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A Simple, Effective High Pressure Valve

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AT the University of Illinois High Pressure Laboratory a simply constructed, widely useful high pressure valve has been devised. It has been tested to 30,000 psia with oil and to 20,000 psia with gas without leak. It is believed that it would hold considerably higher pressure. The valve is shown in Figs. 1 and 2. It can be made from either 2-in. diameter round or hex stock. The stem is conveniently made from drill rod.

The valve offers the following advantages:

(1) Four-piece construction, with the upper half of the body acting also as safety nut.

(2) The only part requiring careful machining is the "O" ring groove and immediately adjacent area.

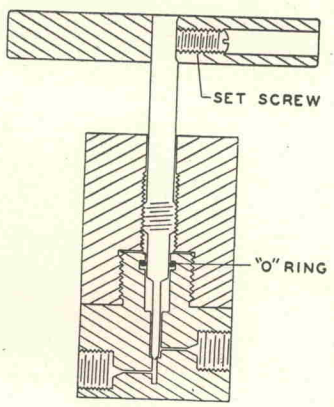

FIG. 1. "O" ring high pressure valve.

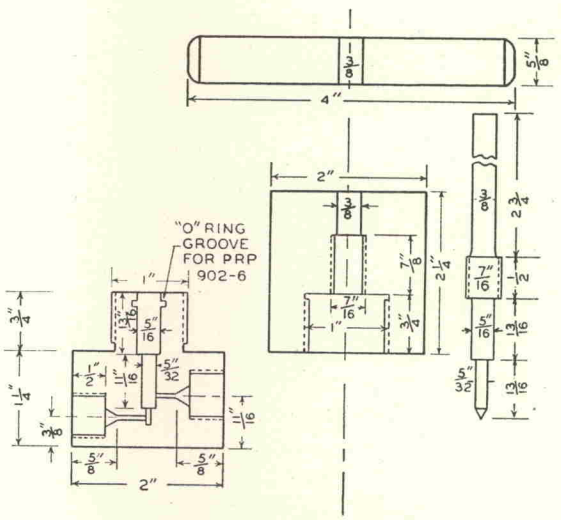

FIG. 2. Details.

(3) The "O" ring packing is easily replaced and offers little resistance to turning. The valve can be turned with one hand at 20,000 psia.

(4) It is possible to put the inlet and outlet connections at any angle and thereby to save on tees, elbows, etc. It is also possible to have several inlet or outlet connections on a single valve.