



DPX Series

Full Flow Sharing Sectional Valves



Additional information

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

WARNING!

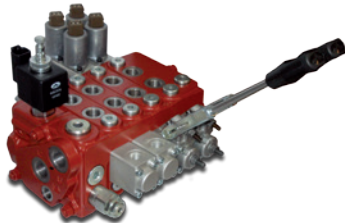
All specifications of this catalogue refer to the standard product at this date.
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12th edition October 2016

The DPX Series

The DPX Series is a family of open/closed center post-pressure compensated sectional valves designed specifically for Mobile Applications. The DPX series provides exceptional controllability, efficiency and flexibility for applications requiring up to 160 l/min (42 US gpm) flow rates. The DPX Series is available in three different sizes: DPX050, DPX100 and DPX160, also available in High Pressure configuration.



DPX050



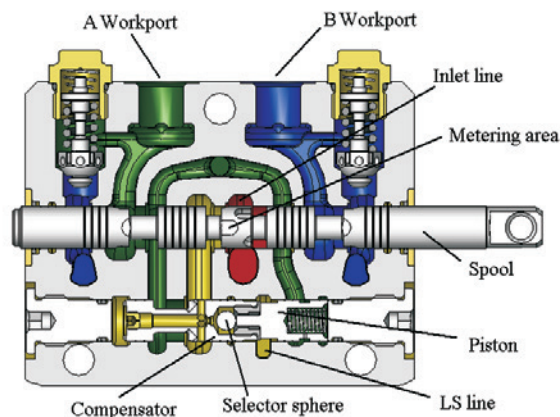
DPX100



DPX160

The Flow Sharing technology

The DPX Series control valves adds the benefit of Flow Sharing technology to the standard Load Sensing valve. The DPX Series patented compensator maintains the margin pressure as a constant pressure drop across the spool metering area. The result is a flow to the workport dependent only on spool position. In case of flow saturation, the effective pressure drop across all spools is reduced equally. This results in proportional flow reduction at each section.



In case of flow saturation, the flow demand is higher than the maximum pump flow, therefore the margin pressure is reduced according to the formula (dimensionless indication):

$$Q \propto A \sqrt{\frac{\Delta P}{\rho}}$$

Q = flow to workports
 ΔP = pressure drop across metering area
 A = metering area
 ρ = oil density

Since all spools have the same pressure drop across the metering area, then all flows are reduced proportionally. This allows the operator to maintain control of all functions, though at reduced speed of active functions.

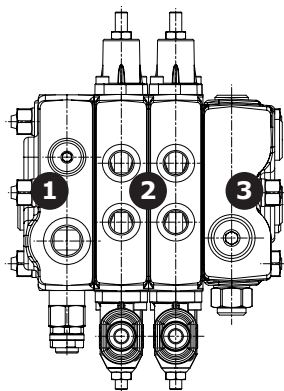
Advantages and options

- Energy saving on closed center system, is produced only required flow and pressure by the actuators.
 - The flow sharing technology permits multiple movements even with flow saturation.
 - Flow passage design allows high P and T flow rate in a standard valve dimension.
 - Inlet section with unidirectional restrictor option suitable for dumping the pressure peaks from the LS line to the compensator and vice versa.
 - High Pressure version (HP) stackable with standard one.
 - Working section option with priority features in saturation conditions.
 - Dedicated spools for special functions (customized flows, back pressures, pressure control).
- For special options please contact Sales Dept.

Guide to configuration

Configuration with mechanical, hydraulic or electric controls

This configuration needs standard inlet sections, working sections without pilot lines and standard outlet sections.



DPX050

- 1: AM or AN inlet sections
- 2: P or Q working sections
- 3: RP or RQ working sections with outlet

DPX100

- 1: AM or AN inlet sections
- 2: P or Q working sections
- 3: RF outlet sections

DPX160

- 1: AM or AN inlet sections
- 2: P or Q working sections
- 3: RC outlet sections

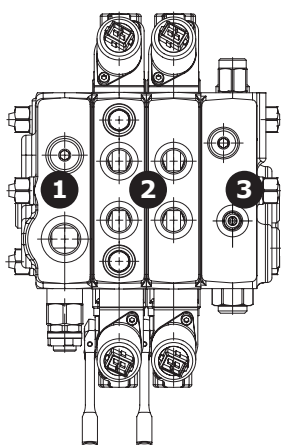
Configuration with only electrohydraulic or mixed controls

Electrohydraulic configuration (pic. 1) needs standard inlet sections, working and outlet sections with pilot lines.

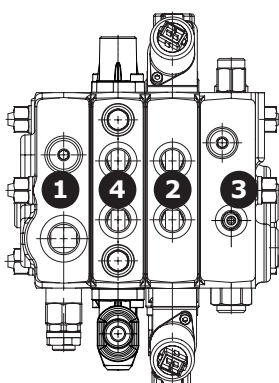
In a valve configured with electrohydraulic mixed sections (two-sides and one side type controls), the two-side control section have to be positioned after (on the right) one-side control section, close to the outlet one.

In a mixed control configuration valve (pic. 2) electrohydraulic control sections have to be positioned after (on the right) manual/hydraulic/electric control sections, close to the outlet section.

In case of need to include manual/hydraulic/electric control sections between 2 electro-hydraulic control sections, or between one of these and outlet section, it is necessary to require specific kits able to cross pilot line.



(pic. 1)



(pic. 2)

DPX050

- 1: AM or AN inlet sections
- 2: PZ, QZ, PE or QE working sections
- 3: RPZ, RQZ, RPE or RQE working sections with outlet
- 4: P or Q working sections

DPX100

- 1: AM or AN inlet sections
- 2: PE, QE, PZ or QZ working sections
- 3: RDN or RDR outlet sections
- 4: P or Q working sections

DPX160

- 1: AM or AN inlet sections
- 2: PE or QE working sections
- 3: RCR or RCN outlet sections
- 4: P or Q working sections

High pressure (HP) valve configuration

DPX flow sharing series is available both for Standard and High pressure (HP) configuration..

The main difference between the two configurations is the max. reachable pressure.

In details:

DPX100-DPX160

- Max. pressure on P inlet port and on A/B working ports = 300 bar - 4350 psi

DPX100HP-DPX160HP

- Max. pressure on P inlet port = 380 bar - 5550 psi
- Max. pressure on A/B working ports = 420 bar - 6000 psi

In addition to valve entirely configured for Standard pressure or HP, a mixed configuration – Standard/HP – is available by combining only the sections needed.

Closed center type inlet cover: one single solution for Standard and HP pressures.

Open center type inlet cover: separate solutions for Standard and HP pressure.

Priority inlet cover (only for DPX160): configuration available only for Standard pressure.

Working sections: separate solutions for Standard and HP pressures.

Outlet covers: one single solution for Standard and HP pressures.

Example of entirely Standard pressure valve configuration

DPX100/2/AM1(TGW3-175/ELN)/P-101(80/80)-8IMN.U3T/Q-101(80/80)-8IMN/RF-12VDC-FPM

Std pressure open center inlet section
Std pressure closed center inlet section

Std pressure working sections

Standard pressure outlet section

Example of entirely HP valve configuration

DPX100^{HP}/2/AM1(TGW5-300/ELN)/P-101(80/80)-8IMN.U3T/Q-101(80/80)-8IMN/RF-12VDC-FPM

HP open center inlet section
Std pressure closed center inlet section

HP working sections

Standard pressure outlet section

Example of mixed - Standard/HP - valve configuration

DPX100/2/AM1(TGW3-175/ELN)/P-101(80/80)-8IMN.U3T/^{HP}Q-101(80/80).U3(360)-8IMN/RF-12VDC-FPM

Std pressure open center inlet section
Std pressure closed center inlet section

Std pressure working section

HP working section

Standard pressure outlet section

Pressure peak reduction

Pressure peaks may occur in a port during normal machine operation, causing signal L.S. swings. If those pressure swings reach the inlet section or the pump compensators, they could cause an harsh and not comfortable regulation, especially if they occur with high frequency.

The DPX Series directional valves, open and closed center ones, are available with inlet sections equipped with devices for L.S. signal peak reduction.

Standard configuration

Bidirectional restrictor on L.S. signal; it dampens the pressure peaks from L.S. line to inlet section compensator and vice versa.

SU option

Unidirectional restrictor on L.S. signal; it dampens the pressure peaks from L.S. line (and then from users) to inlet section compensator. It's recommended for applications that need soft start.

SO options

Unidirectional restrictor on L.S. signal; it dampens the pressure peaks from inlet section compensator to L.S. line. It's recommended for swings reduction occurred during normal operation.

Working conditions

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

		DPX050	DPX100			DPX160	
			Std.	HP	HF	Std.	HP
Nominal flow rating	inlet port with compensator, stand-by (margin pressure) 14 bar - 200 psi	80 l/min 21 US gpm	120 l/min 32 US gpm	>120 l/min >32 US gpm		230 l/min 61 US gpm	
	working ports, stand-by (margin pressure) 14 bar - 200 psi	50 l/min 13 US gpm	90 l/min 24 US gpm	120 l/min 32 US gpm		160 l/min 42 US gpm	
Max. pressure	P inlet port	300 bar 4350 psi	300 bar 4350 psi	380 bar ⁽¹⁾ 5550 psi ⁽¹⁾	380 bar ⁽²⁾ 5550 psi ⁽²⁾	300 bar 4350 psi	380 bar ⁽³⁾ 5550 psi ⁽³⁾
	A and B working ports	350 bar 5100 psi	300 bar 4350 psi	420 bar ⁽¹⁾ 6000 psi ⁽¹⁾	420 bar ⁽²⁾ 6000 psi ⁽²⁾	300 bar 4350 psi	420 bar ⁽³⁾ 6000 psi ⁽³⁾
Back pressure (max.) on outlet T port	with mechanical devices	10 bar - 145 psi					
	with hydr./pneum./electric devices	30 bar - 435 psi					
	with electrohydraulic devices	see related pages					
Standard internal leakage A(B)->T	Δp=100 bar - 1450 psi	max. 6.5 cm³/min max. 0.40 in³/min	max. 9 cm³/min max. 0.55 in³/min			max. 12 cm³/min max. 0.73 in³/min	
	with port valves Δp=100 bar - 1450 psi	max. 11.5 cm³/min max. 0.70 in³/min	max. 14 cm³/min max. 0.85 in³/min			max. 17 cm³/min max. 1.04 in³/min	
Fluid	Mineral oil						
Fluid temperature range	with NBR seals (BUNA-N)	from -20°C to 80°C - from -4°F to 176°F					
	with FPM seals (VITON), standard	from -20°C to 100°C - from -4°F to 212°F					
Viscosity	operating range	from 15 to 75 mm²/s - from 15 to 75 cSt					
	min.	12 mm²/s - 12 cSt					
	max.	400 mm²/s - 400 cSt					
Contamination level	max.	-/18/15 - ISO 4406 - NAS 1638 class 9					
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 electric/electrohydraulic devices	from -20°C to 50°C - from -4°F to 122°F					

NOTES: ⁽¹⁾ According to NFPA T 2.6.1., fatigue rating verified for 1 million cycles on 6 sample valves with test Pressure = 1.23 x Max. pressure indicated - ⁽²⁾ According to NFPA T 2.6.1., fatigue rating verified for 1 million cycles on 5 sample valves with test Pressure = 1.16 x Max. pressure indicated - ⁽³⁾ Fatigue rating verified for 1 million cycles on 6 sample valves with Test Pressure = 1.10 x Max. pressure indicated

Standard threads

REFERENCE STANDARD					
	BSP	UN-UNF	METRIC ⁽⁴⁾	METRIC ISO ⁽⁴⁾	NPTF
THREAD ACCORDING TO	ISO 228/1	ISO 263			
	BS 2779	ANSI B1.1 unified	ISO 262	ISO 262	ANSI B1.20.3
CAVITY	ISO	1179	11926	9974-1	6149
DIMENSION	SAE		J1926		J2244
ACCORDING TO	DIN	3852-2 shape X or Y		3852-1 shape X or Y	J476a

NOTE ⁽⁴⁾: Metric threading is available on request

PORTS THREADING	DPX050		DPX100		DPX160	
	BSP	UN-UNF	BSP	UN-UNF	BSP	UN-UNF
P inlet	G 1/2	3/4-16 (SAE 8)	G 1/2 - G 3/4 ⁽⁵⁾	7/8-14 (SAE10) 1 1/16-12 (SAE12) ⁽⁵⁾	G 3/4	1 1/16-12 (SAE12)
A and B ports	G 3/8	9/16-18 (SAE 6)	G 3/8 G 1/2 ⁽⁵⁾ - G 3/4 ⁽⁵⁾	3/4-16 (SAE8) 1 1/16-12 (SAE12) ⁽⁵⁾	G 3/4	1 1/16-12 (SAE12)
T outlet	G 1/2	3/4-16 (SAE 8)	G 1/2 - G 3/4 ⁽⁵⁾	7/8-14 (SAE10) 1 1/16-12 (SAE12) ⁽⁵⁾	G 1	1 5/16-12 (SAE16)
V pilot	G 1/4	7/16-20 (SAE 4)	G 1/4	9/16-18 (SAE6)	G 1/4	9/16-18 (SAE6)
L drain	G 1/4	9/16-18 (SAE 6)	G 1/4	9/16-18 (SAE6)	G 1/4	9/16-18 (SAE6)
Hydraulic control ports	G 1/4	7/16-20 (SAE 4)	G 1/4	7/16-20 (SAE 4)	G 1/4	9/16-18 (SAE 6)
Pneumatic control ports			NPTF 1/8-27	NPTF 1/8-27		

NOTE ⁽⁵⁾ - Optional threading

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• DPX160

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• Accessories

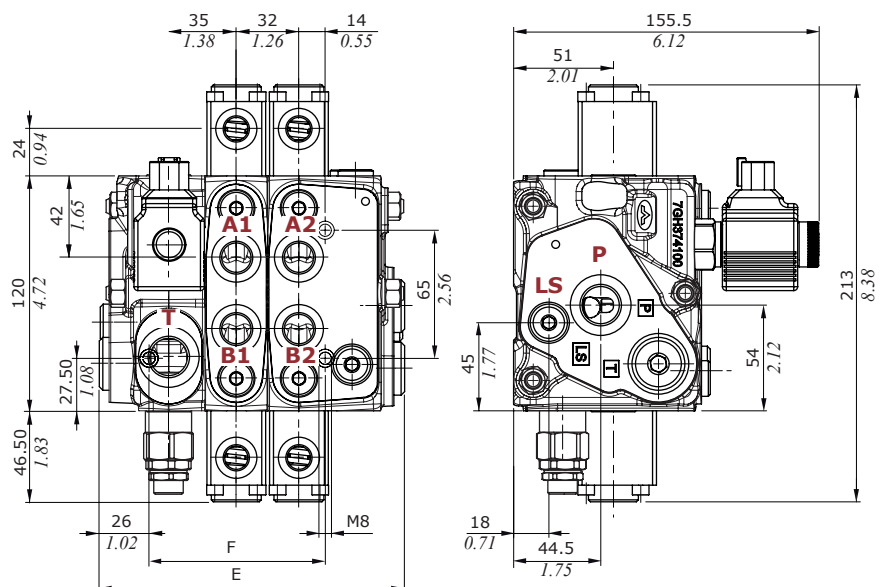
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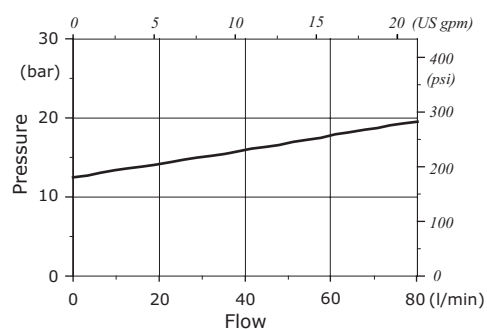
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Dimensional data and performance

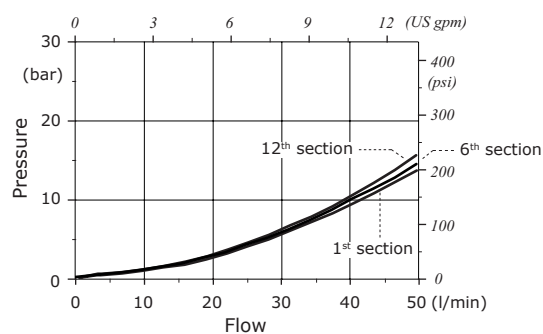


Type	E		F	
	mm	in	mm	in
DPX050/1	119	4.69	57.5	2.26
DPX050/2	151	5.95	89.5	3.52
DPX050/3	183	7.20	121.5	4.78
DPX050/4	215	8.46	153.5	6.04
DPX050/5	247	9.72	185.5	7.30
DPX050/6	279	10.98	217.5	8.56
DPX050/7	311	12.24	249.5	9.82
DPX050/8	343	13.50	281.5	11.08
DPX050/9	375	14.76	313.5	12.34
DPX050/10	407	16.02	345.5	13.60
DPX050/11	439	17.28	377.5	14.86
DPX050/12	471	18.54	409.5	16.12

P⇒T Pressure drop inlet compensator (margin pressure)

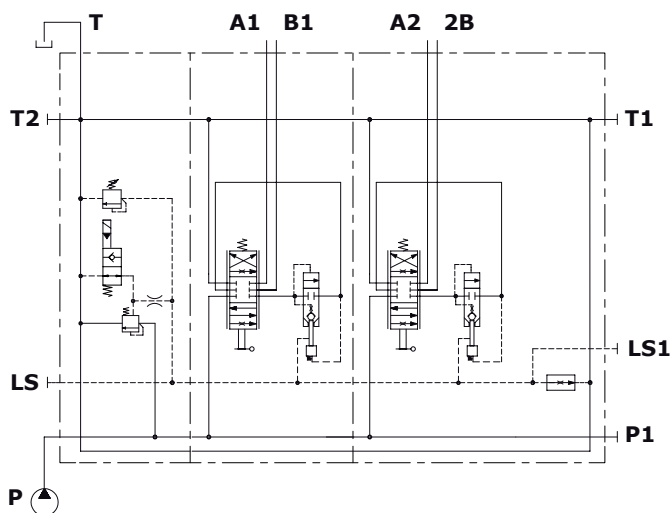


A(B)⇒T pressure drop (standard spool @ max.stroke)

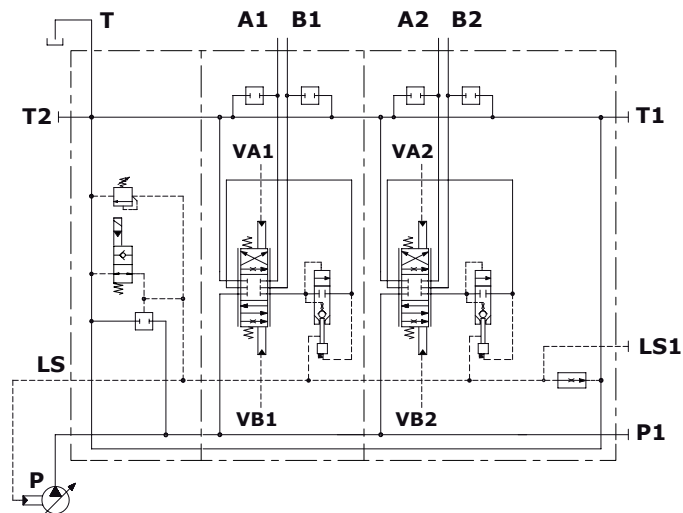


Hydraulic circuit

Configuration example with mechanical and hydraulic controls

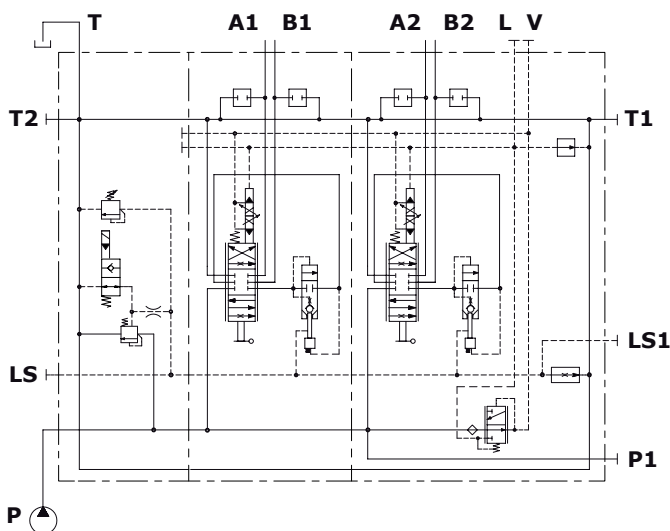


Open center circuit and lever control, with unloader valve, without port valve arrangement

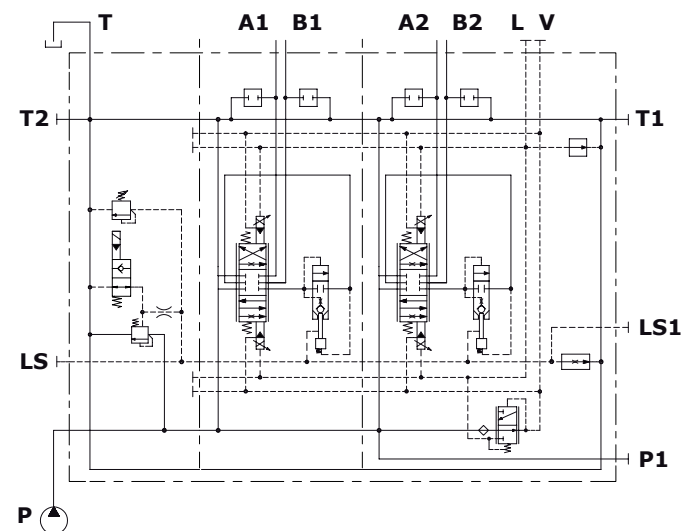


Closed center circuit and proportional hydraulic control, with unloader valve and port valve arrangement

Configuration example with electrohydraulic controls



Open center circuit and one-side proportional electrohydraulic control with lever, unloader valve, port valve arrangement and pressure reducing valve, internal pilot and drain



Open center circuit and two-side proportional electrohydraulic control, with unloader valve and port valve arrangement and pressure reducing valve, internal pilot and drain

Complete section ordering codes

DPX050/3/AM2(TGW3-175\ELN)/Q-104(40\40)-8L/Q-I104(40\40)-8IM/RQ-104(40\40)-8L-.....-12VDC - FPM

Nr. of working
sections

1

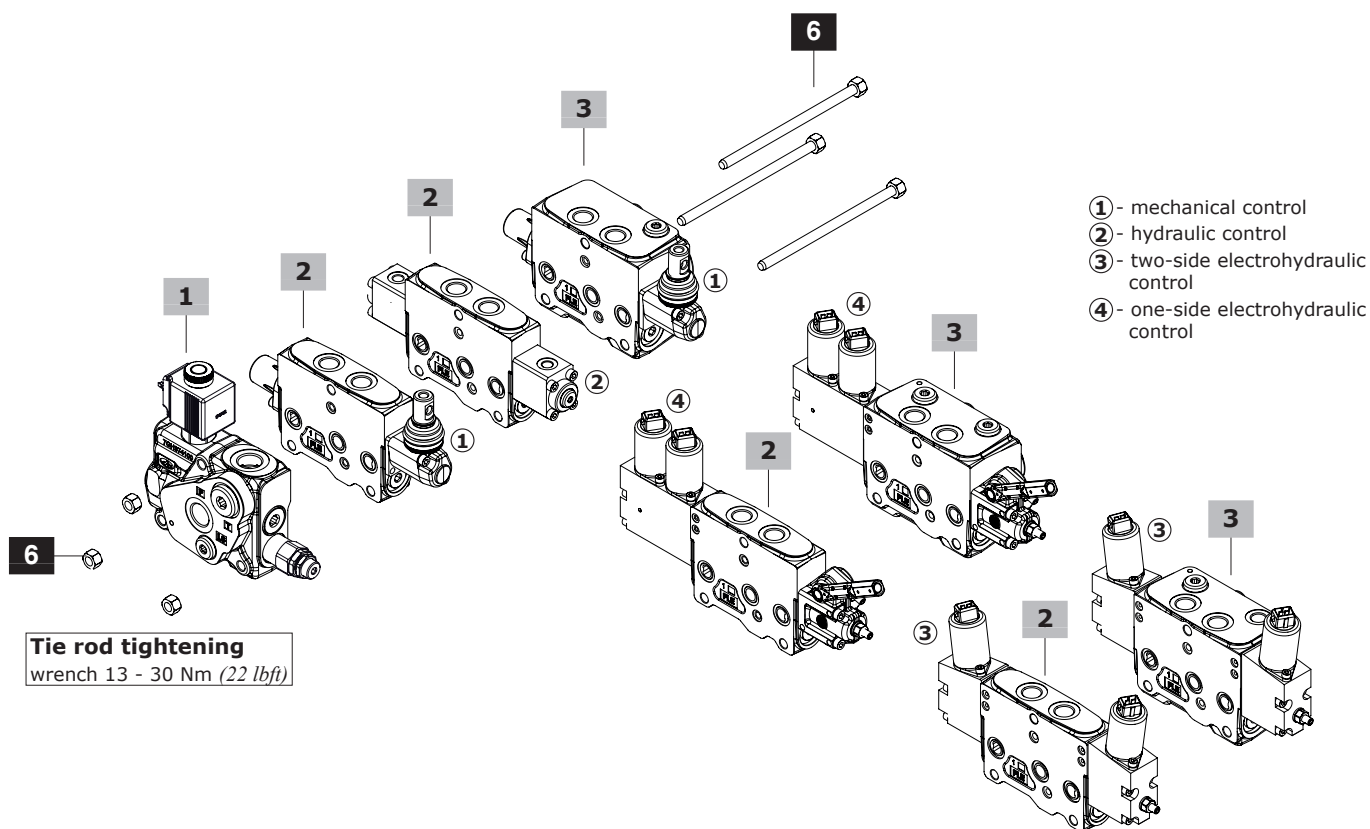
2

3

4

5

6



Complete section ordering codes

1 Complete inlet section *

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX050/AM2(TGW3-175/ELN)-12VDC-FPM**

CODE: 660203001V

DESCRIPTION: With compensator, pressure relief valve and unloader valve, with P-T-T2-LS ports (T2-LS plugged)

TYPE: **DPX050/AM2(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 660203003V

DESCRIPTION: As previous with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX050/AM2(SU/TGW3-175/ELN)-12VDC-FPM**

CODE: 660203002V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

Closed Center circuit

TYPE: **DPX050/AN2(TGW3-175/ELN)-12VDC-FPM**

CODE: 660203004V

DESCRIPTION: Without compensator, with pressure relief valve and unloader valve, with P-T-T2-LS ports (T2 plugged)

TYPE: **DPX050/AN2(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 660203006V

DESCRIPTION: As previous with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX050/AN2(SU/TGW3-175/ELN)-12VDC-FPM**

CODE: 660203005V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

2 Complete working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX050/Q-104(40/40)-8L-FPM**

CODE: 660113001V

DESCRIPTION: Lever control without port valve arrangement

TYPE: **DPX050/P-104(40/40)-8L.U3T-FPM**

CODE: 660103001V

DESCRIPTION: As previous with port valve arrangement

Proportional hydraulic control

TYPE: **DPX050/Q-I104(40/40)-8IM-FPM**

CODE: 660113002V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX050/P-I104(40/40)-8IM.U3T-FPM**

CODE: 660103002V

DESCRIPTION: With port valve arrangement

Two-side proportional electrohydraulic control

TYPE: **DPX050/QE-I104(40/40)-8EB3F3-12VDC-FPM**

CODE: 660113003V

DESCRIPTION: With spool stroke limiter, without port valve arrangement

TYPE: **DPX050/PE-I104(40/40)-8EB3F3.U3T-12VDC-FPM**

CODE: 660103003V

DESCRIPTION: As previous with port valve arrangement

One-side proportional electrohydraulic control

TYPE: **DPX050/QZ-I104(40/40)-8EZ3LQF3-12VDC-FPM**

CODE: 660113005V

DESCRIPTION: With lever and spool stroke limiter, without port valve arrangement

TYPE: **DPX050/PZ-I104(40/40)-8EZ3LQF3.U3T-12VDC-FPM**

CODE: 660113006V

DESCRIPTION: As previous with port valve arrangement

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

3 Complete working section with outlet *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX050/RQ-104(40/40)-8L-FPM**

CODE: 660303001V

DESCRIPTION: Lever control, with bleed valve and P1-T1-LS1 side ports (plugged), without port valves arrangement

TYPE: **DPX050/RP-104(40/40)-8L.U3T-FPM**

CODE: 660303003V

DESCRIPTION: As previous with port valve arrangement

Hydraulic control

TYPE: **DPX050/RQ-I104(40/40)-8IM-FPM**

CODE: 660303011V

DESCRIPTION: With bleed valve and P1-T1-LS1 side ports (plugged), without port valve arrangement

TYPE: **DPX050/RP-I104(40/40)-8IM.U3T-FPM**

CODE: 660303012V

DESCRIPTION: As previous with port valve arrangement

Two-side proportional electrohydraulic control

TYPE: **DPX050/RQE-I104(40/40)-8EB3F3-12VDC-FPM**

CODE: 660303005V

DESCRIPTION: With spool stroke limiter, bleed valve, pressure reducing valve and P1-T1-LS1 side ports (plugged), V pilot and L drain ports plugged, without port valve arrangement

TYPE: **DPX050/RPER-I104(40/40)-8EB3F3.U3T-12VDC-FPM**

CODE: 660303006V

DESCRIPTION: As previous with port valve arrangement

One-side proportional electrohydraulic control

TYPE: **DPX050/RQZ-I104(40/40)-8EZ3LQF3-12VDC-FPM**

CODE: 660303018V

DESCRIPTION: With lever and spool stroke limiter, bleed valve, pressure reducing valve and P1-T1-LS1 side ports (plugged), V pilot and L drain ports plugged, without port valve arrangement

TYPE: **DPX050/RPZ-I104(40/40)-8EZ3LQF3.U3T-12VDC-FPM**

CODE: 660303019V

DESCRIPTION: As previous with port valves arrangement

4 Valve threading

Only specify if it is different from BSP standard (see page 6).

5 Voltage

Specify the voltage of electric devices.

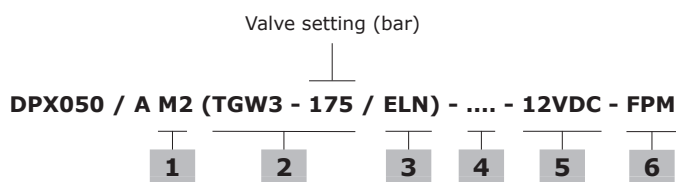
6 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

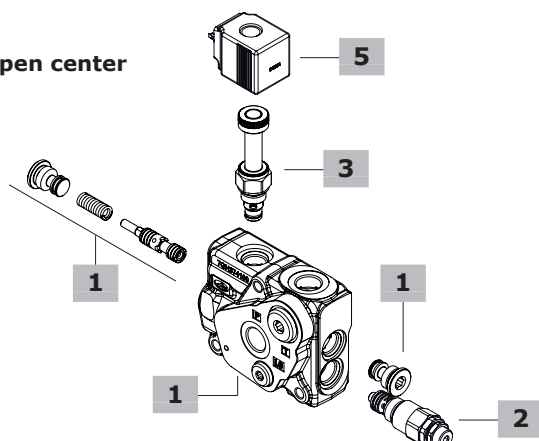
7 Assembling kit

CODE	DESCRIPTION
5TIR108125	Tie rod kit for 1 working section directional valve
5TIR108157	Tie rod kit for 2 working section directional valve
5TIR108192	Tie rod kit for 3 working section directional valve
5TIR108222	Tie rod kit for 4 working section directional valve
5TIR108253	Tie rod kit for 5 working section directional valve
5TIR108285	Tie rod kit for 6 working section directional valve
5TIR108320	Tie rod kit for 7 working section directional valve
5TIR108349	Tie rod kit for 8 working section directional valve
5TIR108381	Tie rod kit for 9 working section directional valve
5TIR108413	Tie rod kit for 10 working section directional valve
5TIR108446	Tie rod kit for 11 working section directional valve
5TIR108477	Tie rod kit for 12 working section directional valve

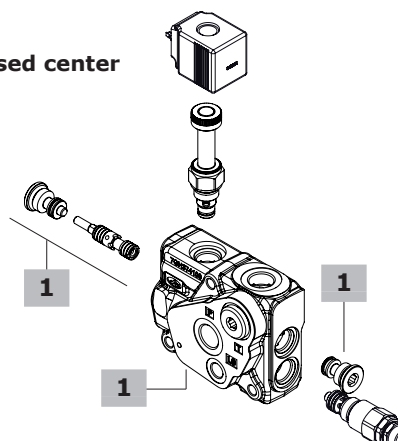
Inlet section part ordering codes



AM: open center



AN: closed center



1 Inlet section kit* page 13

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX050/M2/EL-FPM** CODE: 5FIA150340V

DESCRIPTION: With P-T-T2-LS ports (T2-LS plugged) arranged for unloader valve

TYPE: **DPX050/M2(SU)/EL-FPM** CODE: 5FIA150330V

DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX050/M2(SO)/EL-FPM** CODE: 5FIA150331V

DESCRIPTION: As previous one with non return flow limiter from inlet section to working section and by-pass valve

Closed Center circuit

TYPE: **DPX050/N2/EL-FPM** CODE: 5FIA150341V

DESCRIPTION: With P-T-T2-LS ports, arranged for unloader valve (T2 plugged)

TYPE: **DPX050/N2(SU)/EL-FPM** CODE: 5FIA150332V

DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX050/N2(SO)/EL-FPM** CODE: 5FIA150333V

DESCRIPTION: As previous one with non return flow limiter from inlet section to working section and by-pass valve

2 Main pressure relief valve page 15

The codes are referred to parts with FPM o-ring seals

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

TYPE	CODE	DESCRIPTION
(TGW2-80)	OMC09002009	Range 10-120 bar (145-1750 psi) std setting 80 bar (1160 psi)
(TGW3-175)	OMC09002007	Range 40-220 bar (580-3200 psi) std setting 175 bar (2550 psi)
(TGW4-250)	OMC09002005	Range 200-350 bar (2900-5100 psi) std setting 250 bar (3600 psi)
SV	XTAP524340V	Relief valve blanking plug

3 Solenoid operated unloading valve page 15

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
ELN	0EF08002015	Without emergency override
ELV	0EF08002017	With screw type emergency override
ELP	0EF08002010	With push-button emergency override
ELT	0EF08002016	With "twist & push" emergency override
LT	XTAP510320V	Unloading valve blanking plug

4 Section threading

Only specify if it is different from BSP standard (see page 6).

5 Coil

TYPE	CODE	DESCRIPTION
12VDC	4SLE001200A	Coil type BER , ISO4400 conn., 12VDC

For complete available coil list see page 125.

6 Seals

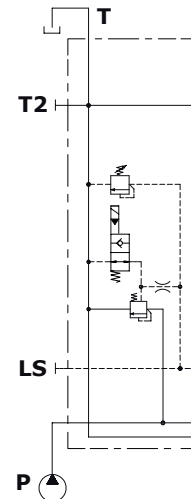
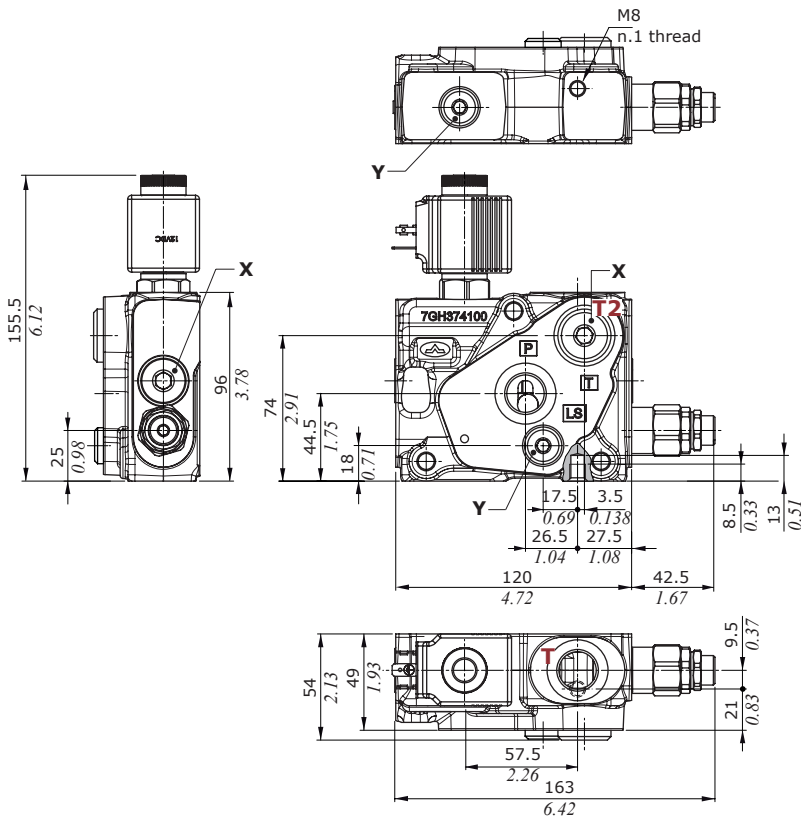
TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

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

Dimensions and hydraulic circuit

Example of M type Open Center section

M2 type



Wrenches and tightening torques

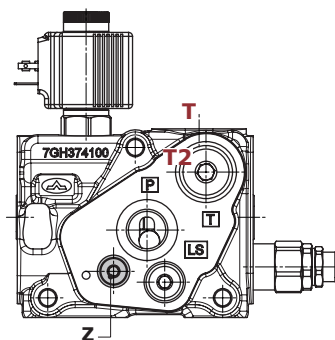
X = allen wrench 8 - 24 Nm (17.7 lbft)

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

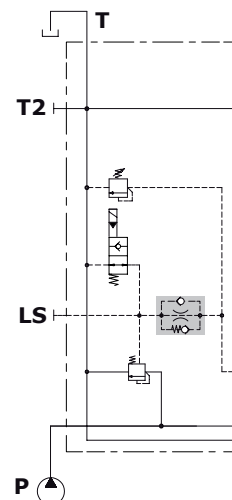
Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

NOTE: for valves wrench and torque see related pages

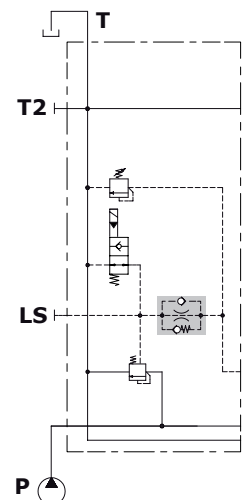
M2(SO) or M2(SU) type



M2(SU) type



M2(SO) type

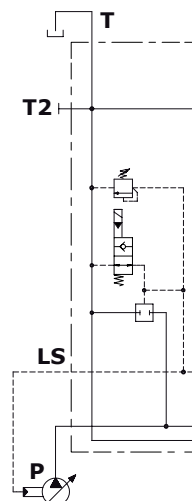
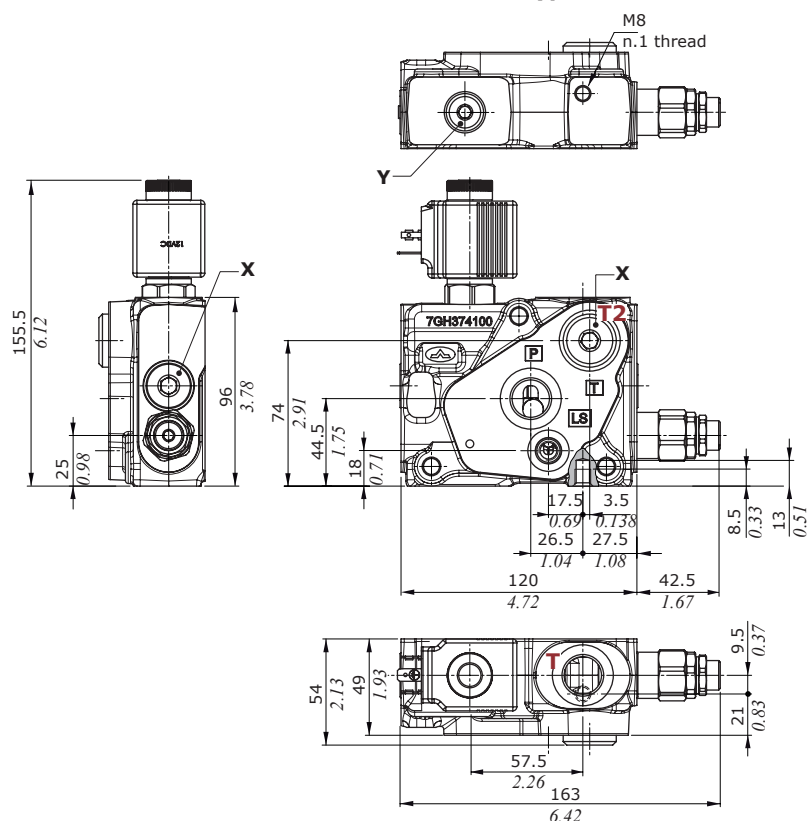


Inlet section

Dimensions and hydraulic circuit

Example of N type Closed Center section

N2 type



Wrenches and tightening torques

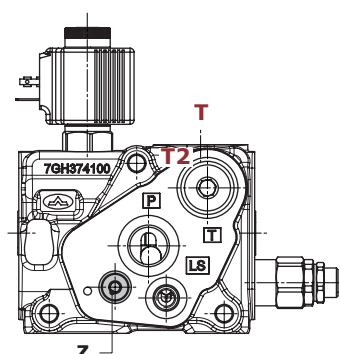
X = allen wrench 8 - 24 Nm (17.7 lbft)

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

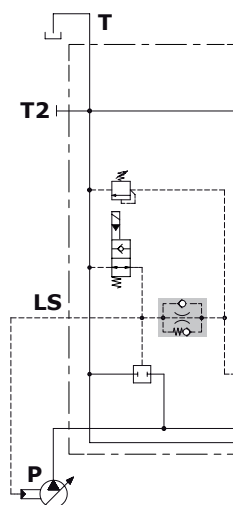
Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

NOTE: for valves wrench and torque see related pages

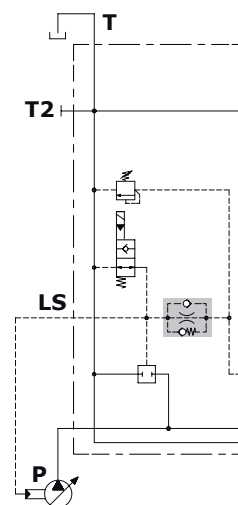
N2(SO) or N2(SU) type



N2(SU) type

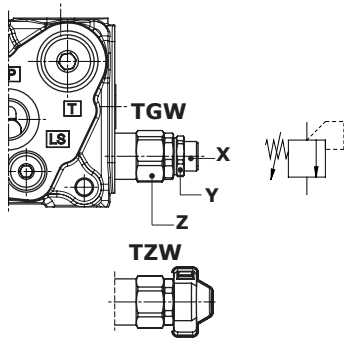


N2(SO) type



Main pressure relief valve

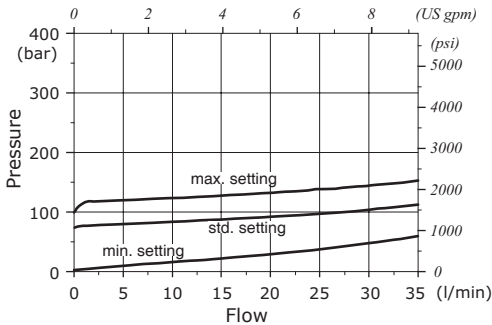
Setting types



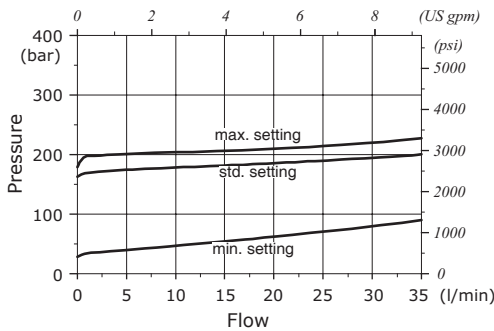
Legenda

TGW: free setting
TZW: valve set and locked
 (cap code 4COP126301, n.2 pcs)
 RAL3003 pigmented
Wrenches and tightening torques
 X = allen wrench 5
 Y = wrench 19 - 20 Nm (14.7 lbf)
 Z = wrench 24 - 42 Nm (31 lbf)

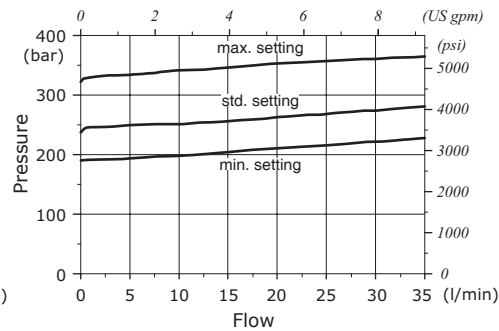
Setting range: TGW2 type



Setting range: TGW3 type

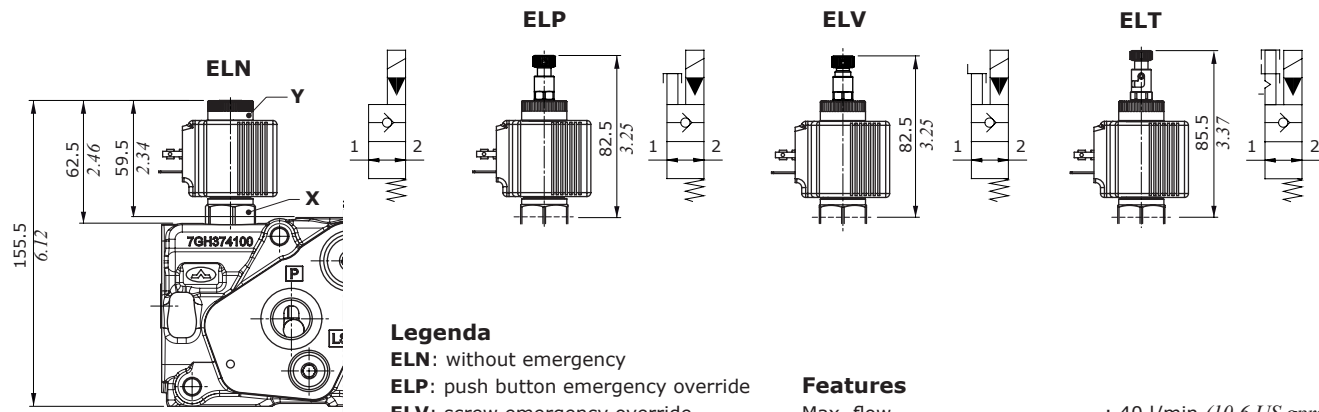


Setting range: TGW4 type



Solenoid operated unloading valve

Manual emergency types



Legenda

ELN: without emergency
ELP: push button emergency override
ELV: screw emergency override
ELT: "push&twist" emergency override
Wrenches and tightening torques
 X = wrench 24 - 30 Nm (22 lbf)
 Y = manual tightening

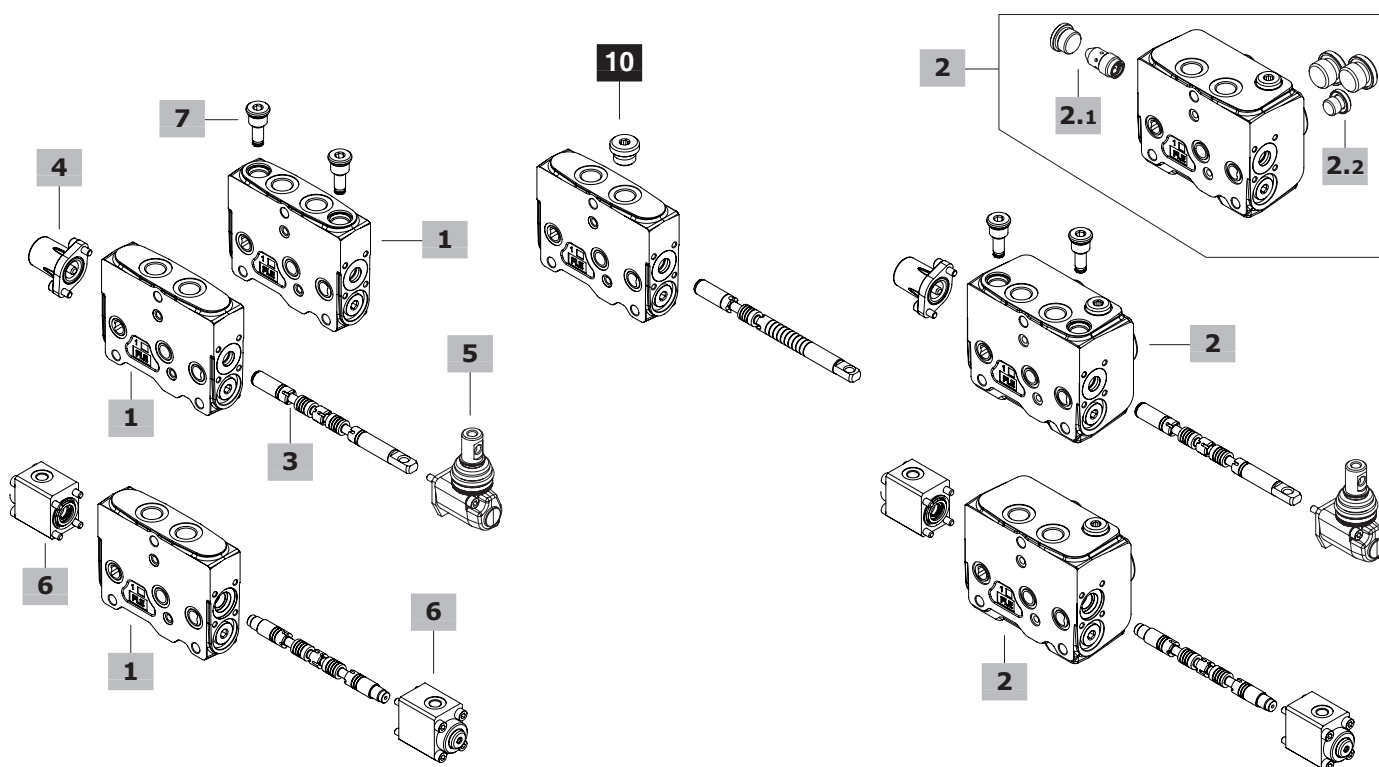
Features

Max. flow 40 l/min (10.6 US gpm)
 Max. pressure 380 bar (5500 psi)
 Internal leakage 0.25 cm³/min @ 210 bar
 (0.015 in³/min @ 3050 psi)

For coil features and options see **BER** type coil at page 125.

Working and outlet section part ordering codes (mechanical and hydraulic)

flow on A/B ports (l/min)			Valve setting (bar)					
			A port	B port				
DPX050 / P - 104(40/40) - 8	L . U1(100) U2(120) -	-FPM						
1	3	4	5	7	8	9		
DPX050 / RP - 104(40/40) - 8 L . U3T-	-FPM							
	2							
DPX050 / Q - I104(40/40) - 8IM -	-FPM							
1	6							
DPX050 / RQ - I104(40/40) - 8IM (VBT) - F1-	-FPM							
	2	2.1	2.2					



1 Working section kit* page 20

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: **DPX050/Q-FPM** CODE: 5EL10A3010V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX050/P-FPM** CODE: 5EL10A3000V

DESCRIPTION: With port valve arrangement

For hydraulic control

TYPE: **DPX050/Q-IM-FPM** CODE: 5EL10A3010AV

DESCRIPTION: Without port valve arrangement

TYPE: **DPX050/P-IM-FPM** CODE: 5EL10A3000AV

DESCRIPTION: With port valve arrangement

2 Working section kit with outlet* page 21

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: **DPX050/RQ-FPM** CODE: 5FIA20A310V

DESCRIPTION: With bleed valve, with P1-T1-LS1 plugged port, without port valve arrangement

TYPE: **DPX050/RP-FPM** CODE: 5FIA20A300V

DESCRIPTION: As previous one with port valve arrangement

For hydraulic control

TYPE: **DPX050/RQ-IM-FPM** CODE: 5FIA20A310AV

DESCRIPTION: With bleed valve, with P1-T1-LS1 plugged port, without port valve arrangement

TYPE: **DPX050/RP-IM-FPM** CODE: 5FIA20A300AV

DESCRIPTION: As previous one with port valve arrangement

Working and outlet section part ordering codes (mechanical and hydraulic)

2.1 Bleed valve page 22

TYPE	CODE	DESCRIPTION
(-)	X138850000	Bleed valve
(VBT)	4TAP416810	Valve blanking plug
Both options need cavity plug:		
	3XTAP822151	SAE8 plug, nr.1, FPM o-ring seals

2.2 Parts*

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
<u>P1-T1-LS1 plugged ports</u>		
-	XTAP727200	G1/2 plug, nr.2
	XTAP719160	G1/4 plug, nr.1

P1-T1 plugged ports, LS1 open

F1	XTAP727200	G1/2 plug, nr.2
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3 Spool page 23

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE	CODE	DESCRIPTION
------	------	-------------

For mechanical control

Double acting with A and B closed in neutral position, floating circuit with 13RZ type positioner (4 position)

105(50)	3CUA110005	50 l/min (13 US gpm) flow
104(40)	3CUA110004	40 l/min (10.5 US gpm) flow
103(30)	3CUA110003	30 l/min (7.9 US gpm) flow
102(20)	3CUA110002	20 l/min (5.3 US gpm) flow
101(10)	3CUA110001	10 l/min (2.6 US gpm) flow
106(5)	3CUA110006	5 l/min (1.3 US gpm) flow

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

2H05(50)	3CUA124005	50 l/min (13 US gpm) flow
2H04(40)	3CUA124004	40 l/min (10.5 US gpm) flow
2H03(30)	3CUA124003	30 l/min (7.9 US gpm) flow
2H02(20)	3CUA124002	20 l/min (5.3 US gpm) flow
2H01(10)	3CUA124001	10 l/min (2.6 US gpm) flow
2H06(5)	3CUA124006	5 l/min (1.3 US gpm) flow

Single acting on A, B plugged: G3/8 plug is required

305(50)	3CUA131005	50 l/min (13 US gpm) flow
302(20)	3CUA131002	20 l/min (5.3 US gpm) flow

For hydraulic control

Double acting with A and B closed in neutral position, floating circuit with 4 positions 13IMP type control

1105(50)	3CUA310005	50 l/min (13 US gpm) flow
1104(40)	3CUA310004	40 l/min (10.5 US gpm) flow
1103(30)	3CUA310003	30 l/min (7.9 US gpm) flow
1102(20)	3CUA310002	20 l/min (5.3 US gpm) flow
1101(10)	3CUA310001	10 l/min (2.6 US gpm) flow
1106(5)	3CUA310006	5 l/min (1.3 US gpm) flow

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

12H05(50)	3CUA324005	50 l/min (13 US gpm) flow
12H04(40)	3CUA324004	40 l/min (10.5 US gpm) flow
12H08(30)	3CUA324008	30 l/min (7.9 US gpm) flow
12H07(20)	3CUA324007	20 l/min (5.3 US gpm) flow
12H01(10)	3CUA324001	10 l/min (2.6 US gpm) flow
12H06(5)	3CUA324006	5 l/min (1.3 US gpm) flow

Single acting on A or B, other port plugged: G3/8 plug is required

1305-1405(50)	3CUA331005	50 l/min (13 US gpm) flow
1302-1402(20)	3CUA331002	20 l/min (5.3 US gpm) flow

10 Plug for single acting spool *

CODE	DESCRIPTION
XTAP722160	G3/8 plug, FPM o-ring seals

4 "A" side spool positioners page 25

TYPE	CODE	DESCRIPTION
7FT	5V0710A001	With friction and neutral position notch
8	5V08102000	3 pos. with spring return to neutral position
8F2	5V0810A001	Spool stroke limiter on B port
8D	5V08102200	External pin with M6 female thread
8D2	5V08102220	External pin with M8 male thread
9BZ	5V09202010	Detent in position 1
10BZ	5V10202010	Detent in position 2
11BZ	5V11202010	Detent in positions 1 and 2
12	5V12102000	2 positions, detent in pos. 1 and 2
<u>For floating circuit (standard spool)</u>		
13RZ	5V13306020	4 pos., detent in 4 th position with spool in, spring return to neutral position

5 "B" side spool control kit page 27

TYPE	CODE	DESCRIPTION
L	5LEV10A000	Standard lever box
LF1	5LEV10A001	As L, with spool stroke limiter on A port
SLP	5COP150000	Without lever with dust-proof plate
TQ	5TEL10A100	Flexible cable connection

6 Proportional hydraulic control* page 28

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
8IM	5IDR20A300V	Range 8-27 bar (116-392 psi)
8IMX	5IDR20A301V	Range 3.5-20 bar (51-290 psi)
8IMF3	5IDR20A302V	Range 8-27 bar (116-392 psi), with spool stroke limiter on A and B ports
8IMXF3	5IDR20A303V	Range 3.5-20 bar (51-290 psi), with spool stroke limiter on A and B ports

For floating circuit (standard spool)

13IMP	5IDR20A310V	Range 4-16.5-28 bar (58-239-406 psi)
--------------	-------------	--------------------------------------

7 Port valves page 36

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
UT	XTAP518370V	Valve blanking plug
C	5KIT411000V	Anticavitation valve

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

TYPE: U 100	CODE: 5KIT308 100 V
└─ setting (bar)	└─ setting (bar)

SETTING:

40 bar (580 psi)	50 bar (725 psi)	63 bar (870 psi)
80 bar (1150 psi)	100 bar (1450 psi)	120 bar (1750 psi)
130 bar (1900 psi)	140 bar (2050 psi)	150 bar (2150 psi)
165 bar (2400 psi)	175 bar (2550 psi)	185 bar (2700 psi)
200 bar (2900 psi)	210 bar (3050 psi)	220 bar (3200 psi)
235 bar (3400 psi)	250 bar (3600 psi)	270 bar (3900 psi)
300 bar (4350 psi)	340 bar (4950 psi)	

8 Section threading

Only specify if it is different from BSP standard (see page 6).

9 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

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

NOTE (-): "Type" omitted in section description

Working and outlet section part ordering codes (electrohydraulic)

flow on A/B ports (l/min) Valve setting (bar)
A port B port

DPX050 / PZ - I104(40/40) - 8EZ3 LQF3 . U1(100) U2(120) - - 12VDC - FPM

1 3 4 5 7 8 4 9

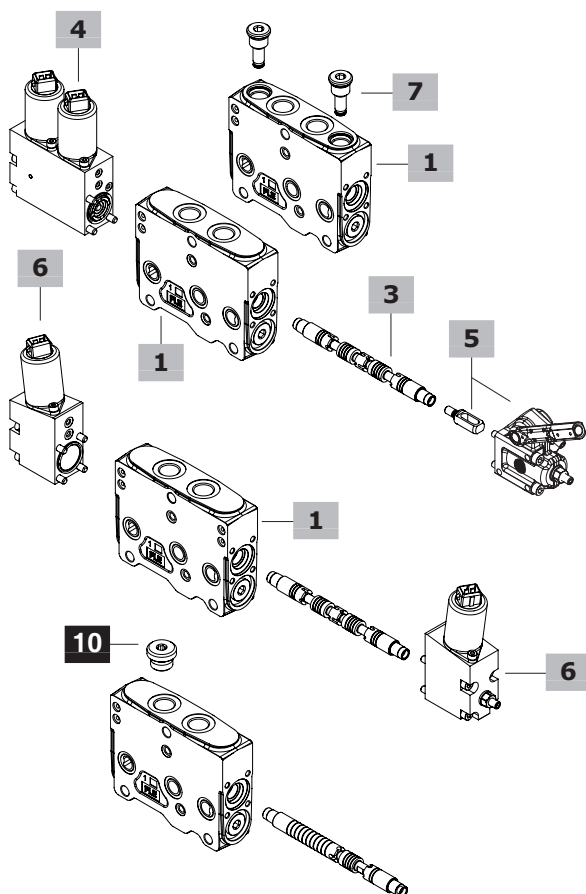
DPX050 / RQZ - I104(40/40) - 8EZ3LQF3 - (VBT / RT) - F1 - NOTAP(VL) - - 12VDC-FPM

2 2.1 2.2 2.3 2.4

DPX050 / QE - I104(40/40) - 8EB3F3 - - 12VDC -FPM

1 6 6 2

DPX050 / RQE - I104(40/40)-8EB3F3-....-12VDC-FPM



1 Working section kit* page 20

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: DPX050/QE-FPM CODE: 5EL10A3012V

DESCRIPTION: Without port valve arrangement

TYPE: DPX050/PE-FPM CODE: 5EL10A3002V

DESCRIPTION: With port valve arrangement

For one-side electrohydraulic control

TYPE: DPX050/QZ-FPM CODE: 5EL10A3210V

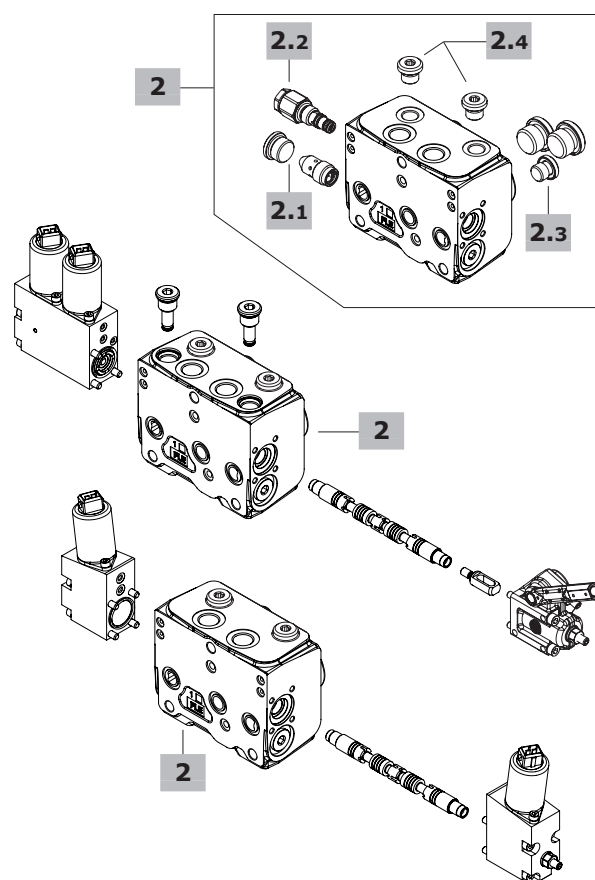
DESCRIPTION: Without port valve arrangement

TYPE: DPX050/PZ-FPM CODE: 5EL10A3200V

DESCRIPTION: With port valve arrangement

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

NOTE (-): "Type" omitted in section description



2 Working section kit with outlet* page 21

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: DPX050/RQE-FPM CODE: 5FIA20A313V

DESCRIPTION: With bleed valve, with P1-T1-LS1 plugged port, without port valve arrangement

TYPE: DPX050/RPE-FPM CODE: 5FIA20A301V

DESCRIPTION: As previous one with port valve arrangement

For one-side electrohydraulic control

TYPE: DPX050/RQZ-FPM CODE: 5FIA20A326V

DESCRIPTION: With bleed valve, with P1-T1-LS1 plugged port, without port valve arrangement

TYPE: DPX050/RPZ-FPM CODE: 5FIA20A325V

DESCRIPTION: As previous one with port valve arrangement

Working and outlet section part ordering codes (electrohydraulic)

2.1 Bleed valve page 22

TYPE	CODE	DESCRIPTION
(-)	X138850000	Bleed valve
(VBT)	4TAP416810	Valve blanking plug
Both options need cavity plug:		
	3XTAP822151	SAE8 plug, nr.1, FPM o-ring seals

2.2 Pressure reducing valve page 22

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
(-)	X219740035V	Pressure reducing valve, 30-45 bar (435-650 psi)
(RT)	XTAP418350V	Valve blanking plug

2.3 Parts*

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
<u>P1-T1-LS1 plugged ports</u>		
-	XTAP727200	G1/2 plug, nr.2
	XTAP719160	G1/4 plug, nr.1
<u>P1-T1 plugged Ports, LS1 open</u>		
F1	XTAP727200	G1/2 plug, nr.2

2.4 Pilot and drain*

TYPE	CODE	DESCRIPTION
(-)	XTAP719160	G1/4 plug, nr.2 for internal pilot and drain, FPM o-ring seals
NOTAP(VL)	4TAP310007	M10x1 DIN906 plug, for external drain

3 Spool page 23

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE	CODE	DESCRIPTION
<u>Double acting with A and B closed in neutral position, floating circuit with 4 positions controls (13... type)</u>		
I105(50)	3CUA310005	50 l/min (13 US gpm) flow
I104(40)	3CUA310004	40 l/min (10.5 US gpm) flow
I103(30)	3CUA310003	30 l/min (7.9 US gpm) flow
I102(20)	3CUA310002	20 l/min (5.3 US gpm) flow
I101(10)	3CUA310001	10 l/min (2.6 US gpm) flow
I106(5)	3CUA310006	5 l/min (1.3 US gpm) flow
<u>Double acting with A and B partially to tank in neutral position</u>		
I2H05(50)	3CUA324005	50 l/min (13 US gpm) flow
I2H04(40)	3CUA324004	40 l/min (10.5 US gpm) flow
I2H08(30)	3CUA324008	30 l/min (7.9 US gpm) flow
I2H07(20)	3CUA324007	20 l/min (5.3 US gpm) flow
I2H01(10)	3CUA324001	10 l/min (2.6 US gpm) flow
I2H06(5)	3CUA324006	5 l/min (1.3 US gpm) flow
<u>Single acting on A or B, other port plugged: G3/8 plug is required</u>		
I305-I405(50)	3CUA331005	50 l/min (13 US gpm) flow
I302-I402(20)	3CUA331002	20 l/min (5.3 US gpm) flow

9 Seals

TYPE	DESCRIPTION	TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard	NBR	NBR o-ring seals

10 Plug for single acting spool*

CODE	DESCRIPTION
XTAP722160	G3/8 plug, FPM o-ring seals

4 One-side electrohydr. control page 34

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
8EZ3-12VDC	5V0810A780V	AMP connector
8EZ3-24VDC	5V0810A785V	AMP connector
8EZ3F2-12VDC	5V0810A781V	AMP conn., spool stroke limiter
8EZ3F2-24VDC	5V0810A782V	As previous one
8EZ34-12VDC	5V0810A786V	Deutsch connector
8EZ34-24VDC	5V0810A787V	Deutsch connector
8EZ34F2-12VDC	5V0810A783V	Deutsch conn., spool stroke limiter
8EZ34F2-24VDC	5V0810A784V	As previous one
<u>For floating circuit (standard spool)</u>		
13EZ3P-12VDC	5V1310A780V	With Step, with AMP connector
13EZ3P-24VDC	5V1310A781V	As previous one
13EZ34P-12VDC	5V1310A782V	With Step, with Deutsch conn.
13EZ34P-24VDC	5V1310A783V	As previous one
<u>With spool position sensor</u>		
8EZ3SPSD-12VDC	5V0810A790V	AMP connector and digital sensor
8EZ3SPSD-24VDC	5V0810A791V	As previous one

5 "B" side options page 35

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
<u>For one-side electrohydraulic control</u>		
LQ	5LEV10A005V	Lever control
LQ180	5LEV10A006V	As previous one, turned of 180°
LQF3	5LEV10A004V	As LQ, spool stroke limiter on A, B ports
LQF3180	5LEV10A003V	As previous one, turned of 180°
SLC	5COP150010V	Endcap
SLCF1	5COP150011V	Endcap with spool stroke limiter

6 Two-side electrohydr. control page 33

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
8EB3-12VDC	5IDR90A200V	AMP connector
8EB3-24VDC	5IDR90A201V	AMP connector
8EB34-12VDC	5IDR90A202V	Deutsch connector
8EB34-24VDC	5IDR90A203V	Deutsch connector
8EB3F3-12VDC	5IDR90A204V	AMP conn., spool stroke limiter
8EB3F3-24VDC	5IDR90A205V	As previous one
8EB34F3-12VDC	5IDR90A206V	Deutsch conn., spool stroke limiter
8EB34F3-24VDC	5IDR90A207V	As previous one
<u>For floating circuit (standard spool)</u>		
13EB3P-12VDC	5IDR91A200V	With Step, AMP connector
13EB3P-24VDC	5IDR91A201V	As previous one
13EB34P-12VDC	5IDR91A202V	With Step, Deutsch connector
13EB34P-24VDC	5IDR91A203V	As previous one

7 Port valves page 36

TYPE	CODE	DESCRIPTION
U040	5KIT308040V	Setting: 40 bar (580 psi)

For complete list see previous pages.

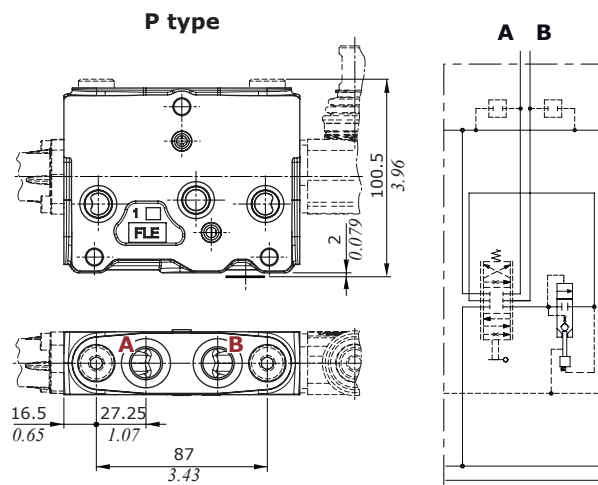
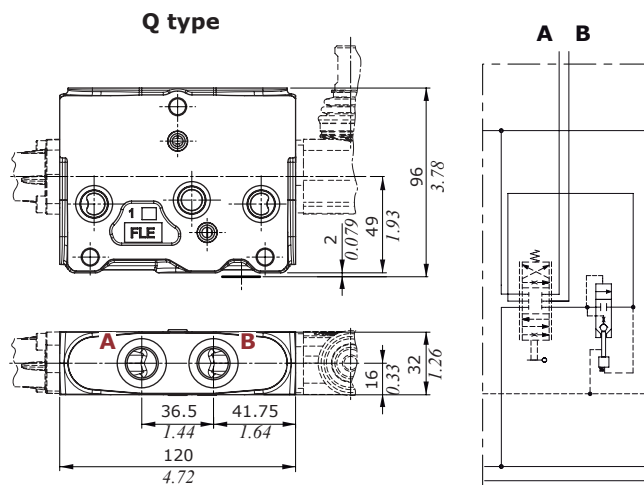
8 Section threading

Only specify if it is different from BSP standard (see page 4).

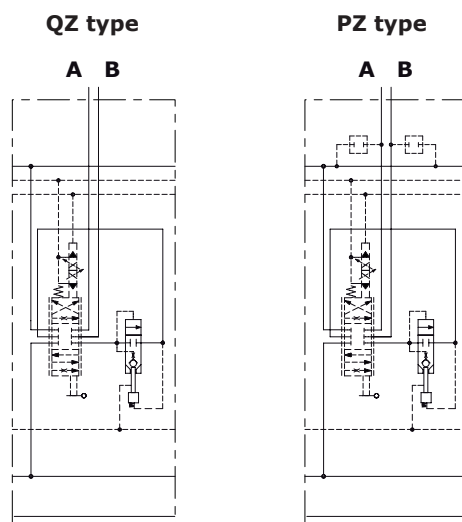
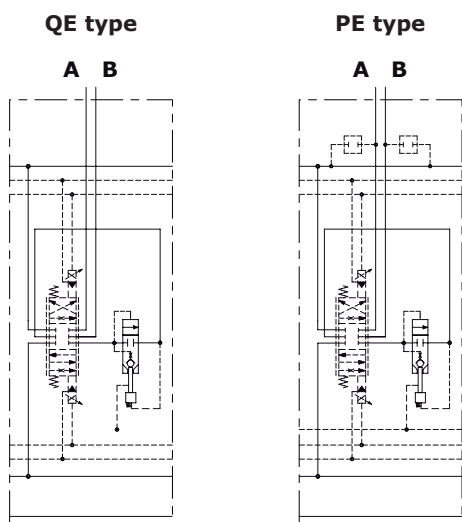
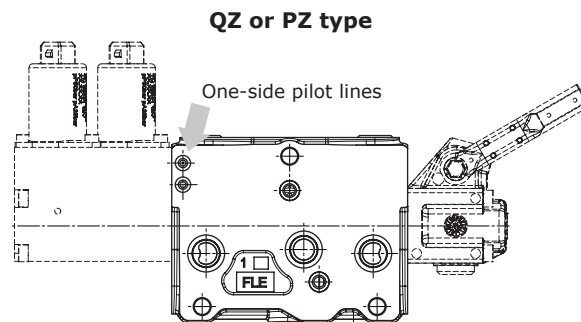
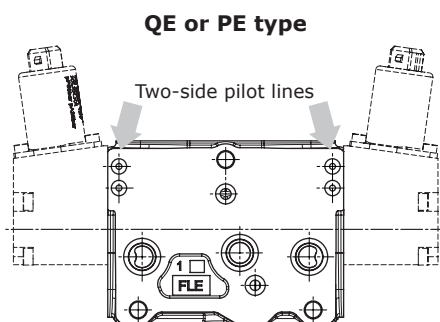
Working and outlet section

Dimensions and hydraulic circuit

Section for mechanical and hydraulic controls



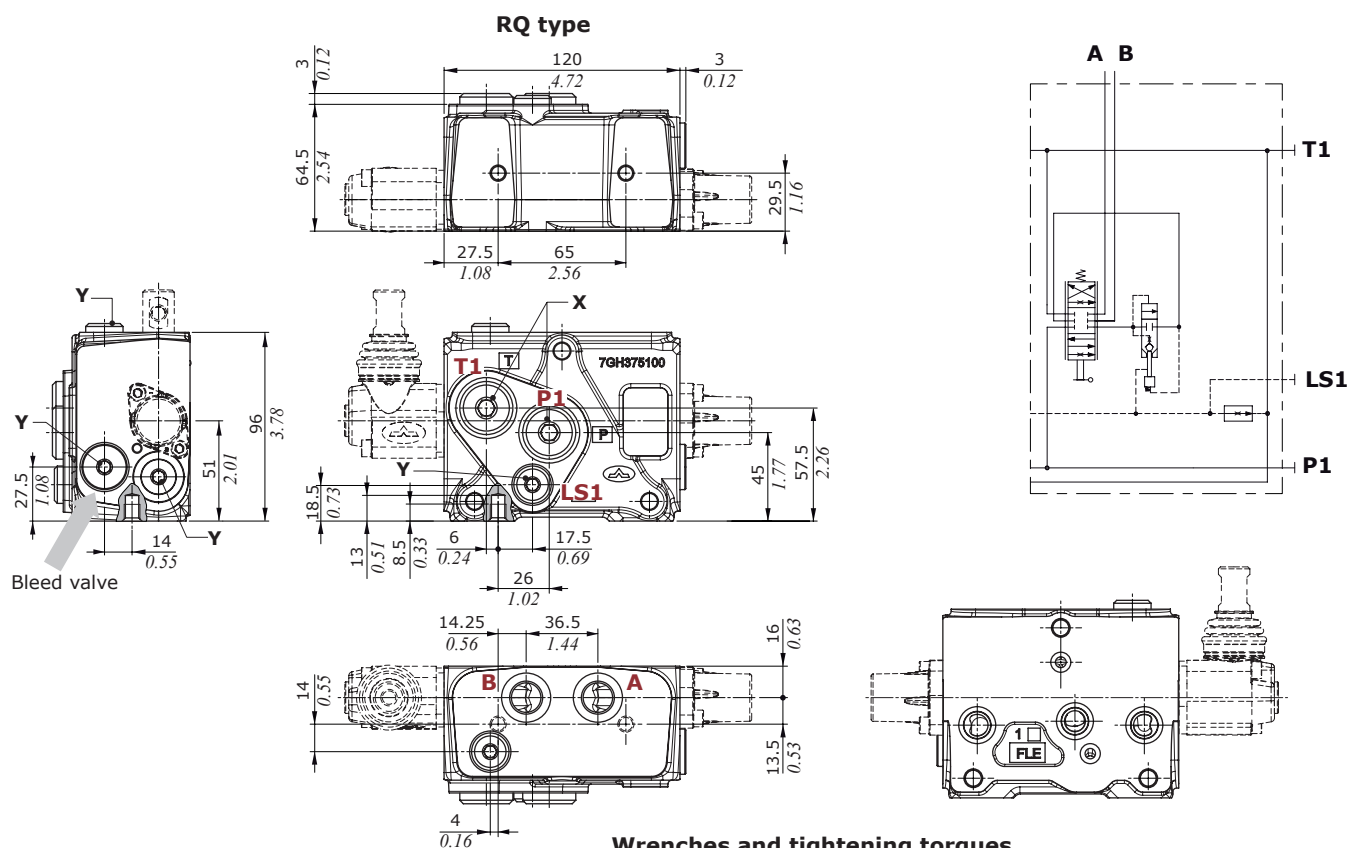
Section for electrohydraulic controls



Working and outlet section

Dimensions and hydraulic circuit

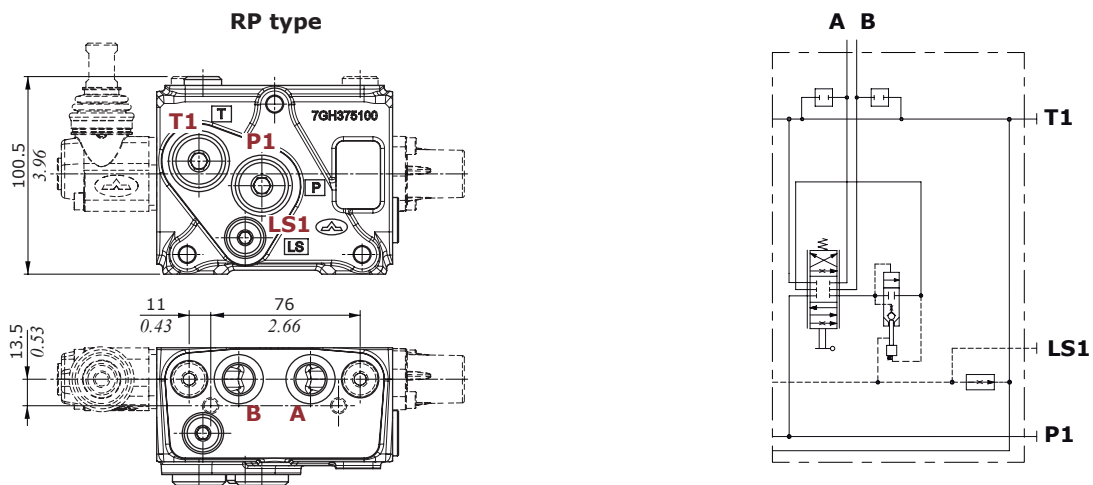
Section with outlet for mechanical and hydraulic controls



Wrenches and tightening torques

X = allen wrench 8 - 24 Nm (17.7 lbf)

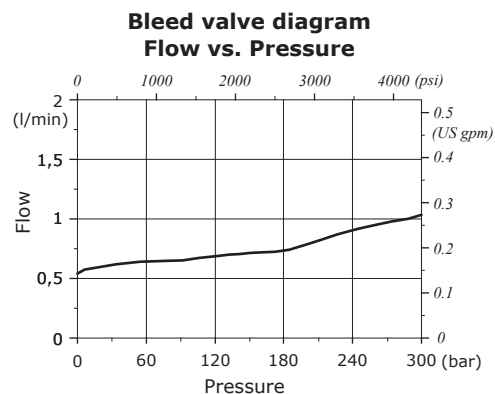
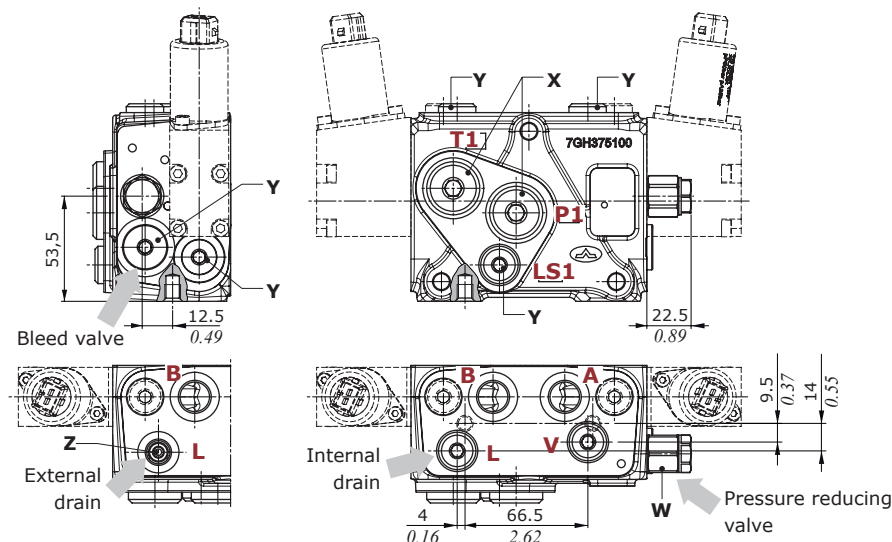
Y = allen wrench 6 - 24 Nm (17.7 lbf)



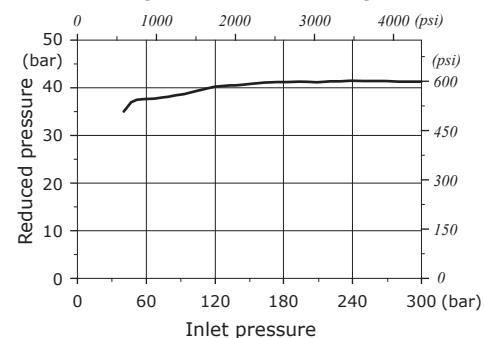
Working and outlet section

Dimensions and hydraulic circuit

Section with outlet for electrohydraulic controls



Pressure reducing valve diagram
Reduced pressure vs. Inlet pressure



Wrenches and tightening torques

X = allen wrench 8 - 24 Nm (17.7 lbf)
Y = allen wrench 6 - 24 Nm (17.7 lbf)
Z = allen wrench 5 - 9.8 Nm (7.2 lbf)
W = wrench 19 - 24 Nm (17.7 lbf)

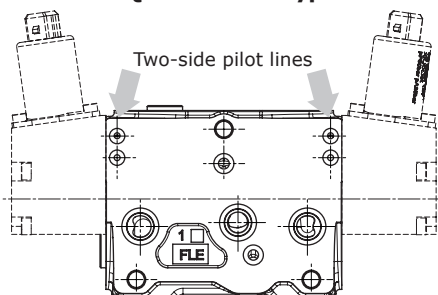
Bleed valve features

Max. inlet pressure . . : 300 bar (4350 psi)
Max. back pressure . . : 25 bar (363 psi)

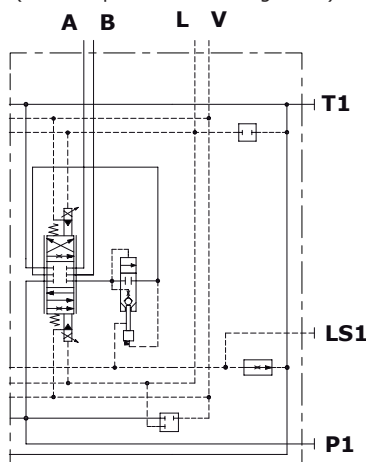
Pressure reducing valve features

Max. inlet pressure . . : 380 bar (5500 psi)
Reduced pressure . . . : 30-45 bar (435-650 psi)
Max. back pressure . . : 25 bar (363 psi)

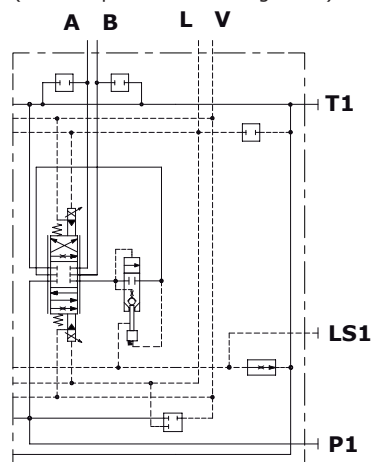
RQER or RPER type



RQE type (Without pressure reducing valve)

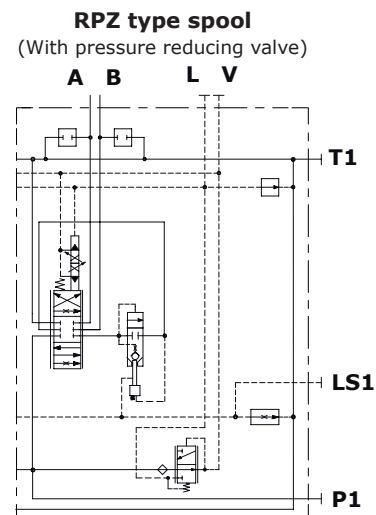
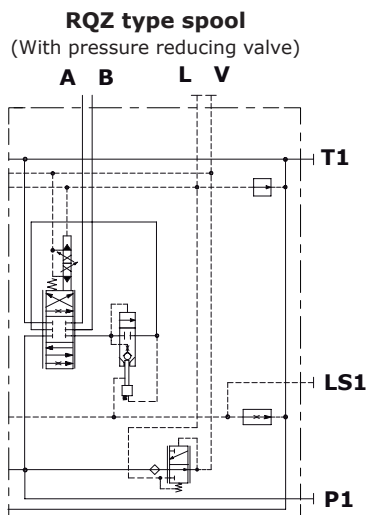
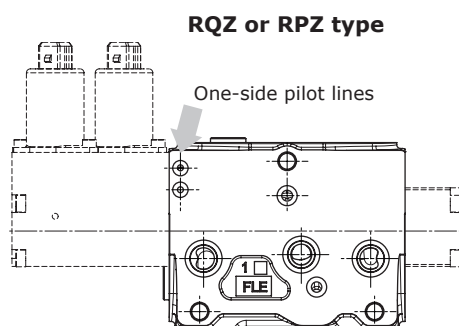


RPE type (Without pressure reducing valve)



Working and outlet section

Dimensions and hydraulic circuit



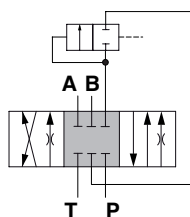
Spool

Type 1 (1../I1..) spool

A, B closed in neutral position

with 3 position control

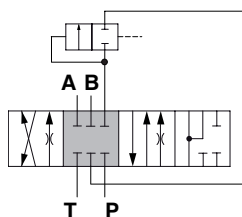
1 0 2

**Spool stroke**

position 1: + 5.5 mm (- 0.22 in)
position 2: - 5.5 mm (+ 0.22 in)

with 4 position control

1 0 2 3

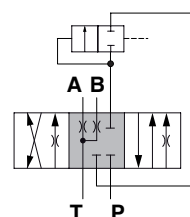
**Spool stroke**

position 1: + 5.5 mm (- 0.22 in)
position 2: - 5.5 mm (+ 0.22 in)
position 3: - 10 mm (- 0.39 in)

Type 2H (2H../I2H..) spool

A, B partially to tank in neutral pos.

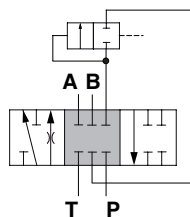
1 0 2

**Spool stroke**

position 1: + 5.5 mm (- 0.22 in)
position 2: - 5.5 mm (+ 0.22 in)

Type 3 (3../I3..) spool
single acting on A

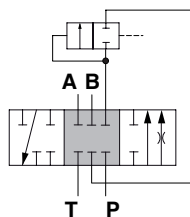
1 0 2

**Spool stroke**

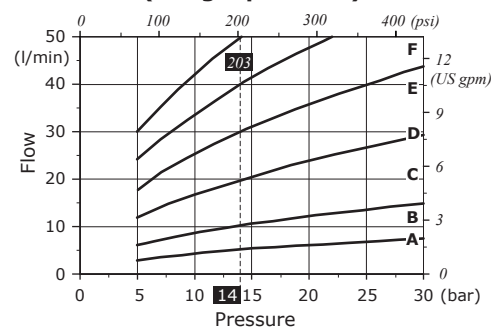
position 1: + 5.5 mm (- 0.22 in)
position 2: - 5.5 mm (+ 0.22 in)

Type 4 (4../I4..) spool
single acting on B

1 0 2

**Spool stroke**

position 1: + 5.5 mm (- 0.22 in)
position 2: - 5.5 mm (+ 0.22 in)

**Spool flow vs. Stand-by pressure
(margin pressure)****Curves with spool nominal flow****@ 14 bar (200 psi) stand-by (margin pressure)**

A = 5 l/min (1.3 US gpm) B = 10 l/min (2.6 US gpm)
C = 20 l/min (5.3 US gpm) D = 30 l/min (7.9 US gpm)
E = 40 l/min (10.6 US gpm) F = 50 l/min (12.2 US gpm)

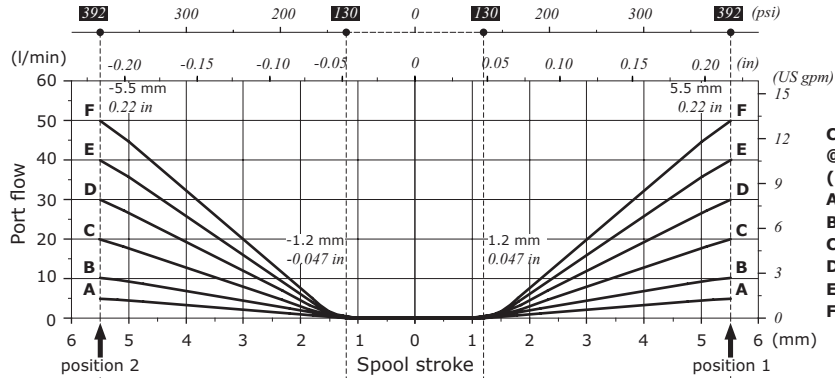
Working and outlet section

Spools

Following curves are detected with standard spools, connecting $P \Rightarrow A \Rightarrow B \Rightarrow T$ and $P \Rightarrow B \Rightarrow A \Rightarrow T$ ports without flow multiplication. Customized spools with backpressure or flow multiplication may require different force, pressure and pilot current for operation.

3 position spools metering curve

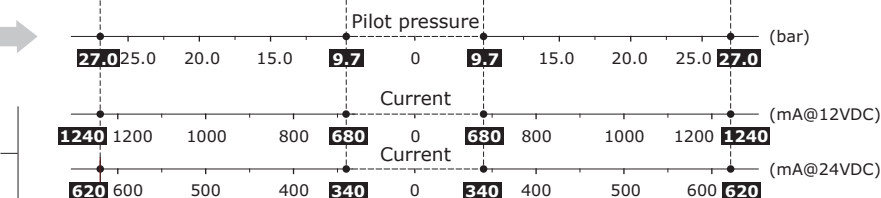
$Q_{in} = 50 \text{ l/min (13.2 US gpm)}$ - Open center circuit



Curves with spool nominal flow @ 14 bar (200 psi) stand-by (margin pressure)
 A = 5 l/min (1.3 US gpm)
 B = 10 l/min (2.6 US gpm)
 C = 20 l/min (5.3 US gpm)
 D = 30 l/min (7.9 US gpm)
 E = 40 l/min (10.6 US gpm)
 F = 50 l/min (12.2 US gpm)

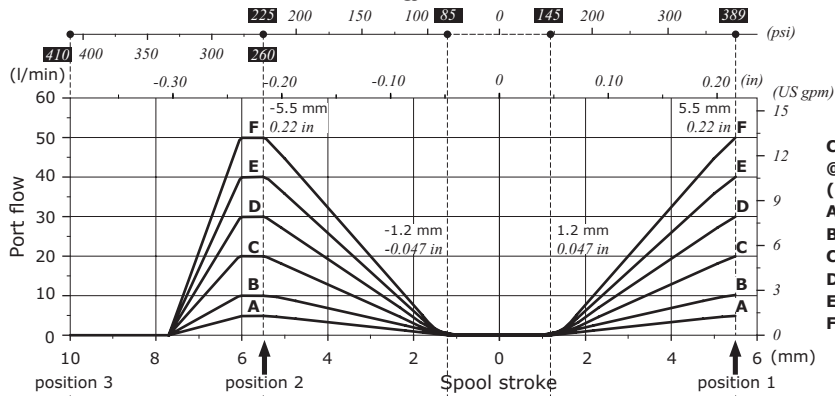
With 8IM control kit

With 8EB3 or 8EZ3 control kit



Floating spool metering curve

$Q_{in} = 50 \text{ l/min (13.2 US gpm)}$ - Open center circuit

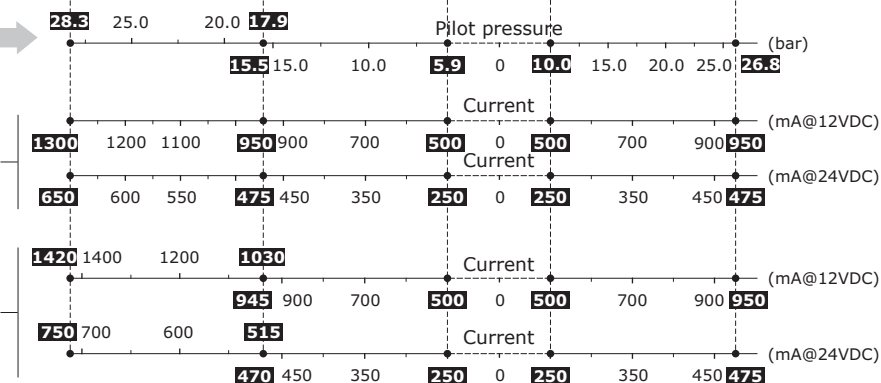


Curves with spool nominal flow @ 14 bar (200 psi) stand-by (margin pressure)
 A = 5 l/min (1.3 US gpm)
 B = 10 l/min (2.6 US gpm)
 C = 20 l/min (5.3 US gpm)
 D = 30 l/min (7.9 US gpm)
 E = 40 l/min (10.6 US gpm)
 F = 50 l/min (12.2 US gpm)

With 13IMP control kit

With 13EB3 or 13EZ3 control kit, without STEP

With 13EB3P or 13EZ3P control kit, with STEP

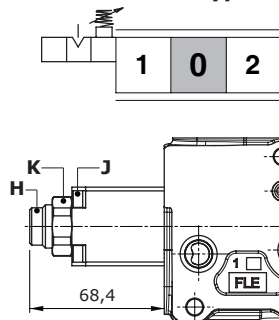


Working and outlet section

"A" side spool positioners

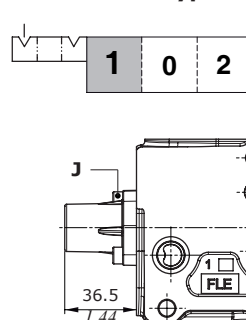
With friction and neutral position notch

7FT type



2 positions, with detent in position 1 and 2

12 type



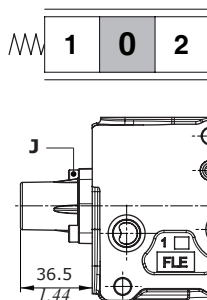
Release force $230 \text{ N} \pm 10 \text{ N}$
 $(51.7 \text{ lbf} \pm 2.2 \text{ lbf})$

Wrenches and tightening torques

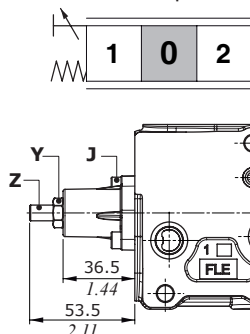
- J = allen wrench 4 - $6,6 \text{ Nm}$ (4.9 lbf)
 H = allen wrench 4
 K = wrench 28 - manual tightening
 X = wrench 9
 Y = wrench 13 - 24 Nm (17.7 lbf)
 Z = allen wrench 4

With spring return to neutral position

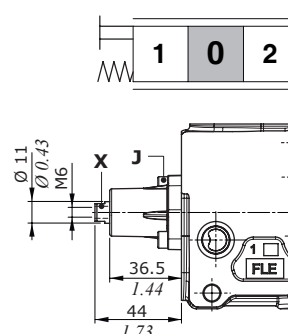
8 type



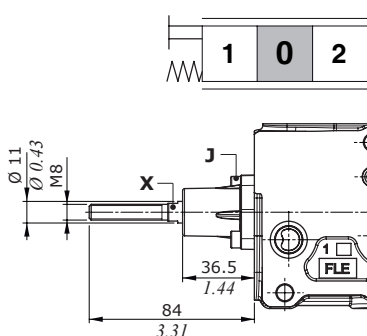
8F2 type

Spool stroke limiter
on B port

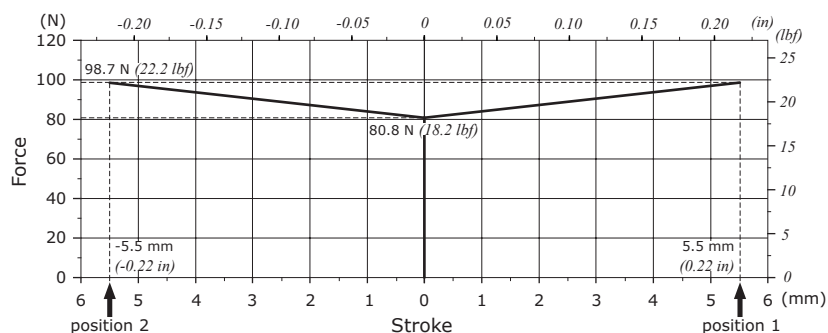
8D type

External pin with
M6 female thread

8D2 type

External pin with
M8 male thread

Force vs. Stroke diagram

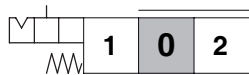


Working and outlet section.

"A" side spool positioners

With detent and spring return to neutral position from either directions

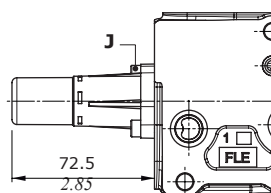
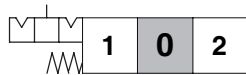
9BZ type
detent in position 1
(see A curve)



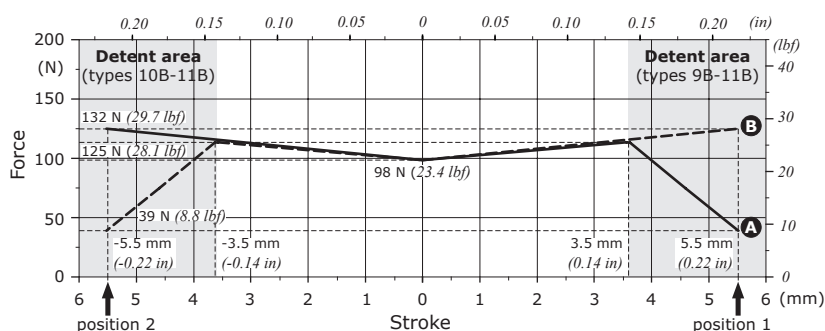
10BZ type
detent in position 2
(see B curve)



11BZ type
detent in positions 1
(A curve) and 2 (B curve)

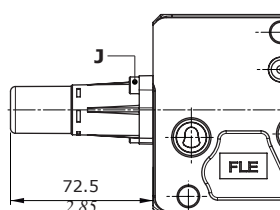
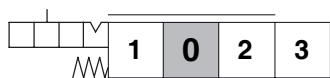


Force vs. Stroke diagram

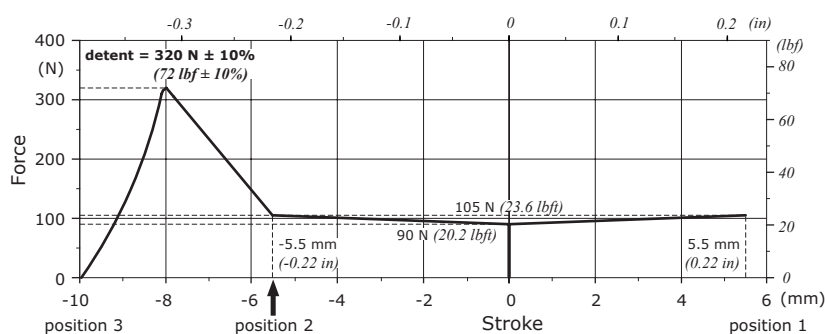


Release force 230 N $\pm$ 10% (51.7 lbf $\pm$ 10%)

For floating circuit, 13RZ type



Force vs. Stroke diagram



Release force from pos.3: 315 N $\pm$ 10% (71 lbf $\pm$ 10%)

Wrenches and tightening torques

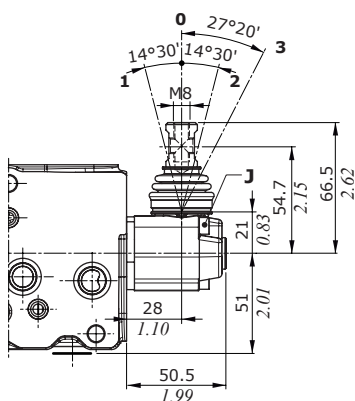
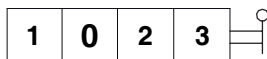
J = allen wrench 4 - 6,6 Nm (4.9 lbf)

Working and outlet section

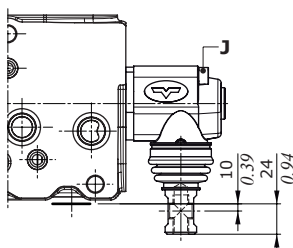
"B" side spool control kit

Lever boxes

L type

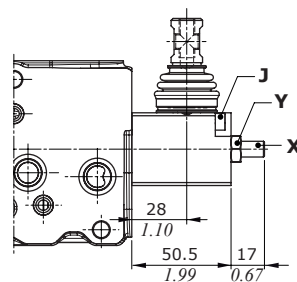
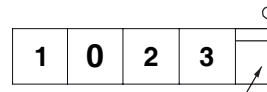


L180 type



LF1 type

Spool stroke limiter on A port



Wrenches and tightening torques

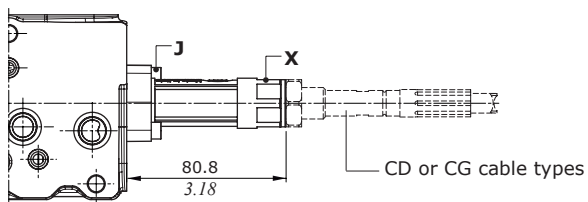
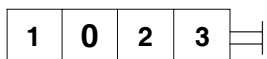
K = wrench 24 (17.7 lbf)

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

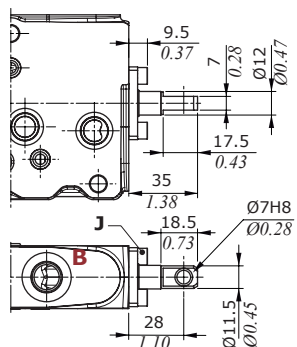
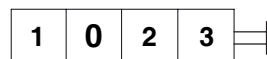
X = allen wrench 4

Y = wrench 13 - 24 Nm (17.7 lbf)

Flexible cable connection, TQ type



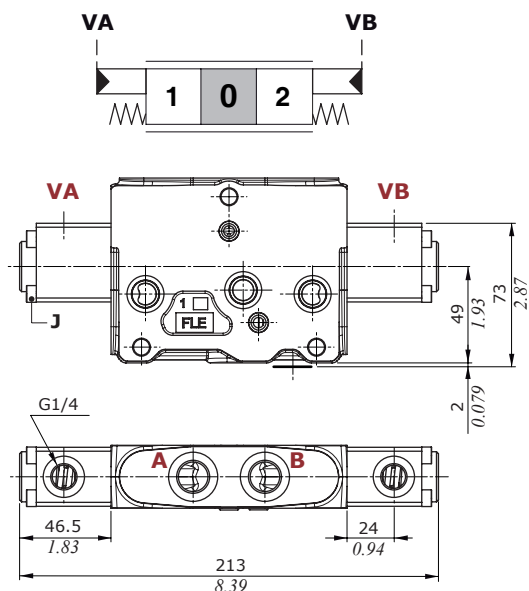
Dust-proof plate, SLP type



Working and outlet section

Proportional hydraulic control

8IM - 8IMX types

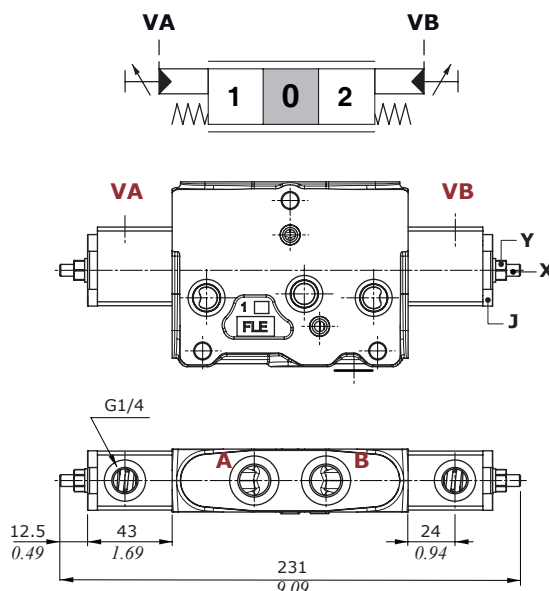


Features (all types)

Max. pressure. : 70 bar (1010 psi)

8IMF3 - 8IMXF3 types

With spool stroke limiter on A and B ports



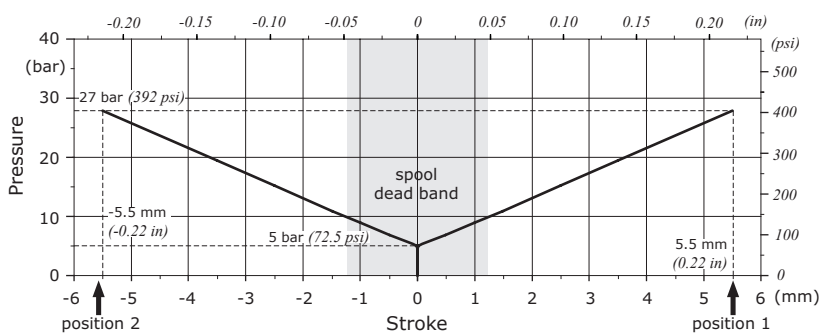
Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

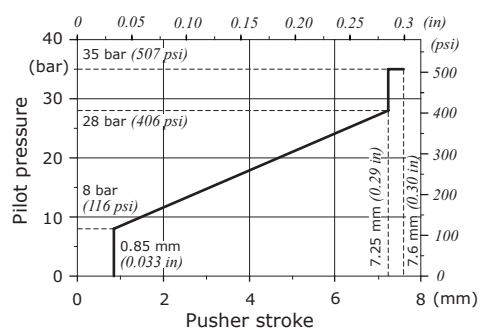
X = allen wrench 3

Y = wrench 10 - 9.8 Nm (7.2 lbf)

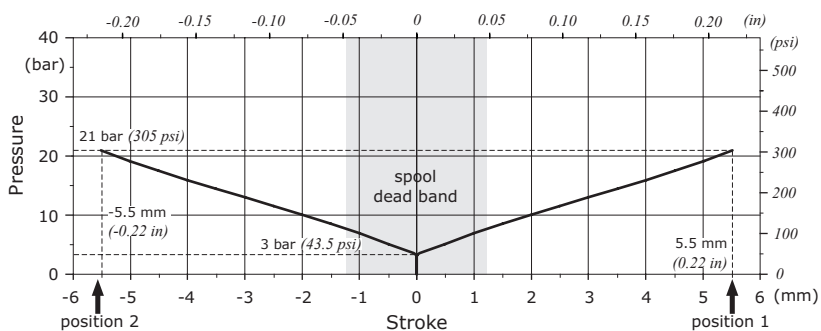
8IM-8IMF3 types: Stroke vs. Pressure diagram



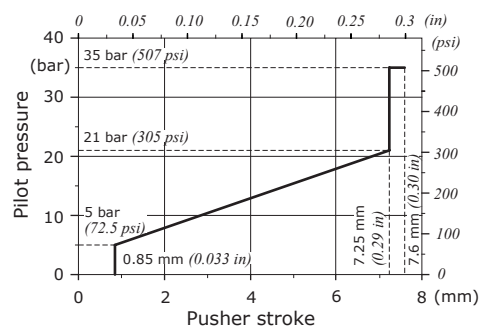
Suggested pressure control curve: 089 type



8IMX-8IMXF3 types: Stroke vs. Pressure diagram



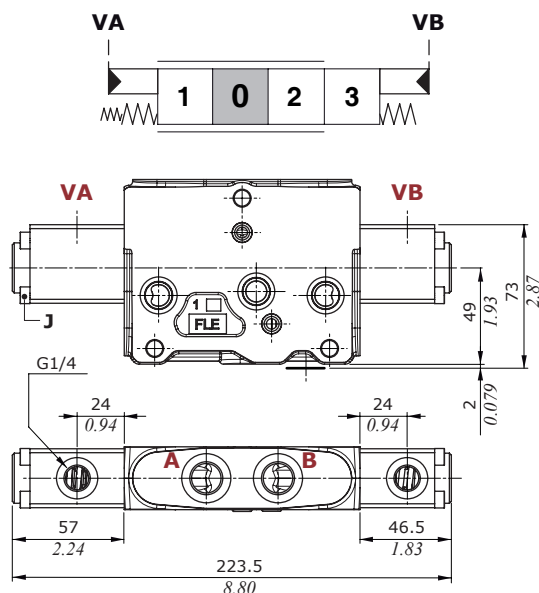
Suggested pressure control curve: 028 type



Working and outlet section

Proportional hydraulic control

For floating circuit, 13IMP type



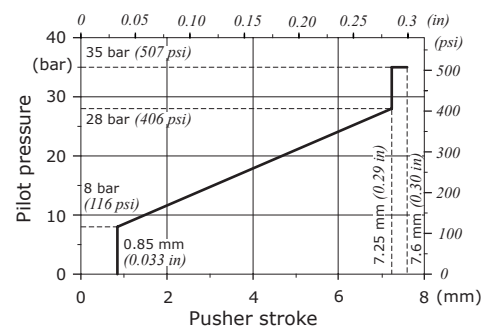
Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

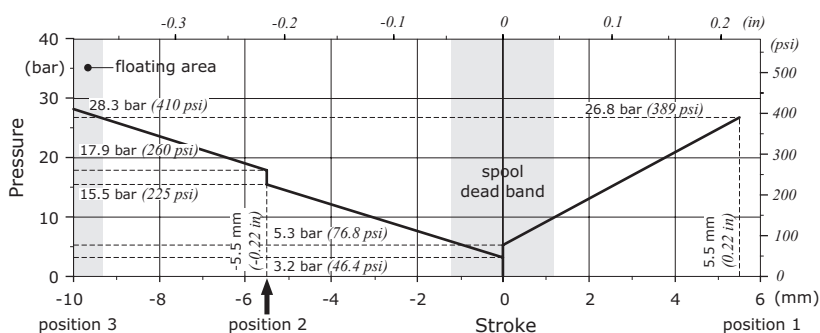
Features

Max. pressure. : 70 bar (1010 psi)

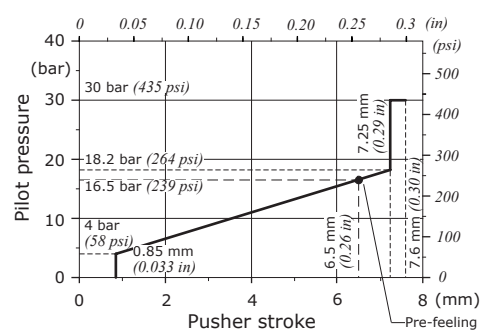
Suggested pressure control curve on VA port: 089 type



Stroke vs. Pressure diagram



Suggested pressure control curve on VB port: 086 type



Working and outlet section

Electrohydraulic control 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 ± 10% tolerance.

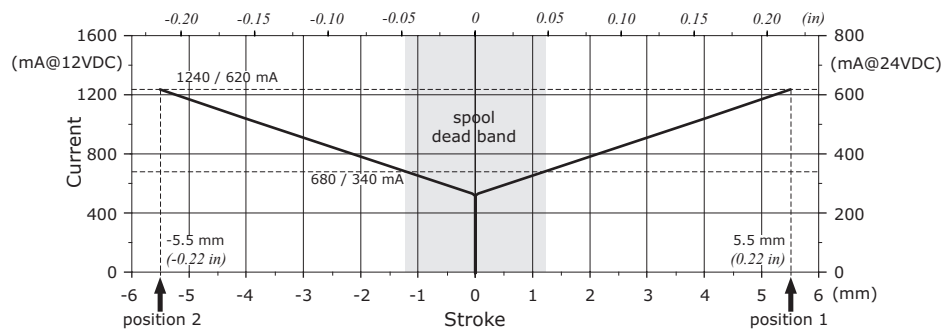
Following electrohydraulic controls need CED100X or CED400X electronic unit; for information please contact Sales Department.

Specifications		Spool control type							
		8EB3	13EB3P	8EZ3	13EZ3P				
Electric specifications									
Coil impedance	12 VDC	4.72 Ω	4.72 Ω	4.72 Ω	4.72 Ω				
	24 VDC	20.8 Ω	20.8 Ω	20.8 Ω	20.8 Ω				
Max. operating current	12 VDC	1.5 A	1.5 A	1.5 A	1.5 A				
	24 VDC	0.75 A	0.75 A	0.75 A	0.75 A				
No load current consumption		0	0	0	0				
Hysteresis max. ⁽¹⁾				With lever box configured controls					
				external drain		4%	4%	6%	6%
				internal drain		5%	5%	7%	7%
Time response	from 0 ⇒ 100% and from 100% ⇒ 0 of stroke	< 60 ms	< 85 ms	< 75 ms	< 85 ms				
Min. flow control signal	12 VDC	680 mA	500 mA	680 mA	500 mA				
	24 VDC	340 mA	250 mA	340 mA	250 mA				
Max. flow control signal	12 VDC	1240 mA	P⇒A: 950 mA P⇒B: 945 mA 1030 mA	1240 mA	P⇒A: 950 mA P⇒B: 945 mA 1030 mA				
	24 VDC	620 mA	P⇒A: 475 mA P⇒B: 470 mA 515 mA	620 mA	P⇒A: 475 mA P⇒B: 470 mA 515 mA				
Float flow control signal	12 VDC		1420 mA		1420 mA				
	24 VDC		710 mA		710 mA				
Dither frequency	low frequency	150 Hz		150 Hz					
	high frequency	180 Hz - 200 mA		180 Hz - 200 mA					
Insertion		100%		100%					
Coil insulance		Class H (180°C - 356°F)		Class H (180°C - 356°F)					
Connector type		AMP JPT - Deutsch DT		AMP JPT - Deutsch DT					
Weather protection (connector)		IP65 (JPT type) - IP69K (DT type)		IP65 (JPT type) - IP69K (DT type)					
Hydraulic specifications									
Max. pressure		40 bar (580 psi)		50 bar (725 psi)					
Max. back pressure		10 bar (145 psi)		10 bar (145 psi)					

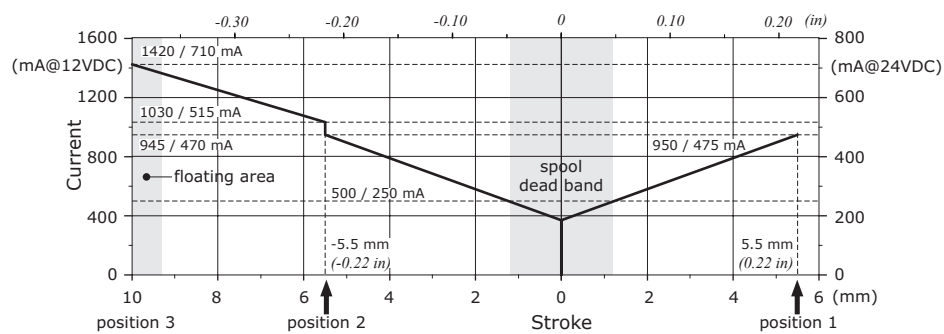
Note (1) hysteresis is indicated at nominal supply voltage and f = 0.008 Hz for one cycle (one cycle = neutral ⇒ full A ⇒ neutral ⇒ full B ⇒ neutral). For the calculation rules see "Appendix A" on page 134.

Electrohydraulic control performance data

8EB3-8EZ3 types: Stroke vs. Current diagram



13EB3P-13EZ3P types: Stroke vs. Current diagram



Working and outlet section

Electrohydraulic controls: spool position sensor

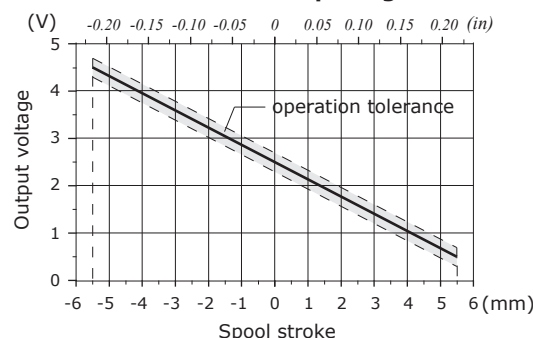
The sensor can be ordered exclusively through the EB and EZ type electrohydraulic controls; see pages 53 and 57 for available control list.

SPSL sensor

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

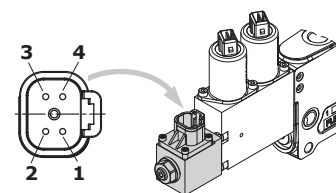
Working conditions		
Voltage supply		5 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±10 mm (±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



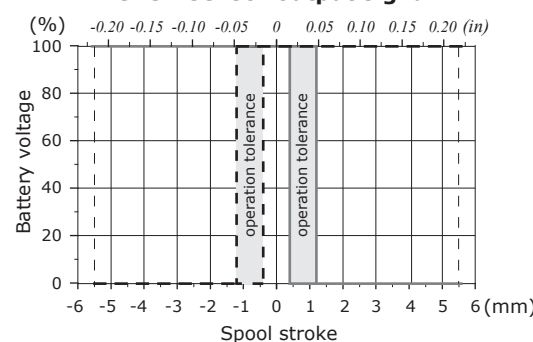
Deutsch DT06-4S mating connector, code 5CON140072

SPSD sensor

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

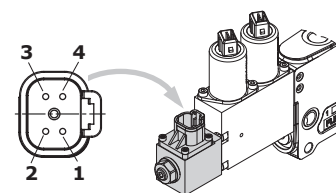
Working conditions		
Voltage supply		from 9 to 32 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±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



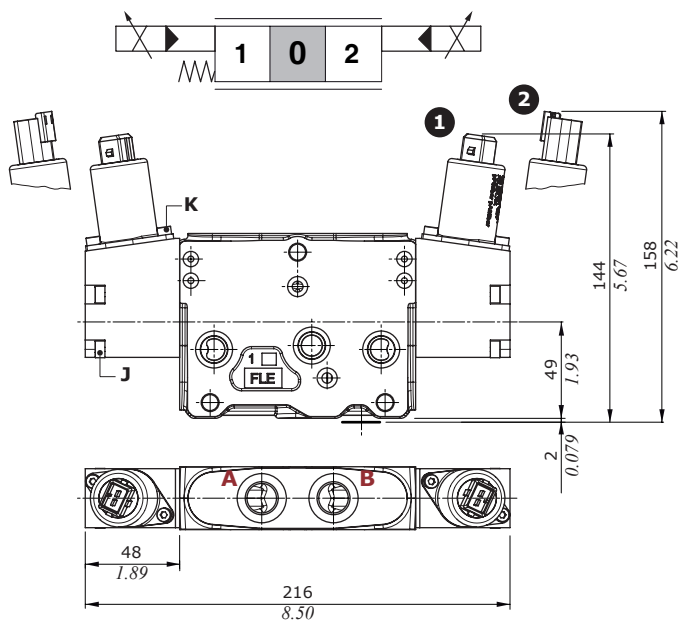
Deutsch DT06-4S mating connector, code 5CON140072

Two-side electrohydraulic control

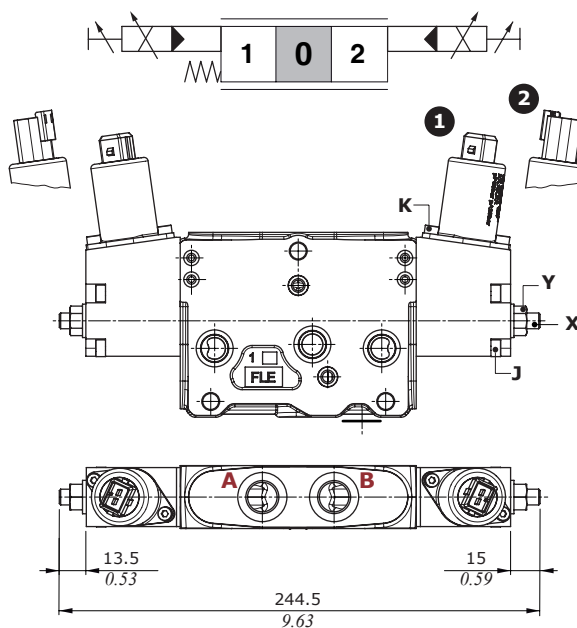
Control Types

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

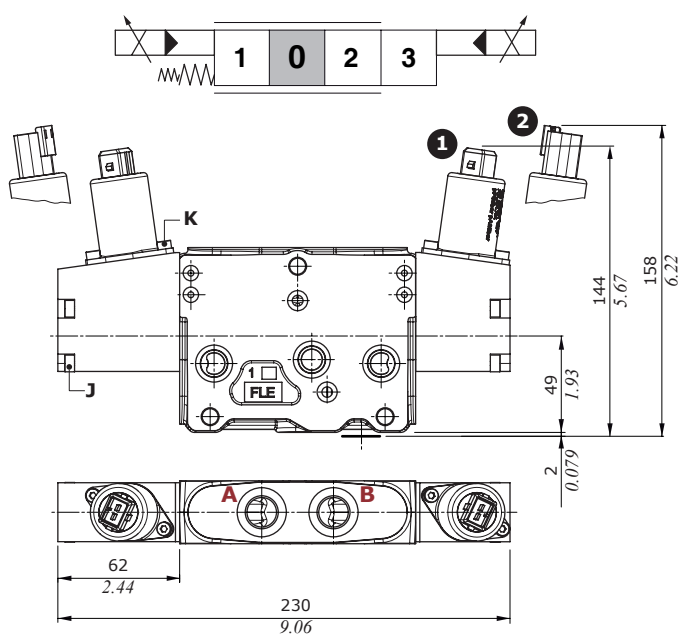
8EB3 - 8EB34 types



8EB3F3 - 8EB34F3 types



13EB3P - 13EB34P types



Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

K = allen wrench 3 - 5 Nm (3.7 lbf)

X = allen wrench 4

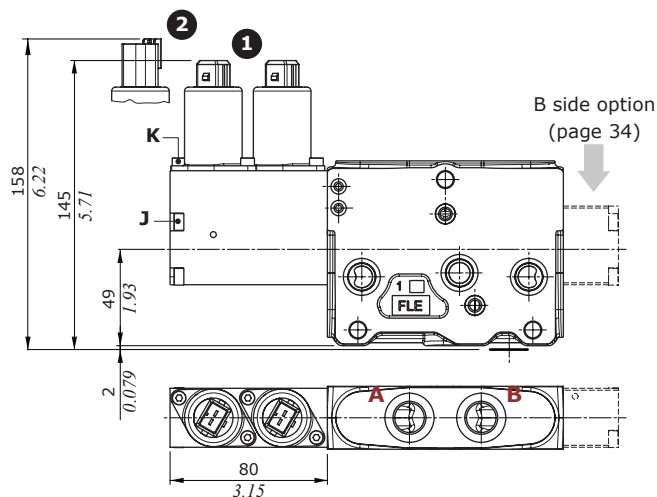
Y = wrench 13 - 24 Nm (17.7 lbf)

Working and outlet section

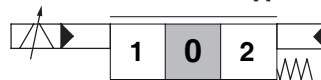
One-side electrohydraulic control

Control Types

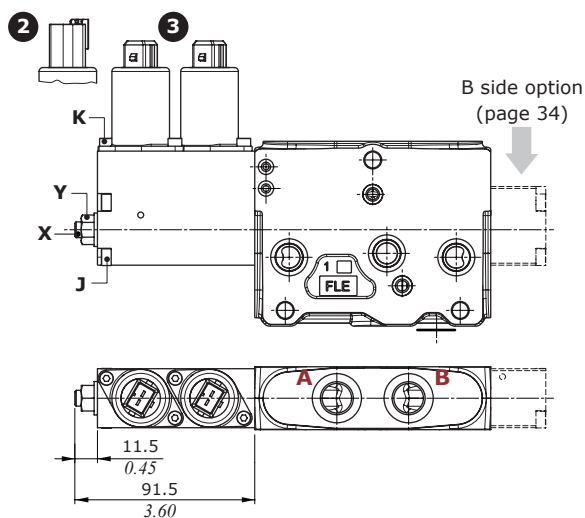
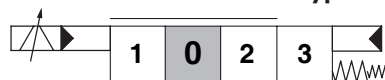
- 1 : With AMP JPT connector - AMP JPT mating connector, code: 5CON003
- 2 : With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031



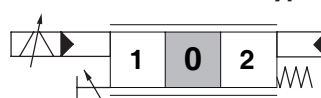
8EZ3 - 8EZ34 types



13EZ3P - 13EZ34P types



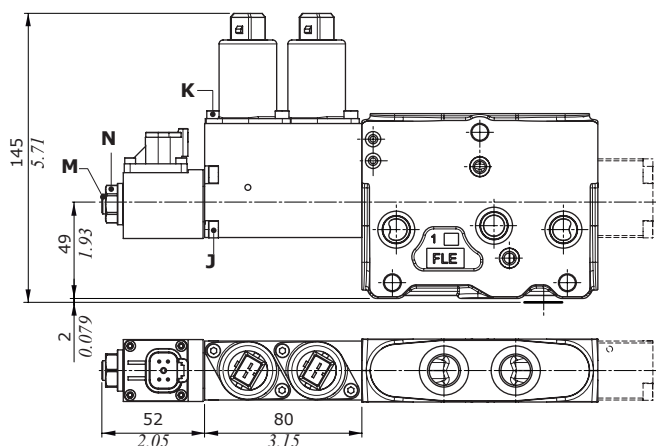
8EZ3F2 - 8EZ34F2 types



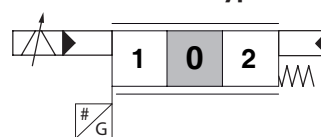
Wrenches and tightening torques

- J = allen wrench 4 - 6.6 Nm (4.9 lbf)
- K = allen wrench 3 - 5 Nm (3.7 lbf)
- X = allen wrench 4
- Y = wrench 13 - 24 Nm (17.7 lbf)
- M = allen wrench 4 - 9.8 Nm (7.2 lbf)
- N = wrench 17 - 9.8 Nm (7.2 lbf)

With SPSP spool position sensor



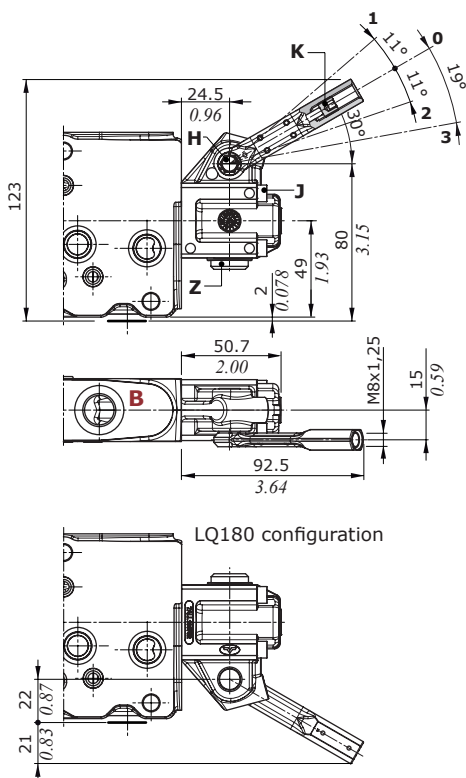
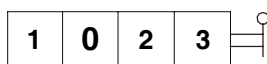
8EZ3SPSD type



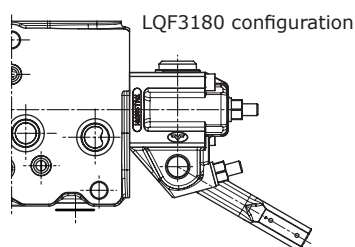
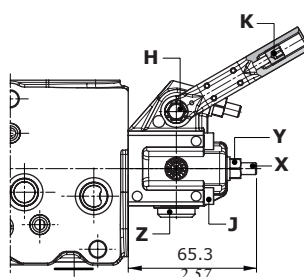
Working and outlet section

"B" side options

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

Lever boxes**LQ - LQ180 types****LQF3 - LQF3180 types**

With stroke limiters on A and B ports

**Wrenches and tightening torques**

H = wrench 8

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

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

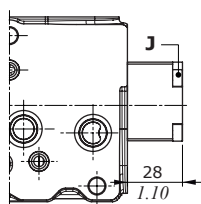
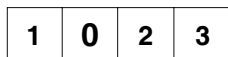
M = allen wrench 4

N = wrench 13 - 24 Nm (17.7 lbf)

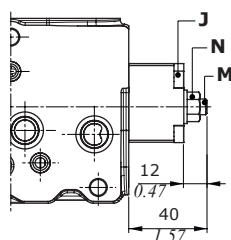
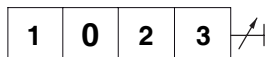
X = allen wrench 3

Y = wrench 10 - 9.8 Nm (7.2 lbf)

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

Endcaps**SLC type****SLCF1 type**

spool stroke limiter
on A port

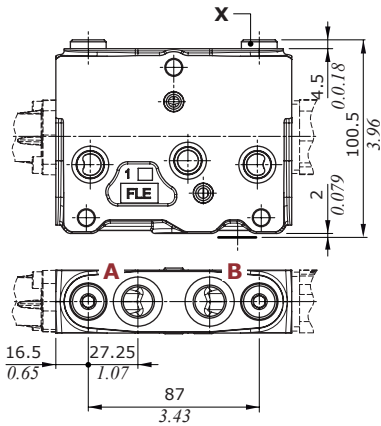


Working and outlet section

Port valves

Wrenches and tightening torques

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



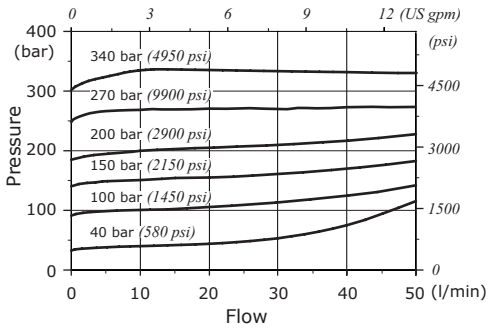
U type valve:
antishock valves with prefill



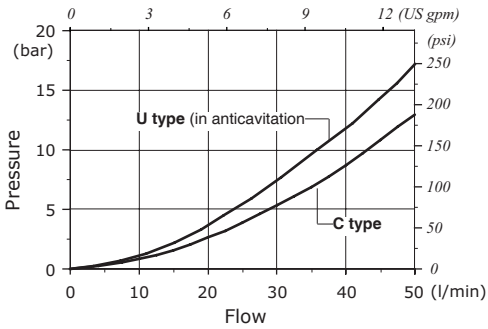
C type valve:
anticavitation



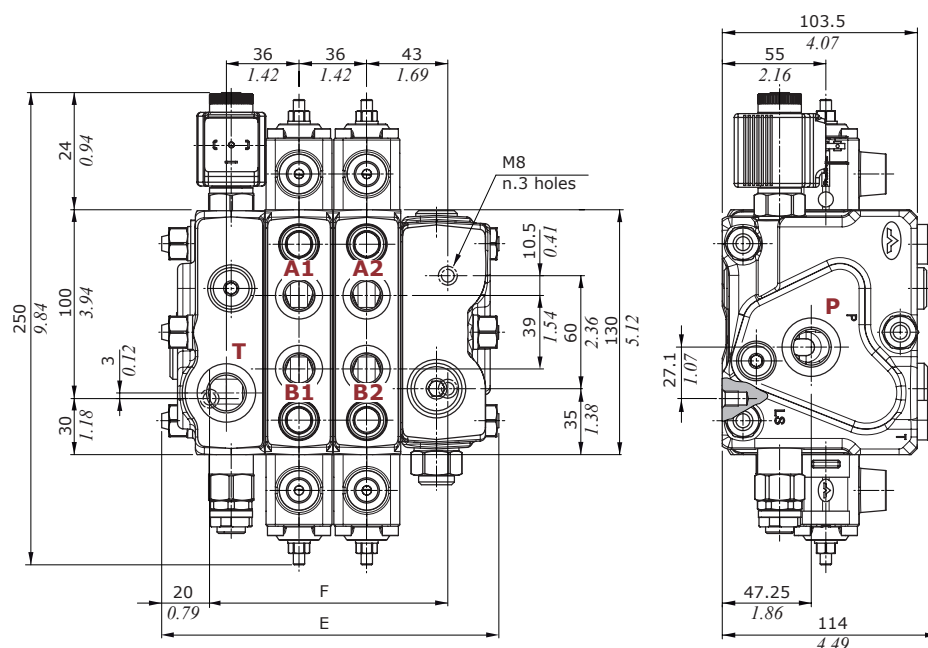
U type: setting example
(10 l/min - 2.6 Us gpm)



U and C types: pressure drops

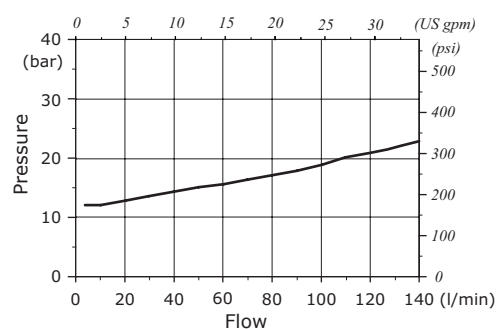


Dimensional data and performance

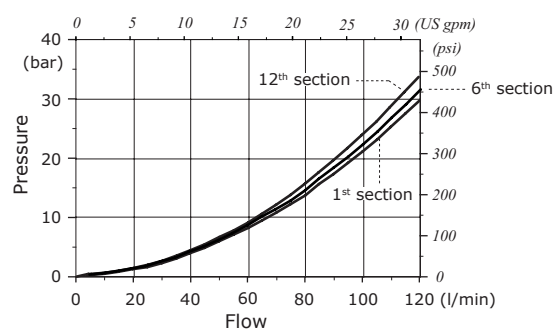


TYPE	E		F	
	mm	in	mm	in
DPX100/1	144	5.67	90.5	3.56
DPX100/2	180	7.09	126.5	4.98
DPX100/3	216	8.50	162.5	6.40
DPX100/4	252	9.92	198.5	7.81
DPX100/5	288	11.34	234.5	9.23
DPX100/6	324	12.76	270.5	10.65
DPX100/7	360	14.17	306.5	12.07
DPX100/8	396	15.59	342.5	13.48
DPX100/9	432	17.01	378.5	14.90
DPX100/10	468	18.43	414.5	16.32
DPX100/11	504	19.85	450.5	17.74
DPX100/12	540	21.26	486.5	19.15

P⇒T Pressure drop inlet compensator (margin pressure)



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



Dimensional data and performance

High Flow (HF) DPX100 valve configuration

It needs to flow up to 120 l/min (32 US gpm), the DPX100 valve can be configured with up to 4 HF (High Flow) working sections. In addition to an entirely for Standard flow or High Flow configuration, a mixed configuration – Standard/HF – is available by combining only the sections needed (the number of HF sections is always limited to 4).

In this case, for hydraulic requirements, the HF sections must be positioned just downstream to the inlet.

HF sections are suitable for use both in Standard Pressure and High Pressure (HP) valves.

The inlet flow rate must not be less than 140 l/min (37 US gpm).

Example of entirely High Flow (HF) valve configuration, for Standard Pressure

DPX100 **HF**/4/AM1(TGW5-300/ELN)/P-101(120/120)-8IMNF3.U3(100)/P-101(120/120)-8IMNF3.U3(100)/

Std pressure open center inlet section
Std pressure closed center inlet section

HF working sections

P-101(120/120)-8IMNF3.U3(100)/P-101(120/120)-8IMNF3.U3(100)/RF-12VDC-FPM

Standard pressure
outlet section

Example of entirely High Flow (HF) valve configuration, for High Pressure (HP)

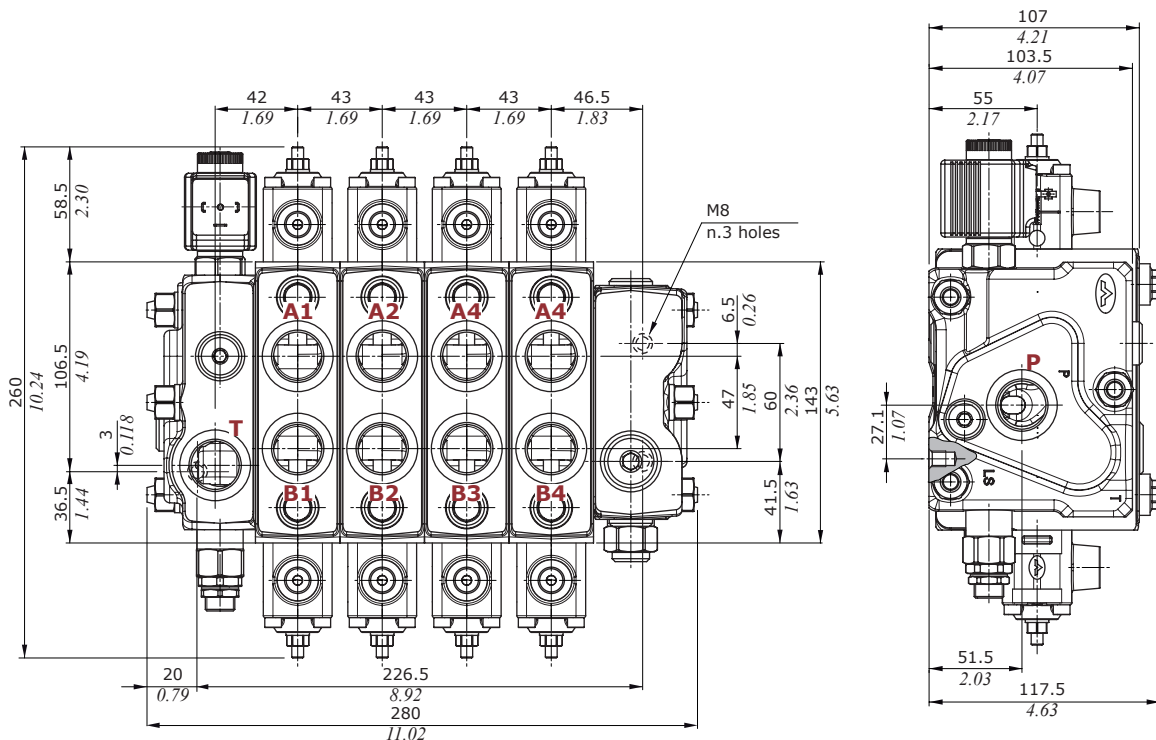
DPX100 **HP**/2/AM1(TGW5-300/ELN)/**HF**-P-101(120/120)-8IMNF3.U3(320)/**HF**-P-101(120/120)-8IMNF3.

HP open center inlet section
Std pressure closed center inlet section

HF working sections

U3(320)/**HF**-P-101(120/120)-8IMNF3.U3(320)/**HF**-P-101(120/120)-8IMNF3.U3(320)/RF-12VDC-FPM

Standard pressure
outlet section



Dimensional data and performance

High Flow (HF) DPX100 valve configuration

Example of mixed - Standard/HF - valve configuration

DPX100/4/AM1(TGW5-300/ELN)/**HE**-P-101(120/120)-8IMNF3.U3(100)/**HE**-P-101(120/120)-8IMNF3.U3(100)/

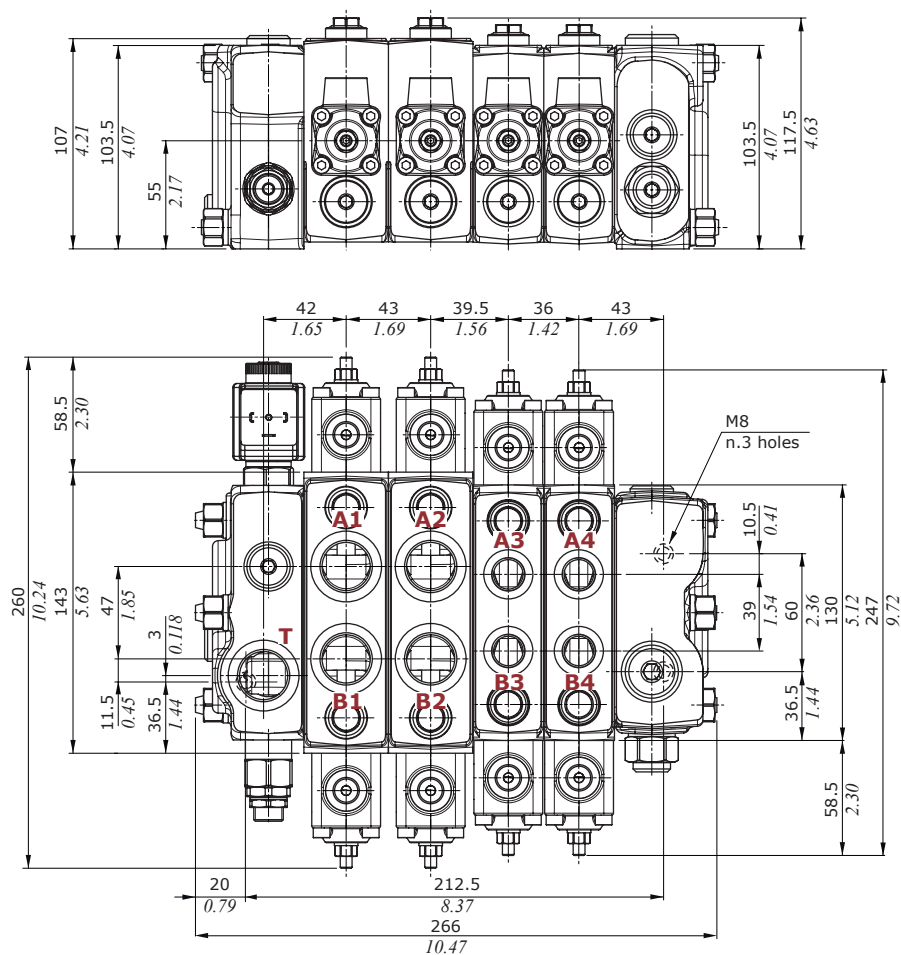
Std pressure open center inlet section
Std pressure closed center inlet section

HF working
sections

P-101(80/80)-8IMNF3.U3(100)/P-101(80/80)-8IMNF3.U3(100)/RF-BSP34(PTA1B1A2B2)38(A3B4A4B4)-12VDC-FPM

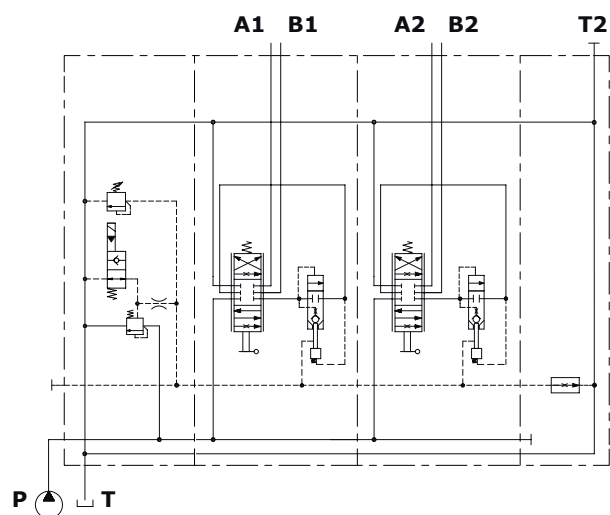
Standard setting
working sections

Standard pressure
outlet section

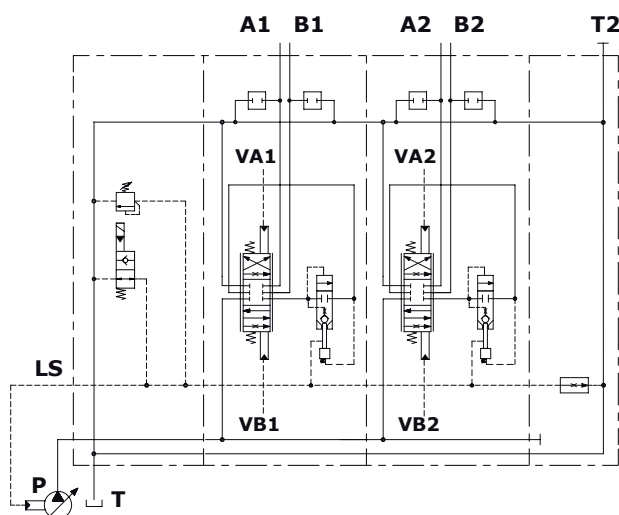


Hydraulic circuit

Configuration example with mechanical and hydraulic controls

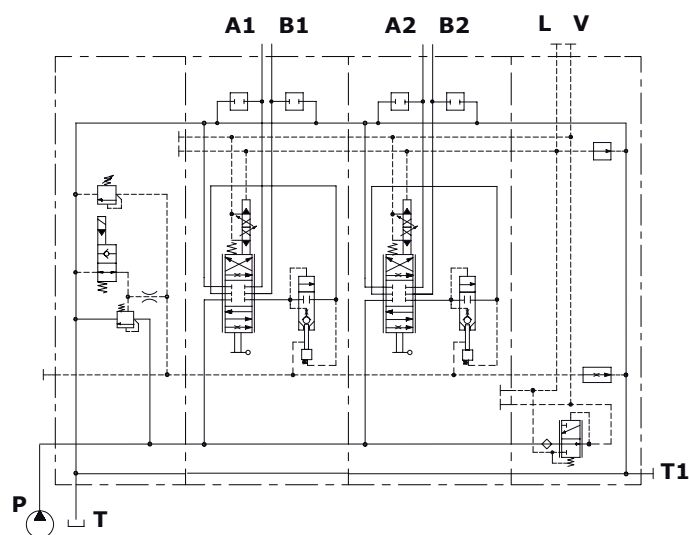


Open center circuit and lever control, with unloader valve, without port valve arrangement

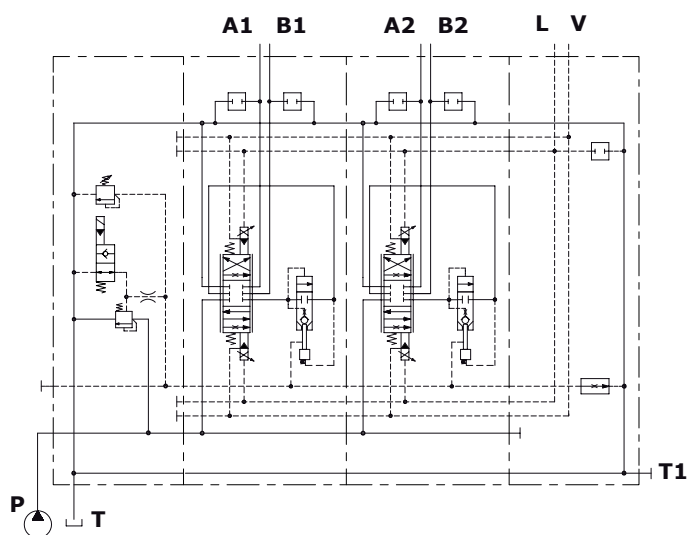


Closed center circuit and proportional hydraulic control, with unloader valve and port valve arrangement

Configuration example with electrohydraulic controls



Open center circuit and one-side proportional electrohydraulic control with lever, with unloader valve, port valve arrangement and pressure reducing valve, internal pilot and drain



Open center circuit and two-side proportional electrohydraulic control, with unloader valve and port valve arrangement, without pressure reducing valve, external pilot and drain

Complete section ordering codes

└─ Nr. of working sections

DPX100/3/AM1(TGW3-175/ELN)/HF-Q-101(80/80)-8L/HP-Q-E101(80/80)-8IMN/P-S102(60/60)-8ES3.U3T/RF-...-12VDC-FPM

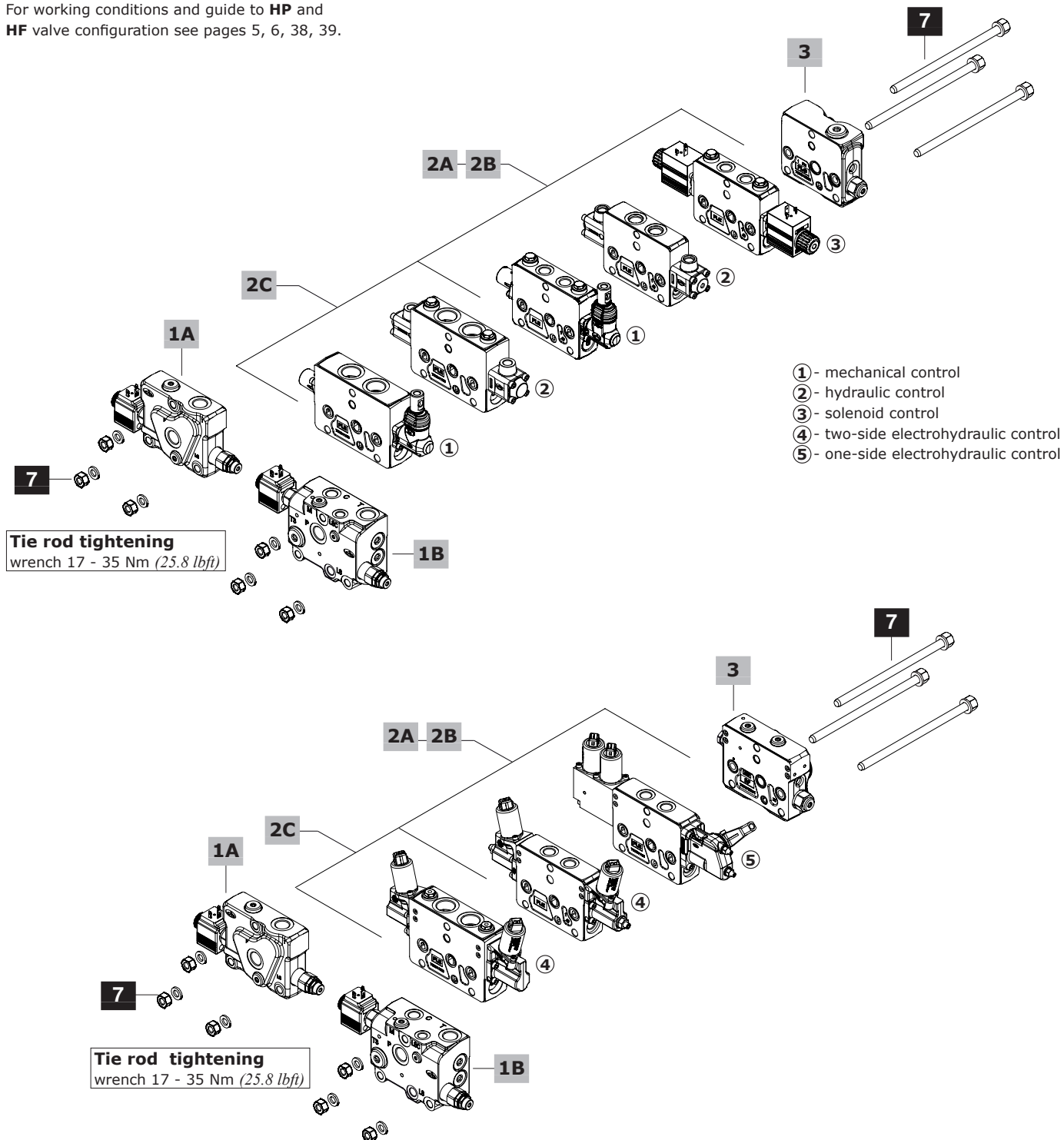
DPX100 = standard pressure valve

DPX100HP = High Pressure valve

DPX100HF: High Flow valve

For working conditions and guide to **HP** and

HF valve configuration see pages 5, 6, 38, 39.



Complete section ordering codes

1A Std pressure inlet section *

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX100/AM1(TGW3-175/ELN)-12VDC-FPM**

CODE: 640203033V

DESCRIPTION: With compensator, press. relief valve and unloader valve, with P-T-LS ports (LS plugged)

TYPE: **DPX100/AM1(TGW3-175/ELN)-12VDC-BSP34-FPM**

CODE: 640204007V

DESCRIPTION: As previous one with G3/4 P and T ports

TYPE: **DPX100/AM1(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 640203007V

DESCRIPTION: As first one with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX100/AM1(SU/TGW3-175/ELN)-12VDC-FPM**

CODE: 640203029V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX100/APF4\TGW3-175\VP-D(1.2)-SB10-Q40-FPM**

CODE: 640203302V

DESCRIPTION: **Designed for steering**, compensator, priority and pressure relief valves, with P-T-T3-LS-M-C-LSC ports (T-M-LS plugged). Needs special tie rods

TYPE: **DPX100/APF4\TGW3-175\VP-D(1.2)-SB10-Q40-BSP34-FPM**

CODE: 640203303V

DESCRIPTION: As previous one, P-T with G3/4 and C with G1/2 thread

Closed Center circuit

TYPE: **DPX100/AN1(TGW3-175/ELN)-12VDC-FPM**

CODE: 640203030V

DESCRIPTION: Without compensator, with press. relief valve and unloader valve, with P-T-LS ports

TYPE: **DPX100/AN1(TGW3-175/ELN)-BSP34-12VDC-FPM**

CODE: 640204008V

DESCRIPTION: As previous one with G3/4 P and T ports

Not available for High Pressure valve configuration

TYPE: **DPX100/AN1(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 640203009V

DESCRIPTION: As first one (Closed Center) with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX100/AN1(SU/TGW3-175/ELN)-12VDC-FPM**

CODE: 640203031V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX100/APFS4\TGW3-175\VP-D(1.2)-SB10-Q40\SB25-LSF(NOFC)\ESO22N-12VDC-FPM** CODE: 640203300V

DESCRIPTION: **Designed for steering**, with flushing valve (stand-by 25 bar - 360 psi), priority, shut-off and pressure relief valves, P-T-T3-LS-M-C-LSC ports (T3-M plugged). Needs special tie rods

Not available for High Pressure valve configuration

TYPE: **DPX100/APFS4\TGW3-175\VP-D(1.2)-SB10-Q40\SB25-LSF(NOFC)\ESO22N-BSP34-12VDC-FPM** CODE: 640203301V

DESCRIPTION: As previous one, P-T with G3/4 and C with G1/2 thread. Not available for High Pressure valve configuration

1B High pressure inlet section *

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX100HP/AM1(TGW5-350/ELN)-12VDC-FPM**

CODE: 640203036V

DESCRIPTION: With compensator, press. relief valve and unloader valve, with P-T-LS ports (LS plugged)

TYPE: **DPX100HP/AM1(TGW5-350/ELN)-BSP34-12VDC-FPM**

CODE: 640204011V

DESCRIPTION: As previous one with G3/4 P and T ports

TYPE: **DPX100HP/AM1(SO/TGW5-350/ELN)-12VDC-FPM**

CODE: 640203037V

DESCRIPTION: As first one with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX100HP/AM1(SU/TGW5-350/ELN)-12VDC-FPM**

CODE: 640203038V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

Closed Center circuit

Refer to "Std pressure" inlet sections

2A Std pressure working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX100/Q-101(80/80)-8L-FPM**

CODE: 640113001V

DESCRIPTION: Lever control without port valve arrangement

TYPE: **DPX100/P-101(80/80)-8L.U3T-FPM**

CODE: 640103001V

DESCRIPTION: As previous one with port valve arrangement

Proportional hydraulic control

TYPE: **DPX100/Q-E101(80/80)-8IMN-FPM**

CODE: 640113600V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100/P-E101(80/80)-8IMN.U3(100)-FPM**

CODE: 640103012V

DESCRIPTION: With antishock port valves

On/off solenoid control

TYPE: **DPX100/Q-S102(60/60)-8ES3-12VDC-FPM**

CODE: 640113018V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100/P-S102(60/60)-8ES3.U3(100)-12VDC-FPM**

CODE: 640103024V

DESCRIPTION: With antishock port valves

Two-side proportional electrohydraulic control

TYPE: **DPX100/QE-E101(80/80)-8EB3TF3-12VDC-FPM**

CODE: 640113007V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX100/PE-E101(80/80)-8EB3TF3.U3T-12VDC-FPM**

CODE: 640103009V

DESCRIPTION: As previous one with port valves arrangement

TYPE: **DPX100/PE-E101(80/80)-8EB3TF3.U3(100)-12VDC-FPM**

CODE: 640103025V

DESCRIPTION: As previous one with antishock port valves

One-side proportional electrohydraulic control

TYPE: **DPX100/QZ-E101(80/80)-8EZ3LQF3-12VDC-FPM**

CODE: 640113019V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX100/PZ-E101(80/80)-8EZ3LQF3.U3T-12VDC-FPM**

CODE: 640103028V

DESCRIPTION: As previous one with port valve arrangement

TYPE: **DPX100/PZ-E101(80/80)-8EZ3LQF3.U3(100)-12VDC-FPM**

CODE: 640103026V

DESCRIPTION: As previous one with antishock port valves

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

Complete section ordering codes

2B High Pressure working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX100HP/Q-101(80/80)-8L-FPM-FPM**

CODE: 640113009V

DESCRIPTION: Lever control without port valve arrangement

TYPE: **DPX100HP/P-101(80/80)-8L.U3T-FPM**

CODE: 640103011V

DESCRIPTION: As previous one with port valve arrangement

Proportional hydraulic control

TYPE: **DPX100HP/Q-E101(80/80)-8IMN-FPM**

CODE: 640113021V DESCRIPTION: Without port valve arrang.

TYPE: **DPX100HP/P-E101(80/80)-8IMN.U3(320)-FPM**

CODE: 640103030V DESCRIPTION: With antishock port valves

On-off solenoid control

TYPE: **DPX100HP/Q-S102(60/60)-8ES3-12VDC-FPM**

CODE: 640113022V DESCRIPTION: Without port valve arrang.

TYPE: **DPX100HP/P-S102(60/60)-8ES3.U3(320)-12VDC-FPM**

CODE: 640103031V DESCRIPTION: With antishock port valves

Two-side proportional electrohydraulic control

TYPE: **DPX100HP/QE-E101(80/80)-8EB3TF3-12VDC-FPM**

CODE: 640113023V

DESCRIPTION: With stroke limiter, without port valve arrangement

TYPE: **DPX100HP/PE-E101(80/80)-8EB3TF3.U3T-12VDC-FPM**

CODE: 640103037V

DESCRIPTION: As previous one with port valve arrangement

TYPE: **DPX100HP/PE-E101(80/80)-8EB3TF3.U3(320)-12VDC-FPM**

CODE: 640103032V

DESCRIPTION: As previous one with antishock port valves

One-side proportional electrohydraulic control

TYPE: **DPX100HP/PZ-E101(80/80)-8EZ3LQF3-12VDC-FPM**

CODE: 640113024V

DESCRIPTION: With stroke limiter, without port valve arrangement

TYPE: **DPX100HP/PZ-E101(80/80)-8EZ3LQF3.U3T-12VDC-FPM**

CODE: 640103033V

DESCRIPTION: As previous one with port valve arrangement

TYPE: **DPX100HP/PZ-E101(80/80)-8EZ3LQF3.U3(320)-12VDC-FPM**

CODE: 640103034V

DESCRIPTION: As previous one with port valve arrangement

2C High Flow working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX100HF/Q-101(120/120)-8L-FPM**

CODE: 640113026V

DESCRIPTION: Lever control without port valve arrangement

TYPE: **DPX100HF/P-101(120/120)-8L.U3T-FPM**

CODE: 640103039V

DESCRIPTION: As previous one with port valve arrangement

Proportional hydraulic control

TYPE: **DPX100HF/Q-E101(120/120)-8IMN-FPM**

CODE: 640113027V DESCRIPTION: Without port valve arrang.

TYPE: **DPX100HF/P-E101(120/120)-8IMN.U3(100)-FPM**

CODE: 640103040V DESCRIPTION: With antishock port valves

Two-side proportional electrohydraulic control

TYPE: **DPX100HF/QE-E101(120/120)-8EB3TF3-12VDC-FPM**

CODE: 640113028V

DESCRIPTION: With stroke limiter, without port valve arrangement

TYPE: **DPX100HF/PE-E101(120/120)-8EB3TF3.U3T-12VDC-FPM**

CODE: 640103041V

DESCRIPTION: As previous one with port valve arrangement

One-side proportional electrohydraulic control

TYPE: **DPX100/QZ-E101(120/120)-8EZ34SLCQ-12VDC-FPM**

CODE: 640103046V

DESCRIPTION: With encap on B side, without port valve arrangement

TYPE: **DPX100HF/PZ-E101(120/120)-8EZ34LQF3.U3T-12VDC-FPM**

CODE: 640103045V

DESCRIPTION: With spool stroke limiter, with port valve arrangement

3 Outlet section *

The codes are referred to sections with FPM o-ring seals

Outlet section is the same type for standard and High Pressure valve

For mechanical, hydraulic or solenoid configuration

TYPE: **DPX100/RF-FPM**

CODE: 640303003V

DESCRIPTION: With bleed valve and upper T2 port (plugged)

TYPE: **DPX100/RF-BSP34-FPM**

CODE: 640304003V

DESCRIPTION: As previous one with G3/4 T2 port (plugged)

TYPE: **DPX100/RF(04)-FPM**

CODE: 640303011V

DESCRIPTION: Bleed valve, upper T2, side P1-T1-LS1-M1 ports (plugged)

For electrohydraulic or mixed configuration

TYPE: **DPX100/RDN-NOTAP(VL)-FPM**

CODE: 640303002V

DESCRIPTION: Without pressure reducing valve, external pilot and drain (V-L ports), with Bleed valve and side T1 port (plugged)

TYPE: **DPX100/RDN-NOTAP(VL)-BSP34-FPM**

CODE: 640304001V

DESCRIPTION: As previous one with G3/4 T1 port

TYPE: **DPX100/RDR-FPM**

CODE: 640303006V

DESCRIPTION: With pressure reducing valve and Bleed valve, internal pilot and drain (V-L plugged ports), side T1 port (plugged)

Type: **DPX100/RDR(03)-FPM**

CODE: 640303007V

DESCRIPTION: With pressure reducing valve and Bleed valve, internal pilot and drain (V-L plugged ports), side T1-P1-LS1 ports (plugged)

Type: **DPX100/RDR(03)-BSP34-FPM**

CODE: 640304005V

DESCRIPTION: As previous one with G3/4 P1 and T1 ports

Note: for sections with different port arrangement please contact

Sales Dpt.

4 Valve threading

Only specify if it is different from BSP standard (see page 6).

5 Voltage

Specify the voltage of electric devices.

6 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

6 Assembling kit

CODE	DESCRIPTION	CODE	DESCRIPTION
Standard tie rods: for M and N type inlet sections			
5TIR110145	For 1 section valve	5TIR110359	For 7 section valve
5TIR110179	For 2 section valve	5TIR110397	For 8 section valve
5TIR110215	For 3 section valve	5TIR110431	For 9 section valve
5TIR110252	For 4 section valve	5TIR110467	For 10 section valve
5TIR110289	For 5 section valve	5TIR110503	For 11 section valve
5TIR110323	For 6 section valve	5TIR110541	For 12 section valve
Special tie rods: for PFS type inlet section			
5TIR110163	For 1 section valve	5TIR110382	For 7 section valve
5TIR110200	For 2 section valve	5TIR110417	For 8 section valve
5TIR110238	For 3 section valve	5TIR110454	For 9 section valve
5TIR110273	For 4 section valve	5TIR110487	For 10 section valve
5TIR110307	For 5 section valve	5TIR110526	For 11 section valve
5TIR110344	For 6 section valve	5TIR110561	For 12 section valve
Special tie rods: for valve HF configuration valve			
5TIR110152	For 1 section valve	5TIR110238	For 3 section valve
5TIR110195	For 2 section valve	5TIR110280	For 4 section valve
NOTE: For valve in mixed configuration (standard+HF or HP+HF) or with PFS inlet sections, please contact Sales Department			

Inlet section part ordering codes

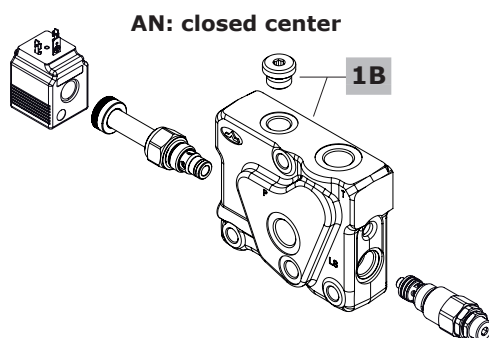
Valve setting (bar)

DPX100 / A M1 (TGW3 - 175 / ELN) - - 12VDC - FPM

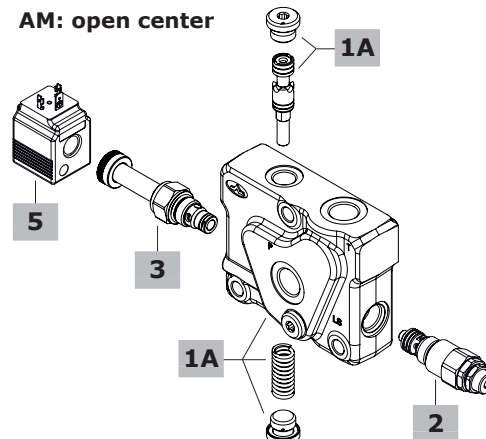
1A 2 3 4 5 6

1B

DPX100: standard pressure section
DPX100HP: High Pressure section



AM: open center



1A Std pressure inlet section kit* page 46

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX100/M1/EL-FPM** CODE: YFIA104310V
DESCRIPTION: With compensator, P-T-LS ports (LS plugged), arranged for unloader valve

TYPE: **DPX100/M1-BSP34/EL-FPM** CODE: YFIA104406V
DESCRIPTION: As previous one with G3/4 P and T ports

TYPE: **DPX100/M1(SU)/EL-FPM** CODE: YFIA104311V
DESCRIPTION: As first one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX100/M1(SO)/EL-FPM** CODE: YFIA104312V
DESCRIPTION: As previous one with non return flow limiter from inlet section to working section and by-pass valve

Closed Center circuit

TYPE: **DPX100/N1/EL-FPM** CODE: YFIA104313V
DESCRIPTION: Without compensator, with P-T-LS ports, arranged for unloader valve

TYPE: **DPX100/N1-BSP34/EL-FPM** CODE: YFIA104401V
DESCRIPTION: As previous one with G3/4 P and T ports

TYPE: **DPX100/N1(SU)/EL-FPM** CODE: YFIA104314V
DESCRIPTION: As first one (Closed Center) with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX100/N1(SO)/EL-FPM** CODE: YFIA104315V
DESCRIPTION: As previous one with non return flow limiter from inlet section to working section and by-pass valve

2 Main pressure relief valve page 50

The codes are referred to parts with FPM o-ring seals

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

TYPE	CODE	DESCRIPTION
(TGW2-80)	OMC09002009	Range 10-120 bar (145-1750 psi) std setting 80 bar (1160 psi)
(TGW3-175)	OMC09002007	Range 40-220 bar (580-3200 psi) std setting 175 bar (2550 psi)
(TGW4-250)	OMC09002005	Range 200-350 bar (2900-5100 psi) std setting 250 bar (3600 psi)
(TGW5-300)	OMC09002008	Range 290-385 bar (4200-5600 psi) std setting 300 bar (4350 psi)
SV	XTAP524340V	Relief valve blanking plug

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

1B High pressure inlet section kit* page 46

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX100HP/M1/EL-FPM** CODE: YFIA104316V
DESCRIPTION: With compensator, P-T-LS ports (LS plugged) arranged for unloader valve

TYPE: **DPX100HP/M1-BSP34/EL-FPM** CODE: YFIA104402V
DESCRIPTION: As previous one with G3/4 P and T ports

TYPE: **DPX100HP/M1(SU)/EL-FPM** CODE: YFIA104317V
DESCRIPTION: As first one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX100HP/M1(SO)/EL-FPM** CODE: YFIA104318V
DESCRIPTION: As previous one with non return flow limiter from inlet section to working section and by-pass valve

Closed Center circuit

Refer to "Std pressure" inlet sections

3 Solenoid operated unloading valve page 50

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
ELN	0EF08002015	Without emergency override
ELV	0EF08002017	With screw type emergency override
ELP	0EF08002010	With push-button emergency override
ELT	0EF08002016	With "twist & push" emergency override
LT	XTAP510320V	Unloading valve blanking plug

4 Section threading

Only specify if it is different from BSP standard (see page 6).

5 Coil

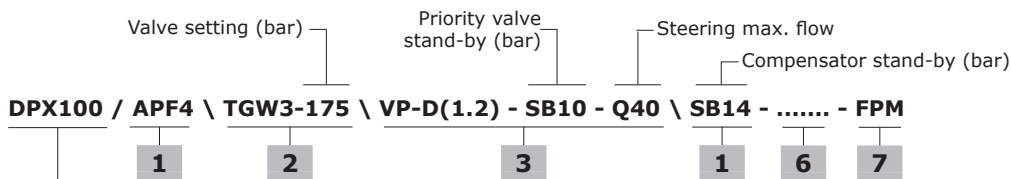
TYPE	CODE	DESCRIPTION
12VDC	4SLE001200A	BER type coil, ISO4400 conn., 12VDC

For complete available coils list see page 125.

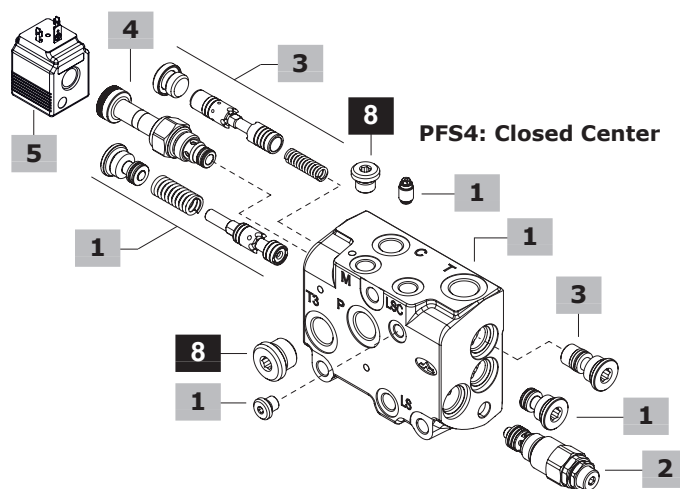
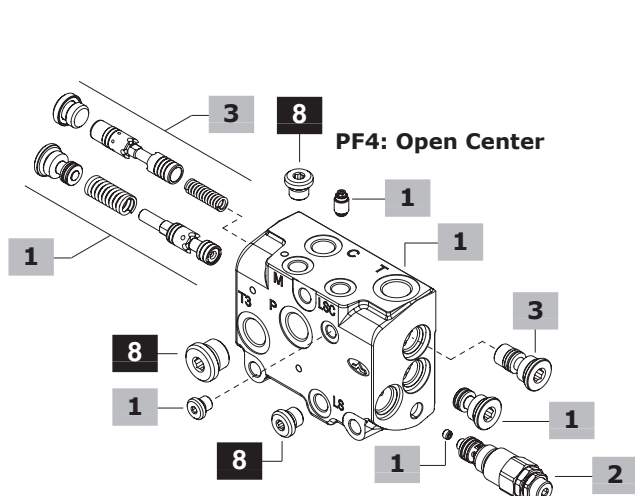
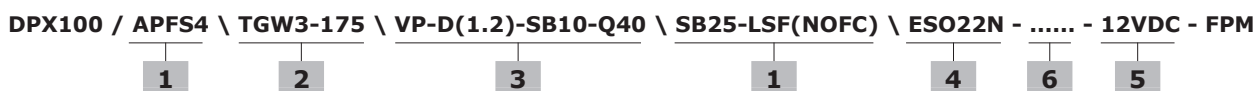
6 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

Inlet section part ordering codes



DPX100 = standard pressure section



1 Inlet section kit* page 48

The codes are referred to sections with FPM o-ring seals
Following sections are suitable only for standard pressure valve

Open Center circuit

TYPE: **DPX100/APF4-FPM** CODE: YFIA104472V
DESCRIPTION: With compensator, P-T-T3-LS-M-C-LSC ports
TIPO: **DPX100/APF4-BSP34-FPM** CODE: YFIA104471V
DESCRIPTION: As previous one, P-T with G3/4 and C with G1/2 thread

Closed Center circuit

TYPE: **DPX100/APFS4-FPM** CODE: YFIA104473V
DESCRIPTION: With flushing valve (stand-by 25 bar - 360 psi), shut-off valve arrangement and P-T-T3-LS-M-C-LSC ports
TYPE: **DPX100/APFS4-BSP34-FPM** CODE: YFIA104470V
DESCRIPTION: As previous one, P-T with G3/4 and C with G1/2 thread
TYPE: **DPX100/APS4-FPM** CODE: YFIA104474V
DESCRIPTION: Without compensator (seat plugged), shut-off valve arrangement and P-T-T3-LS-M-C-LSC ports

2 Main pressure relief valve page 50

See previous page

3 Priority valve kit page 51

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
Regulated flow = 40 l/min (10.5 US gpm)		
D(1.2)-SB10-Q40	5CAS314058AV	Stand-by (margin pressure) 10 bar (145 psi)
D(1.2)-SB07-Q40	5CAS314058BV	Stand-by (margin pressure) 7 bar (100 psi)

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

4 Solenoid operated shut-off valve page 51

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
ESO22N	0EC08002053	Without emergency override
ESO22P	0EC08002047	With push-button emergency override
ESO22V	0EC08002054	With screw type emergency override
ESO22T	0EC08002055	With "twist & push" emergency override
EST	XTAP510320V	Valve blanking plug

5 Coil

TYPE	CODE	DESCRIPTION
12VDC	4SLE001200A	BER type coil, ISO4400 conn., 12VDC

For complete available coils list see page 125.

6 Section threading

Only specify if it is different from BSP standard (see page 6).

7 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

8 Plugs*

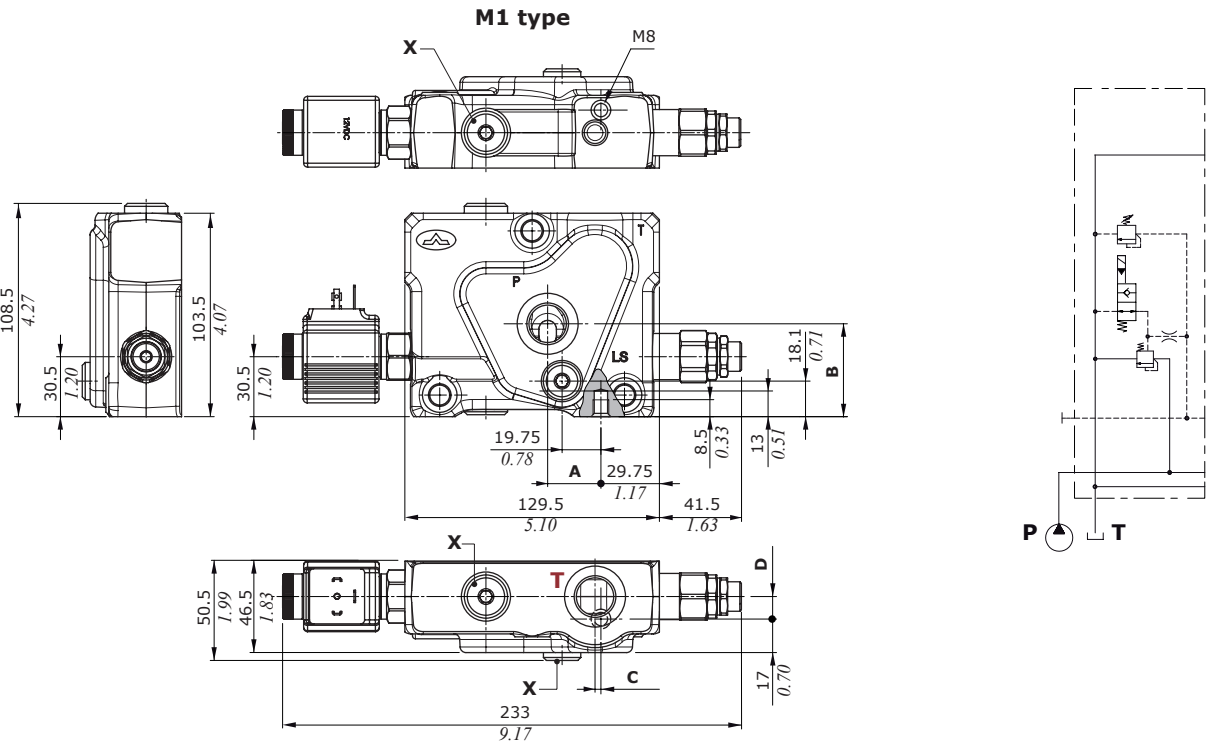
The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION
XTAP719160	G1/4 plug, nr.1 for PFS section, nr.2 for PF section
XTAP727200	G1/2 plug, nr.1
XTAP732220	G3/4 plug, nr.1 (only for BSP34 inlet sections)

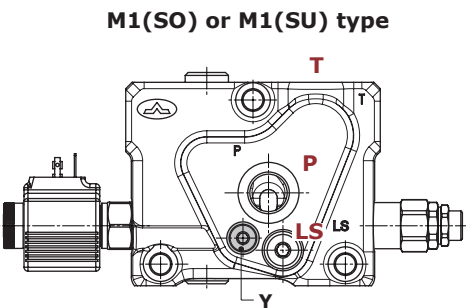
Inlet section

Dimensions and hydraulic circuit

Example of M Open Center section, standard pressure type

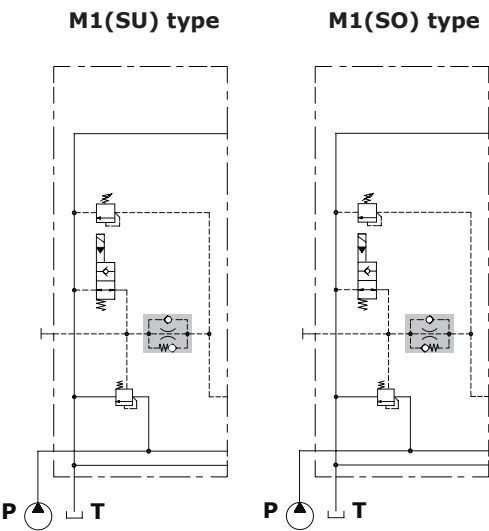


INLET SECTION TYPE		P inlet port				T outlet port			
		A	B	C	D	C	D	C	D
Standard pressure	Standard thread	27.1	1.07	47.25	1.86	3	0.118	11.5	0.45
	Standard thread	27.1	1.07	51.5	2.03	3	0.118	11.5	0.45
	G3/4 thread	27.1	1.07	51.5	2.03	3	0.118	9	0.35
High pressure (HP)									



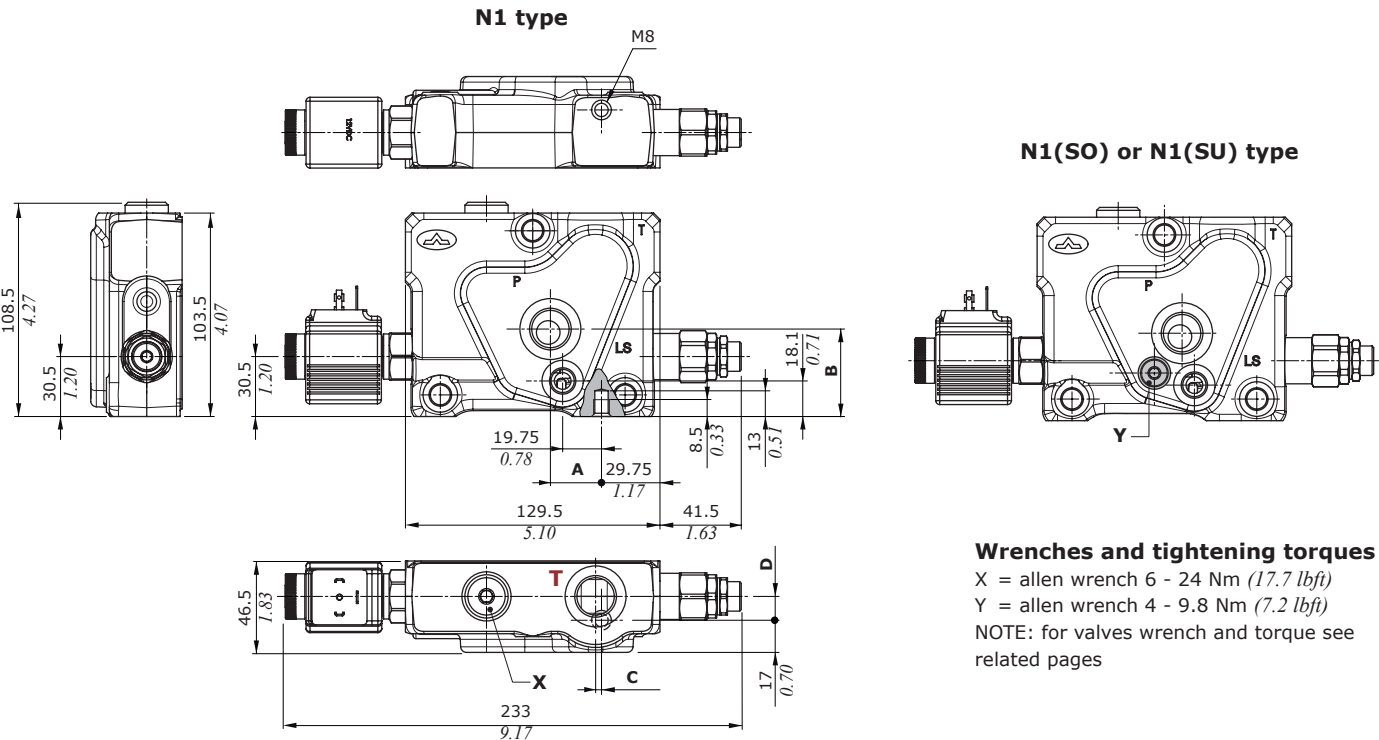
Wrenches and tightening torques

X = allen wrench 6 - 24 Nm (17.7 lbft)
Y = allen wrench 4 - 9.8 Nm (7.2 lbft)
NOTE: for valves wrench and torque see related pages

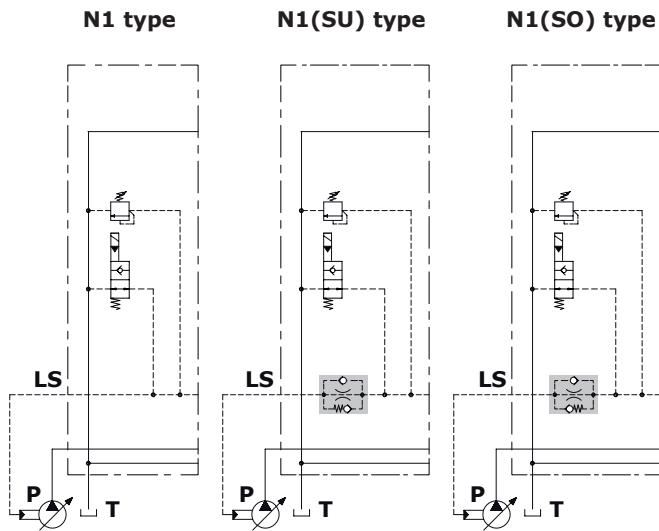


Dimensions and hydraulic circuit

Example of N Closed Center section



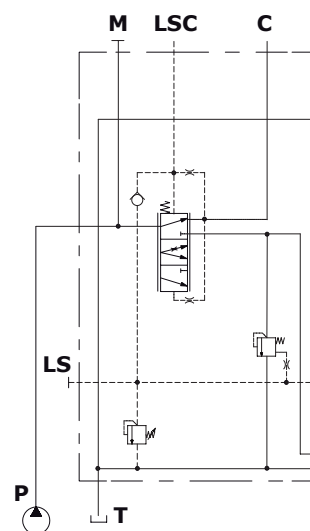
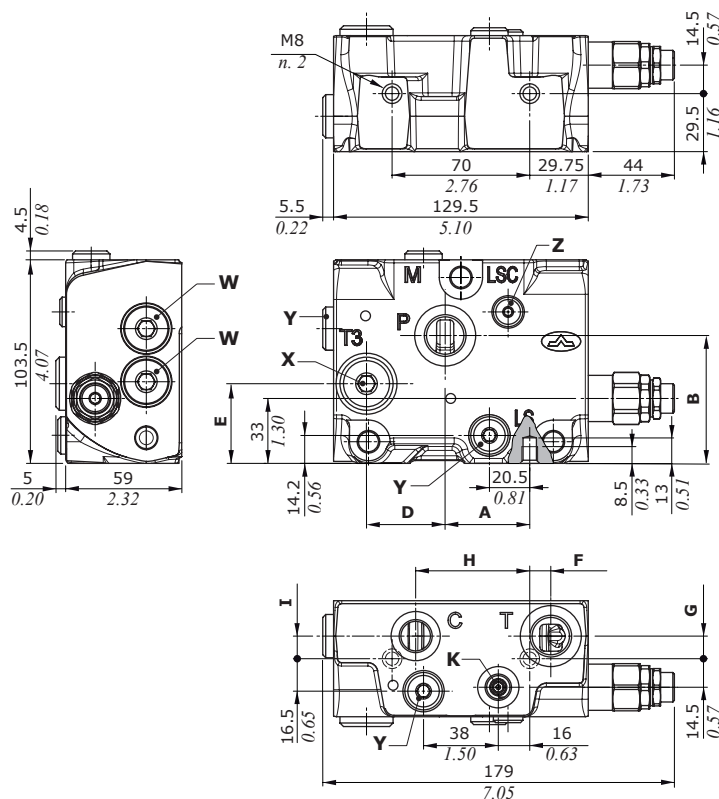
INLET SECTION TYPE	P inlet port				T outlet port			
	A		B		C		D	
	mm	in	mm	in	mm	in	mm	in
Standard thread	26	1.02	44.5	1.75	3	0.118	11.5	0.45
G3/4 thread	27.1	1.07	47.25	1.86	3	0.118	9	0.35



Inlet section

Dimensions and hydraulic circuit

Example of PF4 Open Center section, with priority valve



Wrenches and tightening torques

K = allen wrench 5 - 9.8 Nm (7.2 lbft)

X = allen wrench 8 - 24 Nm (17.7 lbft) - (G1/2)
allen wrench 12 - 42 Nm (31 lbft) - (G3/4)

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

Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

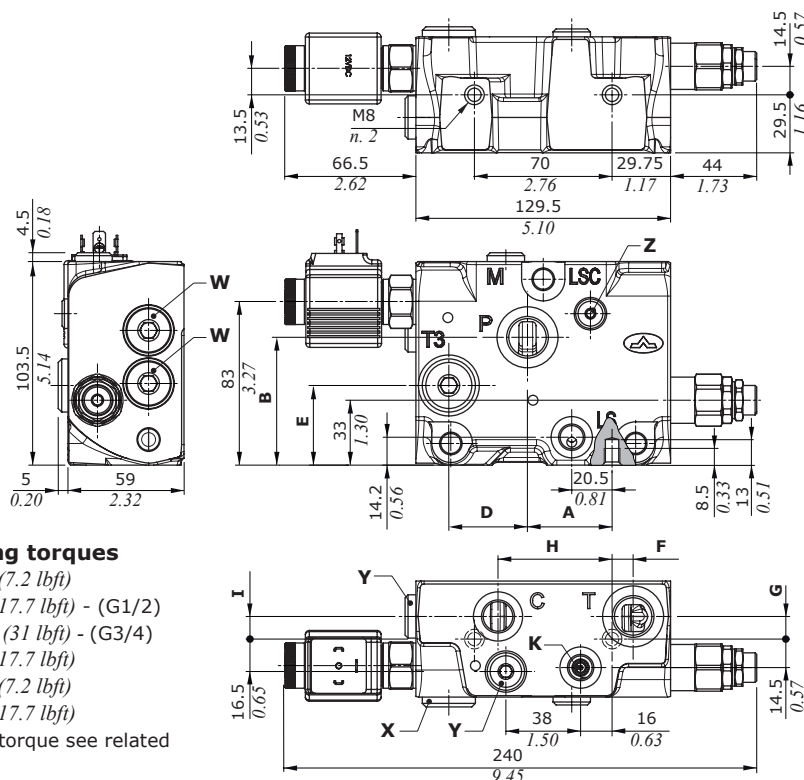
W = allen wrench 8 - 24 Nm (17.7 lbft)

NOTE: for valves wrench and torque see related pages

Port threading	P inlet				T3 outlet				T outlet				C controlled			
	A	B	D	E	F	G	H	I	F	G	H	I	H	I	H	I
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
P,T=G1/2 / C=G3/8	43	1.69	65	2.56	40	1.57	40.5	1.59	10.7	0.42	11.5	0.45	58	2.28	11.5	0.45
P,T=G3/4 / C=G1/2	43	1.69	63	2.48	38	1.50	41	1.61	9.5	0.37	9	0.35	58	2.28	11.5	0.45

Dimensions and hydraulic circuit

Example of PFS4 Closed Center section, with priority valve and shut-off valve arrangement



Wrenches and tightening torques

K = allen wrench 5 - 9.8 Nm (7.2 lbft)

X = allen wrench 8 - 24 Nm (17.7 lbft) - (G1/2)

allen wrench 12 - 42 Nm (31 lbft) - (G3/4)

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

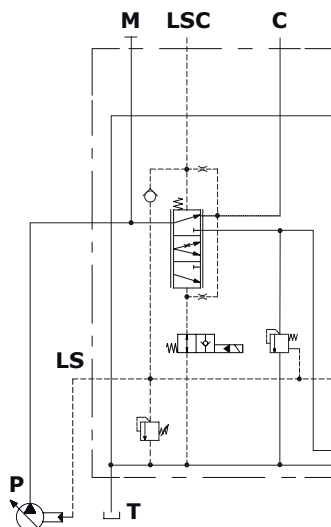
Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

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

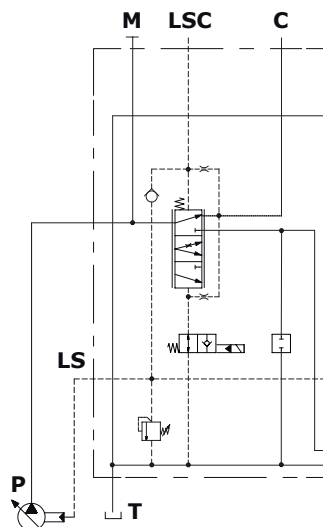
NOTE: for valves wrench and torque see related pages

Port threading	P inlet				T3 outlet				T outlet				C controlled			
	A		B		D		E		F		G		H		I	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
P,T=G1/2 / C=G3/8	43	1.69	65	2.56	40	1.57	40.5	1.59	10.7	0.42	11.5	0.45	58	2.28	11.5	0.45
P,T=G3/4 / C=G1/2	43	1.69	63	2.48	38	1.50	41	1.61	9.5	0.37	9	0.35	58	2.28	11.5	0.45

PFS4 type



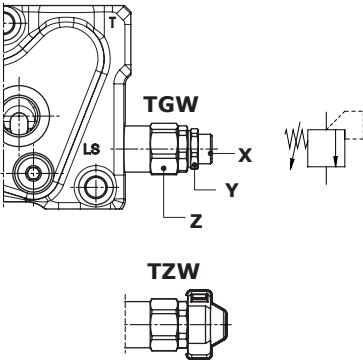
PS4 type



Inlet section

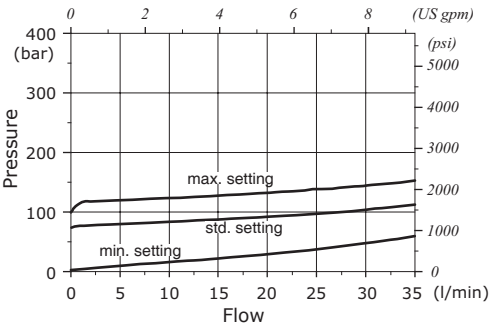
Main pressure relief valve

Setting types

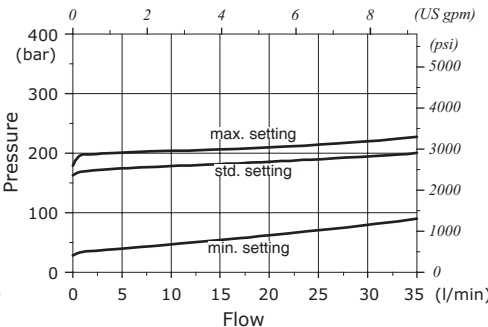


Legenda
TGW: free setting
TZW: valve set and locked
(cap code 4COP126301, n.2 pcs)
RAL3003 pigmented
Wrenches and tightening torques
X = allen wrench 5
Y = wrench 19 - 20 Nm (14.7 lbf)
Z = wrench 24 - 42 Nm (31 lbf)

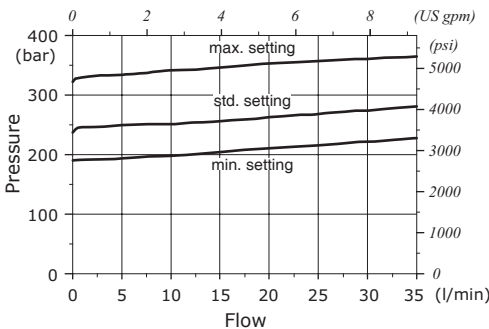
Setting range: TGW2 type



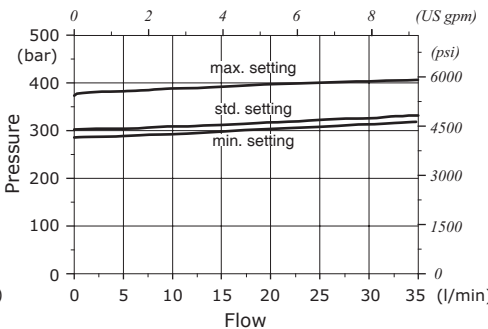
Setting range: TGW3 type



Setting range: TGW4 type

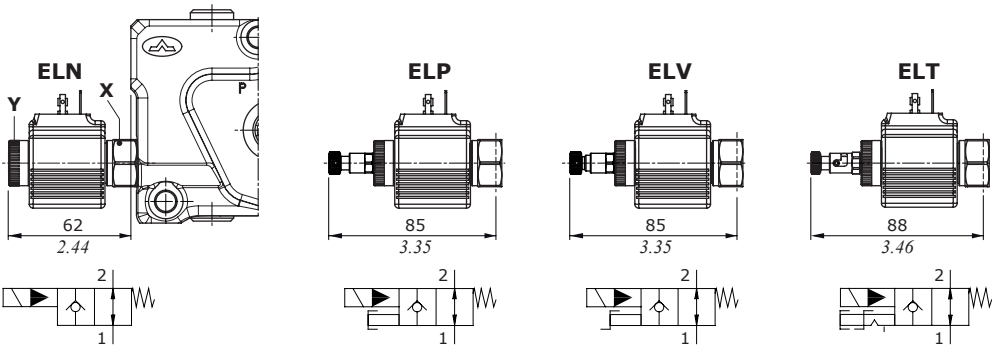


Setting range: TGW5 type



Solenoid operated unloading valve

Manual emergency types

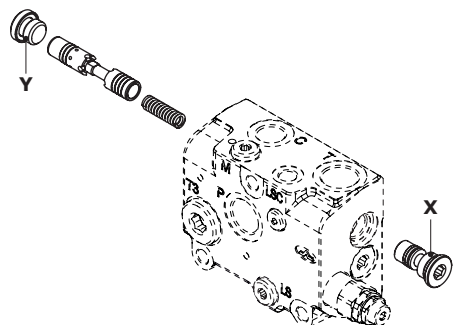


Legenda
ELN: without emergency
ELP: push button emergency override
ELV: screw emergency override
ELT: "push&twist" emergency override
Wrenches and tightening torques
X = wrench 24 - 30 Nm (22 lbf)
Y = manual tightening

Features
Max. flow 40 l/min (10.6 US gpm)
Max. pressure 380 bar (5500 psi)
Internal leakage 0.25 cm³/min @ 210 bar
(0.015 in³/min @ 3050 psi)

For coil features and options see **BER** type coil at page 125.

Priority valve kit



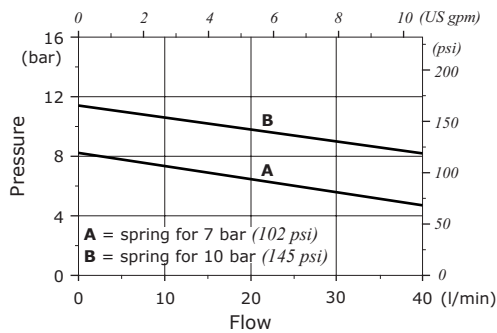
Wrenches and tightening torques

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

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

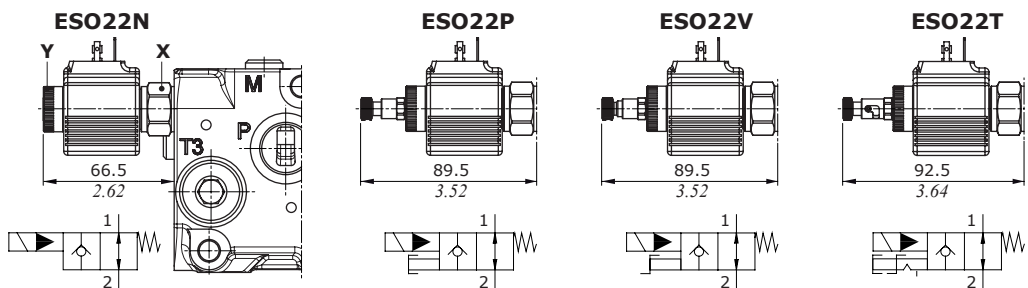
Stand-by (margin pressure) vs. regulated flow

Regulated flow = 40 l/min (10.6 US gpm)



Shut-off valve

Manual emergency types



Legenda

ESO22N: without emergency

ESO22P: push button emergency override

ESO22V: screw emergency override

ESO22T: "push&twist" emergency override

Wrenches and tightening torques

X = wrench 24 - 30 Nm (22 lbft)

Y = manual tightening

Features

Max. flow 40 l/min (10.6 US gpm)

Max. pressure 380 bar (5500 psi)

Internal leakage 0.25 cm³/min @ 210 bar
(0.015 in³/min @ 3050 psi)

For coil features and options see **BER** type coil at page 125.

Working section part ordering codes (mechanical, hydraulic, solenoid)

flow on A/B ports (l/min) Valve setting (bar) A port B port

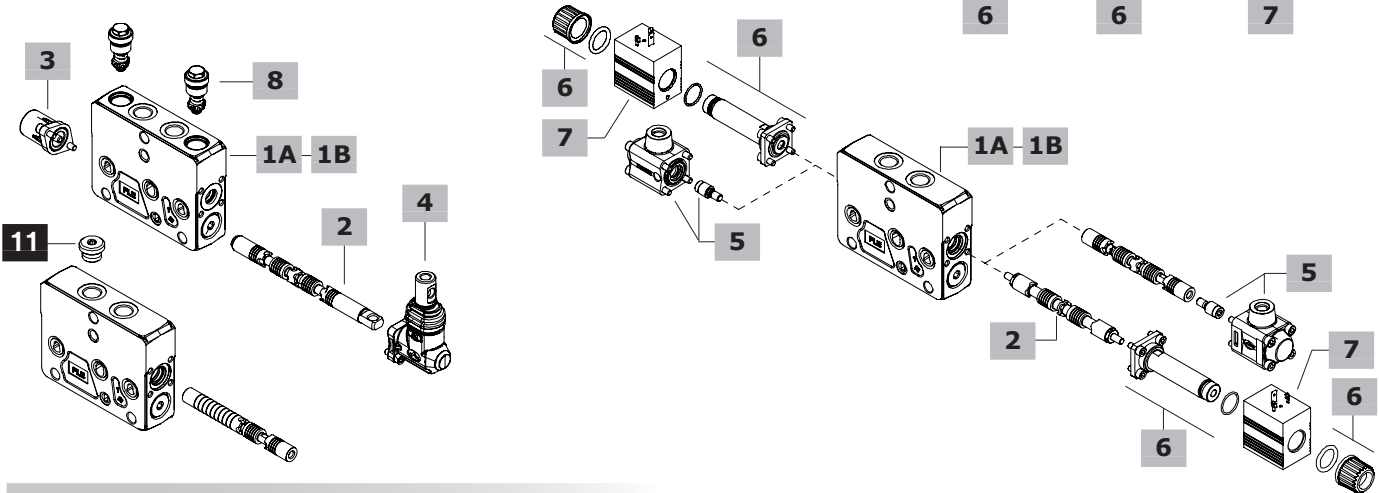
DPX100 / P - 101(80/80) - 8 L . U1(100) U2(120) - - FPM DPX100 / Q - E101(80/80) - 8IMN - - FPM

1A 1B 2 3 4 8 9 10 2 5

DPX100 : standard section
DPX100HP: High Pressure section

DPX100 / Q - S102(60/60) - 8ES3 - - 12VDC - FPM

6 6 7



1A Std press. working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: **DPX100/Q-FPM** CODE: 5EL1043010V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100/Q-BSP12-FPM** CODE: 5EL1044010V

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100/P-FPM** CODE: 5EL1043000V

DESCRIPTION: With port valve arrangement

TYPE: **DPX100/P-BSP12-FPM** CODE: 5EL1044000V

DESCRIPTION: As previous one with G1/2 ports

For hydraulic and solenoid control

TYPE: **DPX100/Q-IM-FPM** CODE: 5EL1043010AV

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100/Q-IM-BSP12-FPM** CODE: 5EL1044010AV

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100/P-IM-FPM** CODE: 5EL1043000AV

DESCRIPTION: With port valve arrangement

TYPE: **DPX100/P-IM-BSP12-FPM** CODE: 5EL1044000AV

DESCRIPTION: As previous one with G1/2 ports

1B High press. working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: **DPX100HP/Q-FPM** CODE: 5EL1043011V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HP/Q-BSP12-FPM** CODE: 5EL1044011V

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100HP/P-FPM** CODE: 5EL1043004V

DESCRIPTION: With port valve arrangement

TYPE: **DPX100HP/P-BSP12-FPM** CODE: 5EL1044008V

DESCRIPTION: As previous one with G1/2 ports

For hydraulic and solenoid control

TYPE: **DPX100HP/Q-IM-FPM** CODE: 5EL1043010BV

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HP/Q-IM-BSP12-FPM** CODE: 5EL1044010EV

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100HP/P-IM-FPM** CODE: 5EL1043000BV

DESCRIPTION: With port valve arrangement

TYPE: **DPX100HP/P-IM-BSP12-FPM** CODE: 5EL1044007AV

DESCRIPTION: As previous one with G1/2 ports

2 Spool for Std and HP sections page 61

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE CODE DESCRIPTION

For mechanical control

Double acting with A and B closed in neutral position

101(80) 3CU7110101 80 l/min (21 US gpm) flow

109(70) 3CU7110109 70 l/min (18.5 US gpm) flow

102(60) 3CU7110102 60 l/min (16 US gpm) flow

112(50) 3CU7110003 50 l/min (13.2 US gpm) flow

103(40) 3CU7110103 40 l/min (10.5 US gpm) flow

111(30) 3CU7110002 30 l/min (7.9 US gpm) flow

104(20) 3CU7110104 20 l/min (5.3 US gpm) flow

113(10) 3CU7110113 10 l/min (2.6 US gpm) flow

Double acting with A and B to tank in neutral position

201(80) 3CU7110201 80 l/min (21 US gpm) flow

211(70) 3CU7125211 70 l/min (18.5 US gpm) flow

206(60) 3CU7110204 60 l/min (16 US gpm) flow

209(50) 3CU7125209 50 l/min (13.2 US gpm) flow

208(40) 3CU7125208 40 l/min (10.5 US gpm) flow

212(30) 3CU7125212 30 l/min (7.9 US gpm) flow

205(20) 3CU7110205 20 l/min (5.3 US gpm) flow

214(5) 3CU7125214 5 l/min (1.3 US gpm) flow

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

2H01(80) 3CU7110202 80 l/min (21 US gpm) flow

2H06(60) 3CU7124213 60 l/min (16 US gpm) flow

2H05(40) 3CU7124212 40 l/min (10.5 US gpm) flow

2H04(20) 3CU7124211 20 l/min (5.3 US gpm) flow

2H07(10) 3CU7124214 10 l/min (2.6 US gpm) flow

Single acting on A, B plugged: G3/8 or G1/2 plug is required

301(80) 3CU7110301 80 l/min (21 US gpm) flow

304(60) 3CU7131304 60 l/min (16 US gpm) flow

303(40) 3CU7131303 40 l/min (10.5 US gpm) flow

302(20) 3CU7131302 20 l/min (5.3 US gpm) flow

Double acting with A and B closed in neutral pos., 4 positions, floating in 4th pos. with spool in: type 13 or 13F positioner is required

508(70) 3CU7142508 70 l/min (18.5 US gpm) flow

507(60) 3CU7142507 60 l/min (16 US gpm) flow

505(40) 3CU7142505 40 l/min (10.5 US gpm) flow

506(20) 3CU7142506 20 l/min (5.3 US gpm) flow

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

Working section part ordering codes (mechanical, hydraulic, solenoid)

2 Spool for Std and HP sections page 61

.....continuation

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE CODE DESCRIPTION

For solenoid controlDouble acting with A and B closed in neutral position**S102(60)** 3CU7410102 60 l/min (16 US gpm) flow**S108(40)** 3CU7410108 40 l/min (10.5 US gpm) flow**S107(30)** 3CU7410107 30 l/min (7.9 US gpm) flow**S105(20)** 3CU7410105 20 l/min (5.3 US gpm) flow**S106(10)** 3CU7410106 10 l/min (2.6 US gpm) flow**S109(5)** 3CU7410109 5 l/min (1.3 US gpm) flowDouble acting with A and B partially to tank in neutral position**S2H02(60)** 3CU7410202 60 l/min (16 US gpm) flow**S2H06(10)** 3CU7410206H 10 l/min (2.6 US gpm) flowSingle acting on A or B, other port plugged: G3/8 or G1/2 plug is required**S308-S408(40)** 3CU7410308 40 l/min (10.5 US gpm) flow**S305-S405(20)** 3CU7410305 20 l/min (5.3 US gpm) flow**For hydraulic control**Double acting with A and B closed in neutral position**E101(80)** 3CU7710101 80 l/min (21 US gpm) flow**E108(60)** 3CU7710108 60 l/min (16 US gpm) flow**E123(50)** 3CU7710123 50 l/min (13.2 US gpm) flow**E105(40)** 3CU7710105 40 l/min (10.5 US gpm) flow**E113(30)** 3CU7710113 30 l/min (7.9 US gpm) flow**E106(20)** 3CU7710106 20 l/min (5.3 US gpm) flow**E110(10)** 3CU7710110 10 l/min (2.6 US gpm) flow**E159(5)** 3CU7710159 5 l/min (1.3 US gpm) flowDouble acting with A and B to tank in neutral position**E210(70)** 3CU7725006 70 l/min (18.5 US gpm) flow**E209(60)** 3CU7725005 60 l/min (16 US gpm) flow**E214(50)** 3CU7725010 50 l/min (13.2 US gpm) flow**E206(40)** 3CU7725003 40 l/min (10.5 US gpm) flow**E202(30)** 3CU7725002 30 l/min (7.9 US gpm) flow**E205(20)** 3CU7725001 20 l/min (5.3 US gpm) flow**E211(10)** 3CU7725007 10 l/min (2.6 US gpm) flowDouble acting with A and B partially to tank in neutral position**E2H01(80)** 3CU7710202 80 l/min (21 US gpm) flow**E2H05(60)** 3CU7724004 60 l/min (16 US gpm) flow**E2H04(40)** 3CU7724003 40 l/min (10.5 US gpm) flow**E2H06(20)** 3CU7724005 20 l/min (5.3 US gpm) flow**E2H03(10)** 3CU7724002 10 l/min (2.6 US gpm) flow**E2H25(5)** 3CU7724159 5 l/min (1.3 US gpm) flowSingle acting on A or B, other port plugged: G3/8 or G1/2 plug is required**E301-E401(80)** 3CU7710301 80 l/min (21 US gpm) flow**E305-E405(60)** 3CU7731305 60 l/min (16 US gpm) flow**E304-E404(40)** 3CU7731304 40 l/min (10.5 US gpm) flow**E303-E403(20)** 3CU7731303 20 l/min (5.3 US gpm) flowDouble acting with A and B closed in neutral pos., 4 positions, floating in 4th pos. with spool in: type 13IMS control is required**I504(60)** YCU7742504 60 l/min (16 US gpm) flow**I503(20)** YCU7742503 20 l/min (5.3 US gpm) flow**10 Seals**

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

11 Plug for single acting spool *

The codes are referred to sections with FPM o-ring seals

CODE	DESCRIPTION	CODE	DESCRIPTION
XTAP722160	G3/8 plug	XTAP727200	G1/2 plug

3 "A" side spool positioners page 63

TYPE	CODE	DESCRIPTION
7FT	5V07407000	With friction and neutral pos. notch
7FTN	5V07407010	As 7FT, friction regulation with spring
8	5V08107000	3 pos., spring return to neutral pos.
8F2	5V08107100	Spool stroke limiter on B port
8D	5V08107200	External pin with M6 female thread
8TL	5V08107310	Arrangement for double control
8RM2-12VDC	5V08107590	Electromagnetic detent in pos.2
8MG3(NO)	5V08107660	With micro in positions 1 and 2
8PP	5V08107700	Proportional pneumatic control
8PNB	5V08107718	On/off waterproof pneumatic control
8EPNB3-12VDC	5V08107742	On/off electropneumatic control
8EPNB3-24VDC	5V08107743	On/off electropneumatic control
8K-12DC	5V08707112	Solenoid detent in neutral position
8K-24DC	5V08707124	Solenoid detent in neutral position
9B	5V09207000	Detent in position 1
10B	5V10207000	Detent in position 2
11B	5V11207000	Detent in positions 1 and 2
<u>For floating circuit (spool 5)</u>		
13N	5V13307005	4 positions, detent in 4 th position with spring return to neutral position
13F	5V13507000	4 pos., spring return to neutral pos.

4 "B" side spool control kit page 68

TYPE	CODE	DESCRIPTION
L	5LEV107000	Standard lever box
LSG	5LEV107000S	As previous one, water-proof type
LF1	5LEV107100	As type L, spool stroke limiter on A port
LSGF1	5LEV107100S	As previous one, water-proof type
SLC	5COP207000	Without lever with endcap
SLP	5COP107010	Without lever with dust-proof plate
TQ	5TEL102100	Flexible cable connection
LCA1-4	5CLO207010	Joystick for 2 section operation: type 1 and 4 configurations.
LCA2-3	5CLO207011	As previous one: type 2-3 configurations

5 Proportional hydraulic control* page 70

The codes are referred to sections with FPM o-ring seals

TYPE	CODE	DESCRIPTION
81MN	5IDR204304V	Range 8-27 bar (116-392 psi)
81MF3N	5IDR204314V	As previous one, with spool stroke limiter
81MXN	5IDR204303V	Range 7.5-24 bar (109-348 psi)
81MXF3N	5IDR204313V	As previous one, with spool stroke limiter
<u>For floating circuit (spool 15)</u>		
13IMS	5IDR207350V	Range 6.5-15.5 / 8-22.5 bar (94-225 / 116-326 psi)

6 On/off solenoid control page 71

The codes are referred to sections with FPM o-ring seals

TYPE	CODE	DESCRIPTION
8ES1-8ES2	5CAN08061V	Single acting on A or B port
8ES3	5CAN08062V	Double acting

7 Coil

TYPE	CODE	DESCRIPTION
12VDC	4SOL412012	12VDC, ISO4400 D12 type connector

For complete available coils list see page 125.

8 Port valves page 82

TYPE	CODE	DESCRIPTION
U025	5KIT330025	Setting: 25 bar (360 psi)

For complete valves list see next pages.

9 Section threading

Only specify if it is different from BSP standard (see page 6).

Working section part ordering codes (electrohydraulic)

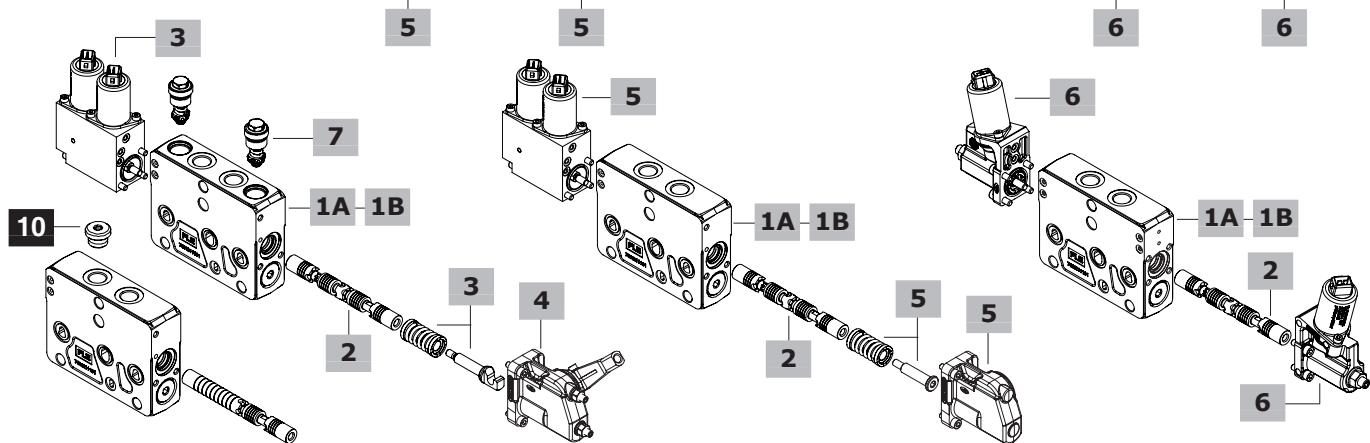
flow on A/B ports (l/min) Valve setting (bar)
A port B port

DPX100 / PZ - E101(80/80) - 8EZ3 LQF3 . U1(100) U2(120) - - 12VDC - FPM

1A 1B 2 3 4 7 8 3 9

DPX100 : standard section - DPX100HP: High Pressure section

DPX100/QZ-E101(80/80) - 8EZ3SLCQ - -12VDC-FPM DPX100/QE-E101(80/80) - 8EB3TF3 - -12VDC-FPM



1A Std press. working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: **DPX100/QE-FPM** CODE: 5EL1043012V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100/QE-BSP12-FPM** CODE: 5EL1044012V

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100/PE-FPM** CODE: 5EL1043002V

DESCRIPTION: With port valve arrangement

TYPE: **DPX100/PE-BSP12-FPM** CODE: 5EL1044002V

DESCRIPTION: As previous one with G1/2 ports

For one-side electrohydraulic control

TYPE: **DPX100/QZ-FPM** CODE: 5EL1043022V

DESCRIPTION: Without port valves arrangement

Type: **DPX100/QZ-BSP12-FPM** CODE: 5EL1044013AV

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100/PZ-FPM** CODE: 5EL1043006V

DESCRIPTION: With port valve arrangement

TYPE: **DPX100/PZ-BSP12-FPM** CODE: 5EL1044004AV

DESCRIPTION: As previous one with G1/2 ports

1B High press. working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: **DPX100HP/QE-FPM** CODE: 5EL1043015V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HP/QE-BSP12-FPM** CODE: 5EL1044014V

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100HP/PE-FPM** CODE: 5EL1043005V

DESCRIPTION: With port valve arrangement

TYPE: **DPX100HP/PE-BSP12-FPM** CODE: 5EL1044005V

DESCRIPTION: As previous one with G1/2 ports

For one-side electrohydraulic control

TYPE: **DPX100HP/QZ-FPM** CODE: 5EL1043022AV

DESCRIPTION: Without port valves arrangement

TYPE: **DPX100HP/QZ-BSP12-FPM** CODE: 5EL1044013BV

DESCRIPTION: As previous one with G1/2 ports

TYPE: **DPX100HP/PZ-FPM** CODE: 5EL1043200AV

DESCRIPTION: With port valves arrangement

TYPE: **DPX100HP/PZ-BSP12-FPM** CODE: 5EL1044003AV

DESCRIPTION: As previous one with G1/2 ports

2 Spool page 61

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE CODE DESCRIPTION

Double acting with A and B closed in neutral position

E101(80) 3CU7710101 80 l/min (21 US gpm) flow

E108(60) 3CU7710108 60 l/min (16 US gpm) flow

E123(50) 3CU7710123 50 l/min (13.2 US gpm) flow

E105(40) 3CU7710105 40 l/min (10.5 US gpm) flow

E113(30) 3CU7710113 30 l/min (7.9 US gpm) flow

E106(20) 3CU7710106 20 l/min (5.3 US gpm) flow

E110(10) 3CU7710110 10 l/min (2.6 US gpm) flow

E159(5) 3CU7710159 5 l/min (1.3 US gpm) flow

Double acting with A and B to tank in neutral position

E210(70) 3CU7725006 70 l/min (18.5 US gpm) flow

E209(60) 3CU7725005 60 l/min (16 US gpm) flow

E214(50) 3CU7725010 50 l/min (13.2 US gpm) flow

E206(40) 3CU7725003 40 l/min (10.5 US gpm) flow

E202(30) 3CU7725002 30 l/min (7.9 US gpm) flow

E205(20) 3CU7725001 20 l/min (5.3 US gpm) flow

E211(10) 3CU7725007 10 l/min (2.6 US gpm) flow

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

E2H01(80) 3CU7710202 80 l/min (21 US gpm) flow

E2H05(60) 3CU7724004 60 l/min (16 US gpm) flow

E2H04(40) 3CU7724003 40 l/min (10.5 US gpm) flow

E2H06(20) 3CU7724005 20 l/min (5.3 US gpm) flow

E2H03(10) 3CU7724002 10 l/min (2.6 US gpm) flow

E2H25(5) 3CU7724159 5 l/min (1.3 US gpm) flow

Single acting on A or B, other port plugged: G3/8 or G1/2 plug is required

E301-E401(80) 3CU7710301 80 l/min (21 US gpm) flow

E305-E405(60) 3CU7731305 60 l/min (16 US gpm) flow

E304-E404(40) 3CU7731304 40 l/min (10.5 US gpm) flow

E303-E403(20) 3CU7731303 20 l/min (5.3 US gpm) flow

Double acting with A and B closed in neutral pos., 4 pos., floating in

4th pos. with spool in: 13EB3.. or 13EZ3.. type control is required

E504(60) 3CU7742504 60 l/min (16 US gpm) flow

E503(20) 3CU7742503 20 l/min (5.3 US gpm) flow

Working section part ordering codes (electrohydraulic)

3 One-side electrohydr. control page 78

The codes are referred to parts with FPM o-ring seals

Combine to "B" side options type LQ and LQF3

TYPE	CODE	DESCRIPTION
8EZ3-12VDC	5IDR604300V	With AMP connector
8EZ3-24VDC	5IDR604301V	With AMP connector
8EZ34-12VDC	5IDR604302V	With Deutsch connector
8EZ34-24VDC	5IDR604303V	With Deutsch connector
<u>With spool position sensor</u>		
8EZ3SPSD-12VDC	5IDR604304V	AMP conn. and digital sensor
8EZ3SPSD-24VDC	5IDR604305V	AMP conn. and digital sensor
8EZ34SPSD-12VDC	5IDR604306V	Deutsch conn. and digital sensor
8EZ34SPSD-24VDC	5IDR604307V	Deutsch conn. and digital sensor
8EZ34SPSL-0.5(A)-4.5(B)-12VDC	5IDR604311V	AMP conn. and analog sensor
<u>For floating circuit (spool E5)</u>		
13EZ3-12VDC	5IDR614300V	With AMP connector
13EZ3-24VDC	5IDR614301V	With AMP connector
13EZ34-12VDC	5IDR614302V	With Deutsch connector
13EZ34-24VDC	5IDR614303V	With Deutsch connector

4 "B" side options page 79

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
For one-side electrohydraulic control		
LQ	5LEV100700V	Lever box
LQF3	5LEV100701V	Lever box with spool stroke limiter
LQSL	5COP204100V	Lever box without lever

5 Complete one-side e.h. control page 80

The codes are referred to parts with FPM o-ring seals

Controls already comprehensive of endcap on B side

TYPE	CODE	DESCRIPTION
8EZ3SLCQ-12VDC	5IDR604300SV	With AMP connector
8EZ3SLCQ-24VDC	5IDR604301SV	With AMP connector
8EZ34SLCQ-12VDC	5IDR604302SV	With Deutsch connector
8EZ34SLCQ-24VDC	5IDR604303SV	With Deutsch connector
<u>With spool position sensor</u>		
TYPE: 8EZ3SPSDSLCQ-12VDC	CODE: 5IDR604304SV	
DESCRIPTION: With AMP connector and digital sensor		
TYPE: 8EZ3SPSDSLCQ-24VDC	CODE: 5IDR604305SV	
DESCRIPTION: As previous one		
TYPE: 8EZ34SPSDSLCQ-12VDC	CODE: 5IDR604306SV	
DESCRIPTION: With Deutsch connector and digital sensor		
TYPE: 8EZ34SPSDSLCQ-24VDC	CODE: 5IDR604307SV	
DESCRIPTION: As previous one		
TYPE: 8EZ34SPSL-0.5(A)-4.5(B)SLCQ-12VDC	CODE: 5IDR604311SV	
DESCRIPTION: With AMP connector and analog sensor		

8 Section threading

Only specify if it is different from BSP standard (see page 6).

9 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

10 Plug for single acting spool *

The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION	CODE	DESCRIPTION
XTAP722160	G3/8 plug	XTAP727200	G1/2 plug

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

6 Two-side electrohydr. control page 76

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
<u>Without lever control</u>		
8EB3T-12VDC	5IDR904214V	With AMP connector
8EB3T-24VDC	5IDR904222V	With AMP connector
8EB34T-12VDC	5IDR904236V	With Deutsch connector
8EB34T-24VDC	5IDR904237V	With Deutsch connector
8EB3TF3-12VDC	5IDR904217V	With AMP, spool stroke limiter
8EB3TF3-24VDC	5IDR904224V	As previous one
8EB34TF3-12VDC	5IDR904235V	Deutsch conn. and stroke limiter
8EB34TF3-24VDC	5IDR904238V	As previous one
<u>Without lever control, with spool position sensor</u>		
8EB3TSPSD-12VDC	5IDR904233V	AMP conn. and digital sensor
8EB3TSPSD-12VDC	5IDR904226V	As previous one
<u>Without lever control: for floating circuit (E5 spool)</u>		
13EB3T-12VDC	5IDR914201V	With AMP connector
13EB3T-24VDC	5IDR914202V	With AMP connector
13EB34T-12VDC	5IDR914214V	With Deutsch connector
13EB34T-24VDC	5IDR914215V	With Deutsch connector
<u>With lever control</u>		
8EB3TLH-12VDC	5IDR904215V	With AMP connector
8EB3TLH-24VDC	5IDR904228V	With AMP connector
8EB34TLH-12VDC	5IDR904219V	With Deutsch connector
8EB34TLH-24VDC	5IDR904239V	With Deutsch connector
8EB3TLHF3-12VDC	5IDR904229V	With AMP, spool stroke limiter
8EB3TLHF3-24VDC	5IDR904218V	As previous one
8EB34TLHF3-12VDC	5IDR904240V	With Deutsch connector with spool stroke limiter
8EB34TLHF3-24VDC	5IDR904241V	As previous one
<u>With lever control and spool position sensor</u>		
8EB3TLHSPSD-12VDC	5IDR904234V	AMP connector and digital sensor
8EB3TLHSPSD-24VDC	5IDR904232V	As previous one
8EB3TLHF3SPSL-0.5(A)-4.5(B)-12VDC	5IDR904259V	With spool limiter, AMP connector and analog sensor
8EB3TLHF3SPSL-0.5(A)-4.5(B)-24VDC	5IDR904247V	As previous one
<u>With lever control: for floating circuit (E5 spool)</u>		
13EB3TLH-12VDC	5IDR914220V	With AMP connector
13EB3TLH-24VDC	5IDR914211V	With AMP connector
13EB34TLH-12VDC	5IDR914216V	With Deutsch connector
13EB34TLH-24VDC	5IDR914217V	With Deutsch connector
13EB3TLHF3-12VDC	5IDR914213V	With AMP and spool stroke limiter
13EB3TLHF3-24VDC	5IDR914210V	As previous one
13EB34TLHF3-12VDC	5IDR914218V	With Deutsch, spool stroke limiter
13EB34TLHF3-24VDC	5IDR914219V	As previous one

7 Port valves page 82

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
UT	XTAP522441V	Valve blanking plug
	XTAP522442V	As previous one, for HP valve
C	5KIT410000V	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 V

SETTING: $\frac{\text{U 100}}{\text{setting (bar)}}$ $\frac{\text{CODE: 5KIT330}}{\text{setting (bar)}}$

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)		

HF working section part ordering codes (mechanical, hydraulic)

flow on A/B ports (l/min)

Valve setting (bar)
A port B port

DPX100HF / P - 101(80/80) - 8 L . U1(100) U2(120) - - FPM

1

2

3

4

6

7

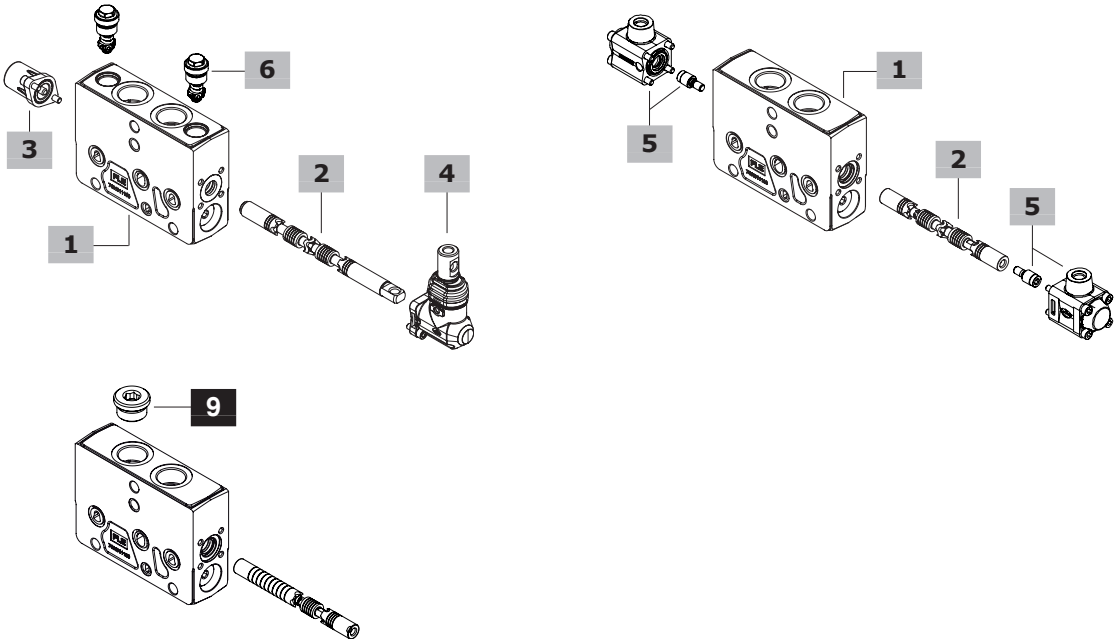
8

High Flow section

DPX100HF / Q - E101(120/120) - 8IMN - - FPM

2

5



HF working section part ordering codes (mechanical, hydraulic)

1 High flow working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: **DPX100HF/Q-FPM** CODE: 5EL1043F10V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HF/P-FPM** CODE: 5EL1043F00V

DESCRIPTION: With port valve arrangement

For hydraulic control

TYPE: **DPX100HF/Q-IM-FPM** CODE: 5EL1043F10AV

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HF/P-IM-FPM** CODE: 5EL1043F00AV

DESCRIPTION: With port valve arrangement

2 Spool page 61

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE	CODE	DESCRIPTION
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For mechanical control

Double acting with A and B closed in neutral position

101(120)	3CU7110F01	120 l/min (32 US gpm) flow
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103(100)	3CU7110F03	100 l/min (26 US gpm) flow
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104(80)	3CU7110F04	80 l/min (21 US gpm) flow
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102(60)	3CU7110F02	60 l/min (16 US gpm) flow
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Double acting with A and B to tank in neutral position

201(120)	3CU7125F01	120 l/min (32 US gpm) flow
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Double acting with A and B partially to tank in neutral position

2H11(100)	3CU7124F11	100 l/min (26 US gpm) flow
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2H06(60)	3CU7124F06	60 l/min (16 US gpm) flow
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For hydraulic control

Double acting with A and B closed in neutral position

E101(120)	3CU7710F01	120 l/min (32 US gpm) flow
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E103(80)	3CU7710F03	80 l/min (21 US gpm) flow
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Double acting with A and B to tank in neutral position

E201(80)	3CU7725F01	80 l/min (21 US gpm) flow
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Single acting on A or B, other port plugged: G3/4 plug is required

E301-E401(120)	3CU7731F01	120 l/min (32 US gpm) flow
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3 "A" side spool positioners page 63

TYPE	CODE	DESCRIPTION
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7FT	5V07407000	With friction and neutral pos. notch
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7FTN	5V07407010	As 7FT, friction regulation with spring
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8	5V08107000	3 pos., spring return to neutral pos.
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8F2	5V08107100	Spool stroke limiter on B port
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8D	5V08107200	External pin with M6 female thread
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8TL	5V08107310	Arrangement for double control
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8RM2-12VDC	5V08107590	Electromagnetic detent in pos.2
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8MG3(NO)	5V08107660	With micro in positions 1 and 2
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8PP	5V08107700	Proportional pneumatic control
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8PNB	5V08107718	On/off waterproof pneumatic control
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8EPNB3-12VDC	5V08107742	On/off electropneumatic control
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8EPNB3-24VDC	5V08107743	On/off electropneumatic control
---------------------	------------	---------------------------------

8K-12DC	5V08707112	Solenoid detent in neutral position
----------------	------------	-------------------------------------

8K-24DC	5V08707124	Solenoid detent in neutral position
----------------	------------	-------------------------------------

9B	5V09207000	Detent in position 1
-----------	------------	----------------------

10B	5V10207000	Detent in position 2
------------	------------	----------------------

11B	5V11207000	Detent in positions 1 and 2
------------	------------	-----------------------------

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

4 "B" side spool control kit page 68

TYPE	CODE	DESCRIPTION
------	------	-------------

L	5LEV107000	Standard lever box
----------	------------	--------------------

LSG	5LEV107000S	As previous, one water-proof type
------------	-------------	-----------------------------------

LF1	5LEV107100	As L type, spool stroke limiter on A port
------------	------------	---

LSGF1	5LEV107100S	As previous one, water-proof type
--------------	-------------	-----------------------------------

SLC	5COP207000	Without lever with endcap
------------	------------	---------------------------

SLP	5COP107010	Without lever with dust-proof plate
------------	------------	-------------------------------------

5 Proportional hydraulic control* page 70

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
------	------	-------------

8IMN	5IDR204304V	Range 8-27 bar (116-392 psi)
-------------	-------------	------------------------------

8IMF3N	5IDR204314V	As previous one with spool stroke limiter
---------------	-------------	---

8IMXN	5IDR204303V	Range 7.5-24 bar (109-348 psi)
--------------	-------------	--------------------------------

8IMXF3N	5IDR204313V	As previous one with spool stroke limiter
----------------	-------------	---

6 Port valves page 82

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
------	------	-------------

UT	XTAP522441V	Valve blanking plug
-----------	-------------	---------------------

	XTAP522442V	As previous, for HP valve
--	-------------	---------------------------

C	5KIT410000V	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 V
	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 Section threading

Only specify if it is different from BSP standard (see page 6).

8 Seals

TYPE	DESCRIPTION
------	-------------

FPM	FPM o-ring seals; standard
------------	----------------------------

NBR	NBR o-ring seals
------------	------------------

9 Plug for single acting spool *

CODE	DESCRIPTION
------	-------------

XTAP732220	G3/4 plug, with FPM o-ring seal
------------	---------------------------------

HF working section part ordering codes (electrohydraulic)

DPX100HF / PZ - E101(120/120) - 8EZ3 LQF3 . U1(100) U2(120) - - 12VDC - FPM

1

2

3

4

7

8

3

9

High Flow section

DPX100HF/QZ-E101(120/120) - 8EZ3SLCQ - - 12VDC - FPM

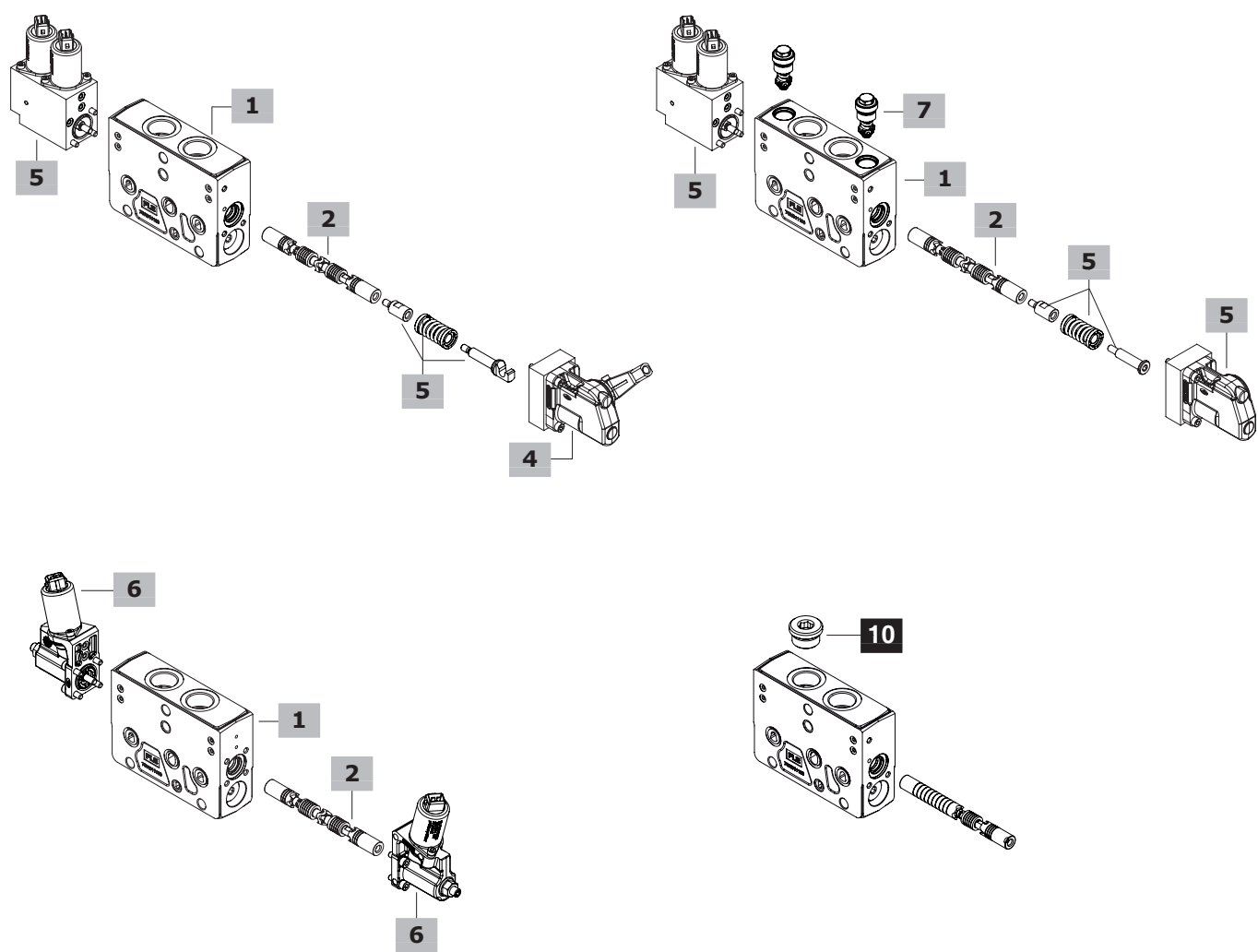
5

5

DPX100HF/QE-E101(120/120) - 8EB3TF3 - - 12VDC - FPM

6

6



HF working section part ordering codes (electrohydraulic)

1 High flow working section kit* page 60

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: **DPX100HF/QE-FPM** CODE: 5EL1043F11V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HF/PE-FPM** CODE: 5EL1043F02V

DESCRIPTION: With port valve arrangement

For one-side electrohydraulic control

TYPE: **DPX100HF/QZ-FPM** CODE: 5EL1043F22V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX100HF/PZ-FPM** CODE: 5EL1043F06V

DESCRIPTION: With port valve arrangement

2 Spool page 61

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE CODE DESCRIPTION

Double acting with A and B closed in neutral position

E101(120) 3CU7710F01 120 l/min (32 US gpm) flow

E106(100) 3CU7710F06 100 l/min (26 US gpm) flow

E103(80) 3CU7710F03 80 l/min (21 US gpm) flow

E105(60) 3CU7710F05 60 l/min (16 US gpm) flow

E104(40) 3CU7710F04 40 l/min (10.5 US gpm) flow

Double acting with A and B to tank in neutral position

E201(80) 3CU7725F01 80 l/min (21 US gpm) flow

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

E2H01(120) 3CU7724F01 120 l/min (32 US gpm) flow

E2H03(100) 3CU7724F03 100 l/min (26 US gpm) flow

E2H02(60) 3CU7724F02 60 l/min (16 US gpm) flow

Single acting on A or B, other port plugged: G3/4 plug is required

E301-E401(120) 3CU7731F01 120 l/min (32 US gpm) flow

3 One-side electrohydr. control page 78

The codes are referred to parts with FPM o-ring seals

Combine to "B" side options

TYPE CODE DESCRIPTION

8EZ3-12VDC 5IDR604314V With AMP connector

8EZ3-24VDC 5IDR604313V With AMP connector

8EZ34-12VDC 5IDR604315V With Deutsch connector

8EZ34-24VDC 5IDR604316V With Deutsch connector

With spool position sensor

8EZ3SPSD-12VDC 5IDR604317V AMP connector and digital sensor

8EZ3SPSD-24VDC 5IDR604318V AMP connector and digital sensor

8EZ34SPSD-12VDC 5IDR604319V Deutsch conn. and digital sensor

8EZ34SPSD-24VDC 5IDR604320V Deutsch conn. and digital sensor

8EZ34SPSL-0.5(A)-4.5(B)-12VDC

5IDR604321V AMP conn. and analog sensor

4 "B" side options page 79

The codes are referred to parts with FPM o-ring seals

TYPE CODE DESCRIPTION

For one-side electrohydraulic control

LQ 5LEV100705V Lever box

LQF3 5LEV100706V Lever box with spool stroke limiter

LQSL 5COP204101V Lever box without lever

10 Plug for single acting spool *

CODE DESCRIPTION
XTAP732220 G3/4 plug, with FPM o-ring seal

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

5 Complete one-side e.h. control page 81

The codes are referred to parts with FPM o-ring seals

Controls already comprehensive of endcap on B side

TYPE CODE DESCRIPTION

8EZ3SLCQ-12VDC 5IDR604314SV With AMP connector

8EZ3SLCQ-24VDC 5IDR604313SV With AMP connector

8EZ34SLCQ-12VDC 5IDR604315SV With Deutsch connector

8EZ34SLCQ-24VDC 5IDR604316SV With Deutsch connector

With spool position sensor

TYPE: **8EZ3SPSDSLCQ-12VDC** CODE: 5IDR604317SV

DESCRIPTION: With AMP connector and digital sensor

TYPE: **8EZ3SPSDSLCQ-24VDC** CODE: 5IDR604318SV

DESCRIPTION: As previous one

TYPE: **8EZ34SPSDSLCQ-12VDC** CODE: 5IDR604319SV

DESCRIPTION: With Deutsch connector and digital sensor

TYPE: **8EZ34SPSDSLCQ-24VDC** CODE: 5IDR604320SV

DESCRIPTION: As previous one

TYPE: **8EZ34SPSL-0.5(A)-4.5(B)SLCQ-12VDC** CODE: 5IDR604321SV

DESCRIPTION: With AMP connector and analog sensor

6 Two-side electrohydr. control page 76

The codes are referred to parts with FPM o-ring seals

TYPE CODE DESCRIPTION

Without lever control

8EB3T-12VDC 5IDR904214V With AMP connector

8EB3T-24VDC 5IDR904222V With AMP connector

8EB34T-12VDC 5IDR904236V With Deutsch connector

8EB34T-24VDC 5IDR904237V With Deutsch connector

8EB3TF3-12VDC 5IDR904217V With AMP, spool stroke limiter

8EB3TF3-24VDC 5IDR904224V As previous one

8EB34TF3-12VDC 5IDR904235V Deutsch conn. and stroke limiter

8EB34TF3-24VDC 5IDR904238V As previous one

Without lever control, with spool position sensor

8EB3TSPSD-12VDC 5IDR904233V AMP conn. and digital sensor

8EB3TSPSD-12VDC 5IDR904226V As previous one

With lever control

8EB3TLH-12VDC 5IDR904215V With AMP connector

8EB3TLH-24VDC 5IDR904228V With AMP connector

8EB34TLH-12VDC 5IDR904219V With Deutsch connector

8EB34TLH-24VDC 5IDR904239V With Deutsch connector

8EB3TLHF3-12VDC 5IDR904229V With AMP, spool stroke limiter

8EB3TLHF3-24VDC 5IDR904218V As previous one

8EB34TLHF3-12VDC 5IDR904240V With Deutsch conn. with

spool stroke limiter

8EB34TLHF3-24VDC 5IDR904241V As previous one

With lever control and spool position sensor

8EB3TLHSPSD-12VDC 5IDR904234V AMP conn. and digital sensor

8EB3TLHSPSD-24VDC 5IDR904232V As previous one

7 Port valves page 82

TYPE CODE DESCRIPTION

U025 5KIT330025V Setting: 25 bar (360 psi)

For complete valves list see previous pages.

8 Section threading

Only specify if it is different from BSP standard (see page 6).

9 Seals

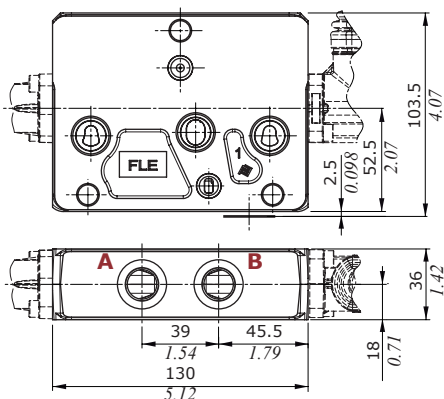
TYPE DESCRIPTION
FPM FPM o-ring seals; standard
NBR NBR o-ring seals

Working section

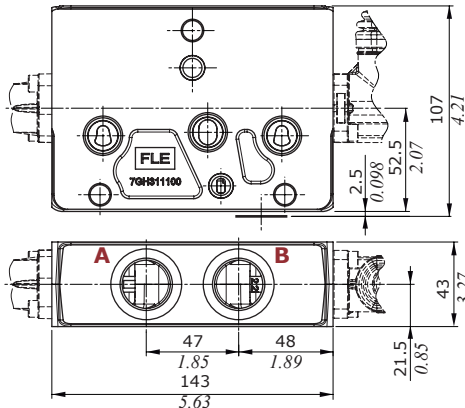
Dimensions and hydraulic circuit

For mechanical, hydraulic and solenoid controls

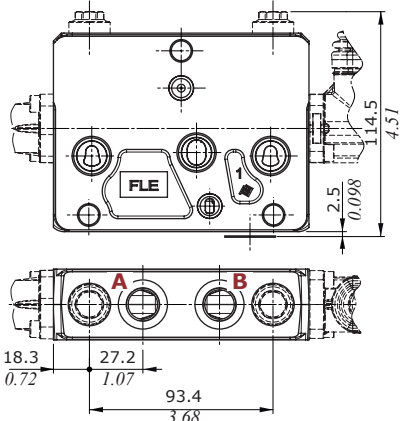
Q type, for std or HP sections
(G3/8 or G1/2 ports)



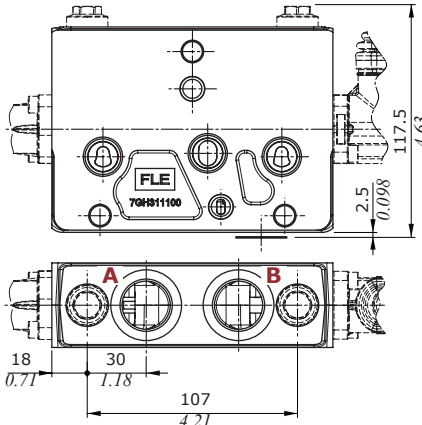
Q type, for FH section
(G3/4 ports)



P type, for std or HP sections
(G3/8 or G1/2 ports)

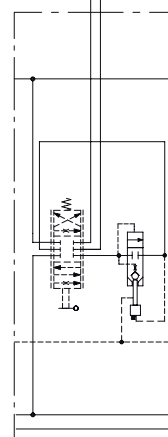


P type, for FH section
(G3/4 ports)



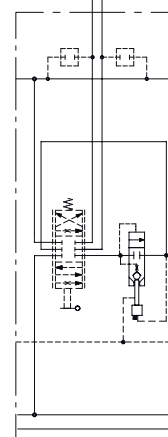
Q type

A B



P type

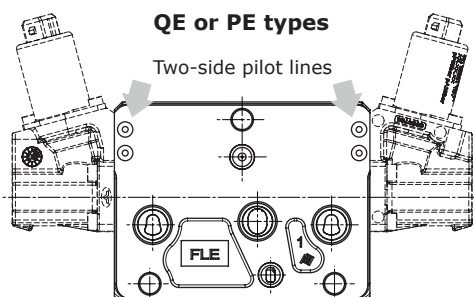
A B



For electrohydraulic control

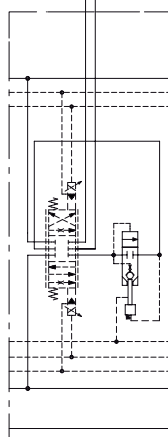
QE or PE types

Two-side pilot lines



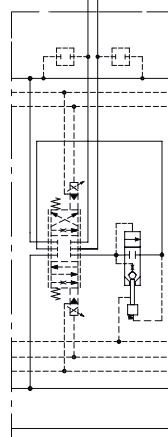
QE type

A B



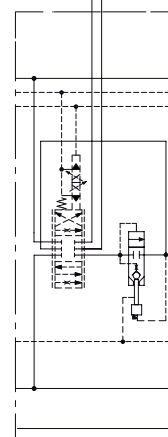
PE type

A B



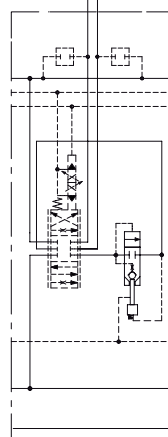
QZ type

A B



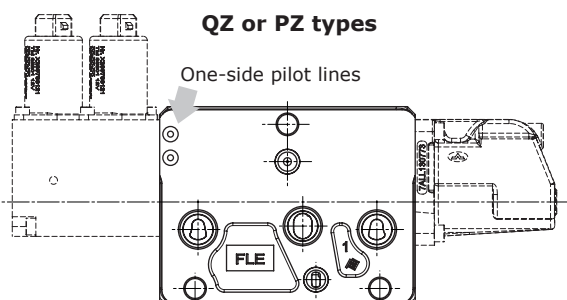
PZ type

A B



QZ or PZ types

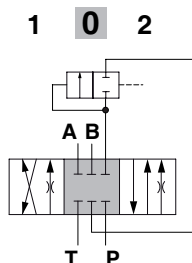
One-side pilot lines



Spools

Type 1 (1../E1../S1..) spool

A, B closed in neutral position

**Spool stroke (1../E1..)**

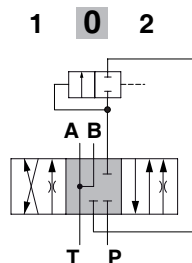
position 1: + 6.5 mm (- 0.26 in)
position 2: - 6.5 mm (+ 0.26 in)

Spool stroke (S1..)

position 1: + 3.5 mm (- 0.14 in)
position 2: - 3.5 mm (+ 0.14 in)

Type 2 (E2H..) spool

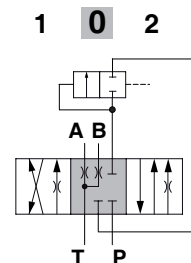
A, B to tank in neutral position

**Spool stroke**

position 1: + 6.5 mm (- 0.26 in)
position 2: - 6.5 mm (+ 0.26 in)

Type 2H (2H../E2H../S2H..) spool

A, B partially to tank in neutral pos.

**Spool stroke (2H../E2H..)**

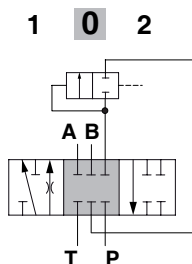
position 1: + 6.5 mm (- 0.26 in)
position 2: - 6.5 mm (+ 0.26 in)

Spool stroke (S2H..)

position 1: + 3.5 mm (- 0.14 in)
position 2: - 3.5 mm (+ 0.14 in)

Type 3 (3../E3../S3..) spool

single acting on A

**Spool stroke (3../E3..)**

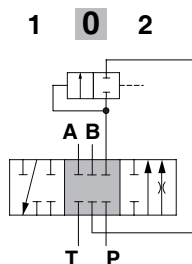
position 1: + 6.5 mm (- 0.26 in)
position 2: - 6.5 mm (+ 0.26 in)

Spool stroke (S3..)

position 1: + 3.5 mm (- 0.14 in)
position 2: - 3.5 mm (+ 0.14 in)

Type 4 (4../E4../S4..) spool

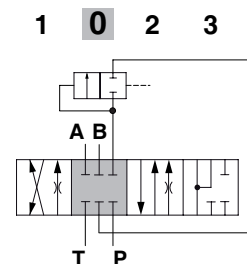
single acting on B

**Spool stroke (4../E4..)**

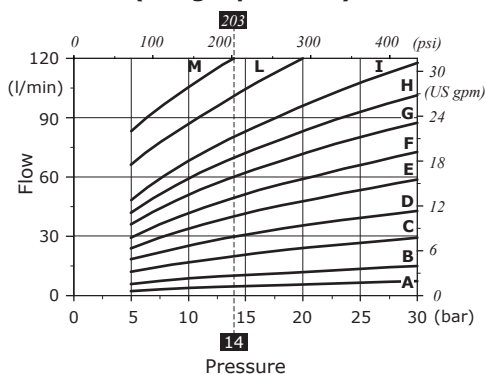
position 1: + 6.5 mm (- 0.26 in)
position 2: - 6.5 mm (+ 0.26 in)

Spool stroke (S4..)

position 1: + 3.5 mm (- 0.14 in)
position 2: - 3.5 mm (+ 0.14 in)

Type 5 (5../E5../I5..) spoolfloating in 4th position (pos.3)**Spool stroke**

position 1: + 6 mm (- 0.24 in)
position 2: - 6 mm (+ 0.24 in)
position 3: - 10.5 mm (- 0.41 in)

**Spool flow vs. Stand-by pressure
(margin pressure)****Curves with spool nominal flow****@ 14 bar (200 psi) stand-by (margin pressure)**

A = 5 l/min (1.3 US gpm)
B = 10 l/min (2.6 US gpm)
C = 20 l/min (5.3 US gpm)
D = 30 l/min (7.9 US gpm)
E = 40 l/min (10.6 US gpm)
F = 50 l/min (13.2 US gpm)
G = 60 l/min (16 US gpm)
H = 70 l/min (18.5 US gpm)
I = 80 l/min (21 US gpm)
L = 100 l/min (26 US gpm) - only for HF working sections
N = 120 l/min (32 US gpm) - only for HF working sections

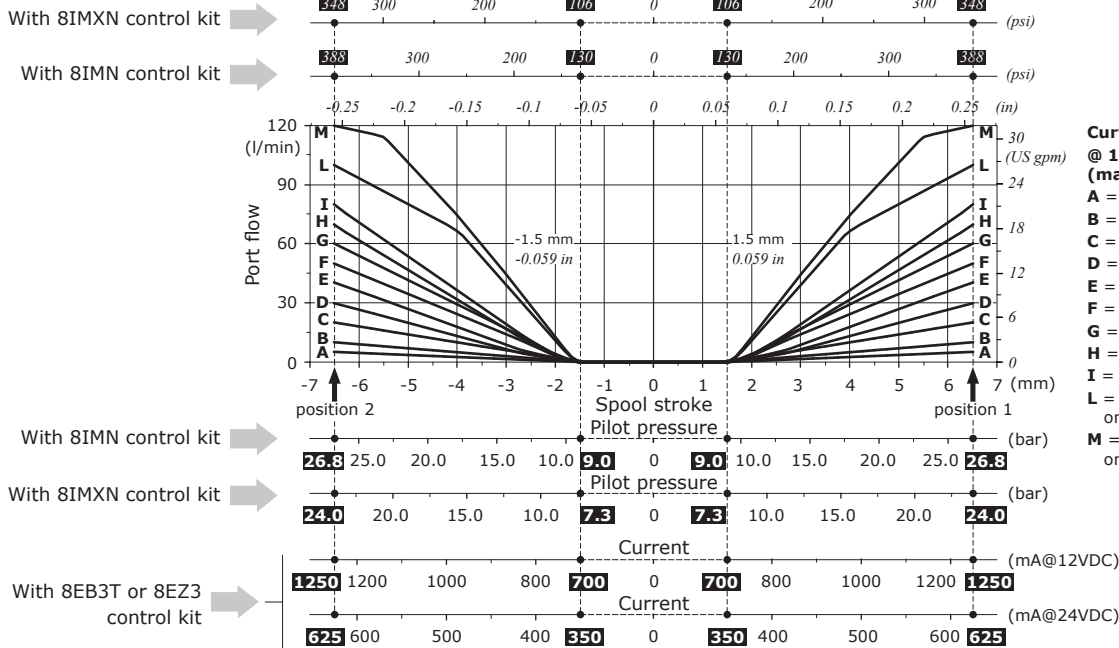
Working section

Spools

Following curves are detected with standard spools, connecting $P \Rightarrow A \Rightarrow B \Rightarrow T$ and $P \Rightarrow B \Rightarrow A \Rightarrow T$ ports without flow multiplication. Customized spools with backpressure or flow multiplication may require different force, pressure and pilot current for operation.

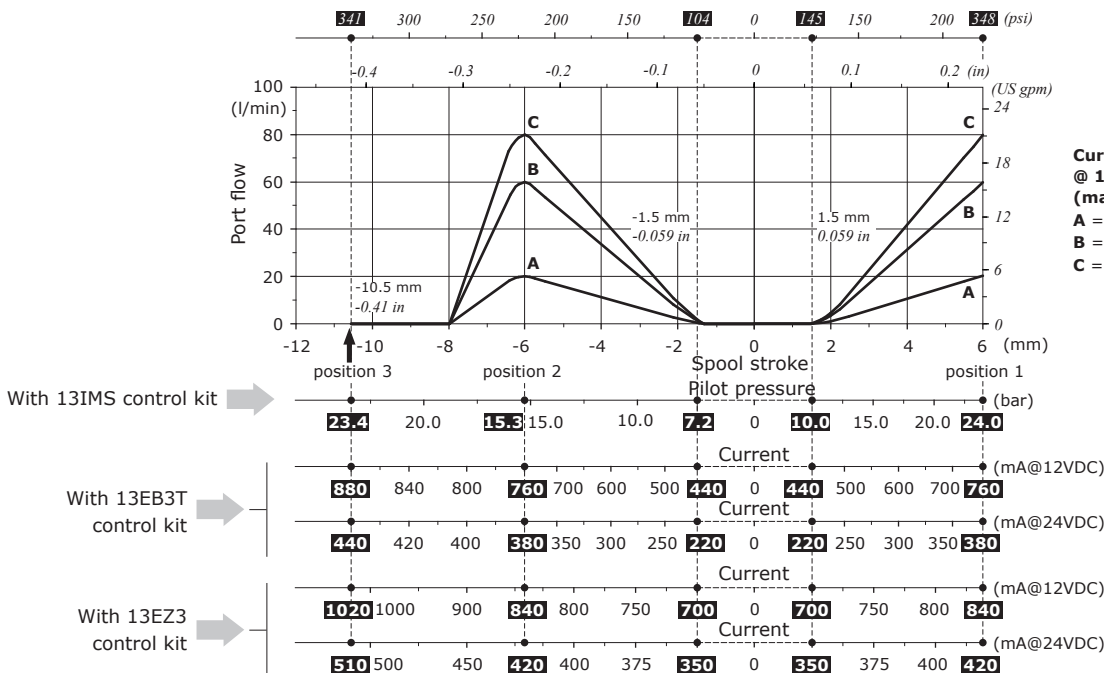
3 position spool metering curve

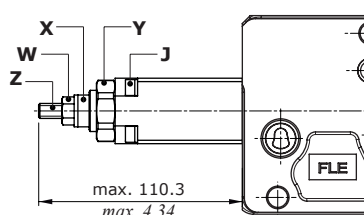
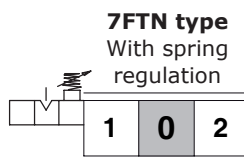
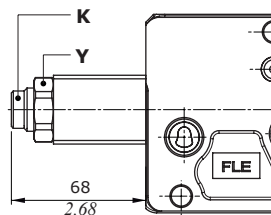
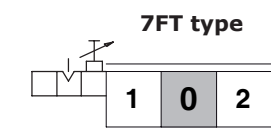
$Q_{in} = 120 \text{ l/min (32 US gpm)}$ - Open center circuit



Floating spool metering curve

$Q_{in} = 90 \text{ l/min (24 US gpm)}$ - Open center circuit



"A" side spool positioners**With friction****Wrenches and tightening torques**

J = allen wrench 4 - 6.6 Nm (4.9 lbft)

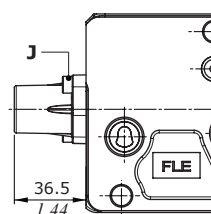
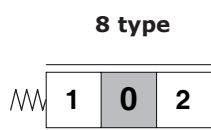
K = allen wrench 6

X = wrench 17

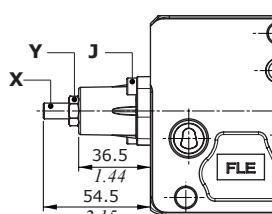
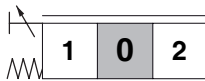
Y = wrench 30, manual tightening

Z = allen wrench 4

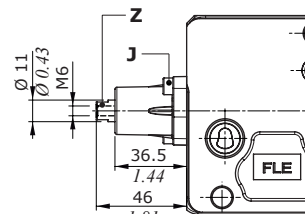
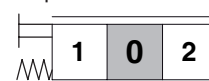
W = wrench 13 - 24 Nm (17.7 lbft)

With spring return to neutral position

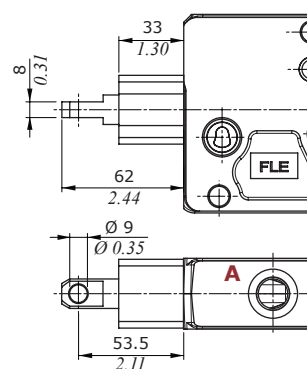
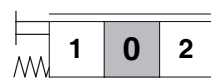
8F2 type
Spool stroke limiter on B port



8D type
External pin with M6 female thread



8TL type
Arrangement for double mechanical control

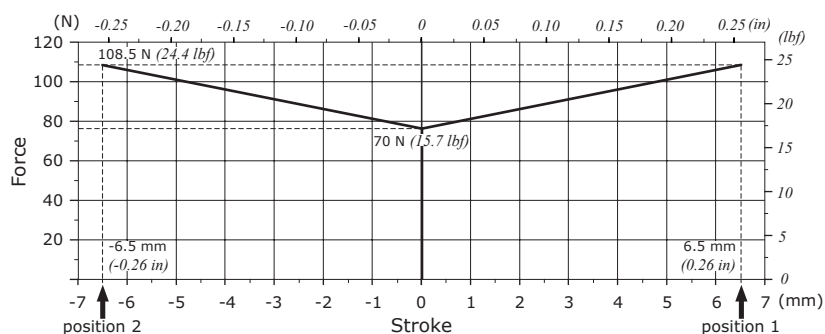
**Wrenches and tightening torques**

J = allen wrench 4 - 6.6 Nm (4.9 lbft)

X = allen wrench 4

Y = wrench 13 - 24 Nm (17.7 lbft)

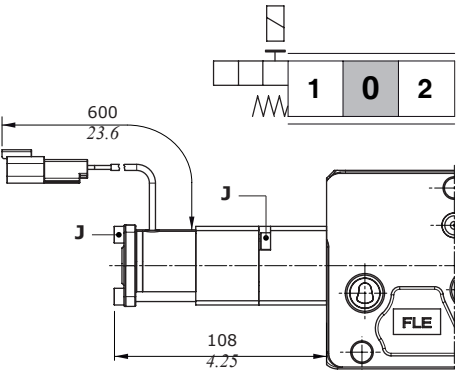
Z = wrench 9

Force vs. Stroke diagram

Working section

"A" side spool positioners

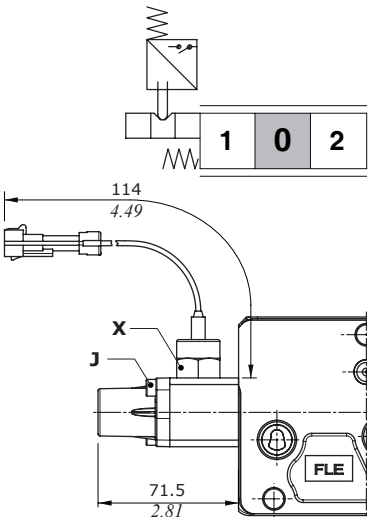
With electromagnetic detent in position 2, 8RM2 type



- Features**
- Nominal voltage : 12 VDC ± 10%
 - Power rating : 5.5 W
 - Min. detent release : 200 N (45 lbf)
 - Coil resistance (@ 20°C - 68°F) : 26.2 Ohm
 - Coil insulation : Class H (180°C - 356°F)
 - Insertion : 100%
 - Connector : Deutsch DT04-2P
 - Mating connector : Deutsch DT06-2S, code 5CON140046

Wrenches and tightening torques
J = allen wrench 4 - 6.6 Nm (4.9 lbf)

With microswitch for spool check in positions 1 and 2, 8MG3 type



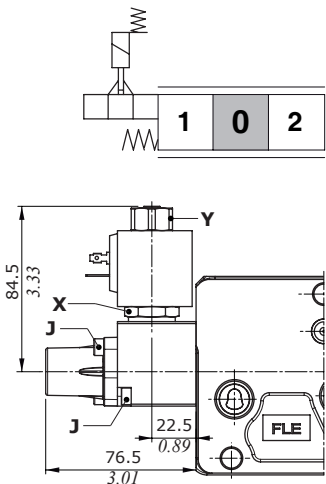
- Features**
- Switch mechanical life : 5x10⁵ cycles
 - Switch electric life : 10⁵ cycles @ 7 A - 13.5 VDC, resistive load
 - 5x10⁴ cycles @ 10 A - 12 VDC, resistive load
 - 5x10⁴ cycles @ 3 A - 28 VDC, resistive load
 - Connector : Packard Weather-Pack
 - Mating connector : Packard Weather-Pack, code 5CON001

Wrenches and tightening torques
J = allen wrench 4 - 6.6 Nm (4.9 lbf)
X = wrench 22 - 24 Nm (17.7 lbf)

Complete controls			
Microswitch operation			
Circuit	position 1 8MG1	position 2 8MG2	positions 1, 2 8MG3
(NO)	5V08107670	5V08107680	5V08107660
(NC)	/	/	5V08107662 (*)

Note (*): with integrated connector

With solenoid lock device in neutral position, 8K type



- Wrenches and tightening torques**
J = allen wrench 4 - 6.6 Nm (4.9 lbf)
X = wrench 24 - 9,8 Nm (7.2 lbf)
Y = wrench 21 - 6,6 Nm (4.9 lbf)

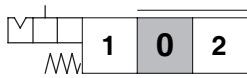
Complete controls			
Coil connector			
Voltage	ISO 4400	Packard M-Mack	Deutsch DT04
12 VDC	5V08707112	5V08707613	5V08707412
24 VDC	5V08707124	5V08707624	5V08707424

For coil features and options see **BE** type coil at page 123.

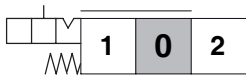
"A" side spool positioners

With detent and spring return to neutral position from either directions

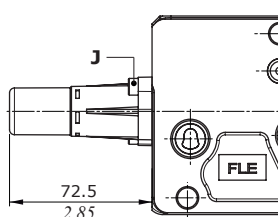
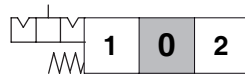
9BZ type
Detent in position 1
(see A curve)



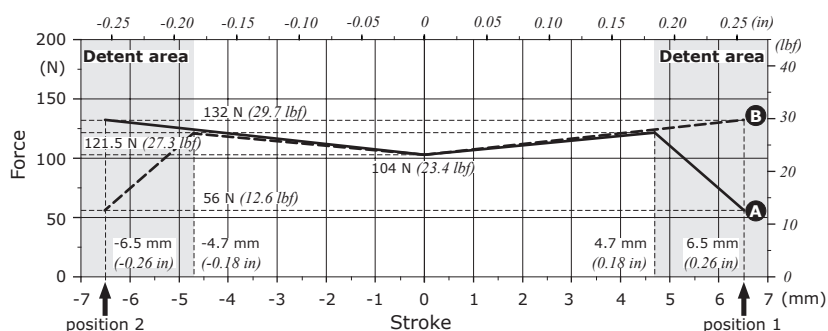
10BZ type
Detent in position 2
(see B curve)



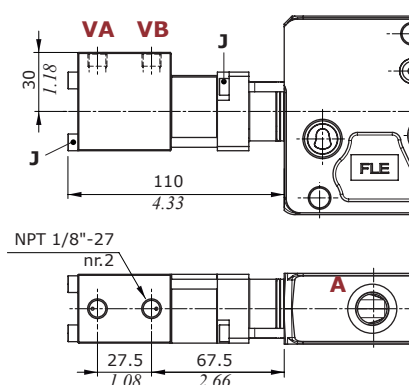
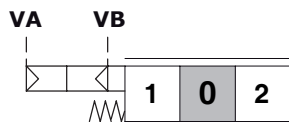
11BZ type
Detent in positions 1
(A curve) and 2 (B curve)

**Wrenches and tightening torques**

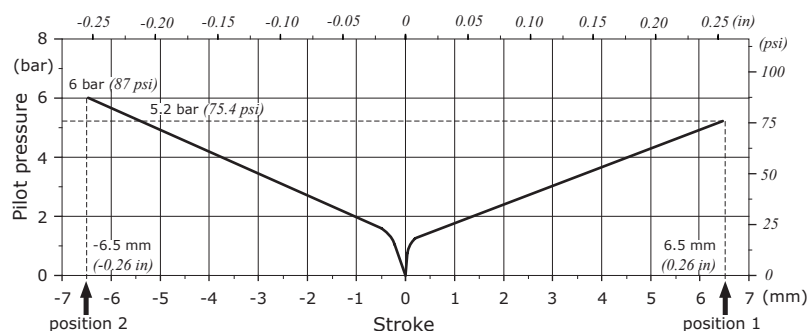
J = allen wrench 4 - 6.6 Nm (4.9 lbf·ft)

Force vs. Stroke diagram

Release force 160 N ± 10 N (36 lbf ± 2.2 lbf)

Proportional pneumatic control, 8PP type**Wrenches and tightening torques**

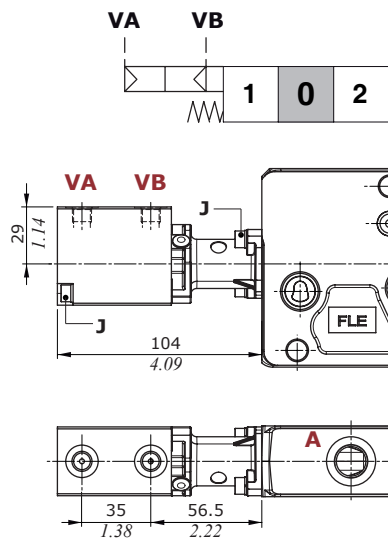
J = allen wrench 4 - 6.6 Nm (4.9 lbf·ft)

Stroke vs. Pilot pressure diagram

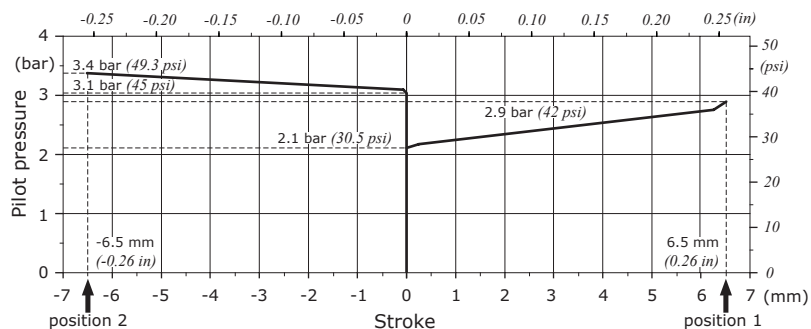
Working section

"A" side spool positioners

On/off pneumatic control, 8PNB type



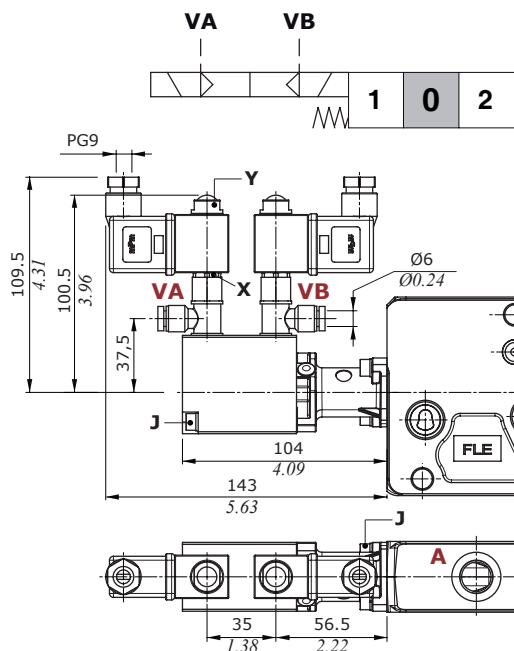
Stroke vs. Pilot pressure diagram



Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbft)

On/off electropneumatic control, 8EPNB3 type



Features

Pilot pressure 6 bar (max.15 bar)
87 psi (max. 218 psi)

For coil features and options see **BPV** type coil at page 124.

Wrenches and tightening torques

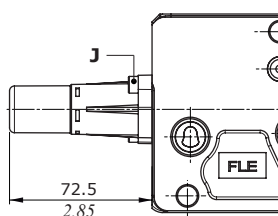
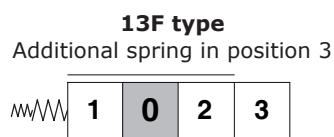
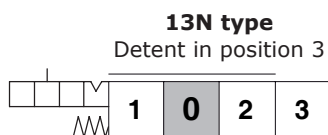
J = allen wrench 4 - 6.6 Nm (4.9 lbft)

X = wrench 15 - 6,6 Nm (4.9 lbft)

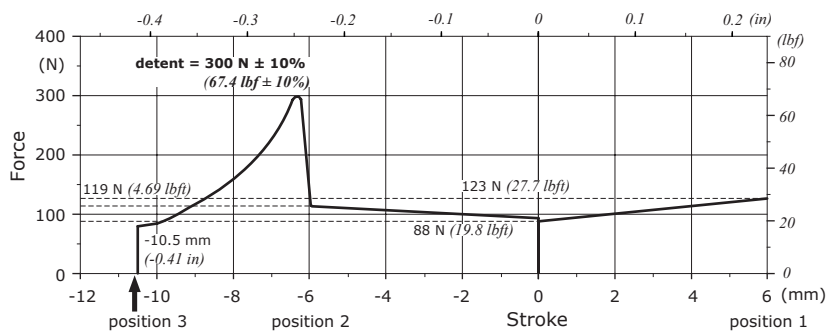
Y = wrench 13, manual tightening

"A" side spool positioners**For floating circuit**

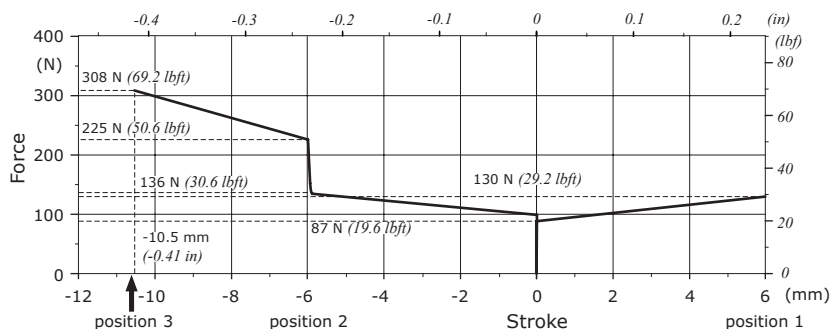
Not available for HF (High Flow) sections.

**Wrenches and tightening torques**

J = allen wrench 4 - 6.6 Nm (4.9 lbf ft)

13N type: Force vs. Stroke diagram

Release force from pos.3: 250 N ± 10% (56.2 lbf ± 10%)

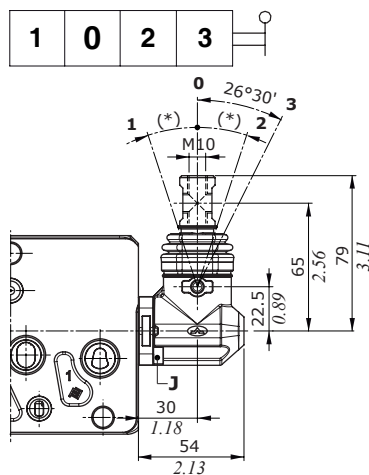
13F type: Force vs. Stroke diagram

Working section

"B" side spool control kit

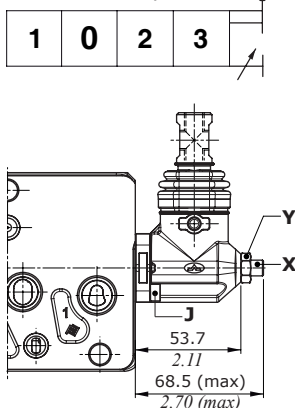
Standard lever boxes

L type



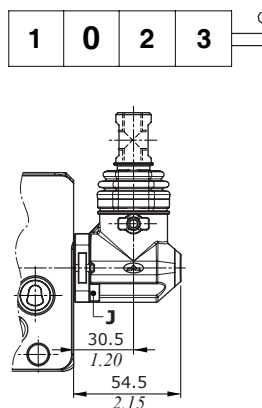
LF1 type

Spool stroke limiter
on A port



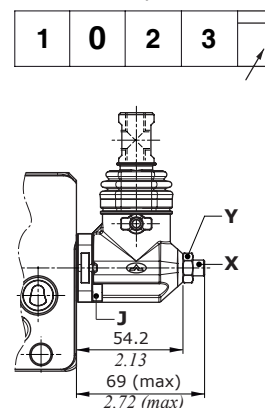
Waterproof lever boxes

LSG type

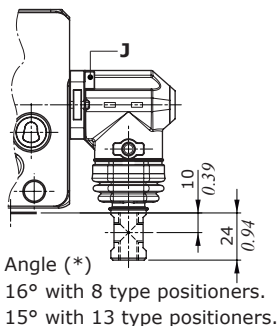


LSGF1 type

Spool stroke limiter
on A port



L180 configuration



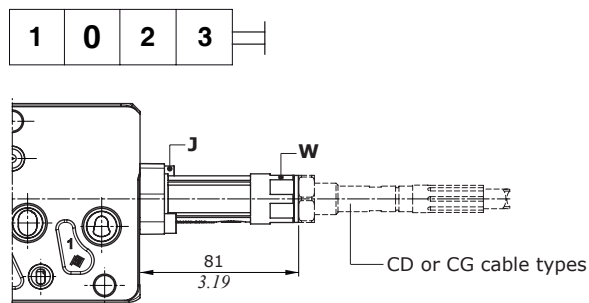
Wrenches and tightening torques

- J = allen wrench 4 - 6.6 Nm (4.9 lbf)
- X = allen wrench 4
- Y = wrench 13 - 24 Nm (17.7 lbf)
- W = wrench 24

Without lever boxes

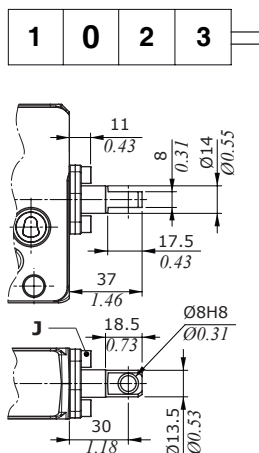
TQ type

Flexible cabler connection



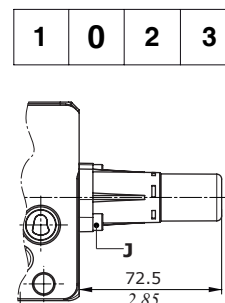
SLP type

With dust-proof plate



SLC type

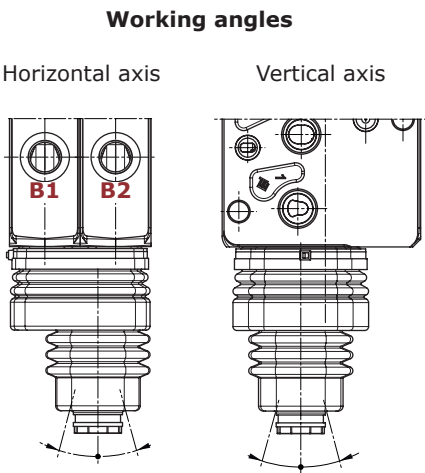
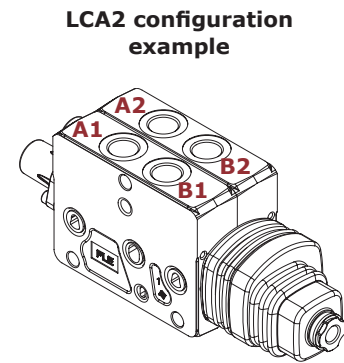
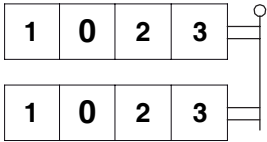
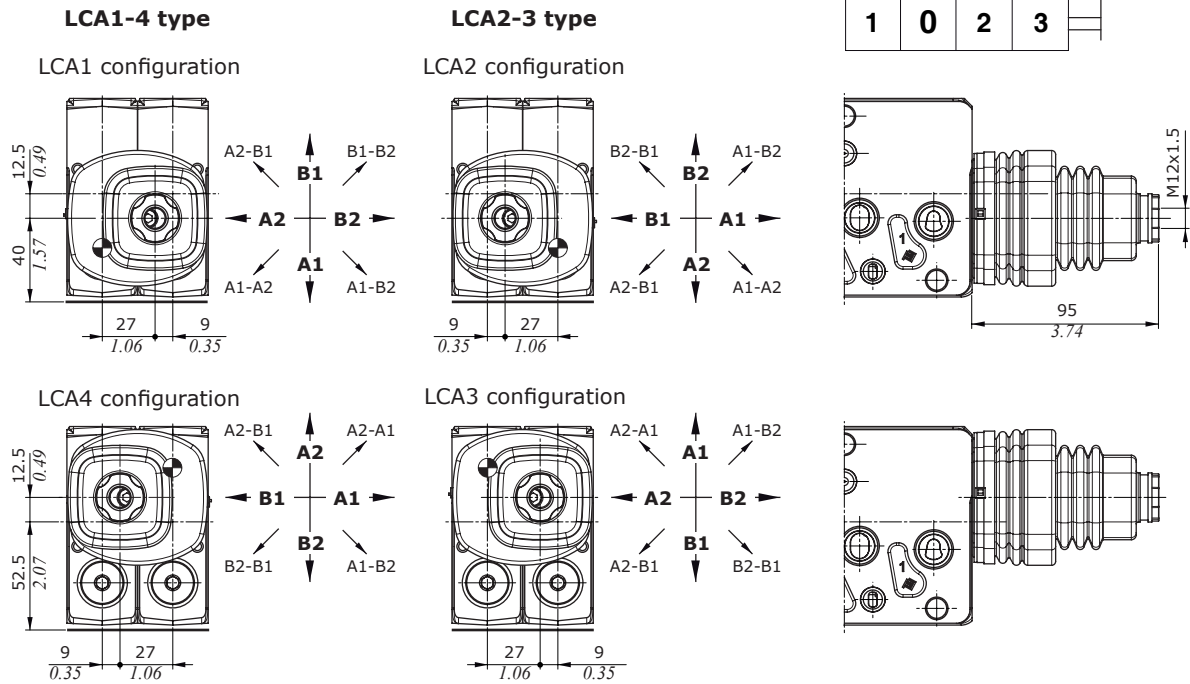
With endcap



"B" side spool control kit

Joysticks for two section operation

Not available for HF (High Flow) sections.

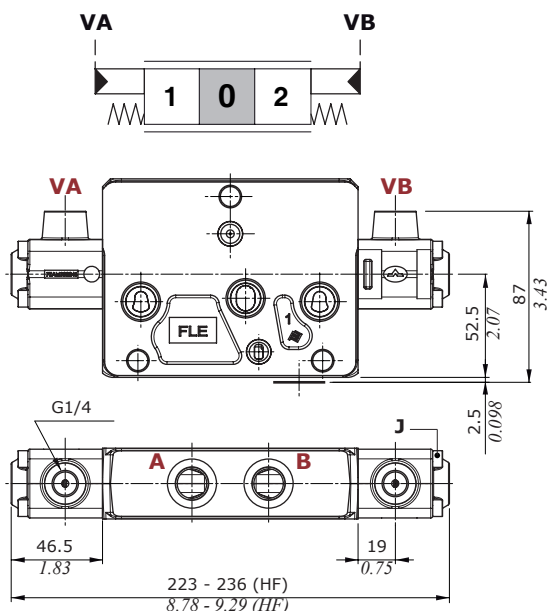


Max. working angles	Horizontal axis	Vertical axis
Single action operation	15°4'	15°4'
Single action operation with floating	25°2'	25°2'
Two section operation	15°52'	15°52'
Two section operation with floating	18°3'	18°3'

Working section

Proportional hydraulic control

8IMN - 8IMXN types

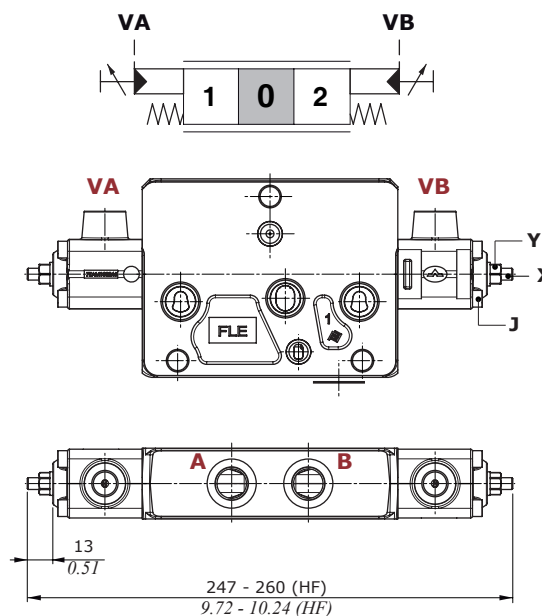


Features (all types)

Max. pressure:: 70 bar (1015 psi)

8IMF3N - 8IMXF3N types

With spool stroke limiter on A and B ports



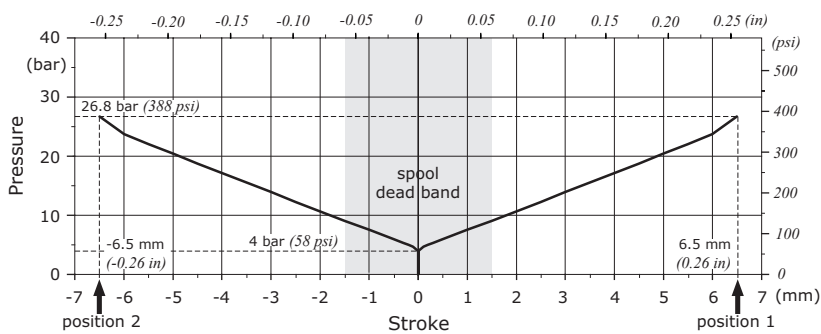
Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

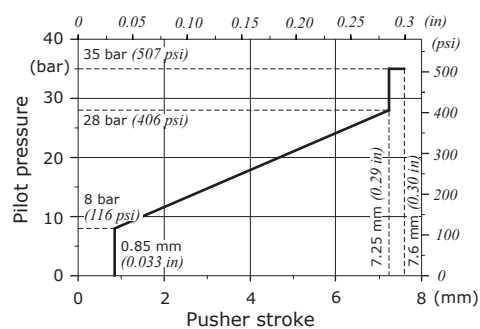
X = allen wrench 3

Y = wrench 10 - 9.8 Nm (7.2 lbf)

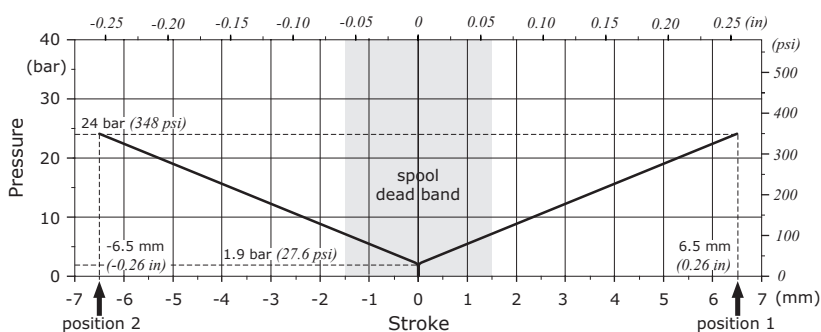
8IMN-8IMF3N types: Pressure vs. Stroke diagram



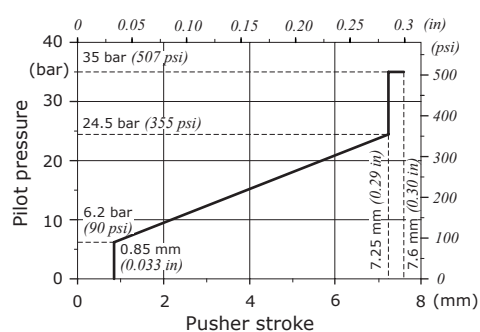
Suggested pressure control curve: 089 type



8IMXN-8IMXF3N types: Pressure vs. Stroke diagram



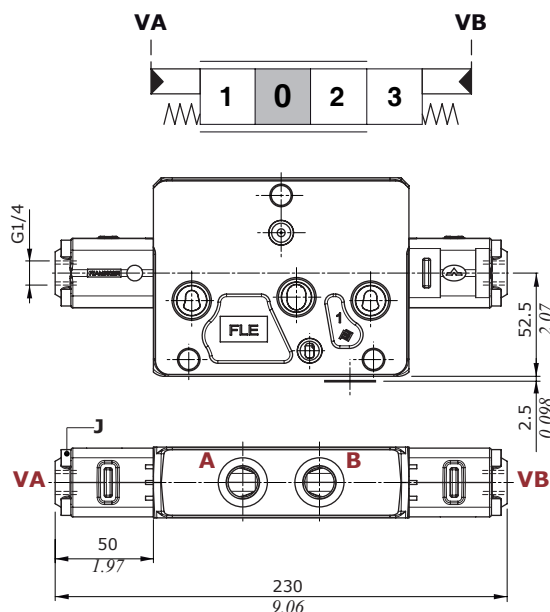
Suggested pressure control curve: 054 type



Proportional hydraulic control

For floating circuit, 13IMS type

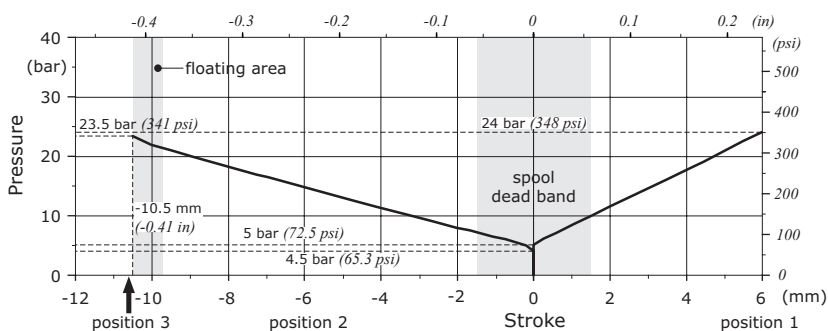
Not available for HF (High Flow) sections.



Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbft)

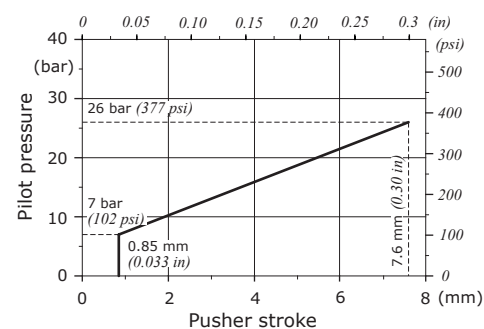
Stroke vs. Pressure diagram



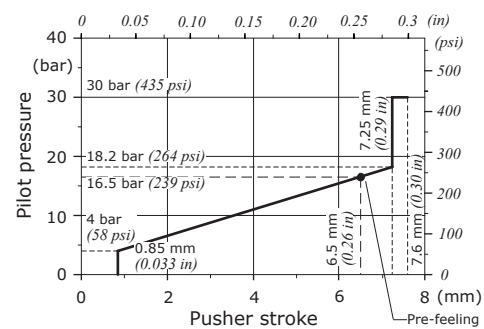
Features

Max. pressure.: 70 bar (1015 psi)

Suggested pressure control curve on port VA: 098 type



Suggested pressure control curve on port VB: 086 type

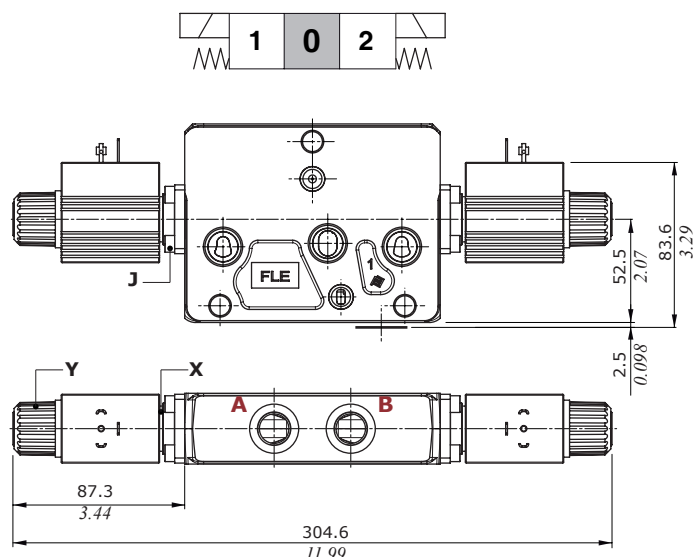


Working section

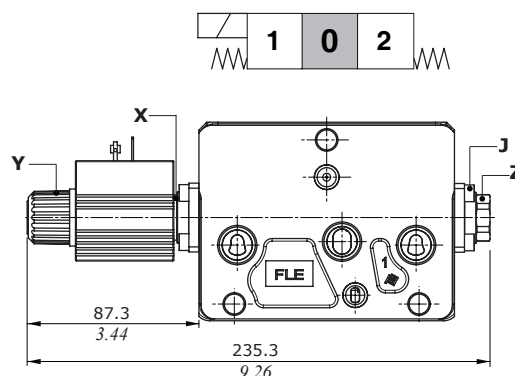
On/off solenoid control

Not available for HF (High Flow) sections.

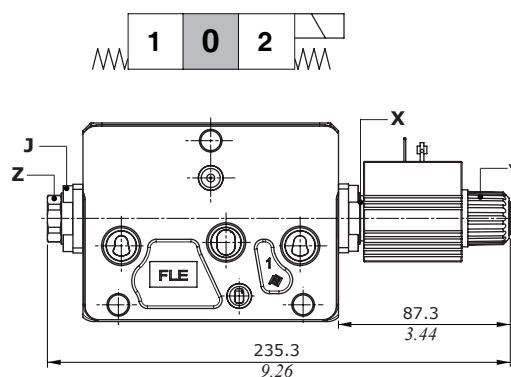
8ES3 type
Double acting



8ES1 type
Single acting in A



8ES2 type
Single acting in B



Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf ft)

X = wrench 17 - 24 Nm (17.7 lbf ft)

Y = special wrench - 6.6 Nm (4.9 lbf ft)

Z = wrench 22 - 24 Nm (17.7 lbf ft)

Features

Max. flow on working ports : **60 l/min (16 US gpm)**

Internal leakage A(B)→T . . : 15 cm³/min @ 100 bar and 20°C
(0.92 in³/min @ 1450 psi and 68°F)

For coil features and options see **D12** type coil at page 125.

Electrohydraulic control 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 ± 10% tolerance.

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

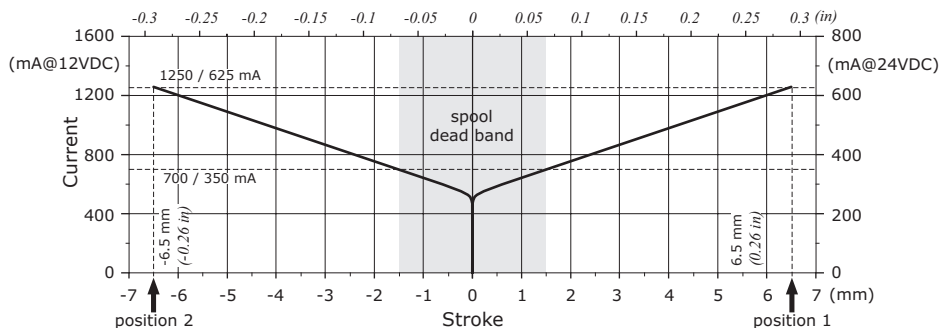
Specifications		Spool control type			
		8EB3	13EB3	8EZ3	13EZ3
Electric specifications					
Coil impedance	12 VDC	4.72 Ω	4.72 Ω	4.72 Ω	4.72 Ω
	24 VDC	20.8 Ω	20.8 Ω	20.8 Ω	20.8 Ω
Max. operating current	12 VDC	1.5 A	1.5 A	1.5 A	1.5 A
	24 VDC	0.75 A	0.75 A	0.75 A	0.75 A
No load current consumption		0	0	0	0
Hysteresis max. ⁽¹⁾	external drain	3%	4%	<u>With lever box configured controls</u>	
		5% with lever	7% with lever		
	internal drain	4%	6%		
		6% with lever	9% with lever	7%	7%
Time response	from 0 ⇒ 100% and from 100% ⇒ 0 of stroke	< 50 ms	< 55 ms	< 50 ms	< 55 ms
Min. flow control signal	12 VDC	700 mA	440 mA	700 mA	700 mA
	24 VDC	350 mA	220 mA	350 mA	350 mA
Flow control signal	12 VDC	1250 mA	760 mA	1250 mA	840 mA
	24 VDC	625 mA	380 mA	625 mA	420 mA
Max. float flow control signal	12 VDC		880 mA		1020 mA
	24 VDC		440 mA		510 mA
Dither frequency	low frequency	150 Hz		150 Hz	
	high frequency	180 Hz - 200 mA		180 Hz - 200 mA	
Insertion		100%		100%	
Coil insulation		Class H (180°C - 356°F)		Class H (180°C - 356°F)	
Connector type		AMP JPT - Deutsch DT		AMP JPT - Deutsch DT	
Weather protection (connector)		IP65 (JPT type) - IP69K (DT type)		IP65 (JPT type) - IP69K (DT type)	
Hydraulic specifications					
Max. pressure		40 bar (580 psi)		50 bar (725 psi)	
Max. back pressure		10 bar (145 psi)		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 see "Appendix A" on page 134.

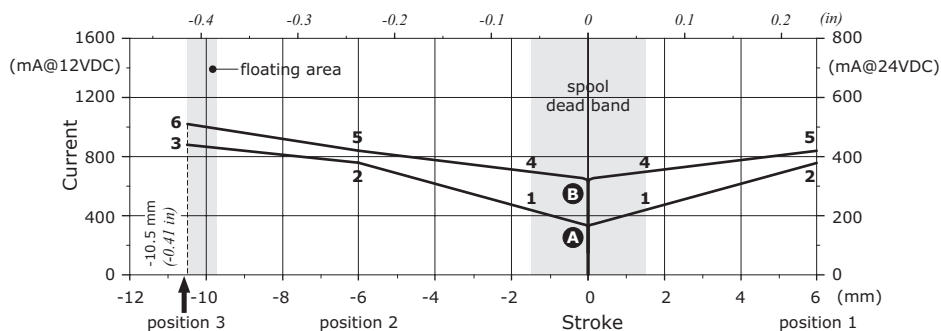
Working section

Electrohydraulic control performance data

8EB3T-8EZ3 type: Stroke vs. Current diagram



13EB3T-13EZ3 type: Stroke vs. Current diagram



A curve = 13EB3T control

1 = 440 mA @ 12 VDC - 220 mA @ 24 VDC
2 = 760 mA @ 12 VDC - 380 mA @ 24 VDC
3 = 880 mA @ 12 VDC - 440 mA @ 24 VDC

B curve = 13EZ3 control

4 = 700 mA @ 12 VDC - 350 mA @ 24 VDC
5 = 840 mA @ 12 VDC - 420 mA @ 24 VDC
6 = 1020 mA @ 12 VDC - 510 mA @ 24 VDC

Electrohydraulic controls: spool position sensor

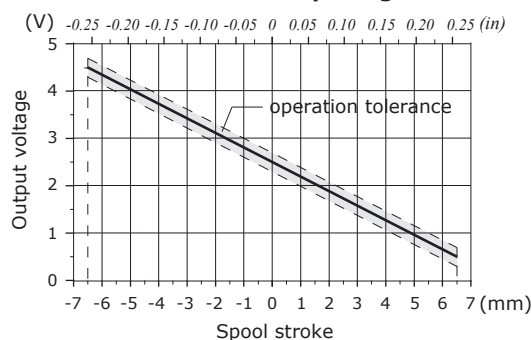
The sensor can be ordered exclusively through the electrohydraulic EB and EZ type controls; see pages 53 and 57 for available control list.

SPSL sensor

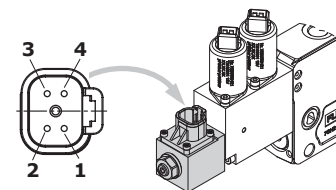
The SPSL position sensor converts the spool movements into a voltage linear signal.

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



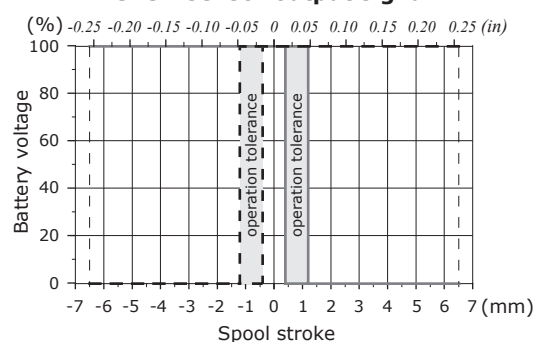
Deutsch DT06-4S mating connector, code 5CON140072

SPSD sensor

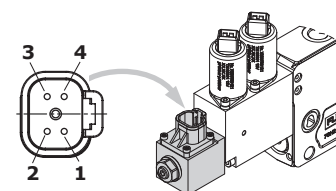
The SPSP position sensor converts the spool movements into an electric digital signal.

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

SPSD 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

Working section

Two-side electrohydraulic control

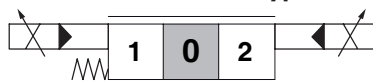
Control Types

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

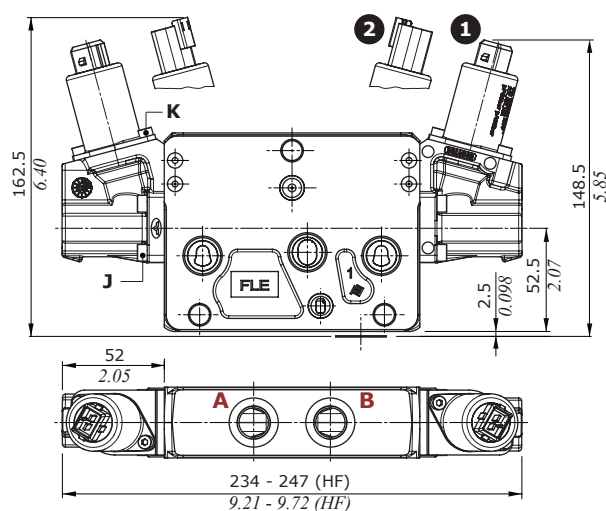
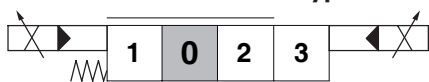
Without lever control

13EB3 type controls are not available for HF sections.

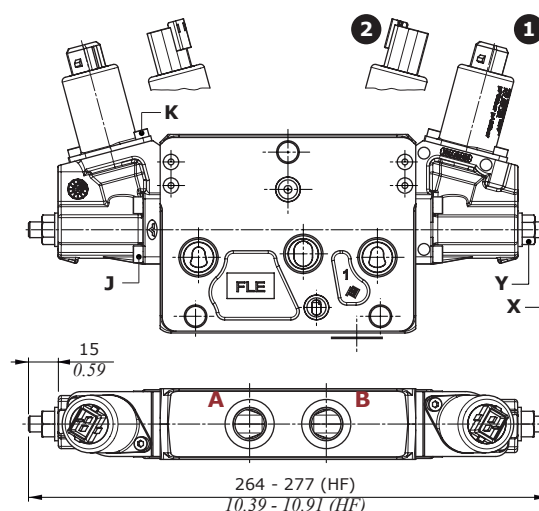
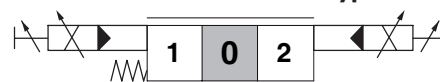
8EB3T - 8EB34T types



13EB3T - 13EB34T types

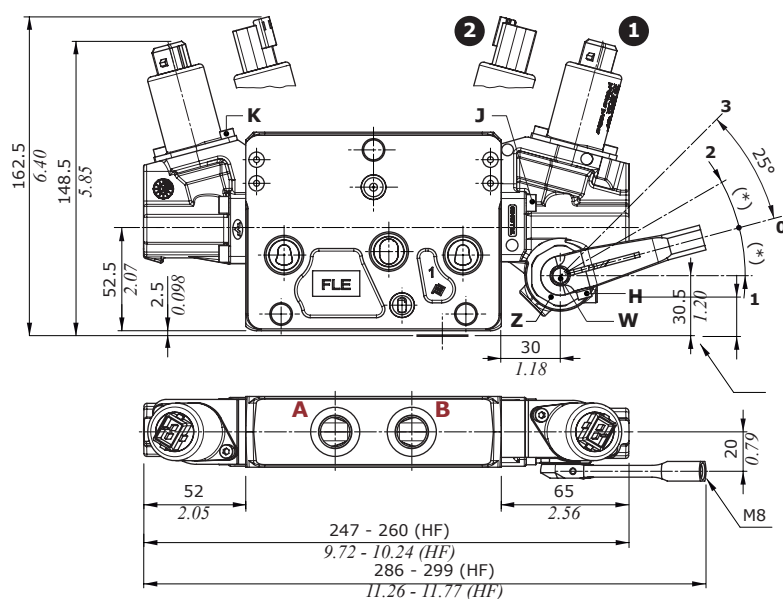


8EB3TF3 - 8EB34TF3 types



With lever control

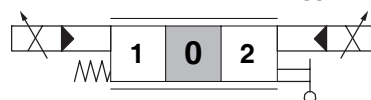
13EB3 types controls are not available for HF sections.



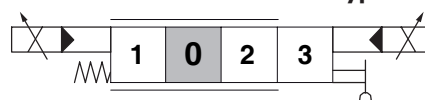
Wrenches and tightening torques

H = allen wrench 3 - 6.6 Nm (4.9 lbf ft)
J = allen wrench 4 - 6.6 Nm (4.9 lbf ft)
K = allen wrench 3 - 5 Nm (3.7 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

8EB3TLH - 8EB34TLH types



13EB3TLH - 13EB34TLH types



Angle (*)
15° with 8EB3.. type controls
14° with 13EB3.. type controls

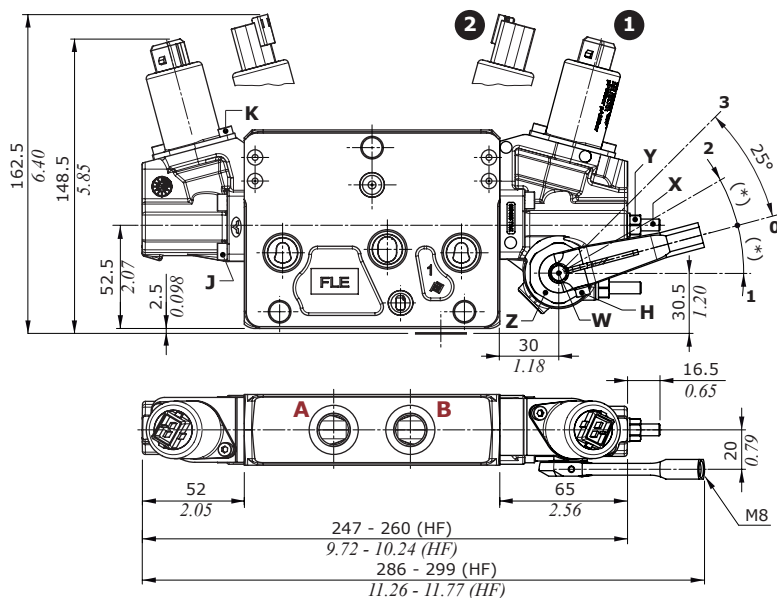
Two-side electrohydraulic control

Control Types

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

With lever control

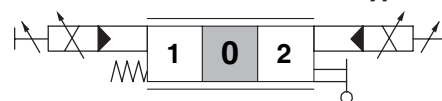
13EB3 type controls are not available for HF sections.



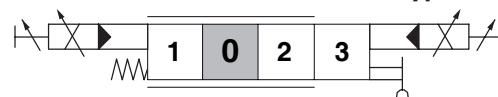
Angle (*)

15° with 8EB3.. type controls; 14° with 13EB3.. type controls

8EB3TLHF3 - 8EB34TLHF3 types



13EB3TLHF3 - 13EB34TLHF3 types



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)

K = allen wrench 3 - 5 Nm (3.7 lbf ft)

M = allen wrench 4 - 9.8 Nm (7.2 lbf ft)

N = wrench 17 - 9.8 Nm (7.2 lbf ft)

X = allen wrench 3

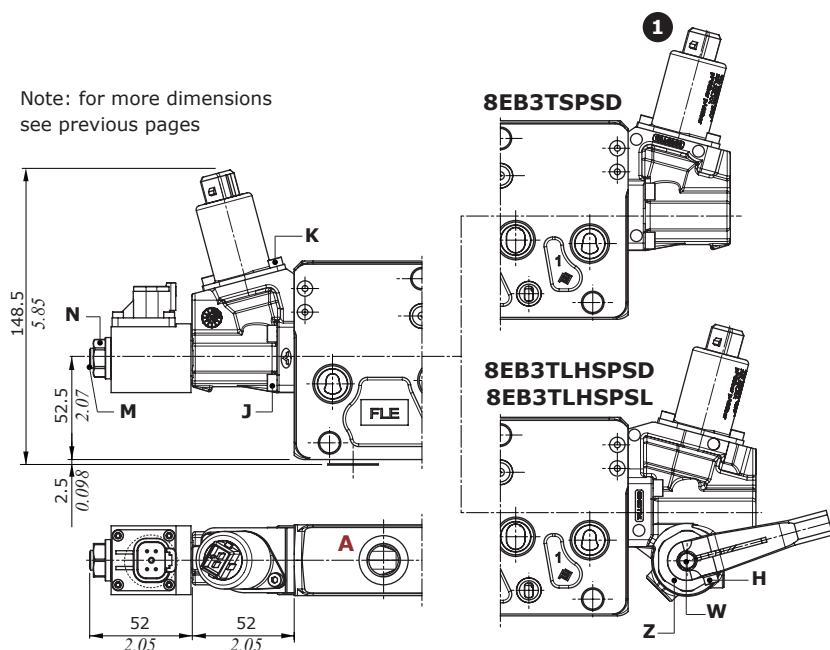
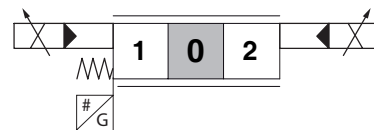
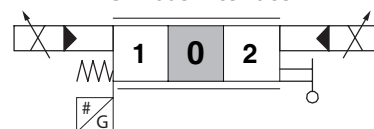
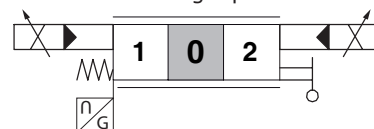
Y = wrench 10 - 9.8 Nm (7.2 lbf ft)

Z = wrench 29 - 24 Nm (17.7 lbf ft)

W = wrench 8

With spool position sensor

Note: for more dimensions see previous pages

8EB3TSPSD type
CANbus interface8EB3TLHSPSD type
CANbus interface8EB3TLHSPSL type
Analog input

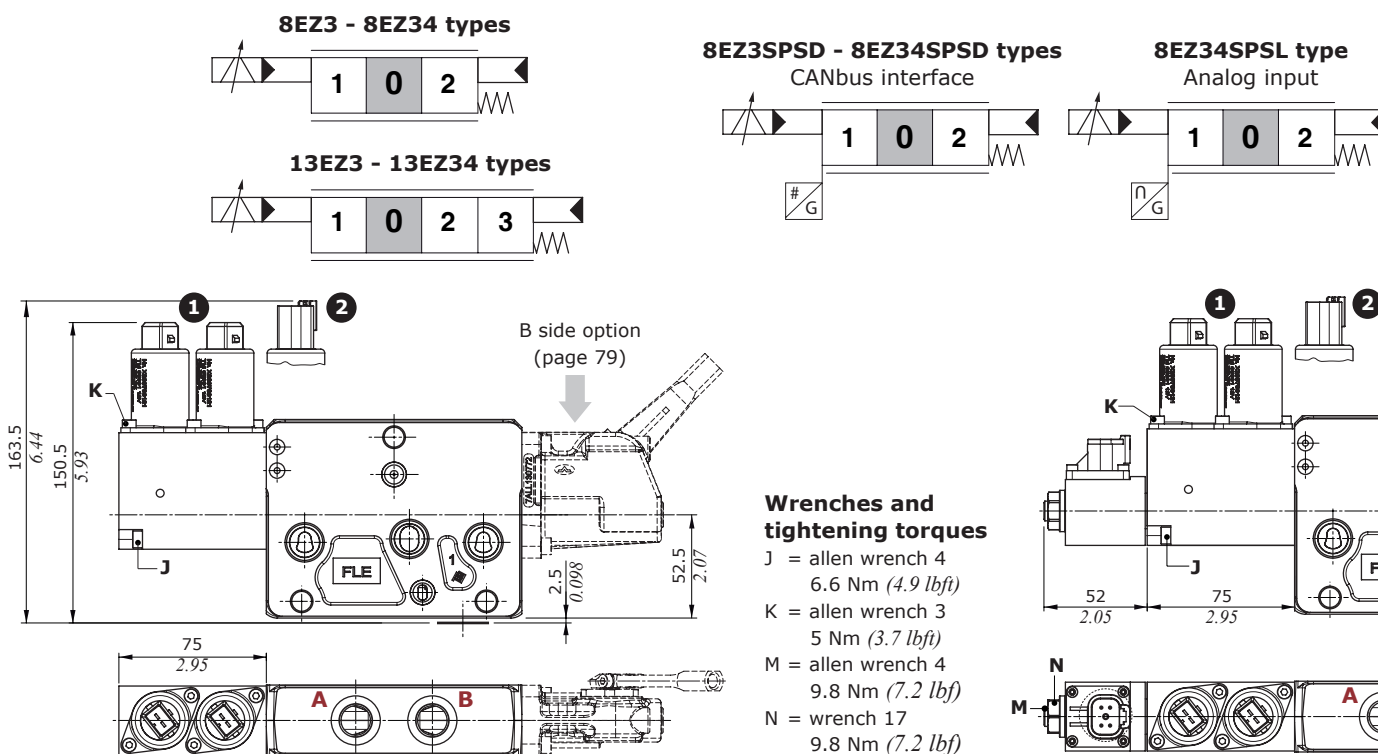
Working section

One-side electrohydraulic control

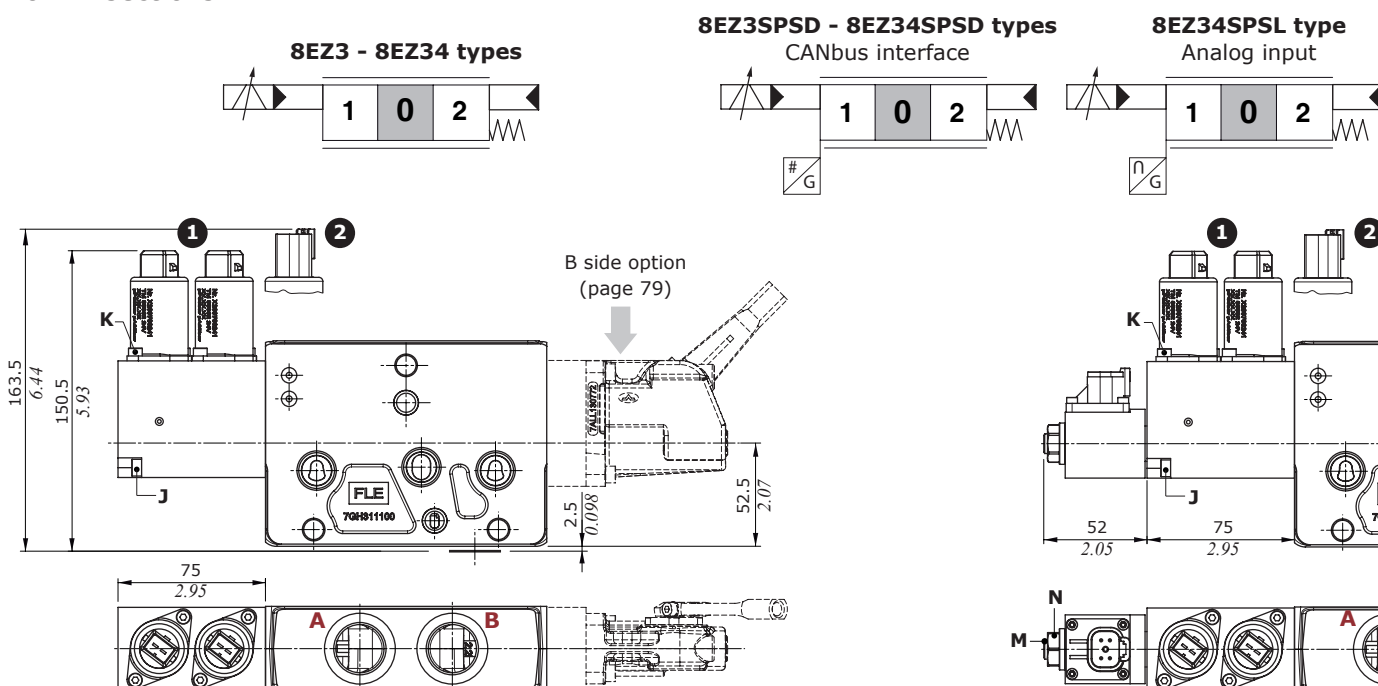
Control Types

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

For Standard and HP sections



For HF sections



Working section

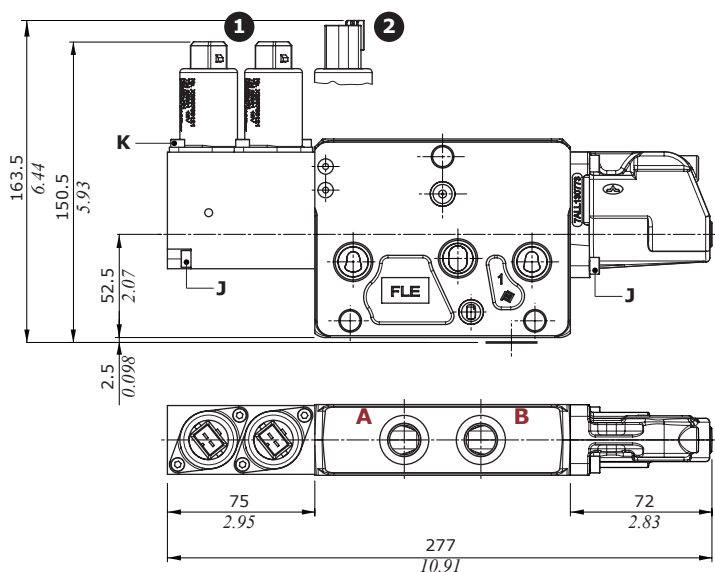
Complete one-side electrohydraulic control

Controls already comprehensive of endcap on B side.

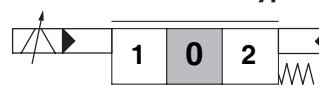
Control Types

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

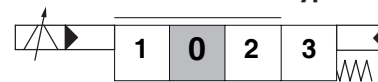
For Standard and HP sections



8EZ3 - 8EZ34 types

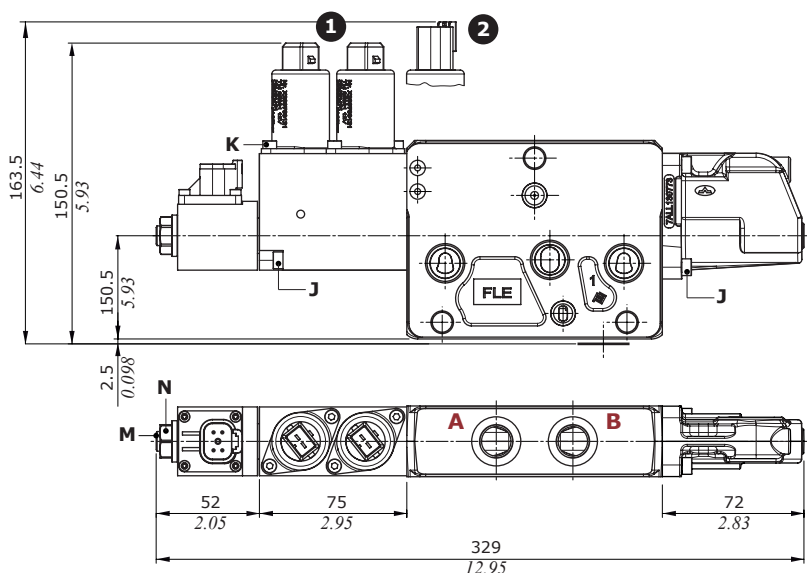


13EZ3 - 13EZ34 types



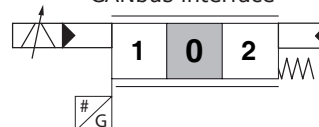
Wrenches and tightening torques

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



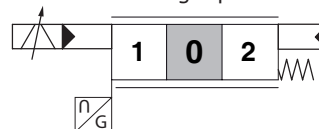
8EZ3SPSD - 8EZ34SPSD types

CANbus interface



8EZ34SPSL type

Analogue input



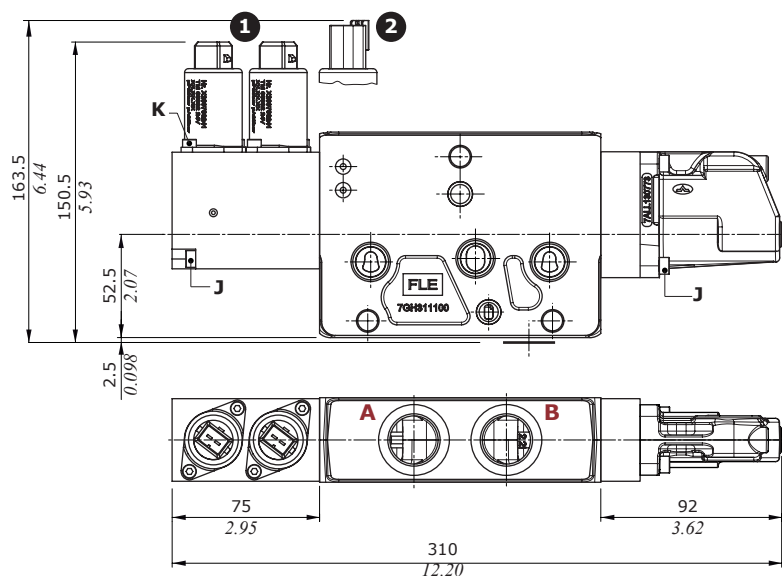
Complete one-side electrohydraulic control

Controls already comprehensive of endcap on B side.

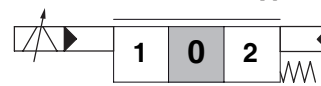
Control Types

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

For HF section



8EZ3 - 8EZ34 types



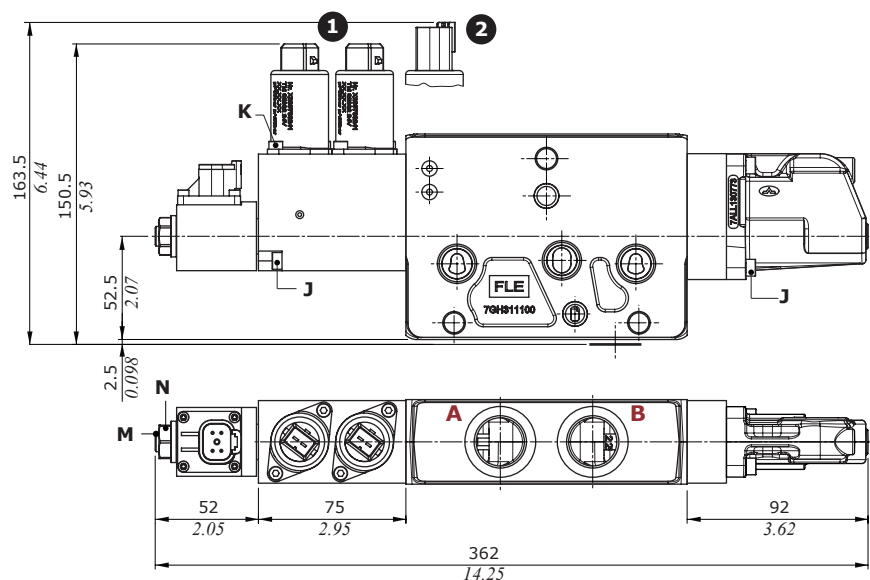
Wrenches and tightening torques

J = allen wrench 4 - 6.6 Nm (4.9 lbf)

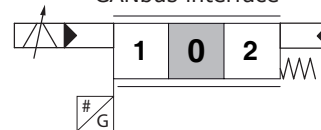
K = allen wrench 3 - 5 Nm (3.7 lbf)

M = allen wrench 4 - 9.8 Nm (7.2 lbf)

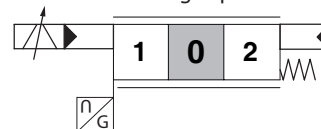
N = wrench 17 - 9.8 Nm (7.2 lbf)



8EZ3SPSD - 8EZ34SPSD types CANbus interface

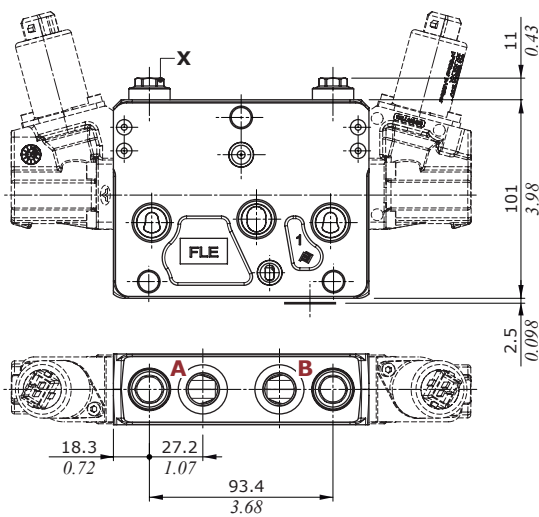


8EZ34SPSL type Analog input



Working section

Port valves



U type



C type

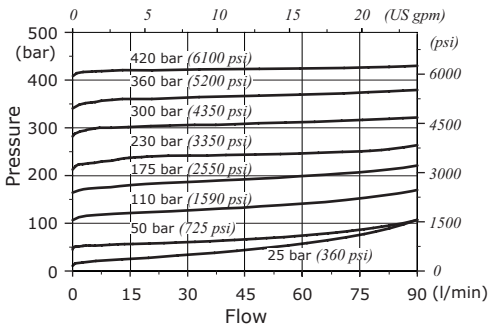


Wrenches and tightening torques

X = wrench 13 - 24 Nm (17.7 lbf)

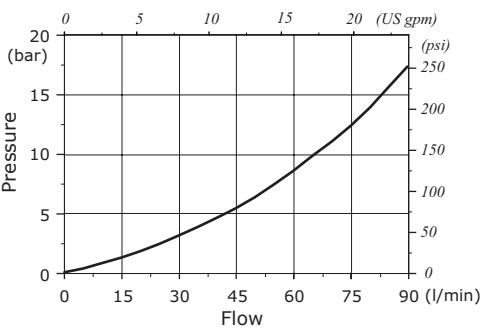
U type: antishock valves with prefill

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

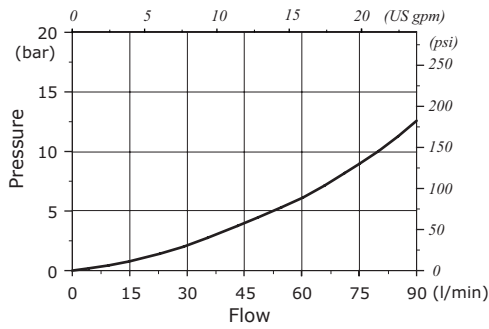


C type: anticavitation valves

Pressure drop



Pressure drop
(in anticavitation)



Outlet section part ordering codes

DPX100 / RF (04) - - FPM

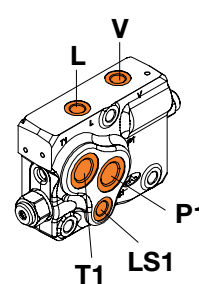
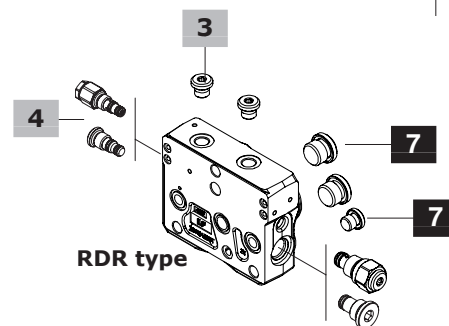
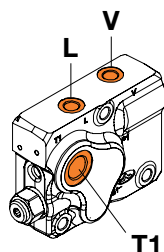
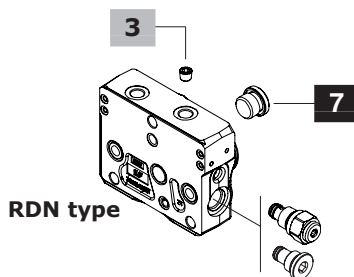
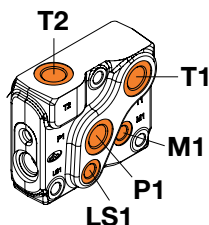
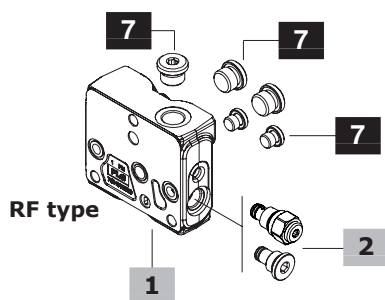
1	1	5	6
---	---	---	---

DPX100 / RDN (VBT) - NOTAP(VL) - - FPM

1	2	3
---	---	---

DPX100 / RDR (VBT / 03 / RT) - TAP(VL) - - FPM

1	2	1	4	3
---	---	---	---	---

**1 Outlet section kit* page 84**

The codes are referred to sections with FPM o-ring seals
 Outlet section is the same type for standard and High Pressure valve
For mechanical, hydraulic and solenoid controls

TYPE: **DPX100/RF-FPM** CODE: YFIA204300V

DESCRIPTION: With T2 upper port port

TYPE: **DPX100/RF-BSP34-FPM** CODE: YFIA204400V

DESCRIPTION: As previous one with G3/4 port

TYPE: **DPX100/RF(04)-FPM** CODE: YFIA204305V

DESCRIPTION: With T2 upper port and P1, T1, LS1, M1 side ports

For electrohydraulic controls

TYPE: **DPX100/RDN-FPM** CODE: YFIA204391V

DESCRIPTION: Without pressure reducing valve arrangement, T1

side and V-L upper ports

TYPE: **DPX100/RDN-BSP34-FPM** CODE: YFIA204491V

Description: As previous one with G3/4 T1 port

TIPO: **DPX100/RDR-FPM** CODE: YFIA204307V

DESCRIZIONE: With pressure reducing valve arrangement, V and L

upper ports, T1 side port

TYPE: **DPX100/RDR(03)-FPM** CODE: YFIA204302V

DESCRIPTION: With pressure reducing valve arrangement, V and L

upper ports, P1, T1, LS1 side ports

TYPE: **DPX100/RDR(03)-BSP34-FPM** CODE: YFIA204403V

DESCRIPTION: As previous one with G3/4 P and T ports

Note: for outlet sections with different port arrangement please contact Sales Dpt.

2 Bleed valve page 85

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
(-)	X138810000V	Bleed valve
(VBT)	XTAP525320V	Valve blanking plug

3 Pilot and drain *

TYPE	CODE	DESCRIPTION
NOTAP(VL)	4TAP310007	M10x1 DIN906 plug, for external drain
(-)	XTAP719160	G1/4 plug, nr.2 for int.pilot and drain, FPM o-ring seal

4 Pressure reducing valve page 85

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
(-)	X219740035V	Pressure reducing valve, 30-45 bar (435-650 psi)
(RT)	XTAP418350V	Valve blanking plug, FPM o-ring seal

5 Section threading

Only specify if it is different from BSP standard (see page 6)

6 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

7 Parts *

The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION
XTAP727200	G1/2 plug, nr.1 for RF and RDN section, nr.2 for RDR(03) section, nr.3 for RF(04) section
XTAP732220	G3/4 plug, for qty see G1/2 plug
XTAP719160	G1/4 plug, nr.1 for RDR(03) section, nr.2 for RF(04) section

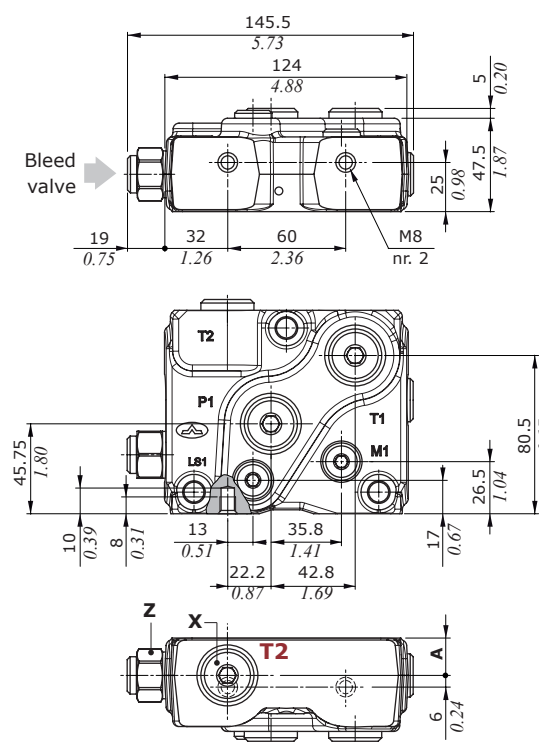
NOTE (*): Codes are referred to **BSP** thread.

NOTE (-): "TYPE" omitted in outlet section description

Outlet section

Dimensions and hydraulic circuit

Example of RF(04) outlet section

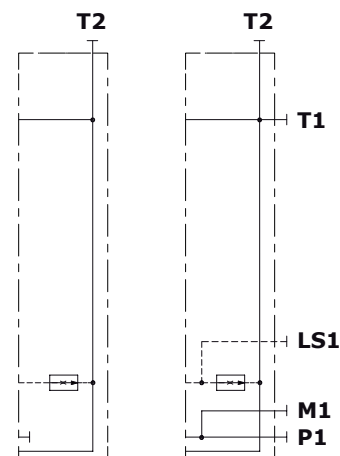


Wrenches and tightening torques

X = allen wrench 8 - 24 Nm (17.7 lbf)
 Y = allen wrench 6 - 24 Nm (17.7 lbf)
 Z = wrench 24 - 42 Nm (31 lbf)

RF type

RF(04) type

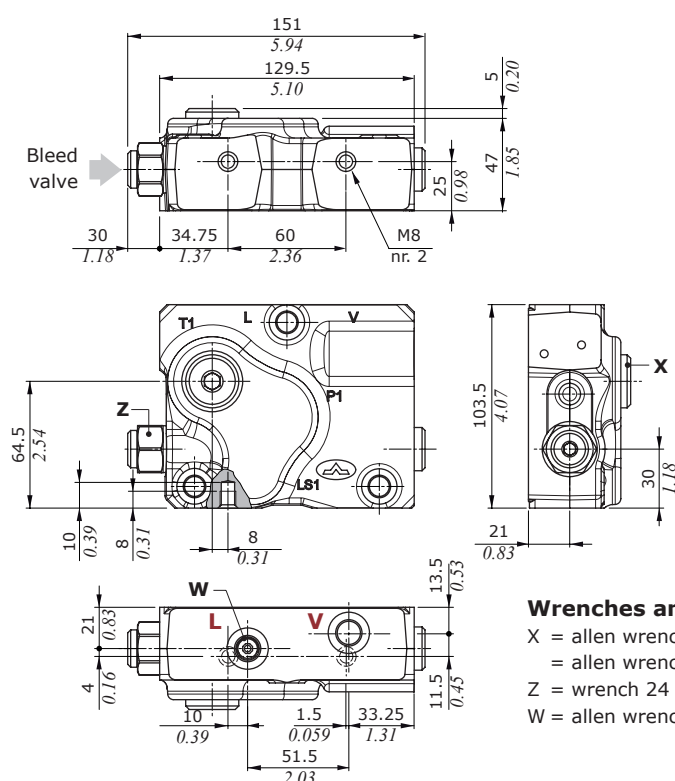


OUTLET SECTION TYPE

A

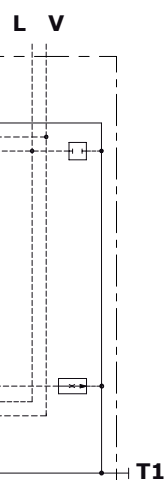
	mm	in
T2 standard thread	19	0.75
T2 with G3/4 thread	23	0.91

Example of RDN outlet section



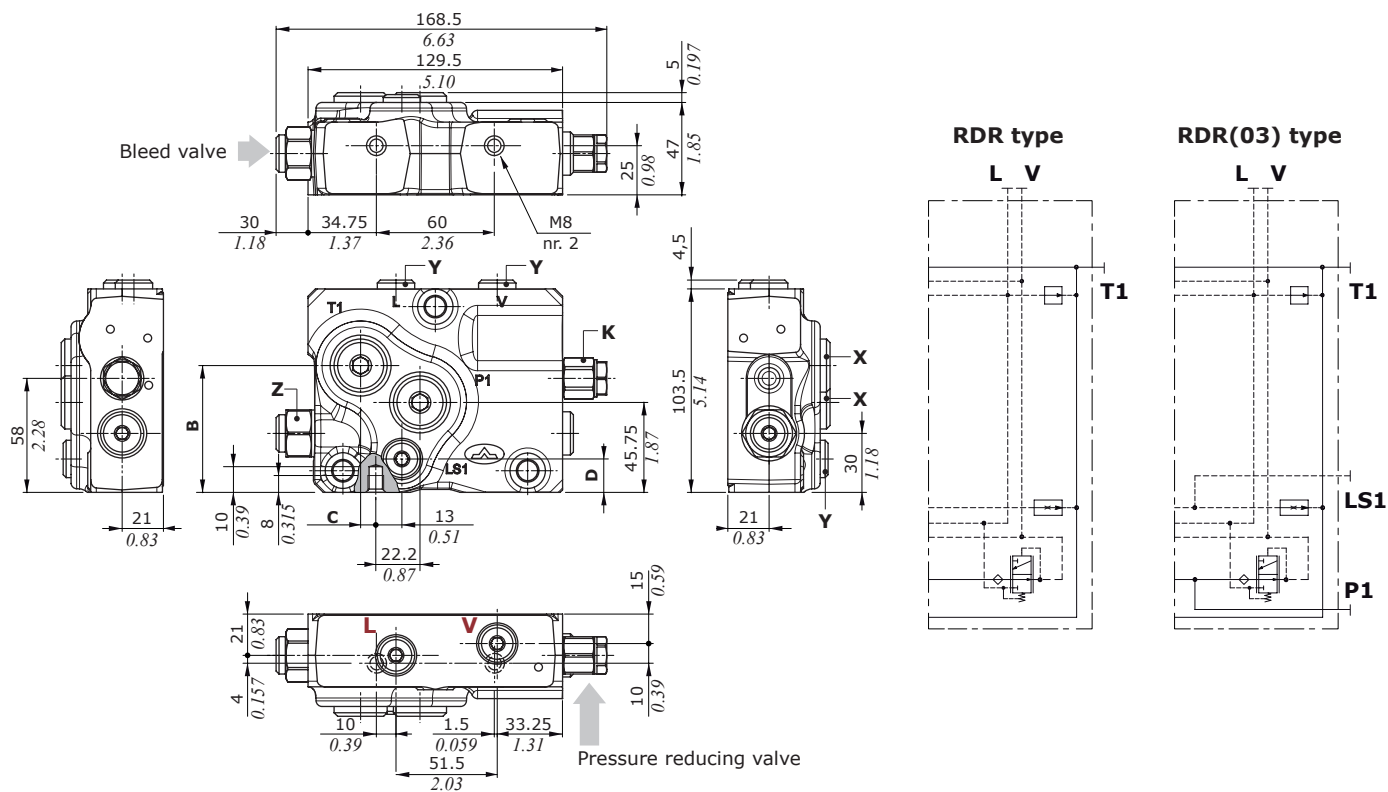
Wrenches and tightening torques

X = allen wrench 8 - 24 Nm (17.7 lbf) - (G1/2)
 = allen wrench 12 - 42 Nm (31 lbf) - (G3/4)
 Z = wrench 24 - 42 Nm (31 lbf)
 W = allen wrench 5 - 9.8 Nm (7.2 lbf)



Dimensions and hydraulic circuit

Example of RDR(03) outlet section



OUTLET SECTION TYPE	B		C		D	
	mm	in	mm	in	mm	in
T1 standard thread	64.5	2.54	8	0.31	17	0.67
T1 with G3/4 thread	65.5	2.58	9	0.35	16	0.63

Wrenches and tightening torques

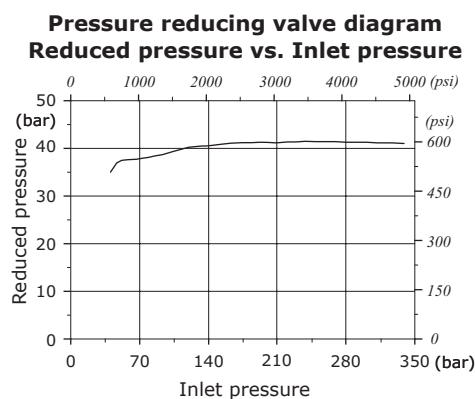
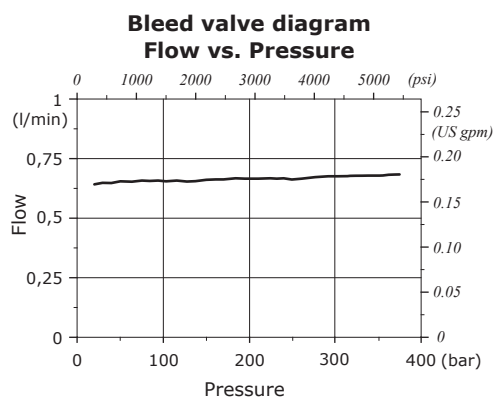
K = wrench 19 - 24 Nm (17.7 lbf)
 X = allen wrench 8 - 24 Nm (17.7 lbf) - (G1/2)
 = allen wrench 12 - 42 Nm (31 lbf) - (G3/4)
 Y = allen wrench 6 - 24 Nm (17.7 lbf)
 Z = wrench 24 - 42 Nm (31 lbf)

Bleed valve features

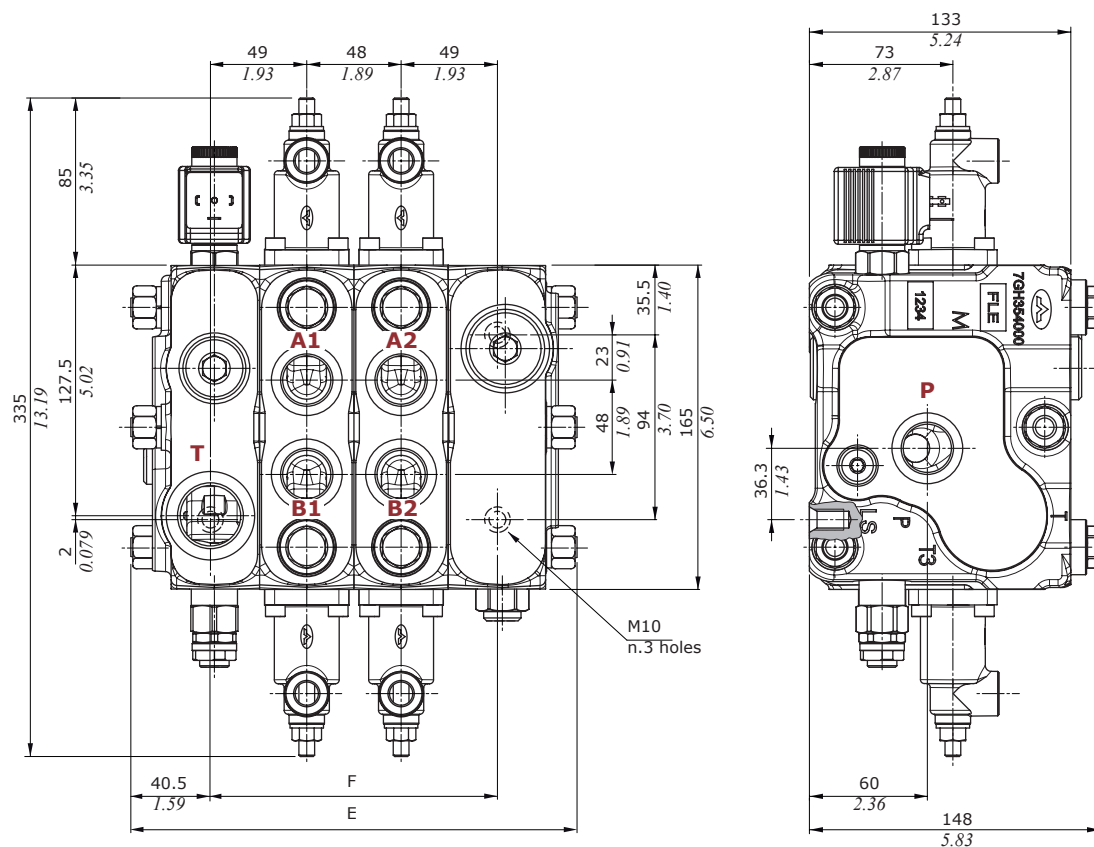
Max. inlet pressure 380 bar (5550 psi)
 Max. back pressure 25 bar (363 psi)

Pressure reducing valve features

Max. inlet pressure 380 bar (5550 psi)
 Reduced pressure range. . . 30-45 bar (435-650 psi)
 Max. back pressure 25 bar (363 psi)

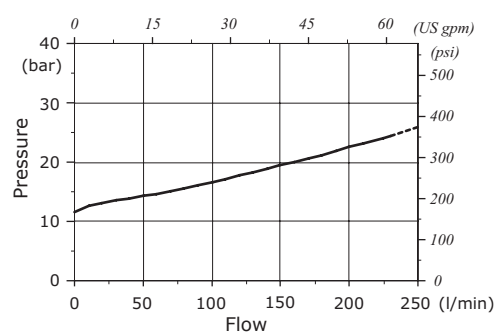


Dimensional data and performance

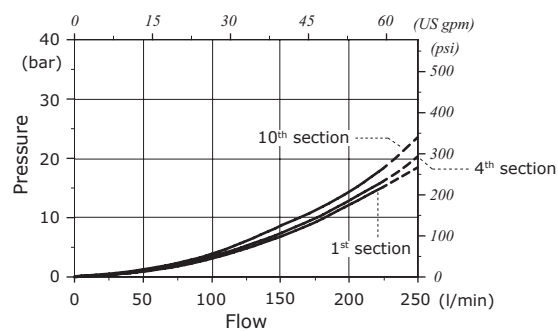


TYPE	E		F	
	mm	in	mm	in
DPX160/1	179	7.05	98	3.86
DPX160/2	227	8.94	146	5.75
DPX160/3	275	10.83	194	7.64
DPX160/4	323	12.72	242	9.53
DPX160/5	371	14.61	290	11.42
DPX160/6	419	16.50	338	13.31
DPX160/7	467	18.39	386	15.20
DPX160/8	515	20.28	434	17.09
DPX160/9	563	22.17	482	18.98
DPX160/10	611	24.06	530	20.87

P→T Pressure drop inlet compensator (margin pressure)

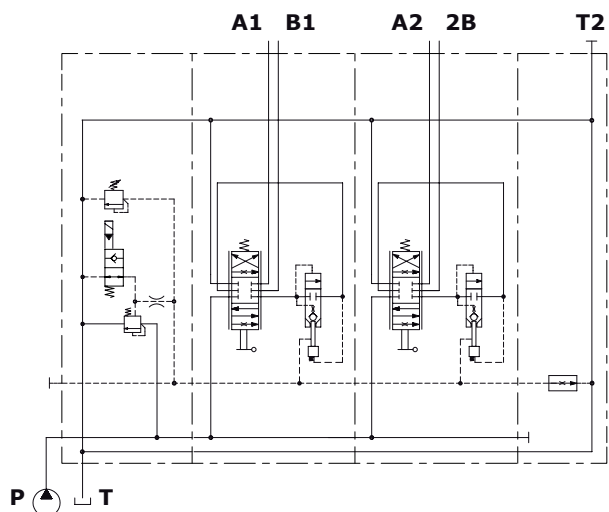


A(B)→T pressure drop (standard spool @ max.stroke)

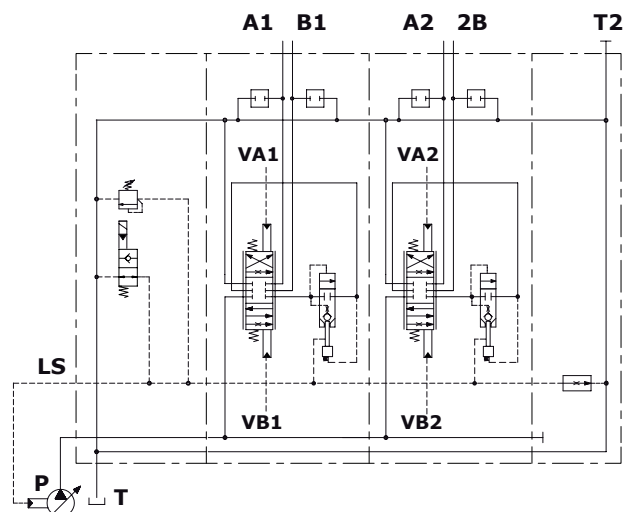


Hydraulic circuit

Configuration example with mechanical and hydraulic controls

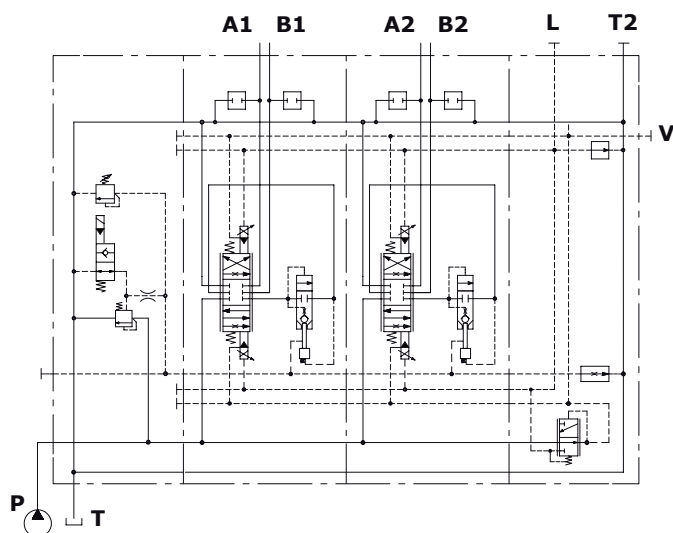


Open center circuit and lever control, with unloader valve, without port valve arrangement

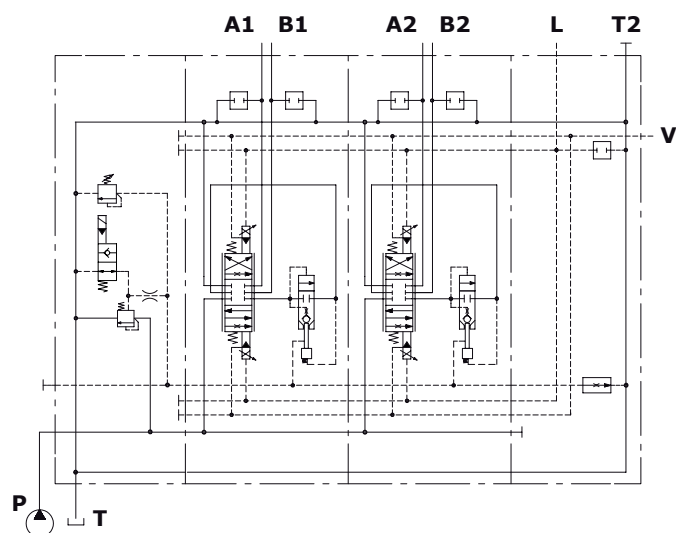


Closed center circuit and proportional hydraulic control, with unloader valve and port valve arrangement

Configuration example with electrohydraulic controls



Open center circuit and two-side proportional electrohydraulic control, with unloader valve, port valve arrangement and pressure reducing valve, internal pilot and drain

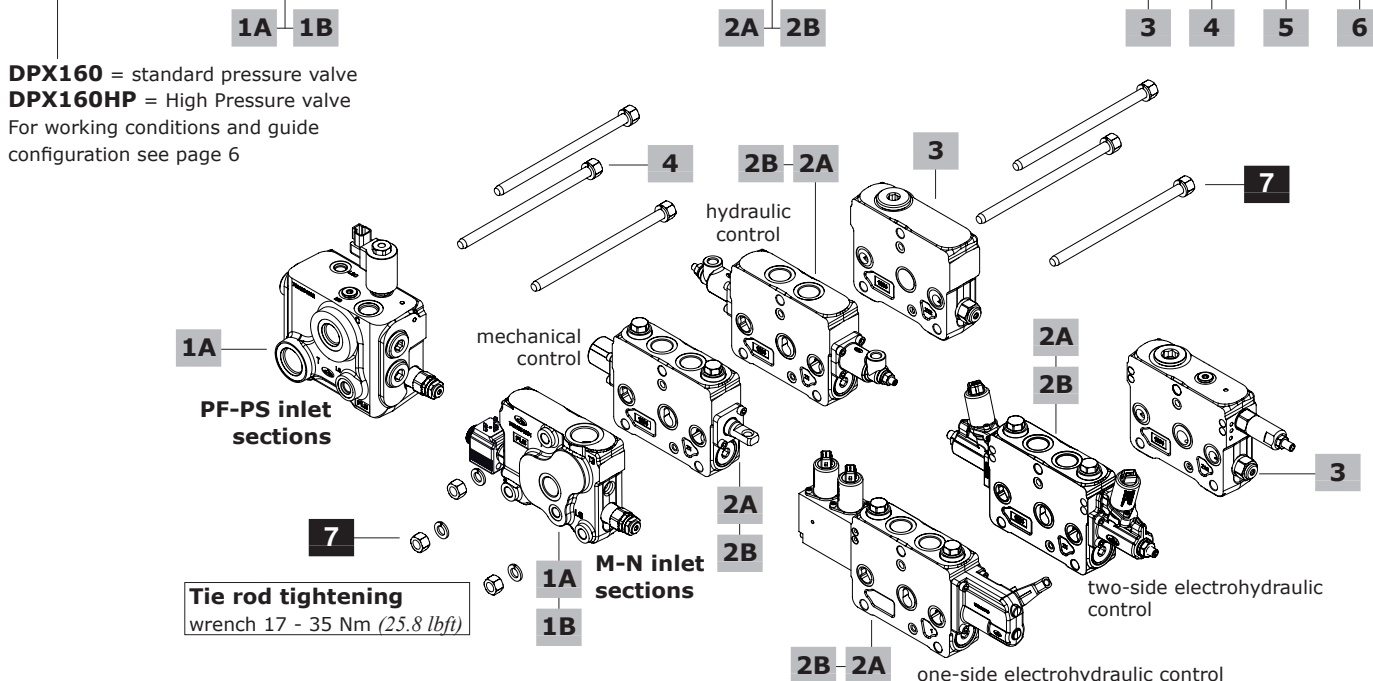


Open center circuit and two-side proportional electrohydraulic control, with unloader valve and port valve arrangement, without pressure reducing valve, external pilot and drain

Complete section ordering codes

Nr. of working sections

DPX160/2/AN1A(TGW3-175/ELN)/P-108(150/150)-8SLP.U3T/Q-E108(150/150)-8IMF3N/RC1A-.....-12VDC-FPM



1A Std pressure inlet section *

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX160/M3B(TGW3-175/ELN)-12VDC-FPM**

CODE: 650203023V

DESCRIPTION: With compensator, press. relief valve and unloader valve, with P-T-LS-M ports (LS-M plugged)

TYPE: **DPX160/M3B(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 650203025V

DESCRIPTION: As previous one with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160/M3B(SU/TGW3-175/ELN)-12VDC-FPM**

CODE: 650203024V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/M4B(TGW3-175/ELN)-12VDC-FPM**

CODE: 650203026V

DESCRIPTION: As type M3, with T3 side outlet port (plugged)

TYPE: **DPX160/PF1A(TGW3-175\VP-D(1)-SB10-Q40\CF(1)-SB14-FPM** CODE: 650203301V

DESCRIPTION: **Designed for steering**, with compensator, priority valve, shut-off valve and pressure relief valve, with P-T-LS-M3-C-LSC ports (M3-LS plugged). Special tie rods are required

Closed Center circuit

TYPE: **DPX160/N1A(TGW3-175/ELN)-12VDC-FPM**

CODE: 650203019V

DESCRIPTION: Without compensator, with pressure relief valve and unloader valve, with P-T-LS ports

TYPE: **DPX160/N1A(SO/TGW3-175/ELN)-12VDC-FPM**

CODE: 650203021V

DESCRIPTION: As previous one with non-return flow limiter from inlet section to working section and by-pass valve

.....to be continued

1A Std pressure inlet section *

.....continuation

TYPE: **DPX160/N1A(SU/TGW3-175/ELN)-SAE-12VDC-FPM**

CODE: 650203020V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/N2A(TGW3-175/ELN)-SAE-12VDC-FPM**

CODE: 650203022V

DESCRIPTION: As N1 type, with T3 side outlet port (plugged)

TYPE: **DPX160/PS1A(TGW3-175\VP-D(1)-SB10-Q40\ESO32N-12VDC-FPM** CODE: 650203300V

DESCRIPTION: **Designed for steering**, without compensator, with priority valve and pressure relief valve, with P-T-LS-M3-C-LSC port (M3-LS plugged). Special tie rods are required

1B High pressure inlet section *

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX160HP/M3B(TGW5-350/ELN)-12VDC-FPM**

CODE: 650203031V

DESCRIPTION: With compensator, press. relief valve and unloader valve, with P-T-LS-M ports (LS-M plugged)

TYPE: **DPX160HP/M3B(SO/TGW5-350/ELN)-12VDC-FPM**

CODE: 650203033V

DESCRIPTION: As previous one with non-return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160HP/M3B(SU/TGW5-350/ELN)-12VDC-FPM**

CODE: 650203032V

DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve

Closed Center circuit

Refer to "Std pressure" inlet sections (except PS section)

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

Complete section ordering codes

2A Std pressure working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX160/Q-108(150/150)-8SLP-FPM**

CODE: 650113002V

DESCRIPTION: With dust-proof plate, without port valve arrangement

TYPE: **DPX160/P-108(150/150)-8SLP.UL3T-FPM**

CODE: 650103002V

DESCRIPTION: As previous one with port pressure relief valve arrangement

TYPE: **DPX160/P-108(150/150)-8SLP.US3T-FPM**

CODE: 650103003V

DESCRIPTION: With port antishock valve arrangement

Proportional hydraulic control

TYPE: **DPX160/Q-E108(150/150)-8IMF3N-FPM**

CODE: 650113001V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX160/P-E108(150/150)-8IMF3N.UL3T-FPM**

CODE: 650103017V

DESCRIPTION: As previous one with port pressure relief valves arrang.

TYPE: **DPX160/P-E108(150/150)-8IMF3N.US3T-FPM**

CODE: 650103018V

DESCRIPTION: With port antishock valve arrangement

Two-side proportional electrohydraulic control

TYPE: **DPX160/QE-E108(150/150)-8EB3F3-12VDC-FPM**

CODE: 650113004V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX160/PE-E108(150/150)-8EB3F3.UL3T-12VDC-FPM**

CODE: 650103025V

DESCRIPTION: As previous one with port pressure relief valves arrang.

TYPE: **DPX160/PE-E108(150/150)-8EB3F3.US3T-12VDC-FPM**

CODE: 650103026V

DESCRIPTION: With port antishock valve arrangement

One-side proportional electrohydraulic control

TYPE: **DPX160/QZ-E108(150/150)-8EZ3LQF3-12VDC-FPM**

CODE: 650103031V

DESCRIPTION: With spool stroke limiter, without port valves arrang.

TYPE: **DPX160/PZ-E108(150/150)-8EZ3LQF3.UL3T-12VDC-FPM**

CODE: 650103032V

DESCRIPTION: As previous one with port pressure relief valves arrang.

TYPE: **DPX160/PZ-E108(150/150)-8EZ3LQF3.US3T-12VDC-FPM**

CODE: 650103033V

DESCRIPTION: With port antishock valve arrangement

2B High pressure working section *

The codes are referred to sections with FPM o-ring seals

Mechanical control

TYPE: **DPX160HP/Q-108(150/150)-8SLP-FPM**

CODE: 650113010V

DESCRIPTION: With dust-proof plate, without port valve arrangement

TYPE: **DPX160HP/P-108(150/150)-8SLP.US3T-FPM**

CODE: 650103027V

DESCRIPTION: As previous one with port antishock valve arrangement

Proportional hydraulic control

TYPE: **DPX160HP/Q-E108(150/150)-8IMF3N-FPM**

CODE: 650113011V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX160HP/P-E108(150/150)-8IMF3N.US3T-FPM**

CODE: 650103028V

DESCRIPTION: As previous one with port antishock valve arrangement

Two-side proportional electrohydraulic control

TYPE: **DPX160HP/QE-E108(150/150)-8EB3F3-12VDC-FPM**

Code: 650113012V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX160HP/PE-E108(150/150)-8EB3F3.US3T-12VDC-FPM**

Code: 650103029V

DESCRIPTION: As previous one with port antishock valve arrangement

..... to be continued.

2B High pressure working section *

.....continuation

One-side proportional electrohydraulic control

TYPE: **DPX160HP/QZ-E108(150/150)-8EZ3LQF3-12VDC-FPM**

CODE: 650103034V

DESCRIPTION: With spool stroke limiter, without port valve arrang.

TYPE: **DPX160HP/PZ-E108(150/150)-8EZ3LQF3.UL3T-12VDC-FPM**

CODE: 650103035V

DESCRIPTION: As previous one with port pressure relief valve arrang.

TYPE: **DPX160HP/PZ-E108(150/150)-8EZ3LQF3.US3T-12VDC-FPM**

CODE: 650103036V

DESCRIPTION: With port antishock valve arrangement

3 Outlet section *

The codes are referred to sections with FPM o-ring seals

Outlet section is the same type for standard and High Pressure valve

For mechanical or hydraulic configuration

TYPE: **DPX160/RC1A-FPM** CODE: 650303002V

DESCRIPTION: With bleed valve and T2 upper port (plugged)

TYPE: **DPX160/RC3A-FPM** CODE: 650303004V

DESCRIPTION: With bleed valve and T2, P1-T1-LS1 side ports (plugged)

TYPE: **DPX160/RC3A-CL-12VDC-FPM** CODE: 650303020V

DESCRIPTION: As previous one, with clamp release function

For electrohydraulic or mixed configuration

TYPE: **DPX160/RCN1A-FPM** CODE: 650303014V

DESCRIPTION: Without pressure reducing valve, external pilot and

drain (V-L ports), with Bleed valve and T2 upper port (plugged)

TYPE: **DPX160/RCN3A-FPM** CODE: 650303016V

DESCRIPTION: As previous one, with P1-T1-LS1 side ports (plugged)

TYPE: **DPX160/RCN3A-CL-12VDC-FPM** CODE: 650303021V

DESCRIPTION: As previous, with clamp release function

TYPE: **DPX160/RCR1A-TAP(VL)-FPM** CODE: 650303005V

DESCRIPTION: With pressure reducing valve and Bleed valve, internal

pilot and drain (V-L ports plugged), with T2 upper port (plugged)

TYPE: **DPX160/RCR3A-TAP(VL)-FPM** CODE: 650303017V

DESCRIPTION: As previous one, with P1-T1-LS1 side ports (plugged)

TYPE: **DPX160/RCN3A-CL-TAP(VL)-12VDC-FPM**

CODE: 650303022V

DESCRIPTION: As previous one, with clamp release function

Note: for outlet sections with different port arrangement please

contact Sales Dpt.

4 Valve threading

Only specify if it is different from BSP standard (see page 6).

5 Voltage

Specify the voltage of electric devices.

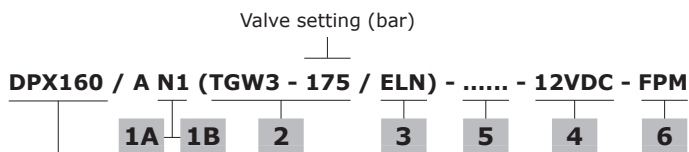
6 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

7 Assembling kit

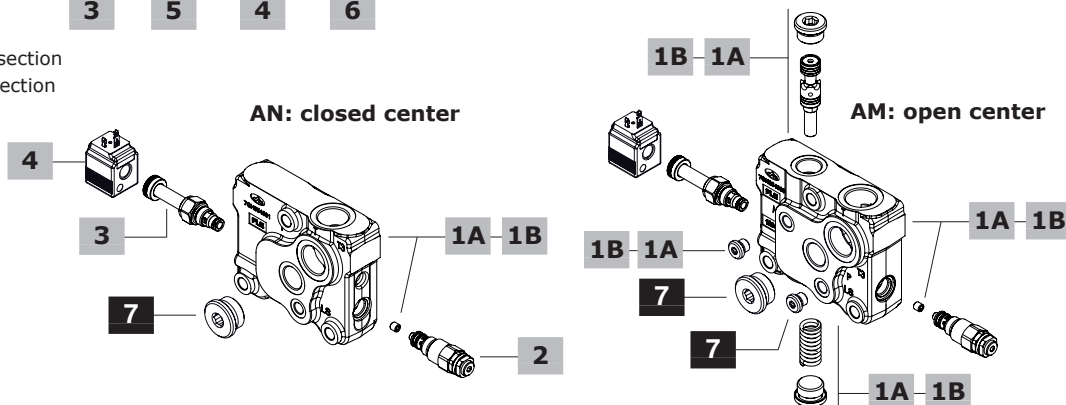
CODE	DESCRIPTION	CODE	DESCRIPTION
Standard tie rods: for M and N inlet sections			
5TIR112179	for 1 work.section	5TIR112419	for 6 work.sections
5TIR112227	for 2 work.sections	5TIR112467	for 7 work.sections
5TIR112275	for 3 work.sections	5TIR112515	for 8 work.sections
5TIR112323	for 4 work.sections	5TIR112563	for 9 work.sections
5TIR112371	for 5 work.sections	5TIR112611	for 10 work.sections
Special tie rods: for PF and PS inlet sections			
5TIR112141	for 1 work.section	5TIR112381	for 6 work.sections
5TIR112189	for 2 work.sections	5TIR112429	for 7 work.sections
5TIR112237	for 3 work.sections	5TIR112477	for 8 work.sections
5TIR112285	for 4 work.sections	5TIR112525	for 9 work.sections
5TIR112333	for 5 work.sections	5TIR112573	for 10 work.sections

Inlet section part ordering codes



DPX160 = standard pressure section

DPX160HP = High Pressure section



1A Std pressure inlet section kit* page 92

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX160/M3-EL-FPM** CODE: YFIA105309V

DESCRIPTION: With compensator, P-T-LS-M ports (M plugged), arranged for unloader valve

TYPE: **DPX160/M3(SU)-EL-FPM** CODE: YFIA105310V

DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/M3(SO)-EL-FPM** CODE: YFIA105311V

DESCRIPTION: With non return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160/M4-EL-FPM** CODE: YFIA105308V

DESCRIPTION: As type M3, with T3 side outlet port

Closed Center circuit

TYPE: **DPX160/N1-EL-FPM** CODE: YFIA105320V

DESCRIPTION: Without compensator, with P-T-LS ports, arranged for unloader valve

TYPE: **DPX160/N1(SU)-EL-FPM** CODE: YFIA105327V

DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/N1(SO)-EL-FPM** CODE: YFIA105328V

DESCRIPTION: With non return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160/N2-EL-FPM** CODE: YFIA105326V

DESCRIPTION: As N1 type, with T3 side outlet port

1B High pressure inlet section kit* page 92

The codes are referred to sections with FPM o-ring seals

Open Center circuit

TYPE: **DPX160HP/M3-EL-FPM** CODE: YFIA105329V

DESCRIPTION: With compensator, P-T-LS-M ports (M plugged), arranged for unloader valve

TYPE: **DPX160HP/M3(SU)-EL-FPM** CODE: YFIA105330V

DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160HP/M3(SO)-EL-FPM** CODE: YFIA105331V

DESCRIPTION: With non return flow limiter from inlet section to working section and by-pass valve

Closed Center circuit

Refer to "Std pressure" inlet sections

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

2 Main pressure relief valve page 96

The codes are referred to parts with FPM o-ring seals

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

TYPE	CODE	DESCRIPTION
(TGW2-80)	OMC09002009	Range 10-120 bar (145-1750 psi) std setting 80 bar (1160 psi)

(TGW3-175)	OMC09002007	Range 40-220 bar (580-3200 psi) std setting 175 bar (2550 psi)
------------	-------------	---

(TGW4-250)	OMC09002005	Range 200-350 bar (2900-5100 psi) std setting 250 bar (3600 psi)
------------	-------------	---

(TGW5-300)	OMC09002008	Range 290-385 bar (4200-5600 psi) std setting 300 bar (4350 psi)
------------	-------------	---

SV	XTAP524340V	Relief valve blanking plug
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3 Solenoid operated unloading valve page 96

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
ELN	0EF08002015	Without emergency override
ELV	0EF08002017	With screw type emergency override
ELP	0EF08002010	With push-button emergency override
ELT	0EF08002016	With "twist & push" emergency override
LT	XTAP510320V	Unloading valve blanking plug

4 Coil

TYPE	CODE	DESCRIPTION
12VDC	4SLE001200A	BER type coil, ISO4400 conn., 12VDC

For complete available coil list see page 125.

5 Section threading

Only specify if it is different from BSP standard (see page 6).

6 Seals

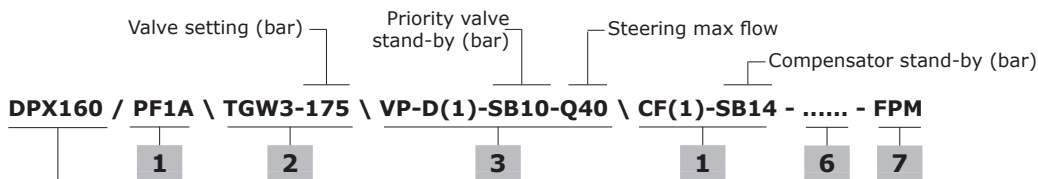
TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

7 Plugs*

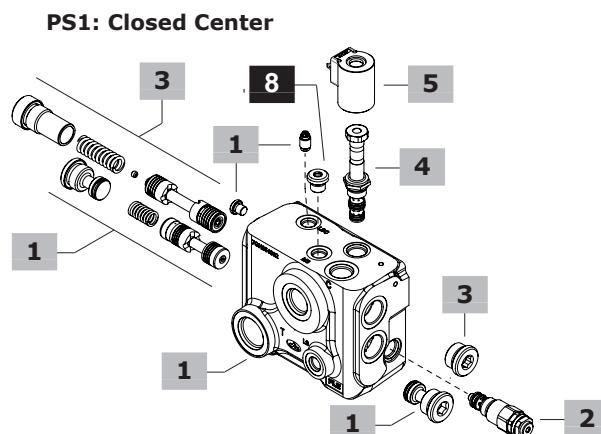
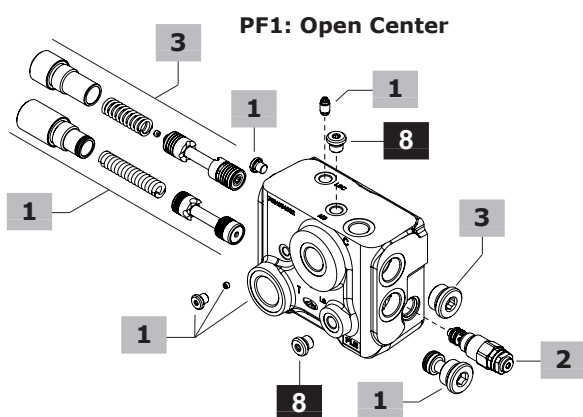
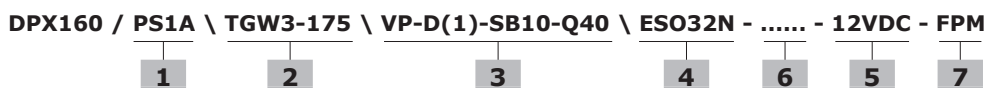
The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION
XTAP740220	G1 plug, nr.1 for M4 and N2 section
XTAP719160	G1/4 plug, nr.1 for Open Center sections

Inlet section part ordering codes



DPX160 = standard pressure valve



1 Inlet section kit* page 94

The codes are referred to sections with FPM o-ring seals
Following sections are suitable only for standard pressure valve

Open Center circuit

TYPE: **DPX160/PF1-FPM** CODE: YFIA105350V

DESCRIPTION: With compensator, P-T-LS-M3-C-LSC ports

Closed Center circuit

TYPE: **DPX160/PS1-FPM** CODE: YFIA105351V

DESCRIPTION: With shut-off spool, P-T-LS-M3-C-LSC ports

TYPE: **DPX160/PST1-FPM** CODE: YFIA105352V

DESCRIPTION: With shut-off blanking kit, P-T-LS-M3-C-LSC ports

2 Main pressure relief valve page 96

See previous page

3 Priority valve kit page 97

The codes are referred to parts with FPM o-ring seals

TYPE CODE DESCRIPTION

Regulated flow = 40 l/min (10.5 US gpm)

D(1)-SB10-Q40 5CAS322100AV Stand-by (margin pressure)
10 bar (145 psi)

D(1)-SB07-Q40 5CAS322100BV Stand-by (margin pressure)
7 bar (100 psi)

D(1)-SB04-Q40 5CAS322100CV Stand-by (margin pressure)
4 bar (58 psi)

Regulated flow = 20 l/min (5.3 US gpm)

D(1)-SB10-Q20 5CAS323099AV Stand-by (margin pressure)
10 bar (145 psi)

D(1)-SB07-Q20 5CAS323099BV Stand-by (margin pressure)
7 bar (100 psi)

D(1)-SB04-Q20 5CAS323099CV Stand-by (margin pressure)
4 bar (58 psi)

4 Solenoid operated shut-off valve page 97

The codes are referred to parts with FPM o-ring seals

TYPE CODE DESCRIPTION

ESO32A 0EJ08002058 Without emergency override

ESO32V 0EJ08002060 With screw type emergency override

EST 3XTP3534800V Valve blanking plug, only for PST inlet section

5 Coil

TYPE CODE DESCRIPTION

12VDC 4SL3000120 **BT** type coil, ISO4400 connector, 12VDC

For complete available coil list see page 125.

6 Section threading

Only specify if it is different from BSP standard (see page 6).

7 Seals

TYPE DESCRIPTION
FPM FPM o-ring seals; standard
NBR NBR o-ring seals

8 Plugs*

CODE DESCRIPTION
XTAP719160 G1/4 plug, nr.1 for PS section, nr.2 for PF section, FPM o-ring seal

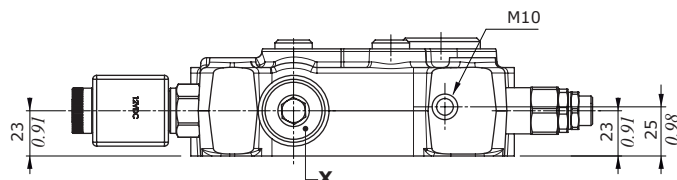
NOTE (*): Codes are referred to **BSP** thread.

Inlet section

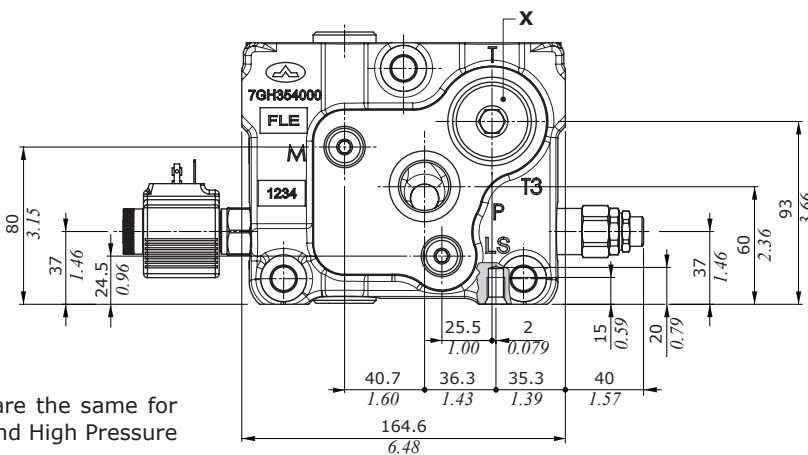
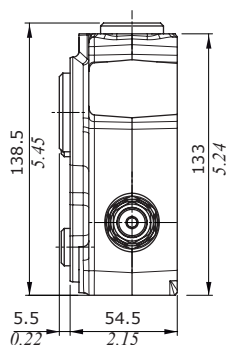
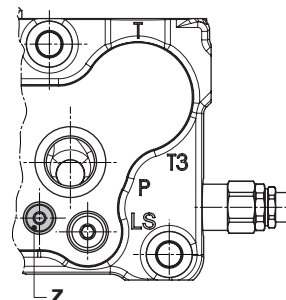
Dimensions and hydraulic circuit

Example of M Open Center section

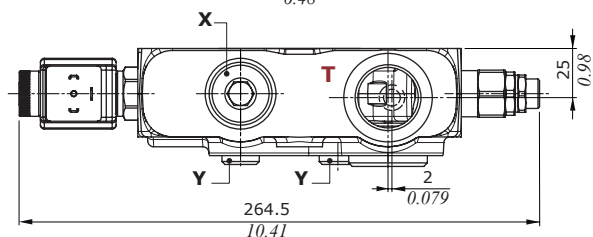
M4 type



M3(SO) or M3(SU) type



NOTE: Dimensions are the same for standard pressure and High Pressure inlet sections



Wrenches and tightening torques

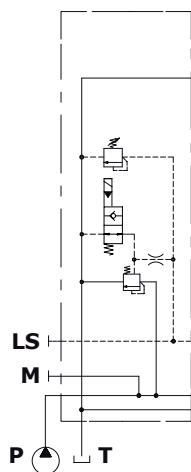
X = allen wrench 12 - 42 Nm (31 lbft)

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

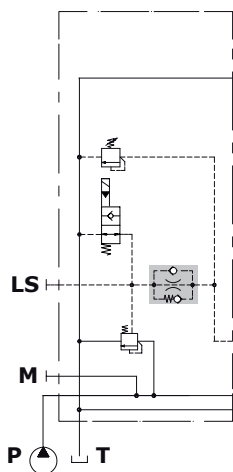
Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

NOTE: for valves wrench and torque see related pages

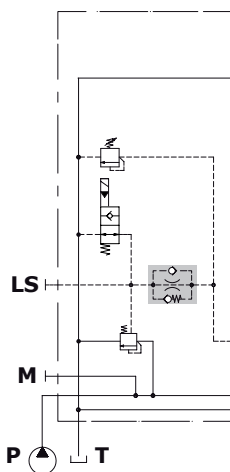
M3 type



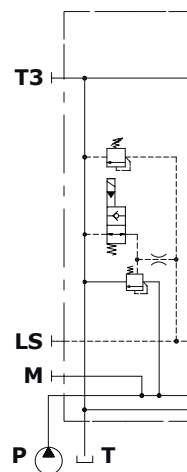
M3(SU) type



M3(SO) type



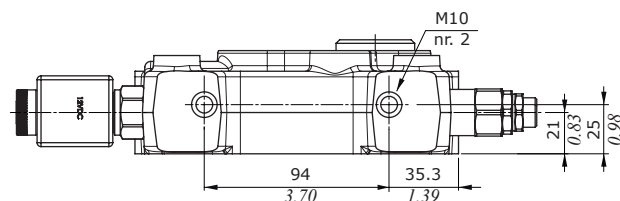
M4 type



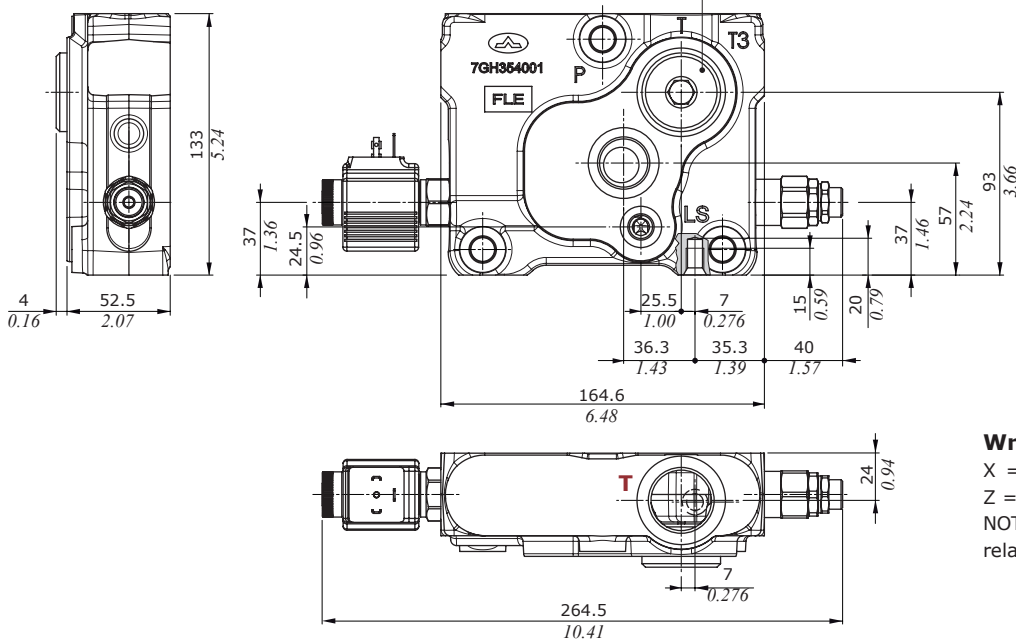
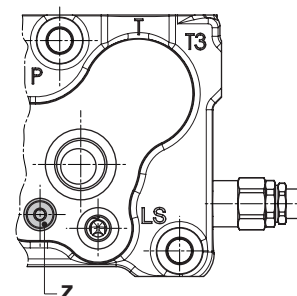
Dimensions and hydraulic circuit

Example of N Closed Center section

N2 type



N1(SO) or N1(SU) type



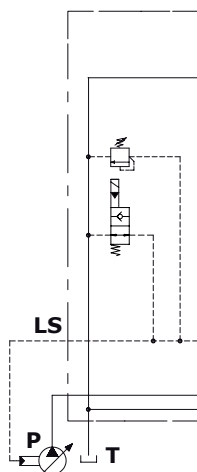
Wrenches and tightening torques

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

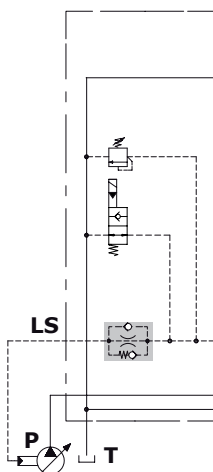
Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

NOTE: for valves wrench and torque see related pages

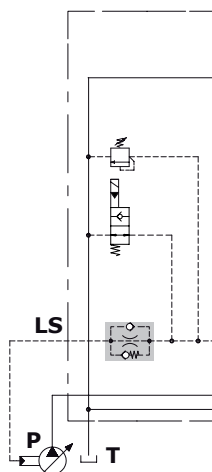
N1 type



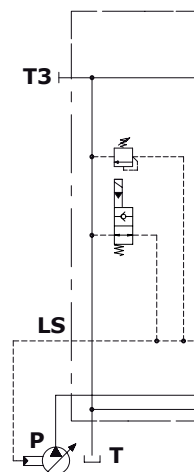
N1(SU) type



N1(SO) type



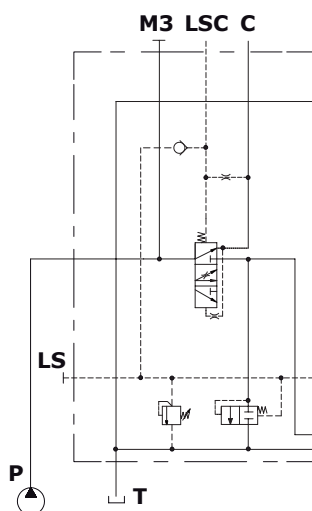
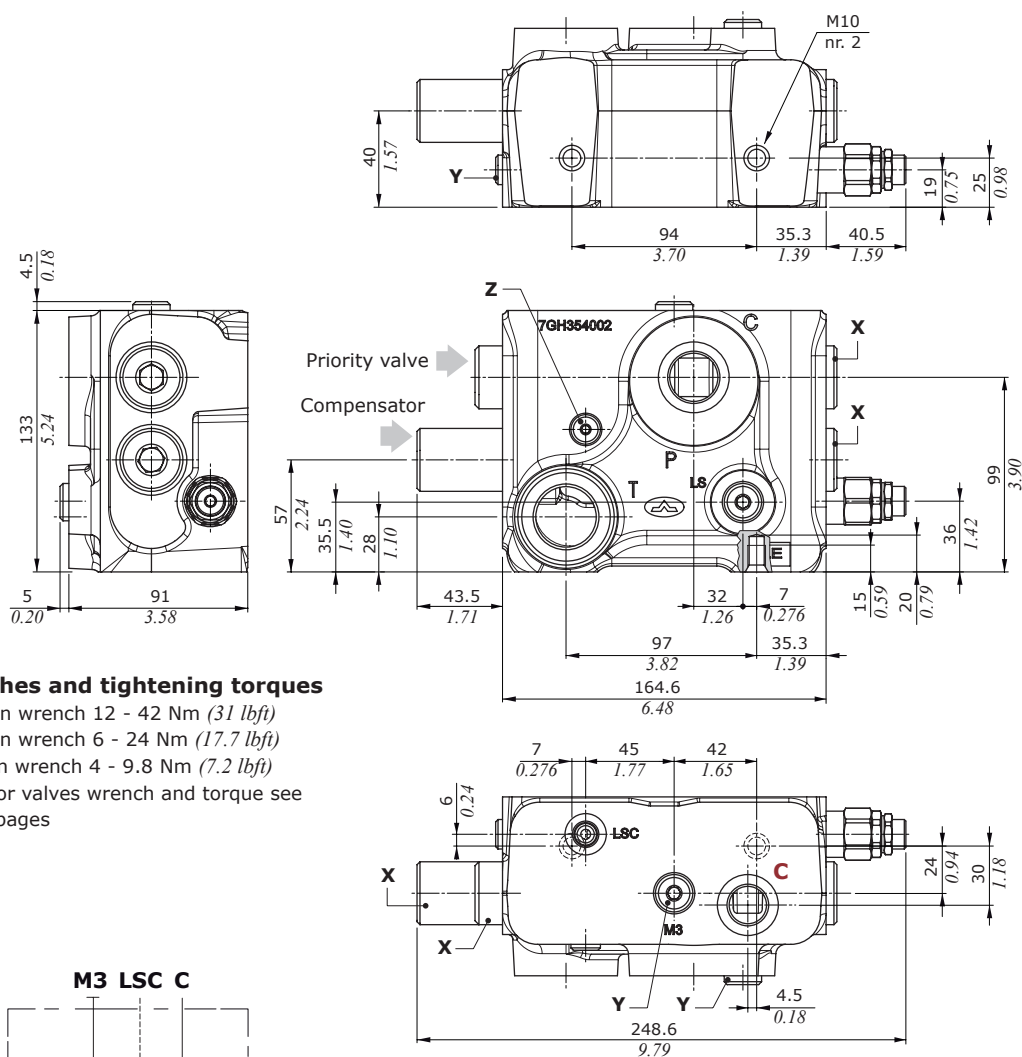
N2 type



Inlet section

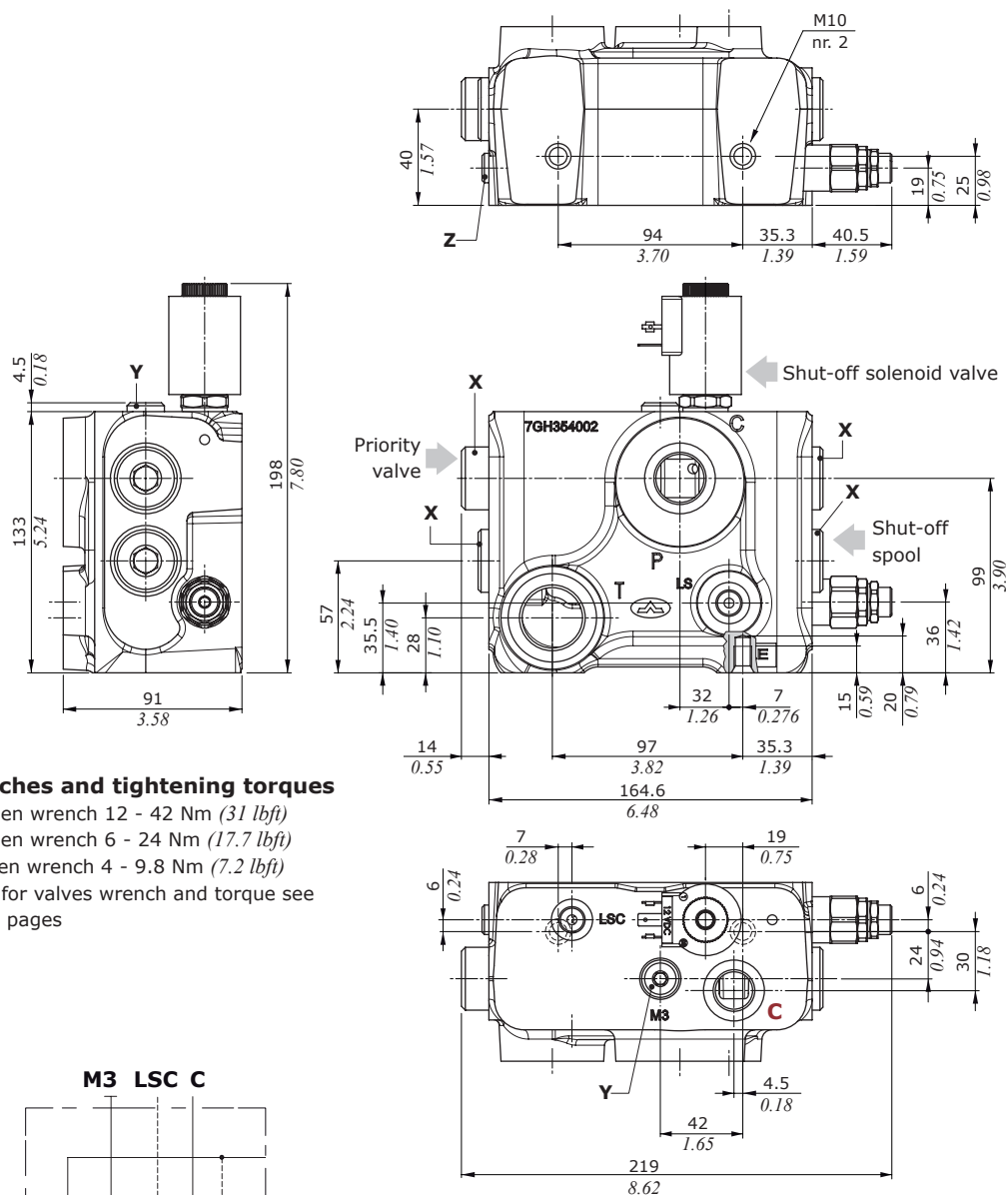
Dimensions and hydraulic circuit

PF1 Open Center section with priority valve



Dimensions and hydraulic circuit

PS1 Closed Center section with priority valve and shut-off



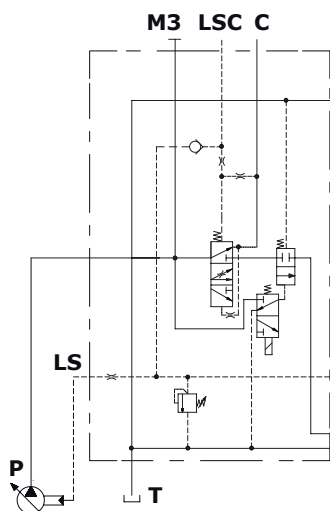
Wrenches and tightening torques

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

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

Z = allen wrench 4 - 9.8 Nm (7.2 lbft)

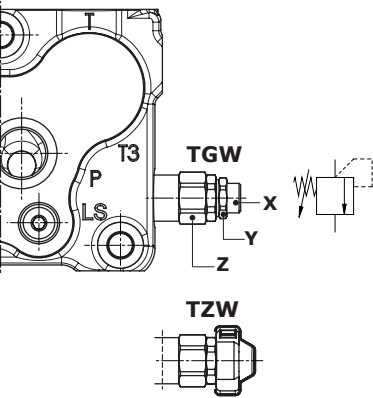
NOTE: for valves wrench and torque see related pages



Inlet section

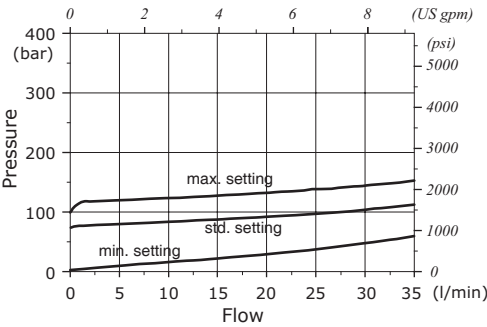
Main pressure relief valve

Setting types

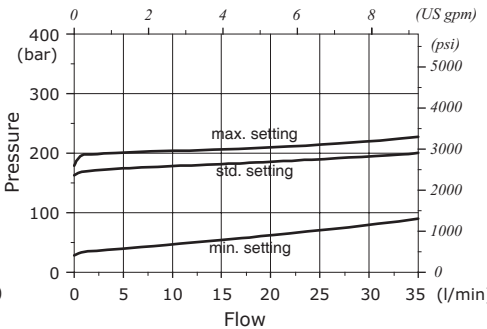


Legenda
TGW: free setting
TZW: set and locked valve
(cap code 4COP126301, n.2 pcs)
RAL3003 pigmented
Wrenches and tightening torques
X = allen wrench 5
Y = wrench 19 - 20 Nm (14.7 lbf)
Z = wrench 24 - 42 Nm (31 lbf)

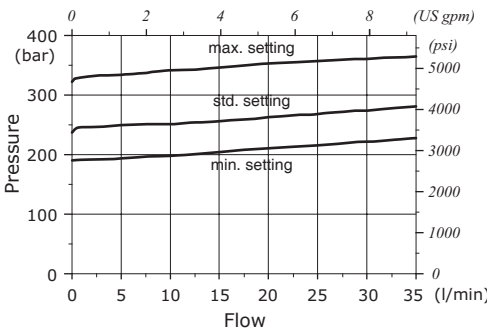
Setting range: TGW2 type



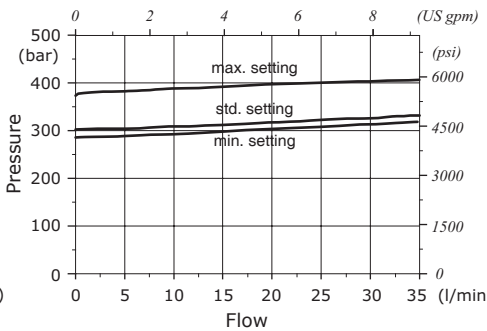
Setting range: TGW3 type



Setting range: TGW4 type

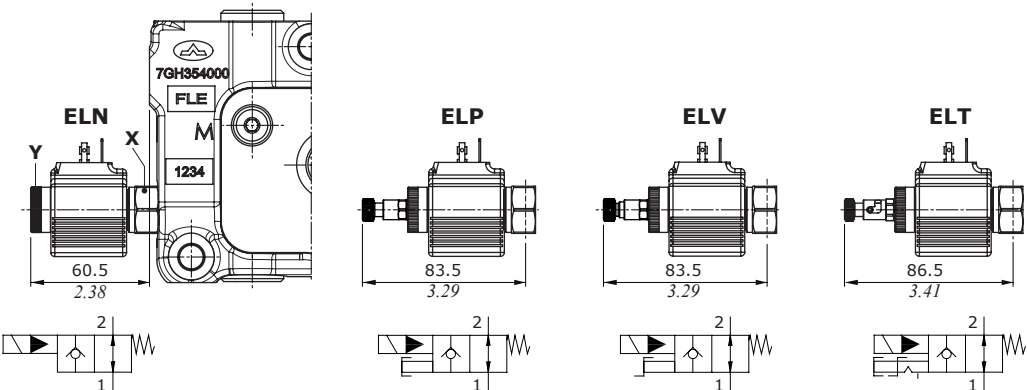


Setting range: TGW5 type



Solenoid operated unloading valve

Manual emergency types



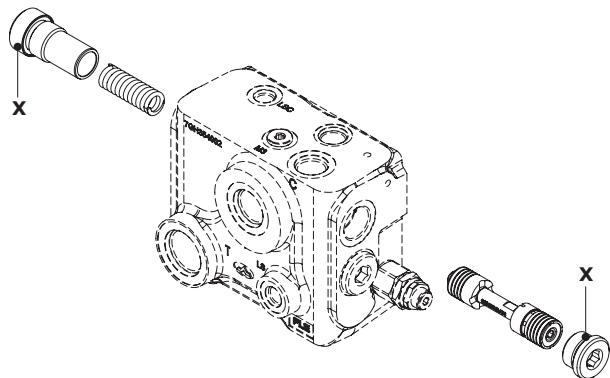
Legenda
ELN: without emergency
ELP: push button emergency override
ELV: screw emergency override
ELT: "push&twist" emergency override
Wrenches and tightening torques
X = wrench 24 - 30 Nm (22 lbf)
Y = manual tightening

Features
Max. flow 40 l/min (10.6 US gpm)
Max. pressure 380 bar (5500 psi)
Internal leakage 0.25 cm³/min @ 210 bar
(0.015 in³/min @ 3050 psi)

For coil features and options see **BER** type coil at page 125.

Inlet section

Priority valve kit

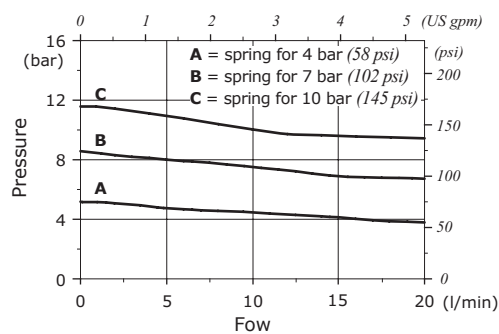


Wrenches and tightening torques

X = allen wrench 12 - 42 Nm (31 lbf)

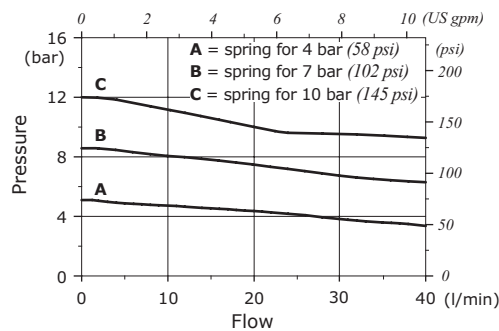
Stand-by (margin pressure) vs. regulated flow

Regulated flow = 20 l/min (5.3 US gpm)



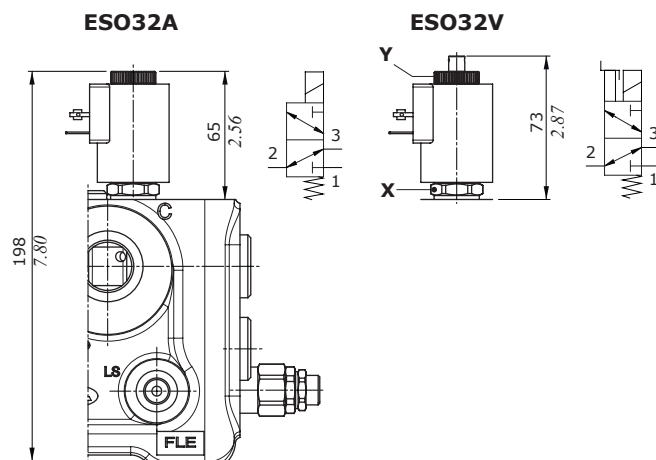
Stand-by (margin pressure) vs. regulated flow

Regulated flow = 40 l/min (10.6 US gpm)



Shut-off solenoid valve

Manual emergency types



Legenda

ES032A: without emergency

ES032V: screw emergency override

Wrenches and tightening torques

X = wrench 24 - 30 Nm (22 lbf)

Y = manual tightening

Features

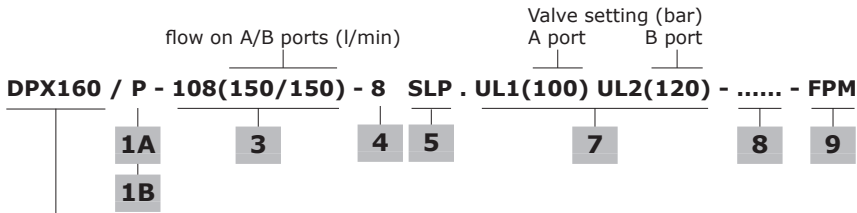
Max. flow: 3 l/min (0.796 US gpm)

Max. pressure: 350 bar (5100 psi)

Internal leakage: 10 cm³/min @ 210 bar
(0.61 in³/min @ 3050 psi)

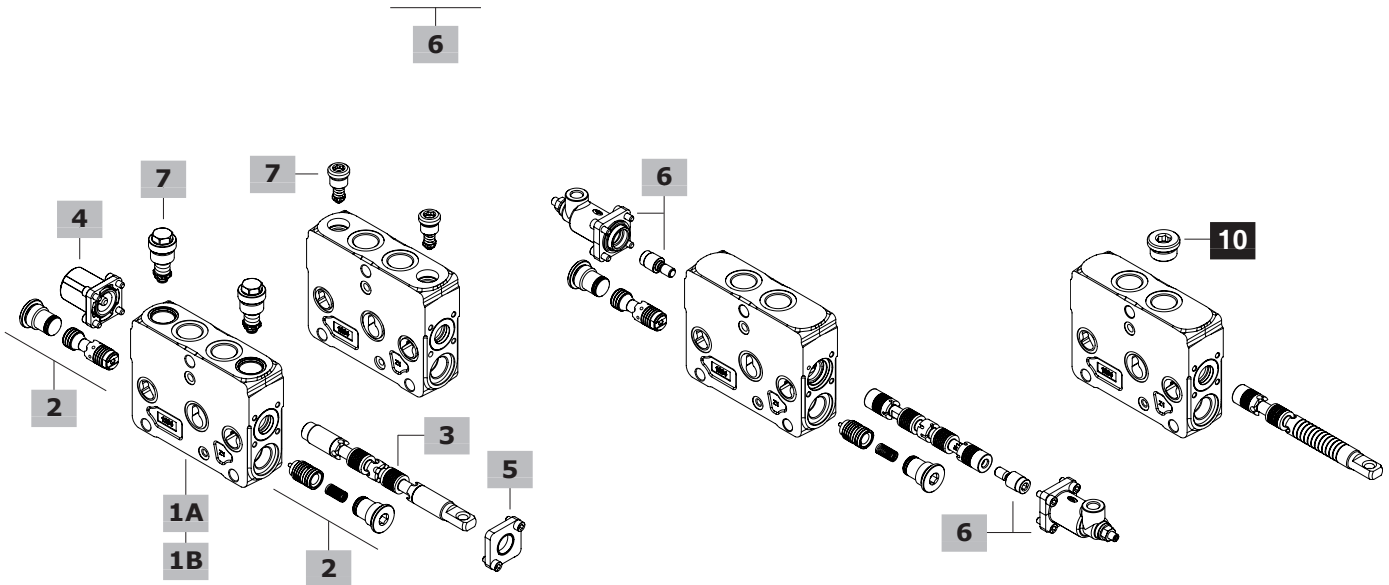
For coil features and options see **BT** type coil at page 125.

Working section part ordering codes (mechanical, hydraulic)



DPX160 = standard pressure section
DPX160HP = High Pressure section

DPX160 / Q - E108(150/150) - 8IMF3N - - FPM



1A Std press. working section kit* page 102

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: DPX160/Q-FPM CODE: 5EL1053011V

DESCRIPTION: Without port valve arrangement

TYPE: DPX160/P(UL)-FPM CODE: 5EL1053000V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: DPX160/P(US)-FPM CODE: 5EL1053001V

DESCRIPTION: With port antishock valve arrangement

For hydraulic control

TYPE: DPX160/Q-IM-FPM CODE: 5EL1053011AV

DESCRIPTION: Without port valve arrangement

TYPE: DPX160/P(UL)-IM-FPM CODE: 5EL1053000AV

DESCRIPTION: With port pressure relief valve arrangement

TYPE: DPX160/P(US)-IM-FPM CODE: 5EL1053001AV

DESCRIPTION: With port antishock valve arrangement

1B High press. working section kit* page 102

The codes are referred to sections with FPM o-ring seals

For mechanical control

TYPE: DPX160HP/Q-FPM CODE: 5EL1053015V

DESCRIPTION: Without port valve arrangement

TYPE: DPX160/P(UL)-FPM# CODE: 5EL1053020V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: DPX160HP/P(US)-FPM CODE: 5EL1053008V

DESCRIPTION: With port antishock valve arrangement

For hydraulic control

TYPE: DPX160HP/Q-IM-FPM CODE: 5EL1053015AV

DESCRIPTION: Without port valve arrangement

TYPE: DPX160/P(UL)-IM-FPM# CODE: 5EL1053020AV

DESCRIPTION: With port pressure relief valve arrangement

TYPE: DPX160HP/P(US)-IM-FPM CODE: 5EL1053008AV

DESCRIPTION: With port antishock valve arrangement

NOTE (*): Max pressure = 380 bar (4350 psi)

2 Compensator kit

CODE	DESCRIPTION
5CAS321061V	Compensator, FPM o-ring seals

Working section parts ordering codes (mechanical, hydraulic)

3 Spool page 103

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)
 TYPE CODE DESCRIPTION

For mechanical control

Double acting with A and B closed in neutral position

108(150)	3CU8110108	150 l/min (39.5 US gpm) flow
107(130)	3CU8110107	130 l/min (34.3 US gpm) flow
106(110)	3CU8110106	110 l/min (29 US gpm) flow
105(90)	3CU8110105	90 l/min (23.8 US gpm) flow
104(70)	3CU8110104	70 l/min (18.5 US gpm) flow
103(50)	3CU8110103	50 l/min (13.2 US gpm) flow
102(30)	3CU8110102	30 l/min (7.9 US gpm) flow
109(20)	3CU8110109	20 l/min (5.3 US gpm) flow
101(10)	3CU8110101	10 l/min (2.6 US gpm) flow

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

2H08(150)	3CU8110209	150 l/min (39.5 US gpm) flow
2H07(130)	3CU8110223	130 l/min (34.3 US gpm) flow
2H06(110)	3CU8110222	110 l/min (29 US gpm) flow
2H05(90)	3CU8110224	90 l/min (23.8 US gpm) flow
2H04(70)	3CU8110221	70 l/min (18.5 US gpm) flow
2H03(50)	3CU8110220	50 l/min (13.2 US gpm) flow
2H02(30)	3CU8110219	30 l/min (7.9 US gpm) flow
2H09(20)	3CU8110218	20 l/min (5.3 US gpm) flow
2H01(10)	3CU8110217	10 l/min (2.6 US gpm) flow

Single acting on A, B plugged: G3/4 plug is required

308(150)	3CU8110308	150 l/min (39.5 US gpm) flow
306(110)	3CU8110306	110 l/min (29 US gpm) flow
303(50)	3CU8110303	50 l/min (13.2 US gpm) flow
309(20)	3CU8110309	20 l/min (5.3 US gpm) flow

Single acting on B, A plugged: G3/4 plug is required

408(150)	3CU8110408	150 l/min (39.5 US gpm) flow
406(110)	3CU8110406	110 l/min (29 US gpm) flow
403(50)	3CU8110403	50 l/min (13.2 US gpm) flow
409(20)	3CU8110409	20 l/min (5.3 US gpm) flow

Double acting with A and B closed in neutral pos., 4 positions, floating in 4th position with spool in: 13 type positioner is required

508(150)	3CU8110508	150 l/min (39.5 US gpm) flow
504(70)	3CU8110504	70 l/min (18.5 US gpm) flow

For hydraulic control

Double acting with A and B closed in neutral position

E108(150)	3CU871E108	150 l/min (39.5 US gpm) flow
E107(130)	3CU871E107	130 l/min (34.3 US gpm) flow
E106(110)	3CU871E106	110 l/min (29 US gpm) flow
E105(90)	3CU871E105	90 l/min (23.8 US gpm) flow
E104(70)	3CU871E104	70 l/min (18.5 US gpm) flow
E103(50)	3CU871E103	50 l/min (13.2 US gpm) flow
E102(30)	3CU871E102	30 l/min (7.9 US gpm) flow
E113(20)	3CU871E113	20 l/min (5.3 US gpm) flow
E101(10)	3CU871E101	10 l/min (2.6 US gpm) flow

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

E2H08(150)	3CU871E209	150 l/min (39.5 US gpm) flow
E2H07(130)	3CU871E223	130 l/min (34.3 US gpm) flow
E2H06(110)	3CU871E222	110 l/min (29 US gpm) flow
E2H05(90)	3CU871E215	90 l/min (23.8 US gpm) flow
E2H04(70)	3CU871E221	70 l/min (18.5 US gpm) flow
E2H03(50)	3CU871E220	50 l/min (13.2 US gpm) flow
E2H02(30)	3CU871E219	30 l/min (7.9 US gpm) flow
E2H13(20)	3CU871E218	20 l/min (5.3 US gpm) flow
E2H01(10)	3CU871E217	10 l/min (2.6 US gpm) flow

Single acting on A or B, other port plugged: G3/4 plug is required

E308-E408(150)	3CU871E308	150 l/min (39.5 US gpm) flow
E306-E406(110)	3CU871E306	110 l/min (29 US gpm) flow
E303-E403(50)	3CU871E303	50 l/min (13.2 US gpm) flow
E313-E413(20)	3CU871E313	20 l/min (5.3 US gpm) flow

Double acting with A and B closed in neutral pos., 4 positions, floating in 4th pos. with spool in: 13IM type control is required

I508(150)	YCU871E508	150 l/min (39.5 US gpm) flow
I507(130)	YCU871E507	130 l/min (34.3 US gpm) flow
I504(70)	YCU871E504	70 l/min (18.5 US gpm) flow

4 "A" side spool positioners page 105

TYPE	CODE	DESCRIPTION
7FTNA	5V07210101	With friction and neutral pos. notch
8MD	5V08109000	3 positions with spring return to neutral position
<u>For floating circuit (spool 5)</u>		
13	5V13109000	4 positions, detent in 4 th position with spring return to neutral position

5 "B" side spool control kit page 106

TYPE	CODE	DESCRIPTION
L	5LEV110000	Standard lever box
LFG	5LEV110700	Lever box with spool stroke limiter on both ports
SLP	5COP110000	Without lever with dust-proof plate
TQ	5TEL110110	Flexible cable connection
LCB	5CLO216100	Joystick for 2 section operation

6 Proportional hydraulic control* page 108

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
8IMNOH	5IDR209304V-H	Range 8-28 bar (116-406 psi)
8IMOHF3N	5IDR209305V-H	As previous with spool stroke limiter
<u>For floating circuit (spool 15)</u>		
13IMOH	5IDR209303V-H	Range 3.1-25.6 / 0-30 bar (45-371 / 0-435 psi)
13IMP	5IDR209014V	Range 2-17 / 2-30 bar (29-247 / 29-435 psi)

7 Port valves page 118

TYPE	CODE	DESCRIPTION
Pressure relief valves		
UL(50)	5KIT340050LV	Setting: 50 bar (725 psi)
Antishock valves		
US(25)	5KIT326025V	Setting: 25 bar (360 psi)

For complete list see following page.

8 Section threading

Only specify if it is different from BSP standard (see page 6).

9 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

10 Plug for single acting spool*

CODE	DESCRIPTION
XTAP732220	G3/4 plug, FPM o-ring seal

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

Working section part ordering codes (electrohydraulic)

flow on A/B ports (l/min) Valve setting (bar)
A port B port

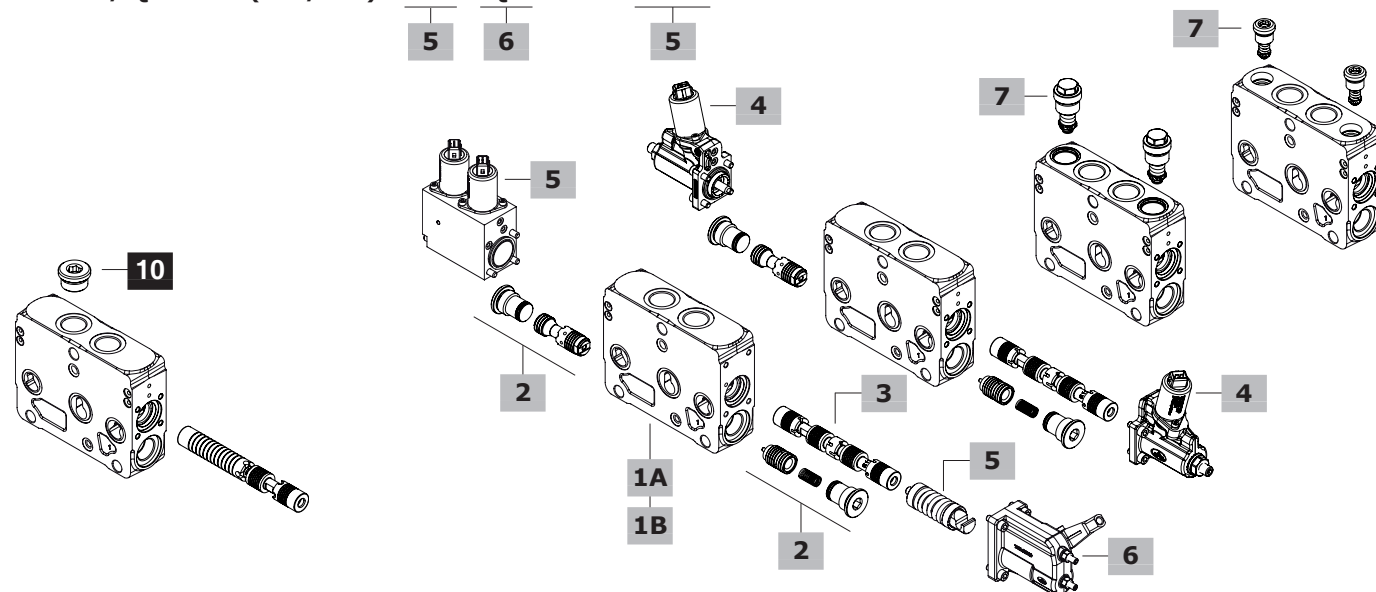
DPX160 / PE - E108(150/150) - 8EB3F3 . UL1(100) UL2(120) - - 12VDC - FPM

1A 1B 3 4 7 8 4 9

DPX160 = standard pressure section

DPX160HP = High Pressure section

DPX160 / QZ - E108(150/150) - 8EZ3 LQF3 - - 12VDC - FPM



1A Std press. working section kit* page 102

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: **DPX160/QE-FPM** CODE: 5EL1053010V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX160/PE(UL)-FPM** CODE: 5EL1053002V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: **DPX160/PE(US)-FPM** CODE: 5EL1053003V

DESCRIPTION: With port antishock valve arrangement

For one-side electrohydraulic control

TYPE: **DPX160/QZ-FPM** CODE: 5EL1053029V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX160/PZ(UL)-FPM** CODE: 5EL1053028V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: **DPX160/PZ(US)-FPM** CODE: 5EL1053030V

DESCRIPTION: With port antishock valve arrangement

1B High press. working section kit* page 102

The codes are referred to sections with FPM o-ring seals

For two-side electrohydraulic control

TYPE: **DPX160HP/QE-FPM** CODE: 5EL1053016V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX160HP/PE(UL)-FPM*** CODE: 5EL1053021V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: **DPX160HP/PE(US)-FPM** CODE: 5EL1053009V

DESCRIPTION: With port antishock valve arrangement

For one-side electrohydraulic control

TYPE: **DPX160HP/QZ-FPM** CODE: 5EL1053031V

DESCRIPTION: Without port valve arrangement

TYPE: **DPX160HP/PZ(UL)-FPM*** CODE: 5EL1053032V

DESCRIPTION: With port pressure relief valve arrangement

TYPE: **DPX160HP/PZ(US)-FPM** CODE: 5EL1053033V

DESCRIPTION: With port antishock valve arrangement

NOTE (*): Max pressure = 380 bar (4350 psi)

2 Compensator kit

TYPE	CODE	DESCRIPTION
-	5CAS321061V	Compensator, FPM o-ring seal

3 Spool page 103

Flow is referred to 14 bar (200 psi) stand-by (margin pressure)

TYPE CODE DESCRIPTION

Double acting with A and B closed in neutral position

E108(150)	3CU871E108	150 l/min (39.5 US gpm) flow
E107(130)	3CU871E107	130 l/min (34.3 US gpm) flow
E106(110)	3CU871E106	110 l/min (29 US gpm) flow
E105(90)	3CU871E105	90 l/min (23.8 US gpm) flow
E104(70)	3CU871E104	70 l/min (18.5 US gpm) flow
E103(50)	3CU871E103	50 l/min (13.2 US gpm) flow
E102(30)	3CU871E102	30 l/min (7.9 US gpm) flow
E113(20)	3CU871E113	20 l/min (5.3 US gpm) flow
E101(10)	3CU871E101	10 l/min (2.6 US gpm) flow

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

E2H08(150)	3CU871E209	150 l/min (39.5 US gpm) flow
E2H07(130)	3CU871E223	130 l/min (34.3 US gpm) flow
E2H06(110)	3CU871E222	110 l/min (29 US gpm) flow
E2H05(90)	3CU871E215	90 l/min (23.8 US gpm) flow
E2H04(70)	3CU871E221	70 l/min (18.5 US gpm) flow
E2H03(50)	3CU871E220	50 l/min (13.2 US gpm) flow
E2H02(30)	3CU871E219	30 l/min (7.9 US gpm) flow
E2H13(20)	3CU871E218	20 l/min (5.3 US gpm) flow
E2H01(10)	3CU871E217	10 l/min (2.6 US gpm) flow

.....to be continued

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

Working section part ordering codes (electrohydraulic)

3 Spool page 103

.....continuation

TYPE	CODE	DESCRIPTION
Single acting on A or B, other port plugged: needs G3/4 plug		
E308-E408(150)	3CU871E308	150 l/min (39.5 US gpm) flow
E306-E406(110)	3CU871E306	110 l/min (29 US gpm) flow
E303-E403(50)	3CU871E303	50 l/min (13.2 US gpm) flow
E313-E413(20)	3CU871E313	20 l/min (5.3 US gpm) flow
Double acting with A and B closed in neutral pos., 4 positions, floating in 4 th pos. with spool in: needs control kit type 13EB3.../13EZ3...		
E508(150)	3CU871E508	150 l/min (39.5 US gpm) flow
E507(130)	3CU871E507	130 l/min (34.3 US gpm) flow
E504(70)	3CU871E504	70 l/min (18.5 US gpm) flow

4 Two-side electrohydr. control page 113

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
<u>Without lever control</u>		
8EB3-12VDC	5IDR909312V	With AMP connector
8EB3-24VDC	5IDR909324V	With AMP connector
8EB34-12VDC	5IDR909329V	With Deutsch connector
8EB34-24VDC	5IDR909330V	With Deutsch connector
8EB3F3-12VDC	5IDR909313V	With AMP connector with spool stroke limiter
8EB3F3-24VDC	5IDR909317V	As previous one
8EB34F3-12VDC	5IDR909314V	With Deutsch connector with spool stroke limiter
8EB34F3-24VDC	5IDR909331V	As previous one
<u>Without lever control: for floating circuit (E5 spool)</u>		
13EB3-12VDC	5IDR919312V	With AMP connector
13EB3-24VDC	5IDR919324V	With AMP connector
13EB34-12VDC	5IDR919317V	With Deutsch connector
13EB34-24VDC	5IDR919318V	With Deutsch connector
<u>With lever control</u>		
8EB3LH-12VDC	5IDR909315V	With AMP connector
8EB3LH-24VDC	5IDR909326V	With AMP connector
8EB34LH-12VDC	5IDR909332V	With Deutsch connector
8EB34LH-24VDC	5IDR909333V	With Deutsch connector
8EB3LHF3-12VDC	5IDR909316V	With AMP connector with spool stroke limiter
8EB3LHF3-24VDC	5IDR909327V	As previous one
8EB34LHF3-12VDC	5IDR909334V	With Deutsch connector with spool stroke limiter
8EB34LHF3-24VDC	5IDR909335V	As previous one
<u>With lever control and spool position sensor</u>		
8EB3LHSPSD-12VDC	5IDR909341V	AMP conn., and digital sensor
8EB3LHSPSD-24VDC	5IDR909338V	As previous one
8EB3LHF3SPSD-12VDC	5IDR909339V	AMP conn., digital sensor and spool stroke limiter
8EB3LHF3SPSD-24VDC	5IDR909336V	As previous one
<u>With lever control: for floating circuit (E5 spool)</u>		
13EB3LH-12VDC	5IDR919313V	With AMP connector
13EB3LH-24VDC	5IDR919325V	With AMP connector
13EB34LH-12VDC	5IDR919319V	With Deutsch connector
13EB34LH-24VDC	5IDR919320V	With Deutsch connector
13EB3LHF3-12VDC	5IDR919314V	With AMP connector with spool stroke limiter
13EB3LHF3-24VDC	5IDR919326V	As previous one
13EB34LHF3-12VDC	5IDR919321V	With Deutsch connector with spool stroke limiter
13EB34LHF3-24VDC	5IDR919322V	As previous one

9 Plug for single acting spool*

CODE	DESCRIPTION
XTAP732220	G3/4 plug, FPM o-ring seal

5 One-side electrohydr. control page 116

The codes are referred to parts with FPM o-ring seals

Combine to "B" side options

TYPE	CODE	DESCRIPTION
8EZ3-12VDC	5IDR609315V	With AMP connector
8EZ3-24VDC	5IDR609316V	As previous one
8EZ34-12VDC	5IDR609317V	With Deutsch connector
8EZ34-24VDC	5IDR609318V	As previous one
<u>With spool position sensor</u>		
8EZ34SPSL-0.5(A)-4.5(B)-12VDC	5IDR609313V	Deutsch conn. and analog sensor
<u>With lever control: for floating circuit (spool E5)</u>		
13EZ3-12VDC	5IDR619300V	With AMP connector
13EZ3-24VDC	5IDR619302V	As previous one
13EZ34-12VDC	5IDR619301V	With Deutsch connector
13EZ34-24VDC	5IDR619303V	As previous one

6 "B" side options page 117

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
For one-side electrohydraulic control		
LQ	5LEV160700V	Lever box
LQF3	5LEV160701V	Lever box with spool stroke limiter
SLCQ	5COP260000V	Endcap

7 Port valves page 118

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
"UL" size valves		
ULT	XTAP528520V	Valve blanking plug
CL	5KIT409000V	Anticavitation valve (for UL cavity)
<u>Fixed setting pressure relief valves: setting is referred to 10 l/min (2.6 US gpm)</u>		
TYPE: UL (100) CODE: 5KIT340 100 LV		
setting (bar) setting (bar)		
SETTING:		
50 bar (725 psi)	70 bar (1010 psi)	80 bar (1150 psi)
100 bar (1450 psi)	120 bar (1750 psi)	130 bar (1900 psi)
140 bar (2050 psi)	150 bar (2150 psi)	160 bar (2300 psi)
170 bar (2450 psi)	180 bar (2600 psi)	190 bar (2750 psi)
200 bar (2900 psi)	210 bar (3050 psi)	220 bar (3200 psi)
250 bar (3600 psi)	270 bar (3900 psi)	300 bar (4350 psi)
320 bar (4650 psi)	350 bar (5050 psi)	370 bar (5350 psi)
380 bar (5500 psi)		
"US" size valves		
UST	XTAP221340V	Valve blanking plug
CS	5KIT426270V	Anticavitation valve (for US cavity)
<u>Fixed setting antishock and anticavitation valves with pressure relief function: setting is referred to 5 l/min (1.3 US gpm)</u>		
TYPE: US (100) CODE: 5KIT326 100 V		
setting (bar) setting (bar)		
SETTING:		
25 bar (360 psi)	40 bar (725 psi)	50 bar (725 psi)
60 bar (870 psi)	70 bar (1010 psi)	80 bar (1150 psi)
90 bar (1300 psi)	100 bar (1450 psi)	125 bar (1800 psi)
140 bar (2050 psi)	160 bar (2300 psi)	175 bar (2550 psi)
190 bar (2750 psi)	210 bar (3050 psi)	230 bar (3350 psi)
240 bar (3500 psi)	250 bar (3600 psi)	260 bar (3750 psi)
280 bar (4050 psi)	300 bar (4350 psi)	320 bar (4650 psi)
340 bar (4950 psi)	360 bar (5200 psi)	380 bar (5500 psi)
400 bar (5800 psi)	420 bar (6100 psi)	

8 Section threading

Only specify if it is different from BSP standard (see page 6).

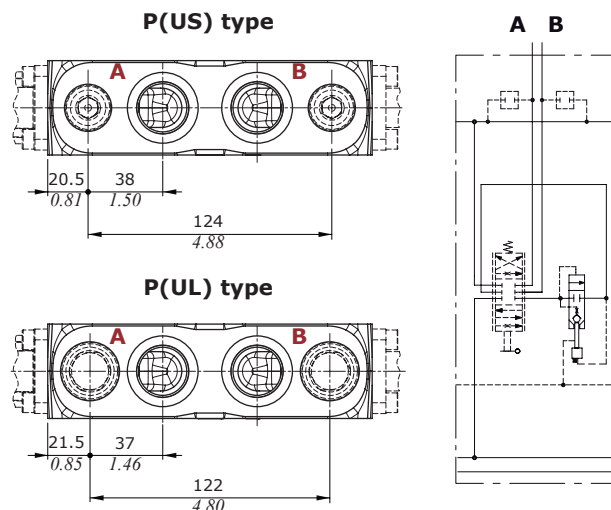
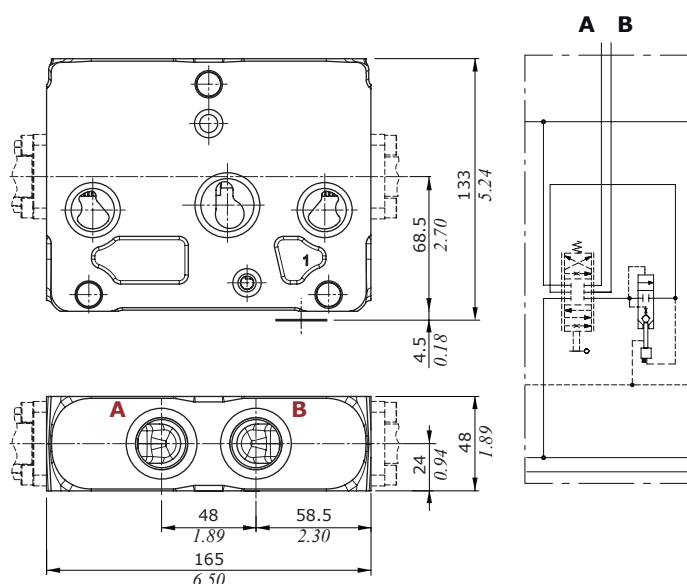
9 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

Working section

Dimensions and hydraulic circuit

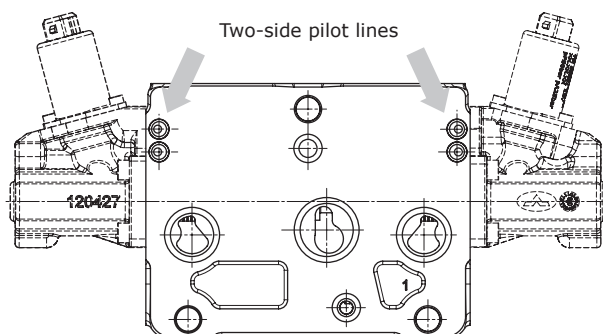
For mechanical and hydraulic controls



NOTE: US and UL auxiliary valves are not interchangeable: they need dedicated working sections

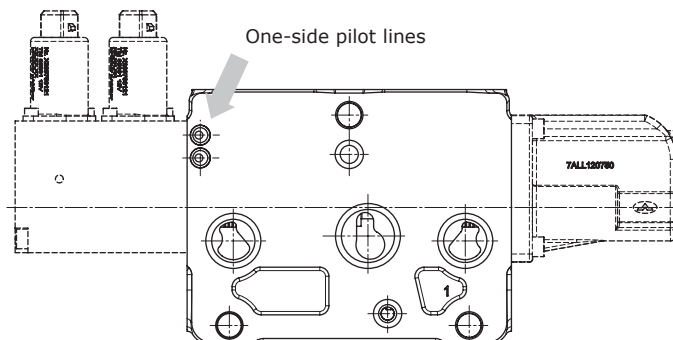
For two-side electrohydraulic control

QE, PE(US) or PE(UL) types



For one-side electrohydraulic control

QZ, PZ(US) or PZ(UL) types



QE type

PE type

QZ type

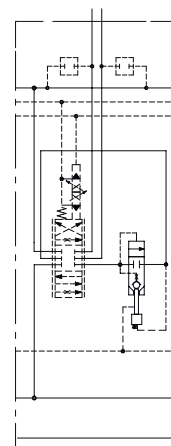
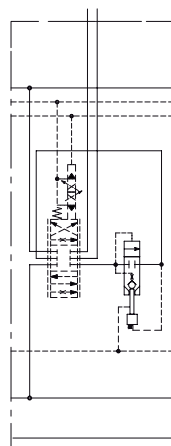
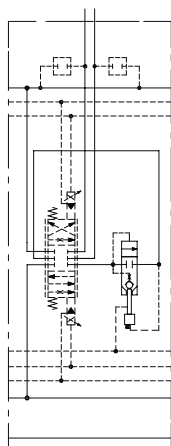
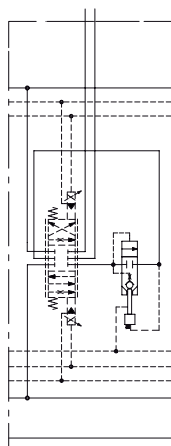
PZ type

A B

A B

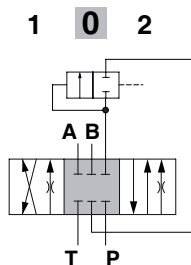
A B

A B



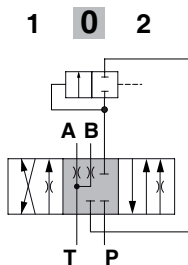
Spools

Type 1 (1../E1..) spool
A, B closed in neutral position



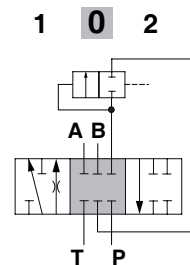
Spool stroke
position 1: + 8 mm (- 0.31 in)
position 2: - 8 mm (+ 0.31 in)

Type 2H(2H../E2H..) spool
A, B partially to tank in neutral pos.



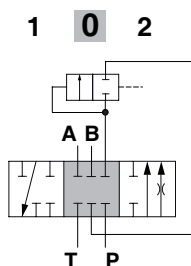
Spool stroke
position 1: + 8 mm (- 0.31 in)
position 2: - 8 mm (+ 0.31 in)

Type 3 (3../E3..) spool
single acting on A



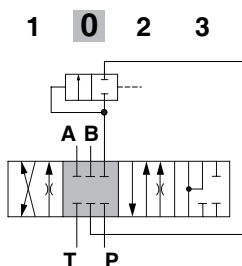
Spool stroke
position 1: + 8 mm (- 0.31 in)
position 2: - 8 mm (+ 0.31 in)

Type 4 (4../E4..) spool
single acting on B



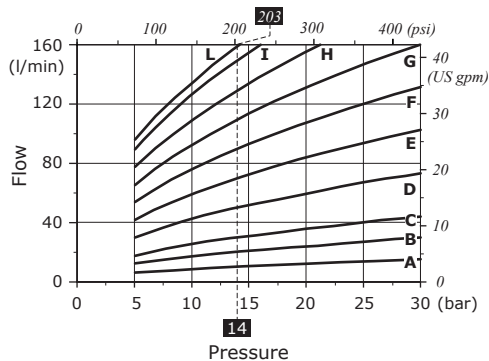
Spool stroke
position 1: + 8 mm (- 0.31 in)
position 2: - 8 mm (+ 0.31 in)

Type 5 (5../E5../I5..) spool
floating in 4th position (pos.3)



Spool stroke
position 1: + 8 mm (- 0.31 in)
position 2: - 8 mm (- 0.31 in)
position 3: - 13 mm (- 0.51 in)

**Spool flow vs. Stand-by pressure
(margin pressure)**



**Curves with spool nominal flow
@ 14 bar (200 psi) stand-by (margin pressure)**

- A = 10 l/min (2.6 US gpm)
- B = 20 l/min (5.3 US gpm)
- C = 30 l/min (7.9 US gpm)
- D = 50 l/min (13.2 US gpm)
- E = 70 l/min (18.5 US gpm)
- F = 90 l/min (23.8 US gpm)
- G = 110 l/min (29.0 US gpm)
- H = 130 l/min (34.3 US gpm)
- I = 150 l/min (39.5 US gpm)
- L = 160 l/min (42.3 US gpm)

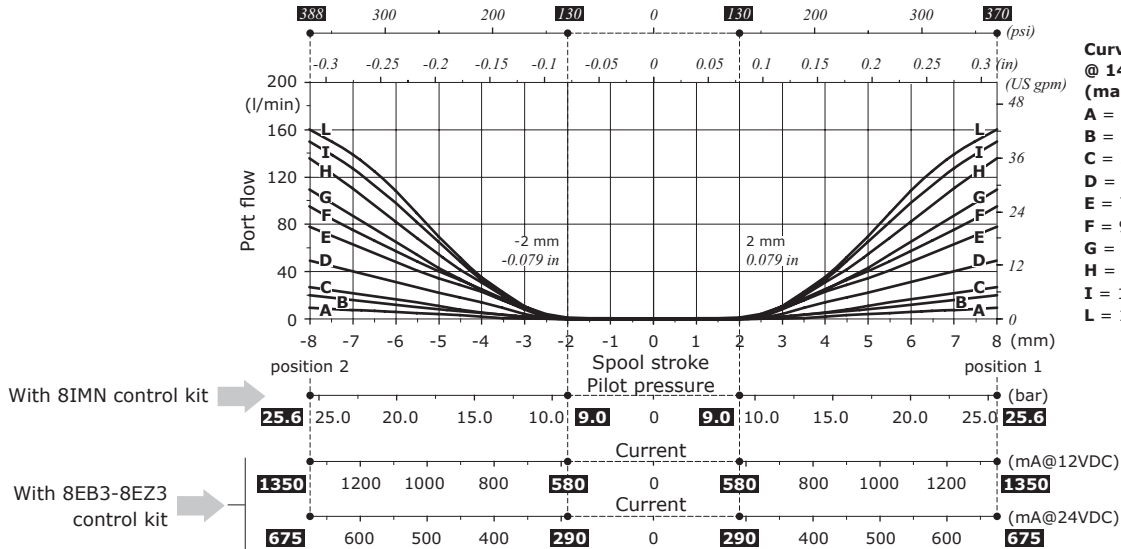
Working section

Spools

Following curves are detected with standard spools, connecting $P \Rightarrow A \Rightarrow B \Rightarrow T$ and $P \Rightarrow B \Rightarrow A \Rightarrow T$ ports without flow multiplication. Customized spools with backpressure or flow multiplication may require different force, pressure and pilot current for operation.

3 position spool metering curve

$Q_{in} = 160 \text{ l/min (42.3 US gpm)}$ - Open center circuit

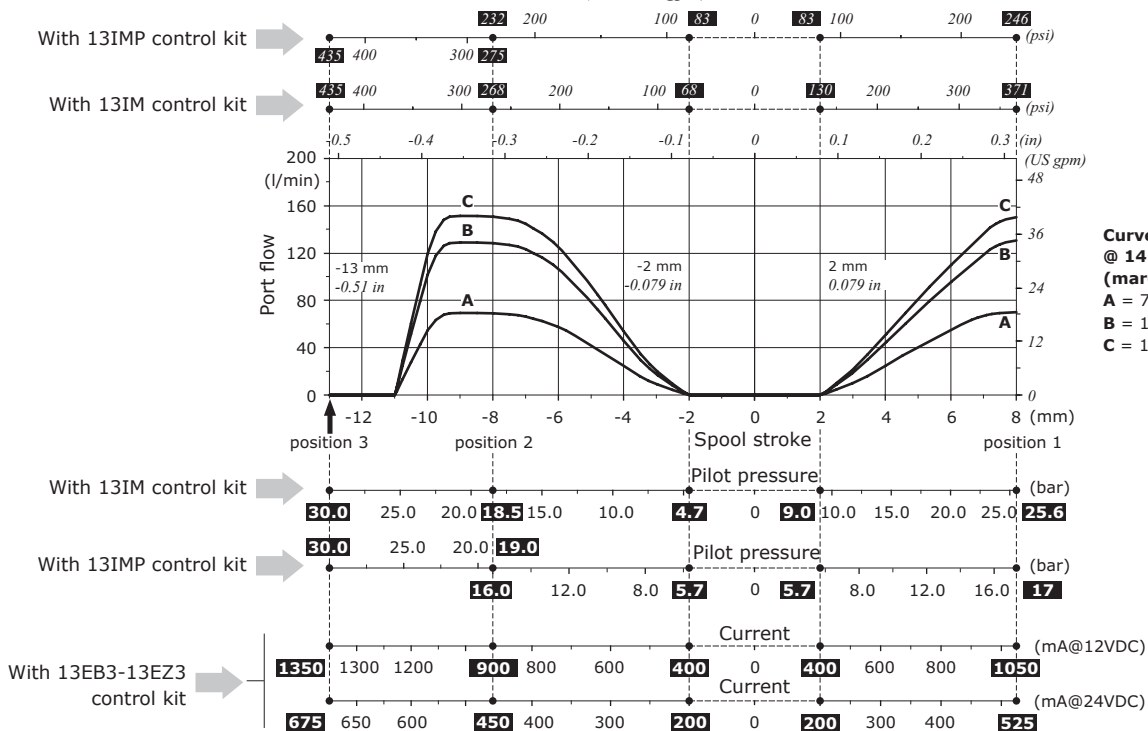


Curves with spool nom. flow @ 14 bar (200 psi) stand-by (margin pressure)

- A = 10 l/min (2.6 US gpm)
- B = 20 l/min (5.3 US gpm)
- C = 30 l/min (7.9 US gpm)
- D = 50 l/min (13.2 US gpm)
- E = 70 l/min (18.5 US gpm)
- F = 90 l/min (23.8 US gpm)
- G = 110 l/min (29.0 US gpm)
- H = 130 l/min (34.3 US gpm)
- I = 150 l/min (39.5 US gpm)
- L = 160 l/min (42.3 US gpm)

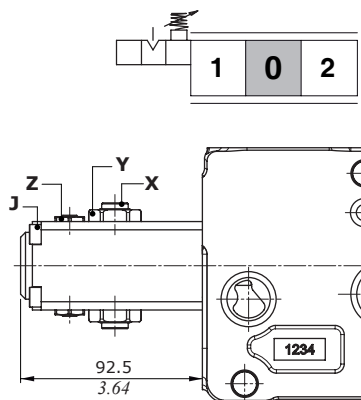
Floating spool metering curve

$Q_{in} = 160 \text{ l/min (42.3 US gpm)}$ - Open center circuit



Curves with spool nom. flow @ 14 bar (200 psi) stand-by (margin pressure)

- A = 70 l/min (18.5 US gpm)
- B = 130 l/min (34.3 US gpm)
- C = 150 l/min (39.5 US gpm)

"A" side spool positioners**With friction, 7FTNA type****Wrenches and tightening torques**

J = allen wrench 5 - 9.8 Nm (7.2 lbf ft)

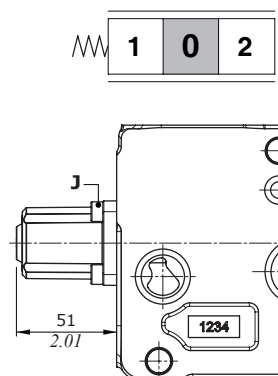
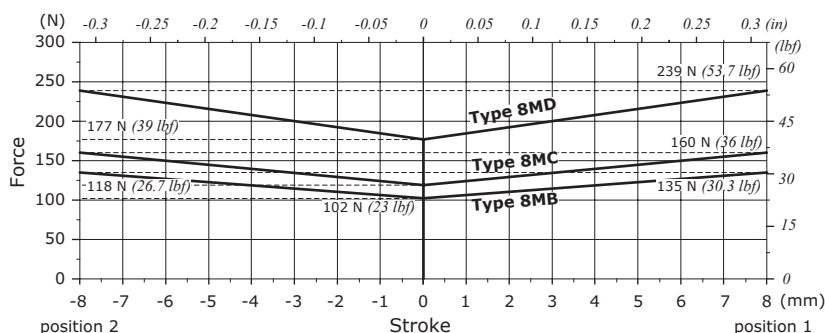
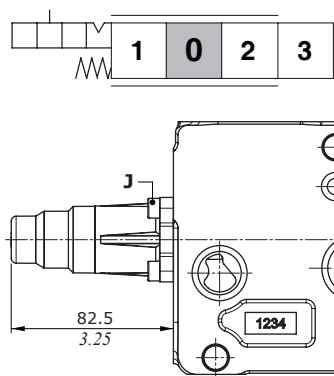
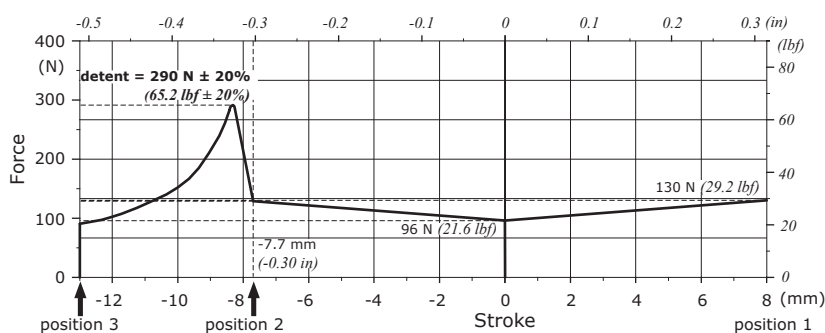
X = allen wrench 4

Y = wrench 24 - manual tightening

Z = wrench 15 - 42 Nm (31 lbf ft)

With spring return to neutral position, 8MD type

It's configured with spring type D, as standard (see diagram); it's also available with lighter C type springs (8MC code: 5V08109002) or B type (8MB code 5V08109003).

**Force vs. Stroke diagram****For floating circuit, 13 type****Force vs. Stroke diagram**

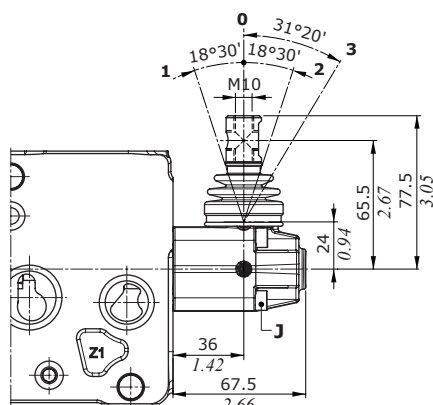
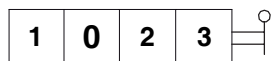
Release force from pos.3: 260 N ± 20% (58.5 lbf ± 20%)

Working section

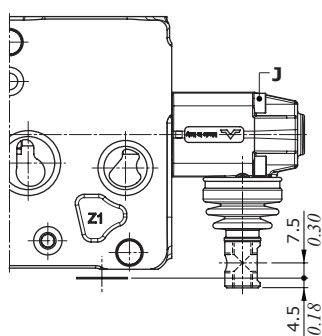
"B" side spool control kit

Lever boxes

L type

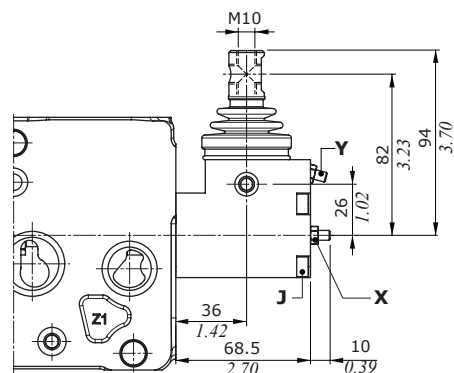
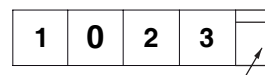


L180 type



LFG type

Spool stroke limiter on both ports



Wrenches and tightening torques

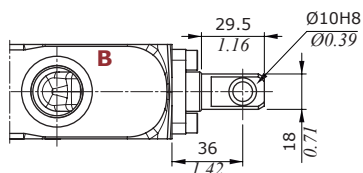
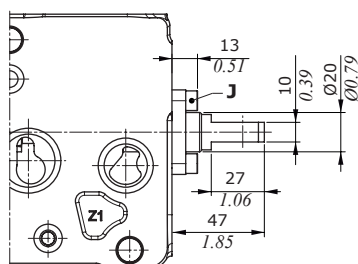
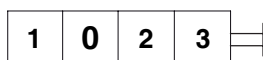
J = allen wrench 5 - 9.8 Nm (7.2 lbft)

X = allen wrench 2.5

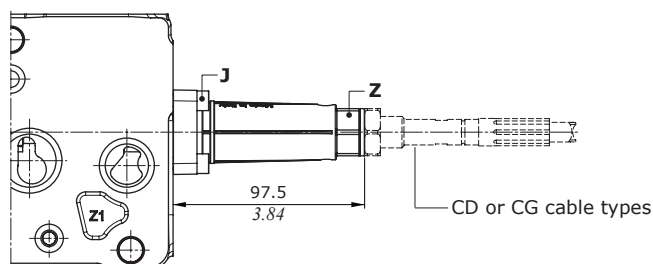
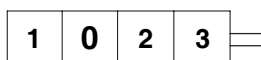
Y = wrench 8 - 6.6 Nm (4.9 lbft)

Z = wrench 24

Dust-proof plate, SLP type



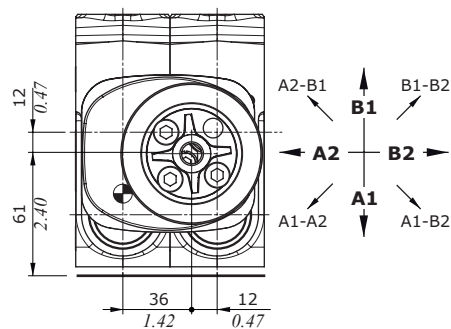
Flexible cable connection, TQ type



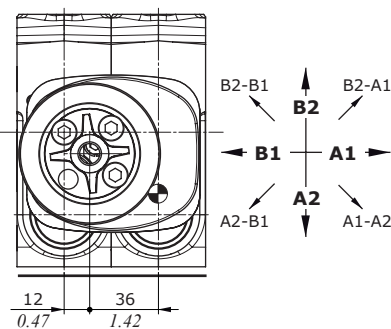
"B" side spool control kit

Joysticks for two section operation

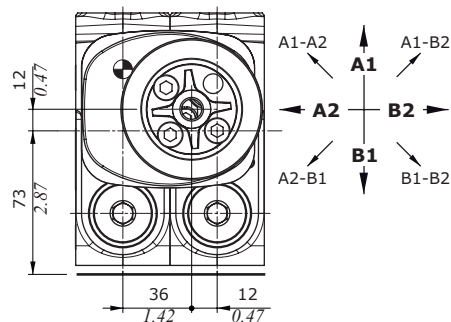
LCB1 configuration



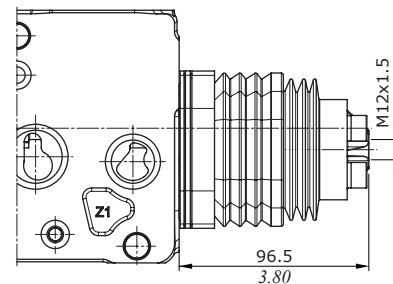
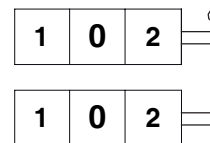
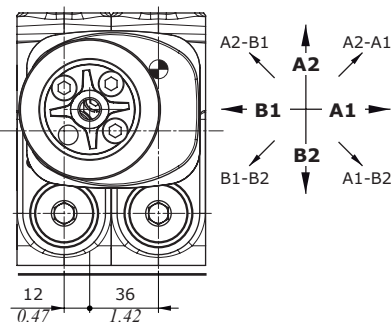
LCB2 configuration



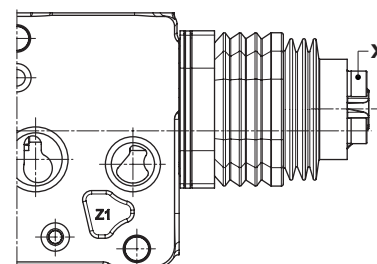
LCB3 configuration



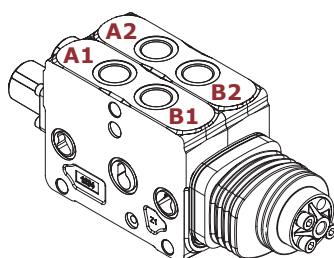
LCB4 configuration



Wrenches and tightening torques
X = allen wrench 6 - 24 Nm (17.7 lbf)



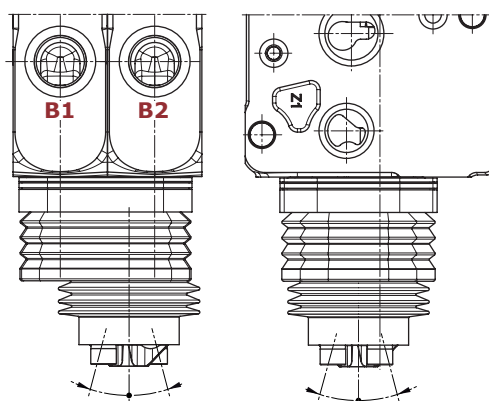
LCB1 configuration example



Working angles

Horizontal axis

vertical axis

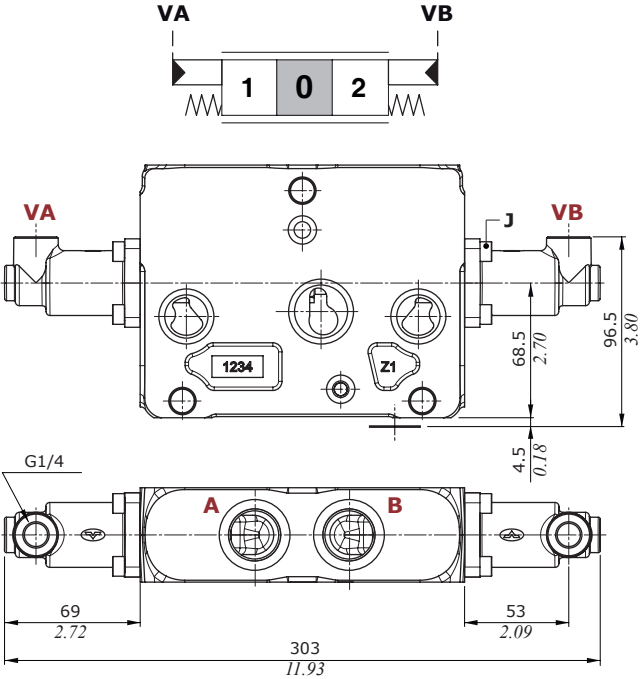


Max. working angles	Horizontal axis	Vertical axis
Single action operation	19°42'	19°41'
Single action operation with floating	operation not available	operation not available
Two section operation	21°22'	19°41'
Two section operation with floating	operation not available	operation not available

Working section

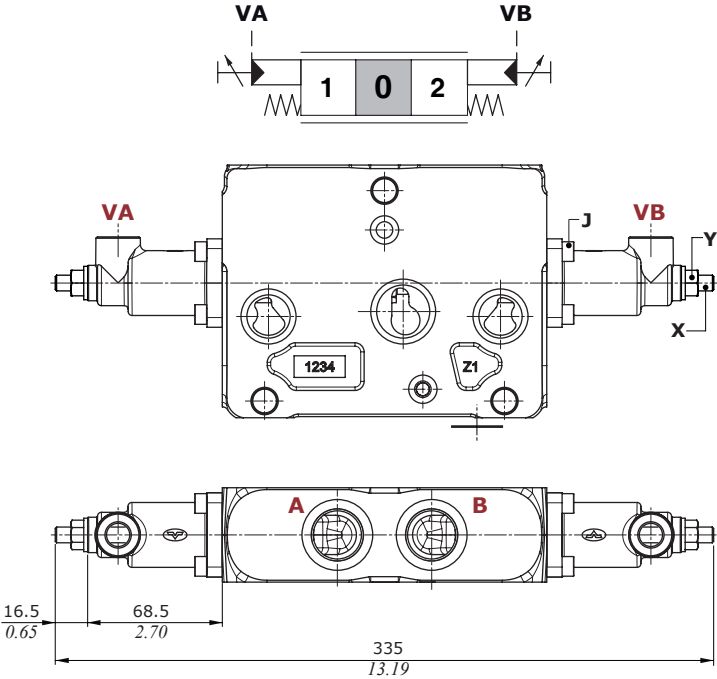
Proportional hydraulic control

8IMNOH type



8IMOHF3N type

With spool stroke limiter on ports A and B



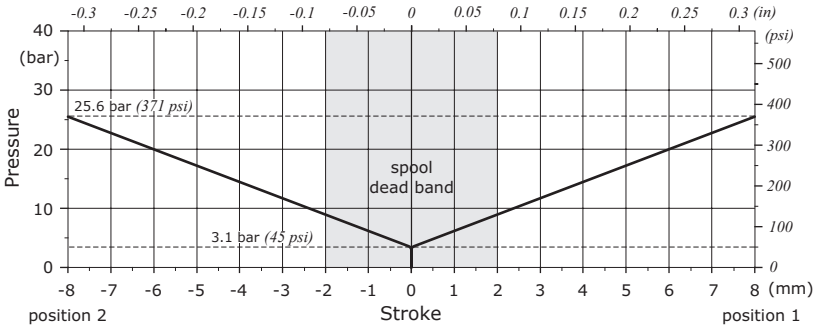
Features (all types)

Max. pressure.: 50 bar (725 psi)

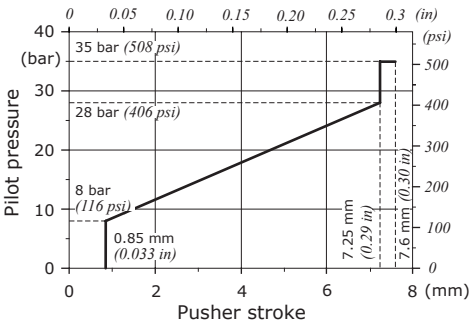
Wrenches and tightening torques

- J = allen wrench 5 - 9.8 Nm (7.2 lbft)
- X = allen wrench 4
- Y = wrench 13 - 24 Nm (17.7 lbft)

Stroke vs. Pressure diagram

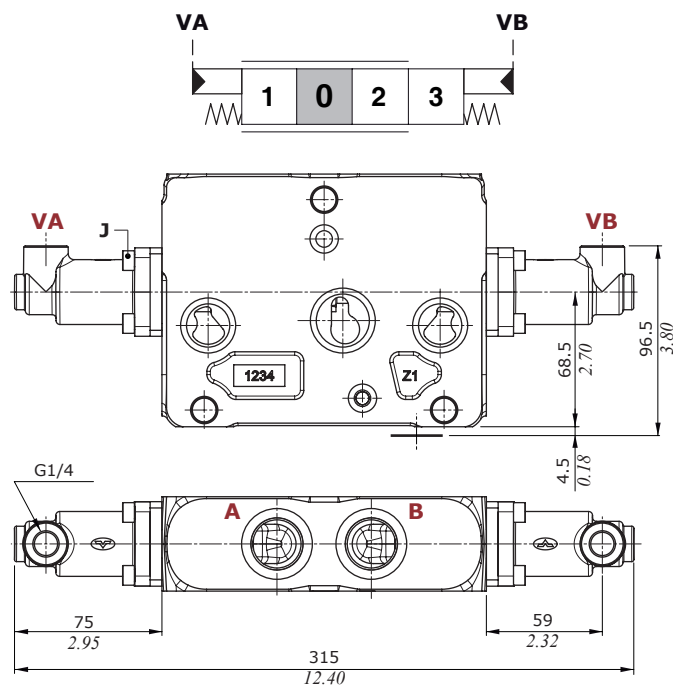


Suggested pressure control curve: 089 type



Proportional hydraulic control

For floating circuit, 13IMOH - 13IMP types



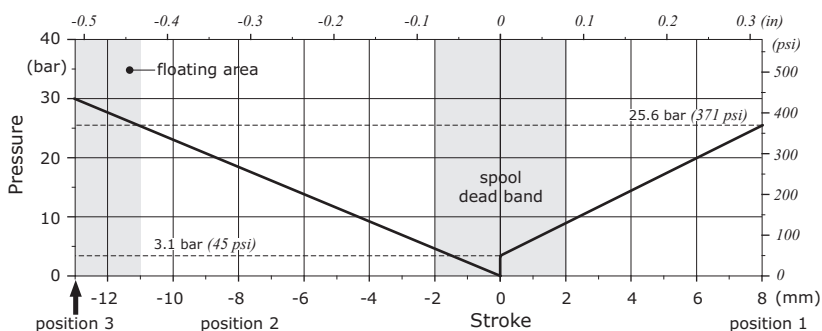
Features

Max. pressure. : 50 bar (725 psi)

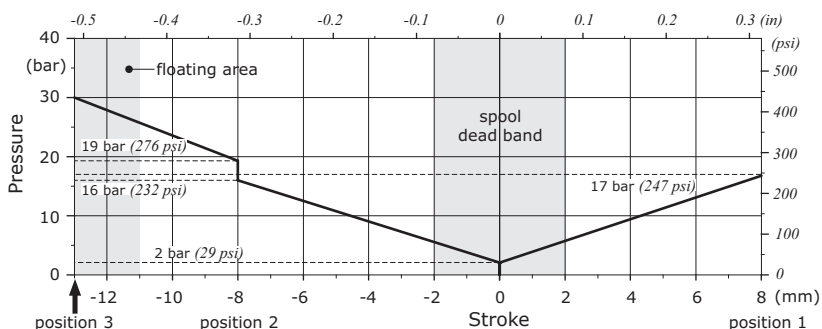
Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm (7.2 lbf)

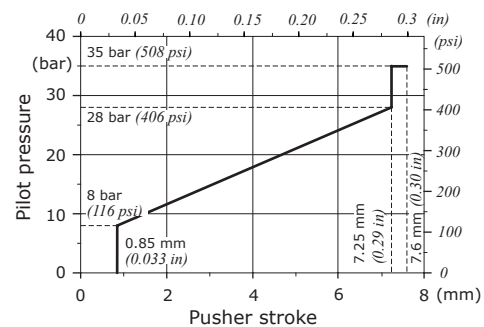
13IMOH type: Stroke vs. Pressure diagram



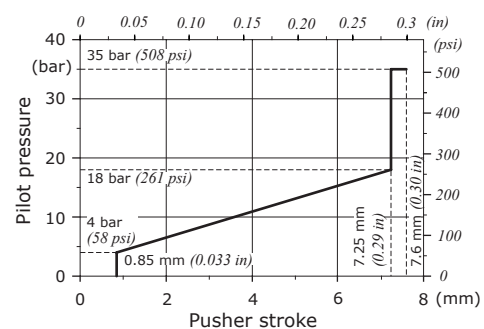
13IMP type: Stroke vs. Pressure diagram



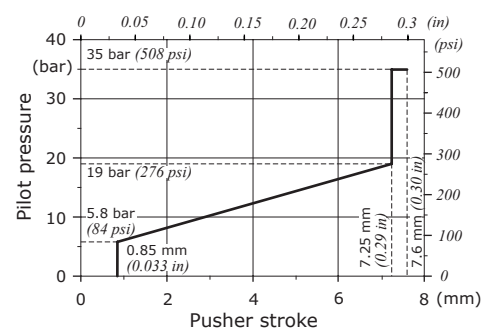
13IMOH type: suggested pressure control curve on port VA: 089 type



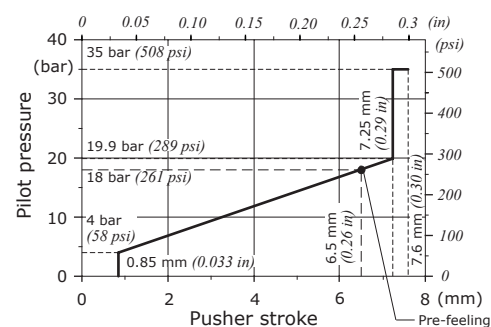
13IMP type: suggested pressure control curve on port VA: 073 type



13IMOH type: suggested pressure control curve on port VB: 033 type



13IMP type: suggested pressure control curve on port VB: E073 type



Working section

Electrohydraulic control 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 ± 10% tolerance.

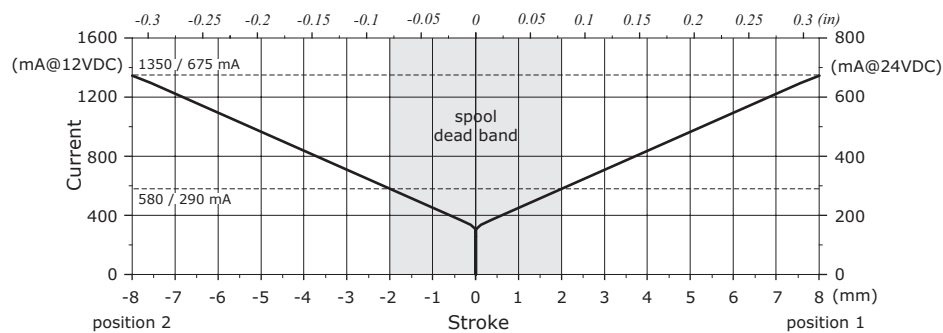
Following electrohydraulic controls need CED100X or CED400X electronic unit; for information please contact Sales Department.

Specifications		Spool control type			
		8EB3	13EB3	8EZ3	13EZ3
Electric specifications					
Coil impedance	12 VDC	4,72 Ω	4,72 Ω	4,72 Ω	4,72 Ω
	24 VDC	20,8 Ω	20,8 Ω	20,8 Ω	20,8 Ω
Max. operating current	12 VDC	1,5 A	1,5 A	1,5 A	1,5 A
	24 VDC	0,75 A	0,75 A	0,75 A	0,75 A
No load current consumption		0	0	0	0
				With lever box configured controls	
Hysteresis max. ⁽¹⁾	external drain	3% 4% with lever	6% 8% with lever	4%	8%
	internal drain	4% 5% with lever	7% 10% with lever	5%	10%
Time response	from 0 ⇒ 100% of stroke	< 80 ms	< 100 ms	< 80 ms	< 100 ms
	from 100% ⇒ 0 of stroke	< 60 ms	< 80 ms	< 60 ms	< 80 ms
Min. flow control signal	12 VDC	580 mA	400 mA	580 mA	400 mA
	24 VDC	290 mA	200 mA	290 mA	200 mA
Max. flow control signal	12 VDC	1350 mA	P⇒A: 1050 mA P⇒B: 900 mA	1350 mA	P⇒A: 1050 mA P⇒B: 900 mA
	24 VDC	675 mA	P⇒A: 525 mA P⇒B: 450 mA	675 mA	P⇒A: 525 mA P⇒B: 450 mA
Float flow control signal	12 VDC		1350 mA		1350 mA
	24 VDC		675 mA		675 mA
Dither frequency	low frequency	150 Hz		150 Hz	
	high frequency	180 Hz - 350 mA		180 Hz - 350 mA	
Insertion		100%		100%	
Coil insulance		Class H (180°C - 356°F)		Class H (180°C - 356°F)	
Connector type		AMP JPT - Deutsch DT		AMP JPT - Deutsch DT	
Weather protection (connector)		IP65 (JPT type) - IP69K (DT type)		IP65 (JPT type) - IP69K (DT type)	
Hydraulic specifications					
Max. pressure		40 bar (580 psi)		50 bar (725 psi)	
Max. back pressure		20 bar (290 psi)		20 bar (290 psi)	

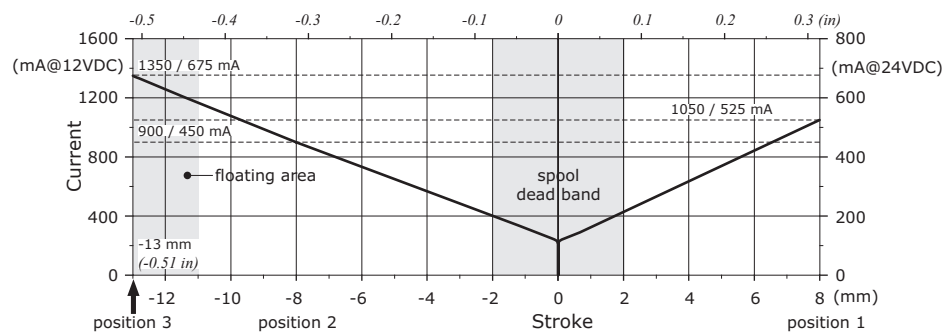
Note (1) hysteresis is indicated at nominal supply voltage and f = 0.008 Hz for one cycle (one cycle = neutral ⇒ full A ⇒ neutral ⇒ full B ⇒ neutral). For the calculation rules see "Appendix A" on page 134.

Electrohydraulic control performace data

8EB3-8EZ3 types: Stroke vs. Current diagram



13EB3-13EZ3 types: Stroke vs. Current diagram



Working section

Electrohydraulic controls: spool position sensor

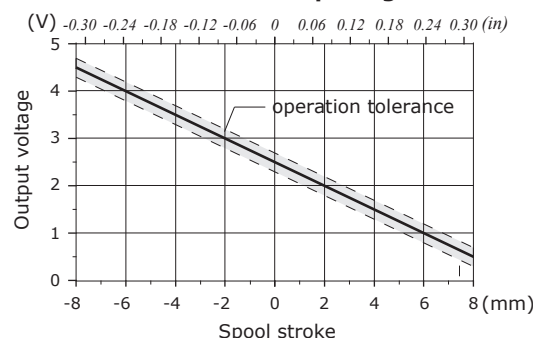
The sensor can be ordered exclusively through the EB and EZ type electrohydraulic controls; see pages 53 and 57 for available control list.

SPSL sensor

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

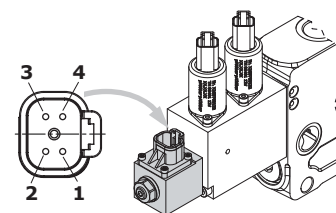
Working conditions		
Voltage supply		5 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±10 mm (±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



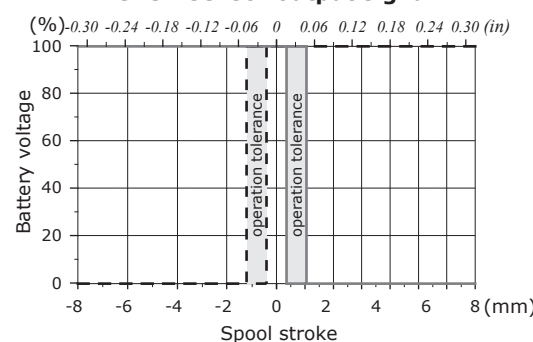
Deutsch DT06-4S mating connector, code 5CON140072

SPSD sensor

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

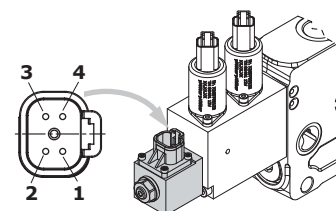
Working conditions		
Voltage supply		from 9 to 32 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10 ⁶
Connector type		DT04-4P Deutsch
Weather protection		IP67 / IP69K
Working temperature		from -40°C to 105°C (from -40°F to 221°F)
Working pressure		350 bar (5100 psi)
Max. electrical stroke		±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

SPSD 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

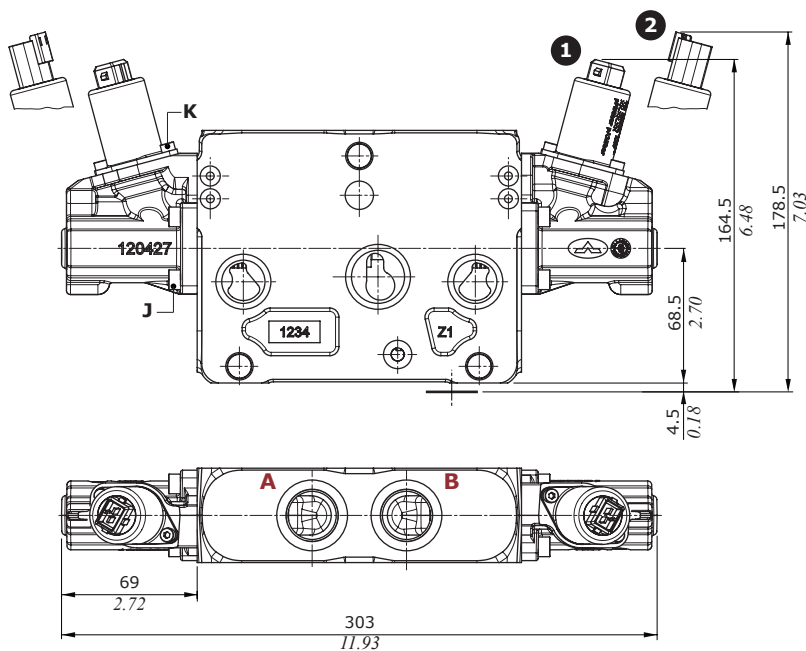
Two-side electrohydraulic control

Without lever control

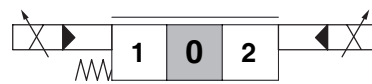
Control Types

① : With AMP JPT connector - AMP JPT, mating connector code: 5CON003

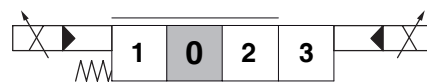
② : With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031



8EB3 - 8EB34 types



13EB3 - 13EB34 types



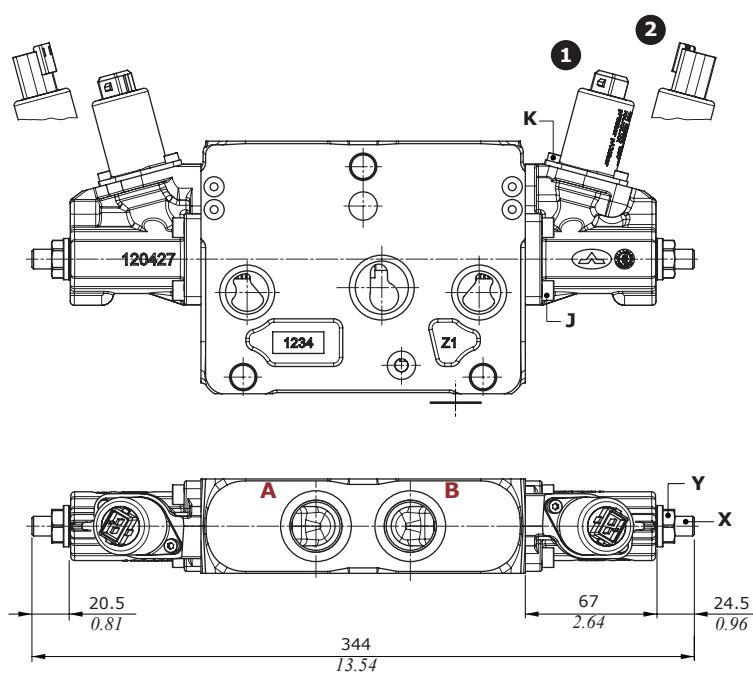
Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm (7.2 lbf·ft)

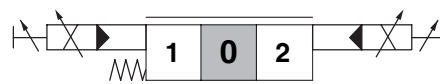
K = allen wrench 3 - 5 Nm (3.7 lbf·ft)

X = allen wrench 5

Y = wrench 17 - 24 Nm (17.7 lbf·ft)



8EB3F3 - 8EB34F3 types



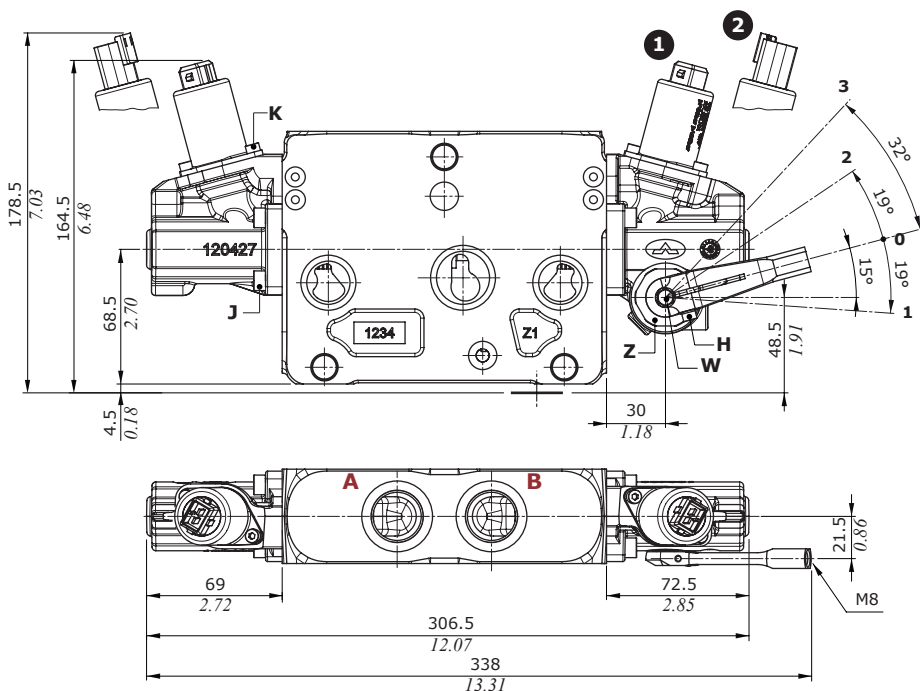
Working section

Two-side electrohydraulic control

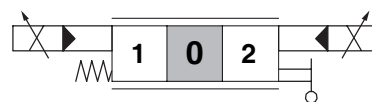
With lever control

Control Types

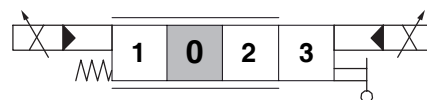
- 1 : With AMP JPT connector - AMP JPT, mating connector code: 5CON003
- 2 : With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031



8EB3LH - 8EB34LH types

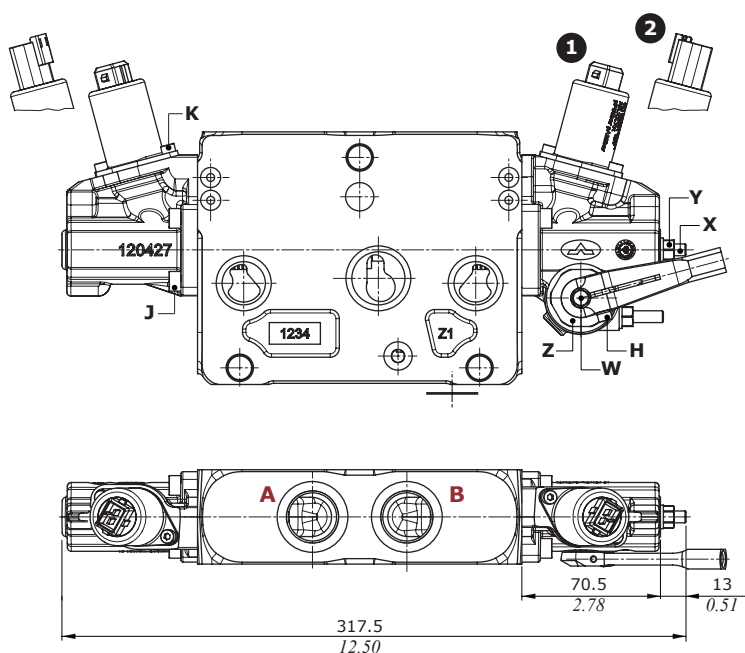


13EB3LH - 13EB34LH types

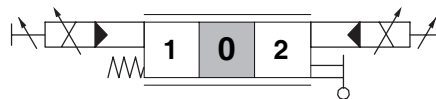


Wrenches and tightening torques

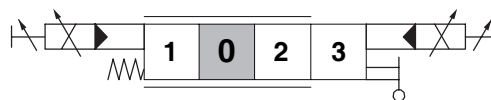
- H = allen wrench 3 - 6.6 Nm (4.9 lbft)
- J = allen wrench 5 - 9.8 Nm (7.2 lbft)
- K = allen wrench 3 - 5 Nm (3.7 lbft)
- X = allen wrench 3
- Y = wrench 10 - 9.8 Nm (7.2 lbft)
- Z = wrench 29 - 24 Nm (17.7 lbft)
- W = wrench 8



8EB3LHF3 - 8EB34LHF3 types



13EB3LHF3 - 13EB34LHF3 types



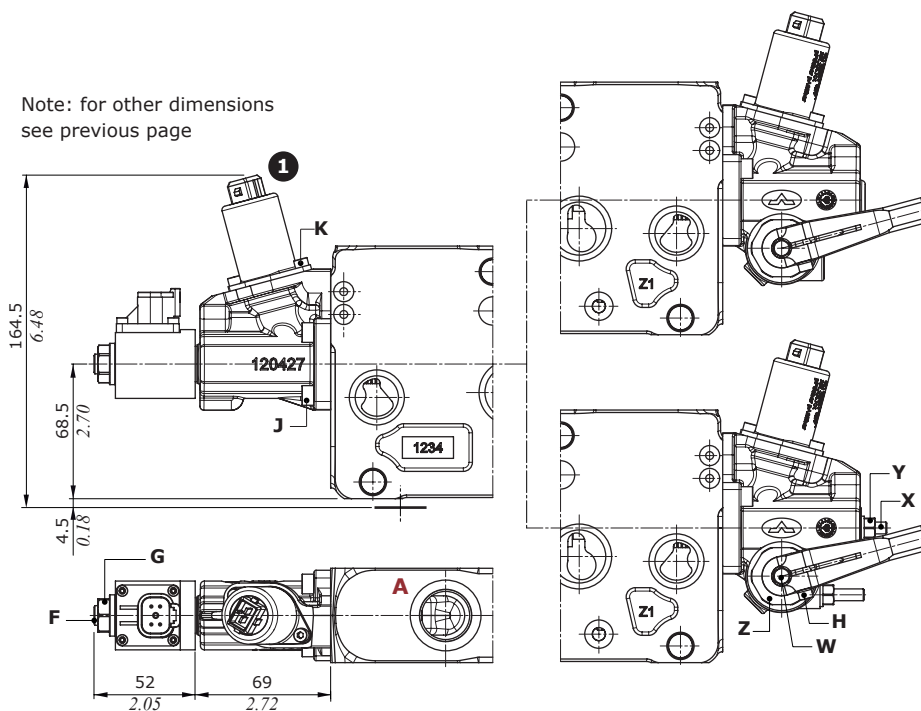
Two-side electrohydraulic control

With lever control and spool position sensor

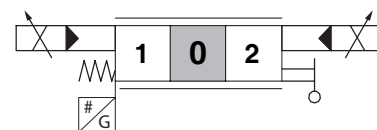
Control Types

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

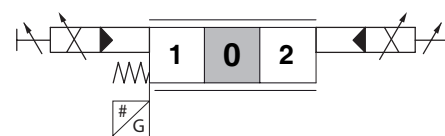
Note: for other dimensions
see previous page



8EB3TLHSPSD type



8EB3TLHF3SPSD type



Wrenches and tightening torques

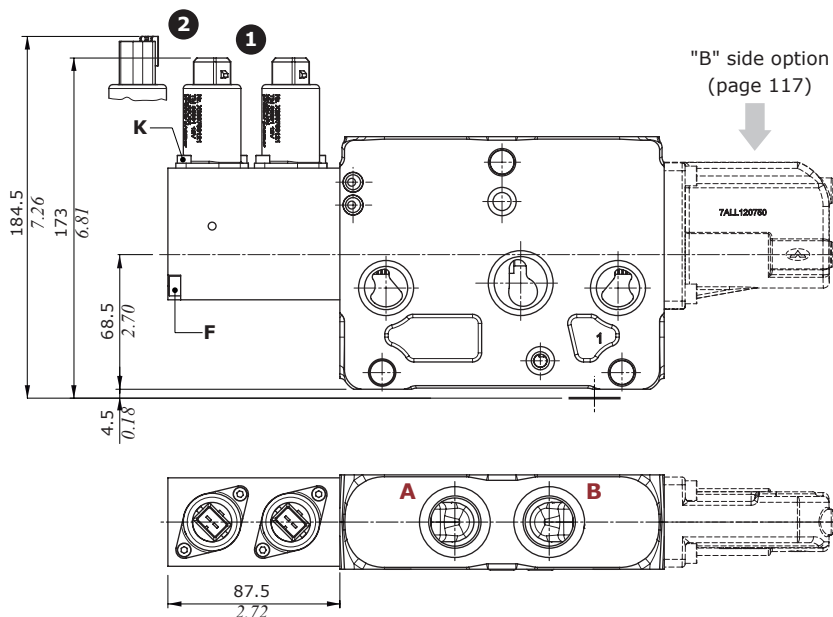
- F = allen wrench 4 - 9.8 Nm (7.2 lbft)
 G = wrench 17 - 9.8 Nm (7.2 lbft)
 H = allen wrench 3 - 6.6 Nm (4.9 lbft)
 J = allen wrench 5 - 9.8 Nm (7.2 lbft)
 K = allen wrench 3 - 5 Nm (3.7 lbft)
 X = allen wrench 3
 Y = wrench 10 - 9.8 Nm (7.2 lbft)
 Z = wrench 29 - 24 Nm (17.7 lbft)
 W = wrench 8

Working section

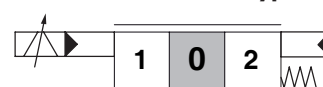
Two-side electrohydraulic control

Control Types

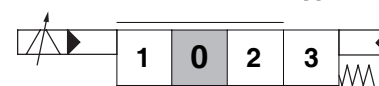
- 1 : With AMP JPT connector - AMP JPT, mating connector code: 5CON003
- 2 : With Deutsch DT04 connector - Deutsch DT06-2S mating connector code: 5CON140031



8EZ3 - 8EZ34 types



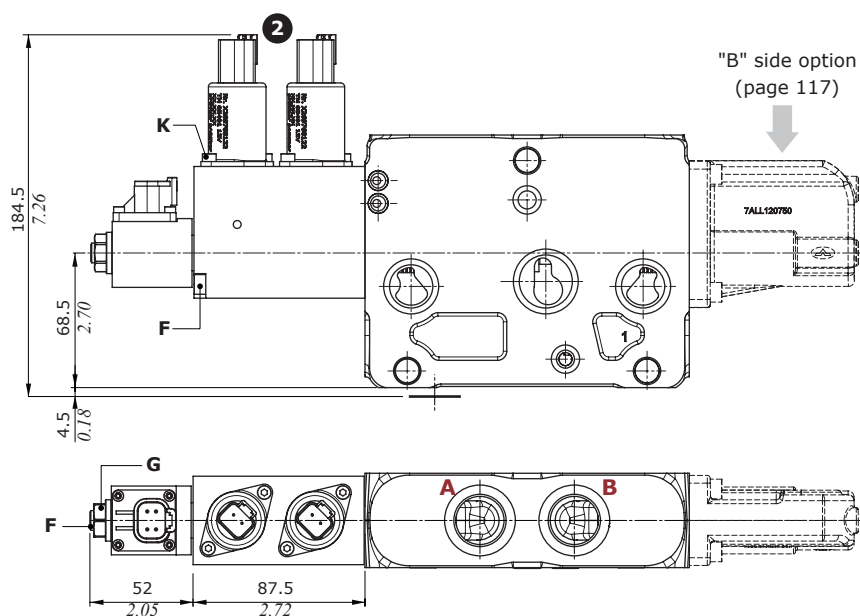
13EZ3 - 13EZ34 types



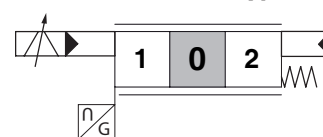
Wrenches and tightening torques

- F = allen wrench 4 - 9.8 Nm (7.2 lbft)
- G = wrench 17 - 9.8 Nm (7.2 lbft)
- J = allen wrench 5 - 9.8 Nm (7.2 lbft)
- K = allen wrench 3 - 5 Nm (3.7 lbft)

With spool position sensor

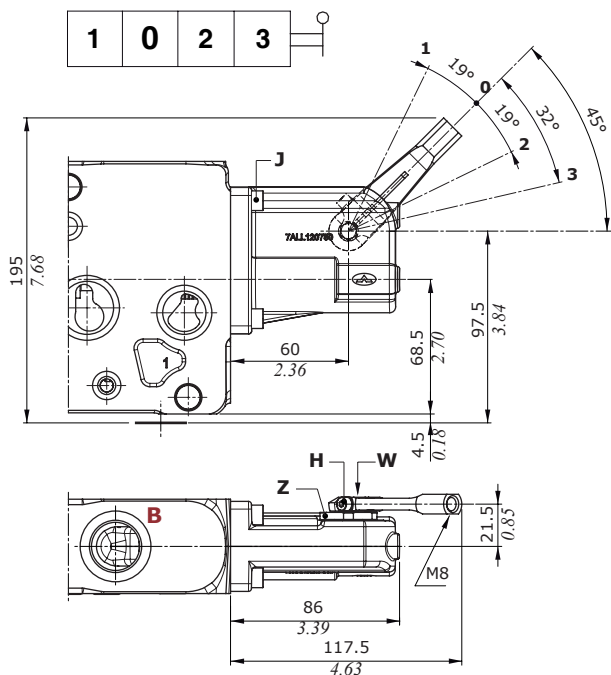


8EZ34SPSL type

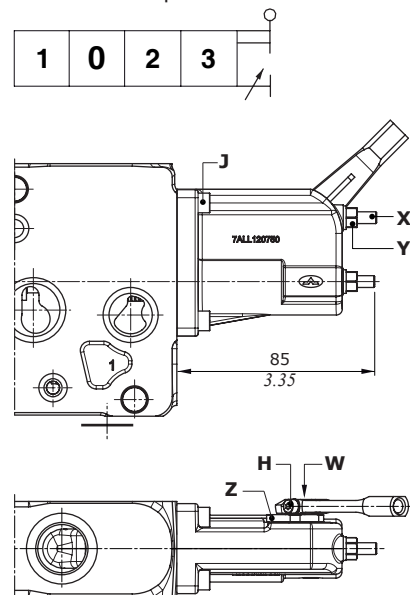
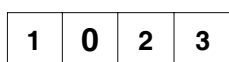


"B" side options

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

Lever boxes**LQ type****LQF3 type**

Spool stroke limiter on
A and B ports

**Endcap****SLCQ type****Wrenches and tightening torques**

H = allen wrench 3 - 6.6 Nm (4.9 lbft)

J = allen wrench 5 - 9.8 Nm (7.2 lbft)

X = allen wrench 3

Y = wrench 10 - 9.8 Nm (7.2 lbft)

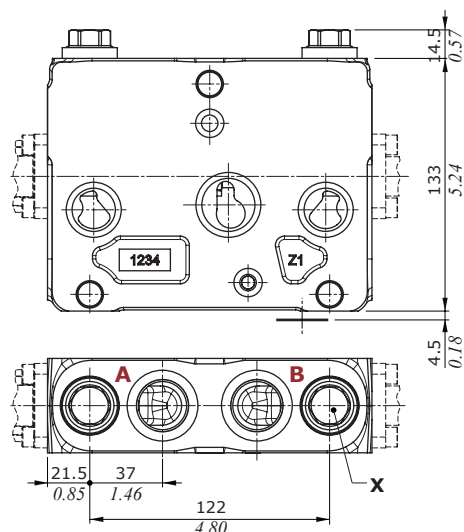
Z = wrench 29 - 24 Nm (17.7 lbft)

W = wrench 8

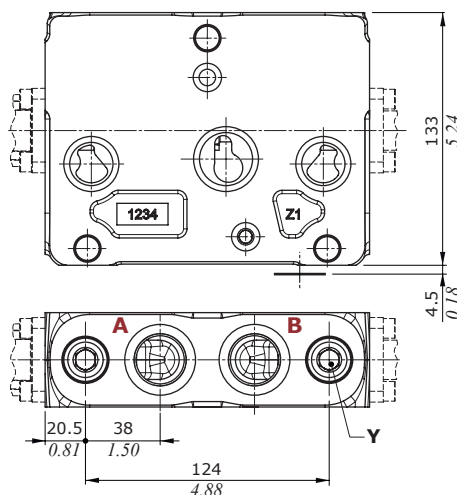
Working section

Port valves

Pressure relief valves, UL type
Anticavitation valve, CL type



Antishock valves, US type
Anticavitation valve, CS type



UL-US types



CL-CS types



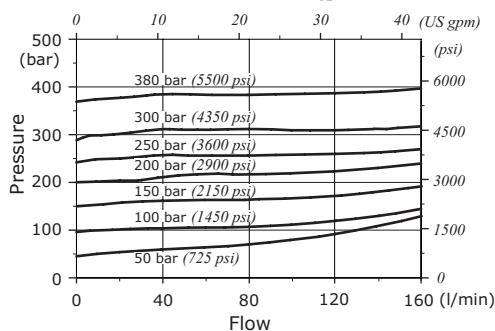
Wrenches and tightening torques

X = wrench 19 - 42 Nm (31 *lbft*) - (plug and valves)

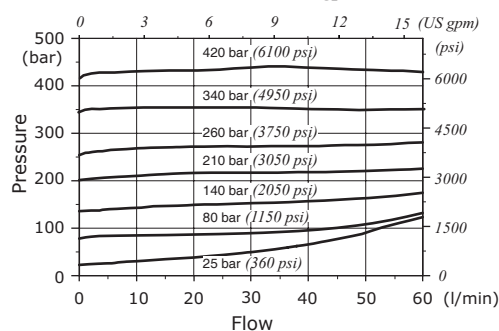
Y = allen wrench 6 - 24 Nm (17.7 *lbft*) - (tappo)

wrench 10 - 24 Nm (17.7 *lbft*) (valves)

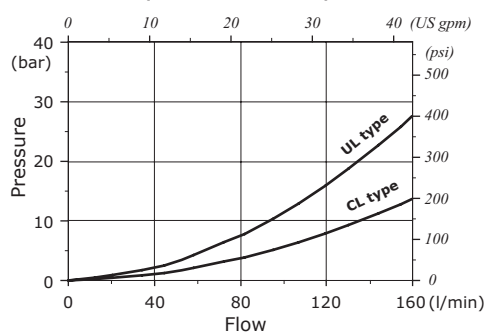
UL type, setting example
(5 l/min - 1.3 *Us gpm*)



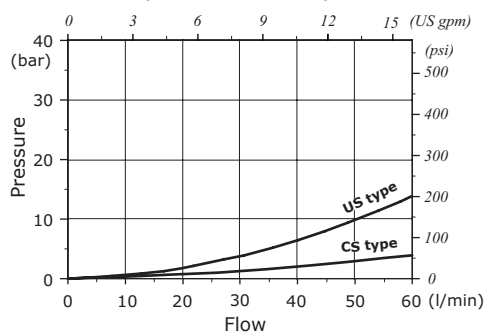
US type, setting example
(10 l/min - 2.6 *Us gpm*)



UL-CL types, pressure drop
(in anticavitation)



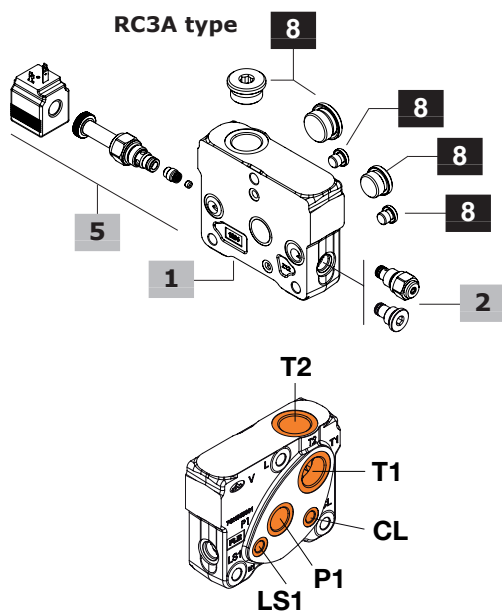
US-CS types, pressure drop
(in anticavitation)



Outlet section part ordering codes

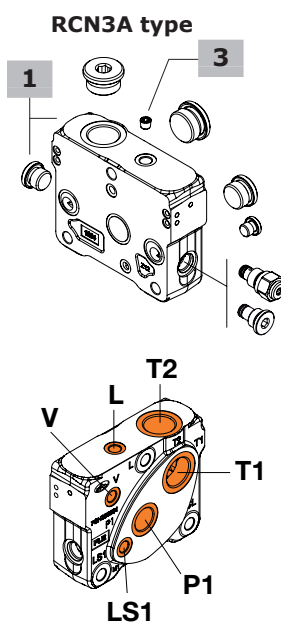
DPX160/RC3A-CL - ... -12VDC-FPM

1 5 6 5 7



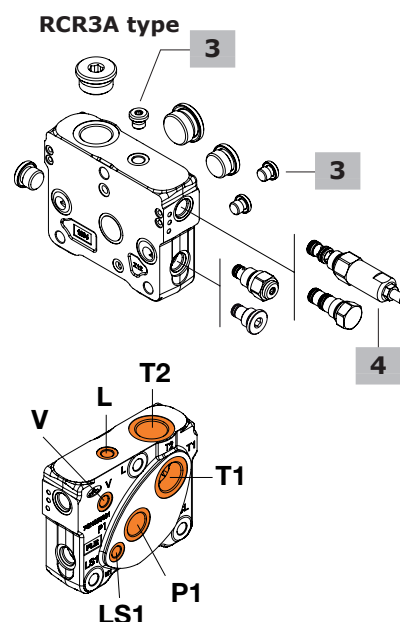
DPX160/RCN3A(VBT)- ... -FPM

1 2



DPX160/RCR3A(RT)(VLT)(VBT)-... -FPM

1 4 3 2



1 Outlet section kit* page 120

The codes are referred to sections with FPM o-ring seals
Outlet section is the same type for standard and High Pressure valve
For mechanical and hydraulic controls

TYPE: **DPX160/RC1-FPM** CODE: YFIA205300V

DESCRIPTION: With T2 upper port

TYPE: **DPX160/RC3-FPM** CODE: YFIA205302V

DESCRIPTION: With T2 upper port and P1, T1, LS1 side ports

TYPE: **DPX160/RC3-CL-FPM** CODE: YFIA205314V

DESCRIPTION: As previous one with clamps release arrang. and CL port

For electrohydraulic controls

TYPE: **DPX160/RCN1-FPM** CODE: YFIA205306V

DESCRIPTION: Without pressure reducing valve arrangement, L

upper and V side ports, T2 upper port

TYPE: **DPX160/RCN3-FPM** CODE: YFIA205313V

DESCRIPTION: As previous one with P1, T1, LS1 side ports

TYPE: **DPX160/RCN3-CL-FPM** CODE: YFIA205315V

DESCRIPTION: As previous one with clamps release arrang. and CL port

TYPE: **DPX160/RCR1-FPM** CODE: YFIA205303V

DESCRIPTION: With pressure reducing valve arrangement, L upper and V side ports, T2 upper port

TYPE: **DPX160/RCR3-FPM** CODE: YFIA205307V

DESCRIPTION: As previous one with P1, T1, LS1 side ports

TYPE: **DPX160/RCR3-CL-FPM** CODE: YFIA205316V

DESCRIPTION: As previous one with clamps release arrang. and CL port

Note: for outlet sections with different port arrangement please contact Sales Dpt.

2 Bleed valve page 120

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
(-)	X138810000V	Bleed valve
(VBT)	XTAP525320V	Valve blanking plug

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

NOTE (-): "TYPE" omitted in outlet section description

3 Pilot and drain* page 121

TYPE	CODE	DESCRIPTION
(-)	4TAP306006	M6-DIN906 plug, for external drain
(VLT)	XTAP719160	G1/4 plug, nr.2 for int. pilot and drain, FPM o-ring seal

4 Pressure reducing valve page 121

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
(-)	4AC9539900	Press. reducing valve, 32 bar (464 psi)
(RT)	3XTP3535100V	Valve blanking plug (SAE 08/3)

5 Clamp release kit page 121

TYPE	CODE	DESCRIPTION
CL	5KIT409010V	Clamp release kit, 12VDC, FPM o-ring seals

6 Section threading

Only specify if it is different from BSP standard (see page 6).

7 Seals

TYPE	DESCRIPTION
FPM	FPM o-ring seals; standard
NBR	NBR o-ring seals

8 Parts*

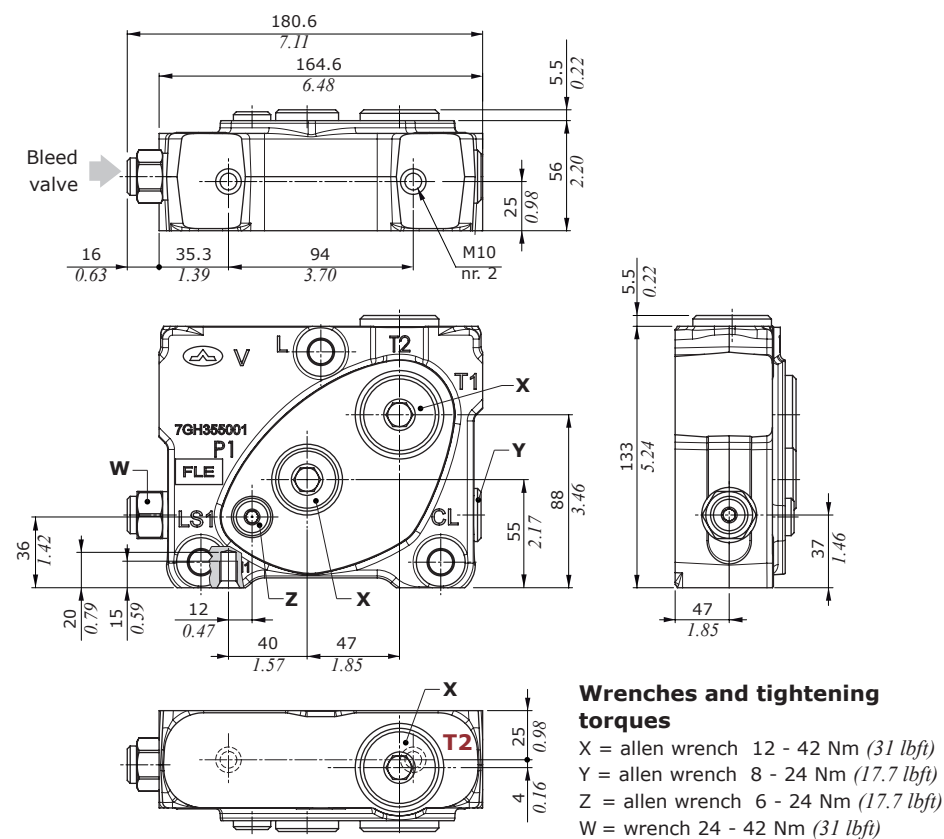
The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION
XTAP740220	G1 plug: for RC1/RCN1/RCR1 = nr. 1 for RC3/RCN3/RCR3 = 2
XTAP732220	G3/4 plug, for RC1/RCN1/RCR1 = nr. 0 for RC3/RCN3/RCR3 = 1
XTAP719160	G1/4 plug, for RC1/RCN1/RCR1 = nr. 0 for RC3/RCN3/RCR3 = 1 for RC3-CL/RCN3-CL/RCR3-CL = 2

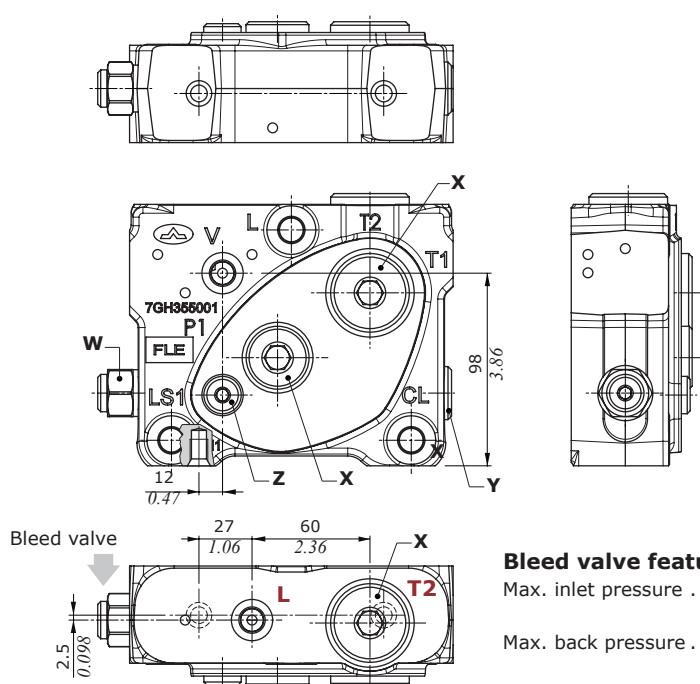
Outlet section

Dimensions and hydraulic circuit

Example of RC3A outlet section

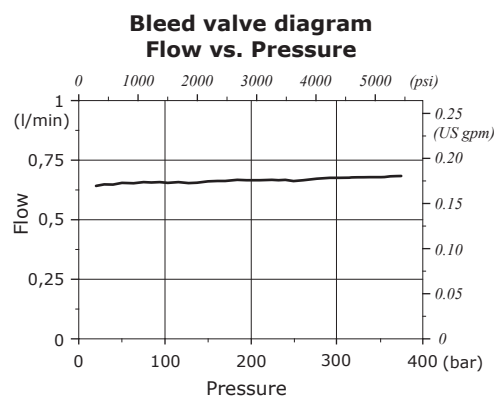
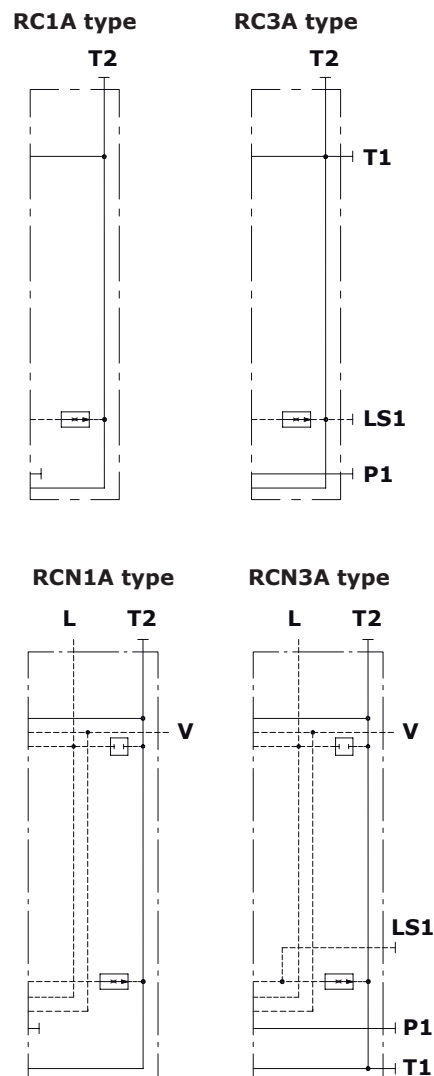


Example of RCN3A outlet section



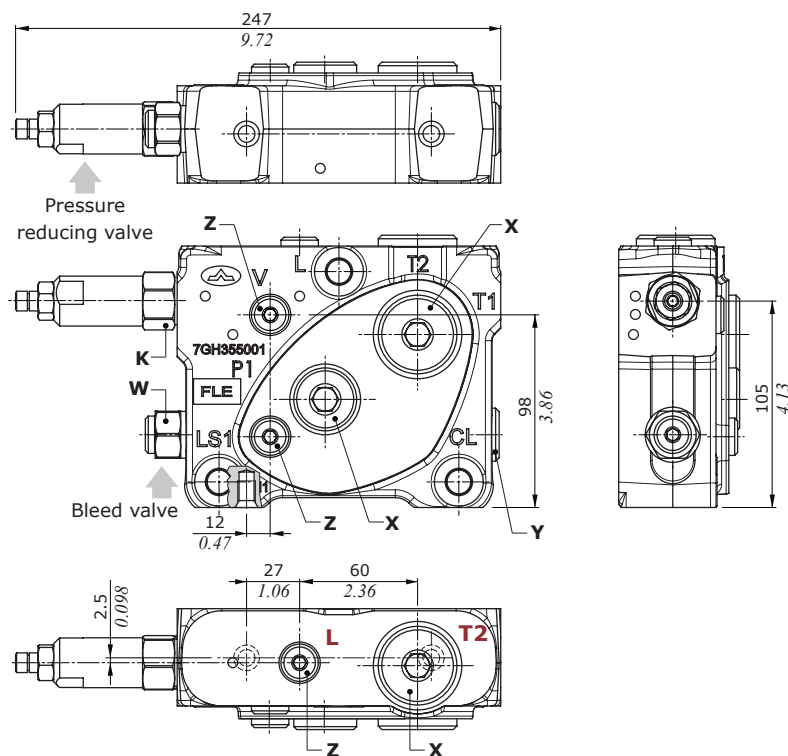
Bleed valve features

Max. inlet pressure . . . : 380 bar
(5550 psi)
Max. back pressure . . . : 25 bar
(363 psi)



Dimensions and hydraulic circuit

Example of RCR3A outlet section



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)

Wrenches and tightening torques

H = manual tightening

K = wrench 24 - 30 Nm (22 lbft)

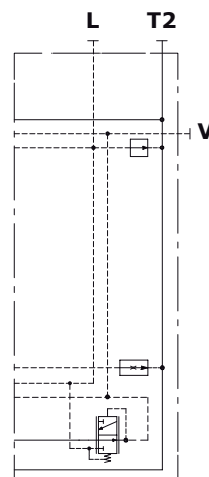
X = allen wrench 12 - 42 Nm (31 lbft)

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

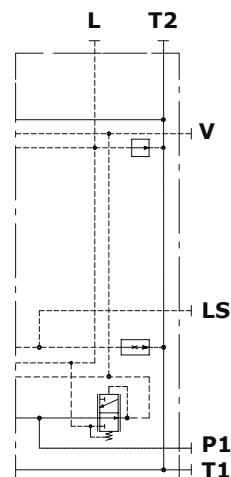
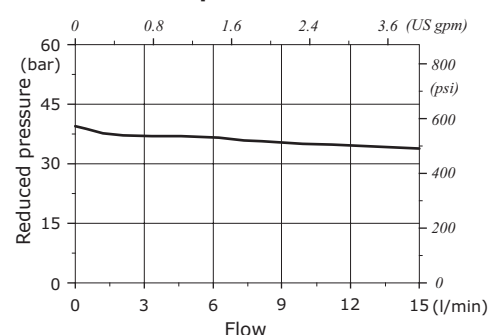
Z = allen wrench 6 - 24 Nm (17.7 lbft)

W = wrench 24 - 42 Nm (31 lbft)

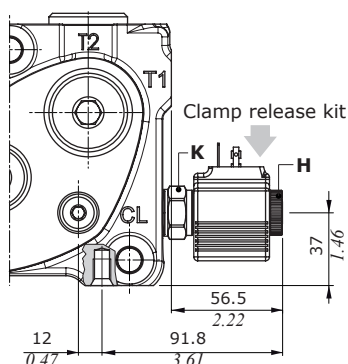
RCR1A type



RCR3A type

Pressure reducing valve diagram
Reduced pressure vs. Flow

Outlet sections with clamp release kit



Features

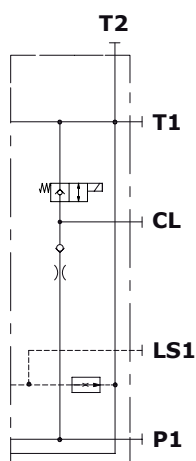
Max. flow : 45 l/min (12 US gpm)

Max. pressure : 315 bar (4600 psi)

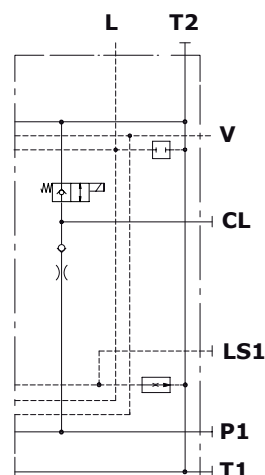
Internal leakage : max. 3 cm³/min @ 100 bar
(max. 0.018 in³/min @ 1450 psi)

For coil features and options see **BER** type coil at page 125.

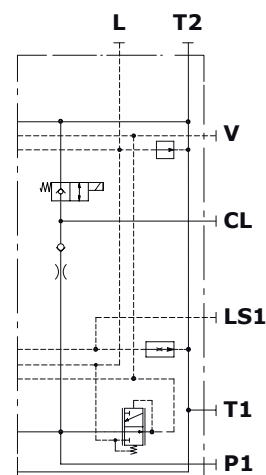
RC3A-CL type



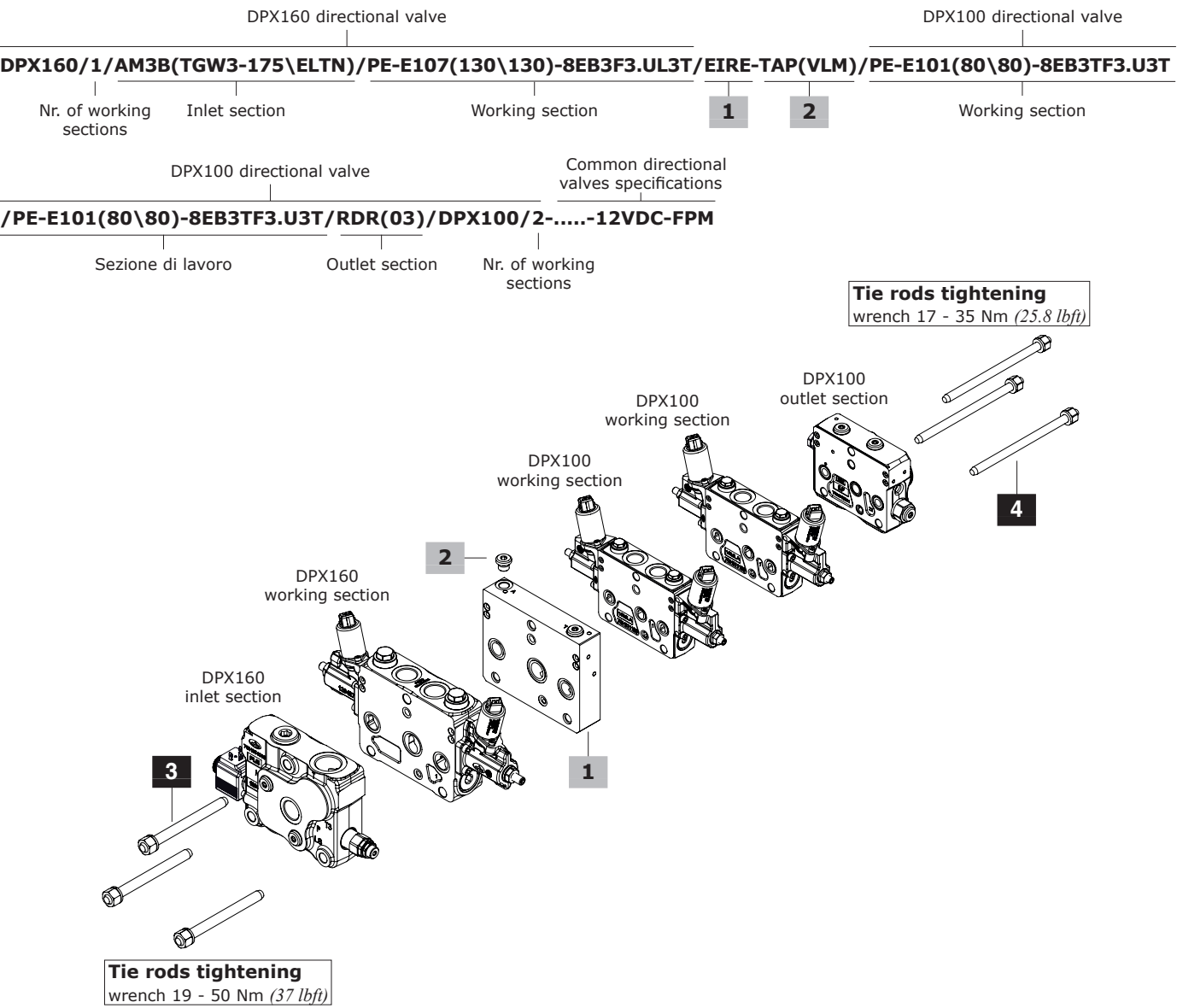
RCN3A-CL type



RCR3A-CL type



Intermediate sections



1 Intermediate section* page 123

The codes are referred to parts with FPM o-ring seals

TYPE	CODE	DESCRIPTION
EIR	650423000V	For valves with hydraulic or mechanical controls, with M1 pressure gauge port
EIRE	650423001V	For valves with two-side electrohydraulic control; with pilot V, drain L, M1 pressure gauge ports
EIRZS	650423004V	As previous one, for valves with one-side electrohydraulic control

2 Pilot and drain

The codes are referred to parts with FPM o-ring seals

CODE	DESCRIPTION
XTAP719160*	Optional G1/4 plug for internal pilot
4TAP310007	Optional M10x1 DIN906 plug for external drain

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

3 DPX160 side assembling kit

CODE	DESCRIPTION
5TIR112141	For 1 working section valve
5TIR112189	For 2 working section valve
5TIR112237	For 3 working section valve
5TIR112285	For 4 working section valve
5TIR112333	For 5 working section valve
5TIR112382	For 6 working section valve

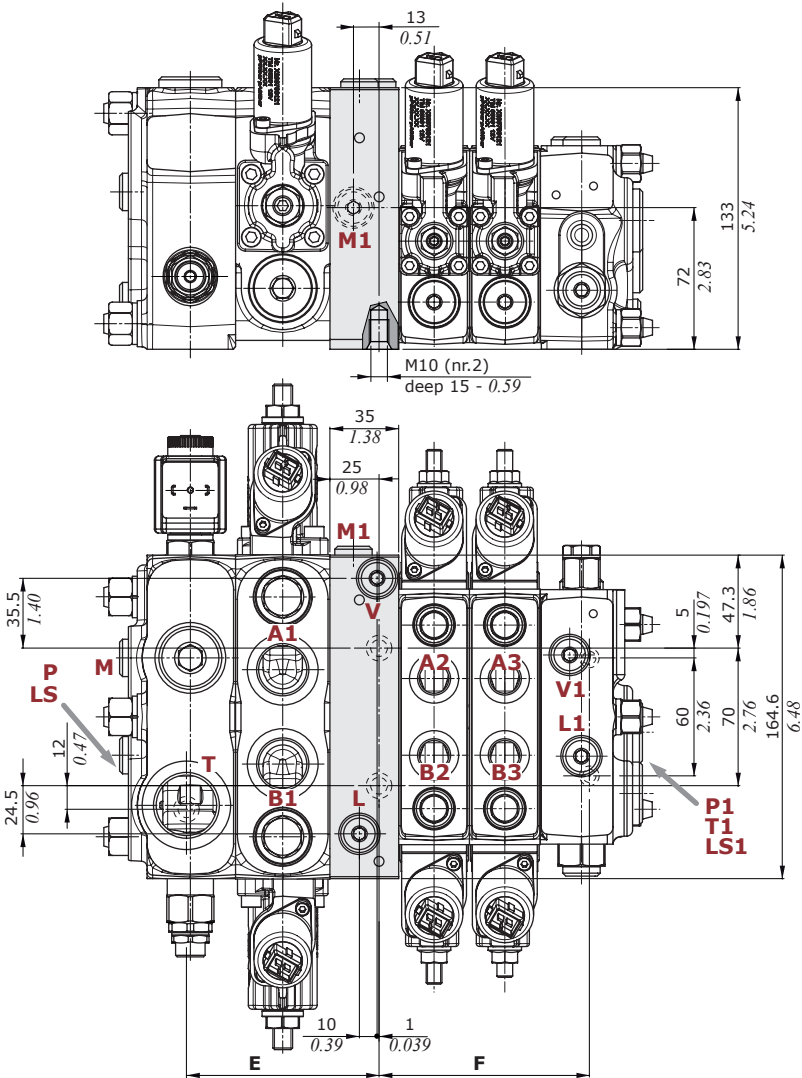
4 DPX100 side assembling kit

CODE	DESCRIPTION
5TIR110142	For 2 working section valve
5TIR110178	For 3 working section valve
5TIR110216	For 4 working section valve
5TIR110253	For 5 working section valve
5TIR110286L	For 6 working section valve
5TIR110322	For 7 working section valve

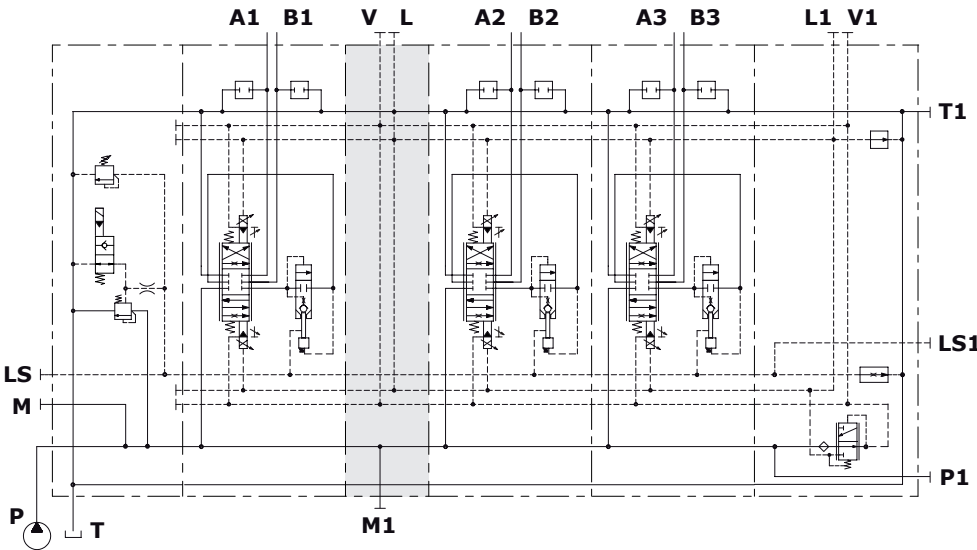
Intermediate sections

EIRE intermediate section

For DPX valves with two-side electrohydraulic controls.



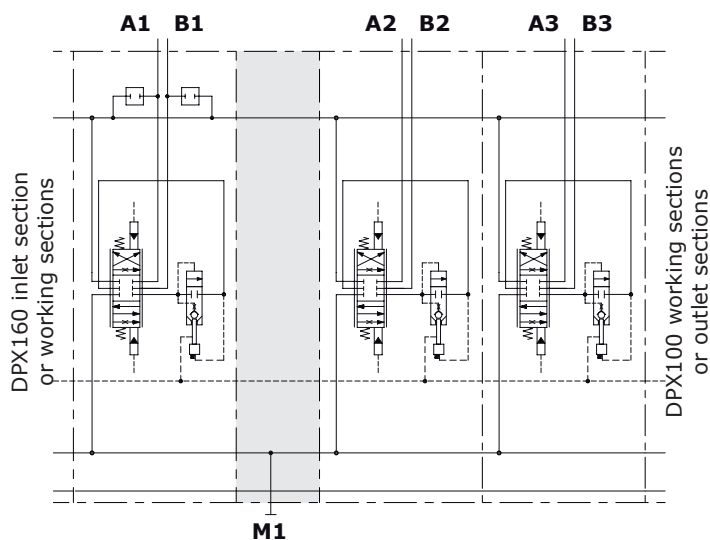
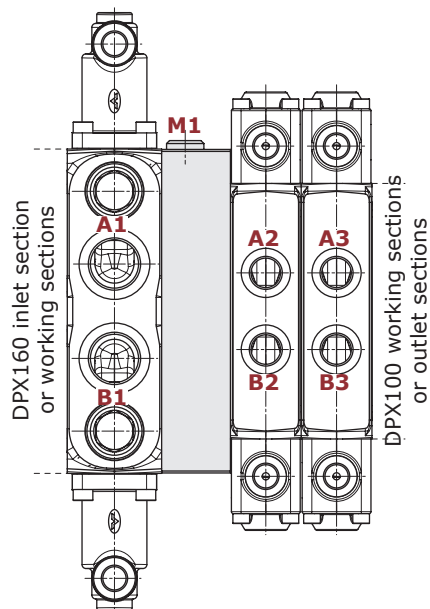
Nr. of working sections	dim. E with M or N inlet sections		dim. F with standard or HP sections	
	mm	in	mm	in
1	98	3.86	-	-
2	146	5.75	107	4.21
3	194	7.64	143	5.63
4	242	9.53	179	7.05
5	290	11.42	215	8.46
6	338	13.31	251	9.88
7	-	-	287	11.30



Intermediate sections

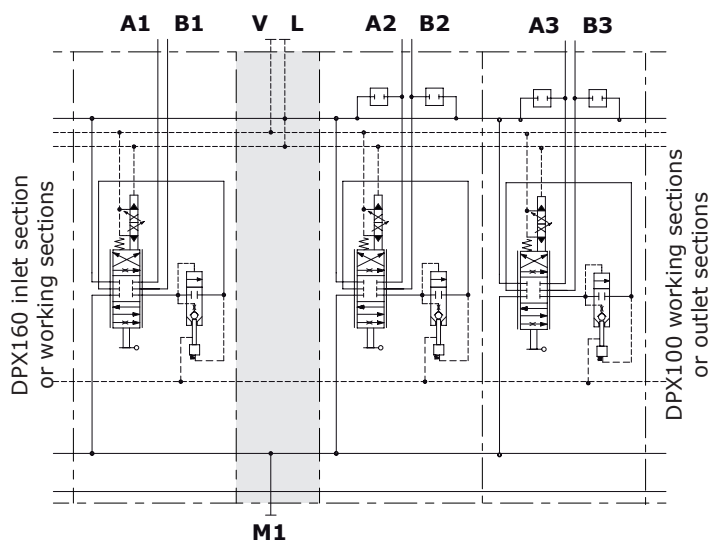
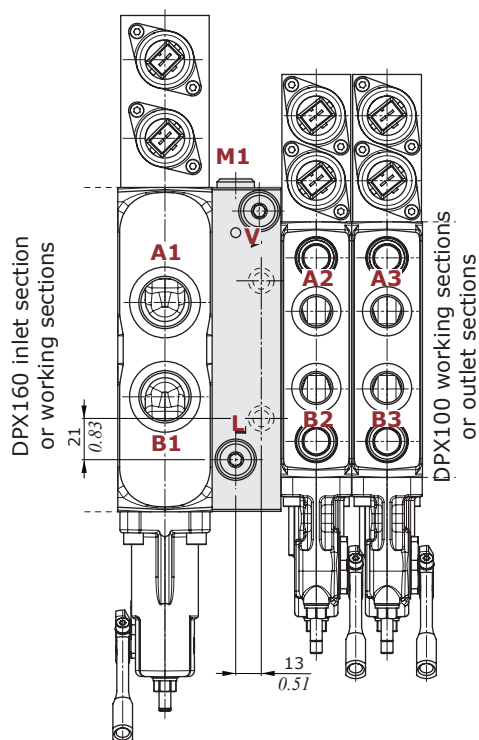
EIR intermediate section

For DPX valves with hydraulic or mechanical controls; for dimensions and port position see EIRE type on previous page.



EIRZS intermediate section

For DPX valves with one-side electrohydraulic controls; for further dimensions see EIRE type on previous page.



Coils and connectors

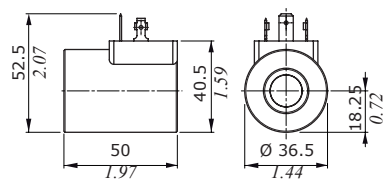
Coil type	Voltage	Connectors					
		ISO4400	Deutsch DT	AMP JPT	Packard Weatherpack	Packard Metri-pack	Flying leads (without conn.)
BER	10 VDC	4SLE001000A	-	-	-	-	-
	12 VDC	4SLE001200A 4SLE001217A ⁽³⁾	4SLE001201A ⁽⁵⁾ 4SLE001209A ⁽³⁻⁵⁾ 4SLE001202A ⁽⁶⁾ 4SLE001216A ⁽³⁻⁶⁾ 4SLE001206A ⁽²⁾	4SLE001203A ⁽⁵⁾ 4SLE001211A ⁽³⁻⁵⁾	4SLE001210A ⁽²⁾	4SLE001214A ⁽²⁾	4SLE001207A
	14 VDC	-	4SLE001400A ⁽⁶⁾ 4SLE001401A ⁽³⁻⁶⁾ 4SLE001402A ⁽³⁻⁵⁾	4SLE001403A ⁽³⁻⁵⁾	-	-	-
	24 VDC	4SLE002400A 4SLE002408A ⁽³⁾ 4SLE002400A ⁽¹⁾	4SLE002401A ⁽⁵⁾ 4SLE002407A ⁽³⁻⁵⁾ 4SLE002402A ⁽⁶⁾	4SLE002403A ⁽⁵⁾	-	-	4SLE002404A
	28 VDC	-	4SLE002802A ⁽⁶⁾	4SLE002800A ⁽⁵⁾	-	-	-
	48 VDC	4SLE004800A 4SLE304800A ⁽¹⁾	-	-	-	-	-
	110VDC	4SLE011000A 4SLE311000A ⁽¹⁾	-	-	-	-	-
	220 VDC	4SLE022000A 4SLE322000A ⁽¹⁾	-	-	-	-	-
BE	12 VDC	4SL1000120	4SL1000123 ⁽⁶⁾ 4SL1000140 ⁽³⁻⁶⁾ 4SL1000124 ⁽²⁾	-	-	-	4SL1000122
	24 VDC	4SL1000240 4SL1030240 ⁽¹⁾	4SL1002401 ⁽⁶⁾	-	-	-	-
	48 VDC	4SL1010480	-	-	-	-	-
	110 VDC	4SL1011100 4SL1031100 ⁽¹⁾	-	-	-	-	-
	220 VDC	4SL1022200 4SL1032200 ⁽¹⁾	-	-	-	-	-
BT	10 VDC	4SL3000100	-	-	-	-	-
	12 VDC	4SL3000120 4SL3000126 ⁽⁴⁾	4SL3000130 ⁽⁶⁾ 4SL3000134 ⁽³⁻⁶⁾ 4SL3000128 ⁽²⁾	4SL3000122 ⁽⁵⁾ 4SL30001200 ⁽³⁻⁵⁾	4SL3000124 ⁽²⁾	4SL3000127 ⁽²⁾	4SL300012C
	24 VDC	4SL3000240 4SL3030240 ⁽¹⁾	4SL3000249 ⁽⁶⁾ 4SL300024C ⁽³⁻⁶⁾	4SL3000248 ⁽⁵⁾	-	-	4SL3000246
	26 VDC	4SL3000260	-	-	-	-	-
	48 VDC	4SL3000480 4SL3030480 ⁽¹⁾	-	-	-	-	-
	110 VDC	4SL3001100 4SL3031100 ⁽¹⁾	-	-	-	-	-
BPV	220 VDC	4SL3002200 4SL3032200 ⁽¹⁾	-	-	-	-	-
	12 VDC	4SLA001200	-	-	-	-	-
D12	24 VDC	4SLA002400	-	-	-	-	-
	10,5 VDC	4SOL412011	4SOL412111 ⁽²⁾	-	-	-	-
	12 VDC	4SOL412012 4SOL412016 ⁽³⁾	4SOL412013 ⁽⁶⁾ 4SOL412112 ⁽²⁾ 4SOL412015 ⁽³⁻⁶⁾ 4SOL412113 ⁽²⁻³⁾	-	-	-	4SOL412017 ⁽³⁾
	24 VDC	4SOL412024	4SOL412025 ⁽⁶⁾ 4SOL412124 ⁽²⁾ 4SOL412027 ⁽³⁻⁶⁾	4SOL412224 ⁽²⁾	-	-	-
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 - ⁽⁵⁾ with unidirectional diode
⁽³⁾ integrated perpendicular type - ⁽⁶⁾ integrated parallel type

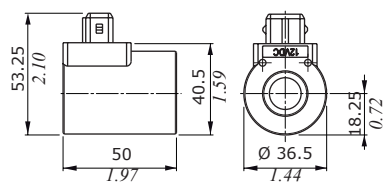
Voltage	ISO 4400 mating connector with rectifier				
	BER type coil	BT type coil	BPV type coil	BE type coil	D12 type coil
24 VDC	4CN1010240	4CN3010240	-	4CN1010240	-
48 VDC	4CN1010480	4CN3010480	-	4CN1010480	-
110 VDC	4CN1011100	4CN3011100	-	4CN1011100	-
220 VDC	4CN1012200	4CN3012200	-	4CN1012200	-

BT type

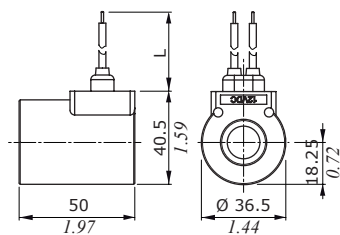
ISO4400 connector



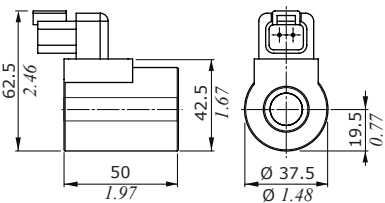
AMP JPT connector



Flying leads



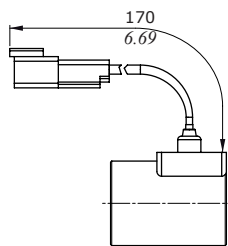
DEUTSCH DT04 connector



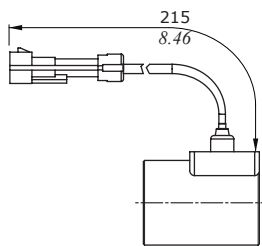
Coil type	L dimension	
	(mm)	(in)
12VDC	247	9.72
24VDC	307	12.09

- Features
- Nominal voltage tolerance : ±10%
 - Power rating : 19 W - 10 VDC
 - : 21 W - 12/24/26 VDC
 - : 20.3 W - 48 VDC
 - : 17.3 W - 110 VDC
 - : 17.7 W - 220 VDC
 - : 19.9 W - 24 RAC
 - : 20.7 W - 48 RAC
 - : 20 W - 110 / 220 RAC
 - Max. operating current . . : 1.9 A - 10 VDC
 - : 1.77 A - 12 VDC
 - : 0.89 A - 24VDC
 - : 0.84 A - 26 VDC
 - : 0.43 A - 48 VDC
 - : 0.16 A - 110 VDC
 - : 0.08 A - 220 VDC
 - : 0.93 A - 24 RAC
 - : 0.47 A - 48 RAC
 - : 0.18 A - 110 RAC
 - : 0.09 A - 220 RAC
 - Coil insulation : Class F (155°C - 311°F)
 - Weather protection : IP65 - ISO4400
 - : IP69K - Deutsch DT
 - : IP65 - AMP JPT
 - : IP67 - Weatherpack
 - : IP67 - Metri-pack
 - Insertion : 100%

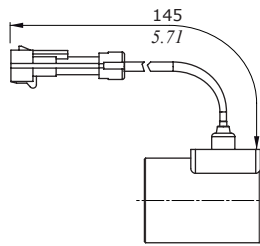
Flying leads with DEUTSCH DT04 connector



Flying leads with PACKARD WEATHER-PACK connector

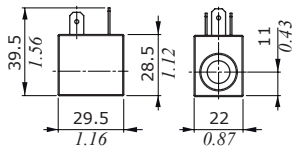


Flying leads with PACKARD METRI-PACK connector

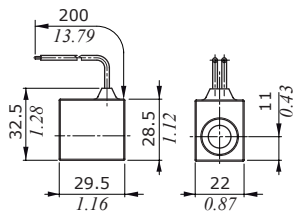


BPV type

ISO4400 connector



Flying leads

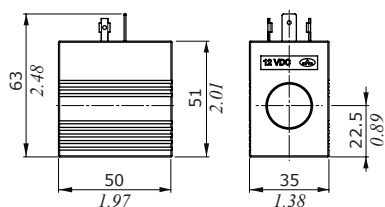


- Features
- Nominal voltage tolerance : ±10%
 - Power rating : 8 W - 12/24 VDC
 - Max. operating current . . : 0.67 A - 12 VDC
 - : 0.33 A - 24VDC
 - Coil Insulance : Class H (180°C - 356°F)
 - Weather protection : IP65 - ISO4400
 - Insertion : 100%

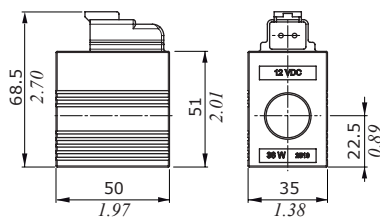
Coils and connectors

D12 type

ISO4400 connector



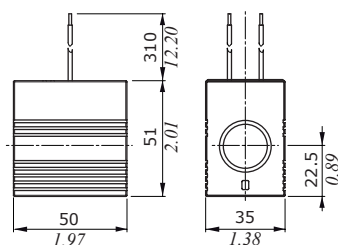
DEUTSCH DT04 connector (with or without bidirectional diode)



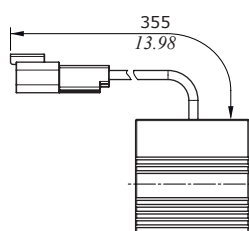
Features

Nominal voltage tolerance : $\pm 10\%$
 Power rating : 36 W - 10.5/12/24 VDC
 Max. operating current . . : 3,43 A - 10.5 VDC
 : 3 A - 12 VDC
 : 1.5 A - 24VDC
 Coil insulation : Class H (180°C - 356°F)
 Weather protection : IP65 - ISO4400
 : IP69K - Deutsch DT
 : IP65 - AMP JPT
 Insertion : 100%

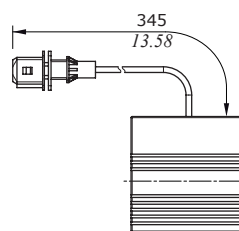
Flying leads



Flying leads with DEUTSCH DT04 connector



Flying leads with AMP JPT connector

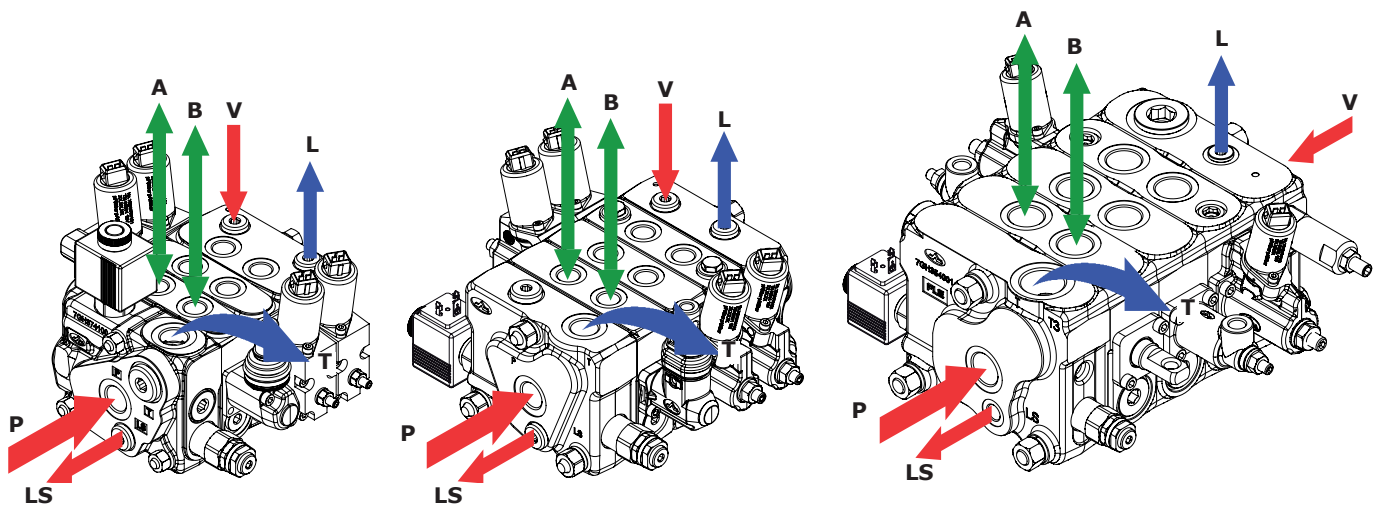


Main rules

The DPX series 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 body deformation and spool sticking mount the product on a flat surface;
- In order to prevent the possibility of water entering the spool control kit, do not use high pressure washdown directly on the valve;
- prior to painting, ensure plugs on normally open ports are tightly in place.



FITTING TIGHTENING TORQUE - Nm / lbft

THREAD TYPE	P inlet port		A and B workports				T outlet port		LS signal port	V and L ports
BSP	G 1/2		G 3/8				G 1/2		G 1/4	G 1/4
DPX050	With O-Ring seal	50 / 36.9	35 / 35.8				50 / 36.9		25 / 18.4	25 / 18.4
	With copper washer	60 / 44.3	40 / 29.5				60 / 44.3		30 / 22.1	30 / 22.1
	With steel and rubber washer	60 / 44.3	30 / 22.1				60 / 44.3		16 / 11.8	16 / 11.8
	UN-UNF	3/4-16 (SAE 8)	6/16-18 (SAE 6)				3/4-16 (SAE 8)		9/16-18 (SAE 6)	9/16-18 (SAE 6)
	With O-Ring seal	35 / 25.8	30 / 22.1				35 / 25.8		30 / 22.1	30 / 22.1
DPX100	BSP	G 1/2	G 3/4	G 3/8	G 1/2	G 3/4	G 1/2	G 3/4	G 1/4	G 1/4
	With O-Ring seal	50 / 36.9	90 / 66.4	35 / 35.8	50 / 36.9	90 / 66.4	50 / 36.9	90 / 66.4	25 / 18.4	25 / 18.4
	With copper washer	60 / 44.3	90 / 66.4	40 / 29.5	60 / 44.3	90 / 66.4	60 / 44.3	90 / 66.4	30 / 22.1	30 / 22.1
	With steel and rubber washer	60 / 44.3	70 / 51.6	30 / 22.1	60 / 44.3	70 / 51.6	60 / 44.3	70 / 51.6	16 / 11.8	16 / 11.8
	UN-UNF	7/8-14 (SAE 10)	3/4-16 (SAE 8)	1 1/16-12 (SAE 12)	7/8-14 (SAE 10)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)
DPX160	With O-Ring seal	90 / 66.4	35 / 25.8	95 / 70.1	90 / 66.4	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1
	BSP	G 3/4	G 3/4	G 3/4	G 1	G 1/4	G 1/4	G 1/4	G 1/4	G 1/4
	With O-Ring seal	90 / 66.4	90	100 / 73.8	25 / 18.4	25 / 18.4	25 / 18.4	25 / 18.4	25 / 18.4	25 / 18.4
	With copper washer	90 / 66.4	90	90 / 66.4	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1
	With steel and rubber washer	70 / 51.6	70	100 / 73.8	16 / 11.8	16 / 11.8	16 / 11.8	16 / 11.8	16 / 11.8	16 / 11.8
DPX160	UN-UNF	1 1/16-12 (SAE 12)	1 1/16-12 (SAE 12)	1 5/16-12 (SAE 16)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)	9/16-18 (SAE 6)
	With O-Ring seal	95 / 70.1	95 / 70.1	150 / 100.6	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1	30 / 22.1

NOTE – These torques are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish.

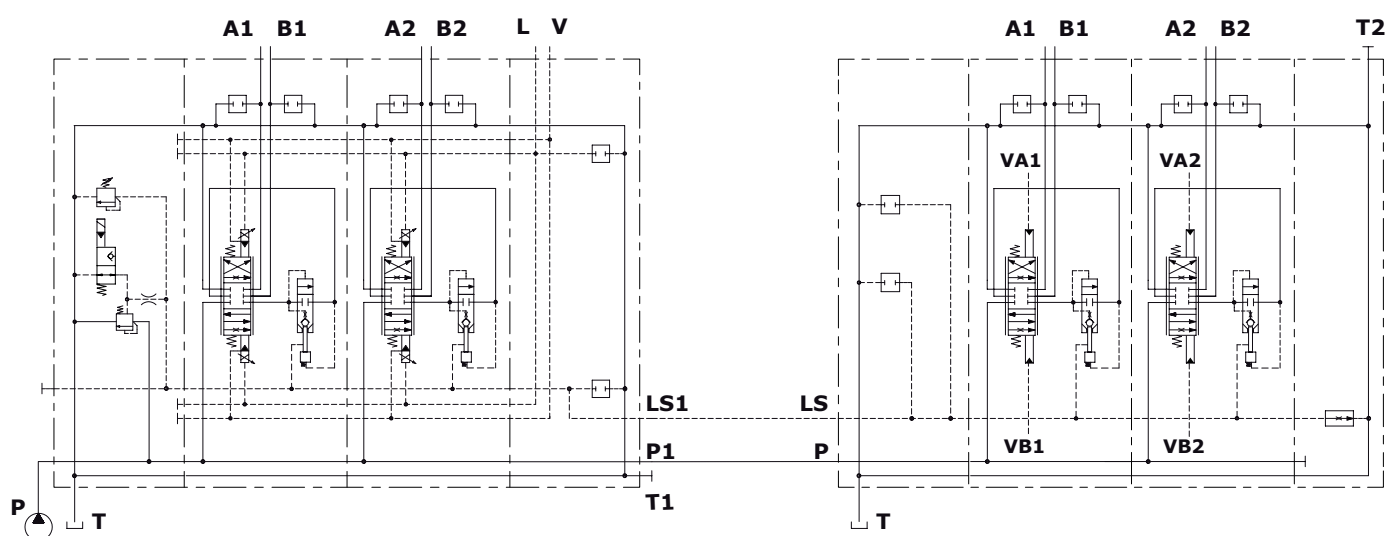
Connection between two directional valves

All the examples shown allow contemporary workports operations.

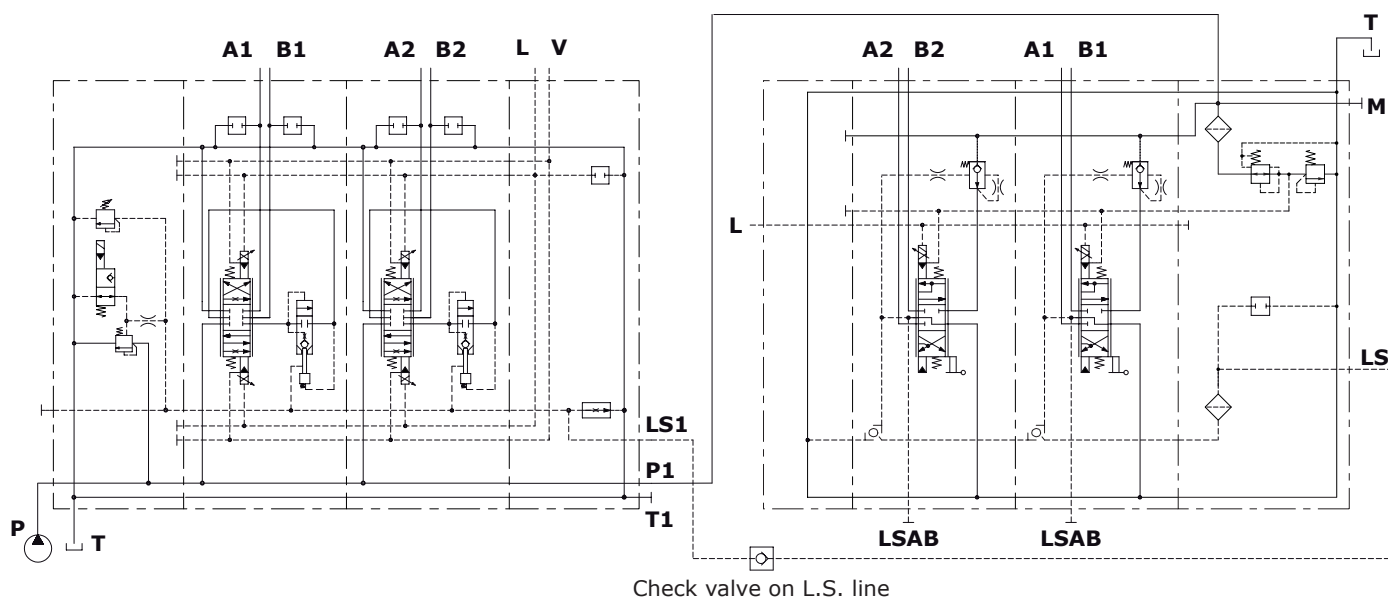
With two or more DPX Series valves connected as shown, only one bleed valve is needed, on the last DPX valve and it is necessary to blank plugs on the others valves.

However if DPX valves are far from each other or configured with many sections, the Bleed valve may be required on each directional valve.

Example 1: connection between DPX series valves, Open Center circuit



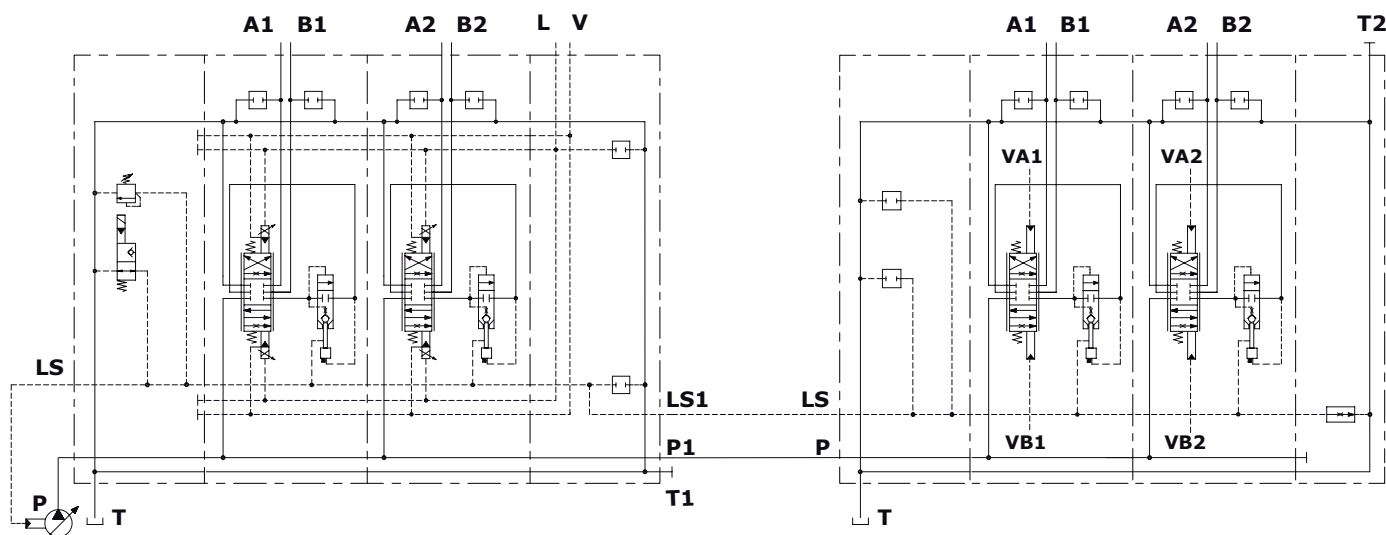
Example 2: connection between DPX series and DPC series valves, Open Center circuit



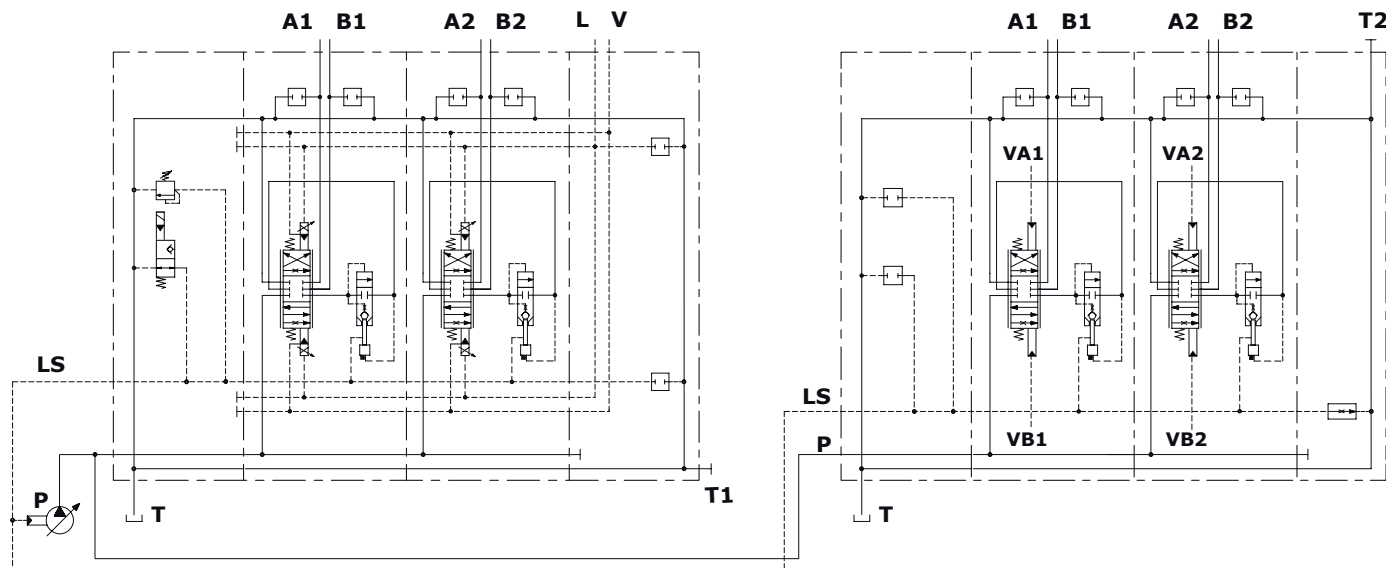
Connection between two directional valves

Example 3: connection between DPX series valves, Closed Center circuit

Bleed valve has to be installed only on one DPX valve

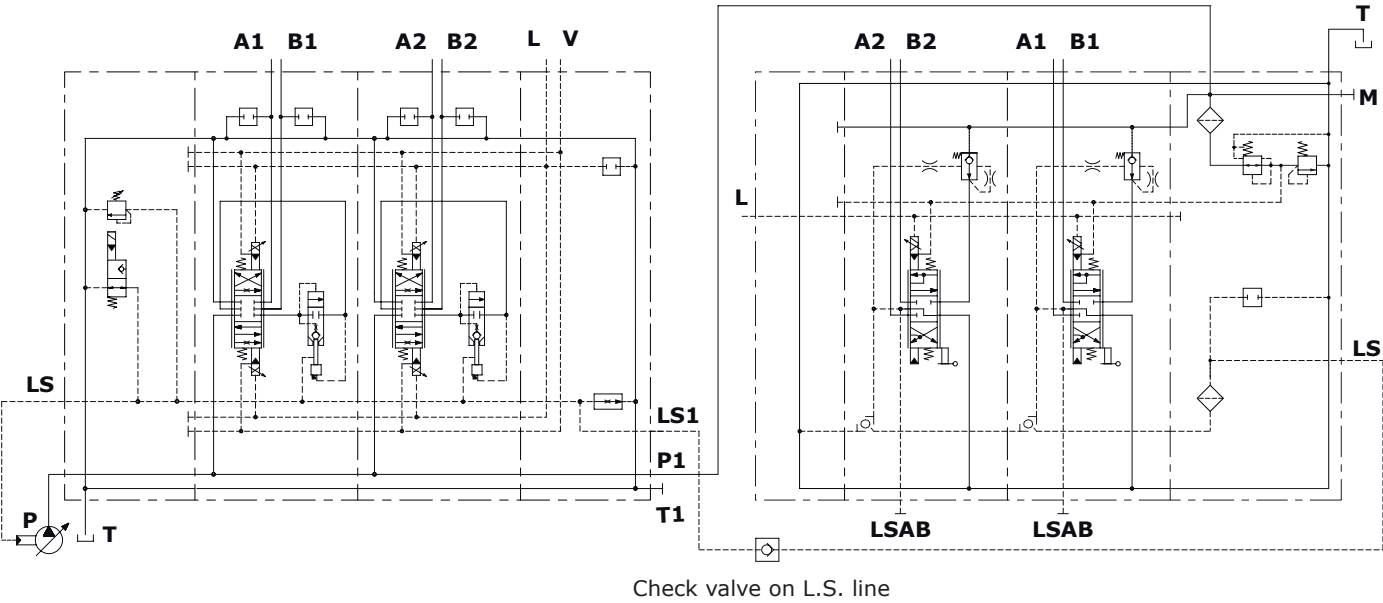


NOTE: if there is a big distance between the valves, the following circuit is suggested.



Connection between two directional valves

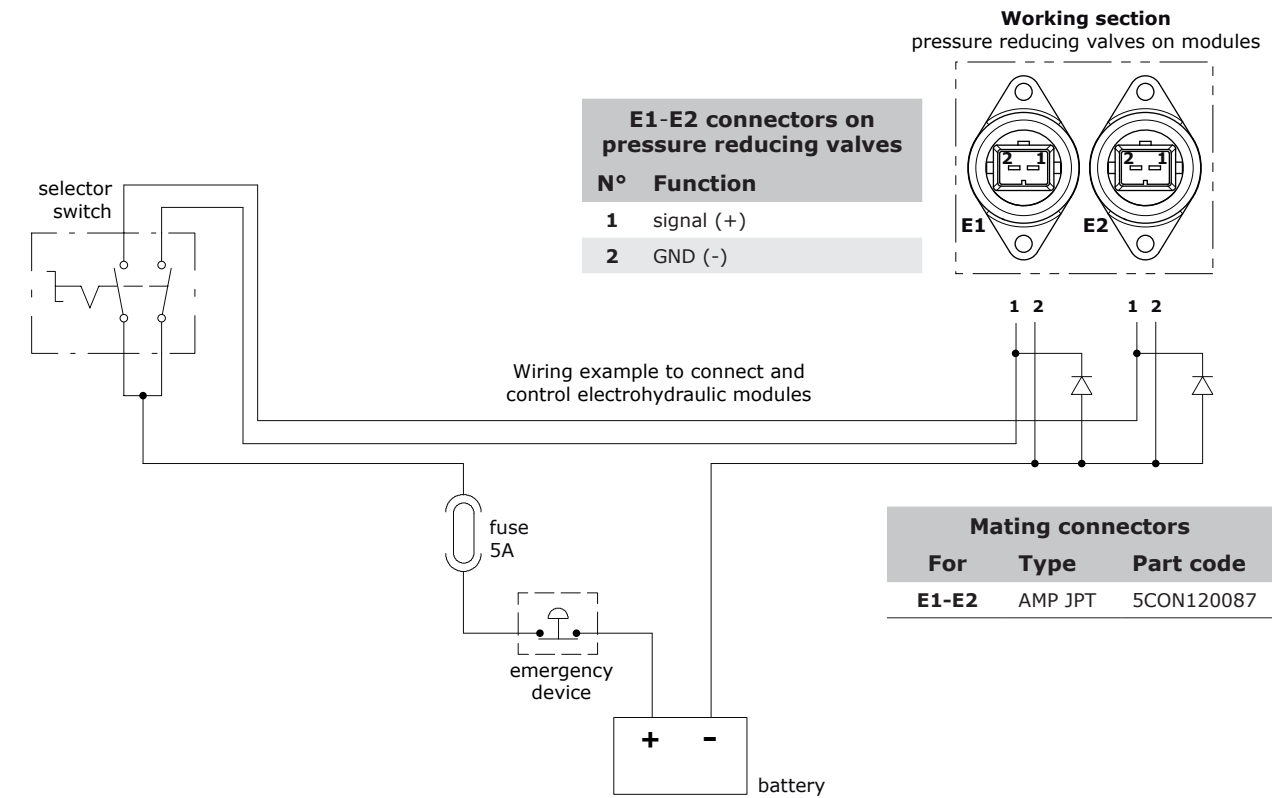
Example 4: connection between DPX series and DPC series valves, Closed Center circuit



Electrohydraulic control connection

On/off electrohydraulic control

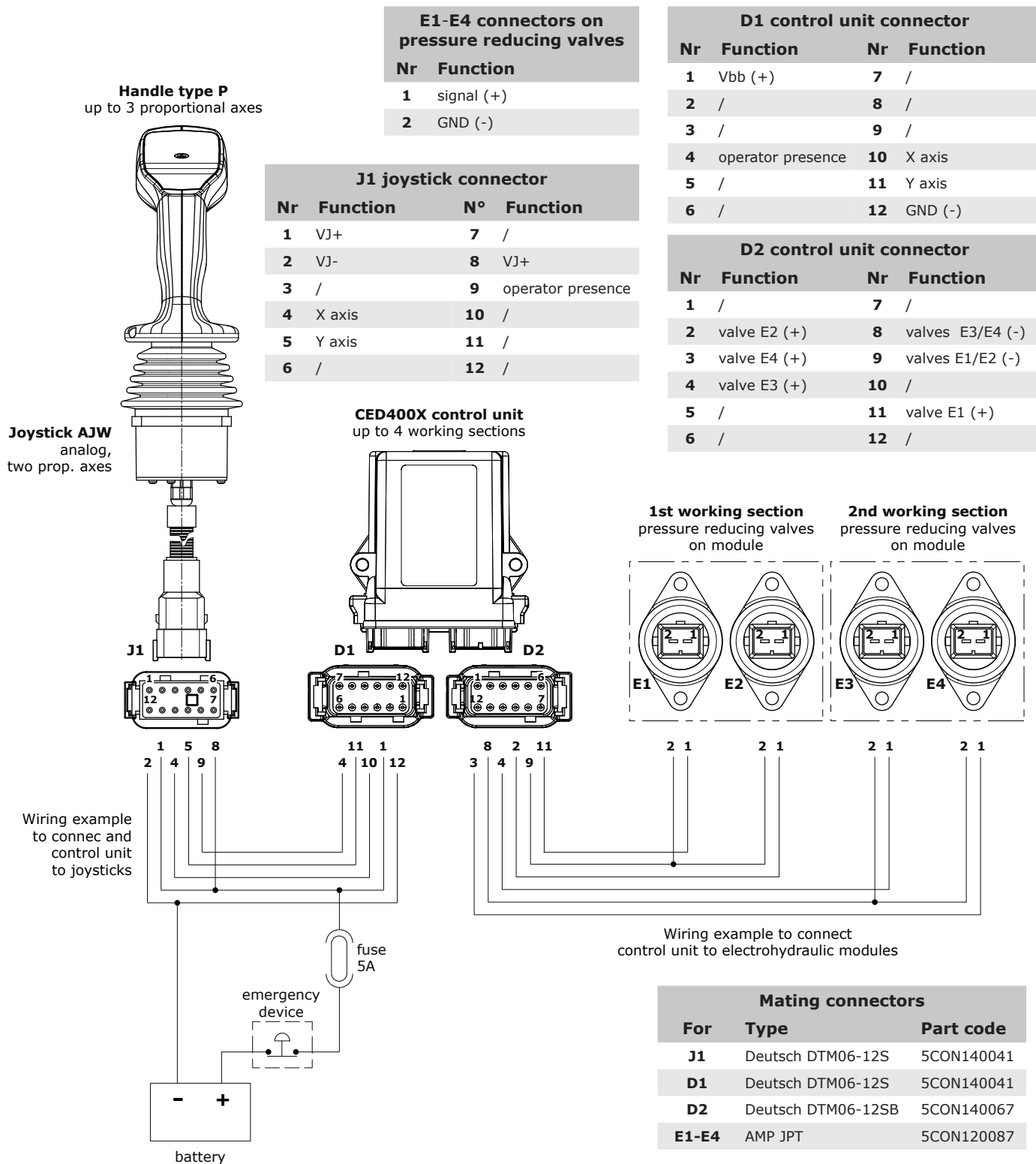
See below an example of on/off control for a working section.



Electrohydraulic control connection

Proportional electrohydraulic control

See below a proportional control system for two working sections, equipped with a proportional analog Hall-effect joystick. The circuit is a connection example, the pin-out refers to standard devices; for ordering codes, detailed information and customization, please contact our Sales Department.



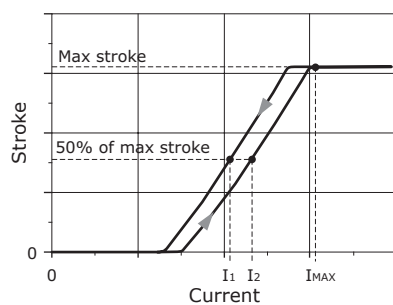
Appendix A

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



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

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