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| Spec No.: ES-AFAM15-0200-01 | Date: January 03, 2019 |

NOTE TO SPECIFIER; This specification pertains to a fully automatic switchover high purity manifold, copper-free construction, high pressure carbon dioxide cylinder (gas use) x high pressure carbon dioxide cylinder (gas use), with inboard gas heater.

* 1. MATERIALS

1. Manifold Box
   1. The cabinet–style manifold shall be specifically made and cleaned for carbon dioxide cylinders.
   2. The inlet pressure gauges shall be 0-2000 psi for better accuracy.
   3. Internal tubing shall be stainless steel (copper is not acceptable) and fittings shall be made from brass.
   4. All pressure reducing regulators shall be brass barstock with stainless steel diaphragms (neoprene diaphragm regulators are not acceptable).
   5. The manifold shall be designed so that when the automatic switchover from the primary bank to the reserve bank occurs there will be no drop in the line pressure.
   6. The switchover process shall be controlled electronically by the manifold control box.
   7. The resetting of the manifold shall be accomplished automatically (no lever to rotate).
   8. The manifold shall have a minimum flow coefficient of Cv = 0.4 to allow for high flow peak demands.
   9. The manifold shall be equipped with a pipeline pressure relief valve with a set-point no greater than 150 psig.
   10. The manifold box must be equipped with a built-in 1000-Watt electric gas heater to prevent regulator freeze up.
2. Control Box
   1. The manifold control box shall be separate from the manifold box.
   2. A low pressure alarm signal shall be actuated by a pressure switch installed in the manifold box (one pressure switch per cylinder bank).
   3. The alarm box shall be equipped with green (in service), yellow (ready) and red (bank depleted) lights indicating the status of each cylinder bank.
   4. A buzzer shall sound when a bank is depleted.
   5. The buzzer shall be cancelled by a silence push button without canceling the red light.
   6. The alarm box shall actuate a dry contact for remote alarm connection.
3. Header Bar and Hoses
   1. The header bars shall be made from brass barstock.
   2. The header bars shall be cleaned for oxygen service and nickel plated to the outside (painted header bars are not acceptable).
   3. The 36”-long flexible hoses shall be suitable for high purity applications and compatible for the intended gas service.
   4. PRODUCT
4. Acceptable Manufacturer
   1. AFAM1500H Series (For IVF Applications) Carbon Dioxide Service from BeaconMedaes.