2100/210, 220 Series Semi-Automatic Switchover System

Operational Manual

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Introduction

GENTEC R2100 Series Semi-Automatic Switchover System is used for adjusting, controlling, small flow, compressed gas manifold systems without interrupting the system during switchover. The switchover occurs automatically, once the primary bank (in use) gas supply runs low, the reserve bank becomes the primary bank. The arrow on the handle bar on the right end bank regulator indicates the designated primary bank, which the operator may change. The outlet pressure may be calibrated to meet customer needs. See Figure 1 for a diagram of the switchover system.

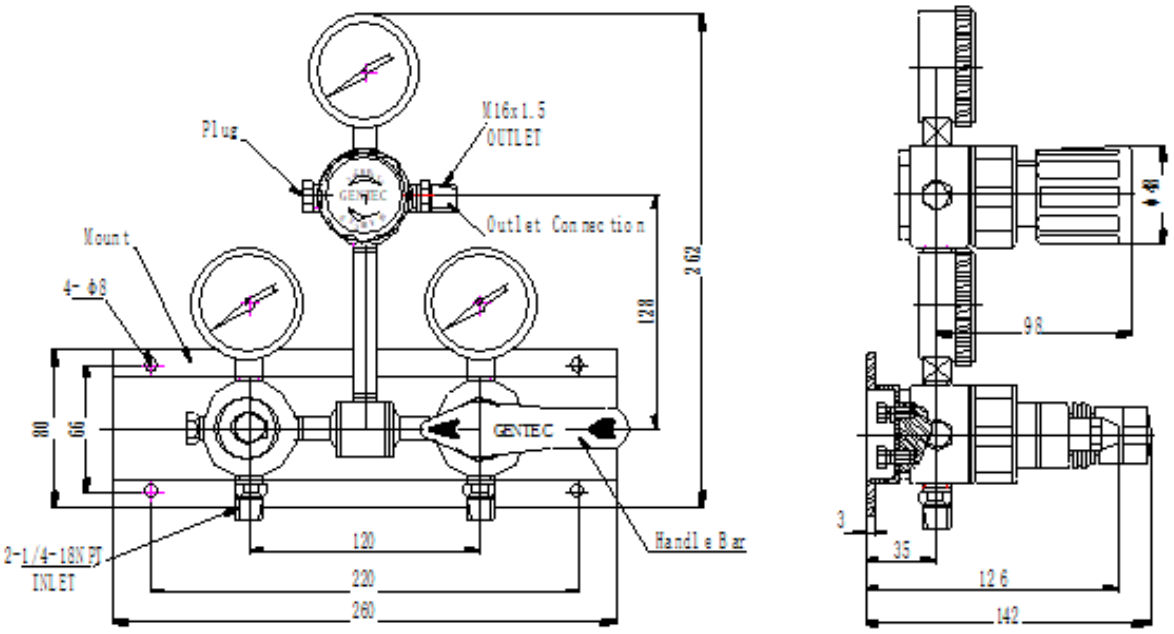

Figure 1

Assembly

1. Measure the position at which the switchover system is to be assembled, ensure that it is at a location convenient for both the operator and maintenance personnel. The switchover system shall be placed in a well ventilated facility, and must be away from flammable materials and open fire. There are four 8mm assembly holes on the mount, which are intended to be used with 6mm expansion screws or bolts to mount the switchover system against the wall or assembly rack.

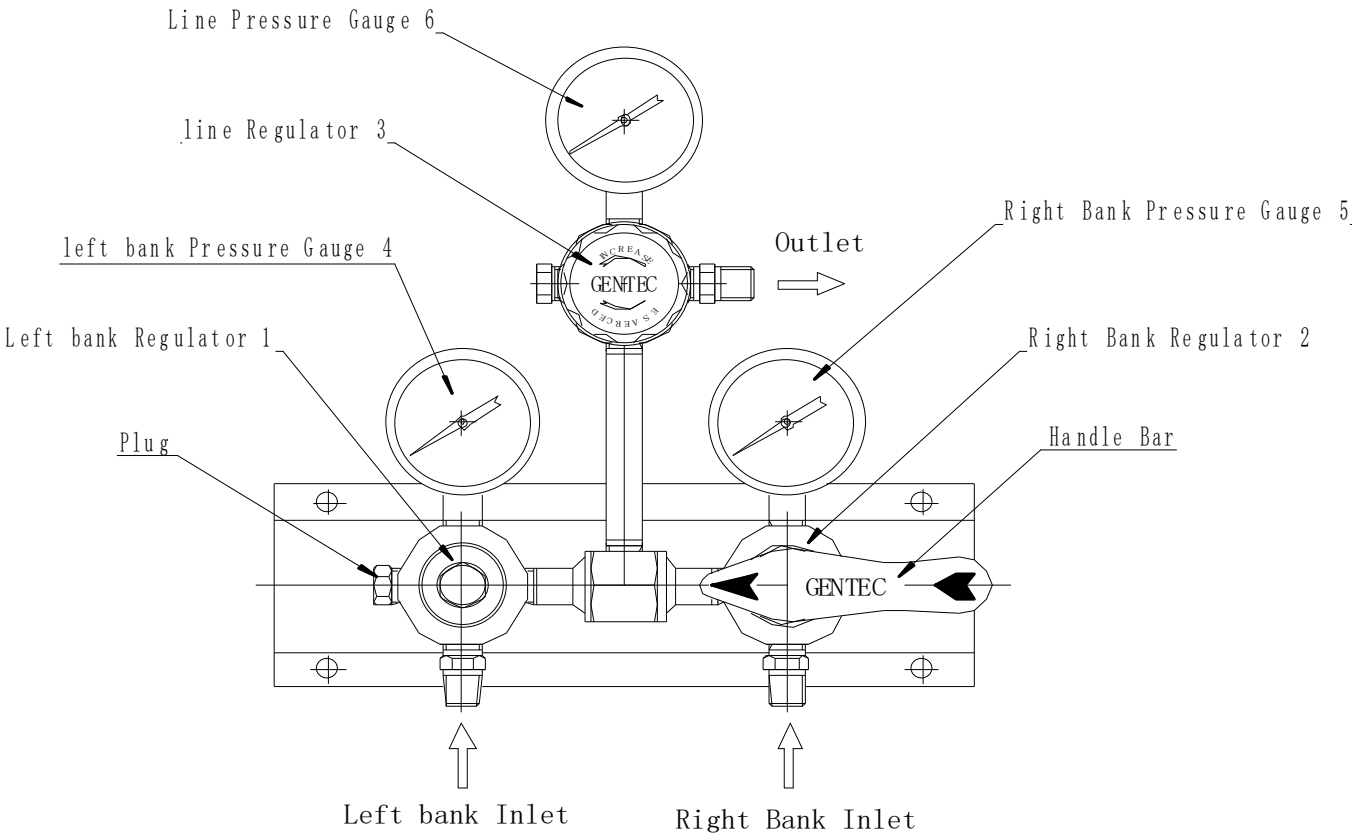

Figure 2

Principles

See Figure 2 for the components of the switchover system.

Left Bank Regulator 1 outlet pressure is preset and non-adjustable, at a pressure of P_i. Right Bank Regulator 2 pressure is adjusted only within a certain range by the 180 degrees movement of the handle bar. When the arrow is pointing left, the outlet pressure of the Right Bank Regulator 2 is P_1, and when the arrow is pointing right, the outlet pressure is P_2, where pressure $P_2 > P_1$. Left Bank Regulator pressure P_i is equal to $(P_1+ P_2)/2$.。 While the arrow is pointing left, P_1 is $< P_i$, therefore the gas is supplied through the left bank. While the arrow is pointing right, $P_2 > P_i$, therefore the gas is supplied through the right bank.

Line Regulator 3 outlet pressure can be adjusted by turning the knob on the regulator. Left Bank Pressure Gauge 4 and Right Bank Pressure Gauge 5 display the left and right bank inlet pressure, respectively. Line Pressure Gauge 6 displays the system outlet pressure.

Operation

1. Primary bank and reserve bank setup:

   While both bank cylinders are full, the operator can designate either side to become the primary bank. For example, when the arrow is pointing to the left, the left bank is designated as the primary bank and the right bank as the reserve bank. If the operator chooses to turn the arrow to the right first, then the right bank would be designated as

the primary bank and left bank becomes the reserve bank.

2. Replacing cylinders and operation:

   When the primary bank gas supply is almost depleted, the switchover will occur automatically, meaning the reserve bank is now in use. The operator may verify which bank is depleted by reading the inlet pressure gauge. When the switchover occurs, the operator must replace the cylinders on the depleted bank immediately.

   Note: Before replacing the cylinders, remember to turn the arrow 180 degrees to designate the other bank as the primary bank.

3. Adjusting the system outlet pressure:

   The outlet pressure is displayed by the pressure gauge 6 on the line regulator. The outlet pressure of line regulator 3 is adjusted by turning the adjusting screw clockwise and vice versa.

Maintenance

- Daily maintenance should be done by trained personnel only:
  1. Record the outlet/piping pressure.
  2. Verify that the regulator, header bar, pigtail connections do not have leakage.
  3. Check the regulator for creep; must maintain regulator immediately if creep is present.