

Pneumatics Symbols

DIN ISO1219-1, 03/96. Graphic symbols for pneumatic equipment.

Circuit symbols are used through this catalogue and on the labels of most SMC Pneumatic products.

There are several symbol systems and conventions in use around the world, most officially recognised by standards bodies. Commonly used is ISO1219-1.

The symbols found in this catalogue generally conform to the Japanese Industrial Standard (JIS) in many cases, there is no difference between JIS and ISO circuit symbols.

The situation also occurs when SMC develop new product systems for which an ISO or JIS symbol does not exist. Examples include the MGZ high power cylinder or the AV series air operated soft start / release valve. In this situation either a composite symbol showing a representative circuit is used, or the nearest standard symbol is modified by SMC.

For assistance a table below shows both ISO symbols, which may differ from JIS symbols in this catalogue, and common ISO/JIS/SMC Symbols.

Volume 1



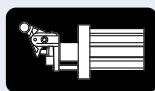
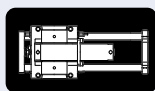
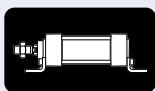
Symbol	Description
	Directional control valve 2/2-way valve, closed normal position
	Directional control valve 2/2-way valve, open normal position
	Directional control valve 3/2-way valve, closed normal position
	Directional control valve 3/2-way valve, open normal position
	Directional control valve 3/3-way valve, closed neutral position
	Directional control valve 4/2-way valve
	Directional control valve 4/3-way valve, closed neutral position
	Directional control valve 4/3-way valve, exhaust neutral position
	Directional control valve 5/2-way valve
	Directional control valve 5/3-way valve, closed neutral position

Symbol	Description
	Directional control valve 5/3-way valve, exhaust neutral position
	Directional control valve 5/3-way valve, open neutral position
	Manual Control General
	Manual Control Button
	Manual Control Lever
	Manual Control Pedal
	Mechanical Control Plunger
	Mechanical Control Spring
	Mechanical Control Roller
	Mechanical Control Roller with idle return
	Solenoid with one effective winding
	Solenoid with two windings acting in opposition
	Combined Control by solenoid and pilot valve
	Pressure Control
	Shuttle valve
	Pneumatic- Electric-Relay
	Pneumatic indicator
	Silencer
	Pressure Control Valve Air operated
	Mechanical Component Detent

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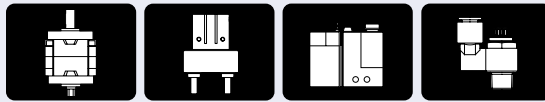
Symbol	Description
	Single-acting cylinder, single piston rod, return stroke by external force
	Double-acting cylinder, single piston rod
	Double-acting cylinder, non-rotating single piston rod
	Double-acting cylinder, rear boss mount, single piston rod
	Double-acting air-hydro cylinder, single piston rod
	Double-acting cylinder with double piston rod
	Double-acting cylinder with double non rotating piston rod
	Double-acting air-hydro cylinder with double piston rod
	Single-acting cylinder, single piston rod, return stroke by spring
	Single-acting cylinder, non rotating single piston rod, return stroke by spring

Symbol	Description
	Single-acting cylinder, single piston rod, stroke by spring, return stroke by air pressure
	Single-acting cylinder, non rotating single piston rod, stroke by spring, return stroke by air pressure
	Double-acting cylinder with cushioning adjustable at both ends, single piston rod
	Double-acting cylinder with cushioning adjustable at both ends, double piston rod
	Magnetically coupled rodless cylinder
	Double-acting cylinder, single piston rod, with built in speed controller
	Double-acting cylinder, double piston rod, with built in speed controller
	Stroke reading cylinder, single piston rod
	Stroke reading cylinder with brake, single piston rod
	Double-acting cylinder with lock, single piston rod

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Volume **3**

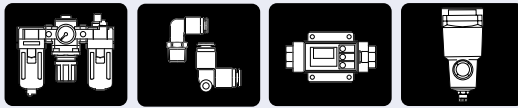


Symbol	Description	Symbol	Description
	Semi-rotary actuator, double acting		Safety speed control valve. Meter-out control style: A control valve with cylinder speed control function, fixed throttle, rapid air supply function
	Flow control valve. Throttle valve, adjustable, with silencer		Safety speed control valve. Meter-in control style: A control valve with cylinder speed function and rapid air supply function
	Non-return valve, without spring		Vacuum ejector
	One way flow control valve, adjustable		Vacuum ejector, with built-in silencer
	Non-return valve, dual speed controller with one-touch fittings		Multistage vacuum ejector, with filter and built-in silencer
	Quick exhaust valve		Multistage vacuum ejector, with filter, built-in silencer and vacuum pressure gauge
	Quick exhaust valve with silencer		Multistage vacuum ejector, with filter, built-in silencer and vacuum pressure switch
	Quick exhaust valve with speed exhaust controller and silencer		Vacuum pressure switch unit
	Speed controller with residual pressure release valve		Energy Transmission Filter
	Speed controller with pilot check valve		

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Volume **4**



Symbol	Description
	Pressure control valve, relieving pressure regulator, adjustable
	Filter with water trap
	Filter with water trap, automatic
	Water trap with automatic drain
	Mist separator
	Micro mist separator
	Lubricator
	Dryer
	Cooler
	Pneumatic pressure gauge

Symbol	Description
	Air preparator, Service unit (simplified graph)
	Air combination, Air filter, regulator and Lubricator
	Air combination, Air filter and regulator
	Air combination, Air filter, mist separator and regulator
	Air combination, Mist separator, regulator and pressure gauge
	Pneumatic booster regulator, handle operated
	Adjustable pressure switch
	Non adjustable pressure switch
	Pneumatic capacitor
	Non-return valve, without spring