

INCUBATOR-GENIE™

OPERATING INSTRUCTIONS

Models SI-1400 through SI-1406



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U.S. PAT 5,918,979

INCUBATOR-GENIE®

Environmentally Controlled Benchtop 3-in-1 Incubator / Rotator / Rocker

The **Incubator-Genie** is an Incubator / Rotator / Rocker for the study of micro-organisms and tissue cell growth under strictly controlled conditions of temperature and agitation. Designed to provide the security of precise temperature control and uniformity for demanding incubation applications without taking up a great deal of space. It performs membrane-based assays/washings and hybridizations more efficiently. Chamber air is gently and continuously circulating at a rate that ensures the temperature consistency and uniformity of all test samples. Shatter resistant viewing window allows for inspection of samples without affecting the chamber environment.

Microprocessor control easily achieves desired rotating/rocking speed and temperature which are shown on large, easy to read displays for accurate reproducible conditions. Visible and audible alarms exist for temperature.

FEATURES:

- 28°C to 75°C precise temperature range
- Microprocessor controls allow for accurate, reproducible conditions
- Economical, space saving, and secure

SPECIFICATIONS:

Temperature and Settings

- Heating to 75°C
- Accuracy $\pm 1.0^{\circ}\text{C}$
- Uniformity $\pm 1.0^{\circ}\text{C}$
- Resolution 1.0°C
- Stability $\pm 1.0^{\circ}\text{C}$
- Alarms: Visible & audible for temperature



Rocking

- 6-70 cycles per minute

Rotating

- 3-35 RPM

Size

- Overall: 400mm x 560mm x 370mm (15.9" x 21.13" x 14.5")
- Chamber: 254mm x 362mm x 260mm (10" x 14.25" x 10.25")
- Chamber Volume: 24 Liters

Electrical

- 120 Volt AC, 5 Amp (SI-1400)
- 230 Volt AC, 2.5 Amp (SI-1401, SI-1402, SI-1403, SI-1404)
- 100 Volt AC 5 Amp (SI-1405)

(Nominal voltages not to vary by more than 10%)

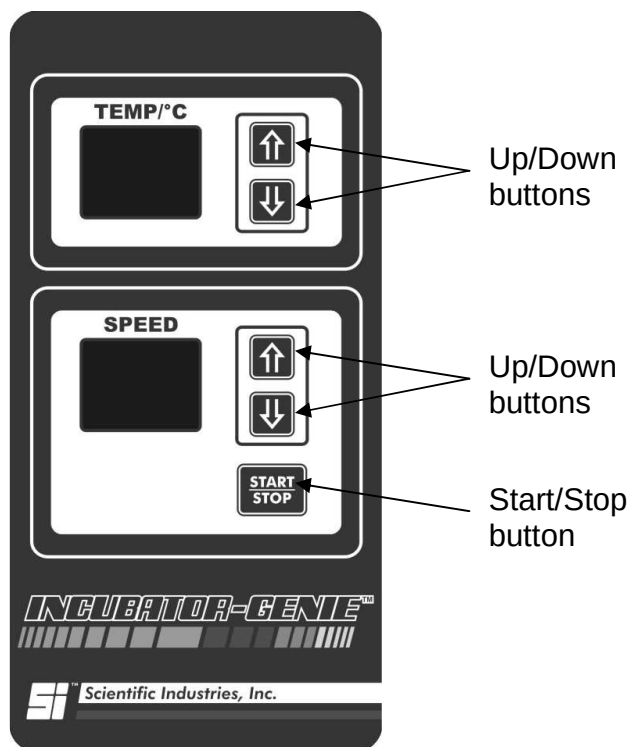
2-Year Warranty

CE

This symbol on  the **Incubator-Genie** means: Attention: Refer to accompanying documents.

OPERATING INSTRUCTIONS

 **CAUTION!** Failure to follow operating instructions can compromise the user's safety.



BUTTON FUNCTIONS

UP and **DOWN** buttons in the temperature area are used for:

- Changing the temperature value

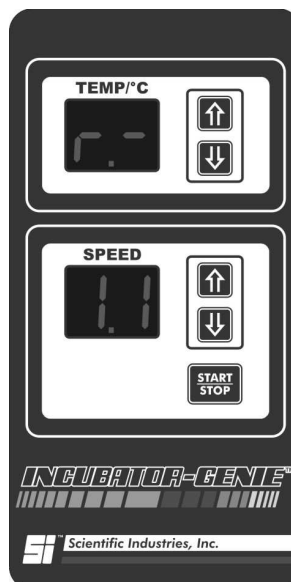
UP and **DOWN** buttons in the speed area are used for:

- Changing the rocking/rotating speed value

START/STOP button is used for starting/stopping rocking/rotating.

DISPLAY CONTENTS

Power on the **Incubator-Genie** (front rocker switch below the control panel). The display will briefly show the software revision:



After 5 seconds the display will show temperature and speed settings and begin to control temperature.

MIXER MODES

The Incubator-Genie has 2 Mixer Modes.

ROTATE/ROCK

OFF (Environmental Chamber - no mixing)

To activate **OFF** mixing mode, press the **SPEED** down button until the display shows (--)

RANGE OF PARAMETER CHANGE

TEMP: 25° to 75°C in 1°C increments.

SPEED: ROTATE mode : 3 to 35 RPM

ROCK mode : 6 to 70 RPM

MIXER OPERATION

The mixer can be turned on/off by pressing the **START/STOP** button.

TEMPERATURE REGULATOR OPERATION

When the unit is first turned **ON** (rocker switch below control panel), the heaters and fan will turn on and begin regulating toward the set temperature. During this time, the temperature display will blink green. The display will become solid green after achieving the desired temperature.

Pressing the Up or Down Arrow buttons in the temperature control area allows you to change the desired temperature. While adjusting temperature, the display will be amber in color.

Once the temperature has reached the set value, a change of $\pm 2^{\circ}\text{C}$ in the measured temperature will change the displayed value to solid red. At $\pm 3^{\circ}\text{C}$ deviation, the display will blink red. At $\pm 4^{\circ}\text{C}$ the display will blink red and the alarm will sound.

Note: This device is not capable of achieving a chamber temperature that is less than the ambient room temperature.

CALIBRATION MODE

The **Incubator-Genie** is electronically factory calibrated and should not need calibration, nor is it recommended. However, should the need arise, the unit may be calibrated, as follows:

In order to calibrate, you will need to make an independent measurement of the chamber temperature. Make sure the thermometer is accurate! Generally speaking, glass thermometers found around the lab will be less accurate than your **Incubator-Genie**. Good, certified glass or digital thermometers are available from laboratory supply dealers. A thermocouple wire may be passed

through the door seal and will not affect performance.

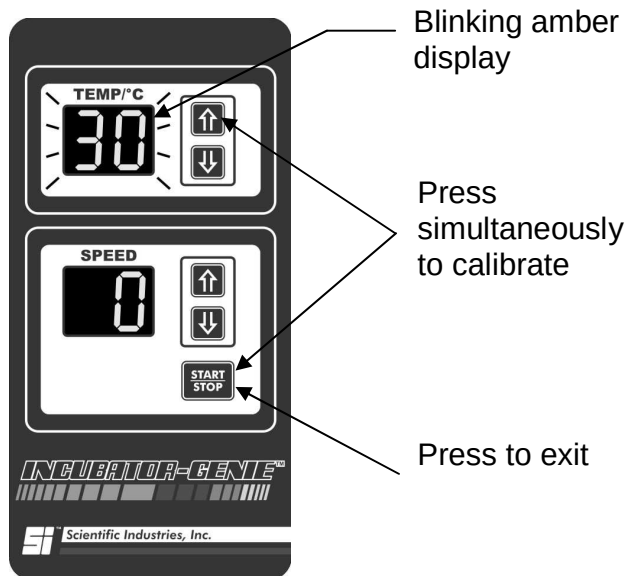
Measure the temperature in the chamber via the lab thermometer, after chamber temperature has been allowed to settle for twenty minutes. Note the difference in temperature between **Incubator-Genie** displayed temperature and your lab thermometer temperature (ex. Incubator-Genie display reads 37°C, lab thermometer reads 38°C; difference is -1°C). This difference is the calibration value to be entered.

To access the calibration menu, simultaneously press and hold the **UP ARROW** button in the temperature control area and the **START/STOP** button while turning the unit ON

The parameters on the display show:

TEMPERATURE: The temperature blinks amber and begins adjusting to reach the last temperature setting. Once there, it changes to solid amber

SPEED: 0 – The speed readout displays “0” in an amber color and can be adjusted ± 9 for each $^{\circ}\text{C}$ desired.

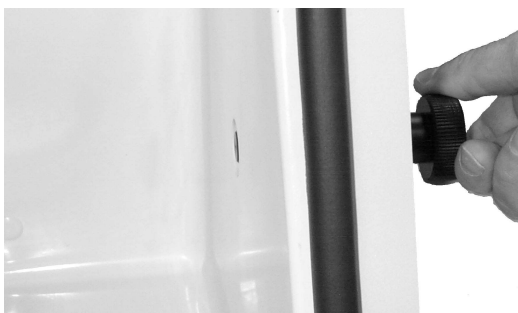


Press the **START/STOP** button to exit calibration mode.

ROTATE/ROCK

Incubator-Genie comes equipped with a magnetic platform that is used for rotating and rocking. Installing/removing the magnetic platform is easy, but may take a few times to get used to. Try the following technique:

Install the magnetic platform by first unscrewing the lock shaft until the end of the lock shaft is flush with the right hand sidewall of the inside of the chamber.



Grab the magnetic platform with the label side up, so that you can read the label. Hold the platform in the chamber and insert the hex shaft on the left side of the chamber into the hex hole in the magnetic platform. You may need to rotate the platform slightly to align the shaft with the hole.



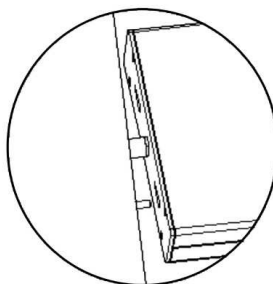
Now hold up the right side of the platform, while depressing the blue lock release. Screw the lock shaft into the hole in the magnetic platform making sure the blue lock release is depressed. When the lock shaft is screwed all the way in, let go of the lock release.



To remove the platform, reverse the above procedure.

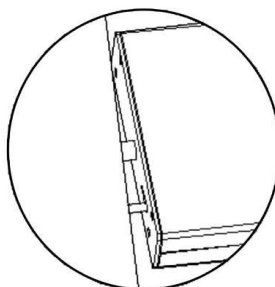
To select rotating mode:

1. Press the lock release.
2. Shift the magnetic platform to the right.
3. While shifting the platform right, release the lock release and line up the hex shaft to engage the lock shaft properly.
4. The platform will lock in place when it reaches the correct position.



To select rocking mode:

1. Press the lock release.
2. Shift the magnetic platform to the left.
3. While shifting the platform left, release the lock release and rotate the platform to line up the pin and the pin slot in the end of the platform. Shift the platform onto the pin.
4. The platform will lock in place when it reaches the correct position.



The versatile magnetic platform can be loaded a variety of ways using both sides of the platform:

To rock open trays or racks, center on the metal rocker tray.

NOTE: The metal rocker tray must be used in rocking mode only. It will not clear the housing if rotated.



To rotate or rock bags, select mode of operation (Rotate or Rock); locate the bags in the desired position using 2 or 4 (depending on application) magnetic stainless steel mounting strips to hold them in place. Four mounting strips are supplied – more can be ordered (see Accessories). The platform capacity for bags can also be expanded (see Accessories).



Various size tubes can be placed on the magnetic platform in different orientations to produce different motions within the tubes. First select the size clip plate required. The large clips hold 28-30mm dia. (50ml) tubes, the medium clips hold 15-17mm dia. (15ml) tubes and the small clips hold 10-13mm dia. (1.5-2.0ml) tubes. One clip plate of each size is supplied. The platform can hold up to eight plates (see Accessories). Push the tubes into the clips.

Positioning the plates as shown below will produce a rotating or rocking motion in the tubes.



Positioning the plates as shown below will produce a rolling or rocking motion in the tubes.



Positioning the plates as shown below will produce a combination rotating/rolling motion ("Figure 8" motion) in the tubes. Adjust the angle to achieve the desired motion.



NOTE: When rotating tubes, rotate the magnetic platform by hand before starting, to check the clearance of the tubes to the chamber walls.

PLATFORM CAPACITY

Centered on Axis: 4.5kg (10lb)
Offset: 2.3kg (5lb)

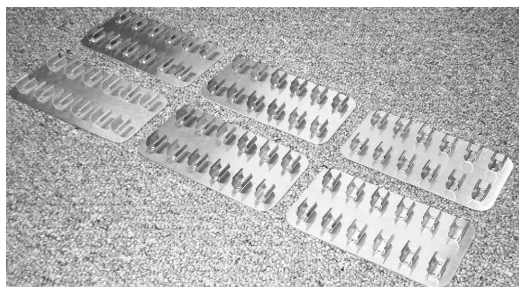
ENVIRONMENTAL CHAMBER ONLY

The **Incubator-Genie** may be used as a temperature chamber when the platform is not installed. A wire rack is included to increase the capacity of the chamber. An additional rack (sold separately) may be stacked on the first rack to further increase capacity (see Accessories).



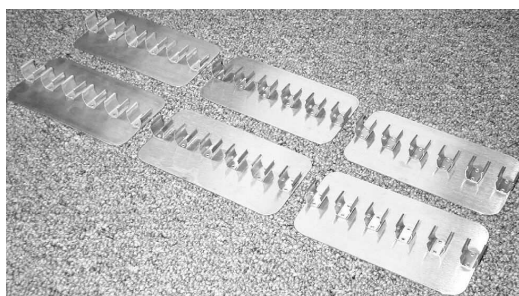
***NOTE: Please check our website
(www.scientificindustries.com) for any
updates to this document***

Incubator-Genie Accessories



SI-1120 Small Tube Plates

Add extra small tube capacity! Each kit contains six 10-13mm diameter tube plates (12 tubes per plate). Ideal for microcentrifuge or other small tubes.



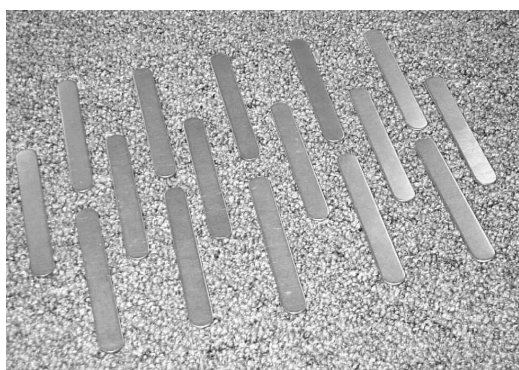
SI-1121 Medium Tube Plates

Add extra medium tube capacity! Each kit contains six 15-17mm diameter tube plates (6 tubes per plate). Ideal for 15ml centrifuge or other medium tubes.



SI-1122 Large Tube Plates

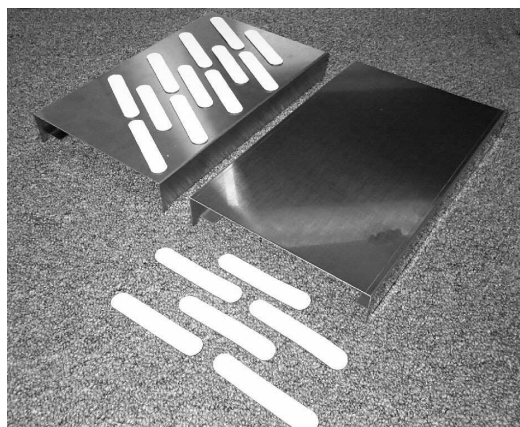
Add extra Large Tube Capacity! Each kit contains six 28-30mm diameter tube plates (3 tubes per plate). Ideal for 50ml centrifuge or other larger tubes.



SI-1126 Bag Mounting Strips

Add extra bag capacity! Each kit contains sixteen magnetic stainless steel mounting strips. Ideal for bag washings of blots.

Incubator-Genie Accessories



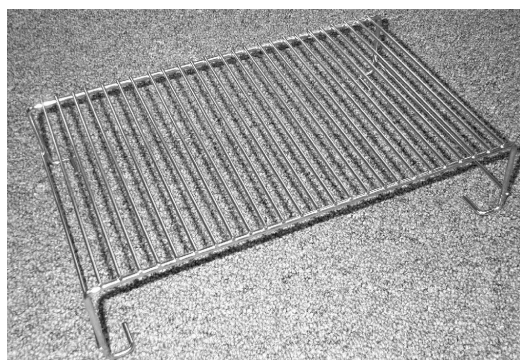
SI-1127 Bag Expansion Kit

Add even more Bag Capacity! Each kit contains two trays (for use on magnetic platform) and 24 flexible mounting strips.



SI-1130 Hybridization Tube Plates

Use your **Incubator-Genie** as a hybridization oven! Each kit contains two clips suitable for 42-45mm diameter tubes.

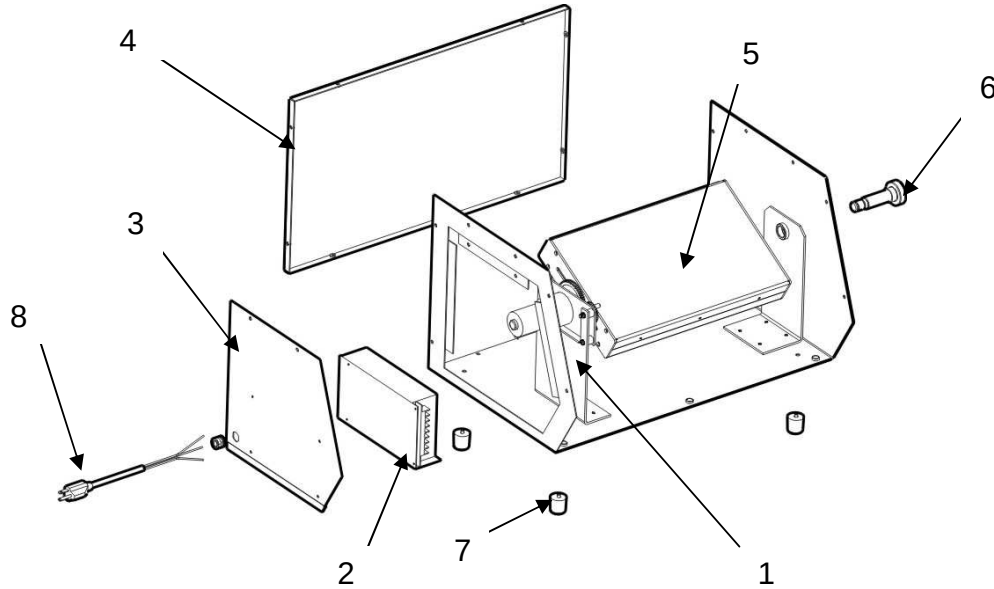


SI-1131 Additional Wire Rack

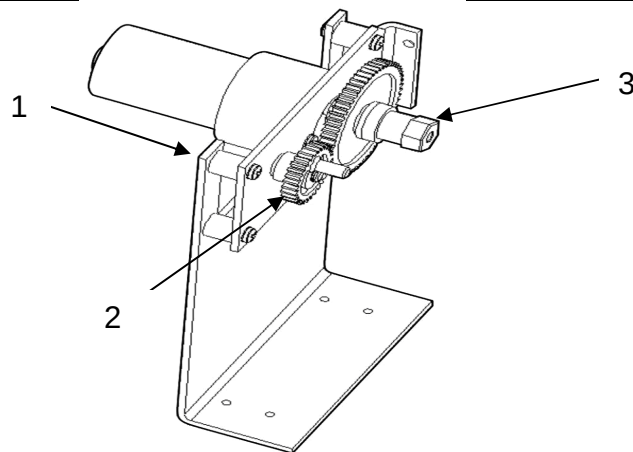
Add extra capacity to your **Incubator-Genie**! This extra rack will stack on top of your existing rack to increase shelf space.

Incubator -Genie Parts Assembly List

To order parts for the **Incubator-Genie**: Contact your local distributor or visit www.scientificindustries.com
Please specify part number, quantity and voltage.



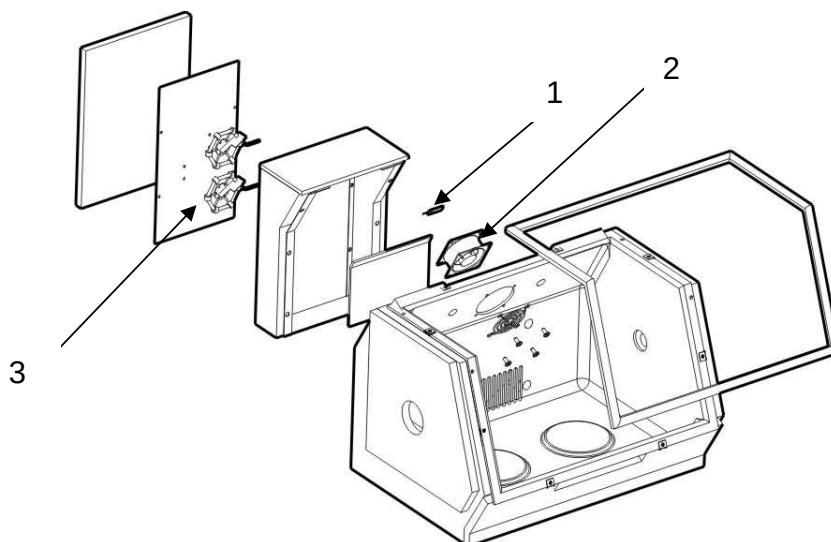
Indicator#	Part#	Description
1	0A-1400-002	KIT, MOTOR ASSEMBLY, INCUBATOR-GENIE
2	0K-1400-902	KIT, POWER SUPPLY
3	0K-1400-202	PANEL, POWER SUPPLY
4	0K-1400-203	BACK PANEL, INCUBATOR-GENIE
5	0A-1100-030	PLATFORM ASSEMBLY
6	0M-1200-214	LOCKSHAFT, PLATFORM
7	HWP0034	BUMPER, 1"DIA X 1" LG.
8A	318-0510-02	LINECORD 120V
8B	0A-1101-015	LINECORD, 230V W/O PLUG
8C	0A-1102-015	LINECORD, 230V EUROPEAN PLUG
8D	0A-1103-015	LINECORD, 230V BRITISH PLUG
8E	0A-1104-015	LINECORD, 230V SWISS PLUG
8F	0A-1105-015	LINECORD, 100V



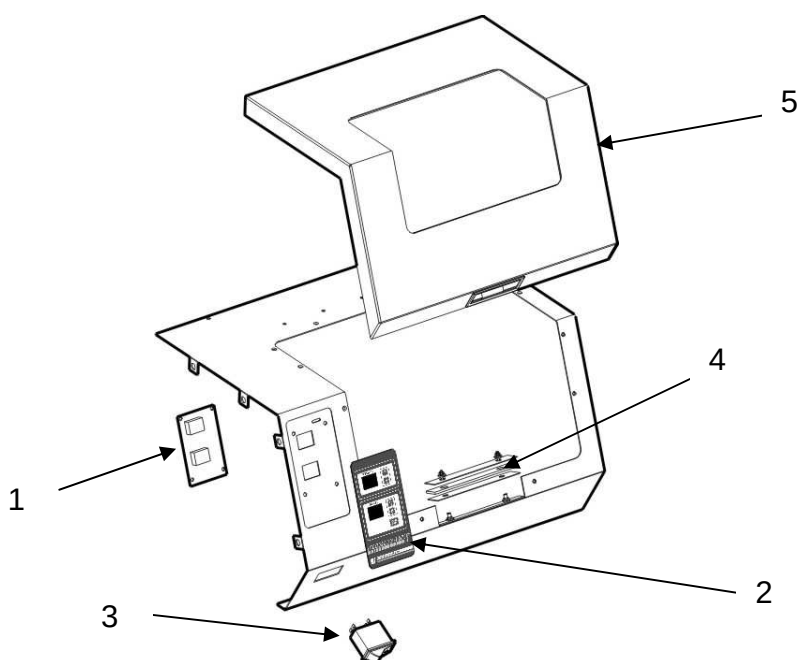
Indicator#	Part#	Description
1	0K-1200-908	KIT, MOTOR DRIVE, INCUBATOR-GENIE
2	0K-1200-909	KIT, SMALL GEAR, 30T, INCUBATOR-GENIE
3	0K-1200-910	KIT, HEX SHAFT, INCUBATOR-GENIE

Incubator -Genie Parts Assembly List

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Indicator#	Part#	Description
1	OK-1200-905	KIT, TEMPERATURE SENSOR, INCUBATOR-GENIE
2	OK-1200-906	KIT, FAN TEC ASSEMBLY, INCUBATOR-GENIE
3	OK-1400-903	KIT, HEATING ELEMENT, INCUBATOR-GENIE



Indicator#	Part#	Description
1	OK-1400-900	KIT, LED DISPLAY BOARD
2	OK-1400-901	KIT, LED DISPLAY KEYPAD
3A	ESP0006	SWITCH, ROCKER, 120V/100V 5A
3B	ESP0007	SWITCH, ROCKER, 230V 2.5A
4	OK-1200-902	KIT, DOOR LATCH, INCUBATOR-GENIE
5	OK-1200-915	KIT, DOOR, INCUBATOR-GENIE

 **CAUTION! Do not subject the Incubator-Genie to excessive shock.**

Dropping the unit, or otherwise subjecting it to unnecessary shock (ie: using excessive force to place vessels on the unit) may crack the case and lead to unsafe conditions.

 **CAUTION! Failure to follow operating instructions can compromise the user's safety.**

CARE & HANDLING

The **Incubator-Genie** should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. The finish can be washed with a damp cloth (after unplugging) and soap or mild detergents. Keep the unit clean by immediately blotting any spills.

 **CAUTION! Unplug from power before cleaning. Do not immerse.**

 **CAUTION! Do not use Incubator-Genie in hazardous atmospheres or with hazardous materials.**

 **CAUTION! Do not use Incubator-Genie in applications such as mixing of flammable materials or where the transfer of mechanical energy to glass apparatus could lead to breakage.**

TECHNICAL SPECIFICATIONS

The **Incubator-Genie** is classified as "Installation Category 2"

Environmental: 0°C – 38°C (32°F-100°F), 95% Humidity max.

MODEL	POWER REQUIRED	AMPS
SI-1400	120V	2.5
SI-1401	230V - No Plug	1.5
SI-1402	230V - European Plug	1.5
SI-1403	230V - British Plug	1.5
SI-1404	230V - Swiss Plug	1.5
SI-1406	230V - Australian Plug	1.5
SI-1405	100V	2.0

Weight: 19.5 Kg (43 lbs)

Maximum Load: Centered on Axis: 4.5kg (10lb.)

Offset: 2.3kg (5lb.)

Dimensions:

- Overall: 404mm x 538mm x 366mm
(15.9 x 21.13 x 14.5in.)
- Chamber: 254mm x 362mm x 260mm
(10 x 14.25 x 10.25in.)
- Chamber Volume: 24 Liters (0.86ft³)

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