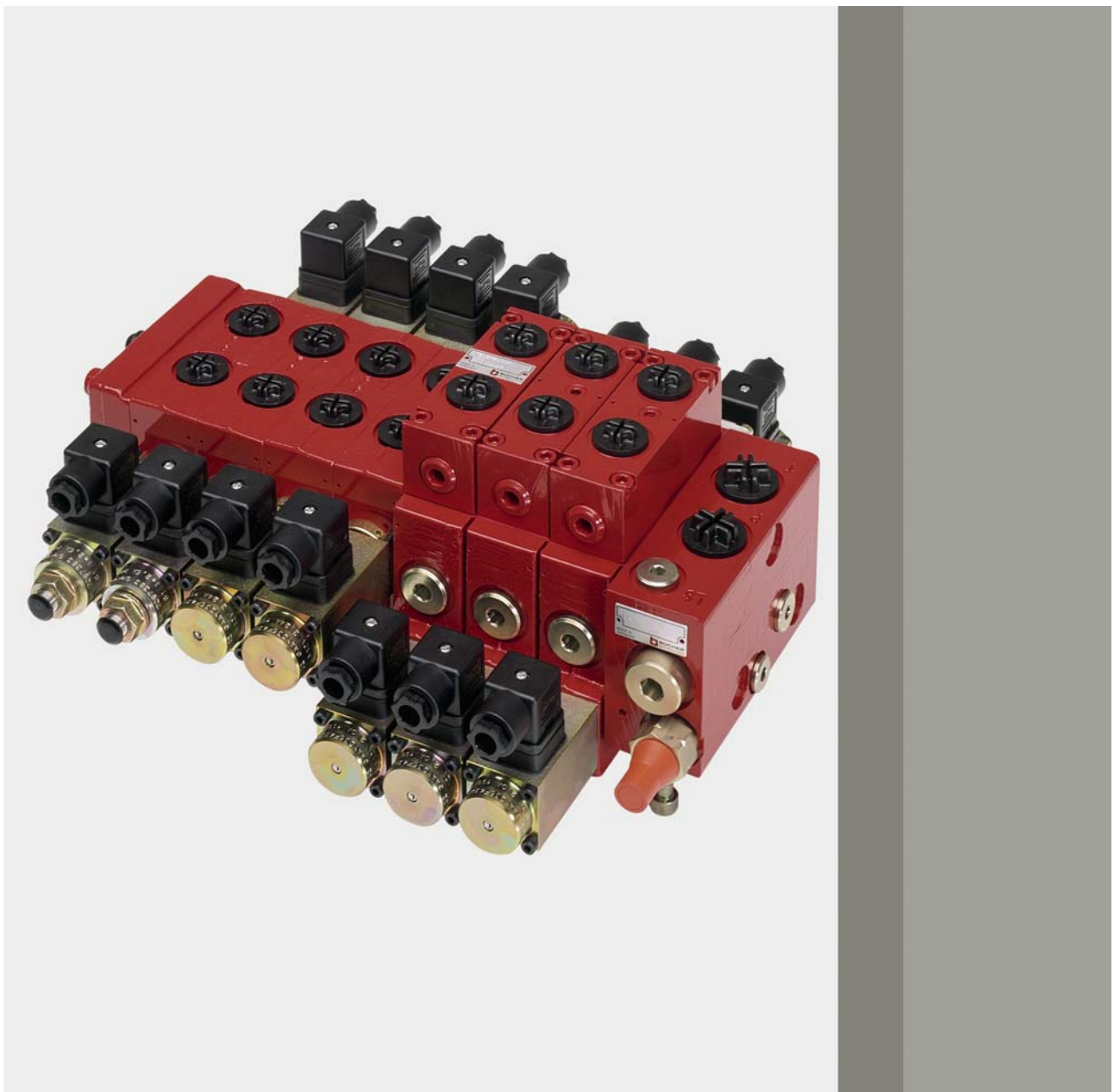


Proportional Directional Valve

Series L.8S



motion and progress

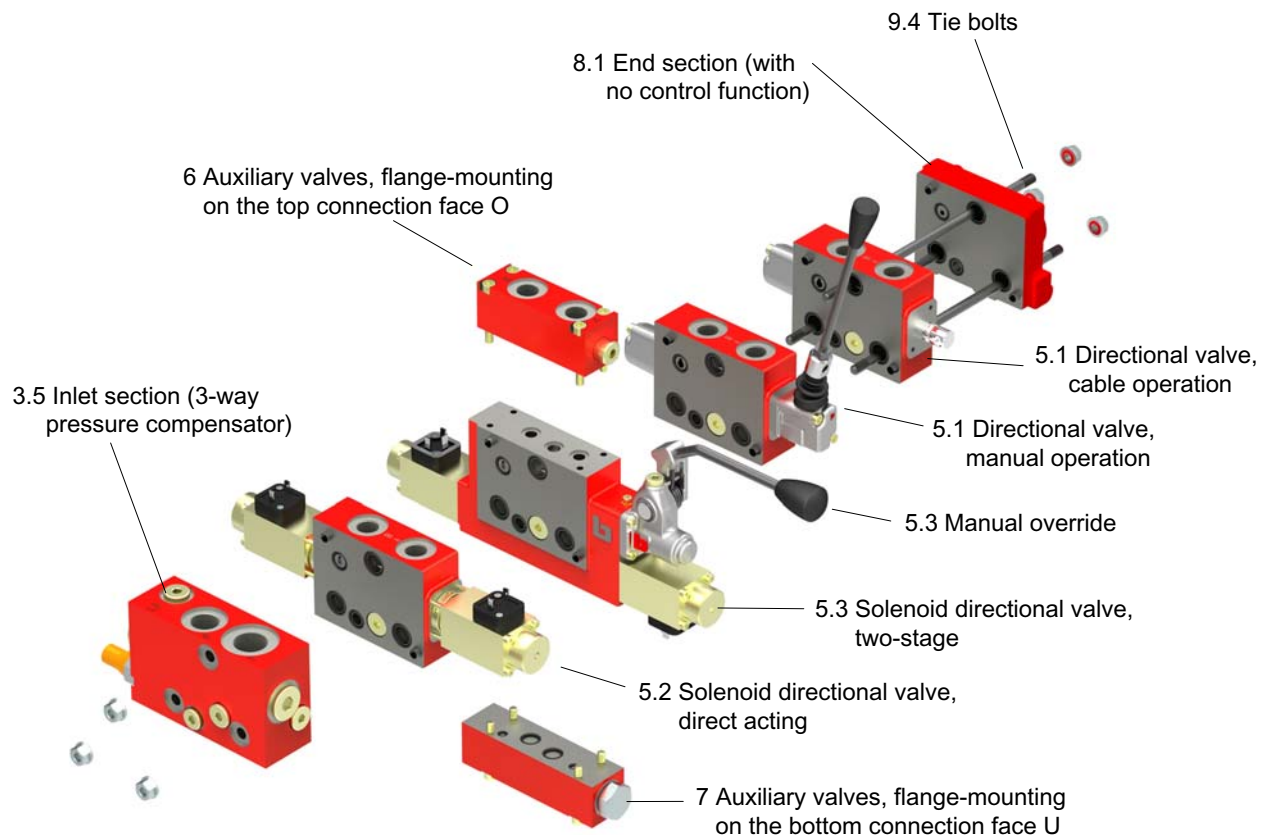
Inhaltsverzeichnis

Seite

1	General description	5
2	The main components	6
2.1	Inlet and end section for valve blocks	6
2.2	Inlet and intermediate sections	6
2.3	Directional valves	7
2.4	Auxiliary valves	8
2.5	General technical data	8
3	Inlet sections	9
3.1	Inlet sections with no control funktion	9
3.2	Inlet pressure relief two-stage	10
3.3	Inlet pressure relief direct acting	11
3.4	2-way pressure compensator	12
3.5	3-way pressure compensator	13
4	Intermediate sections	17
4.1	Intermediate sections with no control function	17
4.2	2-way pressure compensators	18
4.3	3-way pressure compensators	19
4.4	Priority sections LU8SSB..	22
4.5	Multi-way pressure compensator	24
4.6	Proportional pressure reducing valve	26
5	Directional valves	29
5.1	Directional valves LA8S-/LF8S	29
5.2	Directionla valves LD8S-/LC8S	33
5.3	Directional valves LM8S-/LP8S	39
5.4	Directional sections, LH8S	45
6	Auxiliary valves that bolt-on to the top connection face O	49
6.1	Anti-shock/make-up valve (secondary pressure relief)	49
6.2	Lock check valves (pilot operated non return valves)	51
6.3	Load check valves with anti-shock / make-up valve (pilot operated non-return valve with pressure relief on the actuator side)	54
6.4	Load control valves	56
6.5	Special bolt-on plates LU8SSAP-RWM12-0M18	58
7	Auxiliary valves that bolt-on to the bottom connection face U	59
7.1	Individual pressure compensators with / without flow-cut-off (torque-limiting)	59
7.2	Flow limiters with / without individual pressure compensators	61
7.3	Pressure reducing compensators	63

7.4	2-way compensator	66
8	End sections	67
8.1	End sections with no control function	67
8.2	Priority sections LU8SPU	69
8.3	With direct-acting pressure relief	71
8.4	With pressure reducing function e.g. for hydraulic joystick	72
8.5	Load control valve with float position	73
8.6	Intermediate and end section with flow control function SR	75
9	Combinations with other valve series	78
9.1	Combination with SVH04..	78
9.2	Combination with HDS07 with unload function	79
9.3	Combination with HDS07 with priority function	81
9.4	Combinations with HDS07	83
10	Accessories	84
10.1	Cable operators	84
10.2	Electrical joysticks	85
10.3	Tie bolts	85
10.4	Connector plug GDM 309	85
10.5	Liability	85
10.6	Note	85
11	Applications examples	86
11.1	Systems with fixed-displacement pump	86
11.2	Systems with variable-displacement pump and load-independent lowering of the actuator	87
11.3	Systems with a priority circuit in an intermediate section	88
11.4	Systems with priority circuit for various pump types (fixed- and variable-displacement pumps)	89
11.5	Combination with series SVH04 seat valves	90
11.6	Combination with series HDS07 valves	91

1 General description



The L.8S valve series was developed for mobile applications and it features a robust design and small external dimensions.

The L.8S valve range is a very flexible building-block system - its elements can be selected and assembled into a valve block that provides the necessary functions and precisely meets the needs of the application.

The following components are available within the range:

Block termination components

- inlet sections
- end sections

Intermediate sections

- 2-way pressure compensators
- 3-way pressure compensators
- multi-way pressure compensators

Directional valves with auxiliary valves

- load check valves
- anti-shock valves
- individual pressure compensators (2-way)

and many more.

Within the valve block, directional valve sections are connected in parallel to the pressure, tank and control lines.

In a system with a fixed-displacement pump, a typical valve block contains a 3-way compensator, several directional valves and the necessary block termination components. The pump is connected to the valve block by a pressure line.

When all directional valves are in the neutral position, the control line unloads the 3-way compensator to tank. The entire flow supplied to the valve therefore passes - with minimal unloaded pressure drop - through the 3-way compensator to the tank port or the carry-over port.

When one of the directional valves is operated, the load pressure is signaled through the control line to the 3-way compensator. The 3-way compensator keeps the pressure difference between the pressure and control galleries inside the block at a constant level (the control pressure). The flow rate to the actuator is therefore always independent of the load and proportional to the open flow area of the metering orifice in the directional valve that has been operated.

In a system with a pressure-controlled, variable-displacement pump, a typical valve block contains (in addition to the directional valves and block termination components) a 2-way compensator that must be positioned between the pump port and the pressure gallery inside the block.

When all directional valves are in the neutral position, the 2-way compensator closes the inlet to the valve block. When one of the directional valves is operated, the 2-way compensator reduces the inlet pressure to a level sufficient to keep the pressure difference between the pressure and control galleries inside the block at a constant level. This ensures that the flow rate to the actuator is independent of the load and proportional to the open flow area of the metering orifice in the directional valve. The flow rate supplied to the valve block therefore matches the actual demand.

When a valve block is supplied by a variable-displacement pump with a load-sensing control, the pump can be connected directly to the valve block by a pressure line. In addition, the control line is connected to the pump control port. If the control pressure can be adjusted directly at the pump control, it is then possible to set the actuator flow rate to the specified value without any additional measures.

If the pump control pressure is preset, the specified flow rate is achieved by placing a 2-way compensator before the directional valve.

When all directional valves are in the neutral position, the pump is de-stroked. When one of the directional valves is operated then, due to the effect of either the pump control or the 2-way compensator positioned before the directional valve, the necessary control pressure is maintained between the pressure and control galleries inside the block.

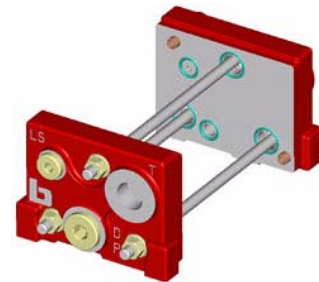
The flow to the selected actuator is therefore independent of the load and proportional to the open flow area of the metering orifice in the directional valve.

In all of the system configurations described up to this point, when several directional valves are operated then, thanks to the shuttle valves situated in the control lines, the actuator with the highest load will dictate the control pressure and the flow rate to the actuator will be independent of the load and proportional to the open flow area of the metering orifice in the directional valve. Load-independence for the less highly-loaded actuators can be achieved by using individual pressure compensators, which reduce the excessive pressure difference sufficiently to ensure that the required control pressure exists at the corresponding directional valve.

2 The main components

2.1 Inlet and end section for valve blocks

Every L.8S series valve block requires two block termination components in the form of one inlet section and one end section. These two components are used for mounting the block, the block tie bolts pass through them, and they are provided with hydraulic ports.



2.2 Inlet and intermediate sections

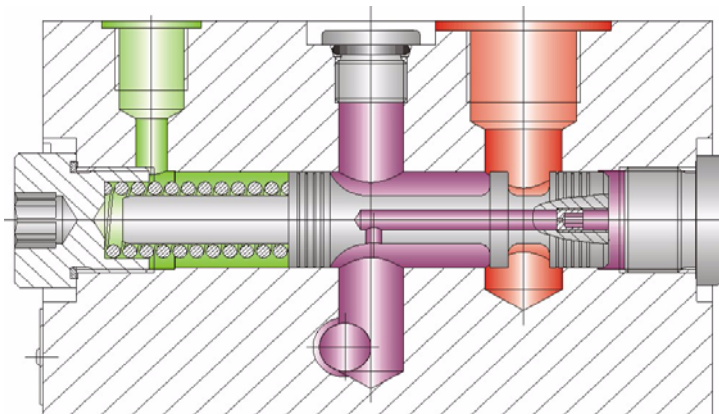
2.2.1 2-way pressure compensator

The 2-way compensator is a valve that controls a pressure differential. It is situated inside the block, before the pressure gallery. In this valve, the inlet pressure is reduced by the amount

needed to ensure that the control pressure between the pressure and control galleries inside the block is kept con-

stant. In some models, the valve closes the inlet to the block if the pressure in

the control line reaches the setting of an upstream pressure relief valve. The 2-way compensator can be supplied as an inlet section or an intermediate section.

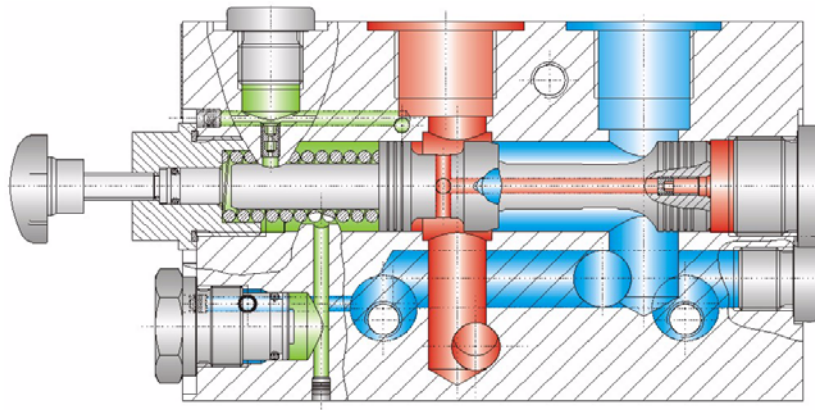


2-way pressure compensator

2.2.2 3-way pressure compensator

The 3-way compensator is a valve that controls a pressure differential. It is situated between the pressure gallery and the tank or carry-over gallery. The valve keeps the pressure difference between the pressure and control galleries inside the block at a constant level and surplus flow passes to the tank or carry-over port. If the pressure in the control line reaches the setting of an upstream pressure relief valve, the 3-way compensator opens the connection to

tank, thus limiting the pressure in the pressure gallery inside the block. In one particular model, the function of the 3-way compensator can be customised to suit the requirements of individual applications. The valve can be closed by a shut-off screw that is accessible from outside the valve. This allows the valve to be used on systems with pressure-controlled pumps, while accepting that there will be a reduction in the smoothness of operation.



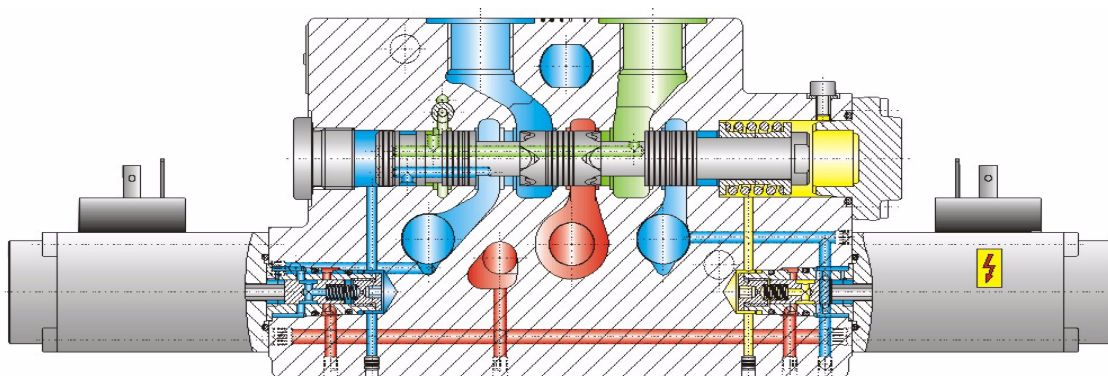
3-way pressure compensator

2.3 Directional valves

The control options for L.8S series directional valves enable continuous (LA, LF, LQ, LH, LC and LP or on/off (LM, LD) changes to the flow area of the metering orifice, which in turn determines the flow rate that is supplied to the actuator. This is achieved by arranging that in the first group of valves the spool can stop at any desired point along its total stroke, whereas the spools of LM/LD valves travel from one end of the stroke to the other when they are switched, and do not stop at intermediate positions.

The various directional valves are differentiated by their type of operation. The LA directional valves are mechanically operated by hand lever. The LF directional valves are mechanically operated by remote cable. The LQ directional

valves are mechanically operated by a lead-screw. The LH directional valves have hydraulic operation via external ports. The LD and LC directional valves are electrically operated, direct acting. The LM and LP directional valves have electro-hydraulic operation. The solenoids of LD, LC, LM and LP directional valves are fitted with a manual override as standard, but in the case of the LM and LP valves the overrides only work if pressure is present at the valve inlet. Series LH, LM and LP directional valves can be equipped with an optional hand lever for manual operation of the valve spool in an emergency. In such cases, the operation of two valves in parallel is dependent on the pressure demands of the actuator connected to each valve.



LP directional valve

2.4 Auxiliary valves

The auxiliary valves fit onto the directional valves and can be flange-mounted on the top (connection face O) or bottom (connection face U) of the valve, which is specially designed for this purpose.

For mounting on connection face O, these alternative auxiliary valves are available:

- Anti-shock valve
(secondary pressure relief valve with make-up facility)
- Load control valve
- Load check valve
(pilot operated non-return valve)
- various special bolt-on plates

Anti-shock valves are used to prevent over-pressure in the actuator lines and/or cavitation with negative loads.

Load control valves provide controlled, load-independent lowering of over-running (pulling) loads. The anti-shock function is integrated and adjustable.

Load check valves hold the actuator, which may be under load, with virtually zero leakage. The actuator is released by applying pressure to the other actuator port.

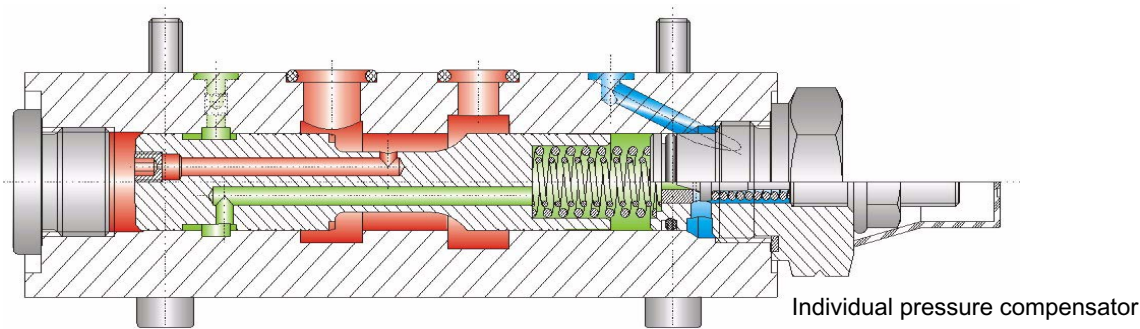
For mounting on connection face U, these alternative auxiliary valves are available:

- Individual pressure compensator
- Flow limiter
- Pressure-reducing compensator

An individual compensator is used when the flow rate to the actuator must be independent of load, but the inlet compensator cannot perform the necessary pressure-control function.

In the case of LQ directional valves, the individual pressure compensator is integrated.

Additional function blocks are described in detail in the relevant sections.



2.5 General technical data

Nominal flow rate	l/min	max. 150
Actuator flow rate	l/min	max. 90
Inlet pressure P + D ²⁾	bar	max. 315
Actuator pressure A + B ²⁾	bar	max. 315
Intermittent press. (max. 10 sec/min)	bar	max. 330
Return line pressure ¹⁾	bar	max. 40
Fluid		Mineral oil to DIN 51524
Fluid temperature	°C	-25 to +80
Ambient temperature	°C	-25 to +50
Viscosity range	mm ² /s (cSt)	10 to 380
Nominal voltage range of switching solenoids	V DC	12V Δ 10,8 - 14 24V Δ 21,6 - 28
Oil cleanliness		NAS 1638 class 8 ISO 4406 class 19 / 17 / 14
Threaded ports		to DIN 3852
Corrosion protection		Valve blocks primed Colour: black RAL 9005 Coating thickness 30 to 50 μ m ³⁾
Tie bolts		M8, tensile grade 10.9 (tightening torque 30Nm)

1) 100 bar return line pressure for brief periods, with max. inlet pressure 210 bar. 210 bar for P and T in individual cases. For higher pressures, consult Bucher Hydraulics.

2) The stated pressures are the maximum absolute pressure limits for a tank line pressure of 10 bar.
Note: Some components have lower individual pressure ratings.

3) Valve blocks that contain components with spool-position feedback are not primed (no corrosion protection)

3 Inlet sections

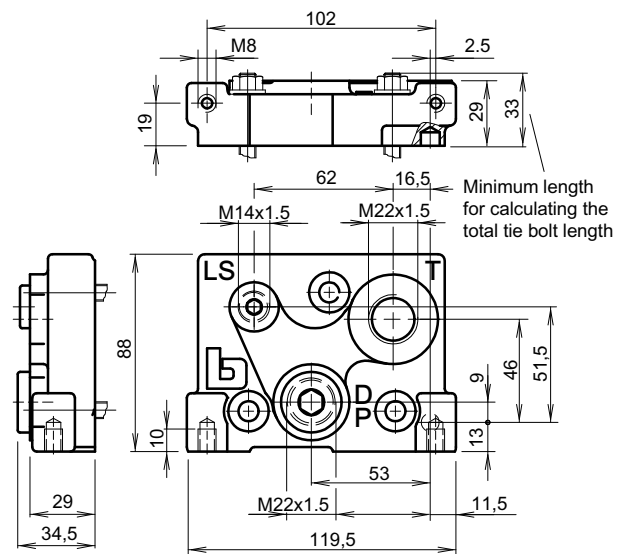
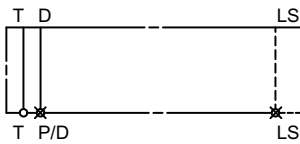
3.1 Inlet sections with no control funktion

These are used to begin the block when no control functions are needed in the section (e.g. LS applications).

Ports P, T and LS, and tapped holes for securing the valve block are provided.



LU8SPOG



L U 8 S P O G - 0 M 2 2 /

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22
DIN 3852 - M26 x 1.5 = M26 ¹⁾

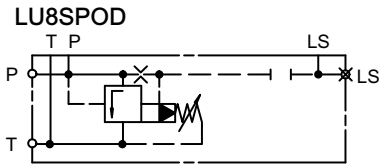
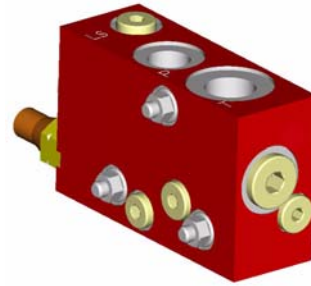
Variants / special features (to be inserted by the factory)

1) Tank port M26x1.5 / pressure port M22x1.5

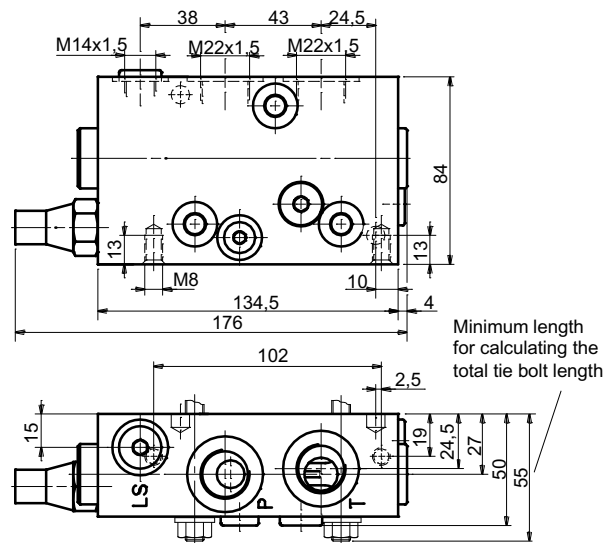
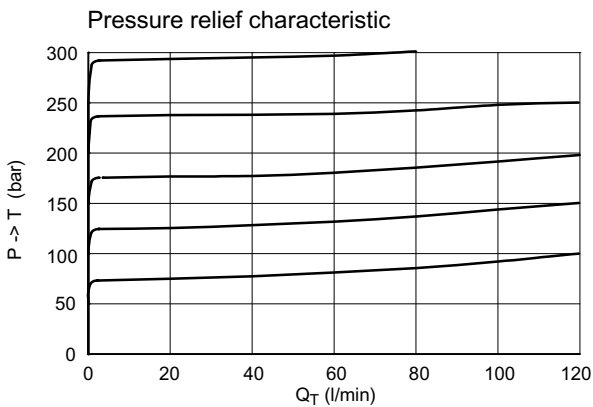
3.2 Inlet pressure relief two-stage

This is used to begin the block, and has an integral two-stage pressure relief function (e.g. safety pressure relief in an LS system).

Ports P, T and LS, and tapped holes for securing the valve block are provided.



Inlet pressure	bar	max. 315
Nominal flow rate	l/min	120
Pressure relief	bar	adjustable



LU8SPOD - 0 M 2 2 / P=...²⁾

Design number	(to be inserted by the factory)		
Port threads	DIN 3852 - M22 x 1.5 = M22		
	DIN 3852 - M26 x 1.5 = M26 ¹⁾		
Variants / special features	(to be inserted by the factory)		

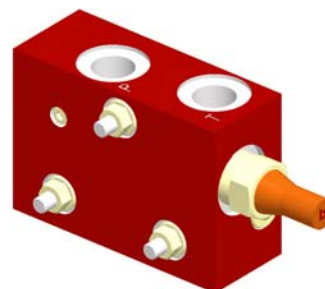
1) Tank port M26x1.5 / pressure port M22x1.5

2) Specify the pressure relief setting in bar.

3.3 Inlet pressure relief direct acting

This is used to begin the block, and has an integral direct-acting pressure relief function (e.g. secondary pressure relief in an LS system). The application limits must not be exceeded.

By screwing in damping and bypass orifices, many possibilities for combating oscillation problems in LS systems can be created. Ports P, T and LS, and tapped holes for securing the valve block are provided.

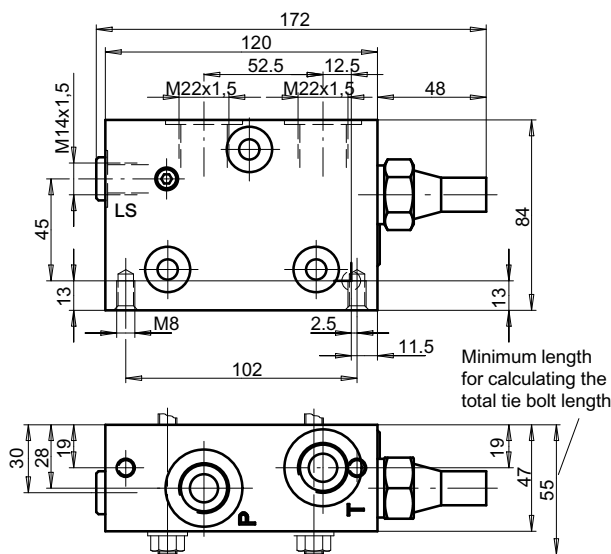
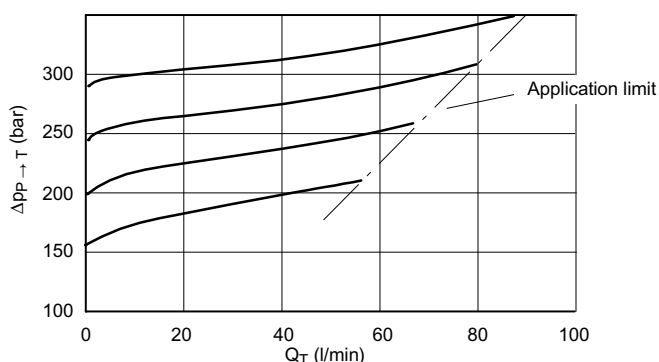


LU8SPOS



Inlet pressure	bar	max. 315
Nominal flow rate	l/min	see performance graph
Pressure range	bar	35 - 95 95 - 210 210 - 315

Pressure relief characteristic



LU8SPoS 1 - 0 M 2 2 / P=...¹⁾

Pressure range	35 - 95	bar = 1
	95 - 210	bar = 2
	210 - 315	bar = 3

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22

Variants / special features (to be inserted by the factory)

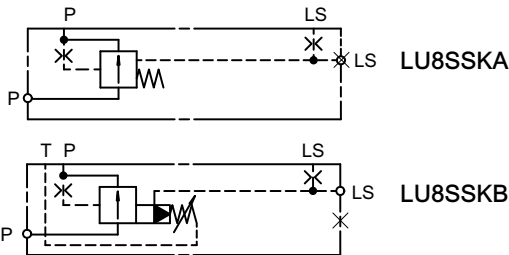
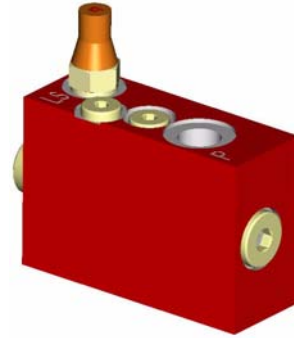
1) Specify the pressure relief setting in bar.

3.4 2-way pressure compensator

These are used to begin the block and have an integral 2-way compensator; optionally with flow cut-off from a pre-set pressure.

A typical application is the parallel operation of two valve blocks in an LS system, where only one spool at a time is operated within each block.

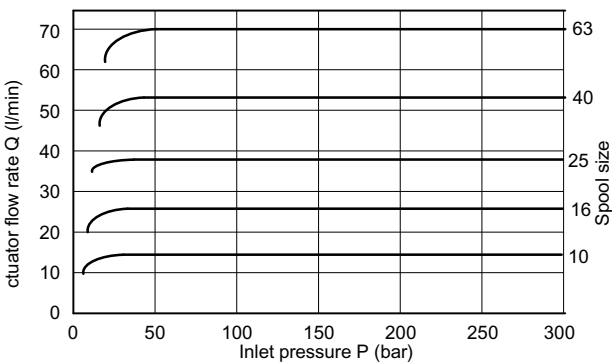
Ports P and LS, and tapped holes for securing the valve block are provided. The upper tank gallery is not connected to the tank port. The lower tank galleries are not connected to the tank port.



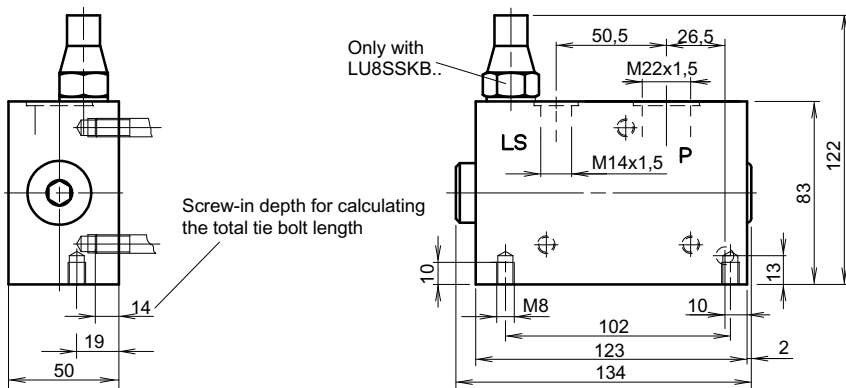
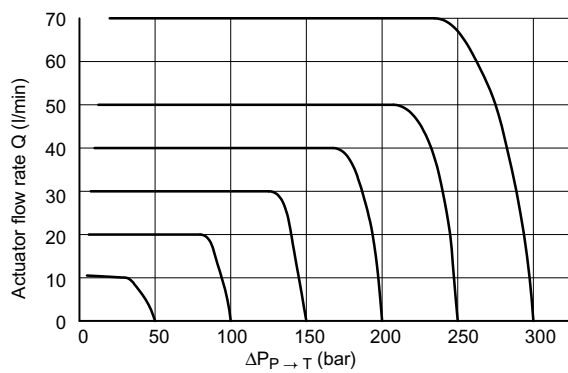
Inlet pressure	bar	max. 315
Nominal flow rate	l/min	100

In type SKB, the flow cut-off pressure is adjustable

Variation of the actuator flow rate with inlet pressure when using an LU8SSKA/SKB inlet section



Flow cut-off function with an LU8SSKB inlet section



LU8SSKA - 0 M 2 2 / P=...¹⁾

Without flow cut-off = SKA
With flow cut-off = SKB

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22

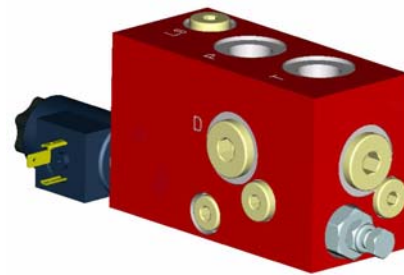
Variants / special features (to be inserted by the factory)

1) Specify the pressure relief setting in bar.

3.5 3-way pressure compensator

These are used to begin the block and have an integral 3-way compensator; optionally with the additional functions shown below.

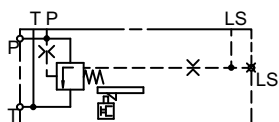
In essence, they can be applied in conjunction with a fixed-displacement pump for control of unloading, and flow control that is independent of the load.



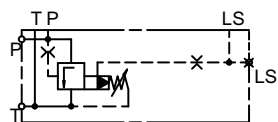
- **LU8SSCK**
Provides a 3-way compensator function, with the facility to change over to LS or constant-pressure systems. This is typical with towed harvesters.
- **LU8SSCS**
Provides a 3-way compensator function and 2-stage pressure relief that is adjustable from outside the valve.
- **LU8SSCU**
Provides a 3-way compensator function, with an independent system pressure relief function.
- **LU8SSCX**
Provides a 3-way compensator function and two-stage pressure relief that is adjustable from outside the valve, and an independent system pressure relief function. The surplus flow is available at port D for other applications. The valve block's own functions have priority over port D. The valve block can be protected at a lower pressure setting by the two-stage relief valve, so that excess flow is always available at port D.

- **LU8SSCW**
Provides a 3-way compensator function, with an independent system pressure relief function. The surplus flow is available at port D for other applications. The valve block's pressure relief function is active, there is no longer any flow to port D.
- **LU8SSCE**
Provides a 3-way compensator function, with an independent system pressure relief function. When it is de-energised, a 2/2 seat valve unloads the internal LS line to tank, which means that the seat valve must first be energised before the valve block is functional. Applications are in safety circuits, e.g. emergency stop controls.

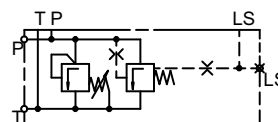
LU8SSCK



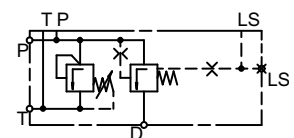
LU8SSCS



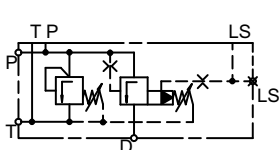
LU8SSCU



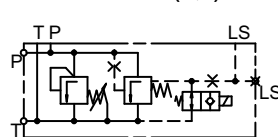
LU8SSCW



LU8SSCX



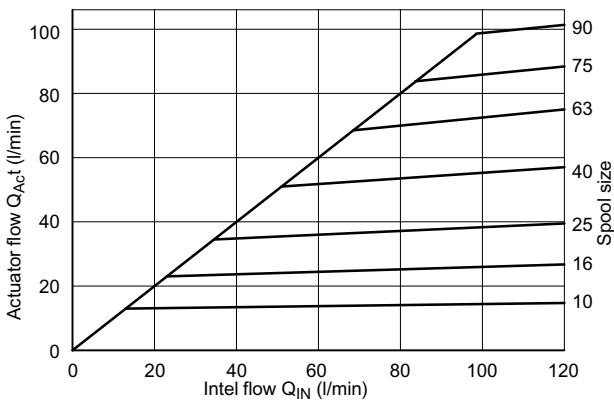
LU8SSCE-...G (T,J)



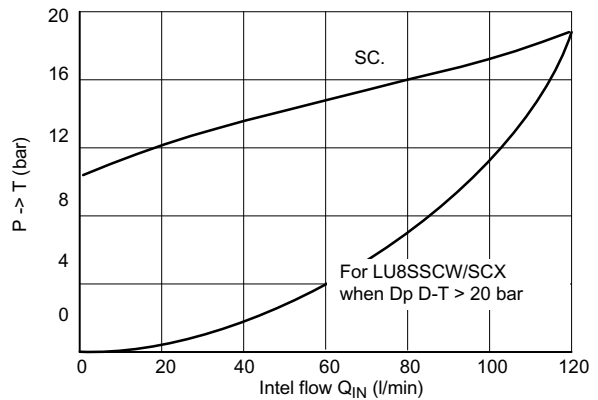
Inlet pressure	bar	max. 315
Nominal flow rate	l/min	120
Unloaded pressure P → T (D)	bar	10 to 13
Pressure relief	bar	adjustable
Nominal voltage ¹⁾	V DC	12 or 24
Power consumption ¹⁾	Watt	27
Duty cycle ¹⁾	%	100
Enclosure protection ¹⁾		IP65 (DIN 40050)

1) only with LU8SSCE

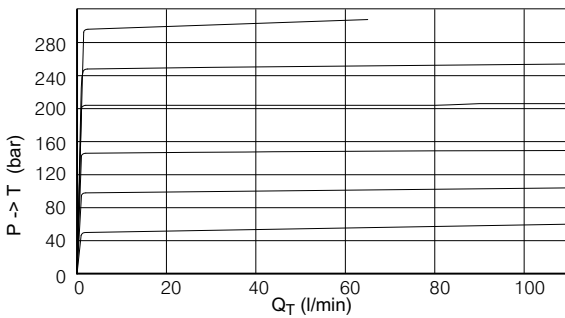
Maximum flow rate at directional valve when using an LU8SSC inlet section.



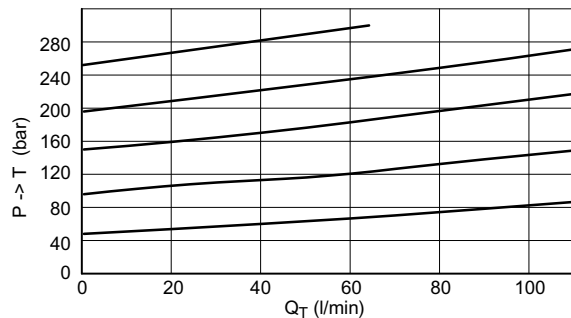
Unloaded pressure in neutral position
For other unloaded pressures, consult Bucher



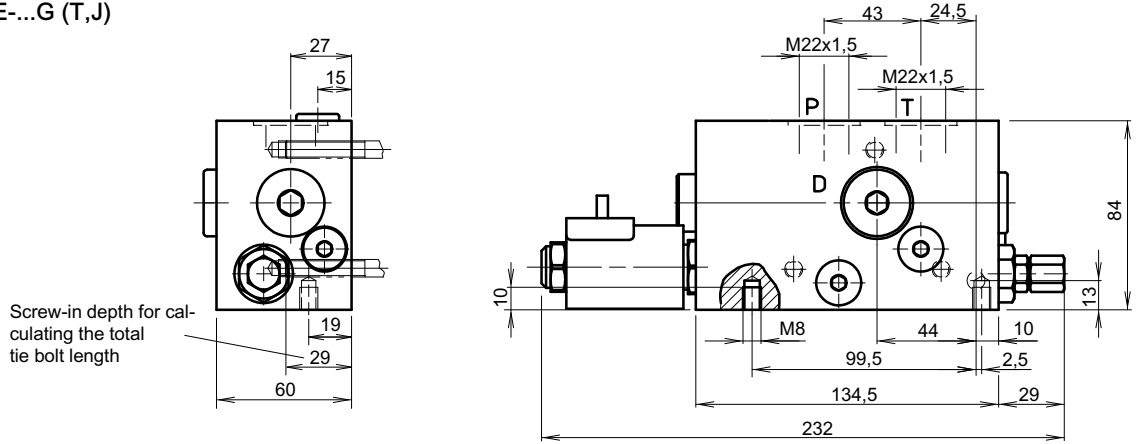
Two-stage pressure relief characteristic
Inlet sections LU8SSCS/SCX



System pressure relief characteristic
Inlet sections LU8SSCE/SCU/SCW/SCX



LU8SSCE-...G (T,J)

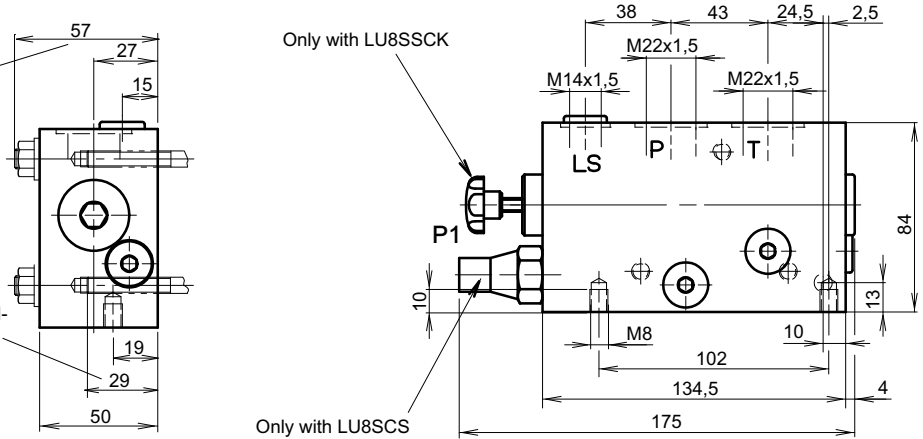


LU8SSCK/SCS

Minimum length for calculating the total tie bolt length with special feature /04

(Special feature /04 is straight-through tie bolts)

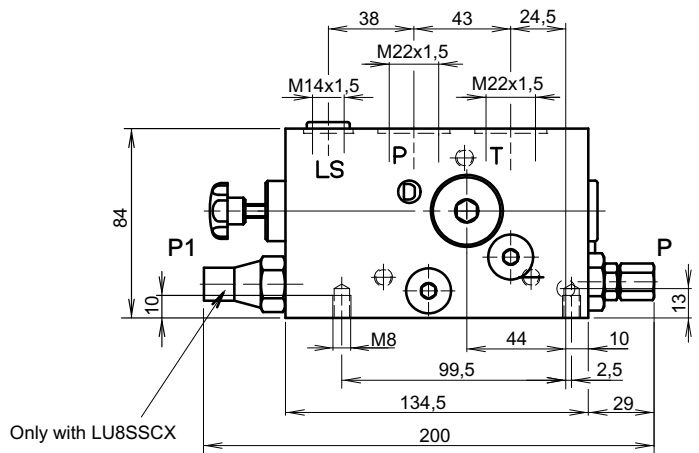
Screw-in depth for calculating the total tie bolt length



LU8SSCU/SCW/SCX

Only with LU8SSCU

Screw-in depth for calculating the total tie bolt length

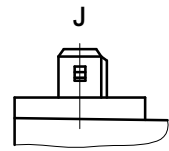
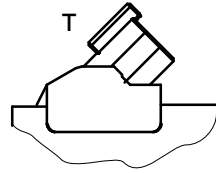
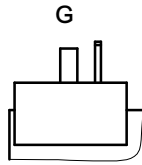


Connector socket
only with LU8SSCE

Plug connection to
DIN 43650

Deutsch DT04-2P-EP04
with protective diode
P6KE33CA

AMP Junior Timer
with protective diode
P6KE33CVA



L U 8 S S C E - 0 M 2 2 G 1 2 / P=...¹⁾
P1=...²⁾

Without pressure relief, with LS changeover facility	=	SCK
With two-stage pressure relief	=	SCS
With system pressure relief, direct acting	=	SCU
With system pressure relief, with surplus-flow port	=	SCW
With system pressure relief and 2-stage pressure relief for the valve block, with surplus-flow port	=	SCX
With system pressure relief, with elec. unloaded neutral (Emer. stop)	=	SCE

Design number (to be inserted by the factory)

Port threads	DIN 3852 - M22 x 1.5	=	M22
	DIN 3852 - M26 x 1.5	=	M26

Connector socket ³⁾	DIN 43650	=	G
	DT04-2P-EP04	=	T
	AMP Junior Timer	=	J

Nominal voltage ³⁾	DC 12 V	=	12
	DC 24 V	=	24

Variants / special features (to be inserted by the factory)

1) Specify the system pressure relief setting in bar.

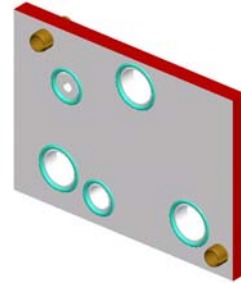
2) for LU8SSCX, specify the setting for the valve block's two-stage pressure relief in bar.

3) only with LU8SSCE

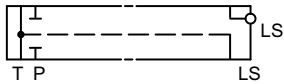
4 Intermediate sections

4.1 Intermediate sections with no control function

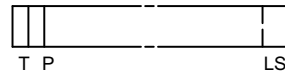
These intermediate sections are used as spacer plates (e.g. with large port fittings) or, in the case of the LU8SBTP-0, for hydraulic partitioning of the P and LS lines within the valve block; T is continuous.



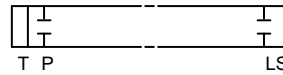
LU8SBTL



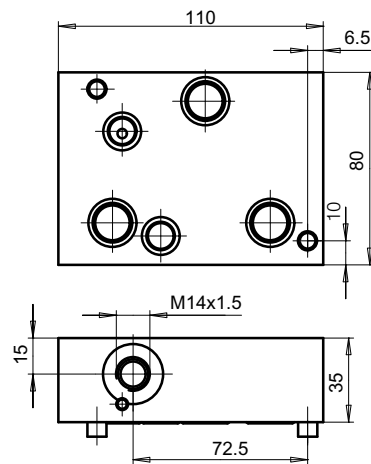
LU8SBDP



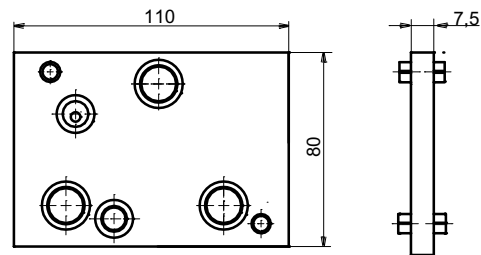
LU8SBTP



LU8SBTL



LU8SBDP/BTP



L U 8 S B D P - 0 M 1 4

Block spacer plate
 Block partition plate, P and LS blocked, T continuous
 Block partition plate, P blocked, T continuous, LS in front
 half of block to T, in rear half to separate LS port

= BDP
 = BTP
 = BTL

Design number (to be inserted by the factory)

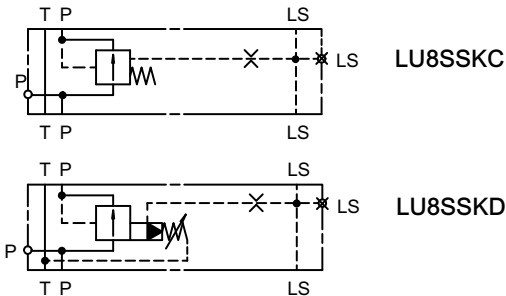
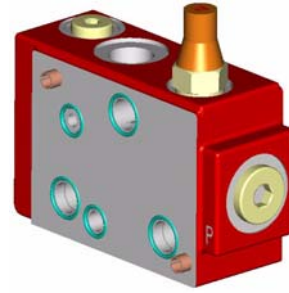
Port threads DIN 3852 - M14 x 1.5

= M14 (only with LU8SBTL)

4.2 2-way pressure compensators

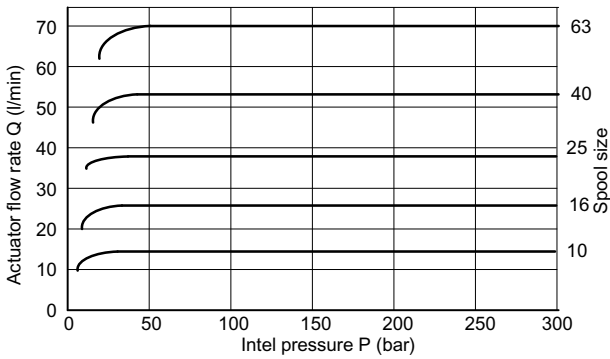
These are intermediate sections with an integral 2-way compensator; optionally with flow cut-off from a preset pressure.

Typical applications: valve block sections that, in general, experience lower pressures are combined with this compensator to ensure load-independent operation. Ports P and LS are provided.

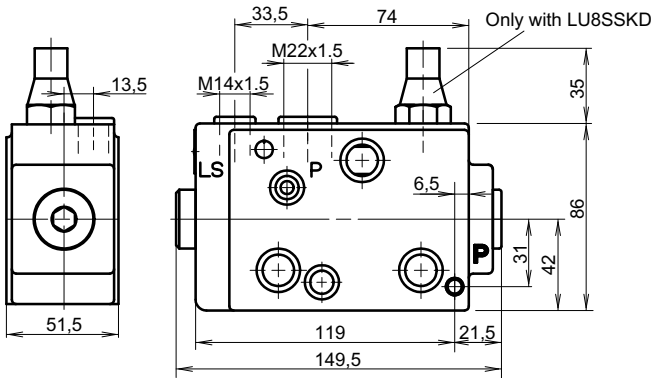
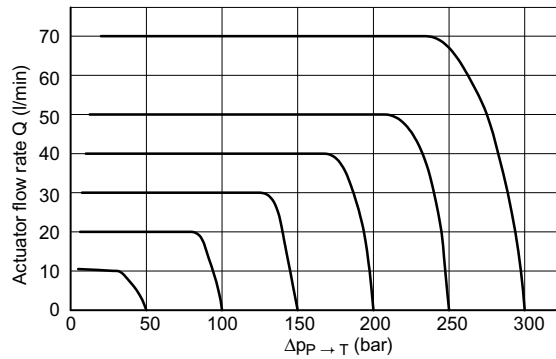


Inlet pressure	bar	315
Nominal flow rate	l/min	100
Pressure for flow cut-off	bar	adjustable

Variation of the actuator flow rate with inlet pressure when using an LU8SSKC/SKD intermediate section



Flow cut-off function with an LU8SSKD intermediate section



LU8SSKD - 0 M 2 2 / P=...¹⁾

Without pressure relief = SKC
With pressure relief = SKD

Design number (to be inserted by the factory)

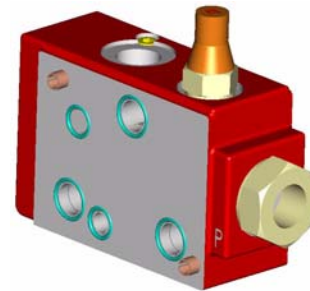
Port threads DIN 3852 - M22 x 1.5 = M22

Variants / special features (to be inserted by the factory)

1) Specify the pressure relief setting in bar. (only with LU8SSKD).

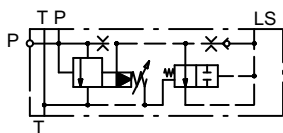
4.3 3-way pressure compensators

These 3-way compensators are intermediate sections with the additional functions shown below. In essence, they can be applied in conjunction with a fixed-displacement pump for control of unloading, and flow control that is independent of the load. Ports P, and D and LS as appropriate, are provided.

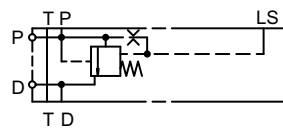


- LU8SSBU**
 Provides a 3-way compensator function with 2-stage pressure relief, and a reduction in the unloaded pressure from the standard 12 bar to approx. 6 bar.
- LU8SSBV**
 Provides a 3-way compensator function, and the surplus flow is available at port D or internally for other applications. The valve block's own functions i.e. on the priority-flow side, have priority over the internal surplus flow or over port D.
- LU8SSBW**
 Provides a 3-way compensator function, and the surplus flow is available at port D or internally for other applications. Both flows are protected by a two-stage pressure relief valve. On reaching the maximum pressure in the priority side, the entire flow is available in the surplus-flow side, which can then be loaded up to the maximum pressure setting.
- LU8SSBK**
 Provides a 3-way compensator function, with the facility to change over to LS or constant-pressure systems. This is typical with towed harvesters.

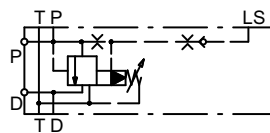
LU8SSBU



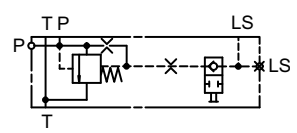
LU8SSBV



LU8SSBW



LU8SSBK

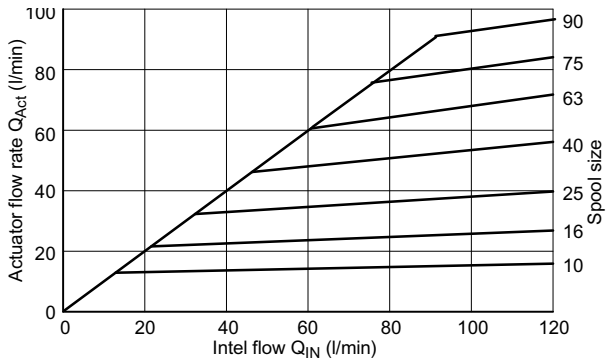


Inlet pressure ¹⁾	bar	max. 315
Nominal flow rate	l/min	120
Unloaded pressure P → T (LU8SSBU/SBT/SBL/SBK)	bar	see performance graph
Unloaded pressure P → D (LU8SSBW/SBV)	bar	see performance graph
Pressure relief	bar	adjustable
Nominal voltage ²⁾	V DC	12 or 24
Power consumption ²⁾	Watt	27
Duty cycle ²⁾	%	100
Enclosure protection ²⁾		IP65 (DIN 40050)

1) Inlet pressure for LU8SSBU-...G.. and LU8SSBW-...G.. max. 250 bar.

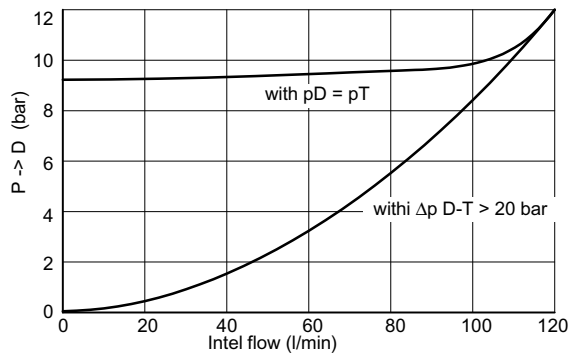
2) only with electrical unloading

Maximum flow rate at directional valve when using an LU8SSBU intermediate section

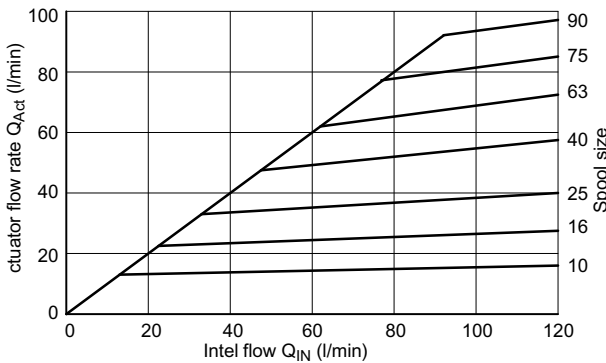


Unloaded pressure in neutral position, intermediate sections LU8SSBV/SBW

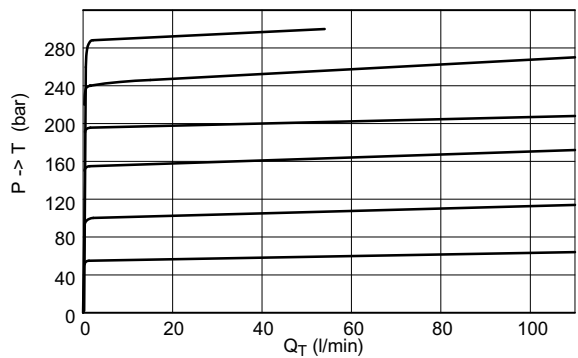
For other unloaded pressures, consult Bucher Hydraulics



Maximum flow rate at directional valve when using an LU8SSBV/SBW intermediate section

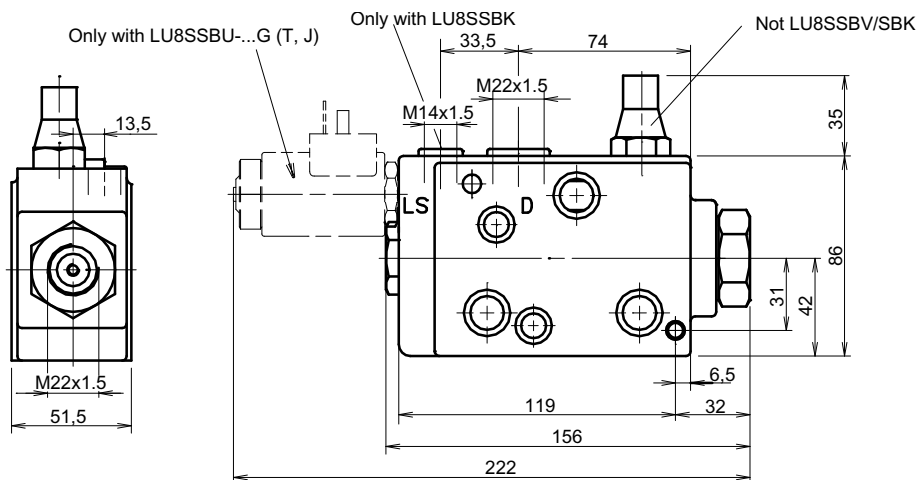
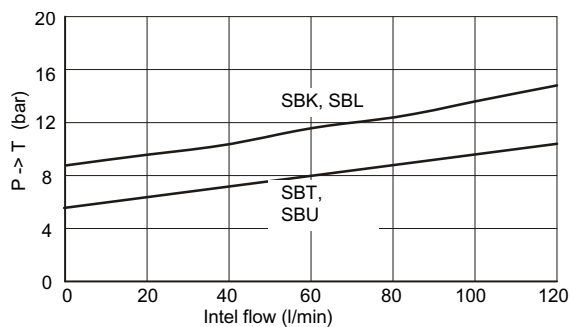


Pressure relief characteristic, intermediate section LU8SSB.



Unloaded pressure in neutral position, intermediate sections LU8SSBU

For other unloaded pressures, consult Bucher Hydraulics

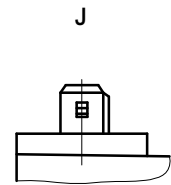
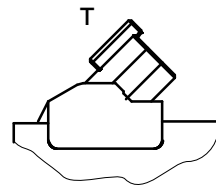
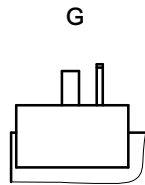


Connector socket
only with
LU8SSBU....G
LU8SSBW....G

Plug connection
to DIN 43650

Deutsch DT04-2P-EP04
with protective diode
P6KE33CA

AMP Junior Timer
with protective diode
P6KE33CA



L U 8 S S B T - 0 M 2 2 G 1 2 / P=...¹⁾

With pressure relief	=	SBU
With surplus flow port, without pressure relief	=	SBV
With surplus flow port, with pressure relief	=	SBW
With LS changeover facility, without pressure relief	=	SBK

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22

Connector socket ²⁾	DIN 43650	= G
	DT04-2P-EP04	= T
	AMP Junior Timer	= J

Nominal voltage ²⁾	DC 12 V	= 12
	DC 24 V	= 24

Variants / special features (to be inserted by the factory)

1) Specify the pressure relief setting in bar.

2) only with LU8SSBU....G (T, J) and LU8SSBW....G (T, J)

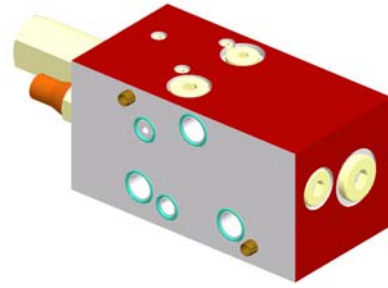
4.4 Priority sections LU8SSB..

The LU8SSB.-0... priority section contains a priority function for the directional valves fitted on the appropriate side or for an external control system, and a surplus flow side.

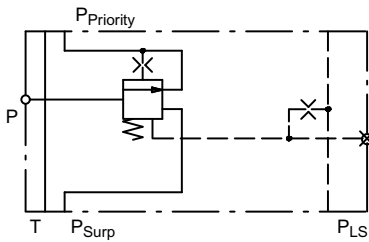
In the under-supply range (pump flow < total flow needed by the valve block), the surplus flow side will receive only a portion of what it needs, or possibly (pump flow < priority-flow setting) no flow whatsoever. Preferred applications are in LS systems.

The priority side can also be equipped with a pressure relief valve that ensures a priority-flow cut-off when the pressure setting is reached.

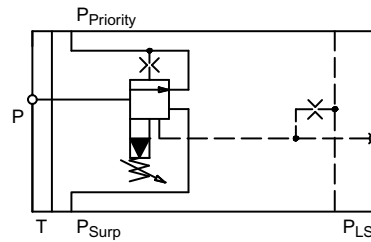
For oscillation-prone applications, a damping element (e.g. an accumulator) can be connected to a port specially provided for this purpose.



LU8SSBO-..

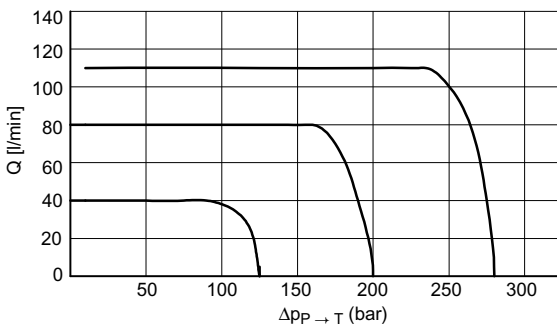


LU8SSBP-..

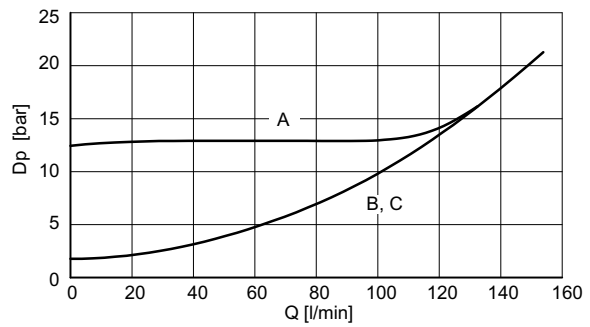


Inlet pressure	bar	max. 315
Nominal flow rate	l/min	max. 150
Control Δp for the compensator	bar	12
Pressure for flow cut-off on the priority side	bar	adjustable

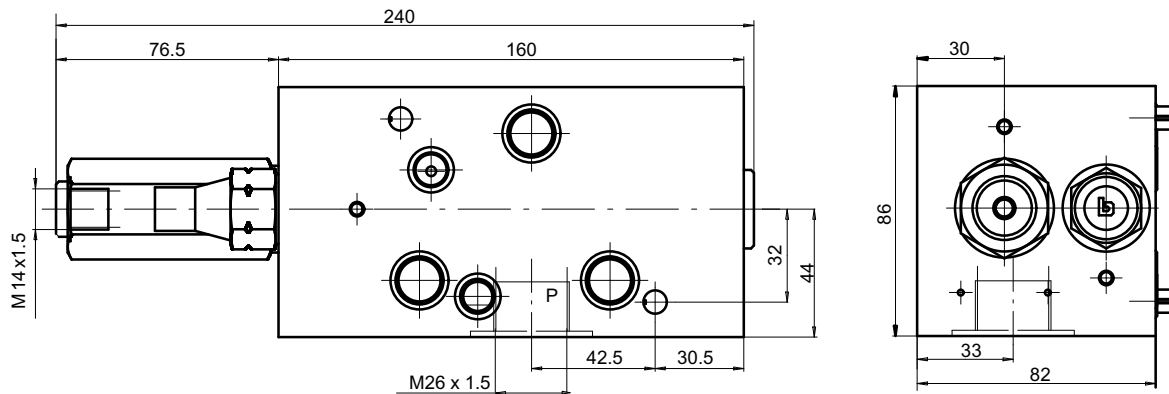
Flow cut-off on the priority side



Pressure drop characteristic



- A = P_{Pump port} to P_{Surp} (Q_{Priority}=zero) at P_{Surp} = P_{LS}
- B = P_{Pump port} to P_{Surp} at Δp P_{Surp} to LS > 20 bar
- C = P_{Pump port} to P_{Priority} (control spool in neutral position)



L U 8 S S B P - 0 M 2 6 / P=...¹⁾

Without flow cut-off
With flow cut-off

= O
= P

Design number (to be inserted by the factory)

Port threads DIN 3852 - M 26 x 1.5 = M26
 BSP 1" / G 1" = B10

Variants / special features (to be inserted by the factory)

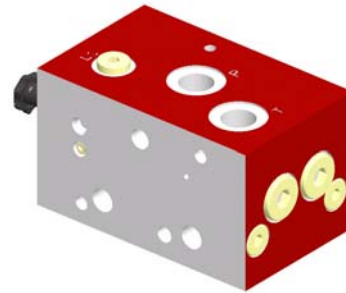
1) Specify the flow cut-off setting in bar.

4.5 Multi-way pressure compensator

The multi-way pressure compensator is an intermediate section, and valve sections can therefore be fitted to either side. This multi-way compensator is intended for all pump systems.

It has a priority-flow side and a surplus-flow side, and the functional variants shown below.

Ports P, T and LS are provided.



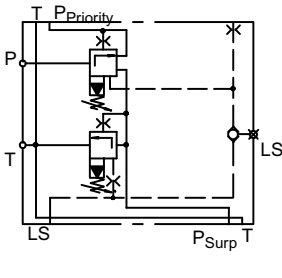
- **LU8SSMD**

Priority-flow control as 2- and 3-way compensator, with surplus-flow control as 3-way compensator. The priority-flow side is provided with a flow cut-off function, the surplus-flow side with two-stage pressure relief.

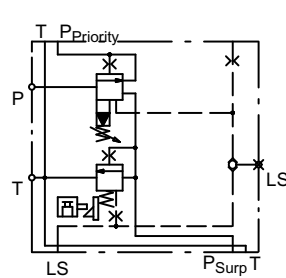
- **LU8SSMF**

Priority-flow control as 2- and 3-way compensator, with surplus-flow control as 3-way compensator. The priority-flow side is provided with a flow cut-off function. The surplus-flow control can be de-activated, which allows an LS or constant-pressure system to be connected. This is typical with towed harvesters.

LU8SSMD

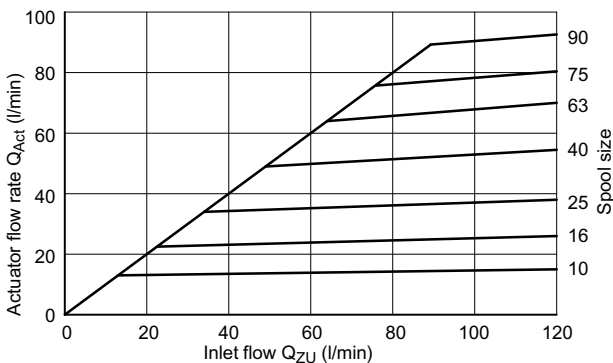


LU8SSMF

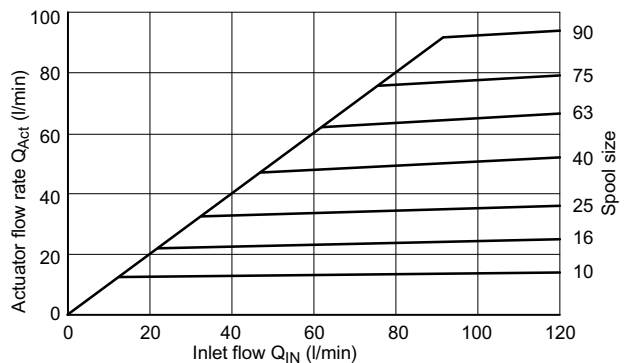


Inlet pressure	bar	max. 315
Nominal flow rate	l/min	120
Unloaded pressure P → T	bar	see performance graph
Pressure for flow cut-off ($P_{Priority}$)	bar	adjustable
Pressure for pressure relief (P_{Surp})	bar	adjustable

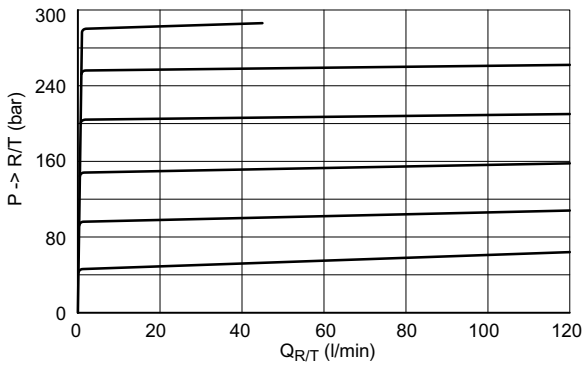
Maximum flow rate at directional valve when using an LU8SSM intermediate section. (Priority side)



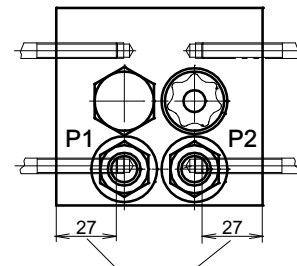
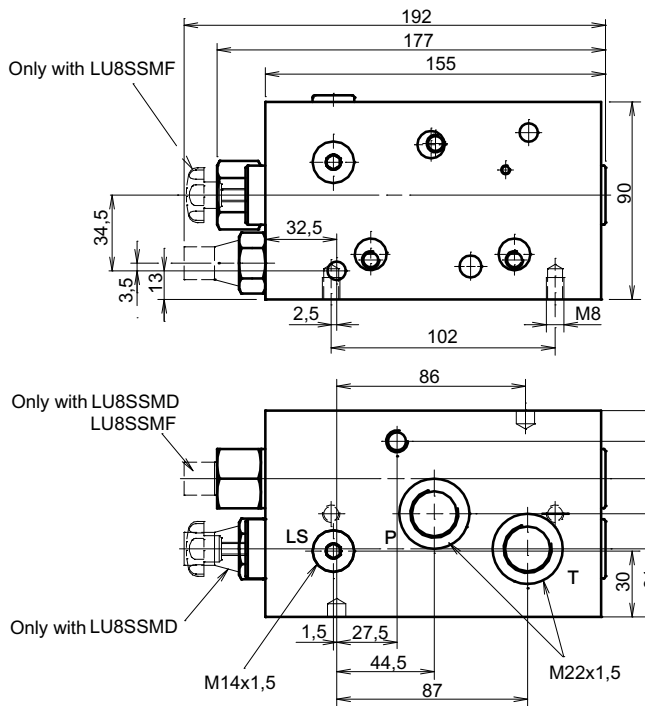
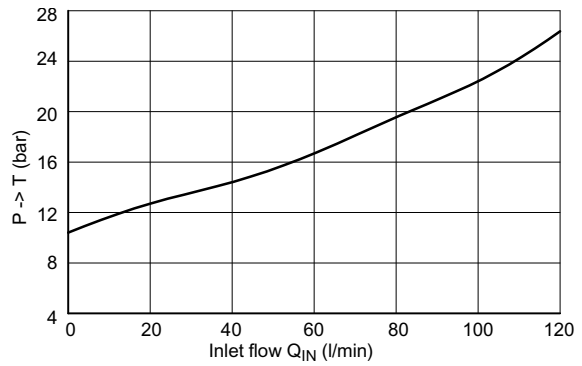
Maximum flow rate at directional valve when using an LU8SSM intermediate section. (Surplus-flow side)



Pressure relief characteristic (priority and surplus flow) Intermediate section LU8SSM.



Unloaded pressure in neutral position Intermediate section LU8SSM.



Screw-in depths for calculating the total tie bolt lengths

L U 8 S S M A - 0 M 2 2 / P=...¹⁾

$P_{Priority}$ and P_{Surp} with pressure relief = SMD²⁾
 $P_{Priority}$ with pressure relief, = SMF
 P_{Surp} with LS changeover facility

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22

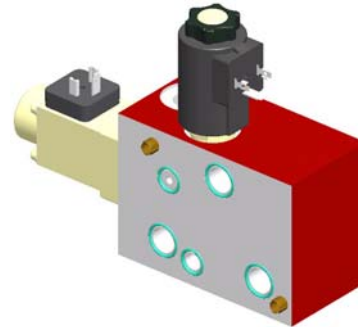
Variants / special features (to be inserted by the factory)

1) Specify the pressure relief setting in bar.
 2) Flow cut-off priority side P1=, pressure relief surplus-flow side P2=

4.6 Proportional pressure reducing valve

The 3-way pressure reducing valve holds the pressure at the actuator port at a constant level, as set by the solenoid current.

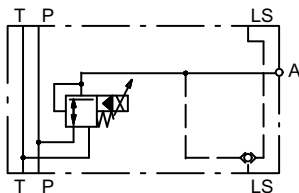
Via the LS feedback, this function can work with all pressure compensators and pump systems. The relevant additional functions are described below.



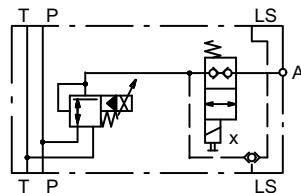
- **LU8SPDRZ*06AS-..**
3-way pressure reducing valve, minimum actuator pressure 8 - 20 bar.
- **LU8SPDRZ*06BS-..**
3-way pressure reducing valve, minimum actuator pressure 8 - 20 bar. Has a 2/2 seat valve for leak-free shut-off of the load.

- **LU8SPDRZ*06CS-..**
3-way pressure reducing valve, with a 2/2 seat valve for leak-free shut-off of the load. In addition, the LS line can be unloaded to tank via a 3/2 directional valve (minimum actuator pressure is uncoupled).

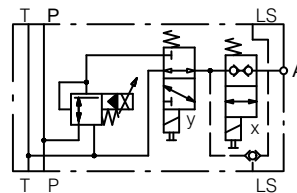
LU8SPDRZ*06AS-..



LU8SPDRZ*06BS-..



LU8SPDRZ*06CS-..

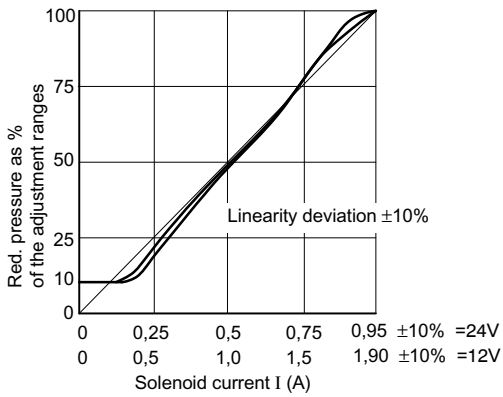


Primary pressure P_{max}	bar	max. 300
Secondary pressure P_{Red} (as per pressure range)	bar	40, 100, 160, 250
Nominal flow rate Q_{max}	l/min	40 for LU8SPDRZ*06AS-..
Nominal flow rate Q_{max}	l/min	25 for LU8SPDRZ*06BS-.., LU8SPDRZ*06CS-..
Power consumption, pressure reducing valve	Watt	20
Solenoid x	Watt	27
Solenoid y	Watt	27
Nominal voltage	V DC	12 or 24
Solenoid current I_{min}	A	0.25 or 0.13 $\pm 10\%$
I_{max}	A	1.90 or 0.95 $\pm 10\%$
Enclosure protection		IP65 (DIN 40050)

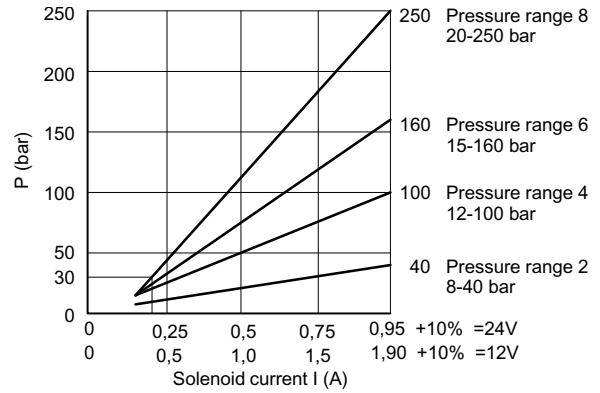
Leakage in working position, including pilot flow

Primary press.	50	100	200	300
Q_{LV} cm ³ /min	235	245	250	260

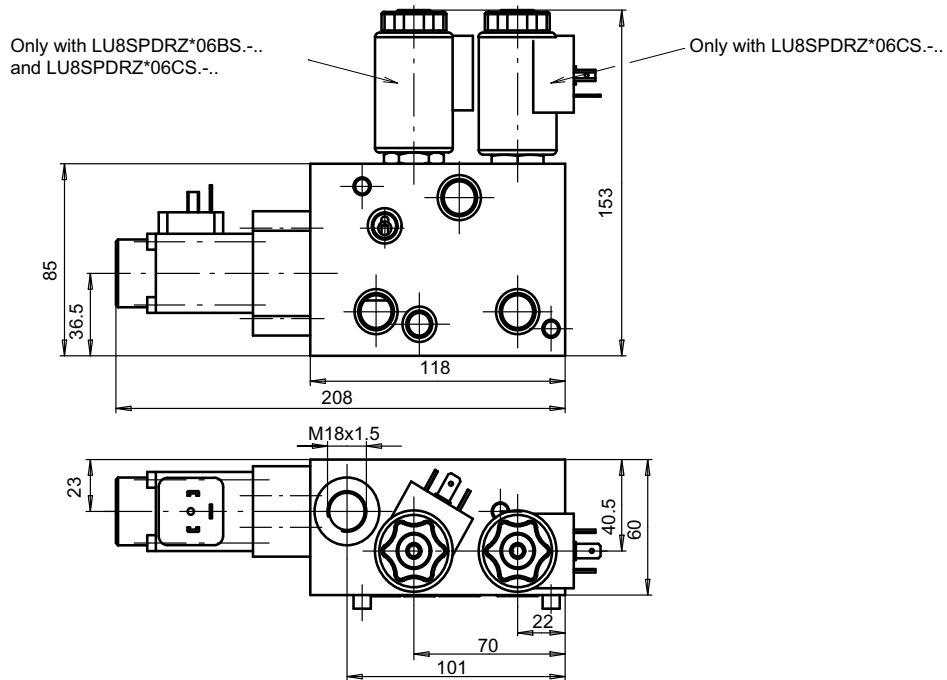
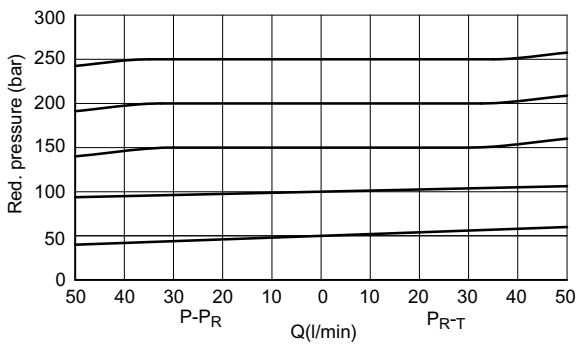
Control characteristic $P_{\text{reduced}} = f(I_{\text{solenoid}})$



Adjustment ranges 3-way pressure control valve



Control characteristic as a function of the flow rate

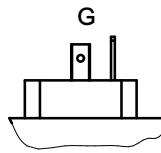


Connector socket

Plug connection
to DIN 43650

Deutsch DT04-2P-EP04

AMP Junior Timer



T

J

Consult Bucher Hydraulics

Consult Bucher Hydraulics

L U 8 S P D R Z * 0 6 B S 6 - 0 M 2 2 G 1 2 1 2 /

Without auxiliary valve (Q_{max} 40 l/min)	=	A
With seat valve on actuator side (Q_{max} 25 l/min)	=	B
With seat valve on actuator side and 3/2 unloading valve (Q_{max} 25 l/min)	=	C

Solenoid operation	=	S
Manual operation	=	M

Pressure range	8 - 40 bar	=	2
	12 - 100 bar	=	4
	15 - 160 bar	=	6
	20 - 250 bar	=	8

Design number (to be inserted by the factory)

Port threads	DIN 3852 - M18 x 1.5	=	M18
--------------	----------------------	---	-----

Connector socket ¹⁾	DIN 43650	=	G
--------------------------------	-----------	---	---

Nominal voltage for pressure reducing valve	DC 12 Volt	=	12
	DC 24 Volt	=	24

Nominal voltage for 2/2 seat valve and 3/2 unloading valve	DC 12 Volt	=	12
	DC 24 Volt	=	24

Variants / special features (to be inserted by the factory)

1) For Deutsch and AMP connector sockets, consult Bucher

5 Directional valves

5.1 Directional valves LA8S-/LF8S

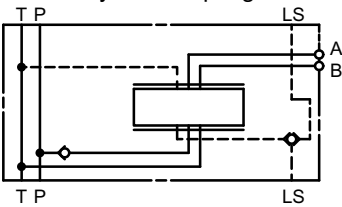
These directional valve sections, operated by hand lever or remote cable, are distinguished by their slim design and their adaptability.

Auxiliary functions can be bolted on above or below the valve. To enable this, the appropriate interfaces must be chosen (see the following illustrations). In consultation with the factory, electrical limit switches acting at various switching positions are available.



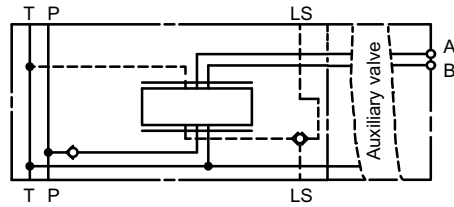
L.8SE.....-.**-...

No facility for accepting bolt on auxiliary valves



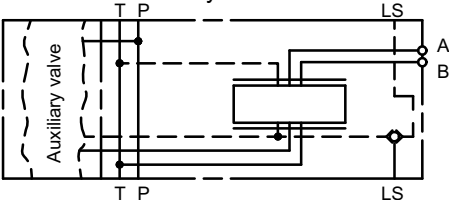
L.8SE.....-M*-...

For bolt-on auxiliary valves on connection face O



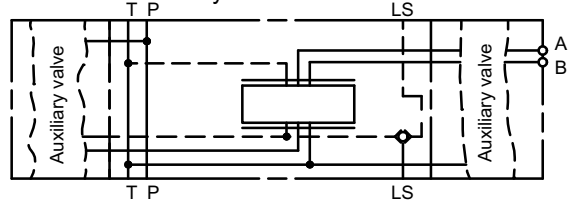
L.8SM.....-K*-...

For bolt-on auxiliary valves on connection face U



L.8SM.....-MK-...

For bolt-on auxiliary valves on connection faces O or U



LA8S
with hand lever



LF8S
with cable operation

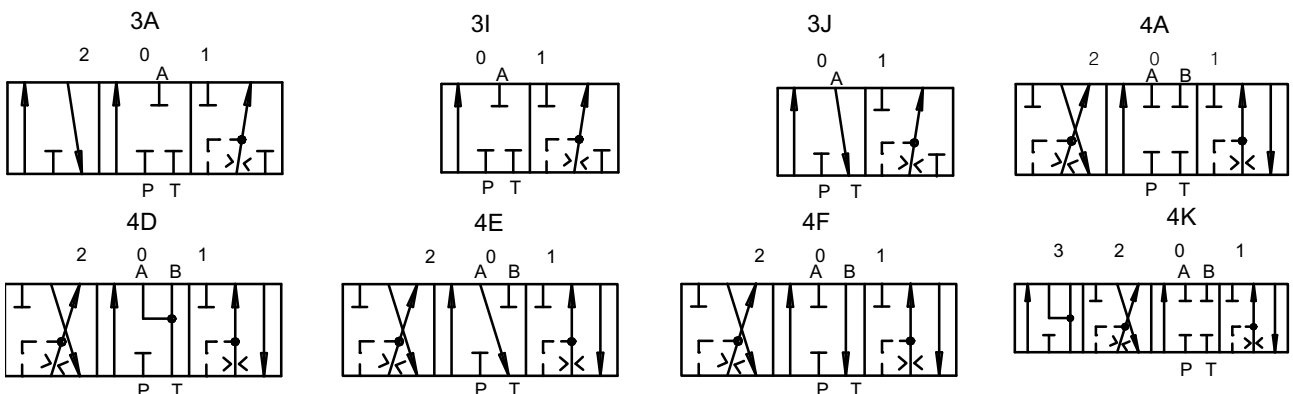


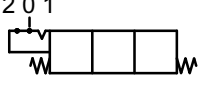
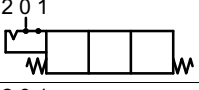
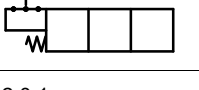
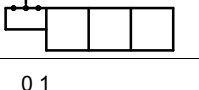

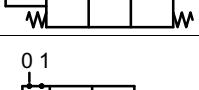
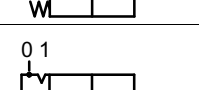
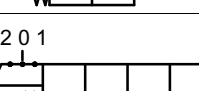
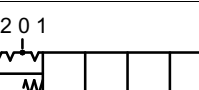
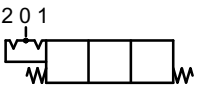
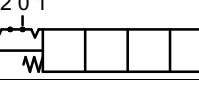
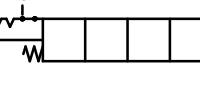
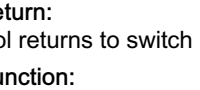
Inlet pressure	bar	315
Actuator pressure duty cycle =10 sec/min	bar	max. 330
Spool size	l/min	10, 16, 25, 40, 63
Operating force on the spool	N	170 to 210
Accessories ¹⁾		cable operation, see 10.1

¹⁾ By cultivation the cable operating 200.9609.0003.0 the special desing LF8S.../17 has to be chosen.

The purpose of the spool position controls and their variants is to optimise the spool-operation logic, and they should be employed to make the user's task simpler. The various types are described below.

Spool types



Spool position control Type	Spring return from switch position		Detent function in switch position			Friction detent in switch position	
	1	2	1	2	3	1	2
A 		X	X				
B 	X			X			
C 	X						X
D 						X	X
E 						X	
F 	X	X					
G 	X						
J 			X				
L 	X	X			X		
M 			X	X	X		
R 			X	X			
T 		X	X		X		
U 	X			X	X		

Spring return:

The spool returns to switch position 0 automatically.

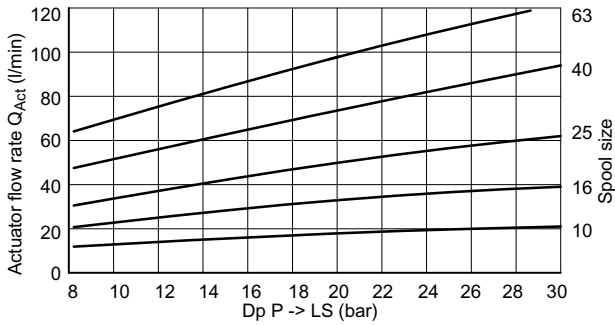
Detent function:

The spool is restrained at switch position 0; at maximum out-stroke it is also restrained in the respective switch position.

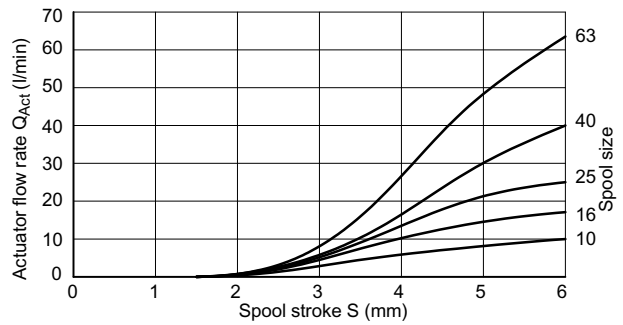
Friction detent:

A detent restraint can be felt at switch position 0; at any other position a friction device restrains the spool.

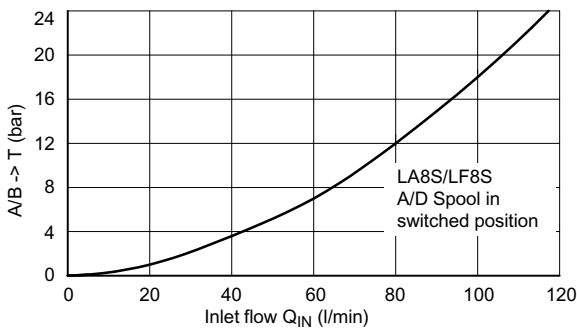
Maximum flow rate at directional valve (without compensator), LS function



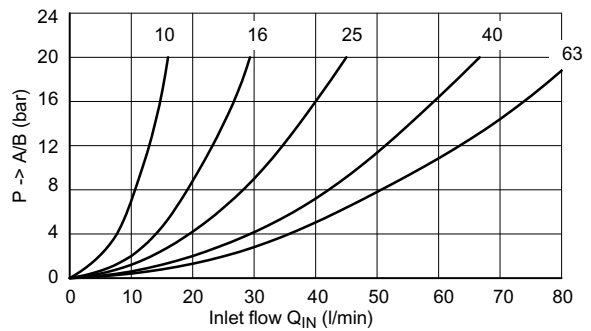
Flow characteristic with individual pressure compensator at connection face U



Pressure drop A/B \rightarrow T

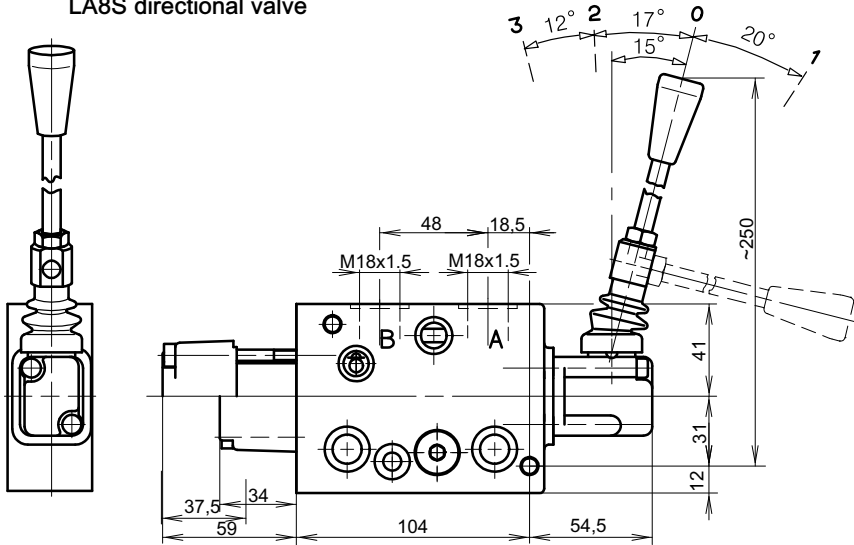


Pressure drop P \rightarrow A/B (L.8S directional valve), spool at max. stroke

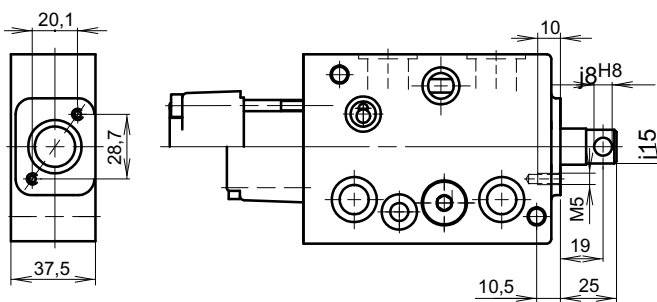


LA8S-/LF8S directional valves (without facility for bolt-on auxiliary valves)

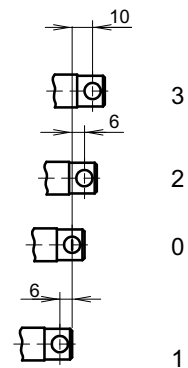
LA8S directional valve



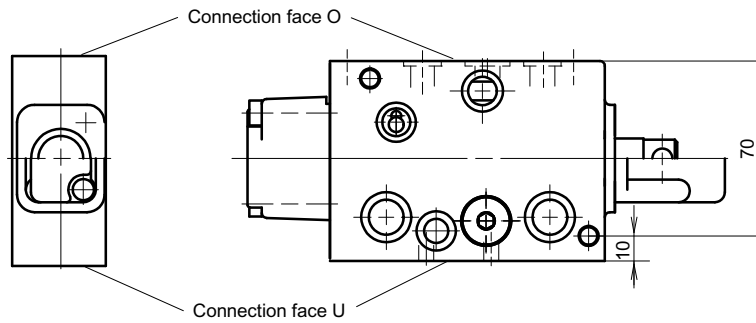
LF8S directional valve



Switch position



LA8S-/LF8S directional valves (with facility for bolt-on auxiliary valves)



L A 8 S E 3 A 1 0 * * - A * * - 0 M 1 8 /

Hand lever	=	LA8S																		
Remote operation	=	LF8S ²⁾																		
Load-independent individual operation	=	E																		
Load-independent parallel operation	=	M																		
3-way function	=	3																		
4-way function	=	4																		
Spool function	=	A, D, E, I, J, K																		
Port A spool code		10, 16, 25, 40, 63	=	e.g. 10 ¹⁾																
Port B spool code			=	**																
with 3-way function			=	**																
with 4-way function		10, 16, 25, 40, 63	=	e.g. 10 ¹⁾																
Spool position control	=	e.g. A																		
Attachment to connection face O			=	*																
port threads for line connection	=	*																		
flange face for auxiliary valve	=	M																		
Attachment to connection face U			=	*																
without (valve type E)	=	*																		
with (valve type M)	=	K																		
Design number		(to be inserted by the factory)																		
Type of connection at face O																				
flange face to factory standard	=	***																		
line connection to ports A and B:		DIN 3852 - M18 x 1.5	=	M18																
Variants / special features		(to be inserted by the factory)																		

1) For different, or higher, litre ratings consult Bucher Hydraulics.

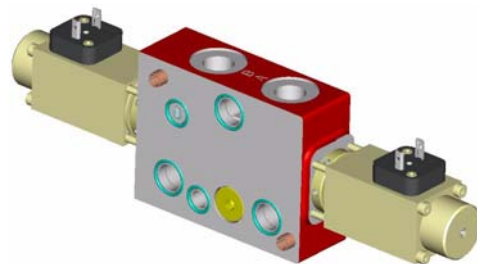
2) By cultivation the cable operating 200.9609.0003.0 the special desing LF8S.../17 has to be chosen.

5.2 Directional valves LD8S-/LC8S

These directional valve sections, with direct-acting switching solenoid or proportional solenoid are distinguished by their slim design and their adaptability.

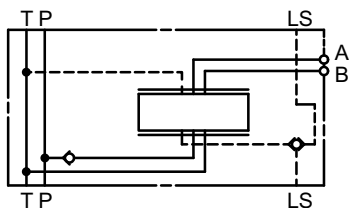
Auxiliary functions can be bolted on above or below the valve. To enable this, the appropriate interfaces must be chosen (see the following illustrations). In the on/off solenoid version, the actuator flows at A and B can be separately preset at any desired flow rate between 2 - 25 l/min, alternatively > 25 - 40 l/min. These values can be altered at any time without any escape of oil.

In the proportional valves, to compensate for manufacturing variations it is possible to adjust either the opening point of the control spool, or any predetermined point on the characteristic.



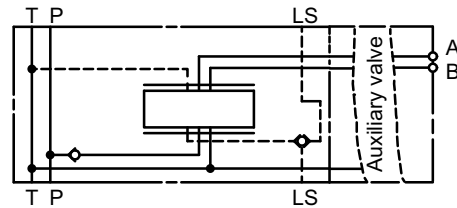
L.8SE.....--....**

No facility for accepting bolt-on auxiliary valves



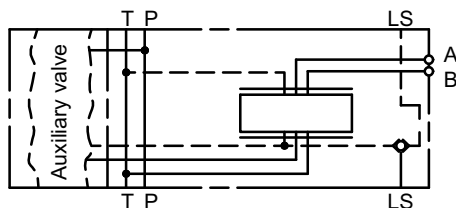
L.8SE.....-M*-....

For bolt-on auxiliary valves on connection face O



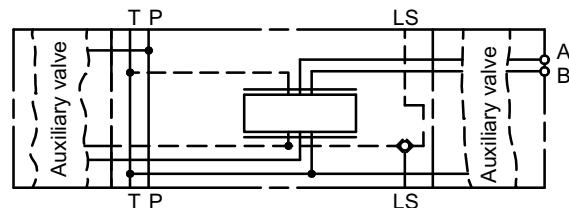
L.8SM.....-.*K-....

For bolt-on auxiliary valves on connection face U

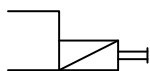


L.8SM.....-MK-....

For bolt-on auxiliary valves on connection faces O and U



LD8S with direct-acting on/off solenoid



The flow rates at the A and B actuator ports are adjustable; the standard settings are 25 or 40 l/min. Any required variations must be plainly specified.

A 90° rotation of the adjuster ring gives a change in flow rate of approx. 5 l/min.

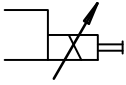
Inlet pressure	bar	250
Actuator pressure (duty cycle 10 sec/min)	bar	max. 280
Adjustment range of actuator flow rates	l/min	2 to 25 > 25 to 40
Solenoid design		on/off solenoid with mechanical manual override
Nominal voltage	V DC	12V Δ 10,8 - 14 24V Δ 21,6 - 28
Power consumption	Watt	39 (12 V) or 37 (24 V)
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)



WICHTIG!

If the maximum nominal voltage is exceeded, the magnet can be damaged

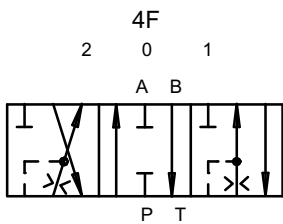
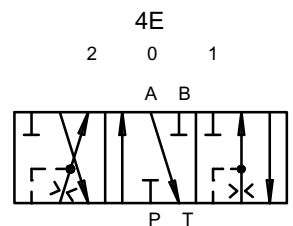
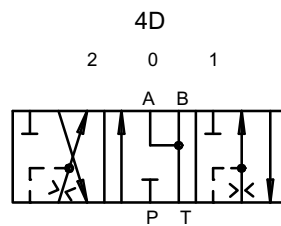
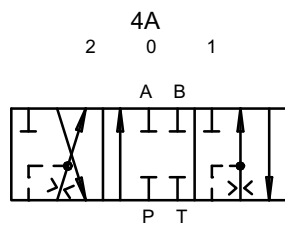
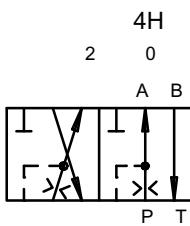
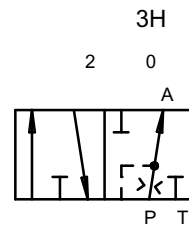
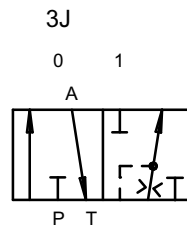
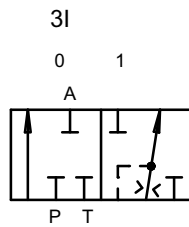
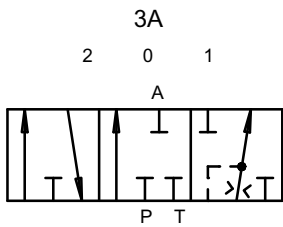
LC8S with direct-acting proportional solenoid



In conjunction with flowing pilot oil e.g. LU8SSB, only possible with a special version of the LC directional section (unacceptable pressure build-up in the opening area)

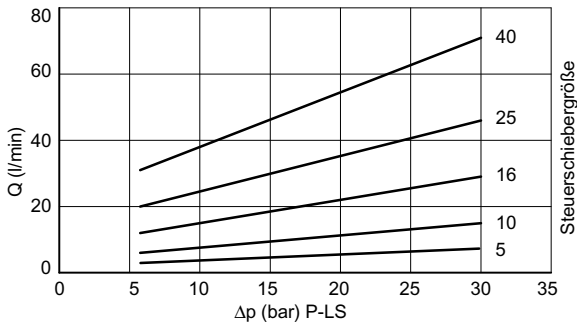
Inlet pressure	bar	250
Actuator pressure (duty cycle =10 sec/min)	bar	max. 280
Spool size	l/min	5,10, 16, 25, 40
Solenoid design		proportional solenoid with mechanical manual override
Nominal voltage	V DC	12 or 24
Power consumption	Watt	max. 22 at 2.2A (U _N 12V) 1.1A (U _N 24V)
Duty cycle	%	100 at I _{max} . 2.2 A (U _N 12 V) 1.1 A (U _N 24 V)
Enclosure protection		IP65 (DIN 40050)
Accessories		For electronic controls, see overview brochure P70003

Spool types



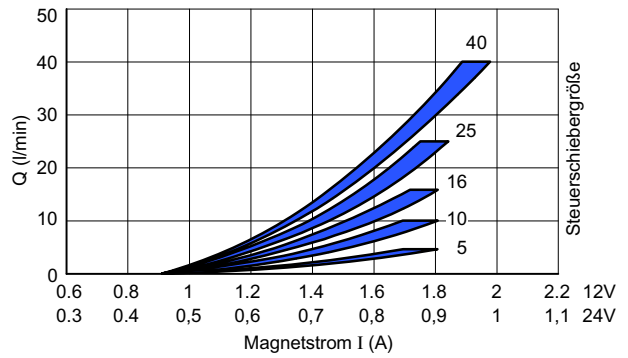
LD/LC

Maximum flow rate at LD/LC directional valve (without compensator), LS function



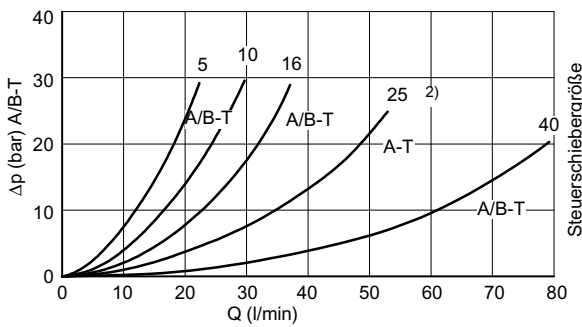
LC

Typical flow characteristic for LC8SM (spool 4D)



LC

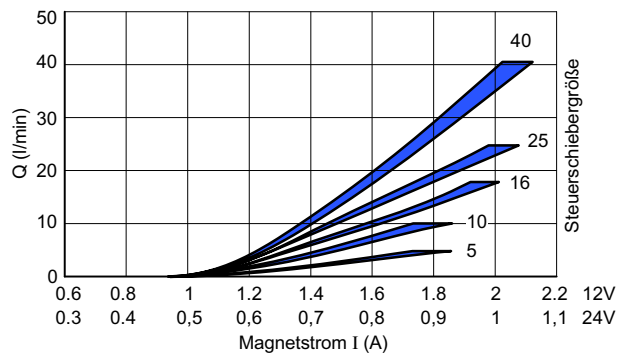
Pressure drop A/B → T in the LC8SM4A directional stage (for spool sizes 10, 16, 25 or 40)



2) 25 B-T = 16 A/B - T

LC

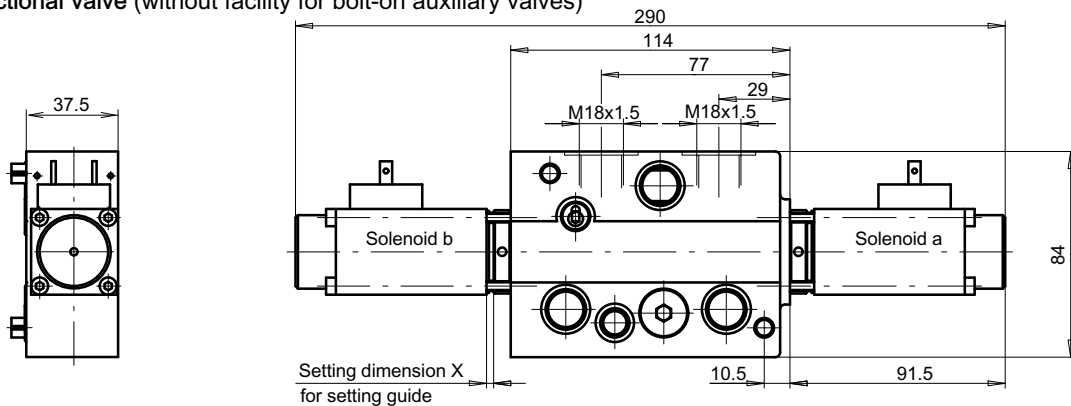
Typical flow characteristic for LC8SM (spool 4A / cylinder ratio 1:1)



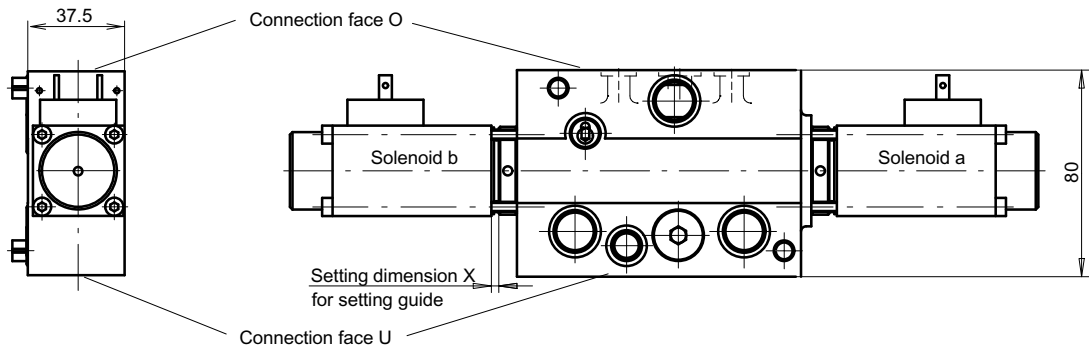
Setting guide (rough setting)

Spool size	Setting dimension X	Actuator flow l/min (approx.)
25	2.3	10
	2.1	18
	1.9	25
40	1.9	26
	1.8	32
	1.6	40

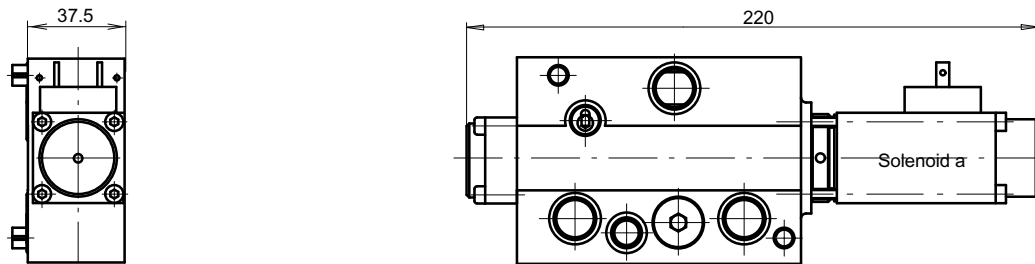
LD8S directional valve (without facility for bolt-on auxiliary valves)



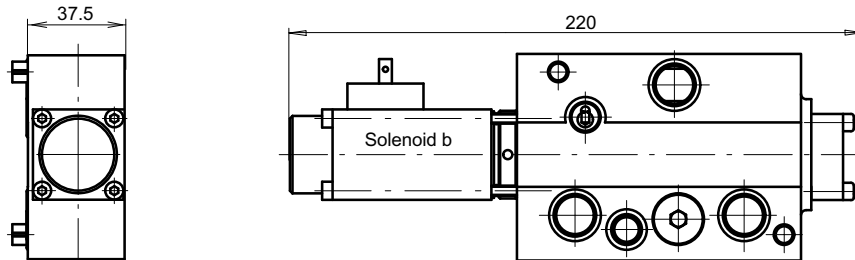
LD8S directional valve (with facility for bolt-on auxiliary valves)



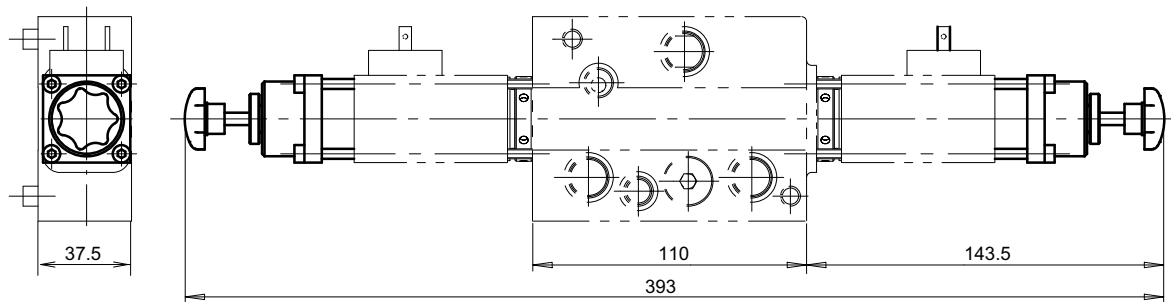
LD8S directional valve (spool types 3I and 3J)



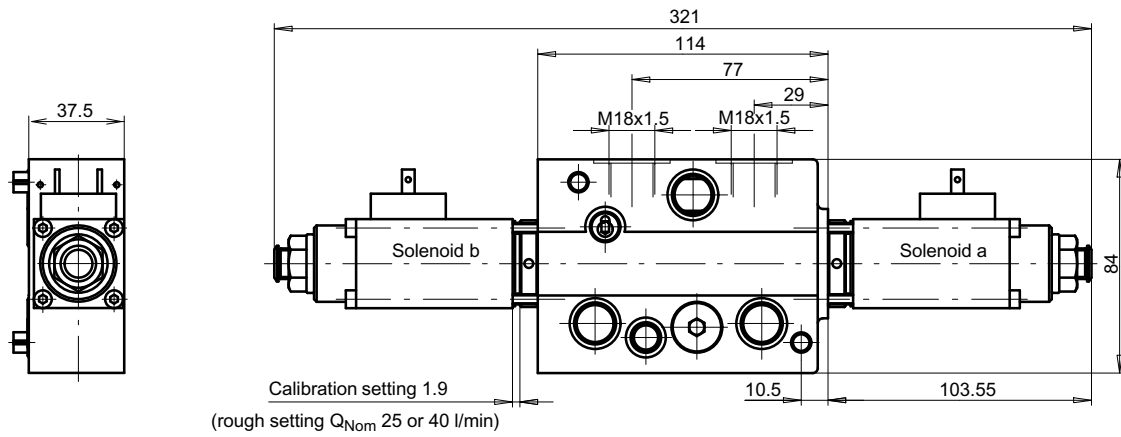
LD8S directional valve (spool types 3H and 4H)



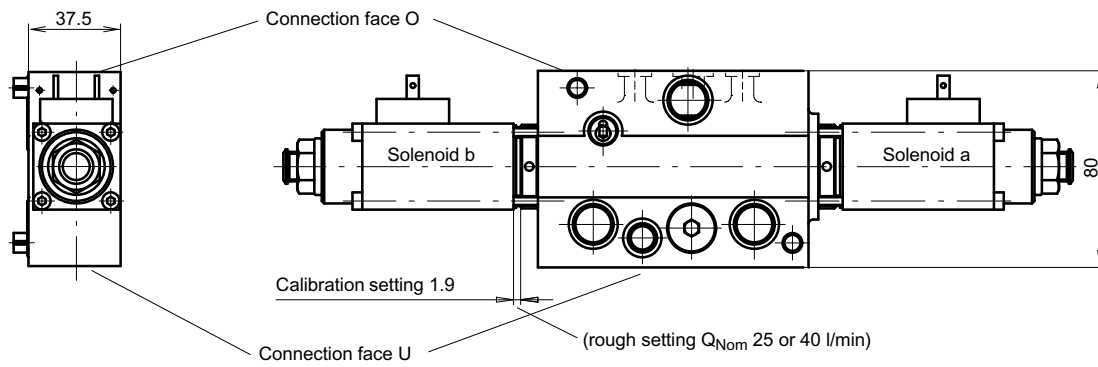
Manual override on LD8S



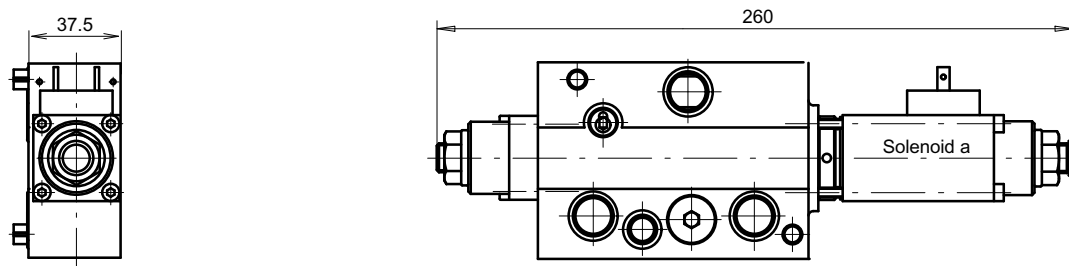
LC8S directional valve (without facility for bolt-on auxiliary valves)



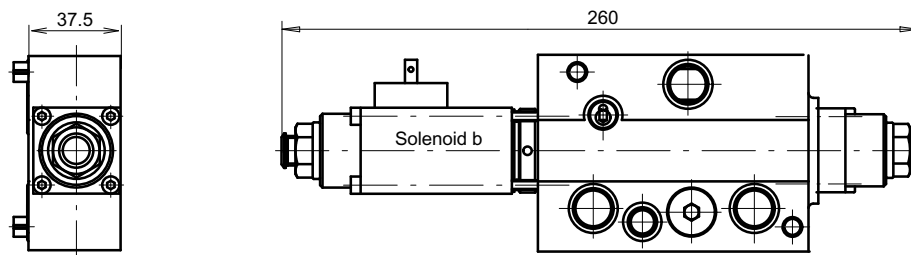
LC8S directional valve (with facility for bolt-on auxiliary valves)



LC8S directional valve (spool types 3I and 3J)



LC8S directional valve (spool types 3H and 4H)

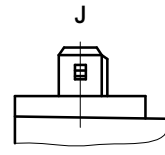
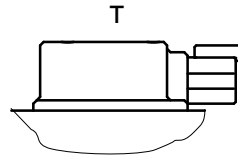
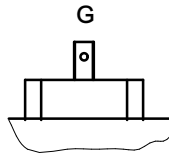


Connector socket

Plug connection to
DIN 43650

German DT04-2P-EP04
with protective diode
P6KE33CA

AMP-Junior-Timer
with protective diode
P6KE33CA



L C 8 S E 3 A 1 0 * * - N * * - 0 M 1 8 G 1 2 /

On/off solenoid = LD8S
Proportional solenoid = LC8S

Load-indep. individual operation = E
Load-independent parallel operation = M

3-way function = 3
4-way function = 4

Spool function = A, D, E, F, I, J, H

Port A spool code
for LD8S
for 3 + 4-way valves 25, 40 = e.g. 25
for LC8S
for 3 + 4-way valves 05¹⁾, 10, 16, 25, 40 = e.g. 10

Port B spool code
for LD8S
for 3-way valves = **
for 4-way valves 25, 40 = e.g. 25
for LC8S
for 3 + 4-way valves 05¹⁾, 10, 16, 25, 40 = e.g. 10

Without additional operator = *
Manual override (manual override only with LD8S) = N

Attachment to connection face O
port threads for line connection = *
flange face for auxiliary valve = M

Attachment to connection face U
without (valve type E) = *
with (valve type M) = K

Design number (to be inserted by the factory)

Type of connection at face O
flange face to factory standard = ***
line connection to ports A and B: DIN 3852 - M18 x 1.5 = M18

Connector socket
DIN 43650 = G
DT04-2P-EP04 = T
AMP Junior Timer = J

Nominal voltage
DC 12 V = 12
DC 24 V = 24

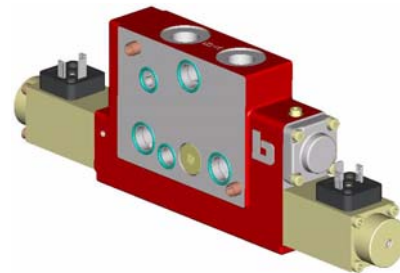
Variants / special features (to be inserted by the factory)

1) 05 only as slide funktion 4A and 4D available

5.3 Directional valves LM8S-/LP8S

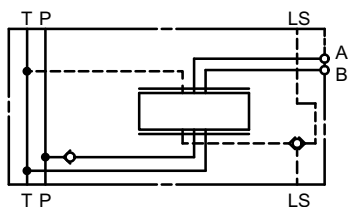
These directional valve sections, with two-stage solenoid/hydraulic control, on/off or proportional, are distinguished by their slim design and their adaptability. Auxiliary functions can be bolted on above or below the valve. To enable this, the appropriate interfaces must be chosen (see the following illustrations).

Manual overrides are available that act on the pilot stage, or directly on the main stage (non-following type). End-stops for the spool (special feature L.8S.../16) make it possible to limit the maximum actuator flow to any desired value.



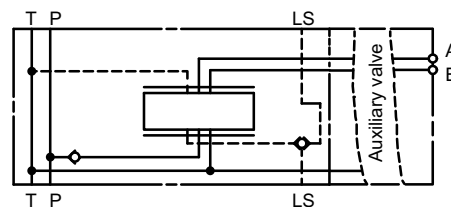
L.8SE.....--.....**

No facility for accepting bolt-on auxiliary valves



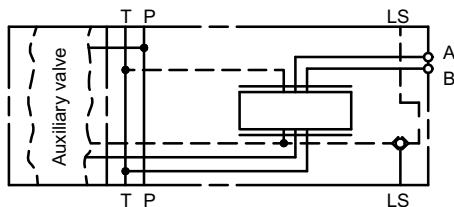
L.8SE.....-M*-.....

For bolt-on auxiliary valves on connection face O



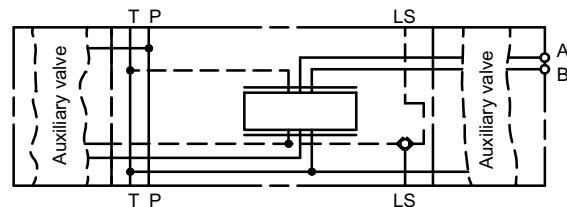
L.8SM.....-K-.....

For bolt-on auxiliary valves on connection face U



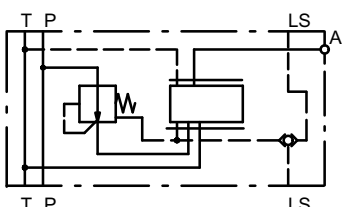
L.8SM.....-MK-.....

For bolt-on auxiliary valves on connection faces O and U



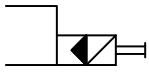
LP8SM.....-*-.....**

with integral pressure compensator

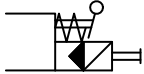


For spool types 3J and 3I, Q_{max} 25 l/min

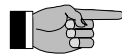
LM8S with on/off solenoid, two-stage



Optional manual override
for the valve spool



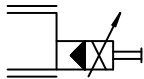
Inlet pressure	bar	315
Actuator pressure (10 sec/min)	bar	max. 330
Spool size	l/min	10, 16, 25, 40, 63, 75,90
Pressure drop A/B → T	bar	3.5 at 60 l/min
Solenoid design		on/off solenoid with mechanical manual override
Nominal voltage	Volt DC	12V Δ 10,8 - 14 24V Δ 21,6 - 28
Power consumption	Watt	24
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)
Accessories		Joystick brochure 100-P-700051-E-03



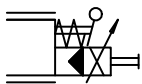
WICHTIG!

If the maximum nominal voltage is exceeded, the magnet can be damaged

LP8S with proportional solenoid, two-stage

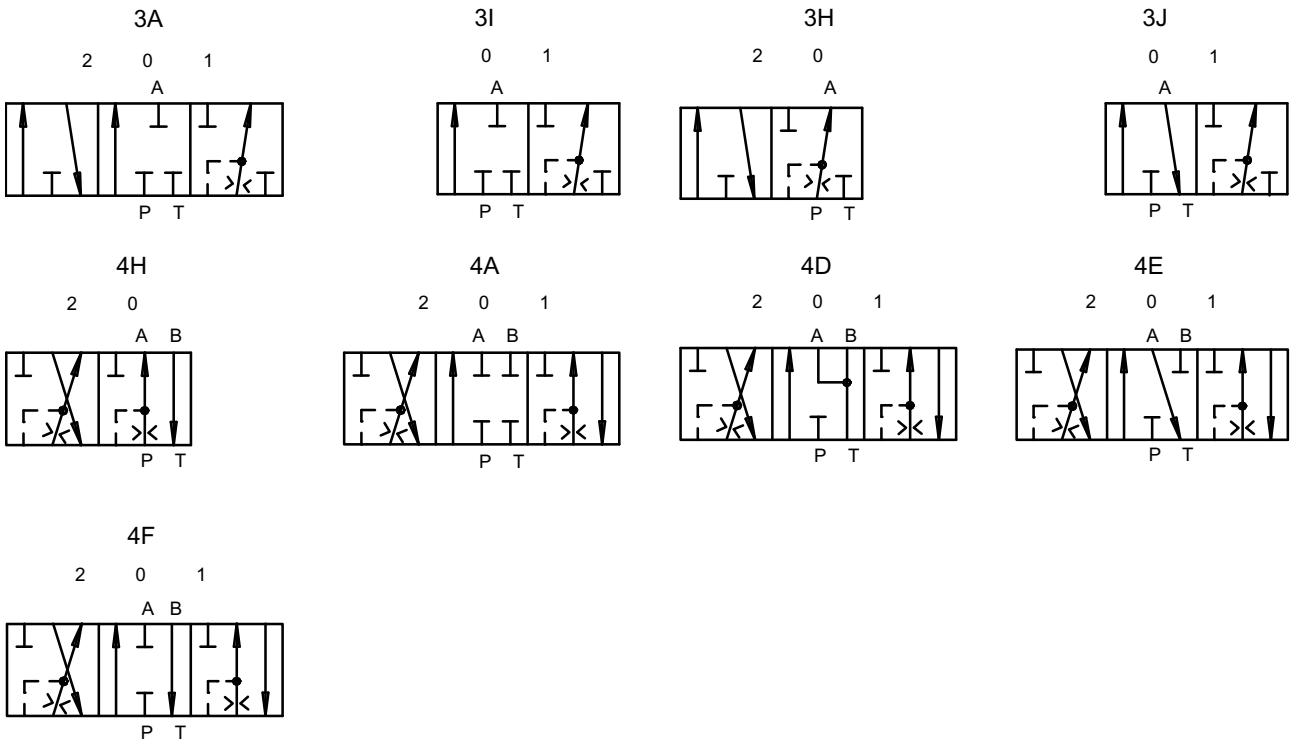


Optional manual override
for the valve spool

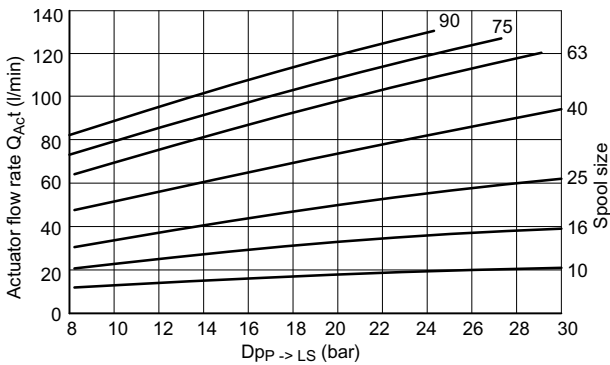


Inlet pressure	bar	315
Actuator pressure (10 sec/min)	bar	max. 330
Spool size	l/min	10, 16, 25, 40, 63, 75,90
Pressure drop A/B → T	bar	3.5 at 60 l/min
Solenoid design		proportional solenoid with mechanical manual override
Nominal voltage	Volt DC	12 or 24
Power consumption	Watt	16 at 1.6 A (U _N 12 V) 0.8 A (U _N 24 V)
Duty cycle	%	100 at I _{max} . 1.6 A (U _N 12 V) 0.8 A (U _N 24 V)
Enclosure protection		IP65 (DIN 40050)
Accessories		Joystick brochure 100-P-700051-E-03

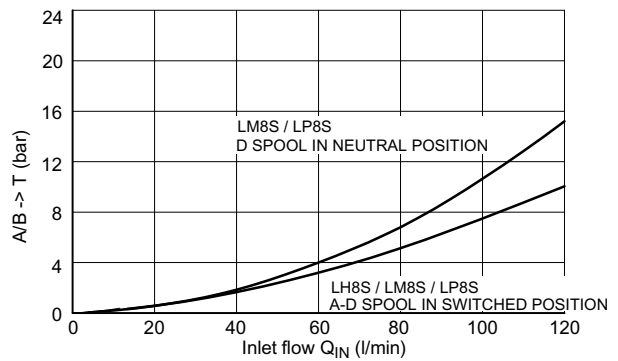
Spool types



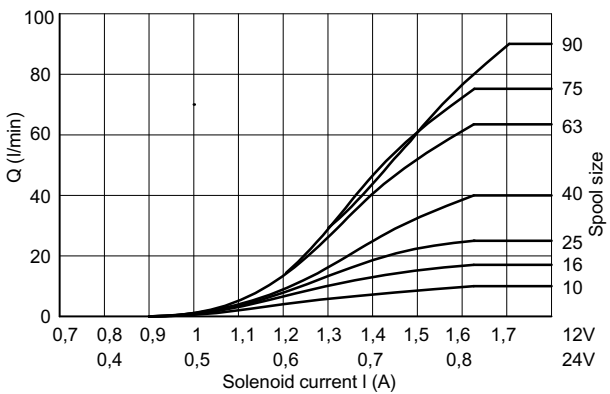
Maximum flow rate at directional valve
(without compensator), LS function



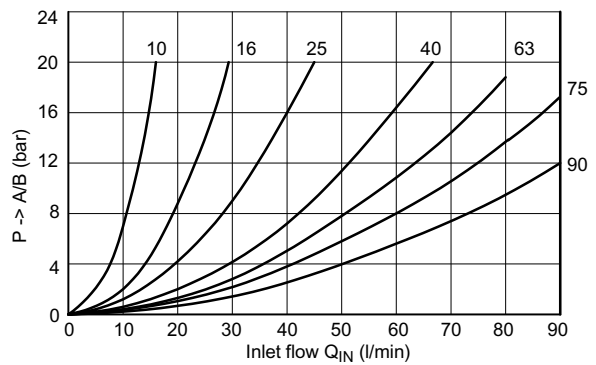
Pressure drop A/B -> T (L.8S directional valve)



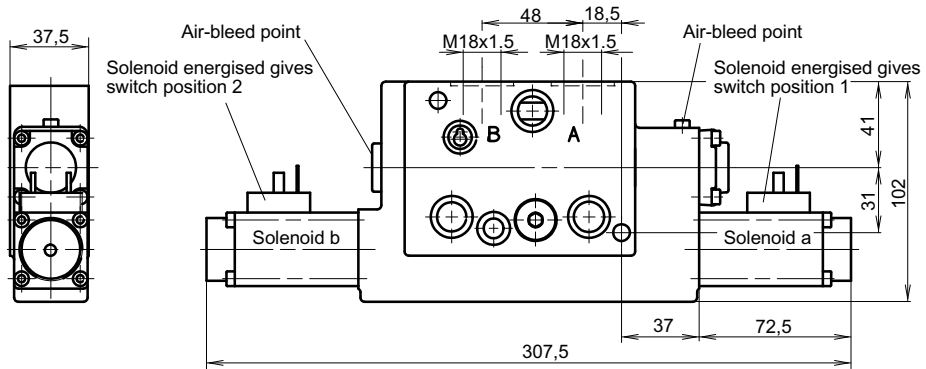
Control characteristic (LP8SM..)



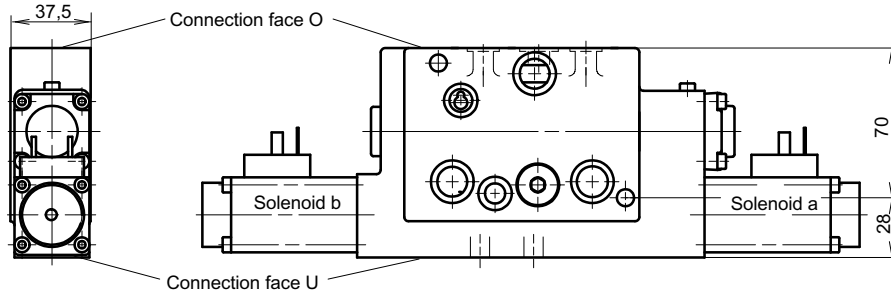
Pressure drop P -> A/B (L.8S directional valve),
spool at max. switched position



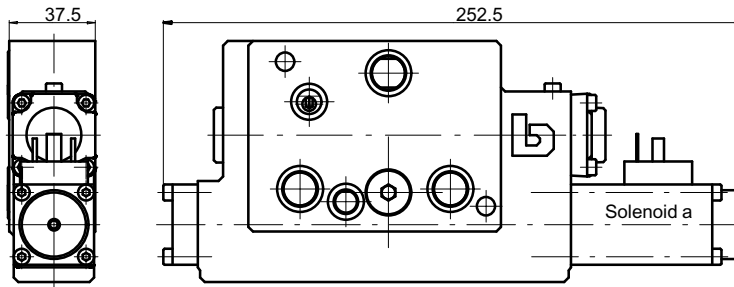
LM8S-/LP8S directional valve (without facility for bolt-on auxiliary valves)



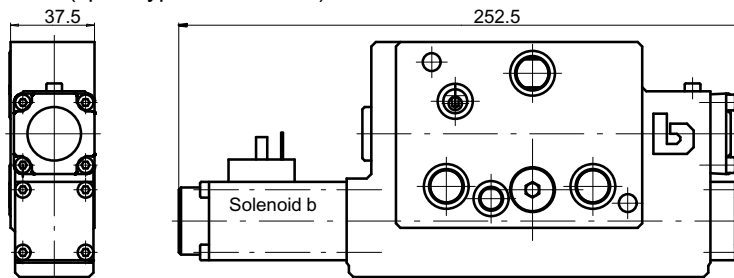
LM8S-/LP8S directional valve (with facility for bolt-on auxiliary valves)



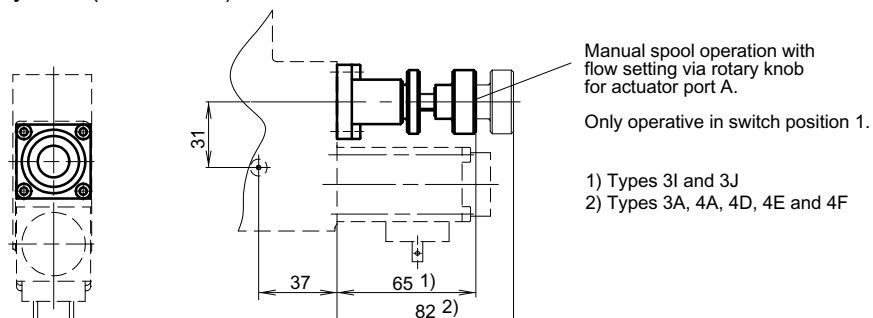
LM8S-/LP8S directional valve (spool types 3I and 3J)



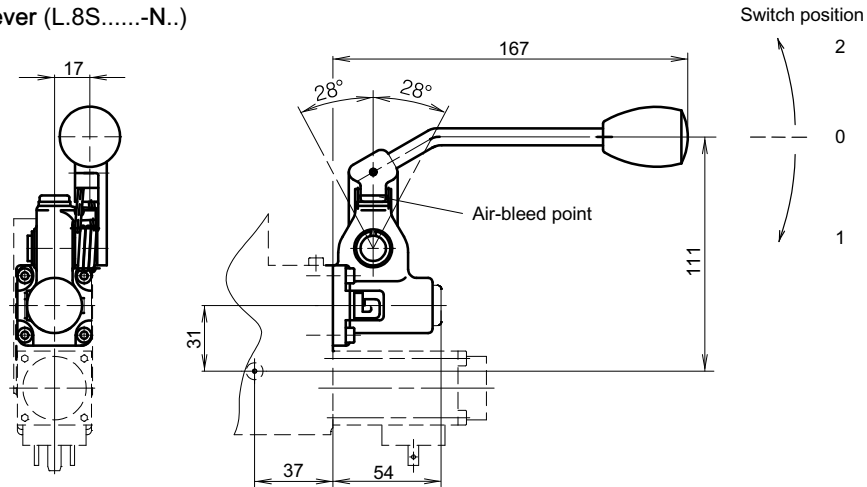
LM8S-/LP8S directional valve (spool types 3H and 4H)



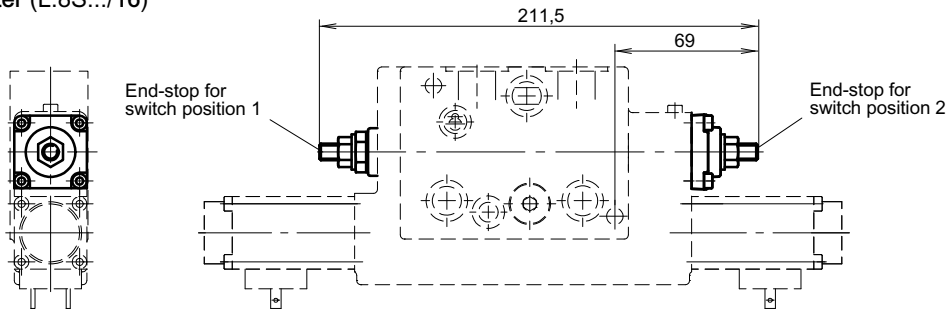
Manual override with rotary knob (L.8S.....-S..)



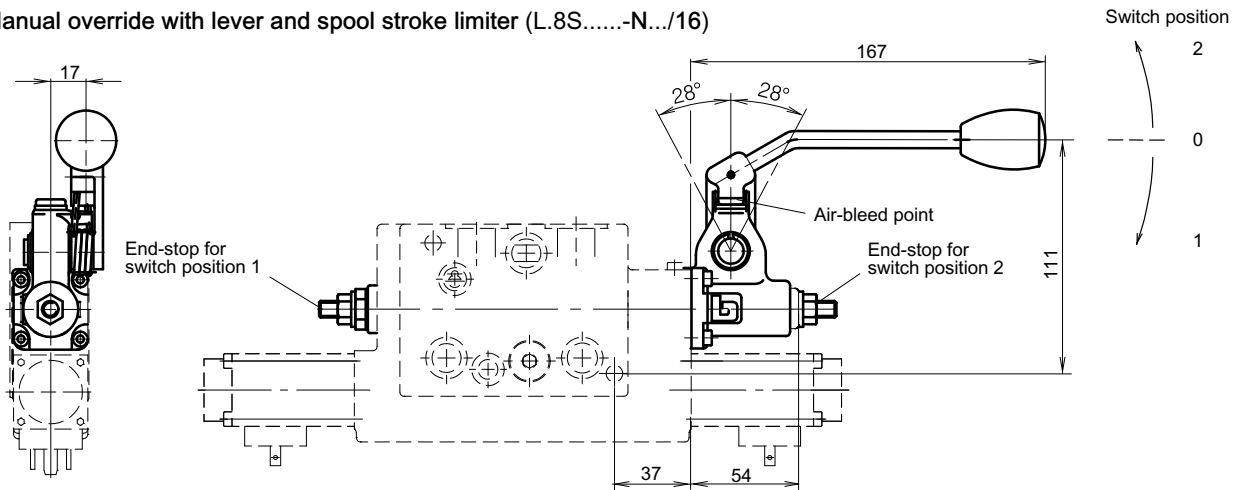
Manual override with lever (L.8S.....-N..)



Spool stroke limiter (L.8S.../16)



Manual override with lever and spool stroke limiter (L.8S.....-N.../16)

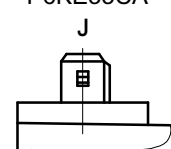
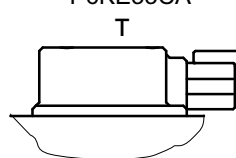
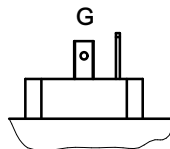


Connector socket

Plug connection to DIN 43650

Deutsch DT04-2P-EP04 with protective diode P6KE33CA

AMP Junior Timer with protective diode P6KE33CA



L M 8 S E 3 A 1 0 * * - N * * - 0 M 1 8 G 1 2 /

On/off solenoid = LM8S
Proportional solenoid = LP8S

Load-indepen. individual operation = E
Load-independent parallel operation = M

3-way function = 3
4-way function = 4

Spool function = A, D, E, F, I, J, H

Port A spool code
10, 16, 25, 40, 63, 75⁴⁾, 90 = e.g. 25¹⁾

Port B spool code
for 3-way valves = **
for 4-way valves 10, 16, 25, 40, 63, 75⁴⁾, 90 = e.g. 25¹⁾

Without additional operator = *
Manual override (with lever) = N
Manual override (with rotary knob) (only operative in switch position 1) = S

Attachment to connection face O
port threads for line connection = *
flange face for auxiliary valve = M

Attachment to connection face U
without (valve type E) = *
without (valve type M) = * 2)
with (valve type M) = K

Design number (to be inserted by the factory)

Type of connection at face O
flange face to factory standard = ***
line connection to ports A and B: DIN 3852 - M18 x 1.5 = M18
DIN 3852 - M22 x 1.5 = M22⁵⁾

Connector socket
DIN 43650 = G
DT04-2P-EP04 = T
AMP Junior Timer = J

Nominal voltage
DC 12 V = 12
DC 24 V = 24

Variants / special features (to be inserted by the factory)

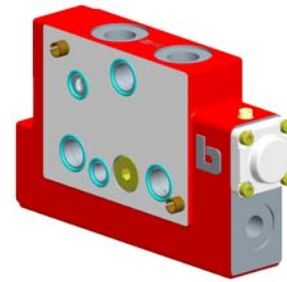
- 1) Stroke limiter (to reduce the maximum actuator flow): = /16
2) with integral compensator $Q_{max} = 25$ l/min (spool types 3I or 3J)
3) only as slide funktion D and J available
4) P reduces onto 250 bar

5.4 Directional sections, LH8S

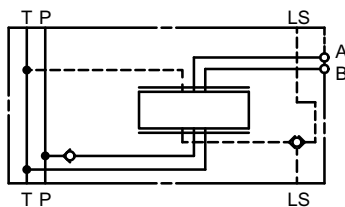
These directional valve sections, operated by a hydraulic pilot stage, are distinguished by their slim design and their adaptability.

Auxiliary functions can be bolted on above or below the valve. To enable this, the appropriate interfaces must be chosen (see the following illustrations).

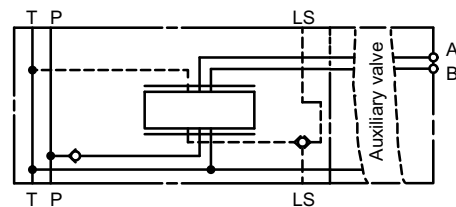
Various manual overrides and end-stops for the spool make it possible to limit the maximum actuator flow to any desired value.



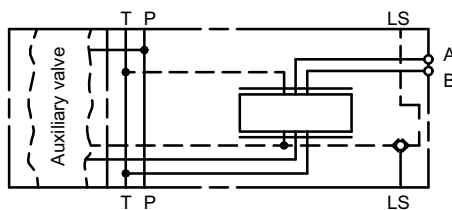
LH8SE.....--....**
No facility for accepting bolt-on auxiliary valves



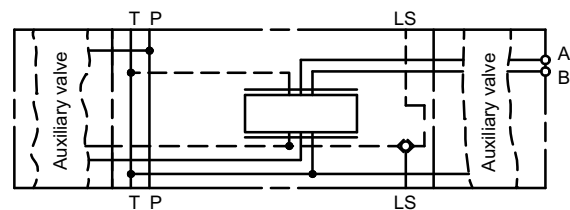
LH8SE.....-M*-....
For bolt-on auxiliary valves on connection face O



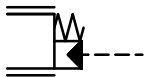
LH8SM.....-*K-....
For bolt-on auxiliary valves on connection face U



LH8SM.....-MK-....
For bolt-on auxiliary valves on connection faces O and U



LH8S hydraulic operation

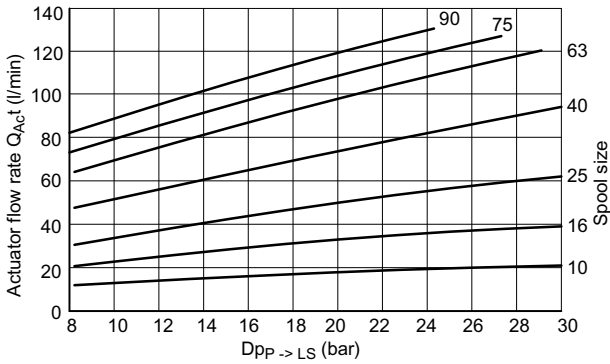


Optional manual override for the valve spool

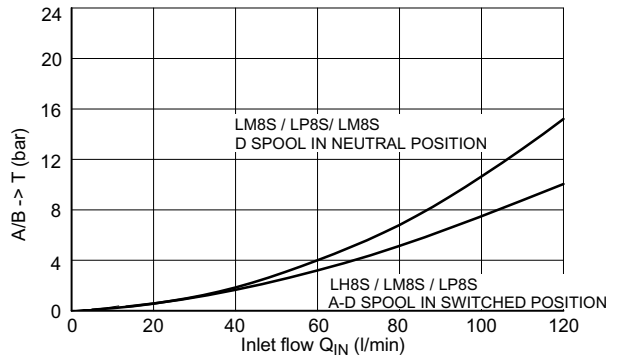


Inlet pressure	bar	315
Actuator pressure (duty cycle 10 sec/min)	bar	max. 330
Spool size	l/min	10, 16, 25, 40, 63, 75
Pilot pressure	bar	max. 50
Pilot pressure over tank pressure	bar	4 to 16 (for other pilot pressures, consult Bucher Hydraulics)
Accessories	Joystick brochure 100-P-700051-D-03	

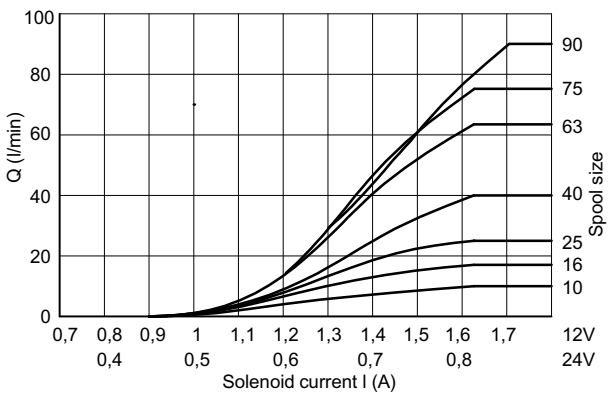
Maximum flow rate at directional valve
(without compensator), LS function



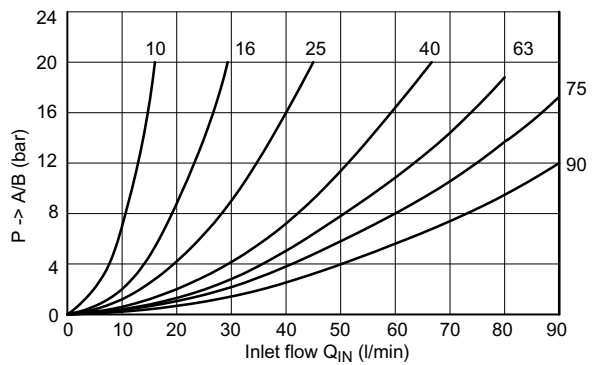
Pressure drop A/B -> T (L.8S directional valve)



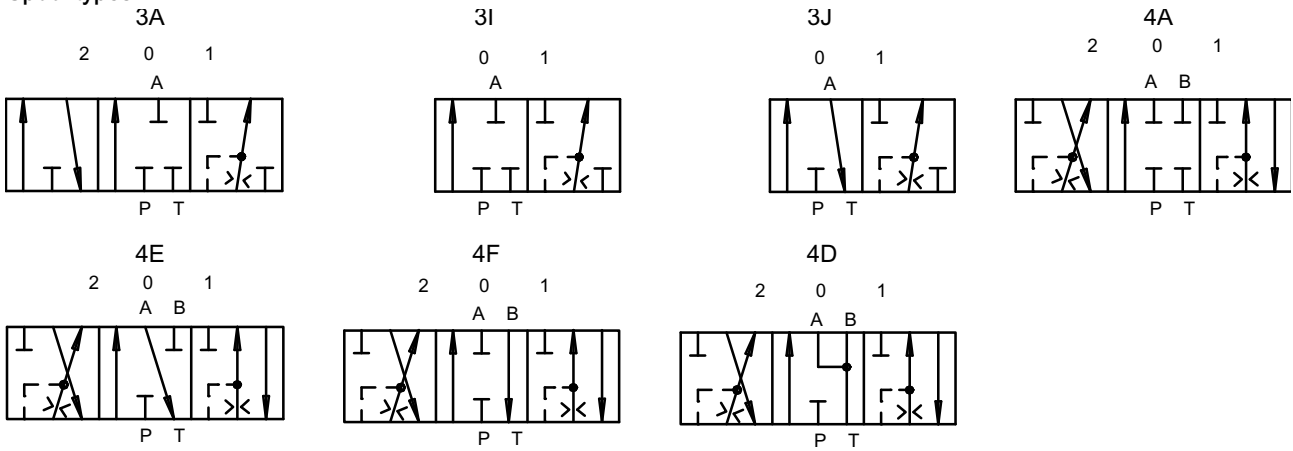
Control characteristic (LH8SM..)



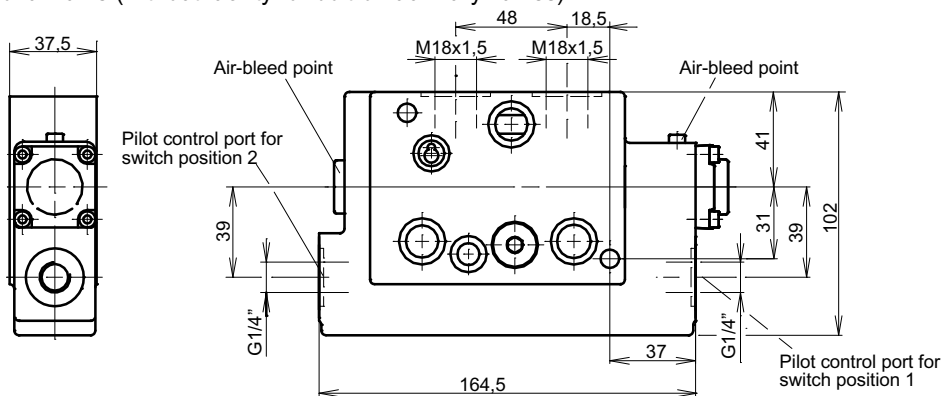
Pressure drop P -> A/B (L.8S directional valve),
spool at max. switched position



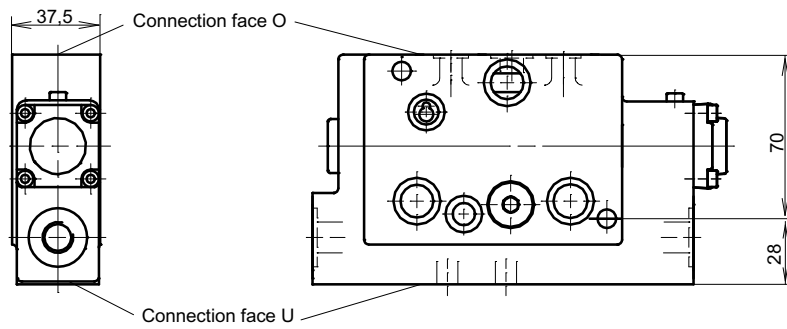
Spool types



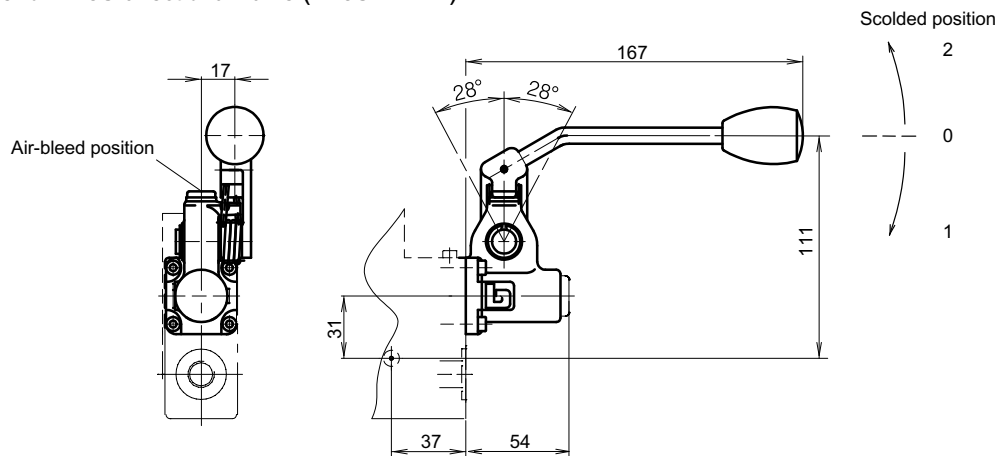
LH8S directional valve (without facility for bolt-on auxiliary valves)



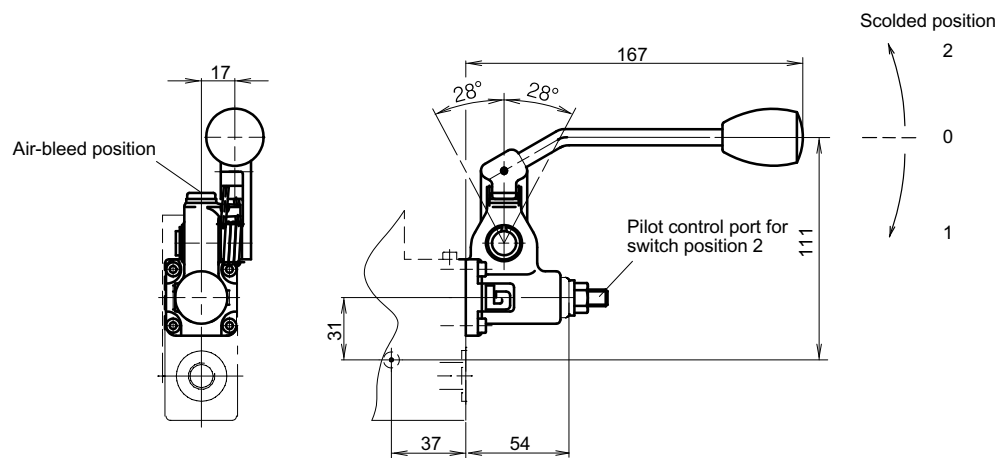
LH8S directional valve (with facility for bolt-on auxiliary valves)



Manual override for LH8S directional valve (LH8S.....-N..)



Manual override for LH8S directional valve and spool stroker limiter (LH8S.....-N../16)



		L	H	8	S	E	3	A	1	0	*	*	-	N	*	*	-	1	M	1	8	/	
Hydraulic operation	=	LH8S																					
Load-indepen. individual operation	=	E																					
Load-independent parallel operation	=	M																					
3-way function	=	3																					
4-way function	=	4																					
Spool function	=	A, D, E, F, I, J																					
Port A spool code		10, 16, 25, 40, 63, 75 ²⁾ , 90 ⁴⁾ = e.g. 25 ¹⁾																					
Port B spool code		for 3-way valves = **																					
		for 4-way valves 10, 16, 25, 40, 63, 75 ²⁾ , 90 ⁴⁾ = e.g. 25 ¹⁾																					
Without additional operator	=	*																					
Manual override (with lever)	=	N																					
Attachment to connection face O		port threads for line connection = *																					
		flange face for auxiliary valve = M																					
Attachment to connection face U		without (valve type E) = *																					
		with (valve type M) = K																					
Design number		(to be inserted by the factory)																					
Type of connection at face O		flange face to factory standard = ***																					
		line connection to ports A and B: DIN 3852 - M18 x 1.5 = M18																					
		DIN 3852 - M22 x 1.5 = M22 ³⁾																					
Variants / special features		(to be inserted by the factory)																					

1) For different, or higher, litre ratings consult Bucher Hydraulics

2) only as slide funktion D and J available

3) P reduces onto 250 bar

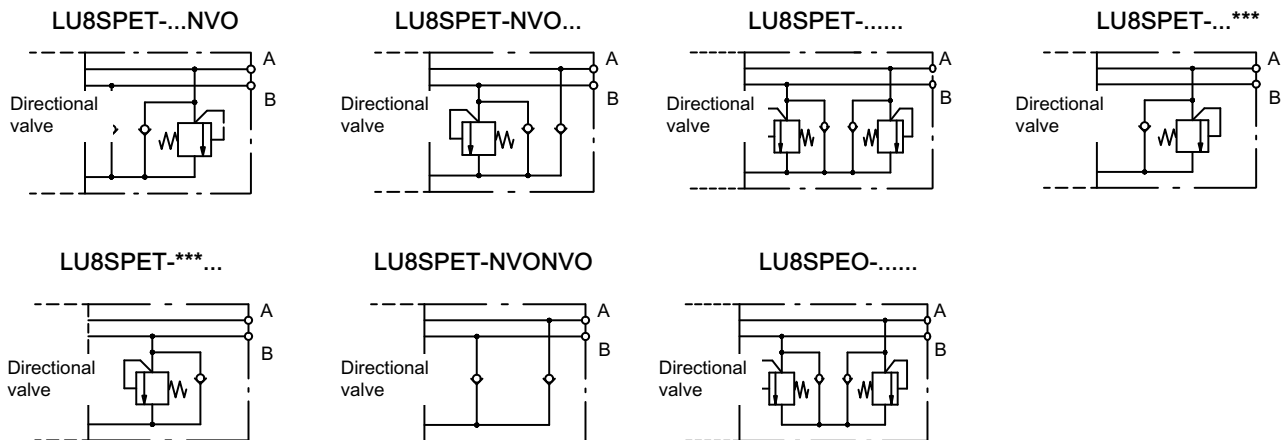
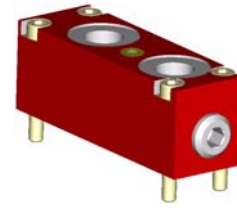
4) only as slide funktion 4A and 4D available

6 Auxiliary valves that bolt-on to the top connection face O

6.1 Anti-shock/make-up valve (secondary pressure relief)

These bolt-on anti-shock/make-up valves are mounted on connection face O. They protect the actuator from unacceptably-high pressure peaks.

The following combinations are available in the pressure ranges listed.

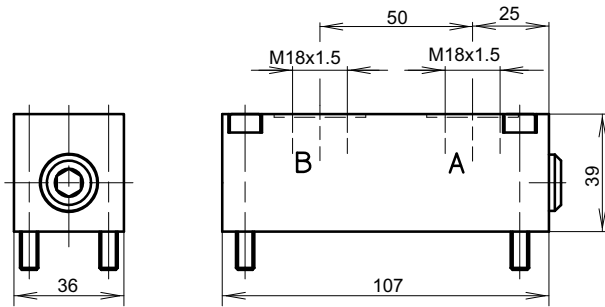


Function

Model	<i>No function</i>		<i>Make-up function</i>		<i>Anti-shock and make-up function</i>	
	Actuator port		Actuator port		Actuator port	
	A	B	A	B	A	B
LU8SPET-...NVO-..				X	X	
LU8SPET-NVO...-..			X			X
LU8SPET-.....-..					X	X
LU8SPET-...***-..		X			X	
LU8SPET-***...-..	X					X
LU8SPET-NVONVO-..			X	X		
LU8SPEO-.....-..					X ¹⁾	X ¹⁾

1) Relieves into opposite line; no tank connection

Pressure settings available (measured at 10 l/min test flow)	bar	25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300
Pressure drop	bar	2 at 63 l/min
Pressure drop through make-up valve	bar	4 at 30 l/min



L U 8 S P E T - 1 0 0 N V O - 0 M 1 8 /

Exit flow path of the excess pressure
to opposite actuator line
to tank

= O
= T

Port A

without pressure relief, without make-up = ***
without pressure relief, with make-up = NVO
with pressure relief and make-up
pressure setting e.g. 100 = 100¹⁾

Port B

without pressure relief, without make-up = ***
without pressure relief, with make-up = NVO
with pressure relief and make-up
pressure setting e.g. 100 = 100¹⁾

Design number (to be inserted by the factory)

Port threads DIN 3852 - M18 x 1.5 = M18

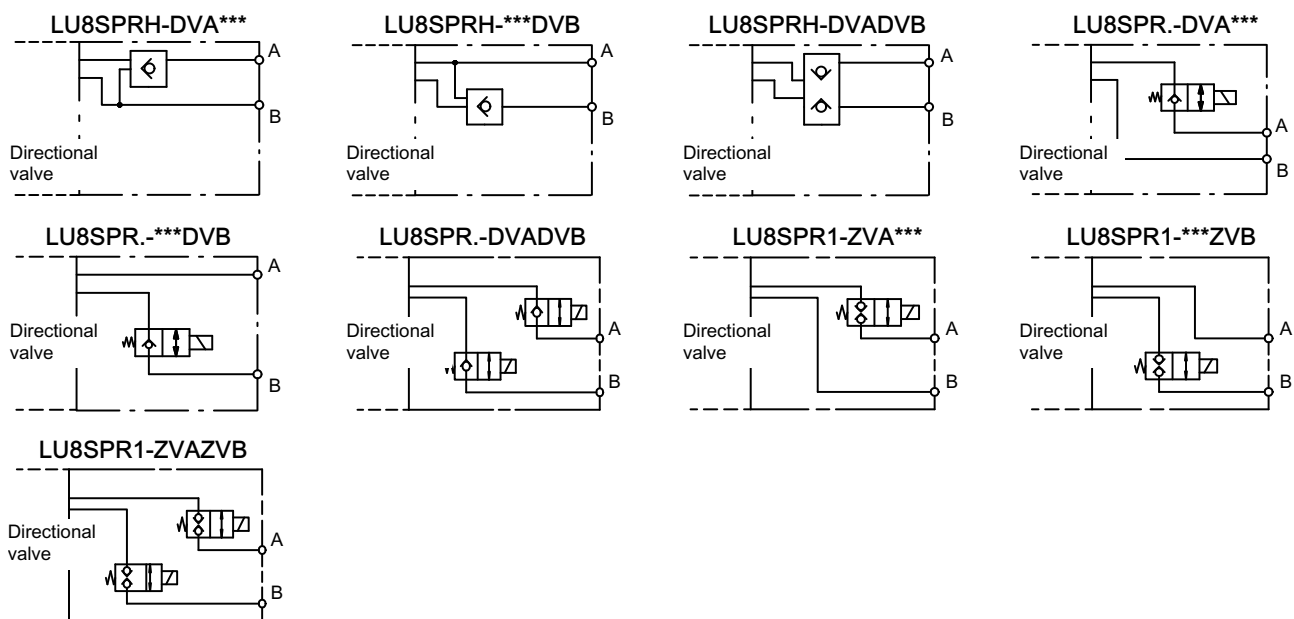
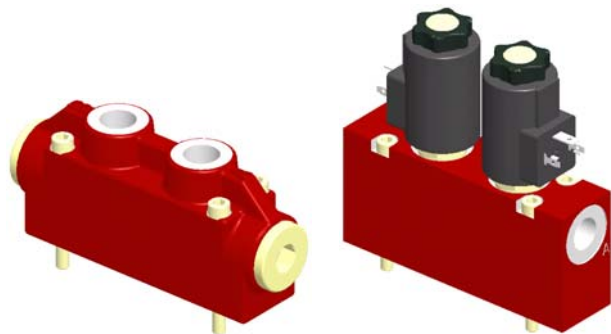
Variants / special features (to be inserted by the factory)

1) The settings (pressures) in bar available for the pressure relief function (measured at 10 l/min test flow) 25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300 (for other pressures, contact Bucher Hydraulics)

6.2 Lock check valves (pilot operated non return valves)

These bolt-on load check valves, with hydraulic or solenoid operation, shut off the actuator lines with zero leakage.

The valves must be mounted on connection face O of the directional valve. The following variants are available.



Function

Model	<i>Hydraulic operation</i>		<i>Solenoid operated</i>		<i>Operating pressure max.</i> [bar]	<i>Nominal flow rate</i> [l/min]
	Actuator port		Actuator port			
	A	B	A	B		
LU8SPRH-DVA***-...	X				280	63
LU8SPRH-***DVB-...		X			280	63
LU8SPRH-DVADVB-...	X	X			280	63
LU8SPR1-***DVB-...				X	210	30
LU8SPR1-DVA***-...			X		210	30
LU8SPR1-DVADVB-...			X	X	210	30
LU8SPR1-***ZVB-...				X	210	30
LU8SPR1-ZVA***-...			X		210	30
LU8SPR1-ZVAZVB-...			X	X	210	30
LU8SPR2-***DVB-...				X	280	70
LU8SPR2-DVA***-...			X		280	70
LU8SPR2-DVADVB-...			X	X	280	70

LU8SPRH-..

Nominal flow rate	l/min	63
Ratio of opening pressure to opposing pressure for double-acting cylinders		1 : 6.25 ¹⁾
Operating pressure	bar	280
Pressure drop	bar	7 at 63 l/min

LU8SPR1-..

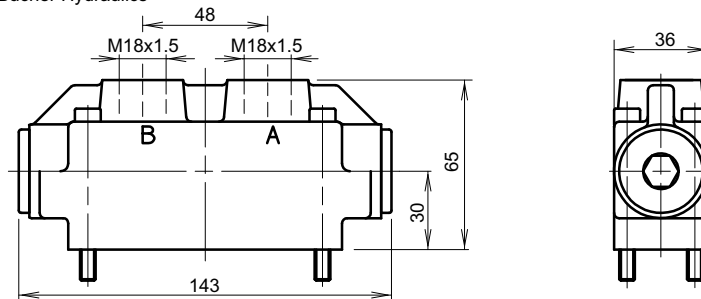
Nominal flow rate	l/min	30
Operating pressure	bar	max. 210
Actuator pressure	bar	max. 250
Pressure drop	bar	10 at 30 l/min
Nominal voltage	V DC	12 or 24
Power consumption	Watt	27
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)
Connector socket		DIN43650 / DT04-2P-EP04 / AMP

LU8SPR2-..

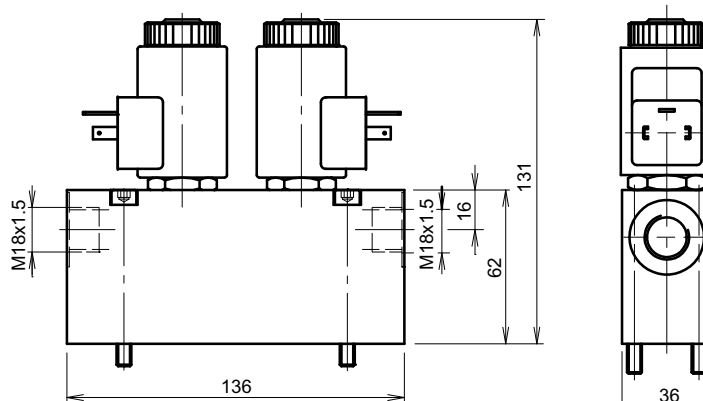
Nominal flow rate	l/min	70
Operating pressure	bar	max. 280
Actuator pressure	bar	max. 315
Pressure drop	bar	10 at 63 l/min
Nominal voltage	V DC	12 or 24
Power consumption	Watt	22
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)
Connector socket		DIN 43650

1) for other opening ratios, contact Bucher Hydraulics

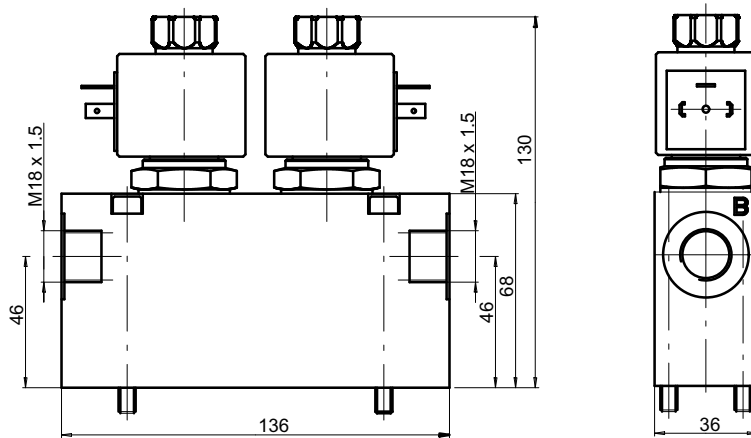
LU8SPRH-...



LU8SPR1-..



LU8SPR2-..

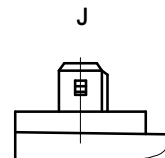
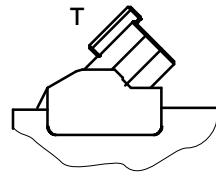
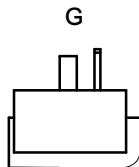


Connector socket

Plug connection to DIN 43650

Deutsch DT04-2P-EP04 with protective diode P6KE33CA

AMP-Junior-Timer with protective diode P6KE33CA



L U 8 S P R 1 - D V A * * * - 0 M 1 8 G 1 2 /

Hydraulic operation
Solenoid operated:
Q_{max} 30 l/min
Q_{max} 70 l/min

= PRH
= PR1
= PR2

Port A
without valve
with check valve
with dual seat valve

= ***
= DVA
= ZVA

Port B
without valve
with check valve
with dual seat valve

= ***
= DVB
= ZVB

Design number (to be inserted by the factory)

Port threads DIN 3852 - M18 x 1.5 = M18

Connector socket
DIN 43650 = G
DT04-2P-EP04 = T (for PR2, consult Bucher Hydraulics)
AMP Junior Timer = J (for PR2, consult Bucher Hydraulics)

Nominal voltage
DC 12 V = 12
DC 24 V = 24

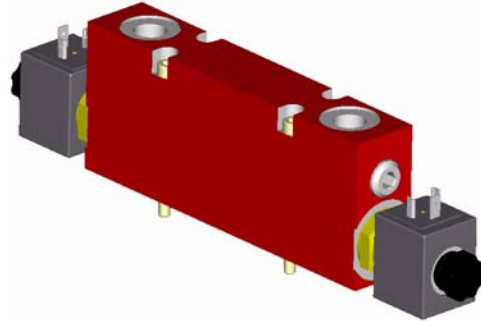
Variants / special features (to be inserted by the factory)

6.3 Load check valves with anti-shock / make-up valve (pilot operated non-return valve with pressure relief on the actuator side)

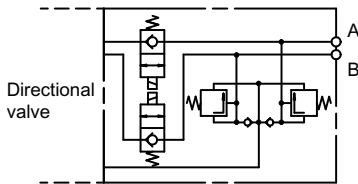
These bolt-on load check valves with service line anti-shock/make-up valves shut off the actuator lines with zero leakage and protect the actuator from unacceptably-high pressure peaks.

The valves must be mounted on connection face O of the directional valve. The relevant pressure settings are detailed below.

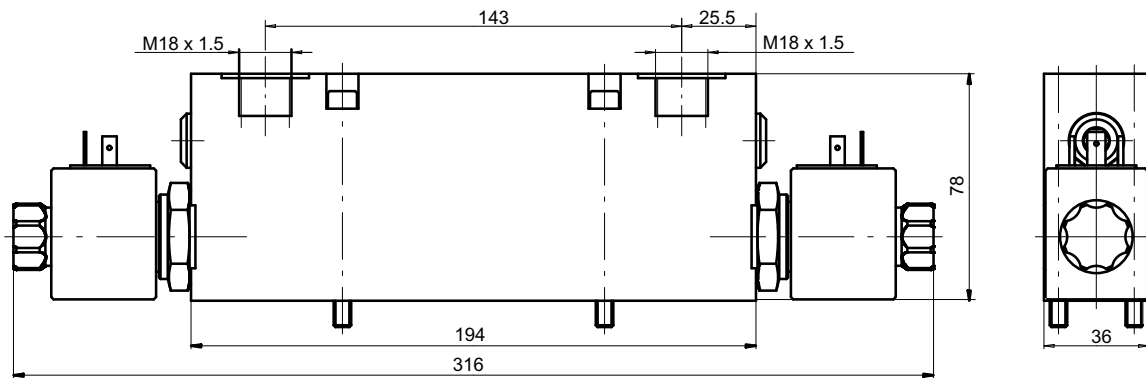
Not usable for LA8S.. valves and LM8S../LP8S.. valves with emergency override.



LU8SPEC..



Nominal flow rate	l/min	70
Operating pressure	bar	max. 280
Actuator pressure	bar	max. 315
Pressure drop	bar	10 at 63 l/min
Pressure settings available for the pressure relief function (measured at 10 l/min test flow)	bar	25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300
Nominal voltage	V DC	12 or 24
Power consumption	Watt	22
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)

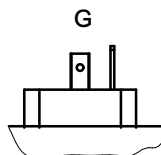


Connector socket

Plug connection to
DIN 43650

Deutsch DT04-2P-EP04

AMP-Junior-Timer



T

consult
Bucher Hydraulics

J

consult
Bucher Hydraulics

L U 8 S P E C - 1 6 0 * * * - 0 M 1 8 G 1 2 /

Port A
 without pressure relief = ***
 with pressure relief and make-up pressure setting e.g. 160 = 160 ¹⁾
 without pressure relief, with make-up valve = NVO

Port B
 Without pressure relief = ***
 with pressure relief and make-up pressure setting e.g. 160 ¹⁾ = 160
 without pressure relief, with make-up valve = NVO

Design number (to be inserted by the factory)

Port threads DIN 3852 - M18 x 1.5 = M18

Connector socket
 DIN 43650 = G
 DT04-2P-EP04 = T ²⁾
 AMP Junior Timer = J ²⁾

Nominal voltage
 DC 12 Volt = 12
 DC 24 Volt = 24

Variants / special features (to be inserted by the factory)

1) The pressure settings in bar available for the pressure relief function (measured at 10 l/min test flow) 25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300 (for other pressures, contact Bucher Hydraulics)

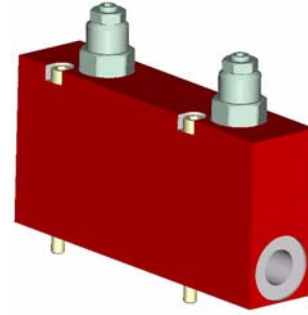
2) For Deutsch and AMP connector plugs, consult Bucher Hydraulics

6.4 Load control valves

These bolt-on load control valves, with integral anti-shock function, ensure load-independent lowering motion at speeds determined by the inlet flow, with leak-free shut-off when the directional valve is in its neutral position. The secondary pressure relief setting should preferably be between 1 and 2 times the highest load pressure. Turning the adjusting screw in the clockwise direction reduces the setting, and this can be used for emergency lowering of the load.

The valves must be mounted on connection face O. The following variants are available.

Not usable for LA8S.. valves and LM8S../LP8S.. valves with emergency override.



- **LU8SPBH-***S..** . . .-

Load-holding valve at port B, orifice damping facility in the control line. Directional valve spool type F preferred

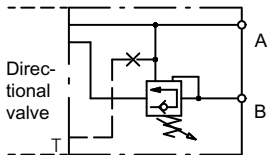
- **LU8SPBH-...S..** . . .-

Anti-shock/make-up valve at port A, load-holding valve at port B. Orifice damping facility in the control line. Directional valve spool type F preferred

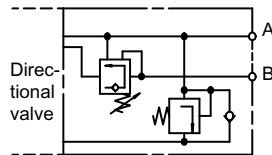
- **LU8SPBH-S..S..** . . .-

Load-holding valves at ports A and B. Directional valve spool type D preferred

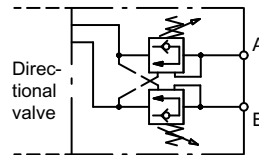
LU8SPBH-*S..**



LU8SPBH-...S..



LU8SPBH-S..S..



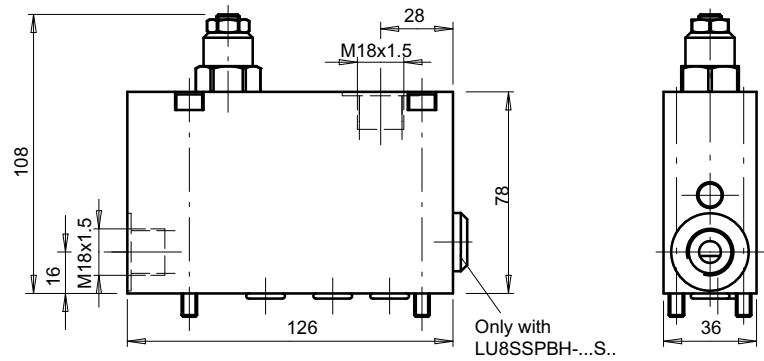
Note:

LU8SPBH-S..S..

cannot be combined with manual override on LM8S, LP8S or LA8S

Inlet pressure	bar	max. 250 LU8SPBH
Actuator pressure	bar	max. 280 LU8SPBH
Pilot ratio:		
S15		1.5 : 1
S23		2.3 : 1
S30		3 : 1
Anti-shock valve adjustable	bar	70 - 280
Pressure drop	bar	25 bei 63 l/min

LU8SSPBH-***S.. / LU8SSPBH-...S..



L U 8 S P B H - * * * S 1 5 - 0 M 1 8 / P=...³⁾

Without float position = PBH

Port A

without load control	=	***
with load control, pilot ratio	1.5 : 1 =	S15 ²⁾
	2.3 : 1 =	S23
	3 : 1 =	S30
with pressure relief and make-up, pressure setting e.g. 210	=	210 ¹⁾

Port B

with load control, pilot ratio	1.5 : 1 =	S15 ²⁾
	2.3 : 1 =	S23
	3 : 1 =	S30

Design number (to be inserted by the factory)

Port threads DIN 3852 - M18 x 1.5 = M18

Variants / special features (to be inserted by the factory)

1) The pressure settings in bar available for the pressure relief function (measured at 10 l/min test flow) 25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 175, 190, 210, 230, 250, 280, 300 (for other pressures, contact Bucher Hydraulics)

2) For other pilot ratios, consult Bucher Hydraulics.

3) Specify the pressure setting in bar.

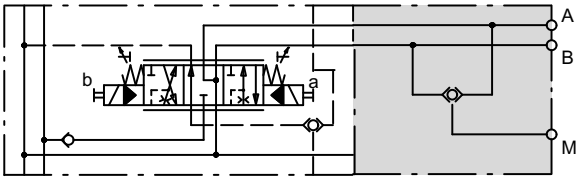
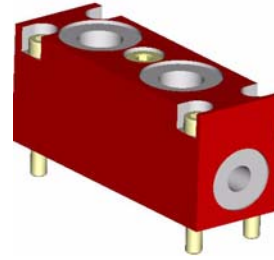
6.5 Special bolt-on plates LU8SSAP-RWM12-0M18

These bolt-on plates can be fitted to all directional valves whose maximum flow rate is limited to 63 l/min.

When the directional valve is in a switched position, the internal shuttle valve supplies the higher of the two actuator pressures (A or B) to port M. When the L.8S.4D... directional valve is in its neutral position, port M is also unloaded.

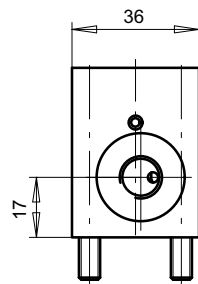
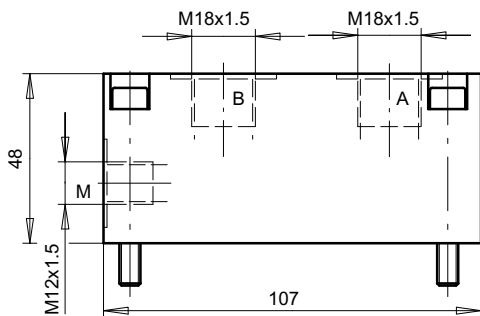
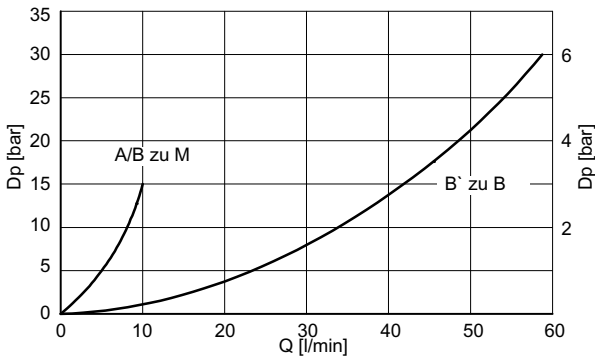
Typical applications are using port M to release brakes, or for attaching a sensor.

The valves must be mounted on connection face O of the directional valve.



Operating pressure		bar	max. 280
Nominal flow rate	A/B to M	l/min	max. 8
Nominal flow rate	A' to A B' to B	l/min	max. 63

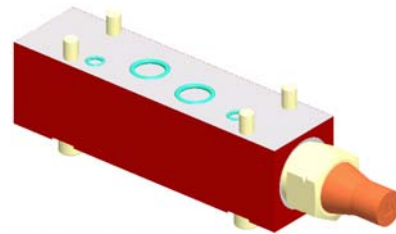
Pressure drop characteristic



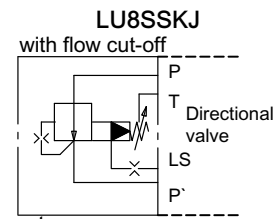
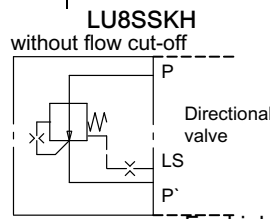
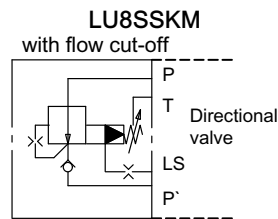
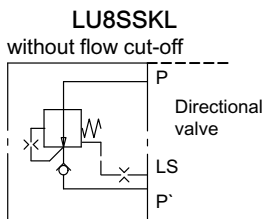
7 Auxiliary valves that bolt-on to the bottom connection face U

7.1 Individual pressure compensators with / without flow-cut-off (torque-limiting)

The individual pressure compensators (2-way compensators), which bolt-on to the bottom of the directional valve, keep the Δp over the spool opening at a constant level, even with high inlet pressures. This means that the actuator flow remains constant and load-independent even if another actuator that needs a higher pressure is operated at the same time. There is an optional flow cut-off function at an adjustable pressure, above which level the actuator flow goes to zero. The valves must be mounted on connection face U of the directional valve.

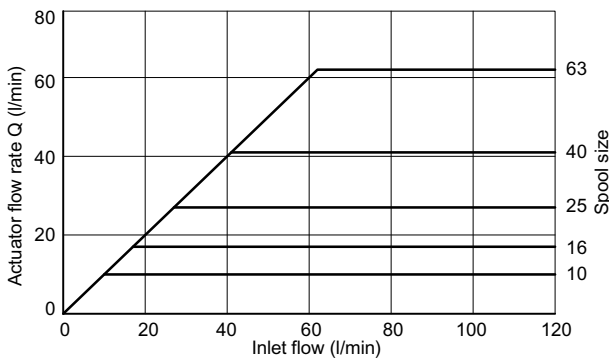


Operating pressure	bar	max. 315
Pressure for flow cut-off		adjustable
Nominal flow rate	SKL/SKM SKJ/SKH	l/min max. 63 max. 110

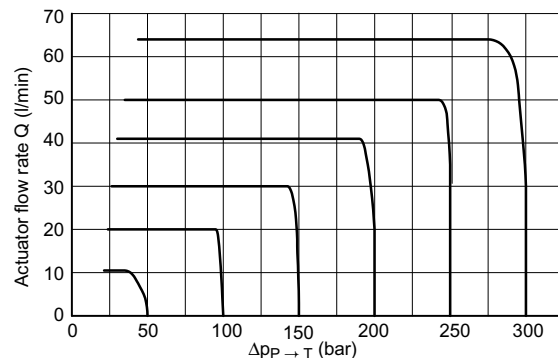


For higher flow rates

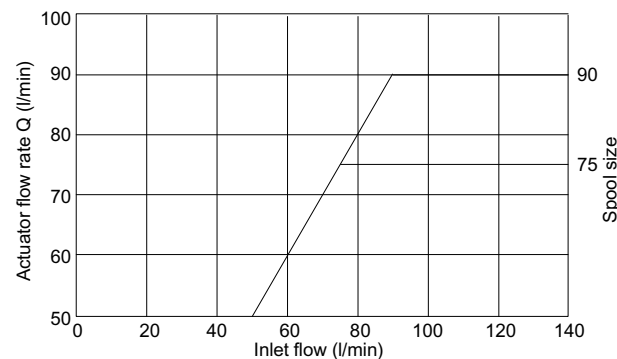
Maximum flow rate at directional valve when using the LU8SSKL/SKM compensator in conjunction with an LU8SSCS inlet section

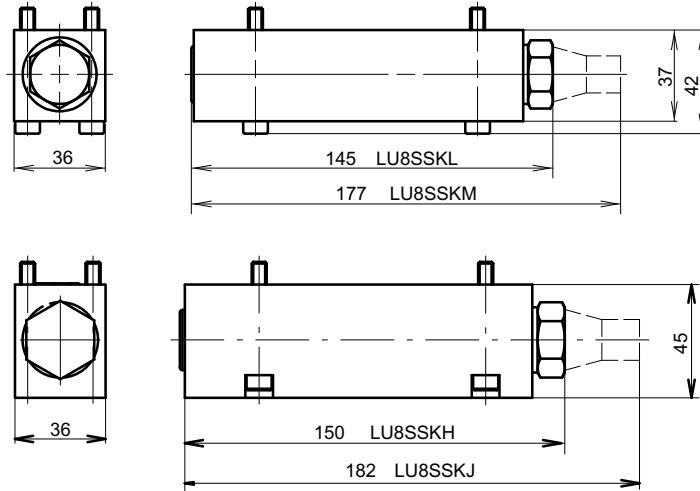


Flow cut-off function in conjunction with an LU8SSKM/SKJ bottom-mounting plate



Maximum flow rate at directional valve when using the LU8SSKH/SKJ compensator in conjunction with an LU8SSCS inlet section





L U 8 S S K L - 0 / P=...

- Without flow cut-off, with check valve = SKL
- With flow cut-off, with check valve = SKM
- Without flow cut-off, without check valve = SKH
- With flow cut-off, without check valve = SKJ

Design number (to be inserted by the factory)

Variants / special features (to be inserted by the factory)

1) Specify the flow cut-off setting in bar (only with SKM/SKJ).

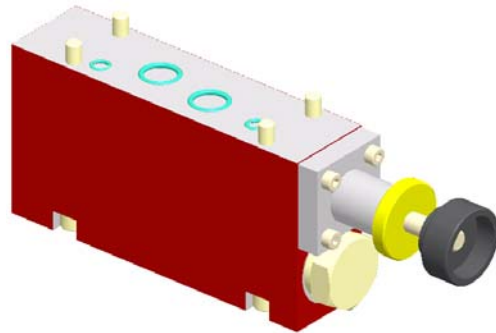
7.2 Flow limiters with / without individual pressure compensators

Optionally, this function can be combined with an individual pressure compensator for independent parallel operation, and also with a flow cut-off function. The valves must be mounted on connection face U of the directional valve.

These flow limiters, which bolt-on to the bottom of the directional valve, are another metering orifice in addition to the one in the spool in the directional valve. This means that the usual flow rate, which is determined by the size of the spool, can be reduced or limited to any desired level by means of a small hand wheel.

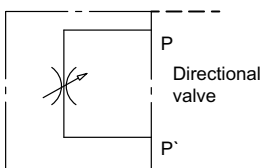
This plate can not be combined with the manual override design on the LP8S/LM8S valves. There are also potential space problems involving the solenoid connector plug in the combination of LD8S/LC8S valves with bolt-on plates (e.g.

LU8SPBH-S..S..). For this reason, planned combinations should be tested for compatibility.

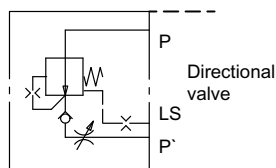


Operating pressure	bar	max. 315
Flow rate	l/min	max. 63
Pressure for flow cut-off		adjustable

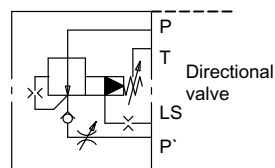
LU8SSDR



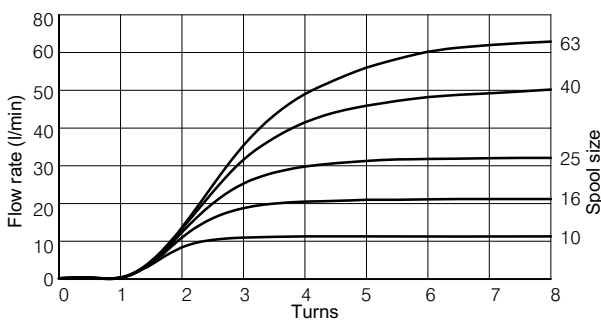
LU8SSKR



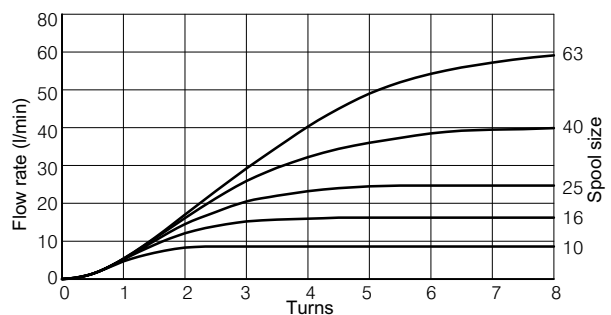
LU8SSKS



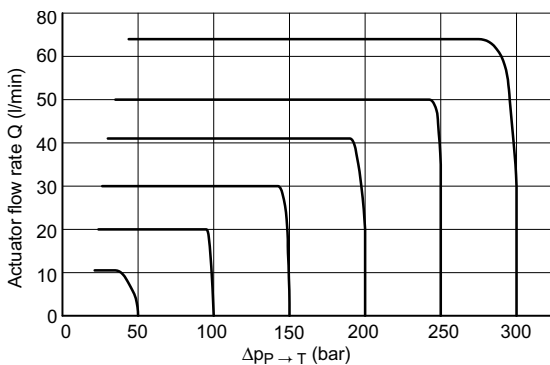
Flow rate calibration - LU8SSDR



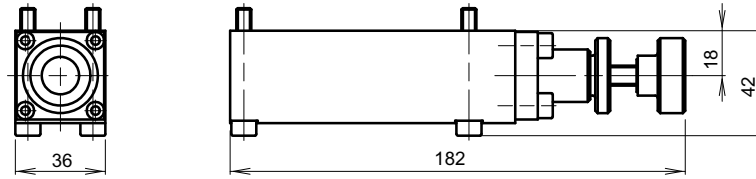
Flow rate calibration - LU8SSKR



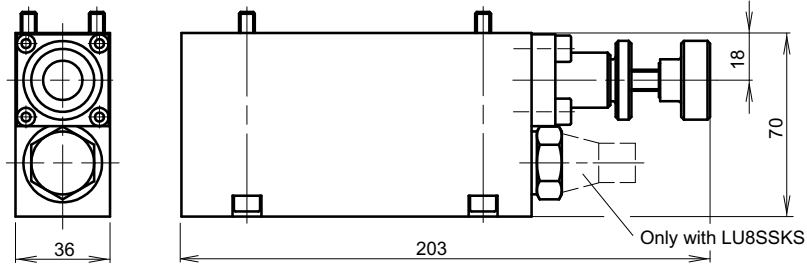
Flow cut-off function in conjunction with an LU8SSKS bottom-mounting plate



LU8SSDR



LU8SSKR/SKSh



L U 8 S S D R - 0 / P=...

- Without 2-way compensator = SDR
- With 2-way compensator, without flow cut-off = SKR
- With 2-way compensator, with flow cut-off = SKS

Design number (to be inserted by the factory)

Variants / special features (to be inserted by the factory)

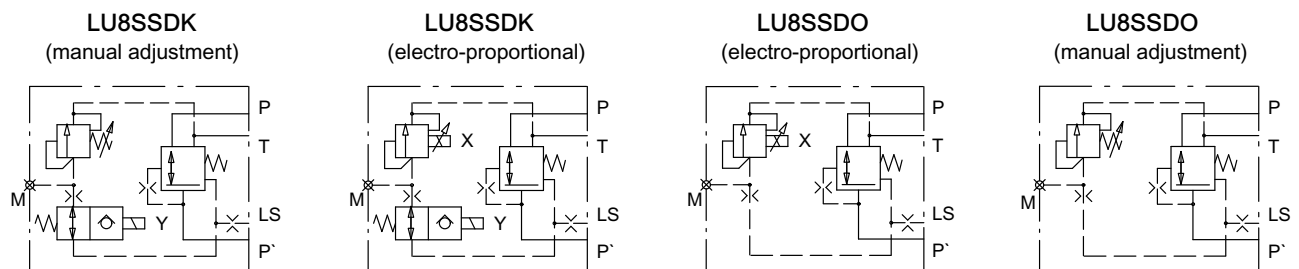
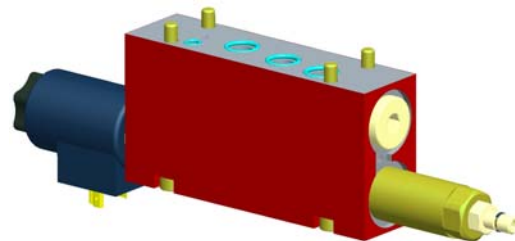
1) Specify the flow cut-off setting in bar (only with SKS).

7.3 Pressure reducing compensators

These pressure-reducing compensators, which bolt-on to the bottom of the directional valve, can be switched between the individual compensator and 3-way pressure reducing functions. By energising solenoid Y, the valves is switched into individual-compensator mode. In pressure-reducing mode, preselection of the appropriate actuator line allows a preset pressure to act at port A or B. The pressure setting can be altered by hand or by electro-proportional solenoid.

The valves must be mounted on connection face U of the directional valve.

The following combinations are available.



Model	Changeover from pressure control to flow control	Pressure setting	
		Manual	Electro-proportional
LU8SSDK pressure ranges 1 to 4	X		X
LU8SSDK pressure ranges 6 to 8	X	X	
LU8SSDO pressure ranges 1 to 4	only pressure control		X
LU8SSDO pressure ranges 6 to 8	only pressure control	X	

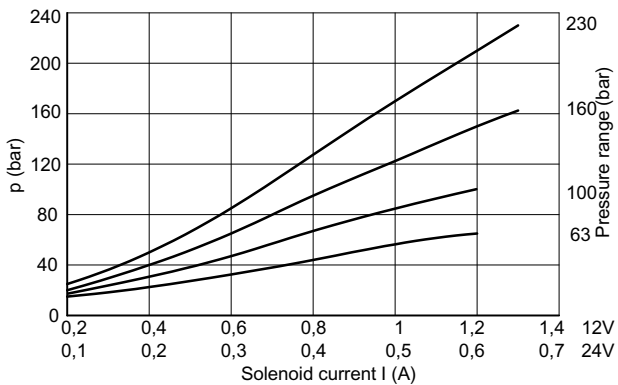
Pressure ranges 1 - 4 (electro-proportional)

Pressure range	1 2 3 4	bar	63 100 160 230
Operating pressure			bar
Minimum pressure always		bar	15 above tank pressure
Nominal flow rate		l/min	max. 25
Solenoid voltage		V DC	12 or 24
Power consumption	Solenoid X Solenoid Y	Watt	16 27
Duty cycle		%	100 at I_{max} . 1.4A (U_N 12V) 0.7 (U_N 24V)
Enclosure protection			IP65 (DIN 40050)

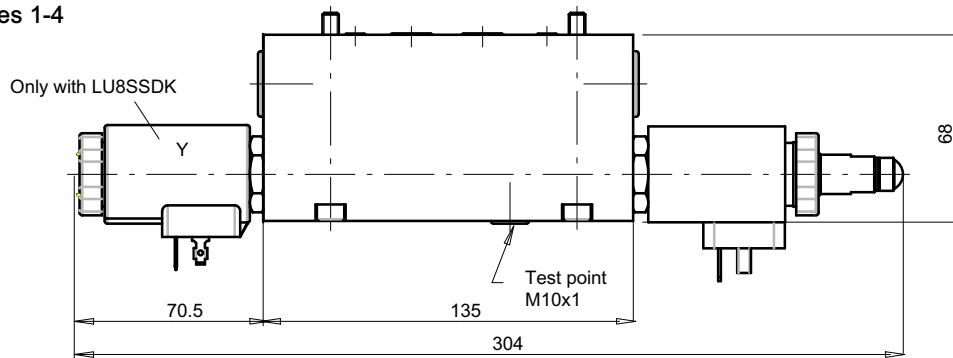
Pressure ranges 6 - 8 (manual adjustment)

Pressure range	6 7 8	bar	100 160 250
Operating pressure		bar	max. 250
Minimum pressure always		bar	15 above tank pressure
Nominal flow rate		l/min	max. 25
Nominal voltage		V DC	12 or 24
Power consumption		Watt	27
Duty cycle		%	100 at I_{max} . 1.4A (U_N 12V) 0.7 (U_N 24V)
Enclosure protection			IP65 (DIN 40050)

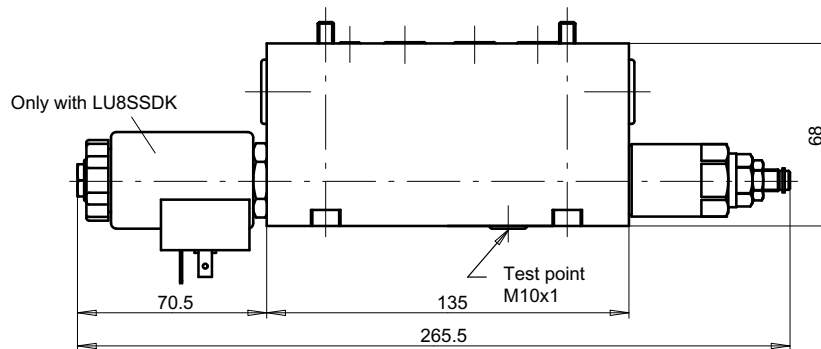
Pressure control characteristic with proportional control of solenoid X



Pressure ranges 1-4



Pressure ranges 6-8



Connector socket

Plug connection
to DIN 43650

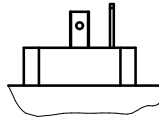
Deutsch DT04-2P-EP04

AMP-Junior-Timer

G

T

J



Consult
Bucher Hydraulics

Consult
Bucher Hydraulics

L U 8 S S D K 1 - 1 G 1 2 /

Prop. press. control vv., switchable to 2-way compensator = SDK
Proportional pressure control valve, not switchable = SDO

Proportional pressure control ranges		
electro-proportional	63 bar	= 1
	100 bar	= 2
	160 bar	= 3
	230 bar	= 4
manual	100 bar	= 6
	160 bar	= 7
	250 bar	= 8

Design number (to be inserted by the factory)

Connector socket ¹⁾	DIN 43650	= G
	DT04-2P-EP04	= T ²⁾
	AMP Junior Timer	= J ²⁾

Nominal voltage ¹⁾	DC 12 V	= 12
	DC 24 V	= 24

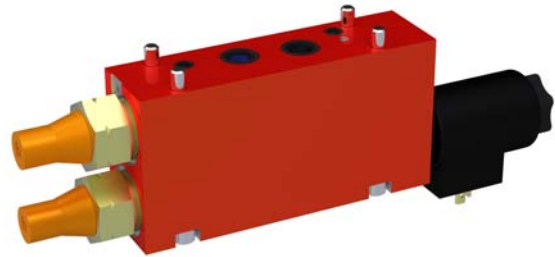
Variants / special features (to be inserted by the factory)

1) Omit for LU8SSDO with manually adjustable pressure control.

2) For Deutsch and AMP connector sockets, consult Bucher Hydraulics

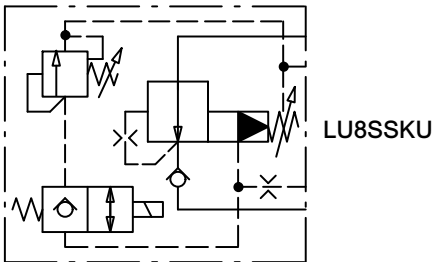
7.4 2-way compensator

The individual pressure compensators (2-way compensators), which bolt-on to the bottom of the directional valve, keep the Δp over the spool opening at a constant level, even with high inlet pressures. This means that the actuator flow remains constant and load-independent even if another actuator is operated at the same time.



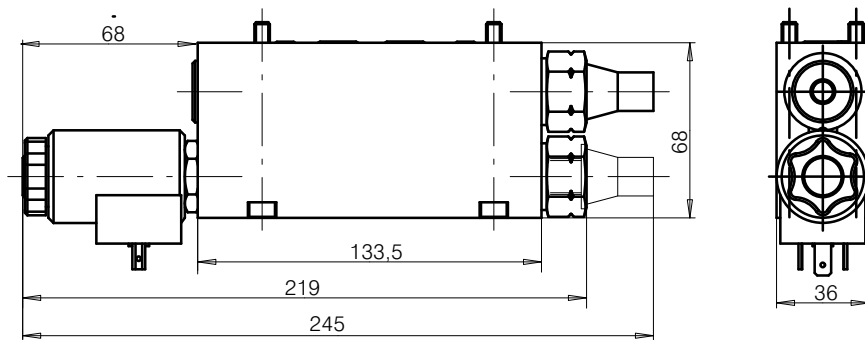
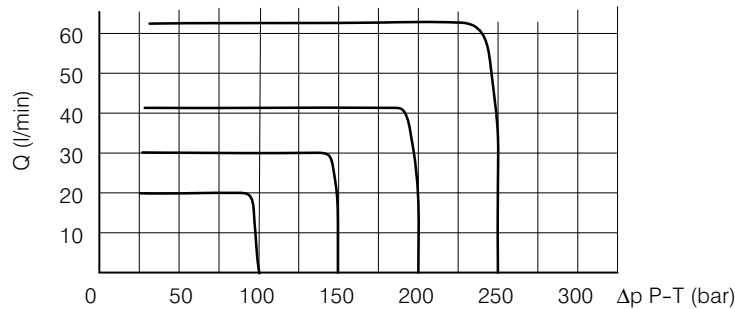
- **LU8SSKU - 0G...**

Electrically switchable to two pressure values for flow cut-off.



Inlet pressure	bar	max. 250
Nominal flow rate	l/min	max. 63
Pressure for flow cut-off		adjustable
Nominal voltage	V DC	12 oder 24

Flow cut-off



L U 8 S S K U - 0 G 2 4 P=...¹⁾

with flow cut-off
second lower cut-off pressure can be activated = SKU

Design number (to be inserted by the factory)

Nominal voltage DC 12 Volt = G12
DC 24 Volt = G24

1) Specify the second, lower flow cut-off setting in bear.

8 End sections

8.1 End sections with no control function

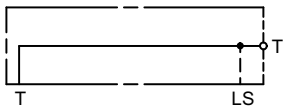
End sections with no control function are intended for the end of a valve block when no other control functions are needed. The LS signal is unloaded to tank.

The ports needed for the particular model are provided, as are tapped holes for securing the valve block.

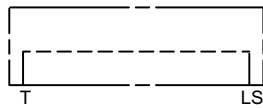
Type LU8SPWS also carries the LS signal outside the valve for further use. To prevent malfunctions, the LS signal must always be used somewhere. Do not plug the LS line. Model LU8SPUB and LU8SPWS: The upper tank gallery is not connected to the tank port. The lower tank galleries are not connected to the tank port.



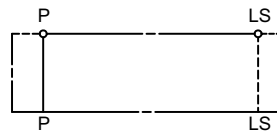
LU8SPUA



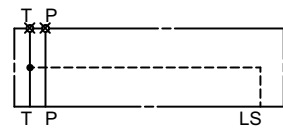
LU8SPUB



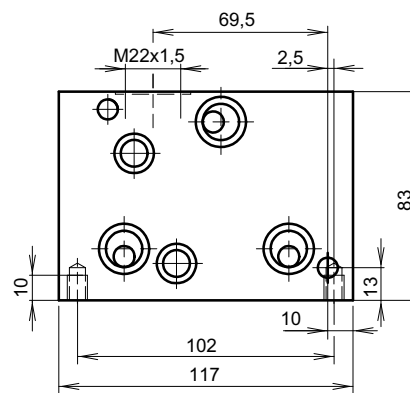
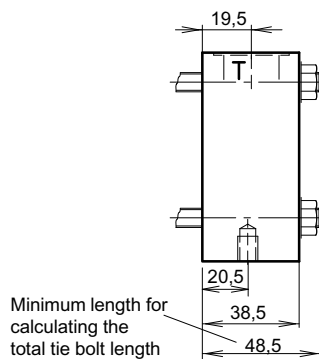
LU8SPWS



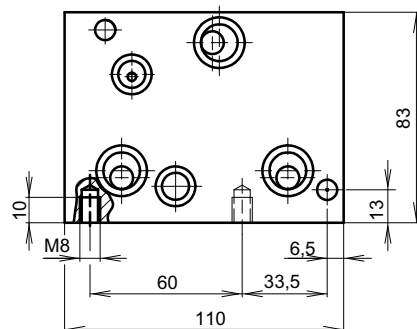
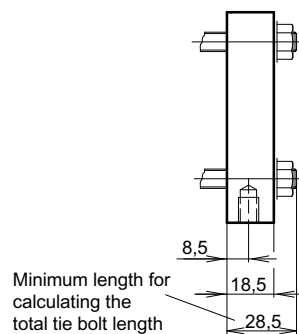
LU8SPUT



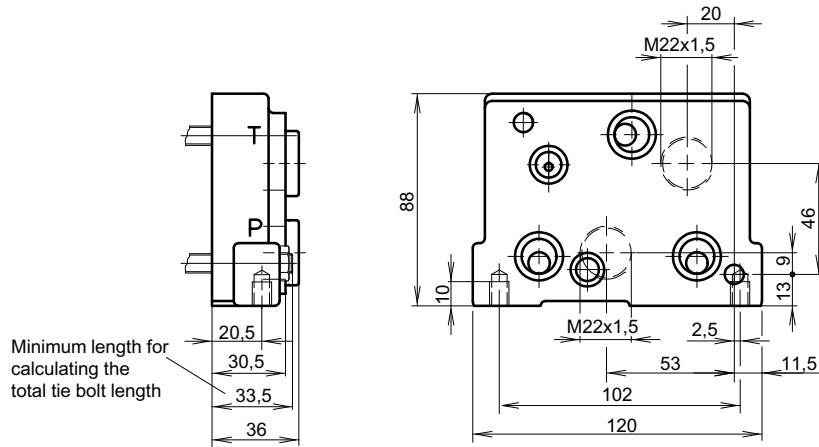
LU8SPUA



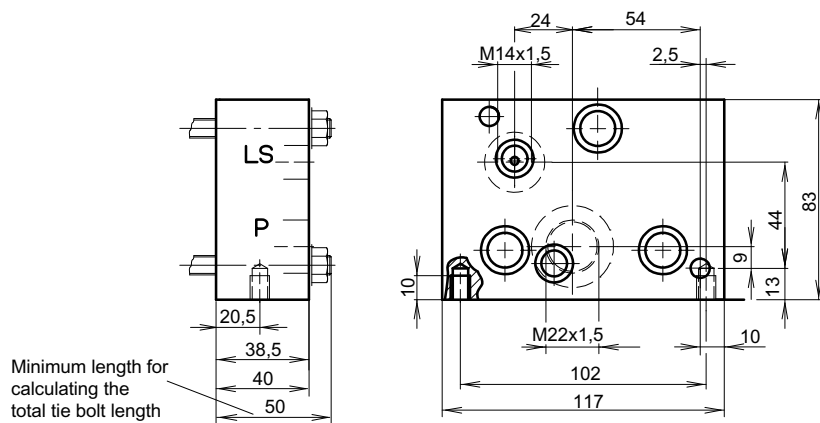
LU8SPUB



LU8SPUT



LU8SPWS



LU8S PUA - 0 M22 /

With T port = PUA
 Without ports = PUB
 With T and P ports = PUT
 With P and LS ports = PWS

Design number (to be inserted by the factory)

Port threads
 DIN 3852 - M 22 x 1.5 = M22
 DIN 3852 - M 26 x 1.5 = M26 ¹⁾
 without port threads = ***

Variants / special features (to be inserted by the factory)

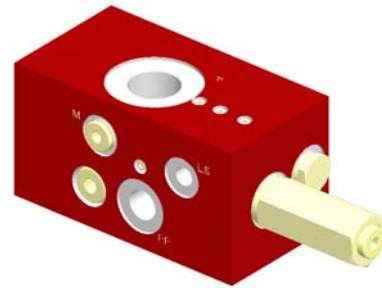
1) only with LU8SPUT: tank port M 26 x 1.5, pressure port M 22 x 1.5.

8.2 Priority sections LU8SPU

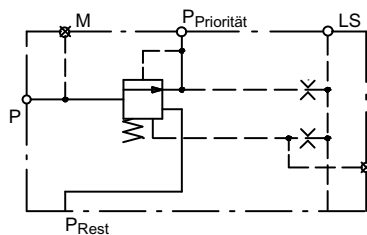
Intended for the end of a valve block, the LU8SPUO/PUP... priority section includes a priority function for the external control system supplied by the ports P_p and LS, and a surplus flow side.

In the under-supply range (pump flow < total flow needed by the valve block), the surplus flow side will receive only a portion of what it needs, or possibly (pump flow < priority flow setting) no flow whatsoever.

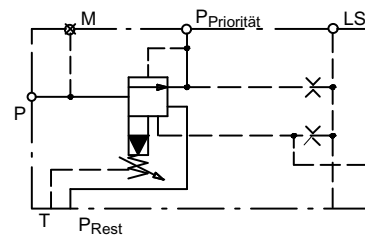
The priority side can also be equipped with a pressure relief valve that ensures a priority flow cut-off when the pressure setting is reached. For oscillation-prone applications, a damping element (e.g. an accumulator) can be connected to a port specially provided for this purpose. Preferred applications are in LS systems.



LU8SPUO



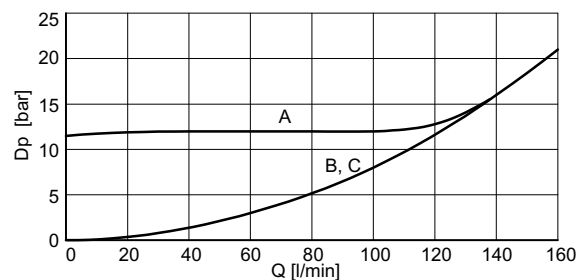
LU8SPUP



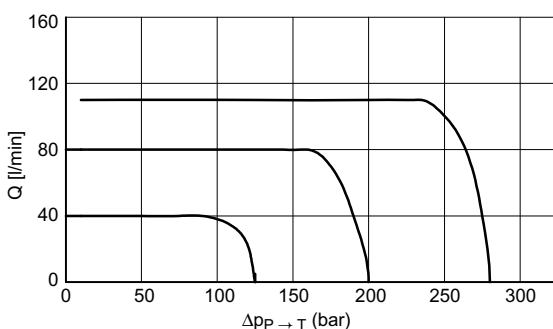
Inlet pressure	bar	max. 315
Nominal flow rate	l/min	max. 150
Control Δp for the compensator	bar	12
Pressure for flow cut-off on the priority side	bar	adjustable

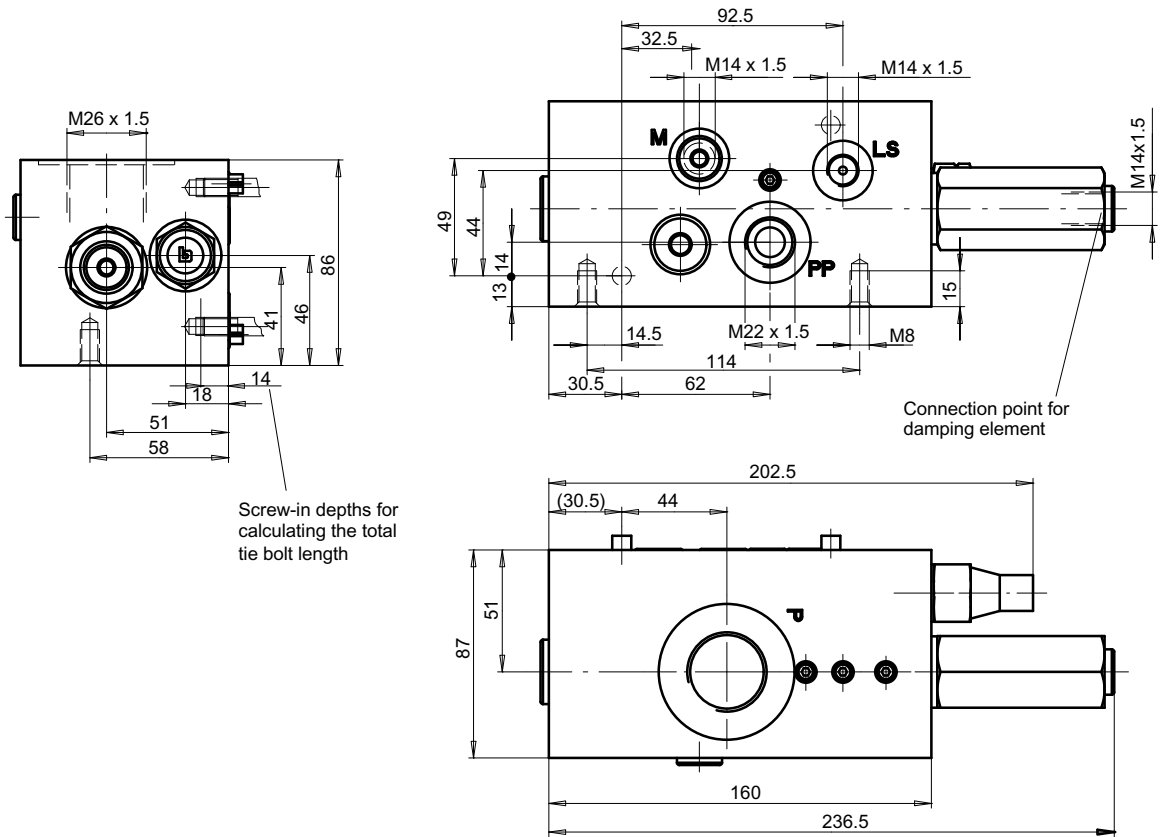
Pressure drop characteristic

- A = $P_{\text{Pump port to } P_{\text{Surp}}}$ ($Q_{\text{Priority}}=0$)
at $P_{\text{Surp}} = P_{\text{LS}}$
- B = $P_{\text{Pump port to } P_{\text{Surp}}}$
at Δp P_{Surp} to LS > 20 bar
- C = $P_{\text{Pump port to } P_{\text{Priority}}}$
(control spool in neutral position)



Flow cut-off on the priority side





Screw-in depths for calculating the total tie bolt length

L U 8 S P U P - 0 B 1 0 / P=...¹⁾

Without flow cut-off
With flow cut-off

= O
= P

Design number (to be inserted by the factory)

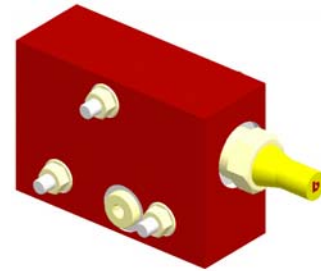
Port threads DIN 3852 - M 26 x 1.5 = M26
 BSP 1" / G 1" = B10

Variants / special features (to be inserted by the factory)

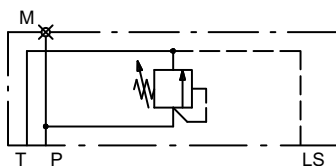
1) Specify the flow cut-off setting in bar.

8.3 With direct-acting pressure relief

For terminating the block with integral direct-acting pressure relief (e.g. secondary pressure relief in LS systems).
The application limits must not be exceeded. A test point for P, and tapped holes for securing the valve block are provided.

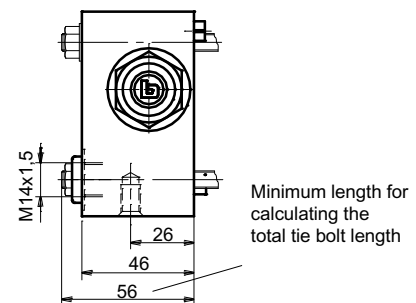
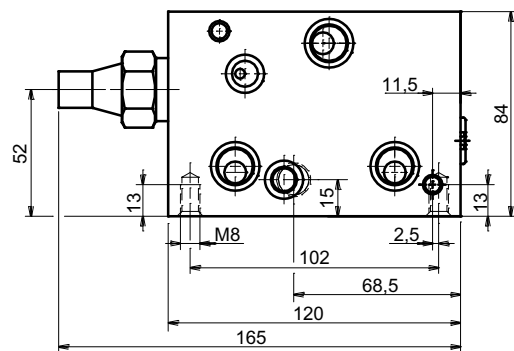
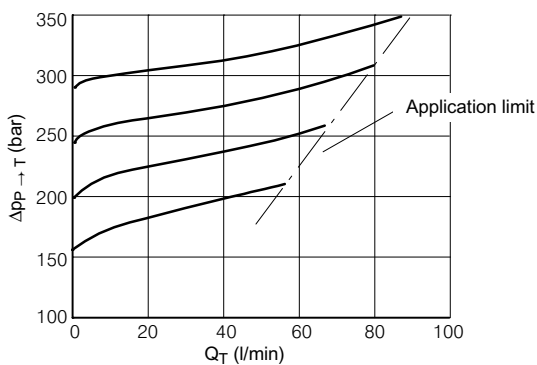


LU8SPUD



Inlet pressure	bar	max. 315
Flow rate	l/min	see diagram
Pressure range	bar	35 - 95
		95 - 210
		210 - 315

Pressure relief characteristic



LU8SPUD 1 - 0 M 1 4 / P=...¹⁾

Pressure range	35 - 95	bar	= 1
	95 - 210	bar	= 2
	210 - 315	bar	= 3

Design number (to be inserted by the factory)

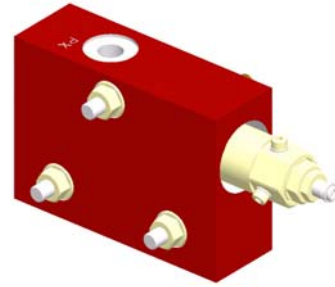
Port threads DIN 3852 - M 14 x 1.5 = M14 (test point)

Variants / special features (to be inserted by the factory)

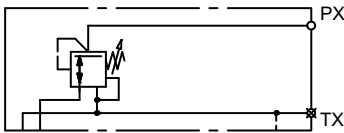
1) Specify the pressure relief setting in bar.

8.4 With pressure reducing function e.g. for hydraulic joystick

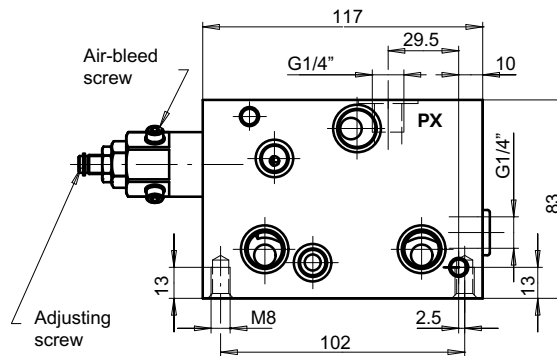
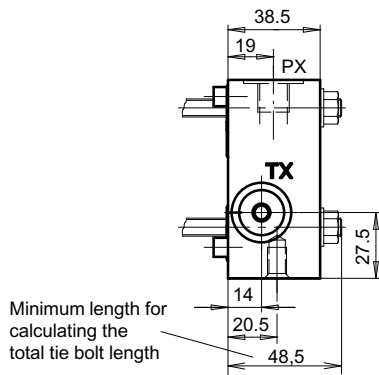
This end section includes a pressure reducing valve and the ports PX and TX. The reduced pressure available at port PX can be varied by the adjusting screw to any required level from 10 to 100 bar. A typical application is providing the supply for hydraulic joysticks. No tank unload facility at the upper tie bolt gallery. The upper tank gallery is not connected to the tank port.



LU8SPUH



Operating pressure	bar	max. 250
Flow rate at port PX	l/min	max. 15
Reduced pressure at PX preset	bar	50
Reduced pressure at PX adjustable	bar	max. 100



L U 8 S P U H - 0 B 1 4 /

Design number (to be inserted by the factory)

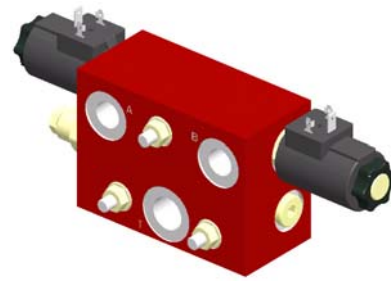
Port threads BSP 1/4" / G 1/4" = B14

Variants / special features (to be inserted by the factory)

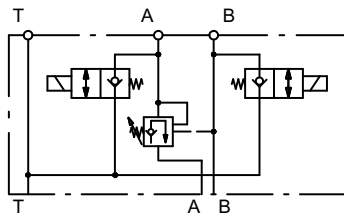
8.5 Load control valve with float position

For terminating the block, this has an integral load-holding valve with anti-shock function for port A and two seat valves in A and B to create the float position. When the directional valve is in the neutral position, actuator line A is shut-off with zero leakage and protected from unacceptably-high pressure peaks by an anti-shock function.

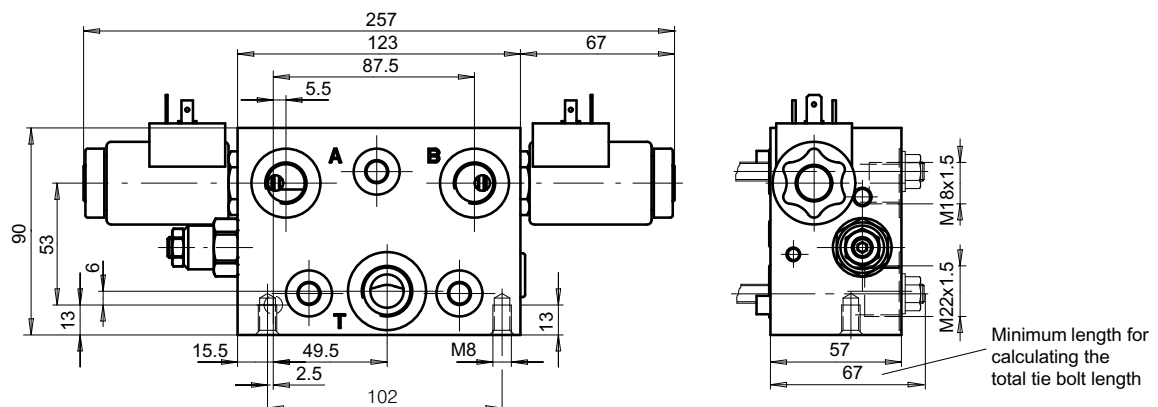
The mating directional valve is the last directional section in the block and must be a special version e.g. L.8S.../24, with spool type E. A typical application is the arm function in wheel loaders and front loaders.



LU8SPUE



Inlet pressure	bar	max. 210
Actuator pressure	l/min	max. 250
Pilot ratio	S15 S30	1.5 : 1 3 : 1
Anti-shock valve adjustable	bar	100 - 250
Pressure drop across load-control function	bar	30 at 63 l/min
Nominal voltage	V DC	12 or 24
Power consumption	Watt	50
Duty cycle	%	100
Enclosure protection		IP65 (DIN 40050)

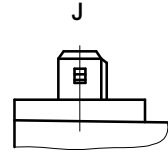
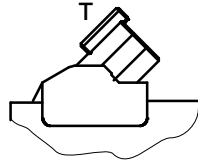
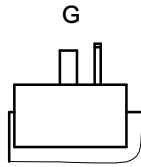


Connector socket

Plug connection
for DIN 43650

Deutsch DT04-2P-EP04
with protective diode
P6KE33CA

AMP-Junior-Timer
with protective diode
P6KE33CA



L U 8 S P U E - S 1 5 * * * - 0 M 1 8 G 1 2 / P...²⁾

Port A with load control valve, pilot ratio	1.5 : 1 = S15 ¹⁾ 3 : 1 = S30
Port B without load control valve	= ***
Design number	(to be inserted by the factory)
Port threads	DIN 3852 - M 18 x 1.5 = M18
Connector socket	DIN 43650 = G DT04-2P-EP04 = T AMP Junior Timer = J
Nominal voltage	DC 12 V = 12 DC 24 V = 24
Variants / special features	(to be inserted by the factory)

1) For other pilot ratios, contact Bucher Hydraulics

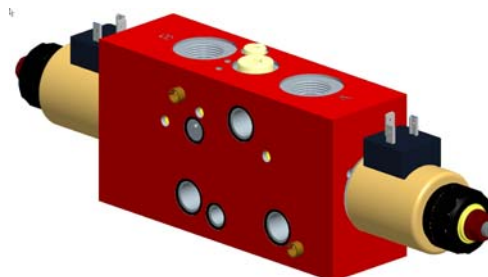
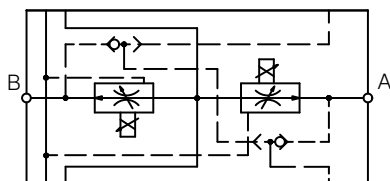
2) Specify the pressure relief setting in bar

8.6 Intermediate and end section with flow control function SR

8.6.1 Intermediate section

Intermediate section with integral flow-control valves for load-independent operation of two actuators. Via the LS signal, this section can be combined with all types of pressure compensators and pump systems. Typical applications are motorised drives.

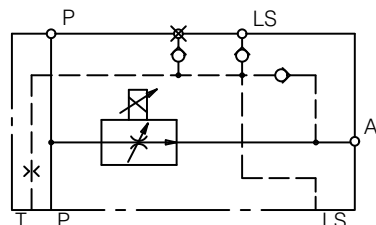
LU8SSZP-SR...



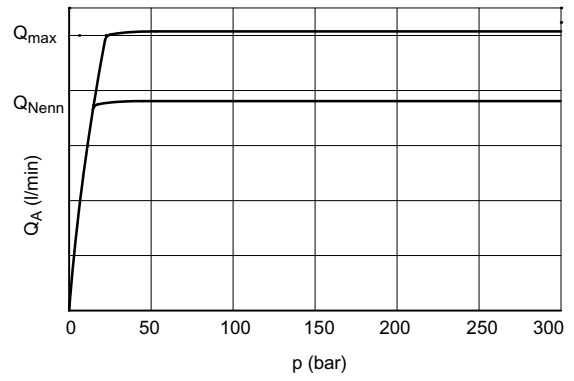
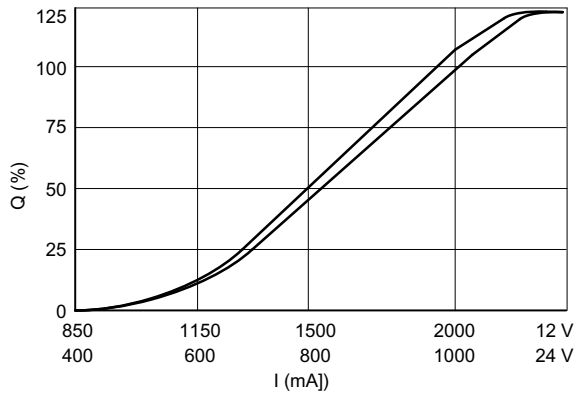
8.6.2 End section

End section with integral flow-control valves for load-independent operation of an actuator. Via the LS signal, this section can be combined with all types of pressure compensators and pump systems. Typical applications are motorised drives.

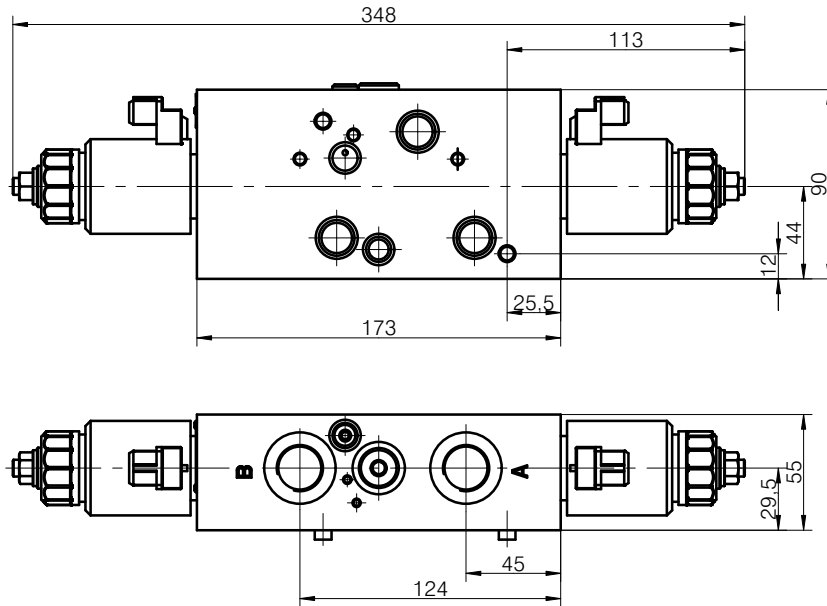
LU8SSPU-SR...



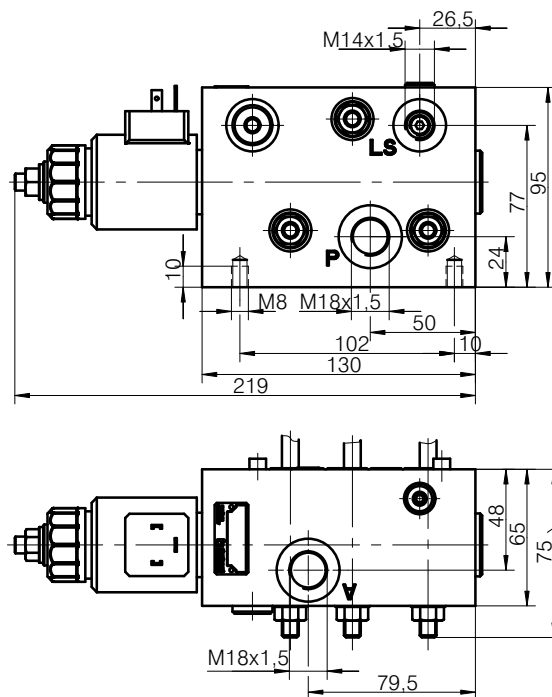
Operating pressure	bar	max. 315
Nominal flow rate	l/min	10, 16, 25, 32, 40, 50, 63 ¹⁾
Leakage	l/min	max. 100 cm ³ /min for 100 bar inlet pressure
Min. Pressure difference (pressure compensator)	bar	7
Control accuracy		(as a % of the nominal flow)
Load-dependency when under pressure		max. ± 2,5%
Hysteresis when operated		± 3,5%
Nominal voltage	V DC	12 bzw. 24
Power consumption	Watt	27,6
Dither frequency required	Hz	50 - 150
Duty cycle	%	100
Protection class		DIN plug - IP65 (DIN 40050) AMP Junior Timer plug connector - IP65 Deutsch plug - DT04-2P-EP04
Electrical connection		Plug-base with pins to DIN 43650 AMP-Junior Timer plug connector Deutsch plug DT04-2P-EP04



LU8SSZP-SR...



LU8SSPU-SR...



Minimum width for calculating the total tie bolt length

L U 8 S | S Z P - | S R | 2 5 | 1 6 | S 2 - | 0 | M 2 2 | G | 1 2

Intermediate section LU8SSZP
End section LU8SSPU

Flow control valve SR

Constant flow range
10, 16, 25, 32, 40, 50, 63 l/min = 25

Constant flow range
10, 16, 25, 32, 40, 50, 63 l/min = 16

Type of operator solenoid + emergency pin = S
 solenoid + basic manual override = N
 solenoid + deluxe manual override = T

2- or 3-way-function = 2

Design number (wird vom Werk eingesetzt)

Port threads DIN 3852 - M 18 x 1,5 = M18

Plug connector DIN 43650 = G
 DT04-2P-EP04 = T
 AMP-Junior-Timer = J

Proportional solenoid supply voltage DC 12 Volt = 12
 DC 24 Volt = 24

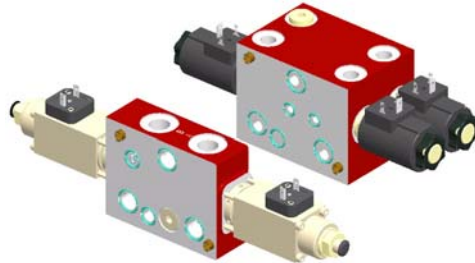
1) For higher litre ratings consult Bucher Hydraulics

9 Combinations with other valve series

9.1 Combination with SVH04..

In this combination, a preselector valve (LD, LM, LP, etc.) is normally employed. This directional stage determines the direction of flow, and the flow rate.

To define the required interface, the special feature code e.g. /02 is added to the respective valve. For the application limits and dimensions of the SVH04.. series, please refer to brochure 100-P-000043-E-03. The maximum system pressure is 210 bar, which also applies to the tank line.



Monoblock flange-mounted on an L.8S series valve block

3 x cap screws
2 x plug screws

SVH04M218SN-0M12G12
X = 2

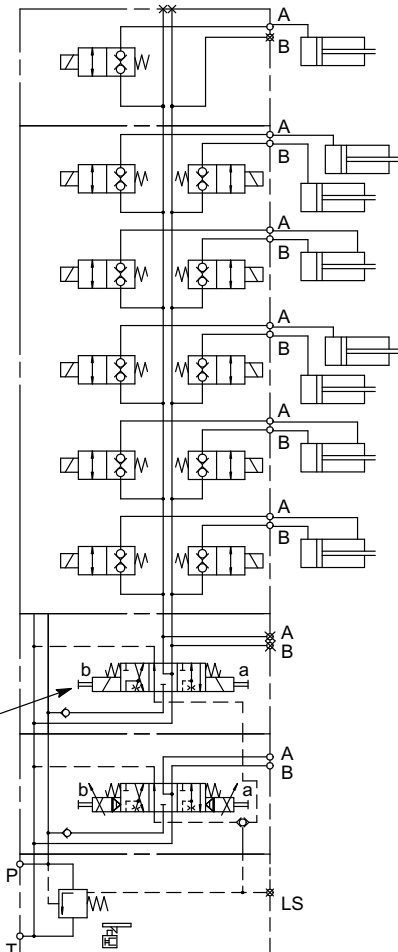
SVH04M008SN-0M12G12

LD8SE4D2525-***-0M18G12/02
A = ...l/min, B = ...l/min

Internal preselector valve

LP8SE4D4040-***-0M18G12

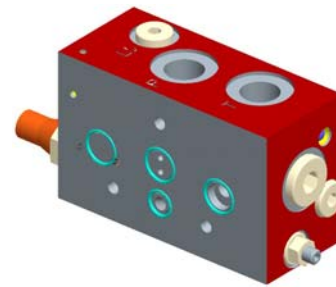
LU8SSCK-0M22/04
LU8S2UB130



9.2 Combination with HDS07 with unload function

In addition to integral functions, these intermediate sections have the LU8S mating interface on one side and the HDS07/HDS11 interface on the other side.

This allows the two valve series to be combined in one valve block.



LU8SSBU-0M22/18

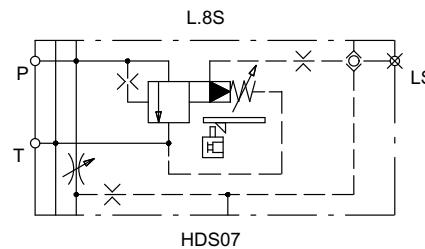
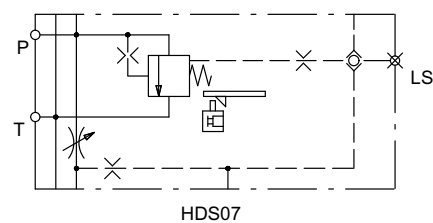
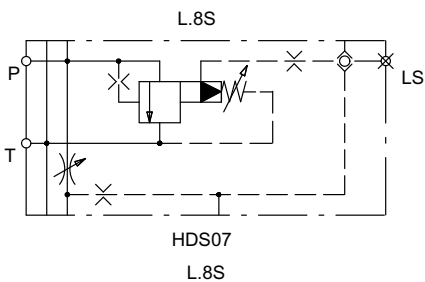
3-way compensator function for series L.8S and HDS07 valves. The flow rate for the HDS07 side can be set by an adjusting screw. There is also a 2-stage pressure relief valve that is adjustable from outside the valve.

LU8SSBL-0M22/18

3-way compensator function for series L.8S and HDS07 valves. The flow rate for the HDS07 side can be set by an adjusting screw. There is also a 2-stage pressure relief valve (only functional in open systems) that is adjustable from outside the valve. The valve also has the facility to change over to LS or constant-pressure systems. This is typical with towed harvesters.

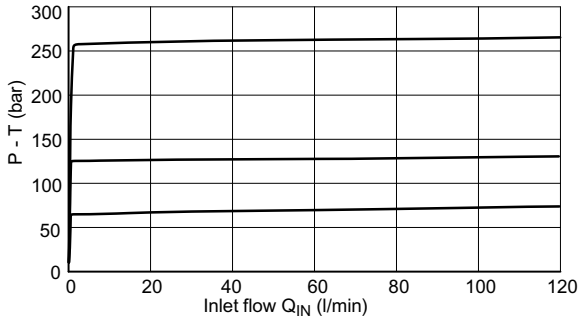
LU8SSBK-0M22/18

3-way compensator function for series L.8S and HDS07 valves. The flow rate for the HDS07 side can be set by an adjusting screw. The valve also has the facility to change over to LS or constant-pressure systems. This is typical with towed harvesters.

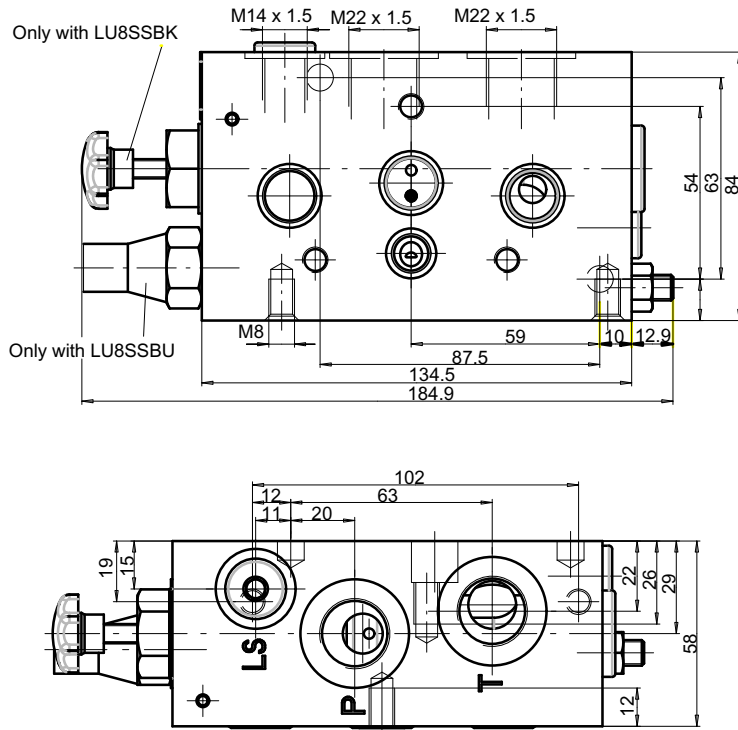
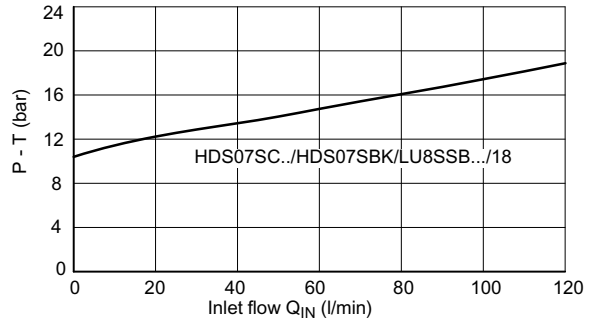


Inlet pressure	bar	250
Unloaded pressure P -> T	bar	10 to 16
Nominal flow rate	l/min	120
Max. flow rate, HDS07 valve	l/min	25
Unloaded pressure	see performance graph	
Pressure relief	adjustable	
Threaded port P/T	M22 x 1.5 DIN 3852	
Threaded port LS	M14 x 1.5 DIN3852	

Pressure relief characteristic



Unload pressure in neutral position



LU8S SBU - 0 M 2 2 / 1 8 P=...¹⁾

With system pressure relief,
two-stage

= SBU

With two-stage pressure relief,
with LS changeover facility

= SBL

Without pressure relief,
with LS changeover facility

= SBK

Design number

(to be inserted by the factory)

Port threads

DIN 3852 - M22 x 1.5 = M22

Variants / special features

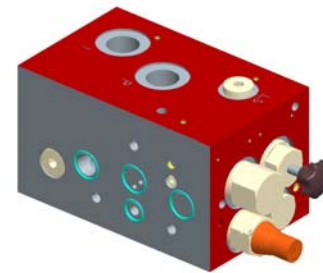
(to be inserted by the factory)

1) Specify the system pressure relief setting in bar.

9.3 Combination with HDS07 with priority function

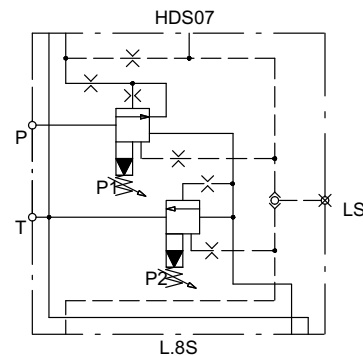
In addition to integral functions, these intermediate sections have the LU8S mating interface on one side and the HDS07/HDS11 interface on the other side.

This allows the two valve series to be combined in one valve block.



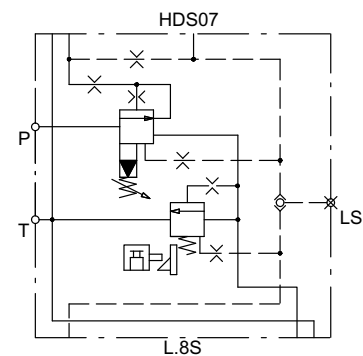
LU8SSMD-0M22/22

Priority function for HDS07 valves whose total flow rate can be set by means of an orifice. The priority-flow is provided with a flow cut-off function. The surplus flow is available for L.8S series valves and load-independent control is provided by a 3-way compensator. The 2-stage pressure relief for the surplus flow, and the flow cut-off for the priority flow are both adjustable from outside the valve.



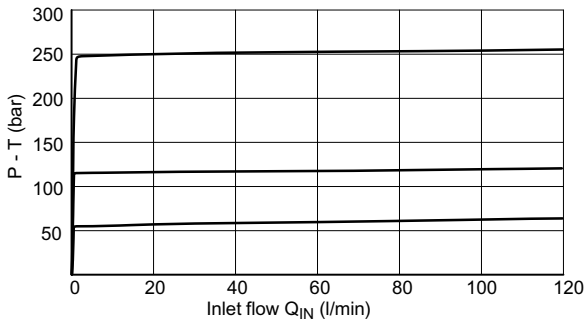
LU8SSMF-0M22/22

Priority function for HDS07 valves whose total flow rate can be set by means of an orifice. The priority-flow is provided with a flow cut-off function. The surplus flow is available for L.8S series valves and load-independent control is provided by a 3-way compensator. The valve also has the facility to change over to LS or constant-pressure systems. This is typical with towed harvesters.

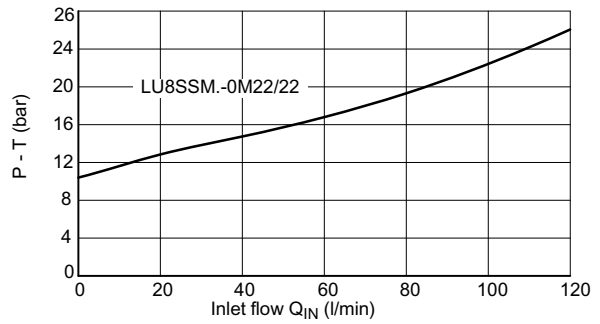


Inlet pressure	bar	250
Unloaded pressure	bar	10 to 20
Nominal flow rate	l/min	120
Max. flow rate, HDS07 valves	l/min	25
Unloaded pressure	see performance graph	
Pressure relief	adjustable	
Threaded port P/T	M22 x 1.5 DIN 3852	
Threaded port LS	M14 x 1.5 DIN3852	

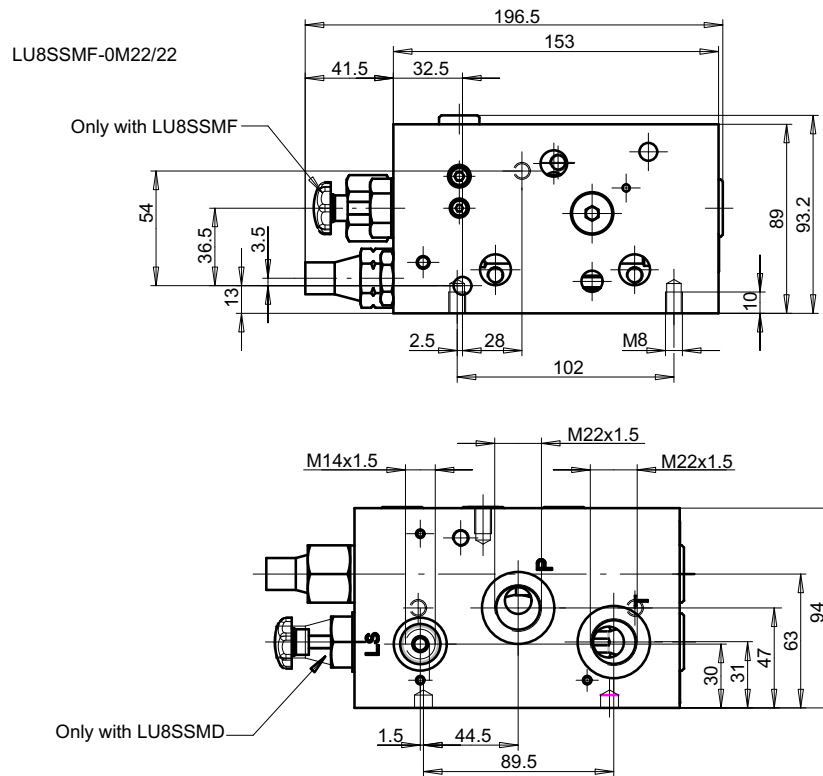
Pressure relief characteristic



Unload pressure in neutral position



Dimensions



L U 8 S S M D - 0 M 2 2 / 2 2 P=...¹⁾

P_{Priority} and P_{Surp} with pressure relief = SMD²⁾
 P_{Priority} with pressure relief, = SMF
 P_{Surp} with LS changeover facility = SMF

Design number (to be inserted by the factory)

Port threads DIN 3852 - M22 x 1.5 = M22

Variants / special features (to be inserted by the factory)

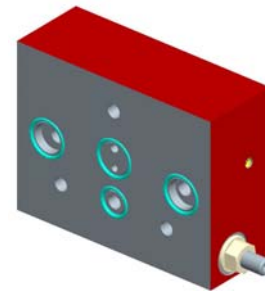
1) Specify the pressure relief setting in bar.

2) Flow cut-off priority side P1=, pressure relief surplus-flow side P2=

9.4 Combinations with HDS07

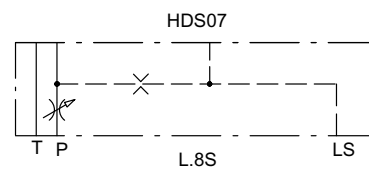
In addition to integral functions, these intermediate sections have the LU8S mating interface on one side and the HDS07/HDS11 interface on the other side.

This allows the two valve series to be combined in one valve block.



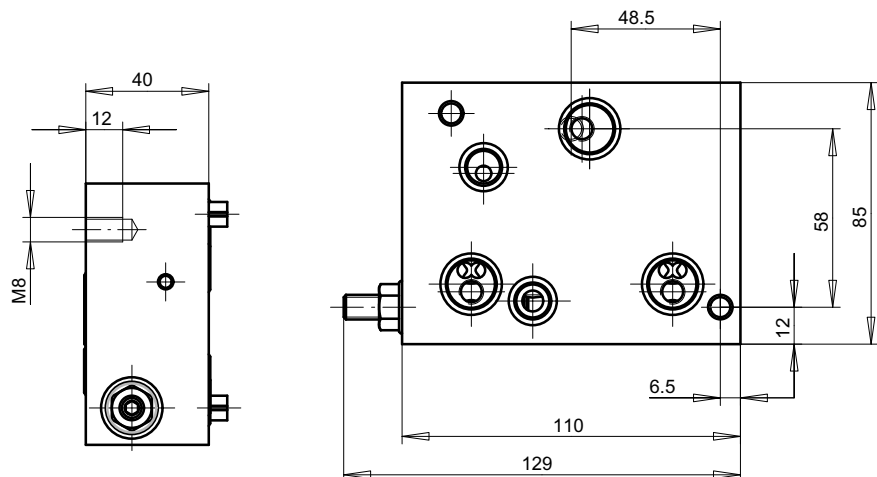
LU8S-HDS07-S-0

For combining HDS07 and L.8S directional valves.
The flow rate for the HDS07 side can be set by an adjusting screw.



Inlet pressure	bar	250
Adjustment range, flow to HDS07 side	l/min	1 to 25
Nominal flow rate	l/min	25

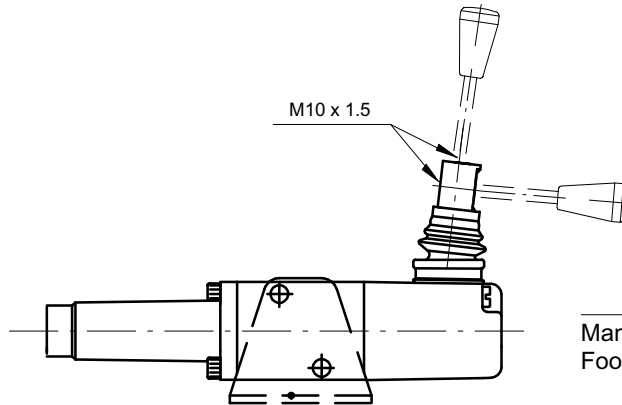
LU8S-HDS07-S-0



10 Accessories

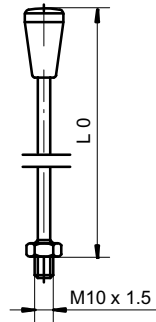
10.1 Cable operators

Manual control



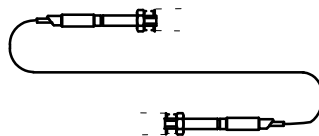
	Ordering no.
Manual control	200.7609.0013.0
Foot bracket	200.6772.0048.0

Lever for manual control



Model	Length	Ordering no.
001	185 mm	200.7022.2001.0
002	250 mm	200.7022.2003.0
003	300 mm	200.7022.2004.0
004	350 mm	200.7022.2005.0

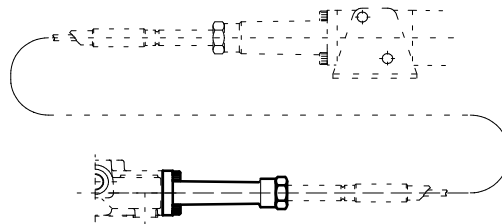
Cable



On request, and at extra cost,
the valve and cable can be
supplied pre-assembled.

Length	Ordering no.
1000mm	200.5441.04002
1500mm	200.5441.04005
2000mm	200.5441.04006
2500mm	200.5441.04007
3000mm	200.5441.04008
4000mm	200.5441.04009

Directional valve attachment kit



Ordering no.
200.9609.0003.0

10.2 Electrical joysticks

see datasheet 100-P-70051

10.3 Tie bolts

L	U	8	S	Z	U	B	4	2	0
---	---	---	---	---	---	---	---	---	---

Length (in steps of 10 mm): = e.g. 420

To calculate the length: add the widths of all the intermediate sections, plus the screw-in depths, or the length information from the dimensional data for the relevant inlet and end sections. Tightening torque = 30 Nm.

10.4 Connector plug GDM 309

For directional valves LM8S, LP8S,
LC8S and LD8S.

To suit DIN 43650 connector socket.

Ordering information:

100.064.970 GDM309

10.5 Liability

In the design and operation of hydraulic systems, all aspects of the potential failure modes and all planned operational conditions and uses of the equipment must be taken into consideration.

Concerning risk assessment, please refer to the relevant Standards. The use of components that are not Original Bucher Replacement Parts and Accessories nullifies all warranty.

10.6 Note

This catalogue is intended for users with specialist knowledge. To ensure that all of the conditions necessary for the function and safety of the system are fulfilled, users must satisfy themselves as to the suitability of the units described herein. If there are any areas of doubt, please consult Bucher Hydraulics.

11 Applications examples

11.1 Systems with fixed-displacement pump

Ordering codes:



LU8SZUB-200

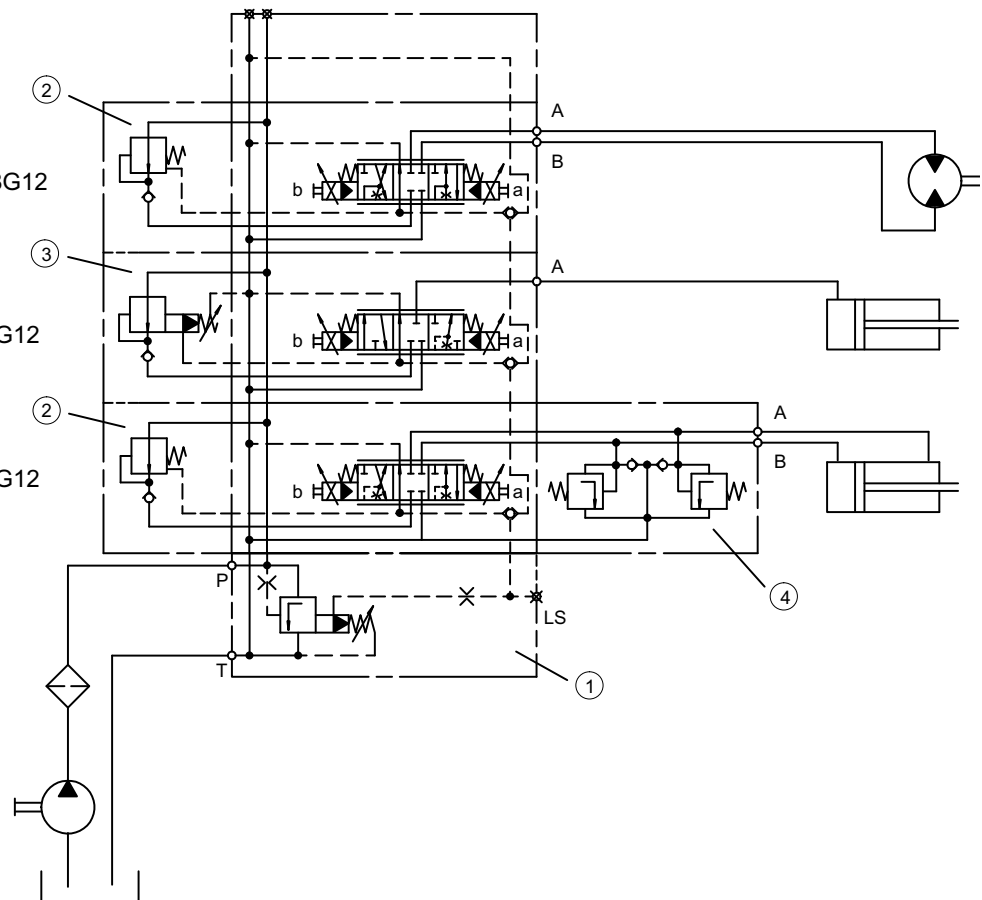
LU8SPUT-0M22

LP8SM4A1616-**K-0M18G12
LU8SSKL-0

LP8SM3A40**-**K-0M18G12
LU8SSKM-0
P = 150 bar

LP8SM4A4040-*MK-0***G12
LU8SPET-210210-0M18
LU8SSKL-0

LU8SSCS-0M22
P = 200 bar



Legend

- ① 3-way compensator with pressure relief
- ② Bottom-mounted individual compensator for load-independent parallel operation
- ③ Individual compensator for limiting the maximum actuator pressure (flow cut-off)
- ④ Top-mounted anti-shock valve for protecting the actuator from pressure peaks and cavitation

11.2 Systems with variable-displacement pump and load-independent lowering of the actuator

Ordering code:



LU8SZUB190

LU8SPUT-0M22

LH8SE4D2525-*M*-0***

LU8SPBH-OV3OV3-0M18

P = 240 bar

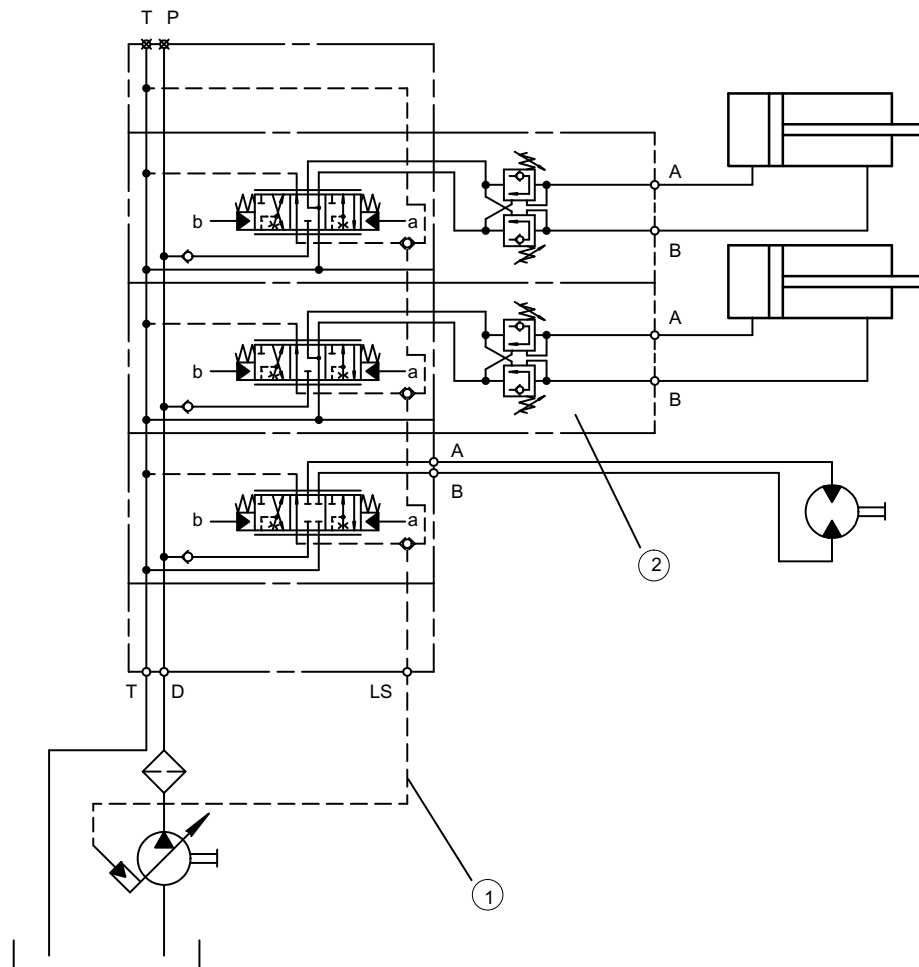
LH8SE4D4040-*M*-0***

LU8SPBH-OV3OV3-0M18

P = 240 bar

LH8SE4A6363-***-0M18

LU8SPOG-0M22



Legend

- ① Load feedback to the load-sensing pump
- ② Top-mounted load control valve for load-independent lowering of over-running (i.e. negative) loads (with leak-free holding)

11.3 Systems with a priority circuit in an intermediate section

Ordering code:



LU8SZUB250

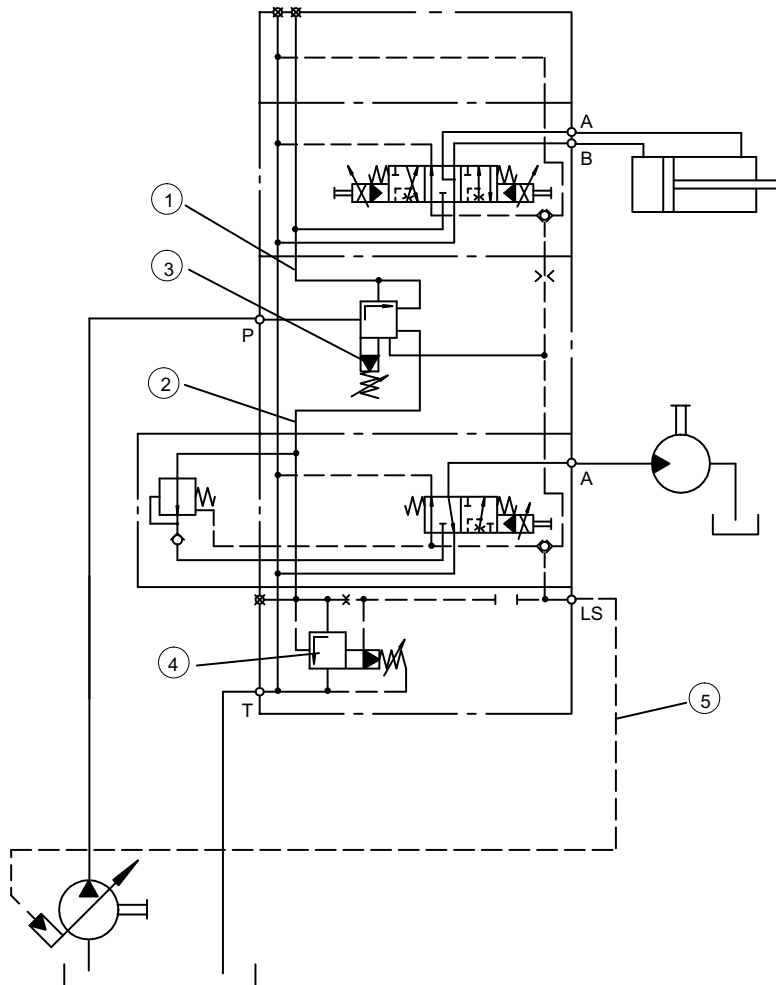
LU8SPUT-0M22

LP8SE4D4040-***-0M18G12

LU8SSBP-0M26 p = 250 bar

LP8SM3J25**-**K-0M18G12
LU8SSKL-0

LU8SPOD-0M22 = p = 280 bar



Legend

- ① Priority flow used internally
- ② Surplus flow used internally
- ③ Flow cut-off of the priority flow
- ④ Pressure relief in the main flow
- ⑤ Highest-load feedback to variable pump

11.4 Systems with priority circuit for various pump types (fixed- and variable-displacement pumps)

Ordering code:



LU8SZUB180

LU8SPUT-0M22

LD8SE4D2525-***-0M18G12

LD8SE4A2525-*M*-0***G12
LU8SPET-210210-0M18

LD8SE4D2525-*M*-0***G12
LU8SPBH-S30S30-0M18
P = 250 bar

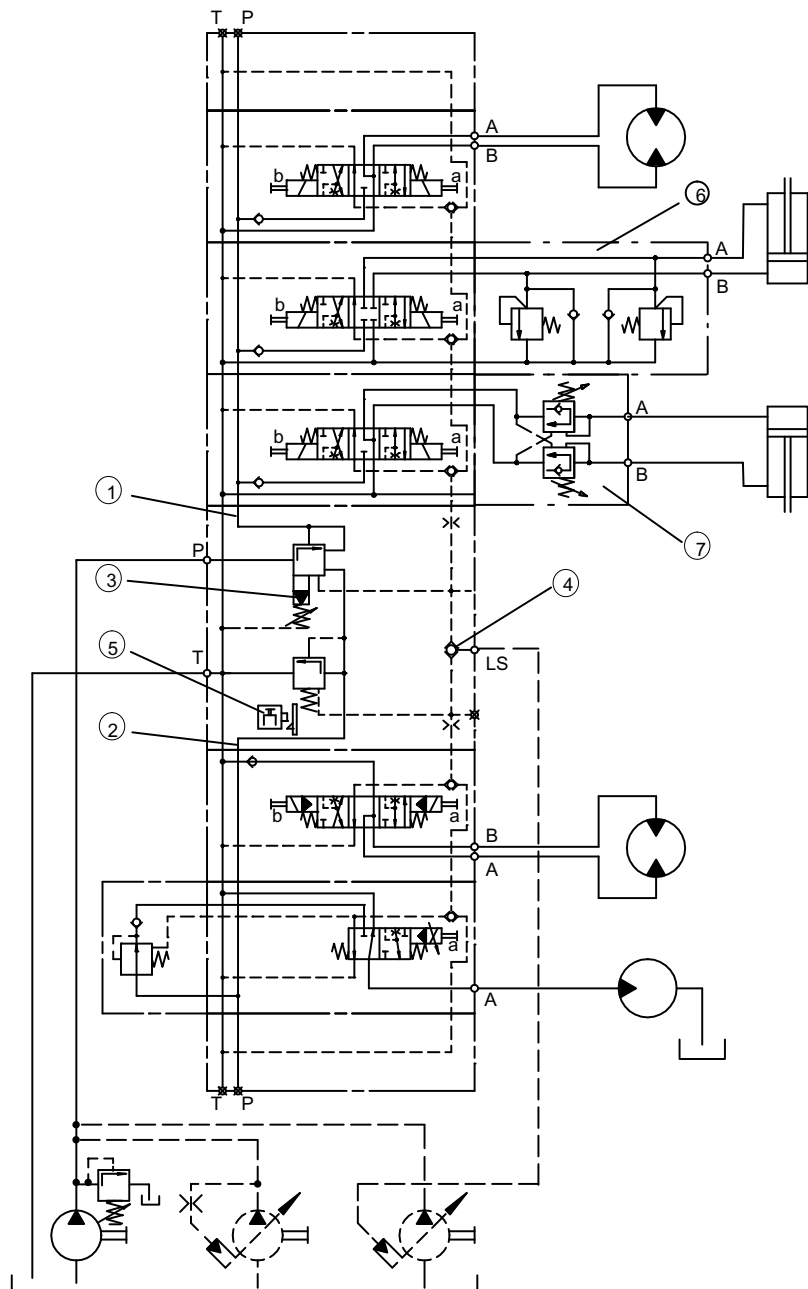
LU8SSMF-0M22 / p = 200 bar

LM8SE4D6363-***-0M22G12

LP8SM3J16**-*K*-0M18G12
LU8SSKL-0

LU8SPUT-0M22

LU8SZUB140



Legend

- | | |
|---------------------------------------|---|
| ① Priority flow load-independent | ⑤ Changeover unit for adapting to pump type |
| ② Surplus flow load-independent | ⑥ Anti-shock function with integral make-up |
| ③ Flow cut-off for priority-flow side | ⑦ Load-holding valve with anti-shock and make-up function |
| ④ Highest-load feedback for LS pumps | |

11.5 Combination with series SVH04 seat valves

Ordering code:



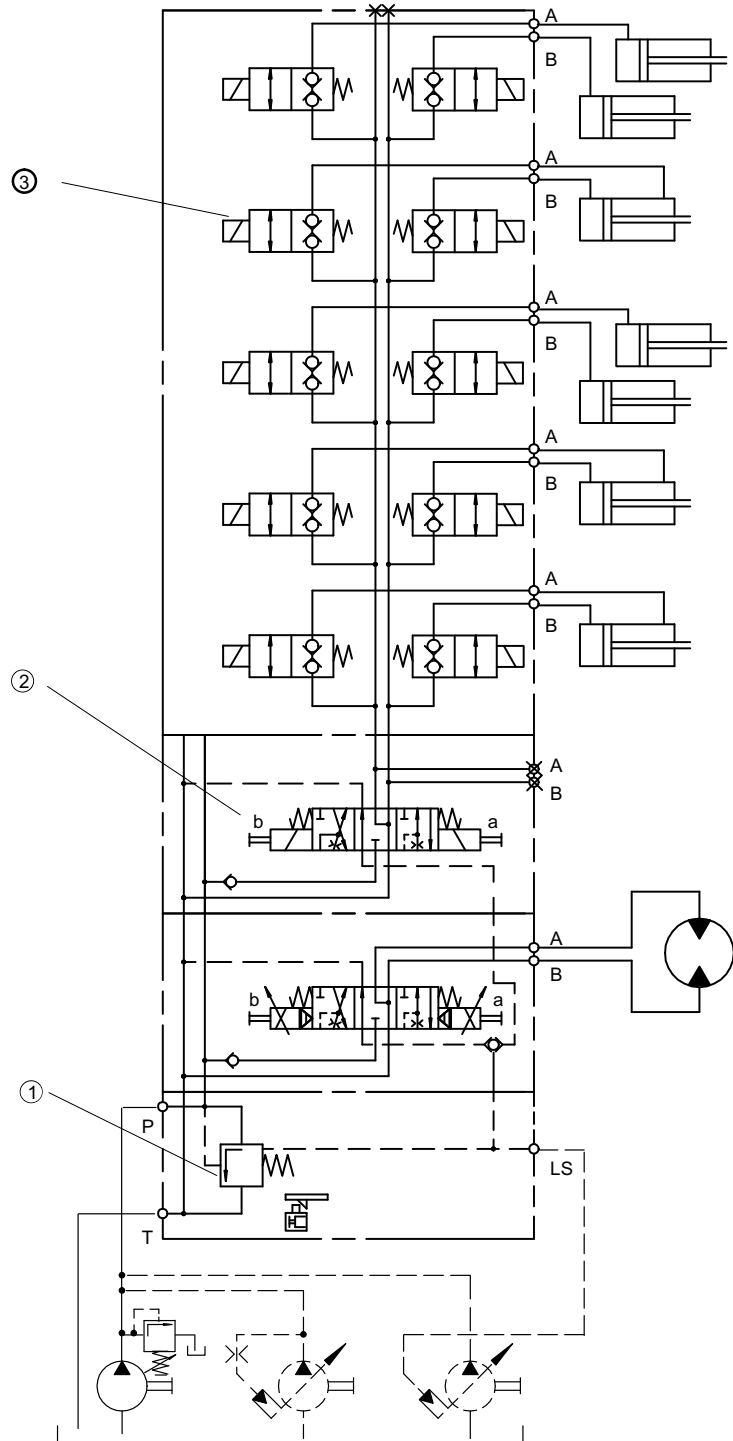
SVH04M008SN-0M12G12
(see brochure 100-P-000043-E-03)

LD8SE4D2525-***-0M18G12/02
(Special feature for combining with SVH04)

LP8SE4D4040-***-0M18G12

LU8SSCK-0M22/04
(Special feature - straight-through tie bolts for combination blocks)

LU8SZUB130



Legend

- ① 3-way compensator with changeover facility for use with constant-pressure systems or LS pumps
- ② Preselector valve with internal carry-over of the lines supplying the SVH04 block
- ③ Mounted on the L.8S valve block, the series SVH04 seat-valve block ensures leak-free actuator shut-off

11.6 Combination with series HDS07 valves

Ordering code:



LU8SPUT-OM22

LP8SE4D4040-***-0M18012

LP8SE4A4040-***-0M18G12

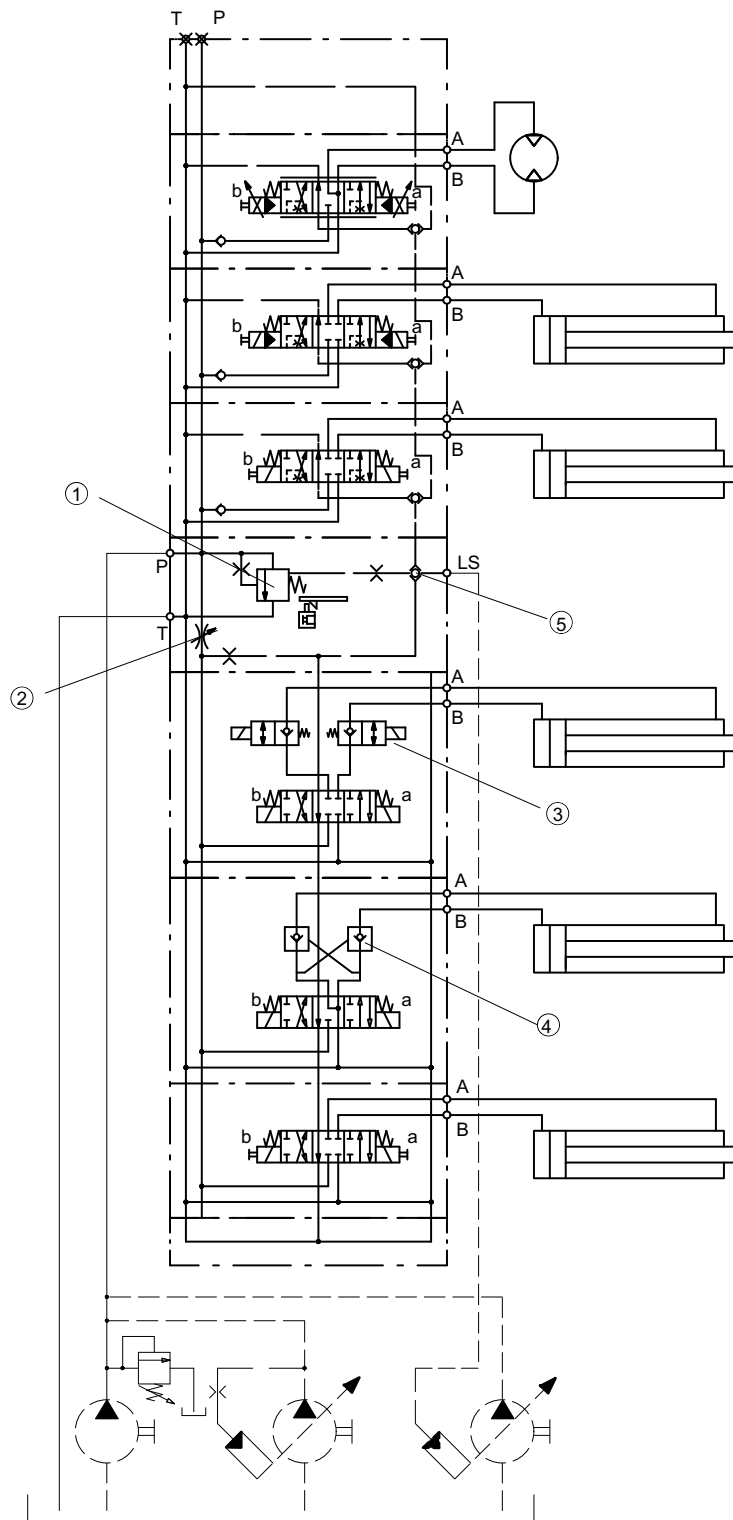
LD8SE4A2525-***-0M18G24

LU8SSBK-0M22/18

HDS07K105CE01E13HCTVR/A-B
(see brochure 200-P-991224-E-00)

HDS07K205CE01E13HCRP/A-B
(see brochure 200-P-991224-E-00)

HDS07K005AE01E13HC HDS11P11
(see brochure 200-P-991224-E-00)



Legend

- ① 3-way compensator with changeover facility for use with constant-pressure systems or LS pumps
- ② Orifice for setting the flow for the HDS valve block (load-independent)
- ③ Solenoid-operated seat valves
- ④ Hydraulic pilot-operated seat valves
- ⑤ Highest-load feedback for LS pumps

info.kl@bucherhydraulics.com

www.bucherhydraulics.com

© 2012 by Bucher Hydraulics GmbH, D-79771 Klettgau

Alle Rechte vorbehalten.

Die angegebenen Daten dienen allein der Produktbeschreibung und sind nicht als zugesicherte Eigenschaften im rechtlichen Sinne zu verstehen. Die Angaben entbinden den Anwender nicht von eigenen Beurteilungen und Prüfungen. Auf Grund kontinuierlicher Verbesserungen der Produkte, sind Änderungen der in diesem Katalog gemachten Produktspezifikationen vorbehalten.

Klassifikation: 430.300.390.365.000