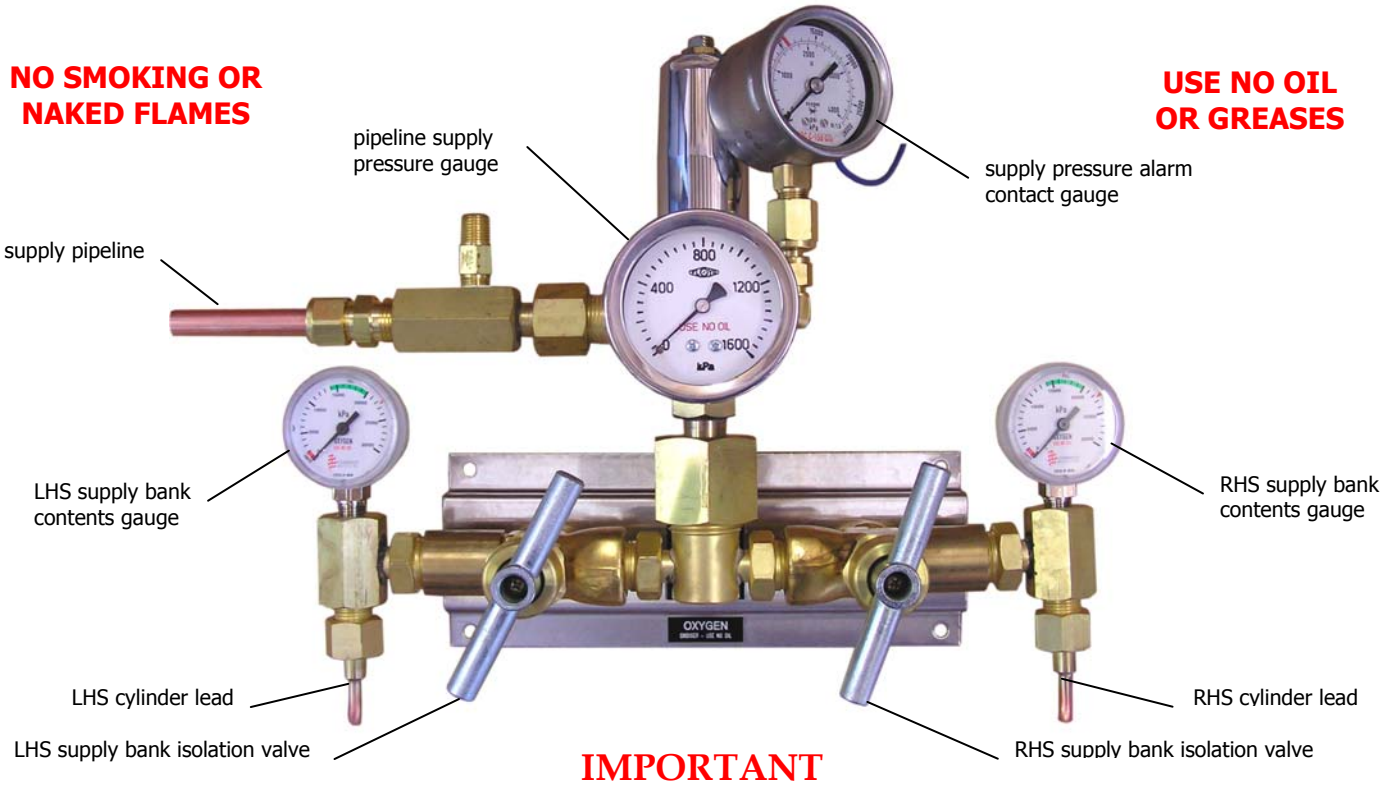
MEDICAL EMERGENCY BACK-UP MANIFOLD OPERATING INSTRUCTIONS

NO SMOKING OR NAKED FLAMES

USE NO OIL OR GREASES



IMPORTANT

- To be in the correct operational back-up mode both supply cylinder banks must be turned on.
- Do not use oils or greases on the manifold or associated components.
- Open all valves SLOWLY and FULLY to ensure the pressure increases gradually.
- Do not remove the plastic caps in cylinder valve outlets until ready to be connected to the manifold.

TO PUT THE MANIFOLD INTO OPERATION

1. Ensure that the supply pipeline isolation valve (not shown) immediately downstream of the main regulator is closed.
2. Check that both the RHS and LHS supply isolation valves are closed.
3. Ensure that each cylinder valve outlet is clean. Momentarily open, then closed each cylinder valve to blow out any foreign matter and ensure that each cylinder is full. Close each cylinder valve lightly to make slow opening, (after connection to the manifold), easier.
4. Connect cylinder leads/coils to the cylinder valves. Ensure that the ends of the leads/coils are not contaminated with any foreign matter, or that they are not damaged.
5. Ensure that the main regulator adjusting screw is fully backed off (ie. turned fully anti-clockwise).
6. Slowly, and fully, open the cylinder valves on both the supply banks of the manifold. Check the cylinder connections for leaks using an appropriate leak detection solution.
7. Slowly, and fully, open both supply isolations valves. Adjust the main regulator until the outlet gauge reads the pre-determined backup system "cut-in" pressure, (typically 750 kPa).
8. Slowly open the emergency supply pipeline isolation valve.
9. Ensure that the pressure switch is connected to the alarm systems, and that the alarm system is functioning correctly.
10. The manifold is now in emergency standby operation mode.

After being operated, and the primary supply having been restored, the partially emptied cylinders on both supply banks on the emergency backup manifold must be replaced with full cylinders. This ensures that the emergency backup system is ready for operation in case there is another failure of the primary supply source.

WHEN THE EMERGENCY MANIFOLD OPERATES

1. The emergency back-up manifold will automatically start to supply the medical facility when there is a low pressure failure of the pipeline system (ie. a primary supply source failure). This is achieved by a pre-determined pressure differential between the primary supply source and the emergency backup regulator.
2. As the emergency back-up manifold starts to supply gas, the supply cylinder contents pressure will begin to reduce. When the pressure drops to approximately 75% of the full pressure, a pressure alarm contact gauge will generate a signal to the alarm system.
3. When an alarm signal is generated the medical facility will be in an emergency/critical operating mode. A properly authorized person must attend the emergency back-up manifold immediately.
4. Upon reaching the manifold the authorized person must turn OFF one of the supply isolation valves (either RHS or LHS). This supply bank is now in "reserve". The pipeline system will be supplied with gas from the remaining bank.
5. When the bank supplying the manifold approaches empty (ie. supply pressure gauge enters the red zone), the authorized person must open the supply valve on the "reserve" supply bank, and then immediately close the supply valve on the emptied bank.
6. The emptied supply bank cylinders must now be replaced with full cylinders.
7. This process must be repeated until the primary supply source is returned to full operation. The authorized person must stay in close proximity to the emergency manifold, to monitor and operate it, until the primary supply is returned.