



The Australian Organisation for Fluid Power & Motion Control Professionals

# ISO/CETOP Fluid Power Symbols

<b>Basic Symbols</b> Shaft, lever, rod, piston Spring Throttling, viscosity dependent Restriction, not viscosity dependent Flow direction Direction of rotation Variable setting Working Lines - Pressure & Return Pilot Control Line - External/Internal drain line Enclosure of two or more functions contained in one unit Flexible Line Connection Tube & Pipe Line Connection Line Crossing - not connected Hydraulic source of energy Pneumatic source of energy	<b>Cylinders</b> Single acting Double acting Differential cylinder Cylinder with cushion	<b>Flow Control</b> Restrictor, fixed Restrictor, variable Restrictor, not viscosity dependent Throttle-check valve 3-way by-pass flow regulator Flow divider	Solenoid Mechanical Roller Direct pressure Pressure rise With transient intermediate position Mechanical feed back Hand operated Lever Roller Hydraulic operated pressure rise Pneumatic operated Direct pressure Solenoid Motor operated Solenoid, hydraulic-operated PVEO PVEM PVEH Pneumatic, hydraulic-operated Mechanical detent Spring return						
				<b>Check Valves</b> Check valve, not spring loaded Check valve, spring loaded Pilot controlled check valve Pilot controlled opening Pilot controlled closing Example Simplified	<b>Direction Control</b> Two - way Three - way Two - way with cross over position Without fixed position 2 - extreme position 2 - extreme position and between (OSP) 2/2 - valve 3/2 - valve 4/3 - valve Typical 4/3 valve crossover configuration Typical valve build arrangements Typical valve centre configurations	<b>Motion Controls</b> Overcentre Valve Check-Q-Meter			
							<b>Pumps &amp; Motors</b> Fixed capacity pump with one direction of flow Fixed capacity pump with two directions of flow Variable capacity pump with one direction of flow & undefined control mechanism in open circuit Variable capacity pump with two directions of flow & undefined control mechanism in closed circuit Fixed capacity motor with uni-directional output Fixed capacity motor with bi-directional output Variable capacity motor with uni-directional output & undefined control mechanism Variable capacity motor with bi-directional output & undefined control mechanism	<b>Pressure Controls</b> Normally closed Normally open Pressure limiting valve, fixed setting Pressure limiting valve, variable setting Pressure limiting valve, pilot controlled with external drain line Pressure limiting valve, pilot controlled with internal drain line Pressure reducing valve, pilot controlled with external drain line Pilot operated normally closed valve with external drain line Pilot operated normally open valve with internal drain line Pressure Switch Bladder Accumulator	
									<b>Legend</b> A. B. Work Lines P. Pump connection (pressure) R. S. T. Return/Tank X. Y. Z. Pilot line L. Drain line