System Diagram of a Hydraulic Jack

In this activity you will draw a systems diagram of a hydraulic jack. Your diagram should describe the way in which a hydraulic jack works.

FIGURE 7 shows the inside of a hydraulic jack. Notice that there is a small cylinder and a larger output cylinder. Between the two cylinders is a valve that allows the hydraulic fluid to work in only one direction. Start by drawing the diagram for the small cylinder. Indicate the direction of flow of the hydraulic fluid to the output cylinder.

Draw the systems diagram of a hydraulic jack in your workbook. Use **FIGURE 8** to guide you.

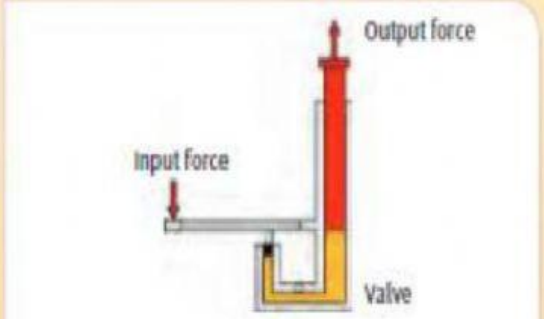

FIGURE 7 Systems diagram of a hydraulic jack

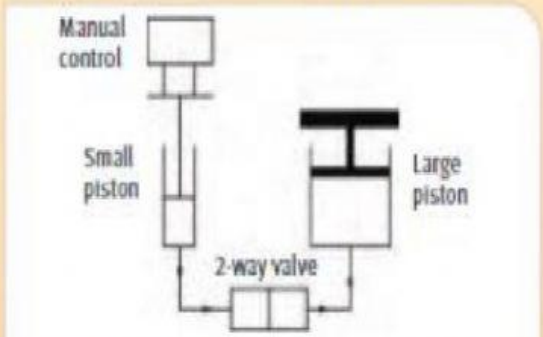

FIGURE 8 Using symbols to show the systems design of a hydraulic jack

1 Force transfer of hydraulic fluid from a large cylinder to a smaller cylinder will _____ the distance on the output piston (MA < 1).

2 Newton is the unit in which _____ is measured.

3 Pascal's Principle states that: pressure applied anywhere on a confined fluid is transmitted _____. The force exerted by the confined fluid is applied to _____ of the surface of the container and is _____.

4 What does this mean? The hydraulic press has a mechanical advantage _____ times larger than the input force.