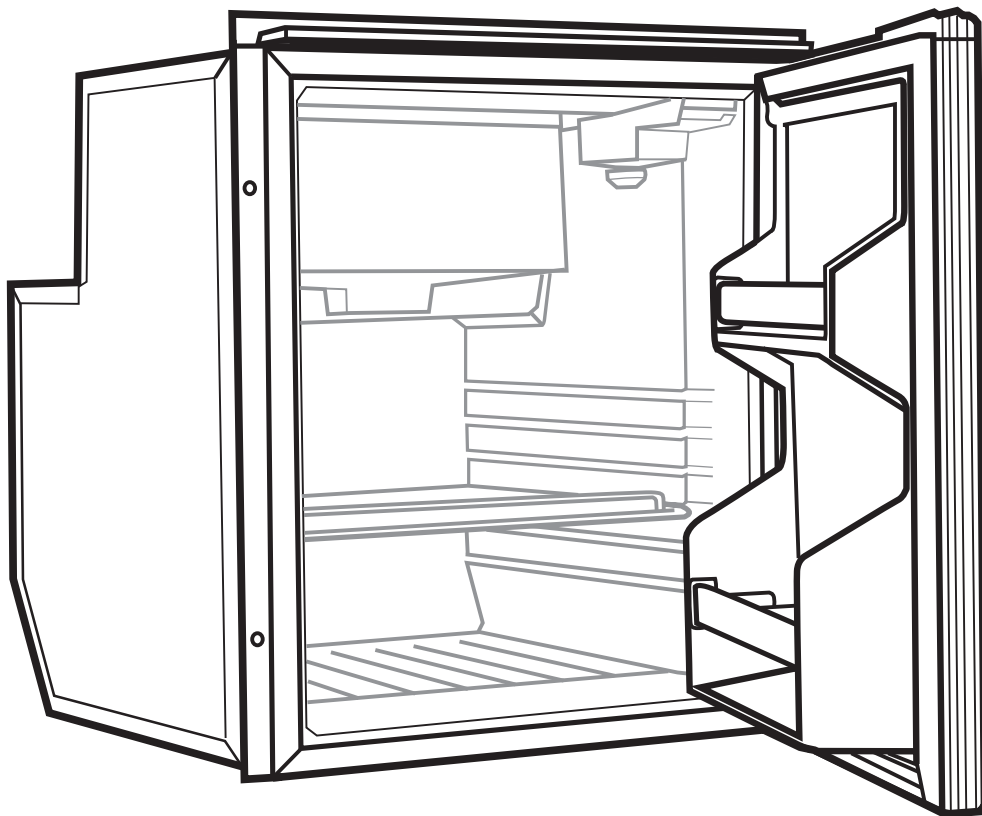


# User Manual & Operating Instructions



## DC-X Fridges

CARAVAN – MARINE – RV - OFFGRID

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**Congratulations on your purchase of a Bushman DC-X fridge. Please read these instructions carefully before installation and use.**

Please be safe and use common sense and caution when installing, operating and cleaning this appliance. If you are unsure about any of these instructions, contact your local stockist before proceeding.

### **IMPORTANT INFORMATION**

Do not lay your fridge on its back, top or sides or at any angle exceeding 30°. If your fridge has been incorrectly handled, ensure that the fridge is placed in a level upright position for 12 hours to allow the internal fluids to redistribute evenly.

Never operate your fridge directly from a 240 V or AC power supply.

Do not use a modified sine wave inverter to operate your fridge.

### **PRIOR TO INSTALLATION**

#### **DELIVERY**

At delivery, please check that the fridge is complete and is not damaged in any way. Remove all packaging and securing tapes from the fridge. To avoid injury and causing damage to the appliance, be extremely cautious when using sharp or pointed tools to complete this task.

Do not connect an appliance that has been damaged, contact your local dealer immediately.

### **INSTALLATION**

Installation of the DC-X range of fridges must be completed by a suitably trained professional only.

#### **POWER SUPPLY**

Your fridge must be connected to a stable and regulated 12 V or 24 V DC power supply only. The compressor will automatically detect which voltage is present adjust accordingly.

If you are using a generator or other power supply, the output must be a pure sine wave. Any fluctuations in generator current may damage the compressor.

#### **WIRING**

For optimum results, you will need the correct sized wire depending on the distance from your power supply to the fridge. Wiring must be directly from your fridge to your battery and should be continuous without joins. Please also ensure the earth is wired directly to your battery, not to a chase. If your wiring is insufficient, your fridge may not perform correctly or may be even be damaged.

<b>CROSS SECTION IN MM2</b>	<b>MAXIMUM LENGTH OF WIRE IN METRES</b>	
	<b>12 V</b>	<b>24 V</b>
2.5	2.5	6
4	4	8
6	6	12
10	10	20

We recommend installing a power switch for the fridge circuit as close to your battery bank as possible. Any switches must have a breaking load not less than 20 A on 12 V or 10 A on 24 V.

The power supply wiring must also be protected with a 15 A fuse.

Ensure sure the wiring polarity is correct. Connect the red wire to the positive terminal (+) and the black wire to the negative terminal (-).

Never connect bare electric wires. Use only connections of a size suitable for the cross section of the wire being used.

## INSTALLATION INTO A CAVITY

DC-X fridges are designed to be installed in a cavity. A gap of minimum 40mm is recommended for the rear. Refer to the following table for the recommended cut-out dimensions. If you are using the mounting kit, allow an extra 5mm width for the mounting kit frame and screws.

MODEL	CUT-OUT CAVITY DIMENSIONS (MM)		
	WIDTH	DEPTH	HEIGHT
DC50-X	385	495	530
DC65-X	455	515	530
DC85-X	480	550	630
DC130-X	530	550	755

## EFFICIENT OPERATION

### VENTILATION

Ventilation will have a significant impact on the efficient operation of your fridge. A minimum of 2 vents need to be provided from the rear of the fridge cavity to the outside environment, or to the general area where the fridge is located. The vents should be located at the bottom and top of the fridge cavity and have a free cross section of minimum 200cm<sup>2</sup> each. By providing free air flow to the compressor area your cooling system will remove heat faster and the fridge will operate more efficiently.

### MOUNTING KIT

The mounting kit is first affixed to the side and top of the fridge cabinet using the screws provided. Once the fridge has been connected to the power supply and moved into its final position, the mounting kit can be affixed to the front of the cavity.

## OPERATING THE FRIDGE

### THERMOSTAT

- The cooling level can be set between 1 and 7.
- 7 is the coldest setting and 1 is the warmest.

### EQUALISING THE FRIDGE

During the first 24 hours of operation, your compressor will operate for longer than usual. This process allows the internal air temperature, food, drinks, condenser and insulation to equalise.

### ENERGY SAVING TIPS

- Have a much ventilation as possible – the more the better.
- Keep the fridge out of direct sunlight whenever possible
- Only open the fridge or freezer door when necessary
- Allow hot food to cool down before placing inside the fridge
- Defrost the fridge as soon as a layer of ice forms
- Set the fridge to be only as cold as necessary

### USING THE FRIDGE IN EXTREME HEAT

If you are using your fridge in a very hot area or situation, removing the drip tray will improve cold air circulation throughout the fridge cabinet. Note the DC130-X and DC85-X models do not have a drip tray.



### **CLEANING**

Wash the inside of your fridge with luke warm water and a mild soap. Never use abrasive or corrosive cleaning agents, steel wool or scouring sponges. A soft sponge, towel, or soft brush is recommended.

Always keep the inside of the fridge clean and dry. Remove any condensate water or ice which gathers in or near the tray under the freezer compartment.

Be careful when opening or closing the freezer door if ice has been allowed to accumulate in this area.

Keep the door of the fridge ajar when the fridge is not in use, to allow fresh air to circulate inside the fridge compartment.

### **DEFROSTING**

Defrosting needs to be carried out when the ice layer reaches a thickness of 5mm.

Turn off the power to the fridge and move your food and beverages to another cool place. Do not use any objects to remove the ice or frost, it must be allowed to melt naturally. Once the ice has melted, thoroughly dry the inside of the fridge and freezer compartment.

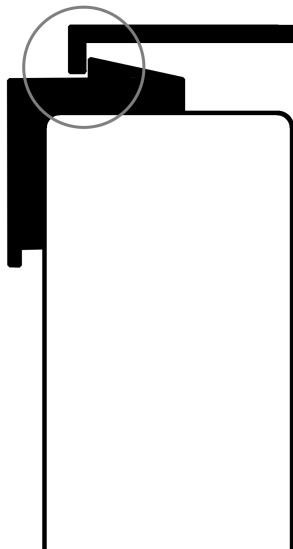
## MOVING THE DOOR HINGES TO THE LEFT-HAND SIDE

To change the hinge side, unscrew the door hinges from the fridge cabinet, move to the other side and re-affix using the same screws. There is a black washer on the bottom hinge, this must stay in place.

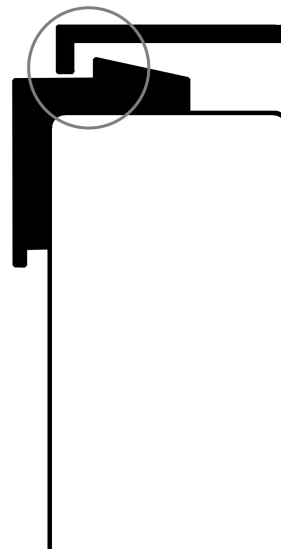
## MOVING THE DOOR HANDLE

1. Remove the 2 screws which hold the door handle in place. Access is provided under the logo sticker. You can more easily remove the sticker by applying moderate heat from a hair dryer.
2. Gently lift the door handle off.
3. Reposition the door handle on the preferred side.
4. Drill 2 small (2mm) pilot holes through the door handle for the original screws.
5. Reaffix the door handle using the original screws.
6. Reapply the logo sticker onto the door handle by applying moderate heat to the sticker.
7. Use the supplied DC-X Series sticker to cover the old screw holes.
8. Check that the plastic door latch is flush with the top metal rail when the door is closed. If there is more than 1-2mm of movement, you will need to adjust the position of the top metal rail. To do this, unscrew the top metal rail and move it backwards so that the plastic latch is just touching. Reaffix in this position. See diagram below:

**CORRECT 0-1MM GAP**



**INCORRECT 2MM+ GAP**



## RUBBER SEALS

1. There are magnets inside the rubber seal which pull towards the metal fridge cabinet to keep it airtight.
2. After you have adjusted your door latch, check to see that the rubber seal is making contact with the fridge cabinet on all 4 sides. If there is even a small gap, this will affect the performance of your fridge.
3. Starting from a corner, gently heat up the rubber seal with a hair dryer or light heat from a heat gun (be careful not to overheat the rubber or it will melt). As the rubber heats up, the magnets inside will pull the seal towards the fridge cabinet. Slowly work your way along the rubber from one corner to the other until it is fully sealed.

## REPLACING THE FRONT DOOR PANEL

1. Follow steps 1 to 2 under "Moving the door handle" above.
2. Gently remove the bottom door profile which supports the door panel. Using a screwdriver gently lever the bottom door profile outwards only. Do not lever it down.
3. Gently slide the original door panel down and out of the door.
4. Slide the new door panel upwards and into place.
5. Reposition the bottom door profile to be flush.
6. Continue from steps 3 to 6 under "Moving the door handle" above.

## TROUBLE SHOOTING

### VOLTAGE

The most common cause of an incorrectly functioning fridge is a lack of voltage.

Your fridge has built in battery protection and needs the following minimum voltage for the compressor to start (Cut-in) or stop (Cut-out).

#### Battery Protection Settings

VOLTAGE	CUT OUT	CUT IN
12 V	9.6 V	10.9 V
24 V	21.3 V	22.7 V

During fridge operation, a load is placed on your power supply which can cause your supplied voltage level to drop by as much as 2 – 3V. This occurs especially if the wiring is insufficient or if there is a loose connection.

If this occurs, your fridge may exhibit a continuous start / stop / start pattern. If so, have your wiring checked by an electrician when under a 10 A load.

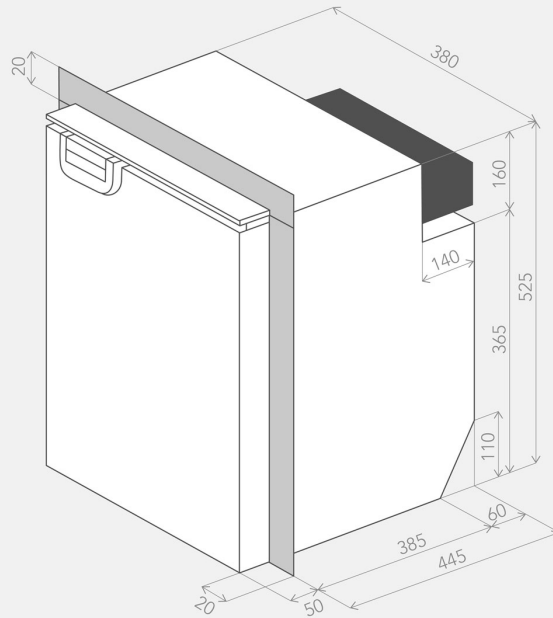
### TROUBLESHOOTING

Check:

- Correct power supply
- The voltage to the compressor is still 12V when a 10 A load is placed on the wire
- The fan is operating
- The polarity of the connections are correct
- There is adequate ventilation to the rear of the fridge
- The fuse is not blown
- The rubber door seal is touching the fridge cabinet all the way around on all 4 sides
- The door latch has a tight fit when closed
- You have given the fridge enough time to cool down

## TECHNICAL SPECIFICATIONS

	DC50-X	DC65-X	DC85-X	DC130-X
<b>COMPRESSOR</b>	Secop BD35	Secop BD35	Secop BD35	Secop BD35
<b>VOLTAGE</b>	12 V / 24 V DC	12 V / 24 V DC	12 V / 24 V DC	12 V / 24 V DC
<b>WATT RATING</b>	60 W	60 W	60 W	60 W
<b>EXTERNAL DIMENSIONS (mm)</b>	W 380 D 495 H 525	W 450 D 515 H 525	W 475 D 550 H 625	W 525 D 550 H 750
<b>NETT WEIGHT</b>	16.4 kg	18 kg	22.5 kg	27.2 kg

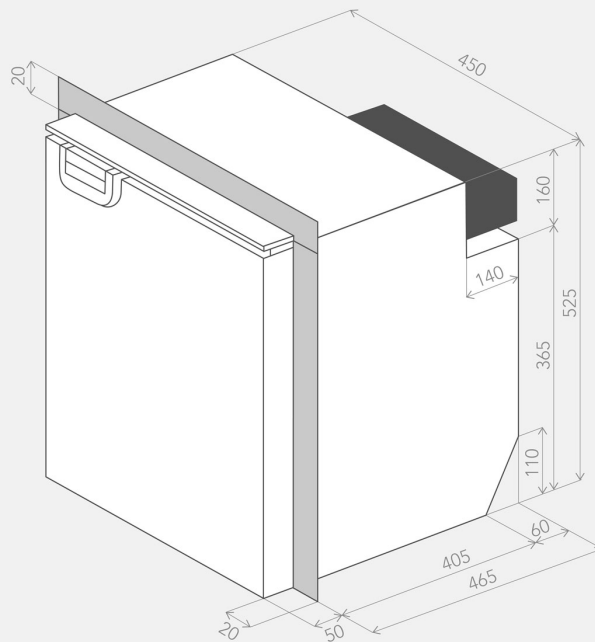


**MODEL: DC50-X**

■ MOUNTING KIT

■ COOLING UNIT

SCALE: (MM)

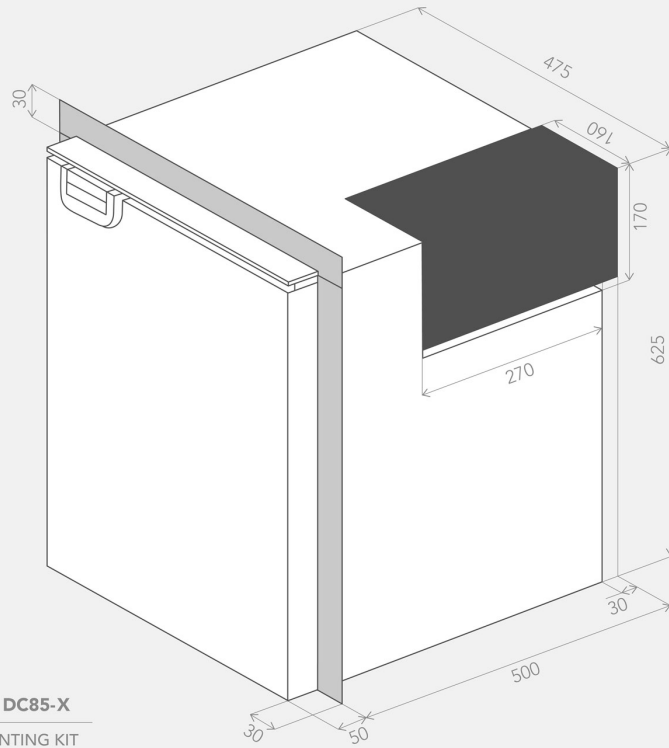


**MODEL: DC65-X**

■ MOUNTING KIT

■ COOLING UNIT

SCALE: (MM)

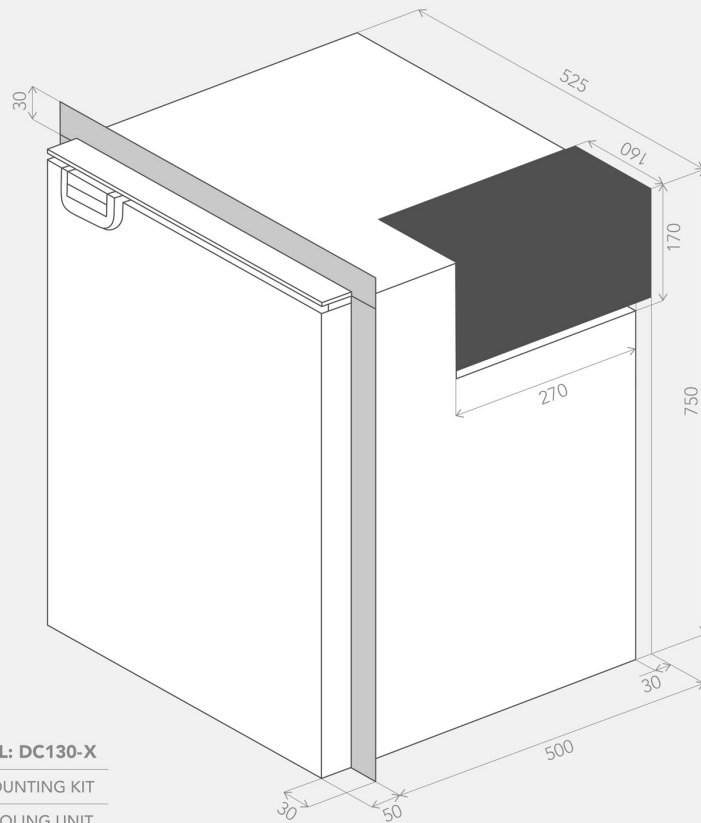


**MODEL: DC85-X**

■ MOUNTING KIT

■ COOLING UNIT

SCALE: (MM)



**MODEL: DC130-X**

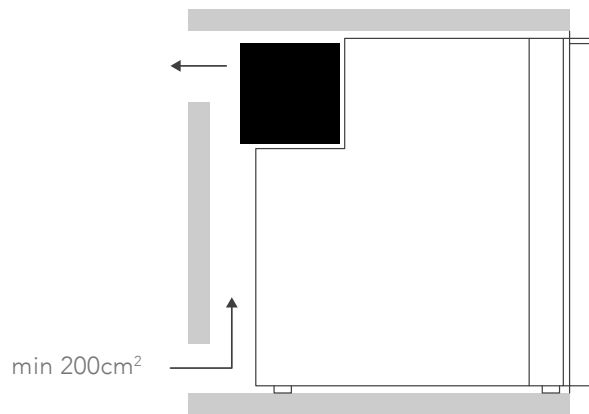
■ MOUNTING KIT

■ COOLING UNIT

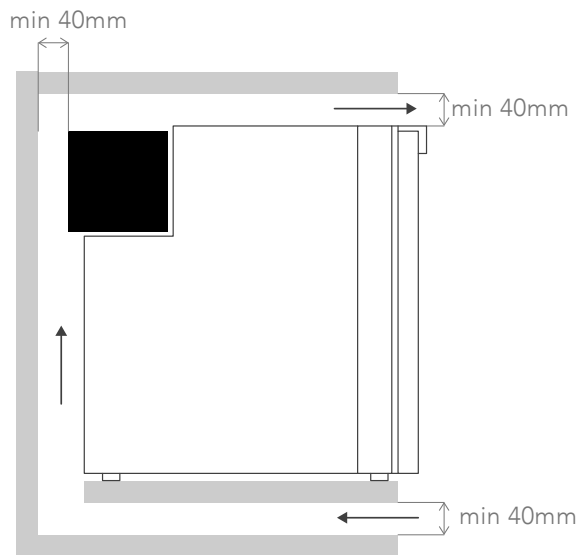
SCALE: (MM)



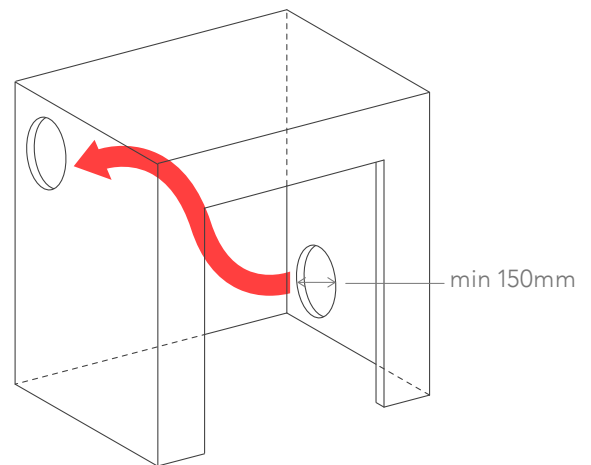
## VENTILLATION OPTIONS DC-X



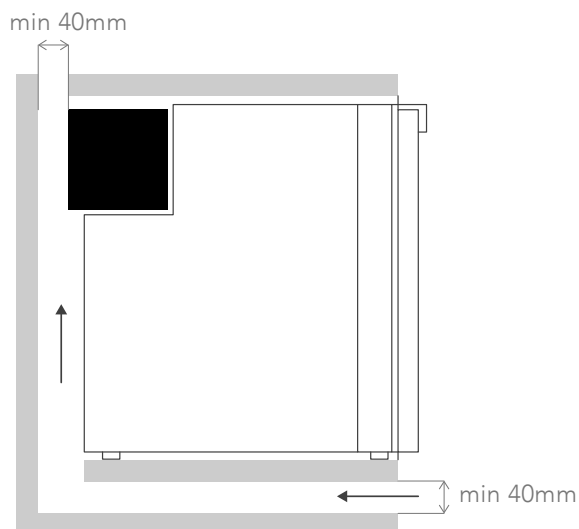
### ▲ Exterior Ventilation



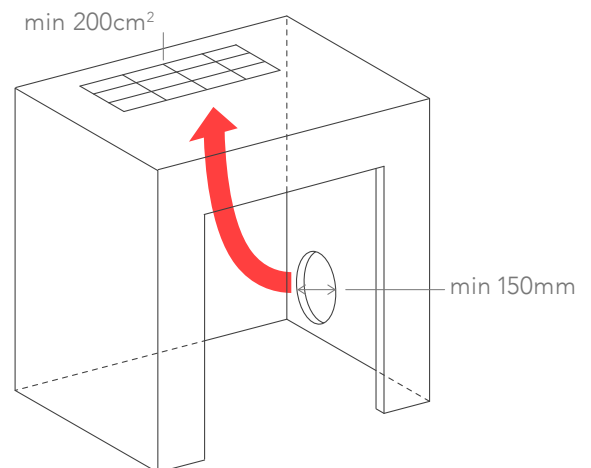
### ▲ Interior Ventilation Option 1



### ▲ Interior Ventilation Option 2



### ▲ Interior Ventilation Option 3



### ▲ Interior Ventilation Option 4



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NOTES



## **WARRANTY**

DP Refrigeration Pty Ltd trading as Bushman Fridges ABN 94 615 295 255 (Bushman) warrants, to the original owner, that this product is free from defects in workmanship and material for a period of three (3) years from the purchase date. This warranty shall be limited to repairing or replacing, at Bushman's option and without charge to the purchaser, defective components. All warranty work shall be performed at a Bushman approved facility. Shipping charges related to returning the product to the Bushman facility are not covered under this warranty. However, this warranty covers shipping charges related to returning the repaired product to the customer. This warranty does not apply to damage or wear to the product caused by accident, abuse, misuse, neglect, unauthorized alteration or repair, or if the product was not used in accordance with Bushman printed installation and operating instructions. To obtain service under this warranty, the defective product must be returned to Bushman together with a copy of the original purchase receipt. Any product repaired or replaced under this warranty will be warranted for the balance of the warranty period with respect to the original purchased product. Bushman is not liable for any incidental or consequential loss or damages whatsoever as a result of use or misuse of this product. Any statutory warranty also applies.

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