

Flexibility and Superior Control

## Proportional Flow Sharing Valve HDS14

# An Introduction to the New HDS14

The new HDS14 completes Bucher Hydraulic flow sharing valve range specifically designed for material handling and earth moving applications.

HDS14 valve section architecture is based on HDS24 experience in order to include all the special technical solutions and patented features of the size 12 valve and the compensation performance and stability of HDS34.

Standard inlet cover is designed with a flexible core arrangement in order to create different circuits to satisfy the requirements of several applications.

Simpler and more cost effective customized castings are foreseen to satisfy specific hydraulic circuits of OEM machines.

The similar internal core arrangement allows to easily combine HDS14 and HDS24 elements with simple or complex interfaces in order to adapt the valve section to the flow requirement of the specific valve function.

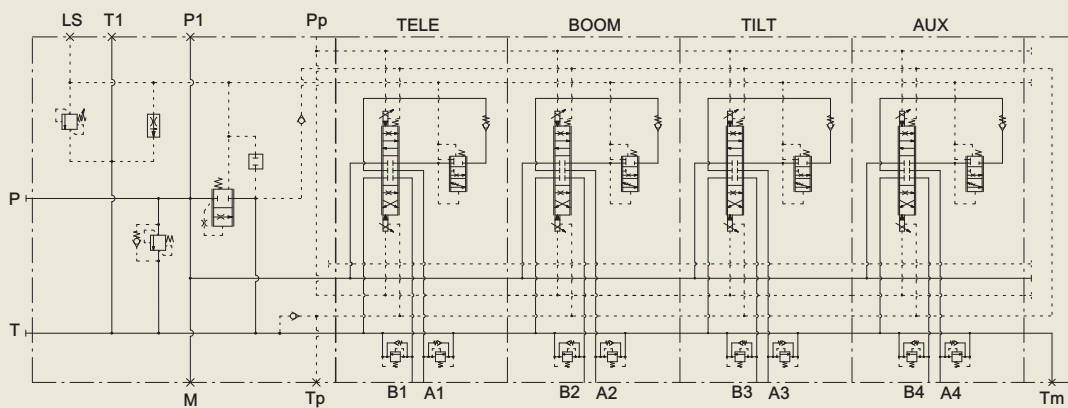
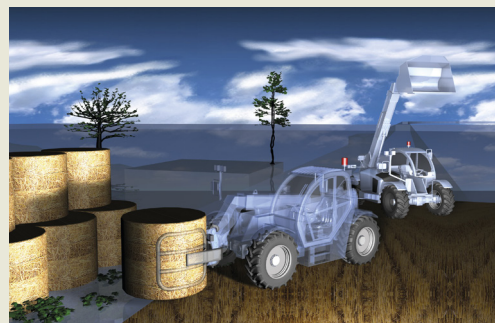
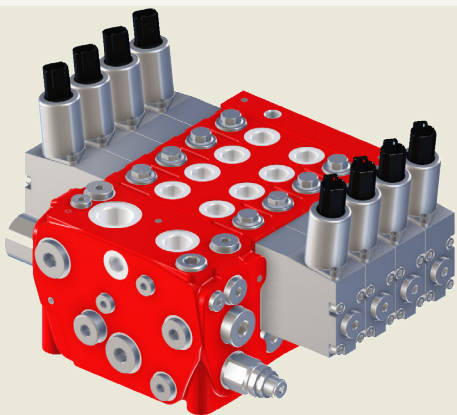
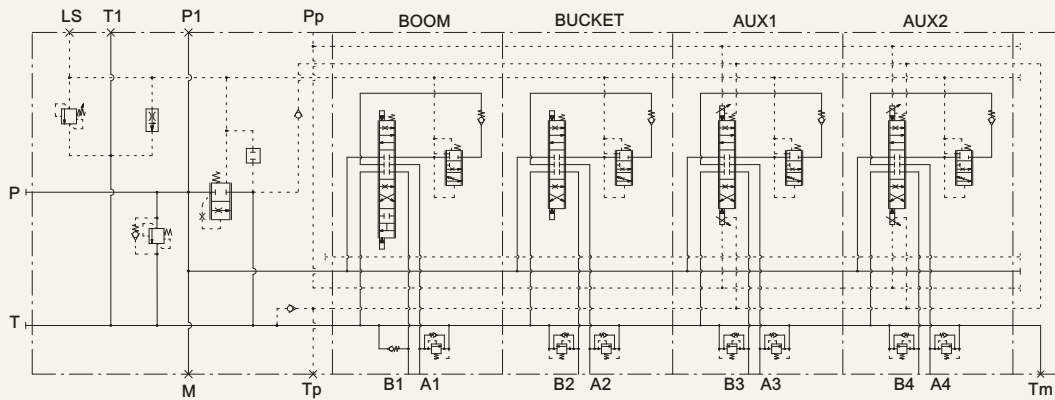
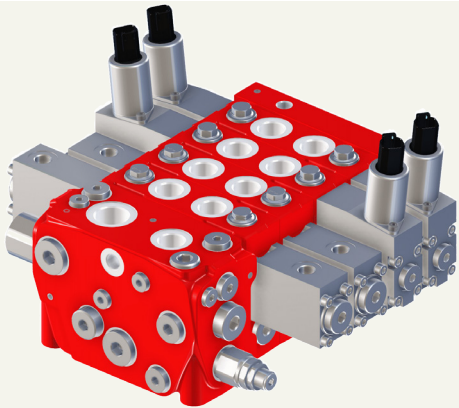
## Main features

- Flow sharing/priority compensator with check valve.
- Damped compensators for smooth controllability and functional instability reduction.
- Fully interchangeable spools with wide range of notch configurations, designed to reduce flow forces effect and to improve control hysteresis.
- Manual, hydraulic and electro-hydraulic proportional controls.
- Inlet and back cover arrangements: same standard options developed for HDS24.
- Electro-magnetic direct acting ON-OFF controls.
- High flexibility through a common body with interchangeable components: easy to switch between the different versions.
- Low pressure drops and high fatigue strength through numerical simulation and optimization: longer system lifetime.

## Technical Data

Max inlet flow		110 l/min
Nominal Work port flow		70 l/min
Max inlet pressure (P)		280 bar
Max work ports pressure (A/B)		320 bar
Max back pressure (T)	Standard	30 bar
	With electro-hydraulic positioner (EHO)	5 bar
Max internal leakage A/B-> T (at 100 bar, 23 mm <sup>2</sup> /s):	Without port valves std	10 cm <sup>3</sup> /min
	With port valves std	14 cm <sup>3</sup> /min
Fluid		mineral oil based
Fluid temperature (with NBR seals)		-20°C/ +80°C
Max fluid contamination		21/19/16 ISO4406:1999 (NAS 1638 class 10)
Viscosity operating range	recommended	from 15 to 75 mm <sup>2</sup> /s
	admissible	from 12 to 400 mm <sup>2</sup> /s
Max number of elements		12
Ambient temperature	with mechanical/hydraulic/pneumatic devices	from -30 to +60 °C
	with electric/hydraulic/electrohydraulic devices	from -30 to +50 °C

## Hydraulic circuits combination examples

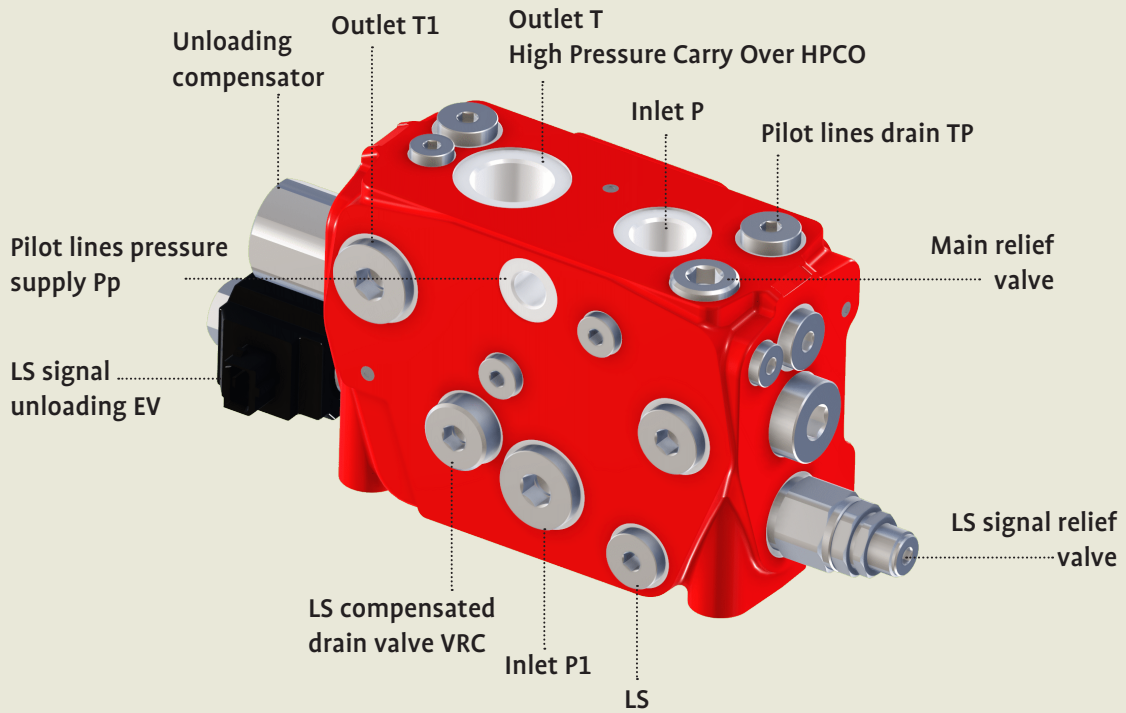


# Flow Sharing Valve HDS14

## Inlet cover options

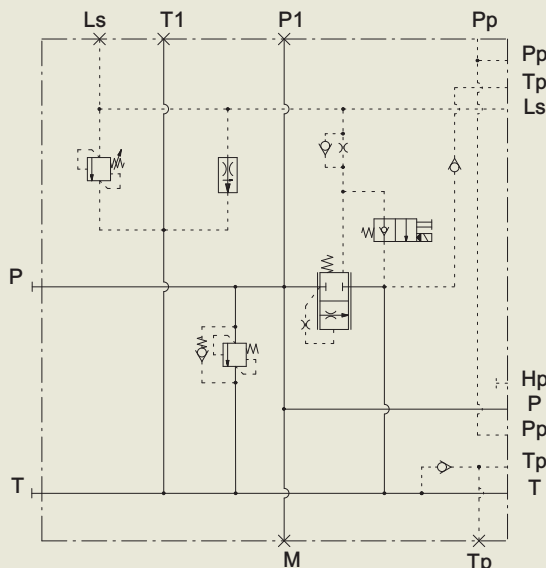
Standard inlet cover is designed with a flexible core arrangement in order to create different circuits to satisfy the requirements of several applications.

Simpler and more cost effective customized castings are foreseen to satisfy specific hydraulic circuits of OEM machines.

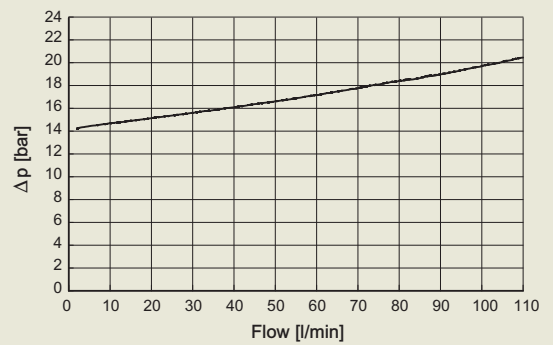


## System with fixed displacement pump (FP) - Example

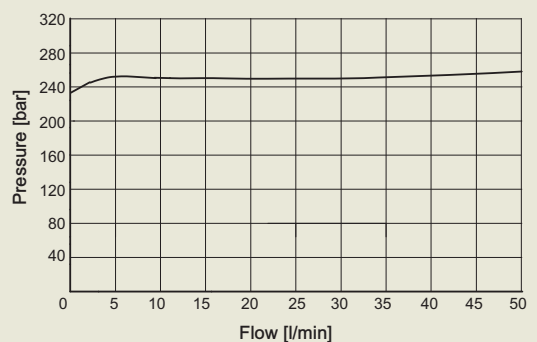
With LS relief valve + P relief valve + LS signal unloading valve + VS valve + VRC valve



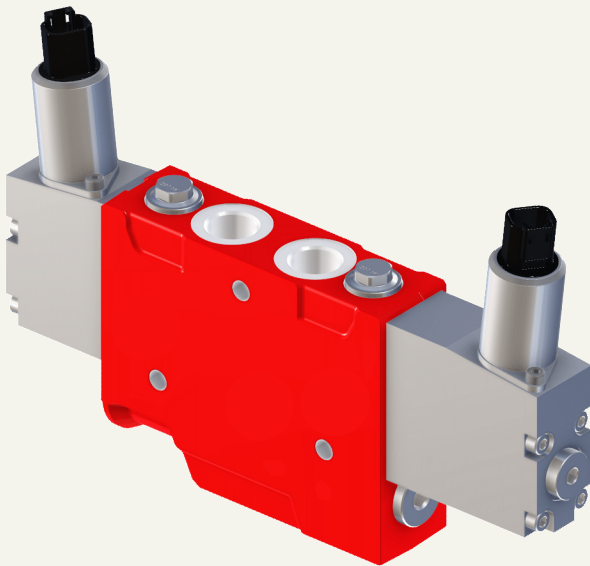
Unloading compensator P → T characteristic



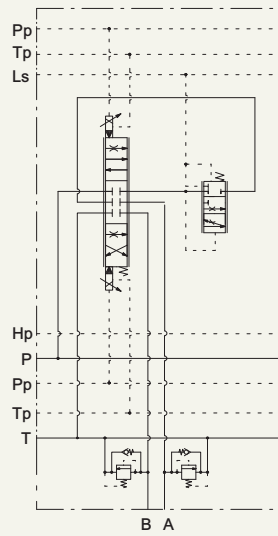
LS relief valve



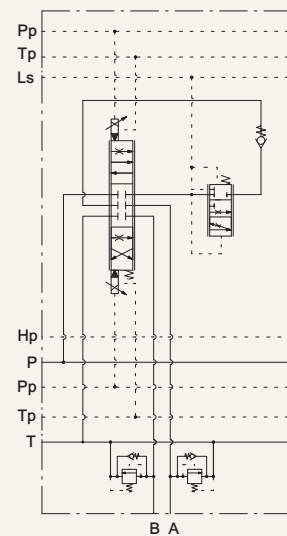
## Body arrangements



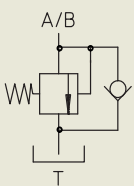
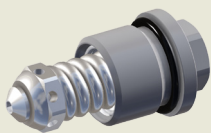
**KCS**



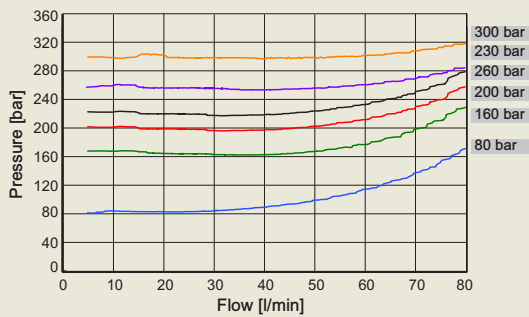
**KLS**



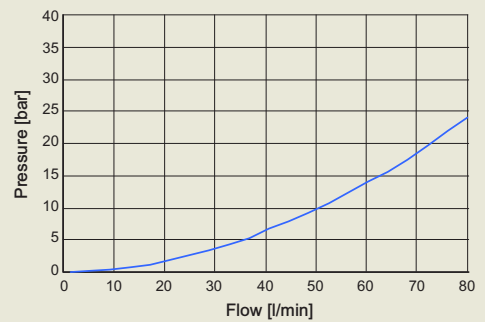
## Anti-shock and anti-cavitation valve (UC)



**Anti-shock**



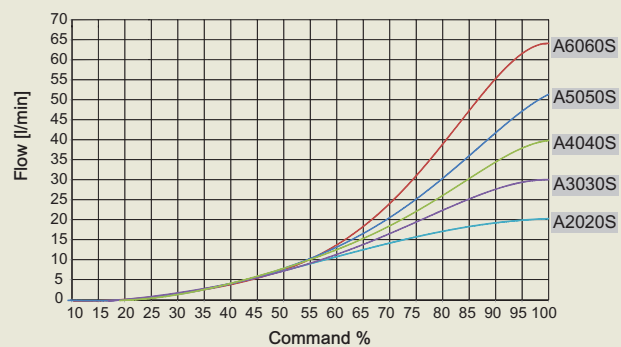
**Anti-cavitation**



## Standard spools

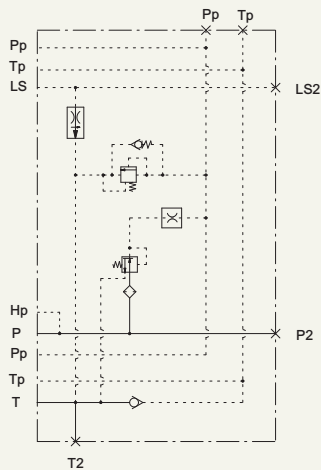
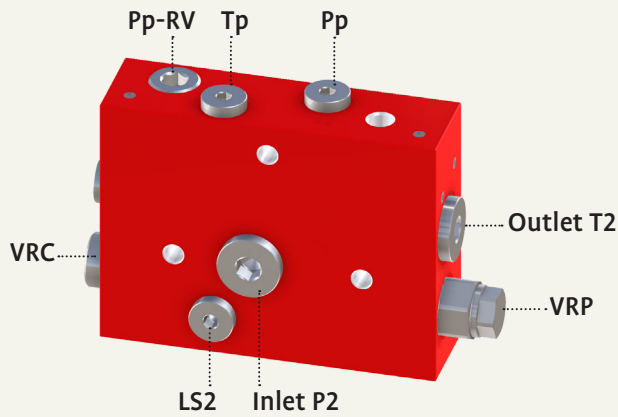
Spool ref.	Nominal flow
A1010S	10 l/min
A2020S	20 l/min
A3030S	30 l/min
A4040S	40 l/min
A5050S	50 l/min
A6060S	60 l/min
A7070S	70 l/min

**Standard spool metering curves**

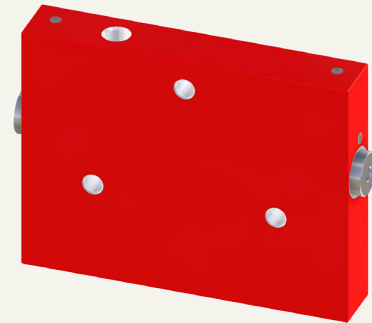


## End cover arrangements

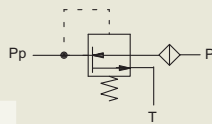
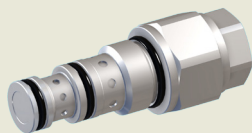
### PH cover



### Plate

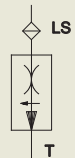


### Pressure reducing valve (VRP)



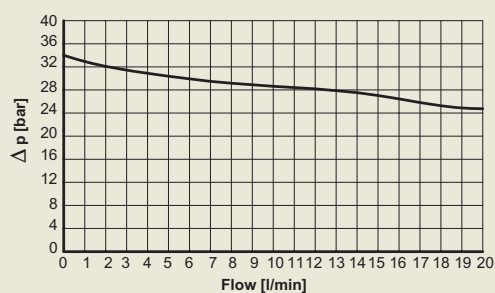
Type	Nominal pressure (Bar)
VALV VRP08-T32-F	32

### LS signal flow compensated drain valve (VRC)

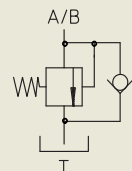
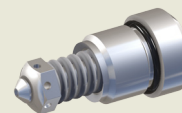


Type	Nominal flow l/min
VALV VRC D. 0,5	0,35

### Pressure vs flow curve P → Pp (reducing)

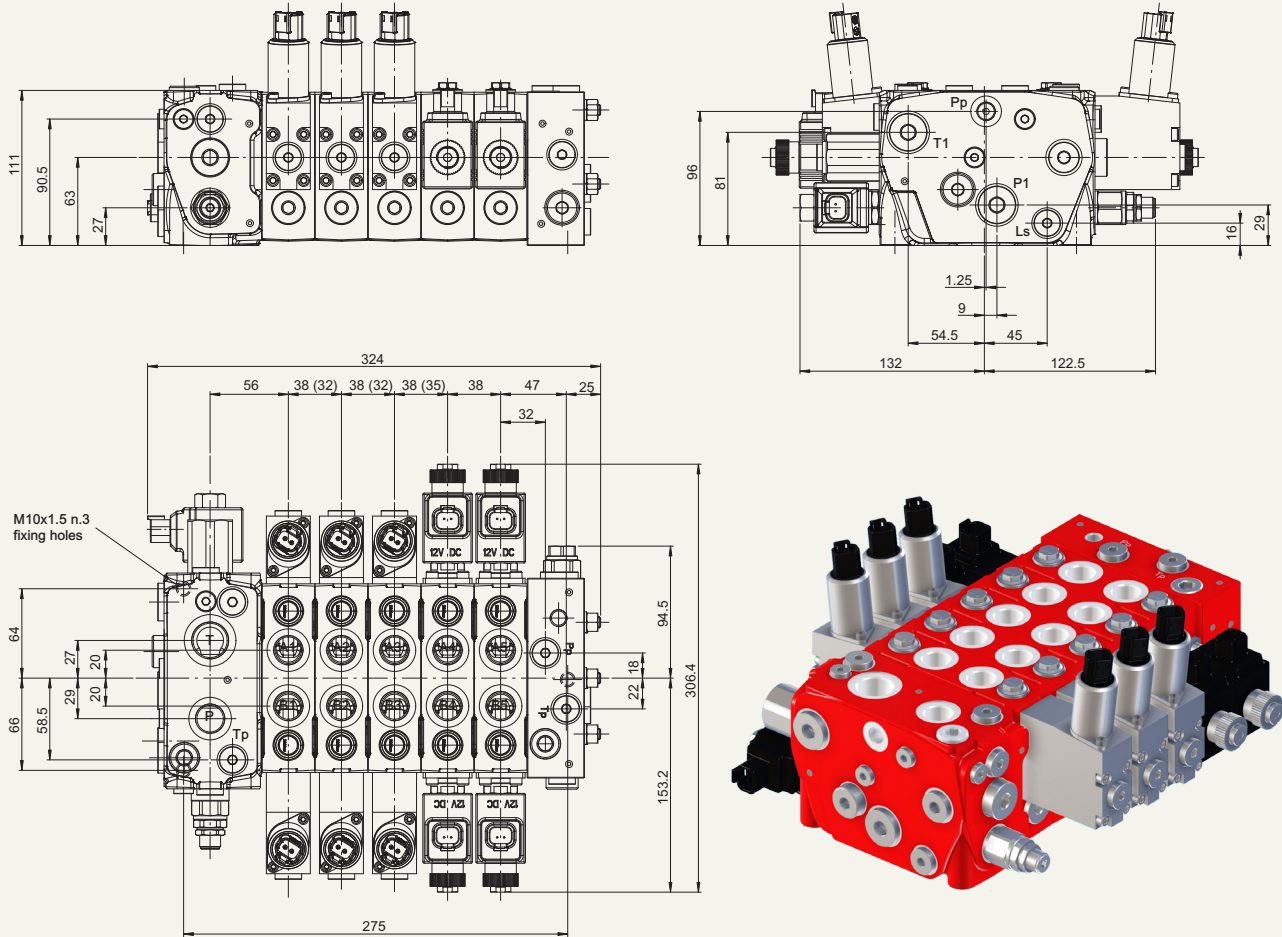


### Pilot pressure relief valve (Pp-RV)

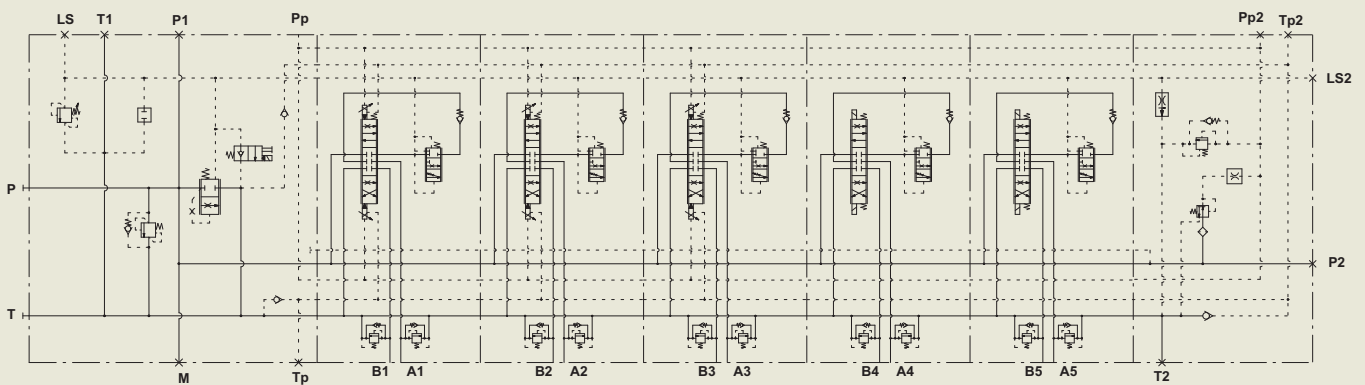


Type	Pressure setting at 10 l/min (bar)
VALV Pp-RV T.40	40

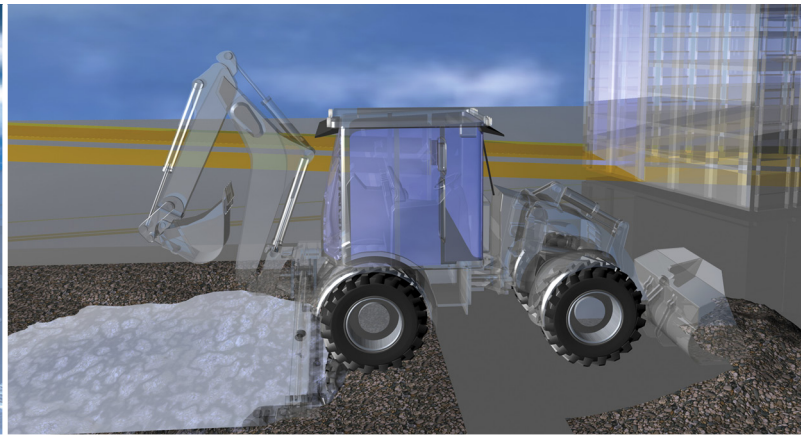
## Dimensions



## Hydraulic scheme



## Areas of Application



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For further information please do not hesitate to contact us.

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