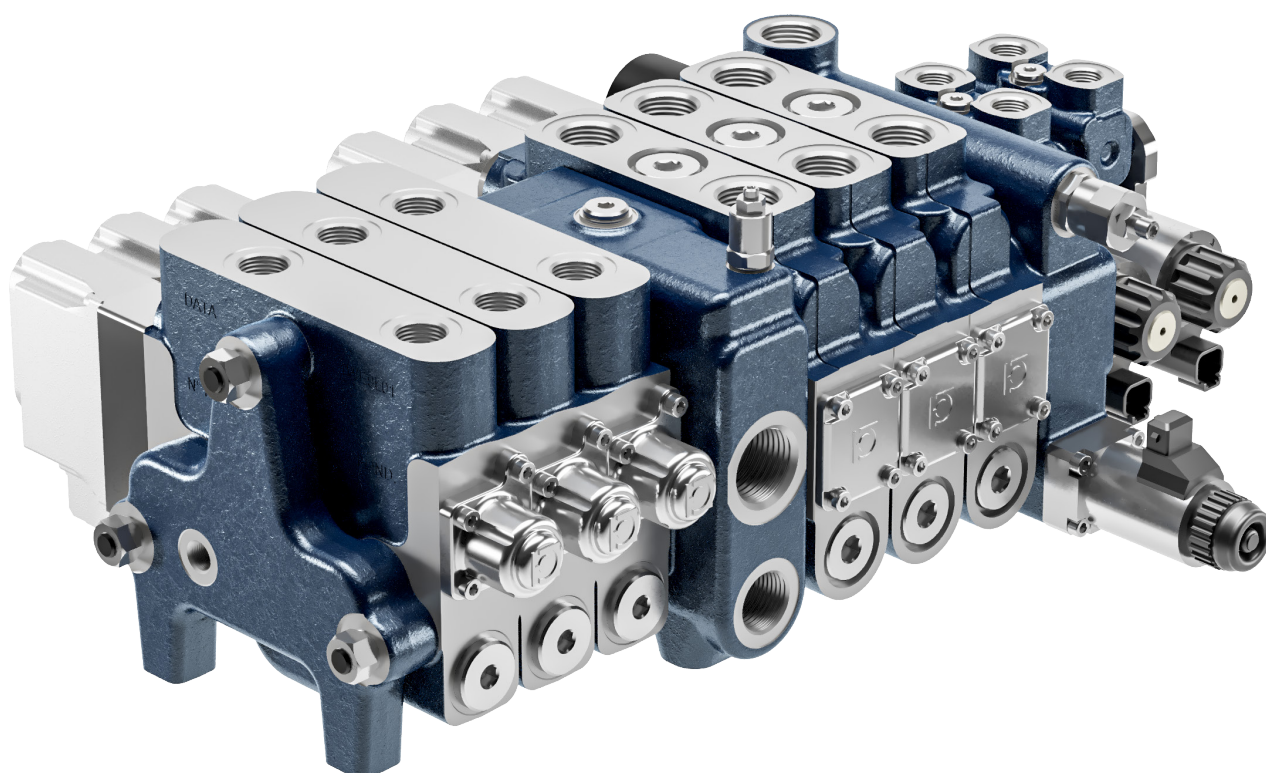


## Ordering guide



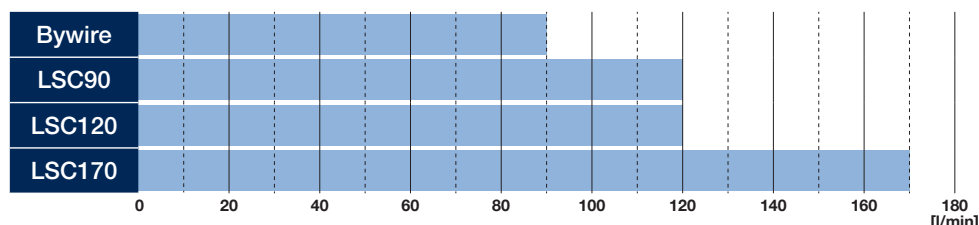
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## Tractors platform

The **LSC directional valves**, updated according to the principle of "**compact modularity**", offers a range of **flexible solutions** to meet the requirements of any kind of tractor.

An integral part of the ByWire system, the platform is **divided based on the flowrate required on each section**, with manual actuator or electric actuator configurations, in a CAN bus network.

## Range



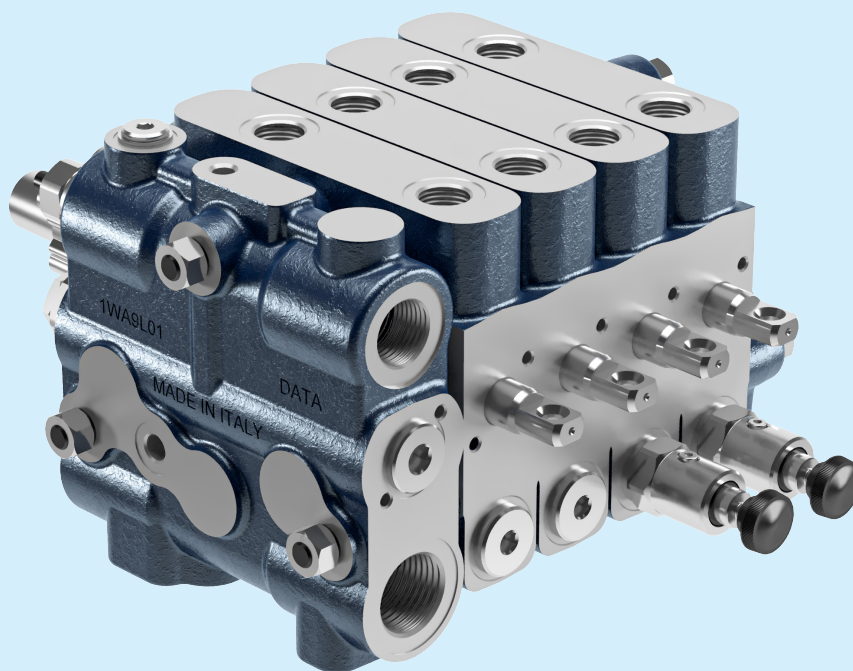
LSC valves are available in different configurations and they can work with fix or load sensing pumps. The valves can also be equipped with:

- Flow regulator on the sections
- Zero leakage check valve on the ports
- Spool control with kick out
- Hitch Control module with PWM control
- Bywire sections to control the third point levelling cylinder
- Intermediate inlet cover with the option of mounting sections with different sizes
- HL (Hybrid Load Sensing) Module to manage the LS line of the Power Beyond

Customized solutions to optimize overall dimensions and performance, upon request.

**LSC90** The valve can be used with fixed pump or LS pump, and the sections are equipped with manual actuators (lever-holder kit, cable control, joystick).

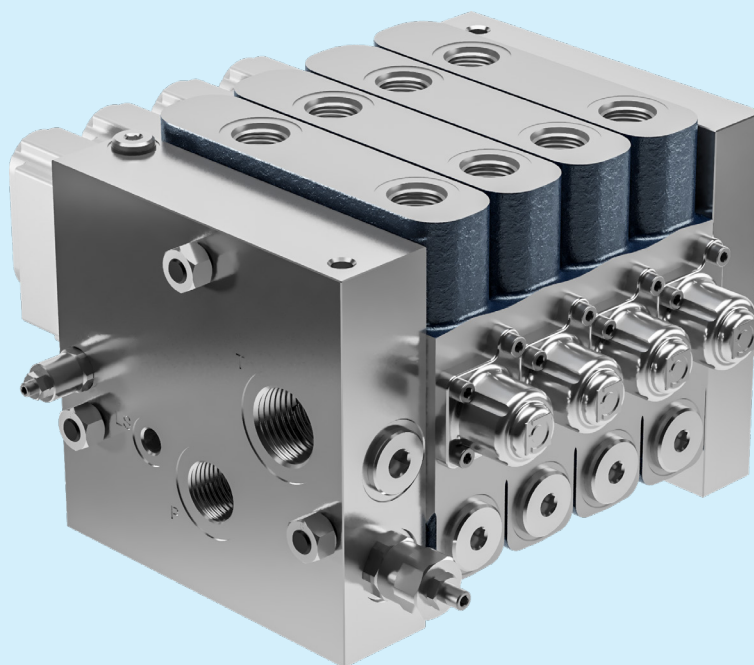
Nominal flow rate	120 l/min 31.7 US gpm
Nominal pressure	250 bar 3625 psi
Maximum tank pressure	20 bar 290 psi
Internal leakage (A or B -> P and T) $p = 100 \text{ bar (1450 psi)}$	$< 15 \text{ cm}^3/\text{min}$ $0.91 \text{ in}^3/\text{min}$
Internal leakage with zero leakage valve	$< 3 \text{ cm}^3/\text{min}$ $0.18 \text{ in}^3/\text{min}$
Temperature range	-20°C +85°C NBR seals (max peak +100°C) -20°C + 130°C HNBR seals
Oil viscosity	from 15 mm <sup>2</sup> /s to 90 mm <sup>2</sup> /s (15 cSt at 90 cSt)
Fluid	Hydraulic fluids defined by the ISO 6743-4 standard





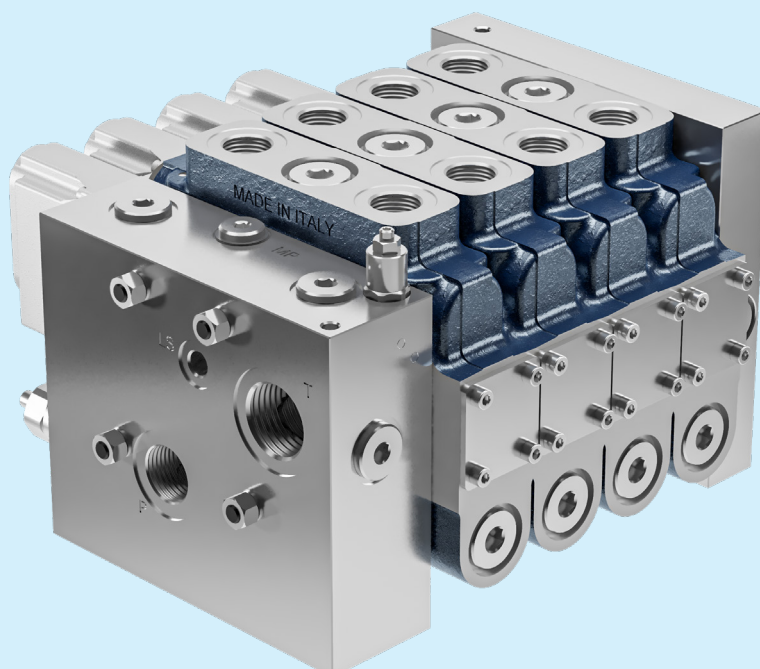
**LSC120** The valve can be used with LS pump, and the sections are equipped with electric actuators managed with CAN Bus network modules.

Nominal flow rate	120 l/min 31.7 US gpm
Nominal pressure	250 bar 3625 psi
Maximum tank pressure	20 bar 290 psi
Internal leakage (A or B -> P and T) p = 100 bar (1450 psi)	< 15 cm <sup>3</sup> /min 0.91 in <sup>3</sup> /min
Internal leakage with zero leakage valve	< 3 cm <sup>3</sup> /min 0.18 in <sup>3</sup> /min
Temperature range	-20°C +85°C NBR seals (max peak +100°C) -20°C + 130°C HNBR seals
Oil viscosity	from 15 mm <sup>2</sup> /s to 90 mm <sup>2</sup> /s (15 cSt at 90 cSt)
Fluid	Hydraulic fluids defined by the ISO 6743-4 standard



**LSC170** The valve can be used with LS pump, and the sections are equipped with electric actuators managed with CAN Bus network modules.

Nominal flow rate	170 l/min 44.9 US gpm
Nominal pressure	250 bar 3625 psi
Maximum tank pressure	20 bar 290 psi
Internal leakage (A or B -> P and T) $p = 100 \text{ bar (1450 psi)}$	< 15 cm <sup>3</sup> /min 0.91 in <sup>3</sup> /min
Internal leakage with zero leakage valve	< 3 cm <sup>3</sup> /min 0.18 in <sup>3</sup> /min
Temperature range	-20°C +85°C NBR seals (max peak +100°C) -20°C + 130°C HNBR seals
Oil viscosity	from 15 mm <sup>2</sup> /s to 90 mm <sup>2</sup> /s (15 cSt at 90 cSt)
Fluid	Hydraulic fluids defined by the ISO 6743-4 standard



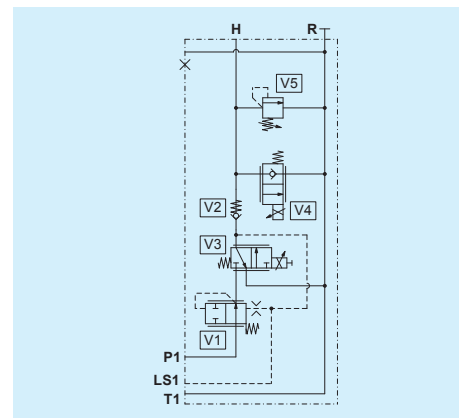
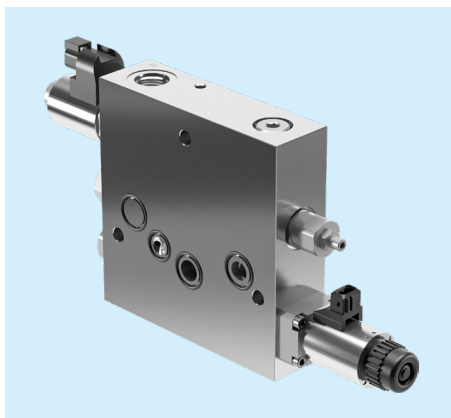
## Hitch control modules

The following modules allow to have an optimized control of the equipments connected to the tractor hydraulic power lift (made with simple effect cylinders). The return line from these cylinders can be connected to the tank line directly inside the valve or through the dedicated R port.

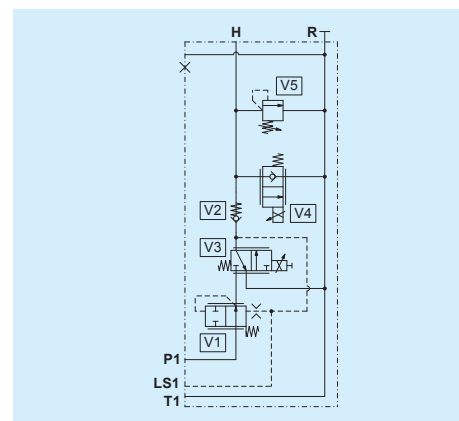
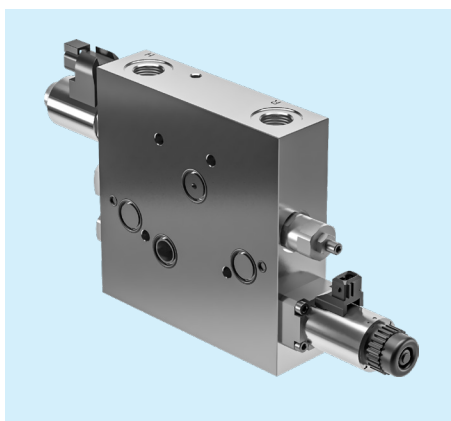
The modules are designed with:

- A locally compensated (V1) proportional valve for the lifting function
- A proportional valve for the lowering function (V4)
- An auxiliary relief valve to cut off the peaks of pressure (V5)
- A check valve (V2)

### HC120



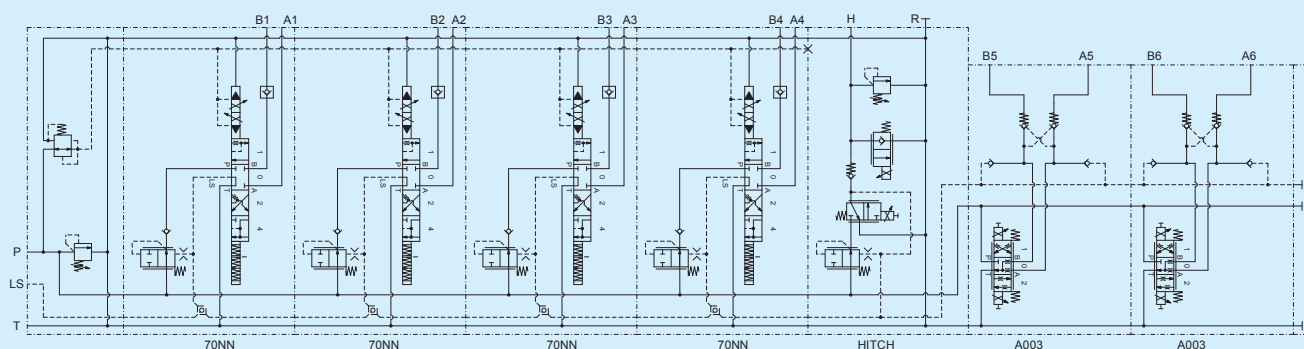
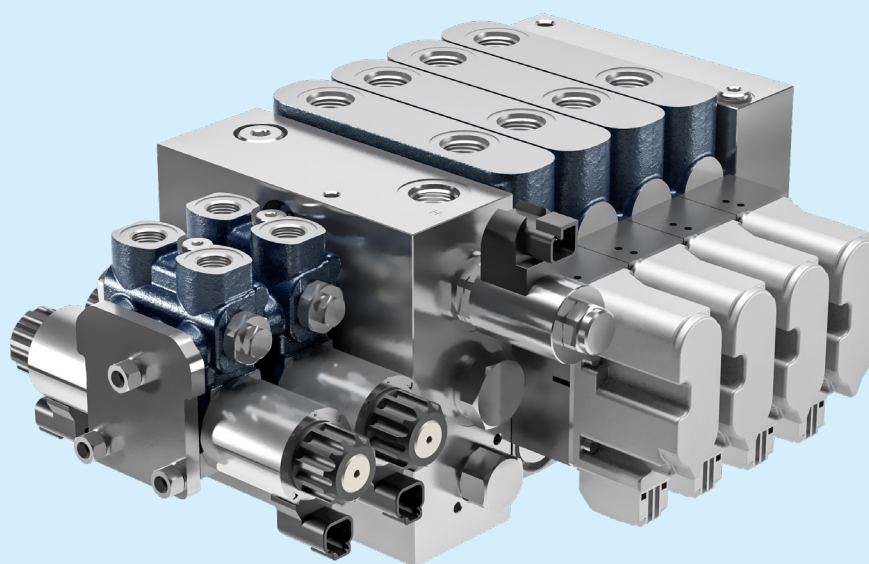
### HC170



## Third point levelling control

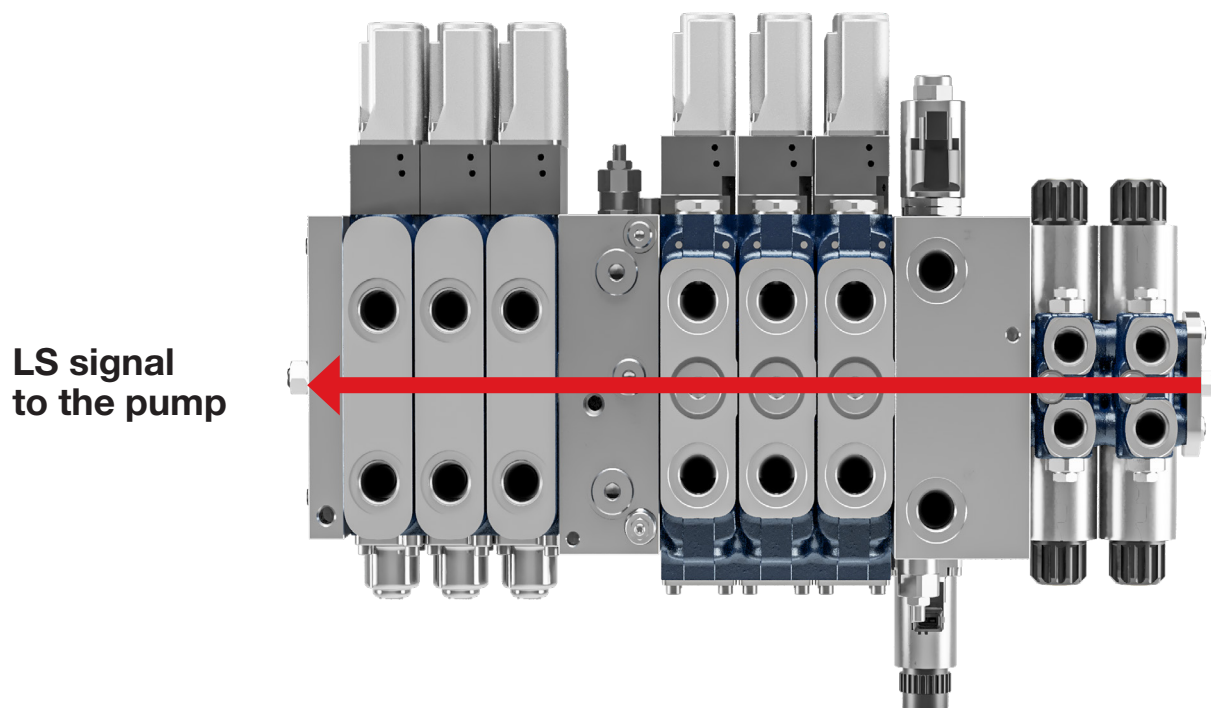
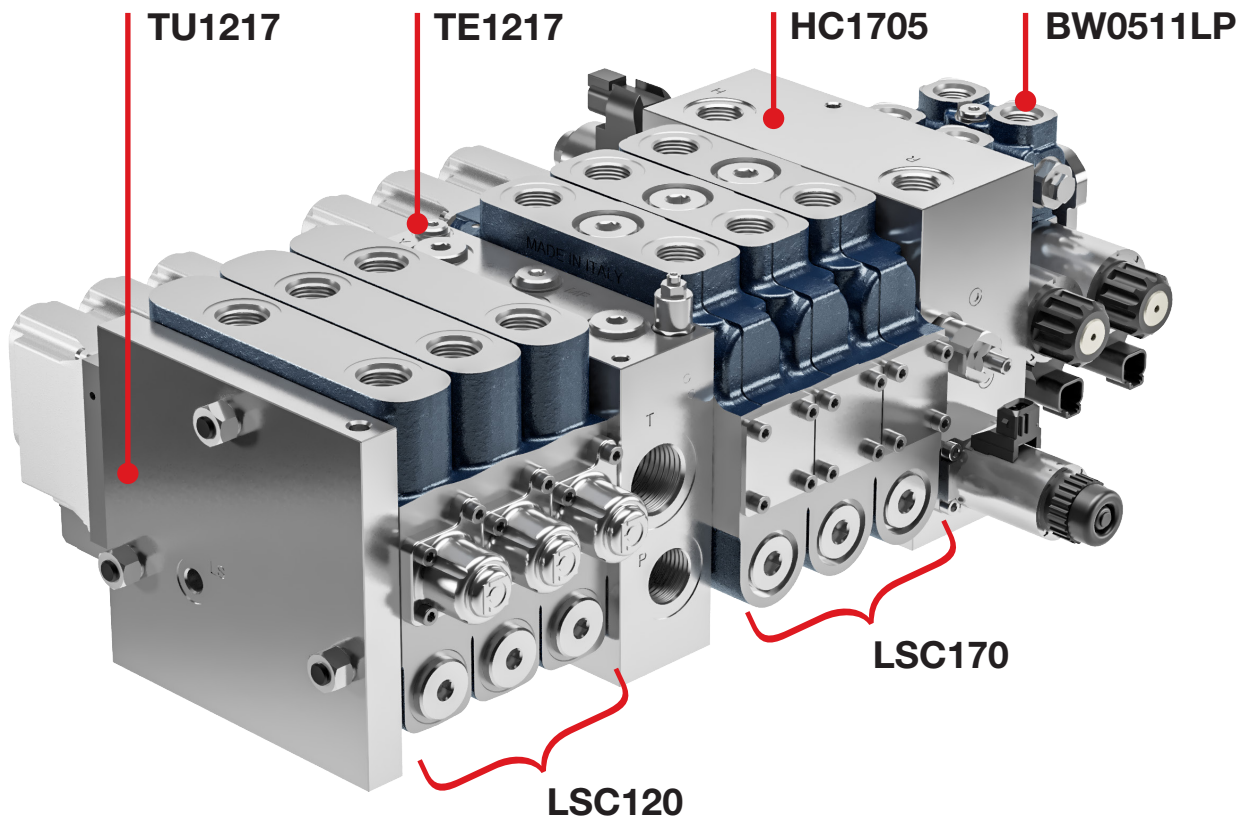
By exploiting the modularity of the platform and the different sizes of the sections, the valve can be design according to the right flow rates required on the functions connected to it. For instance, the third point levelling cylinder can be managed directly from the tractor cab; This function can be added to the valve configuration, using BW05/BW10 size Bywire load sensing sections (non-compensated or compensated mode). This option can be applied with or without the Hitch Control module.

**LSC120 with HC1205 and section BW0511LP**



Configuration with intermediate cover and sections of different sizes

The platform includes the option of using different section sizes in the same valve to optimize the system. In this configuration, there must be a dedicated outlet plate for the LS line (TU1217).

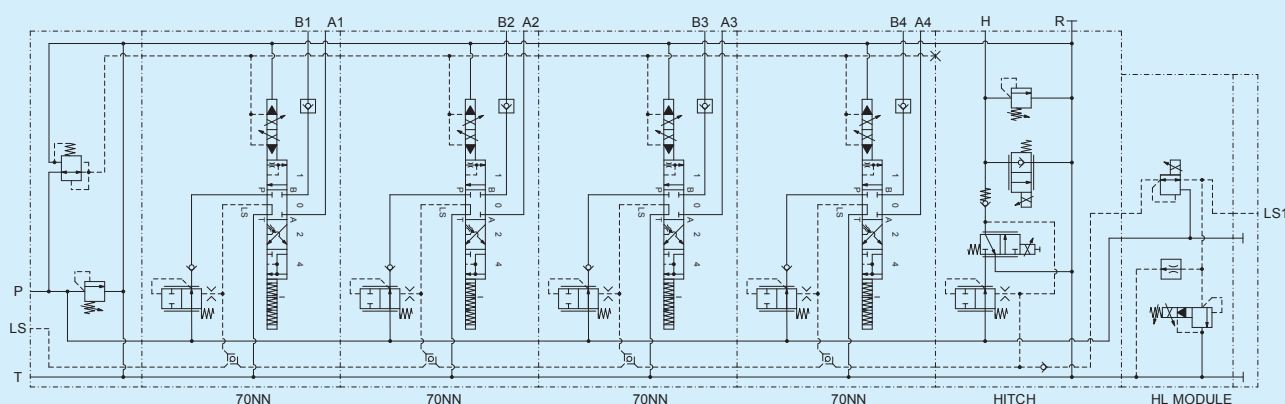
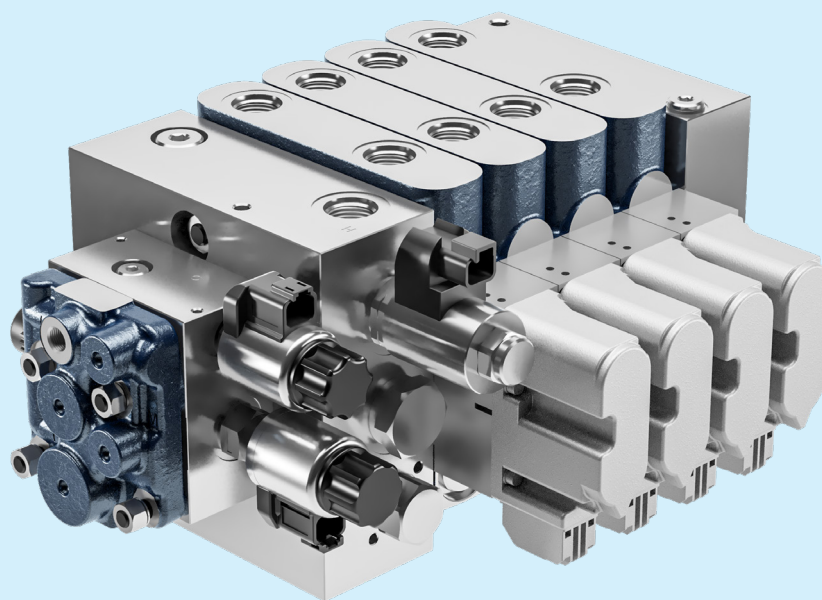


## HL (Hybrid Load Sensing) Module to manage the LS line of the Power Beyond

Through the HL module, it is possible to optimize the Power Beyond LS signal, to maximize the yield of the implement connected to the tractor, in terms of performance and energy savings.

The module is designed with:

- A proportional relief valve to manage the maximum pressure available in line LS1, where the Power Beyond LS signal is connected.
- A proportional pressure reducing valve to optimize the LS1 signal to be sent to the tractor's LS pump.



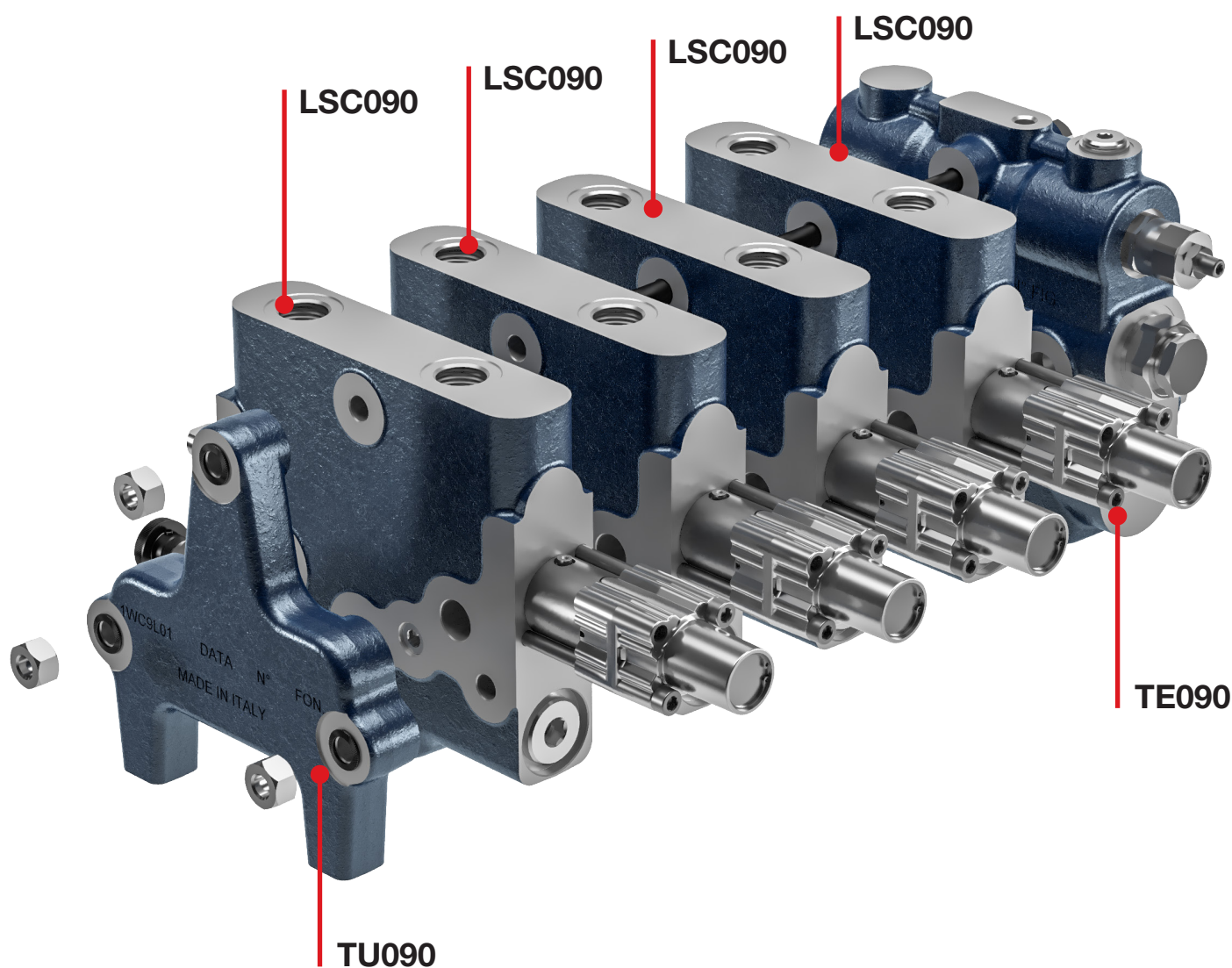


**Ordering instructions** Define each module in detail, following the **Ordering instructions** in the technical data sheet available for each module.

**Ordering sequence** The ordering sequence of the valve must follow **the hydraulic logic**. It always starts from the inlet module, either on the left side or in an intermediate position in the valve. It is not necessary to choose the tie rod valve kit, this will be done by the Bondioli & Pavesi - Dinoil technical office. Then proceed as follows:

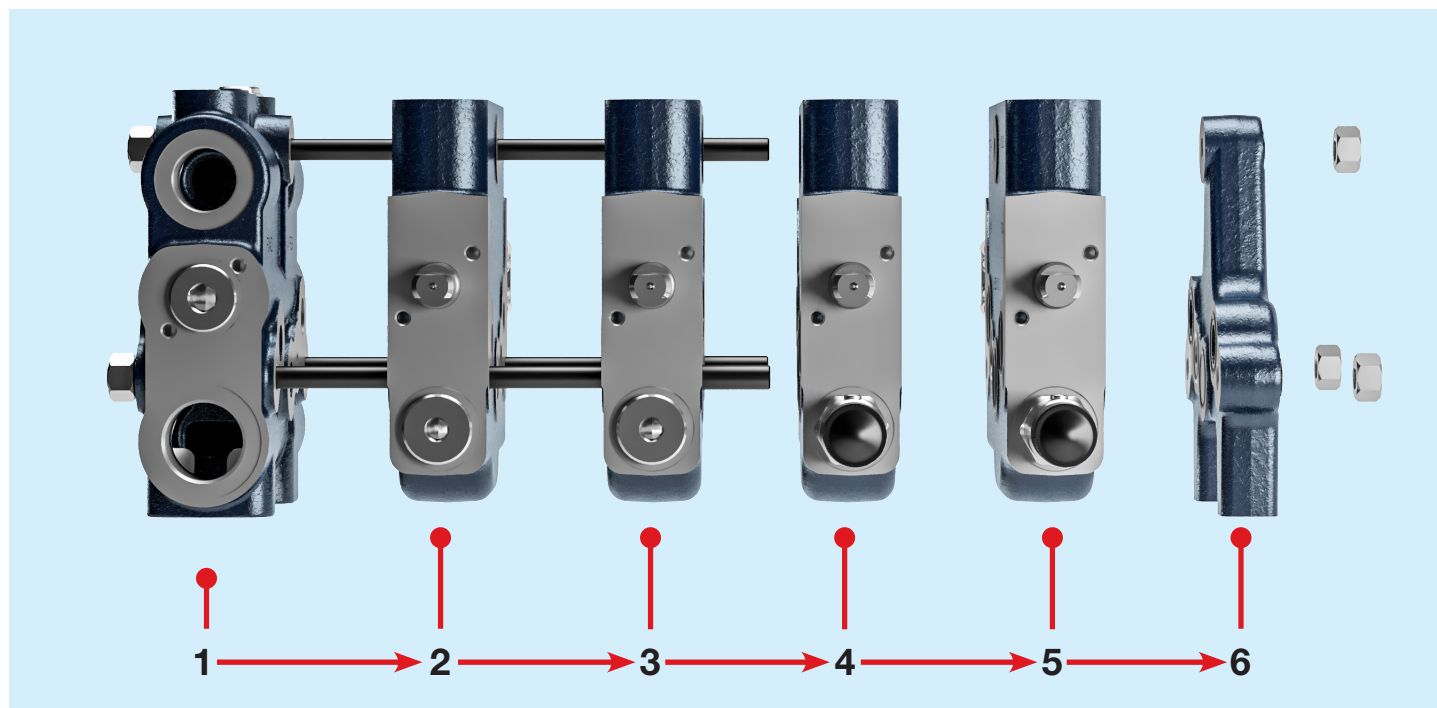
**CASE 1**  
**Inlet module on the left side**

- **Choose the inlet module**  
TE = inlet cover or RF = Flow regulator
- **Select all the elements**  
Starting from the inlet module towards the right
- **Choose the closing module**  
TU = outlet cover or outlet plate





CASE 1  
Inlet module on the left side    Ordering sequence



1 - TE090    B F 5 5 K B N K N A 2 8 G N N N Z

2 - LSC90    A F J C C 7 0 0 C N P T 1 7 N B N N N N Z

3 - LSC90    A F J C C 7 0 0 C N P T 1 7 N B N N N N Z

4 - LSC90    A F J C C 7 0 0 C N P T 1 7 N B N N N N Z

5 - LSC90    A F J C C 7 0 0 C N P T 1 7 N B N N N N Z

6 - TU090

## TE090

Nominal flow rate 120 l/min

Nominal pressure 250 bar

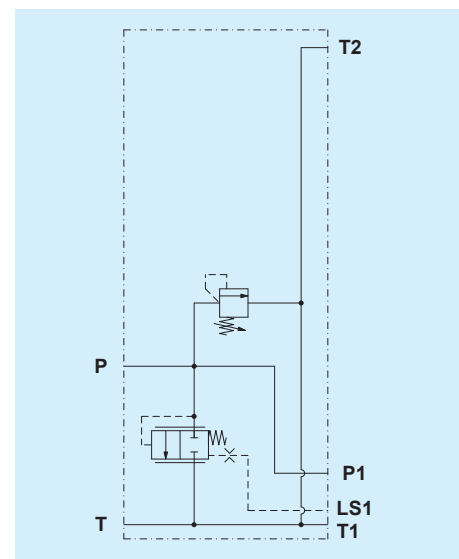
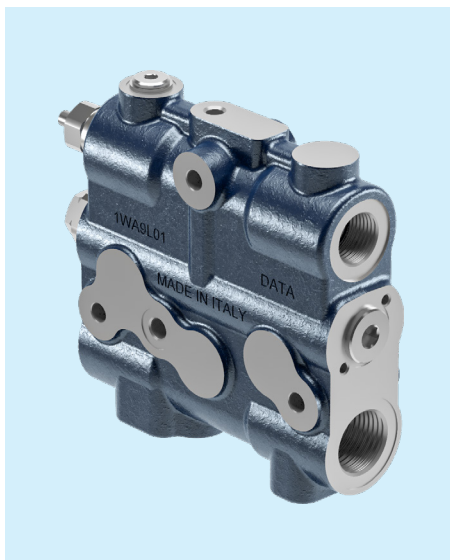
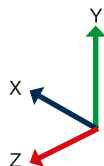
Description:  
Inlet cover with peak cut-off relief valve on line P.  
Configuration for fixed pump.

Standard version dimensions:

X = 210 mm

Y = 175 mm

Z = 55 mm



## TE090

Nominal flow rate 120 l/min

Nominal pressure 250 bar

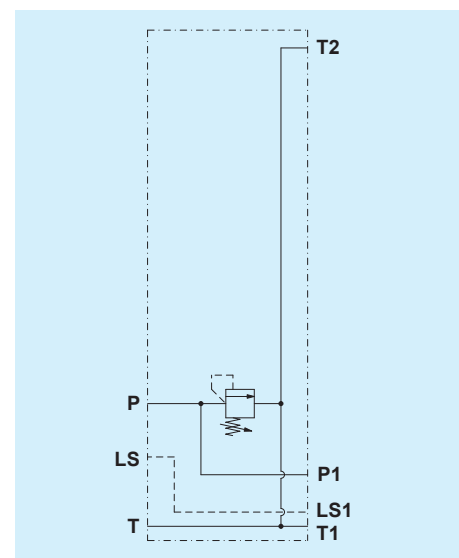
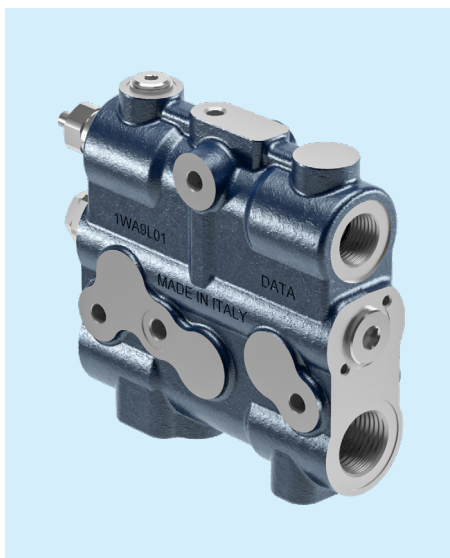
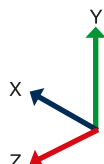
Description:  
Inlet cover with peak cut-off relief valve on line P.  
Configuration for LS pump.

Standard version dimensions:

X = 210 mm

Y = 175 mm

Z = 55 mm



## TE120

Nominal flow rate 150 l/min

Nominal pressure 250 bar

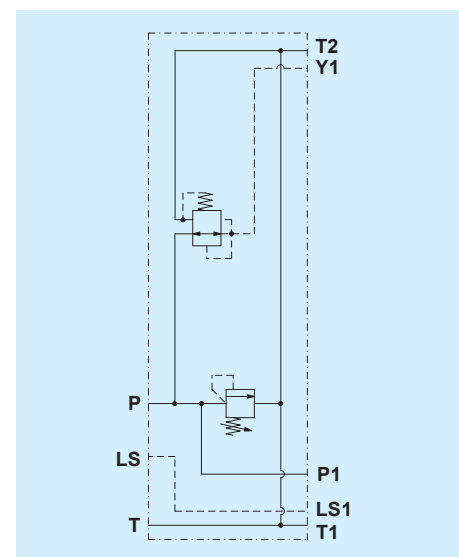
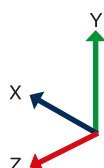
Description:  
Inlet cover with peak cut-off relief valve on line P.  
Configuration for LS pump.

Standard version dimensions:

X = 205 mm

Y = 169 mm

Z = 74 mm



## TE170

Nominal flow rate 200 l/min

Nominal pressure 250 bar

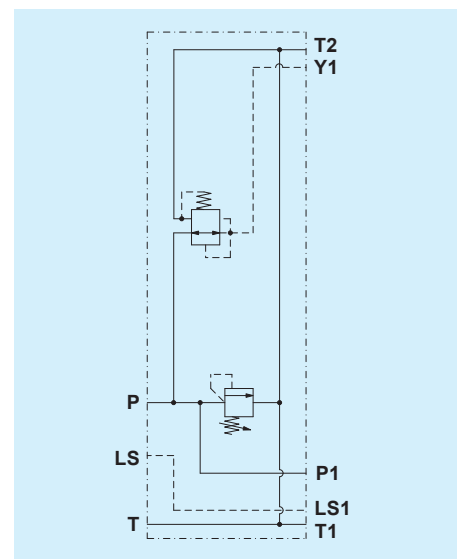
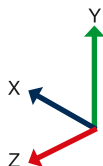
Description:  
Inlet cover with peak cut-off relief valve on line P.  
Configuration for LS pump.

Standard version dimensions:

X = 216 mm

Y = 180 mm

Z = 57 mm



## TE1217

Nominal flow rate 200 l/min

Nominal pressure 250 bar

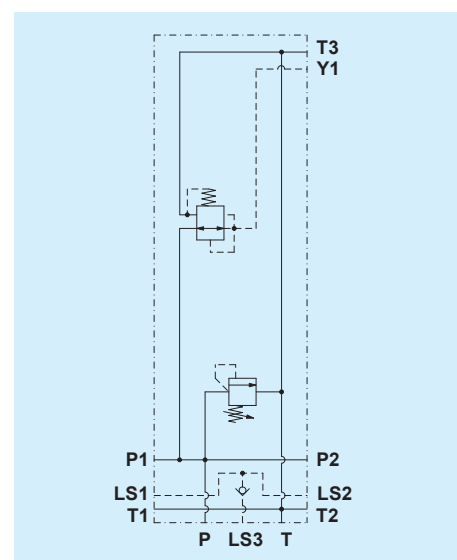
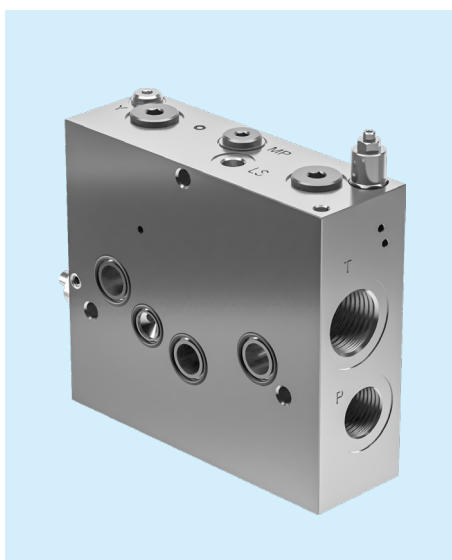
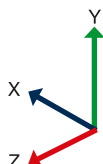
Description:  
Inlet cover with peak cut-off relief valve on line P.  
Configuration for LS pump.

Standard version dimensions:

X = 216 mm

Y = 180 mm

Z = 57 mm



## LSC090

Nominal flow rate 120 l/min

Nominal pressure 250 bar

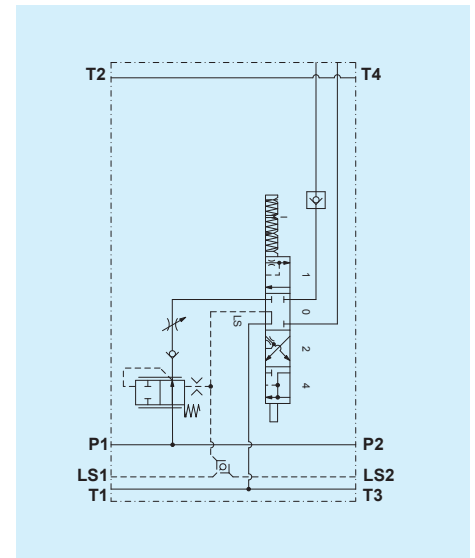
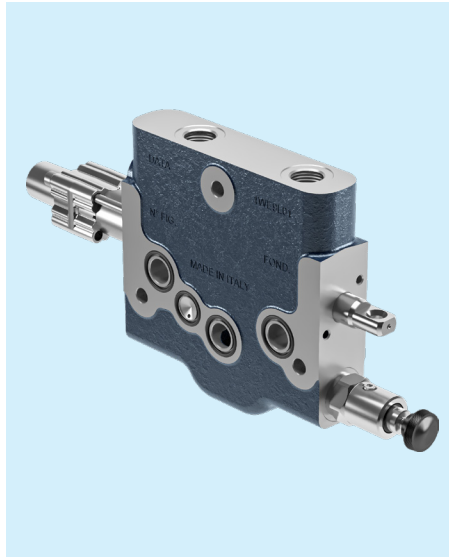
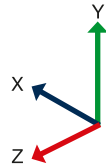
Description:  
Compensated element with or without max flow manual adjustment.

Standard version dimensions:

X = 301 mm

Y = 164 mm

Z = 40 mm



## LSC120

Nominal flow rate 120 l/min

Nominal pressure 250 bar

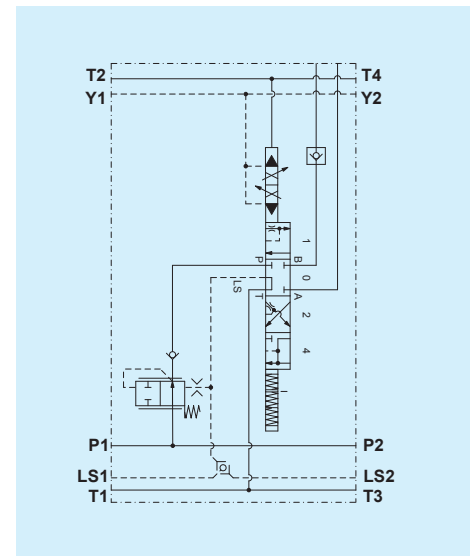
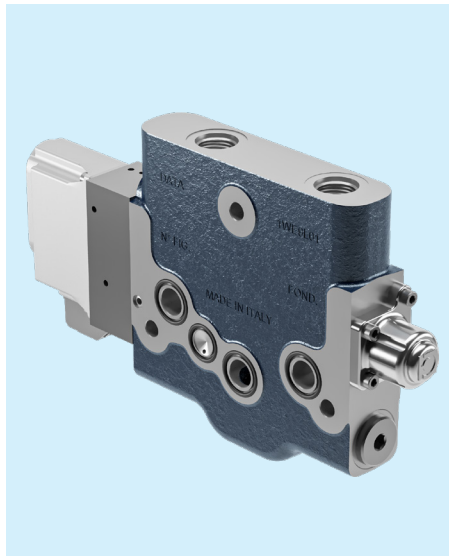
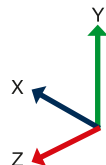
Description:  
Compensated element with electrohydraulic actuator in a CAN bus network.

Standard version dimensions:

X = 301 mm

Y = 164 mm

Z = 40 mm



## LSC170

Nominal flow rate 170 l/min

Nominal pressure 250 bar

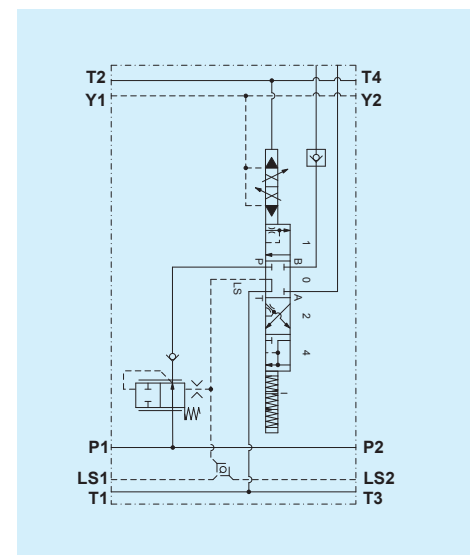
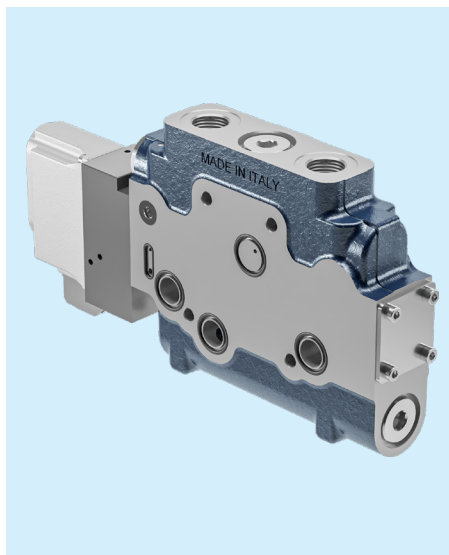
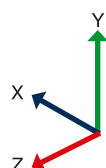
Description:  
Compensated element with electrohydraulic actuator in a CAN bus network.

Standard version dimensions:

X = 303 mm

Y = 155 mm

Z = 44 mm



## TU090

Nominal flow rate

-

Nominal pressure

250 bar

Description:

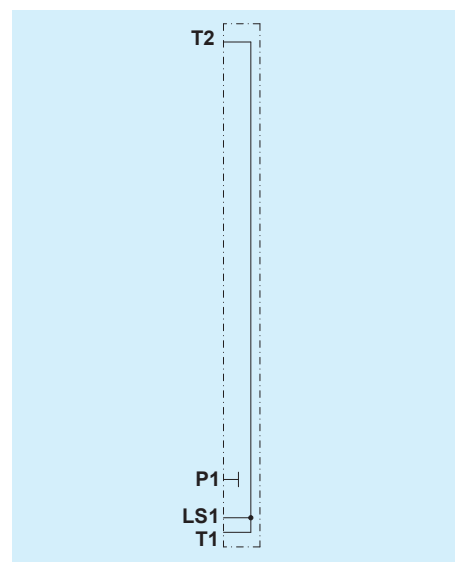
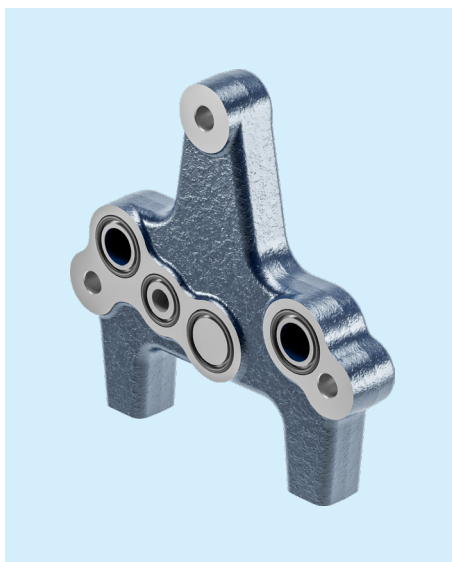
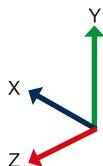
Closing plate for elements LSC90.

Standard version dimensions:

X = 163 mm

Y = 163 mm

Z = 25 mm



## TU120

Nominal flow rate

-

Nominal pressure

250 bar

Description:

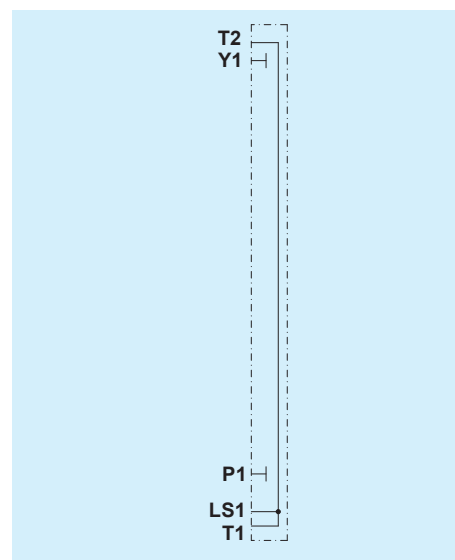
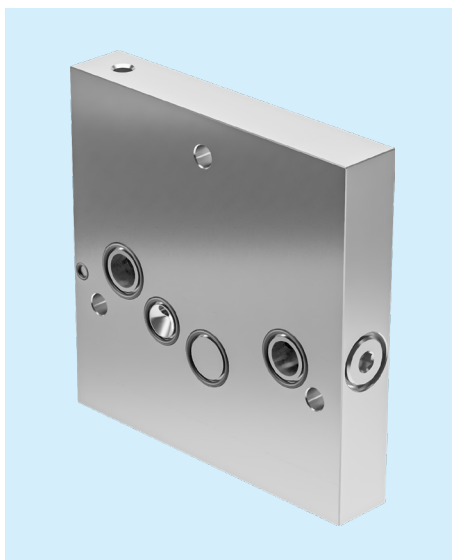
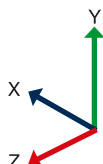
Closing plate for elements LSC120.

Standard version dimensions:

X = 167 mm

Y = 167 mm

Z = 30 mm



## TU170

Nominal flow rate

-

Nominal pressure

250 bar

Description:

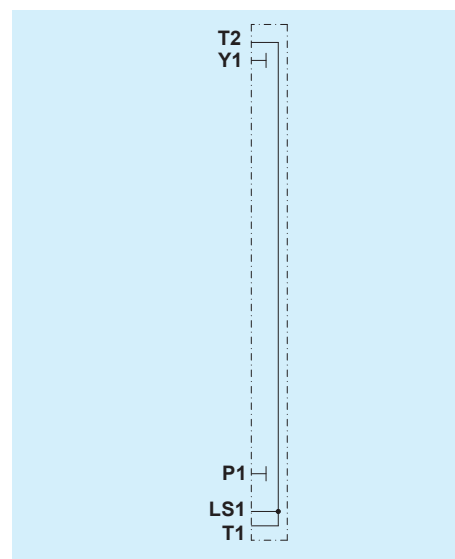
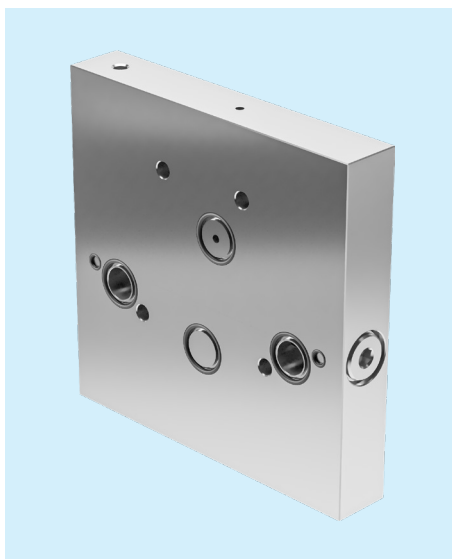
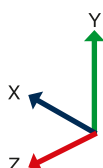
Closing plate for elements LSC170.

Standard version dimensions:

X = 174 mm

Y = 174 mm

Z = 30 mm

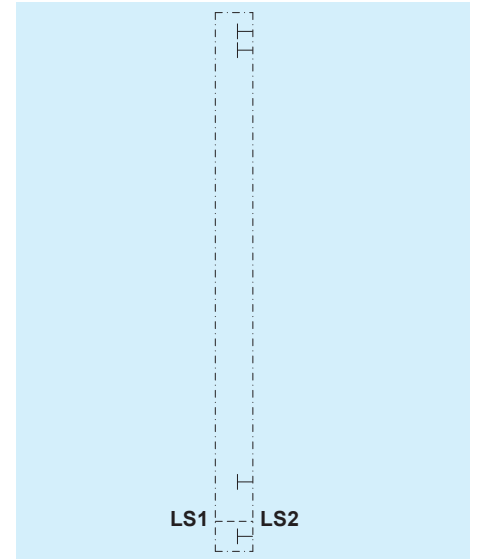
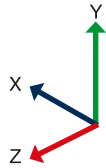


## TU1217

Nominal flow rate	-
Nominal pressure	250 bar

Description:  
LSC120 side outlet cover to send the LS signal to the pump. Paired with TE1217.

Standard version dimensions:  
X = 165 mm  
Y = 165 mm  
Z = 20 mm



## HC120

Nominal flow rate 80 l/min

Nominal pressure 250 bar

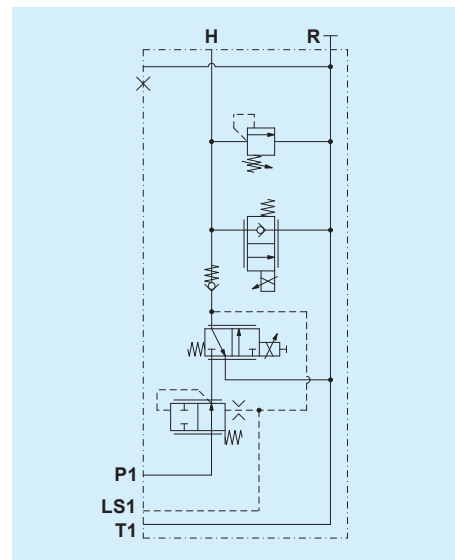
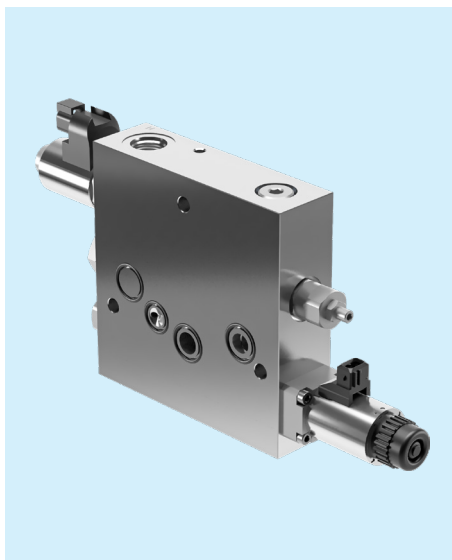
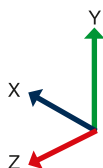
Description:  
LSC90 - LSC120 Hitch Control module.

Standard version dimensions:

X = 332 mm

Y = 174 mm

Z = 47 mm



## HC170

Nominal flow rate 80 l/min

Nominal pressure 250 bar

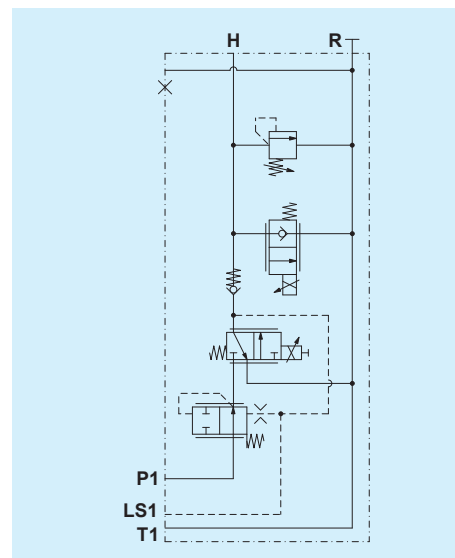
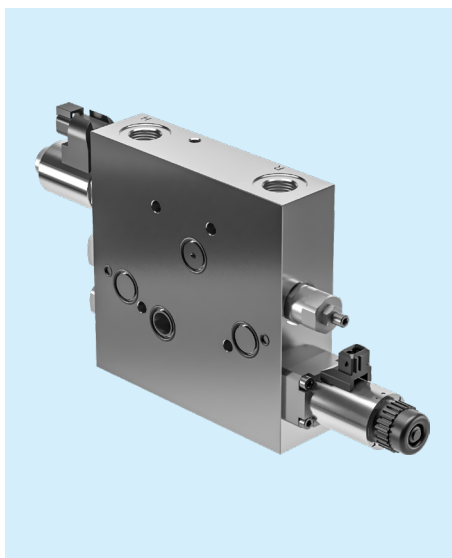
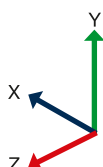
Description:  
LSC170 Hitch Control module.

Standard version dimensions:

X = 340 mm

Y = 174 mm

Z = 47 mm



## HC1205

LSC90 - LSC120 Hitch Control with BW05 element interface

## HC1210

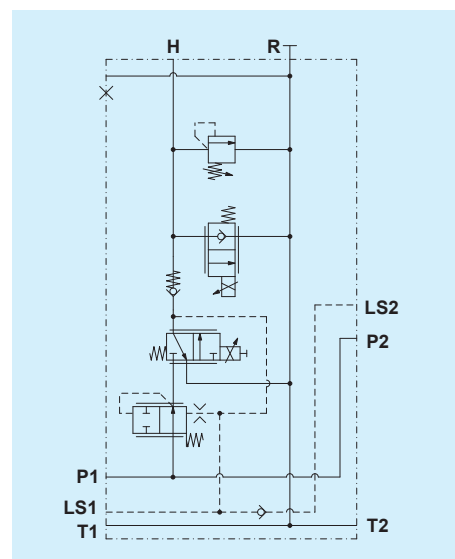
LSC90 - LSC120 Hitch Control with BW10 elements or HL module interface

## HC1705

LSC170 Hitch Control with BW05 element interface

## HC1710

LSC170 Hitch Control with BW10 elements or HL module interface





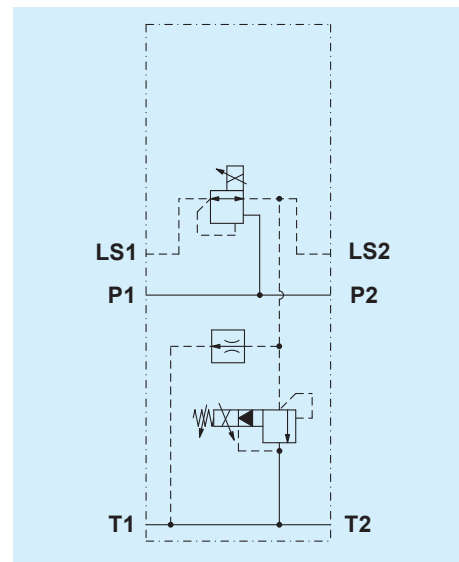
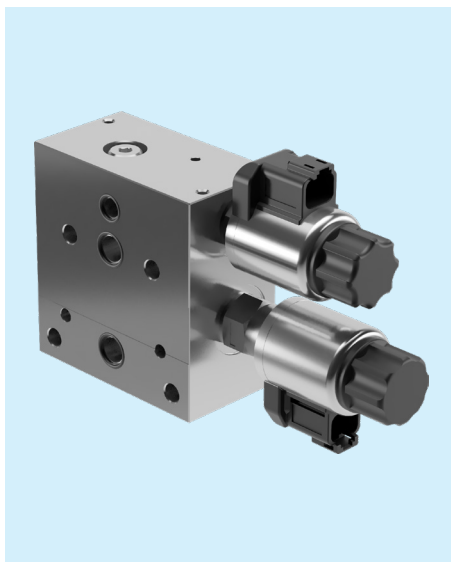
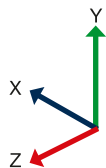
## HL10

Nominal flow rate	-
Nominal pressure	250 bar

Description:  
HL module

Standard version dimensions:

X = 182 mm  
Y = 100 mm  
Z = 49 mm



## BW0511BO

Nominal flow rate 42 l/min

Nominal pressure 250 bar

Description:

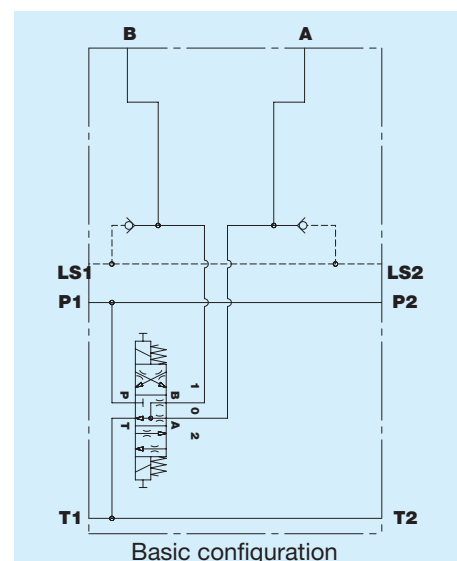
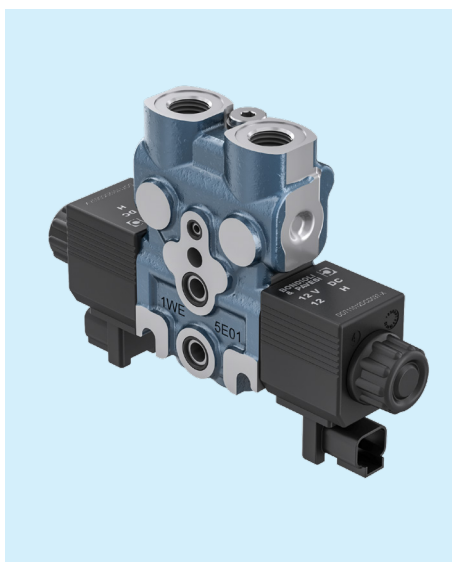
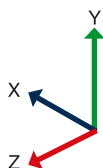
Element 4/3 ON - OFF with Upper ports with L.S. signal

Standard version dimensions:

X = 181 mm

Y = 121 mm

Z = 37 mm



## BW0511LP

Nominal flow rate 37 l/min

Nominal pressure 250 bar

Description:

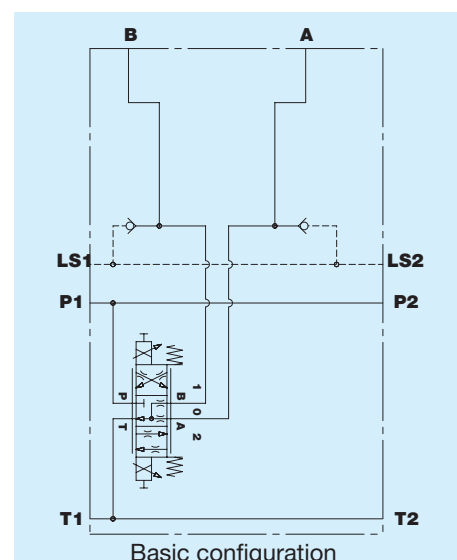
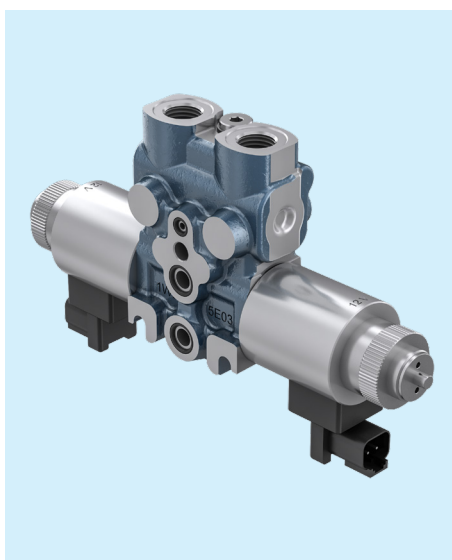
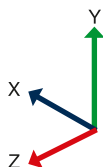
Wide element 4/3 Proportional with Upper ports and with L.S. signal

Standard version dimensions:

X = 231 mm

Y = 129 mm

Z = 46 mm



## BW0511FP

Nominal flow rate 35 l/min

Nominal pressure 250 bar

Description:

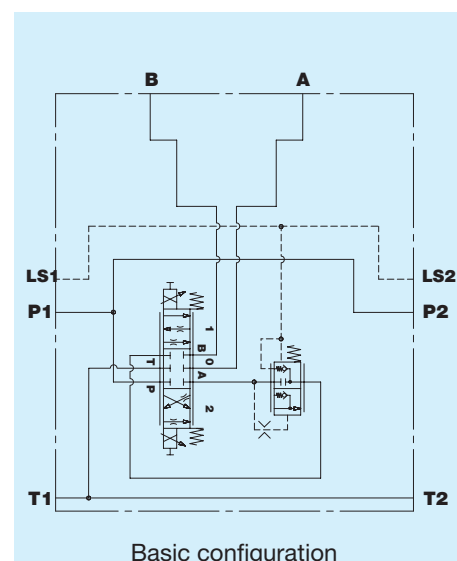
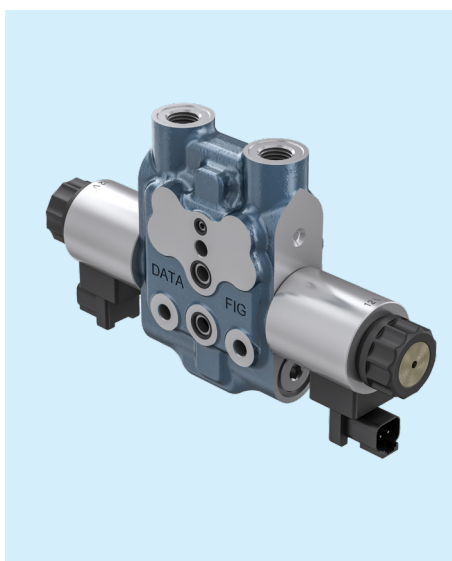
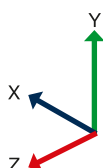
Post-compensated proportional flow sharing element with L.S. signal

Standard version dimensions:

X = 233 mm

Y = 131 mm

Z = 46 mm



## BW0511CP

Nominal flow rate 32 l/min

Nominal pressure 250 bar

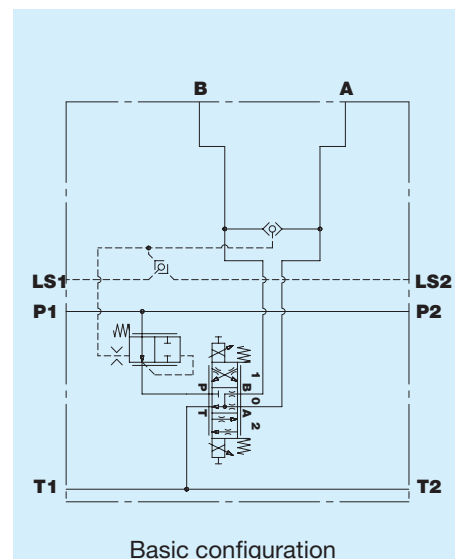
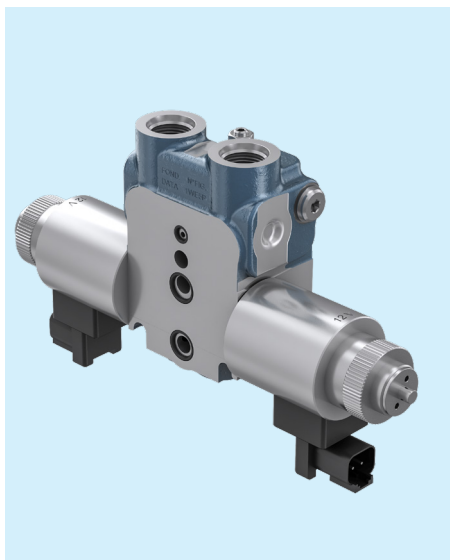
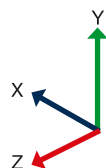
Description:  
Proportional pre-compensated element 4/3 with L.S. signal

Standard version dimensions:

X = 231 mm

Y = 129 mm

Z = 55 mm



## BW1033AO

Nominal flow rate 80 l/min

Nominal pressure 250 bar

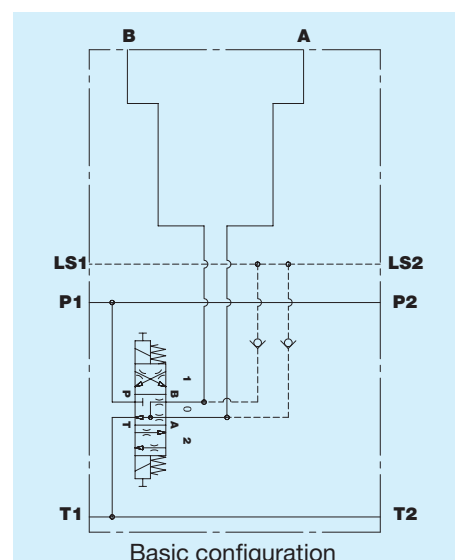
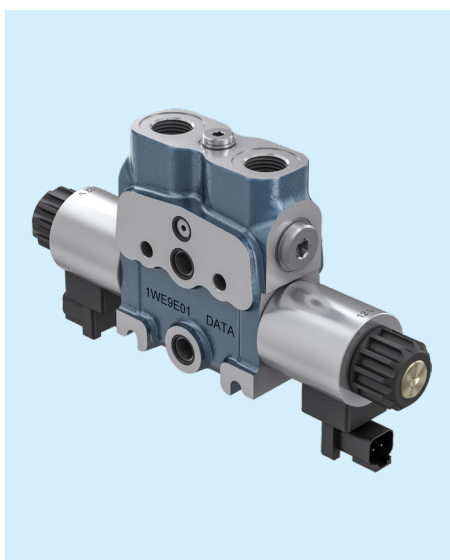
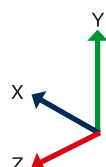
Description:  
Top port 4/3 ON - OFF element with L.S. signal

Standard version dimensions:

X = 242 mm

Y = 134 mm

Z = 48 mm



## BW1033BP

Nominal flow rate 85 l/min

Nominal pressure 250 bar

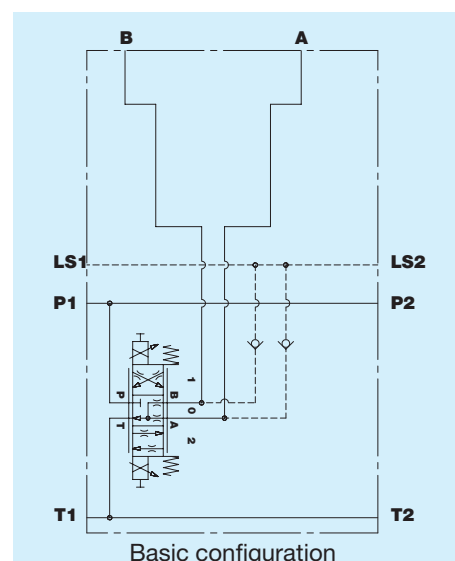
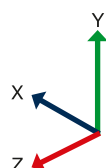
Description:  
Element 4/3 Proportional L.S. with upper ports

Standard version dimensions:

X = 303 mm

Y = 144 mm

Z = 65 mm



## BW1033CP

Nominal flow rate 90 l/min

Nominal pressure 300 bar

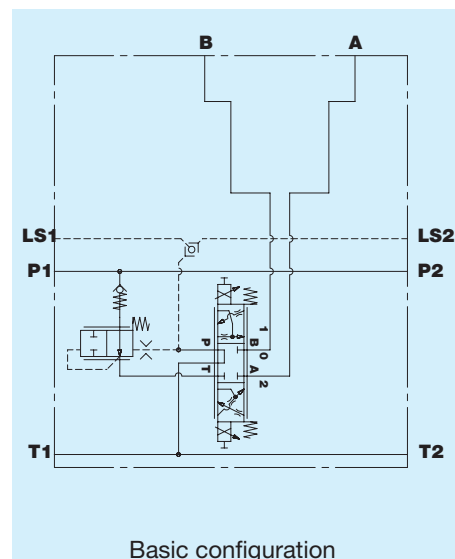
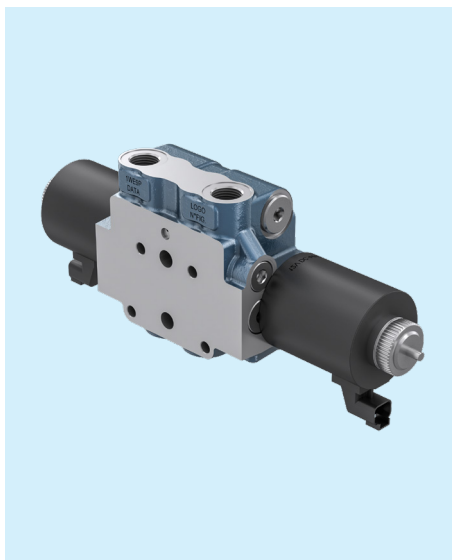
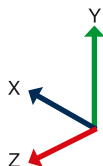
Description:  
Proportional pre-compensated element 4/3 with L.S. signal

Standard version dimensions:

X = 347 mm

Y = 139 mm

Z = 81 mm



## BW1033FP

Nominal flow rate 70 l/min

Nominal pressure 250 bar

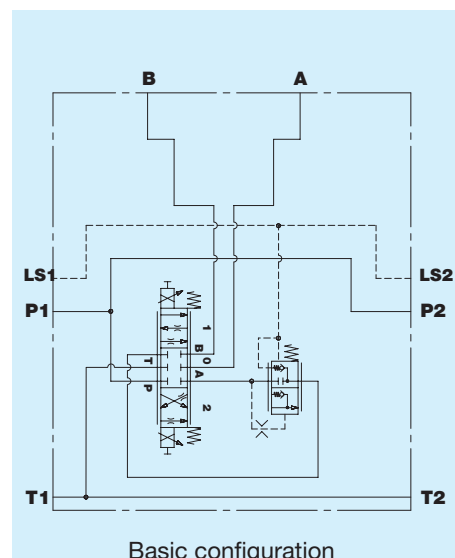
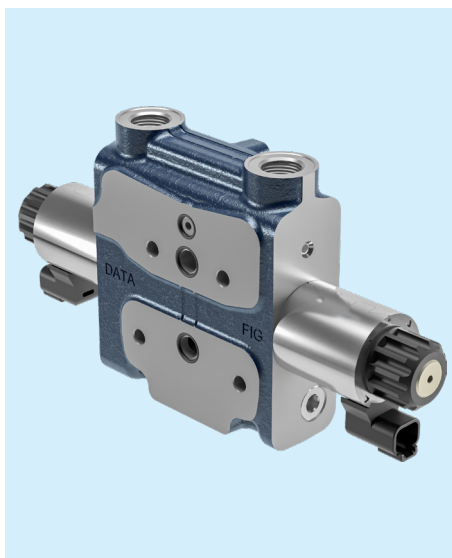
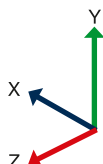
Description:  
Post-compensated proportional flow sharing element with LS signal

Standard version dimensions:

X = 271.2 mm

Y = 137.5 mm

Z = 48 mm



## PI05

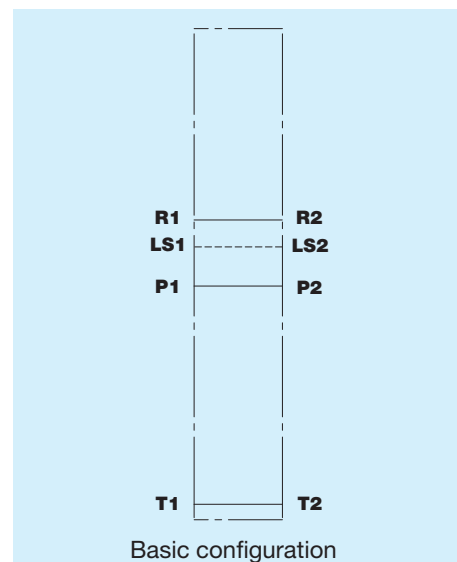
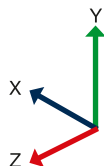
Description:  
Intermediate plate for BW05 with P-T-LS-R  
feedthroughs.

Standard version dimensions:

X = 75 mm

Y = 79 mm

Z = 10 mm



## PI10

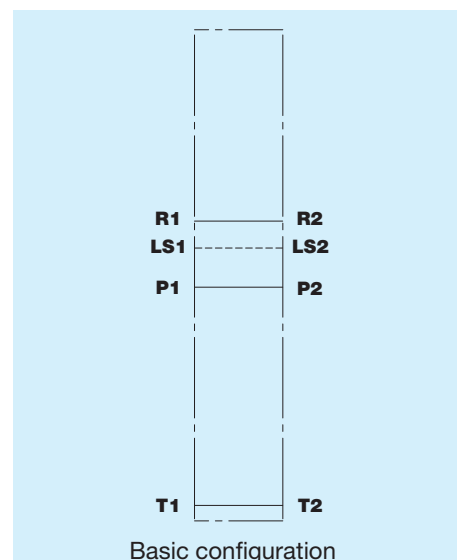
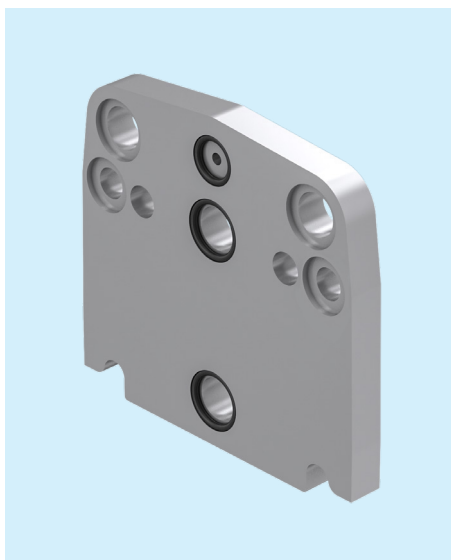
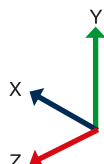
Description:  
Intermediate plate for BW10 with P-T-LS-R  
feedthroughs.

Standard version dimensions:

X = 92 mm

Y = 87 mm

Z = 10 mm



## TU051F

Nominal flow rate 50 l/min

Nominal pressure 250 bar

Description:  
Outlet cover P-T-LS.

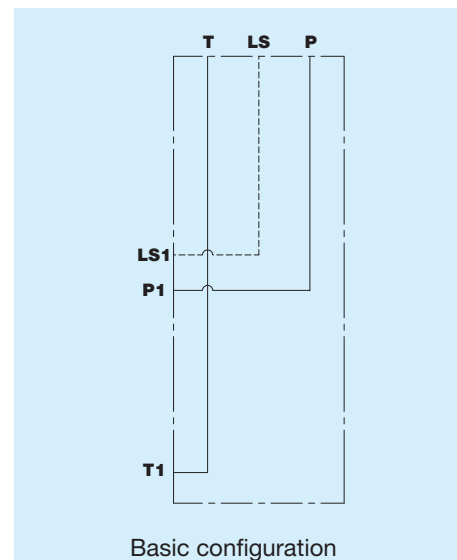
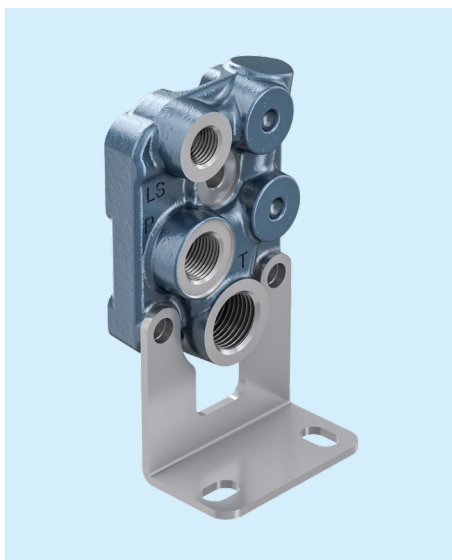
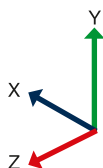
Standard version dimensions with H2

bracket:

X = 53 mm

Y = 113 mm

Z = 67 mm



## TU103F

Nominal flow rate 100 l/min

Nominal pressure 250 bar

Description:  
Outlet cover P-T-LS.

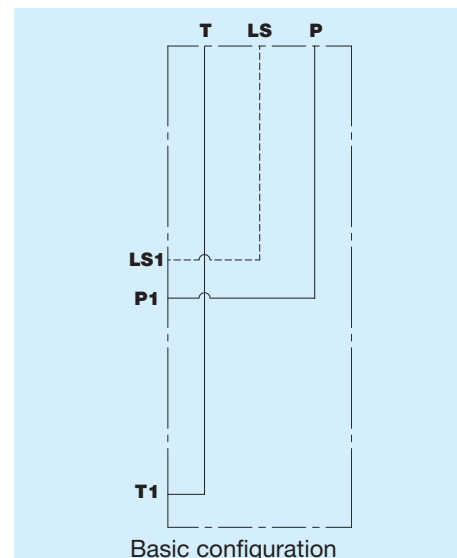
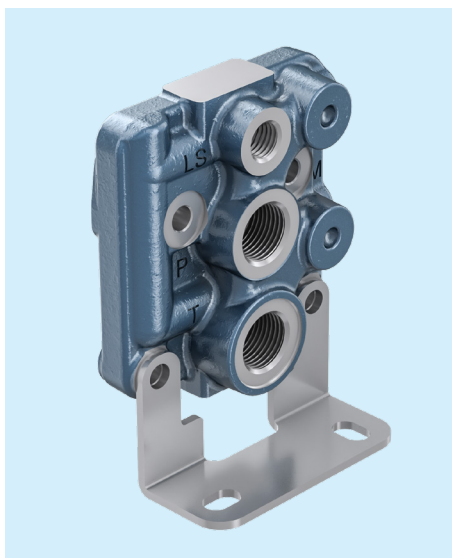
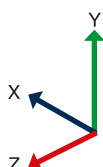
Standard version dimensions with H3

bracket:

X = 53 mm

Y = 129 mm

Z = 90 mm



## TU05

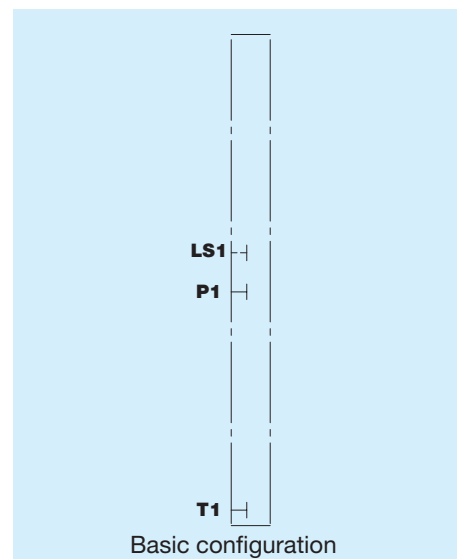
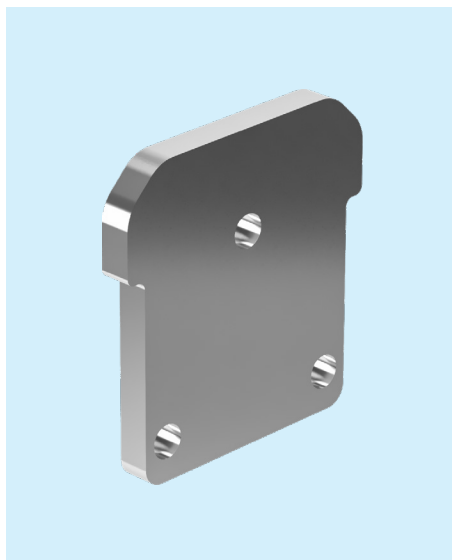
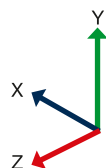
Description:  
Closing plate for elements BW05.

Standard version dimensions:

X = 8 mm

Y = 78.5 mm

Z = 75 mm



## TU05 H3

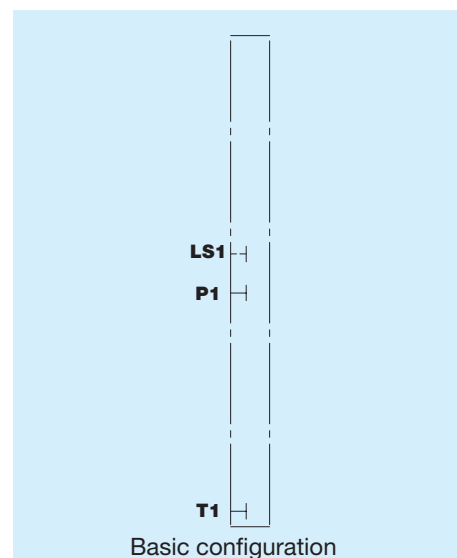
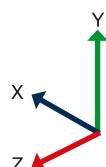
Description:  
Closing plate for elements BW05.

Standard version dimensions:

X = 39 mm

Y = 121 mm

Z = 75 mm



## TU10

Description:  
Closing plate for elements BW10.

Standard version dimensions:

X = 39 mm

Y = 124 mm

Z = 95 mm

