

NOTE:
This project uses compressed air.
Please use appropriate precautions
when loading and launching.

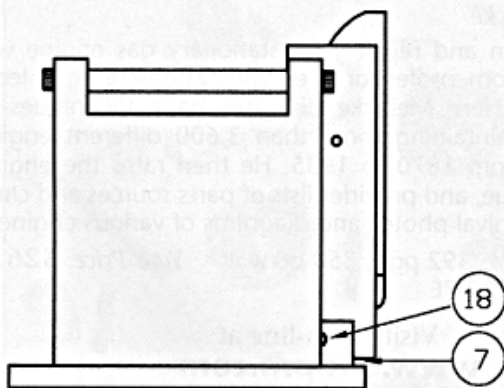
HOSE ASSEMBLY

Operation

The amount of water placed in the bottle contributes to the thrust. A bottle one-quarter full of water will fly further than one filled with just air or completely full of water. The thrust of the bottle is dependent on the mass of water being expelled and the speed at which it is expelled. The amount of water and the pressure applied also affects stability. When launching a two-liter bottle, it will quickly lose stability and tumble. This occurs when the water is completely expelled.

To reach a greater height, the bottle must be aerodynamically stable in flight. At our reunion, several of our teenage grandchildren spent all day experimenting with their bottles by adding nose cones of light cardboard or paper. Paper and plastic cups were also employed. In one case, a cut-off top section of a two-liter bottle was used. Fins made from light cardboard were applied with 5-minute

epoxy and some with duct tape. Various small weights were added to the nose in the form of modeling clay, a couple of pebbles and, in one case, a little sand. They quickly learned the right combinations of materials to stabilize the rocket and get the greatest height.



ASSEMBLY DRAWING

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