

SPECIFICATIONS FOR MAKING A PUMP (Valve section)

Having followed the stages for making the framework and the drive mechanism to work the pump, the valves must be incorporated into the supplied container.

General Function (service function)

The instrument must allow a liquid comparable to blood to circulate, in one direction, inside a canal circuit or in relatively flexible tubing

In terms of the *human aspect*, the prototype of the valve-pump must:

- Be manually activated;
- Be easy to use;

In terms of the *physical aspect*, the prototype of the valve-pump must:

- Be made from durable materials.
- Allow a liquid (water) to be aspirated and to circulate with a certain pressure.

In terms of the *technical aspect*, the prototype of the valve-pump must:

- Have valves.
- Allow the movement of liquid in only one direction.
- Allow the valves to be solidly affixed to the central pump.
- Be sealed (no leaks).
- Be efficient; the liquid must not come back into the pump once it is expelled.
- Supply adequate output

In terms of the *industrial aspect*, the prototype of the valve-pump must:

- Be able to be entirely built in a science and technology laboratory of the 2nd cycle of secondary school.
- Be entirely built with the available materials and with the raw materials put at your disposal.

Note: Pressure-tack, adhesive tape and elastics are not allowed as technical connections

In terms of the *economic aspect*, the prototype of the valve-pump must:

- Cheaper than \$3.00

Working Document