



**TITLE: Logging onto Iowa Courses ON-line (ICON) for GMP Related Training**

SOP Number:           D-DEZ-EQP-002          

Revision Number:                           0                          

Effective Date:                   07 Apr 2015                  

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color, with an option arrow on the label displaying increase or decrease. This is the only valve the manufacturing technician will adjust when processing.

- 1.2.5 The Oxygen gas manifold is supplied by either of two oxygen filled cylinders. An adjustable valve is available to open or close the flow of oxygen to the cleanroom. This valves should always be in the open position, or arrow pointing downstream of the flow alignment.

**1.3 Operations (Carbon Dioxide Gas Manifold)**

- 1.3.1 The Automatic Cylinder Changeover System is designed to provide an uninterrupted flow of gas from four sources. When one source is being serviced by the user, the other source is on stand-by, and will come on-line when the other source has depleted.
- 1.3.2 Each carbon dioxide cylinder will be provided by a third-party vendor and will be installed by the vendor in the Equipment Room (L174E), to the Carbon Dioxide Gas Manifold. Quality Assurance will be responsible for ordering of the cylinders, and scheduling replacement with the vendor.
- 1.3.3 The Vendor will ensure each Carbon Dioxide cylinder is connected to the correct manifold, and that each Carbon Dioxide cylinder (total x 4) will be restrained to the wall by use of cylinder restraints. Pressure regulation will be setup by the vendor for each cylinder.
- 1.3.4 The Vendor will verify the manifold set-up when changing out a cylinder. A manufacturing technician will ensure the pressure regulator supplying the cleanroom, is adjusted to 20-30 p.s.i., or what is required to transfer carbon dioxide to the cleanroom. This pressure regulator is identified by the top (closest to the ceiling) ProStar regulator, red in color, with an option arrow on the label displaying increase or decrease. This is the only valve the manufacturing technician will adjust when processing.
- 1.3.5 The carbon dioxide gas manifold is supplied by either of four carbon dioxide filled cylinders. Four adjustable valves are available to open or close the flow of carbon dioxide to the cleanroom. These valves should always be in the open position, or arrow pointing downstream of the flow alignment.

**1.4 Operations (Mixed CO<sub>2</sub>/O<sub>2</sub> Gas Manifold)**

- 1.4.1 The Automatic Cylinder Changeover System is designed to provide an uninterrupted flow of gas from two sources. When one source is being serviced by the user, the other source is on stand-by, and will come on-line when the other source has depleted.
- 1.4.2 Each mixed gas cylinder will be provided by a third-party vendor and will be installed by the vendor in the Equipment Room (L174E), to the Mixed Gas Manifold. Quality Assurance will be responsible for ordering of the cylinders, and scheduling replacement with the vendor.
- 1.4.3 The Vendor will ensure each mixed gas cylinder is connected to the correct manifold, and that each mixed gas cylinder (total x 2) will be restrained to the wall by use of cylinder restraints. Pressure regulation will be setup by the vendor for each Dewar.
- 1.4.4 The Vendor will verify the manifold set-up when changing out a cylinder. A manufacturing technician will ensure the pressure regulator supplying the cleanroom, is adjusted to 20-30 p.s.i., or what is required to transfer Mixed Gas to the cleanroom. This pressure regulator is identified by the top (closest to the ceiling) ProStar regulator, red in

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color, with an option arrow on the label displaying increase or decrease. This is the only valve the manufacturing technician will adjust when processing.

1.4.5 The Mixed Gas manifold is supplied by either of two Mixed Gas filled cylinders. Two adjustable valves are available to open or close the flow of mixed gas to the cleanroom. These valves should always be in the open position, or arrow pointing downstream of the flow alignment.

**1.5 Troubleshooting**

**1.5.1 Power Supply**

1. The ProStar panel LED indicator is not sensing an alarm when the Dewar is empty:

- Check that the cord is securely plugged in.
- Plug another appliance into the outlet to see if it is live.
- If the outlet is dead, check the circuit breaker or fuses.
- Check the Pressure Switches are operating correctly.

**1.5.2 Gas Supply**

1. The source of gas being used is not entering the cleanroom for production:

- Check that there are no alarms signaling the Dewar is empty.
- Verify the pressure indicators on the Dewar indicate the vessel is not empty.
- Verify the supply valve on top of the Dewar is in the open position.
- Verify the cut-off valves, identified by an arrow is indicating the flow is going in the downstream direction toward the cleanroom.
- Verify the supplied side of operations indicates pressure on each of the two pressure gauges.

**1.6 Alarms**

1.6.1 The Prostar Alarm system is designed to provide a signal when the Gas Manifold Dewar's are empty. The alarm will send notification to the Johnson Controls MVE and to the System Owner.

1.6.2 This alarm is activated when the "Indicating Pressure Switch" detects a pressure loss and works in conjunction with the ProStar Platinum Alarm Panel. The audible warning signal sounds when there is a pressure loss condition, notifying the System Owner there is either an empty Dewar, of a leak in the system.

1.6.3 Standard operating conditions of the two-point alarm are indicated by an illuminated green lamp. The lamp and horn check button allows for self-checking.

1.6.4 If one or more alarm signals are triggered, acoustic and visual signals are emitted.

**The University of Iowa Dezii Translational Vision Research Group**

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E. HISTORY

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07 Apr 2015	0	Original document