

Hydraulic symbols

PUMPS

Graphic symbol		Item	Description
(a)	(b)	Fixed displacement pump	One flow direction (a)
			Two flow directions (b)
(a)	(b)	Variable displacement pump	One flow direction (a)
			Two flow directions (b)
		Hand pump	Lever pumping

MOTORS

Graphic symbol		Item	Description
(a)	(b)	Fixed displacement motor	One rotation direction (a)
			Two rotation directions (b)
(a)	(b)	Variable displacement motor	One rotation direction (a)
			Two rotation directions (b)
		Rotary actuator	Hydraulic motor with limited angle of rotation

CYLINDERS

Graphic symbol		Item	Description
(a)	(b)	Single-acting cylinder	Return stroke by external force (a)
			Return stroke through a spring (b)
(a)	(b)	Double-acting cylinder	Single rod (a)
			Double rod (b)
(a)	(b)	Cylinder with fixed stroke end cushioning	Cushioning on one side (a)
			Cushioning on both sides (b)
(a)	(b)	Cylinder with adjustable stroke end cushioning	Cushioning on one side with adjustment (a)
			Cushioning on both side with adjustment (b)
(a)	(b)	Telescopic cylinder	Single-acting (a)
			Double-acting (b)

PRESSURE CONTROL VALVES

Pressure relief valve Direct operated Pilot operated		Sequence valve Direct operated Pilot operated	
Pressure reducing valve Direct operated Pilot operated		Counterpressure valve 	

FLOW CONTROL VALVES

Variable throttling valve Two way With check		Compensated flow regulator Two-way Three-way	

DIRECTIONAL CONTROL VALVES

Check valves			
without spring 	With spring, normally closed 	Piloted operated 	Piloted with drain
Directional valves (spool type)			
2 ways - 2 positions 	3 ways - 2 positions 	4 ways - 2 positions 	4 ways - 3 positions
Controls for directional valves			
Detent 	Pushbutton 	Lever 	Adjustable stroke limiter
Spring 	Cam 	Electric (solenoid) 	Electro-hydraulic
Pneumatic 	Hydraulic 	Electric (proportional) 	Electro-hydraulic (proportional)

ENERGY TRANSMISSION AND ACCESSORIES

Graphic symbol	Item	Description
	Motor	Electric
		Engine
	Pipings and connections	Main
		Pilot
		Drain
		Flexible hose
		Connection point
		Crossing
		Branching
	With connected piping	
	Coupling	Fast coupling
		With check valves

Graphic symbol	Item	Description
	Reservoir	Pipings above level
		Pipings under level
		Pressurized reservoir
(a) (b)	Spool position sensor on-off	Mechanical microswitch (a) Inductive proximity sensor (b)
	Hydraulic accumulator	
	Filter	
	Heat exchanger	Heater
		Cooler
		Liquid operated cooler
	Pressure gauge	
	Pressure switch	
	Rotating shaft	1 direction
		2 directions