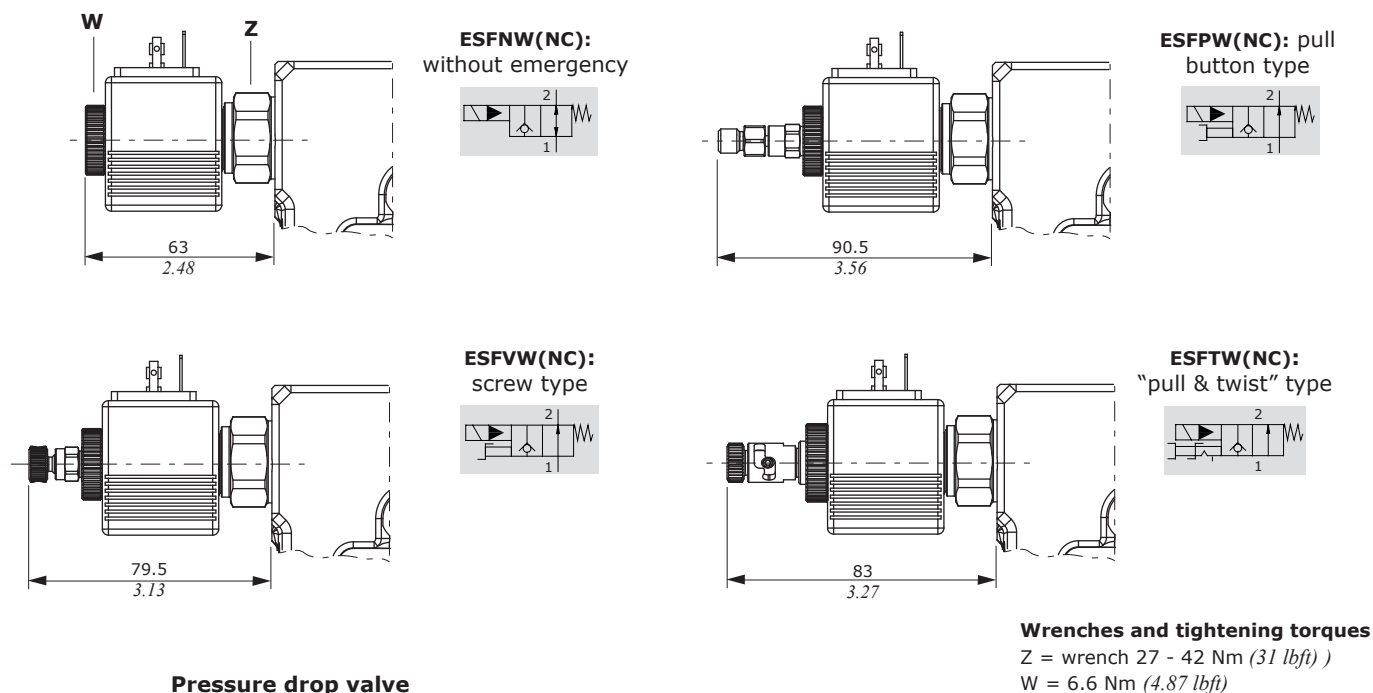
Inlet valve options

Unloading valves

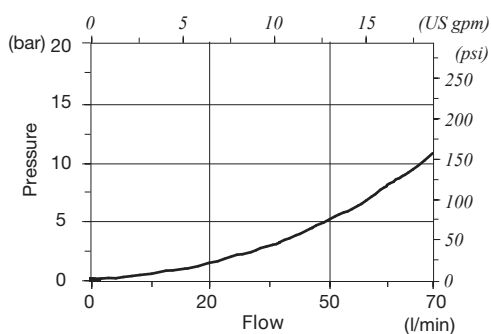
Solenoid operated for M and N inlet sections

Emergency with pull button and spring return; for detent position turn the button after pull it.

WARNING: the manual override option is intended for emergency use, not for continuous duty operation.



Pressure drop valve



Features

Nominal flow 70 l/min (78 US gpm)

Max. pressure. 350 bar (5100 psi)

Internal leakage 25 cm³/min @ 210 bar
 (0.015 in³/min @ 3050 psi)

For **BER** coils features and options see page 33

Part ordering codes

Standard: omitted in description valve setting (bar)

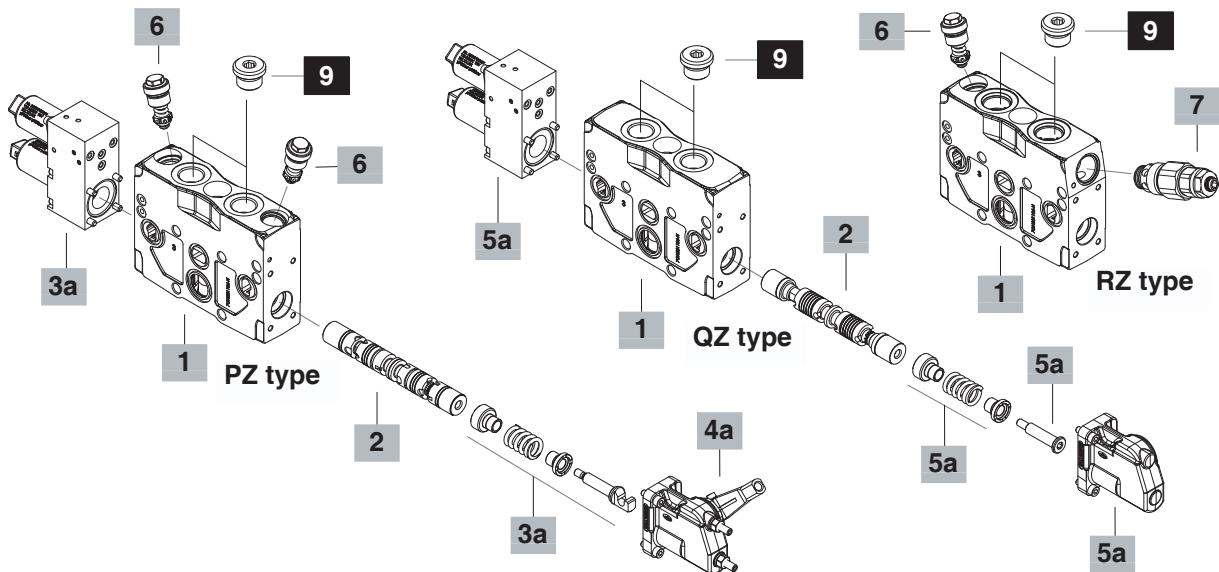
EL SDS140 / PZ - 1EZ 8EZH3 LQF3(20) . U3(220) - - 12VDC

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

1 2a 3a 4a 3a 6 8 3a

EL SDS140 / QZ - 1EZ 8EZH3SLCQ - - 12VDC

1 2a 5a 8 5a



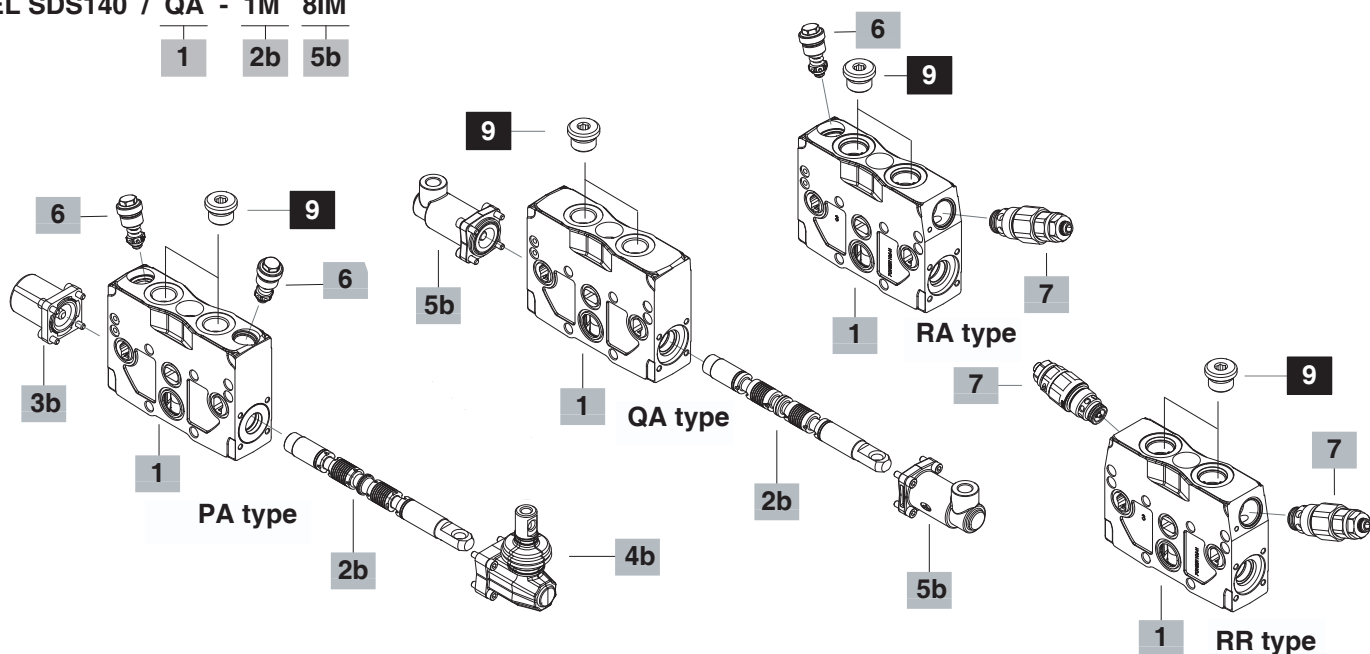
EL SDS140 / PA - 1 8 L . U3(200) - -

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

1 2 3b 4b 6 8

EL SDS140 / QA - 1M 8IM

1 2b 5b



Part ordering codes

1 Working section kit * page 21

TYPE	CODE	DESCRIPTION
For electrohydraulic controls		
QZ	5EL1133010	Parallel circuit without port valves arrangement
PZ	5EL1133005	Parallel circuit arranged for antishock valves
RZ	5EL1133006	As PZ with pilot operated antishock and anticavitation valve (on B side)
For mechanical controls		
QA	5EL1133014	Parallel circuit without port valves arrangement
PA	5EL1133004	Parallel circuit arranged for antishock valves
RA	5EL1133003	As PA arranged for pilot operated antishock and anti-cavitation valve (on B side)
RR	5EL1133015	Parallel circuit arranged with 2 ports for anti-shock and anticavitation valves, without pilot lines: must be positioned as last electrohydraulic control section
For proportional hydraulic controls		
QA-IM	5EL1133014A	Parallel circuit without port valves arrangement
PA-IM	5EL1133004A	Parallel circuit arranged for antishock valves
RA-IM	5EL1133003A	As PA arranged for pilot operated antishock and anticavitation valve (on B side)
RR-IM	5EL1133015A	Parallel circuit arranged with 2 ports for antishock and anticavitation valves, without pilot lines: must be positioned as last electrohydraulic control section

2b Spools page 23

TYPE	CODE	DESCRIPTION
For mechanical and proportional hydraulic controls		
1	3CU2310100	Double acting, 3 positions, with A and B closed in neutral position
1CSG	3CU2310250	As type 1, with fine metering suggested for flow up to 70 l/min (18.5 US gpm)
1M	3CU2310130	As type 1 with metering suggested for flow rates above to 70 l/min (18.5 US gpm)
1A	3CU2321100	Double acting, 3 positions, with A open to tank in neutral position
1B	3CU2322100	Double acting, 3 positions, with B open to tank in neutral position
2	3CU2325100	Double acting, with A and B open to tank in neutral position
2CSG	3CU2325255	As type 2, with fine metering suggested for flow up to 70 l/min (18.5 US gpm)
2H	3CU2325225	Double acting, with A and B partially open to tank in neutral position
3	3CU2331110	Single acting on A, 3 positions, B plugged, G1/2 plug is required
4	3CU2335100	Single acting on B, 3 positions, A plugged, G1/2 plug is required
4M	3CU2335110	As type 4 with metering suggested for flow rates above to 70 l/min (18.5 US gpm), G1/2 plug is required

3b "A" side spool positioners

See SD8 catalogue, code D1WWEB05E.

4b "B" side spool control kit

See SD8 catalogue, code D1WWEB05E.

2a Spools page 23

TYPE	CODE	DESCRIPTION
For electrohydraulic controls		
1EZ	3CU2910001	Double acting, 3 positions, with A and B closed in neutral position
1CSGEZ	3CU2910003	As type 1, with fine metering suggested for flow up to 70 l/min (18.5 US gpm)
1MEZ	3CU2910004	Double acting, 3 positions, with A and B closed in neutral position with metering suggested for flow rates above to 70 l/min (18.5 US gpm)
2MEZ	3CU2925000	Double acting, with A and B open to tank in neutral position, with metering suggested for flow rates above to 70 l/min (18.5 US gpm)
2CSGEZ	3CU2925003	As type 2, with fine metering suggested for flow up to 70 l/min (18.5 US gpm)
4MEZ	3CU2935001	As type 4 with metering suggested for flow rates above to 70 l/min (18.5 US gpm), G1/2 plug is required

3a One-side electrohydraulic control page 26**Combine to "B" side options**

TYPE	CODE	DESCRIPTION
8EZH3(20)-12VDC	5IDR601302	With AMP connector, horizontal configuration
8EZH3(20)-24VDC	5IDR601303	With AMP connector, horizontal configuration
8EZH34(20)-12VDC	5IDR601308	With Deutsch connector, horizontal configuration
8EZH34(20)-24VDC	5IDR601309	With Deutsch connector, horizontal configuration
8EZ3(20)-12VDC	5IDR601304	With AMP connector, vertical configuration
8EZ3(20)-24VDC	5IDR601305	With AMP connector, vertical configuration
8EZ34(20)-12VDC	5IDR601306	With Deutsch connector, vertical configuration
8EZ34(20)-24VDC	5IDR601307	With Deutsch connector, vertical configuration

With spool position sensor: **vertical configuration only**

8EZ34SPSD(20)-12VDC	CODE: 5IDR601312
DESCRIPTION: Deutsch connector and digital sensor	
8EZ34SPSD-24VDC	CODE: 5IDR601313
DESCRIPTION: Deutsch connector and digital sensor	
8EZ34SPSL-0.5(A)-4.5(B)-12VDC	CODE: 5IDR601316
DESCRIPTION: Deutsch connector and analog sensor	
8EZ34SPSL-0.5(A)-4.5(B)-24VDC	CODE: 5IDR601317
DESCRIPTION: Deutsch connector and analog sensor	
Different spring setting are available: 17, 20 and 23 bar (246, 290 and 333 psi). Type standard (20) is omitted. Specify in description when it is different from standard.	

4a "B" side options page 27

TYPE	CODE	DESCRIPTION
For one-side electrohydraulic control		
LQ	5LEV140700	Lever box
LQF3	5LEV140701	Lever box with spool stroke limiter

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

Part ordering codes

5a Complete one-side e.h. control page 28

Controls already comprehensive of endcap on B side

TYPE	CODE	DESCRIPTION
8EZH3SLCQ-12VDC	5IDR601318	With AMP connector, horizontal configuration
8EZH3SLCQ-24VDC	5IDR601319	With AMP connector, horizontal configuration
8EZH34SLCQ-12VDC	5IDR601320	With Deutsch connector, horizontal configuration
8EZH34SLCQ-24VDC	5IDR601321	With Deutsch connector, horizontal configuration
8EZ3SLCQ-12VDC	5IDR601322	With AMP connector, vertical configuration
8EZ3SLCQ-24VDC	5IDR601323	With AMP connector, vertical configuration
8EZ34SLCQ-12VDC	5IDR601324	With Deutsch connector, vertical configuration
8EZ34SLCQ-24VDC	5IDR601325	With Deutsch connector, vertical configuration

5b Complete controls *

TYPE	CODE	DESCRIPTION
8IM	5IDR208300	Proportional hydraulic control
8IMF3	5IDR208220	Proportional hydraulic control with screw for spool stroke adjusting

See SD8 catalogue, code D1WWEB05E.

6 Port valves page 29

TYPE	CODE	DESCRIPTION
UT	XTAP522441	Valve blanking plug
C	5KIT410000	Anticavitation valve

Fixed setting antishock and anticavitation valves: setting is referred to 10 l/min (2.6 US gpm)

TYPE: **U 100** CODE: 5KIT330 100

└ setting (bar) └ setting (bar)

SETTING:

25 bar (363 psi)	30 bar (435 psi)	40 bar (580 psi)
50 bar (725 psi)	63 bar (914 psi)	80 bar (1150 psi)
100 bar (1450 psi)	110 bar (1590 psi)	125 bar (1800 psi)
140 bar (2050 psi)	150 bar (2150 psi)	160 bar (2300 psi)
175 bar (2550 psi)	190 bar (2750 psi)	200 bar (2900 psi)
210 bar (3050 psi)	220 bar (3190 psi)	230 bar (3350 psi)
240 bar (3500 psi)	250 bar (3600 psi)	260 bar (3750 psi)
270 bar (3900 psi)	280 bar (4050 psi)	290 bar (4200 psi)
300 bar (4350 psi)	310 bar (4500 psi)	320 bar (4650 psi)
340 bar (4950 psi)	360 bar (5200 psi)	400 bar (5800 psi)
420 bar (6100 psi)		

7 Port valves page 29

For RA, RZ And RR Working Section Kit

Pilot operated antishock and anticavitation valve

TYPE	CODE	DESCRIPTION
-	3XTAP524290	Valve blanking plug (omitted in description)
UXW(G-200)	X005421200	Range 30-315 bar (435-4600 psi) standard setting 200 bar (2900 psi)

For other valves see SD8 catalogue code D1WWEB05E.

8 Section threading

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

9 Port plugs*

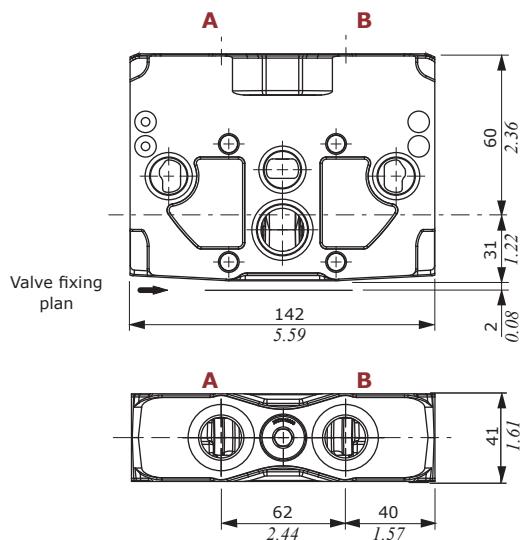
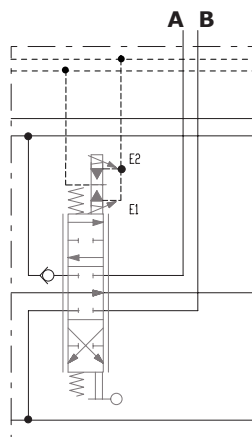
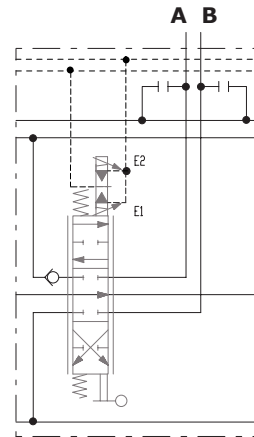
CODE	DESCRIPTION
3XTAP727180	G1/2 plug for single acting spool

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

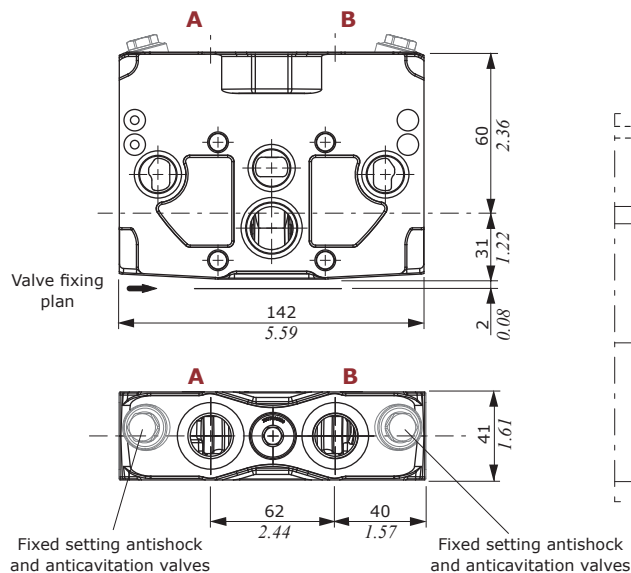
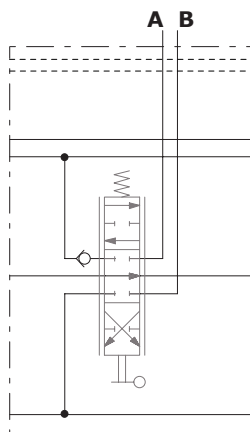
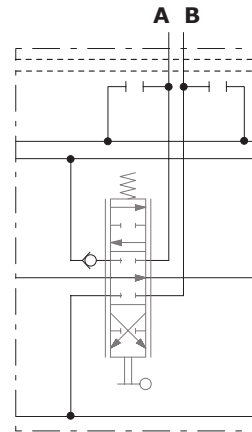
Dimensional data and hydraulic circuit

Q type

(Dimensions are the same for QZ and QA)

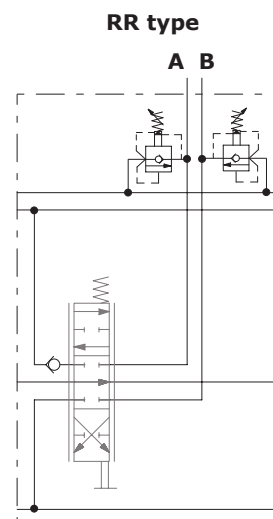
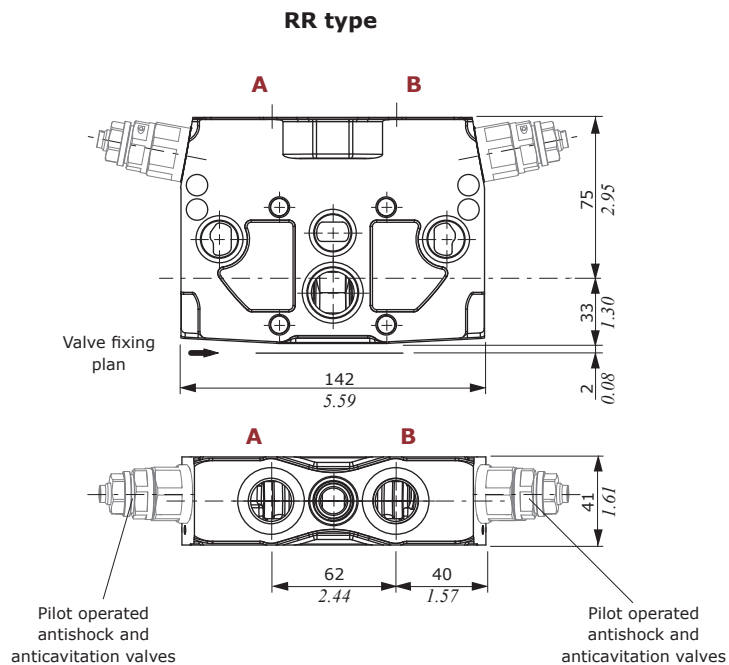
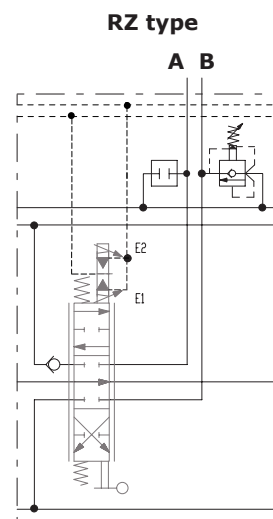
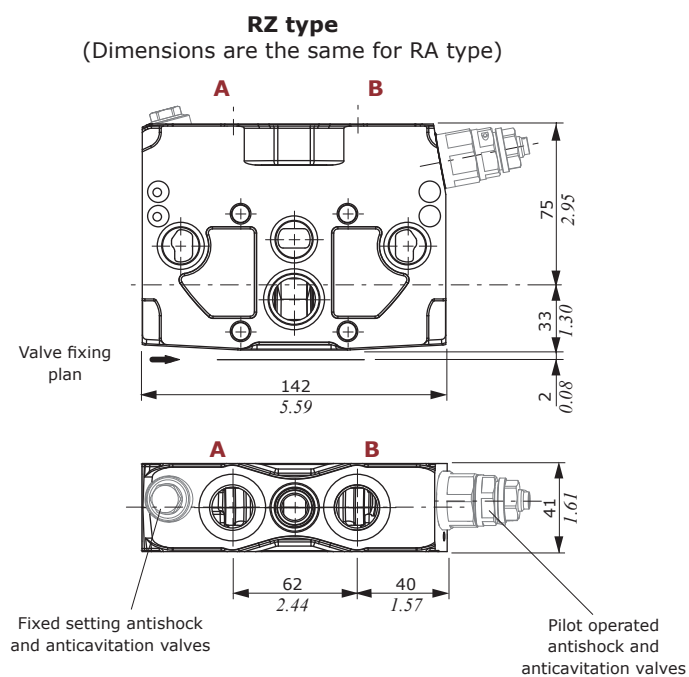
**QZ type****PZ type****P type**

(Dimensions are the same for PZ and PA)

**QA type****PA type**

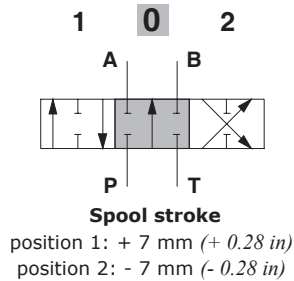
Dimensional data and hydraulic circuit

Without pilot lines; must be positioned after all electrohydraulic elements.



1 (1CSG/1M/ 1CSGEZ/1MEZ) type spool

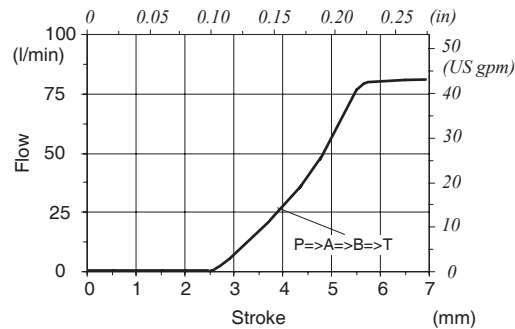
Double acting, 3 positions, with A and B closed in neutral position



1 type spool metering

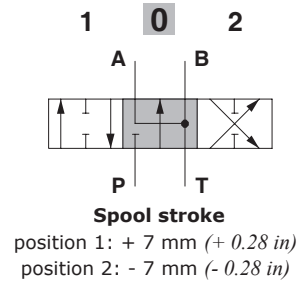
$$Q_{in} = 80 \text{ l/min (42 US gpm)}$$

$$P_{(on ports)} = 100 \text{ bar (1450 psi)}$$



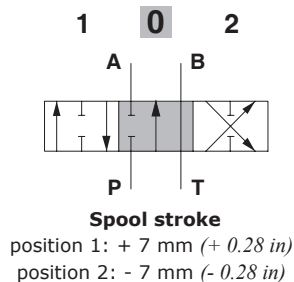
2 (2CSG/2CSGEZ/2MEZ) type spool

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



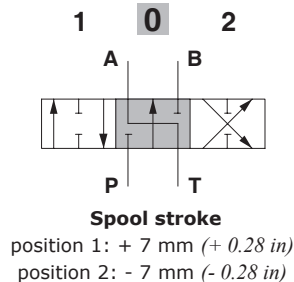
1B type spool

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



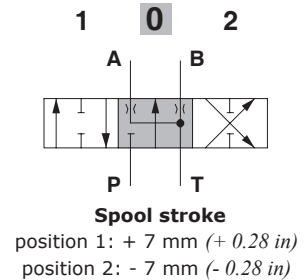
1A type spool

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



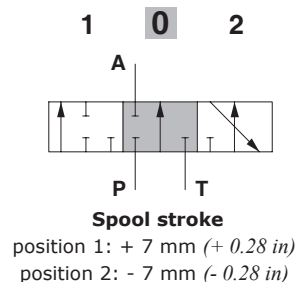
2H type spool

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



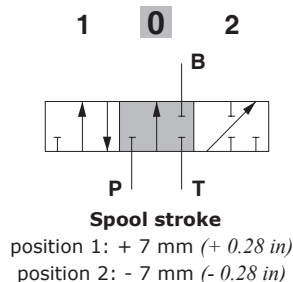
3 type spool

Single acting on A, 3 positions, B plugged, needs G1/2 plug



4 (4M/4MEZ) type spool

Single acting on B, 3 positions, A plugged, needs G1/2 plug



Electrohydraulic controls

Performance data

Following specifications are measured with:

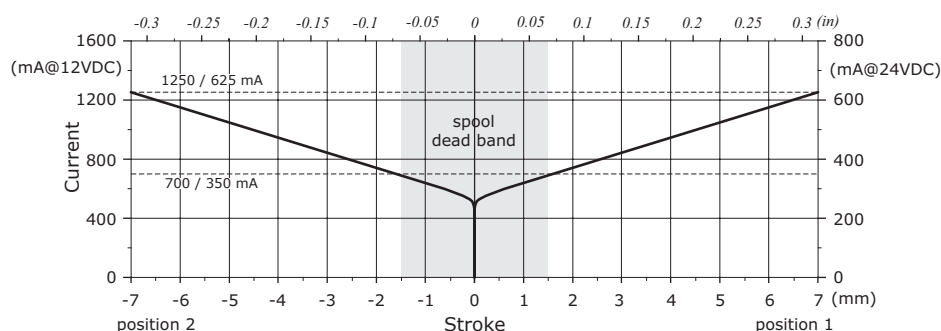
- mineral oil of 46 mm²/s (46 cSt) viscosity at 40°C (104°F) temperature.
- standard spools, connecting P⇒A⇒B⇒T ports without flow multiplication
- 12 VDC and 24 VDC nominal voltage with tolerance ± 10%.

Following electrohydraulic controls need CED100X or CED400X electronic unit; for information contact Sales Department.

Specifications		
Electric specifications		8EZ3
Coil impedance	12 VDC	4.72 Ω
	24 VDC	20.8 Ω
Max. operating current	12 VDC	1.5 A
	24 VDC	0.75 A
No load current consumption		0
Controls configured with lever box		
Hysteresis max. ⁽¹⁾	external drain	7%
	internal drain	9%
Time response	from 0 ⇒ 100% and from 100% ⇒ 0 of stroke	< 50 ms
Min. flow control signal	12 VDC	700 mA
	24 VDC	350 mA
Flow control signal	12 VDC	1250 mA
	24 VDC	625 mA
Max. float flow control signal	12 VDC	
	24 VDC	
Dither frequency	low frequency	150 Hz
	high frequency	180 Hz - 200 mA
Insertion		100%
Coil insulation		Class H (180°C - 356°F)
Connector type		AMP JPT - Deutsch DT
Weather protection (connector)		IP65 (type JPT) - IP69K (type DT)
Hydraulic specifications		
Max. pressure		50 bar (725 psi)
Max. back pressure		10 bar (145 psi)

NOTE (1) hysteresis is indicated at nominal supply voltage and f = 0.008 Hz for one cycle (one cycle = neutral ⇒ full A ⇒ neutral ⇒ full B ⇒ neutral). For the calculation rules, please see "Appendix A" on page 35.

Type 8EZ3: Stroke vs. Current diagram



Electrohydraulic controls

Spool position sensor

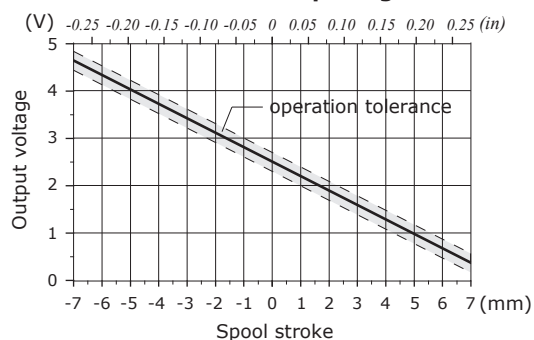
The sensor can be ordered exclusively through the EZ type electrohydraulic controls; please see page 19 for available control list.

SPSL sensor

The SPSL position sensor converts the spool movements into a voltage linear signal.

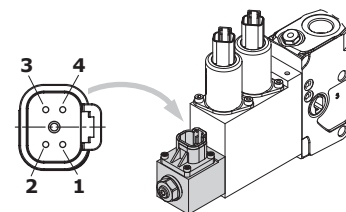
Working conditions		
Voltage supply		5 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±10 mm (±0.39 in)
Max. mechanical stroke		±10 mm (±0.39 in)
Output signal	range	from 0.5 to 4.5 V
	linearity	± 5%
	spool in neutral	2.5 ± 0.2 V
	max. current	1 mA
EMC compatibility		ISO 13766 / ISO 14982
Mechanical vibrations, shock, bumps		IEC 68-2-6,-27,-29

SPSL sensor output signal



Deutsch DT04-4P connector

Pin	Function
1	+ 5V
2	not connected
3	GND
4	signal OUT



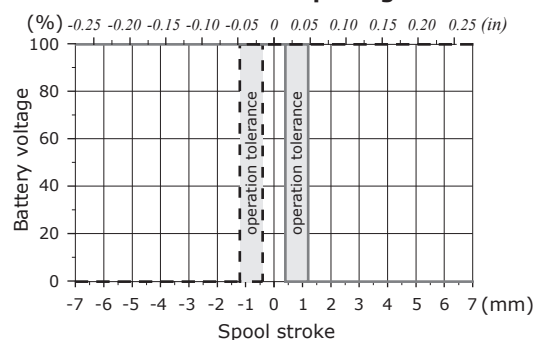
Deutsch DT06-4S mating connector, code 5CON140072

SPSD sensor

The SPSP position sensor converts the spool movements into an electric digital signal.

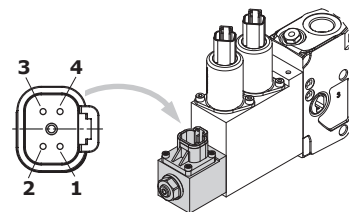
Working conditions		
Voltage supply		from 9 to 32 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±10 mm (±0.39 in)
Max. mechanical stroke		±10 mm (±0.39 in)
Output signal	type	PNP
	max. current	6 mA
EMC compatibility		ISO 13766 / ISO 14982
Mechanical vibrations, shock, bumps		IEC 68-2-6,-27,-29

SPSP sensor output signal



Deutsch DT04-4P connector

Pin	Function
1	Out A
2	GND
3	VB +
4	Out B



Deutsch DT06-4S mating connector, code 5CON140072

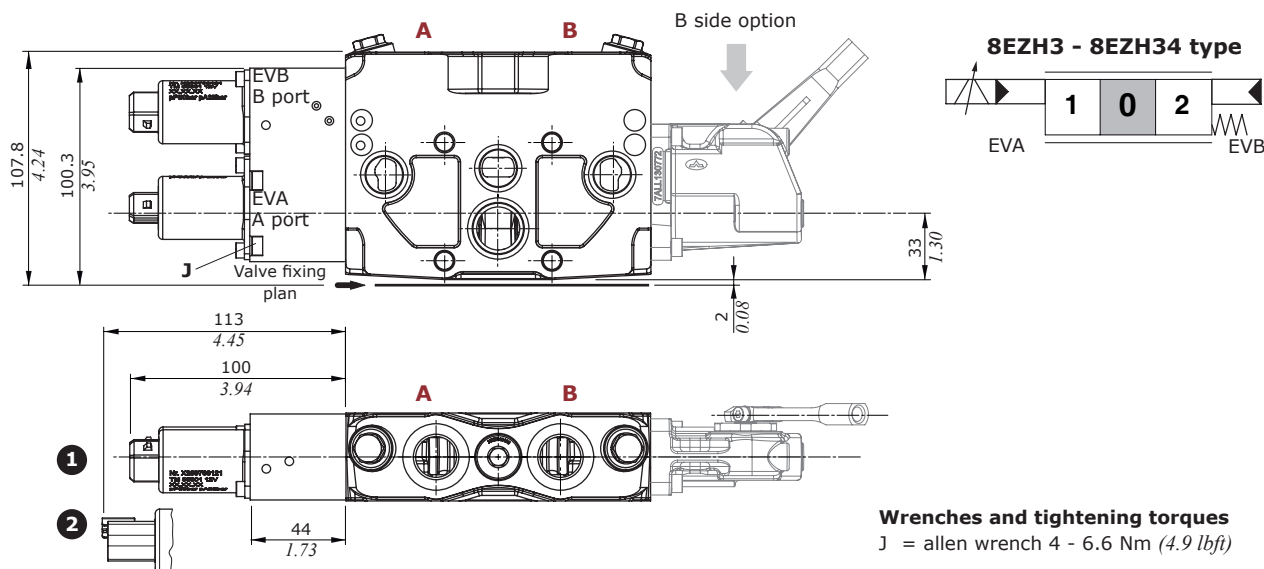
Electrohydraulic controls

One-side electrohydraulic control

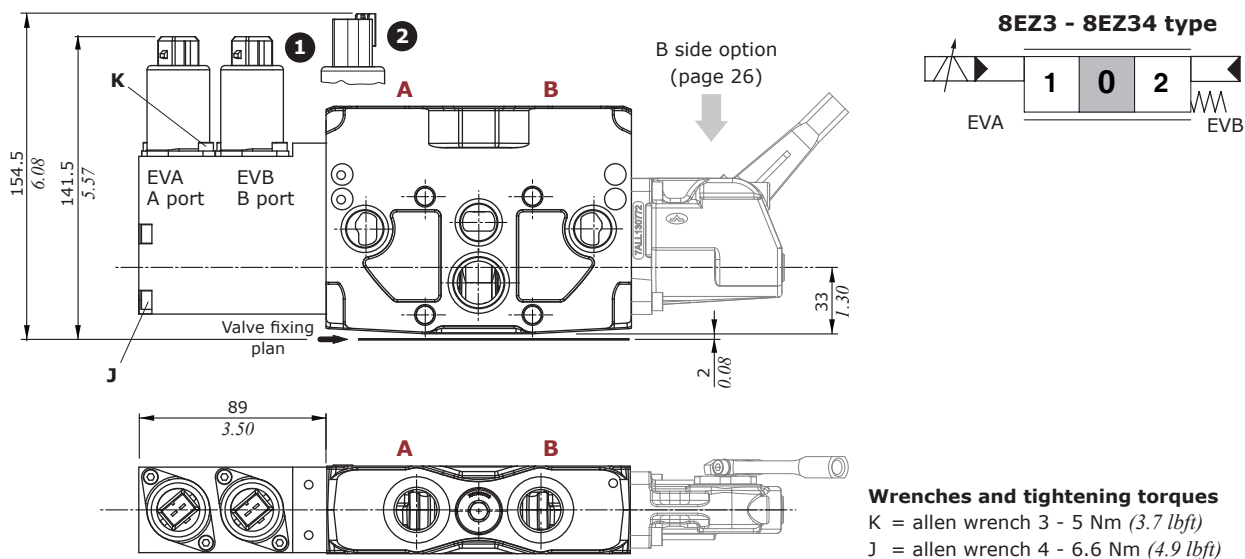
Control type

- ① : With AMP JPT connector - AMP JPT mating connector, code: 5CON003
- ② : With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031

With horizontal valves: 8EZH3 type (standard)



With vertical valves: 8EZ3 type



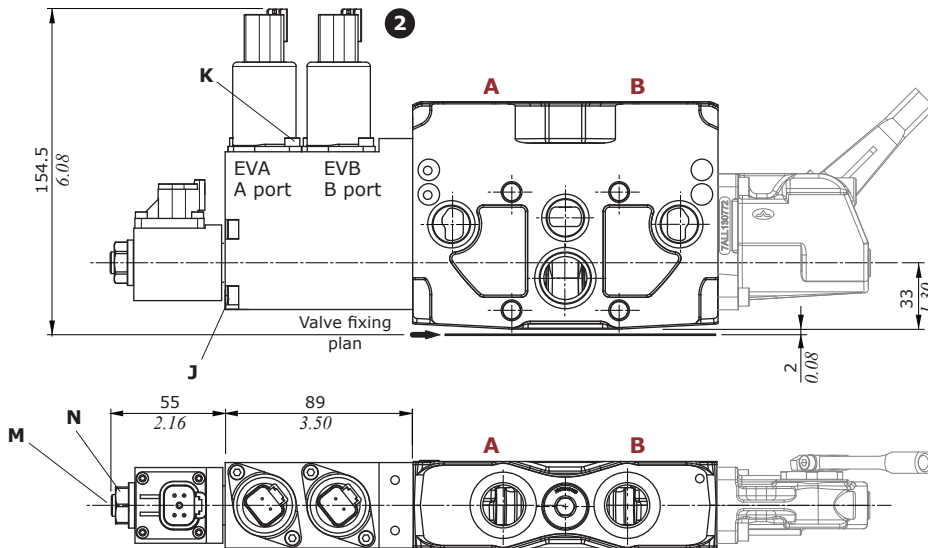
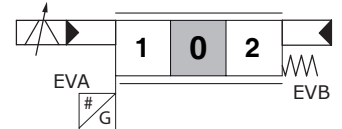
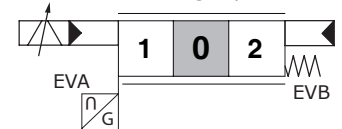
Electrohydraulic controls

One-side electrohydraulic control

Control type

②: With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031

8EZ3SPSD control with spool position sensor

8EZ34SPSD type
CANbus interface8EZ34SPSL type
Analog input

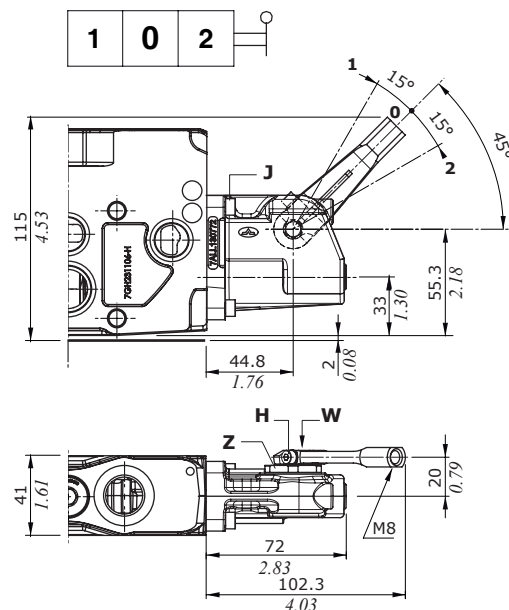
Wrenches and tightening torques

K = allen wrench 3 - 5 Nm (3.7 lbf ft)
J = allen wrench 4 - 6.6 Nm (4.9 lbf ft)
M = wrench 4 - 9.8 Nm (7.2 lbf ft)
N = wrench 17 - 9.8 Nm (7.2 lbf ft)

"B" side options

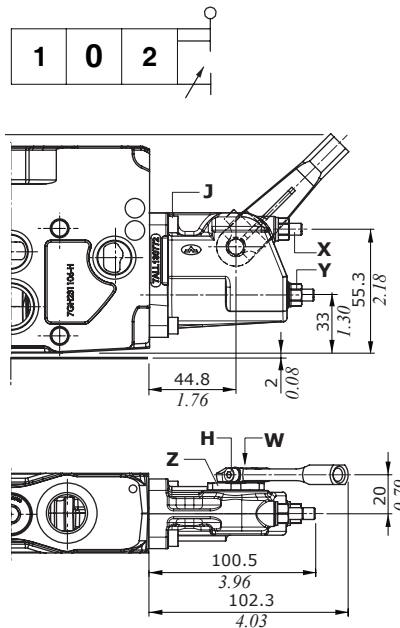
These options are available for one-side electrohydraulic controls only.

LQ type



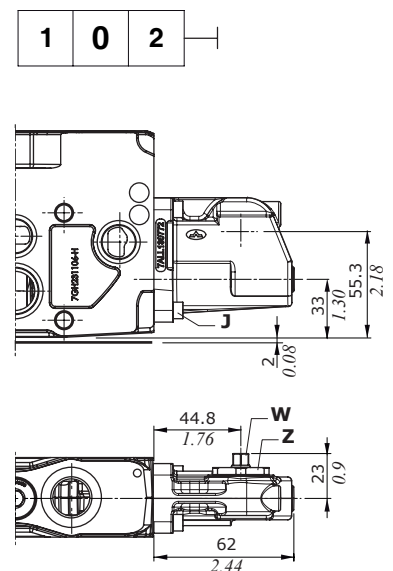
LQF3 type

Spool stroke limiter on ports A and B



LQSL type

Without lever



Wrenches and tightening torques

H = allen wrench 3 - 6.6 Nm (4.9 lbf ft)
J = allen wrench 4 - 6.6 Nm (4.9 lbf ft)
X = allen wrench 3
Y = wrench 10 - 9.8 Nm (7.2 lbf ft)
Z = wrench 29 - 24 Nm (17.7 lbf ft)
W = wrench 8

Electrohydraulic controls

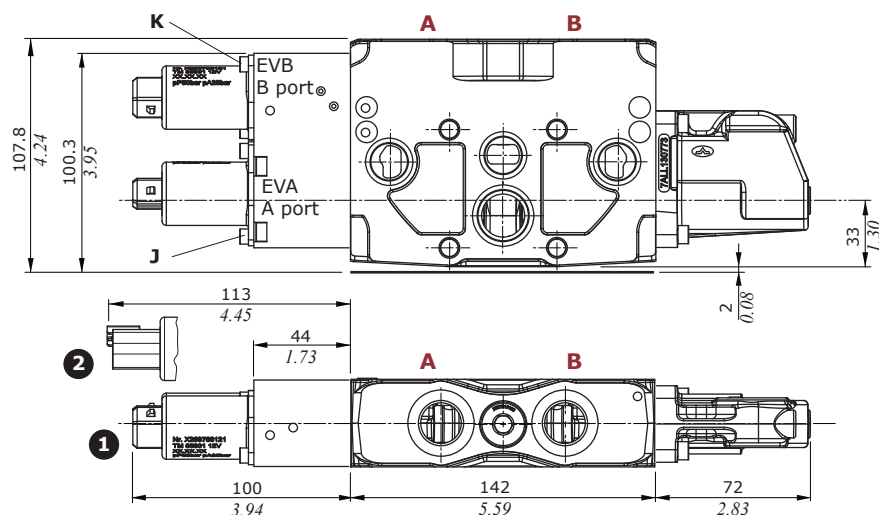
Complete one-side electrohydraulic control

Controls already comprehensive of endcap on B side.

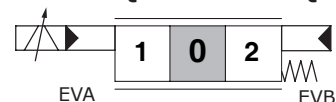
Control types

- ① : With AMP JPT connector - AMP JPT mating connector, code: 5CON003
- ② : With Deutsch DT04 connector - Deutsch DT06-2S code mating connector: 5CON140031

8EZH3SLCQ complete control (standard)



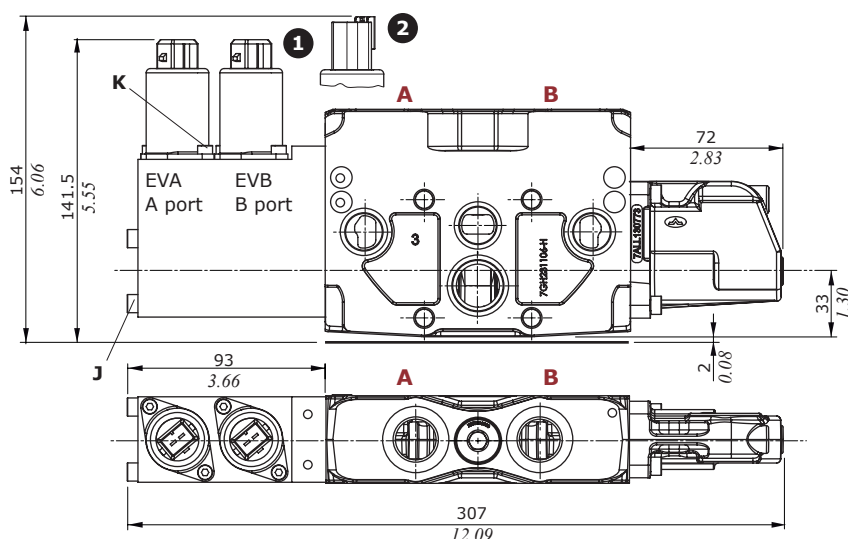
8EZH3SLCQ - 8EZH34SLCQ type



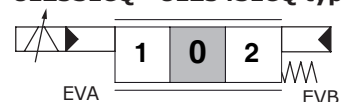
Wrenches and tightening torques

- K = allen wrench 3 - 5 Nm (3.7 lbft)
- J = allen wrench 4 - 6.6 Nm (4.9 lbft)

8EZ3SLCQ complete control



8EZ3SLCQ - 8EZ34SLCQ type

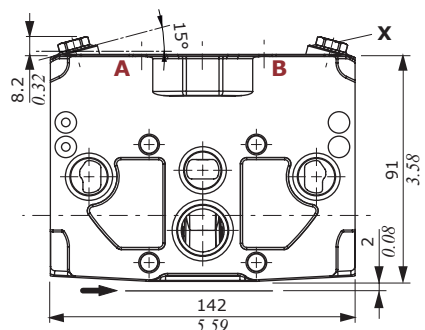


Wrenches and tightening torques

- J = allen wrench 4 - 6.6 Nm (4.9 lbft)
- K = allen wrench 3 - 5 Nm (3.7 lbft)

Anti-shock and anti-cavitation valves

For flow rates up to 60 l/min (16 US gpm) and higher valve setting.



Wrenches and tightening torques

X = wrench 13 - 24 Nm (17.7 lbf)

U type

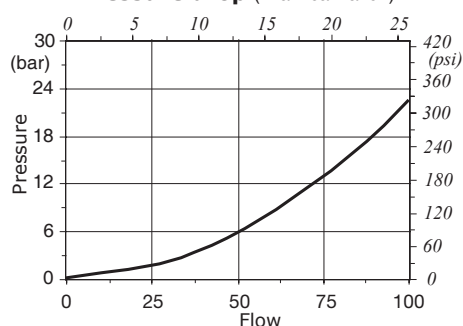


C type

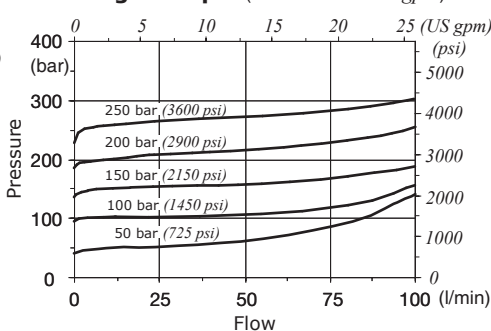


U type: antishock valves with prefill

Pressure drop (in anticavitation)

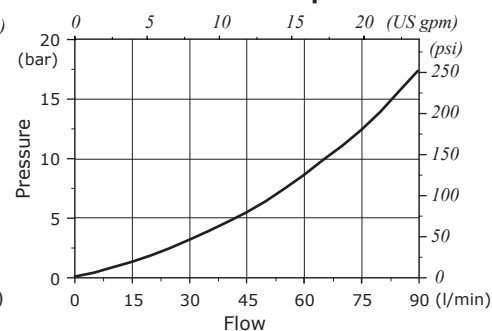


Setting example (10 l/min - 2.6 US gpm)

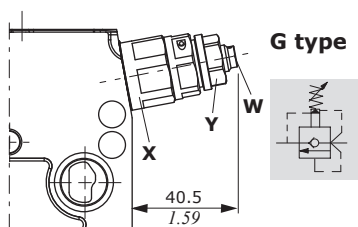


C type: anticavitation valves

Pressure drop



Pilot operated anti-shock and anti-cavitation valve UXW type



Legenda

G: adjustable with screw

Wrenches and tightening torques

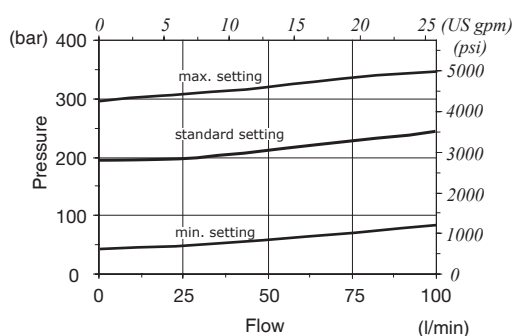
X = wrench 24 - 42 Nm (31 lbf)

Y = wrench 17 - 24 Nm (17.7 lbf)

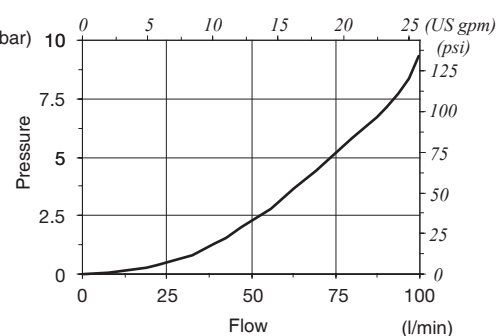
W = wrench 5

NOTE - It can not be used with mechanical controls with lever.

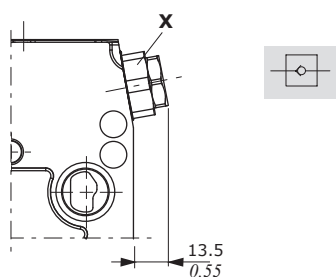
Range setting



Pressure drop in anticavitation



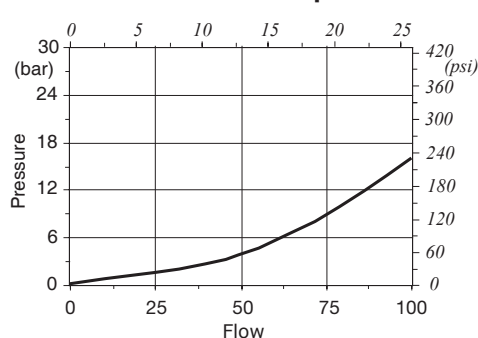
Anti-cavitation valve C type



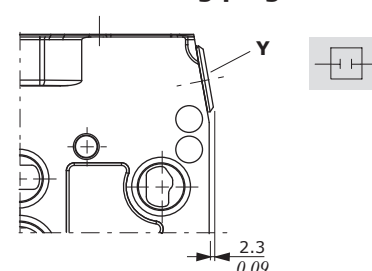
Wrenches and tightening torques

X = wrench 24 - 42 Nm (31 lbf)

Pressure drop



Valve blanking plug



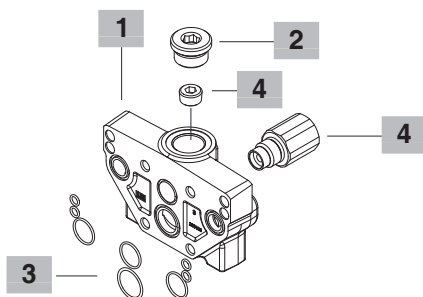
Wrenches and tightening torques

Y = allen wrench 10 - 42 Nm (31 lbf)

Part ordering codes

FS SDS140 / RC

- RC** With side outlet: **requires external pilot source**
- RD** With upper outlet: **requires external pilot source**
- RE** With upper outlet and side carry-over sleeve: **requires external pilot source**
- RVC** With back pressure valve: **requires internal pilot source, to build up pressure**
- RVE** With back pressure valve and side carry-over sleeve
- RF** With side and upper ports plugged for N type inlet section
- RFC** As RF with tapered plug with metering hole for M and DT type inlet sections
- RDC** As RD with tapered plug with metering hole for M type inlet section



1 Outlet section *

CODE	DESCRIPTION
3FIA213300	Outlet section body

2 Plug *

CODE	DESCRIPTION
3XTAP732200	G 3/4 plug

3 O-ring seals

CODE	DESCRIPTION
4GUA118818	O-ring 18.77x1.78 NBR 70 SH (3 pieces)
4GUA125118	O-ring 25.12x1.78 NBR 70 SH (1 piece)
4GUA106818	O-ring 6.75x1.78 NBR 70 SH (4 pieces)

4 Circuit option*

page 31

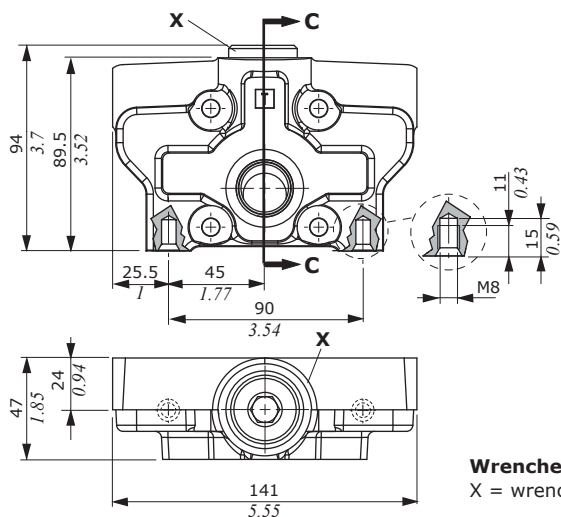
CODE	DESCRIPTION
4TAP318010	M18x1.5 plug for carry-over (RE) and closed centre options
X047710010(*)	VRE back pressure valve for RVE configuration; with side carry-over sleeve
X147600007(*)	VRC back pressure valve for RVC configuration
3VT2730100	FC5 plug with metering hole for RFC and RDC

5 Section threading

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

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

Dimensional data and hydraulic circuit



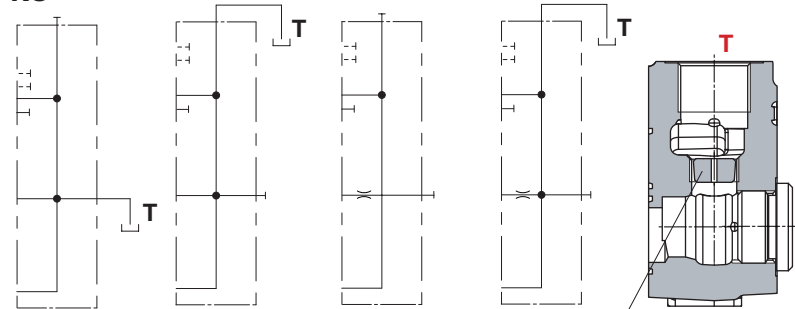
RC

RD

RFC

RDC

C-C section



tapered plug with metering hole

Wrenches and tightening torques
X = wrench 12 - 42 Nm (31 lbf ft)

RE

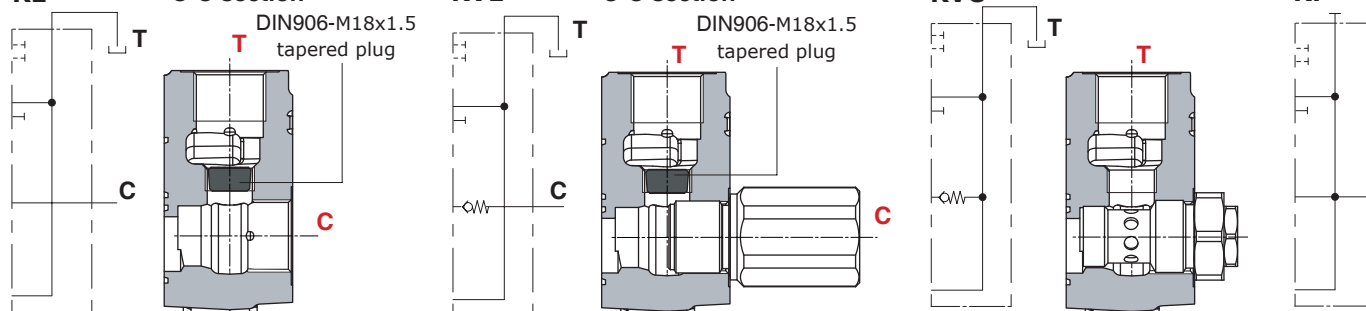
C-C section

RVE

C-C section

RVC

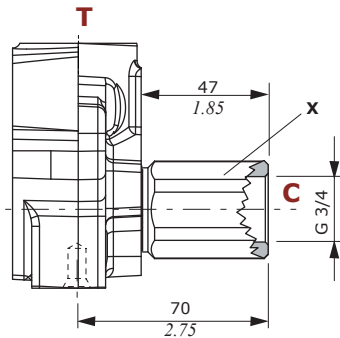
RF



Circuit option

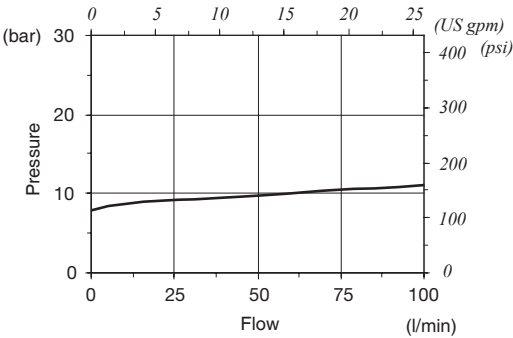
The VRE and VRC valves are assembled on flow through passage of outlet cover; it's necessary to provides pilot pressure to the actuator.

VRE back pressure valve

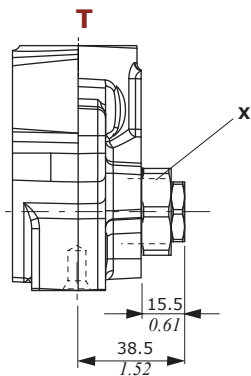


Wrenches and tightening torques
X = wrench 34 - 42 Nm (31 lbft)

Pressure drop from P to C
(referred to SDS140/1)

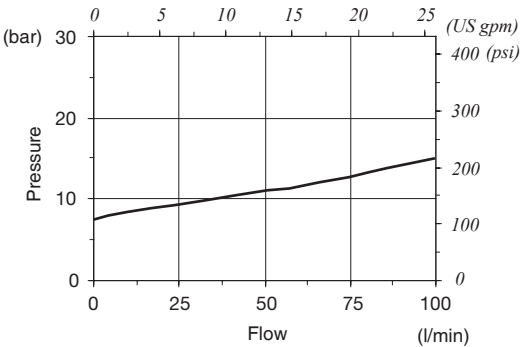


VRC back pressure valve



Wrenches and tightening torques
X = wrench 32 - 42 Nm (31 lbft)

Pressure drop P to T
(referred to SDS140/1)

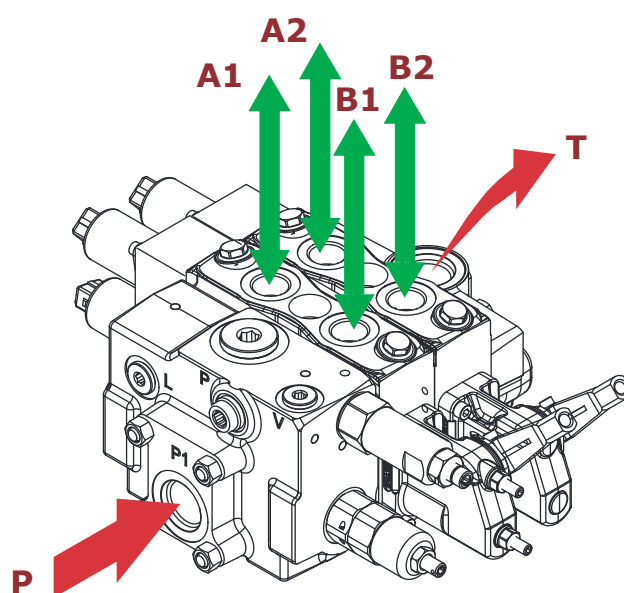


Installation and maintenance

The SDS140 valves are assembled and tested as per the technical specifications of this catalogue.

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

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



Fitting tightening torque - Nm (lbft)

THREAD TYPE	P port	A, B ports	T, C ports	LS signal
BSP	G 3/4	G 1/2	G 3/4	G 1/4
With O-Ring seal	90 - 66.4	50 - 36.9	90 - 66.4	20 - 14.7
With copper washer	90 - 66.4	60 - 44.3	90 - 66.4	25 - 18.4
With steel and rubber washer	70 - 51.6	60 - 44.3	70 - 51.6	16 - 11.8
UN-UNF	7/8-14 (SAE 12)	3/4-16 (SAE 8)	7/8-14 (SAE 12)	9/16-18 (SAE 6)
With O-Ring seal	90 - 66.4	60 - 44.3	90 - 66.4	30 - 22.1
METRIC	M27x2	M22x1.5	M27x2	M14x1.5
With O-Ring seal	100 - 73.7	60 - 44.3	100 - 73.7	35 - 25.8

NOTE – This torque is recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer has to be consulted.

Types and ordering codes

Coil type	Voltage	Connectors					
		ISO4400	Deutsch DT	AMP JPT	Packard Weatherpack	Packard Metri-pack	Flying leads (without conn.)
BER	10 VDC	4SLE001000	-	-	-	-	-
	12 VDC	4SLE001200 4SLE001217 ⁽³⁾	4SLE001201 ⁽⁵⁾ 4SLE001209 ⁽³⁻⁵⁾ 4SLE001202 ⁽⁶⁾ 4SLE001216 ⁽³⁻⁶⁾ 4SLE001206 ⁽²⁾	4SLE001203 ⁽⁵⁾ 4SLE001211 ⁽³⁻⁵⁾	4SLE001210 ⁽²⁾	4SLE001214 ⁽²⁾	4SLE001207
	24 VDC	4SLE002400 4SLE002408 ⁽³⁾ 4SLE302400 ⁽¹⁾	4SLE002401 ⁽⁵⁾ 4SLE002407 ⁽³⁻⁵⁾ 4SLE002402 ⁽⁶⁾	4SLE002403 ⁽⁵⁾	-	-	4SLE002404
	48 VDC	4SLE004800 4SLE304800 ⁽¹⁾	-	-	-	-	-
	110VDC	4SLE011000 4SLE311000 ⁽¹⁾	-	-	-	-	-
	220 VDC	4SLE022000 4SLE322000 ⁽¹⁾	-	-	-	-	-
	Mating connectors (for connector with rectifier see following table)						
		4CN1009995	5CON140031	5CON003	5CON001	5CON017	-

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

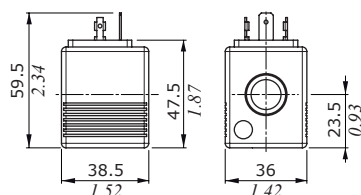
Voltage	ISO 4400 mating connector with rectifier	
	BER type coil	BT type coil
24 VDC	4CN1010240	4CN3010240
48 VDC	4CN1010480	4CN3010480
110 VDC	4CN1011100	4CN3011100
220 VDC	4CN1012200	4CN3012200

Coils

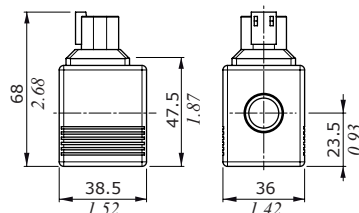
Dimensions and features

BER type

ISO4400 connector



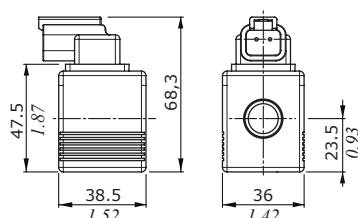
DEUTSCH DT04 connector (perpendicular type)



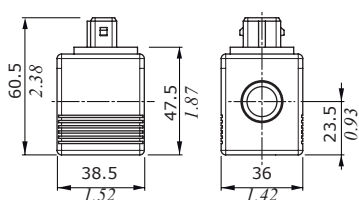
Features

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

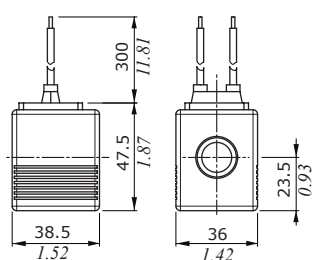
DEUTSCH DT04 connector (parallel type)



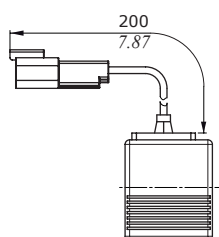
AMP JPT connector



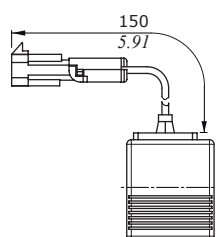
Flying leads



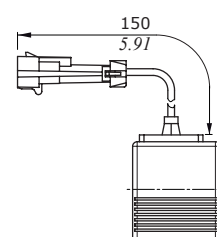
Flying leads with DEUTSCH DT04 connector



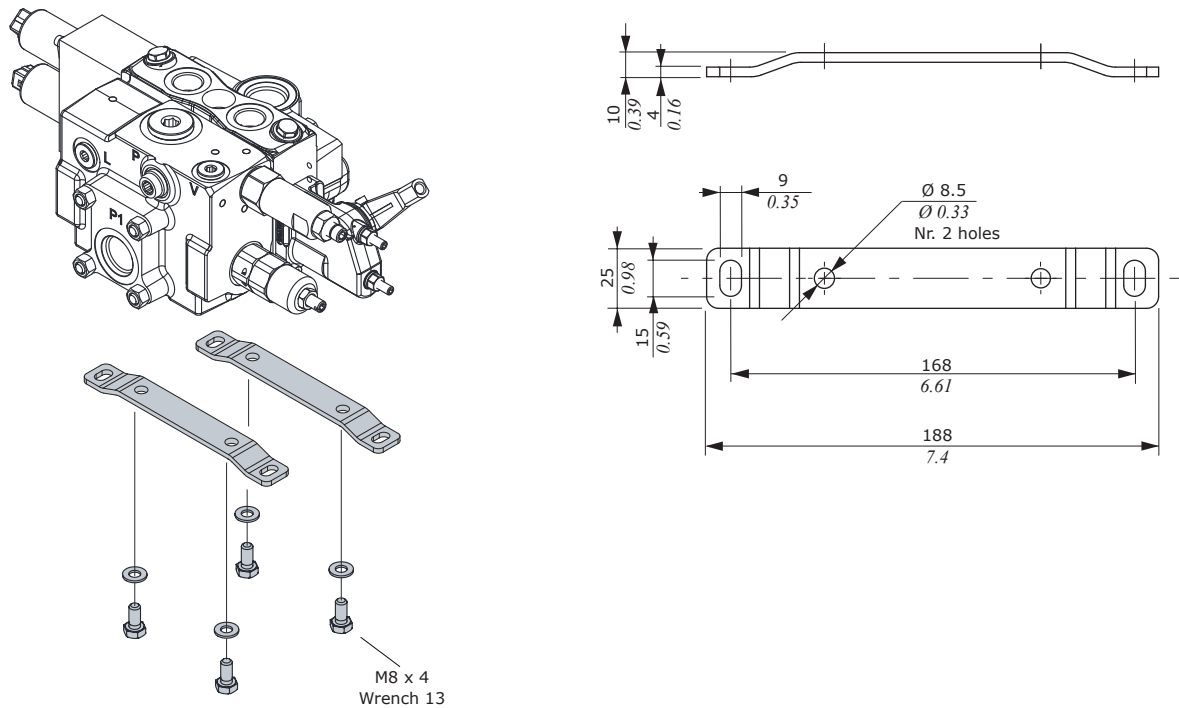
Flying leads with PACKARD WEATHER-PACK connector



Flying leads with PACKARD METRI-PACK connector



Fixing brackets



NOTE - For fixing bracket code please see page 7.

Painting

SDS140 valve can be supplied with one coat of black paint (**CVN** configuration).

Description example: SDS140/2/AC(YG3-175)-R(32)/PZ-1EZ8EZH3LQ.U3T/RD-**<CVN>**

NOTE - For different colour please contact our Sales Dpt.

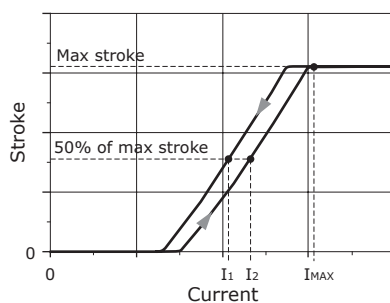
Appendix A

Electrohydraulic controls: hysteresis calculation rule

Hysteresis is calculated as the difference between control currents ($I_2 - I_1$), needed to reach 50% of nominal spool stroke, referred to maximum control current I_{MAX} , needed to reach 100% of spool stroke.

I_2 is determined on spool stroke increase line, I_1 is determined on spool stroke decrease line.

Example diagram for
data detection



$$\text{Hysteresis \%} = \frac{I_2 - I_1}{I_{MAX}} \times 100$$

3rd edition March 2016

WWW.WALVOIL.COM



D1WWEB06E

