

■ Lines	
	Line, Working (Main)
	Line, Pilot or Drain
	Flow Direction Hydraulic Pneumatic
	Lines Crossing
	Lines Joining
	Lines With Fixed Restriction
	Line, Flexible
	Station, Testing, Measurement or Power Take-Off
	Variable Component (run arrow through symbol at 45)
	Pressure Compensated Units (Arrow parallel to short side of symbol)
	Temperature Cause or Effect
Reservoir	
	Vented
	Pressurized
Line, To Reservoir	
	Above Fluid Level
	Below Fluid Level
	Vented Manifold

■ Hydraulic Pumps	
	Fixed Displacement
	Variable Displacement

■ Motors and Cylinders	
Hydraulic	
	Fixed Displacement
	Variable Displacement
	Cylinder, Single-Acting
Cylinder, Double-Acting	
	Single End Rod
	Double End Rod
	Adjustable Cushion Advance Only
	Differential Piston

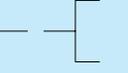
■ Miscellaneous Units	
	Electric Motor
	Accumulator, Spring Loaded
	Accumulator, Gas Charged
	Heater

■ Miscellaneous Units	
	Cooler
	Temperature Controller
	Filter, Strainer
	Pressure Switch
	Pressure Indicator
	Temperature Indicator
	Component Enclosure
	Direction of Shaft Rotation (assume arrow on near side of shaft)

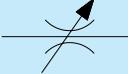
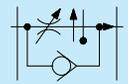
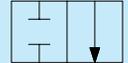
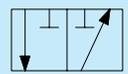
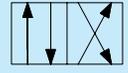
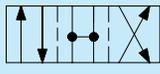
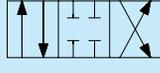
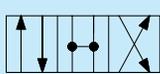
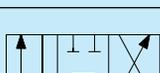
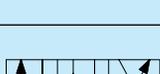
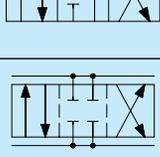
■ Methods of Operation	
	Spring
	Manual
	Push Button
	Push-Pull Lever
	Pedal or Treadle
	Mechanical
	Detent
	Pressure Compensated

Hydraulic Symbols

Methods of Operation

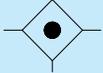
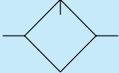
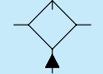
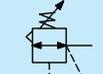
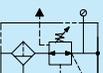
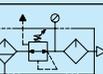
	Solenoid, Single Winding
	Servo Control
Pilot Pressure	
	Remote Supply
	Internal Supply

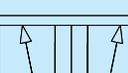
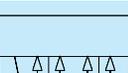
Valves

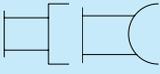
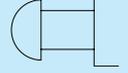
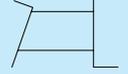
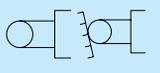
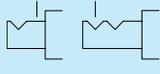
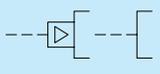
	Check
	On-Off (manual shut-off)
	Pressure Relief
	Pressure Reducing
	Flow Control, Adjustable - Non-Compensated
	Flow Control, Adjustable (Temperature and pressure compensated)
	Two-Position Two Way
	Two-Position Three Way
	Two-Position Four Way
	Two-Position In Transition
	Three-Position Four Way Closed Center
	Three Position Open Center Four Way
	Three Position Tandem Center Four Way
	Three Position Float Center Four Way
	Valves Capable of Infinite Positioning (Horizontal bars indicate infinite positioning ability)

Color Code for Fluid Power Schematic Drawings

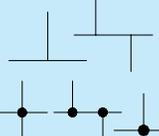
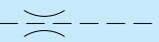
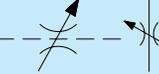
Black	Intensified Pressure
Red	Supply
Intermittent Red	Charging Pressure
Intermittent Red	Reduced Pressure
Intermittent Red	Pilot Pressure
Yellow	Metered Flow
Blue	Exhaust
Green	Intake
Green	Drain
Blank	Inactive

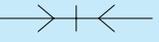
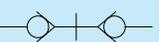
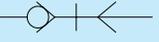
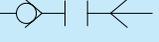
■ Air Prep Units	
	Filter/Separator with manual drain
	Filter/Separator with automatic drain
	Oil Removal Filter
	Automatic Drain
	Lubricator less drain
	Lubricator with manual drain
	Lubricator with automatic filling
	Air Line Pressure Regulator adjustable, relieving
	Air Line Pressure Regulator pilot controlled, relieving
	Filter/Regulator (piggyback) Manual Drain Relieving (without gauge)
	Filter/Regulator (piggyback) Auto Drain Relieving
	Air Line Combo F-R-L simplified

■ Pneumatic Valves	
	Check
	Flow Control
	Relief Valve
	2-Position, 2-Way
	2-Position, 3-Way
	2-Position, 4-Way 4-Ported
	2-Position, 4-Way 5-Ported
	3-Position, 4-Way ports closed, center position
	3-Position, 4-Way, 5-Ported cylinder ports open to pressure in center position
	Quick Exhaust
	Shuttle

■ Valve Actuators	
	Manual General Symbol
	Push Button
	Lever
	Pedal or Treadle
	Mechanical Cam, Toggle, etc.
	Spring
	Detent - Line indicates which detent is in use
	Solenoid
	Internal Pilot Supply
	Remote Pilot Supply
	And/or Composite solenoid and pilot or manual override
	And/or Composite solenoid and pilot or manual override and pilot

Pneumatic Symbols

■ Lines & Functions	
	Main Line
	Pilot Line
	Exhaust or Drain Line
	Enclosure Line
	Lines Crossing
	Lines Joining
	Flow Direction Hydraulic Medium
	Flow Direction Gaseous Medium
	Energy Source
	Line with Fixed Restriction
	Line with Adjustable Restriction
	Flexible Line
	Plugged Port, Test Station, Power Take-Off

■ Lines & Functions	
	Quick Disconnect without checks connected
	Quick Disconnect without checks disconnected
	Quick Disconnect with checks connected
	Quick Disconnect with checks disconnected
	Quick Disconnect with one check connected
	Quick Disconnect with one check disconnected