

CONTROL VALVE RELAY

This is a spring-closed hydraulic relay (Refer to Fig. 1) whose output piston (1) positions the secondary control valve relay. The lift of the control valve relay is representative of the required control valve flow. There are three pilot valves, designated as V-2, V-3 and L pilot valves, provided to control the piston position of the control valve relay unit. All three pilot valves are arranged in series in the oil feed to the piston chamber (2). Whichever pilot valve calls for the lower lift of the control valve relay will be in control of the oil supply and, as a result, in control of the relay piston proper.

The input end of the V-2 pilot valve floating lever will be operated by the speed relay (S-1 signal) and the input of the V-3 pilot valve floating lever by the output torque shaft (P-1 signal) of the pressure control unit. The input end of the L pilot valve floating lever will be operated by the control valve limit handwheel (3).

In the event the V-2 pilot valve has control over the control valve relay, then the control valve relay lift (V-1 signal) is proportional to the speed relay lift, and the V-3 pilot valve is some amount above

port; the amount of its overtravel (V-3 signal) representing the amount of reactor steam that is not absorbed by the control valves and, as a result, must be passed through the bypass valves. A linkage system is connected to the V-3 pilot valve directly to transmit its position to the bypass relay unit.

Conversely, if the V-3 pilot valve has control over the control valve relay, then the V-2 pilot valve is some amount above port. Any amount of overtravel of this pilot valve (V-2 signal) is significant of the fact that the permitted opening of the control valves does not pass sufficient flow to carry the turbine load called for by the speed relay. As a result, the turbine will not be on governor control.

The lift of the control valve relay piston may be limited by the L pilot valve if it is desired to limit the opening of the control valves for special purposes. This L pilot valve can be operated by a handwheel mechanism, the control valve limit, which is accessible at the turbine front standard. Since this means of control will only be used very seldom, no means of remote control of the control valve limit is provided.



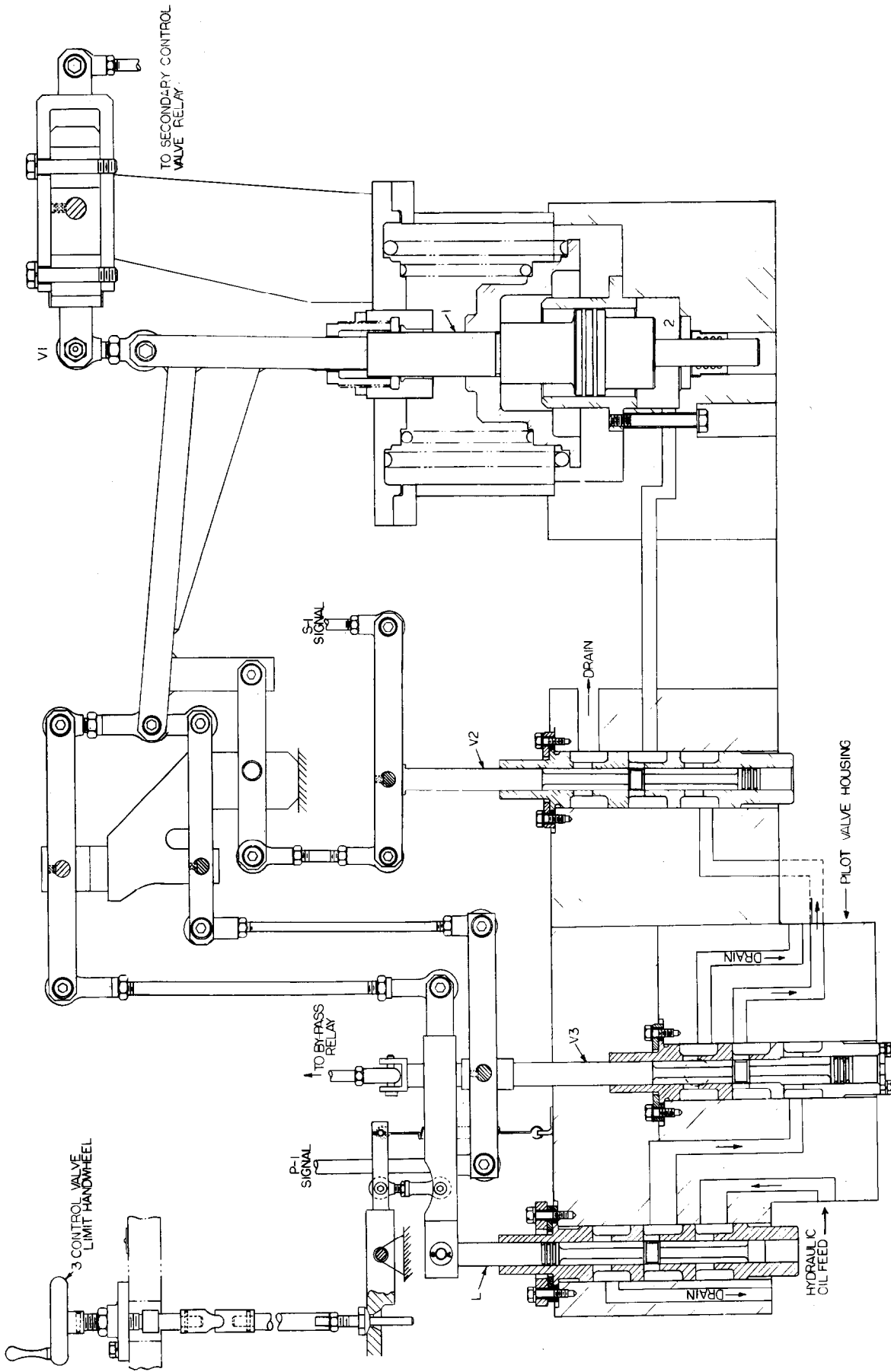


Fig. 1. Control valve relay assembly
 (Dwg 945D603, rev.0)