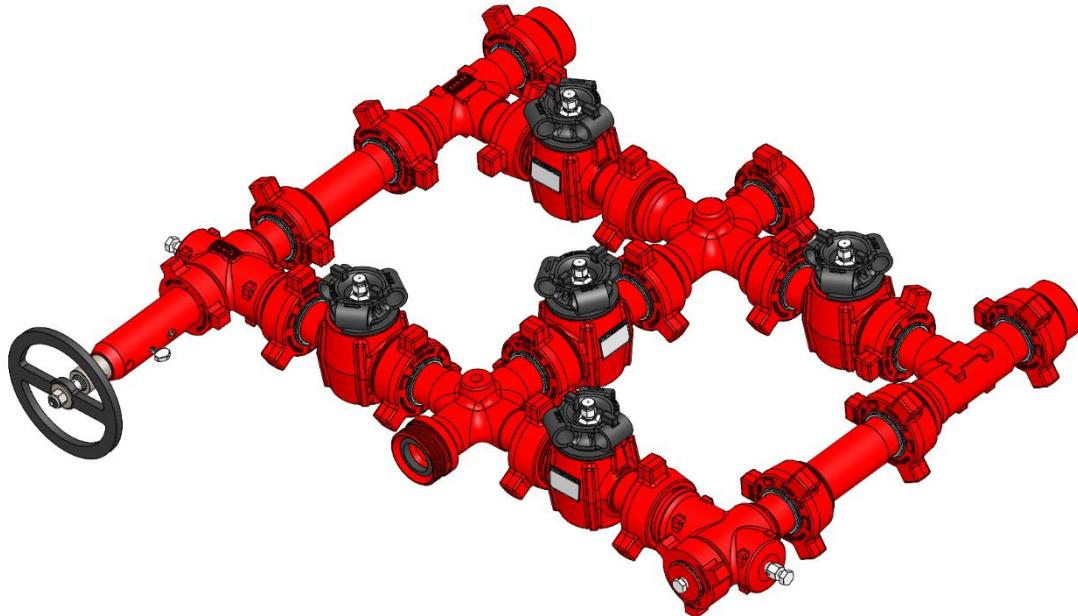


Red Deer Ironworks



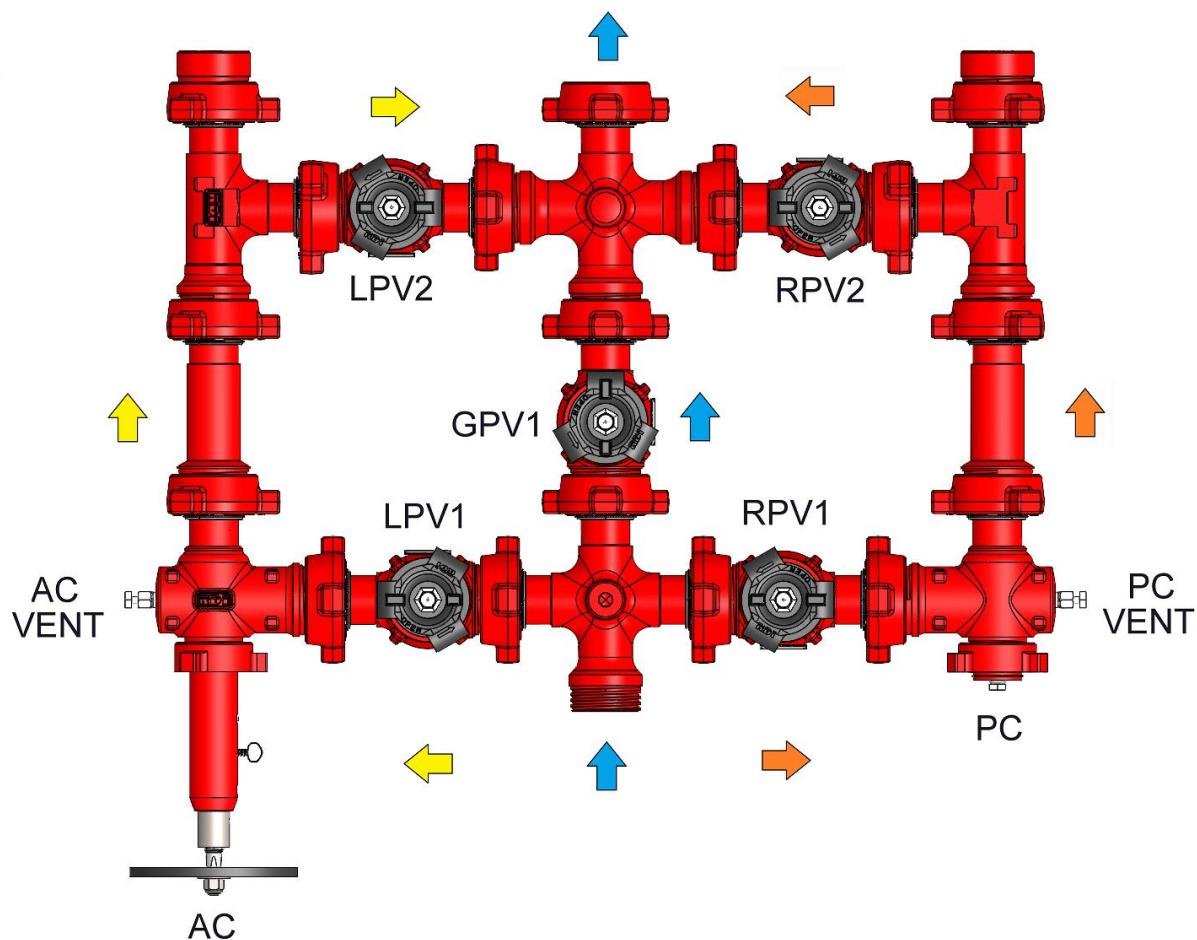
MAN0201-A001 Operation Manual



Other Similar Manifolds that this procedure can be used for: **MAN0202, 0203, 0205, 0206, 0207, 1201, 1202.**

The single stage choke manifold is designed to control the flow rate of fluid flowing back from the well. This design allows the operator to adjust the flowrate via the adjustable choke on one side and then change out the positive choke bean on the other side to the appropriate size to obtain the desired flowrate.

When operating the plug valves always close the downstream valve first followed by the upstream valve, when opening always open the valves in the opposite order i.e. open the upstream valve first and then open the downstream valve. This will save the upstream valve from wear, as it will be opened and closed when there is no flow.



Procedure to operate manifold for one full cycle

1. Follow all site and company specific safe operating procedures (SOPs) when completing the following steps.
2. See also operation manuals OM-02 & OM-07.
3. Before opening flow to the manifold do the following steps:
 - 3.1. Replacing the Choke Bean in the right leg
 - 3.1.1. Ensure all vent fittings are closed.
 - 3.1.2. Close RPV2 & RPV1.
 - 3.1.3. Open LPV1 then LPV2.
 - 3.1.4. Ensure gutline plug valve is in the closed position (GPV1).
 - 3.1.5. Initiate flow through manifold, fluid will now be flowing through the adjustable choke (AC).
 - 3.1.6. Make adjustments to the adjustable choke (AC) until the desired flowrate is achieved. Calculate the BEAN size required.
 - 3.1.7. Ensure RPV2 & RPV1 are in the closed position.
 - 3.1.8. Bleed off any trapped pressure in the right leg using the vent fitting (PC VENT).
 - 3.1.9. Remove the hammer union choke cap on the positive choke (PC).
 - 3.1.10. Install the appropriately sized choke bean as calculated previously.
 - 3.1.11. Reinstall the hammer union choke cap on the positive choke (PC).
 - 3.1.12. Close all vent fitting on the right leg (PC VENT).
 - 3.2. Switching Flow to the right leg
 - 3.2.1. Ensure all vent fittings are closed.
 - 3.2.2. Open RPV1.
 - 3.2.3. Then open RPV2.
 - 3.2.4. Close LPV2.
 - 3.2.5. Then close LPV1.
 - 3.2.6. Flow is now directed through the right leg of the manifold and the left leg is isolated.
 - 3.3. Switching flow to the left leg
 - 3.3.1. Ensure all vent fittings are closed.
 - 3.3.2. Open LPV1.
 - 3.3.3. Then open LPV2.
 - 3.3.4. Close RPV2.
 - 3.3.5. Then close RPV1.
 - 3.3.6. Flow is now directed through the left leg of the manifold and the right leg is isolated.
 - 3.4. Procedure to start flow through gutline:
 - 3.4.1. Open GPV1.
 - 3.4.2. Close LPV2 & RPV2 (if open)
 - 3.4.3. Then close LPV1 & RPV1 (if open).
 - 3.5. Procedure to switch flow from the gutline to one of the choke legs:
 - 3.5.1. Ensure all vent fittings are closed.
 - 3.5.2. Open LPV1 (replace L with R for right side).
 - 3.5.3. Then open LPV2 (replace L with R for right side).
 - 3.5.4. Close GPV1.

- 3.6. Procedure to completely stop flow through the manifold:
 - 3.6.1. Close LPV2 & RPV2 (if open).
 - 3.6.2. Then close LPV1 & RPV1 (if open).
 - 3.6.3. Then close GPV1 (if open).

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