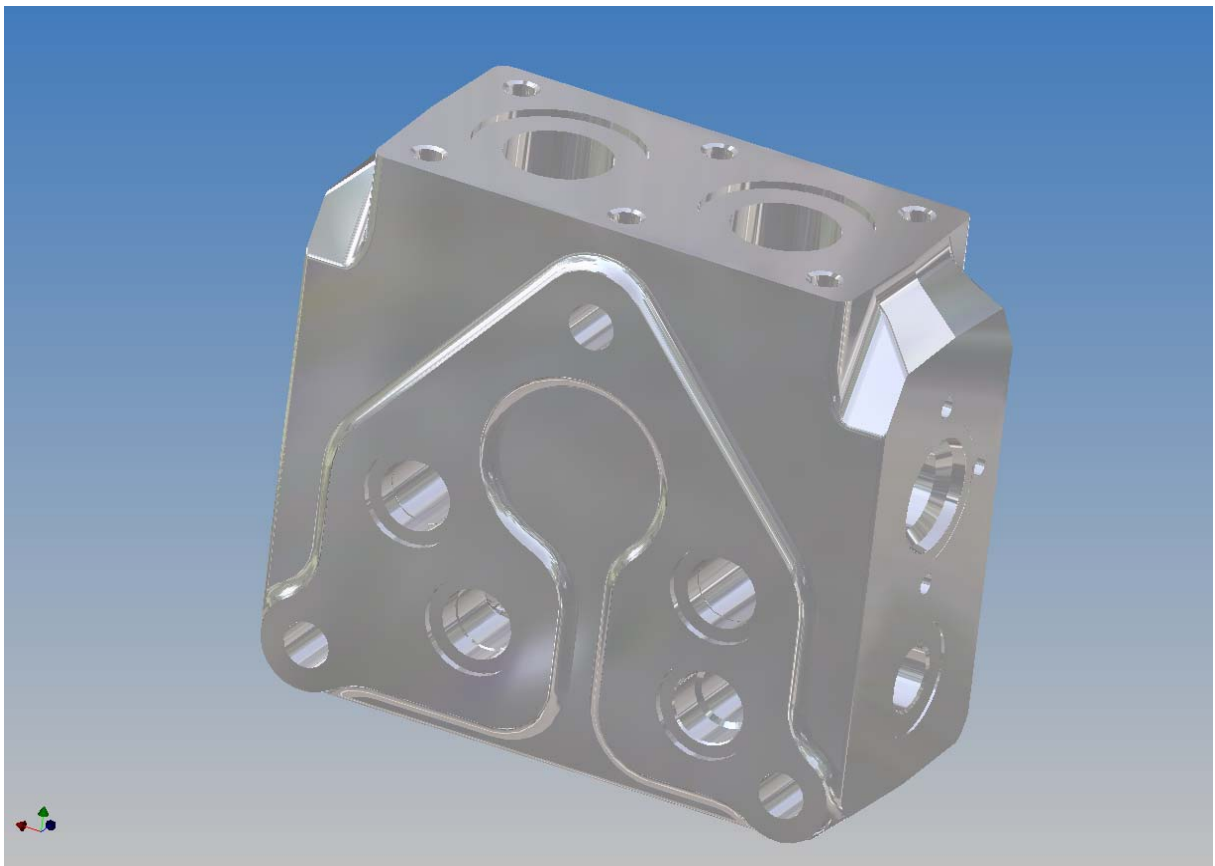




## DIRECTIONAL CONTROL VALVE BLS6

*Proportional load sensing and  
pressure compensated*

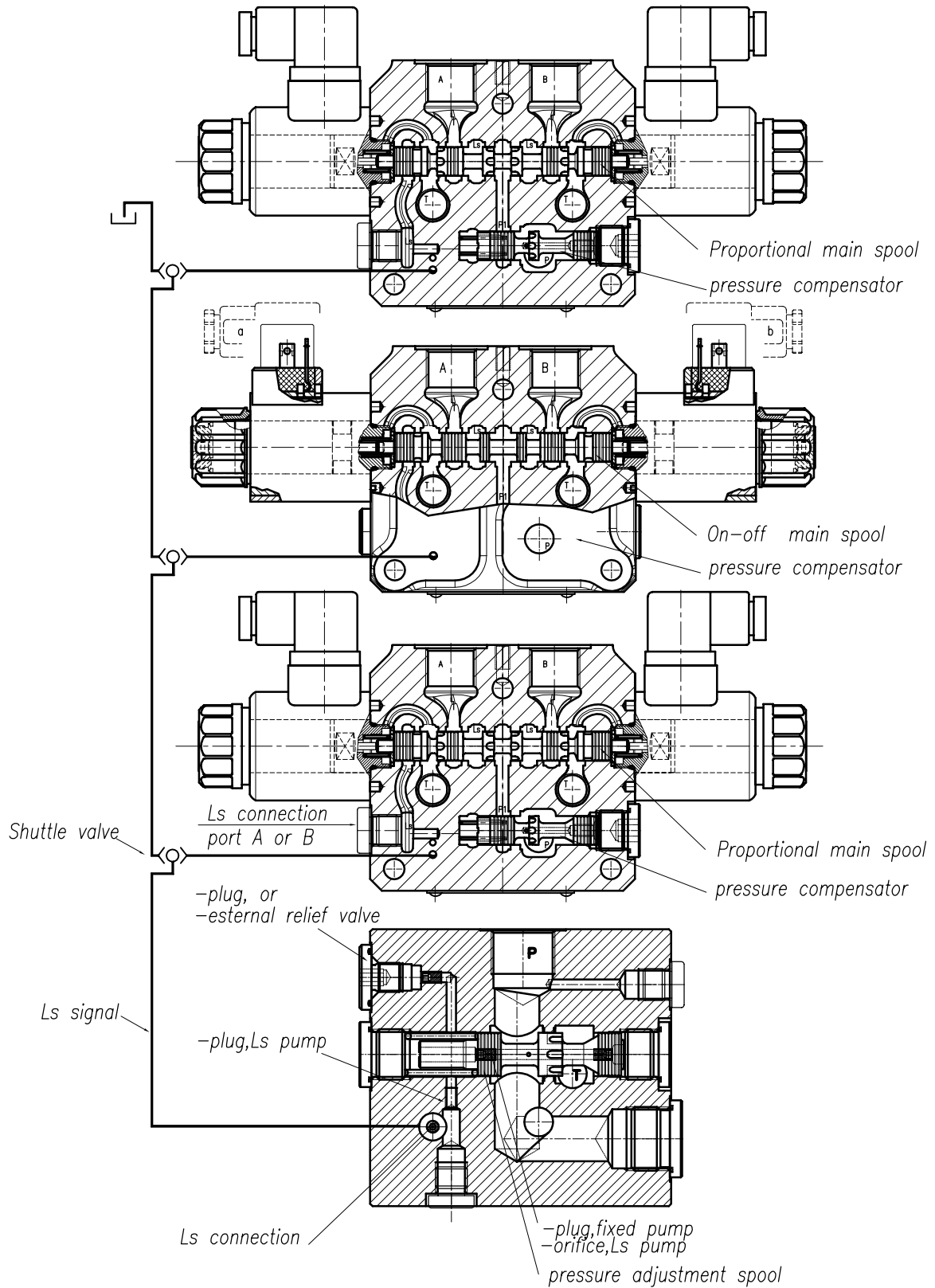


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Valve block sets consisting of:  
 1 inlet section, 1 end section, 1...8 spool sections and shuttle valves,  
 3 tie bolts



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## GENERAL

The BLS6 is a stackable , load–sensing and pressure compensated directional valve.  
It is designed for many different applications , and. it can be used in cranes ,  
forestry machines , working platforms , agricultural machines,etc.

## COMPACT SYSTEM DESIGN

The BLS6 valve is of modular design , with unique possibilities to integrate  
application–adapted function solutions thus facilitating a complete system solution for your machine.

## BENEFIT

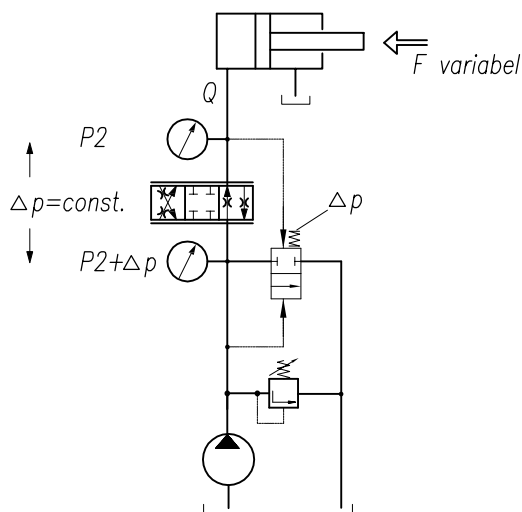
The modular construction of the BLS6 can be optimized for both simple and sophisticated functions.  
The possibilities for integrating complete function solutions give a good ratio between cost and performance.  
Function–adapted solutions enable energy consumption to be kept at the minimum level.

## "LOAD SENSING" PRINCIPLE

This means that the variable load pressure is sampled and fed to a pressure compensator or a pump regulator.  
This principle offers the following advantages as against other systems.

### 1) Load–independent flow rate control

The pressure difference  $\Delta p$  at the variable throttle cross–section of the directional control valve is kept constant.  
This means that load fluctuations are compensated for and the flow rate/cylinder speed is kept constant.  
However, this only applies to the cylinder with the load pressure detected by the shuttle valves.

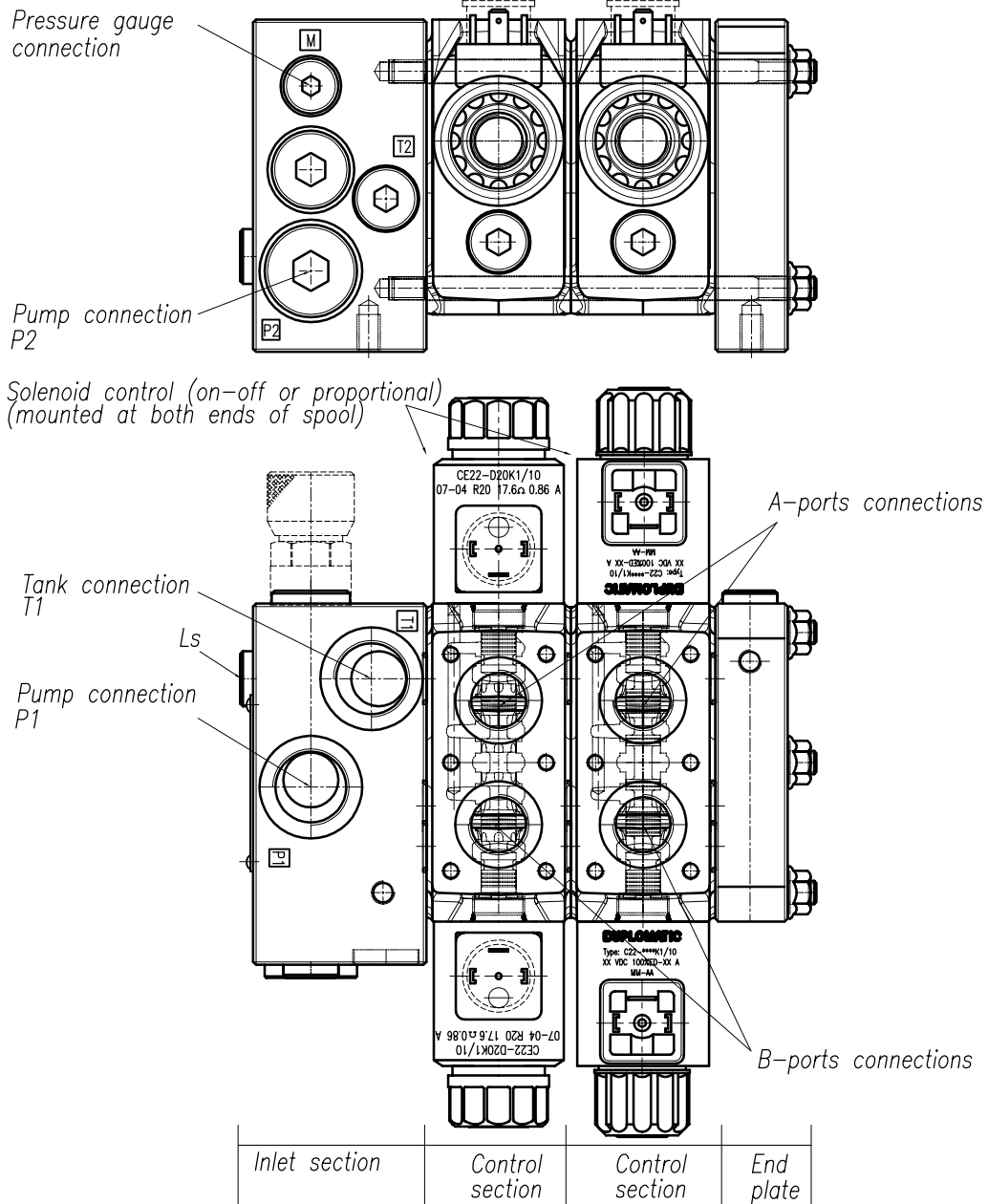


### 2) Constant displacement pump with "load sensing"

The flow rate excess is not fed away via the relief pressure valve but via a parallel pressure compensator.

This arrangement corresponds to a 3–way flow control valve and, in addition to improved efficiency , means the flow to the consumer unit is independent of load fluctuations.

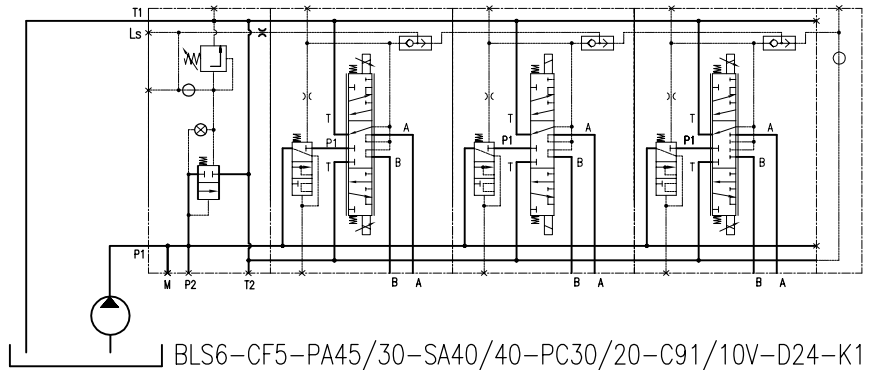
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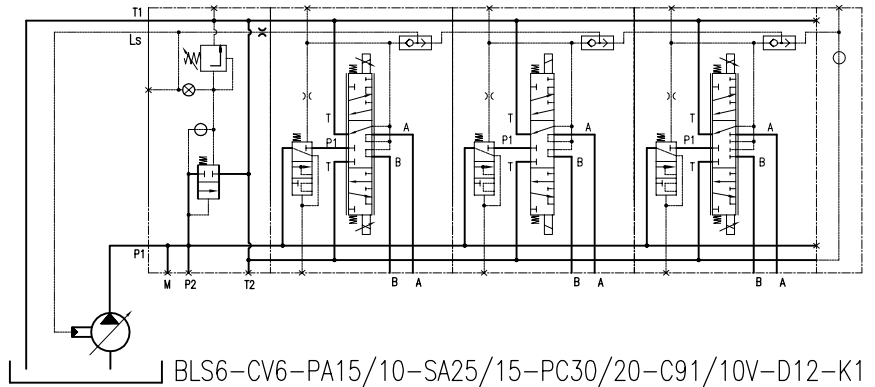
<b>PRESSURE</b>		<b>FILTRATION</b>	
Pump inlet (P1,P2 port)	250bar	Filtration must be arranged so that Target	
Control ports (A,B-ports)	300bar	Contamination Class 18/14 according to	
Tank connection (T port)	max 20bar	ISO4406 is not exceeded.	
<b>FLOW RATES ,RECOMMENDED</b>		<b>CONNECTIONS</b>	
Pump connection	max 100l/min	P1	G3/4"
Motor port, with compensator	max 40**/min	P2	G3/4"
Motor port, without compensator	max 60**/min	T1	G3/4"
Tank connection	max 120l/min	A,B port	G1/2"
		Ls	G1/4"
** Depending on spool variant		M	G1/4"

Hydraulic circuit diagram showing basic functions for BLS6

BLS6 valve for fixed displacement pumps integrated with pressure relief valve.



BLS6 valve for systems with  $L_s$  pump. The system is equipped with a pilot-operated relief valve, which protects the pump.



Parallel connection of two BLS6 blocks

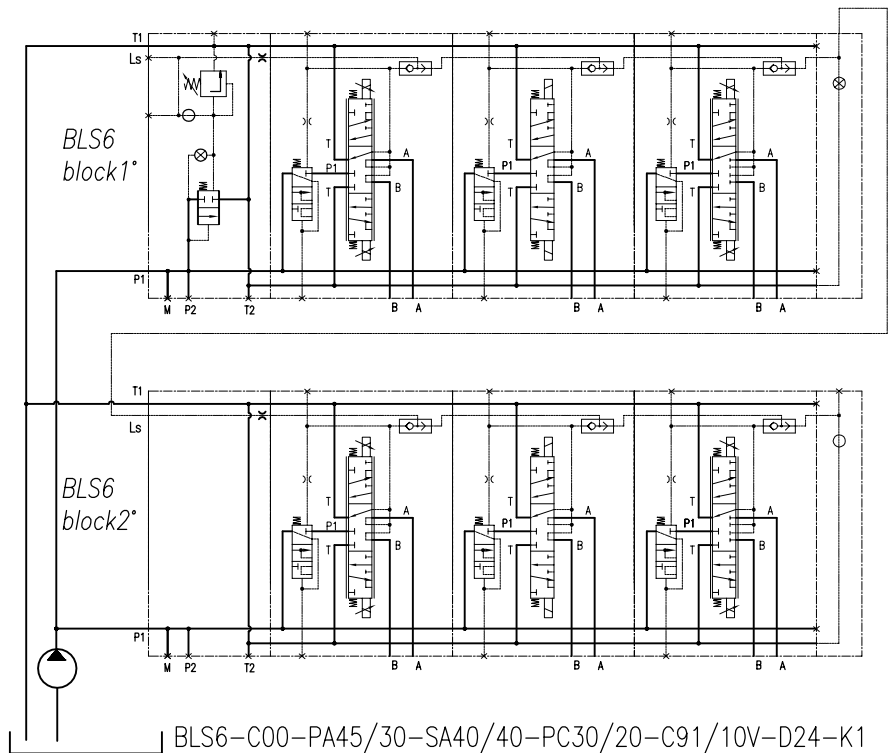
Open centre pump control, fine control flow, residual flow and primary pressure relief valve function via pressure compensator in block 1<sup>o</sup>, i.e. block 2<sup>o</sup> does not require its own pressure compensator.

Connections:

$L_s$  connection via inlet section from block 2<sup>o</sup> to end section of block 1<sup>o</sup>.

"P" and "T" connected via pressure line which divides before block 1<sup>o</sup>.

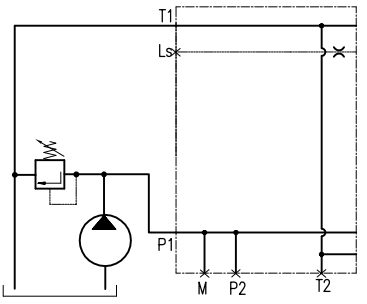
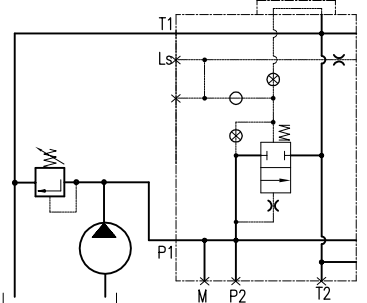
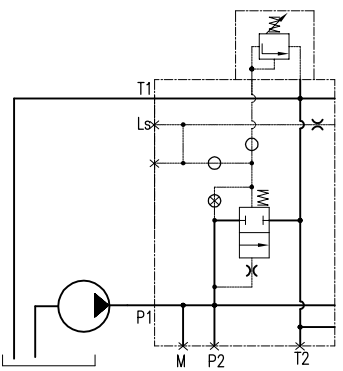
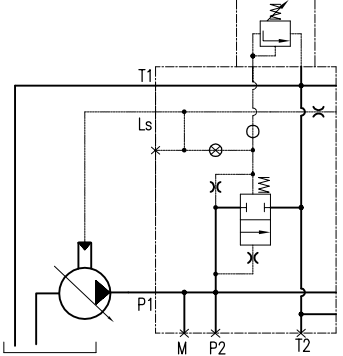
BLS6-CF5-PA45/30-SA40/40-PC30/20-C92/10V-D24-K1



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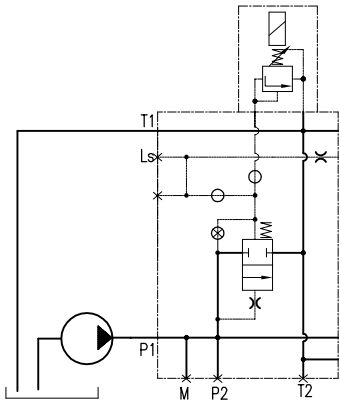
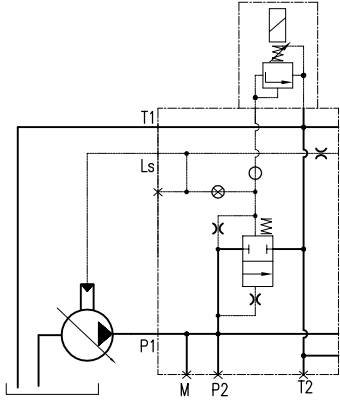
## INLET SECTION

The inlet section is available in variants for fixed pump and in variants for system with Ls pump.  
The variant for fixed pumps can be converted easily in the field to work with variable pumps , and vice versa.

IDENTIFICATION	Pressure range	DESCRIPTION	SYMBOL
BLS6–C00/10V		Inlet section without pressure compensator, without pressure relief valve. Inlet section for system with fixed pump . Can be used also with Ls pump.	
BLS6–CF0/10V		Inlet section with pressure compensator, without pressure relief valve. Inlet section for system with fixed pump.	
BLS6–CF5/10V BLS6–CF6/10V	12....210bar 15....315bar (*)	Inlet section with an adjustable , pressure relief valve, which protect the pump.  Inlet section for system with fixed pump.	
BLS6–CV5/10V BLS6–CV6/10V	12....210bar 15....315bar (*)	Inlet section with an adjustable , pressure relief valve which protect the pump.  Inlet section for system with Ls pump.	

(\*) Don't exceed 250bar max.

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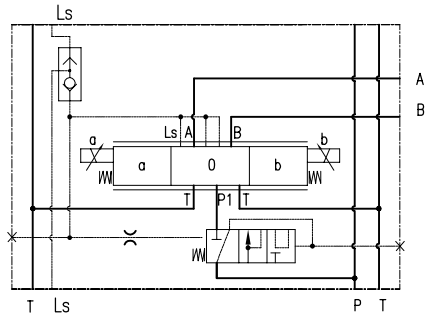
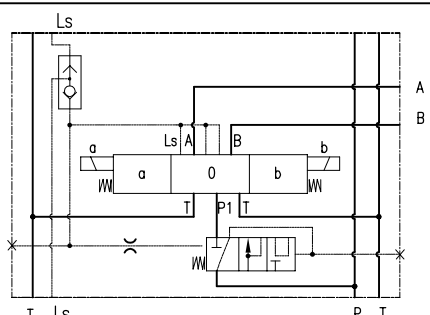
IDENTIFICATION	Pressure range	DESCRIPTION	SYMBOL
BLS6-CF6MA/10V-D**-K1	15....315bar (*) on-off command deenergised open	Inlet section with an adjustable pressure relief valve electrically actuated, which protects the pump.  Inlet section for system with fixed pump.	
BLS6-CV6MA/10V-D**-K1	15....315bar (*) on-off command deenergised open	Inlet section with an adjustable pressure relief valve electrically actuated, which protects the pump.  Inlet section for system with Ls pump.	

(\*) Don't exceed 250bar max.

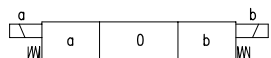
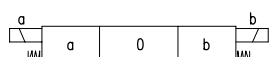
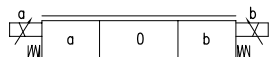
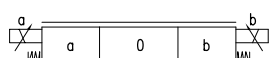
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### CONTROL SECTION

The BLS6 directional valve is stackable and can be delivered in combinations of 1 to 10 spool sections.  
Each section can be equipped individually with a large number of different spools.

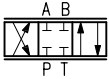
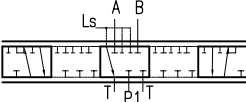
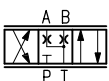
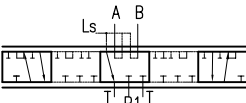
IDENTIFICATION	DESCRIPTION	SYMBOL
BLS6-P***/10V	<p>-Section fitted with 2-way pressure compensator, with load holding function</p> <p>For use in PARALLEL OPERATION.</p> <p>PRESSURE COMPENSATOR</p> <p>Sections with pressure compensators are not influenced in any way by other simultaneously operated functions, regardless of variations in load or pump delivery pressure, provided that sufficient pump capacity is available.</p>	
BLS6-S***/10V	<p>It maintains a constant pressure differential over the regulating restrictor of the main spool, which means that the section is not disturbed in any way by other simultaneously operated functions, regardless of variations in load or pump delivery pressure.</p>	

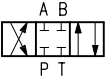
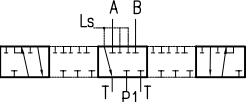
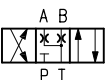
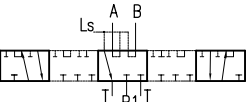
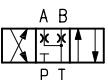
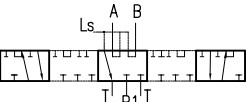
### CONTROL SECTION ACTUATORS

IDENTIFICATION	DESCRIPTION	SYMBOL
BLS6-S**/**/10V-D12-K1	ON-OFF 12V DC	
BLS6-S**/**/10V-D24-K1	ON-OFF 24V DC	
BLS6-P**/**/10V-D12-K1	PROPORTIONAL 12V DC 1.88A	
BLS6-P**/**/10V-D24-K1	PROPORTIONAL 24V DC 0.86A	


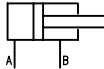
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## CONTROL SPOOL OPTIONS

PROPORTIONAL SECTION SPOOL OPTIONS			
IDENTIFICATION	$\Delta p$ (bar)	SYMBOL ISO	SYMBOL
PC45/30	8		4-way, 3-position closed neutral position
PC30/20	4		
PC25/15	8		
PC15/10	4		
PA45/30	8		4-way, 3-position open neutral position
PA30/20	4		
PA25/15	8		
PA15/10	4		

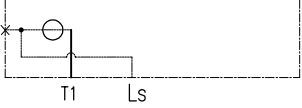
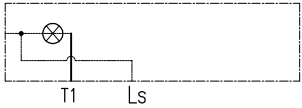
ON-OFF SECTION SPOOL OPTIONS			
IDENTIFICATION	$\Delta p$ (bar)	SYMBOL ISO	SYMBOL
SC60/60	8		4-way, 3-position closed neutral position
SC40/40	4		
SC45/30	8		
SC30/20	4		
SC25/15	8		4-way, 3-position open neutral position
SC15/10	4		
SA60/60	8		
SA40/40	4		
SA45/30	8		4-way, 3-position open neutral position
SA30/20	4		
SA25/15	8		
SA15/10	4		

### EXAMPLE :

SC60/60	$Q(P-A)=60L/min$ $Q(P-B)=60L/min$ (with $\Delta p=8bar$ const.)	$\frac{Q(P-A)}{Q(P-B)} = 1$	Symetric spool for : 
PC25/15	$Q(P-A)=25L/min$ $Q(P-B)=15L/min$ (with $\Delta p=8bar$ const.)	$\frac{Q(P-A)}{Q(P-B)} = 1,5$	Asymetric spool for : 

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END SECTION

IDENTIFICATION	DESCRIPTION	SYMBOL
BLS6-C91	The LS port signal is plugged. Standard end section	
BLS6-C92	The LS port signal is open. This connection is used to receive the load signal from a parallel connected valve.	

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# BLS6

Ordering information  
SINGLE SECTION

ASSIEME  
ASSEMBLY

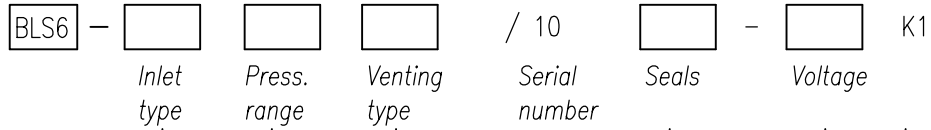
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see page  
07/08

INLET SECTION



Code	Type
MA	On-off deenergised open

Electric connector  
DIN43650

Code	Type
CF	Fixed pump
CV	Variable pump
CO	No compensator

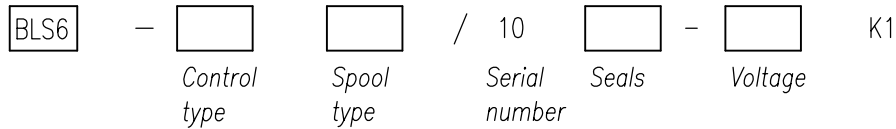
Code	Type
0	No relief valve
5	max 210bar
6	max 315bar

Code	Type
V	FPM

Code	Type
D12	12V
D24	24V
D00	without coils

see page  
09/10

CONTROL SECTION



Code	Type
P	Proportional
S	On-off

Code	Type
V	FPM

Code	Type
D12	12V
D24	24V
D00	without coils

Electric connector  
DIN43650

Proportional	
Flow A/B	Type
Code	Type
A 45/30	
A 30/20	
A 25/15	
A 15/10	
C 45/30	
C 30/20	
C 25/15	
C 15/10	

On-off	
Flow A/B	Type
Code	Type
A 60/60	
A 40/40	
A 45/30	
A 30/20	
A 25/15	
A 15/10	
C 60/60	
C 40/40	
C 45/30	
C 30/20	
C 25/15	
C 15/10	

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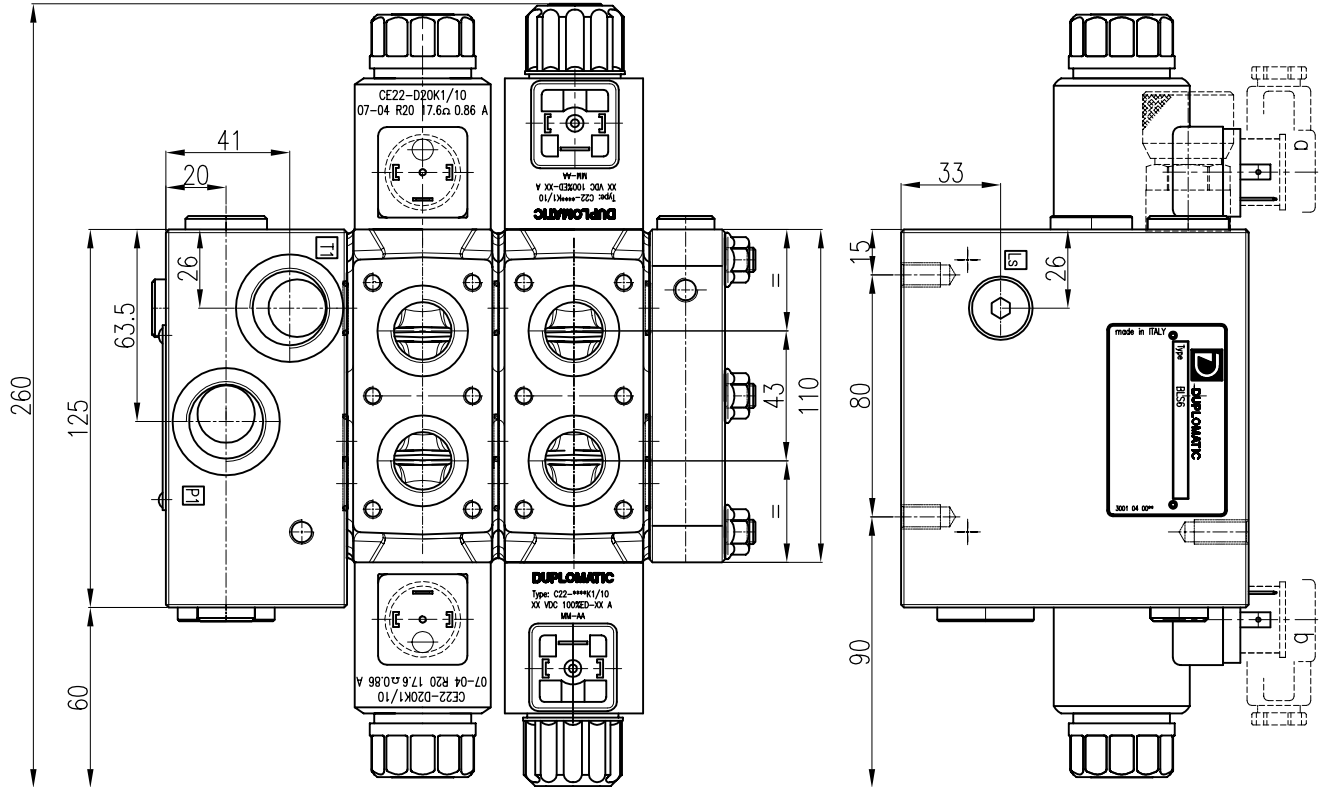
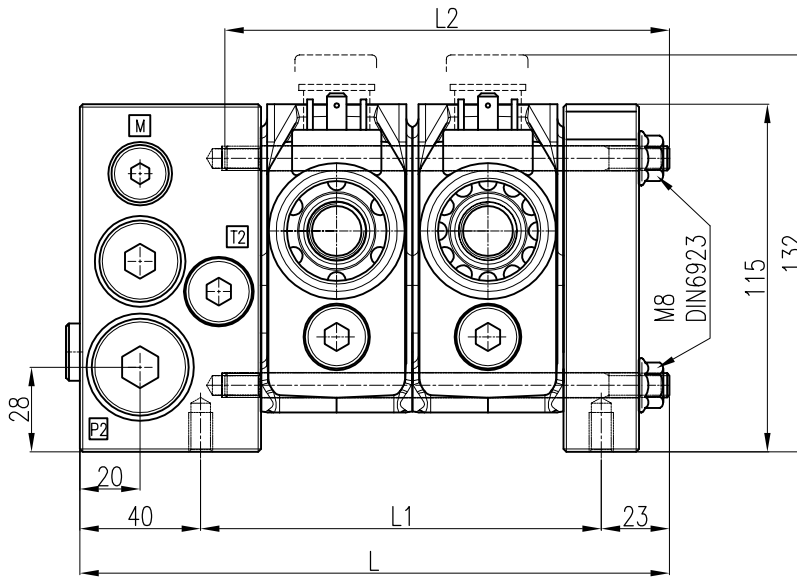


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Dis/Dwg ing.Ina Costin  
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NUMBER OF SECTIONS

BLS6	1	2	3	4	5	6	7	8
L(mm)	145.5	195.5	245.5	295.5	345.5	395.5	445.5	495.5
L1(mm)	82.5	132.5	182.5	232.5	282.5	332.5	382.5	432.5
L2(mm)	97	147	197	247	297	347	397	447

Connections

P1	P2	T1	T2	A/B	LS	M
G3/4	G3/4	G3/4	G3/8	G 1/2	G1/4	G1/4

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