

In the event that pumping is necessary the operator may route the high pressure gas to a one cubic foot storage reservoir for later use, or pump directly into the breech reservoir.

It is normal procedure to fill the breech reservoir fifty to one hundred psi above the desired shooting pressure and then allow the gas pressure to stabilize at ambient temperature. This makes it necessary to have some means of slowly relieving the breech pressure to the desired pressure.

A normally open high pressure valve with a restricted orifice open to the atmosphere is used to facilitate bleeding the breech pressure to the desired value. This valve (No. 15) is in parallel with the breech fill line. One other valve (No. 14) with a full orifice open to the atmosphere and also in parallel with the breech fill line is of the normally closed configuration and is used for "dumping" the pressure in the breech to the surroundings should an emergency arise.

To facilitate the use of both breeches without having to make extensive changes in the system, valves number 10 and 12 (Fig. 13) were incorporated into the system. Valve No. 11 always remains the firing valve, so as not to present any chance of confusion on the part of the operator. Valves No. 10 and 12 are on the same circuit and are operated in such a way that only one may be open at any time. In effect these two valves afford the possibility of operating both breeches from essentially the same system. By opening valve 10, valve 12 is simultaneously closed and the system is ready to accept the double diaphragm breech. In the other mode (valve 12 open, valve 10 closed) the system is used to operate the wrap-around breech.

## 2. Control Panel

The control panel (Fig. 14) is divided into two sections. One affords the control of operations and the other enables the operator to monitor the influence of the controlling action taken.