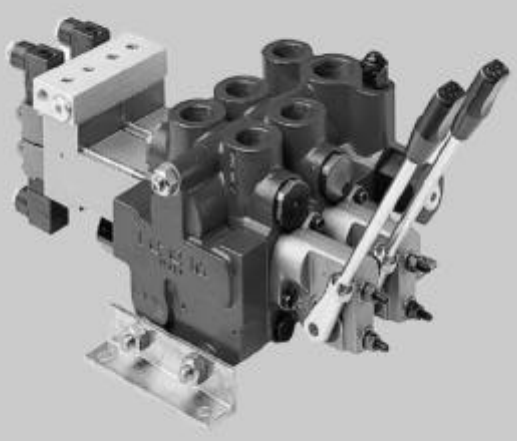
COMPACT CATALOGUE



DPC38

PRESSURE COMPENSATED
PROPORTIONAL LOAD SENSING VALVE

walvoil
HYDRAULIC CONTROL SYSTEMS

DPC38

Features

These valves, available from 1 to 10 sections, are used for systems with fixed displacement pumps (open centre version) or Load-Sensing variable displacement pumps (closed centre version).
Main peculiarity are listed below.

H Available with compensated or non compensated working sections.

H Interchangeable spools.

H Available manual, hydraulic and electro-hydraulic proportional spool control kits.

H Available anti-shock and anti-cavitation port valves.

H Available intermediate sections with pressure reducing valve for pilot feeding and mid return manifold.

Working conditions

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm^2/s - *46 cSt* viscosity at 40°C temperature.

Nominal flow rating	*on inlet port P*	200 l/min	
	on ports A and B with compensator	150 l/min	
	on ports A and B without compensator	170 l/min	
Operating pressure (maximum)	*in ingresso P e sulle bocche A, B e LS*	315 bar	*4600 psi*
Max. back pressure	*on outlet port **T***	10 bar	*145 psi*
	*on drain port **L***	2.5 bar	*36 psi*
Internal leakage A(B)→T	*Δp=100 bar - 1450 psi fluid and valve at 40°C*	12 cm^3/min	*0.73 in^3/min*
Fluid		Mineral base oil	
Fluid temperature range	*with NBR (BUNA-N) seals*	from -20° to 80°C	
Viscosity	*operating range*	da 15 a 75 mm^2/s	*da 15 a 75 mm^2/s*
	min	12 mm^2/s	*12 cSt*
	max	400 mm^2/s	*400 cSt*
Max level of contamination		18/15 - ISO 4406	
Ambient temperature range		from -40° to 60°C	
Tie rod tightening torque (wrench 17)		40 Nm	*29.5 lbft*

NOTE - *For different conditions please contact Customer Service.*

Additional information

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

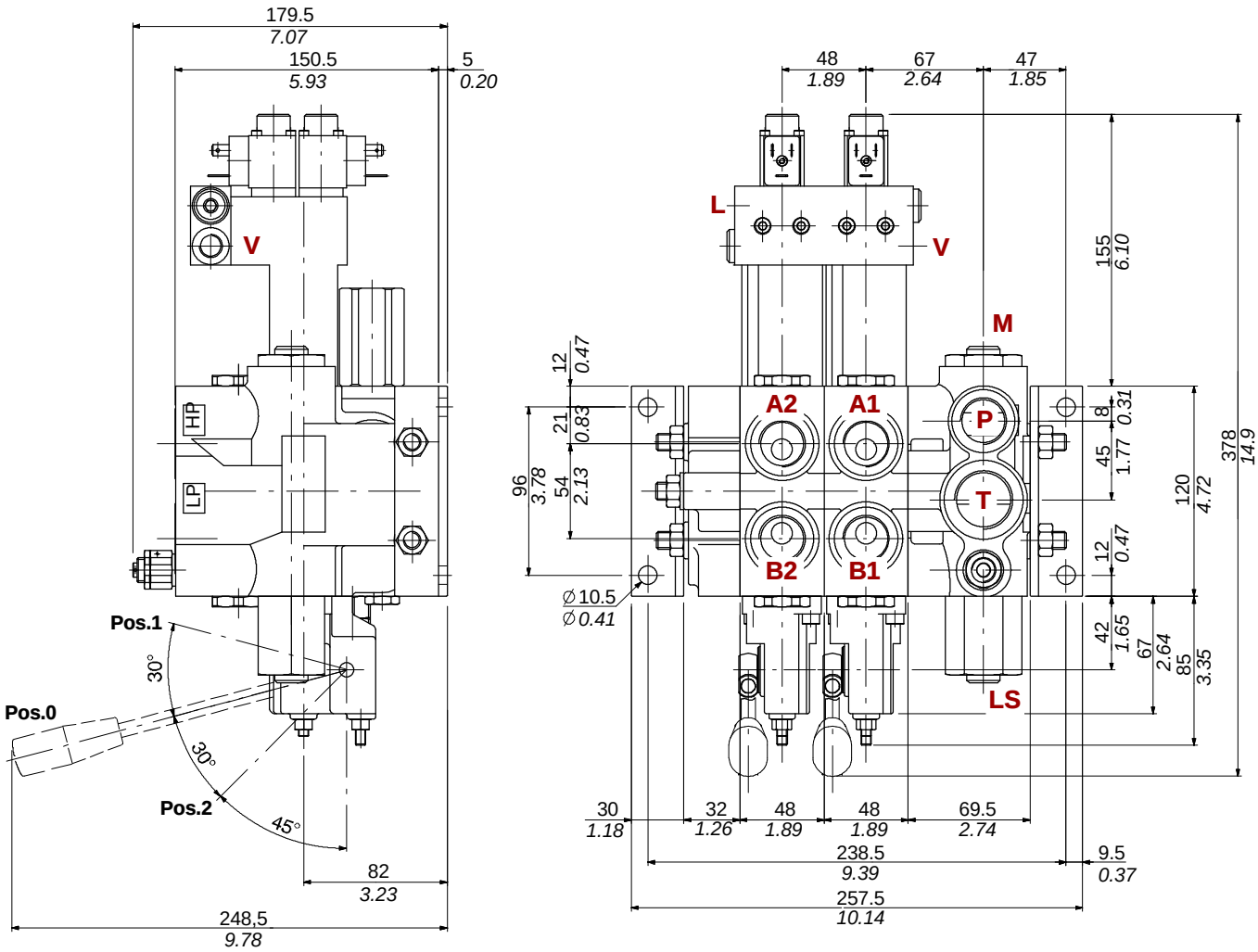
WARNING!

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.

3rd edition July 2001
This edition supercedes all prior documents.

Dimensional data



TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
DPC38/1	209.5	*8.25*	190.5	*7.50*	14.4	*31.7*
DPC38/2	257.5	*10.1*	238.5	*9.39*	21.3	*47.0*
DPC38/3	305.5	*12.0*	286.5	*11.3*	28.3	*62.4*
DPC38/4	353.5	*13.9*	334.5	*13.2*	35.3	*77.8*
DPC38/5	401.5	*15.8*	382.5	*15.1*	42.2	*93.0*

TYPE	E		F		Weight	
	mm	*in*	mm	*in*	kg	*lb*
DPC38/6	449.5	*17.7*	430.5	*16.9*	49.1	*108*
DPC38/7	497.5	*19.6*	478.5	*18.8*	56	*123*
DPC38/8	545.5	*21.5*	526.5	*20.7*	62.9	*139*
DPC38/9	593.5	*23.4*	574.5	*22.6*	69.8	*154*
DPC38/10	641.5	*25.3*	622.5	*24.5*	76.7	*169*

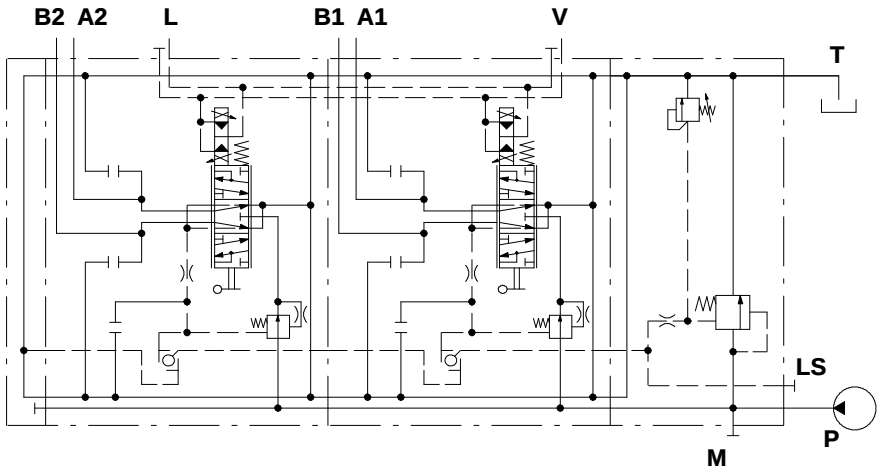
Standard threads

PORTS	**BSP** (ISO 228/1)	**UN-UNF** (ISO11926-1)
Inlet **P**	G 3/4	1 1/16-12 UN-2B (SAE 12)
Outlet **T**	G 1	1 5/16-12 UN-2B (SAE 16)
A and **B** ports	G 3/4	1 1/16-12 UN-2B (SAE 12)
PILOT PORTS		
LS, M, V, L	G 1/4	9/16-18 UNF-2B (SAE 6)

Hydraulic circuit

Fixed displacement pump (open centre)

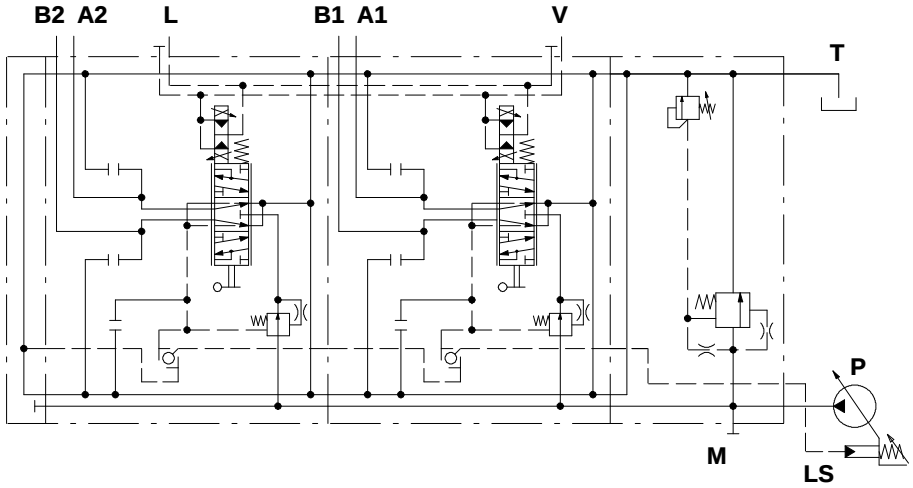
When the spools are in neutral position the main pump flow is discharged to tank by a 3-way compensator valve in the inlet section at stand by pressure (15 bar - *218 psi*).
When the spools are activated the highest load pressure is selected by the shuttle valve logic.
Any excess pump flow is discharged by the 3-way compensator valve in the inlet section at load pressure + stand by pressure (15 bar - *218 psi*) to tank.



Ex.: DPC38**A**/2/**BNB11**-S20/CTB501N-AE0018EZ32LH.UTUTST/CTB501N-AE0018EZ32LH.UTUTST/RF-<SB15>-<CVN>

Variable displacement pump with Load Sensing compensator

The compensator located in the inlet section acts as the main stage of a pilot operated relief valve.
When main pressure exceeds the setting of the L.S. relief valve, any excees flow is discharged at L.S. valve setting to tank.

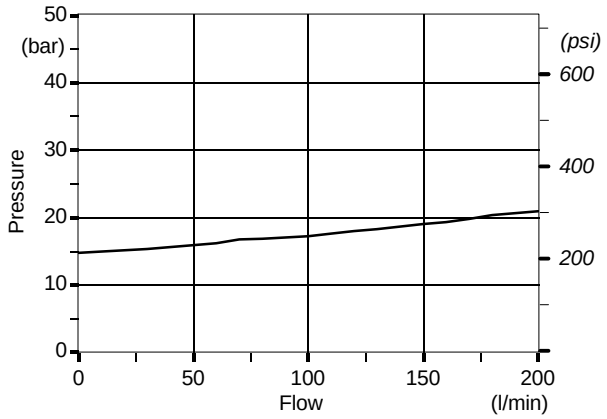


Ex.: DPC38**C**/2/**BNB21**-S20/CTB501N-AE0018EZ32LH.UTUTST/CTB501N-AE0018EZ32LH.UTUTST/RF-<SB15>-<CVN>

Performance data (pressure drop vs. flow)

Open centre

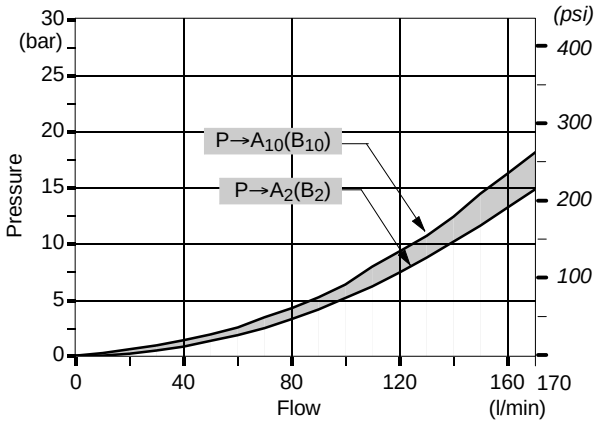
Pressure drop curve (stand-by pressure) on inlet section from port P to port T, for open centre circuit (with fixed displacement pump).



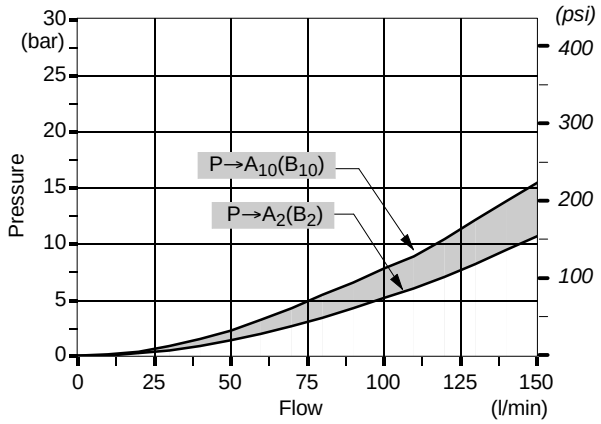
Inlet to work port

From inlet **P** to port **A** (spool in position **1**) or port **B** (spool in position **2**).

Working section without compensator



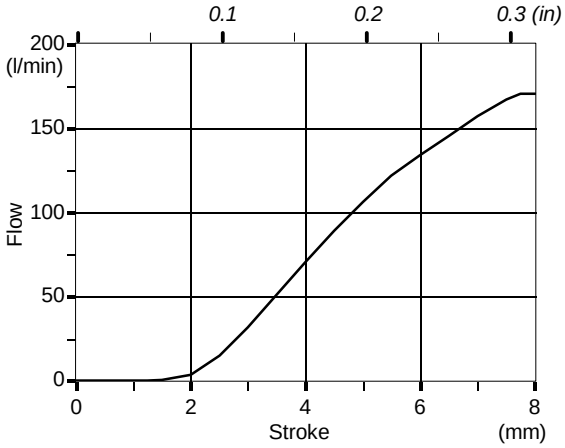
Working section with compensator



Spool metering

From inlet **P** to port **A** (spool in position **1**) or port **B** (spool in position **2**).

Working section without compensator



Ordering codes

Description example:

Complete sectional valve is supplied painted as standard, with one coat of Primer black antirust paint

n. of working section

1.a 1.b

1st section

following section

5. 7.

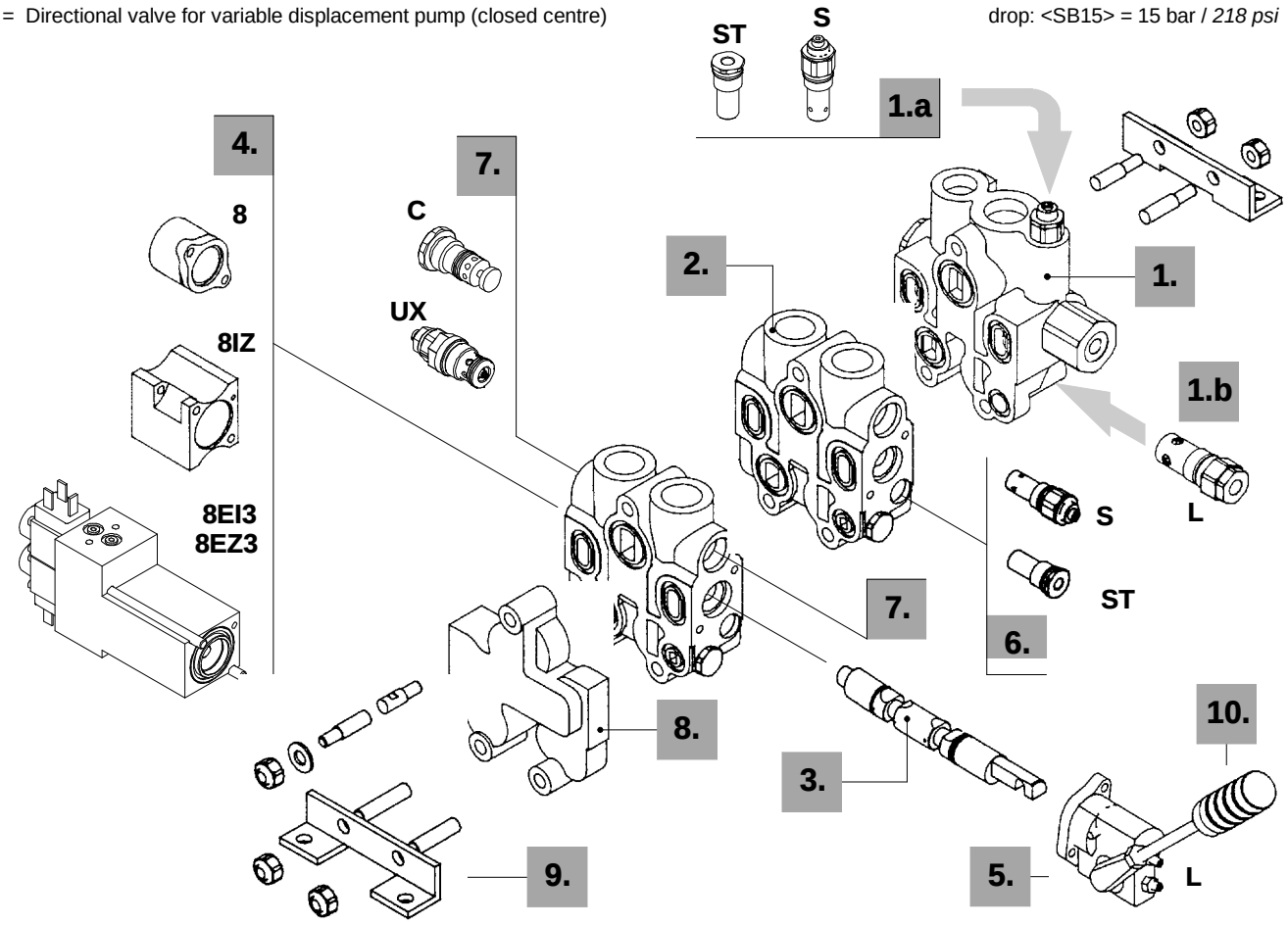
DPC38 A / 1 / BNB11 - S 20 - L / CTB501N..... / CTB501N - AD003 8EZ3 LH .UTUT ST / RF - <SB15> - <CVN>

1. L.S. relief valve setting (MPa)

2. 3. 4. 6. 8.

A = Directional valve for fixed displacement pump (open centre)
C = Directional valve for variable displacement pump (closed centre)

3-way inlet compensator pressure drop: <SB15> = 15 bar / *218 psi*



1. Complete inlet cover *

TYPE	CODE	DESCRIPTION
For open centre circuit		
BNB11-S35	636211008	With L.S. relief valve, for setting from 180 to 350 bar / *from 2600 to 5070 psi*
BNB11-S35-LT	636211004	With L.S. relief valve for setting from 180 to 350 bar / *from 2600 to 5070 psi* and arrangement for unloader valve
BNB11-S35-L	636211006	With L.S. relief valve for setting from 180 to 350 bar / *from 2600 to 5070 psi* and unloader valve
For closed centre circuit		
BNB21-ST	636221007	With L.S. relief valve arrangement
BNB21-S35	636221004	With L.S. relief valve, for setting from 180 to 350 bar / *from 2600 to 5070 psi*

1.a Inlet relief options

TIPO	CODICE	DESCRIZIONE
S	XCAR602100	Setting from 63 to 210 bar / from 900 to 3050 psi
	XCAR602200	Setting from 180 to 350 bar / *from 2600 to 5070 psi*
ST	XTAP220440	L.S. relief valve blanking plug

1.b Unloader valve options

TYPE	CODE	DESCRIPTION
L	XCAR701000	Unloader valve
LT	XTAP227570	Unloader valve blanking plug

Ordering codes

2. Working section *

TYPE	CODE	DESCRIPTION
With compensator		
CMB200N	536111005	For manual control, with service valves arrangement
CMB501N	536111006	For manual control, with service and L.S. valves arrangement
CTB200N	536111002	For electro-hydraulic control, with service valves arrangement
CTB501N	536111003	For electro-hydraulic control, with service and L.S. valves arrangement

TYPE	CODE	DESCRIPTION
Without compensator		
DMB200V	536121005	For manual control, with service valves arrangement
DTB501V	536121003	For electro-hydraulic control, with service and L.S. valves arrangement

3. Spool options

TYPE	CODE						DESCRIPTION
	50 l/min	70 l/min	90 l/min	110 l/min	130 l/min	150 l/min	Nominal flow with open centre circuit (SB 15 bar / *218 psi*) and compensated workin section
AD	3CU41**AD003**	3CU41**AD012**	3CU41**AD002**	3CU41**AD010**	3CU41**AD011**	3CU41**AD006**	Double acting, 3 positions with A and B closed in neutral position
AE	3CU41**AE001**	3CU41**AE007**	3CU41**AE028**	3CU41**AE030**	3CU41**AE017**	3CU41**AE003**	Double acting, 3 positions with A and B partially open to tank in neutral position

4. "A" side positioner kits

TYPE	CODE	DESCRIPTION
8	5V08138005	Manual control , 3 positions with spring return in neuteral position
8IZ	5V08138810*	Proportional hydraulic operated with spring return in neutral position
8EI3	5V08138750	12VDC ON/OFF electro-hydraulic
	5V08138751	24VDC ON/OFF electro-hydraulic
8EZ3	5V08138780	12VDC proportional electro-hydraulic
	5V08138790	24VDC proportional electro-hydraulic

5. "B" side options

TYPE	CODE	DESCRIPTION
LH	5LEV138700	Lever box for hydraulic and electro-hydraulic controls
LM	5LEV138715	Lever box for manual control

NOTE - *Handlever not included*

6. L.S. relief options

TYPE	CODE	DESCRIPTION
S	XCAR602101	L.S valve with setting from 63 to 210 bar / *from 900 to 3050 psi*
	XCAR602201	L.S valve with setting from 180 to 350 bar / *from 2600 to 5070 psi*
ST	XTAP220440	L.S. valve blanking plug
SR	XGIU120410	Joint for external connection of L.S. signal
SR1	5GIU120410	90° JIC joint for external connection of L.S. signal

7. Service valves

TYPE	CODE	DESCRIPTION
UX	X143411145	Pilot operated anti-shock and anti-cavitation valve
C	XCAR502000	Anti-cavitation valve
UT	XTAP230330	Service valve blanking plug

8. End cover *

TYPE	CODE	DESCRIPTION
RF	636310001	Standard, without any connection

9. Assembling kit

CODE	DIRECTIONAL VALVE
5TIR110186	Tie rods with nuts for 1 section
5TIR110234	Tie rods with nuts for 2 sections
5TIR110282	Tie rods with nuts for 3 sections
5TIR110330	Tie rods with nuts for 4 sections
5TIR110378	Tie rods with nuts for 5 sections
5TIR110426	Tie rods with nuts for 6 sections
5TIR110474	Tie rods with nuts for 7 sections
5TIR110522	Tie rods with nuts for 8 sections
5TIR110570	Tie rods with nuts for 9 sections
5TIR110618	Tie rods with nuts for 10 sections

10. Optional handlever

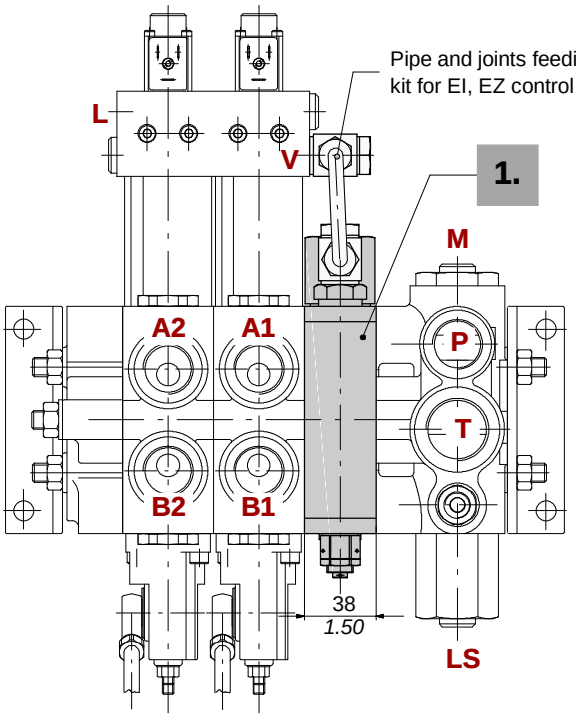
TYPE	CODE	DESCRIPTION
AL01/M8x170	170011117	For L lever box: h = 170 mm / *6.69 in*

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

Intermediate sections

With pressure reducing valve

This section is introduced after inlet cover in order to create necessary low pressure pilot signal for 8EI3 and 8EZ3 controls; it's complete with pipe connection and it's available also within solenoid operated unloader valve for L.S. signal.
Special tie rods are necessary; contact Customer Service.



Description example:
DPC38C/2/BNS21-S20/**ERB-LT**/
CTS501N-AE0018EZ32LH.UTUTST/
CTS501N-AE0018EZ32LH.UTUTST/RF-<SB15>

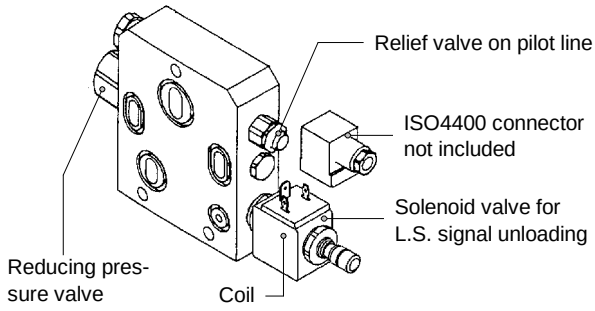
Operating features
Reduced pressure . . . . . : 30 bar / *435 psi*

Coil operating features
Nominal supply voltage . . . . . : 12 VDC / 24 VDC
Power rating . . . . . : 21 W
Duty cycle . . . . . : 100%

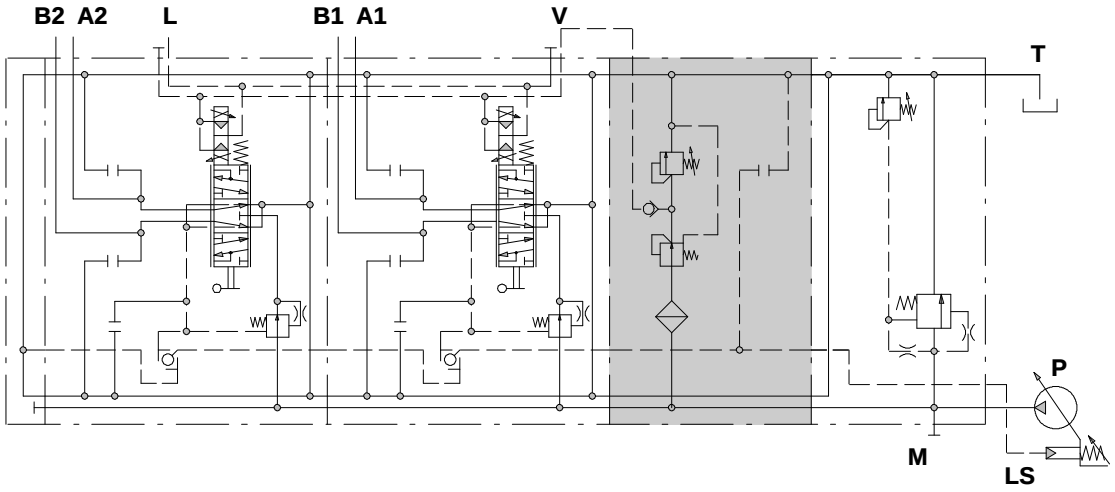
1. Intermediate section

TYPE	CODE	DESCRIPTION
ERB-LT	536431003	Standard with solenoid valve arrangement on L.S. signal
ERB-EL2	536431001	With 12VDC solenoid valve on L.S. signal
ERB-EL4	536431002	With 24VDC solenoid valve on L.S. signal

Example of section with solenoid valve

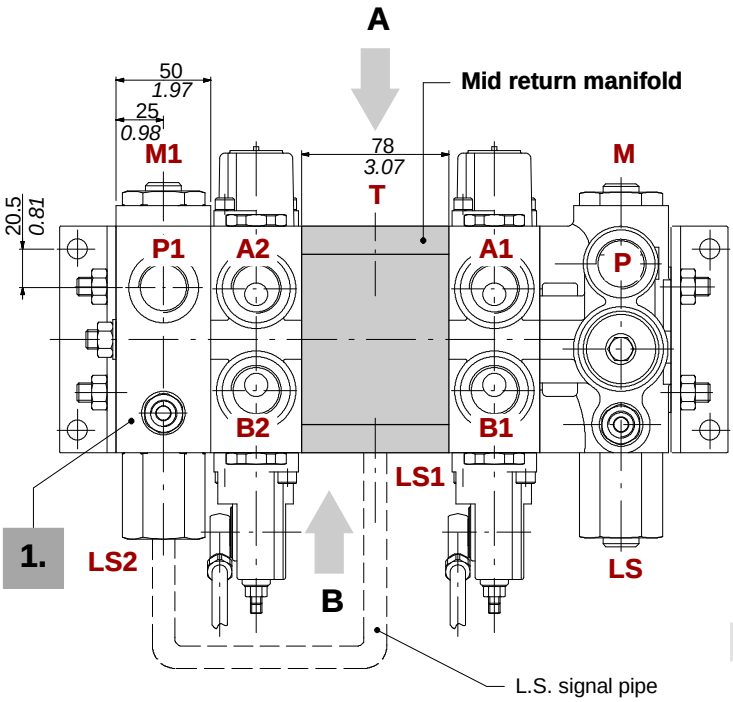


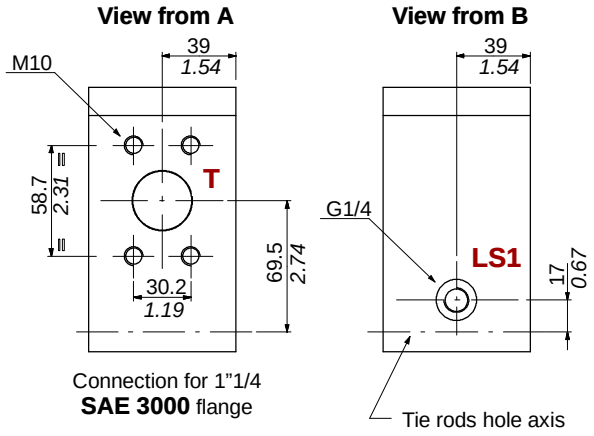
PART CODE	DESCRIPTION
5CAR438302	12VDC solenoid valve
5CAR438304	24VDC solenoid valve
XTAP222340	Solenoid valve blanking plug



CS1 mid return manifold code: 636419001*

Mid return manifold to be added with right inlet valves (standard) and left inlet valves.
The drawing and scheme shows open centre circuit valve.
In case of close centre circuit the L.S. signal coming out from manifold must be connected with L.S. port on the pump.
Special tie rods are necessary: contact Customer Service.

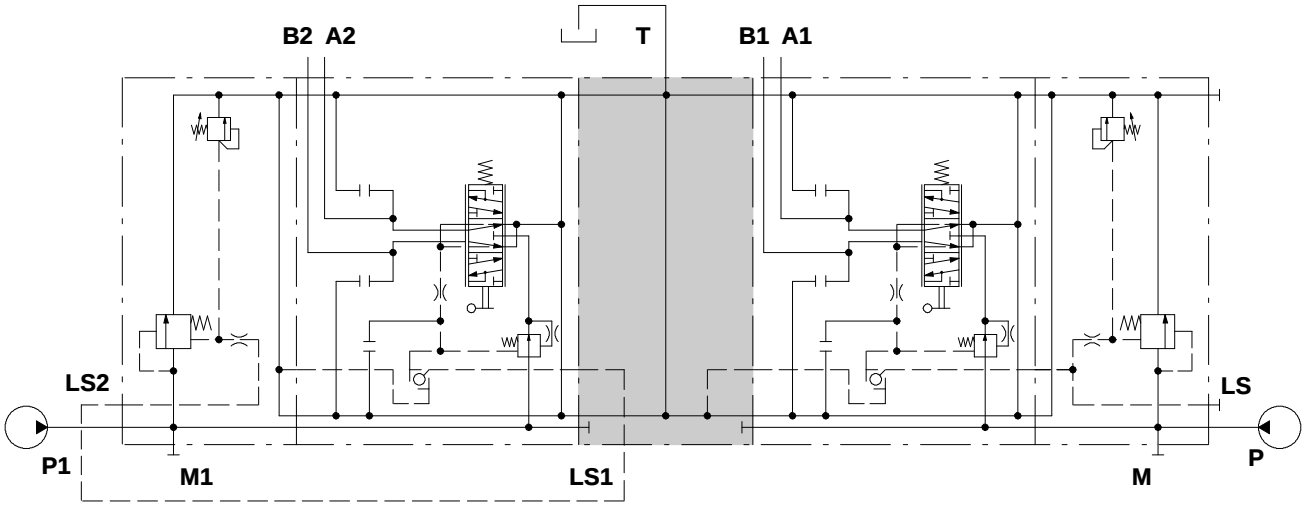




Description example:
DPC38A/2/BNB12-S20/CTB501N-AE0018L.UTUTST/
CS1-FS3/CTB501N-AE0018L.UTUTST/ANB11-S35-<SB15>

1. Complete left inlet cover *

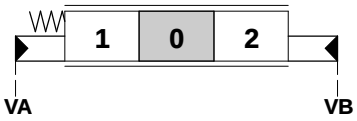
TYPE	CODE	DESCRIPTION
ANB11-S35	636221005	For open centre circuit with L.S. main relief valve
ANB21-S35	636221006	For closed centre circuit with L.S. main relief valve

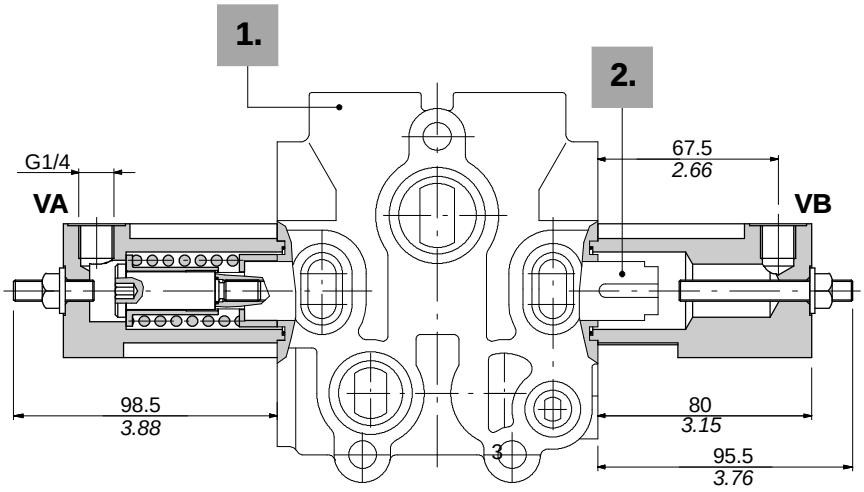


NOTE (*)- *Codes are referred to **BSP** thread.*

Special spool controls

8IM double side proportional operated hydraulic control code: 5IDR238000*

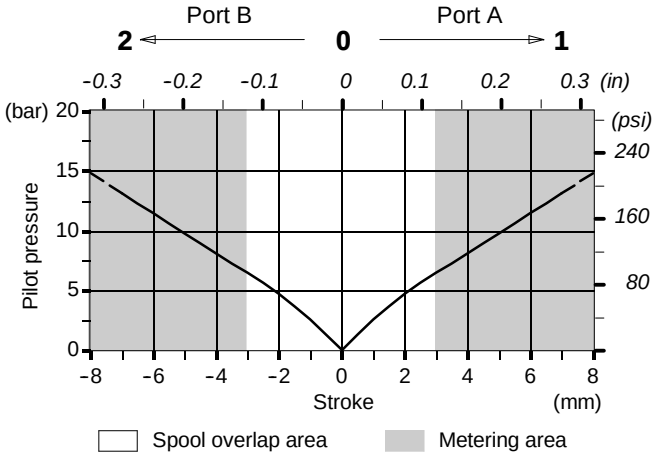




Operating features

Adjustment range (curva 020): from 4 to 14 bar
from58 to 203 psi

Pilot pressure - stroke diagram



1. Special working section kit *

TYPE	CODE	DESCRIPTION
CUB501N	536111009	With compensator and arrangement for service and L.S. valves.
DUB501V	536121009	Without compensator and arrangement for service and L.S. valves.

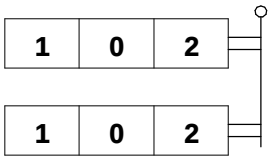
2. Special spool

3 positions spools with A and B closed in neutral position (tipo **BD**) and with A and B to tank in neutral position (tipo **BE**) are available.
For informations about code and flow contact Customer Service.

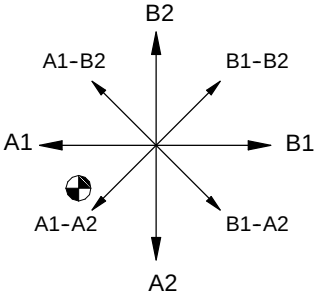
NOTE (*) - *Codes are referred to **BSP** thread.*

Joystick control

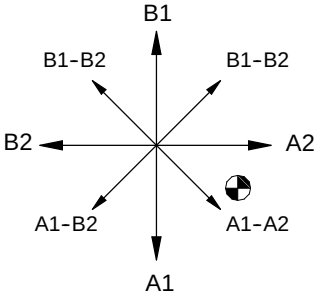
For two sections control.



Execution **LCB1**
pivot placed down on the left

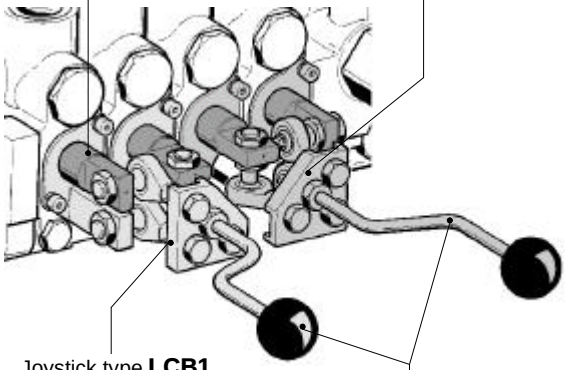


Execution **LCB2**
pivot placed down on the right



Special spools; for information contact Customer Service

Joystick type **LCB2**
code: **5CLO338010**



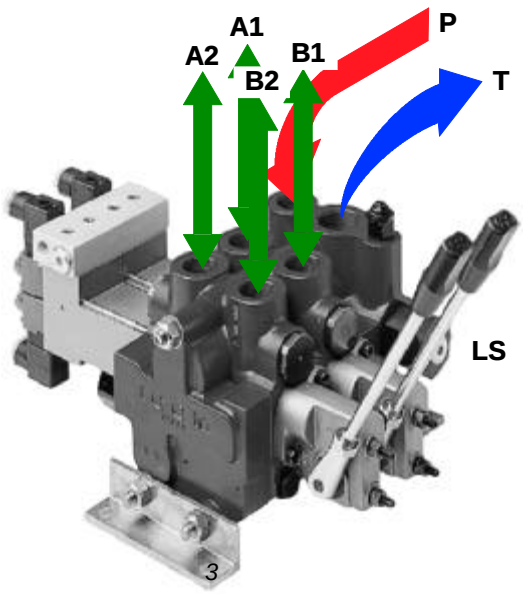
Joystick type **LCB1**
code: **5CLO338000**

Handlever on request **AL04/M10x200**
code: **170012024**

Installation and maintenance

The DPC38 valve is assembled and tested as per the technical specification of this catalogue.
Before the final installation on your equipment, follow the below recommendations:

- the valve can be assembled in any position; in order to prevent working sections deformation and spool sticking mount the product on a flat surface;
- prior to painting, ensure plastic port plugs are tightly in place.



Open centre configuration

Fitting tightening torque - Nm

THREAD TYPE	ports P, A and B	port T	port LS
BSP (ISO 228/1)	G 3/4	G 1	G 1/4
With O-Ring seal	70	100	25
With copper washer	70	90	30
With steel and rubber washer	70	100	16
UN-UNF (ISO 11926-1)	1 1/16-12 UN-2B (SAE 12)	1 5/16-12 UN-2B (SAE 16)	9/16-18 UNF-2B (SAE 6)
With O-Ring seal	95	150	30

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

HYDRAULIC CONTROL SYSTEMS

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