


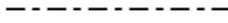




TECHNICAL INFORMATION


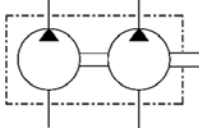
Hydraulic symbols



General symbols

graphic symbol	description
	direction and symbol of hydraulic control
	direction and symbol of pneumatic control
	variability of pump, spring, etc.

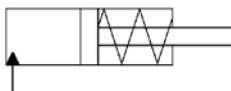

graphic symbol	description
	enclosure outline
	pilot line
	mechanical element (shaft, lever, piston)

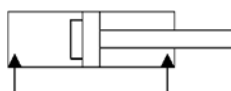
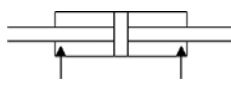
Symbols of energy transformation elements

graphic symbol	description
	one-way pump with constant flow rate
	two-stream pump

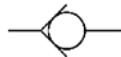


graphic symbol	description
	one-way actuator
	two-way actuator

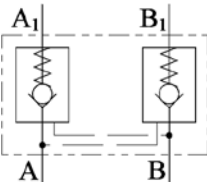
Hydraulic symbols of actuators (cylinders)

graphic symbol	description
	single acting cylinder with spring
	double acting cylinder

graphic symbol	description
	double-acting single end rod with cushioning on one side
	double-acting double end rod

Symbols of flow direction control elements *

graphic symbol	description
	check valve
	check valve with spring
	shut-off valve

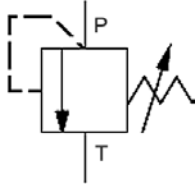
graphic symbol	description
	control check valve, double (load holding valve for double-acting actuator)
	- permissible flow directions:
	A → A1 at the same time B1 → B
	B → B1 at the same time A1 → A

* - dividers - see next page


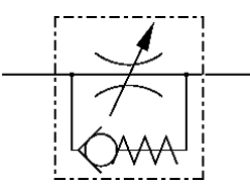
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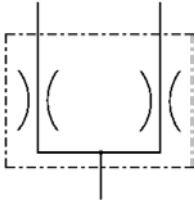
Hydraulic symbols

Symbols of pressure control elements












graphic symbol	description
	<p>full flow valve</p> <p>- pressure relief valve, variable (safety or overflow)</p>


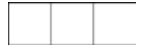



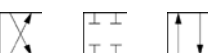
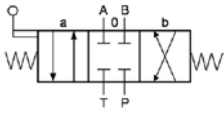
Symbols of flow rate control valves

graphic symbol	description
	<p>non-adjustable restrictor</p> <p>- flow restrictions depend on medium viscosity</p>
	<p>adjustable check valve with spring</p>

graphic symbol	description
	<p>adjustable restrictor</p> <p>- flow restrictions depend on medium viscosity</p>
	<p>flow divider</p>

Symbols of dividers

control symbols	
graphic symbol	description
	hand operated
	lever
	spring
	push button
	three-position lock
	electromagnet with single solenoid
	electromagnet with push/pull solenoid
	indirect hydraulic control by pressure increase
	indirect proportional hydraulic control by pressure increase
	indirect pneumatic control
	indirect proportional pneumatic control

control symbols	
graphic symbol	description
	two-way directional valve
	three-way directional valve
	<p>two ways combined - normally open</p> <p>- arrow signifies direction of the medium flow (from higher to lower pressure)</p>
	two ways closed - flow closed
	three-way valve (examples)
	four-way valve (examples)
	<p>example (divider 4/3)</p> <p>number of flows number of positions</p> <p>- 0 (rest position)</p> <p>- a, b (set position)</p> <p>- P (inlet flow)</p> <p>- T (outlet flow)</p> <p>- A, B (flows)</p>