

4-INS-220



## INSTALLATION, OPERATION AND CARE MANUAL

REMEMBER TO COMPLETE THE ONLINE  
WARRANTY REGISTRATION TO  
RECEIVE YOUR FULL TWO YEAR WARRANTY.

### **WARRANTY**

All Scientific equipment comes with a standard ONE year warranty, The 1 Year Extended Warranty is only valid for customers who have registered their warranty online at [www.scientific.co.za](http://www.scientific.co.za) within the first year after making their purchase.

MANUFACTURED  
IN SOUTH AFRICA





ALL SCIENTIFIC EQUIPMENT COMES WITH A TWO  
YEAR WARRANTY ON COMPONENTS AND  
DEFECTIVE WORKMANSHIP - Ts & Cs APPLY.

### REGISTER ONLINE TODAY

- Register your warranty on-line at [www.scientific.co.za](http://www.scientific.co.za) today and learn how to get the best out of your Scientific product.

### NO WEB ACCESS?

- If you do not have access to the Web, register by completing this form and Email it to the Scientific head office in South Africa. Email: [sales@scientific.co.za](mailto:sales@scientific.co.za)

### ONLY COMPLETE IF YOU DO NOT HAVE WEB ACCESS

Company \_\_\_\_\_

Name \_\_\_\_\_

Surname \_\_\_\_\_

Telephone \_\_\_\_\_

Cellphone \_\_\_\_\_

Email Address \_\_\_\_\_

Country \_\_\_\_\_

Postal address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Scientific products purchased \_\_\_\_\_

Product Code (see box label) \_\_\_\_\_

Serial number (see back of machine) \_\_\_\_\_

### INTENDED USE

- |                                       |  |   |
|---------------------------------------|--|---|
| <input type="checkbox"/> Agriculture  | <input type="checkbox"/> Genetics        | <input type="checkbox"/> Pharmaceutical Physics |
| <input type="checkbox"/> Automotive   | <input type="checkbox"/> Industrial      | <input type="checkbox"/> Power Generation       |
| <input type="checkbox"/> Biochemistry | <input type="checkbox"/> Medical         | <input type="checkbox"/> Special Metals         |
| <input type="checkbox"/> Botony       | <input type="checkbox"/> Microbiology    | <input type="checkbox"/> Sugar                  |
| <input type="checkbox"/> Chemistry    | <input type="checkbox"/> Mining          | <input type="checkbox"/> Water                  |
| <input type="checkbox"/> Cosmetics    | <input type="checkbox"/> Nuclear         | <input type="checkbox"/> Zoology                |
| <input type="checkbox"/> Electronics  | <input type="checkbox"/> Paper/Packaging | <input type="checkbox"/> Other (Specify): _____ |
| <input type="checkbox"/> Food         | <input type="checkbox"/> Petrochemical   | _____   |



ALL SCIENTIFIC EQUIPMENT COMES WITH A TWO  
YEAR WARRANTY ON COMPONENTS AND  
DEFECTIVE WORKMANSHIP - Ts & Cs APPLY.

## LIMITED WARRANTY

The manufacturer guarantees that this unit is free from defect in materials and workmanship when it leaves the factory and undertakes to replace or repair the unit if it proves defective in normal use or during servicing for a period of 1(one) year. The date of original installation and is for the benefit of the original purchaser only. The liability under this warranty is limited to repairing the defective unit or any part of the unit provided it is sent carriage paid to an authorized dealer. All other Warranties ,expressed or implied , statutory or otherwise, including without limitations any implied Warranty of Merchantability or fitness for purpose are excluded .The Seller shall in no event be liable for direct,indirect or consequential damages in connection with the products.

This unit is at all times to be used according to the instruction manual and for its normal purpose.

This Warranty is not effective if damage occurs because of accident, carelessness,improper installation,lack of proper set-up,supervision when required or if the equipment is installed or operated in any manner contrary to the installation and operating instructions. In these cases,repairs will be made at a reasonable cost. Work performed by unauthorized personnel or unauthorized service agencies voids this Warranty.

## ECONOMY OVENS AND INCUBATORS



**INSTALLATION OPERATION AND CARE OF  
SERIES 2000 ECONOMY OVENS AND INCUBATORS  
MODELS: 220/221/222/223/224/223D/224D/224V  
225/226/227/228/229/228D/229D/229V  
275/276/277/278/279/278D/279D/279V  
295/296/297/298/299/298D/299D/299V**

## UNPACKING

Unpack the product and check for any damage incurred during transit. This should be reported to the responsible carrier, railway or postal authority, and a request for a damage report should be made.



THESE INSTRUCTIONS MUST BE FOLLOWED FOR US TO GUARANTEE OUR FULL SUPPORT OF YOUR CLAIM FOR PROTECTING AGAINST LOSS FROM CONCEALED DAMAGE. THE FORM FOR FILING SUCH A CLAIM WILL BE PROVIDED BY THE CARRIER.

## GENERAL INSTALLATION AND OPERATION INFORMATION

1. Position the unit on a stable bench.
2. Ensure that the unit is at least 100mm-200mm from the wall to ensure that the exhaust air duct on the rear of the unit can vent adequately.
3. Before switching on the unit, remove all leaflets and contents from the inside of the oven/incubator.
4. The oven door is opened by a 90° anti-clockwise turn of the handle and then pull to open.
5. There are two chrome plated steelwire shelves provided, plus 4 shelf runners. Once unpacked, clip the shelf runners firmly into position via the hooks, which clip into the recessed rails on the inner side walls of the oven/incubator. Ensure that they are firmly clipped into the desired position and slide the shelf into the U-profile of the shelf runner.
6. Uniformly load the shelves and observe the maximum shelf loadings given in the technical specification.
7. Pushing the door slightly against the silicon frame seal and then running handle clockwise through 90° closes the oven/incubator door.

**MODEL: 400L VERTICAL OVEN**  
**MODEL CODES : 224V/229V/279V/299V**

ITEM	DESCRIPTION
1	BODY ASSEMBLY
2	INNER CHAMBER ASSEMBLY
3	ELEMENT
4	SHELF
5	LEFT SHELF RUNNER
6	RIGHT SHELF RUNNER
7	DOOR HANDLE BUSH ASSEMBLY
8	DOOR HANDLE
9	DOOR
10	INNER DOOR
11	DOOR SEAL
12	FAN COVER
13	BOTTOM HINGE
14	PT100 PROBE
15	SIDE COVER
16	FAN
17	FAN BOX
18	FAN MOTOR
19	MILLBOARD
20	FAN BOX COVER
21	TOP HINGE
22	CONTROL BOX
23	SOLID STATE RELAY HEAT SINK
24	SOLID STATE RELAY
25	CABLE GLAND
26	POWER CORD
27	15 AMP FUSE HOLDER AND FUSE
28	CONTROL BOX COVER
29	FACIA PANEL
30	ILLUMINATED ROCKER SWITCH
31	THERMOSTAT
32	DIGITAL CONTROLLER
33	KNOB AND KNOB CAP

## PRODUCT DESCRIPTION

The units are either bench-top ovens or incubators. The oven models are general-purpose units with a working temperature range from ambient +7°C to 250°C. The incubator models have a working temperature range from ambient +7°C to 110°C.

Either unit consists of a mild steel body coated with a textured powder coated finish, while the interior chamber is made of 304 stainless steel. The exterior shell is separated from the interior shell by mineral wool insulation.

## MAINS FUSE

The mains fuse on the rear of the unit may be exchanged using the following fuse

MEDIUM BLOW FUSE – M15 AMP 5 X 32MM

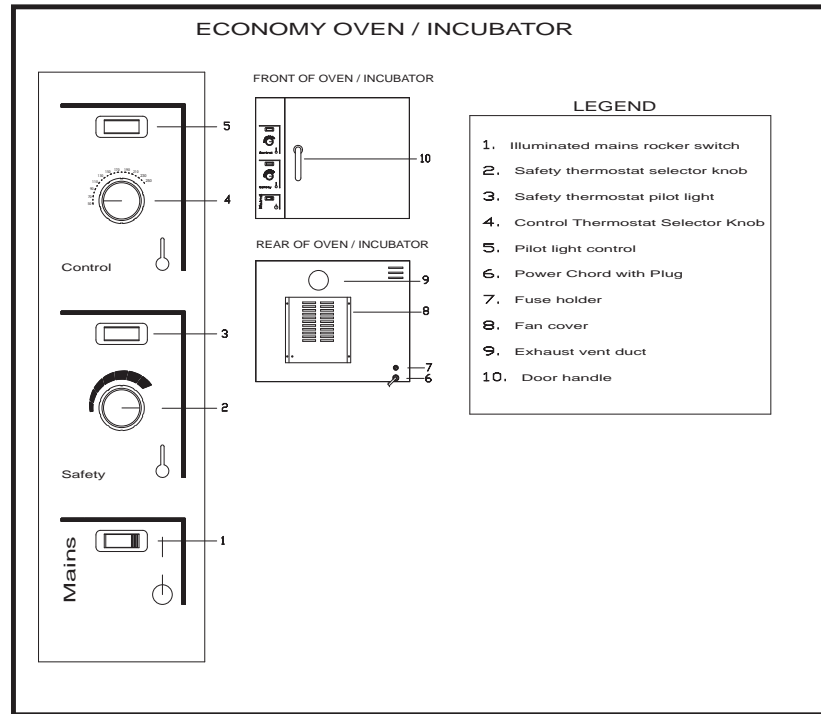
Disconnect the power plug from the mains socket before attempting to replace the fuse.



**THESE OVENS/INCUBATORS ARE NOT EXPLOSION-PROOF. IT IS NOT RECOMMENDED TO HEAT SOLVENTS AND OTHER FLAMMABLE SUBSTANCES.**

## SPECIFIC INSTALLATION AND OPERATING INFORMATION

ECONOMY SERIES : 220 – 224 OVENS / 225 – 229 INCUBATORS

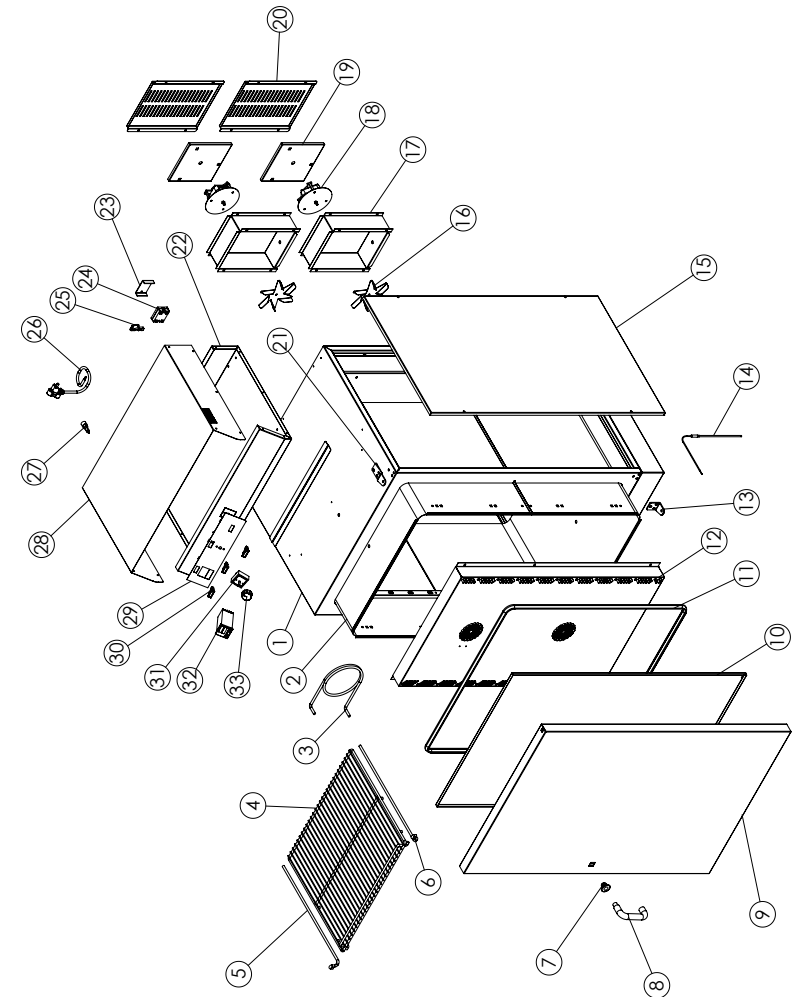


1. Ensure that the power plug of the unit is plugged into the mains power socket.
2. Ensure that the oven /incubator door is closed.
3. Switch on the mains power switch of the unit via the "MAINS" rocker switch.
4. The rocker switch will illuminate and the circulation fan will immediately operate.
5. Set the desired control temperature via the "CONTROL" thermostat selector knob.
6. Set the "SAFETY" cut out temperature on the safety thermostat by allowing the unit to reach the set "CONTROL" temperature and setting the "SAFETY" temperature slightly above the set temperature using the "SAFETY" thermostat selector knob.

## EXPLODED DIAGRAM

MODEL: 400L VERTICAL OVEN-INCUBATOR

MODELS: 224V/229V/279V/299V

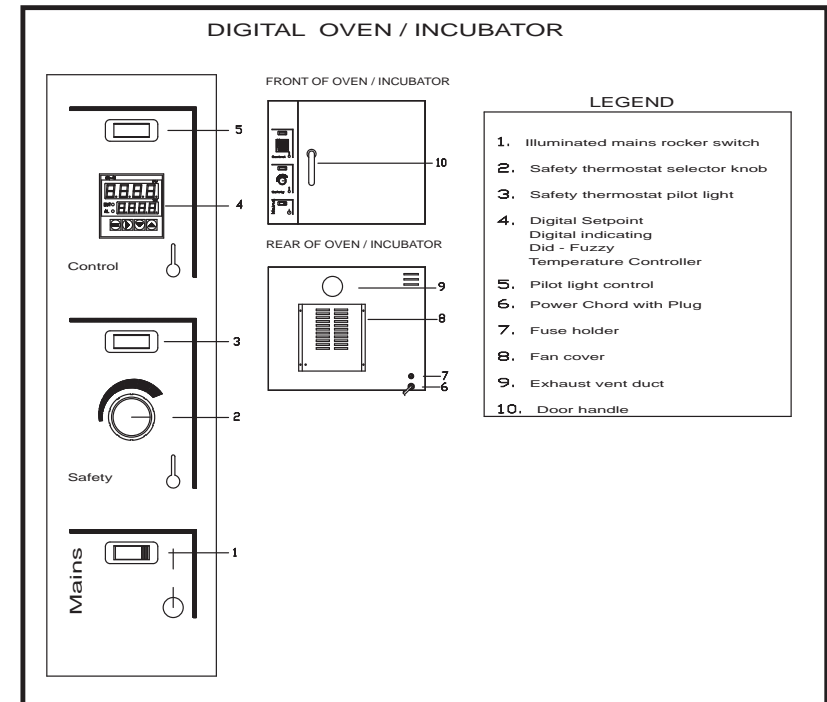


**MODEL : 240L/400L DIGITAL OVEN/INCUBATOR****MODEL CODES : 278D/279D/298/299D**

ITEM	DESCRIPTION
1	RUBBER GROMMET
2	BODY ASSEMBLY
3	TOP HINGE
4	INNER CHAMBER ASSEMBLY
5	SOLID STATE RELAY
6	SOLID STATE RELAY HEAT SINK
7	SHELF RUNNER
8	SHELF
9	SHELF RUNNER
10	BOTTOM HINGE
11	ILLUMINATED ROCKER SWITCH
12	FAN
13	SEE TABLE
14	FAN COVER
15	DOOR SEAL
16	INNER DOOR
17	RIGHT DOOR
18	DOOR HANDLE WASHER
19	DOOR HANDLE
20	DOOR HANDLE
21	DOOR HANDLE BUSH ASSEMBLY
22	LEFT DOOR
23	TEMPERATURE CONTROLLER
24	KNOB CAP
25	KNOB
26	THERMOSTAT
27	THERMOSTAT
28	DOOR BOX
29	PT100 PROBE
30	FACIA PANEL
31	BOTTOM LEFT HINGE
32	FOOT
33	BOTTOM COVER
34	SIDE COVER
35	FAN BOX
36	FAN MOTOR
37	MILL BOARD
38	FAN BOX COVER
39	CABLE GLAND
40	POWER CORD
41	15 AMP FUSE HOLDER AND FUSE

MODELS:240L/400L DIGITAL OVEN/INCUBATOR	
13	MODEL: 278-2000W ELEMENT
13	MODEL: 279-1500W ELEMENT
13	MODEL: 298-1000W ELEMENT
13	MODEL: 299-750W ELEMENT

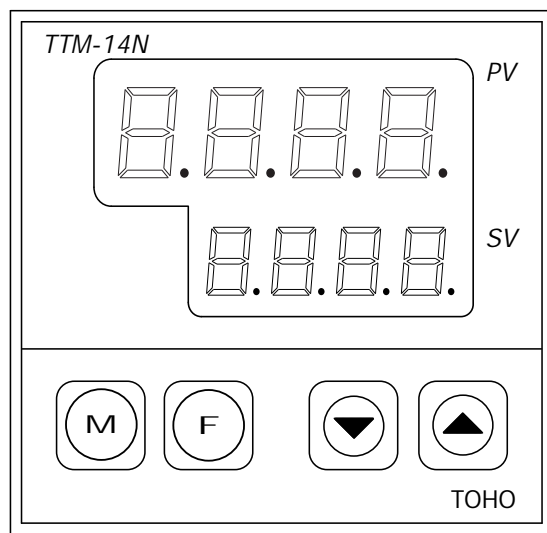
DIGITAL SERIES : 275 – 279 OVENS / 295 – 299 INCUBATORS

**DIGITAL TEMPERATURE CONTROLLER**

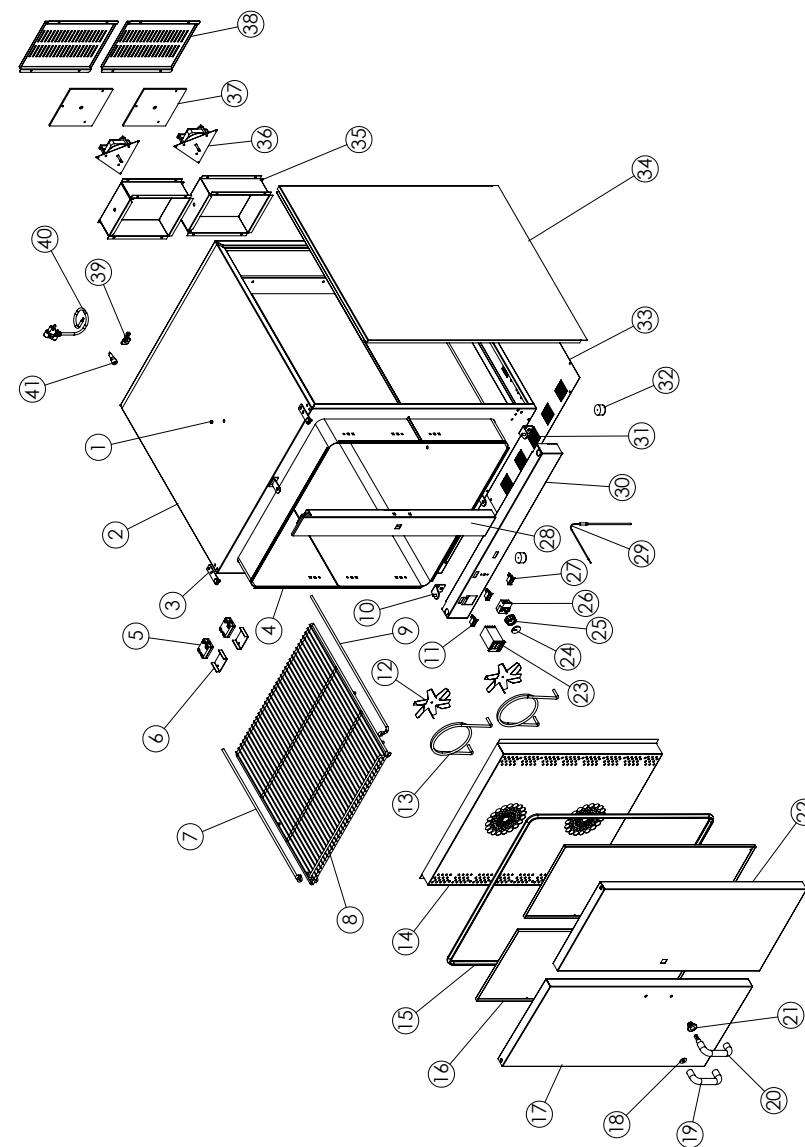
1. Ensure that the oven /incubator door is closed.
2. Switch on the mains power switch of the unit via the “MAINS” rocker switch.
3. The rocker switch will illuminate and the circulation fan will immediately operate.
4. Set the desired control temperature via the “ELECTRONIC TEMPERATURE CONTROLLER” As per instructions overleaf.
5. Set the “SAFETY” cut out temperature on the safety thermostat by allowing the unit to reach the set “CONTROL” temperature and setting the “SAFETY” temperature slightly above the set temperature using the “SAFETY” thermostat selector knob.

## OPERATING INSTRUCTIONS OF ELECTRONIC TEMPERATURE CONTROLLER

1. The temperature controller has four buttons on the front face. These are used to set the required temperature, initiate Auto-Tuning, and enter any adjustments to the program.
2. To set the required temperature, ensure that the unit is connected and switched "ON" in the appropriate manner.
3. The top display (white) shows the actual temperature (PV) in the unit, the bottom display (green) is the setting temperature (SV) and must be adjusted to the required temperature. To adjust the setting, press the function "F" button. This action will start one of the digits in the lower display flashing. By touching this button again, the flashing will move to the left. Once the flashing green display is on the number that needs to change, use the UP/DOWN buttons to attain the required settings.
4. By moving the flashing digit left or right the desired temperature required can be set. Once the correct temperature has been entered, press Mode "M" button to enter the setting.



## EXPLODED DIAGRAM MODEL: 240L/400L D/D DIGITAL OVEN-INCUBATOR MODELS: 278/279/298/299





**MODEL : 240L/400L ECONOMY OVEN/INCUBATOR****MODEL CODES : 223D/224D/228D/229D**

ITEM	DESCRIPTION
1	RUBBER GROMMET
2	BODY ASSEMBLY
3	TOP HINGE
4	INNER CHAMBER ASSEMBLY
5	SOLID STATE RELAY
6	SOLID STATE RELAY HEAT SINK
7	SHELF RUNNER
8	SHELF
9	SHELF RUNNER
10	BOTTOM HINGE
11	PILOT LIGHT
12	FAN
13	SEE TABLE
14	FAN COVER
15	DOOR SEAL
16	INNER DOOR
17	RIGHT DOOR
18	DOOR HANDLE WASHER
19	DOOR HANDLE
20	DOOR HANDLE
21	DOOR HANDLE BUSH ASSEMBLY
22	LEFT DOOR
23	KNOB CAP
24	THERMOSTAT
25	KNOB
26	THERMOSTAT
27	ILLUMINATED ROCKER SWITCH
28	DOOR BOX
29	PT100 PROBE
30	CONTROL FACIA PANEL
31	BOTTOM LEFT HINGE
32	FOOT
33	BOTTOM COVER
34	SIDE COVER
35	FAN BOX
36	FAN MOTOR
37	MILL BOARD
38	FAN BOX COVER
39	CABLE GLAND
40	POWER CORD
41	15 AMP FUSE HOLDER AND FUSE

**MODELS:240L/400L ECONOMY OVEN/INCUBATOR**

13	MODEL: 223-2000W ELEMENT
13	MODEL: 224-1500W ELEMENT
13	MODEL: 228-1000W ELEMENT
13	MODEL: 229-750W ELEMENT

**TROUBLE-SHOOTING GUIDE**

SYMPTOMS	POSSIBLE DIAGNOSIS	POSSIBLE DIAGNOSIS
Mains switch fails to switch on convection fan when switched on	<ul style="list-style-type: none"> <li>- Faulty power supply</li> <li>- Faulty fuse</li> <li>- Defective plug</li> <li>- Fan faulty</li> </ul>	- In all instances we suggest you contact a service technician
The "Control" pilot light fails to light up	<ul style="list-style-type: none"> <li>- The pilot light may be faulty or there may be a problem in the regulation circuit.</li> <li>- The safety thermostat may be set below the control set temperature.</li> </ul>	<ul style="list-style-type: none"> <li>- Contact a service technician</li> <li>- Turn safety thermostat selector knob slightly clockwise until control circuit is activated.</li> </ul>
Control pilot light on but no heating	- Element faulty	- Contact a service technician.



## WARNING

### Burn Hazard.

Do not touch hot, liquid or heating surfaces while equipment is heating or operating

Hot surfaces and liquid can burn skin. Allow the hot surfaces to cool before handling

## MAINTENANCE AND REPAIRS

The oven/incubators are designed for continuous operating under normal conditions. Periodic maintenance other than cleaning is not required.

Before asking for a service technician or returning the unit for repair please contact one of our authorized dealers.

## CLEANING THE UNIT

BEFORE CLEANING THE UNIT, DISCONNECT THE POWER PLUG FROM THE MAINS SOCKET!

- Clean the outside of the unit using a damp cloth with soapy water.
- The stainless steel inner chamber should be cleaned with a damp cloth immersed in soapy water.
- Under no circumstances should steel wool be used.
- Avoid aggressive acids since this will discolour the stainless steel.
- It is normal for the stainless steel to adapt a slightly yellow discolouration when exposed to continuous high temperature use.

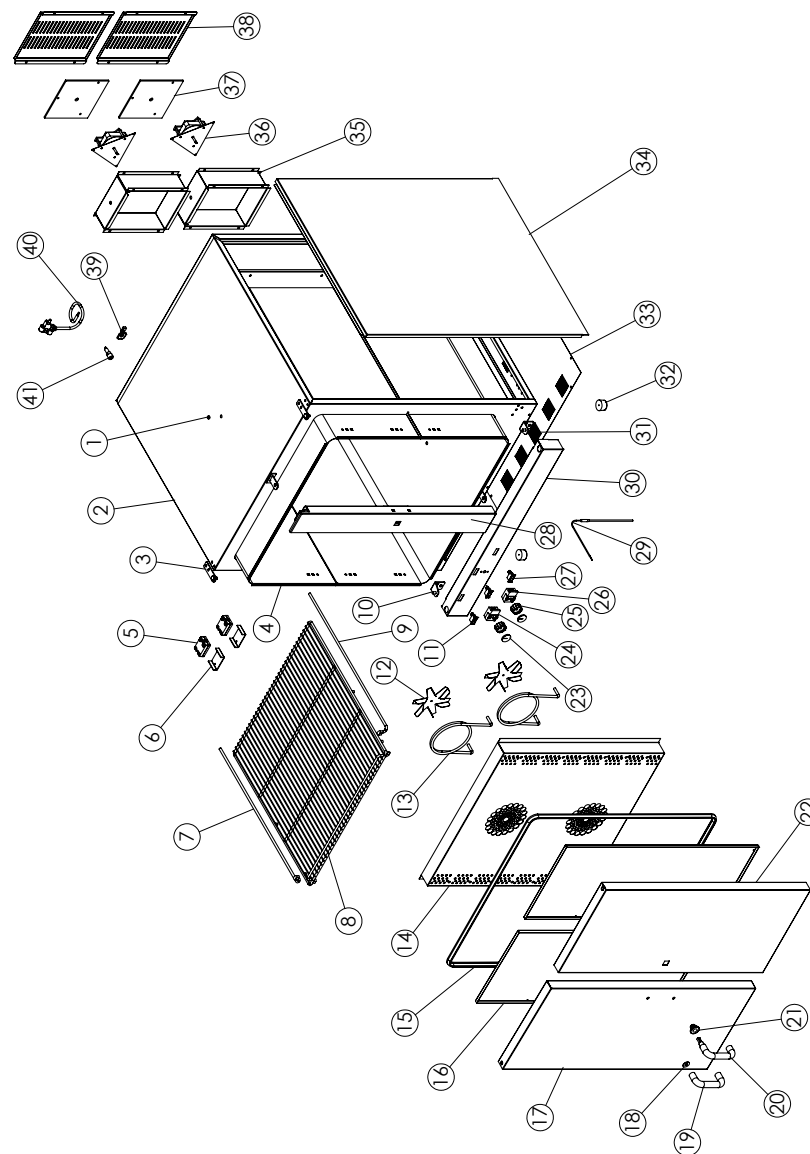


CLEAN THE STEEL PARTS WITH WATER AND SOAP. AVOID THE USE OF DETERGENTS CONTAINING ABRASIVE SUBSTANCES. ALWAYS RINSE WELL AND DRY CAREFULLY AFTER CLEANING. DO NOT USE PRODUCTS CONTAINING AGGRESSIVE CHEMICALS, ACIDS OR CHLORINE AS THIS WILL INVALIDATE THE WARRANTY

## EXPLODED DIAGRAM

MODEL: 240L/400L D/D ECONOMY OVEN-INCUBATOR

MODELS: 223/224/228/229



**MODEL : DIGITAL OVEN /INCUBATOR****MODEL CODE : 275/276/277/278/279****295/296/297/298/299**

1	BODY ASSEMBLY SEE BELOW
2	FACIA PANEL
3	FACIA
4	SOLID STATE RELAY
5	SHELF RUNNER SUPPORT
6	TEMPERATURE CONTROLLER
7	THERMOSTAT
8	PILOT LIGHT
9	KNOB
10	KNOB CAP
11	DOOR STRIKER PIN NUT
12	DOOR STRIKER PIN
13	SHELF RUNNER LEFT
14	DOOR HANDLE BUSH ASSEMBLY
15	DOOR HANDLE
16	DOOR ASSEMBLY
17	DOOR SEAL
18	SHELF
19	SHELF RUNNER RIGHT
20	FAN COVER
21	TEMPERATURE CONTROLLER PROBE
22	ILLUMINATED ROCKER SWITCH
23	ELEMENT - SEE BELOW
24	INNER OVEN CHAMBER
25	RUBBER FOOT
26	SIDE COVER
27	ELEMENT MILLBOARD
28	MOTOR MILLBOARD
29	FAN BOX COVER
30	FAN MOTOR
31	CABLE GRIP
32	15AMP FUSE HOLDER AND FUSE
33	POWER CORD
34	FAN BOX

1	40L BODY ASSEMBLY
	80L BODY ASSEMBLY
	160L BODY ASSEMBLY
	240L BODY ASSEMBLY
	400L BODY ASSEMBLY

	OVEN	INCUBATOR
23	40L 500W ELEMENT	40L 500W ELEMENT
	80L 500W ELEMENT	80L 500W ELEMENT
	160L 750W ELEMENT	160L 750W ELEMENT
	240L 1000W ELEMENT	240L 1000W ELEMENT
	400L 1500W ELEMENT	400L 750W ELEMENT

**WARNING****Electric Shock Hazard.**

Keep water and other liquids from entering the inside of the equipment. Liquid inside the equipment could cause an electrical shock

Do not spray water or cleaning products. Liquid could contact the electrical components and cause a short circuit or an electrical shock. Do not use equipment if power cord is damaged or has been modified

**SAFETY****READ ALL INSTRUCTIONS BEFORE USE. FAILURE TO FOLLOW THESE PRECAUTIONS COULD RESULT IN INJURY TO YOURSELF AND OTHERS**

1. Use the Ovens/Incubators on an individual 15A mains outlet only. **DO NOT OVERLOAD THE CIRCUIT.**
2. Ensure that the equipment and the power supply cord does not come into contact with hot surfaces.
3. This unit is only to be used by properly trained laboratory staff.
4. If the supply cord is damaged, it must be replaced with a new cord assembly available from the suppliers agent.
5. Use only earthed outlets matching the serial plate voltage.
6. Have equipment installed by a qualified personnel in accordance with local codes and ordinances.
7. Use equipment in a flat level position.
8. Never leave oven door open because the desired set temperature cannot be reached which can result in over-heating of the elements.
9. Uniformly load shelves and do not overload since this may damage the inside construction of the ovens.
10. Because these ovens are not explosion-proof, it is dangerous to heat solvents and other flammable substances in this equipment.
11. When opening the door of the unit, stand a distance away for the fumes to escape which may be harmful.
12. Do not operate if equipment has been damaged or is malfunctioning in any way.
13. These units are designed to run only on alternating current (A.C.) **DO NOT CONNECT TO DIRECT CURRENT (D.C)**

### INTERNAL DIMENSIONS

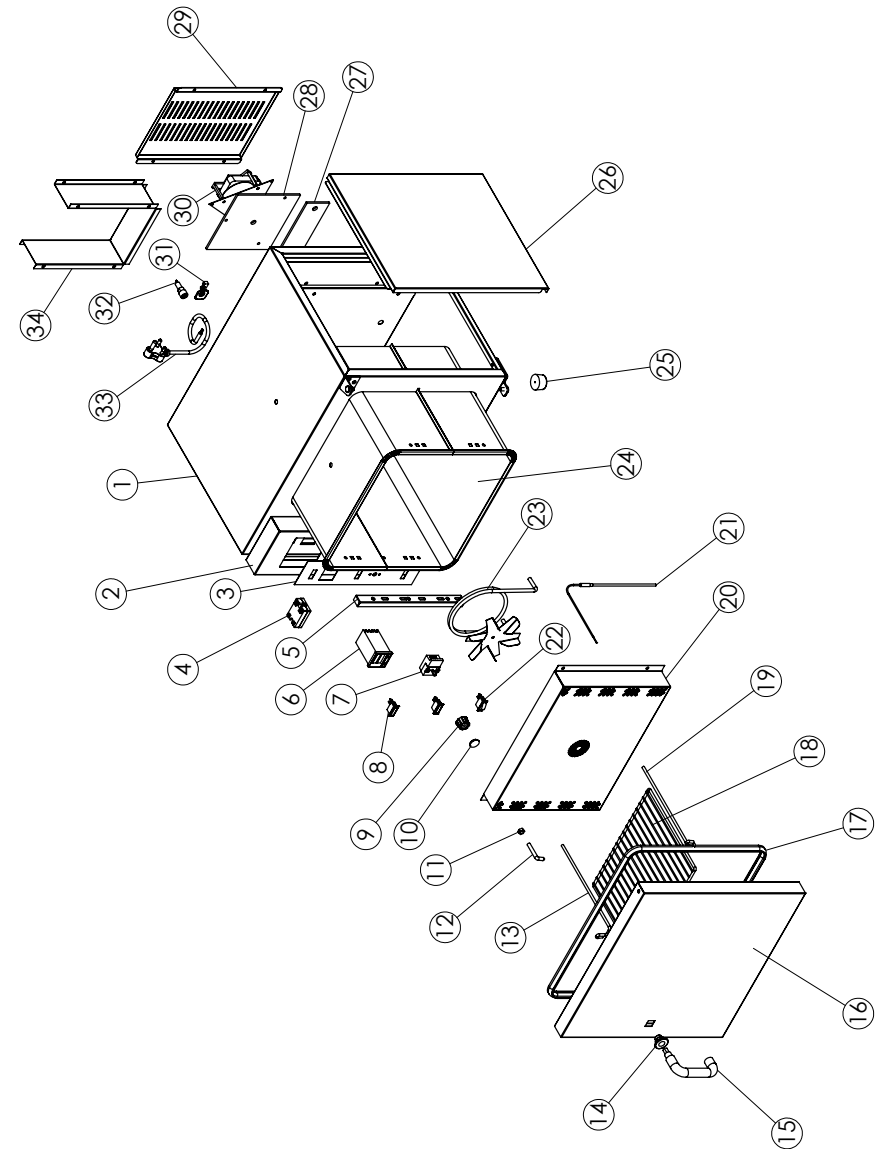
MODEL	APPROX INT. VOL (L)	H (mm)	W (mm)	D (mm)	NETT WEIGHT (KG)	MAX SHELF LOAD RATING (KG)
220/275	40	370	385	375	38	26
225/295	40	370	385	375	38	26
221/226	80	400	485	455	45	26
276/296	80	400	485	455	45	26
222/227	160	580	535	535	75	26
277/297	160	580	535	535	75	26
223/228	240	680	625	580	88	20
278/298	240	680	625	580	88	20
224/228	780	780	725	755	132	15
279/299	400	780	725	755	132	15
224V/229V	400	990	622	525	116	10
279V/299V	400	990	622	525	116	10
223/228	240DD	680	625	580	88	20
278/298	240DD	680	625	580	88	20
224/229	400DD	780	725	755	132	15
279/299	400DD	780	725	755	132	15

### EXPLODED DIAGRAM

MODEL: DIGITAL OVEN /DIGITAL INCUBATOR

MODEL CODES: 275/276/277/278/279

295/296/297/298/299



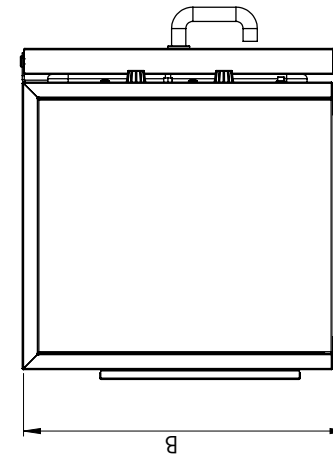
**MODEL : ECONOMY OVEN/INCUBATOR**  
**MODEL CODE : 220/221/222/223/224**  
**225/226/227/228/229**

ITEM	DESCRIPTION
1	BODY ASSEMBLY -SEE BELOW
2	SHELF RUNNER SUPPORT
3	THERMOSTAT 50° - 300°C
4	PILOT LIGHT
5	KNOB
6	KNOB CAP
7	SHELF RUNNER LEFT
8	DOOR STRIKER PIN NUT
9	DOOR STRIKER PIN
10	DOOR HANDLE BUSH ASSEMBLY
11	DOOR HANDLE
12	DOOR ASSEMBLY
13	DOOR SEAL
14	SHELF
15	SHELF RUNNER RIGHT
16	FAN COVER
17	ELEMENT -SEE BELOW
18	ILLUMINATED ROCKER SWITCH
19	INNER OVEN CHAMBER
20	RUBBER FOOT
21	SIDE COVER
22	ELEMENT MILLBOARD
23	MOTOR MILLBOARD
24	FAN BOX COVER
25	FAN MOTOR
26	CABLE GRIP
27	15AMP FUSE HOLDER AND FUSE
28	POWER CORD

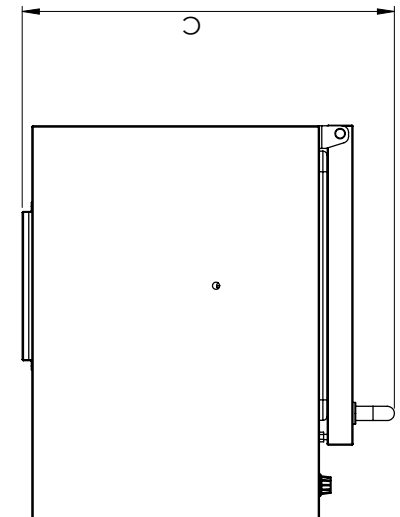
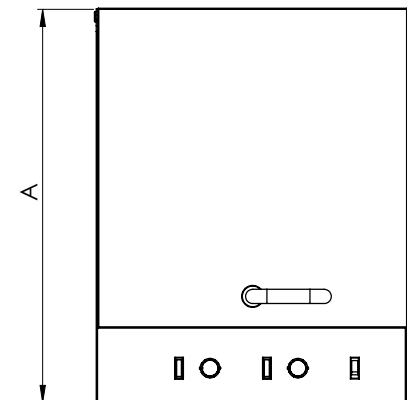
1	40L	BODY ASSEMBLY
	80L	BODY ASSEMBLY
	160L	BODY ASSEMBLY
	240L	BODY ASSEMBLY
	400L	BODY ASSEMBLY

	OVEN		INCUBATOR	
17	40L	1000W ELEMENT	40L	500W ELEMENT
	80L	1000W ELEMENT	80L	500W ELEMENT
	160L	1500W ELEMENT	160L	700W ELEMENT
	240L	2000W ELEMENT	160L	1000W ELEMENT
	400L	1500W ELEMENT	160L	750W ELEMENT

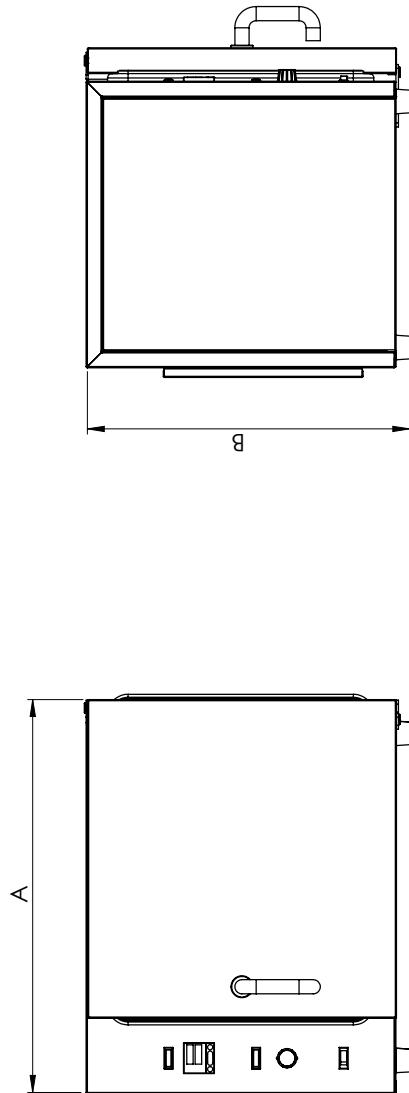
**POSITIONING DIAGRAM**  
**MODEL: ECONOMY OVEN /ECONOMY INCUBATOR**  
**MODEL CODES: 220/221/222/223/224**  
**225/226/227/228/229**



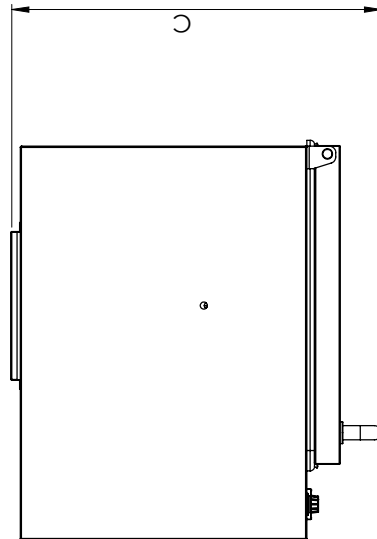
	A	B	C
MODEL	220/225	221/226	222/227
	651	510	600
	750	540	690
	801	720	770
	890	820	810
	990	920	985



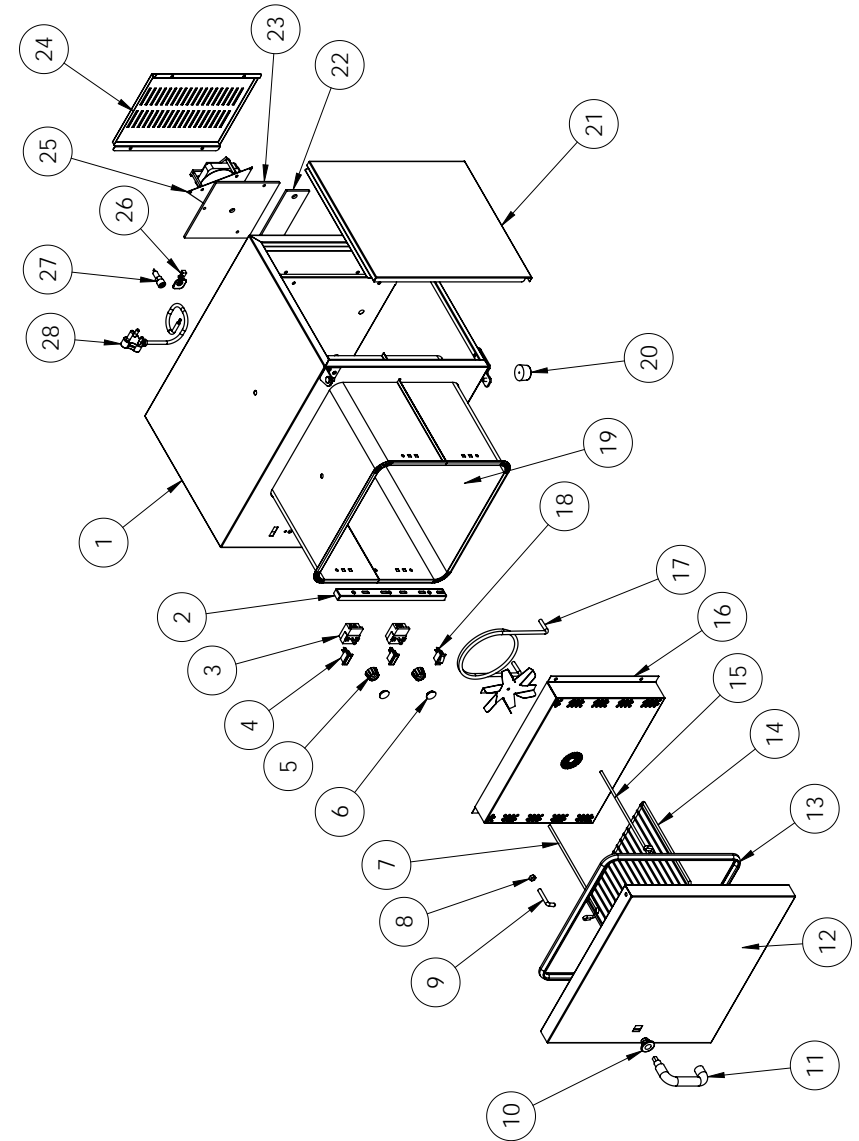
**POSITIONING DIAGRAM**  
**MODEL: DIGITAL OVEN /DIGITAL INCUBATOR**  
**MODEL CODES: 275/276/277/278/279**  
**295/296/297/298/299**



MODEL	A	B	C
275/295	651	510	600
276/296	750	540	690
277/297	801	720	770
278/298	890	820	810
279/299	990	920	985



**EXPLODED DIAGRAM**  
**MODEL: ECONOMY OVEN /ECONOMY INCUBATOR**  
**MODEL CODES: 220/221/222/223/224**  
**225/226/227/228/229**



**WIRING DIAGRAM LEGEND**  
**MODEL: DIGITAL OVEN /DIGITAL INCUBATOR**  
**MODEL CODES: 275/276/277/278/279/279V**  
**295/296/297/298/299/299V**

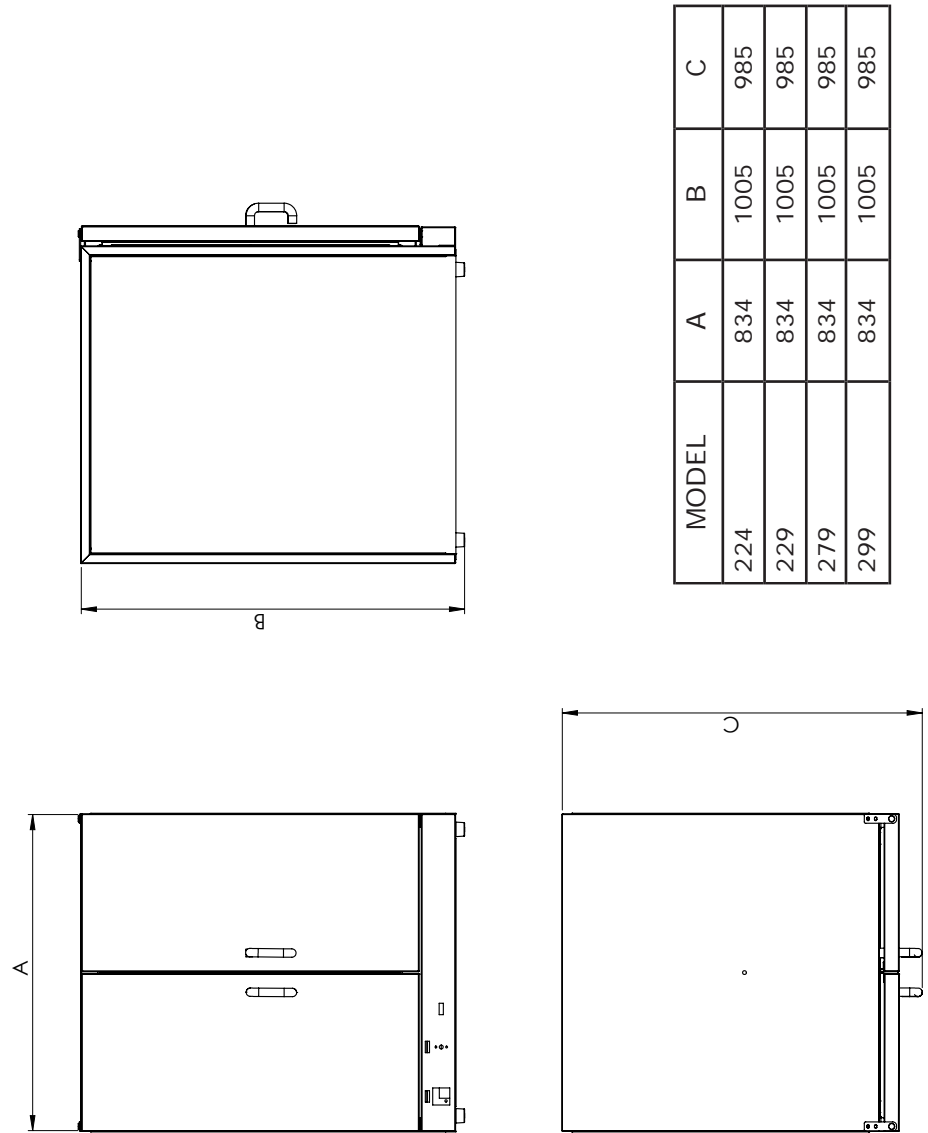
LEGEND	DESCRIPTION	PART NUMBER
S1	ILLUMINATED ROCKER SWITCH	1-17TAF
B1	SAFETY THERMOSTAT	1-EGO-150
U1	DIGITAL ELECTRONIC CONTROLLER	1-DC-TTM14N
D1	SOLID STATE RELAY	1-SSR-40A
FU	15AMP FUSE AND FUSE HOLDER	1-15-FU/1-15-FH
H1	PILOT LIGHT	1-18TRF
H2	CONTROL PILOT LIGHT	1-18TRF
M	CIRCULATION FAN	1-EBM-FAN-320
E1	HEATING ELEMENT	SEE TABLE BELOW

**TABLE OF HEATING ELEMENTS**

	HEATING ELEMENTS-OVEN	HEATING ELEMENTS-INCUBATOR
40L	5-1000W-OVEN	5-500W-OVEN
80L	5-1000W-OVEN	5-500W-OVEN
160L	5-1500W-OVEN	5-750W-OVEN
240L	5-2000W-OVEN	5-1000W-OVEN
400L	5-1500W-OVEN	5-750W-OVEN

**NOTE: THE 400L OVENS AND ICUBATORS ARE FITTED WITH TWO OF EACH OF THE SPECIFIED ELEMENTS**

**POSITIONING DIAGRAM**  
**MODEL: 400L DOUBLE DOOR ECONOMY OVEN /INCUBATOR**  
**MODEL CODES: 224D/279D**  
**229D/299D**

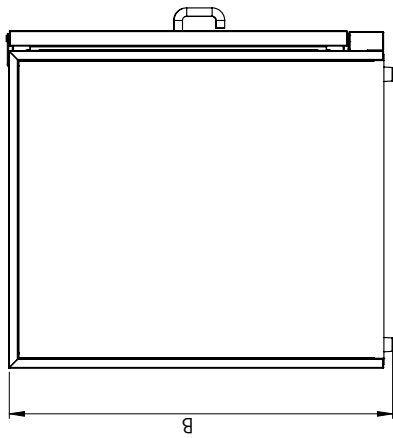


# POSITIONING DIAGRAM

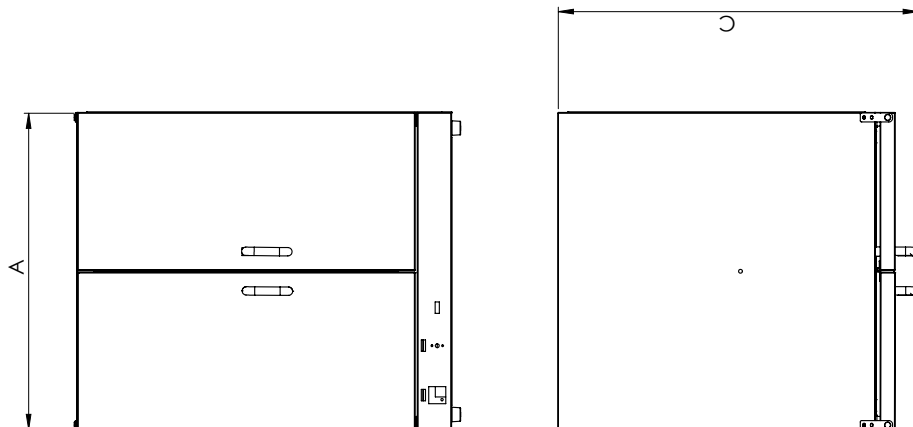
MODEL: 240L DOUBLE DOOR ECONOMY OVEN /INCUBATOR

MODEL CODES: 223D/278D

228D/298D



MODEL	A	B	C
223	734	905	810
228	734	905	810
278	734	905	810
279	734	905	810

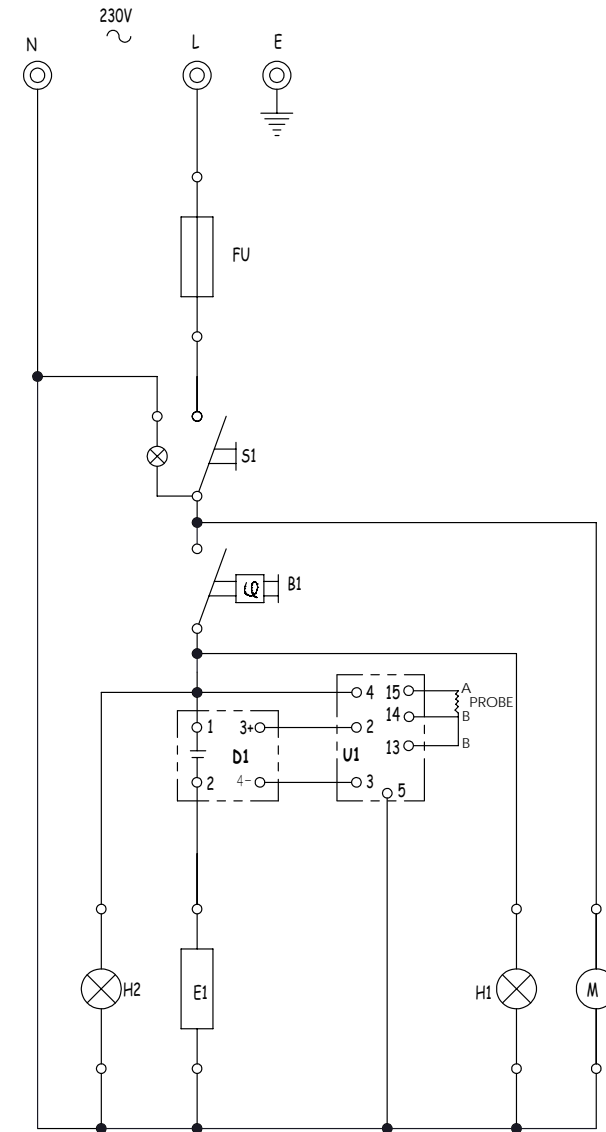


# WIRING DIAGRAM

MODEL: DIGITAL OVEN /DIGITAL INCUBATOR

MODEL CODES: 275/276/277/278/279/279V

295/296/297/298/299/229V





**WIRING DIAGRAM LEGEND**  
**MODEL: ECONOMY OVEN /ECONOMY INCUBATOR**  
**MODEL CODES: 220/221/222/223/224/224V**  
**225/226/227/228/229/229V**

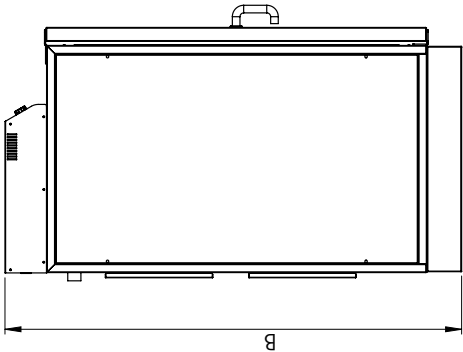
LEGEND	DESCRIPTION	PART NUMBER
S1	ILLUMINATED ROCKER SWITCH	1-17TAF
B1	SAFETY THERMOSTAT	1-EGO-150
B2	CONTROL THERMOSTAT	1-LH-355
FU	15AMP FUSE AND FUSE HOLDER	1-15-FH/1-15-FU
H1	PILOT LIGHT	1-18TRF
H2	CONTROL PILOT LIGHT	1-18TRF
M	CIRCULATION FAN	1-EBM-FAN-320
E1	HEATING ELEMENT	SEE TABLE

**TABLE OF HEATING ELEMENTS**

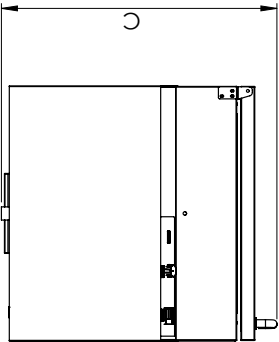
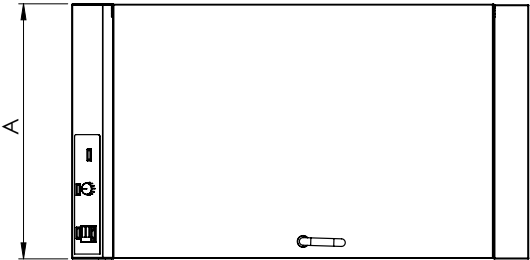
	HEATING ELEMENTS-OVEN	HEATING ELEMENTS-INCUBATOR
40L	5-1000W-OVEN	5-500W-OVEN
80L	5-1000W-OVEN	5-500W-OVEN
160L	5-1500W-OVEN	5-750W-OVEN
240L	5-2000W-OVEN	5-1000W-OVEN
400L	5-1500W-OVEN	5-750W-OVEN

**NOTE: THE 400L OVENS AND INCUBATORS ARE FITTED WITH TWO OF EACH OF THE SPECIFIED ELEMENTS**

**POSITIONING DIAGRAM**  
**MODEL: 400L VERTICAL OVEN /INCUBATOR**  
**MODEL CODES: 224V/279V**  
**229V/299V**



	A	B	C
MODEL	735	1325	792
224V	735	1325	792
229V	735	1325	792
279V	735	1325	792
299V	735	1325	792



## ELECTRICAL CONNECTION INFORMATION

MODEL	DESCRIPTION	VOLTS (V/Hz)	POWER (WATTS)
220/275	40LT OVEN	230/50	1000
221/276	80LT OVEN	230/50	1000
222/277	160LT OVEN	230/50	1500
223/278	240LT OVEN	230/50	2000
224/279	400LT OVEN	230/50	3000
224V/279V	400LT OVEN	230/50	3000
225/295	40LT INCUBATOR	230/50	500
226/296	80LT INCUBATOR	230/50	500
227/297	160LT INCUBATOR	230/50	750
228/298	240LT INCUBATOR	230/50	1000
229/299	400LT INCUBATOR	230/50	1500
229V/299V	400LT INCUBATOR	230/50	1500



IT IS ESSENTIAL TO MAKE SURE THAT THE INCOMING VOLTAGE IS THE SAME AS THE RATED VOLTAGE OF THE OF THE UNIT AS FOUND ON THE SERIAL PLATE. THE SERIAL PLATE IS LOCATED AT THE REAR OF THE UNIT ADJACENT TO THE INCOMING CABLE ENTRY.



THE CONTROL COMPARTMENT OF THIS UNIT CONTAINS DANGEROUS VOLTAGES. MAINTENANCE AND SERVICING REQUIRING THE REMOVAL OF ANY PANELS OR COVERS SHOULD BE DONE BY QUALIFIED SERVICE PERSONNEL ONLY.

## WIRING DIAGRAM

MODEL: ECONOMY OVEN /ECONOMY INCUBATOR

MODEL CODES: 220/221/222/223/224/224V  
225/226/227/228/229/229V

