



Add-in Boiler Instructions

| Add in Boiler Part Number | Style | Output to Water | BTU |
|---------------------------|------------|-----------------|-------|
| AIB0 | Slab | 1.8kW | 6145 |
| AIB1 | Slab | 2.9kW | 9901 |
| AIB2 | Cantilever | 4.6kW | 15704 |
| AIB3 | Slab | 3.3kW | 11266 |
| AIB4 | Cantilever | 6.1kW | 20825 |
| AIB5 | Slab | 4.2kW | 14339 |
| AIB6 | Cantilever | 9.0kW | 30726 |
| AIB7 | Slab | 1.2kW | 4097 |
| AIB8 | Slab | 2.0kW | 6828 |
| AIB9 | Slab | 2.6kW | 8876 |
| AIB10 | Slab | 3.4kW | 11607 |
| AIB11 | Slab | 1.7kW | 5803 |
| AIB12 | Slab | 1.3kW | 4438 |
| AIB13 | Slab | 3.0kW | 10242 |
| AIB014 | Slab | 3.4kW | 11607 |
| AIBV001 | Slab | 4.7kW | 16046 |
| AIBV007 | Cantilever | 3.4kW | 11607 |
| AIBV008 | Slab | 3.7kW | 12632 |
| AIBV009 | Cantilever | 4.6kW | 15704 |
| AIBV016 | Slab | 2.9kW | 9900 |
| AIBV017 | Slab | 3.4kW | 11607 |
| AIBV018 | Slab | 1.6kW | 5462 |
| AIBV019 | Slab | 1.6kW | 5462 |

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MADE IN BRITAIN

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Should you have any questions about our products that are not covered by this manual, please contact the Arada retailer in your area, or call our technical support department on +44 (0)8448 567181

Safety Notice

All installation work regarding the installation of this add-in boiler, should be referenced to BS 5449-Code Of Practice For Central Heating For Domestic Premises & BS 1556 Copper Indirect Cylinders For Domestic Purposes. This accessory should only be fitted by a qualified heating engineer, such as a HETAS registered engineer.

Heating System

The size of the heating system that can be run will depend on the output rating of the appliance.

It will be necessary to work out the heat loss calculations for the system proposed in order to establish the kW/Hr rating. An appliance that will meet this figure can then be chosen.

The constructional requirements of installing and connecting the appliance also need to be taken into account when selecting. Design calculations for individual heating systems should be carried out by a qualified heating engineer, such as a HETAS registered engineer. In many cases your supplier will be able to offer advice and help.

Direct Systems

Stainless steel boilers, that are retro-fitted as add-in boilers, enable connection to direct systems to be made without the need to change the cylinder or to fit an expansion tank.

This applies to domestic water supply only **and should not be done when in an area with soft water**. If radiators are used then an indirect system must be used.

To connect the indirect hot water cylinder use 28mm copper pipes. Ensure that the pipes rise continuously to the cylinder.

Ensure that runs are not too long, i.e. 6 metres maximum each for flow and return. Install the

cylinder above the level of the fire, and as close to it as possible (within reason the higher the cylinder the faster the circulation). Ensure no valves are present in the pipes.

Indirect Systems

The Domestic Hot Water Circuit

In addition to providing hot water to the primary circuit it is essential to provide a 'Heat Leak' radiator to absorb excessive heat produced in the event of the circulating pump shutting down.

Heat is produced in varying quantities while the stove is alight and care must be taken to ensure that effective circulation can occur around the primary circuit to carry the heat away and thus prevent boiling of the system.

The output of any radiator installed as a 'Heat Leak' should not be less than 10% of the rated output of the appliance to which it is connected.

The radiator should not be fitted with a control valve as it should never be turned off or down. The hot water cylinder must be indirect with a minimum capacity of 110 litres, conforming to BS 1566 Part 1.

Primary flow and return pipes should be 28mm in diameter. The cylinder should be installed at a higher level than the appliance and as close to it as possible. The flow and return pipes should not be longer than 6 metres each and should rise

continually from the boiler to the cylinder.

A radiator of approximately 2m² surface area should be connected into the primary circuit. If installed in the bathroom it provides a means of drying towels.

Safety Vent Circuit

This circuit consists of a cold feed pipe, a separate expansion pipe, and expansion tank. The possibility that water in the stove boiler may boil can never be completely ruled out and it is therefore vital to ensure that cold water can be provided to the boiler and steam vented from it at all times.

The expansion tank should have a capacity of at least 7% of the systems total water capacity. The cold water feed pipe should be at least 22mm in diameter.

There must not be any shut-off valves in the circuit. Pipes should be run so as to avoid air locks. A safety relief valve should be fitted into the expansion pipe close to the boiler. The expansion pipe should not be branched off from the cold water feed pipe to ensure it cannot be blocked by any settlement matter originating from the expansion tank

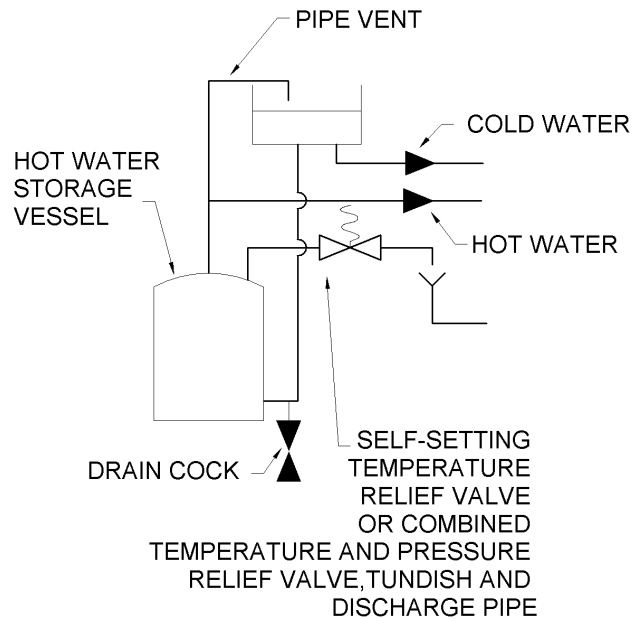
It is often possible and good practise to utilise the primary flow and return as part of the safety circuit. The ball valve should be copper, the overflow pipe from the expansion tank should be 28mm diameter copper. All pipes in unheated spaces must be lagged.

Temperature and Pressure Relief Valve

With solid fuel appliances it is not practical to provide a sufficiently rapid reaction for shutting down the fuel in the event of a sudden rise in water temperature. A temperature valve or preferably, a combined temperature and pressure relief valve should be installed to operate in the event of high water temperatures occurring.

Please see diagram in the top right corner of this page.

As the water connections are on the back of the stove, make sure you have enough room to connect onto the boiler terminals, the boiler terminals are **1" BSP parallel threads (female)**.

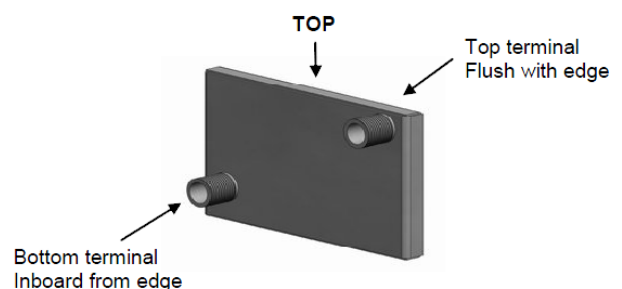


Fitting the Add-In Boiler

Boilers can either be Slab or Cantilever style depending on the stove model. Typically the Slab add-in boiler occupies the position of the rear firebox liners, and in the case of the Cantilever style, the rear liners and throat plate are replaced by the boiler.

Fitting:

- Remove the fuel retainer bars for ease of access.
- Remove the throat plate and the rear firebox liner panel(s).
- Knock out the blanking discs in the back panel of the stove, corresponding to the terminal on the boiler.
- For Villager stove models AH/AL, BH/BL (20,000 BTU output only) Flatmate, Bromley/Berkley bend or knock out the throat plate retaining lugs in the top and/or back of the stove as these are no longer required and will interfere with the positioning of the boiler.
- Introduce the boiler to the appliance through the door aperture and locate the terminal pipes through the back plate holes, and seal around the boiler terminals with fire cement.



- Engage the locking nuts on the thread of the terminals and tighten to secure the boiler in position, ready for the connection of the flow and return pipe.

- Replace the throat plate on the Slab boiler model, together with the fuel retaining bars.

Note: On boilers the terminal which is approximately flush with the edge of the boiler and marked 'TOP' must be fitted uppermost, to prevent 'Kettling' or internal damage to the boiler.

Hot Water System

Before handing over the installation to the customer it is strongly recommended that the appliance is lit and the functioning of the chimney, hot water and heating system is checked.

Please follow Pre-Lighting checks listed below.

- Operate the heating system and set the pump head.
- Balance the radiators.
- Re-vent and ensure there are no air locks .
- Check the circulation around the primary system and the heat leak radiator.
- Be sure that the chimney is operating and that ALL smoke and fumes are vented to the atmosphere through the chimney terminal.
- Check all joints and seals.
- Clean the outside of the appliance to prevent any stains from becoming permanently burnt on.
- Check the flue draught which should read 0.1 to 0.2mbar.

It may be necessary to refer to the installation and operating manual of the appliance the boiler is to be fitted to for familiarisation of the appliance controls.

Important Note:

When an add-in boiler is fitted into a stove you will experience a loss of heat output to the room approximately equivalent to the output rating of the boiler. i.e. a type '0' will in general reduce the nominal heat output to room by approximately 1.8kW during a water heating cycle.

This will be especially noticeably when the stove is first lit, and/or if the hot water demand is high, i.e. if the domestic hot water tank has been drawn down.

Once the domestic hot water heating demand has

reduced the heat output to the room will begin to rise, assuming a constant burn rate.

The stove will generally need to be burned more vigorously to achieve close to the same heat to room output seen prior to the fitting of the add-in boiler. This is quite normal and is not a fault.

If your stove is close to the limit on heat output to room size, it may be worth considering a larger stove before fitting an add-in boiler.

Hot Water System Check list

The following details **MUST** be checked and completed in full by the installer at the time of installation. Please answer all questions as fully as possible. Arada Ltd cannot be held responsible for the flue, chimney or for the stove installation.

| Hot Water Systems | |
|--|----------|
| Is the boiler cross-flowed? | YES / NO |
| Are the pipes correctly sized? | YES / NO |
| What is the calculated output required to heat the system? | |
| Is a heat leak fitted? | YES / NO |
| What is the return water temperature? | |
| Is the pump thermostatically controlled by a pipe stat? | YES /NO |
| What is the height and distance of the hot water tank above the stove? | |

Customer Notification

Do not light the stove if it is suspected that any part of the water system (pipe work, boiler, pump etc.) could be frozen. Serious damage will occur to the heating system.