Magoui

ARCADIA, UTOPIA, UTOPIA Series 2 & GRAND UTOPIA SOLID-FUEL HEATERS



INSTALLING AND OPERATING INSTRUCTIONS 585877

THIS BOOK CONTAINS IMPORTANT INFORMATION. PLEASE KEEP IT IN A SAFE PLACE FOR FUTURE REFERENCE.

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INTRODUCTION

In the interests of your safety, most building regulatory Authorities in Australia and New Zealand require any solid fuelled heater installation to comply with the relevant Safety Standard. In Australia, that Standard is AS 2918-1990, while in New Zealand the Standard is NZS 7421-1990. They may also have local requirements in addition to those in the Standard so you should approach your local Building Authority before commencing installation to establish whether you will require a Permit and whether you will need to meet extra requirements. MASPORT radiant heaters have been tested to ensure that they will meet the appropriate safety Standard requirements if the instructions in this book are followed.

PLEASE ENSURE THAT ONLY COMPONENTS APPROVED BY MASPORT ARE USED FOR THE INSTALLATION, as substitutes may adversely affect performance and might nullify compliance with the requirements of your Standard.

This recommendation is endorsed by Australian Standard 3869 - 1991, which states:-WARNING: THE APPLIANCE AND FLUE SHALL BE INSTALLED IN ACCORDANCE WITH AS 2918 AND THE APPROPRIATE REQUIREMENTS OF THE LOCAL BUILDING REGULATORY AUTHORITY. CAUTION: MIXING OF APPLIANCE OR FLUE SYSTEM COMPONENTS FROM DIFFERENT SOURCES OR MODIFYING THE DIMENSIONAL SPECIFICATION OF COMPONENTS MAY RESULT IN HAZARDOUS CONDITIONS. WHERE SUCH ACTION IS CONSIDERED, THE MANUFACTURER SHOULD BE CONSULTED IN THE FIRST INSTANCE.

WE RECOMMEND THAT THE INSTALLATION OF YOUR MASPORT HEATER BE CARRIED OUT BY A SUITABLY QUALIFIED SPECIALIST INSTALLER.

CAUTION. SURFACES ON RADIANT HEATERS CAN BECOME VERY HOT. IF CHILDREN OR ELDERLY AND INFIRM PERSONS MIGHT ACCIDENTALLY TOUCH THE HEATER WHILE IT IS OPERATING, WE RECOMMEND THE INSTALLATION OF SUITABLE PROTECTIVE GUARDING.

UNPACKING

After removal of the shipping carton, open the door and take out all loose components.

<u>ASSEMBLY</u>

Using the shipping carton to prevent possible paint damage to the floor or floor coverings, roll the heater gently onto its back. USING THE BOLTS PROVIDED (<u>NOT</u> THE SHIPPING BOLTS — THESE CAN DAMAGE THE BASE CASTING), bolt the four legs onto the base of the heater, making sure to fit the bottom heat shield directly under the heads of the leg bolts. the heat shield is slightly concave and this side should face the heater base. Fitting this shield is essential if overheating of the floor below the heater is to be avoided.

If extensions to the top of the Utopia (warming shelves) are being fitted, it will be convenient to do this now. The extensions are each attached by a support bracket with four screw holes. Attach the bracket to the underside of the top casting with two screws, ensuring that the bracket support leg touches the side of the stove. Fit screws through the other two holes of the bracket into the bottom of the extension. Note that the extensions are right and left handed. When fitted correctly, the straight back edge of the extension should align with the back edge of the top of the heater, and the extension should fit snugly against the top casting.

Raise the heater into its upright position, again taking care not to damage the floor.

Before fitting the firebox ceiling baffle, first locate the four support lugs which will support it near the top of the firebox. Insert the baffle into the firebox, ensuring that the curved centre section is at the rear and is facing downwards. Tilt the baffle to about 45• with its front edge horizontal and uppermost. Keeping it in this orientation, lift it until its top edge passes *behind* the two front support lugs and then move it upwards and toward you until the baffle is resting on the two front lugs. Then swing the baffle up at the rear until it can slide backward to rest on top of the rear lugs. When correctly fitted, the baffle will sit at a 20• slope and its rear edge will fit against the rear of the firebox.

The top part of the rear heat shield is shipped upside down inside the top end of the main section of the rear heat shield. Remove the two screws holding it, rotate it 180° , and re-fit the screws.

If it is intended to use the top flue exit, fit the flue socket to the top of the heater using the three screws provided. If the rear outlet is to be used, remove the four screws holding the rear heat shield assembly, take off the blanking plate covering the rear flue outlet and fit the flue socket instead. The blanking plate should then be fitted to the top of the heater. Carefully remove the 'knock-out' in the rear heat shield and refit the shield.

Fit the fuel retaining plate vertically inside the bottom of the door opening with the angled edge facing away from the firebox at the top.

POSITIONING YOUR HEATER

The heater must not be installed under a heat sensitive ceiling of less than normal height (approx. 2.4 metres). No wall or other immovable object may be closer to the front of the heater than one metre. The heater may be installed in front of, or partially into a fireplace which has a suitable heat resistant surround, but any heat sensitive material (such as a mantel-piece) which protrudes from the face of the fireplace surround will need to be completely shielded. This shielding is best provided by a sheet metal panel held 12mm from the face to be protected on heat resistant spacers. The inner edge of the shield must abut the face of the fireplace surround and the outer edge and ends must have an unobstructed 10mm gap to allow cooling air circulation. Floor protection, to the extent shown below, must be provided either by the existing hearth or by an extension to it. Any extension must be securely fixed and must fit snugly against the hearth so that there is no gap which might allow a small ember to reach the floor beneath. (See INSTALLING THE FLUE for the flue requirements for a fireplace installation)

Finalise the installation position for your woodfire only after considering the necessary heater-to-wall distances (see below) and checking the practicability of installing the flue system through the ceiling and roof or wall. As a guide, the flue shielding and the 25mm clearance gap around it in the ceiling space will occupy a diameter of approximately 300mm, and this must be available without the removal of structural beams.

If a 'through-the-wall' flue system is contemplated, consult AS 2918 or NZS 7421 for the appropriate wall constructional requirements and verify that these will be feasible for your existing wall structure.



MINIMUM DISTANCES (mm) TO HEAT SENSITIVE WALLS WHEN THE REAR SHIELD AND A FLUE HEAT SHIELD ARE FITTED

		А	В	С	D	Е	F
Australia	Arcadia	200	575	350	838	450	700
	Utopia Ser. 2	300#	500*	455#	808	350*§	650§
New Zealand	Arcadia	300	512	450	775	350	600
	Utopia	345	642*	500	950	350*	650
See next page for recommended Australian flue options							

Reduce by 50mm if the flue heat deflector is polished stainless steel.

* These dimensions are measured from the edge of any side-fitted warming shelf. In this case, dimensions **D** and **F** will increase accordingly.

§ Increase by 50mm if no flue heat deflector is fitted.

RECOMMENDED FLUES FOR AUSTRALIA

ARCADIA: Floate Metal - Flomet 5" Super Single with 180• polished stainless steel flue heat shield.

Shamic 1A with 900mm 180• polished stainless steel flue heat shield.

UTOPIA Ser 2: Acorn Metal Products - Special Insulated kit with 900mm 120• polished reflector and 425 dia. ceiling plate.

Floate Metal - Flomet Super Single with full length decorative heat shield with 120• solid back.

Statewide Heating - Model M1 with 900mm enamelled flue shield.

Woodland Fireplaces - Woodland Standard Flat Ceiling Plate flue kit with 900mm enamelled flue shield.

WALL SHIELDING

The minimum distances between the heater and heat sensitive walls, (shown in the Table on page 4), may be reduced significantly by fitting suitable heat shield(s) on the adjacent wall(s). Shields must be made of heat resistant material (such as Harditherm or Supalux) and they must be mounted on the wall on non-combustible spacers arranged to not obstruct the vertical flow of cooling air behind them. Shields mounted against the wall are virtually useless.

Ventilation slots must be provided at the top and bottom of each shield, each slot having a cross-sectional area not less than half the width of the shield multiplied by the spacing depth. The slots should, as far as possible, extend across the full width of the shield.

EXAMPLE: A 1200mm wide shield spaced 25mm from the wall must have ventilation slots, top and bottom, each of an area not less than $600 \times 25 \text{ mm}^2$, i.e. $15,000 \text{mm}^2$. So if the effective length of each slot is 1m, it will need to be 15mm wide

Three types of shield are recommended:-

Туре	Layers	Spacing	Clearance Factor
Α	One	12mm	0.4 *
В	One	25mm	0.3 *
С	Two	12 & 12mm	0.2 *

* Valid only for shields within 45• of vertical.

To find the reduced minimum distances, multiply the figures in columns A, B and E (from the Table on page 4) by the appropriate clearance factor.

EXAMPLE: An Arcadia in New Zealand, mounted parallel to the wall, has a normal minimum rear clearance of 300mm and a side clearance of 512mm. The reduced minimum clearances for type A shielding would be 300×0.4 (120mm) at the rear, and 512×0.4 (205mm) at the side.

NOTE: The original heater shields and flue heat shield must still be fitted to the heater when the above factors are used.

WALL SHIELD SIZES

Shields must extend at least 600mm each side of the heater centreline on side and rear walls, or in the case of a corner installation, 1200mm each way from the corner. They must be at least 1200mm high (measured from the hearth top).

Because the reduced wall clearances will bring the flue close to the rear wall, (in the case of a parallel installation), it will be necessary to extend the wall shield upwards to protect the wall for at least 300mm each side of the flue centreline. The extended rear wall shield will, of course, finish just clear of the ceiling to provide the top ventilation slot described above.

WALL SHIELD FINISHES

Because the outer surface of the wall shield will become quite hot, any surface finish must not be heat sensitive. Possibilities are high temperature paints or cladding with ceramic tiles, slate etc.

HEARTH REQUIREMENTS

Unless your heater will be standing on an un-covered fireproof floor which extends at least as far as the minimum hearth areas shown below, it will be necessary to provide a hearth for floor protection. See page 8 for construction details.

Having decided exactly where your heater will be installed, you will be able to establish the size of hearth you will need. Where the minimum requirements bring the edge of the hearth nearly to a wall, it is better to extend the hearth to meet the wall. In fact it is sensible to increase all dimensions by moving up to the next available standard hearth size so that precise positioning of the heater on the hearth will not be needed.



MINIMUM HEARTH EXTENSIONS (mm) WHEN THE REAR HEAT SHIELD IS FITTED

		W	В	С	D	G	Н	J
Australia	Arcadia	855	635	300	165	150	335	525
	Utopia	855	730	300	120	155	430	615
New Zealand (hearth flush)	Arcadia	1075	760	425	275	150	335	525
	Utopia	1165	980	550	275	155	430	615
New Zealand (hearth 50mm high)	Arcadia	975	680	345	225	150	335	525
	Utopia	1065	900	470	225	155	430	615

¥ Note. The hearth protecting a heat sensitive floor must extend behind the heater by at least the following distances (measured from the rear heat shield):-

	Arcadia	Utopia
Australia	200mm	100mm
New Zealand	325mm (or to the wall if closer)	100mm

Usually a neater installation will result if the hearth extends right up to the rear wall, but take care not to obstruct air flow into the lower ventilating slot of any wall shields that may be fitted.

CORNER HEARTHS

While the information in the previous section details the MINIMUM size of hearth necessary to comply with the Safety Standards, it may be desirable to use a larger hearth for æsthetic considerations. A particular example is when the heater is installed diagonally in a corner. A neater appearance will result if the hearth is carried right into the corner and is shaped as shown below. The chart facilitates calculation of the MINIMUM dimensions required for hearths of this shape. The minimum allowable values for dimension 'E' are given in the tables on page 4.



NOTE: YOUR SPECIFIC MEASUREMENT FOR '**E**' MUST BE ADDED TO '**X**' AND '**Y**' TO FIND THE APPROPRIATE MINIMUM HEARTH DIMENSIONS.

SEE PAGE 4 FOR MINIMUM VALUES OF ' \mathbf{E} '.

HEARTH CONSTRUCTION

In Australia the minimum hearth construction requirement is a 6mm fibre cement sheet. It is usually fastened directly to the floor.

In New Zealand, the hearth will need the insulating qualities provided by two layers of MICORE 160 (each 16mm thick), or one layer of WOODTEX (35mm thick). Both these materials give adequate protection for solid timber or particle board flooring. Alternatively, a reinforced concrete slab at least 50mm thick raised up from the floor on

insulating blocks to allow air to circulate beneath may be used. There must be at least a 12mm high gap unobstructed along at least two thirds of each side, and care must be taken to ensure that this amount of space will not be encroached on by laying carpet etc. To be safe, a 25mm high gap is recommended. If preferred, instead of having a gap under the concrete slab, it may be poured on top of two sheets of Micore 160 lying directly on the floor. If cast in place, an impermeable sheet must be laid on top of the Micore to prevent water damage from the concrete mix. Constructions which are NOT suitable as insulating hearths are bricks and concrete when they are in contact with heat sensitive flooring material.

In all cases, in both countries, a durable top surface will be needed to resist damage from dropped embers. Obvious choices are slate, bricks and ceramic tiles. Gaps in the top surfacing material must be grouted to prevent embers from penetrating. A trim moulding will provide a neat edge finish.



Recommended hearth constructions are:-

FITTING A WATER COIL

Water heating coils can be fitted to Arcadia and Utopia heaters. The pipe attachment positions are shown below.



All plumbing work must meet the requirements of local Building Codes. Pipe connections are 1" BSP. Special piping methods must be followed to ensure effective circulation, and the hot water cylinder will need to have an internal riser pipe to two thirds of the cylinder height to discourage unwanted water circulation through the piping system when the heater is not burning. This internal riser pipe must be connected to the return pipe from the heater.

Piping instructions are included with the kit. Two safety requirements must be stressed.

THERE MUST BE NO NON-RETURN OR SHUT-OFF VALVES IN THE PIPES BETWEEN THE HEATER AND THE STORAGE CYLINDER.

A HEATER FITTED WITH A WATER HEATING BOOSTER MUST NOT BE FIRED UNLESS IT IS CONNECTED TO A VENTED STORAGE CYLINDER FILLED WITH WATER FREE TO CIRCULATE.

INSTALLING THE FLUE

FREE-STANDING FLUES

You MUST use a flue system which is approved by MASPORT and which complies with AS 2918 - 1990 or NZS - 7421 1990 as appropriate. The flues and flue heat shields recommended in Australia are detailed in the table on page 4. In Australia, a 900mm 180• stainless steel flue heat shield must be fitted unless all heat sensitive material is at least 500mm away from the flue surface.

In New Zealand we recommend the use of genuine MASPORT flue kits. The flue MUST be installed in accordance with the detailed instructions accompanying it. A polished 150• stainless steel heat deflector, 1200mm long must be fitted at the back of the flue, directly above the stove.

Detailed dimensional requirements for the flue installation are included with every MASPORT approved flue system. The flue must be secured to the flue collar to prevent accidental separation.

Flue installations other than strictly vertical ones are possible. See AS 2918 or NZS 7421 for information on flues passing through walls and eaves.

WHEN THE FLUE IS IN A CHIMNEY (See page eight for rear flue collar height)

For a safe installation the following matters must be attended to.

- The fireplace and chimney must be thoroughly cleaned and checked for soundness.
- The chimney must not connect to a second fireplace.

• The joint between the chimney face and the fireplace surround must be checked and sealed to prevent leakage if necessary.

• Where the fireplace is in a heat sensitive wall it must have a non-metallic heat resistant surround extending at least 600mm each side of the recess centreline and up to at least 1000mm above the base of the fireplace recess.

• In New Zealand, the fireplace and chimney must comply with all the requirements of NZS 1900 Chapter 7 - 1985, except that the specified separation between the outside of the chimney and timber construction need not be complied with.

• A flue pipe must be fitted right up the chimney, and the space between the flue pipe and chimney must be ventilated at the top. In Australia the area of this vent must be not less than 10,000mm², while in New Zealand it is 13,000mm². The vent must be fitted with means to prevent significant ingress of water and debris.

• We recommend fitting a horizontal register plate at the lower end of the chimney to minimise room heat loss. The register plate should provide the same area of ventilation as at the top of the chimney.

• Provision must be made to support the weight of the flue and to permit the free expansion of the flue pipe when it heats up.

• The flue must be secured to the flue collar to prevent accidental separation.

MANTEL-SHELF SHIELDING

When the heater is installed in front of a fireplace, any heat sensitive material (such as a mantel-piece) which protrudes from the face of the fireplace surround will need to be completely shielded. This shielding is best provided by a sheet metal panel fastened 12mm from the face to be protected on heat resistant spacers. The inner edge of the shield must abut the face of the fireplace surround and the outer edge and ends must have an unobstructed 10mm gap to allow cooling air circulation.

FIXING THE HEATER IN POSITION

Once the flue system has been installed, the heater can be placed in position on the hearth. Confirm that the flue is correctly aligned and that the necessary minimum heater clearances are being achieved. In New Zealand, NZS 7421 requires that the heater and hearth be secured to prevent shifting in the event of an earthquake. This is best done by fastening to the floor through the holes provided in the feet, using at least two 12 gauge screws (on diagonally opposite feet) or the equivalent sizes of coach bolts or spring toggle fasteners.

OPERATING INSTRUCTIONS

BASIC INFORMATION

DOOR HANDLE Arcadia: Swing the door open and shut with the handle in the 3 o'clock position. Latch the door shut by pushing in on the handle and turning it toward the 6 o'clock position.

Utopia: This model has twin doors with a central latching system. To keep the handle cool it is detachable, and it should be engaged with the latching system only when opening or closing the doors. The doors are opened and closed with the handle in the 1 o'clock position. Turn the handle fully clockwise (to about the 6 o'clock position) to latch the doors shut. Use the loose handle to swing the left hand door into position for latching. Do not touch the doors by hand as they can be very hot.

<u>HEAT OUTPUT CONTROLS</u> Two types of air control are provided — the upper air control and the twin lower air vents in the door. Opening the lower vents (two turns anti-clockwise) for a few minutes when loading wood fuel will assist rapid ignition. The lower vents should then be closed unless maximum heat output is required. The upper air control moves toward the right to increase the heat output and toward the left to decrease it. A high fire can be shut down rapidly only by starving it of air, and this can result in undesirable emissions. For this reason, Masport heaters are designed to settle down to lower heat outputs comparatively slowly.

<u>EXTENDED BURN TIMES</u> To obtain maximum burn times a generous quantity of wood should be banked up on top of a healthy ember bed and allowed a few minutes to achieve ignition. All air controls should then be closed. Hardwoods will always give longer burn times than softwoods.

ESSENTIAL ADVICE

• Correct installation, the use of only DRY wood and adherence to the following instructions will ensure satisfactory performance. The use of wood with greater than 25% moisture is not permitted.

• MAKE SURE THE MINIMUM HEATER-TO-WALL DISTANCES SHOWN ON PAGE 4 ARE ALWAYS MAINTAINED BETWEEN THE HEATER AND ANY HEAT SENSITIVE MATERIAL SUCH AS FURNITURE, WINDOW DRAPES, FUEL ETC.

• DO NOT ATTEMPT TO BURN LIQUID FUELS OF ANY KIND.

LIGHTING UP

Before lighting the first fire, spread the sand provided over the floor of the firebox evenly. This applies equally to woodburners and coal-type burners. Subsequently, always leave sand or ash to the level of the tops of the floor ribs.

Slide the upper air control fully to the hot position (the right). The two lower air vents in the door may be opened two turns to assist rapid ignition.

Crumple up several double sheets of newspaper and place them in the centre of the firebox or the grate. Build a pyramid of thin, dry kindling wood on the paper with some heavier pieces on top. Light the paper at the bottom and leave the door slightly ajar until the kindling has 'caught', then latch the door shut.

<u>WARNING</u>: DO NOT USE ANY FLAMMABLE LIQUID SUCH AS PETROL, KEROSENE, OIL ETC. TO START OR REKINDLE THE FIRE.

When the kindling is well alight, open the door slowly and add some larger pieces of wood. Close and latch the door. Once these are properly alight, the final fuel can be carefully laid on the fire-bed.

Move the heat output controls away from the maximum settings only after the fire is well established. We recommend running at full heat for 30 minutes after lighting. The controls can then be set wherever desired. If maximum heat output is not required, close the two lower air vents. Until the heater has been run for a total of 8 hours, it should not be operated at more than half heat output from thirty minutes after light-up.

The special high temperature paint on the firebox will emit some smoke as it cures during the first hour or so of running. This is quite normal.

OPERATING HINTS FOR CLEAN BURNING AND BEST EFFICIENCY

• Use only dry fuel. Wood should be air dried in a sheltered stack, preferably for at least 12 months. If moist fuel must be used, add it only to a really hot fire, mixing it with a large proportion of dry fuel.

• Add fuel reasonably often. A large fuel load placed on a dying fire can drop combustion temperatures undesirably.

• Do not burn driftwood or chemically treated wood, as salt will corrode the woodfire and chemicals can create poisonous gases and leave toxic ash.

• Move the heat controls to maximum for a minute or so before opening the door on a low burning fire. This will clear away any fumes in the firebox.

• Always open the door SLOWLY, and close and latch it shut securely again as soon as possible after re-loading.

• When loading wood fuel, first place several pieces in a front-to-back direction, loading upper layers crosswise on top of them to give good air access to the fuel bed.

• Avoid large smouldering fires. A small intense fire is more efficient.

REMEMBER, FOR THE FIRE TO DRAW PROPERLY, AIR MUST BE ABLE TO ENTER THE ROOM WHERE YOUR HEATER IS INSTALLED. YOU MAY HAVE TO LEAVE A DOOR SLIGHTLY OPEN AND PERHAPS A WINDOW ELSEWHERE IN THE HOUSE IF YOUR HOME IS OF MODERN AIRTIGHT CONSTRUCTION. LEAVING THE DOOR OPEN WILL HELP SPREAD WARMTH THROUGH THE REST OF YOUR HOME.

SAFETY

• Always keep children well away from the heater when it is alight as surfaces on radiant heaters can become very hot. If children or aged and infirm persons might accidentally touch the heater while it is operating, we recommend the installation of a suitable protective guard.

• Do not put furniture, clothing, firewood or other combustibles near the heater. The minimum safe distance is 600mm from the sides and 1 metre from the front.



• Do not leave the heater unattended with the door open.

• Accidental fires can be caused by wrapping seemingly cold ashes in paper. It is much safer to place ashes outside in a metal container with a close fitting lid.

• If a fire is burning up inside the flue, close all the heat output controls and call the Fire Service. DO NOT OPEN THE HEATER DOOR.

• If you have had a flue fire, inspect your flue for damage before lighting another fire.

• Do not modify your heater in any way without obtaining written permission from the Manufacturers.

• Do not use the heater if the glass is broken. Replace it only with the correct ceramic glass, available from your MASPORT dealer.

MAINTENANCE

ASH REMOVAL

Simply shovel out any excess ash, always leaving a bed of sand or ash to the tops of the ribs. This is more easily done by lifting out the fuel retaining plate just inside the bottom of the door opening. Beware of glowing embers which may be buried in the ash. They can remain alight for many hours.

CLEANING THE GLASS

A good hot fire will generally burn away any deposits left from a long slow burn. If desired, a proprietary oven cleaner can be used.

CLEANING THE FLUE

This should be needed about once a year or more frequently under adverse conditions. Signs of creosote and soot build-up are inadequate draught, smoking when the door is opened and a dull thud when the outside of the flue is tapped. A blocked flue can be cleaned only by sweeping. DO NOT USE CHEMICAL CHIMNEY CLEANERS. To facilitate flue cleaning, the firebox ceiling baffle should be lifted out. See ASSEMBLY (page 3) for instructions on re-fitting the baffle correctly.

CLEANING THE HEATER

Usually a wipe with a damp cloth is all that is needed. If, after long service, it is felt desirable to freshen up the appearance of the heater, special black high temperature paint is available in aerosol cans from your Masport Dealer.

FLUE INSPECTION

Check regularly that the flue is sound.

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