Graphic Representation of Directional Control Hydraulic Valves

Hydraulic components are represented by symbols because the representation of their complex control functions by sketches may be too difficult to draw. The symbolic representation of a component merely specifies the function of the part without indicating its constructional details. The symbols are described in the standard ISO 1209. Learn valve representation by following the simple graphics given hereunder.

'Port'/'Position' Concepts of Hydraulic Valves

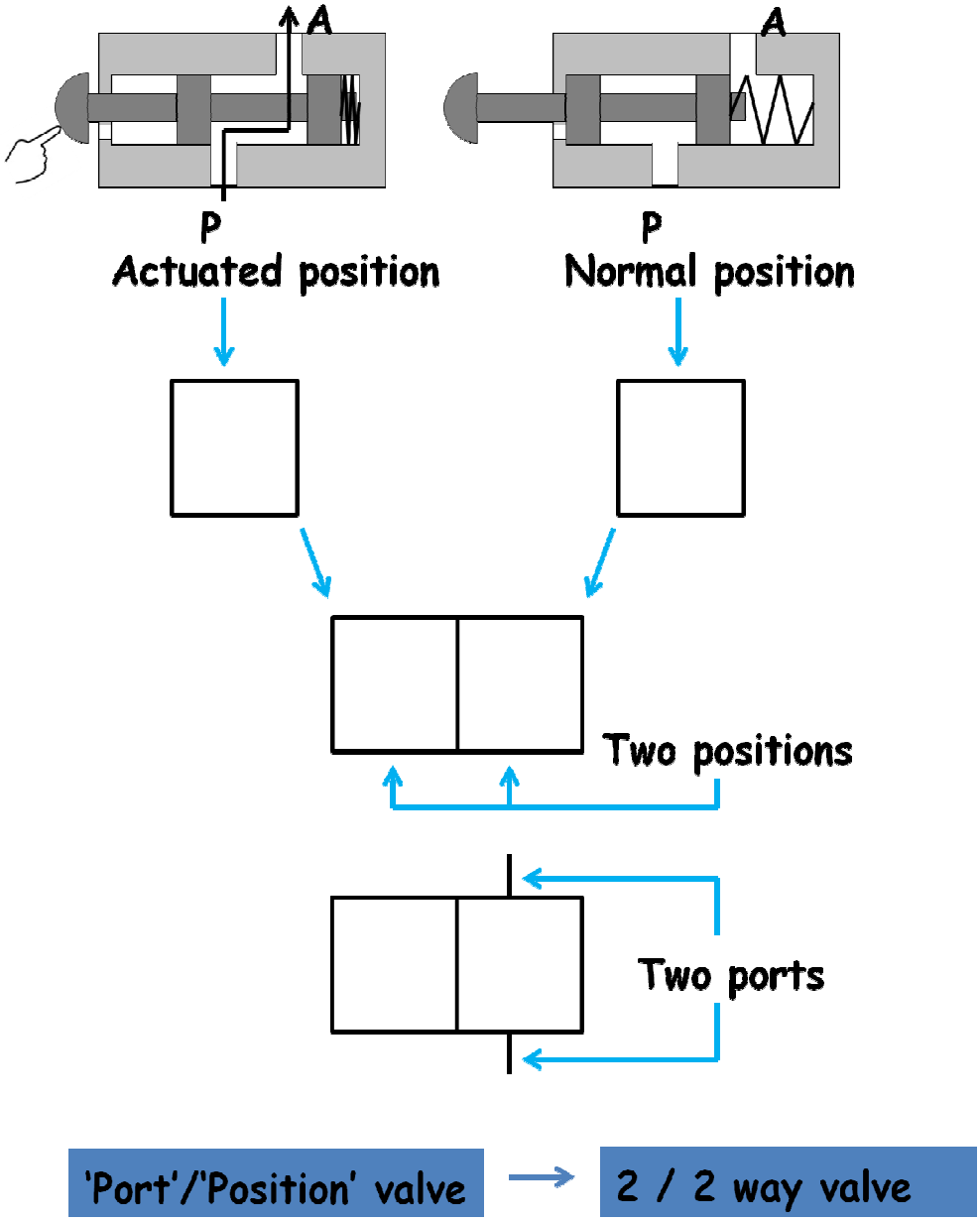


Figure 1

Graphic Symbols for Basic DC Valves

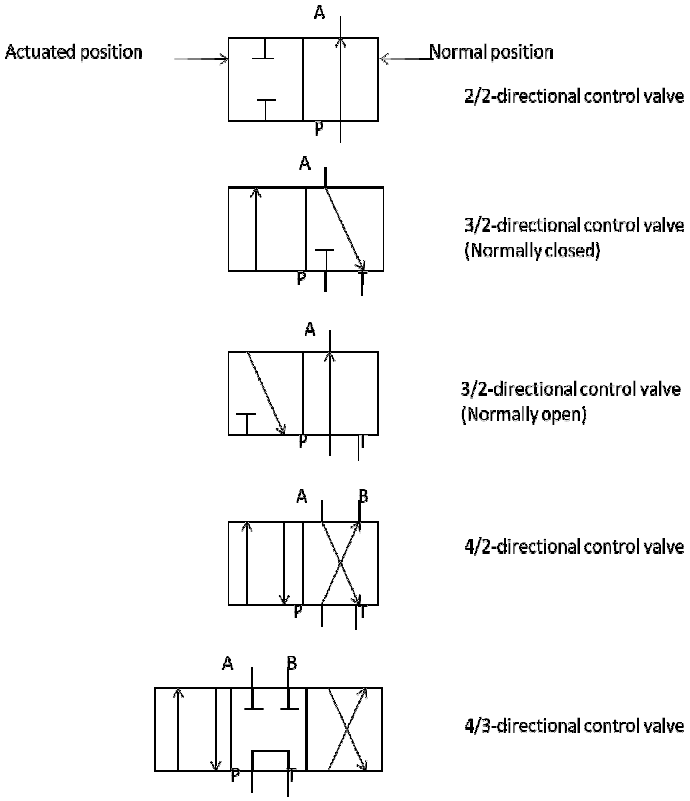


Figure 2

Representations of Function and Actuating Methods

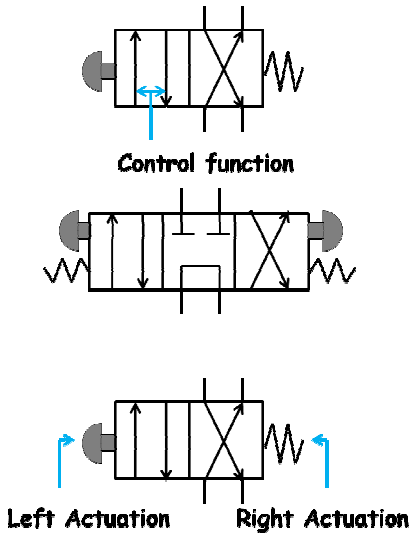


Figure 3

Port Markings

Port	As per ISO 4401	Comment
Pressure port	P	Supply port
Working ports (Service ports)	A	In a 3/2-DC valve
	A, B	In a 4/2-DC valve
Tank port	T	In a 3/2 or 4/2-DC valve

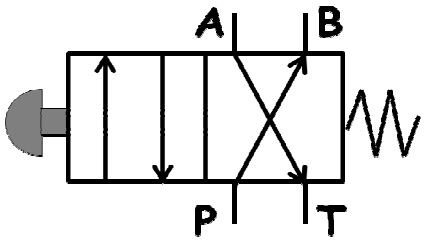


Figure 4

Methods of Valve Actuation

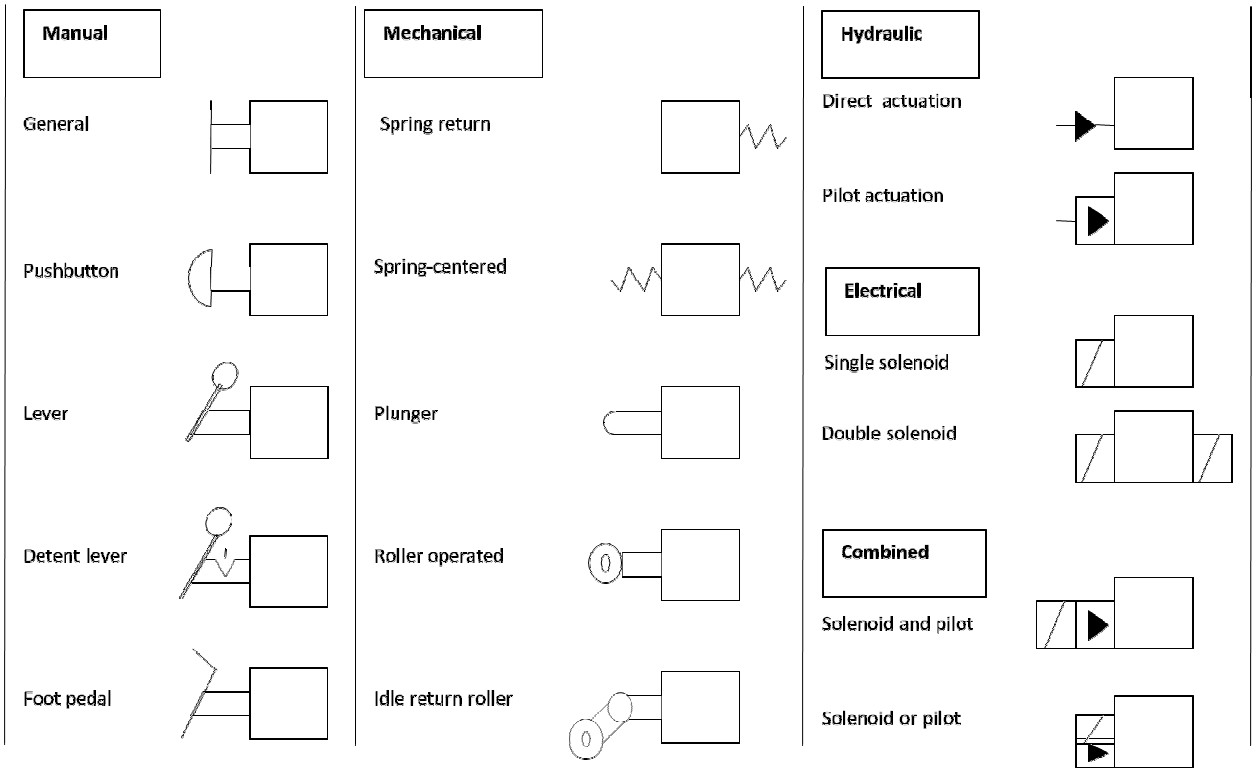


Figure 5

Cross-sectional View and Symbol of a 2/2-DC Valve

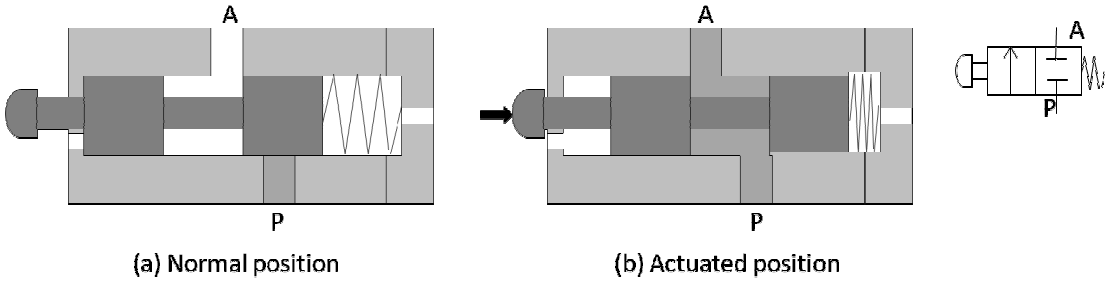


Figure 6

Cross-sectional View and Symbol of a 3/2-DC Valve

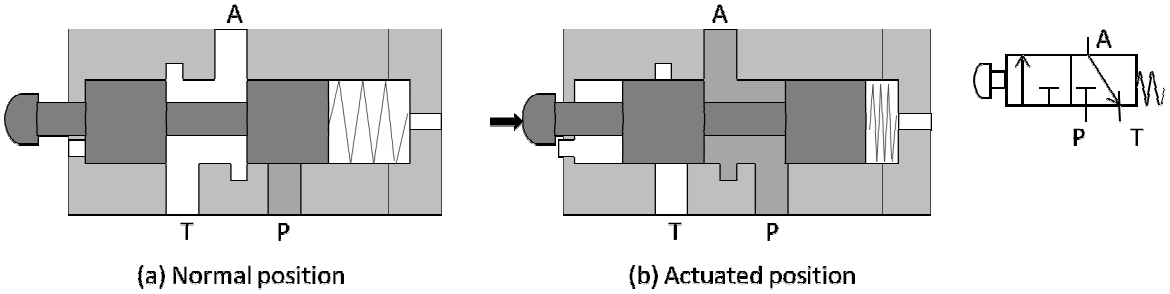


Figure 7

Cross-sectional View and Symbol of a 4/2-DC Valve

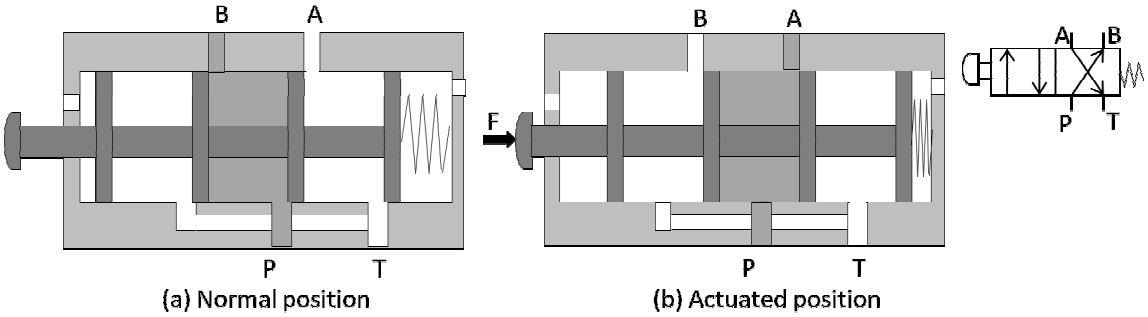
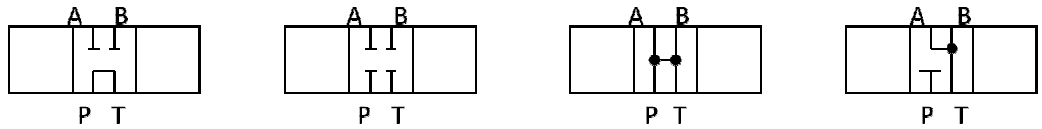


Figure 8

Centre configurations of 4/3-DC valves



(a) Tandem-centre (b) Closed-centre (c) Open-centre (d) Float-centre

Figure 9

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Reference: JOJI PARAMBATH, Industrial Hydraulic Systems – Theory and Practice, Universal Publishers, Boca Raton, USA, 2016. Please visit: http://www.universal-publishers.com/book.php?method=ISBN&book=1627340580

Note: A comprehensive account of the topic is given in the textbook on 'Industrial Hydraulic Systems-Theory and Practice' by Joji Parambath.
