

For test and INJECTION Systems 10,000 to 30,000 psi 700 to 2,000 Bar

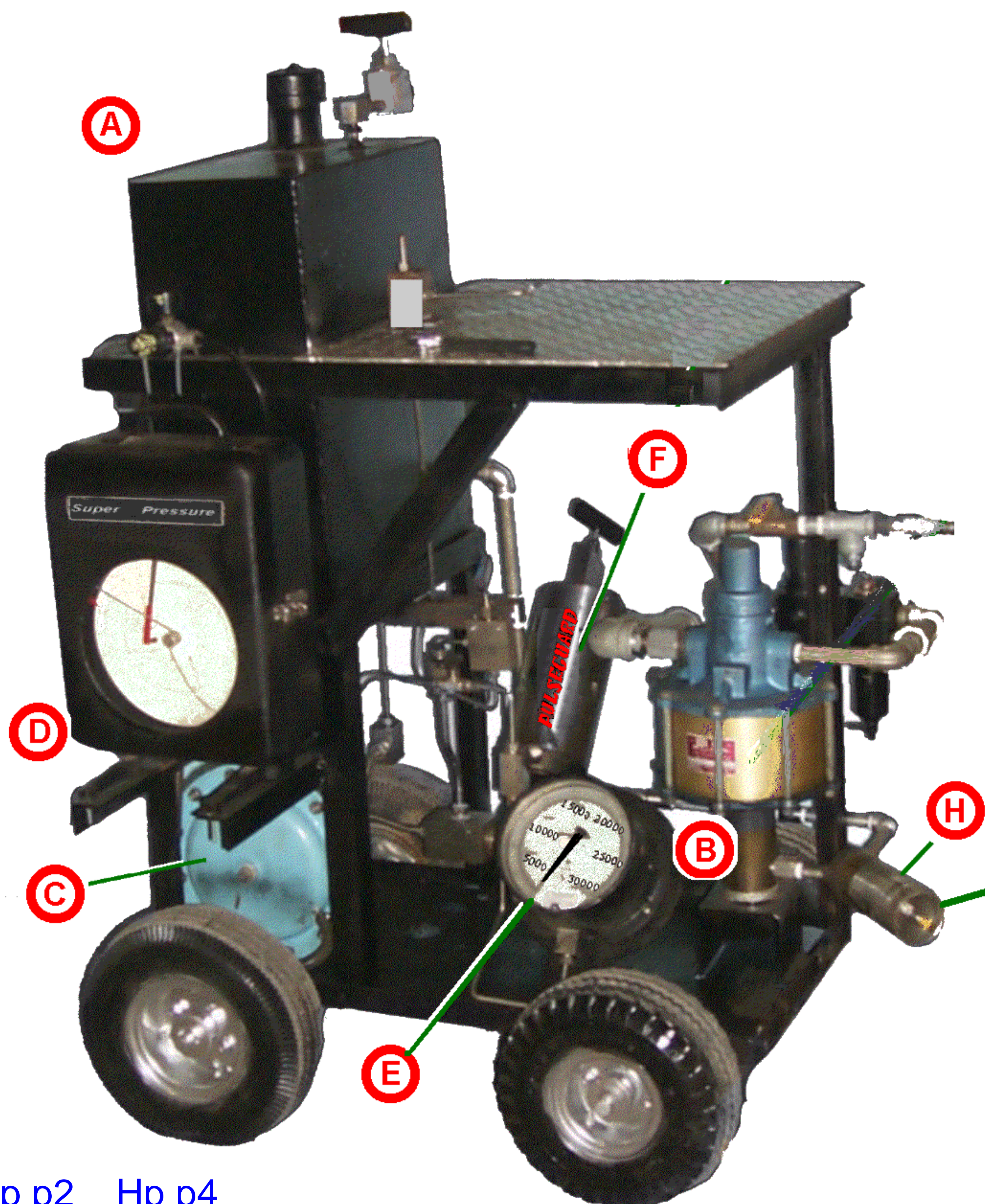
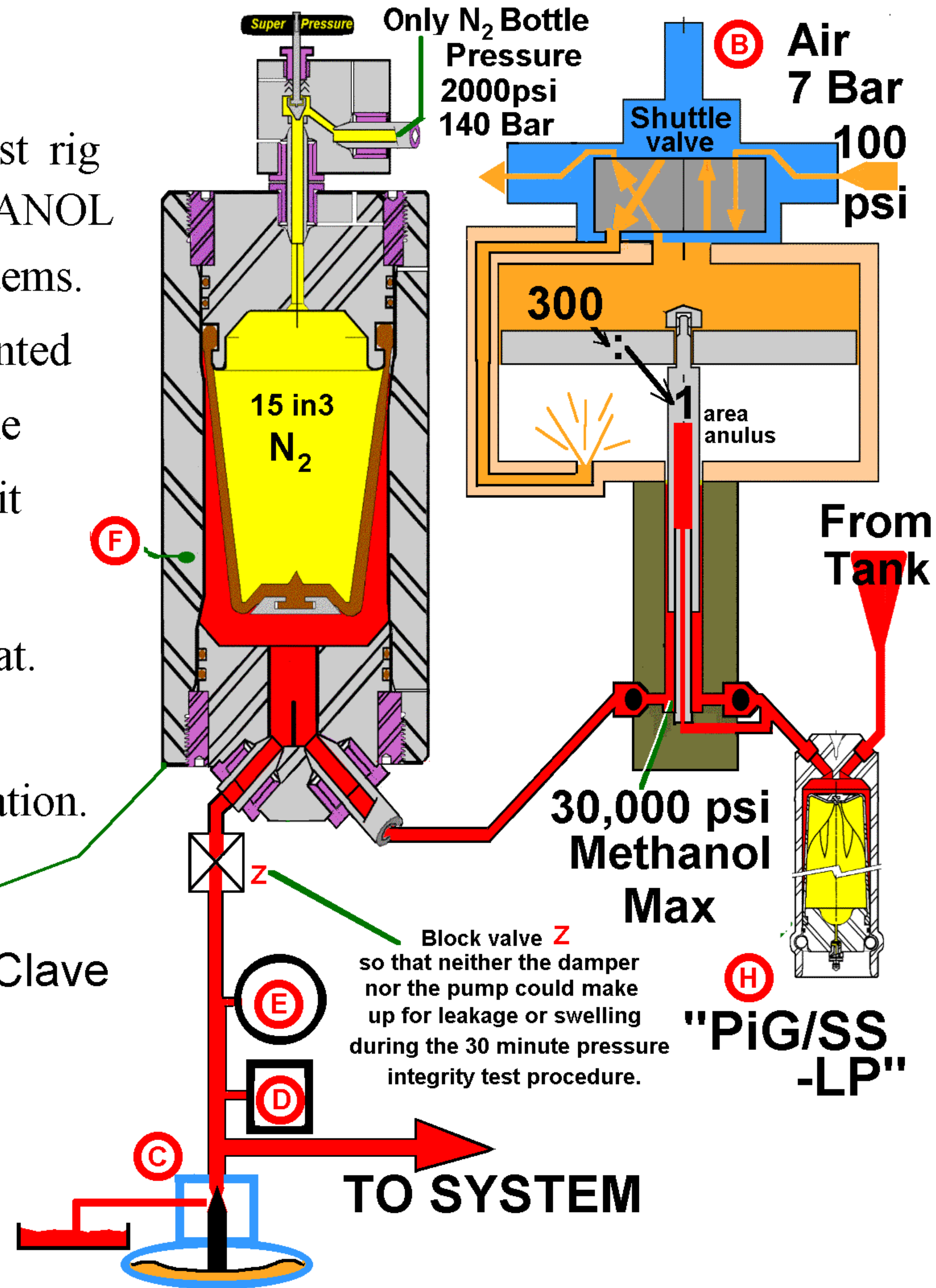
PROBLEM 1, 2, & 3. Below

The National Oilwell ("O.W.E.CO") well head test rig (A) below, was re-deployed to 11,500 psi METHANOL and INHIBITOR pumping, to prove injection systems.

The fast return / suction stroke of pump (B) prevented the suction from fully filling. The discharge stroke began with a huge acceleration until the plunger hit the liquid and sent a shock into the system.

1. The pressure set valve (C) was blasted off its seat.
2. The chart recorder (D) was ruptured.
3. The certified gauge (E) immediately lost calibration.

ANSWER (F) "PiG" **PIPEGUARD** pt. No. PiG / 0.25 Lt. / 1000 Br. / 9/16" AutoClave From inventory in DUPLEX SS , intercepted the shocking "pulsation" ,



RESULTS

Three days of procedures were then performed with no loss of calibration, nor disturbance of the pressure set valve, and with complete legibility of the chart recorder.

6% max residual shock.

(H) A **PIPEGUARD** PiG/SS-LP was added to the suction supply line from the tank, and resulted in :

1. A further 70% reduction in pulsation
2. A 225% increase in pumpable rate.
3. One year before recalibration was required.

DAMPERS THAT DO - FLOW GOES THROUGH - SHOCKS DO NOT
Always address the suction system first.