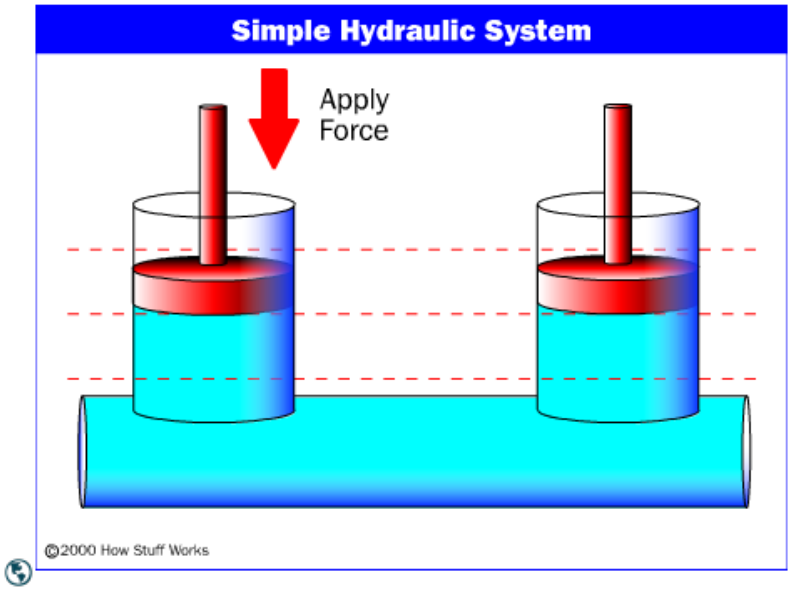
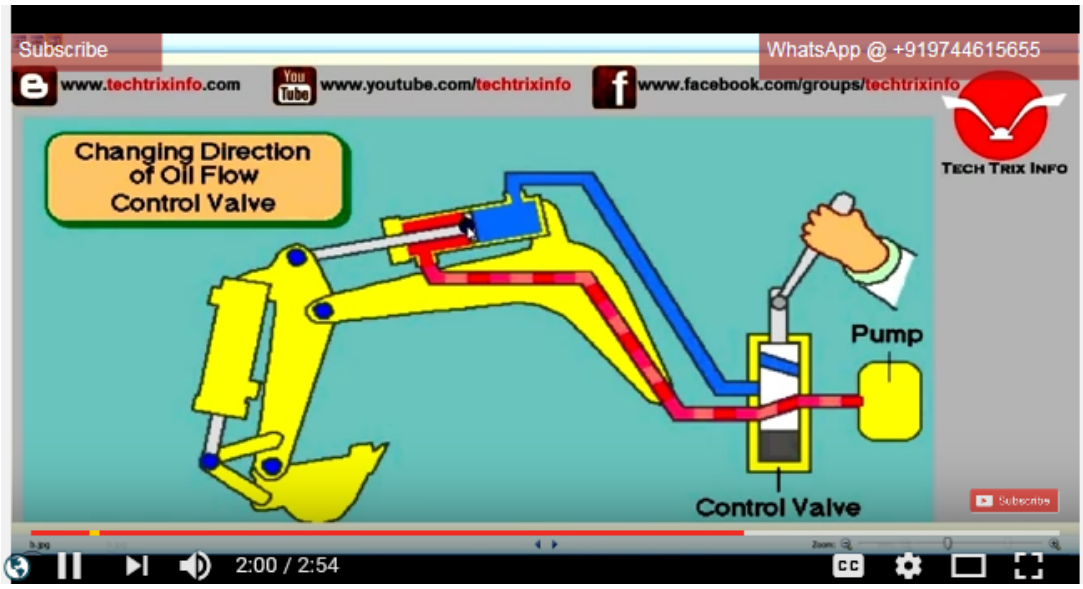
Pressure in fluids is important in hydraulic machinery

**Hydraulics** - is the study of pressure in liquids

**Hydraulic Systems** - are devices that transmit applied forces through a liquid to move something else.






In most hydraulic systems, a force is exerted on a continuous, enclosed liquid. This applied force created pressure that moves the liquid through a series of tubes,pipes or hoses, which causes motion at the other end of the system.

Liquids must be enclosed in a tube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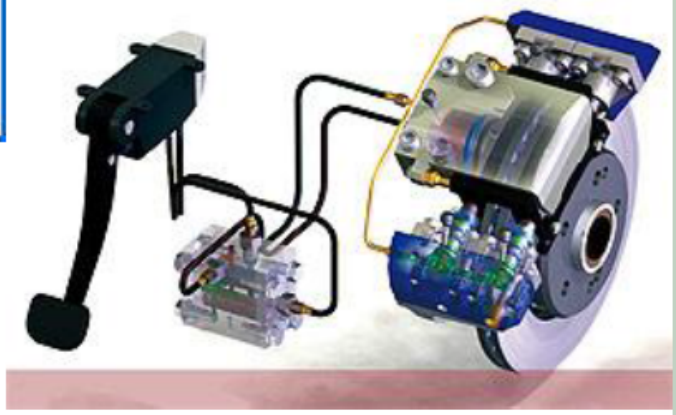


The term "**Jaws of Life**" refers to several types of piston-rod hydraulic tools known as cutters, spreaders and rams, which are used to pry open vehicles involved in accidents when a victim may be trapped.

attachments for jaws of life

Rams


Cutters

Spreaders

Pipelines use fluid pressure and hydraulics to transport liquids such as oil, water and other liquids over large distances.

Pumps provide a force that pushes the fluid through the pipes.

Water that comes out of our faucet comes from the lakes, rivers or from underground in wells. Thus water MUST flow up to get to your home. In order for water to travel up, it must be places under pressure in order to give the water particles the energy to move against gravity. (No energy from a pump means water sits in the low parts of pipes) The pressure transmitted in the pipes must be large enough to transport the water over large distance but not too much to make the pipes burst.

Friction in pipes - caused by rough surfaces or bends in pipes- can affect the fluids pressure. Particles lose energy as they brush past each other in the pipe or bump into walls. Therefore pump stations are needed along long distance to renew energy.

**Valves** - are devices used to regulate the flow of a liquid in a hydraulic system.

## Our Body

The Heart, Part 1 - Under Pressure: Crash Course Anatomy & Physiology #25 - YouTube

The heart in our body acts a pump.

*Highest blood pressure occurs close to the heart

*Lowest blood pressure in distant regions (hands and feet)

Arteries and capillaries act as the pipeline for blood

Valves in the veins keep the blood moving in one direction.