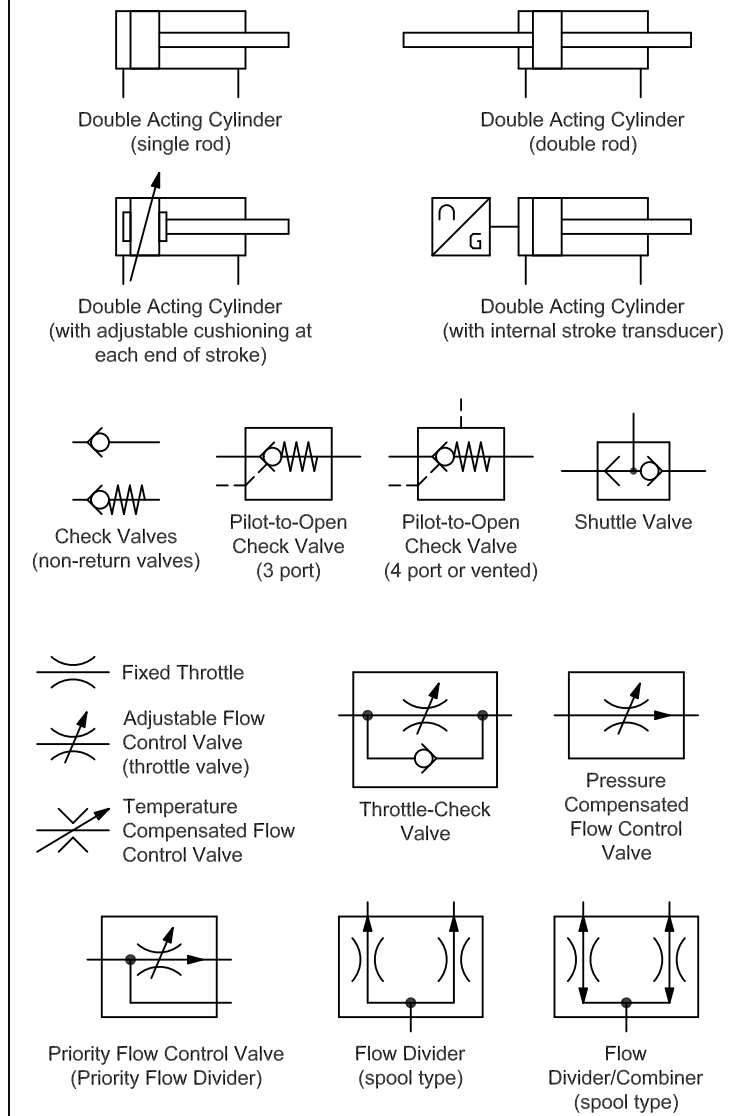
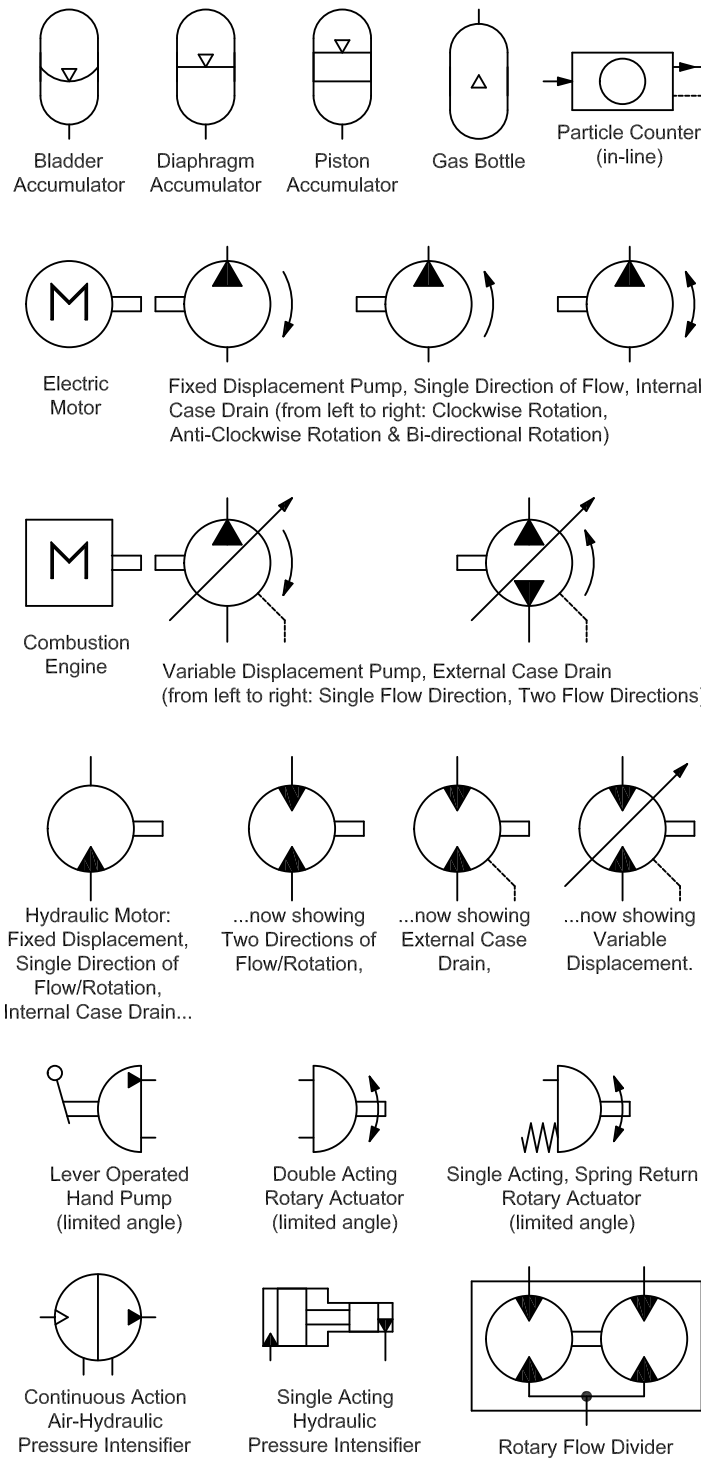
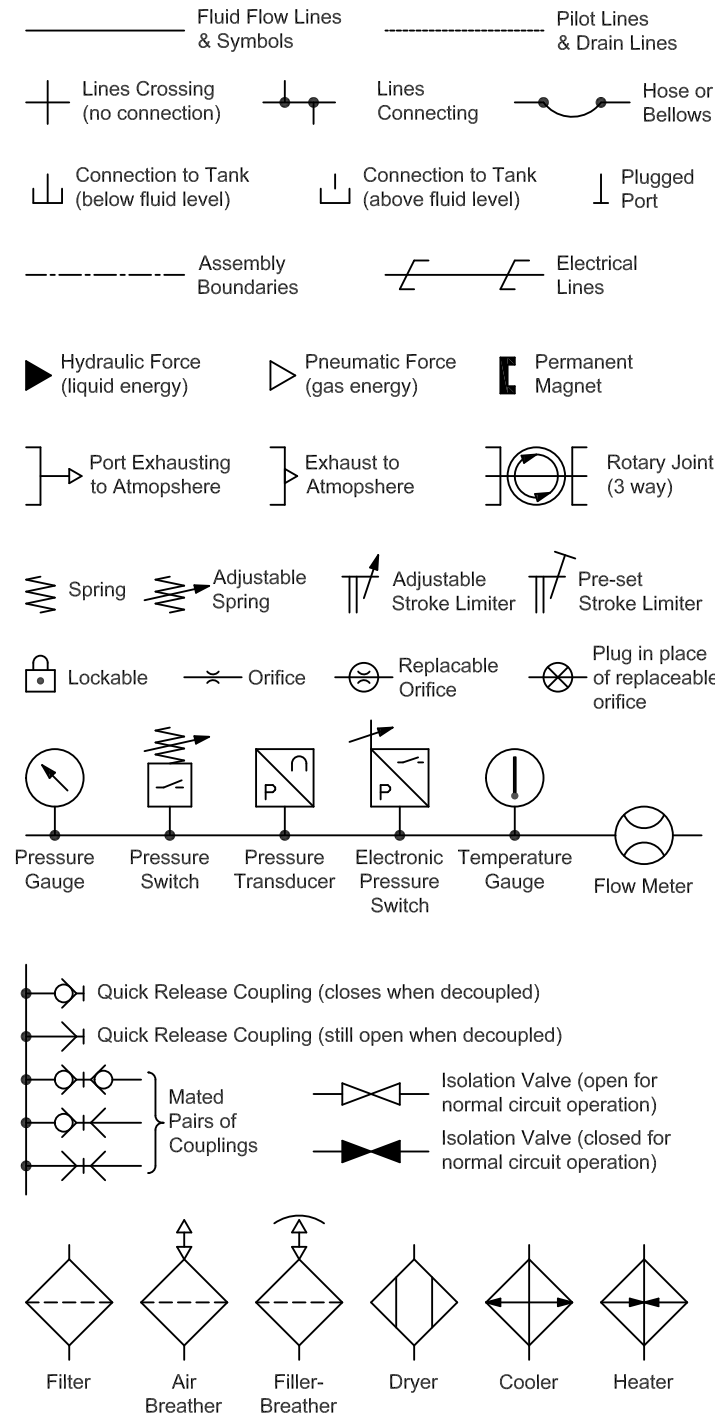


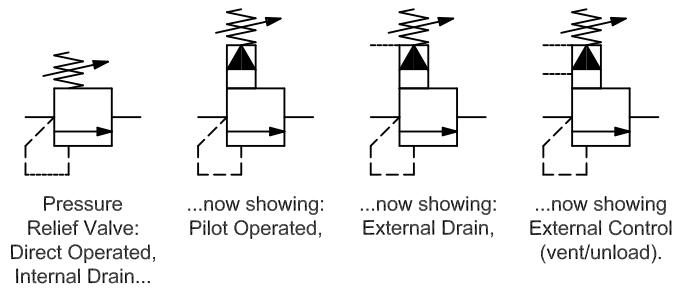
# Hydraulic Symbols to BS ISO 1219-1:2012



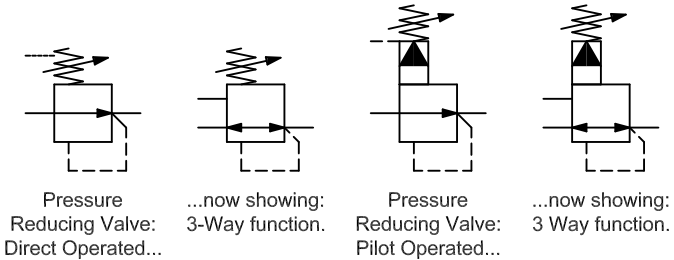
Carlton Road  
Worksop, Notts  
S81 7HP, England

Tel: +44 (0)1909 504700  
www.nfpc.co.uk

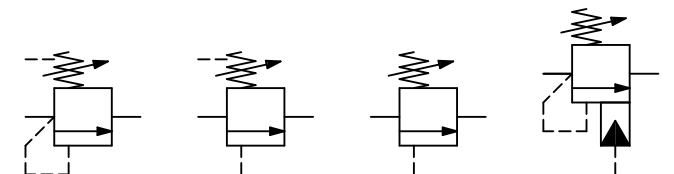
EDUCATION & TRAINING BY PROFESSIONALS



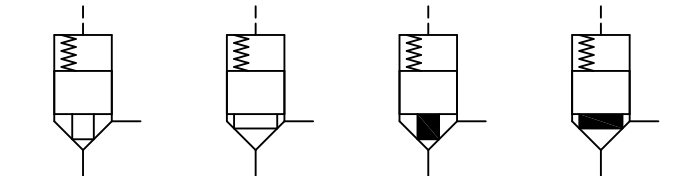
Pressure Relief Valve: Direct Operated, Internal Drain...  
 ...now showing: Pilot Operated,  
 ...now showing: External Drain,  
 ...now showing: External Control (vent/unload).



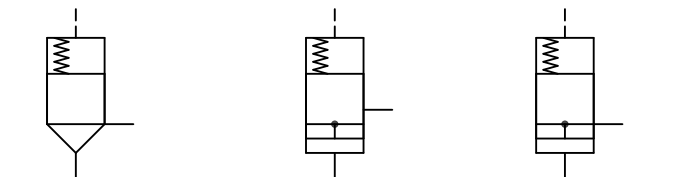
Pressure Reducing Valve: Direct Operated...  
 ...now showing: 3-Way function.  
 Pressure Reducing Valve: Pilot Operated...  
 ...now showing: 3 Way function.



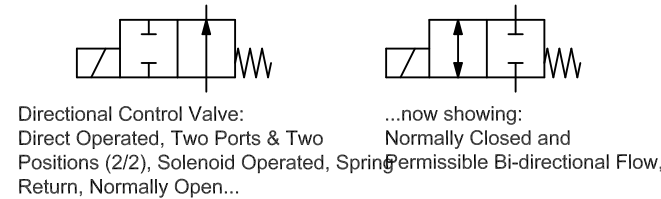
Pressure Sequence Valve: Direct Operated, Internal Pilot, External Drain...  
 ...now showing: External Pilot,  
 ...now showing: Internal Drain.  
 Overcentre Valve or Counterbalance Valve



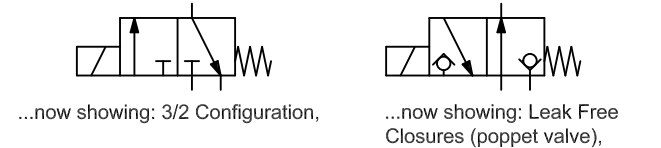
Directional Control Valve Cartridge: Small Seat Area ...  
 ... now showing: Large Seat Area,  
 ... now showing: the poppet having a throttling effect (damping nose).



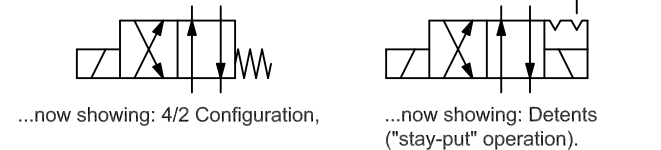
Pressure Control Valve Cartridge: Poppet Type, Normally Closed...  
 ... now showing: Spool Type,  
 ... now showing: Normally Open.



Directional Control Valve: Direct Operated, Two Ports & Two Positions (2/2), Solenoid Operated, Spring Return, Normally Open...  
 ...now showing: Normally Closed and Permissible Bi-directional Flow,



...now showing: 3/2 Configuration,  
 ...now showing: Leak Free Closures (poppet valve),



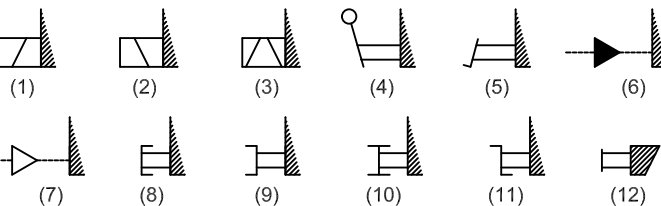
...now showing: 4/2 Configuration,  
 ...now showing: Detents ("stay-put" operation).



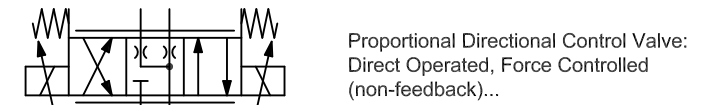
4/3 Direct Operated Directional Control Valve: Solenoid Operated, Spring Centred, All Ports Closed in Neutral...  
 ...now showing: P-T in Neutral.



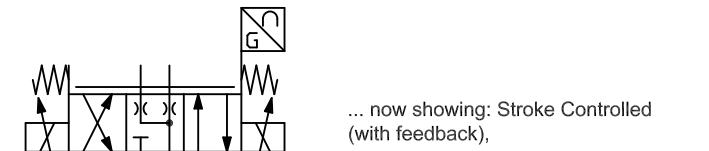
4/3 Pilot Operated Directional Control Valve: Solenoid Operated, Spring Centred, Internal Pilot, Internal Drain, All Ports Closed in Neutral...  
 ...now showing: External Pilot, External Drain, A-B-T in Neutral.



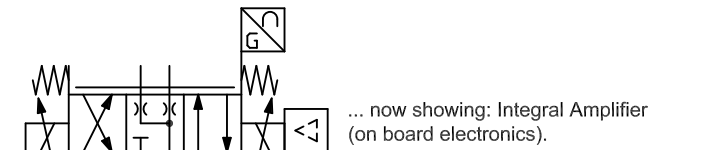
Alternative Valve Actuators: (1) pushing solenoid, (2) pulling solenoid, (3) dual solenoid, (4) lever, (5) pedal, (6) direct hydraulic operation, (7) direct pneumatic operation, (8) push, (9) pull, (10) push-pull, (11) turn, (12) manual override



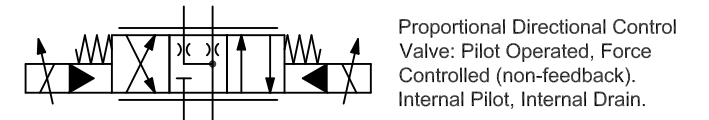
Proportional Directional Control Valve: Direct Operated, Force Controlled (non-feedback)...



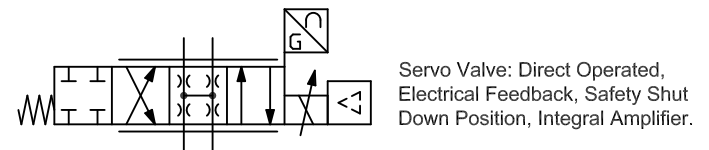
... now showing: Stroke Controlled (with feedback),



... now showing: Integral Amplifier (on board electronics).



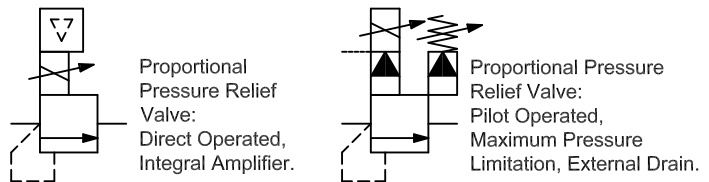
Proportional Directional Control Valve: Pilot Operated, Force Controlled (non-feedback). Internal Pilot, Internal Drain.



Servo Valve: Direct Operated, Electrical Feedback, Safety Shut Down Position, Integral Amplifier.



Servo Valve: Pilot Operated (2 stage), Mechanical Feedback, External Pilot, Internal Drain.



Proportional Pressure Relief Valve: Direct Operated, Integral Amplifier.

Proportional Pressure Relief Valve: Pilot Operated, Maximum Pressure Limitation, External Drain.



Proportional Directional Control Valve: Stepper Motor Actuated. All Ports Closed in Neutral.