

SCHEMATICS AND SYMBOLS

These symbols are based upon the international ISO 1219 fluid power symbols. Only the most common symbols have been included. Composite symbols can be devised for any fluid power components by combining the relevant basic symbols.

Pumps, motors and drives

	Fixed	Variable
Single direction pump		
Double direction pump		
Single direction motor		
Double direction motor		
Single direction pump/motor with reversal of flow direction		
Single direction pump/motor with single flow direction		
Double direction pump/motor with two directions of flow		
Hydrostatic drive, split system type		
Hydrostatic drive, compact, reversible output		
Semi rotary actuator		
Air compressor		
Vacuum pump		

Air motor, single direction	
Air motor, double direction	
Semi rotary actuator	

Linear actuators

Single acting ram (load returns the ram)	
Single acting actuator (load returns the piston)	
Single acting actuator (spring returns the piston)	
Double acting actuator	
Differential actuator with oversize rod	
Double acting actuator with double ended rod	
Piston with adjustable end cushioning	

Piston with fixed end cushioning



Telescopic, single acting actuator



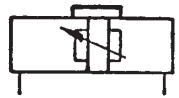
Telescopic, double acting actuator



Pressure intensifier



Rodless acting, double acting with cushioning



Double acting with impact stroke



Rodless with magnetic coupling



Hydraulic pilot



Solenoid



Solenoid/hydraulic pilot



Pneumatic/hydraulic pilot



Two stage amplifier



One way trip lever



Wire sensor (whisker)



Key operator



Air spring (internal)



Spring centred



Valve control mechanisms

Undefined control



Hand lever (rotary or linear)



Push button



Foot lever



Cam roller



Plunger (piston or ball)



Spring



Detent mechanism



Pressure relief



Pressure applied



Pneumatic pilot



Directional control valves

Directional control valve with two discrete positions



Directional control valve with three discrete positions



Directional control valve with significant cross-over positions



Valve with two discrete and an infinite number of intermediate throttling positions



Valve with three discrete and an infinite number of intermediate throttling positions



Two position, two port valve



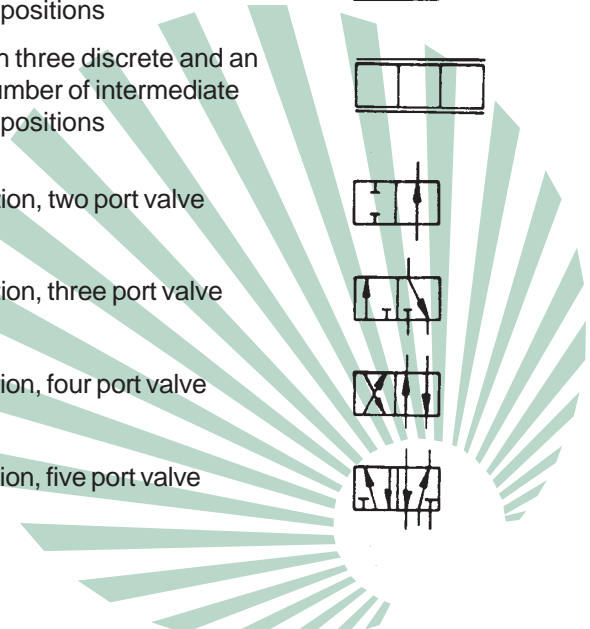
Two position, three port valve



Two position, four port valve



Two position, five port valve

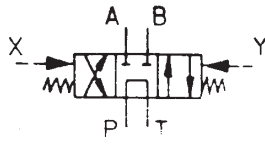


Three position, four port valve with fully closed centre configuration

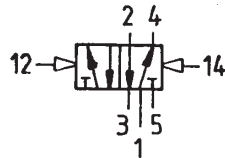


Port labelling

Working lines A,B
 Pilot lines X,Y
 Pressure line P
 Tank line T



Port labelling with numbers



Check valve



Spring loaded check valve



Pilot operated check valve



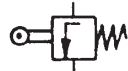
OR function valve



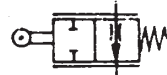
AND function valve



Deceleration valve

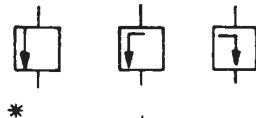


Deceleration valve



Pressure controls

Throttling orifice normally closed or normally open (* optional)



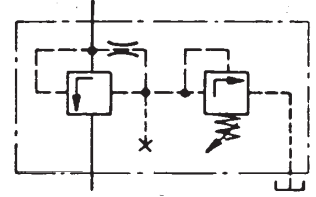
Pressure relief valve (fixed)



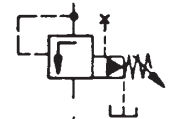
Pressure relief valve (adjustable)



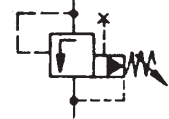
Detailed symbol of pilot operated pressure relief valve (compound relief valve)



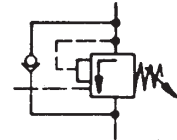
Simplified symbol of compound relief valve (Pilot flow externally drained)



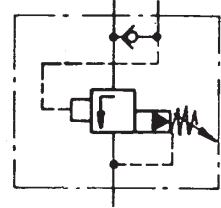
(Pilot flow internally drained)



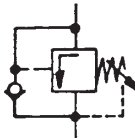
Brake valve



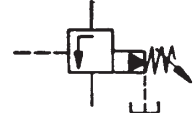
Unloading valve (accumulator charging valve)



Counter balance valve (back pressure valve)



Sequence valve with remote control (external pilot)



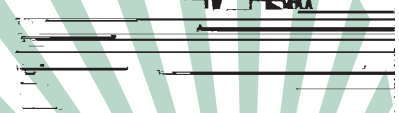
Sequence valve with direct control (internal pilot)



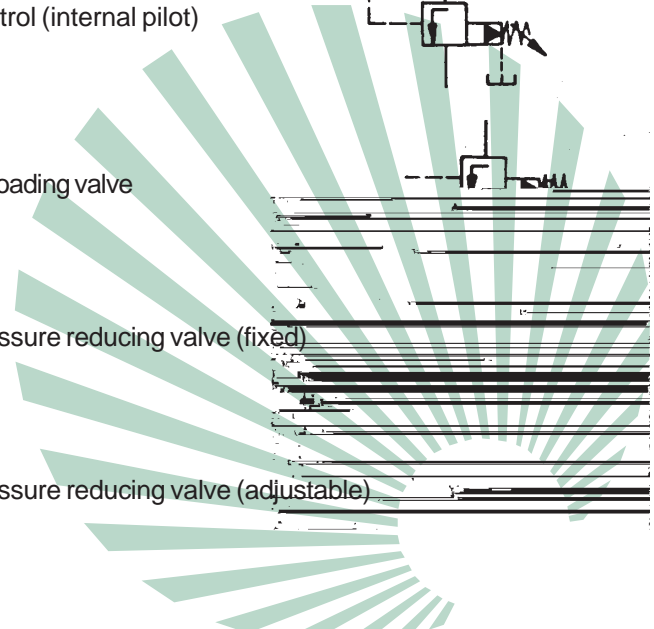
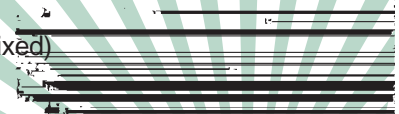
Offloading valve



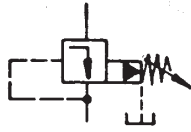
Pressure reducing valve (fixed)



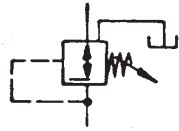
Pressure reducing valve (adjustable)



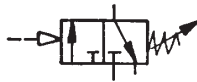
Pilot operated pressure reducing valve



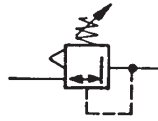
Pressure reducing valve with secondary system relief



Pneumatic pressure sequence valve



Pneumatic pressure reducing valve with secondary relief



Flow controls

Throttle valve not affected by viscosity



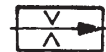
Throttle valve (fixed)



Throttle valve (adjustable)



Flow control valve, pressure and temperature compensated



Flow control valve with reverse free flow check



By-pass flow control valve



Flow divider



Pneumatic flow control valve with reverse free flow check



Quick exhaust valve



Pneumatic cam operated deceleration valve



Fluid plumbing and storage

Pressure source



Working line, return line, feed line



Pilot control line



Drain line



Enclosure line



Flexible line



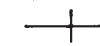
Electric line



Pipeline connections



Cross pipeline (not connected)



Air vent



Reservoir with inlet below fluid level



Reservoir with inlet above fluid level



Miscellaneous symbols

Electric motor



Heat engine



Electric motor with pump and drive coupling



Plugged line



Plugged line with take-off line



Quick connect coupling



Rotary connection



Accumulator

