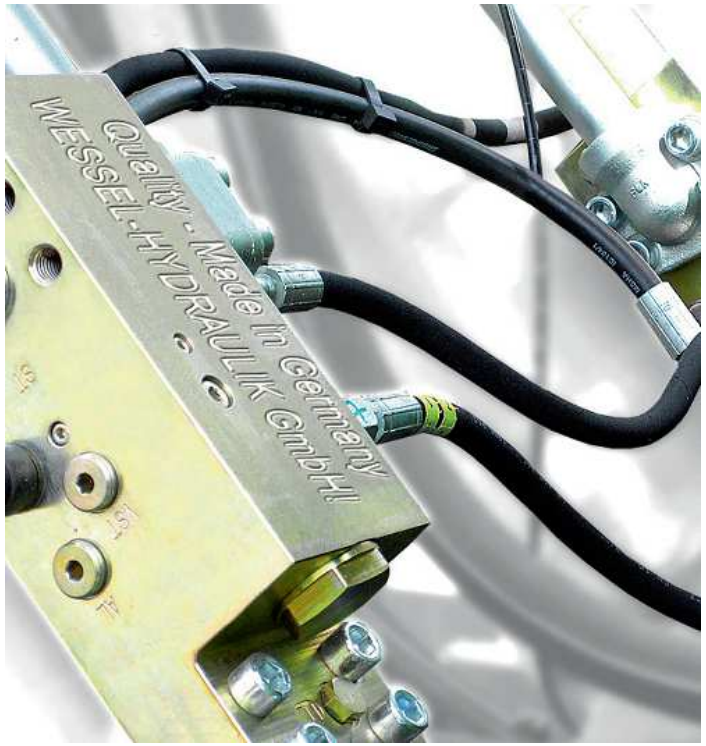
Safety for mobile construction machinery

WESSEL-HYDRAULIK GmbH



Valve types and their application

Rupture valves

Application:

Protection of cylinder, opened by external pilot pressure

Properties:

Leakage free
Low hysteresis
Smooth moving start
Load pressure compensated

Load holding valves

Protection of cylinders or motors, opened by internal pilot pressure (inlet pressure)

Leakage free
Low hysteresis
Smooth moving start
Load pressure compensated

Main applications

Rupture valves

Boom cylinders excavator

Boom cylinders cranes

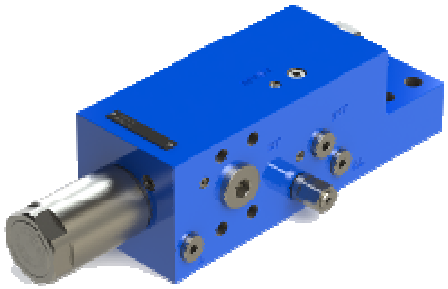
Load holding valves

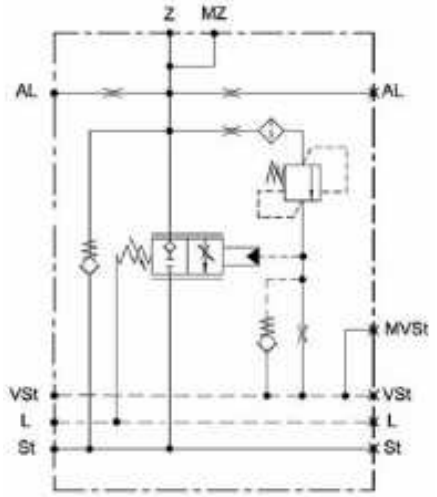
Boom cylinders

Winch motors

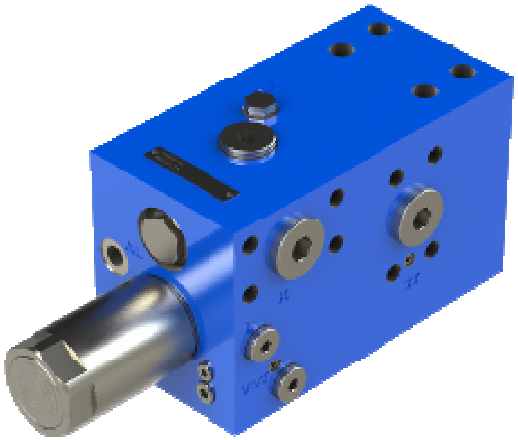
Types of rupture valves

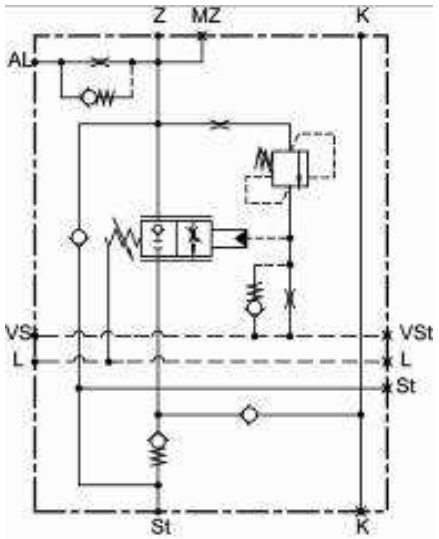
1. Standard (½“, ¾“, 1“, 11/4“)





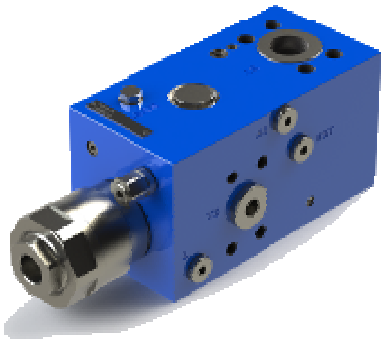
2. With regeneration (1“, 11/4“)

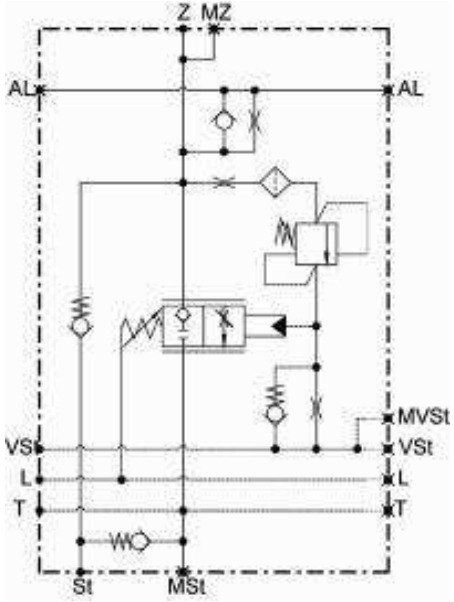




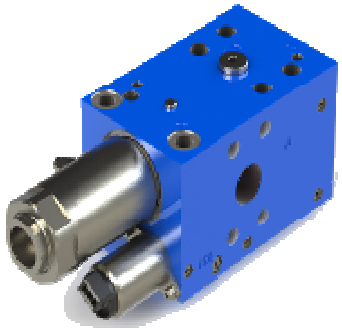
Types of rupture valves

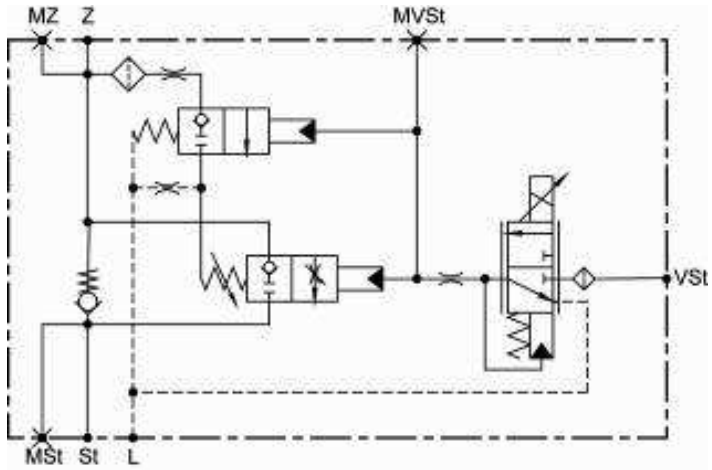
3. With additional T-port (1“)



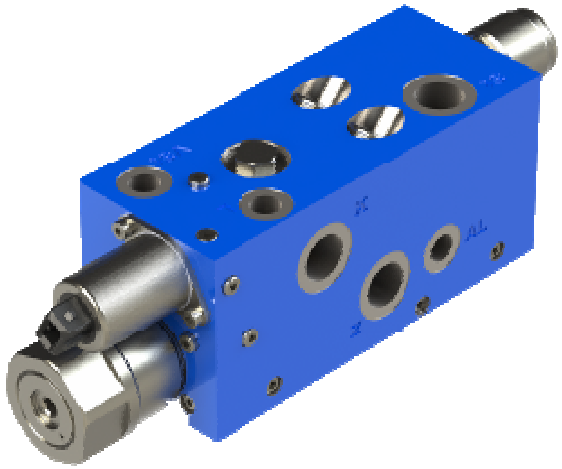


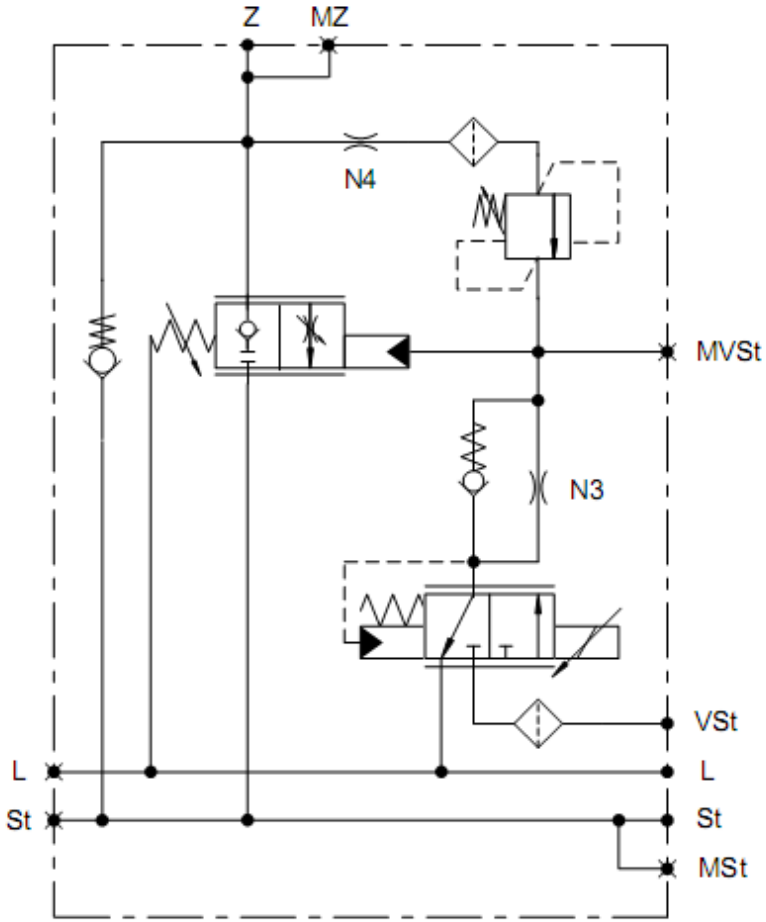
4. electric-proportional (1“)



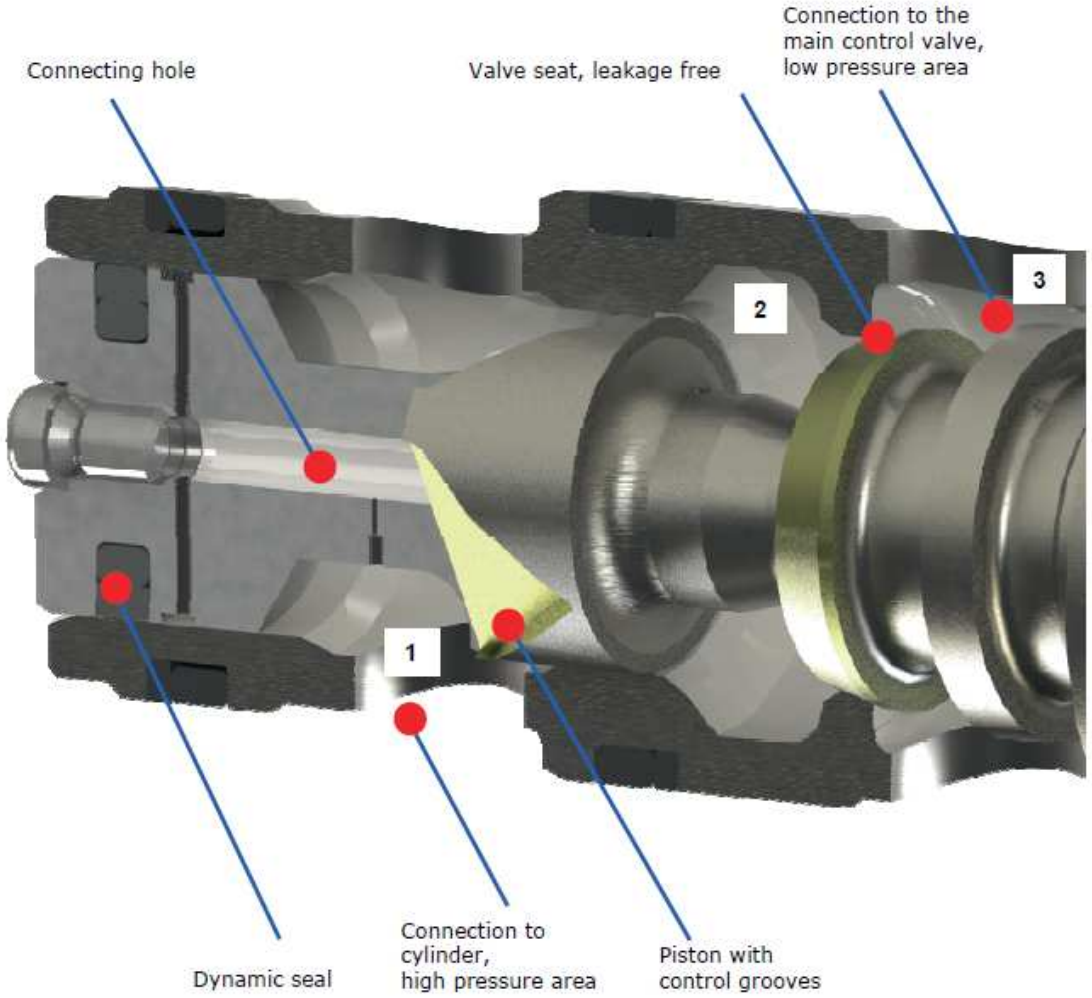


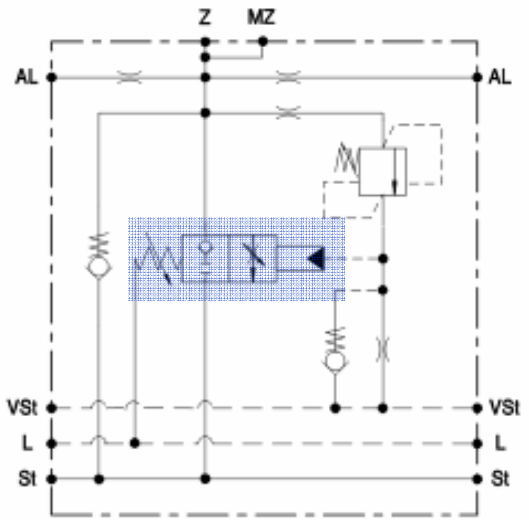
New Design of electric proportional rupture valves





Technique of rupture valve main spool





Advantages of Wessel rupture valves

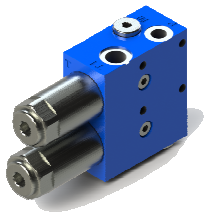
- Opening point independent of load pressure

- Also with high loads no starting shake

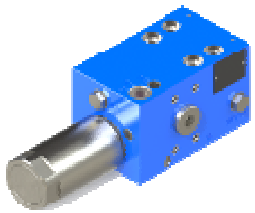
- low hysteresis and direct transmission of joystick movement

- Leakage free

Types of load holding valves



Type LHC
For oscillation-prone cylinder applications up to 60 l/min and 450 bar

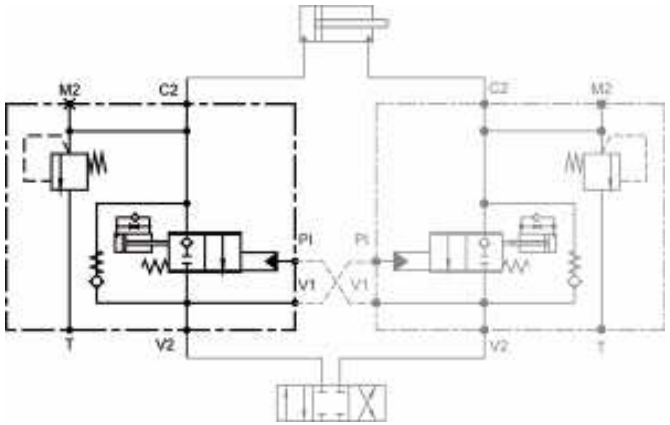


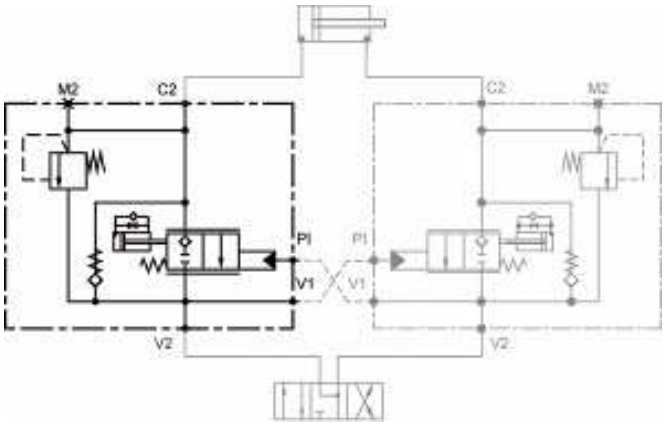
Type LHW
For motor and cylinder applications up to 500 l/min and 420 bar – mostly winch applications

Type LBM
For Travel-, track and winch drives up to 300 l/min and 420 bar

For oscillation-prone booms

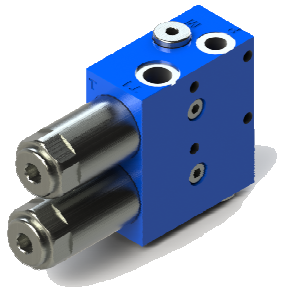
Typ LHC





The pressure relief valve opens to a separate tank line

The pressure relief valves opens to port V2



Functional elements:

Check valve: leakagefree and low pressure loss

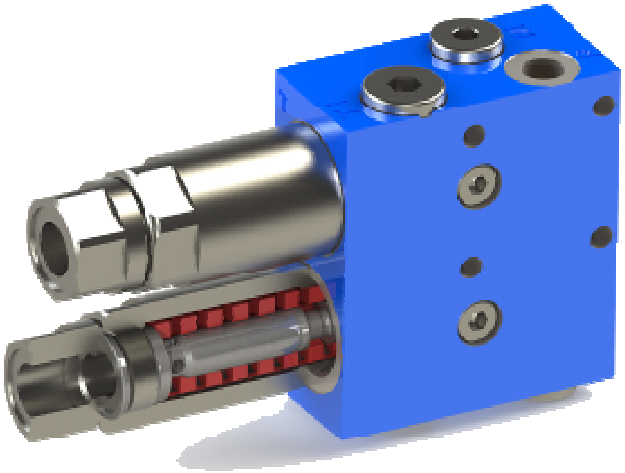
Braking spool: load indepent opening point and smooth start

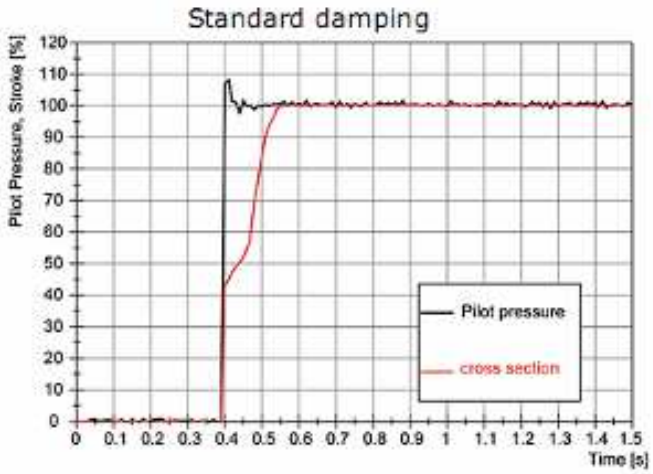
Pressure valve: pressure setting is possible up to maximum load pressure

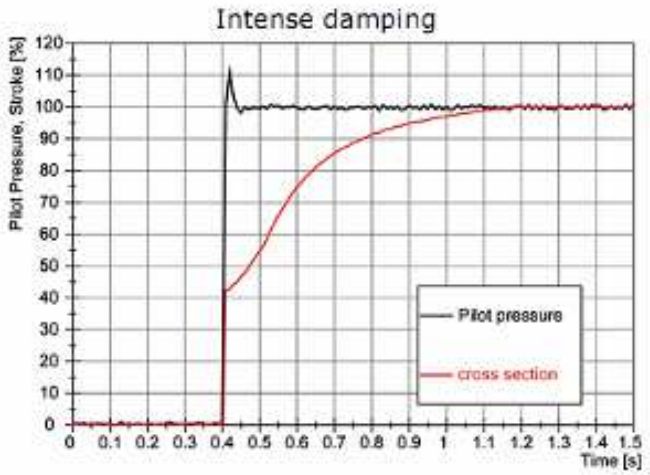
The damping makes the difference

Type LHC - design

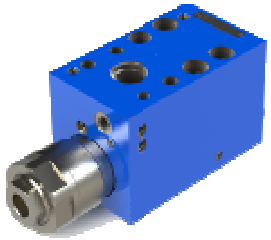
Special design for damping:
Use of damping cartridge





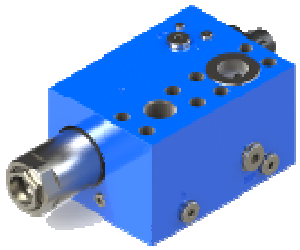


For (crane-) winches

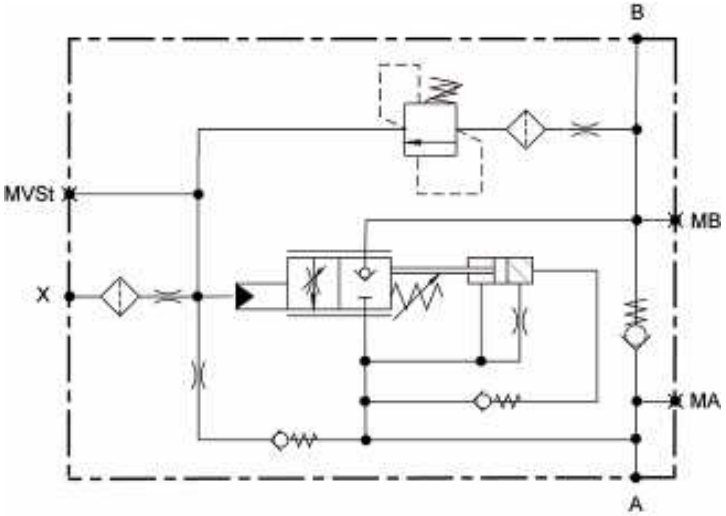


Type LHW

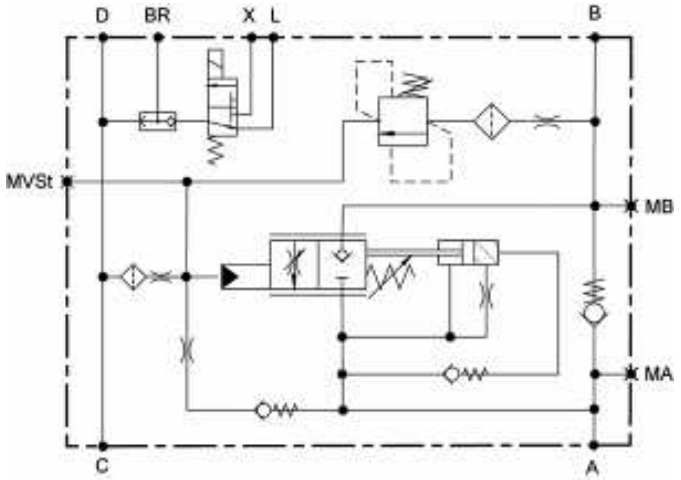
- Fast implementing
- Optimum damping characteristic
- Load indepent opening point and damping characteristic



For assembly on one of the connecting ports of the motor

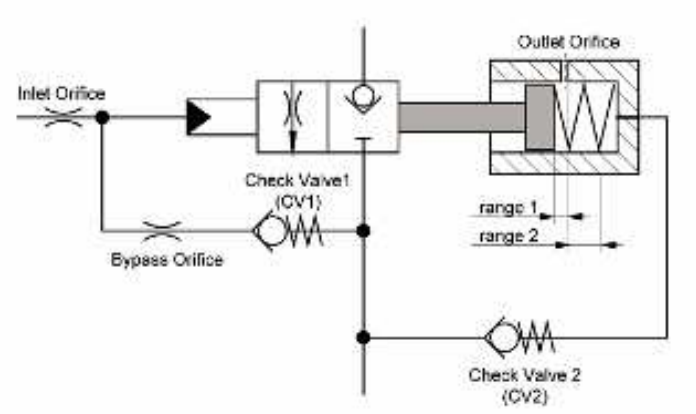


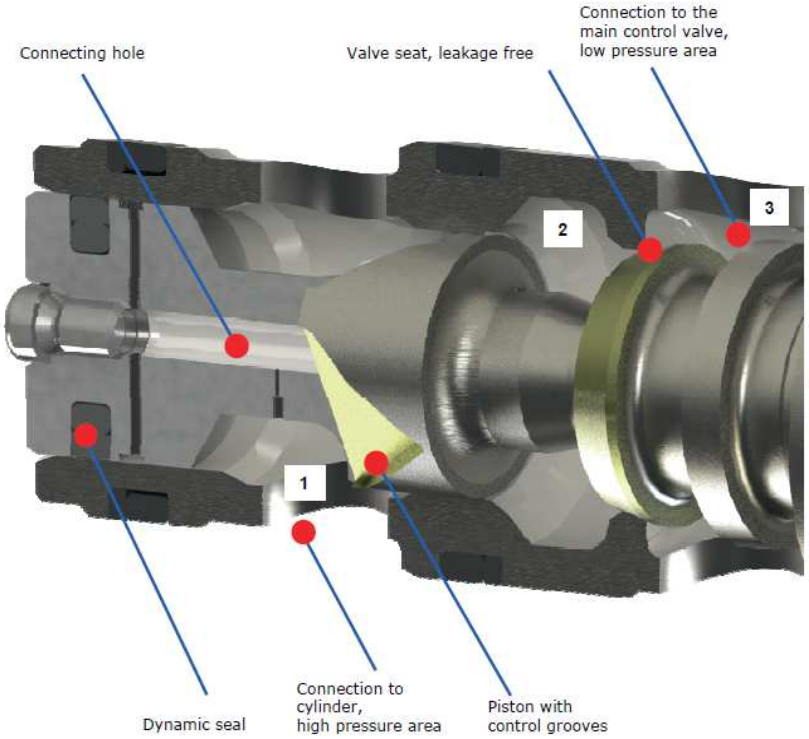
For assembly on both conneting ports of the motor (internal pilot pressure)



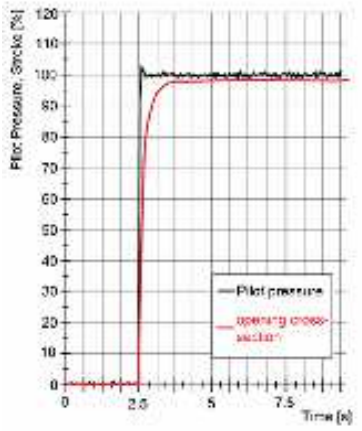
Vibration free lowering by high damping

Type LHW: Damping

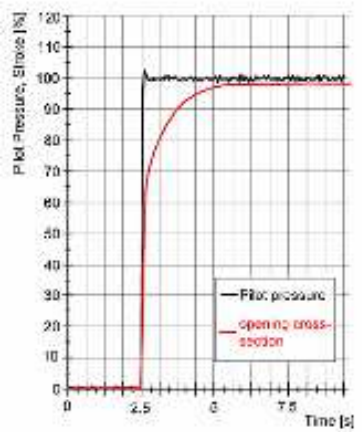




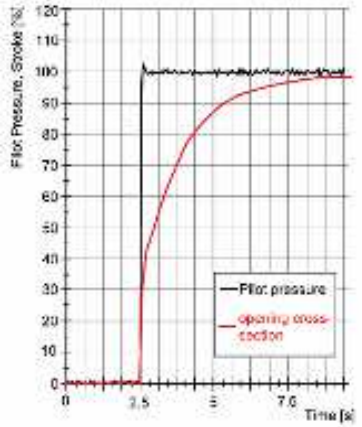
Stroke dependent damping



Minor damping



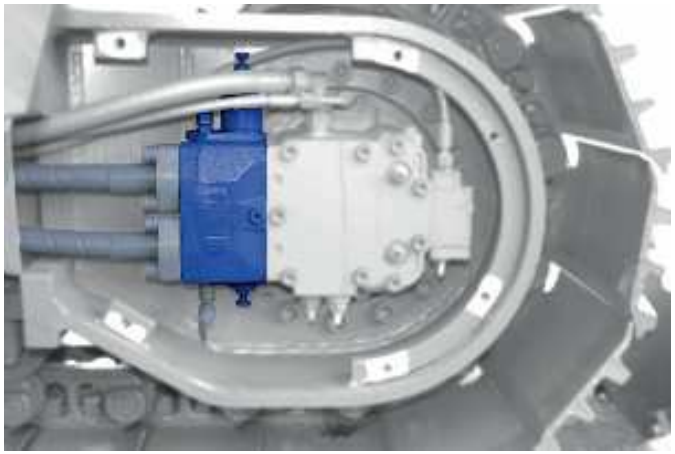
Medium damping

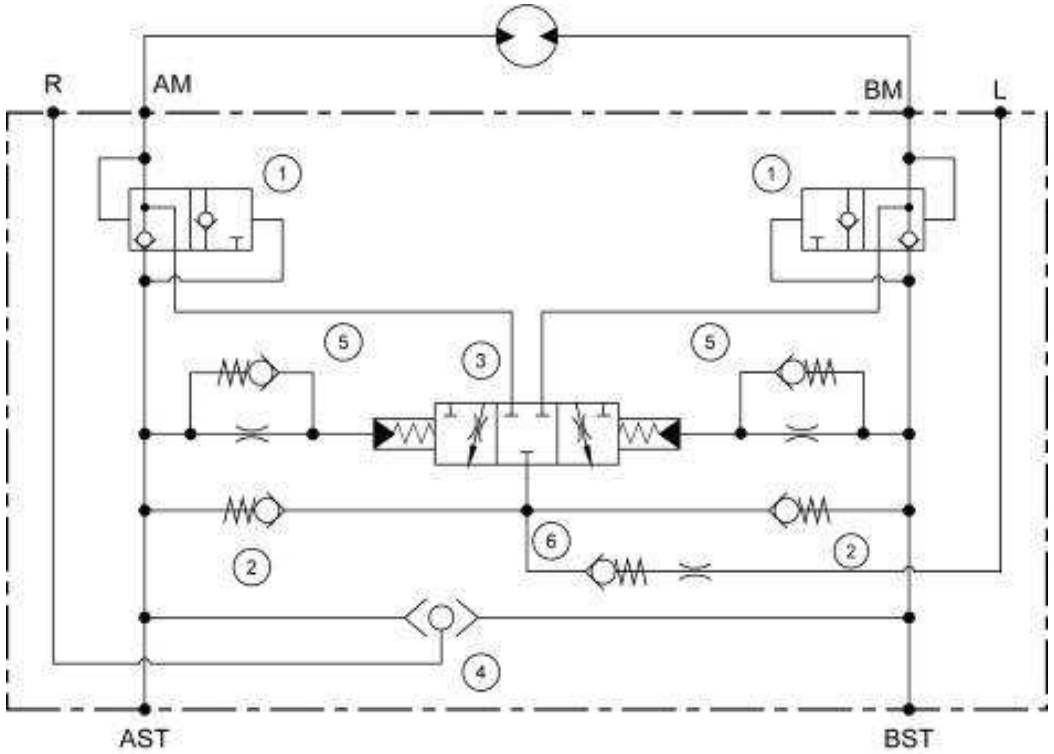


High damping

Brake valve for travel-,track-and winch motors

Type LBM



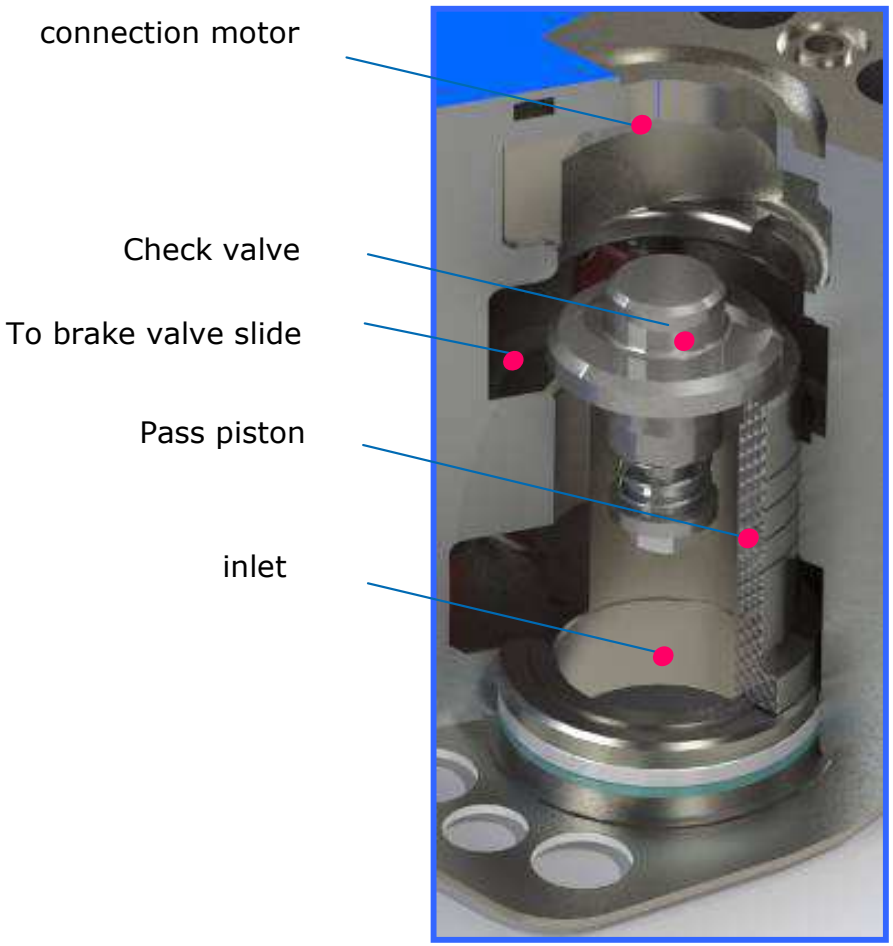


For direct assembling on the driving motor:
- Lowest pressure loss
- High damping possible
- Not leakagefree

Brake valve for travel-,track-and winch motors

Type LBM: Design

Patented flow divider allows a quick reverse of the motor also high damping. The oil flow can not circulate through the main piston to the tank side!



Quality und Service Wessel-Hydraulik

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