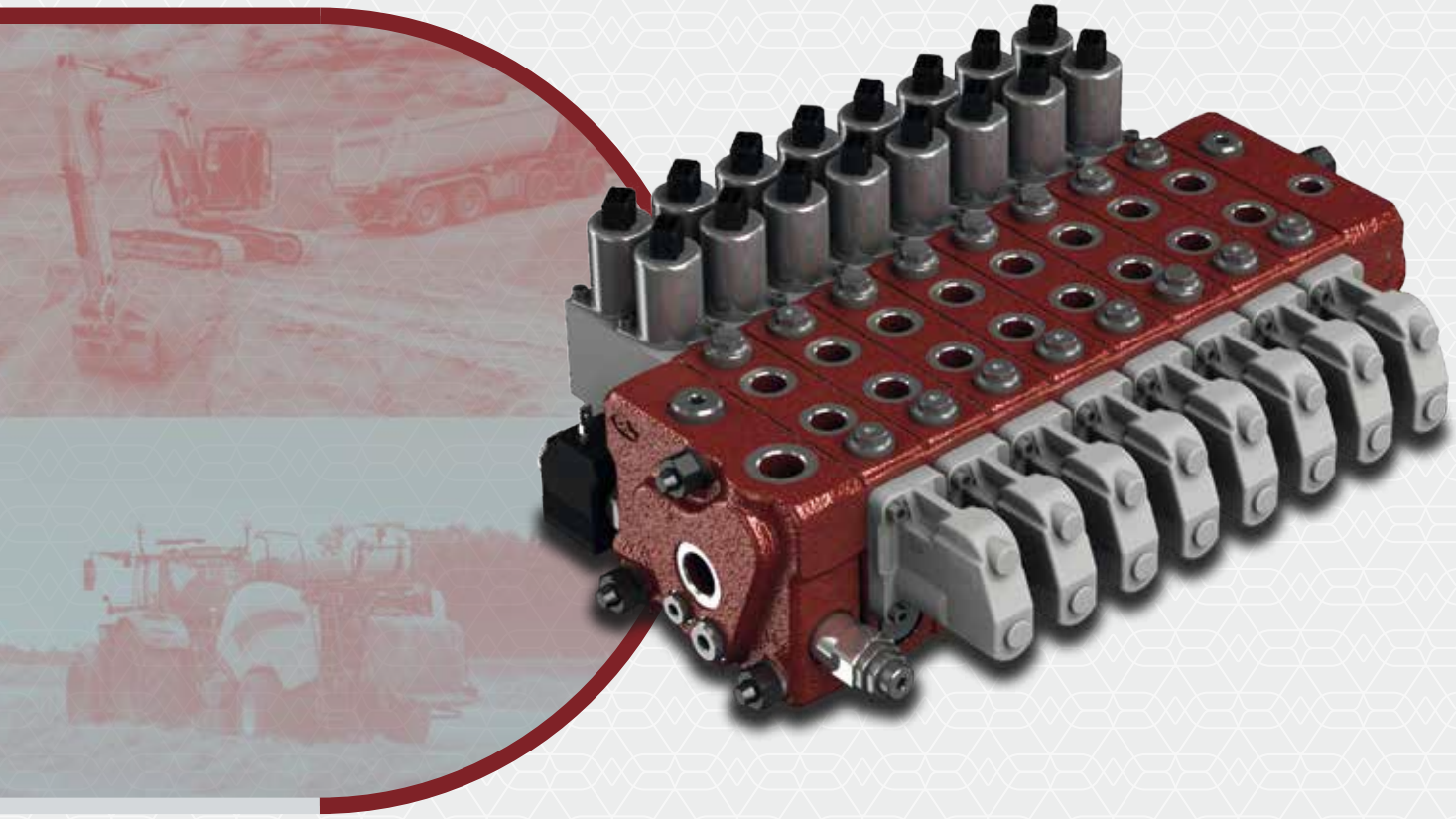
walvoil

MOTION BY PEOPLE

DPX Series

Full Flow Sharing Sectional Valve





DIRECTIONAL 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.
Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

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

1st edition February 2026

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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



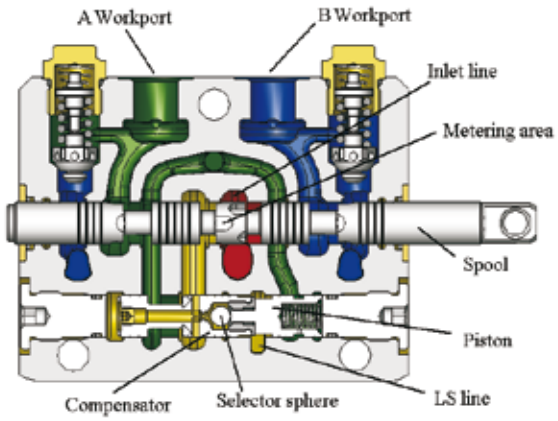
DPX100



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 costant 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):

$$Q \alpha A \sqrt{\Delta P / \rho}$$

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 mantain control of all functions, though at reduced speed of active functions.

Advantages and options

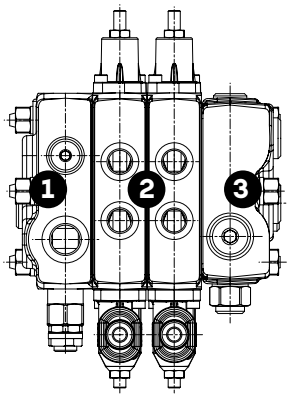
- Energy saving on closed center system, is produced only required flow and pressure by the actuators.
- The flow sharing technology permits multiple movements even with flow saturation.
- Flow passage design allows high P and T flow rate in a standard valve dimension.
- Inlet section with unidirectional 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.



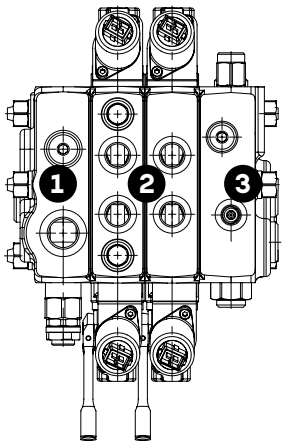
DPX050
1: AM or AN inlet sections
2: P or Q working sections
3: RP or RQ working sections with outlet

DPX100
1: AM or AN inlet sections
2: P or Q working sections
3: RF outlet sections

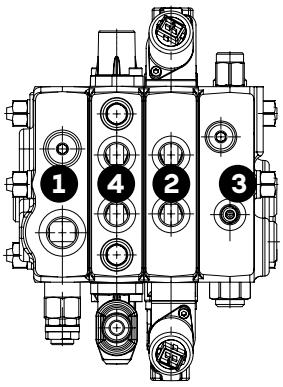
DPX160
1: AM or AN inlet sections
2: P or Q working sections
3: RC outlet sections

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 configurated 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 working sections 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

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 Std.	DPX100 HP	DPX100 HF	DPX160 Std.	DPX160 HP
Nominal flow rating	inlet port with compensator, with 14 bar - *200 psi* stand-by (margin pressure)	80 l/min *21 US gpm*	120 l/min *32 US gpm*	120 l/min *32 US gpm*	>120 l/min *>32 US gpm*	230 l/min *61 US gpm*	
	working ports, with 14 bar - *200 psi* stand-by (margin pressure)	50 l/min *13 US gpm*	90 l/min *24 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[1] *5550 psi*[1]	300 bar	380 bar [3]
	A and **B** working ports	350 bar *5100 psi*	300 bar *4350 psi*	420 bar[1] *6000 psi*[1]	420 bar[1] *6000 psi*[1]	300 bar	420 bar [3]
Back pressure (max.) on outlet **T** port	with mechanical devices	10 bar - *145 psi*					
	with hydraulic/pneumatic devices	30 bar - *435 psi*					
	with electric/electrohydraulic devices	see related pages					
Standard internal leakage A(B)⇒T	**On std.working section**						
	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*	
	On Low Leak section						
	Δp=180 bar	max. 3 cm³/min *max. 0.18 in³/min*	max. 3 cm³/min *max. 0.18 in³/min*	-	-	-	
	with port valves, Δp=180 bar - *2600 psi*	max. 4 cm³/min *max. 0.24 in³/min*	max. 4 cm³/min *max. 0.24 in³/min*	-	-	-	
Fluido		Mineral oil					
Fluid temperature range	standard configuration	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	19/18/15 - 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 BS 2779	ISO 263 ANSI B1.1 unified	ISO 262	ISO 262	ANSI B1.20.3
CAVITY DIMENSION ACCORDING TO	ISO	1179	11926	9974-1	6149	
	SAE		J1926		J2244	J476a
	DIN	3852-2 shape X or Y		3852-1 shape X or Y		

NOTE [4]: Metric threading is available on request

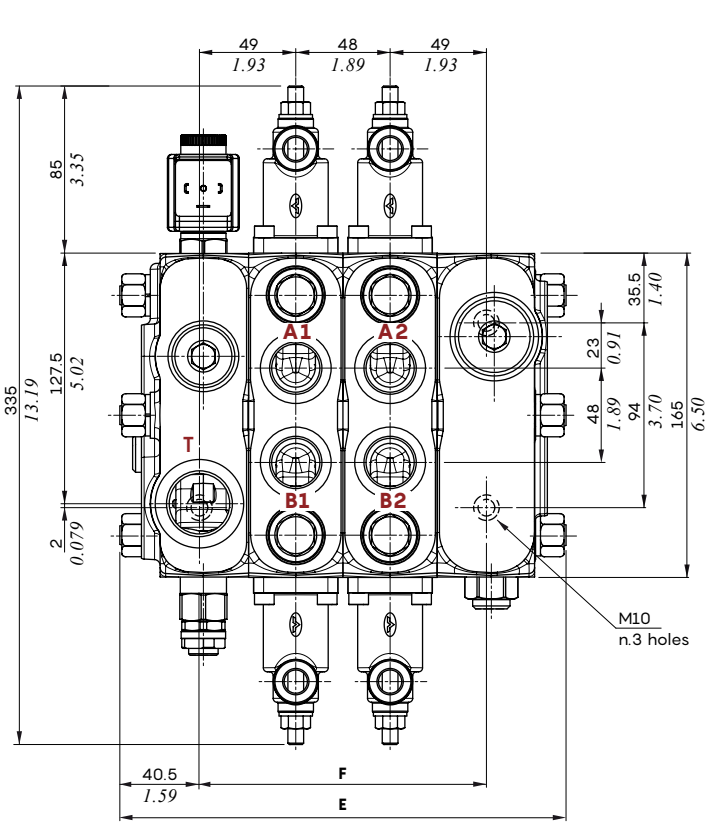
PORTS	DPX050		DPX100		DPX160	
THREADING	BSP	UN-UNF	BSP	UN-UNF	BSP	UN-UNF
P inlet	G 1/2	3/4-16 (SAE 8)	G 1/2 - G 3/4[5]	7/8-14 (SAE10) 1 1/16-12 (SAE12)[5]	G 3/4	1 1/16-12 (SAE12)
A and **B** ports	G 3/8	9/16-18 (SAE 6)	G 3/8 G 1/2[5] - G 3/4[6]	3/4-16 (SAE8) 1 1/16-12 (SAE12)[6]	G 3/4	1 1/16-12 (SAE12)
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		

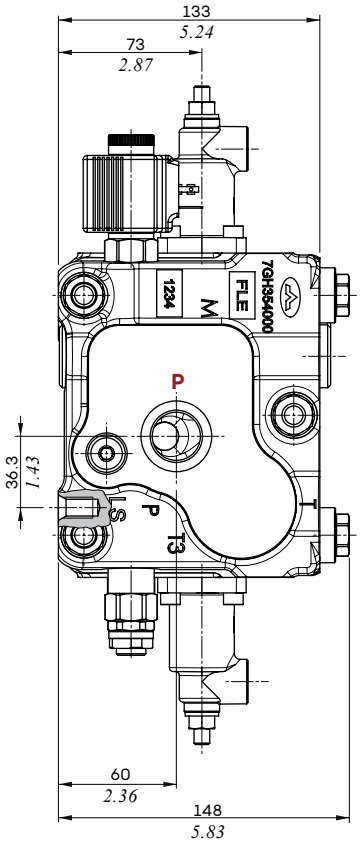
NOTE:
[5] - Optional threading / [6] - only for High Flow sections

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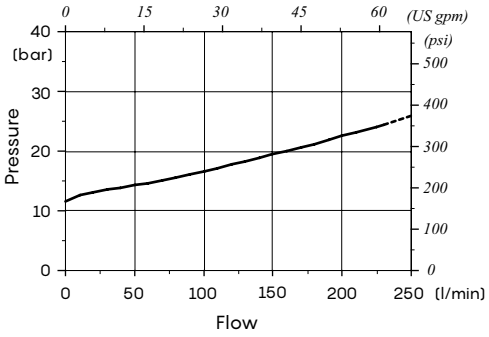
Dimensional data and performance



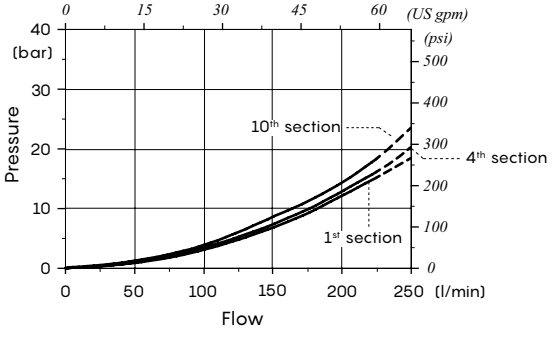


TYPE	E		F	
	mm	*in*	mm	*in*
DPX160/1	179	*7.05*	98	*3.86*
DPX160/2	227	*8.94*	146	*5.75*
DPX160/3	275	*10.83*	194	*7.64*
DPX160/4	323	*12.72*	242	*9.53*
DPX160/5	371	*14.61*	290	*11.42*
DPX160/6	419	*16.50*	338	*13.31*
DPX160/7	467	*18.39*	386	*15.20*
DPX160/8	515	*20.28*	434	*17.09*
DPX160/9	563	*22.17*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

P⇒T Pressure drop inlet compensator (margin pressure)

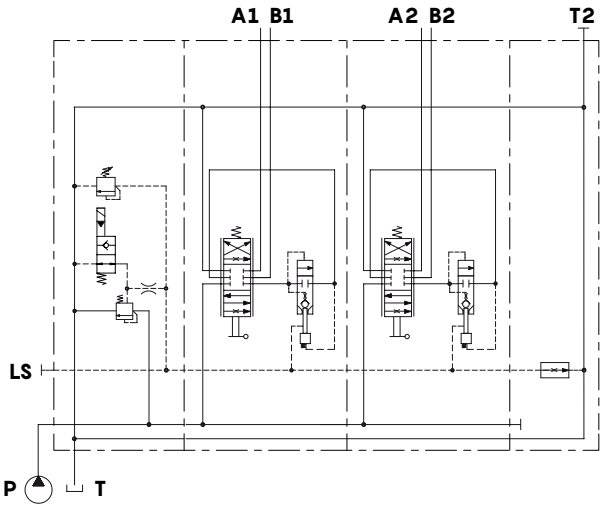


A(B)⇒T pressure drop (standard spool @ max.stroke)

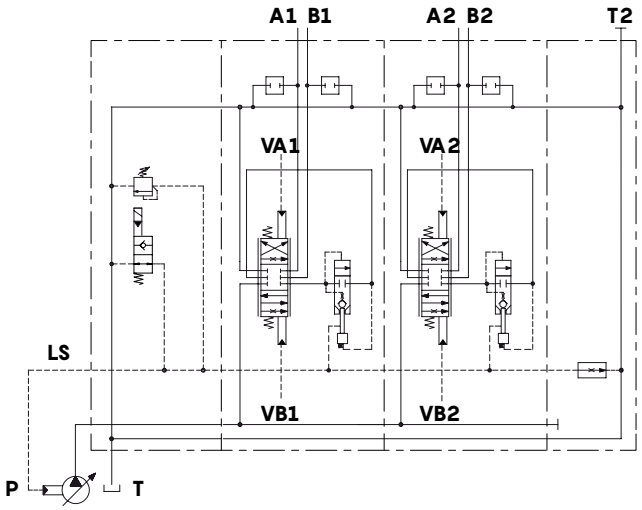


Hydraulic cuircuit

Configuration example with mechanical and hydraulic controls

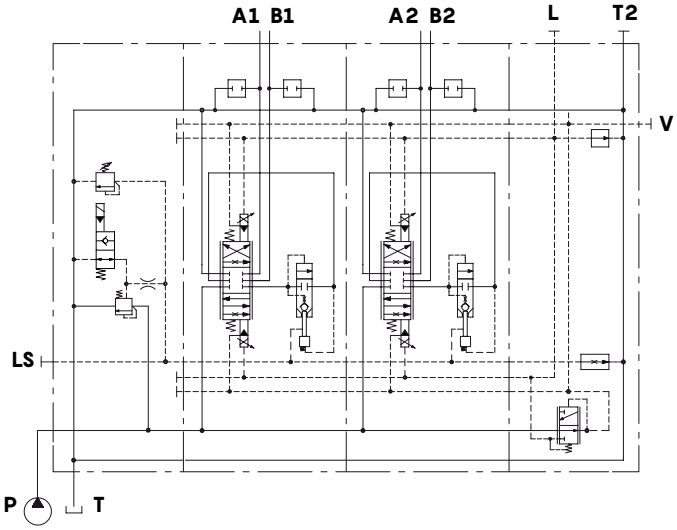


Open center circuit and lever control, with unloader valve, without port valve arrangement

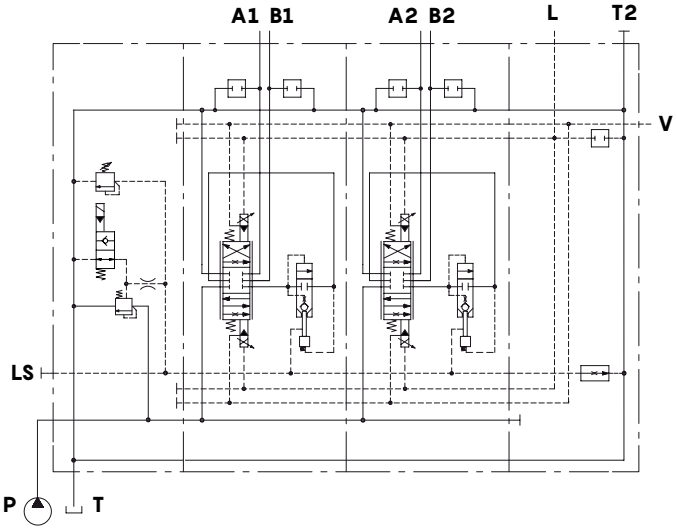


Closed center circuit and proportional hydraulic control, with unloader valve and port valve arrangement

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

Guide to configuration

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 confortable 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.

High Pressure (HP) valve configuration

DPX160 Flow Sharing valves are available both for Standard and High pressure (HP) configuration.
The main difference between the two configurations is the max. reachable pressure.
In details:

DPX160
- Max. pressure on P inlet port and on A/B working ports = 300 bar - *4350 psi*

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 configurated for Standard pressure or HP, a mixed configuration — Standard/HP — is available by combining only the sections needed.

Closed center type inlet section: one single solution for Standard and HP pressures.
Open center type inlet section: separate solutions for Standard and HP pressures..
Priority inlet section: configuration available only for Standard pressure.
Working sections: separate solutions for Standard and HP pressures.
Outlet section: one single solution for Standard and HP pressures.

Example of entirely Standard Pressure valve configuration

DPX160/2/AM1A(TGW3-175\ELN)/P-E108(150\150)-8IMNOH.U3T/Q-E108(150\150)-8IMNOH/RC1A-12VDC

- Std open center inlet section or Std Pressure closed center inlet section
- Std Pressure working sections
- Standard Pressure outlet section

Example of entirely High Pressure (HP) valve configuration

DPX160HP/2/AM1A(TGW5-300\ELN)/P-E108(150\150)-8IMNOH.U3T/Q-E108(150\150)-8IMNOH/RC1A-12VDC

- HP open center inlet section or Std Pressure closed center inlet section
- HP working sections
- Standard Pressure outlet section

Example of mixed - Standard/HP - valve configuration

DPX160/2/AM1A(TGW3-175\ELN)/P-E108(150\150)-8IMNOH.U3T/HP-Q-E108(150\150)-8IMNOH/RC1A-12VDC

- Std open center inlet section or Std Pressure closed center inlet section
- Std Pressure working section
- HP working section
- Standard Pressure outlet section

Complete section ordering codes

A Mechanical-hydraulic controls configuration:

Nr. of working sections

DPX160/2/AN1A(TGW3-175/ELN)/P-108(150/150)-8SLP.U3T/Q-E108(150/150)-8IMOHF3N/RC1A-.....-12VDC

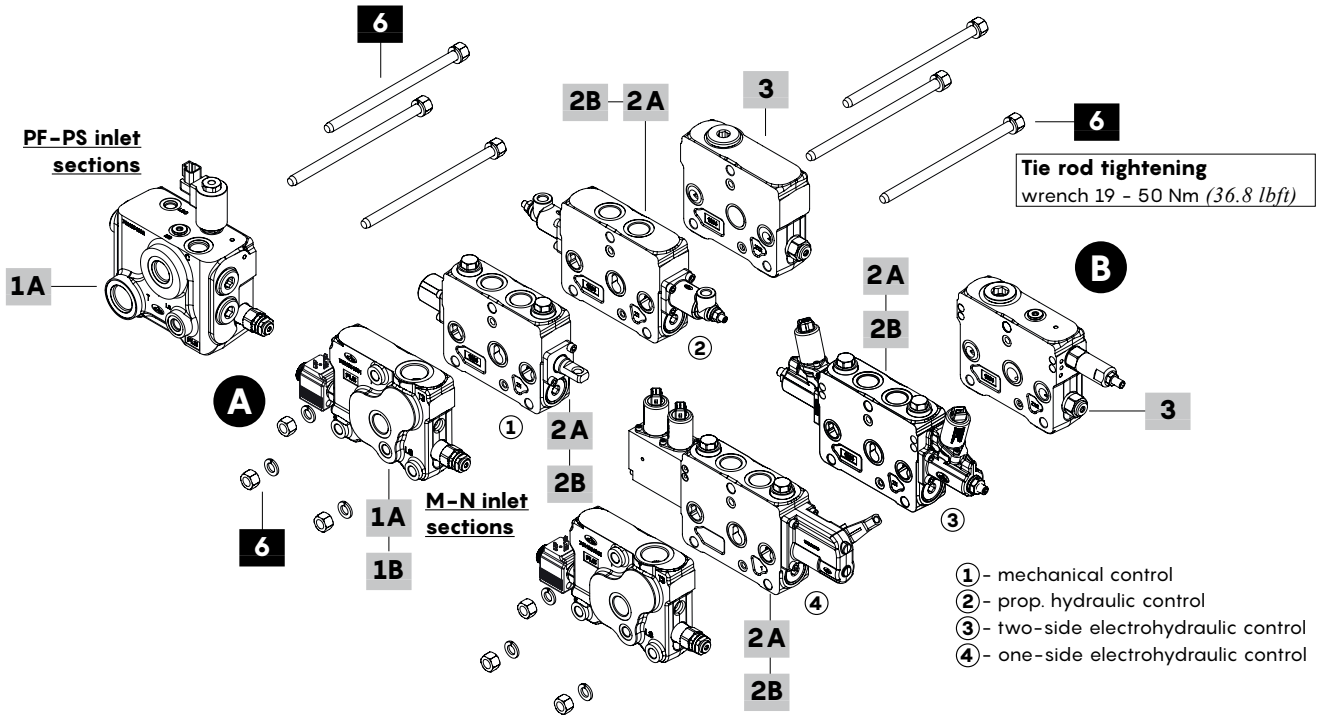
1A 1B — 2A 2B — 3 — 4 — 5

DPX160: Standard pressure valve
DPX160HP: High Pressure valve
For working conditions and guide configuration see page 5, 6, 122

B Electrohydraulic controls configuration:

DPX160/2/AN1A(TGW3-175/ELN)/PZ-E108(150/150)-8EZ3LQ.U3T/PE-E108(150/150)-8EB3F3.U3T/RCR3A-.....-12VDC

1A 1B — 2A 2B — 3 — 4 — 5



1A Std pressure inlet section *

Open Center circuit
TYPE: **DPX160/M3B(TGW3-175/ELN)-12VDC**
CODE: 650203023S
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**
CODE: 650203025S
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**
CODE: 650203024S
DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve
TYPE: **DPX160/M4B(TGW3-175/ELN)-12VDC**
CODE: 650203026S
DESCRIPTION: As type M3, with T3 side outlet port (plugged)
TYPE: **DPX160/PF1A\TGW3-175\VP-D(1)-SB10-Q40\CF(1)-SB14**
CODE: 650203301S
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

1A Std pressure inlet section *

Closed Center circuit
TYPE: **DPX160/N1A(TGW3-175/ELN)-12VDC**
CODE: 650203019S
DESCRIPTION: Without compensator, with pressure relief valve and unloader valve, with P-T-LS ports
TYPE: **DPX160/N1A(SO/TGW3-175/ELN)-12VDC**
CODE: 650203315S
DESCRIPTION: As previous one with non-return flow limiter from inlet section to working section and by-pass valve
TYPE: **DPX160/N1A(SU/TGW3-175/ELN)-SAE-12VDC**
CODE: 650201326S
DESCRIPTION: With non-return flow limiter from working section to inlet section and by-pass valve
TYPE: **DPX160/N2A(TGW3-175/ELN)-SAE-12VDC**
CODE: 650203022S
DESCRIPTION: As N1 type, with T3 side outlet port (plugged)
TYPE: **DPX160/PS1A\TGW3-175\VP-D(1)-SB10-Q40\ESO32N-12VDC**
CODE: 650203300S
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

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

Complete section ordering codes

1B High pressure inlet section *

Open Center circuit
TYPE: **DPX160HP/M3B(TGW5-350/ELN)-12VDC**
CODE: 650203031S
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**
CODE: 650203033S
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**
CODE: 650203032S
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)

2A Std pressure working section *

Mechanical control
TYPE: **DPX160/Q-108(150/150)-8SLP**
CODE: 650151001S
DESCRIPTION: With dust-proof plate, without port valve arrangement
TYPE: **DPX160/P-108(150/150)-8SLP.UL3T**
CODE: 650101007S
DESCRIPTION: As previous one with port pressure relief valve arrangement
TYPE: **DPX160/P-108(150/150)-8SLP.US3T**
CODE: 650101008S
DESCRIPTION: With port antishock valve arrangement
Proportional hydraulic control
TYPE: **DPX160/Q-E108(150/150)-8IMOHF3N**
CODE: 650151002S
DESCRIPTION: With spool stroke limiter, without port valve arrang.
TYPE: **DPX160/P-E108(150/150)-8IMOHF3N.UL3T**
CODE: 650101009S
DESCRIPTION: As previous one with port pressure relief valves arrang.
TYPE: **DPX160/P-E108(150/150)-8IMOHF3N.US3T**
CODE: 650101010S
DESCRIPTION: With port antishock valve arrangement
Two-side proportional electrohydraulic control
TYPE: **DPX160/QE-E108(150/150)-8EB3F3-12VDC**
CODE: 650101011S
DESCRIPTION: With spool stroke limiter, without port valve arrang.
TYPE: **DPX160/PE-E108(150/150)-8EB3F3.UL3T-12VDC**
CODE: 650101012S
DESCRIPTION: As previous one with port pressure relief valves arrang.
TYPE: **DPX160/PE-E108(150/150)-8EB3F3.US3T-12VDC**
CODE: 650101013S
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 *

Mechanical control
TYPE: **DPX160HP/Q-108(150/150)-8SLP**
CODE: 650113010S
DESCRIPTION: With dust-proof plate, without port valve arrangement
TYPE: **DPX160HP/P-108(150/150)-8SLP.US3T**
CODE: 650103027S
DESCRIPTION: As previous one with port antishock valve arrangement
Proportional hydraulic control
TYPE: **DPX160HP/Q-E108(150/150)-8IMOHF3N**
CODE: 650113011S
DESCRIPTION: With spool stroke limiter, without port valve arrang.
TYPE: **DPX160HP/P-E108(150/150)-8IMOHF3N.US3T**
CODE: 650103028S
DESCRIPTION: As previous one with port antishock valve arrangement

2B High pressure working section *

Two-side proportional electrohydraulic control
TYPE: **DPX160HP/QE-E108(150/150)-8EB3F3-12VDC**
CODE: 650113012S
DESCRIPTION: With spool stroke limiter, without port valve arrang.
TYPE: **DPX160HP/PE-E108(150/150)-8EB3F3.US3T-12VDC**
CODE: 650103029S
DESCRIPTION: As previous one with port antishock valve arrangement
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 *

Outlet section is the same type for standard and High Pressure valve
For mechanical or proportional hydraulic configuration
TYPE: **DPX160/RC1A** CODE: 650303002S
DESCRIPTION: With bleed valve and T2 upper port (plugged)
TYPE: **DPX160/RC3A** CODE: 650303004S
DESCRIPTION: With bleed valve and T2, P1-T1-LS1 side ports (plugged)
TYPE: **DPX160/RC3A-CL-12VDC** CODE: 650303020S
DESCRIPTION: As previous one , with clamp release function
For electrohydraulic or mixed configuration
TYPE: **DPX160/RCN1A** CODE: 650303014S
DESCRIPTION: Without pressure reducing valve, external pilot and drain (V-L ports), with Bleed valve and T2 upper port (plugged)
TYPE: **DPX160/RCN3A** CODE: 650303016S
DESCRIPTION: As previous one, with P1-T1-LS1 side ports (plugged)
TYPE: **DPX160/RCN3A-CL-12VDC** CODE: 650303021S
DESCRIPTION: As previous, with clamp release function
TYPE: **DPX160/RCR1A-TAP(VL)** CODE: 650303005S
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)** CODE: 650303017S
DESCRIPTION: As previous one, with P1-T1-LS1 side ports (plugged)
TYPE: **DPX160/RCR3A-CL-TAP(VL)-12VDC**
CODE: 650303022S
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 7).

5 Voltage

Specify the voltage of electric devices.

6 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

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

Inlet section part ordering codes

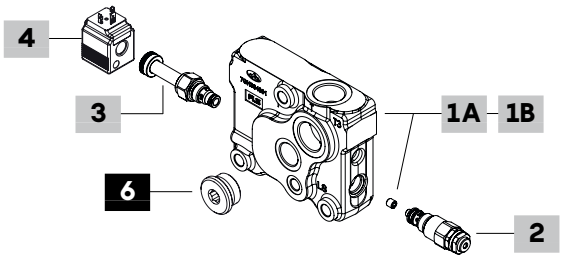
Valve setting (bar)

DPX160 / A N1 A (TGW3 - 175 / ELN) - ..... - 12VDC

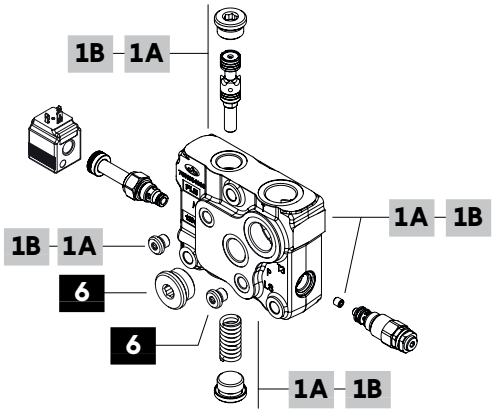
1A **1B** **2** **3** **5** **4**

DPX160: Standard pressure section
DPX160HP: High Pressure section

N: Closed Center



M: Open Center



1A Std pressure inlet section kit * page 127

Open Center circuit

TYPE: **DPX160/M3-EL** CODE: YFIA105309S
DESCRIPTION: With compensator, P-T-LS-M ports (M plugged), arranged for unloader valve

TYPE: **DPX160/M3(SU)-EL** CODE: YFIA105310S
DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/M3(SO)-EL** CODE: YFIA105311S
DESCRIPTION: With non return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160/M4-EL** CODE: YFIA105308S
DESCRIPTION: As type M3, with T3 side outlet port

Closed Center circuit

TYPE: **DPX160/N1-EL** CODE: YFIA105320S
DESCRIPTION: Without compensator, with P-T-LS ports, arranged for unloader valve

TYPE: **DPX160/N1(SU)-EL** CODE: YFIA105327S
DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160/N1(SO)-EL** CODE: YFIA105328S
DESCRIPTION: With non return flow limiter from inlet section to working section and by-pass valve

TYPE: **DPX160/N2-EL** CODE: YFIA105326S
DESCRIPTION: As N1 type, with T3 side outlet port

1B High pressure inlet section kit * page 127

Open Center circuit

TYPE: **DPX160HP/M3-EL** CODE: YFIA105329S
DESCRIPTION: With compensator, P-T-LS-M ports (M plugged), arranged for unloader valve

TYPE: **DPX160HP/M3(SU)-EL** CODE: YFIA105330S
DESCRIPTION: As previous one with non return flow limiter from working section to inlet section and by-pass valve

TYPE: **DPX160HP/M3(SO)-EL** CODE: YFIA105331S
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

2 Main pressure relief valve page 131

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

TYPE	CODE	DESCRIPTION
(TGW2-80)	0MC09002000	Range 10-120 bar *(145-1750 psi)* std setting 80 bar *(1160 psi)*
(TGW3-175)	0MC09002001	Range 40-220 bar *(580-3200 psi)* std setting 175 bar *(2550 psi)*
(TGW4-250)	0MC09002002	Range 200-350 bar *(2900-5100 psi)* std setting 250 bar *(3600 psi)*
(TGW5-300)	0MC09002003	Range 290-385 bar *(4200-5600 psi)* std setting 300 bar *(4350 psi)*
SV	XTAP524340D	Relief valve blanking plug

3 Solenoid operated unloading valve page 131

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

4 Coil

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

For complete available coil list see page 160.

5 Section threading

Only specify if it is different from **BSP** standard (see page 7).

6 Plugs *

CODE	DESCRIPTION
3XTAP740210	G1 plug, nr.1 for M4 and N2 section
3XTAP719150	G1/4 plug, nr.1 for Open Center sections

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

Inlet section part ordering codes

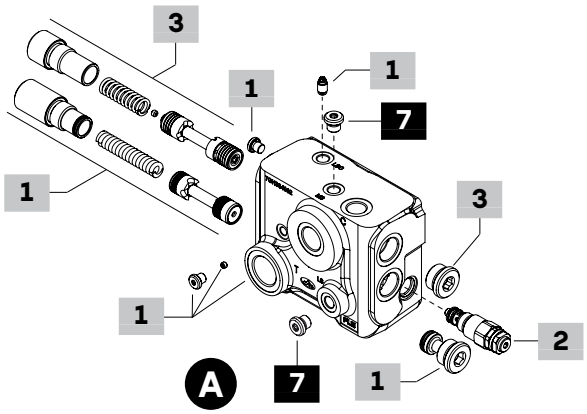
Valve setting (bar) — Priority valve stand-by (bar) — Steering max flow — Compensator stand-by (bar)

A DPX160 / PF1A \ TGW3-175 \ VR5 - VP-D(1)-SB10-Q40 \ CF(1)-SB14 - .....
1 2 1 3 1 6

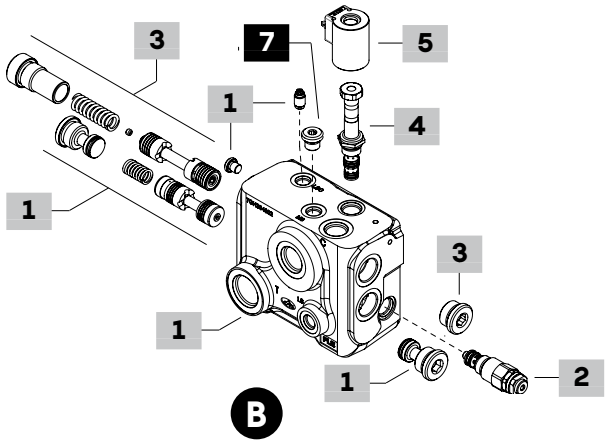
DPX160: Standard pressure valve

B DPX160 / PS1A \ TGW3-175 \ VR5 - VP-D(1)-SB10-Q40 \ ESO32N - ..... - 12VDC
1 2 1 3 4 5

PF1: Open Center



PS1: Closed Center



1 Inlet section kit * page 129

Following sections are suitable only for standard pressure valve

Open Center circuit
TYPE: **DPX160/PF1** CODE: YFIA105350S
DESCRIPTION: With compensator, P-T-LS-M3-C-LSC ports

Closed Center circuit
TYPE: **DPX160/PS1** CODE: YFIA105351S
DESCRIPTION: With shut-off spool, P-T-LS-M3-C-LSC ports
TYPE: **DPX160/PST1** CODE: YFIA105352S
DESCRIPTION: With shut-off blanking kit, P-T-LS-M3-C-LSC ports

2 Main pressure relief valve page 131

See previous page

3 Priority valve kit page 132

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 132

TYPE	CODE	DESCRIPTION
ESO32A	0EJ08002035	Without emergency override
ESO32V	0EJ08002042	With screw type emergency override
EST	XTAP324540V	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 160.

6 Section threading

Only specify if it is different from **BSP** standard (see page 7).

7 Plugs *

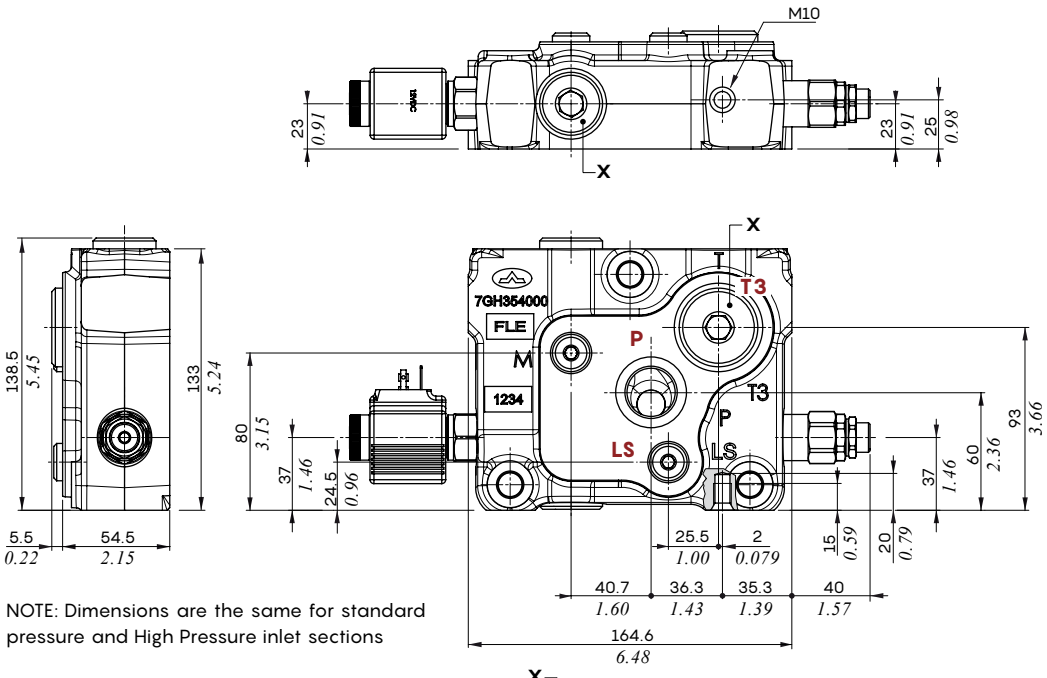
CODE	DESCRIPTION
3XTAP719150	G1/4 plug, nr.1 for PS section, nr.2 for PF section

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

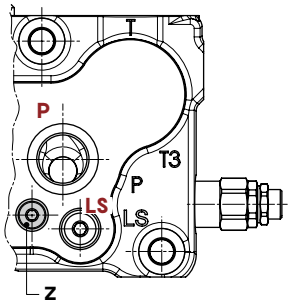
Dimensions and hydraulic circuit

Example of M Open Center section

Type M4



Types M3(SO) or M3(SU)

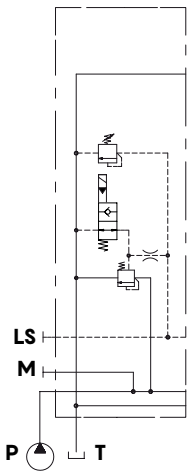


NOTE: Dimensions are the same for standard pressure and High Pressure inlet sections

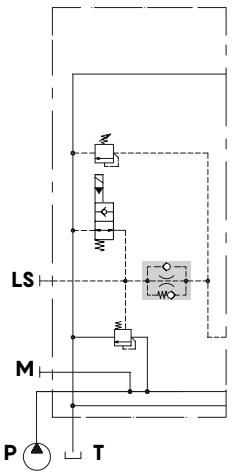
Wrenches and tightening torques

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

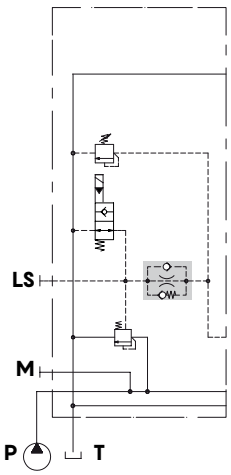
Type M3



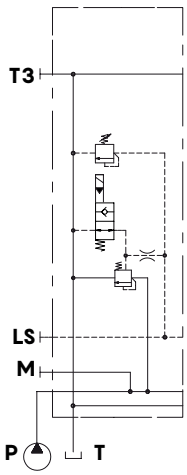
Type M3(SU)



Type M3(SO)



Type M4

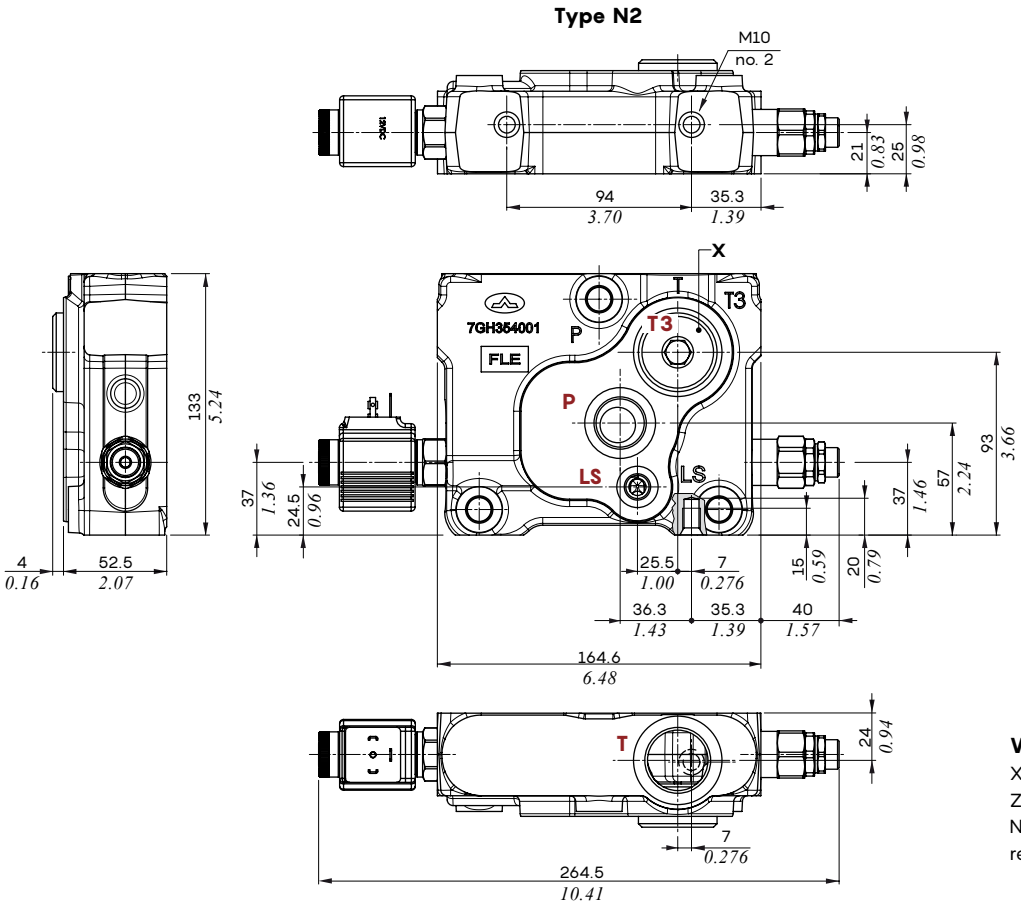


Inlet section

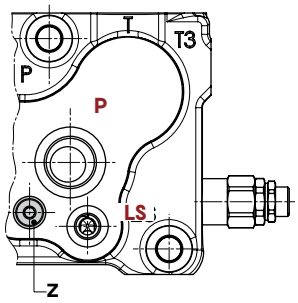
Dimensions and hydraulic circuit

Example of N Closed Center section

Type N2



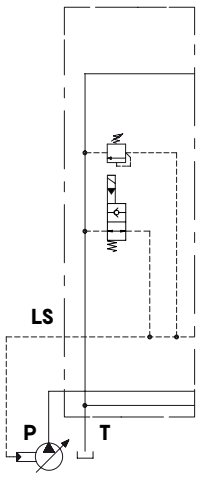
Type N1(SO) or N1(SU)



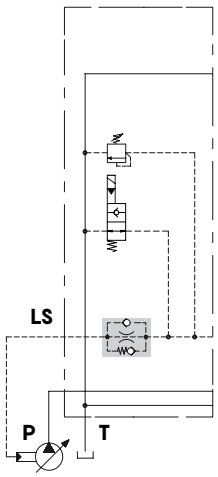
Wrenches and tightening torques

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

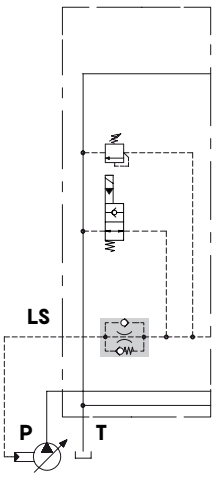
Type N1



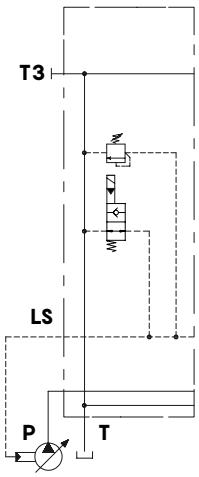
Type N1(SU)



Type N1(SO)

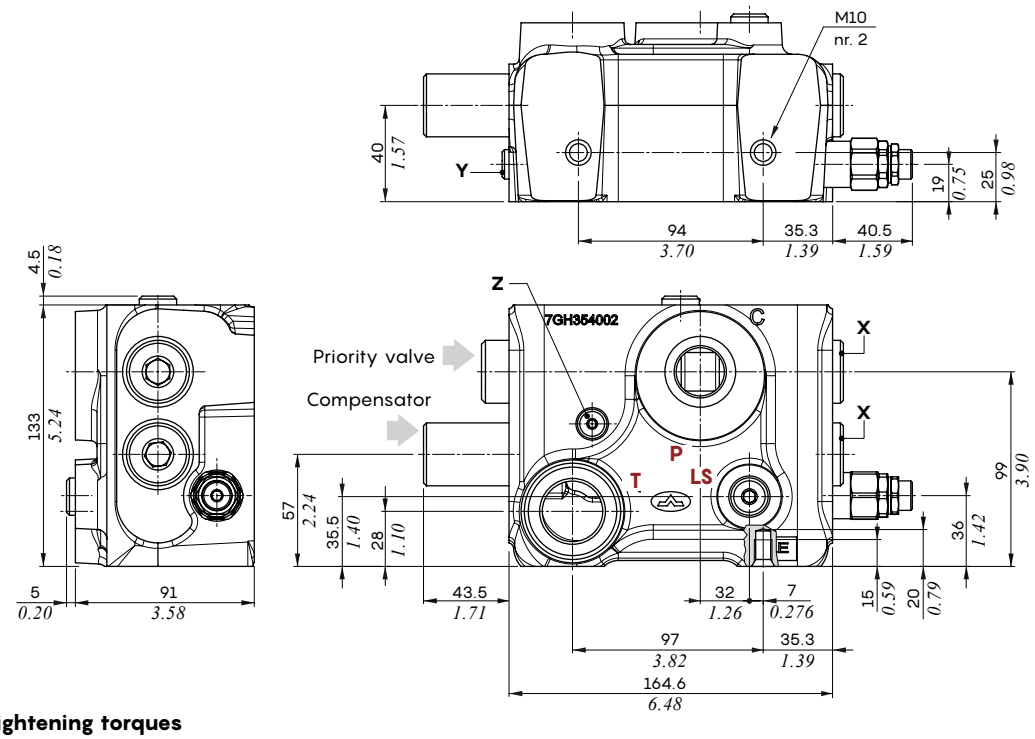


Type N2



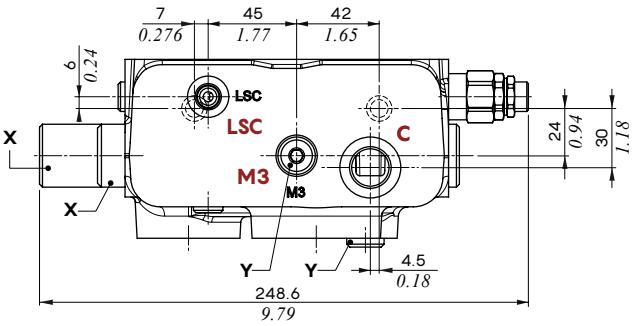
Dimensions and hydraulic circuit

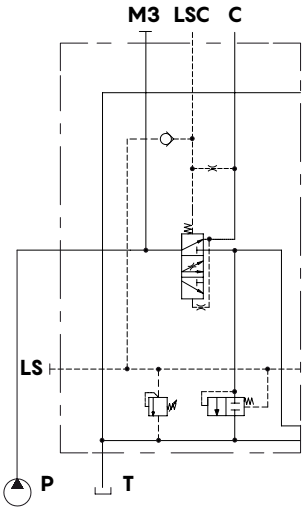
PF1 Open Center section with priority valve



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

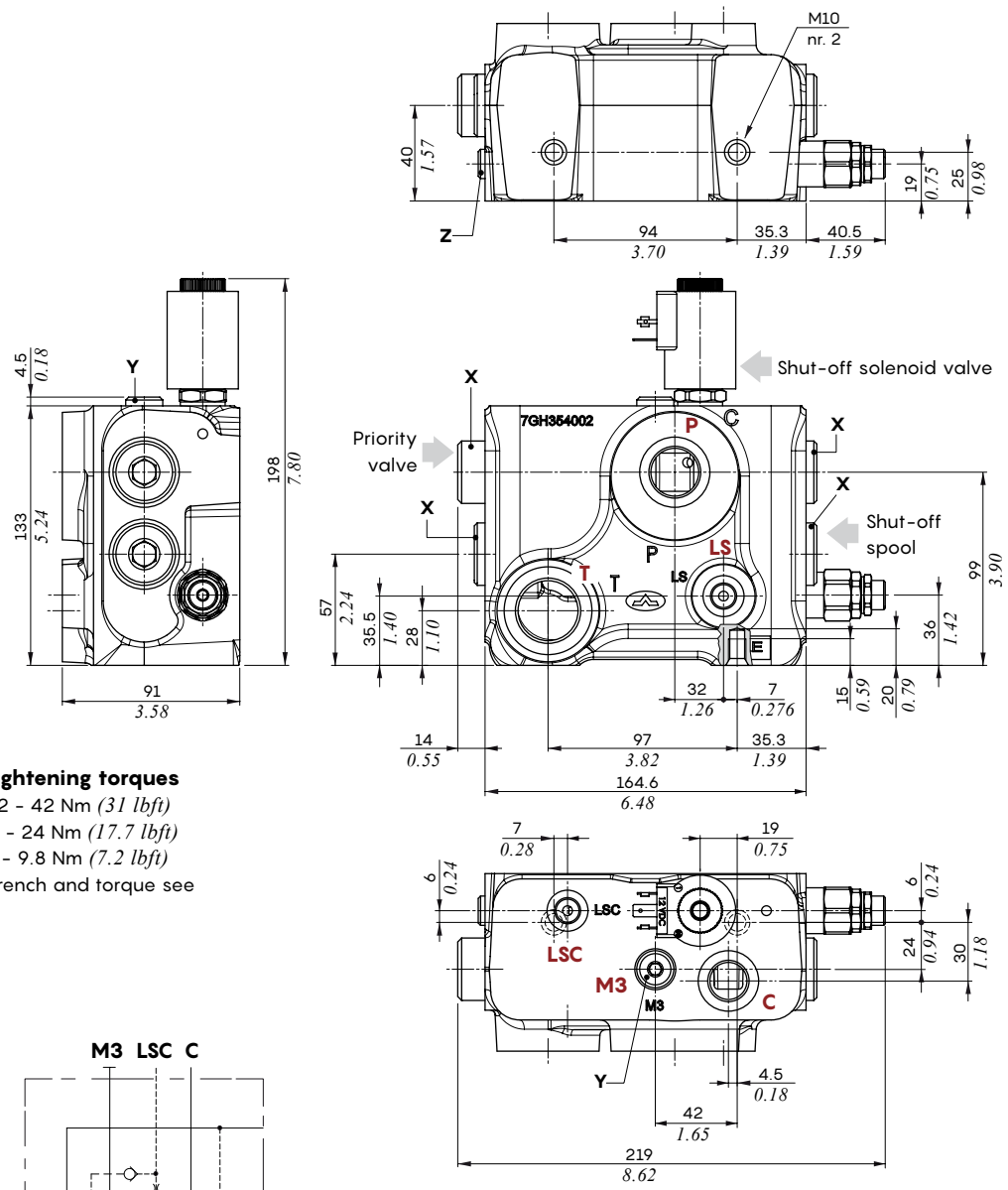




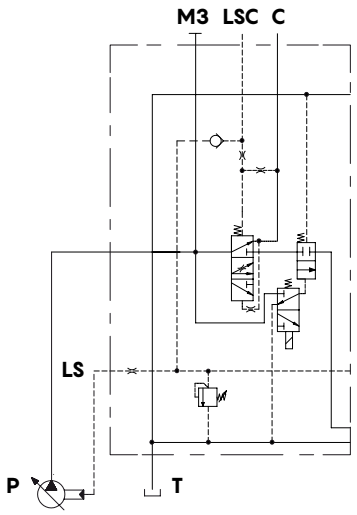
Inlet section

Dimensions and hydraulic circuit

PS1 Closed Center section with priority valve and shut-off

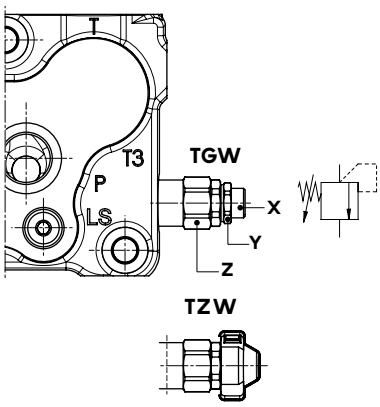


Wrenches and tightening torques
X = allen wrench 12 - 42 Nm *(31 lbft)*
Y = allen wrench 6 - 24 Nm *(17.7 lbft)*
Z = allen wrench 4 - 9.8 Nm *(7.2 lbft)*
NOTE: for valves wrench and torque see related pages

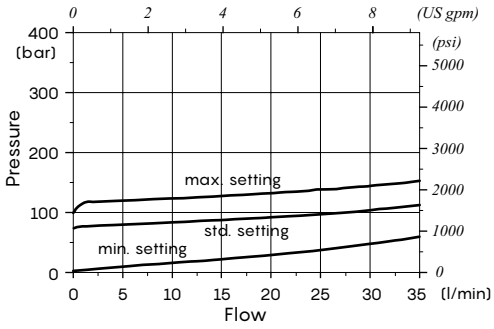


Main pressure relief valve

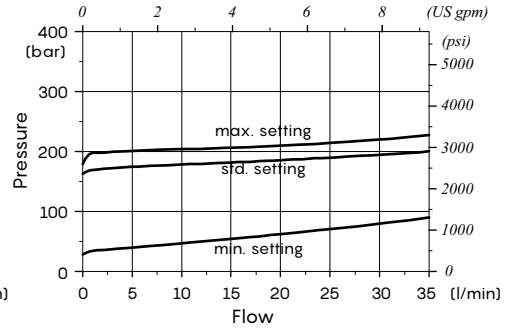
Setting types



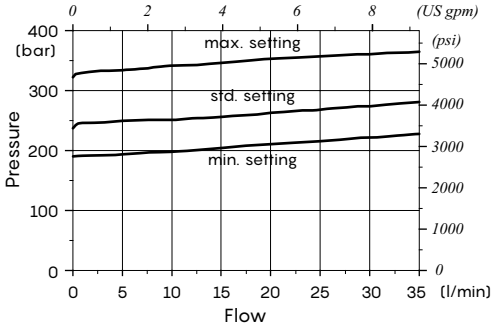
Setting range: type TGW2



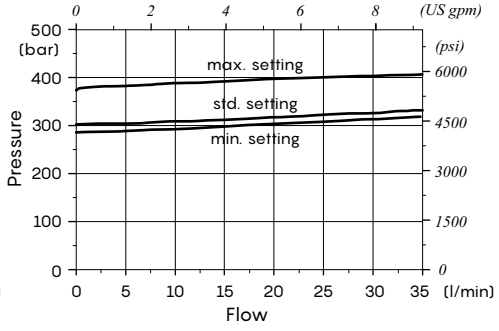
Setting range: type TGW3



Setting range: type TGW4



Setting range: type TGW5

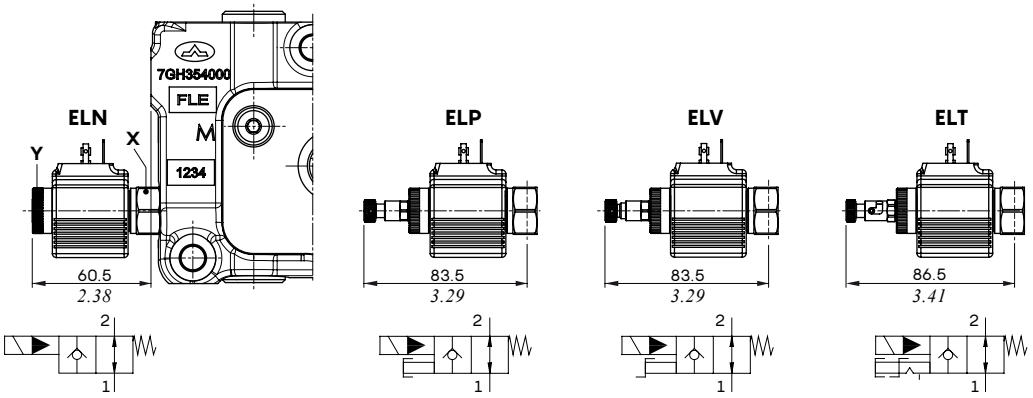


Legenda
TGW: free setting
TZW: set and locked valve
(cap code 4COP126301, n.2 pcs)
RAL3003 pigmented

Wrenches and tightening torques
X = allen wrench 5
Y = wrench 19 - 20 Nm *(14.7 lbft)*
Z = wrench 24 - 42 Nm *(31 lbft)*

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

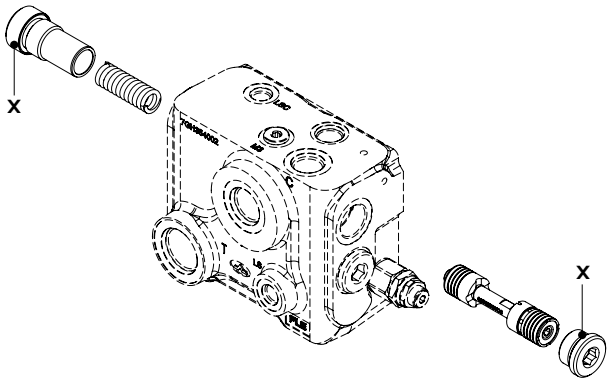
Wrenches and tightening torques
X = wrench 24 - 30 Nm *(22 lbft)*
Y = manual tightening

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 160.

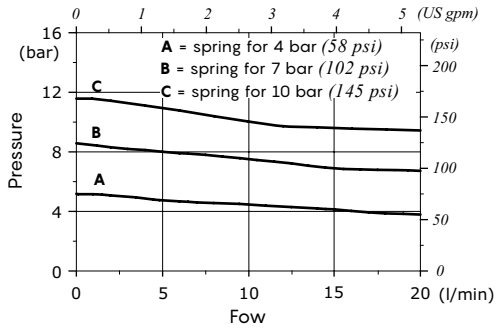
Inlet section

Priority valve kit

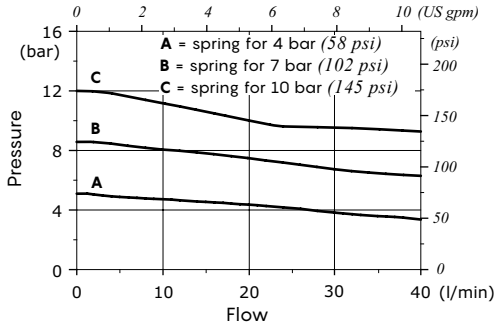


Wrenches and tightening torques
X = allen wrench 12 - 42 Nm *(31 lbft)*

Stand-by (margin pressure) vs. regulated flow
Regulated flow = 20 l/min *(5.3 US gpm)*



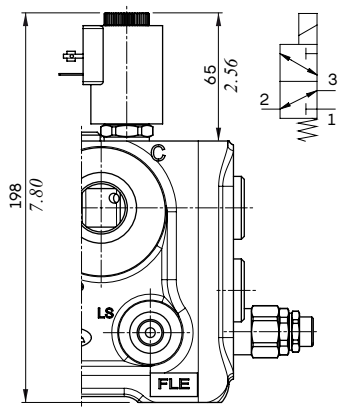
Stand-by (margin pressure) vs. regulated flow
Regulated flow = 40 l/min (*10.6 US gpm*)



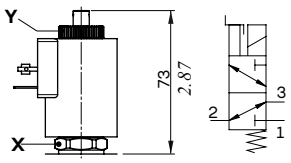
Shut-off solenoid valve

Manual emergency types

ESO32A



ESO32V



Legenda
ESO32A: without emergency
ESO32V: screw emergency override

Wrenches and tightening torques
X = wrench 24 - 30 Nm *(22 lbft)*
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 160.

Working section parts ordering codes (mechanical, hydraulic)

A Mechanical control configuration:

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

DPX160 / P - 108(150/150) - 8 SLP . UL1(100) UL2(120) - .....

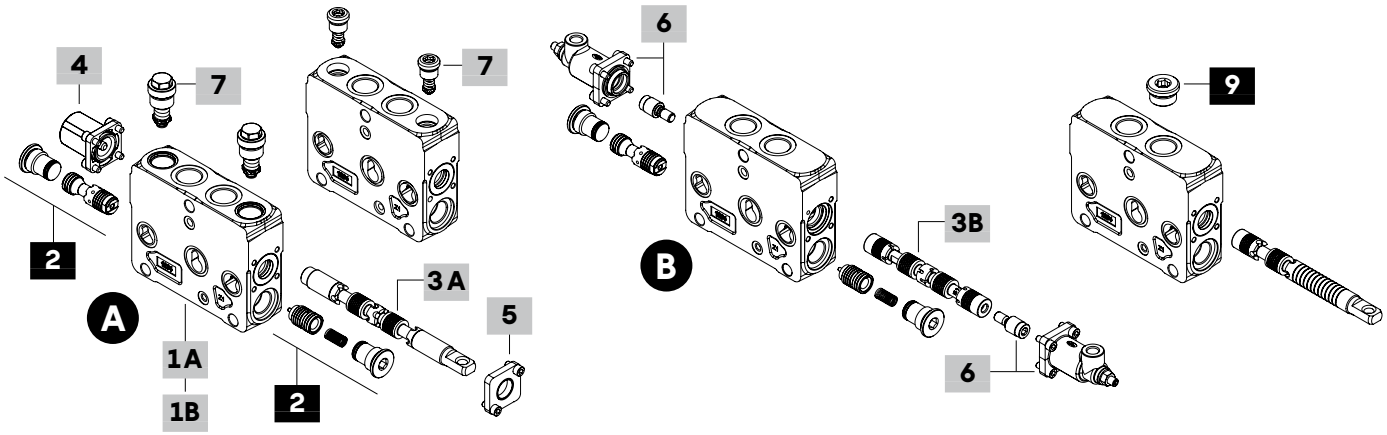
1A 1B 3A 4 5 7 8

DPX160: Standard pressure section
DPX160HP: High Pressure section

B Proportional hydraulic control configuration:

DPX160 / Q - E108(150/150) - 8IMF3N - .....

3B 6



1A Std press. working section kit * page 137

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 proportional 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 137

For mechanical control
TYPE: **DPX160HP/Q-FPM** CODE: 5EL1053015V
DESCRIPTION: Without port valve arrangement
TYPE: **DPX160HP/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 proportional hydraulic control
TYPE: **DPX160HP/Q-IM-FPM** CODE: 5EL1053015AV
DESCRIPTION: Without port valve arrangement
TYPE: **DPX160HP/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

TYPE	CODE	DESCRIPTION
-	5CAS321061V	Compensator

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

3A Spool for mechanical control page 138

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		
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 to tank in neutral position		
208(150)	3CU8110208	150 l/min *(39.5 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

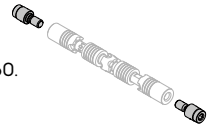
Working section part ordering codes (mechanical, hydraulic)

3B Spool for hydraulic control page 138

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 to tank in neutral position		
E208(150)	3CU871E208	150 l/min *(39.5 US gpm)* flow
E213(100)	3CU871E213	100 l/min *(26.4 US gpm)* flow
E212(80)	3CU871E212	80 l/min *(21 US gpm)* flow
E203(50)	3CU871E203	50 l/min *(13.2 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

NOTE: to order these spools as spare parts
it's necessary to order nr. 2 pins code 3VIT116360.
This rule is not required for floating spools



4 "A" side spool positioners page 140

TYPE	CODE	DESCRIPTION
7FTNA	5V07210101	With friction and neutral pos. notch
8MD	5V08109000	3 postions with spring return to neutral position
For floating circuit (spool 5)		
13	5V13109000	4 positions, detent in 4th position with spring return to neutral position

5 "B" side spool control kit page 141

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 143

TYPE	CODE	DESCRIPTION
8IMNOH	5IDR209304V-H	Range 8-28 bar *(116-406 psi)*
8IMNOHF3	5IDR209305V-H	As previous with spool stroke limiter
For floating circuit (spool I5)		
13IMOH	5IDR209303V-H	Range 3.1-25.6 / 0-30 bar *(45-371 / 0-435 psi)*
13IMPOH	5IDR209014V	Range 2-17 / 2-30 bar *(29-247 / 29-435 psi)*

7 Port valves page 153

TYPE CODE DESCRIPTION

"US" size valves

To be used with a setting pressure higher than the main overpressure valve; if used with a lower setting pressure, the spool flow rate is limited to 60 l/min *(15.8 US gpm).*

UST	XTAP221340V	Valve blanking plug
CS	5KIT426270	Anticavitation valve (for US cavity)

Fixed setting antishock and anticavitation valves with pressure relief function: setting is referred to 10 l/min *(2.6 US gpm)*

TYPE: **US (100)** CODE: 5KIT326 100
(100) = setting (bar); 100 = 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)*		

"UL" size valves

ULT	XTAP528520V	Valve blanking plug
CL	5KIT409000	Anticavitation valve (for UL cavity)

Fixed setting pressure relief valves: setting is referred to 5 l/min *(1.3 US gpm)*

TYPE: **UL (100)** CODE: 5KIT340 100 L
(100) = setting (bar); 100 = 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)*		

8 Section threading

Only specify if it is different from **BSP** standard (see page 7).

9 Plug for single acting spool *

CODE	DESCRIPTION
3XTAP732200	G3/4 plug

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

Working section parts ordering codes (electrohydraulic)

A Two-side electrohydraulic control configuration:

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

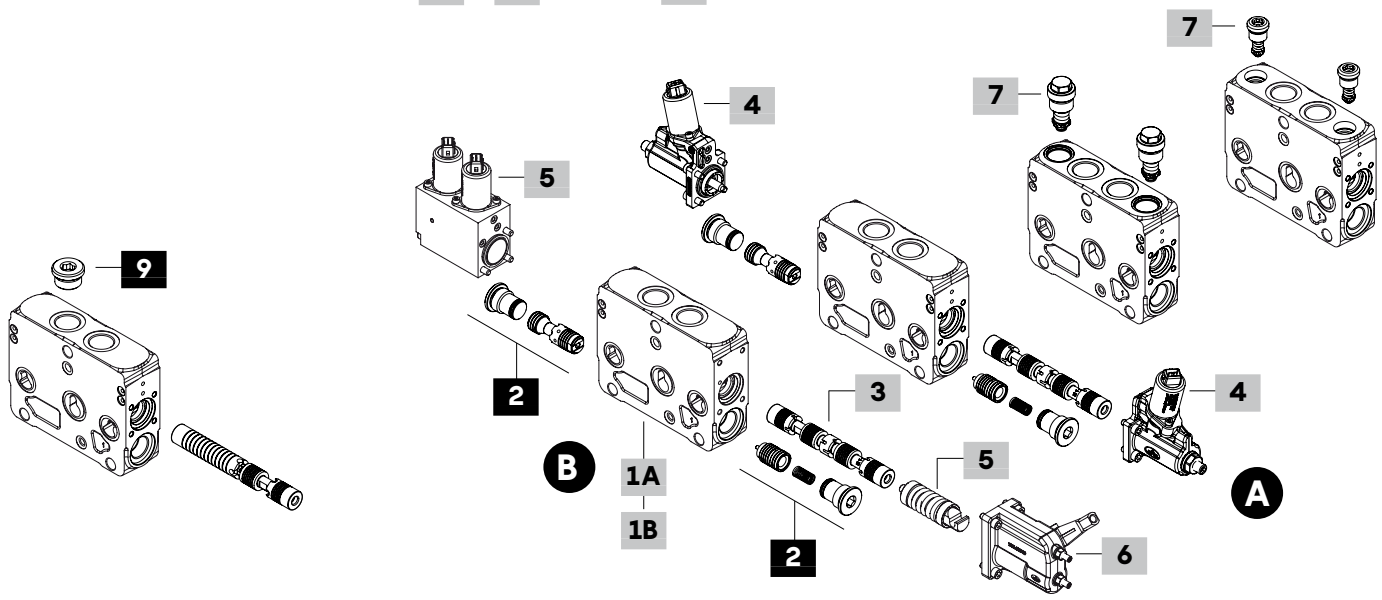
1A 1B — 3 — 4 — 7 — 8 — 4

DPX160: Standard pressure section
DPX160HP: High Pressure section

B One-side electrohydraulic control configuration:

DPX160 / QZ - E108(150/150) - 8EZ3 LQF3 - ..... - 12VDC

5 — 6 — 5



1A Std press. working section kit * page 137

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 137

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

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

Working section part ordering codes (electrohydraulic)

3 Spool page 138

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 to tank in neutral position		
E208(150)	3CU871E208	150 l/min *(39.5 US gpm)* flow
E213(100)	3CU871E213	100 l/min *(26.4 US gpm)* flow
E212(80)	3CU871E212	80 l/min *(21 US gpm)* flow
E203(50)	3CU871E203	50 l/min *(13.2 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: 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

7 Port valves page 153

TYPE	CODE	DESCRIPTION
Pressure relief valves		
UL(50)	5KIT340050L	Setting 50 bar *(725 psi)*
Antishock valves		
US(25)	5KIT326025	Setting 25 bar *(360 psi)*

For complete list see previous pages.

8 Section threading

Only specify if it is different from **BSP** standard (see page 7).

9 Plug for single acting spool*

CODE	DESCRIPTION
3XTAP732200	G3/4 plug

4 Two-side electrohydr. control page 148

TYPE	CODE	DESCRIPTION
Without lever control		
8EB3-12VDC	5IDR909312V	With AMP connector
8EB3-24VDC	5IDR909324V	As previous one
8EB34-12VDC	5IDR909329V	With Deutsch connector
8EB34-24VDC	5IDR909330V	As previous one
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
Without lever control: for floating circuit (E5 spool)		
13EB3-12VDC	5IDR919312V	With AMP connector
13EB3-24VDC	5IDR919324V	As previous one
13EB34-12VDC	5IDR919317V	With Deutsch connector
13EB34-24VDC	5IDR919318V	As previous one
With lever control		
8EB3LH-12VDC	5IDR909315AV	With AMP connector
8EB3LH-24VDC	5IDR909326AV	As previous one
8EB34LH-12VDC	5IDR909332AV	With Deutsch connector
8EB34LH-24VDC	5IDR909333AV	As previous one
8EB3LHF3-12VDC	5IDR909355V	With AMP connector with spool stroke limiter
8EB3LHF3-24VDC	5IDR909354V	As previous one
8EB34LHF3-12VDC	5IDR909334AV	With Deutsch connector with spool stroke limiter
8EB34LHF3-24VDC	5IDR909335AV	As previous one
With lever control and spool position sensor		
8EB3LHSPSD-12VDC	5IDR909341V	AMP conn. and digital sensor
8EB3LHSPSD-24VDC	5IDR909338AV	As previous one
8EB3LHF3SPSD-12VDC	5IDR909339V	AMP conn., digital sensor and spool stroke limiter
8EB3LHF3SPSD-24VDC	5IDR909336AV	As previous one
With lever control: for floating circuit (E5 spool)		
13EB3LH-12VDC	5IDR919313AV	With AMP connector
13EB3LH-24VDC	5IDR919325AV	As previous one
13EB34LH-12VDC	5IDR919319V	With Deutsch connector
13EB34LH-24VDC	5IDR919320V	As previous one
13EB3LHF3-12VDC	5IDR919314V	With AMP connector with spool stroke limiter
13EB3LHF3-24VDC	5IDR919326AV	As previous one
13EB34LHF3-12VDC	5IDR919321AV	With Deutsch connector with spool stroke limiter
13EB34LHF3-24VDC	5IDR919322V	As previous one

5 One-side electrohydr.control; "A" side page 151

These controls must be coupled with "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
With spool position sensor		
8EZ34SPSL-0.5(A)-4.5(B)-12VDC	5IDR609313V	Deutsch conn. and analog sensor
With lever control: for floating circuit (spool E5)		
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 One-side electrohydr.option; "B" side page 152

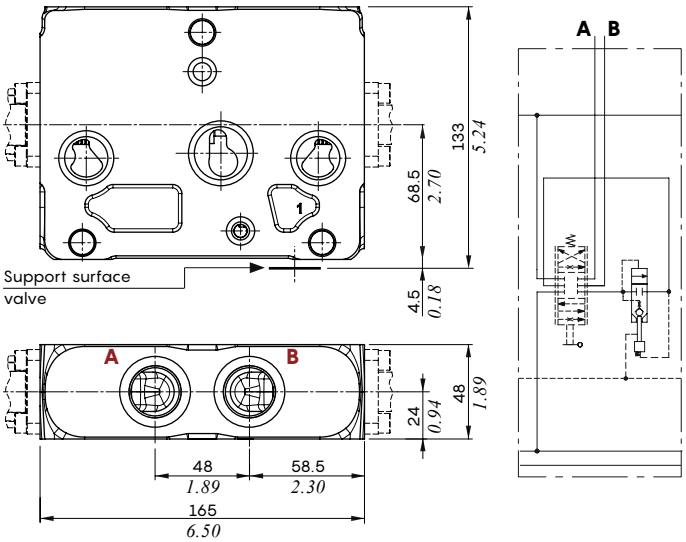
These options must be coupled with "A" side controls

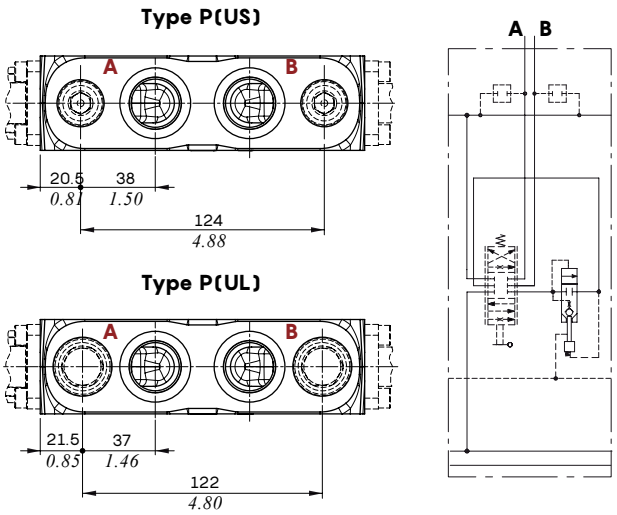
TYPE	CODE	DESCRIPTION
LQ	5LEV160700AV	Lever box
LQF3	5LEV160701AV	Lever box with spool stroke limiter
SLCQ	5COP260000V	Without lever with endcap

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

Dimensions and hydraulic circuit

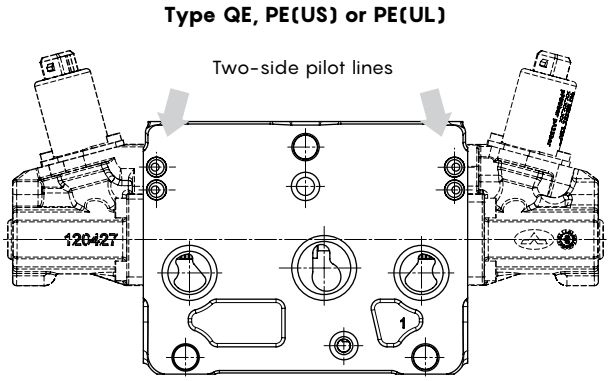
Section for mechanical and proportional hydraulic controls



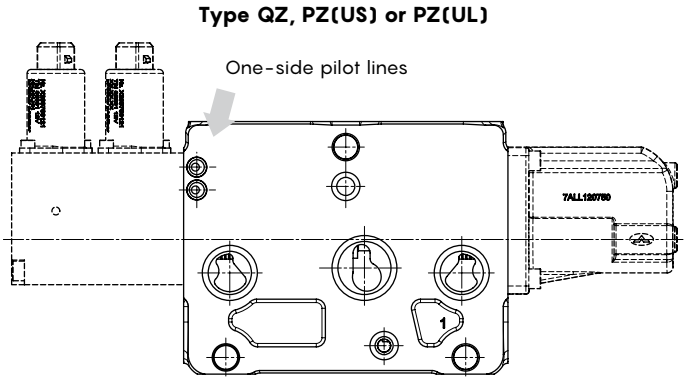


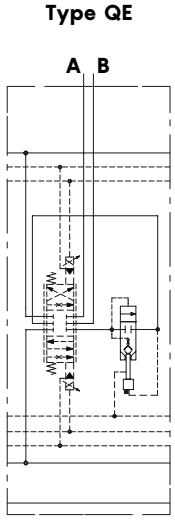
NOTE: US and UL auxiliary valves are not interchangeable: they need dedicated working sections

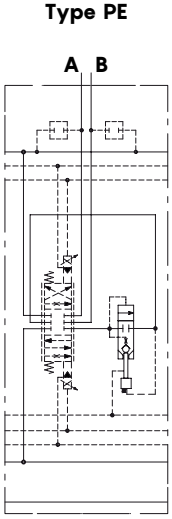
Section for two-side electrohydraulic control

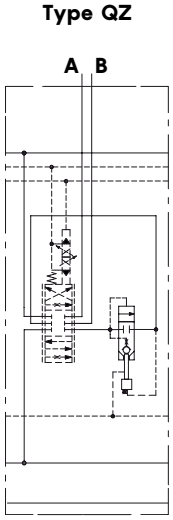


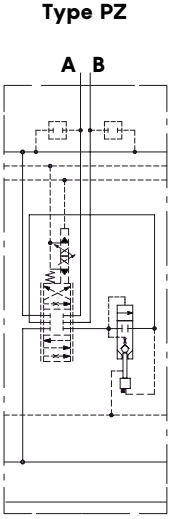
Section for one-side electrohydraulic control









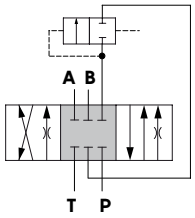


Working section

Spool

Type 1 (1../E1..)
A, B closed in neutral position

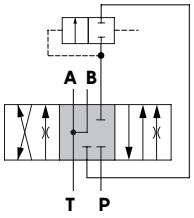
1 0 2



Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*

Type 2(2../E2..)
A, B to tank in neutral position

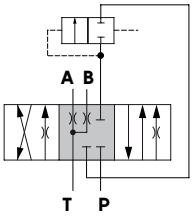
1 0 2



Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*

Type 2H(2H../E2H..)
A, B partially to tank in neutral position

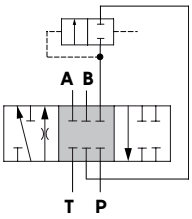
1 0 2



Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*

Type 3 (3../E3..)
Single acting on A

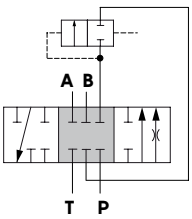
1 0 2



Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*

Type 4 (4../E4..)
Single acting on B

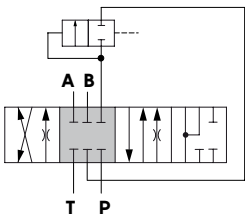
1 0 2



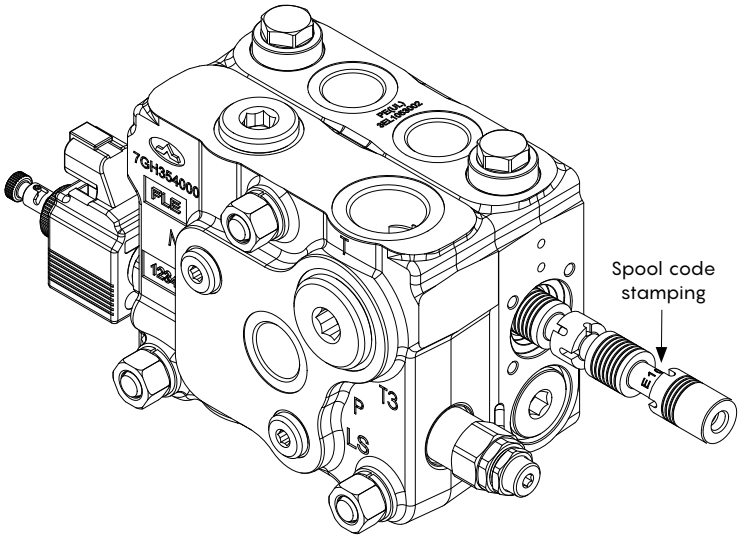
Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*

Type 5 (5../E5../I5..)
Floating in 4th position (pos.3)

1 0 2 3

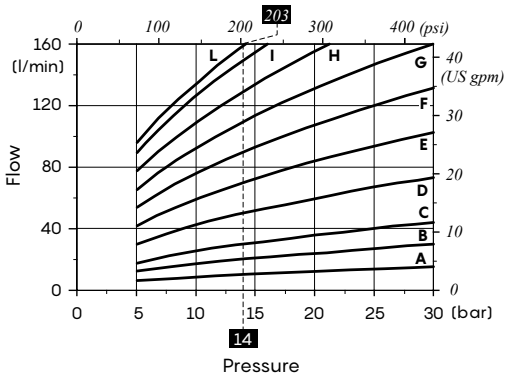


Stroke
position 1: + 8 mm *(+ 0.31 in)*
position 2: - 8 mm *(- 0.31 in)*
position 3: - 13 mm *(- 0.51 in)*



In case of spool replacement the code stamping must be oriented toward B port.

Spool flow vs. Stand-by pressure (margin pressure)



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

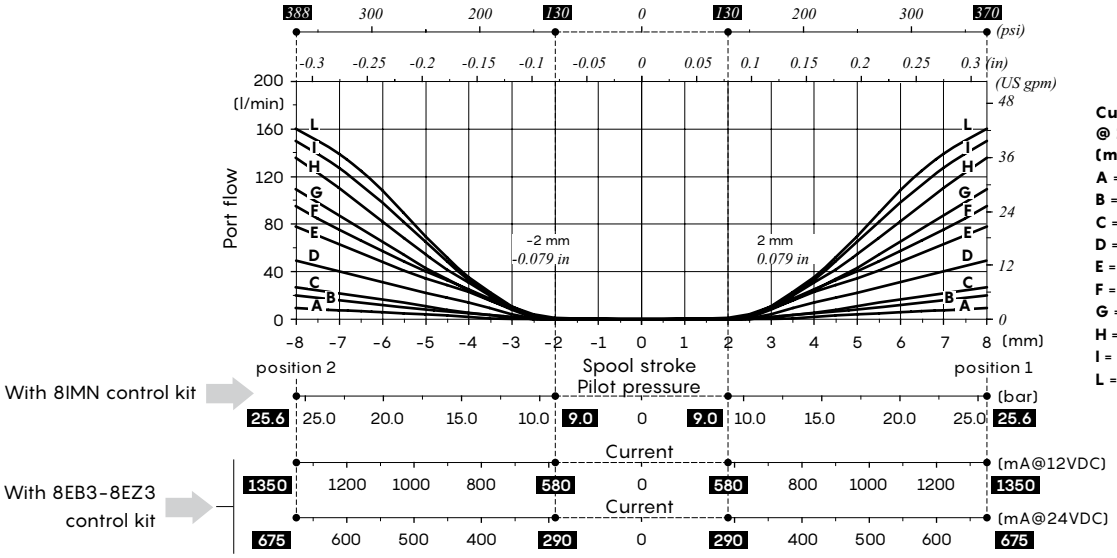
A = 10 l/min *(2.6 US gpm)* ± 10%
B = 20 l/min *(5.3 US gpm)* ± 10%
C = 30 l/min *(7.9 US gpm)* ± 10%
D = 50 l/min *(13.2 US gpm)* ± 10%
E = 70 l/min *(18.5 US gpm)* ± 10%
F = 90 l/min *(23.8 US gpm)* ± 10%
G = 110 l/min *(29.0 US gpm)* ± 10%
H = 130 l/min *(34.3 US gpm)* ± 10%
I = 150 l/min *(39.5 US gpm)* ± 10%
L = 160 l/min *(42.3 US gpm)* ± 10%

Spool

Following curves are detected with standard spools, connecting P⇒A⇒B⇒T and P⇒B⇒A⇒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

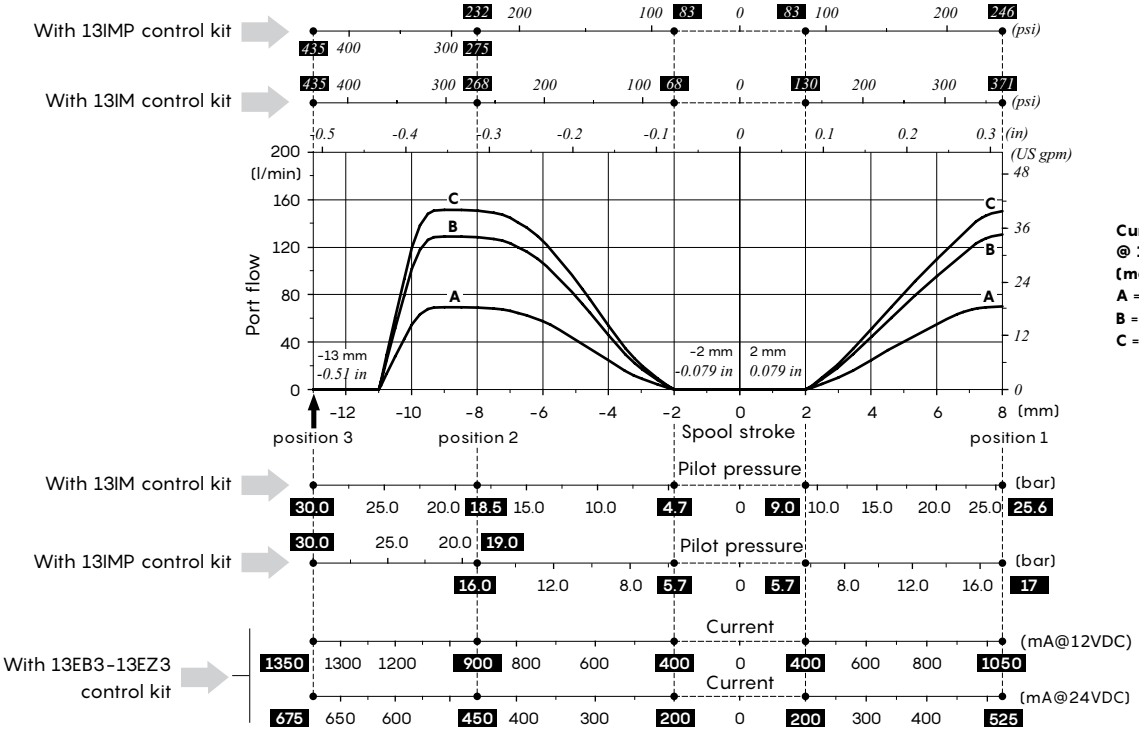
Qin = 160 l/min - *(42.3 US gpm)* - Open center circuit



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

Qin = 160 l/min - *(42.3 US gpm)* - Open center circuit

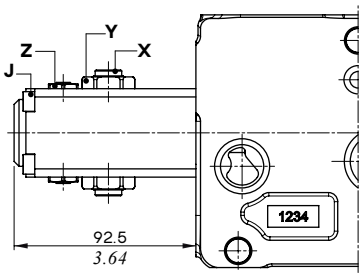


Curves with spool nom. flow @ 14 bar *(200 psi)* stand-by (margin pressure)
A = 70 l/min *(18.5 US gpm)*
B = 130 l/min *(34.3 US gpm)*
C = 150 l/min *(39.5 US gpm)*

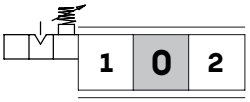
Working section

"A" side spool positioners

With friction and neutral position notch



Type 7FTNA

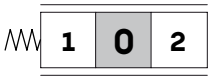


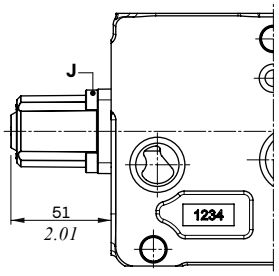
Wrenches and tightening torques
J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*
X = allen wrench 4
Y = wrench 24 - manual tightening
Z = wrench 15 - 42 Nm *(31 lbft)*

With spring return to neutral position

It's configured with spring type D, as standard (see diagram); it's also available with lighter type C springs (8MC code: 5V08109002) or extra-lighter type B (8MB code 5V08109003).

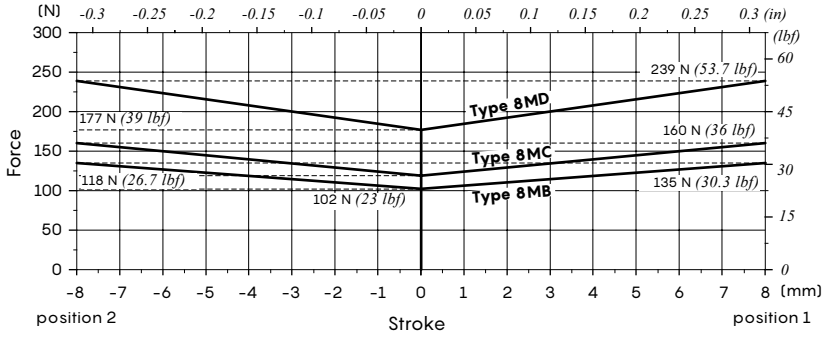
Types 8MD/8MC/8MB
Standard/lighter/extra-lighter springs





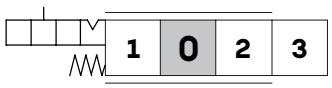
Wrenches and tightening torques
J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

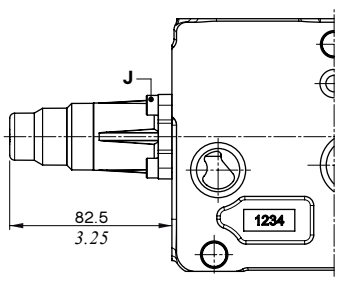
Force vs. Stroke diagram



With spring return to neutral position, for floating circuit

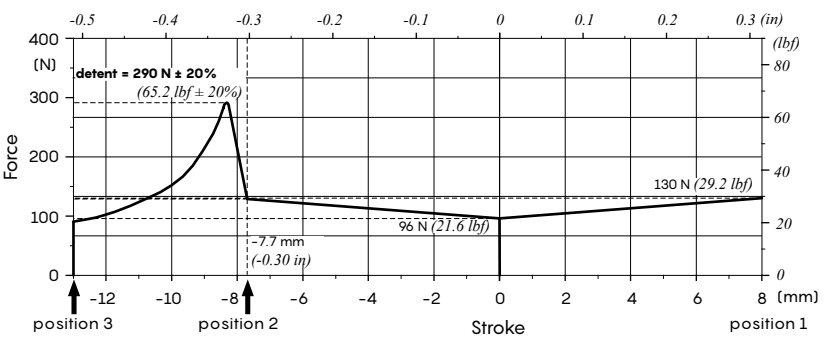
Type 13





Wrenches and tightening torques
J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

Force vs. Stroke diagram



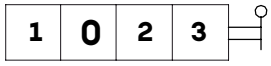
Release force from pos.3: 260 N ± 20% *(58.5 lbf ± 20%)*

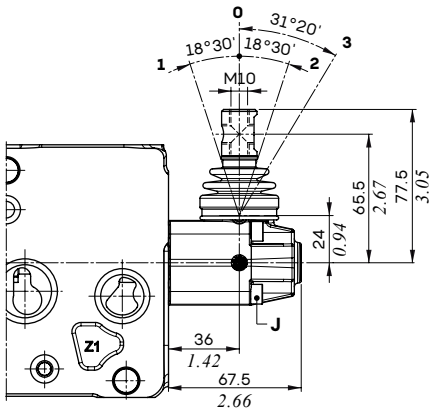
Working section

"B" side spool control kit

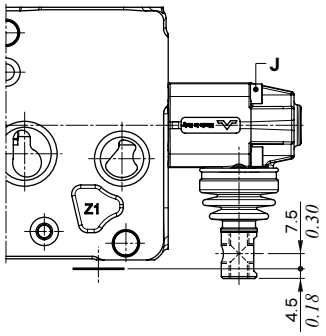
Lever box

Type L



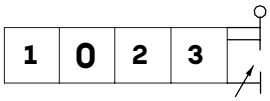


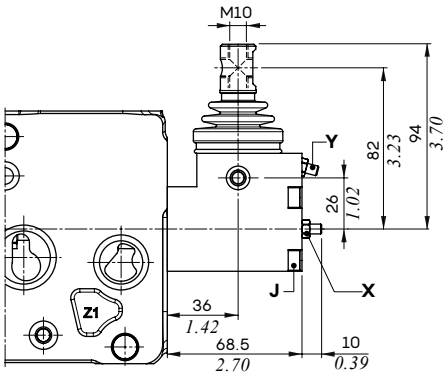
L180 configuration



Type LFG

Spool stroke limiter on A and B ports





Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

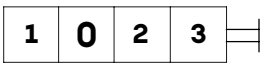
X = allen wrench 2.5

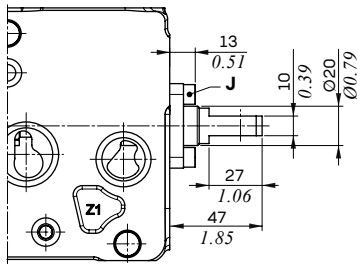
Y = wrench 8 - 6.6 Nm *(4.9 lbft)*

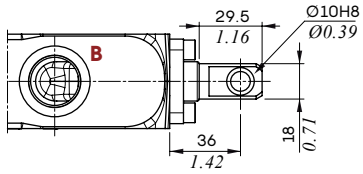
Without lever box

Type SLP

With dust-proof plate

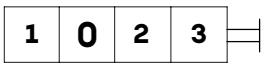


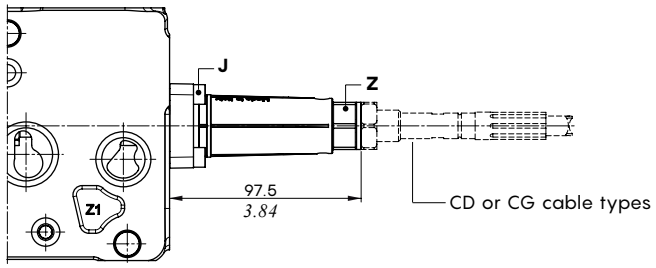




Type TQ

Flexible cable connection





Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

Z = wrench 24

Working section

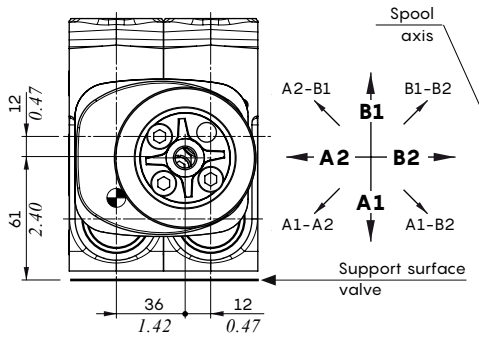
"B" side spool control kit

Joysticks for two section operation

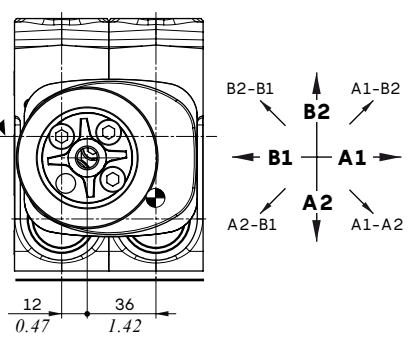
Type LCB

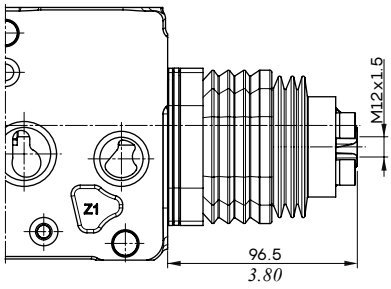
1	0	2
1	0	2

LCB1 configuration

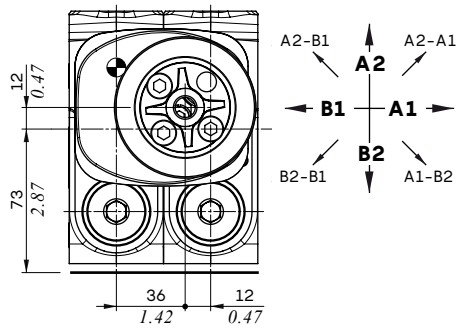


LCB2 configuration

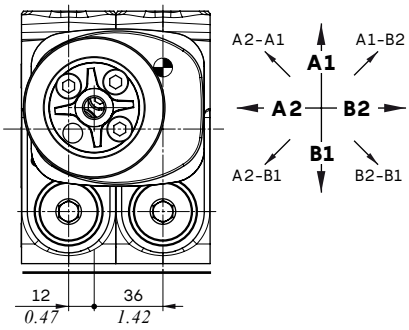


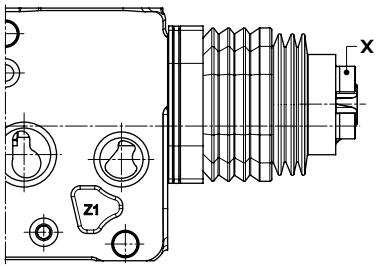


LCB3 configuration



LCB4 configuration

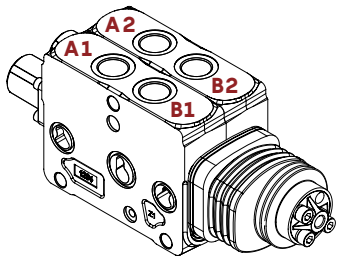




Wrenches and tightening torques

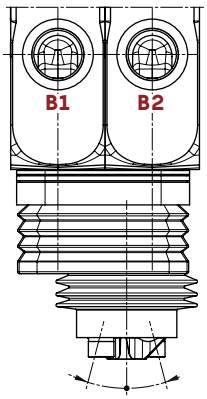
X = allen wrench 6 - 24 Nm *(17.7 lbft)*

LCB1 configuration example

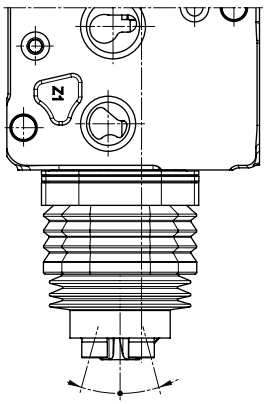


Working angles

Horizontal axis



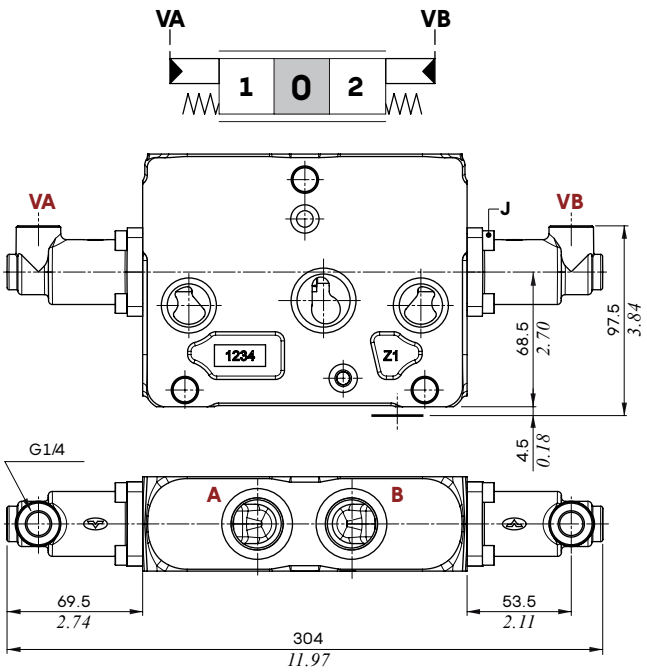
Vertical axis



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

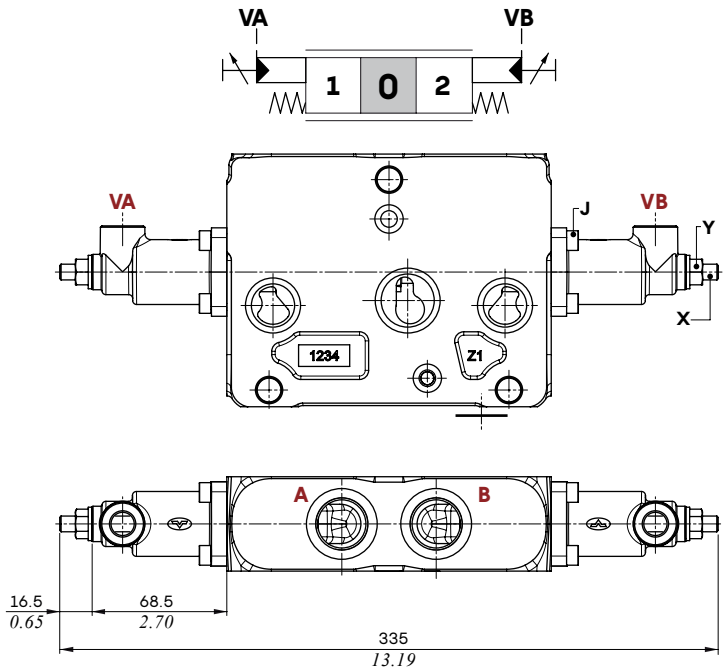
Proportional hydraulic control

Type 8IMNOH



Type 8IMNOHF3

With spool stroke limiter on ports A and B



Features (all types)

Max. pressure ..... : 50 bar *(725 psi)*

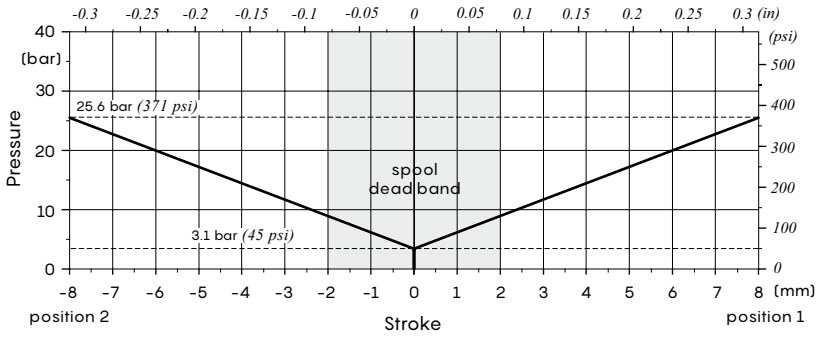
Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

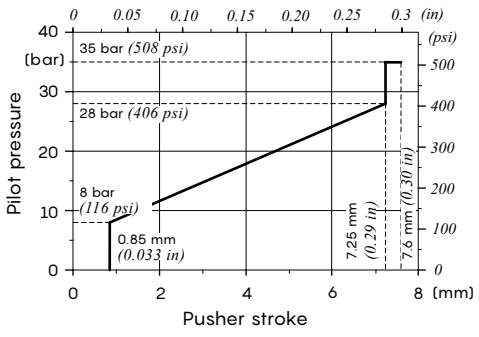
X = allen wrench 4

Y = wrench 13 - 24 Nm *(17.7 lbft)*

Stroke vs. Pressure diagram



Suggested pressure control curve: type 089

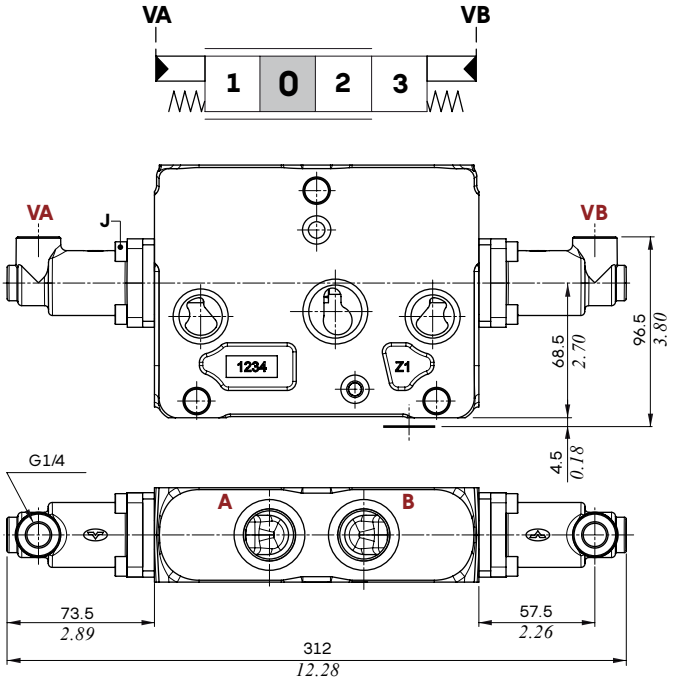


Working section

Proportional hydraulic control

Type 13IMOH – 13IMPOH

For floating circuit



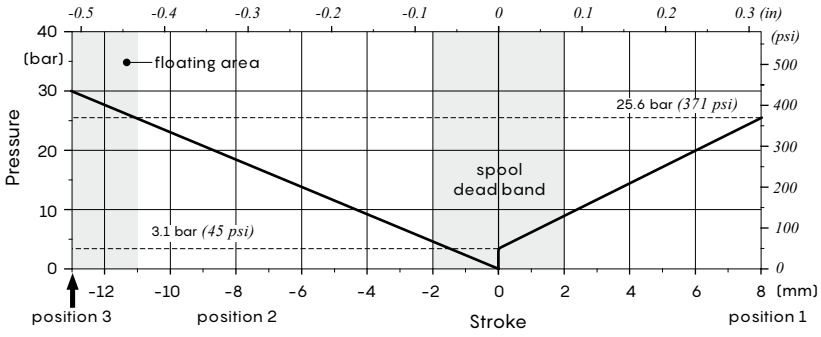
Features

Max. pressure . . . . . : 50 bar *(725 psi)*

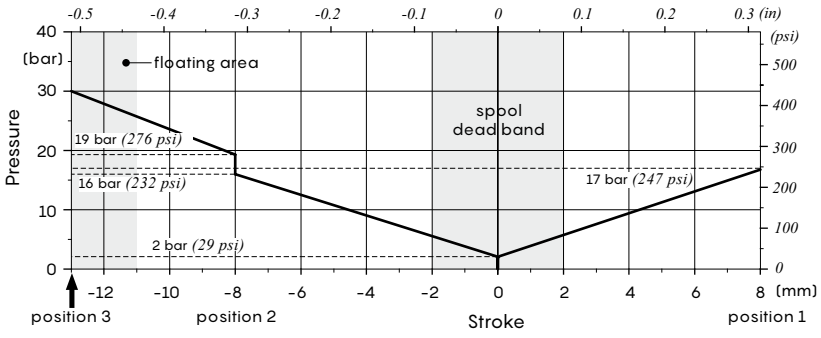
Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

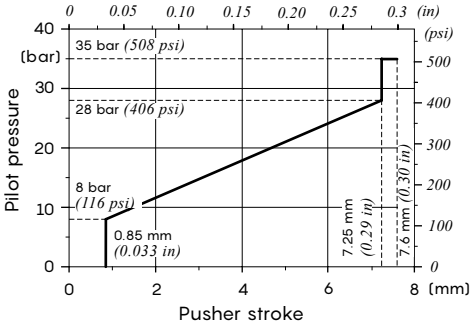
Type 13IMOH: Stroke vs. Pressure diagram



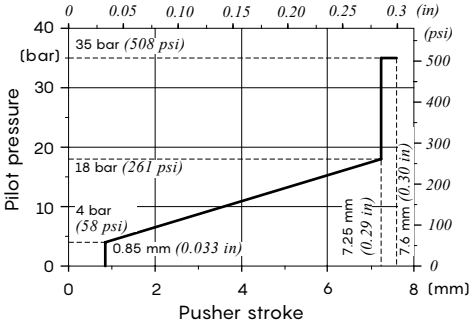
Type 13IMP: Stroke vs. Pressure diagram



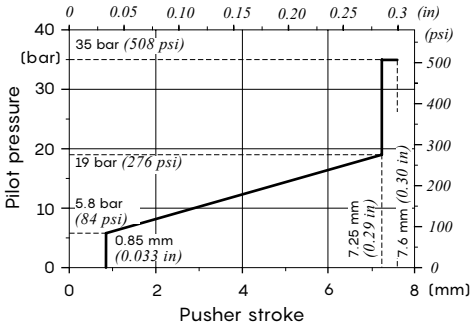
Type 13IMOH – suggested pressure control curve on port VA: type 089



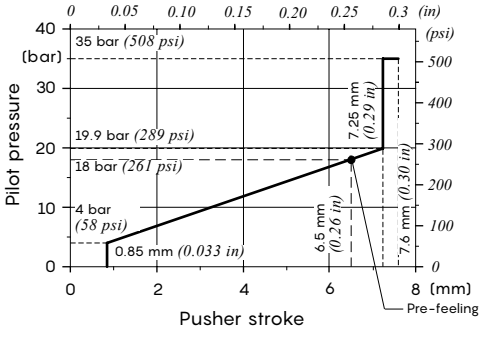
Type 13IMP – suggested pressure control curve on port VA: type 073



Type 13IMOH – suggested pressure control curve on port VB: type 033



Type 13IMP – suggested pressure control curve on port VB: type E073



Electrohydraulic control performace 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 CED400W electronic unit; for information please contact Sales Department.

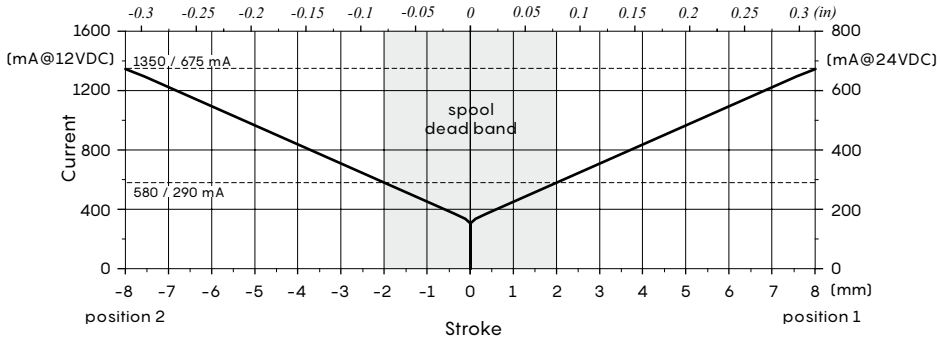
Specifications		Spool control type			
		8EB3	13EB3	8EZ3	13EZ3
Electric specifications					
Coil impedance	12 VDC	4,72 Ω	4,72 Ω	4,72 Ω	4,72 Ω
	24 VDC	20,8 Ω	20,8 Ω	20,8 Ω	20,8 Ω
Max. operating current	12 VDC	1,5 A	1,5 A	1,5 A	1,5 A
	24 VDC	0,75 A	0,75 A	0,75 A	0,75 A
No load current consumption		0	0	0	0
Hysteresis max. (1)				With lever box configured controls	
	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		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 170.

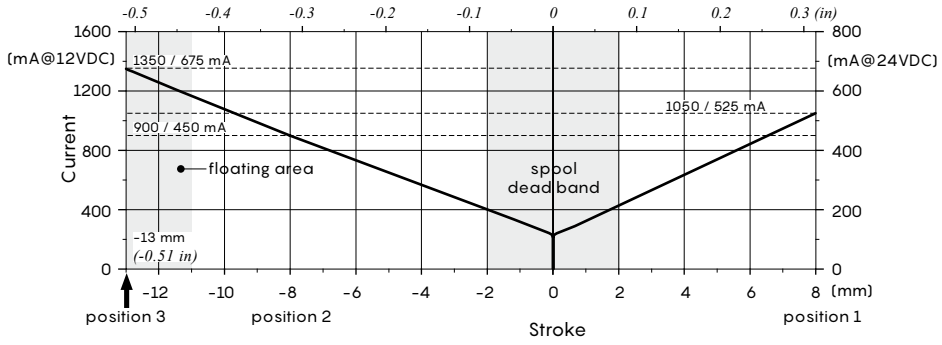
Working section

Electrohydraulic control performace data

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



Types 13EB3-13EZ3: Stroke vs. Current diagram



Electrohydraulic controls: spool position sensor

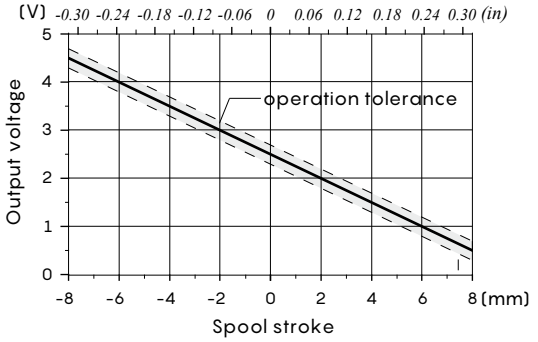
The sensor can be ordered exclusively through the EB and EZ type electrohydraulic controls; see page 136 for available control list.

SPSL sensor

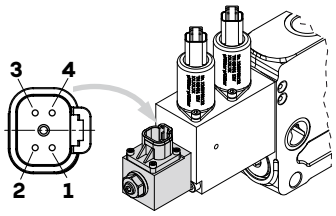
The SPSL position sensor converts the spool movements into a voltage linear signal.

Working conditions		
Voltage supply		5 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10⁶
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



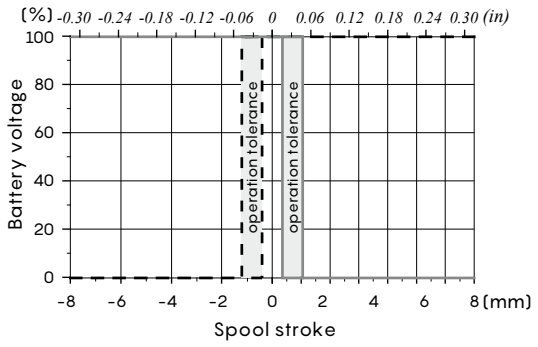
Deutsch DT06-4S mating connector, code 5CON140072

SPSD sensor

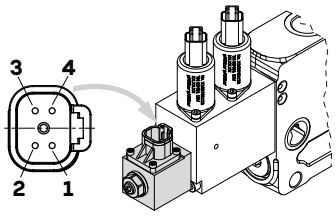
The SPSD position sensor converts the spool movements into an electric digital signal.

Working conditions		
Voltage supply		from 9 to 32 VDC
Current absorption		< 10 mA (no load)
Mechanical life		3x10⁶
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

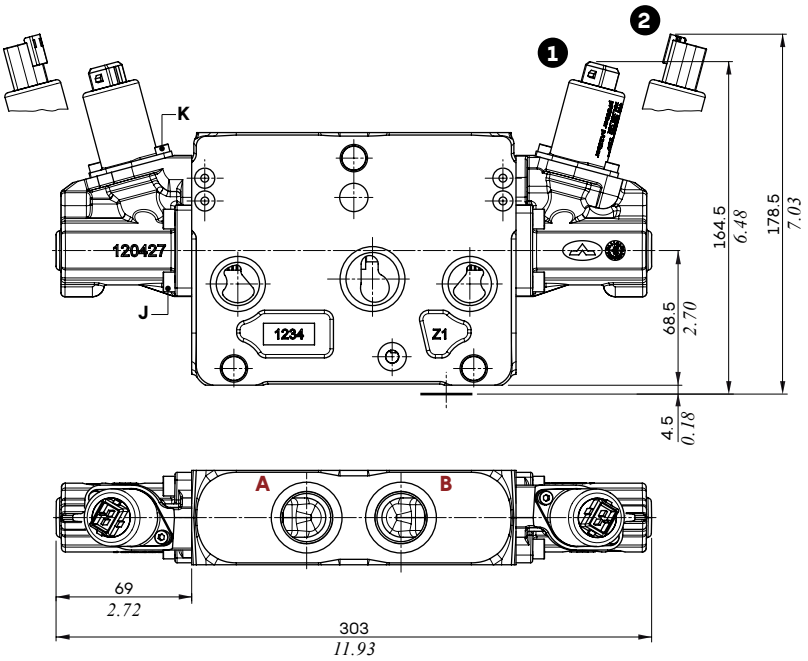
Working section

Two-side electrohydraulic control

Control types

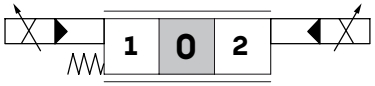
1 : With AMP JPT connector - AMP JPT mating connector, code: 5CON003

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



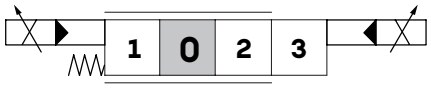
Types 8EB3 - 8EB34

Without lever control



Types 13EB3 - 13EB34

For floating circuit



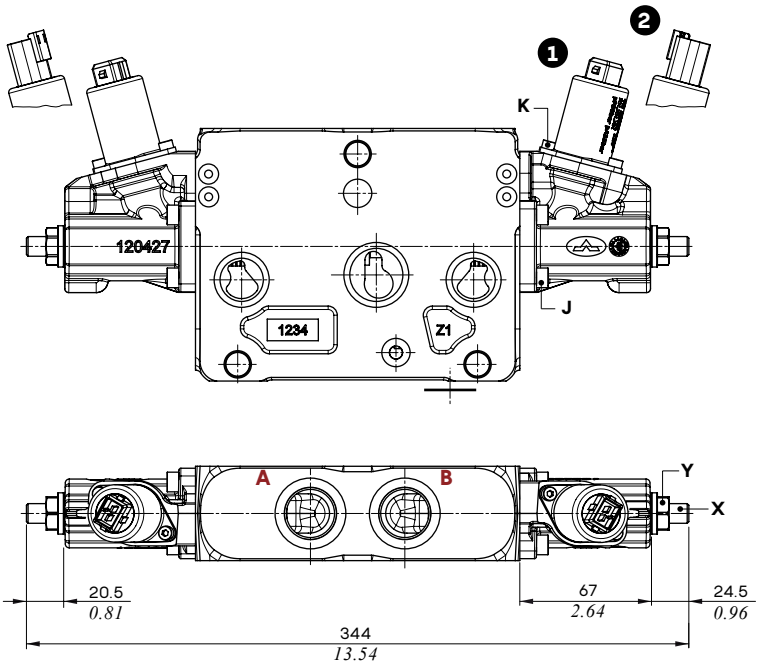
Wrenches and tightening torques

J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*

K = allen wrench 3 - 5 Nm *(3.7 lbft)*

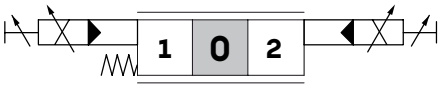
X = allen wrench 5

Y = wrench 17 - 24 Nm *(17.7 lbft)*



Types 8EB3F3 - 8EB34F3

With spool stroke limiter

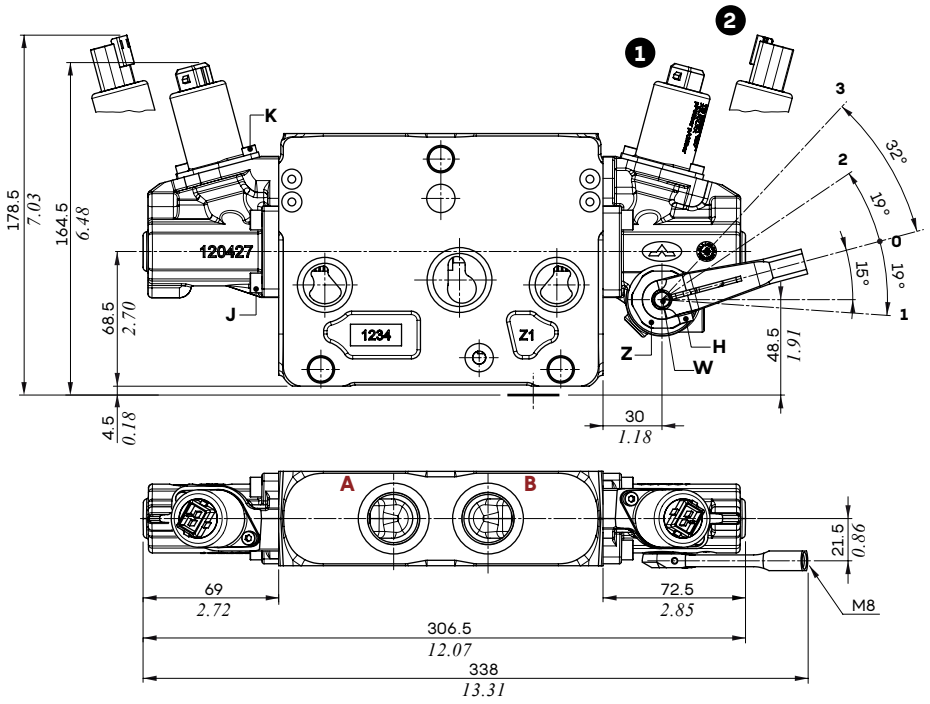


Two-side electrohydraulic control

Control types

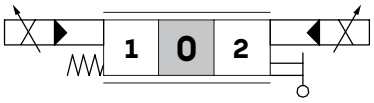
1: With AMP JPT connector - AMP JPT mating connector, code: 5CON003

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



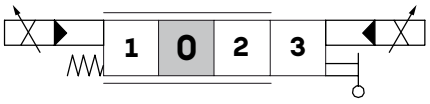
Types 8EB3LH - 8EB34LH

Lever control



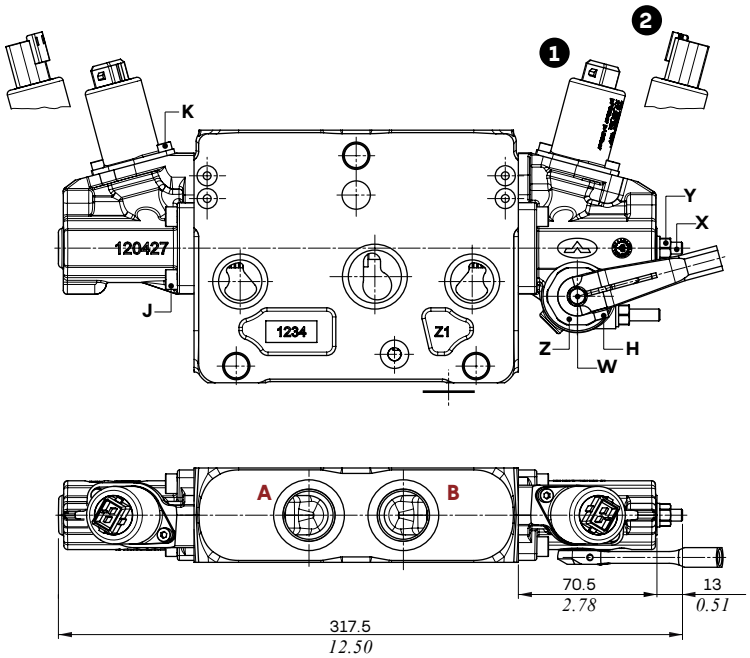
Types 13EB3LH - 13EB34LH

For floating circuit



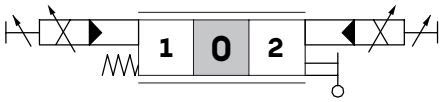
Wrenches and tightening torques

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



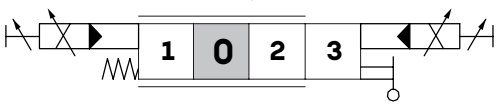
Types 8EB3LHF3 - 8EB34LHF3

Lever control with spool stroke limiter



Types 13EB3LHF3 - 13EB34LHF3

For floating circuit



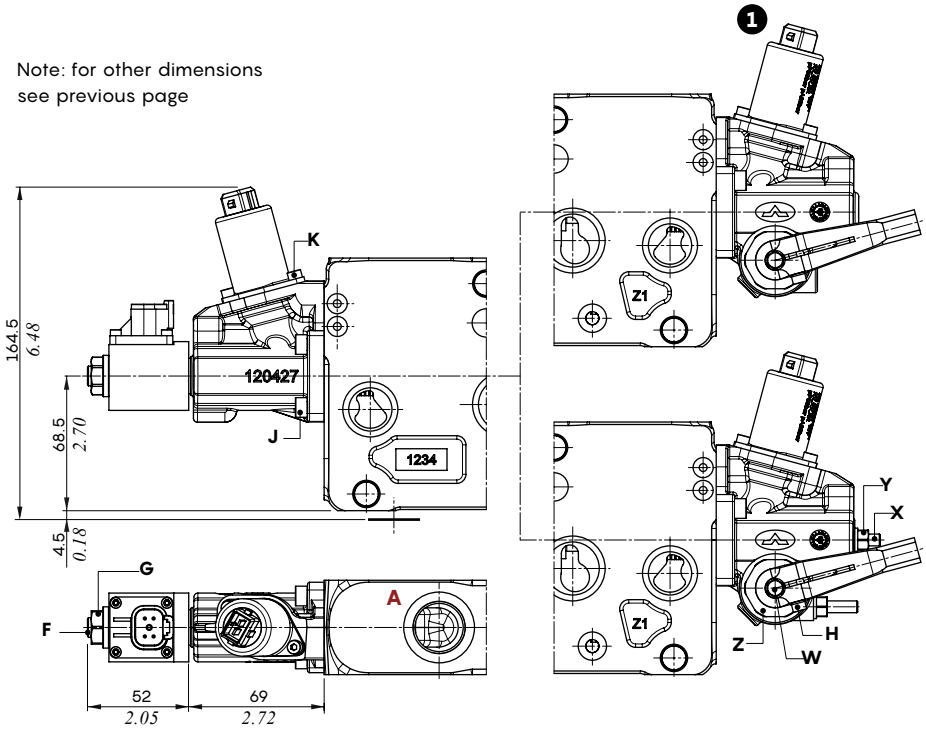
Working section

Two-side electrohydraulic control

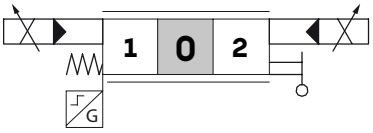
Control type

❶ : With AMP JPT connector - AMP JPT mating connector, code: 5CON003

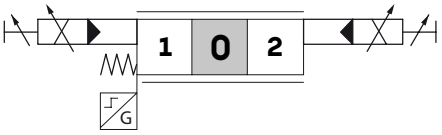
Note: for other dimensions
see previous page



Type 8EB3LHSPSD
Lever control and
digital output sensor SPSD



Type 8EB3LHF3SPSD
Digital output sensor SPSD
and spool stroke limiter



Wrenches and tightening torques

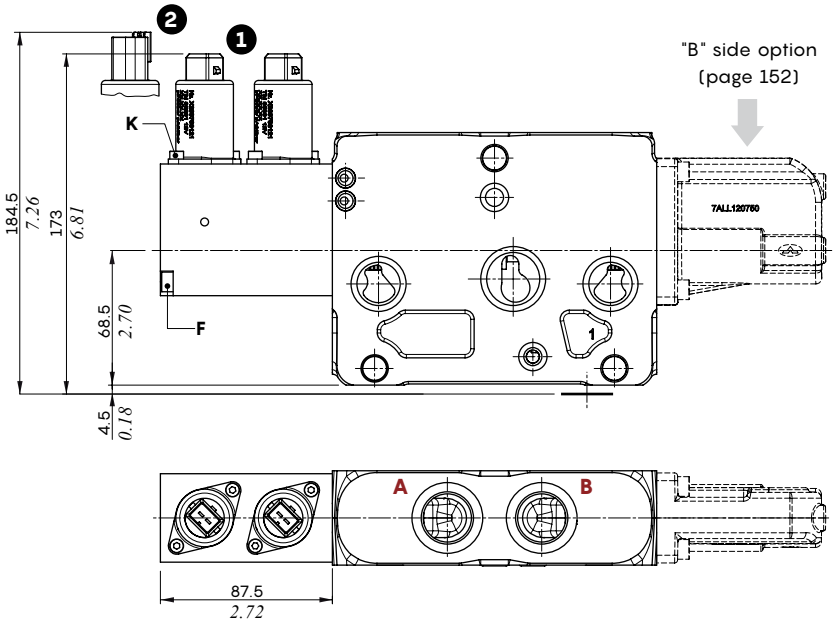
F = allen wrench 4 - 9.8 Nm *(7.2 lbft)*
G = wrench 17 - 9.8 Nm *(7.2 lbft)*
H = allen wrench 3 - 6.6 Nm *(4.9 lbft)*
J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*
K = allen wrench 3 - 5 Nm *(3.7 lbft)*
X = allen wrench 3
Y = wrench 10 - 9.8 Nm *(7.2 lbft)*
Z = wrench 29 - 24 Nm *(17.7 lbft)*
W = wrench 8

One-side electrohydraulic control: "A" side

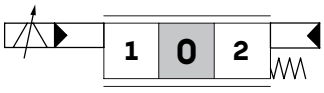
Control types

❶: With AMP JPT connector - AMP JPT mating connector, code: 5CON003

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

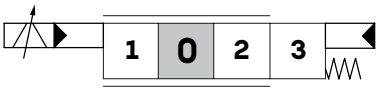


Types 8EZ3 - 8EZ34



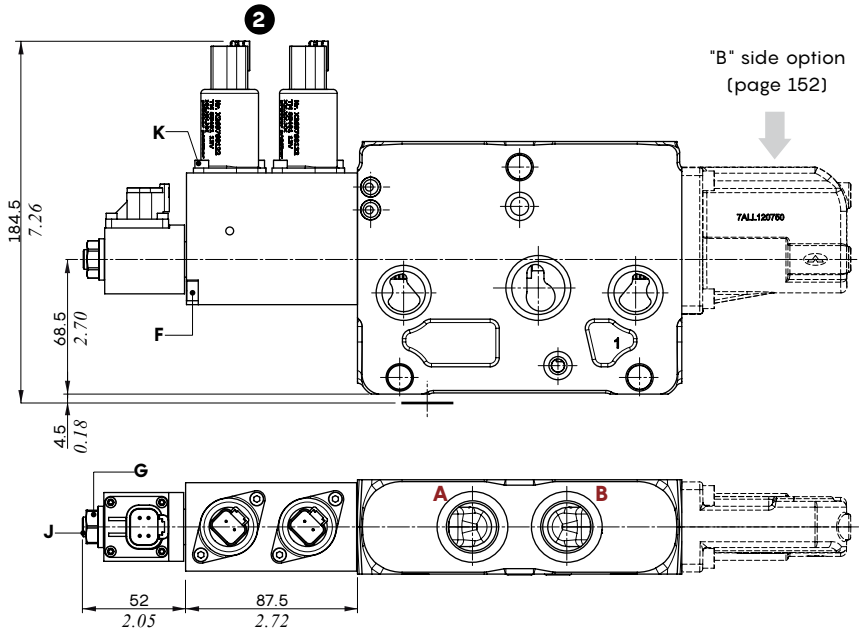
Types 13EZ3 - 13EZ34

For floating circuit



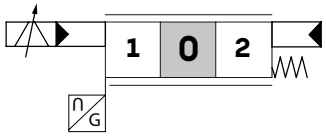
Wrenches and tightening torques

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)*



Types 8EZ34SPSL

Analog output sensor SPSL

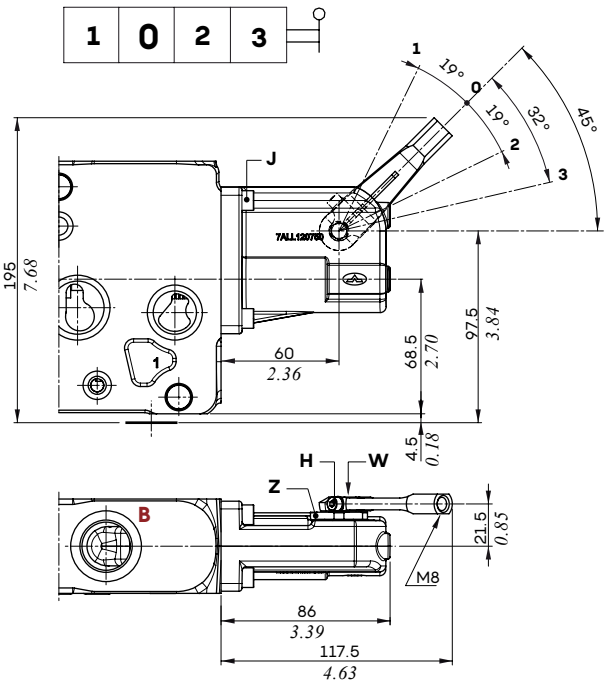


Working section

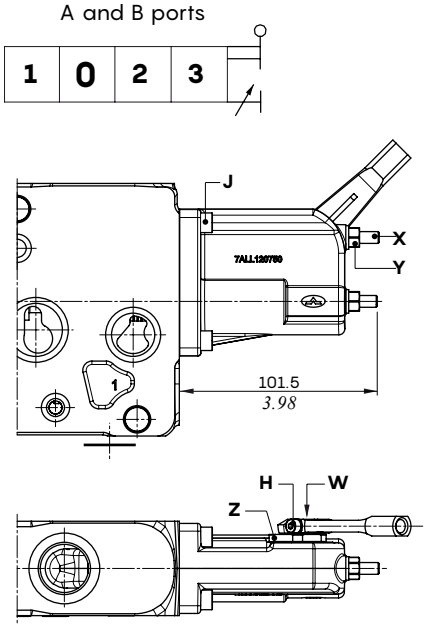
One-side electrohydraulic control: "B" side option

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

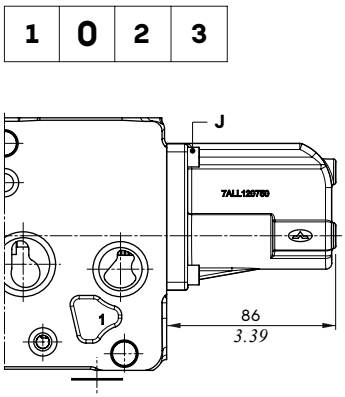
Type LQ



Type LQF3
Spool stroke limiter on
A and B ports



Type SLCQ
With endcap

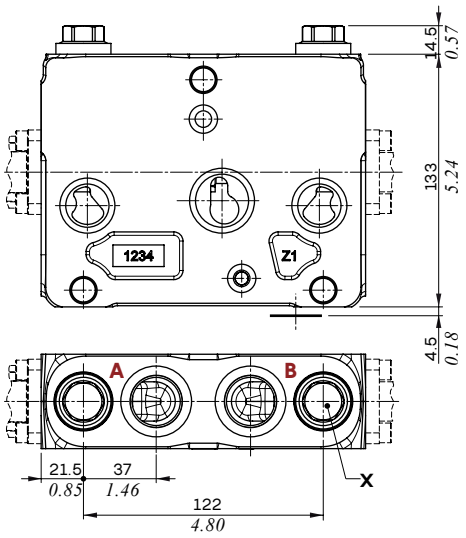


Wrenches and tightening torques

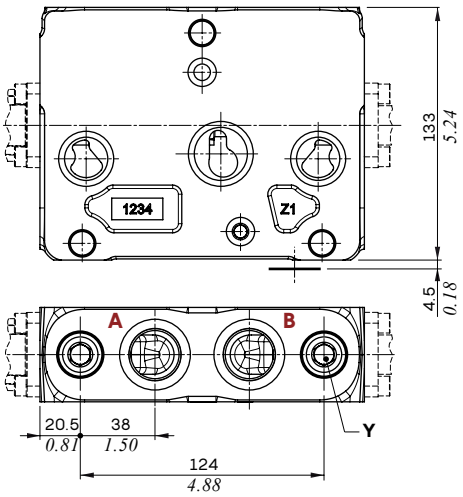
H = allen wrench 3 - 6.6 Nm *(4.9 lbft)*
J = allen wrench 5 - 9.8 Nm *(7.2 lbft)*
X = allen wrench 3
Y = wrench 10 - 9.8 Nm *(7.2 lbft)*
Z = wrench 29 - 24 Nm *(17.7 lbft)*
W = wrench 8

Port valves

Pressure relief valves, type UL
Anticavitation valve, type CL



Antishock valves, type US
Anticavitation valve, type CS



Types UL-US valve:



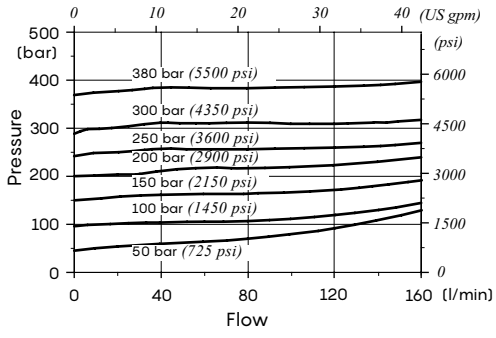
Types CL-CS valve: anticavitation



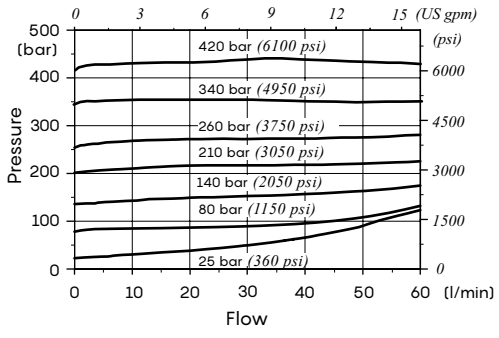
Wrenches and tightening torques

X = wrench 19 - 42 Nm *(31 lbft)* - (plug and valves)
Y = allen wrench 6 - 24 Nm *(17.7 lbft)* - (plug)
wrench 10 - 24 Nm *(17.7 lbft)* (valves)

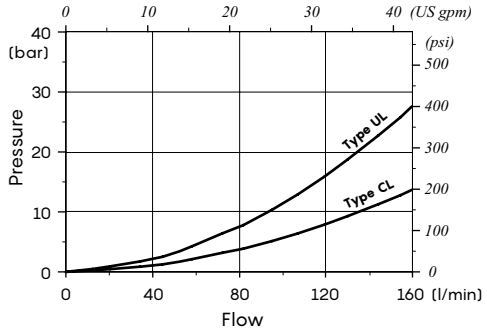
Type UL, setting example
(5 l/min - *1.3 Us gpm*)



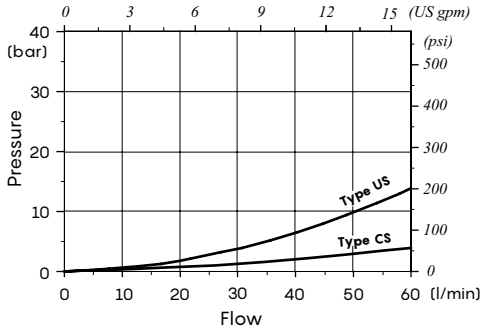
Type US, setting example
(10 l/min - *2.6 Us gpm*)



Types UL-CL, pressure drop
(in anticavitation)



Types US-CS, pressure drop
(in anticavitation)

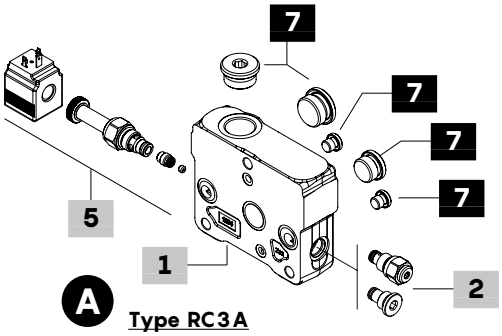


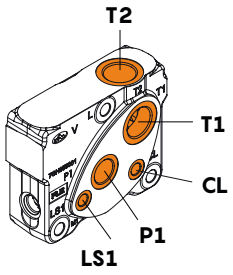
Outlet section part ordering codes

A **For mechanical and proportional hydraulic controls configuration:**

DPX160/RC3A-CL\VR3 - ... -12VDC

1 5 6 5

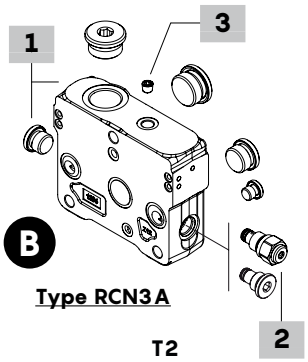


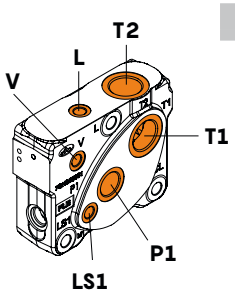


B **For electrohydraulic control configuration:**

DPX160/RCN3A(VBT)- ...

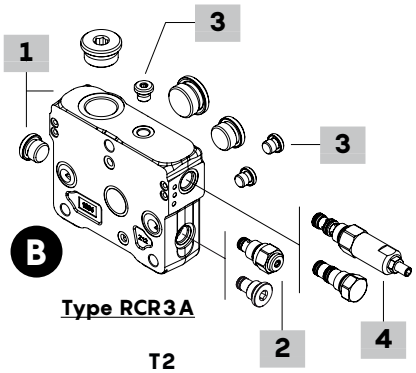
1 2

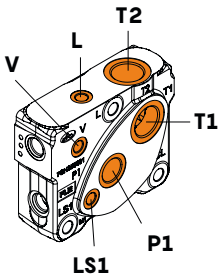




DPX160/RCR3A(RT)(VLT)(VBT)-...

1 4 3 2





1 Outlet section kit * page 155

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

For mechanical and proportional hydraulic controls

TYPE: **DPX160/RC1** CODE: YFIA205300S
DESCRIPTION: With T2 upper port

TYPE: **DPX160/RC3** CODE: YFIA205302S
DESCRIPTION: With T2 upper port and P1, T1, LS1 side ports

TYPE: **DPX160/RC3-CL** CODE: YFIA205314S
DESCRIPTION: As previous one with clamps release arrang. and CL port

For electrohydraulic controls

TYPE: **DPX160/RCN1** CODE: YFIA205306S
DESCRIPTION: Without pressure reducing valve arrangement, L upper and V side ports, T2 upper port

TYPE: **DPX160/RCN3** CODE: YFIA205313S
DESCRIPTION: As previous one with P1, T1, LS1 side ports

TYPE: **DPX160/RCN3-CL** CODE: YFIA205315S
DESCRIPTION: As previous one with clamps release arrang. and CL port

TYPE: **DPX160/RCR1** CODE: YFIA205303S
DESCRIPTION: With pressure reducing valve arrangement, L upper and V side ports, T2 upper port

TYPE: **DPX160/RCR3** CODE: YFIA205307S
DESCRIPTION: As previous one with P1, T1, LS1 side ports

TYPE: **DPX160/RCR3-CL** CODE: YFIA205316S
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 155

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

3 Pilot and drain *

TYPE	CODE	DESCRIPTION
(-)	4TAP306006	M6-DIN906 plug, for external drain
(VLT)	XTAP719160	G1/4 plug, nr.2 for int. pilot and drain

4 Pressure reducing valve page 156

TYPE	CODE	DESCRIPTION
(-)	4AC9539900	Press. reducing valve, 32 bar (*464 psi*)
(RT)	3XTP3535100V	Valve blanking plug (SAE 08/3)

5 Clamp release kit page 156

TYPE	CODE	DESCRIPTION
CL	5KIT409010V	Clamp release kit, 12VDC

6 Section threading

Only specify if it is different from **BSP** standard (see page 7).

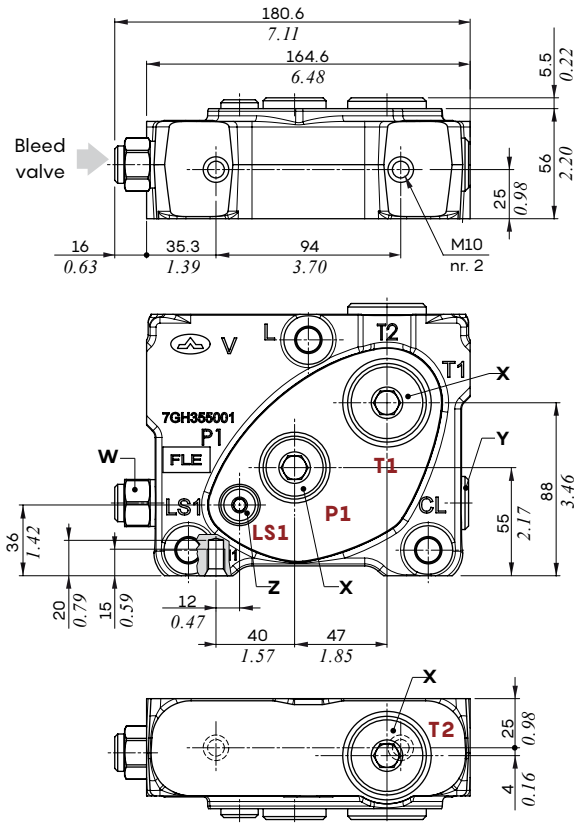
7 Parts *

CODE	DESCRIPTION
3XTAP740210	G1 plug: for RC1/RCN1/RCR1 = nr. 1 for RC3/RCN3/RCR3 = nr. 2
3XTAP732200	G3/4 plug, for RC1/RCN1/RCR1 = nr. 0 for RC3/RCN3/RCR3 = nr. 1
3XTAP719150	G1/4 plug, for RC1/RCN1/RCR1 = nr. 0 for RC3/RCN3/RCR3 = nr. 1 for RC3-CL/RCN3-CL/RCR3-CL = nr. 2

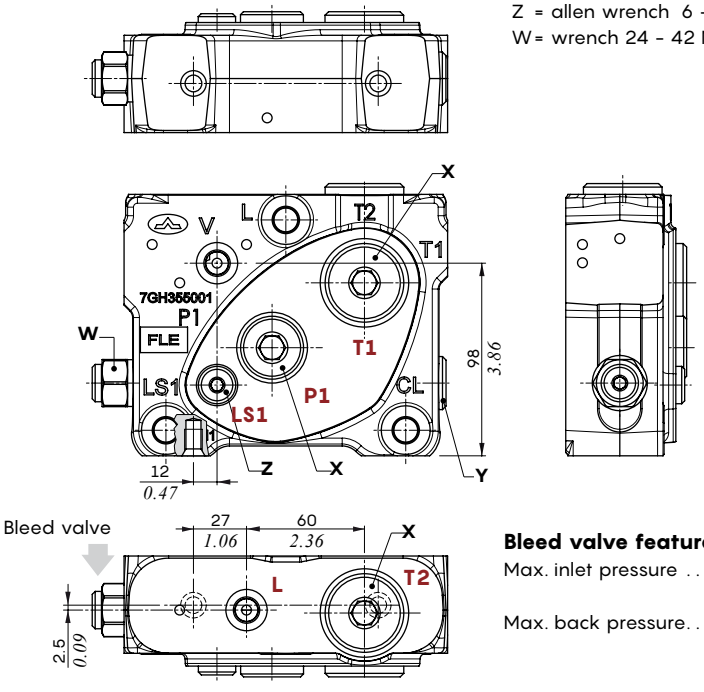
NOTE (*): Codes are referred to **BSP** thread.
NOTE (-): "TYPE" omitted in outlet section description

Dimensions and hydraulic circuit

Example of RC3A outlet section



Example of RCN3A outlet section



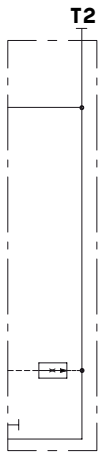
Wrenches and tightening torques

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)*

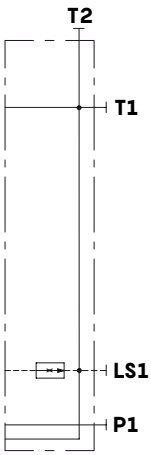
Bleed valve features

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

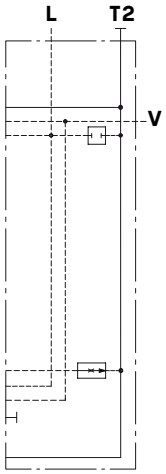
Type RC1A



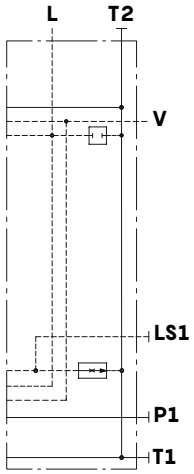
Type RC3A



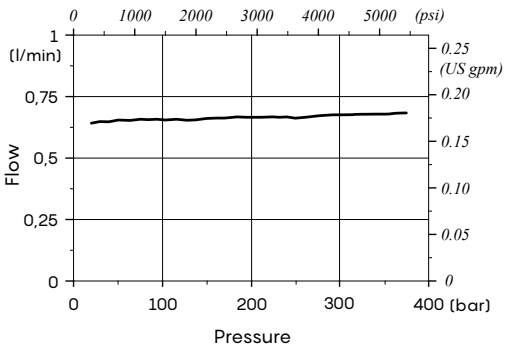
Type RCN1A



Type RCN3A



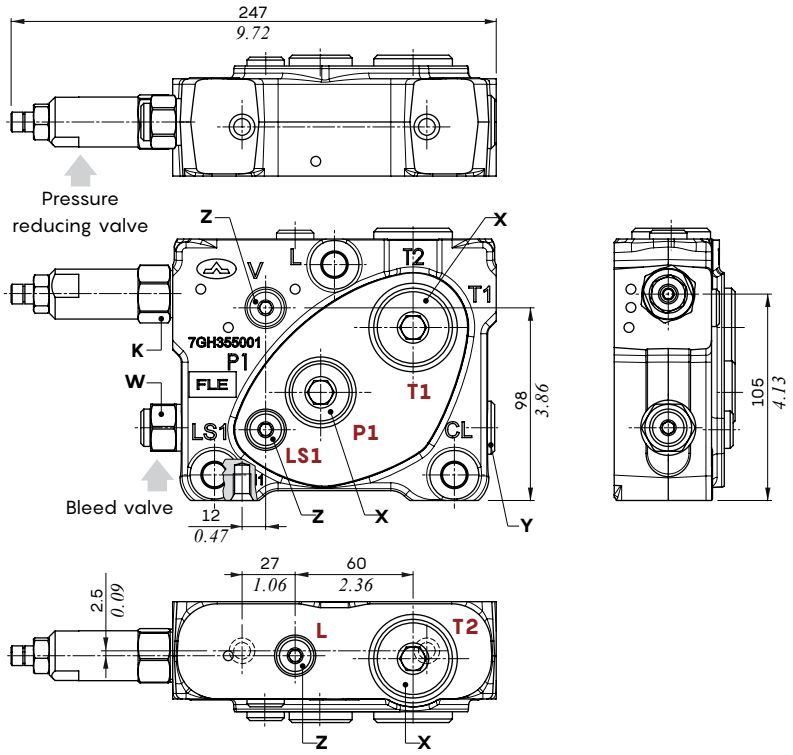
Bleed valve diagram
Flow vs. Pressure

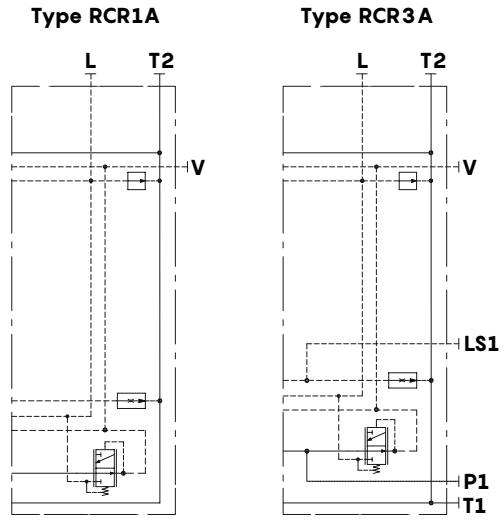


Outlet section

Dimensions and hydraulic circuit

Example of RCR3A outlet section





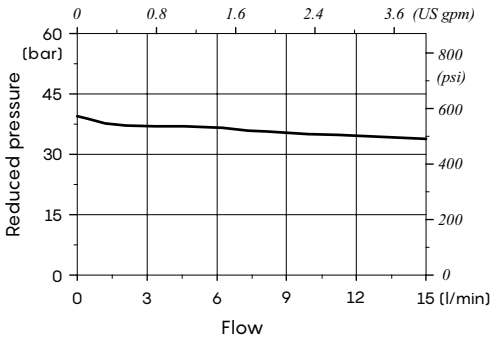
Pressure reducing valve features

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)*

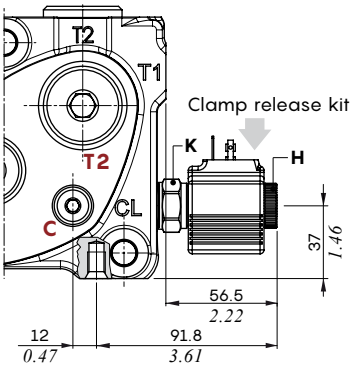
Wrenches and tightening torques

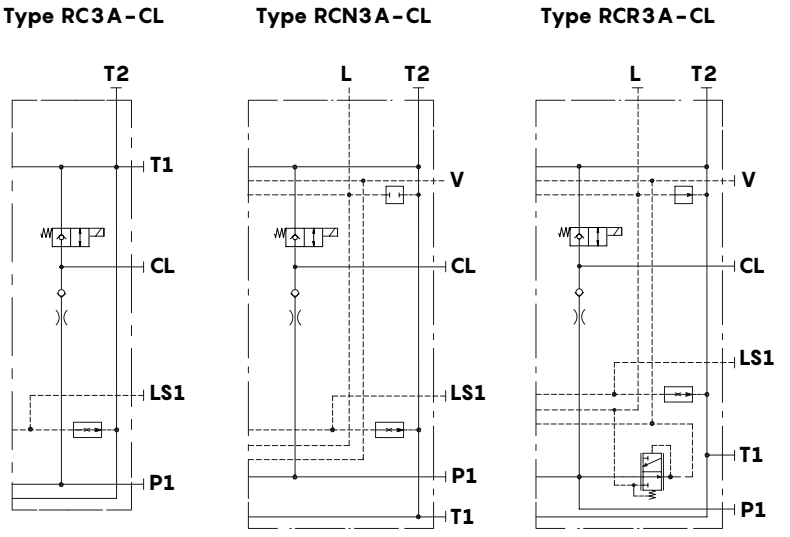
H = manual tightening
K = wrench 24 - 30 Nm *(22 lbft)*
X = allen wrench 12 - 42 Nm *(31 lbft)*
Y = allen wrench 8 - 24 Nm *(17.7 lbft)*
Z = allen wrench 6 - 24 Nm *(17.7 lbft)*
W = wrench 24 - 42 Nm *(31 lbft)*

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 160.

Intermediate section

DPX160 directional valve

DPX100 directional valve

DPX160/1/AM3B(TGW3-175\ELTN)/PE-E107(130\130)-8EB3F3.UL3T/EIRE-TAP(VLM)/PE-E101(80\80)-8EB3TF3.U3T

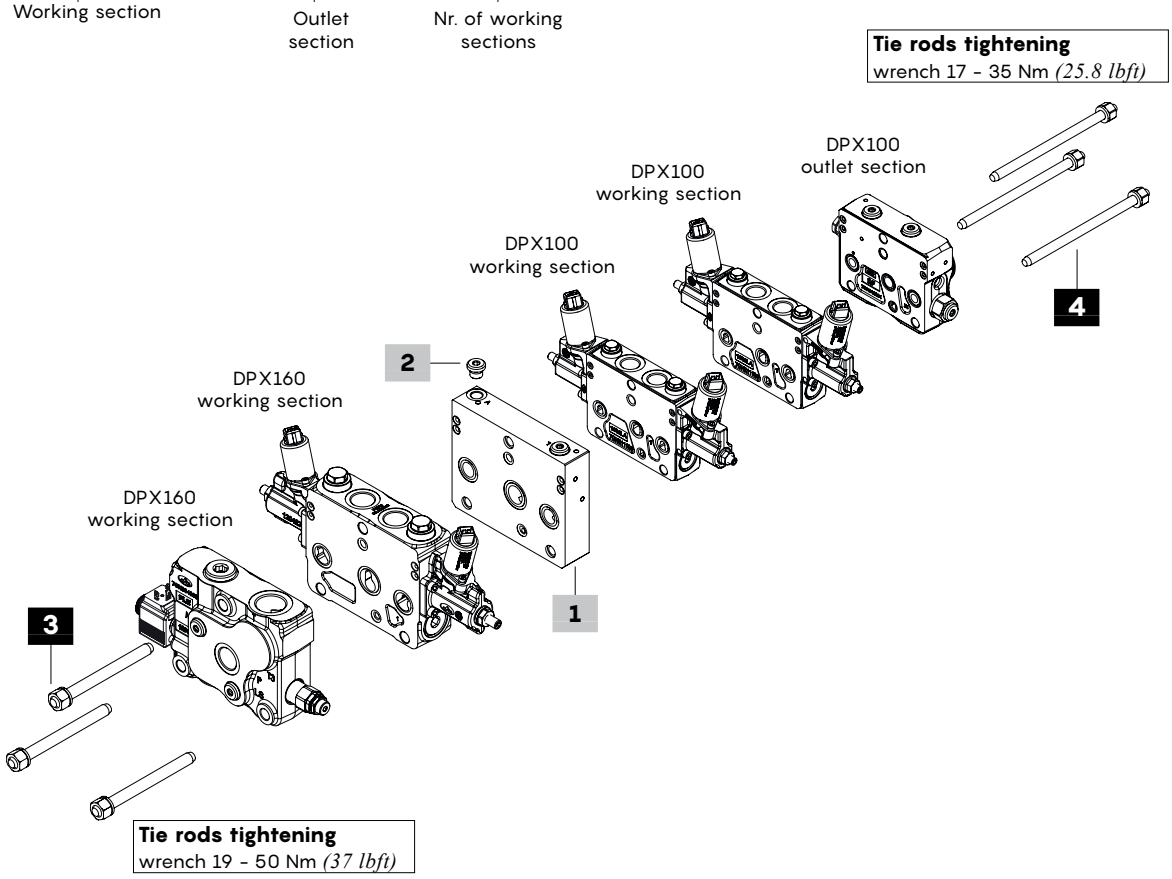
Nr. of working sections | Inlet section | Working section | 1 | 2 | Working section

DPX100 directional valve

Common directional valves specifications

/PE-E101(80\80)-8EB3TF3.U3T/RDR(03)/DPX100/2-.....-12VDC

Working section | Outlet section | Nr. of working sections



1 Intermediate section * page 158

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

CODE	DESCRIPTION
XTAP719160*	Optional G1/4 plug for internal pilot
4TAP310007	Optional M10x1 DIN906 plug for external drain

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

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