

NEUMÁTICA E HIDRÁULICA

FLUIDOS

Presión: se define como la relación entre la fuerza ejercida sobre la superficie de un cuerpo.

$$\text{Presión} = \text{Fuerza} / \text{Superficie}$$

Unidades: $1 \text{ bar} = 1 \text{ kg/cm}^2 = 10^5 \text{ pascal}$

$$1 \text{ pascal} = 1 \text{ N/m}^2$$

FLUIDOS

Caudal: es la cantidad de fluido que atraviesa la unidad de superficie en la unidad de tiempo.

$$\text{Caudal} = \text{Volumen} / \text{tiempo}$$

$$\text{Volumen} = \text{superficie} \times \text{longitud}$$

$$\text{Caudal} = \text{superficie} \times \text{longitud} / \text{tiempo}$$

$$\text{Caudal} = \text{Superficie} \times \text{Velocidad}$$

$$\text{Unidad: } m^3 / \text{sg}$$

$$1 m^3 / \text{sg} = 100 \text{ l} / \text{sg}$$

ELEMENTOS DE LOS CIRCUITOS NEUMÁTICOS

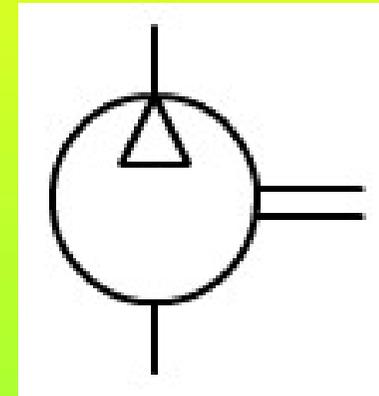
- Elementos generadores (compresores)
- Unidad de mantenimiento:
 - Filtro
 - Lubricador
 - Regulador de presión
 - Manómetro
- Tuberías
- Válvulas:
 - Distribuidoras:
 - 2/2
 - 3/2
 - 4/2
 - 5/2
 - 4/3
 - De bloqueo:
 - Antirretorno
 - Selectora
 - Simultaneidad
 - Reguladoras de flujo:
 - Unidireccional
 - Bidireccional

ELEMENTOS DE LOS CIRCUITOS HIDRÁULICOS

- Grupo motriz:
 - Bomba
 - Motor eléctrico de accionamiento
- Unidad de mantenimiento:
 - Filtro
 - Regulador de presión
 - Manómetro y caudalímetro
- Tuberías
- Depósito
- Válvulas:
 - Distribuidoras:
 - 2/2
 - 3/2
 - 4/2
 - 5/2
 - 4/3
 - De bloqueo:
 - Antirretorno
 - Selectora
 - Simultaneidad
 - Reguladoras de flujo:
 - Unidireccional
 - Bidireccional

ELEMENTOS DE LOS CIRCUITOS NEUMÁTICOS

Compresor



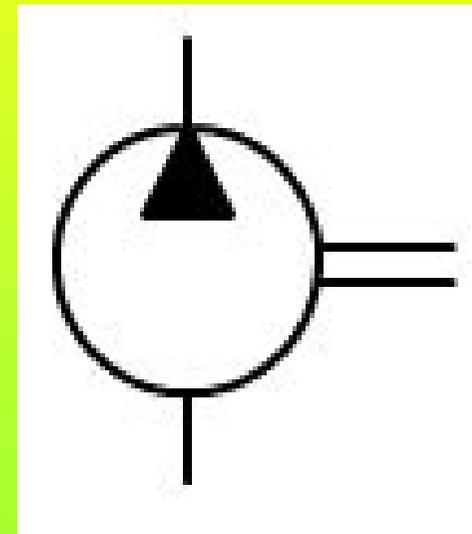
ELEMENTOS DE LOS CIRCUITOS NEUMÁTICOS

Unidad de mantenimiento



ELEMENTOS DE LOS CIRCUITOS HIDRÁULICOS

Bomba hidráulica



ELEMENTOS DE LOS CIRCUITOS HIDRÁULICOS

Unidad de mantenimiento



TUBERÍAS



VÁLVULAS DISTRIBUIDORAS

Posiciones

 ← Una posición



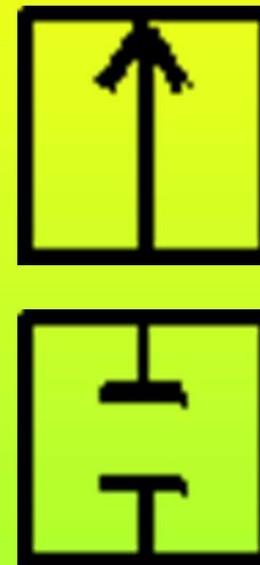
 ← Dos posiciones



 ← Tres posiciones

VÁLVULAS DISTRIBUIDORAS

Vías



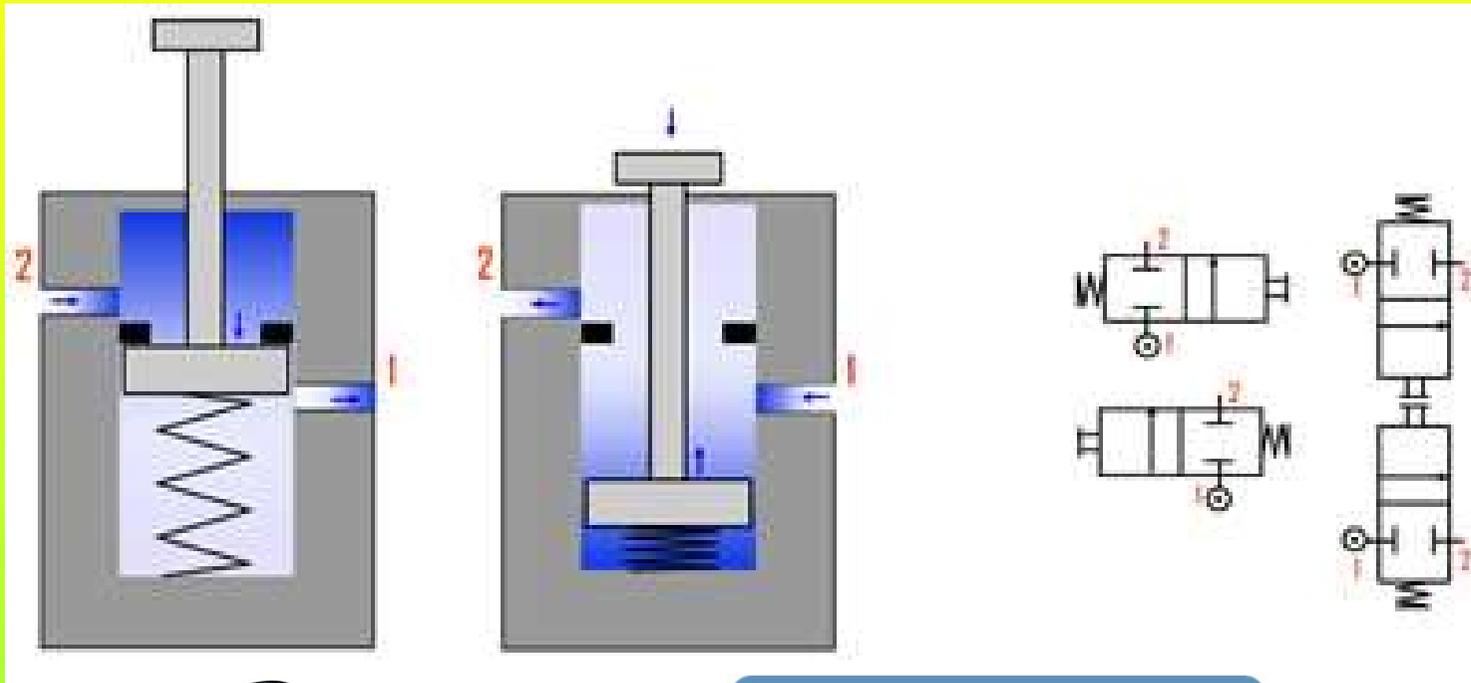
P = suministro de presión

R ó S = escapes

A y B = utilización

VÁLVULAS DISTRIBUIDORAS

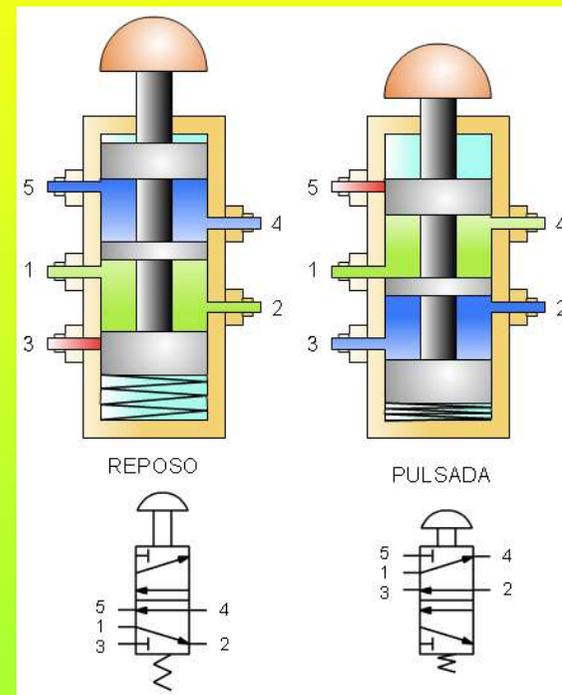
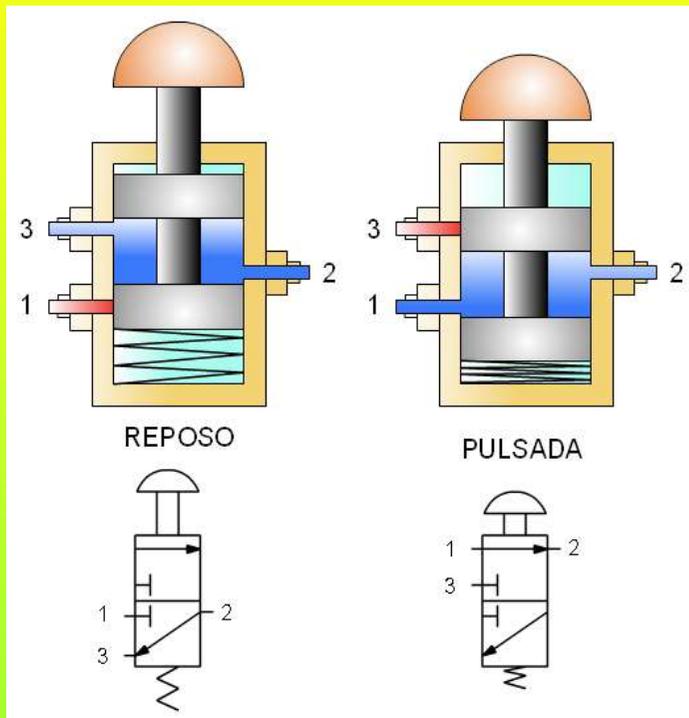
2/2



VÁLVULAS DISTRIBUIDORAS

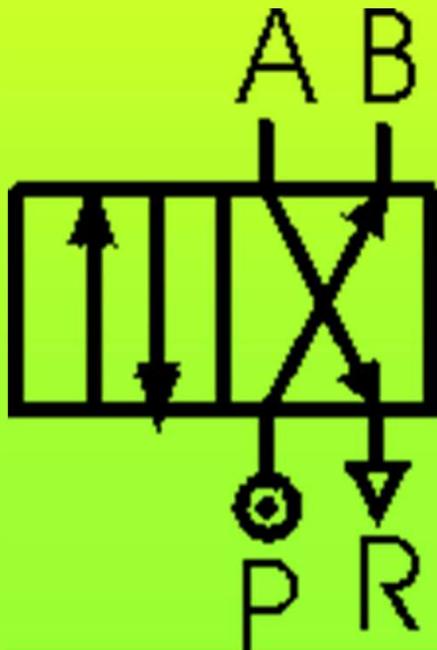
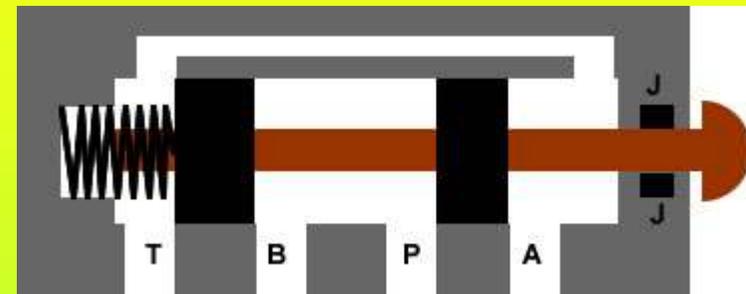
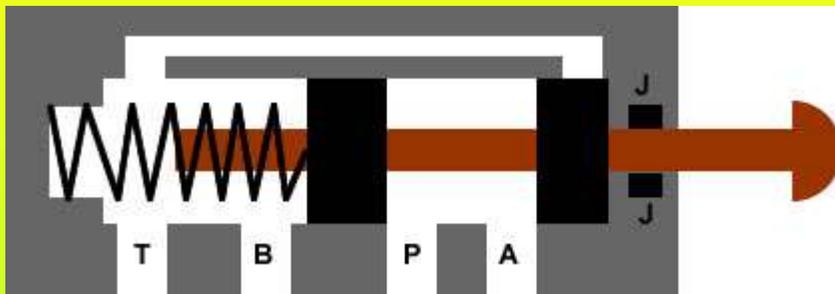
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5/2



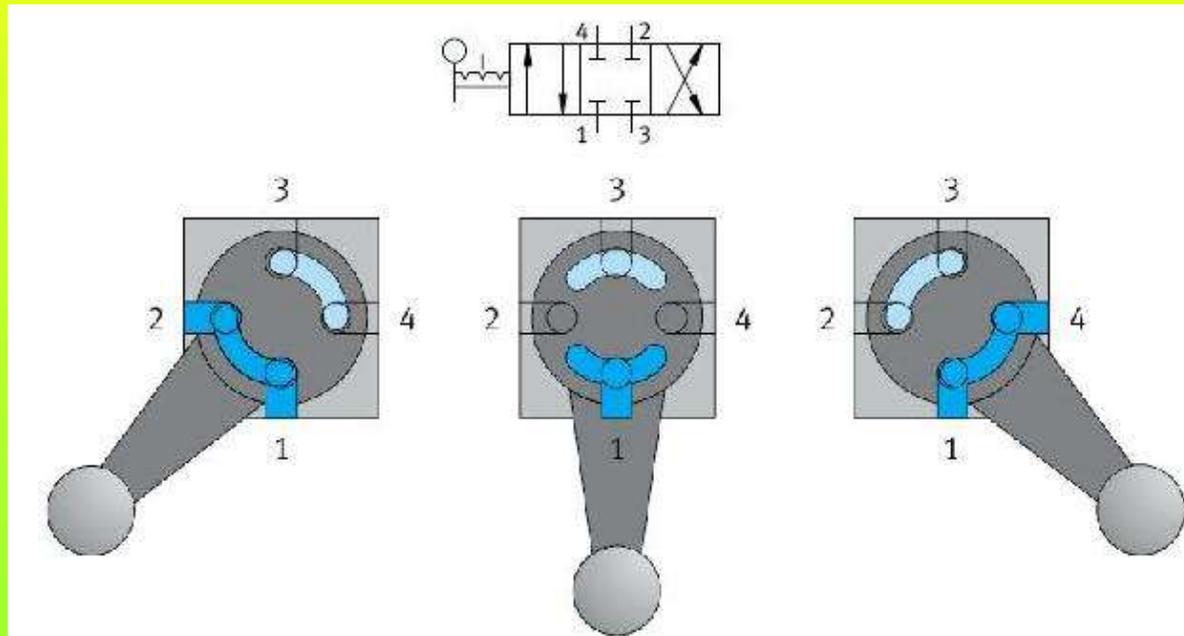
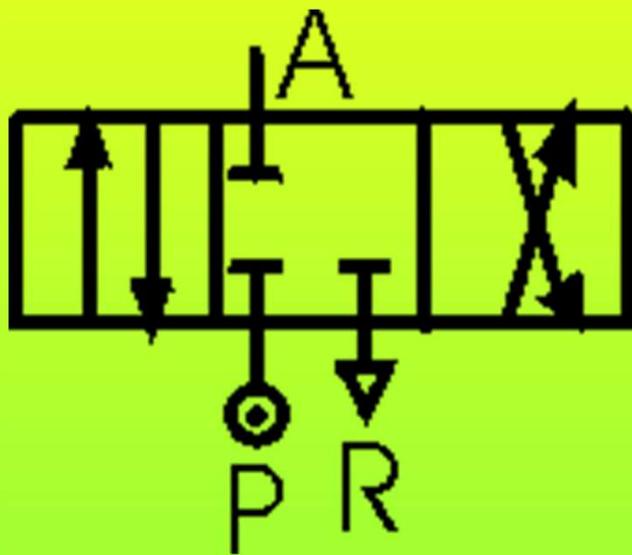
VÁLVULAS DISTRIBUIDORAS

4/2



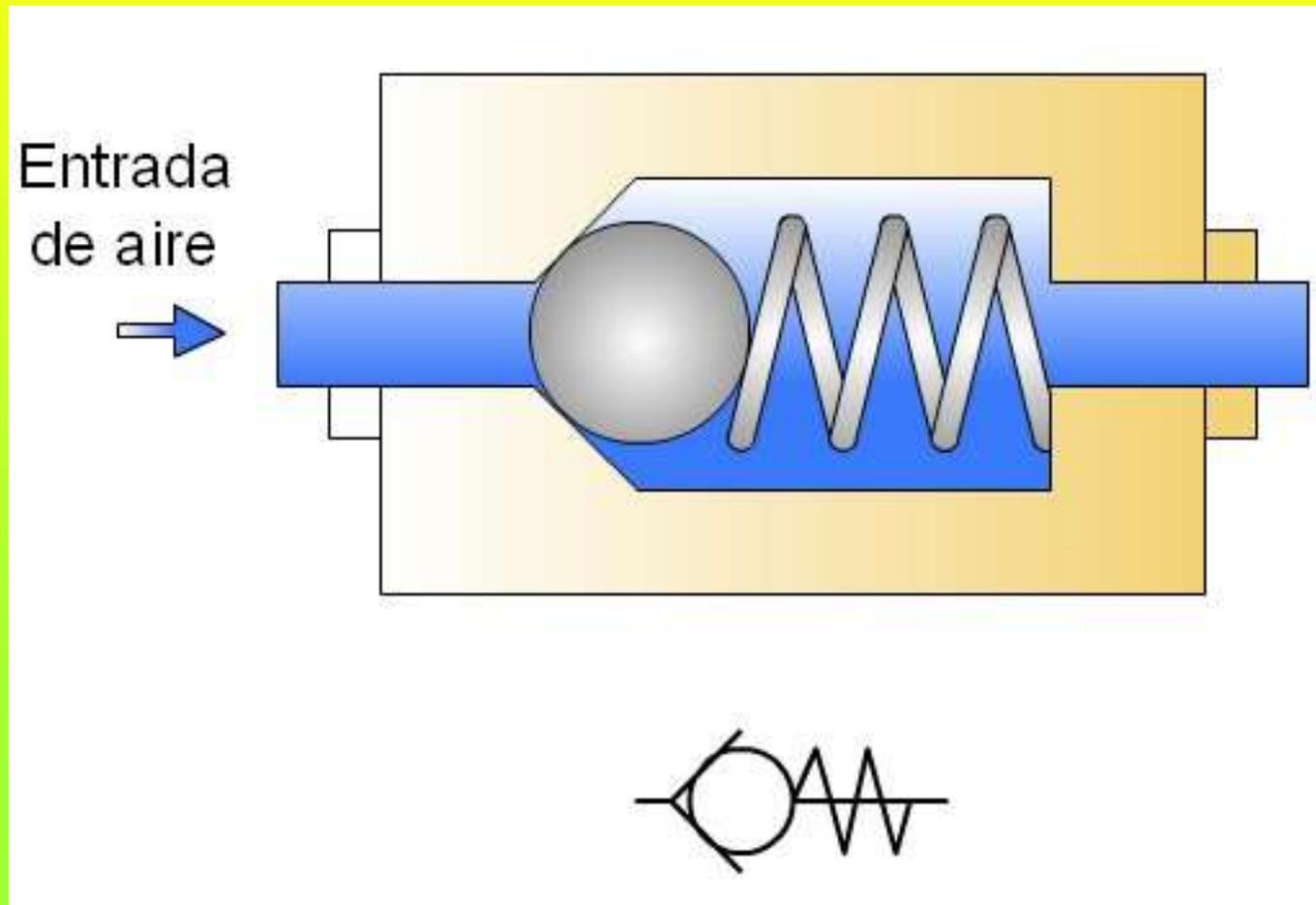
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4/3



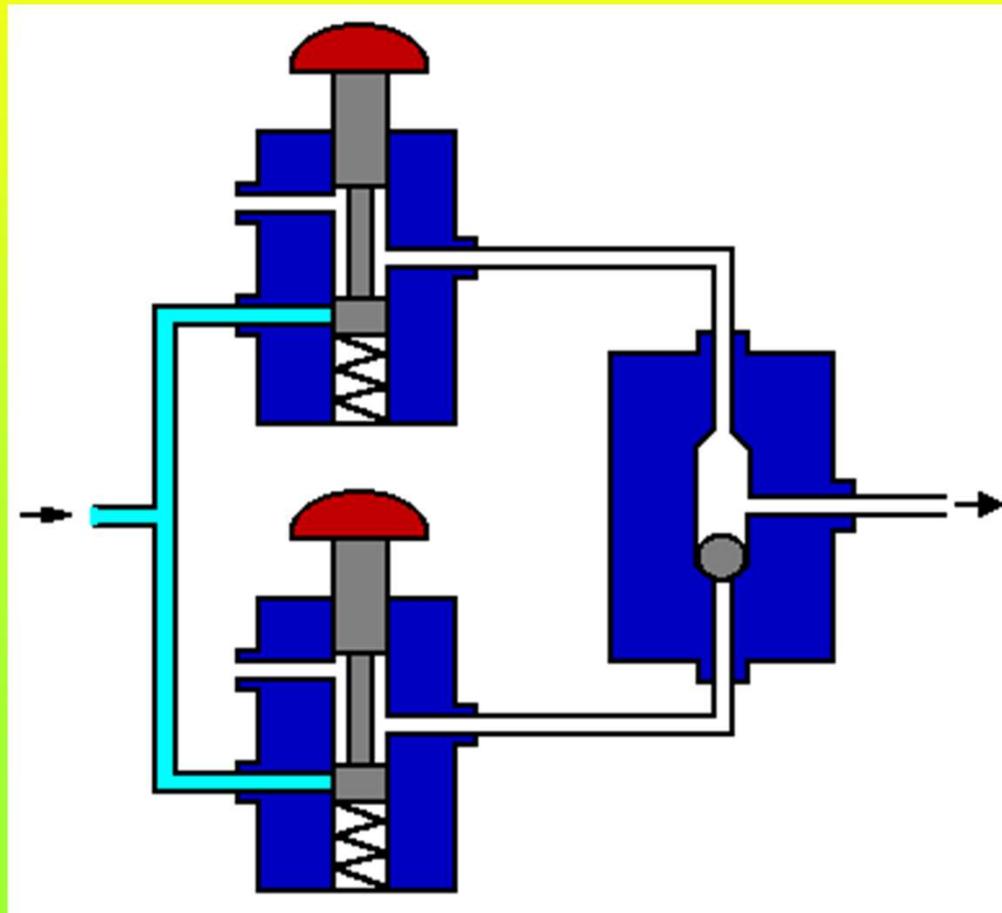
VÁLVULAS DE BLOQUEO

ANTIRRETORNO



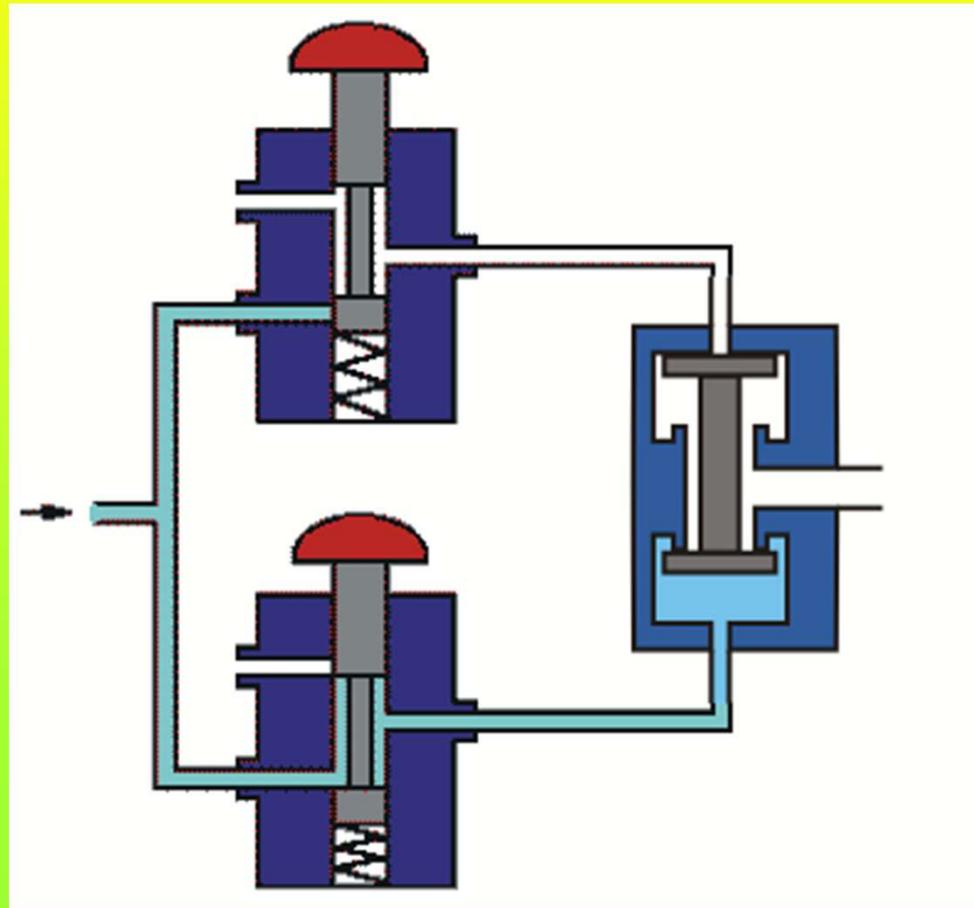
VÁLVULAS DE BLOQUEO

SELECTORA



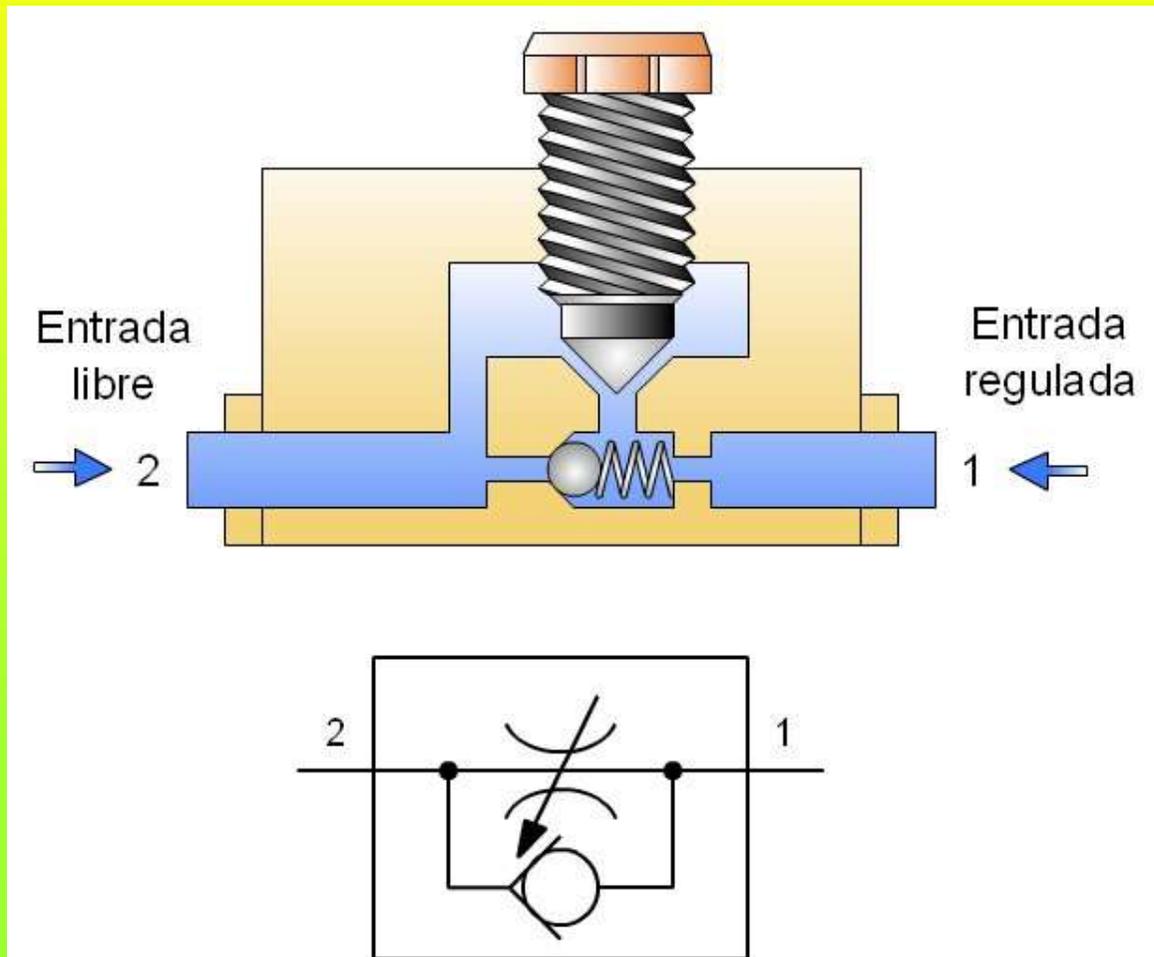
VÁLVULAS DE BLOQUEO DE SIMULTANEIDAD

DE SIMULTANEIDAD



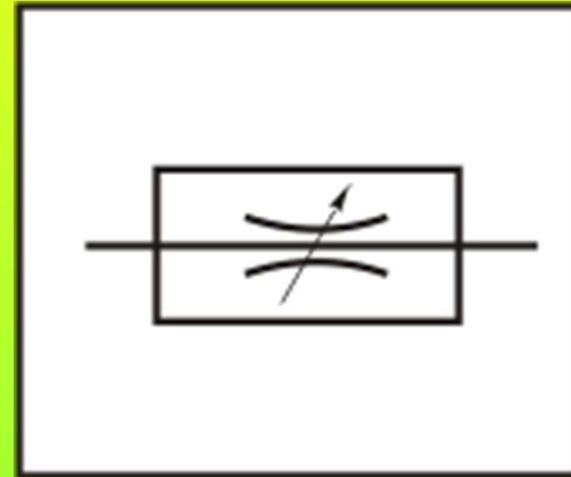
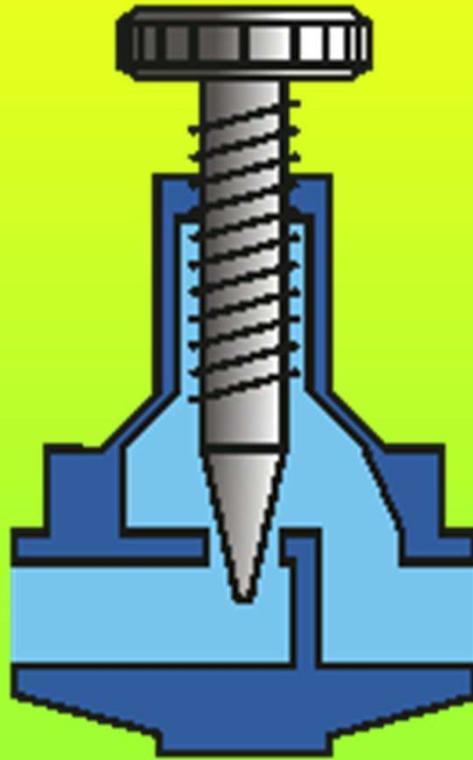
VÁLVULAS REGULADORAS

UNIDIRECCIONAL



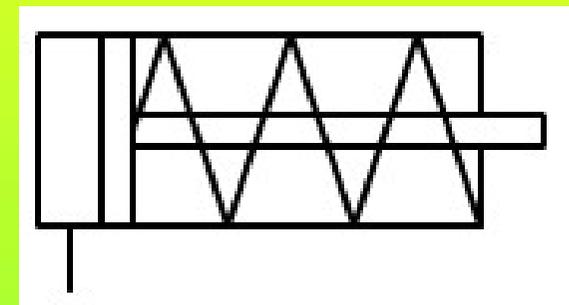
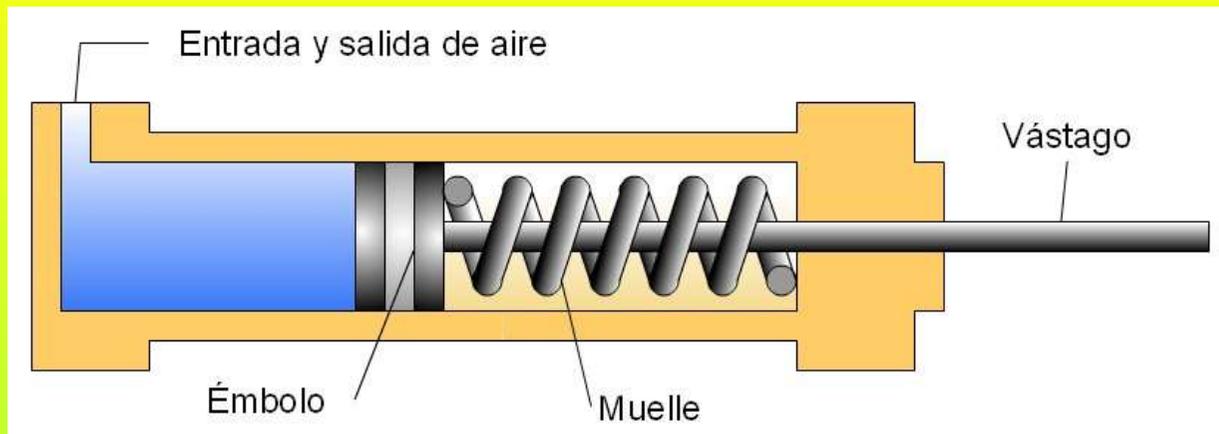
VÁLVULAS REGULADORAS

BIDIRECCIONAL



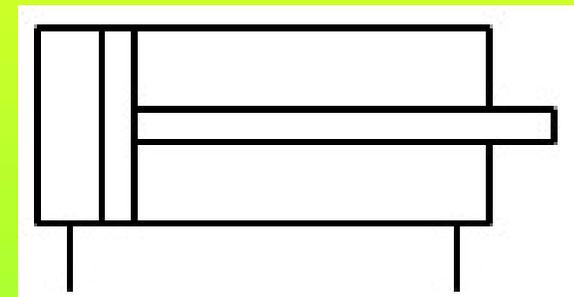
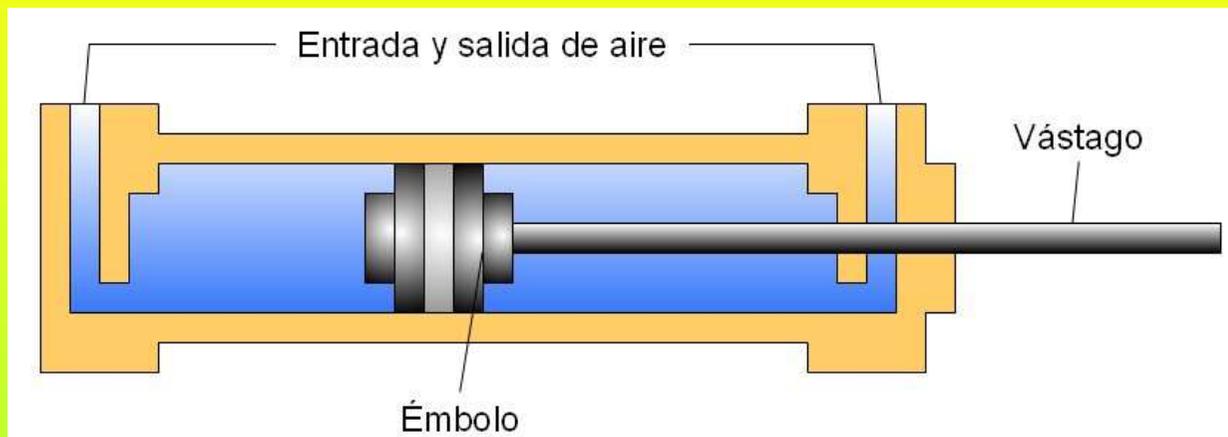
ACTUADORES

CILINDRO DE SIMPLE EFECTO

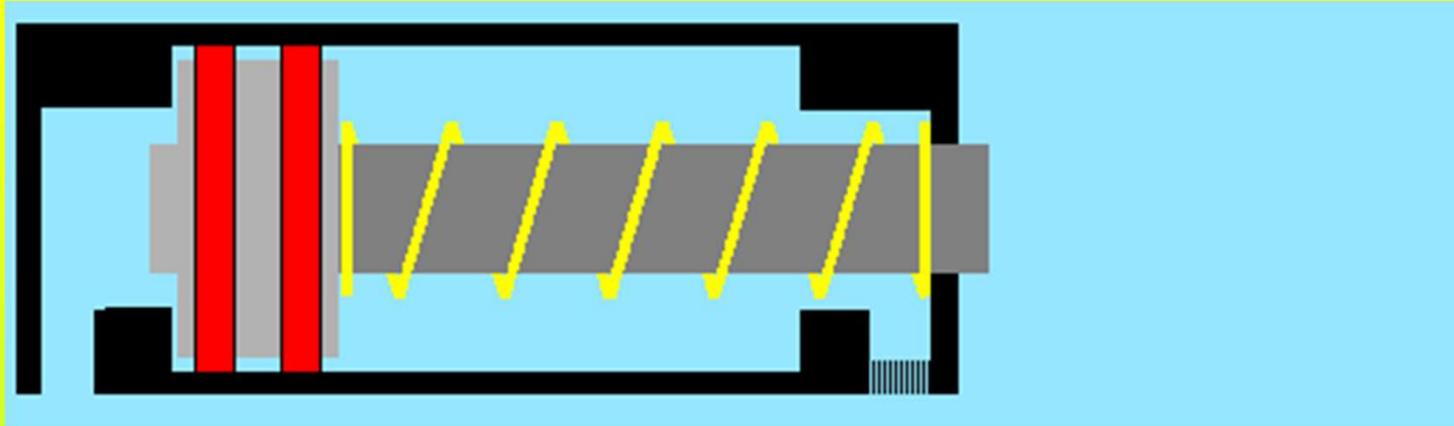


ACTUADORES

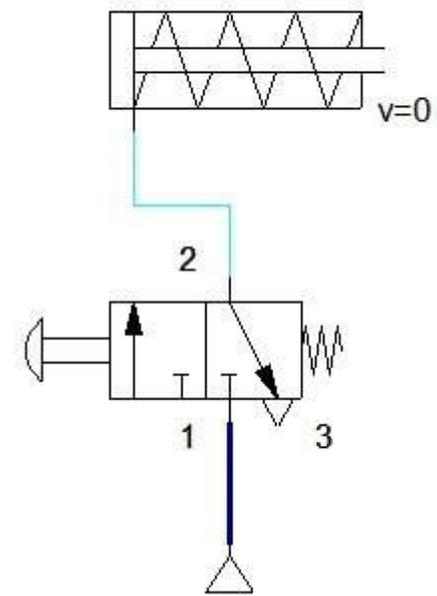
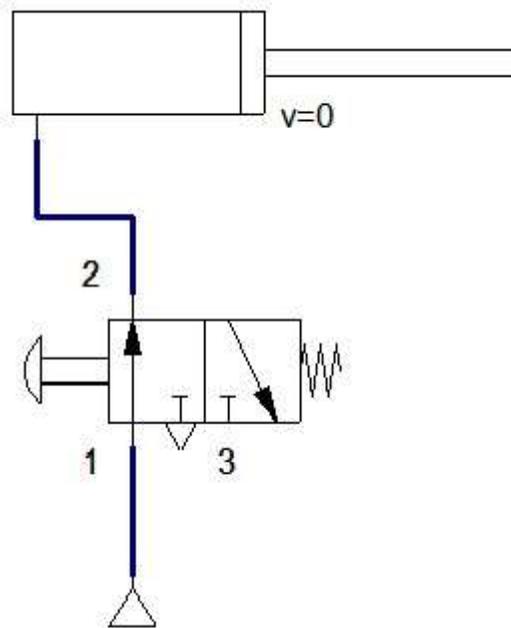
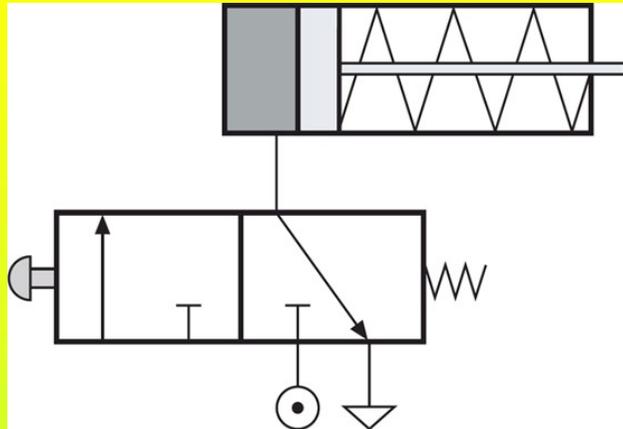
CILINDRO DE DOBLE EFECTO



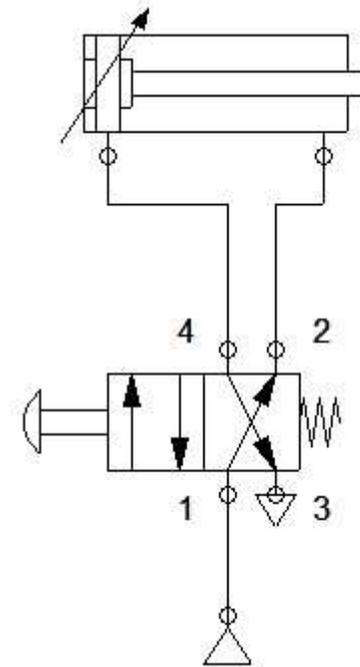
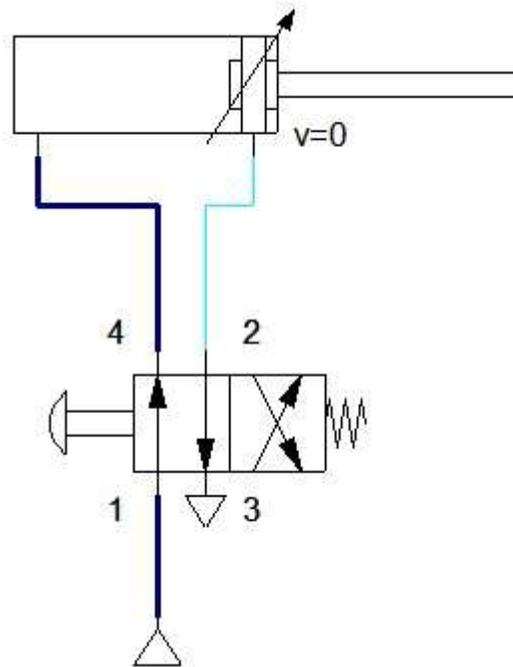
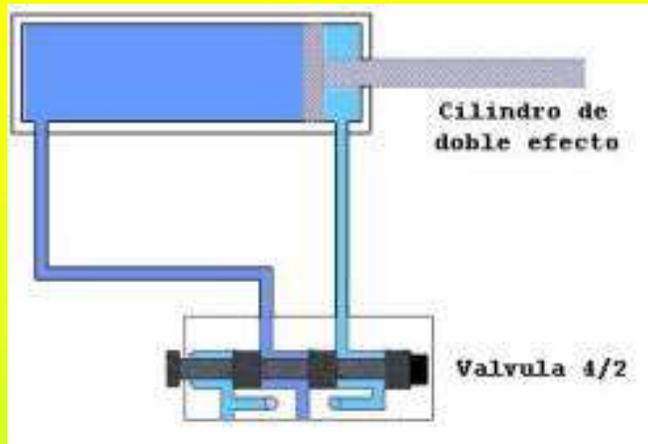
ACTUADORES



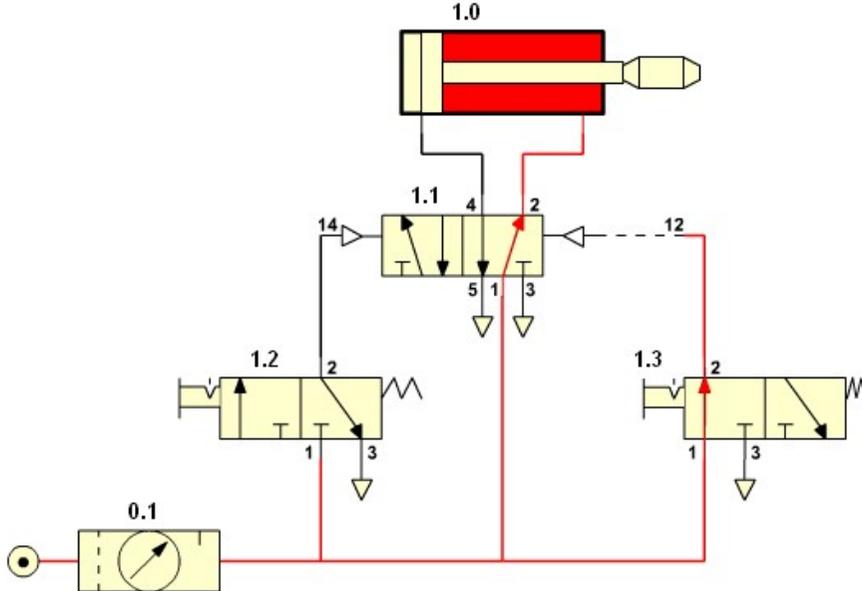
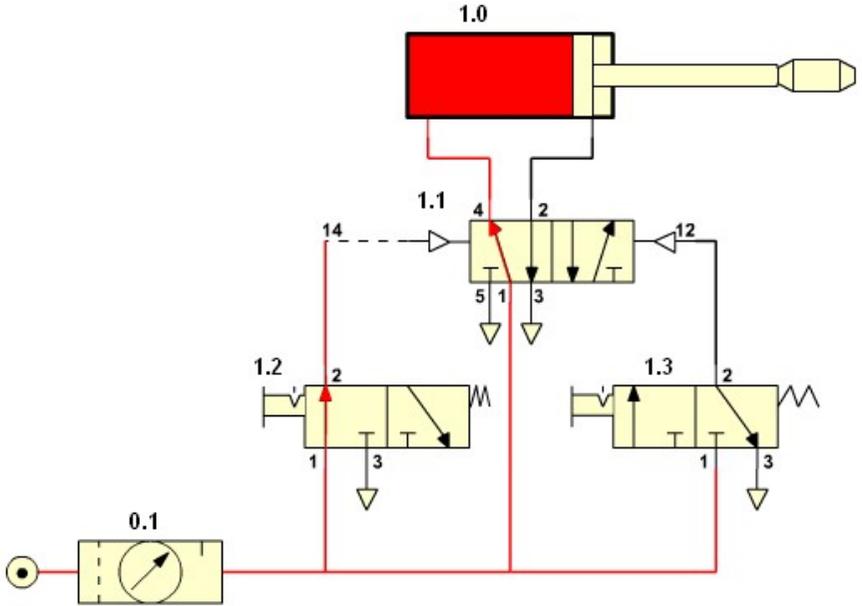
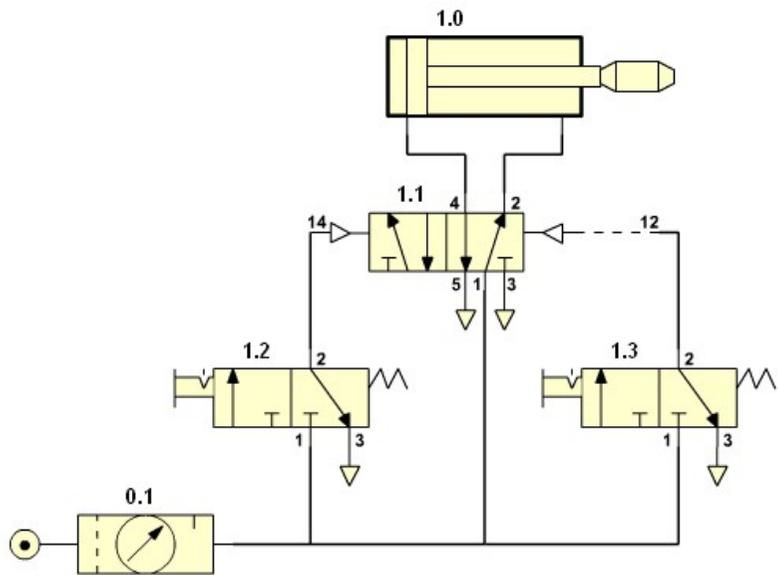
CIRCUITOS NEUMÁTICOS



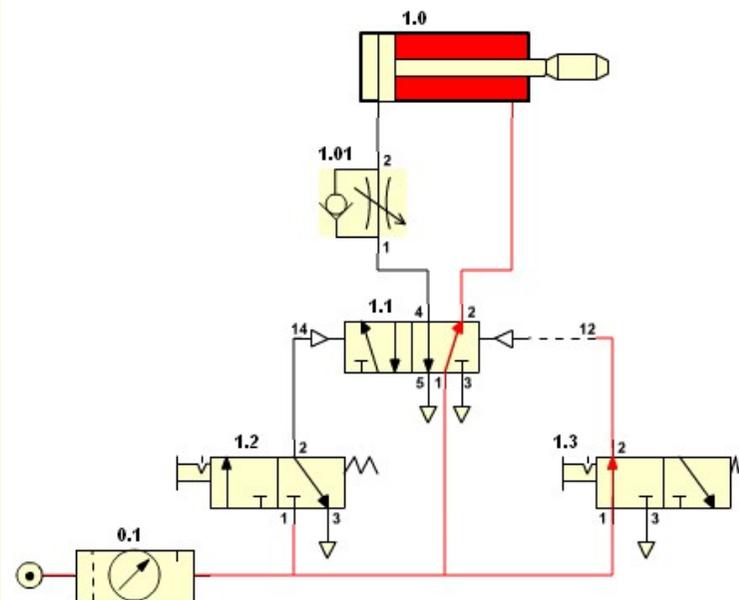
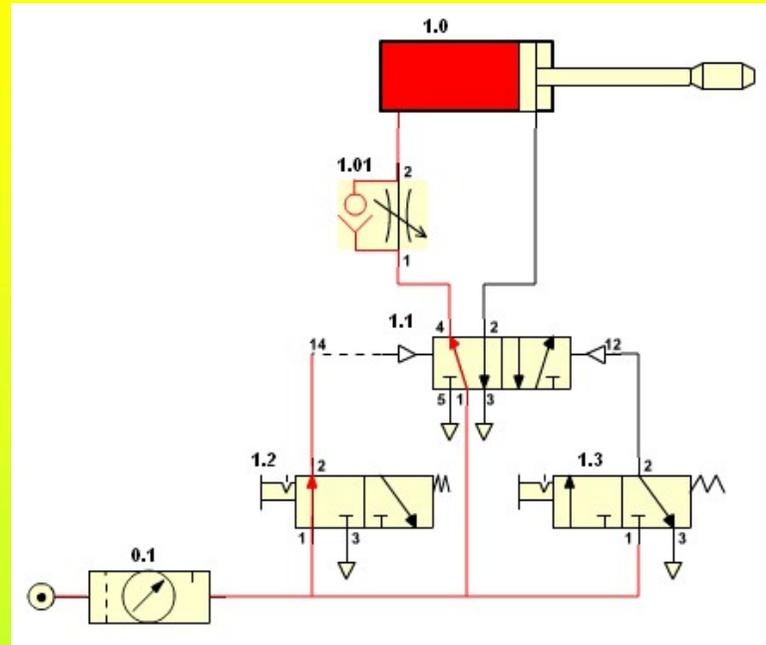
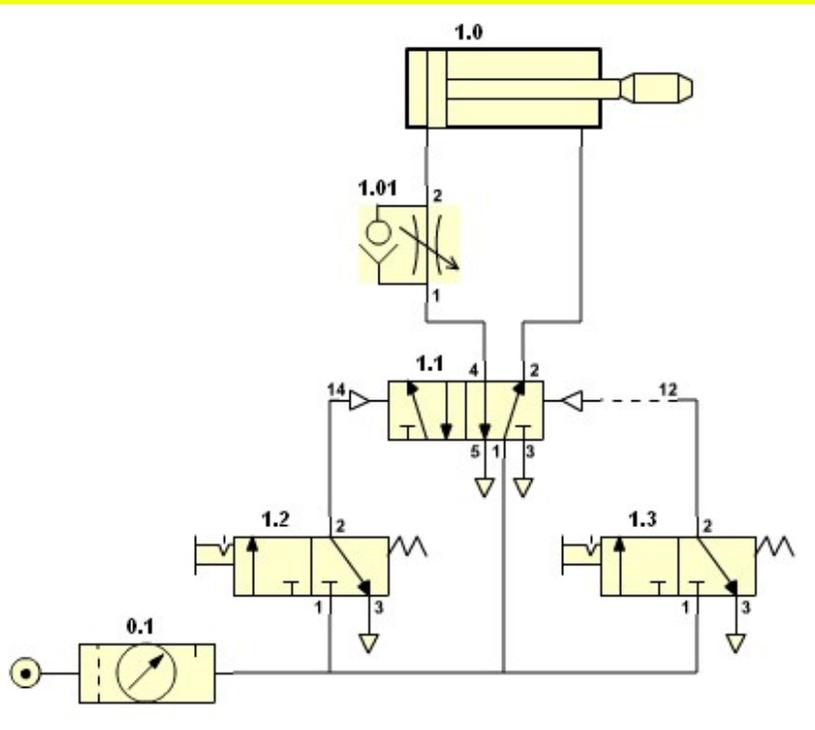
CIRCUITOS NEUMÁTICOS



CIRCUITOS NEUMÁTICOS

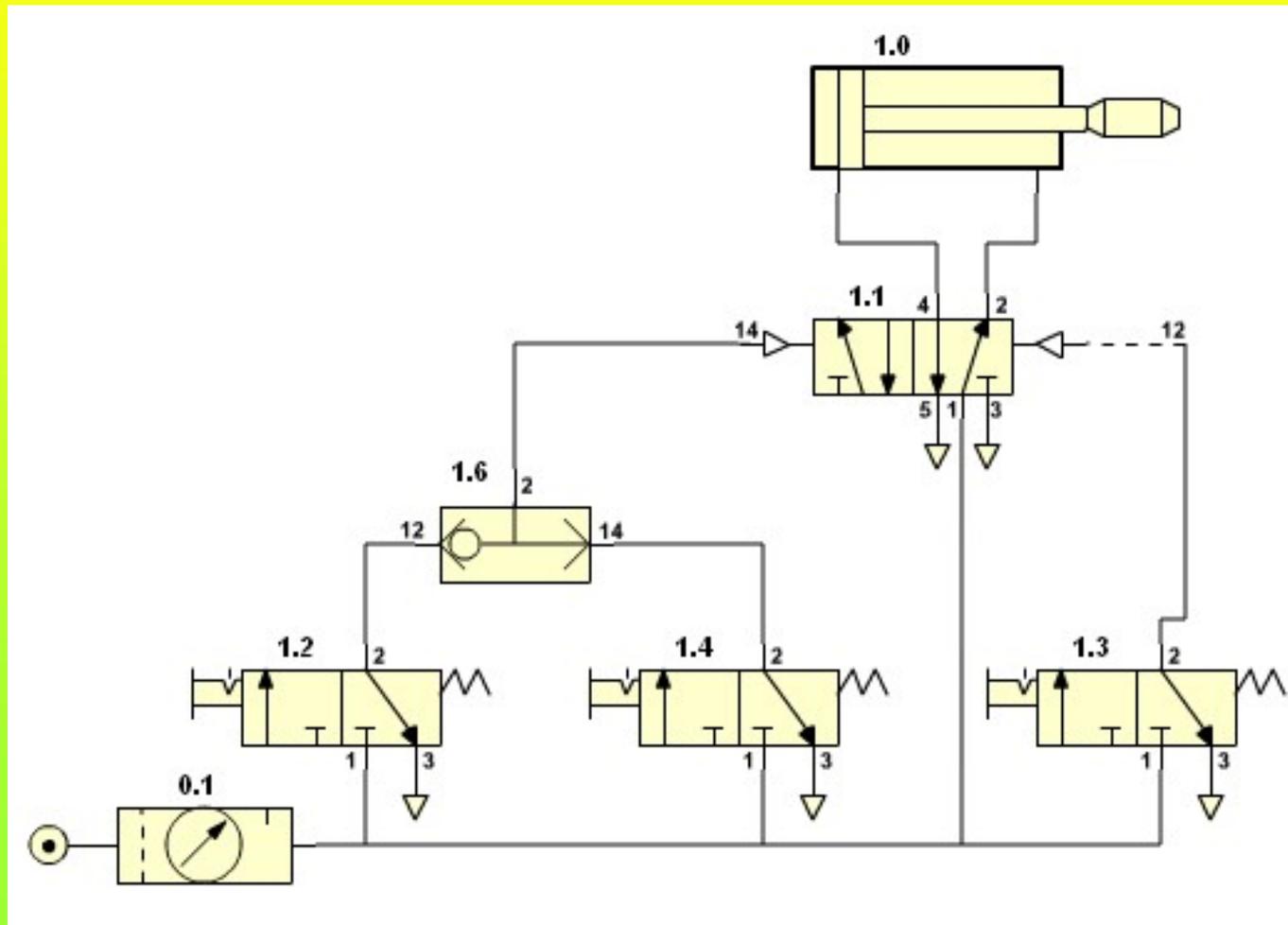


CIRCUITOS NEUMÁTICOS



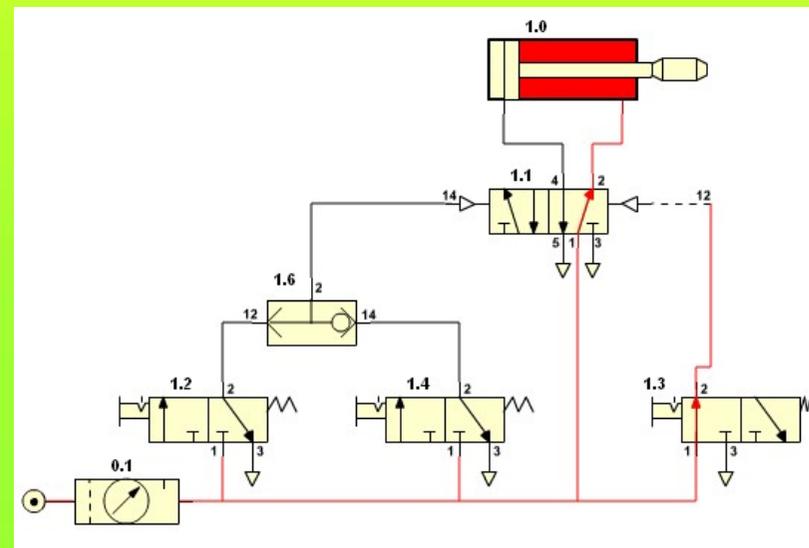
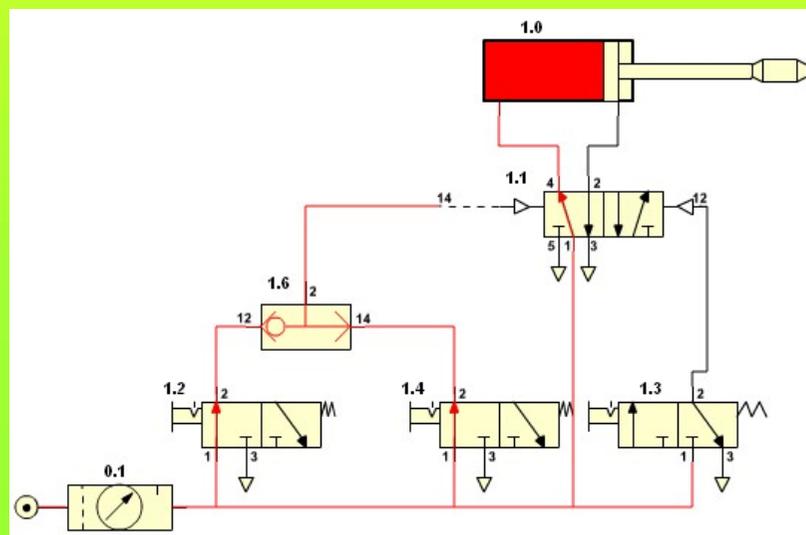
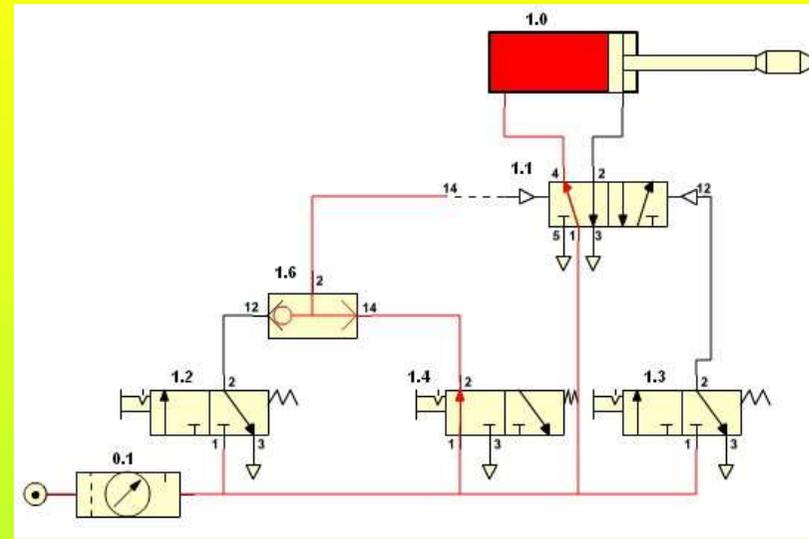
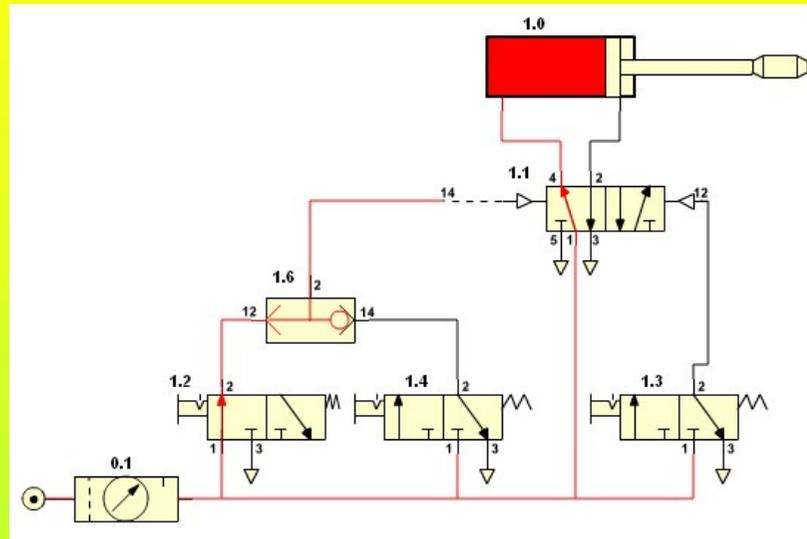
CIRCUITOS NEUMÁTICOS

La válvula selectora



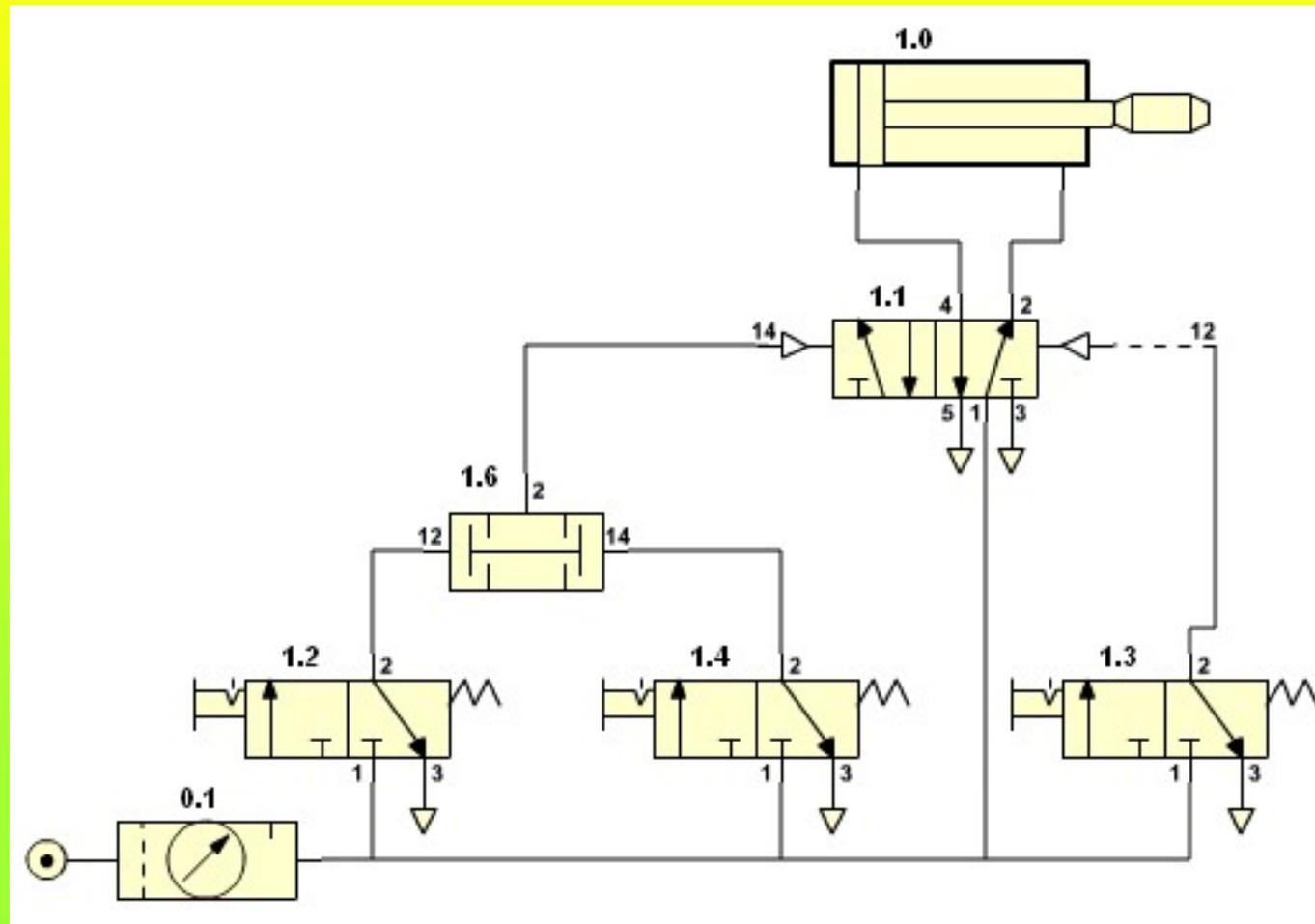
CIRCUITOS NEUMÁTICOS

La válvula selectora



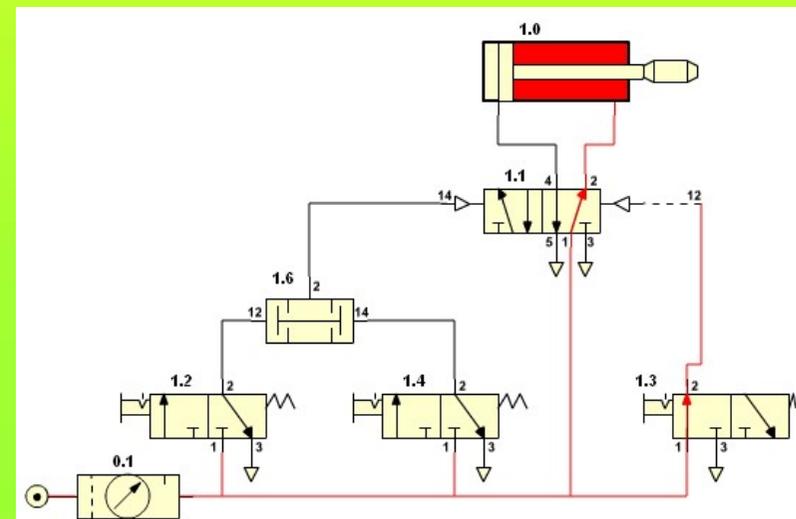
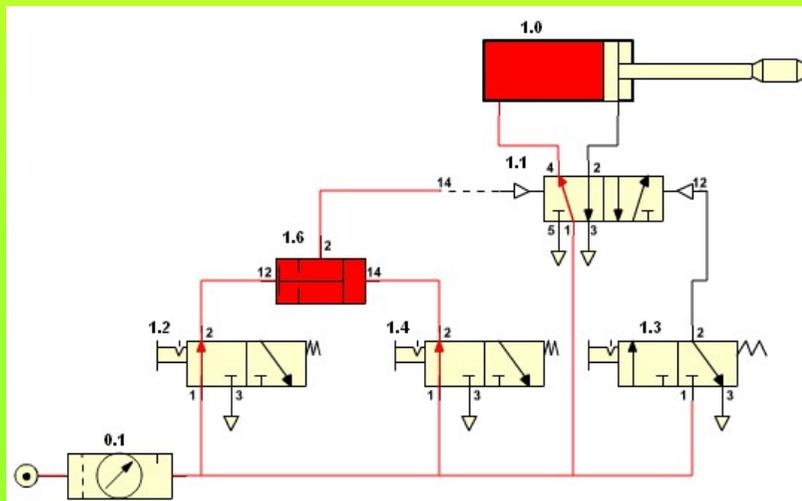
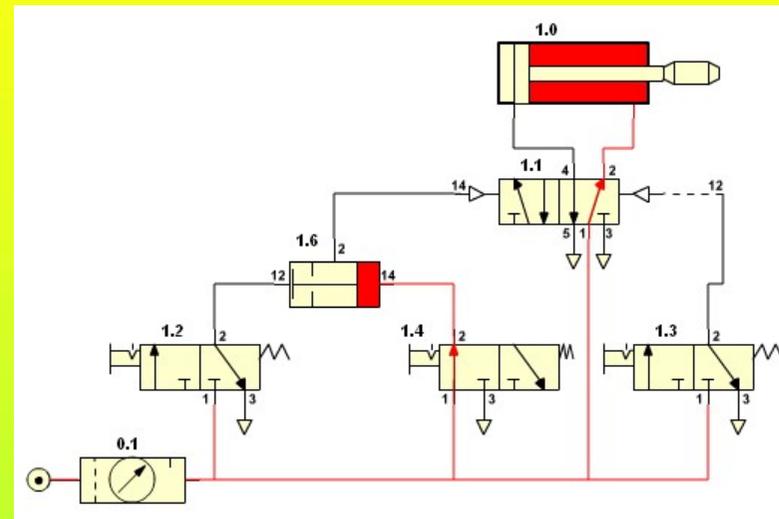
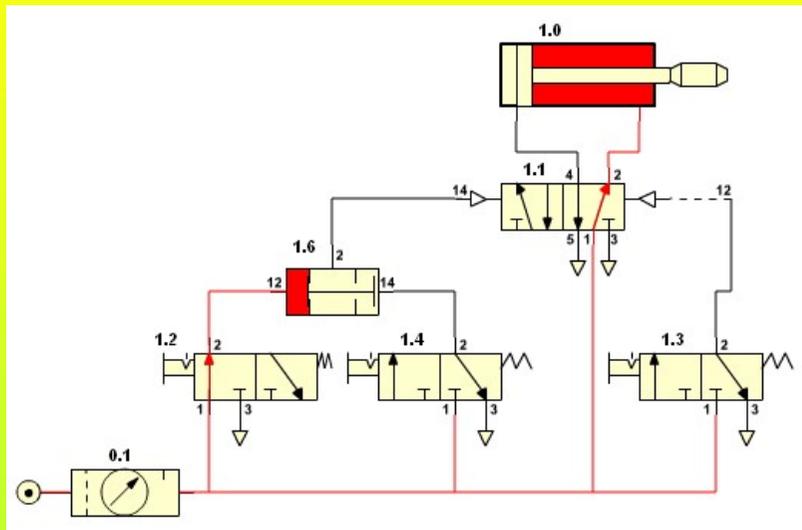
CIRCUITOS NEUMÁTICOS

La válvula de simultaneidad



CIRCUITOS NEUMÁTICOS

La válvula de simultaneidad



AGRADECIMIENTOS

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