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The first task was to dismantle the pump and decide how to mount the die. The pump outlet end (where the hose normally fits), was bored to take the die. The inside of the end casting was polished to give a good face for the die to seat on. Its worth pointing out that in the full size press, no seals are used, so all mating faces are metal to metal. The Press piston is a loose fit in the cylinder bore, so that cordite can seep up the sides of the piston. I assume this is so that there is no heat generated by seals rubbing on the cylinder bore as the cordite is compressed, as the cordite is temperature sensitive. Equally no air must be trapped in the cordite when it is loaded into the press as air under compression rises in temperature and could cause an explosion.

The pump outlet casting was mounted on two columns (photo4) and the die inserted (photo6). Next the Cylinder of the pump, which has a bore of 2.110" was reduced from 5" to 4" in length to make the assembly more manageable.

The piston (photo8) is a piece of aluminium 2.100" dia, giving 0.010" clearance on the cylinder bore and is held onto the screw jack by a U clamp so that it is free to turn as pressure is applied to the jack, as per the prototype.

Photo7 shows the complete assembly and photo9 shows two pieces of extruded plasticine with the seven holes clearly seen.

Extruding the plasticine was extremely hard and experiments with other mixtures (one suggestion being flour & cooking oil) is called for. Or perhaps a bigger die may work better, but never the less, the result is promising.

Incidentally, unlike my two puny pieces of plasticine, cordite was extruded in long lengths, anything from two feet upward, depending on the application it was to be used in and I have seen photos of lengths of 12' or more being extruded using a horizontal press. The extrusion was then fed onto a long table in front of the press, where it would be placed into packing cases for storage and transportation.

Yours Sincerely,

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