

A PUMP, CONTROL VALVE AND DIAPHRAGM

ABSTRACT

A pump (10) has a pump body (11) which at least partly encloses a pair of opposing pump chambers (12) and (13). Mounted in the body (11) are a pair of flexible diaphragms (14 and 15) which divide the respective chambers (12 and 13) into sub-chambers (16, 17, 18 and 19). Extending between the diaphragms (14 and 15) is a connecting rod (20) which is connected to each diaphragm (14 and 15) by a flange assembly (21). Located at each longitudinal end of the pump (10) are manifolds (22) which each provide an inlet duct (23) and an outlet duct (24). Each duct (23) and (24) has an associated valve assembly (25) which restricts movement of the pumped liquid in one direction through the pump (10). Also disclosed is a control valve (29) with a spool (30) having encircling grooves cooperating with detents consisting of O-rings located in corresponding internal grooves in the valve body, and a circular diaphragm having central, intermediate and peripheral portions interconnected by resilient annular hinges.

Fig. 1