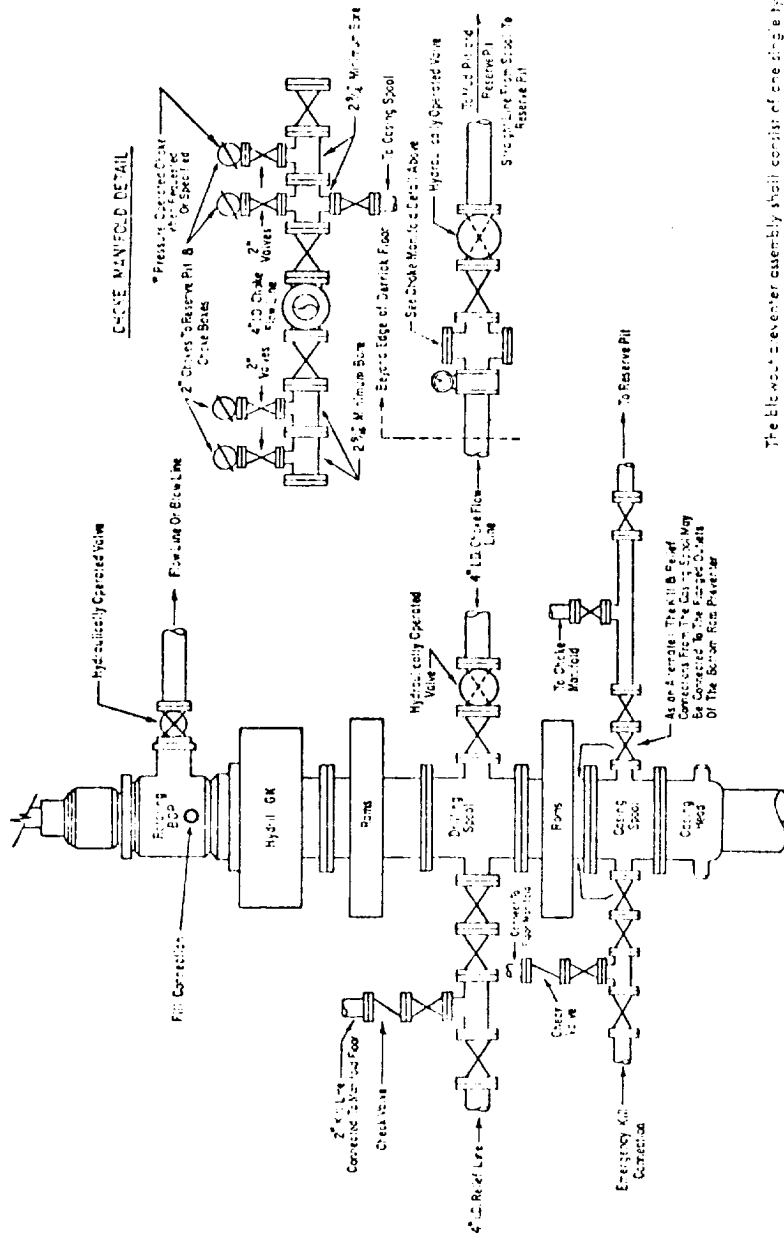




5000 # PSI WORKING PRESSURE SLOWOUT PREVENTER HOOK-UP

The slowout preventer assembly shall consist of one (1) high pressure ram preventer, both hydraulically operated, a Hydraulic "GO" preventer, a matching back pressure preventer, choke, choke and connections, as illustrated. If a tapered drill string is used, a ram pressure preventer must be provided for each size of drill pipe. Choke and tubing rams to fit the preventers are to be available at all times. If correct in size, the tapered ram of the ram preventer may be used for connecting to the 4-inch I.D. choke flow line and 4-inch I.D. relief line, except when air or gas drilling. All preventer connections are to be open-face flanged.

Minimum operating equipment for the preventers and hydraulically operated valves shall be as follows: (1) Multiple pumps, driven by a continuous source of power, capable of fluid charging the total accumulator volume from the nitrogen precharge pressure to its rated pressure within _____ minutes. Also, the pumps are to be connected to the nitrogen precharge pressure to its rated pressure (not less than 700 PSI) and connected so as to receive the above-mentioned fluid charge. With the charging pumps shut down, the pressurized fluid volume stored in the accumulators must be sufficient to close all the pressure-operated devices simultaneously within _____ seconds, after closure, the remaining accumulator pressure shall be not less than 1000 PSI with the remaining accumulator fluid volume of at least _____ percent of the original. (3) When operating, an additional source of power, remote and electrically, is to be available to operate the above pumps, as there shall be available at pumps operated by separate power and control in _____ of the control lines.

The slowout manifold and remote closing manifold shall have a separate control for each pressure-operated device. Controls are to be located, with control lines, in the derrick room and closed positions. A pressure relief valve must be provided for each of the slowout preventers, when remote, a pressure relief valve shall be provided to prevent the slowout preventer from becoming a ram preventer. Controls on the slowout preventer, or equivalent or better, is to be used as the line to the slowout preventer.

The choke manifold, choke flow line, relief line, and choke lines are to be supported by metal arms and adequately anchored. The choke flow line, relief line, and choke lines shall be connected directly to the slowout preventer and not to the choke manifold. If deemed necessary, valves shall be installed in the choke flow line and the choke manifold. All valves are to be selected for operation in the presence of oil, gas, and drilling fluids. The choke flow line valves and relief line valves connected to the existing slowout preventer shall be equipped with stem extensions, universal joints if needed, and hand wheels which are to extend beyond the edge of the derrick substructure. All valves are to be equipped with handwheels.

* To include derrick floor mounted controls.