INSTALLATION & SERVICING INSTRUCTIONS

ATAG

Blauwe Engel

These instructions to be retained by user.

CE PIN 0063AS3538

ATAG

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The appliance should only be installed by a Competent Gas Installer.

1 Introduction

These instructions describe the functioning, installation, use and primary maintenance of ATAG central heating units for United Kingdom and Ireland. Where necessary different regulations of each country are separately described.

These instructions are intended for the use of Corgi registerd installers or registered Bord Gais installers in connection with the installation and putting into operation of ATAG units. It is advisable to read these instructions thoroughly, well in advance of installation. Separate instructions for use are supplied with the unit for users of ATAG central heating units. ATAG is not liable for the consequences of mistakes or shortcomings which have found their way into the installation instructions or user's manual. Further, ATAG reserves the right to alter its products without prior notification.

⚠ **When delivering the unit, give the customer clear instructions concerning its use; present the customer with the user's manual and card.**

Each unit is fitted with an identification plate. Consult the details on this plate to verify whether the unit is compliant with its intended location, e.g.: gas type, power source and exhaust classification.

On completion of the installation the installer or commissioning engineer must fill out and complete the Benchmark commission section of the boiler log book and hand to customer or end user for future record keeping. The Benchmark log book must also be filled out and completed by the service agent following each service call, and returned to the customer. A copy of the Benchmark commissioning certificate must be returned to ATAG Heating UK Ltd along with the warranty registration card to register the appliance for the standard warranty benefits.

2 Regulations

The following regulations apply to installation of ATAG central heating units:

Legislation and Regulations.
Gas Safety (Installation and Use). All gas appliances must by law, be installed by a competent person, eg. Members of CORGI and in accordance with the current Gas Safety Regulation. Failure to install appliance correctly could lead to prosecution.

In addition to the above regulations this appliance must be installed in compliance with the current IEE Regulations, the Building Standards (Scotland Consolidation) Regulations. Regulations and bye laws of the Local Water Authority and the Current Health and Safety Regulation.

Ireland:
- Irish standard 813
- Domestic gas installations

The current, Electricity at Work Regulation must be complied with and also be in accordance with the relevant and current editions of the British Standards.

The ATAG Blauwe Engel boiler is a certified appliance and must not be modified or installed in any way contrary to this Installation Manual.
Manufactures instructions must not be taken in any way as overriding statutory obligations.

The ATAG Blauwe Engel is a central heating unit with an optional integrated hot water function. These units must be connected according to these instructions and all installation norms in respect of the part of the unit to be connected.

Observe the following rules of safety:
- All work on the unit must take place in a dry environment.
- ATAG units may never be in operation without their housing, except in connection with maintenance or adjustments (see Chapter 13 and 14).
- Never allow electrical or electronic components to come into contact with water.

Carry out the following tasks in connection with maintenance, etc. to an already-installed unit:
- Shut down all programmes
- Close the gas tap
- Remove the plug from the wall socket
- Close the stop cock of the unit's intake connection

Take note of the following when maintenance or adjustments are needed:
- The unit must be able to function during these activities; for this reason, the unit's supply voltage, gas pressure and water pressure must be maintained. Ensure that these are not a source of potential danger during these activities.

⚠ **Following maintenance or other activities; always check the installation of all parts through which gas flows (using leak-search spray).**

⚠ **Following maintenance or other activities, always replace the housing and secure it with the screw behind the door at the front of the casing.**

The following (safety) symbols may be encountered in these installation instructions and on the unit:

This symbol indicates that the unit must be stored away from frost.

This symbol indicates that the packaging and/or contents can be damaged as a result of insufficient care taken during transport.

This symbol indicates that, whilst still in its packaging, the unit must be protected from weather conditions during transport and storage.

KEY-symbol. This symbol indicates that assembly or dismantling, must be carried out.

ATTENTION symbol. This symbol indicates that extra attention must be paid in connection with a particular operation.

Danger: High Voltage!

3 Description of the appliance

The ATAG Blauwe Engel S-HR boiler is a room sealed, condensing and modulating central heating boiler, with or without an integrated hot water facility.
The built-in fan sucks the combustion air from outside and provides full premixing of the gas and air. The gas mixture is guided through the ceramic burner which is fitted above the heat exchanger. As a result of the small flame height a compact construction is possible. The combustion gasses are exhausted after passing through the stainless steel heat exchanger. The formed condensate water is discharged through the waste trap.

The boiler has been tested according to valid CE* standards and has a CE* certificate and SEDBUK A-rating.
The operating efficiency of the boiler is higher than 98% (on upper value Hs). As a result of its compact construction the radiation, convection and stand by losses are very low. The emission of damaging substances is far below the standard set for equipment with the gas quality-control label for clean combustion.

The boiler is provided with an automatic venting program. In case of a recently topped up or filled up installation this program takes care of the removal of any present air in the boiler. In this case the control will check the water pressure and if it is to low, will report this on the display.

The boiler anticipates the heat requirement of the central heating installation or the hot water supply. As a result the boiler will adjust its capacity to the installation and will switch on less often, which means that the boiler will operate longer and at a low level. It is possible that the boiler will only have to switch on once an hour. In this case the aim is to obtain maximum comfort and efficiency.

In order to be able to anticipate installation heat emissions the boiler has been fitted with a proportional gradient control system. After the boiler goes into operation this control provides a uniform increase of power, instead of immediately burning at full power. When the installation does require full power the control will adjust as required. By this means a uniform increase of the water temperature is effected.
If an outside sensor is connected, the control will operate weather-dependent. This means that the control measures the outside temperature and the flow water temperature. On the basis of this data the control calculates the optimal flow water temperature in the installation.

The S-HR-T combination boiler provides a hot water supply by means of a high output cylinder fitted on the right hand side of the boiler. An adjustable thermostatic mixing valve is fitted which provides a constant hot water temperature (60°C factory setting).

4 Scope of the supply

The boiler is supplied ready for use. The supply kit is composed as follows:
- Boiler with casing;
- Automatic vent (inside the boiler);
- Safety valve (inside the boiler);
- Suspension bracket
- Filling and draining valve with T-piece;
- Fixing material consisting of plugs and screws;
- Template on the package wrapper;
- Installation instructions
- Operating manual;
- Warranty card;
- Benchmark logbook.

5 Mounting of the boiler

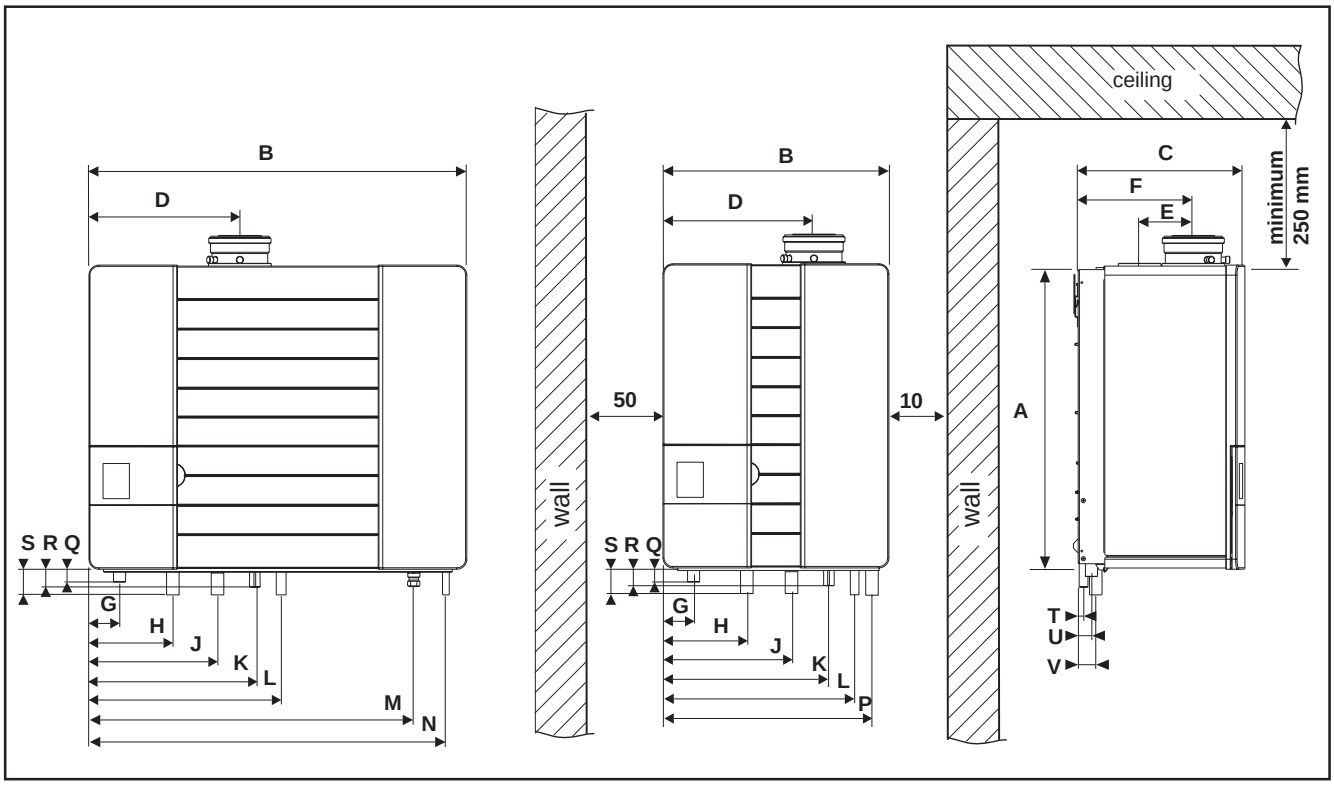
The boiler can be mounted practically to any wall with the suspension bracket and the enclosed fixing equipment. The wall must be flat and of sufficient strength in order to be able to carry the boiler weight.
Above the boiler there must be at least 250 mm working space in order to be able to fit a coaxial flue system or a twin supply. On the left side of the boiler at least 50 mm and on the right side 10 mm must be reserved in connection with fitting or removing of the casing. The location of the boiler can be determined by using the template located inside the boiler packaging.

5.1 Dimensions

	type of unit		S-HR 15	S-HR 24	S-HR 24T	S-HR 35	S-HR 35T	S-HR 51	S-HR 51T	S-HR 60
A	height	mm	680	680	680	680	680	680	680	680
B	width	mm	500	500	840	500	840	660	1000	660
C	depth	mm	370	370	370	370	370	370	370	370
D	left side / flue gas concentric	mm	335	335	335	335	335	495	495	495
E	centre to centre / flue gas exhaust and supply	mm	120	120	120	120	120	120	120	120
F	back / flue gas exhaust	mm	270	270	270	270	270	270	270	270
G	left side / gas pipe	mm	65	65	65	65	65	65	65	65
H	left side / flow pipe	mm	185	185	185	185	185	185	185	185
J	left side / return pipe	mm	285	285	285	285	285	445	445	445
K	left side / condensation pipe	mm	370	370	370	370	370	530	530	530
L	left side / expansion tank pipe	mm			430		430		590	
M	left side / cold water pipe	mm			725		725		885	
N	left side / hot water pipe	mm			795		795		955	
P	left side / return pipe DHW	mm	475	475		475				
Q	pipe lenght of g*	mm	18	18	18	18	18	18	18	18
R	pipe lenght of c and k*	mm	40	40	40	40	40	40	40	40
S	pipe lenght of f; r; e and w*	mm	60	60	60	60	60	60	60	60
T	back / centre of pipe c*	mm	25	25	25	25	25	25	25	25
U	back / centre of pipe g*	mm	40	40	40	40	40	40	40	40
V	back / centre of pipe f;r;e;k;w*	mm	50	50	50	50	50	50	50	50

Dimensions (see figure 2)*

table 1

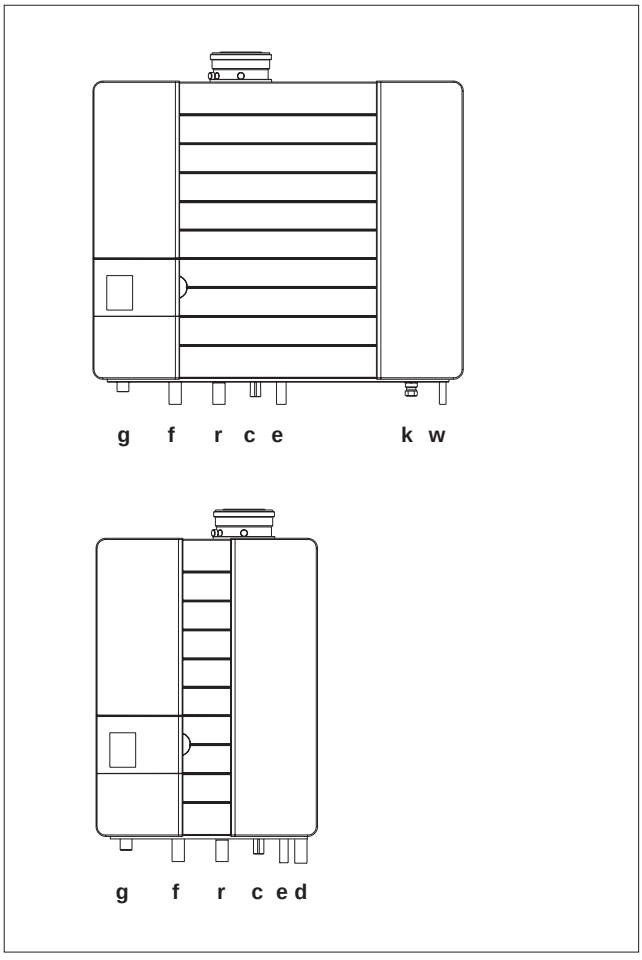


Dimensions (in mm)

figure 1

type of unit		S-HR 15	S-HR 24	S-HR 24T	S-HR 35	S-HR 35T	S-HR 51	S-HR 51T	S-HR 60
combustion air supply/flue gas exhaust	mm	80/125	80/125	80/125	80/125	80/125	80/125	80/125	80/125
gas pipe - g		½" inside	½"inside	½" inside	½" inside	½" inside	¾" inside	¾" inside	¾"inside
central heating flow pipe - f	mm	28	28	28	28	28	35	35	35
central heating return pipe - r	mm	28	28	28	28	28	35	35	35
condensation discharge pipe - c	mm	24	24	24	24	24	24	24	24
expansion vessel pipe - e	mm	22	22		22			22	
cold water pipe - k	mm			15		15		15	
hot water pipe - w	mm			15		15		15	
return pipe DHW - d	mm	28	28		28				

connection diameters table 2



boiler pipes bottom figure 2

6 Connecting the boiler

The boiler has the following connection pipes;

- The central heating pipes.
  These can be connected to the installation by means of compression fittings;
- The gas pipe.
  It is provided with a female thread into which the tail piece of the gas valve can be screwed;
- The condensation drain pipe.
  It consists of an oval 24 mm plastic pipe. The drain pipe can be connected to this by means of an open connection. If the open connection is fitted in a different location, then the pipe can be lengthened by means of a 32 mm PVC sleeve;
- The flue gas exhaust system and air supply system.
  It consists of a concentric connection 80/125 mm.
- Cold and hot water pipes.
  These consist of 15 mm copper pipe and can be connected to the installation by means of compression fittings.

When removing the plastic sealing caps from the pipes, contaminated testing water can be released.

It is advisable to spray-clean all of the unit's connecting pipes and/or to spray-clean/blow-clean the installation before connecting it to the unit.

6.1 Central heating system

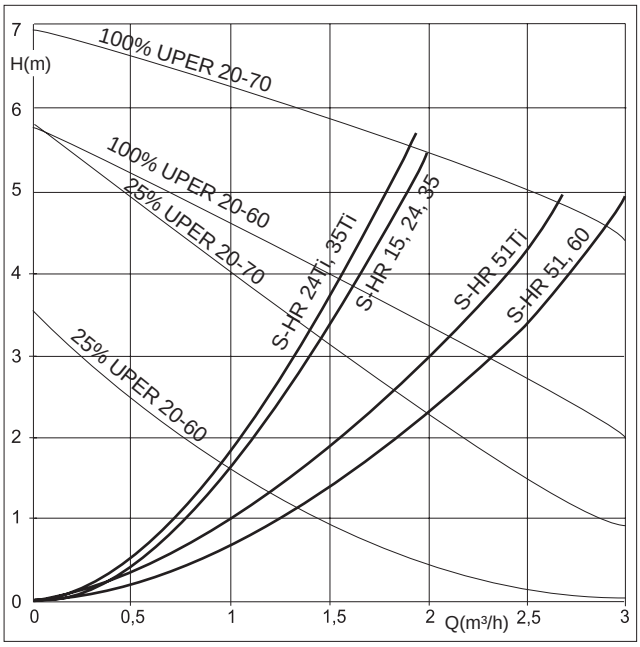
The boiler pipes can be connected to the installation by means of compression fittings. Reducers should be used for connecting to thick-walled pipe (welded or threaded).

The boiler has a self-adjusting and self-protecting control system for the load and the pump capacity. By this means the temperature difference between the flow and return water is checked. The circulation pump will be able to supply the given water displacement with an installation resistance of up to 20 kPa, for this see table 3.

type of unit	Pump type	water flow rate ΔT 20°C		permissible installation resistance	
	UPER	l/min	l/h	kPa	mbar
S-HR 15	20-60	9,5	570	42	420
S-HR 24/24T	20-60	15,1	908	30	300
S-HR 35/35T	20-60	22,1	1324	20	200
S-HR 51/51T	20-70	32,1	1924	25	250
S-HR 60	20-70	37,8	2267	20	200

available water flow at full load table 3

the pump will rotate at maximum pump capacity and the load will be adjusted until an acceptable temperature difference between flow and return water has been obtained. If, after this, the temperature difference remains to much then the boiler will switch itself off and wait until an acceptable temperature has arisen.

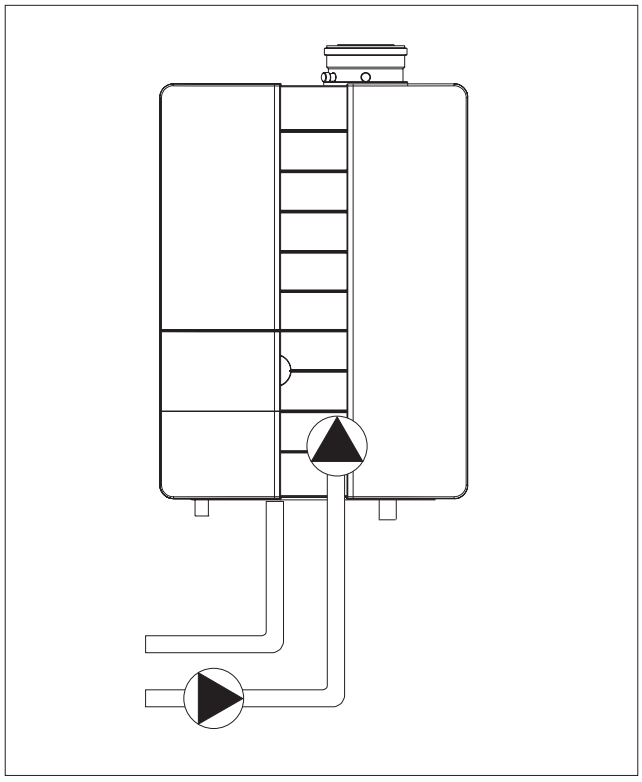


pump index lines graph 1

If an unacceptable temperature is detected, then the control will repeatedly try to achieve water flow, and if this does not work then the boiler will switch off.

The S-HR 60 boiler has a circulation pump which has a residual suction head for the installation of 20 kPa. This means that the boiler can function normally in installations which have an installation resistance of up to 20 kPa and in cascade installations.
If the installation resistance is higher than 20 kPa, the boiler will automatically reduce in power.

If the capacity of the boiler pump is insufficient, an extra external pump can be installed in series with the boiler. The electrical side of this external circulation pump can be connected in the Control Tower, by which means this pump switches at the same times as the boiler pump. The maximum absorbed current consumption of the external circulation pump may be 230 W (1 Amp).
Use with a low velocity header can also be selected. In this case a larger secondary sided water output has to be taken into account, in order to affect the maximum water temperature.



external installation pump in series figure 3