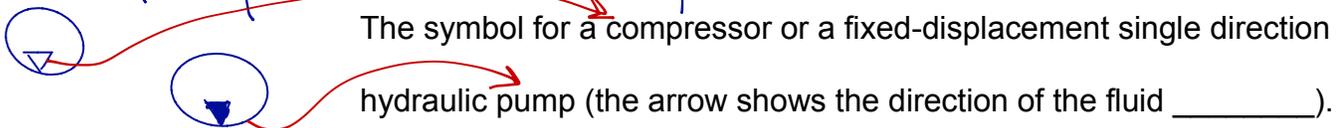


# Fluid Systems

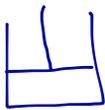
## SPH4C

The hydraulic press is an example of a fluid system, an arrangement of components used to transmit & control forces in a fluid.

The initial source of energy for the system can be an electric motor or other device that drives a pump (for liquids) or a compressor (for gases).



The pump or compressor transforms mechanical energy to fluid energy, and then the actuator transforms the fluid energy back to mechanical energy.



The symbol for a single acting cylinder, the actuator for the hydraulic press you constructed.

### More Symbols

Transmission lines (through which the fluid travels)

A continuous line is a fluid conductor (pipe)

A dashed line is a control or drain line

A diamond is a fluid separator.  
(filter, separator, lubricator, heat exchanger)

One square indicates a single control function

Two or three adjacent squares indicate a directional control

The most commonly used directional controls are 3 way valves.

Example: 3 ports / 2 positions

A normally closed directional control valve with 3 ports and 2 finite positions looks like:

A normally open directional control valve with 3 ports and 2 finite positions looks like:

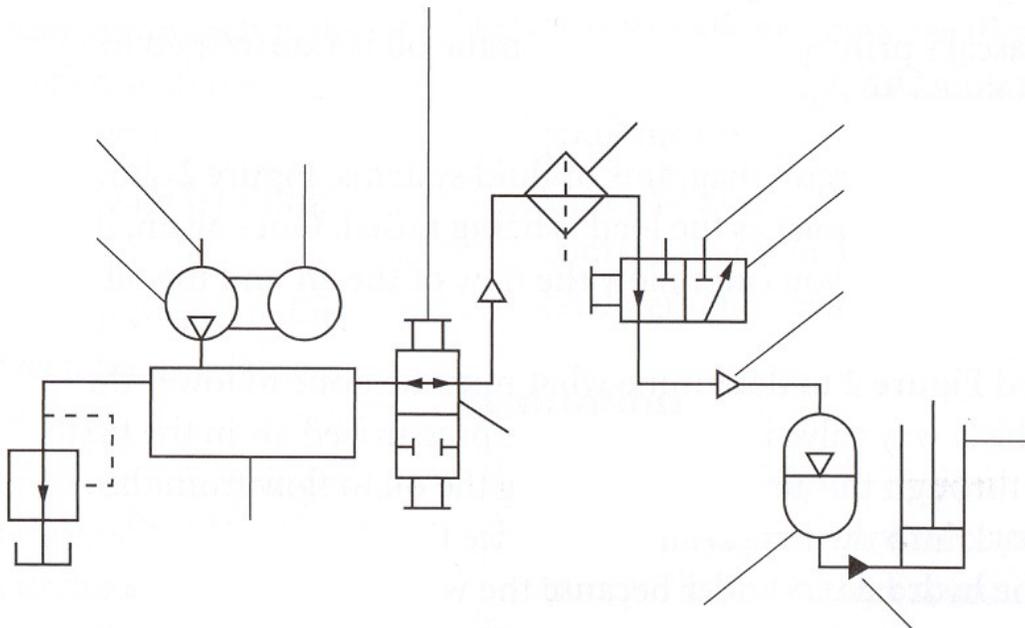
The general symbol for a manual control is  
(without showing the control type)

a pushbutton

a lever

a foot pedal

Example System: A Car Hoist



When the hoist is lowered,  
the valve's position changes:

