

GALLENKAMP



**Prime Oven
Operator Manual**

SANYO GALLenkAMP PLC

Health and Safety at Work

Sanyo Gallenkamp is required under the Health and Safety at Work, etc. Act, 1974 and other UK legislation as designers, manufacturers, suppliers and importers of articles for use at work to ensure that, as far as is reasonably practicable, the articles which we design, produce, supply or import are safe and without risk to health.

We are required to provide information on the safety and handling precautions to be observed when installing, operating, maintaining and servicing our products. Such advice is contained in this manual.

We are also obliged to update this information should circumstances change and to operate a system to this end.

We should also like to point out, however that **you as users have an important responsibility in the provision and maintenance of safe working practices and conditions.**

Accordingly, we draw the following matters to your attention:

1. **This apparatus should only be used as intended and within its design parameters by suitably qualified and trained personnel who have read and understood the relevant sections of this manual.**
2. **This manual should be readily available to such personnel at all times.**
3. **In addition to that which is written in the manual, normal commonsense safety precautions must be taken at all times to avoid the possibility of accidents. Particular care is required when working with apparatus at high temperature or pressure.**
4. **Installation, maintenance, servicing and connection to electrical supplies should only be carried out by suitably trained personnel.**

Technical Support

If you are in any doubt whatsoever regarding the correct use of this apparatus, or if you require any technical data or assistance, please contact the Sanyo Gallenkamp Customer Technical Support Department at:

**Park House
Meridian East
Meridian Business Park
Leicester LE3 2UZ**

**Telephone (0533) 630530
Telex 347269 MSE G
Fax (0533) 630353**

Warranty Service and Maintenance

**Fisons Instruments
Sussex Manor Park
Gatwick Road
Crawley
West Sussex RH10 2QQ**

**Telephone (0293) 561222
Telex 878851 FIS G
Fax (0293) 561980**

Overseas Customers : Should contact their local Sanyo Gallenkamp Distributor

Electricity Supplies: voltage and frequency

Sanyo Gallenkamp electrical apparatus is offered and labelled for one, or for a choice of two or more voltage ranges and, where necessary, different frequencies of mains supply. Sanyo Gallenkamp does not accept any responsibility for the operation of any such apparatus should it be connected to electricity supplies which are normally outside, or vary outside, the stated voltage and frequency values for which it is designed, nor for any consequential loss, damage or injury, howsoever caused.

Read this before use

ELECTRICITY SUPPLY

Before connecting this apparatus to the electricity supply, check the information given on the apparatus rating plate and ensure that:

- A) Your supply is single phase a.c. (alternating current) of the stated frequency with neutral nominally at earth potential .
- B) your supply voltage is within the stated range.
- C) The current rating is within the capacity of your supply outlet
- D) Your plug or electricity supply circuit is fitted with a suitable fuse.

	220v-240v	110v-120v
Fuse rating -	75 Ltr 7amp	NA
" " -	150 Ltr 10amp	NA
" " -	225 Ltr 13amp	NA

WARNING! This apparatus must be earthed

The wires in the mains lead are coloured in accordance with the following code:

	220v-240v	110v-120v
Live	Brown	Black
Neutral	Blue	White
Earth	Green and Yellow	Green

Connect the wires to a non—reversible 3 pin plug as follows
Green and Yellow or Green wire to terminal marked E(Earth), G (Ground) coloured Green or Green & Yellow) or marked with the Earth symbol

Blue or White wire to terminal marked N (Neutral) or common or coloured Blue

Brown or Brown wire to terminal marked L (Live) or Phase or coloured Brown

Note 110v-120v installations to comply with National and State Wiring Codes

IMPORTANT Consult an electrician if in any doubt or if your supply system has any of the following:

No earth.

A colour code different from the above.

Reversible plugs.

supply and return leads that are both above earth potential.

This manual will help you to get the best from your GALLENKAMP **Prime Oven**. It covers all OVE 100 digital series ovens & OPR digital series ovens.

Here are the 3 main sections:-

1

basics

1 - 20

section marked □

About your oven
Unpack, check and set up
Checks and safety
Connecting up safely
Bringing to temperature
Control summary

2

operation

21 - 27

section marked □ □

Load / unload - Operating tips
ventilation, temperature check
gasket replacement

Safety in trouble shooting

3

data

28 - 29

section marked □ □ □

Specification
Performance

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For safety, service and help
read notes opposite now

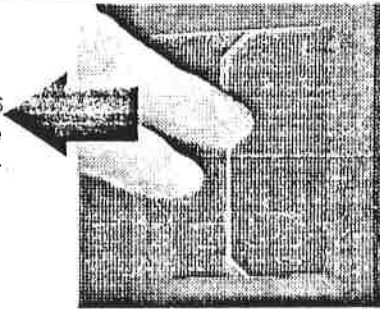


About your GALLENKAMP oven

1

These ovens achieve excellent temperature performance by careful matching of sensor and controller, heater power, fan power and overall oven design. Fan circulation provides even temperature distribution regardless of oven loading.

The Door Catch is designed for one handed operation as shown.



The top vent is adjustable to allow vapours to be exhausted. Alternatively it may be used to introduce thermometers, cables, etc.

Temperature controls are mounted behind a tamper proof panel. Just press panel to open. Model details are on the back of the panel

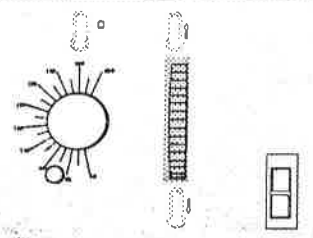
The Door Hinges are castellated to prevent the door swinging to and hot inner surface touching your arm.

Construction is coated, rust proofed steel. The inner liner is stainless steel. Efficient insulation and a renewable silicone seal on the door opening help keep the inside hot and external surfaces safe to touch.

Special non tip shelving is supplied and there are a large number of shelf positions.

Inside the oven on the back panel is a further 25mm access port. Internal edges are rounded and sharp edges minimised.

Your Prime Oven



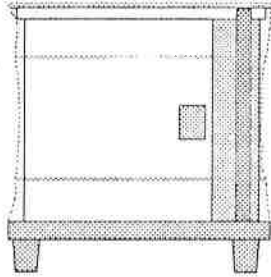
Temperature control is by platinum resistance thermometer linked to a proportional electronic controller. A separate adjustable over-temperature cut out is incorporated.

2 Remove + save all packaging

Cut off shrink wrapper
Lift off top board. Shelves are in recess in polystyrene foam packing.



Oven eases off base, and styrene, support tube, card and pallet feet can then all be removed



Before easing oven off pallet make sure it is:-

- * sited on strong bench or level floor area
- * near suitable power socket
- * convenient to work area

3 Check oven + packing list

Oven Size	Shelves Supplied
75 litre	2
150 litre	3
225 litre	4



Each shelf comes with two runner guides. Check over your oven and the shelves supplied. Check model details on rear of control panel cover. You can use the Gallenkamp quality control list as the basis for your own checks. Complete your warranty card now.

4 Siting oven

Air space all round \Rightarrow 5cm min all round



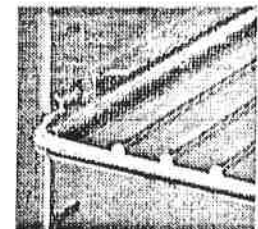
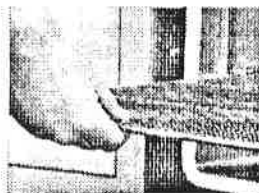
WEIGHT! Empty 60 - 100kgs

On strong level bench or floor, make sure oven will not tip, as door opens! A level base will help the hinges prevent the hot inner door surface swinging shut against your arm! Air vents on the side, back and top of the oven must be left clear. The side and rear vents ensure that the control electronics operate reliably at optimum temperature.

5 Fit shelves



Slide runner tabs into vertical support frames. Make sure runners are level. Now slide in shelves evenly as shown below



Accessory shelves are available - see section 30 - "Specification".

Checks and safety

6 Clean oven as necessary

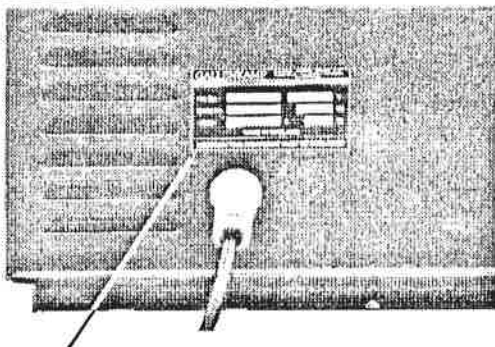
Exterior of oven can be wiped with damp cloth.
Interior stainless liner should be wiped with damp cloth with mild non-abrasive cleaner.

No solvents!
No gritty cleaners!
Don't slosh water about!



Disconnect before cleaning
Steel liner may go light brown after use- this is normal

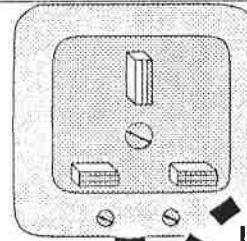
8 Check oven rating



Check rating plate at rear of oven against your order details

In particular note: V - the voltage
A - amps required
Hz - frequency
C - catalogue number

7 ! Safety now !



Don't be afraid of your oven, but electric current can kill and oven heat can cause very painful burns. **If in doubt about correct use - consult your dealer.**

9 Check your supply



Example of supply suitable for above model
Voltage = 220/240 V
Amps = 13
Frequency = 50

Your supply and the rates specified on the plate of your particular apparatus must be compatible. If in doubt - consult your dealer. For all models you must have single phase alternating current (AC) with neutral at Earth potential.

10 Recommended fuses - plug or outlet circuit

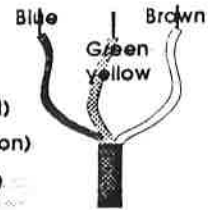
SIZE + CAT.No.	Fuse	
75L OVE-100-110S	7A	220-240v 50/60Hz
QPR075.XX1.5		
150L OVE-100-210X	13A	
QPR150.XX1.5		
225L OVE-100-310K	13A	110-120v 60Hz
QPR225.XX1.5		
75L OVE-100-130M	13A	
QPR075.XX1.1		
150L OVE-100-230Y	20A	
QPR150.XX1.1		
225L OVE-100-330E*	25A	
QPR225.XX1.1		

*This oven is supplied without mains cable and is intended to be hard wired via a fuse box in accordance with local regulations.

11 Do you need an electrician?

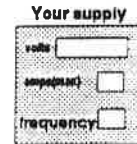
Yes! if colour code of your supply is not -

Green/ yellow	Earth (ground)
Blue	Neutral (common)
Brown	Live (phase)



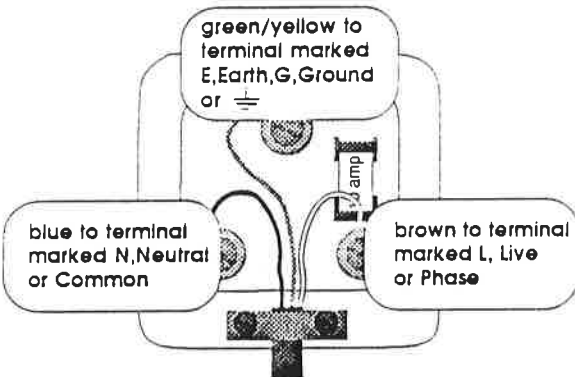
Yes! if no Earth

Yes! if supply and return are both above Earth potential



12 Connect oven

Example - UK main supply (fused plug)

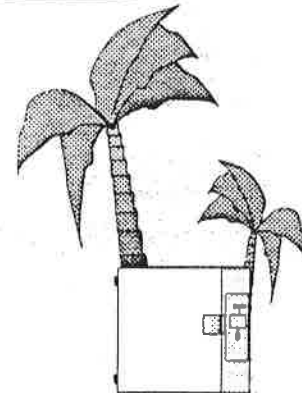


Connect to non-reversible 3-pin plug. It may be that terminals are colour coded.

WARNING- THE OVEN MUST BE EARTHED

13 High humidity conditions

High humidity reduces insulation resistance - dry out oven

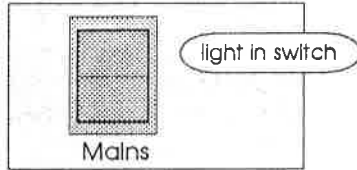


Heater insulation can absorb water vapour in transit, lowering its resistance below an acceptable level. If you suspect this has happened, run the oven for 1 hour to dry it out.

Bringing to temperature

14 Switch on

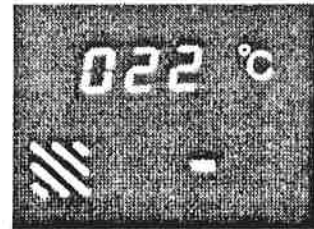
Switch on at mains
Press bottom of switch for "ON"
Switch lights (green)
Fan starts
Yellow light above control panel lights



The mains switch internal light will glow once the power is on. Yellow heater light may also come on.

15 Check digital temperature-display OK

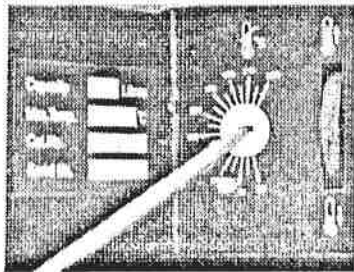
Before heating, digital readout should show room temperature



A typical reading would be 18 - 22°C as shown. If temperature is showing 10°C higher than room temperature, there is a fault.

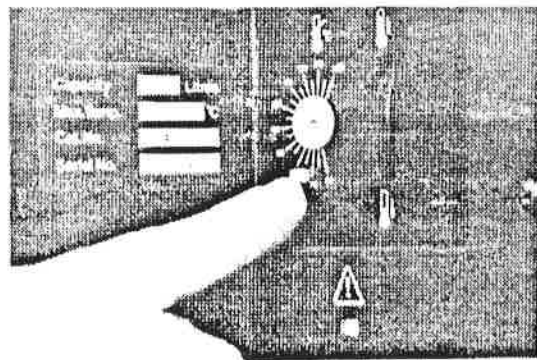
16 Set over temperature thermostat

Use screwdriver to set over temperature cut out to 5-10°C above oven temperature required



Turn the dial clockwise to increase. In the example above the over temperature cut out is set to take over at about 125°C. This means you require the oven to operate normally up to about 120°C.

17 Resetting over temperature cut out

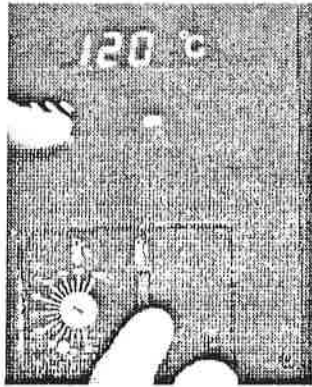


After increasing setting of over temperature cut out to 5 - 10°C above the oven temperature press the reset button shown

18

Set desired oven temperature

Press + hold in the set/display button (zebra striped) and turn the knurled control wheel until required oven temperature is displayed

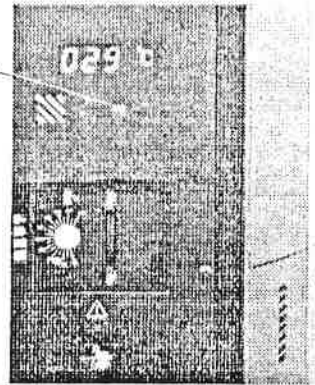


Move wheel up to display higher set temperatures. At the temperature required, e.g. 120°C, release the set button. Display reverts to current oven temperature again. Yellow heater light will glow indicating heating, while the actual temperature is below the set temperature.

19

Allow oven to heat

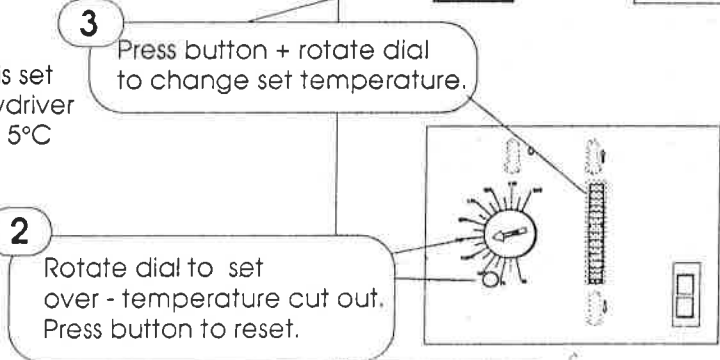
The oven heats, the yellow light goes on showing heater on and internal temperature rising. Light pulses at about 5°C below set temperature.



No oven should be used continuously at maximum temperature as this will shorten its useful life. Periodic brief use at 220°C is within the design parameters of the oven

20

Set temperature is changed by turning knurled control wheel whilst pressing set button.
Yellow light shows that the oven is heating up. It will flick on and off as set temperature is reached and maintained.
Mains light shows power is on - fan then audible.
Over temperature cut out is set by turning knob with screwdriver until dial setting is around 5°C above maximum oven temperature required
Red light shows when this cut out has come on - overriding the normal control thermostat.



3 Press button + rotate dial to change set temperature.

2 Rotate dial to set over - temperature cut out. Press button to reset.

1 Switch on mains switch.

Temperature inside the oven is displayed here.

029 °C

Yellow light on when heater on.

Red light on when over temperature cut out operating.

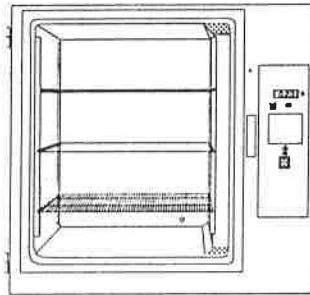
Mains light on when power on.

Prime Oven Control Panel

Load/unload - Operating tips

21 Load/unload

Load uniformly - maximum space between items but group small items together. Drip trays or sheet shelves will reduce air circulation.

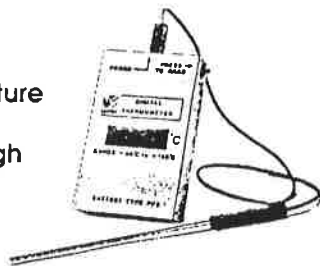


Place items to allow air to circulate around. Fan stops when door is opened and reduces cooling via air draw through door. For details of maximum shelf loading see page 10 - Specification

NO toxic, flammable or explosive materials/solvents, see page 11.

23 Temperature checks

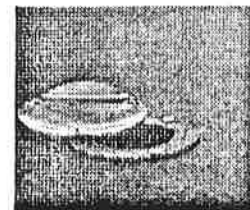
For critical work and checks on the displayed temperature insert a calibrated thermometer through the top vent.



This is helpful when you want to check on the proper functioning of the platinum resistance thermometer. e.g. if you suspect that it is not accurately controlling oven temperature.

22 Use of top ventilator

Use top vent to introduce cables, gas tubes, water cooling tubes, or sample support wires. If sterilising, close top vent.



The top ventilator is handy for introducing any items into the working space of the oven. A closed vent will increase temperature stability.

24 Care if using mercury thermometer

Glass thermometers are fragile. They contain mercury which is a hazardous substance.

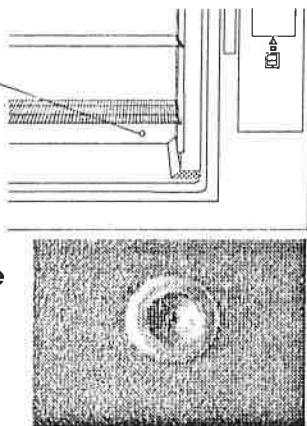
PRIOR TO USING THIS OVEN

We recommend that you contact your safety officer and familiarise yourself with mercury decontamination procedures. Be prepared to follow these in the event of a breakage

25 Use of rear vent port

Rear vent is inside working chamber, below the bottom shelf.

To introduce permanent cables etc. to work space via this vent remove metal blanking disc and rubber bung at back of oven

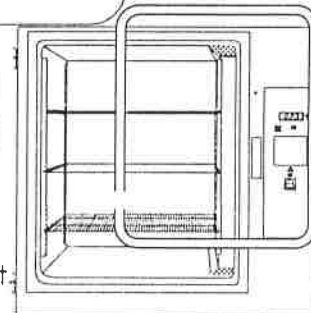


Keep closed when not in use.

26 Gasket seal replacement

silicone bead gasket X section

Pull out old gasket. Run silicone rubber bead around slot in back of new gasket. Insert new gasket - work around oven. to form a butt joint about 100mm up hinge side of oven case. Hold seal in place with sellotape. Close door - leave Open door, carefully remove tape. Close door and heat oven to 150°C -leave for 1 hour to cure silicone.
WARNING During curing, acetic acid fumes may be released



27 Safety in troubleshooting



In the unlikely event of any malfunction, don't remove any panels unless you ...

- a) are suitably qualified
- b) have switched off and unplugged

DO NOT ATTEMPT TO CHANGE ANY INTERNAL FUSES

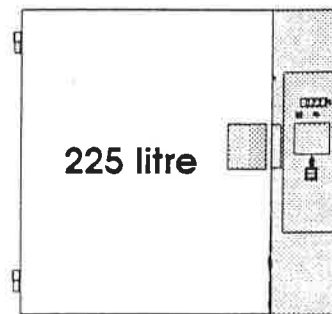
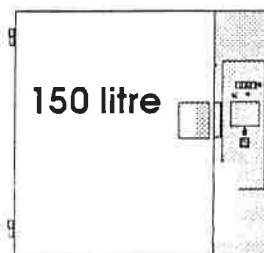
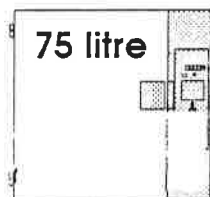
Simply follow the instructions given on the inside cover of this manual regarding service availability. To assist in gaining prompt action the following information must be given:-

- Catalogue number
- Serial number }see rating plate
- Date of purchase
- Details of application
- Clear symptoms of malfunction

Specification

28

Oven Size



Temperature operating range 40° - 220°C all sizes * see section 19

Ambient temperature range 15° - 40°C all sizes

Overall dimensions

h x w x d mm	604x752x523	784x832x619	964x912x608
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Internal dimensions

h x w x d mm	479x408x375	659x488x476	839x568x460
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Internal Volume litres	75	150	225
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Weight kilograms	59	77	98
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Max power - watts	1100	2000	2400
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Shelving

Number supplied	2	3	4
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Number of positions	10	15	20
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Interval in mm	35	35	35
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Useable area sq.mm	402x370	482x471	562x455
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Maximum shelf loading kg	7	11	12
--------------------------	---	----	----

General Accessories

Extra shelves and runners for:

- | | |
|----------------|-----------------------------------|
| 75 litre oven | - Catalogue number INC-100 - 502U |
| 150 litre oven | - Catalogue number INC-100 - 504Q |
| 225 litre oven | - Catalogue number INC-100 - 506M |

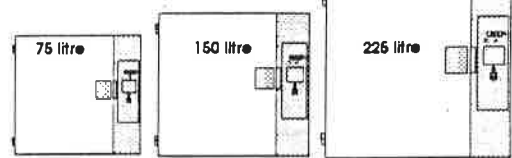
29

Catalogue Number

OVE-100-110S OVE-100-210X OVE-100-310K
OPR075.XX1.5 OPR150.XX1.5 OPR225.XX1.5
OVE-100-130M OVE-100-230Y OVE-100-330E
OPR075.XX1.1 OPR150.XX1.1 OPR225.XX1.1

Performance Area

**BS2648
requirement**



100°C

Temperature fluctation °C ‡	1.0	0.1	0.1	0.1
Temperature variation °C ‡	2.5	2.0	2.0	2.0
Heating time to stability(minutes)	-	20	20	22
Recovery time(minutes)	20	all models < 5minutes		
Ventilation Rate(lites/hour)	800	all models 2 - 4000		

200°C

Temperature fluctation °C		0.1	0.1	0.1
Temperature variation °C		2.0	2.0	3.0
Heating time to stability(minutes)		30	30	30
Recovery time(minutes)		9	9	9

Note on usage

1. The Prime Oven is not designed for use with flammable solvents/materials, toxic solvents/materials, potentially explosive materials or fine powders - particularly if conductive.
2. The oven liner is not sealed.

Other notes and definitions

1. BS2648 is a standard intended for drying ovens. The test methods provide an excellent basis for performance comparison of ovens, but no elevated temperature requirements are defined in the standard.
2. Oven temperature is the temperature at the centre of the working space.
3. Working space is that portion of the internal space which is above the lowest shelf and not less than 30mm from any wall (including the roof).
4. Temperature variation is the maximum temperature difference at any moment between the temperature at the centre of the working space and that at any other point in the working space.
5. Temperature fluctuation is the short term change in temperature occuring at any point in the working space as the temperature controller trips in and out to maintain the overall working temperature required.
6. Recovery time is the number of minutes that the oven takes to return to its original steady temperature after the door has been opened fully for one minute and then closed again.

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GALLENKAMP

Prime Oven

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OPR-000-MA1.9 / OVE-104-488X / 71100-902-1