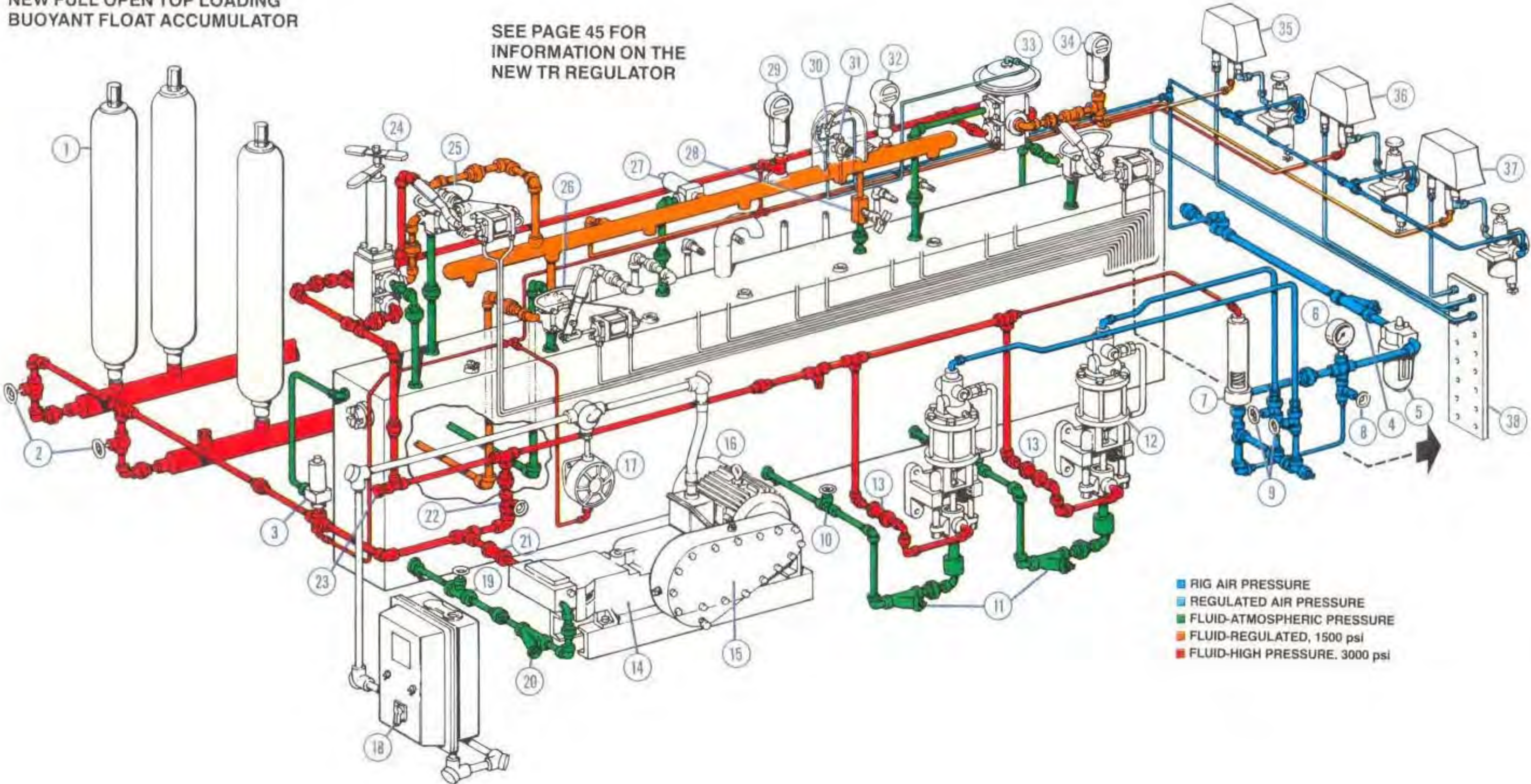


TYPICAL CONVENTIONAL BOP CONTROL SYSTEMS

SEE PAGE 28 FOR
INFORMATION ON THE
NEW FULL OPEN TOP LOADING
BUOYANT FLOAT ACCUMULATOR

SEE PAGE 45 FOR
INFORMATION ON THE
NEW TR REGULATOR



- RIG AIR PRESSURE
- REGULATED AIR PRESSURE
- FLUID-ATMOSPHERIC PRESSURE
- FLUID-REGULATED, 1500 psi
- FLUID-HIGH PRESSURE, 3000 psi

TYPICAL CONVENTIONAL BOP CONTROL SYSTEMS

1. **Accumulators** — Precharge to 1000 psi + 10%. **WARNING: USE NITROGEN ONLY — DO NOT USE OXYGEN!** Check every 30 days.
2. **Accumulator Bank Isolation Valve** — Manually operated, normally open.
3. **Accumulator Relief Valve** — Set at 3500 psi.
4. **Air Filter** — Automatic drain, clean every 30 days.
5. **Air Lubricator** — Fill with SAE 10 lubricating oil, set for 6 drops per minute, check oil level weekly.
6. **Air Pressure Gauge** — 0 to 300 psi.
7. **Air Pressure Switch** — Automatically stops air operated pumps when pressure reaches 3000 psi and starts pumps when pressure drops to 2700 psi.
8. **Air Pressure Switch Bypass Valve** — Normally closed, open for pressure above 3000 psi.
9. **Air Supply Valves** — Normally open, close when servicing air operated pumps.
10. **Suction Valve, Air Operated Pumps** — Normally open, close when servicing pumps.
11. **Suction Strainer, Air Operated Pumps** — Clean every 30 days.
12. **Air Operated Pump**
13. **Discharge Check Valve, Air Operated Pump**
14. **Duplex or Triplex Pump** — Fill crankcase with SAE 20 oil for 40°F to 115°F ambient temperature range. Check oil level monthly.
15. **Chainguard** — Fill with SAE 90 compound chain oil for operation above 20°F ambient temperature. Check oil level monthly.
16. **Explosion Proof Electric Motor**
17. **Electric Pressure Switch** — Automatically stops pumps when accumulator pressure reaches 3000 psi and starts pumps when pressure drops to 2700 psi.
18. **Electric Motor Starter** — Keep starter switch in "AUTO" position. **TURN OFF** power at main panel when servicing.
19. **Suction Valve, Duplex or Triplex Pump** — Normally open, close when servicing pumps.
20. **Suction Strainer, Duplex or Triplex Pump** — Clean every 30 days.
21. **Discharge Check Valve, Duplex or Triplex Pump**
22. **Isolation Valve, Duplex or Triplex Pump** — Normally open, close for operating pressures above 3000 psi.
23. **High Pressure Strainer** — Clean every 30 days.
24. **Manifold Regulator** — Regulates operating pressure to ram preventers and gate valves. Manually adjustable from 0 to 1500 psi. New TR Regulator contains internal bypass for pressures up to 3000 or even 5000 psi.
25. **Manifold Regulator Bypass Valve** — (Not required with new TR Regulator with internal bypass) — Normally in low-pressure (handle left) position. For operating pressures above 1500 psi (ram preventers and gate valves), move to high pressure position (handle right).
26. **Four-way Control Valve** — Direct the flow of operating fluid pressure to the preventers and gate valves. **NEVER** leave in the center position.
27. **Manifold Relief Valve** — Set at 5500 psi.
28. **Manifold Bleeder Valve**
29. **Accumulator Pressure Gauge** — 0 to 6000 psi.
30. **Annular Unit/Remote Selector Valve** — Selects mode of annular regulation from the unit or Driller's air operated remote control panel.
31. **Air Regulator, Annular Pilot Pressure** — Regulates air pilot signal to the annular regulator.
32. **Manifold Pressure Gauge** — 0 to 10,000 psi.
33. **Annular Regulator** — Provides independent regulation of the annular operating pressure. Adjustable from 0 to 1500 psi. New TR Regulator can provide regulation up to 3000 psi for Cameron Type D annulars and contains a manual override to prevent loss of operating pressure should rig power be lost.
34. **Annular Pressure Gauge** — 0 to 3000 psi.
35. **Annular Pressure Transmitter** — 0 to 3000 psi hydraulic input, 3-15 psi air output.
36. **Accumulator Pressure Transmitter** — 0 to 6000 psi hydraulic input, 3-15 psi air output.
37. **Manifold Pressure Transmitter** — 0 to 10,000 psi hydraulic input, 3-15 psi air output. (Transmitter converts hydraulic pressure to air pressure and sends a calibrated signal to corresponding air receiver gauges on the Driller's air operated remote control panel.)
38. **Air Junction Box** — Used for connecting the air cable from the air operated remote control panels.