

Lincoln

Chlorinator

auto self cleaning



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Operating salt level for the Lincoln Chlorinator

Mineral Salts
3500-4000ppm

Sodium Salts
3500-7000ppm

STATEMENT

- A. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and maintenance shall not be made by children without supervision.

- B. The appliance must be permanently connected to fixed wiring according to the national wiring rules. The appliance must be installed, maintained and serviced by a qualified licensed electrician. Equipotential bonding must be carried out.

- C. Means of disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions must be incorporated in the fixed wiring in accordance with the wiring rules.

- D. The appliance should be supplied through a residual current device RCD having a rated residual operating current not exceeding 30ma.

- E. Parts containing live parts, except parts supplied with safety extra-low voltage not exceeding 12V, must be inaccessible to a person, in the bath or spa.

- F. Parts incorporating electrical components, except remote control devices, must be located or fixed so that they cannot fall into the bath or spa.

- G. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid a hazard.

INDEX

2. STATEMENT
3. INDEX
4. INSTALLATION
5. PLUMBING
6. CONTROLS
7. MENU & SUBMENU
8. MODES
9. BACKWASH
10. SALT
11. WATER QUALITY
12. TROUBLESHOOTING
13. TROUBLESHOOTING
14. TROUBLESHOOTING
15. SPECIFICATION TABLE
16. PARTS
17. WARRANTY
18. NOTES
19. NOTES

INSTALLATION

Position the chlorinator power module at least 1m above ground and at least 2m from the pool edge.

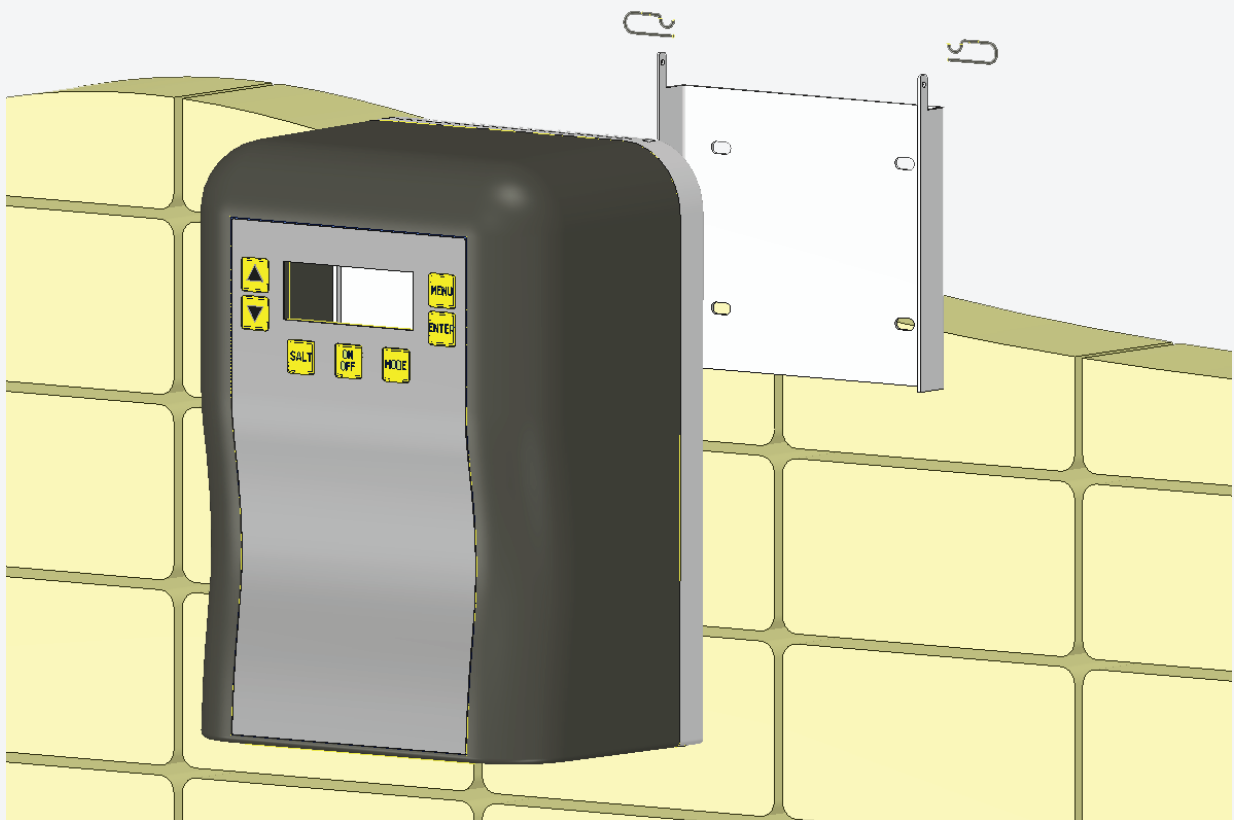
Mount the stainless steel bracket to a solid structure with the screws provided and fit the power module over the two raised pins on the bracket, secure with the 2 locking clips provided.

Protect the chlorinator module and cell housing from direct sunlight and rain where possible for extended life.

Connect the mains plug from the chlorinator power pack into a RCD Protected 240V mains 10A outlet

Connect the cell cable connector into the connector on the bottom of the power pack

Connect the mains plug from the pump into the pump outlet on the bottom of the chlorinator power pack



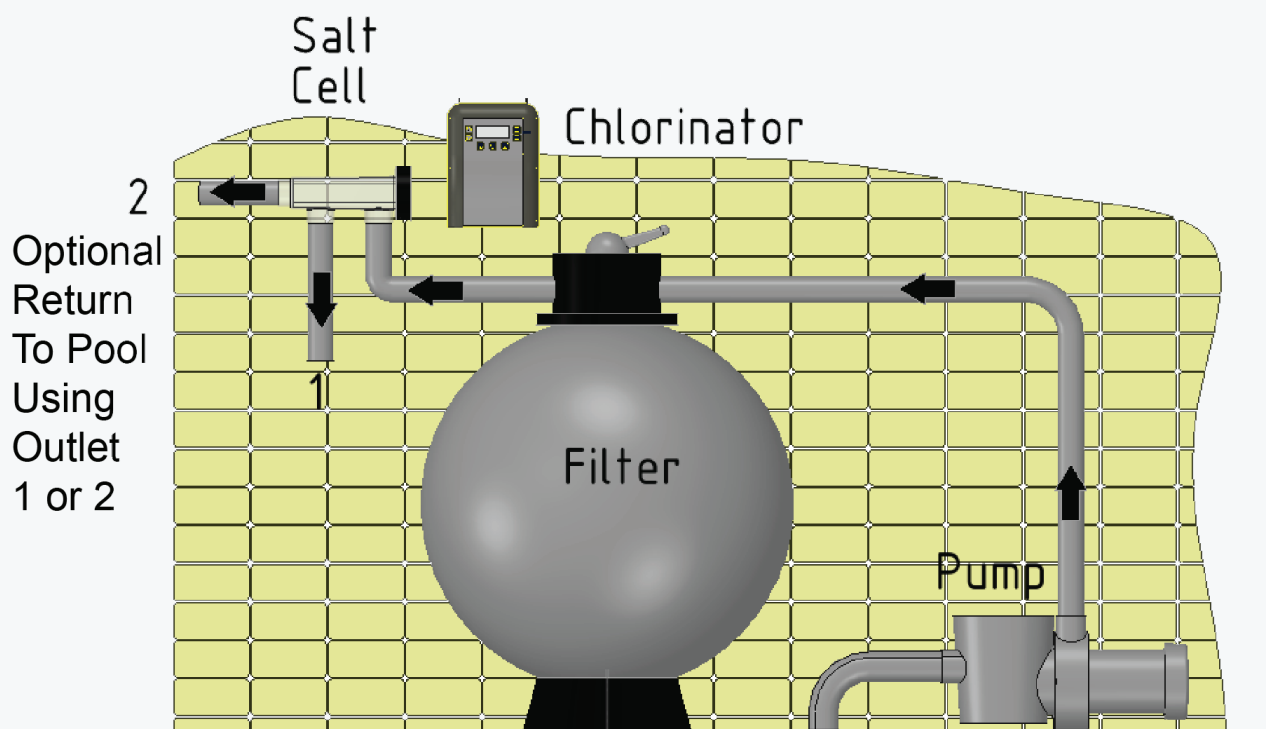
PLUMBING

Plumbing should be performed by a qualified Plumber or a pool industry service technician where possible. It can however be done by the home handyman taking due care and attention.

Warning: Do Not apply Priming Fluid to the Clear Cell Housing

All pipe work should be primed with priming fluid before glue is applied, any high pressure PVC glue will work, make sure both surfaces are well coated before mating the connections as you will only have a few seconds before the glue bond will take.

Piping from the Filter to the Cell should enter the pipe connection closest to the cell head as per the image below as this is where the water sense probe has been installed during manufacture. NOTE: When plumbed from the other direction and used with variable speed pumps having very low flow rates the water probe may not get covered with water causing the chlorinator to display Priming Cell.



CONTROLS



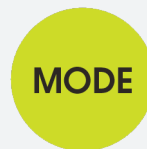
Toggles the Chlorinator OFF then back ON when connected to the mains power



Press to enter or exit the main menu or to exit sub menus (PAGE 7)



Press to enter a selected menu or confirm a setting



Selects different modes of operation, (PAGE 8)
Press to select
ON
TIMER
SUPERCHLORINATE
SPA
BACKWASH



Will turn the pump ON and measure your salt or mineral (PAGE 10)



Increase button is used to navigate menus, modify settings or increase the chlorine output



Decrease button is used to navigate menus, modify settings or decrease the chlorine output

MENU

Pressing the MENU button will take you into the main menu list, by using the up/down arrows you can scroll through the list, then press the enter button to enter the function you wish to modify, pressing the MENU button again will exit you from the sub menu

SUB MENU

CLOCK	Use the Up/Down buttons to enter the time of day (0-24hrs)
CHLORINE OUTPUT	Use the Up/Down buttons to set the chlorine output, this can also be performed from the working screen as the chlorinator is functioning.
TIMER	Use the Up/Down buttons to move the cursor under each block where you would like the chlorinator to operate, then press the ENTER button to fill in the block, filled blocks are ON & empty blocks are OFF
PUMP PROTECTION	Use the Up/Down arrows to set between 3-10 minutes or you can set this function OFF. Pump Protection is activated when there's no water flowing across the cell
CELL CLEANING	Use the Up/Down arrows to change the time between cell reversals, a shorter time will remove more calcium for pools that have high levels, set for a longer time for pools that don't have calcium issue's.
BRIGHTNESS	If your screen is to too bright for the area installed you can dim the backlight with the up/down buttons
CONTRAST	Sets the Clarity of the display via the up/down buttons
SYSTEM INFO	Total Hrs = Hours the power module has operated Cell Hrs = Hours the Cell has operated Polarity = What direction the electrical current is flowing Unit size = What size your chlorinator is

MODE

Pressing the MODE button will toggle you through the different operational modes the chlorinator can be set too.

These MODES are,

ON	Sets the chlorinator and pump to operate 24/7
TIMER	Sets the chlorinator and pump to operate ONLY at the times you have indicated in the TIMER settings
SUPERCHLORINATE	Sets the chlorinator and pump to operate @ 100% for 24hrs only, then reverts back to TIMER mode
SPA	Sets the chlorinator to operate @ 10% output and pump on NOTE: This mode will operate 24/7 until you manually set the chlorinate mode back to TIMER
BACKWASH	Backwash is explained on (Page 9)

BACKWASH

The Backwash function has been added to simplify how the pump is operated as you adjust the Filter Lever into its different positions during a backwash.

NOTE: NEVER OPERATE THE FILTER LEVER WHILE THE PUMP IS OPERATING

WARNING: THE PUMP WILL START AND STOP AUTOMATICALLY

Enter the BACKWASH function by pressing the MODE button until BACKWASH is displayed

The screen will now display.....**SET VALVE TO BACKWASH AND PRESS ENTER**..... rotate the filter valve to backwash, pressing enter will start the pump and you will see the dirty water exit the waste pipe and in the clear glass installed on your filter.

The screen will now display.....**PRESS ENTER TO FINISH BACKWASH**.....press enter once the water in the waste pipe has become clear, this will stop the pump so you can rotate the filter valve.

Chlorinator will now display.....**SET VALVE TO RINSE AND PRESS ENTER**.....rotate the filter valve to RINSE, pressing enter will start the pump, once water is flowing allow the pump to operate for at least 30 seconds or as per the filter manufacturers recommendations to clean the last contaminates from the filter.

Chlorinator will now display.....**PRESS ENTER TO FINISH RINSE CYCLE**.....press enter, the chlorinator will display.....**SET VALVE TO FILTER AND PRESS ENTER**.....press enter, the backwash is now complete and the chlorinator will automatically revert back to the TIMER mode.

SALT

Recommended Salt Concentration

For Sodium Chloride Salts 3500 – 7000 PPM

For Mineral/Magnesium Chloride Salts 3500 – 4000 PPM

Pressing the SALT button will start the salt measurement, the chlorinator will start the pump as the measurement requires good water flow through the cell, this also allows the water temperature to be taken as it forms part of the equation.

Water temperature at the cell should be allowed to stabilize for at least 5 minutes before a measurement is taken

The measurement will take approx 30 seconds and display a result in PPM, the result will continue to be updated every few seconds over 1 minute then revert back to the previous mode automatically or by pressing SALT will cancel the salt test .

Salt levels under 2000ppm cannot be measured by the chlorinator and salt levels above 8000ppm will be more inaccurate

PLEASE NOTE:

The salt measurement is meant to be a guide only as many factors will vary the result, for more accurate measurements a sample of pool water should be taken to your local pool shop or be performed by your local pool service technician

WATER QUALITY

Your water BALANCE should be kept within the following levels for trouble free operation

pH

Measurement Interval – once a week

7.2 – 7.8 Controlling your pH is most important so that you have good active levels of chlorine throughout the water , high pH above 8.0 will reduce how active the chlorine is.

When pH is high, Adding Hydrochloric acid will lower the pH

When pH is low, Adding Sodium bicarbonate will raise the pH

Stabiliser

Measurement Interval – 1-2 times per year

Stabiliser level should be kept between 20 – 50 ppm, levels higher than this aren't required. Stabiliser should be measured by your pool shop 1-2 times per year but most importantly in summer when the UV levels are highest.

Chlorine

Measurement Interval – once a week

Chlorine (Free Chlorine) should be measured once weekly and kept between 2 – 3 ppm for good disinfection, adjust the chlorinator output percentage or the pump run time to either increase or decrease this level as required.

Total Alkalinity

Measurement Interval - once a month

80-150ppm

Calcium Hardness

Measurement Interval – once per year

150-250ppm

TROUBLESHOOTING

Before troubleshooting, remove power from the chlorinator by turning off at the wall or removing the mains plug , wait 10sec then re-apply power, this will reset all functions.

PROBLEM	CAUSE	REMEDY
Priming Cell	Requires water across the CELL to complete the circuit before the chlorinator will display OK and start chlorination	Make sure that the pump is primed with water and operating correctly Make sure any Valves are in the open position and water is flowing through the CELL
Chlorine output will not reach 100%	Salt level is not high enough	Salt level should be as per recommendations on page 9 of this handbook
	Water temperature is low	Winter water temperatures can get very low, for every 1C below 28C the chlorinator output can drop by 2%
	Cell has too much calcium deposit on plates	Clean the cell in a 1/9ltr ratio of Hydrochloric acid & water or a cleaning solution available from any pool store
	Cell could be at end of life	If salt conditions are correct and the cell won't achieve its full output you may require a new Cell
Cell Life	How long will my Cell last	At 4hr reversals the cell can last approx 13,000hrs+ and at 12hr reversals approx 18,000hrs+
No Chlorine measured in the water	PH is far too High	Add Hydrochlic acid to reduce the PH between 7.2-7.8ppm
	No Stabiliser in the water	Add Cynuric acid(Stabiliser) until you have 20-50ppm
	Chlorinator isn't operating long enough or at high enough output	Increase operating hours or percentage output

PROBLEM	CAUSE	REMEDY
Calcium build on Cell is high	Cell cleaning time is set too high	Enter the cell cleaning function in the menu and reduce the time between cleaning cycles
Salt measurement is not correct	Too much calcium on the cell when measuring	Clean the cell in a 1/9ltr ratio of Hydrochloric acid & water or a cleaning solution available from any pool store
Salt measurement accuracy		A 10% accuracy is all that can be achieved without going to very expensive probes & solutions for calibration
Salt measurement says cell at end of life	Salt cell is nearing the end of its life	Only replace when cell has completely failed, salt measurements will continue to be more inaccurate the longer it is used past 10,000hrs, measurements should then be taken ONLY by your local pool store or service agent until a new cell is installed
My pump is always ON	The Pump may have been connected to the mains before the chlorinator The chlorinator is in the ON or SPA mode and will operate 24/7	Make sure the pump is plugged into the 240V socket on the chlorinator Make sure the chlorinator MODE is set to TIMER
My Display doesn't show the temperature	Dirty connection	Remove the cell plug/cable from the chlorinator power module, apply some INOX or Vaseline to the contacts attached to the cable and re-install several times to help clean the contacts
High Salt	Salt level is above 7000ppm	Backwash water from the pool and re-fill to reduce the salt level to 7000ppm or below

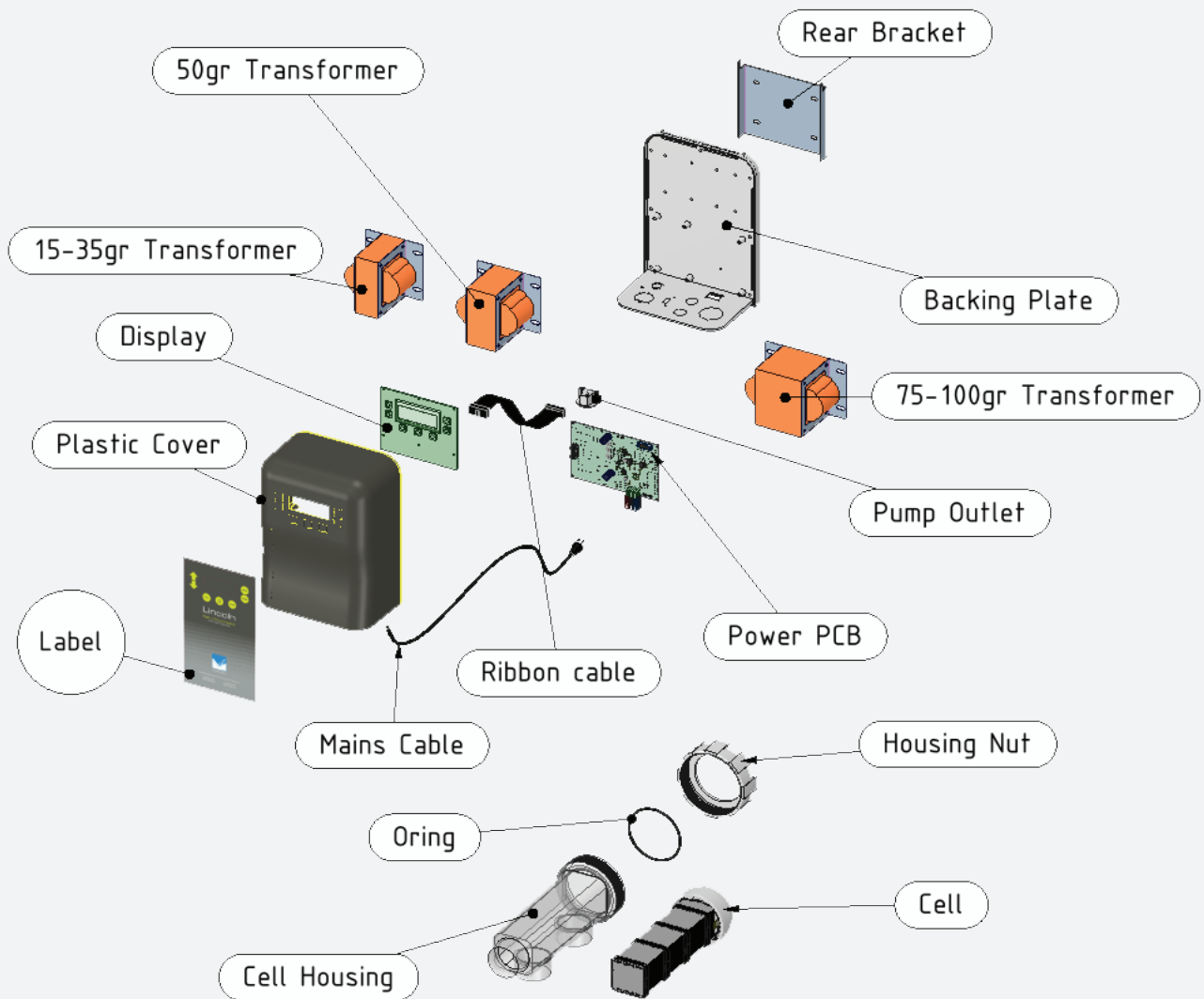
PROBLEM	CAUSE	REMEDY
My Chlorinator won't go above 80% and displays high salt	The chlorinator has a protection feature that will limit your output to 80% when your salt level gets too far above 7000ppm	Backwash water from the pool and re-fill to reduce the salt level to 7000ppm or below
Water/Condensation on screen	Small amounts of moisture can sometimes be absorbed during the manufacturing process on the inner surface of the plastic	Allow to operate and the moisture will be expelled from the chlorinator, normally within 24hrs

SPECIFICATION TABLE

MODEL NUMBER	LSC15	LSC20	LSC25	LSC30	LSC35	LSC50	LSC75	LSC100
VOLTAGE AC INPUT	240	240	240	240	240	240	240	240
AMP AC INPUT	0.5A	0.6A	0.7A	1.0A	1.1A	1.35A	1.50A	1.95A
VOLTAGE DC OUTPUT	8.0V	8.0V	8.0V	8.0V	8.0V	8.0V	12V	12V
AMPS DC OUTPUT	8.5A	11A	13.5A	15.7A	18.5A	26.5A	20A	26.5A
CHLORINE @3500ppm PRODUCTION Grams/HR @7000ppm	15 17	20 22	25 27	30 33	35 38	50 57	75 82	100 110
POWER CONSUMPTION (Watts)	86	124	140	153	185	265	360	433
FREQUENCY (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
WEIGHT (KG)	8.6	9.5	9.8	10.2	10.5	11.5	12.5	13.5
DIMENSION (CM)	30H 22W 15D	30H 22W 15D	30H 22W 15D	30H 22W 15D	30H 22W 15D	30H 22W 15D	30H 22W 15D	30H 22W 15D

Pump Outlet Rating for all Model sizes is
MAXIMUM 1.5Kw (2HP)

PARTS



Part No	Description
1.	Rear Bracket
2.	Backing Plate
3.	15-35gr Transformer
4.	50gr Transformer
5.	75-100gr Transformer
6.	Pump Outlet
7.	Ribbon Cable
8.	Display
9.	Power PCB
10.	Plastic Cover
11.	Mains Cable
12.	Label
13.	Cell Housing
14.	Oring
15.	Housing Nut
16.	Cell

WARRANTY

Your Lincoln Chlorinator carries the following warranty should a fault occur due to faulty materials or manufacture.

Lincoln warrants the original purchaser of the control panel and cell electrode, whether personal or commercial use, for a period of (see warranty period below), from the date of purchase should the purchaser disclose that this particular equipment failed due to faulty materials or manufacture.

The equipment under warranty claim must be returned to Lincoln for repair or replacement. Costs associated with freight and incidental charges resulting from goods being returned to Lincoln are at the customer's expense and Lincoln will cover the cost of returning the equipment to the customer.

The warranty does not apply to any material supplied or workmanship performed by others in the process of installing the equipment. Nor does it apply if the equipment has been repaired or altered by anyone other than Lincoln personnel or a Lincoln Representative. This warranty does not apply if the equipment has been subject to misuse or misapplication.

The warranty applies to materials and manufacture only. This warranty does not cover an act of god, i.e. storm and tempest, lightning strike, floods, tsunami, earthquake etc. Lincoln or its agent will replace at no charge, all parts, which show faulty materials or manufacture faults. The foregoing constitutes the entire liability of Lincoln to the original owner of the equipment. There are no other warranties, expressed or implied, including but not limited to the implied warranties of merchantability or fitness for a particular purpose other than those contained herein.

In no event will Lincoln be liable to the original or subsequent owners either directly or as an indemnitor, or any direct, incidental or consequential loss, damage or economic loss, damage or injury to any person or property arising out of or relating to the equipment or any parts supplied in the equipment, except as expressly stated herein. No other person, or company or organisation is authorised to make any warranties, guarantees or representations, or allowed to allow any exceptions to this warranty, or assume any other liability or obligation on behalf of Lincoln in connection with the equipment. This warranty shall not extend to any expenditure incurred.

The rights and remedies conferred by this warranty are in addition to those conferred under Australian Consumer Law.

Our goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty Period

Domestic	Power pack	4 Years
	Cell electrode	4 years or 10,000hrs whichever comes first
Commercial	Power pack	4 Years
	Cell electrode	4 Years or 10,000hrs whichever comes first

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