

PNEUMATICS

This course will cover:

Basic pneumatic

Components of pneumatic

Symbols

Control valve

Valve

Actuator

Kind of control system

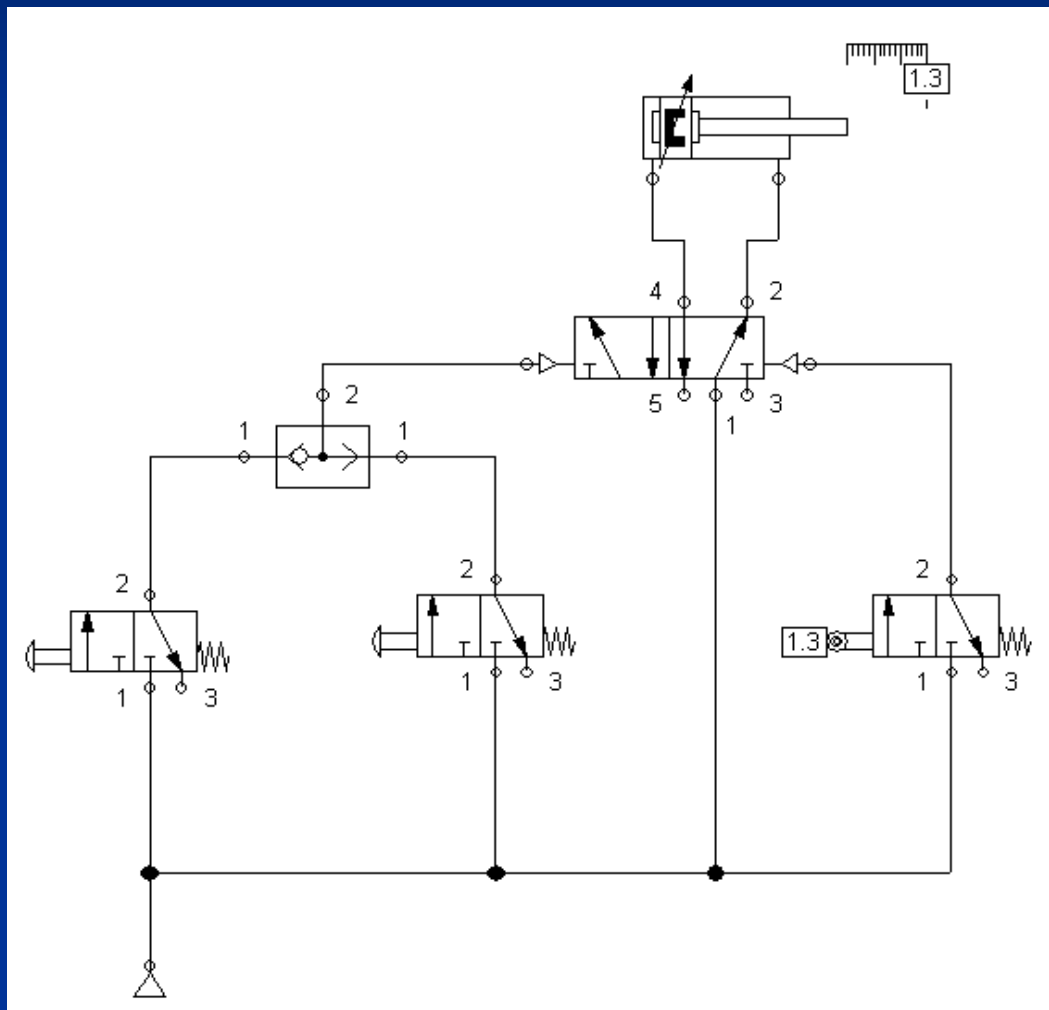
Application for pneumatic control system

Yuwono Indro H.

Pneumatics

Pneumatic devices are found in every gas production, processing, transmission and distribution facility

Circuit diagram of Pneumatic elements



Actuator

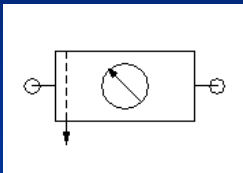
End of control elements

Signal

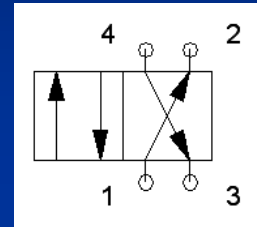
Input signal

Source of energy

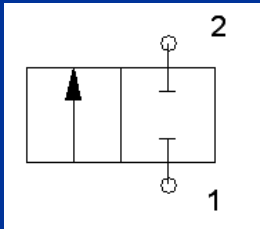
Symbols in pneumatic



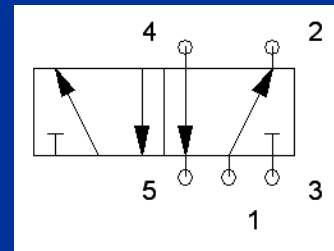
Air service unit



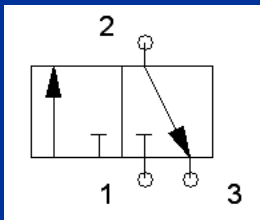
4/2 way valve



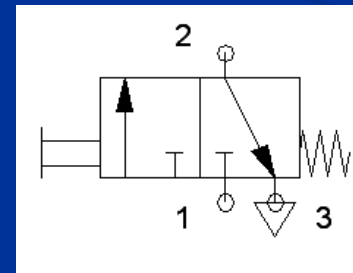
2/2 way valve



5/2 way valve

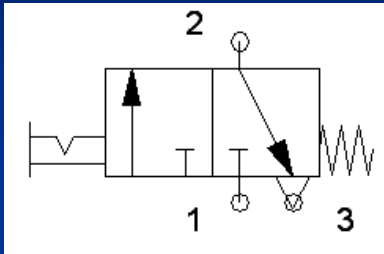


3/2 way valve

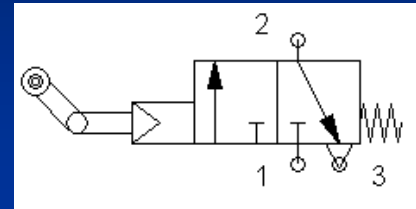


**3/2 way valve
with push
button**

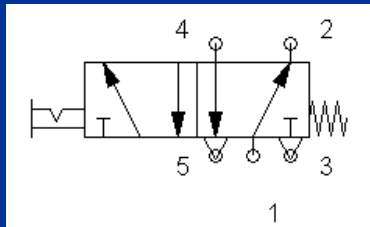
Symbols in pneumatic



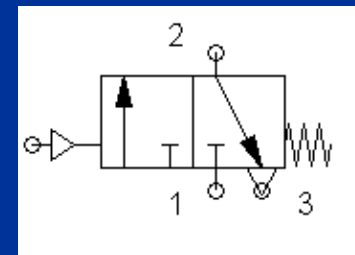
**3/2 way valve
with manually
operated**



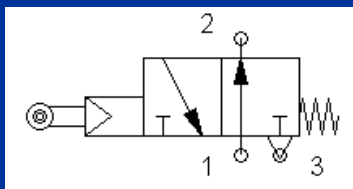
**3/2 way idle
return roller
valve**



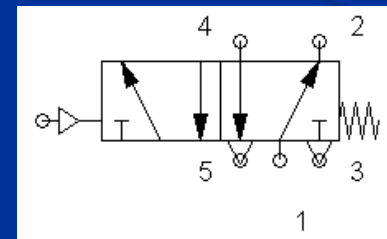
**5/2 way valve
with selection
switch**



**3/2 way valve,
pneumatically
operated**

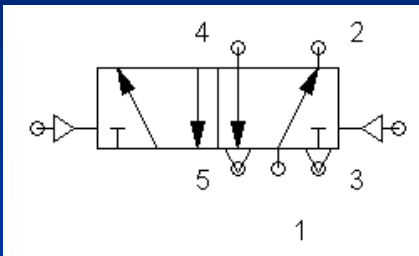


**3/2 way roller
lever valve**

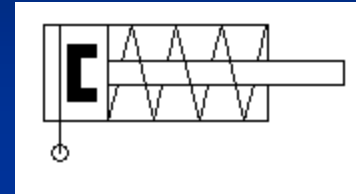


**5/2 way valve,
pneumatically
operated**

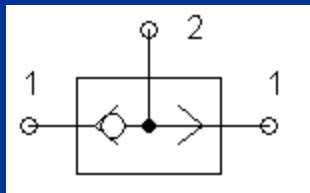
Symbols in pneumatic



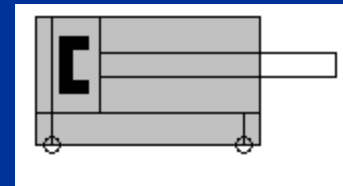
**5/2 way impulse
valve
pneumatically
operated**



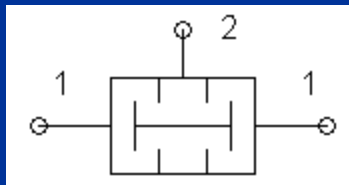
**Single acting
cylinder**



OR valve



**Double acting
cylinder**



AND valve

Indicating of pneumatic valve

No	Kind	Indicator
1.	Pressure	P (<i>Pressure</i>) or 1
2.	Output from valve	A, B, C, ... or 2, 4, 6, ...
3.	Loses from valve	R, S, T, ... or 3, 5, 7, ...
4.	Control of signal	X, Y, Z, ... or 1.2 ; 1.4 ; 1.6 ; ...

Kind of control system depend from air stream

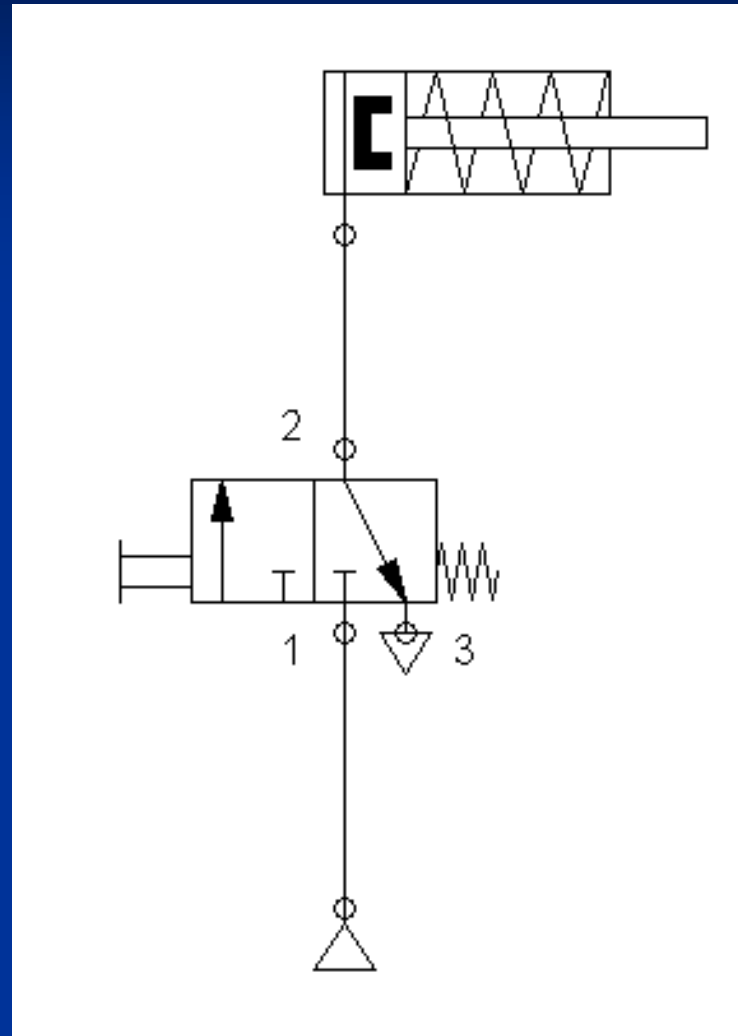
Direct control system

Direct control system used for cylinder who needed few air stream, small size of spillway.

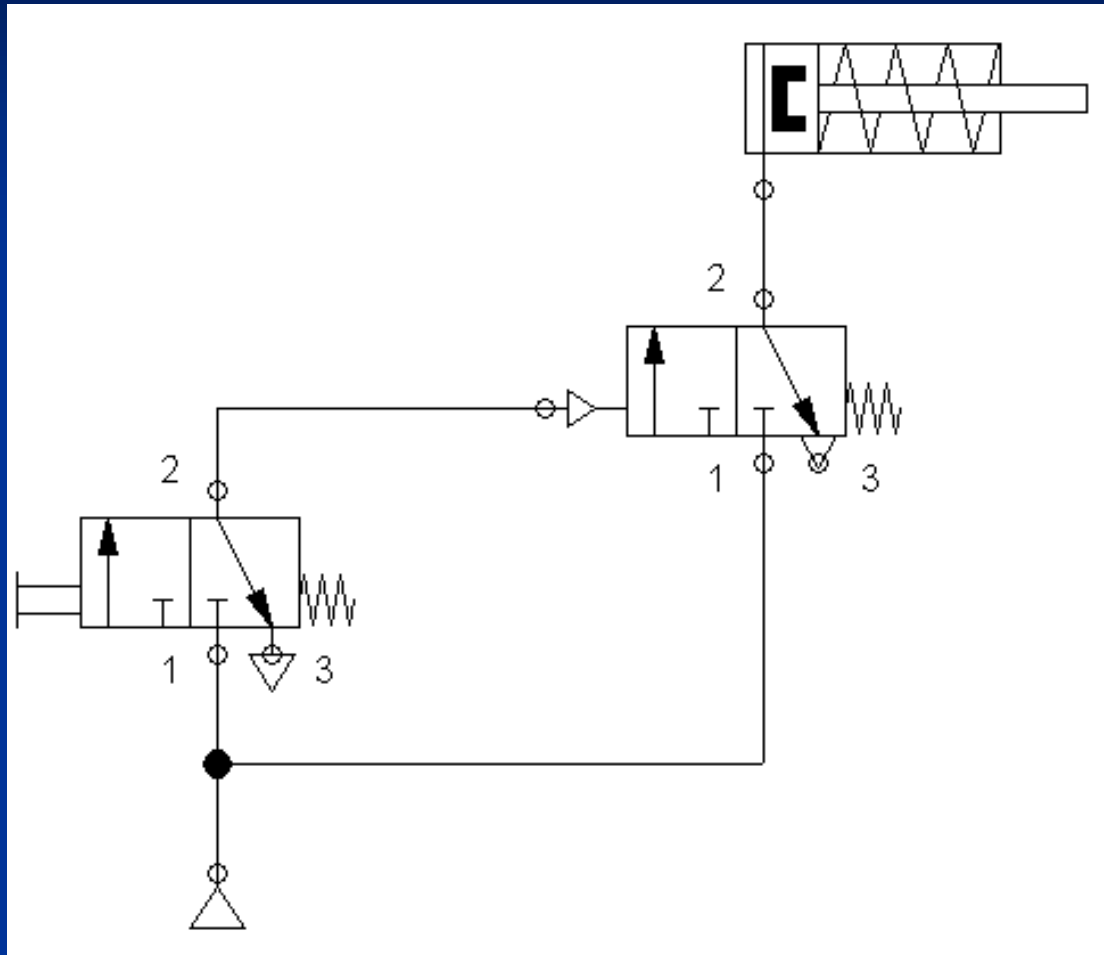
Indirect control system

Indirect control system used for cylinder who needed a lot of air stream, big size of spillway.

Direct control system



Indirect control system



Quiz

Single barrel cylinder with the diameter 25 mm have to clutch the object work to process the stamping, when push button depressed. Cylinder have to be at the position clutch during push button not yet been discharged. If push button discharged, clutching will turn off.