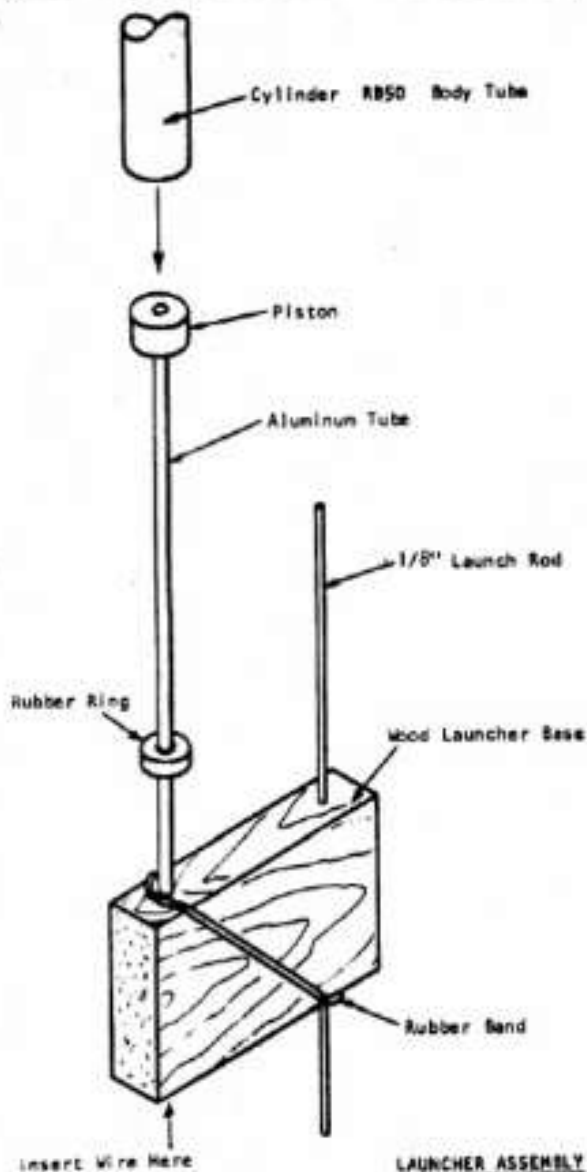
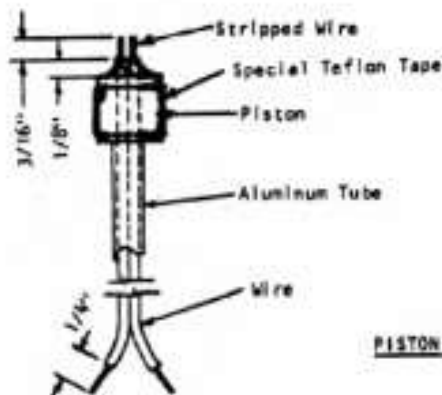


Piston Launcher



LAUNCHER ASSEMBLY



PISTON DETAIL

THE "BOOM TUBE"

The CMR Piston Launcher has been operating successfully for a number of years. It was used exclusively by the 1974 U.S. International Model Rocket Team at the 2nd World Championships held in Dub. ca, Czechoslovakia on 4 to 9 September 1974, and enabled the U.S. to score numerous victories.

THEORY OF OPERATION:

The Piston Launcher fits over a model rocket engine much the same way a cylinder fits around a piston in an automobile engine. The rocket engine acts both as a piston and a source of power. When the engine ignites, gases are expelled and build up pressure in the chamber formed between the piston and the rocket engine. Since the engine in the rocket is movable and the launcher is stationary the increasing pressure of the gas pushes the engine out of the cylinder. These gases which are normally wasted add additional velocity to the rocket at the moment of launch. No launch lug is required because of the additional velocity and the fact that the cylinder itself stabilizes the rocket during the first part of the flight. The lack of launch lug and the additional power produced by the piston can increase the performance up to 30% or more.

ASSEMBLY:

Insert the aluminum tube into the hole in the wood base about 1".

Place rubber ring over the aluminum tube.

Push piston on aluminum tube until tube is flush with piston.

Prepare wire for installation by stripping 3/16" of insulation from each wire.

Insert the prepared end of the wire into the bottom of the aluminum tube and push it until 1/8" of the insulation is above the piston. Glue in place with a fillet of epoxy glue. Make sure glue covers entire face of the piston but not the sides.

A special Teflon tape is furnished to provide a smooth surface and a tighter seal. Cut a 3" piece of tape and remove the tape from the backing. Wrap it carefully around the piston. Check fit to insure a smooth operating cylinder. Remove or add tape as required.

Strip about 1/4" of insulation off the wire sticking out of the bottom of the launcher.

Slip cylinder down over piston and push rubber ring into bottom of cylinder. Rubber ring acts as a stop and a guide for the cylinder.

The piston launcher is now ready for operation.