LARGE CAPACITY CO_2 INCUBATOR
Installation, Operation and Maintenance Instructions

GENERAL

Inspection

When the equipment is received, all items should be carefully checked against the bill of lading to insure all crates and cartons have been received. All units should be inspected for concealed damage by uncrating the units immediately. If any damage is found, it should be reported to the carrier at once, and a claim should be filed with the carrier. This equipment has been inspected and tested in the manufacturing facility and has been crated in accordance with transportation rules and guidelines. Manufacturer is not responsible for freight loss or damage.

Location

The cabinet should also be leveled when it is placed in its permanent location. Do not stack items on top of the unit. Vibration during shipping and handling may loosen mechanical connections. Check all connections during installation. Check all wiring and fasteners.

CAUTION

- Do not modify cabinet construction or associated equipment assemblies.
- Do not remove labeling or information supplied with the unit.

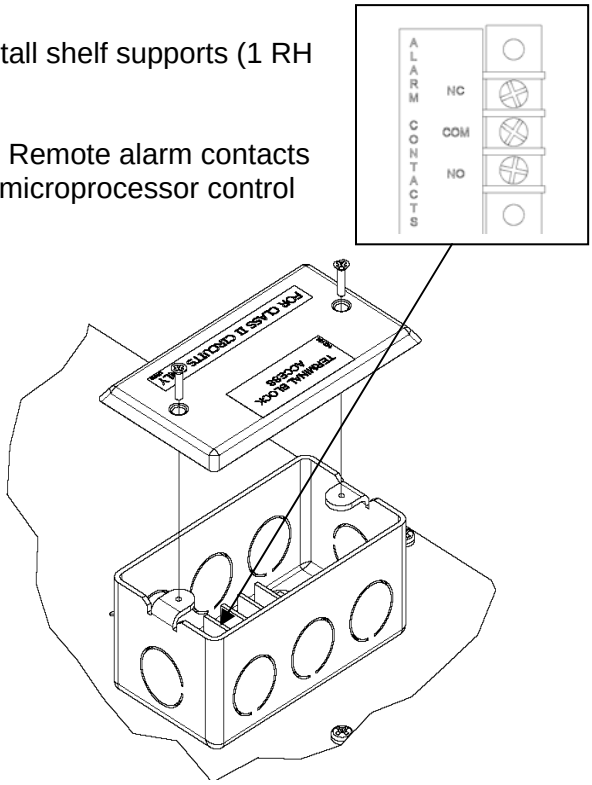
Observe all Warning Labels. Disconnect power supply to eliminate injury from electrical shock or moving parts when servicing equipment.

INSTALLATION

Door Alignment - If for some reason the doors are not squared up on the cabinet, the doors can be adjusted. Opening the door(s) and loosening the screws that hold both the top and bottom hinges to the cabinet can accomplish this. After adjusting the door so that it is aligned correctly, tighten the screws to securely hold the hinges in place.

Shelving Installation - Locate shelves inside cabinet, install shelf supports (1 RH support, 1 LH support per shelf.)

Remote Alarms Contacts Access - The factory installed Remote alarm contacts access box is located at the top of the cabinet behind the microprocessor control (see illustration.)



1. Remove the cover to access the terminal connections.
2. Select and knock-out a hole to run field leads into electrical box terminals.
3. The terminal block in the electrical box is labeled for “normally open” and “normally closed” activation. End user is responsible for proper field installation.

   Terminal connections are rated for class II circuits only per NEC table 11(A). (Limited power source less than 30vac 8 Amp. max, see applicable notes in NEC).

2-10 volt DC Output – Terminal board for 2-10v DC Output is located behind the cabinet façade, next to Remote Alarm access box. Connect wires as per label.

RS485 port - (Optional) terminal board for RS485 port is located behind the cabinet façade, next to the Remote Alarm access box, connect wires as per label.

Duplex, or European Outlet 4 Amp Max. – (Optional) is located near the back of the left hand interior wall, 20” from the cabinet interior floor. Outlet is wired thru main cabinet power supply, and includes a 4 amp, MANUAL RESET, circuit breaker. Breaker is located behind façade, on the side of the control box.

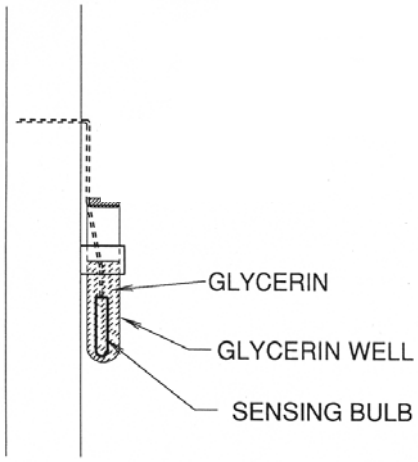
Access Port - (Optional) 2” port is provided with a spring loaded, exterior cover, RH or LH side of the cabinet.

Glycerin Well Assembly

Important: For accurate product temperature reading, the product-sensing bulb must be immersed in glycerin solution contained in the provided well.

One glycerin well is furnished with each model. The purpose of the glycerin is to simulate the product stored in the Incubator. The glycerin temperature reflects the product's temperature during normal operation.

After the unit is put into operation, check to make sure that the temperature indicating or alarm sensing bulb is positioned inside the glycerin well as far as possible without touching the well itself.



OPERATION

The Large Capacity Incubator is designed for an operating range of 5°C above room ambient to 70°C and is intended for indoor use only. A transverse blower optimizes airflow and ensures tight temperature uniformity.

These units employ a programmable controller to control the temperature and CO_2 option. The controller is located on the facade of the unit. Please see the separate instructions, part number 113635, on the operation of the controller used in the Large Capacity Incubator.

The Incubator utilizes an electrically operated heater to warm the cabinet. The programmable control is factory set with a cutout temperature of 70°C (158°F) to prevent the cabinet from exceeding its design limitations.

Chamber CO_2 sample port used for sampling chamber content using a FYRITE or similar instrument.

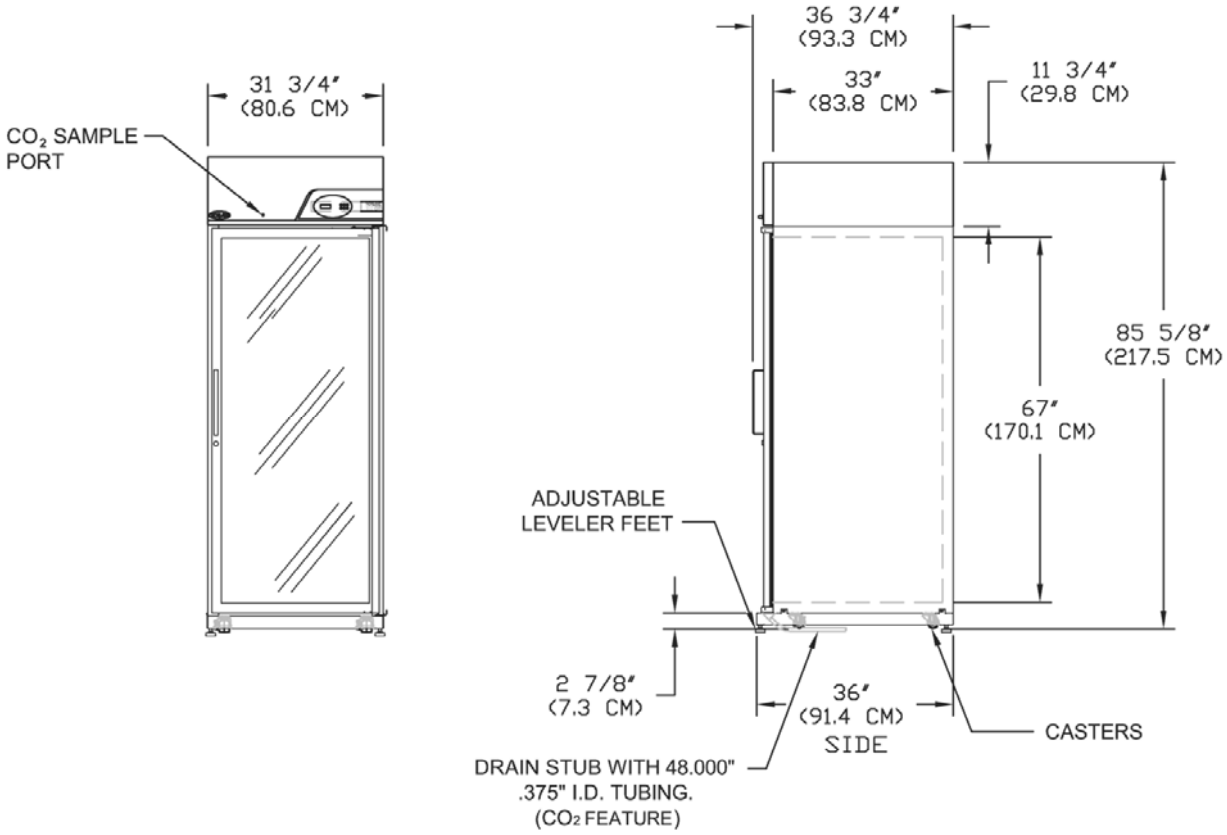


Figure A

CO_2 Operation

The Large Capacity Incubator is offered with a CO_2 dispensing and measurement system. The CO_2 system is microprocessor based and controlled by a sensor based on the NDIR Single-Beam Dual-Wavelength principle. The sensor (included with CO_2 option) measures from 0-20% CO_2 density and provides a reliable and stable reference measurement over time. Water vapor, dust, debris and most chemicals do not affect measurement accuracy; therefore, the sensor may be used in a harsh and humid environment.

The CO_2 settings are controlled by the controller located on the façade of the unit. Please see the default and adjustable settings in the separate instructions, part number 136349.

Installation Requirements – The end user must supply two CO_2 tanks and two-two stage gas regulators for the CO_2 input. See Figure B for hook up points. The input gas pressure must be above 4 psi as the CO_2 tank switch over valve is factory set to recognize an empty tank when the pressure drops to 4 psi. **The maximum recommended input pressure should not exceed 25 psi.**

Connecting a CO_2 Supply

⚠ High concentrations of carbon dioxide can cause asphyxiation. The use of CO_2 monitors and alarms is recommended for areas where CO_2 can collect.

CO_2 Sample Port

The chamber atmosphere can be taken from the Sample Port located at the bottom of the front control panel. CO_2 concentration can then be checked using a FYRITE gas analyzer or other instrument such as a gas chromatograph.

Humidity Pan Option (CO_2 Incubators only)

The Large Capacity Incubator humidity pan is manually filled with water as required. Humidity (moisture) is introduced into the incubator interior by evaporation only.

The humidity pan is 22 Ga. stainless steel with dimensions of 20-3/4 inches long x 12-3/4 inches wide x 2-1/2 inches deep. The pan capacity is 9 quarts (8.52 liters). A stainless steel pan cover is also supplied.

Note: With the CO_2/humidity pan feature, the cabinet is also provided with a drip pan that mounts under the door. The drip pan catches any condensation that drips during door openings. The drip pan is supplied with 4' of 3/8" ID tubing and a 3/8" drain stopper. Tubing must be connected to adequate drain or stopper needs to be installed and accumulated moisture removed as needed.

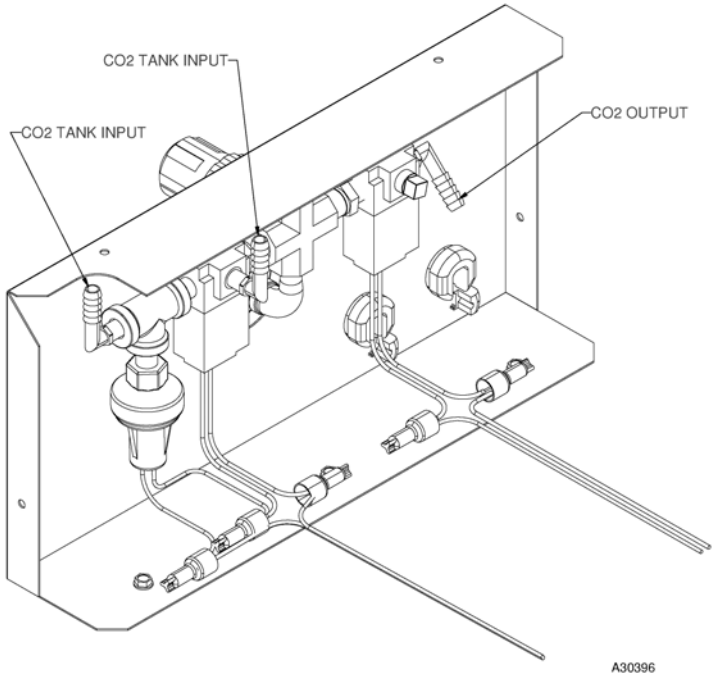
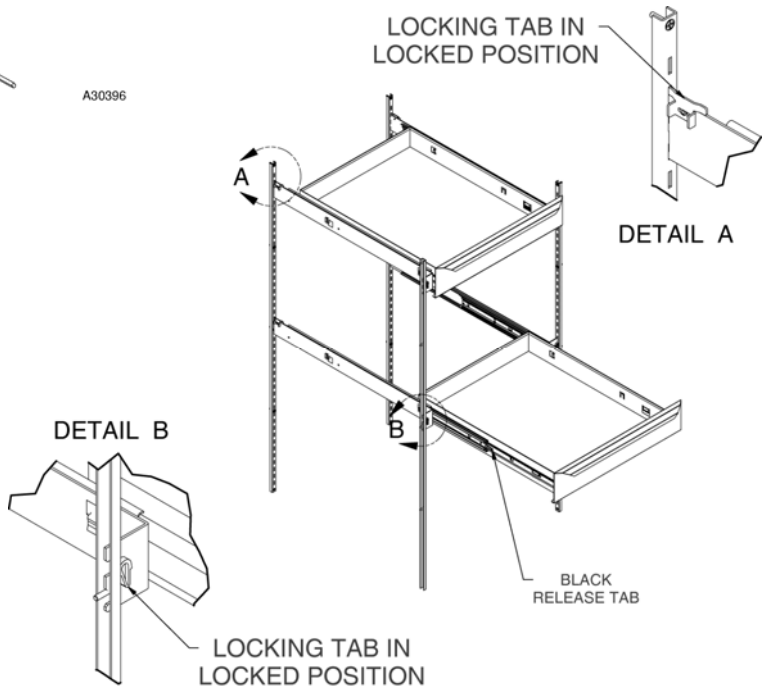


Figure B

Drawer Option

The Large Capacity Incubator is offered with drawers as an option.

Drawer Removal – The Large Capacity Incubator may accommodate up to eight drawers. To remove the drawers for cleaning, locate the black release tabs found on the inside front of the drawer. See Figure C. Push the release tabs on each



side inward and lift up the drawer. Slide the drawer towards you and remove.

Figure C

Drawer Slide Removal/Adjustment

Each drawer slide is independently removable and can be adjusted to different levels. First remove the drawer per above instructions. Release the locking tabs located on the drawer slide, move the front tab up and release the tab in the back of the cabinet, by sliding the locking tab towards the front. See illustration. Unhook the drawer slide assembly from both the front and back shelf standards by lifting up on the assembly.

To install a drawer slide, reverse the process used to remove the slide. Secure the locking tabs into position after the drawer slide assembly is in place. Reinstall the drawer.

MAINTENANCE

Periodic Cleaning

Beginning with the initial installation, the interior surfaces of the cabinet should be periodically wiped down with a solution of warm water and baking soda. This solution will remove any odors from spillage that has occurred. The exterior of the cabinet should also be cleaned frequently with a commercial grade of glass cleaner. **Caution: Do not use an abrasive or alkaline solution.**

All moving parts have been permanently lubricated and will generally require no maintenance.

MAINTENANCE SERVICE AND ANALYSIS GUIDE

MALFUNCTION	POSSIBLE CAUSE	SOLUTION
No power to optional duplex receptacle	1. Internal circuit breaker tripped 2. Wiring incorrect	1. Reset circuit breaker 2. Check wiring against the diagram
Heater inoperative	1. High limit thermostat tripped 2. Wiring incorrect	1. Manually reset thermostat 2. Check wiring against diagram
No power to cabinet	1. Service cord unplugged 2. Circuit breaker supplying main electrical receptacle tripped 3. Wiring incorrect 4. Main cabinet power switch off	1. Plug in service cord 2. Determine reason and correct 3. Check wiring against diagram 4. Turn on power switch
Objectionable noise	1. Vibrating fan blade 2. Worn fan motor bearings	1. Replace fan blade 2. Replace fan motor
CO_2 measurement does not equal the display	1. Poor analyzer 2. Display not calibrated	1. Verify analyzer operation 2. Check calibration (see control manual)
CO_2 measurement less than setpoint	1. CO_2 regulator set too low 2. Door recent opened or poor seal 3. CO_2 tank(s) low 4. Display not calibrated	1. Adjust regulator (not to exceed 25 PSI) 2. Correct door seal 3. Change tank(s) 4. Check calibration (see control manual)
CO_2 and analyzer read zero (setpoint ok)	1. Loss of CO_2 supply 2. Defective solenoid 3. Supply tank(s) empty	1. Identify and correct 2. Replace solenoid 3. Change tank(s)