Fisher Scientific

Isotemp

Laboratory CO_2 Incubators

Installation and Operation Manual

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305978H01 Rev. H

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1 Introduction

1.2 Requirements

- High quality two-stage, low pressure 30 psig pressure regulators are required for proper operation of the CO_2 and (if applicable) O_2 gas supplies, 15 psig at the incubator.
- CO_2 used in the incubator must be at least 99.9% pure.
- In-line gas supply filters must be used on the CO_2 supply and (on tri-gas units) the O_2 supply to prevent damage to the

Below are important safety precautions that apply to this product:

- Use this product only in the way described in the product literature and in this manual. Before using it, verify that this

damage. If there is no exterior damage, unpack and inspect the equipment within five days of delivery. If you find any damage,

5 Initial Start-Up Procedures

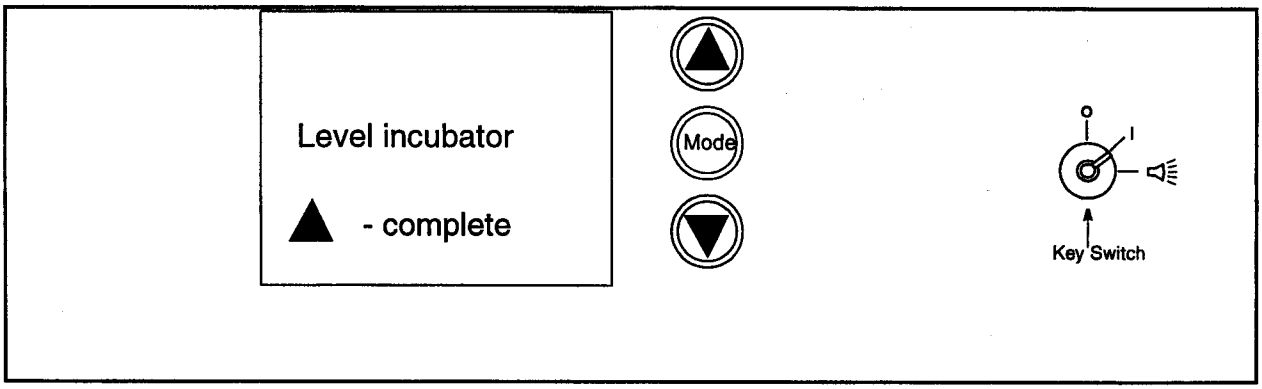


Figure 2. Control Panel: First Start-Up Prompt

IMPORTANT NOTE: *When setting up your incubator for the*

sticker provided on the control panel, and in Section 5.3 below.

5.1 Start-Up Prompts

When you first turn the incubator key switch to the on position (see Section 5.3 below), the control display will go through several prompts that will guide you through the entire set-up

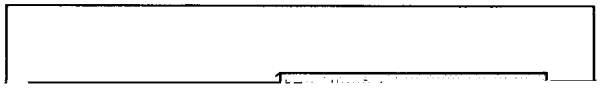
5.4 Level and Position

The first prompt asks you to level the incubator. ***It is very***

1. Place a bubble level across the top of the incubator (side to side).
2. Use the thin, 1/2 in.(1.25 cm) open-end wrench to adjust the leveling feet located at the base of the incubator.
3. Repeat steps 1 and 2, this time placing the bubble level on top of the incubator front to back.

5.5 Shelving, HEPA Filter

The next prompt asks you to install the shelves and the HEPA filter.



5.9 Set Up O_2 or N_2 Supply (Tri-Gas Units Only)

For tri-gas units, the gas you hook up at T3 and T4 depends on whether the ambient oxygen level is above or below the desired O_2 setpoint. It is very important to select the right gas depending

5.12 Setpoint Parameters

Once you have completed the previous installation steps, you will then be prompted to accept or adjust the values of several operating parameters. In each case, press the Increase or

If you are *not* using the R option (see Section 5.11 on page 6) you

(described in Section 5.12 on page 6) and completed the initial start-up procedure, ***wait approximately eight hours*** for the cabinet temperature to stabilize.

2. Fill the humidity pan with cold water and place it in the bottom of the chamber (refer to Figure 7 on page 7); then press ▲. to continue.

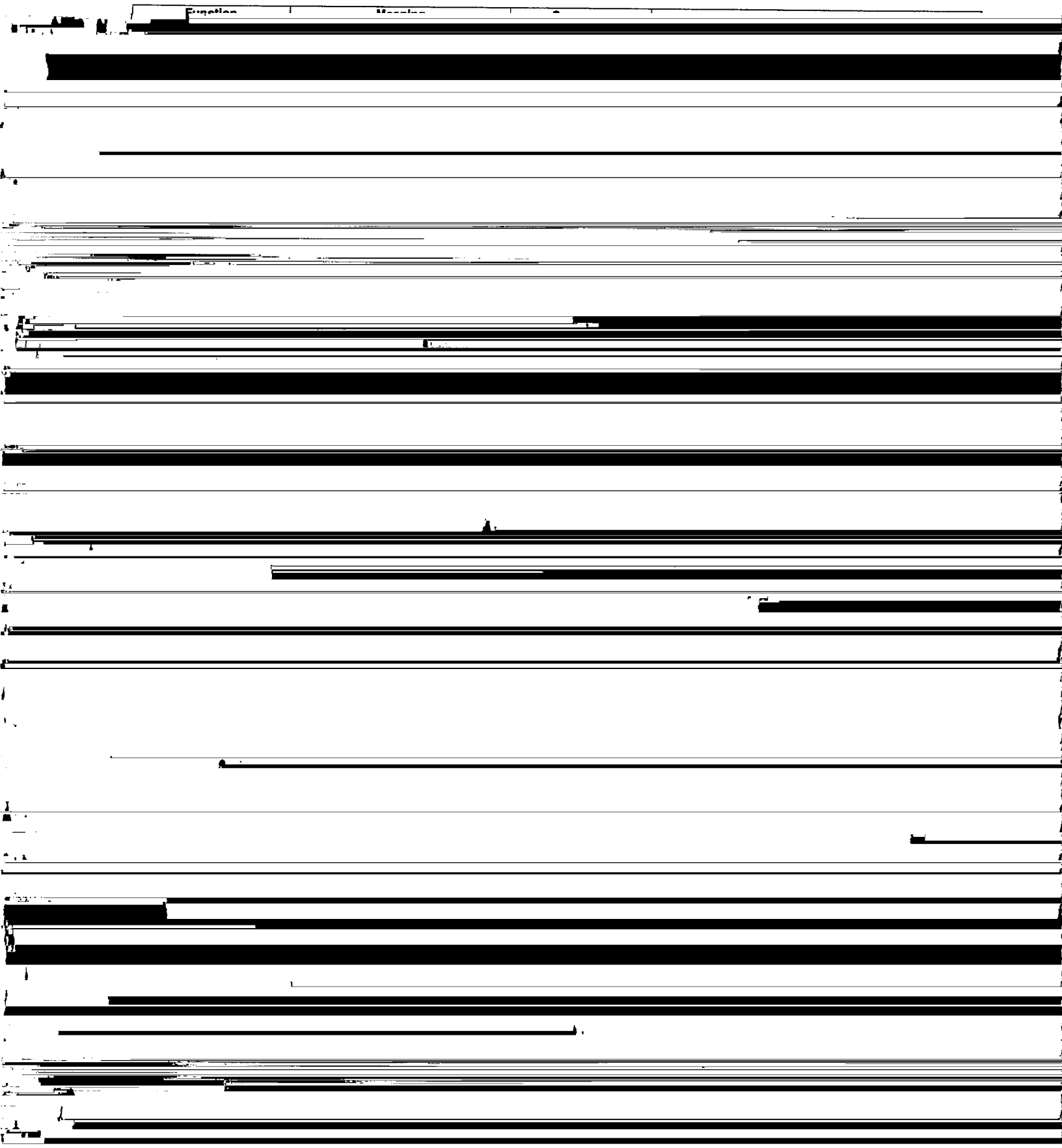
Note: *To retard microorganism growth, you can use 0.25 ml of Lysol Sanitizer or the equivalent (1:15,000 ratio) in the humidity pan. Do not use the water conditioning crystals. Test the Lysol Sanitizer for effects on cell growth prior to*

3. After installing the humidity pan, wait another four hours for

6.1 Key Switch

6.3 Display Functions

Table 1. Control Panel Display Functions



6.5 Service Mode Parameters

From any display in programming mode, you can enter service mode by pressing Mode and holding for 5 seconds.Pressing Mode repeatedly scrolls through the available functions. For any modifiable parameter you can use ▼ and ▲ to adjust the value. The display automatically returns to normal operating mode 30 seconds after the last entry or after scrolling through all available functions and parameters.

Table 3. Service Parameters

Parameter	Notes

6.7 Alarm Summary

This section describes the alarm functions in detail.

Some important general notes:

- Alarms are activated only when the key switch is turned to the alarm position.
- Audible alarms may be silenced at any time by pressing MODE; in that case a full ringback (not a chirp) will occur in 15 minutes.

active.

- 'Has-been' alarms (indicating past alarm conditions) may be cleared by pressing ▲ and ▼ simultaneously. Be careful, however

6.8 Calibration (Optional)

8. Remove the plug from the grommet in the glass door, and insert the open end of the tube through the opening in the

This method uses an instrument, such as the Fyrite, to read the

9. Holding the Fyrite in the upright position, place the sampling

7 Control Systems Theory

7.1 Temperature Control System

Laboratory CO_2 Incubators have a "jacket" between the incubator chamber and the exterior wall of the unit. In water-jacketed incubators, the jacket is filled with water.

Interior chamber temperature control is maintained by two

electronic circuitry. The chamber air provides a reference point while the jacket is being controlled. This circuitry recognizes that jacket temperature is very slow to react to any change in either ambient or chamber temperature but the chamber temperature can change very rapidly due to door opening.

For example:

The chamber inner door is opened. The chamber air sensor

7.3 Door Heat System

Heating the inner surface of the outer door with a low wattage, large area heater provides enough radiant heat to the glass door to control condensation. The micro-processor control operates the door heater.

8 Maintenance

8.1 Cleaning

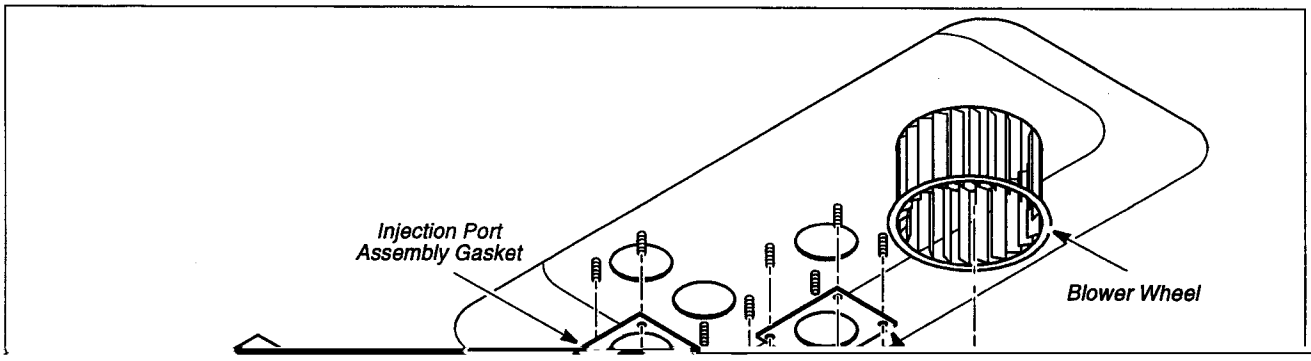
The incubator can be easily cleaned and disinfected in about 30 minutes.

Be sure to use an appropriate disinfectant solution: Roccal II; its Lysol equivalent, 5 milliliters per liter; or O-Syl in a one percent

8.2 CO_2 Filter Replacement

You should replace the CO_2 filter at least once every three months. To replace the CO_2 filter:

1. Turn the main power switch to OFF.
2. Turn the gas supply (or supplies) to OFF.
3. Remove the tubing from both ends of the gas filter.
4. Note the flow direction on the filter. The side marked IN points to the gas supply. Install the new filter onto the tubing


Injection Port
Assembly Gasket
Blower Wheel

8.8 Moving the Incubator

If you need to move the incubator, it is recommended that you drain the water jacket first. This will eliminate excess weight and reduce the risk of damage to the unit and/or personal injury.

8.10 Preventive Maintenance Schedules

Table 5. Suggested Preventive Maintenance Schedule

Suggested Interval	Maintenance Task

9 Troubleshooting

WARNING! Troubleshooting procedures involve working with high voltages which can cause injury or death. Troubleshooting should only be performed by trained personnel.

Symptom	Solution
General	
	No power:

Symptom	Solution

- Check the setpoint.

Symptom	Solution
CO_2 alarm sounds while CO_2 level is controlling	• Excessive EFI or EMI near cabinet.
	• Defective main control board.

10 Replacement Parts

11 Accessories

Description	Part No.
Cleaning, Sanitizing Agents	

Gas Connections to Stacked Incubators

Use 'Y' or 'T' Connectors to split a gas supply line that is needed at top and bottom stacked incubator chambers. Second gas supply for second tank connections with tank-switcher system. See the illustrations.

Tank Switcher Connections, Operations and Alternate Connections

[redacted]

Installation of Passive Humidity in Humidity Controlled "R" Incubator

The installation and use of the stainless steel passive humidity pan (16" x 10"