

CARVER TRUMATIC

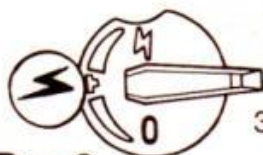
TO LIGHT AND REGULATE

THE SB1800 & SD2000 HEATERS

without wall mounted thermostat



Pos.1



Pos.2



Pos.3

1. Turn the Gas Control Knob to position 1.
2. Press the Control Knob fully in to override the flame failure device and IMMEDIATELY operate the ignitor button and continue to Hold Gas Control In. This will light the heater on "LOW" and you will observe the flames through the inspection window behind the slot in the front cover.
If the heater fails to light first time, continue to operate the ignitor rapidly, keeping the Control Knob pressed. If it still fails to ignite after 15 strokes of the ignitor it may by then have an overrich gas mixture, wait 2 minutes for this to disperse and try again.
3. When lit, keep the Control Knob pressed for about 10 seconds to allow the flame failure device to warm up and then release. Should the heater not remain alight, depress the Control Knob again and operate the ignitor. Do not release the Control Knob quite so soon.
4. The Control Knob can now be adjusted between position 1 "LOW" and position 2 "HIGH" to give the desired heat output.
5. **To extinguish**, turn the Control Knob to position 3 "OFF".
6. Wait 2 minutes before attempting to re-light the heater.

with wall mounted thermostat

1. Turn the thermostat to "30" particularly if the heater is used intermittently, it frees the thermostat valve and purges any trapped air more quickly.
2. Proceed with operation 1 to 3 above.
3. Release the Control Knob and turn it to position 2 "T".
4. Adjust the thermostat to the number you have found most comfortable, usually between 17-22°C. The thermostat is graduated in degrees centigrade, but of course its position within the caravan will affect the eventual "Comfort Number" chosen. The thermostat will establish and maintain the heat level.
5. To extinguish the heater, turn the Control Knob to position 3 "OFF".
6. Wait 2 minutes before attempting to re-light the heater.

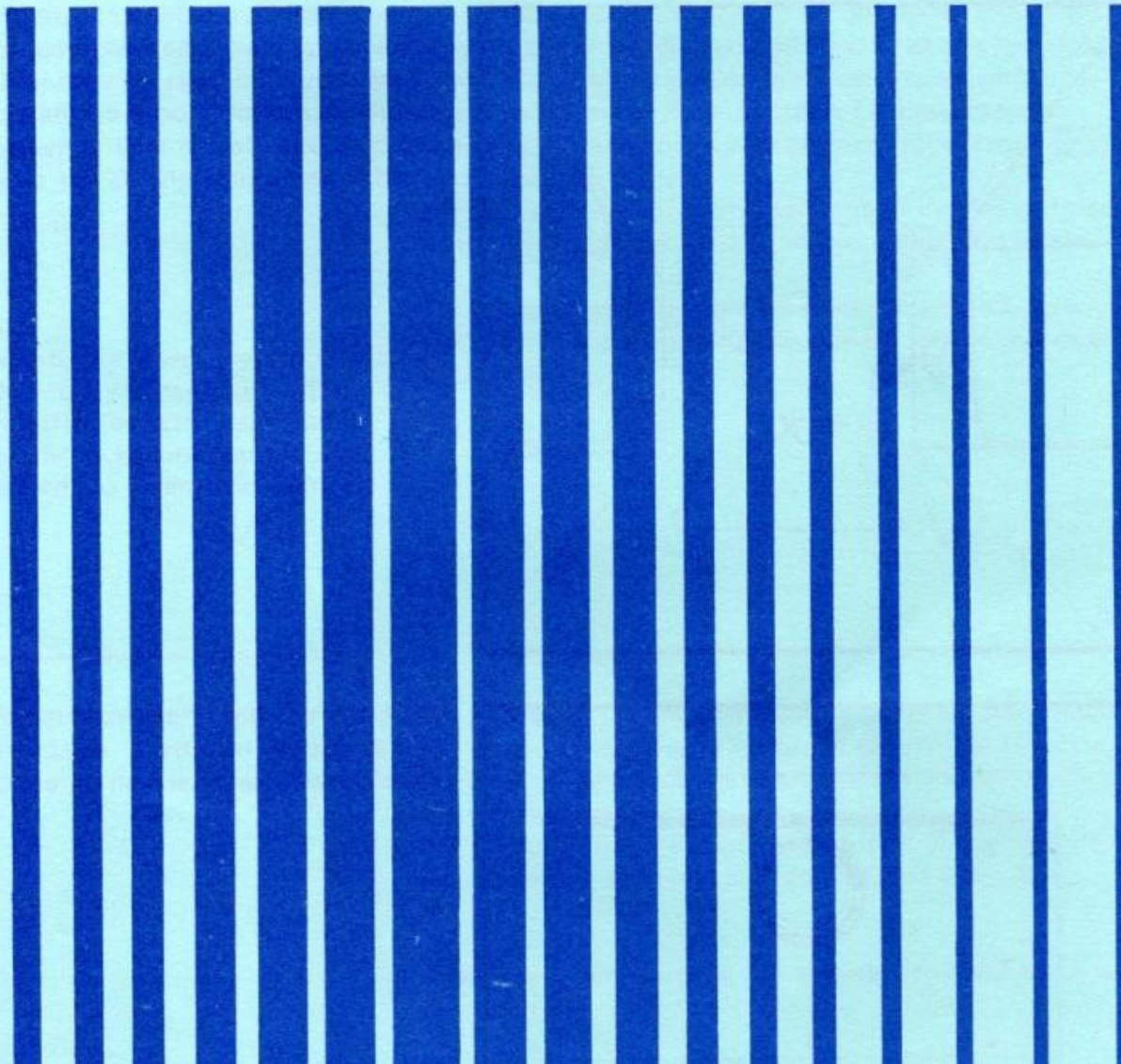
PLEASE NOTE:

1. Do not obstruct the heater in any way with clothing etc.
2. When the heater is not required keep the Gas Control Knob OFF.
3. If the heater has been in operation and is hot, wait at least 2 minutes before attempting to re-light.
4. If fluff, carpet pile, etc. has accumulated on the heat exchanger it can be brushed off after removing the Front Casing, when the heater is cold. The Control Knobs pull off on all models.

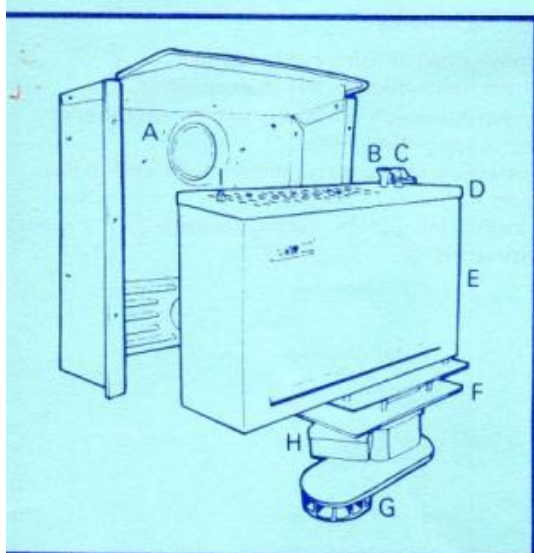
In the Event of Gas Leakage

1. Switch off the heater.
2. Check for leaks with soapy water. NEVER USE A NAKED FLAME.
3. If you are unsure turn off gas at cylinder and refer the problem to your dealer.

SB1800 FITTING INSTRUCTIONS



<http://www.thomson-caravans.co.uk/>



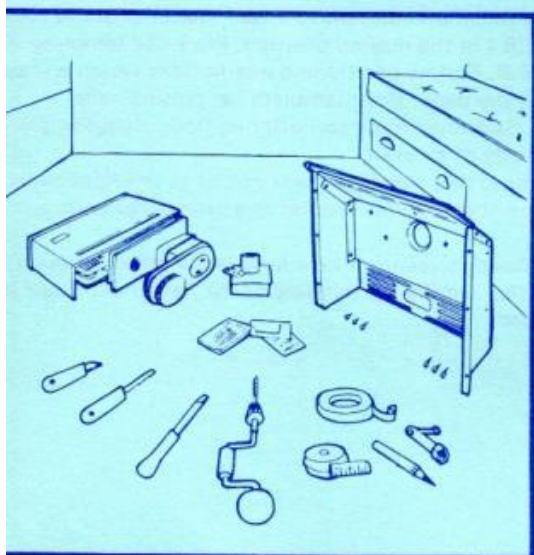
Introduction

These instructions are a guide which we hope will solve any queries that may arise.

Before starting to install the heater it would be advisable to read the instructions in the context of your caravan. We have endeavoured to cover every aspect of the installation, but owing to the variety of caravans and their differing constructions this is not always possible.

Components of the heater referred to in text.

- A — INSTALLATION BOX
- B — IGNITION BUTTON
- C — GAS CONTROL KNOB
- D — TOP GRILL
- E — CASING
- F — CLAMPING PLATE
- G — AIR INTAKE ARM
- H — EXHAUST COWL
- I — CHROMED HEXAGON NUT



S.B. 1800 installation kit comprising: — heater unit assembled as illustrated — flue cowl — installation box (or reflective back panel according to choice) — set of servicing and operating instructions. Six wood screws (size 1/4" No. 6) will be needed to screw installation box into position. Tools and other items that will be needed during installation — sharp knife — padsaw — screwdriver — hand drill and brace — masking tape — tape measure — pencil — 9mm (or 1 B.A.) tube spanner. Make sure that you have all the components listed before starting.

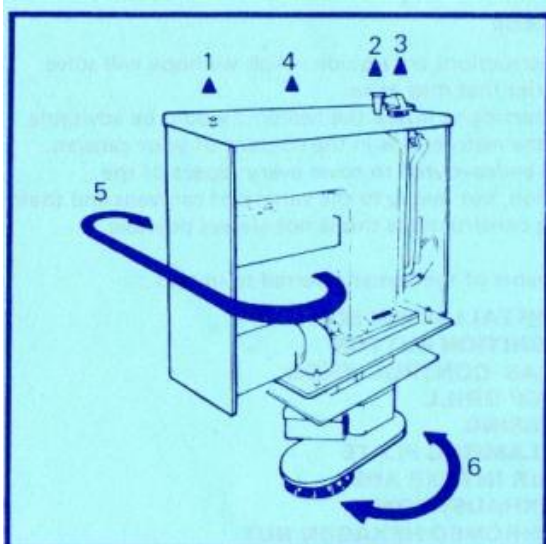
The choice of installation box will depend on where you intend to situate the heater. It is usually positioned in a recess at the base of a wardrobe using installation box U.B. It can also be placed against a wall using reflective back panel R.B.



Having placed the heater upside down, remove the two wing nuts and air intake assembly and the four hexagon nuts and the floor clamping plate.

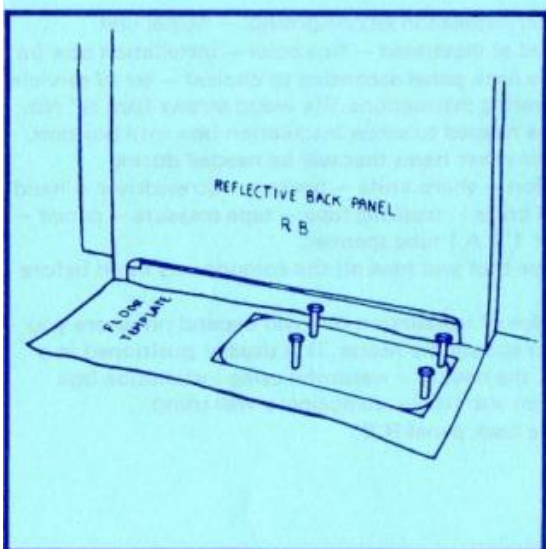
When deciding where to position the heater, consider the underfloor layout of the caravan. The installation will require a hole to be cut through the floor, therefore it is important to be aware of the positions of gas pipes and chassis members relative to the area of the floor you intend to cut through. Having decided on an approximate position it will be found that the design has a certain amount of flexibility to enable the heater's underfloor parts to avoid the caravan's chassis members, should they coincide.

In the standard form the heater is right handed i.e. with the air intake and exhaust port positioned off centre on the right hand side of the appliance. The handing can be changed as described in the next stage.



To change the handing

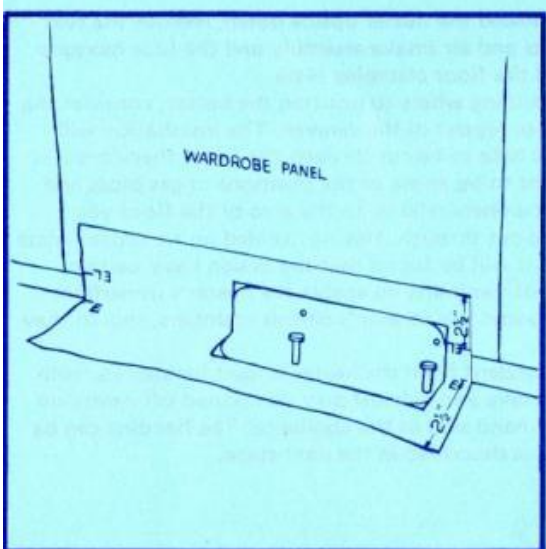
1. Remove small chrome hexagon nut.
2. Pull the control knobs off their spindles.
3. Remove nut which will be found beneath the knob.
4. Remove top grill and case.
5. Re-assemble with case on the opposite side of the exchanger.
6. Air intake arm can be swung through 360° to avoid obstructions.



For an installation adjacent to a wall, place reflective back panel (R.B.) in the desired position. Place the template against R.B. Follow positioning instructions which will be found on the paper floor template i.e. passing nails through clamping points and offering floor clamping plate to underside of caravan.

If it is found that the heater will not fit in the right hand form, turn the template around and proceed as before.

For left hand installation turn template around through 180°. If this is done the handing of the heater will need to be changed.



For a recessed installation fold the template along line EE (2½" from edge). Place the folded edge in the corner of the floor and wardrobe. Mark the holes and follow the positioning instructions.

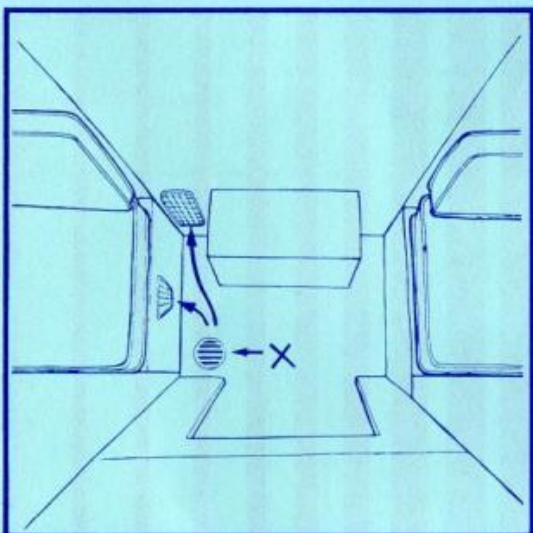
If it is found that the heater will not fit in the right hand form, turn the template around and fold along line EL - EL.

After recess has been cut, lay template flat and mark hole for cutting.



If it has been decided to recess the heater, the installation box will require an opening to be cut in the base of the wardrobe or division wall. 480mm x 480mm (18 7/8" x 18 7/8") It is ideal to protect the surface which is to be cut with masking tape, and score the line with a sharp knife. This should stop the veneer from lifting.

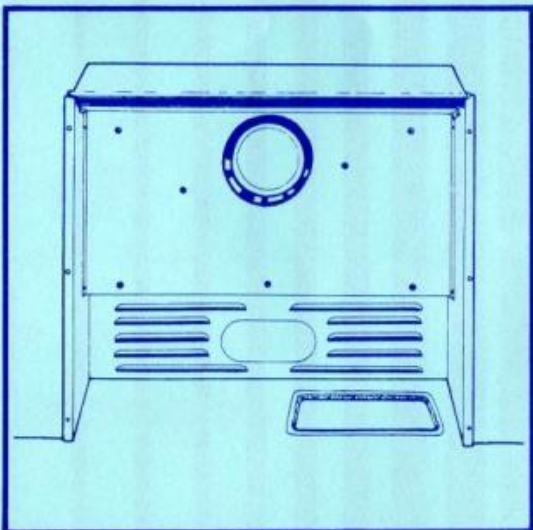
Having marked the line, cut a starting hole for the padsaw. Cut the panel cleanly with the padsaw. The top edge will be visible.



When installing a recessed heater it will be necessary to blank off any existing wardrobe floor vents.

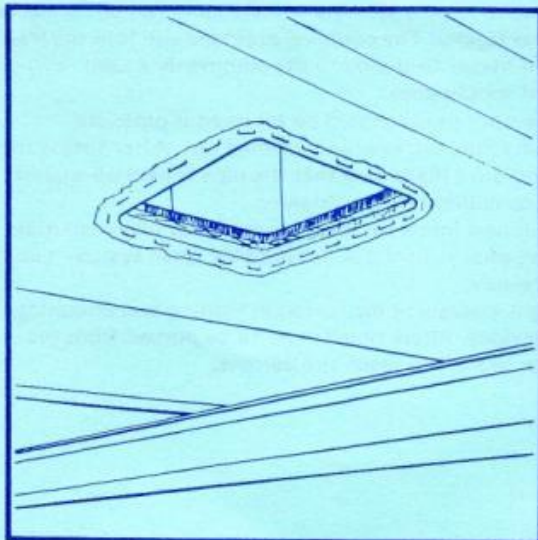
These should be replaced with wall mounted vents which should be mounted both on the exterior wall and an adjacent bunk locker wall. Between them, they should provide approximately 20" sq. air ingress area.

Note: To prevent entry of exhaust gases, it is important that any floor vents in the same underfloor channel as the heater exhaust should be blocked, as should any others within one metre of the heater.

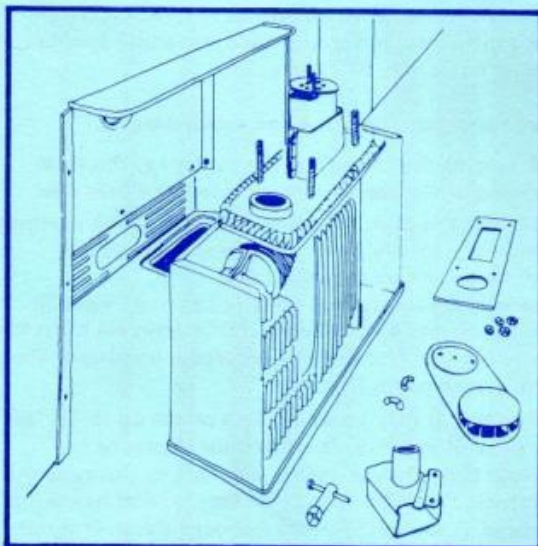


Mark out the floor hole from template and cut away carpet to clear hole by 1" all round.

Check underneath caravan before cutting hole.



Cut out floor hole as instructed on template. Protect any exposed insulation and timber by lining hole with kitchen foil. Staple this, along with loose polythene sheet, in position. Place installation box into the recess. Screw into position.



The heater should now be offered into the hole. Before going underneath to assemble remember to take flue cowl, clamping plate and four nuts, air intake arm and two wing nuts, clamping disc, and 9mm A/F box spanner.

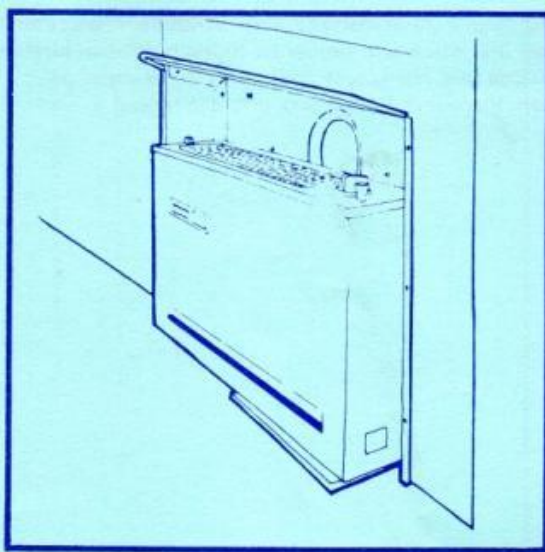


After passing the clamping plate over the four retaining studs, position the flue cowl over the two studs nearest the exhaust port. Place the cowl tube carefully into the port. Screw up all four nuts finger tight.

Go inside caravan and centralise the heater within the installation box. Finally go underneath and tighten retaining nuts.

Place the air intake over its two retaining studs with the intake facing downwards. Pass the securing disc over the studs and lightly screw up wing nuts. Select a suitable position for the air intake arm out of the path of road wheel spray and as far away from air flow obstructions as possible.

Finally tighten wing nuts.

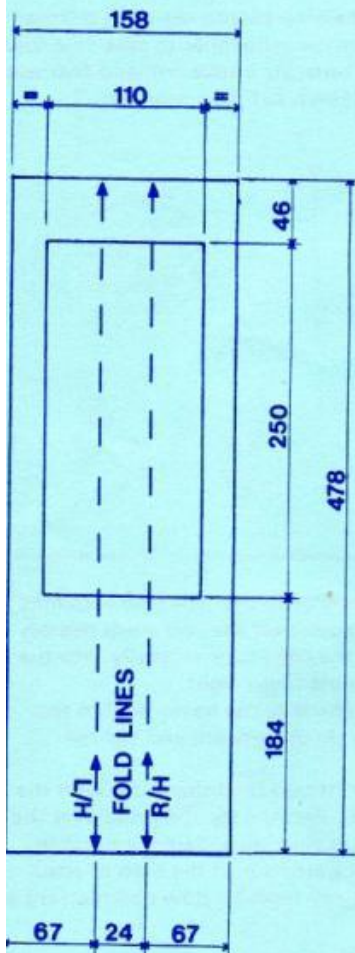


The heater is now securely installed and can be connected to a gas supply. The coupling provided will join the $\frac{5}{16}$ " (8mm) heater feed pipe to the commonly found $\frac{1}{4}$ " (6mm) supply pipe.

Satisfactory joints should be achieved if pipes are carefully cut, defrozed and cleaned out. After fitting the nut and olive make sure that the pipe is held up against the stop collar during tightening.

Test all new joints for leaks by smearing soapy solution around each joint. Look for bubbles when system is under gas pressure.

Firing — operate as instructed in lighting and operating instructions. Allow time for air to be purged from the system and gas to reach the burners.



FLOOR TEMPLATE DMS.

The Carver Trumatic heater will fit in most caravans without difficulty, however should there be a problem the following notes may be of help.

Underfloor obstructions may be avoided by:—

- Changing the "hand" of the heater i.e. the front casing of the heater may be fitted to either side.
- Moving the position either in or out of the wardrobe face. If a totally inset position is required use installation box type G.T. 440.

It is permissible to move the heater out of an installation box (set template accordingly), if it is desirable to fit the heater entirely in front of the wardrobe, use one of the reflective back plates R.B.

- The heater may be set up on a plinth up to $1\frac{1}{2}$ " high. If there is still insufficient underfloor clearance a "Reduced Base" heater can be supplied, in this type the 7" dimension is reduced to $5\frac{1}{8}$ ". This type of heater must be ordered specially (SB 1800 Reduced Base). It is not possible to make this modification yourself. If when installed, the air inlet is obscured, within 3" distance by chassis members greater than 6" deep, the plastic star may be lowered by use of an extension kit code AIX to put it back into an unobstructed air flow. It is not permissible to extend the exhaust outlet either downwards or sideways.

Note: Installation Boxes (UB and GT 440), Reflective Back Panel (RB) and Air Inlet Extension (AIX) are not included in the basic heater kit. These items are available from your Caravan Accessory Retailer.

Carver & Co. (Engineers) Ltd.

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ENGINE LANE, BROWNHILLS,
WALSALL, ENGLAND.

TELEPHONE: BROWNHILLS (0543) 374521

TELEX: 338530

HEATERS

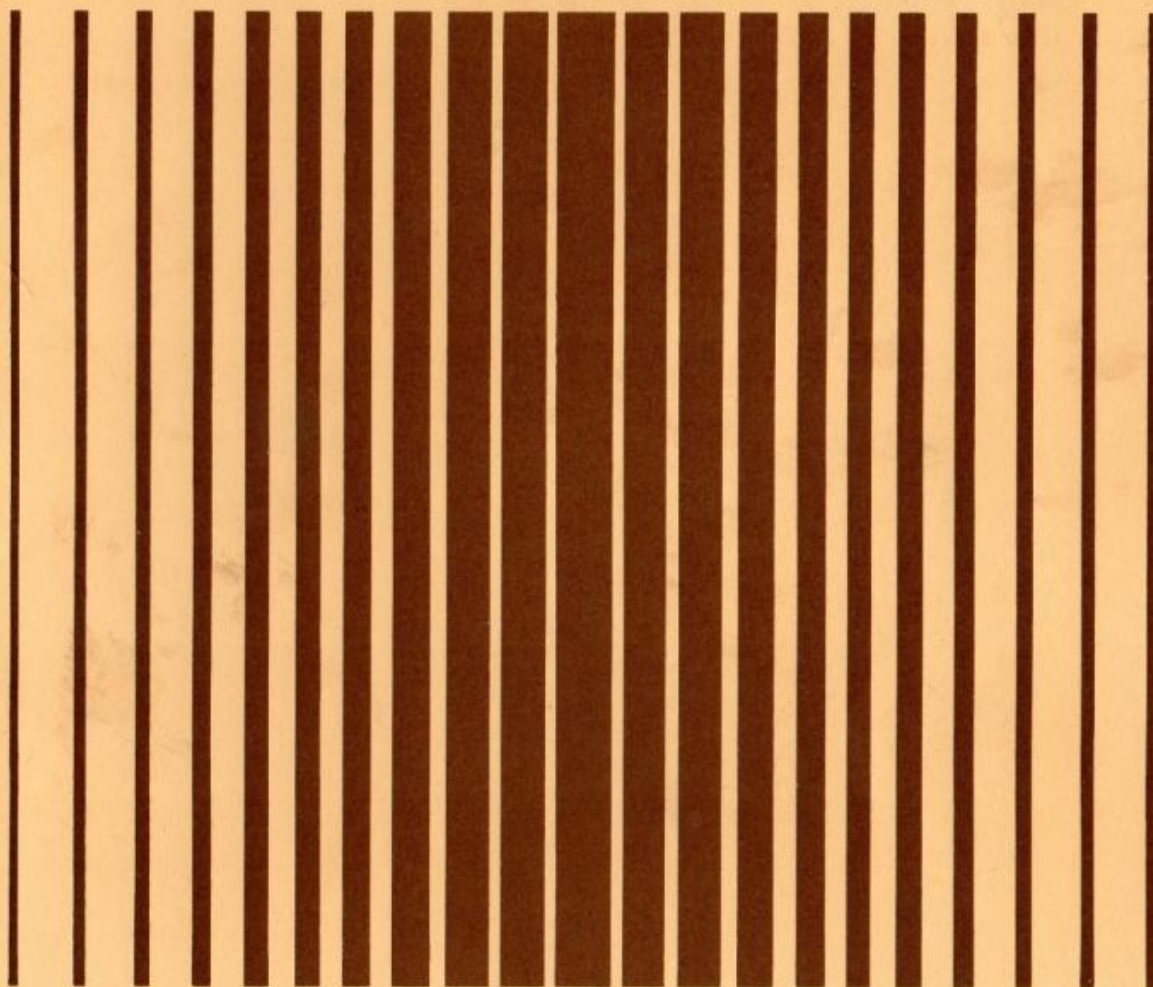
SB 1250
SBT 1800
SB1800
SD 2000

ACCESSORIES

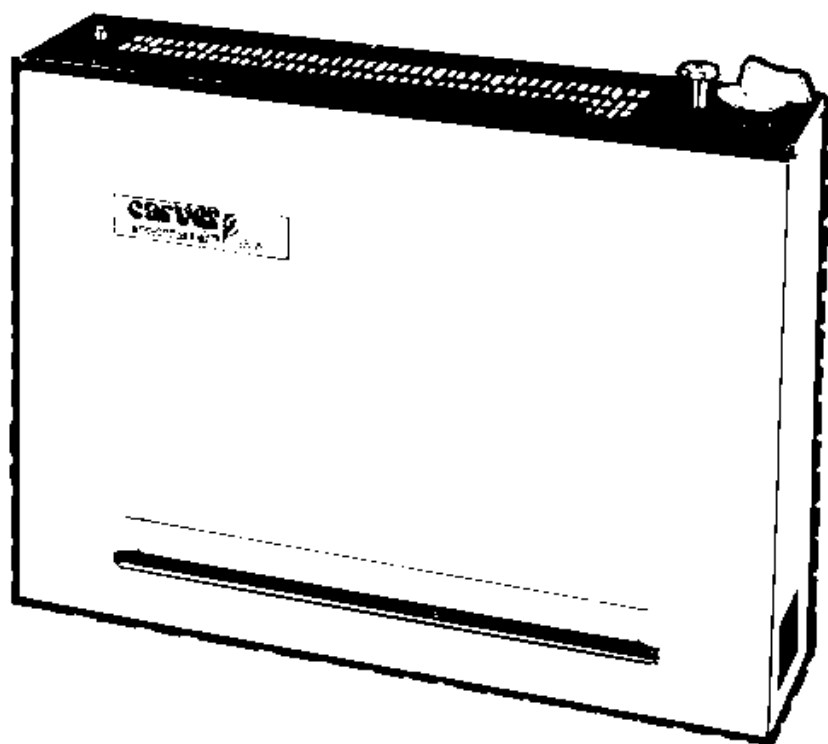
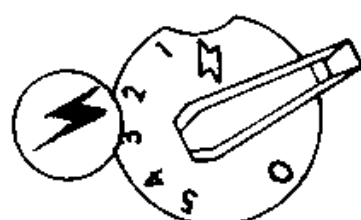
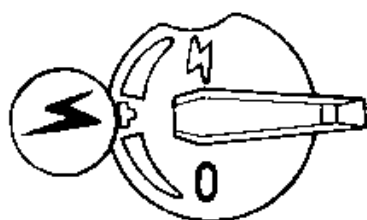
THERMOSTAT

carver 
trumatic

OWNERS
HANDBOOK
AND
OPERATING
INSTRUCTIONS



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SB1800 AND SBT 1800



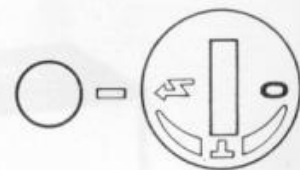
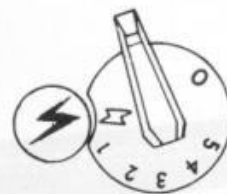
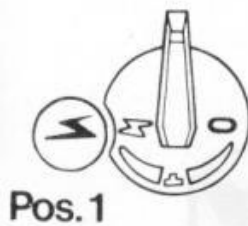
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LIGHTING AND OPERATING INSTRUCTIONS

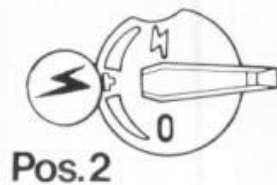
**SB1800
&
SD2000**

SBT1800

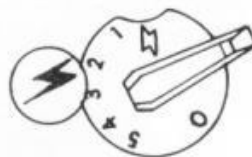
SB1250



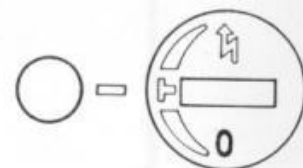
IGNITION AND LOW



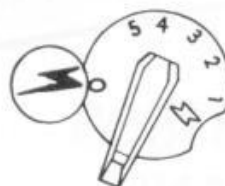
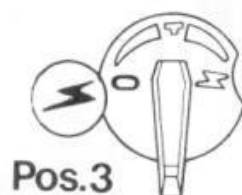
High
and Thermostat



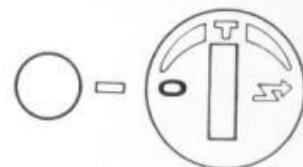
Thermostat
Control



High
and Thermostat



OFF



Shown as Right Handed Models
Left Handed reversed

2



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OPERATING INSTRUCTIONS

To Light and Regulate the SB 1800, SD 2000 & SB 1250 Heaters (without a Thermostat).

1. Turn the Gas Control Knob to position 1.
2. Press the Control Knob fully in to override the flame failure device and IMMEDIATELY operate the ignitor button or knob and continue to Hold Gas Control In. This will light the heater on "LOW" and you will observe the flames through the inspection window behind the slot in the front cover.
If the heater fails to light first time, continue to operate the ignitor rapidly, keeping the Control Knob pressed. If it still fails to ignite after 15 strokes of the ignitor it may by then have an overrich gas mixture, wait 2 minutes for this to disperse and try again.
3. When lit, keep the Control Knob pressed for about 10 seconds to allow the flame failure device to warm up and then release.
Should the heater not remain alight, depress the Control Knob again and operate the ignitor. Do not release the Control Knob quite so soon.
4. The Control Knob can now be adjusted between position 1 "LOW" and position 2 "HIGH" to give the desired heat output.
5. To extinguish, turn the Control Knob to position 3 "OFF".
6. Wait 2 minutes before attempting to re-light the heater.

To Light and Regulate the SB 1800, SD 2000 & SB 1250 Heaters (with a Thermostat)

1. Turn the thermostat to "30" particularly if the heater is used intermittently, it frees the thermostat valve and purges any trapped air more quickly.
2. Proceed with operation 1 to 3 above.
3. Release the Control Knob and turn it to position 2 "T".
4. Adjust the thermostat to the number you have found most comfortable, usually between 17-22°C. The thermostat is graduated in degrees centigrade, but of course its position within the caravan will affect the eventual "Comfort Number" chosen.
The thermostat will establish and maintain the heat level.
5. To extinguish the heater, turn the Control Knob to position 3 "OFF".
6. Wait 2 minutes before attempting to re-light the heater.

To Light and Regulate the SBT 1800 Heater (with Integral Thermostat)

1. Turn the control knob to the ignition position with its cut-out next to the ignition button.
2. Fully depress the control knob to override the flame failure device and IMMEDIATELY operate the ignitor while holding the control knob depressed. This will light the heater on "LOW" and you will observe the flames through the inspection window behind the slot in the front cover. If the heater fails to light first time continue to operate the ignitor rapidly, keeping the control knob pressed. If it still fails to ignite after 15 strokes of the ignitor it may then have an over-rich gas mixture, wait 2 minutes for this to disperse and try again.
3. When lit, keep the control knob pressed for about 10 seconds to allow the flame failure device to warm up and then release. Should the heater not remain alight, depress the control knob again and operate the ignitor. Do not release the control knob quite so soon.
4. The control knob can now be adjusted to Nos. 1-5 to give the required personal comfort setting.
5. The integral thermostat will regulate the output of the heater to maintain the interior of the van at the 'comfort level' chosen.
6. To extinguish turn the control knob to 'O'.
7. After the heater has been extinguished the knob can not be turned from the off position until the flame failure valve has operated.

Please Note:

1. Do not obstruct the heater in any way with clothing etc.
2. When the heater is not required keep the Gas Control Knob OFF.
3. If the heater has been in operation and is hot, wait at least 2 minutes before attempting to re-light.
4. If fluff, carpet pile, etc. has accumulated on the heat exchanger it can be brushed off after removing the Front Casing, when the heater is cold. The Control Knobs pull off on all models.

In the Event of Gas Leakage

1. Switch off the heater.
2. Check for leaks with soapy water.
NEVER USE A NAKED FLAME.
3. If you are unsure turn off gas at cylinder and refer the problem to your dealer.

GENERAL DESCRIPTION

Carver Trumatic heaters are room-sealed units based on a well proven and extremely efficient heat exchanger consisting of a pair of internally and externally finned aluminium die castings.

The burners are situated at the bottom of a vertical fire-way which permits complete combustion of the gas before it meets any exchanger surfaces.

The flame products travel along the top horizontal section and then downwards through further galleries cooling all the way and are kept moving by the thermal drive of the rising column of hot gases from the flame.

The flue outlet of the heater is towards the bottom of the exchanger thus ensuring that the majority of the heat is extracted before the gases leave via the underfloor flue in the case of the SB 1800, SBT 1800 and SB 1250 or a roof flue cowl in the case of the SD 2000. The combustion tract is entirely independent from the living space, all the air for combustion being drawn in from beneath the van through the plastic stabilising stat.

The heat output is controlled by adjusting the gas supply either by the thermostat, if fitted, or the gas control knob.

The spark is generated by piezo ignitor, which does not require any batteries, flints or outside electric supply. The air inlet and its plastic stabilizer needs to be positioned in the most exposed position possible by swinging the inlet trunking around. The flame may be extinguished if the air inlet is in a wind depression zone, i.e. sheltered by floor bearers or chassis, wheels or axle, etc. An extension (Code AIX) is available to lower it and this may be advantageous in some caravans with deeper than normal floor bearers/chassis/water tanks etc.

Servicing

We strongly recommend that these heaters, like other gas appliances, receive an annual safety check from an approved agent. (See Carver UK stockist list). This booklet will help to solve any minor problems.

FAULT FINDING CHART

Symptoms		Cause	Cure
will not light.	Spark visible.	No gas.	Check bottle and taps.
		Bottle temperature too low.	See gas supply notes.
		Regulator malfunction.	See gas supply notes.
		Over gassed.	Turn off. Wait 2 mins. refer to lighting instructions.
	No spark visible.	HT Lead broken.	Check
		HT Lead shorting to earth.	Check and insulate.
Piezo failure.		Seek service attention.	
lights.	Goes out when knob is released.	Knob released to soon or not fully depressed.	See to lighting instructions.
		Thermocouple or valve failure.	Seek service attention.
	Goes out after a short time.	Bottle temperature too low.	See gas supply notes.
		Inlet or exhaust partly blocked.	Check and clear.
		Wind problems.	See general description.
		Thermostat bypass blocked.	Seek service attention.

GAS SUPPLY NOTES

L.P.G. is short for Liquified Petroleum Gas, the 2 gases in common use being Butane and Propane. Calor, Shell and Camping Gaz are proprietary names. In all cases the bottle contents are in liquid form under pressure from the gas above it, and the pressure is only dependent on the type of L.P.G. and its temperature. When gas is supplied the pressure in the bottle is slightly reduced and liquid "boils" off to restore the balance. This action cools the liquid and the bottle, and condensation or even frost may sometimes be observed on the outside of the bottle. The bottle when in use is always cooler than the surrounding air so allow plenty of circulation in cool weather and do not cover the bottle with a "cozy". If in difficulties bring the bottle into a warm room but never put in front of a fire.

Butane

Butane is supplied in the U.K. in Green, Blue or Aluminium bottles. These have a male left hand threaded connection except for Camping Gaz which has a special female right hand thread and the Calor aluminium and 32lb bottles which have a special clip-on connection. Most continental bottles have a male left hand thread similar to but not identical with U.K. butane.

Butane ceases to gas off effectively at about 1 °C (34 °F) and as drawing off the gas cools the contents it is unsuitable for caravan use in temperatures under 2 °C (35 °F).

Propane

Propane is supplied in Red, or partly red bottles which have a female left hand threaded connector. This same connection is used in Scandinavian countries, but in Germany or Austria propane is supplied in bottles with a male connector.

Propane continues to "gas off" down to -40 °C (-40 °F) and is therefore suitable for all winter caravanning.

The regulator

The regulator is a governing device which reduces the internal bottle pressure to one that will suit the equipment in the van. This pressure is usually expressed in millibars (mbar). The usual pressures in U.K. are 28 mbar (11 inches water gauge) for butane and 37 mbar (14 inches water gauge) for propane. These are the pressures that will support columns of water 285 mm and 377 mm high. Carver Trumatic equipment designed to burn butane at 28 mbar will work equally well on propane at 37 mbar.

Warning

Some industrial L.P.G. appliances operate at high pressure and require a "high pressure" regulator. This often has an adjusting handle on it. Under NO circumstances should such a regulator be used on caravan applications.

SERVICING OF CARVER CARAVAN APPLIANCES.

We strongly recommend that CARVER gas appliances receive an Annual Safety Check, provided FREE by Approved Stockists. (Roof flued Space heaters should be inspected at least once a year)

INSTALLATION

The installation of CARVER gas appliances should not be undertaken without reference to the relevant Fitting Instruction Leaflet, as produced by CARVER & Co.

If you have any queries regarding servicing or installation, contact your nearest CARVER Approved Stockist.

GUARANTEE

CARVER PRODUCTS ARE FULLY GUARANTEED FOR A PERIOD OF 12 MONTHS FROM DATE OF PURCHASE AGAINST FAULTY WORKMANSHIP OR MATERIALS.

WE WILL REPAIR OR REPLACE ANY SUCH FAULTY ITEMS "FREE OF CHARGE" PROVIDED THEY HAVE BEEN INSTALLED AND USED IN ACCORDANCE WITH OUR INSTRUCTIONS.

THIS GUARANTEE APPLIES ONLY TO THE UNITED KINGDOM.

ACCEPTANCE OF THIS GUARANTEE DOES NOT IN ANY WAY DIMINISH ANY RIGHTS ENJOYED UNDER THE SALE OF GOODS ACT, 1979

NOTE: THE CUSTOMER MUST WHEREVER PRACTICAL, RETURN THE PRODUCT TO THE CARVER STOCKIST FROM WHOM IT WAS PURCHASED. IN SPECIAL CIRCUMSTANCES HOWEVER IT MAY BE TAKEN TO ANOTHER CARVER STOCKIST FOR ACTION.

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