


# MULTI-HEAT

**AUTOMATIC STOKER BOILER FOR  
WOOD PELLETS OR CORN**



- |                           |   |
|---------------------------|---|
| Easy to operate           | Environmentally Friendly heating            |
| Unusually high efficiency | Certified in accordance with DS/EN ISO 9001 |

**HS  TARM**  
**TARM USA INC**  
[www.pelletboiler.com](http://www.pelletboiler.com)

## *Make yourself independent of oil price increases and fossil fuels:*

# Fully Automatic Stoker Boiler With Hopper

The HS-TARM Multi-Heat boiler is especially well suited for effective and environmentally friendly firing with biomass such as wood pellets and corn.

### Significant savings on your heat bills

The HS-TARM Multi-Heat boiler is a great choice for sustainable energy heating of homes and light industrial, commercial, and institutional buildings. Firing with wood pellets or corn in the Multi-Heat can achieve considerable savings in comparison to fossil fuels. Such savings depend, among other things, on the type of fuel, purchase prices and the annual efficiency of the old boiler. Furthermore, many local governments, possibly yours, are giving grants or subsidies for the installation of Multi-Heat boilers using renewable energy fuel.

### Construction and function

The construction of the boiler gives high

operational security, significant durability, excellent economy, environmentally friendly combustion and simple operation. Depending on the heating requirement, the feeder mechanism automatically feeds the appropriate quantity of fuel into the combustion chamber. The built-in blower produces a precise mixture of primary and secondary air, resulting in a very high efficiency. The temperature is regulated by a two-step control. This means that the boiler operates at full output until the set temperature is close to being achieved. Then the control switches over to reduced output and continues at this rate. If the boiler temperature drops slightly below the set temperature again, the control will once again switch over to full output. This control ensures constant heat. For best efficiency, the boiler size and adjustment of the output ought to be only slightly greater than the buildings requirement.

The hopper must typically be filled up once or twice a week during cold weather. However this will depend on the heat requirement, hopper size and fuel. The possibility of automatic feeding of fuel from a large external bin or silo is also available. Ash is removed as required.

### A heat storage tank is unnecessary

The boiler output can be regulated from 100% down to 30% during continuous operation and, in pilot/standby mode, as low as approx. 3412 BTU/hr (1 KW). In order to maintain the boiler outside the heating season, at least one hot water tank 25-80 gal. as well as 1-2 radiators or under-floor heating must be connected (open), but as such no large heat storage tank is necessary. In order to obtain the best possible yield as far as the firing economy, the environment and comfort is concerned, it is important that the boiler is correctly installed and adjusted.



*Multi-Heat: Fully automatic stoker boiler with hopper*

### Some key advantages

- **For economical, environmentally friendly combustion of fuels such as wood pellets and corn.**
- **Constant heating gives optimum building comfort. Very high efficiency, up to 89-91%.**
- **Multifunctional digital control provides simple operation with continuously variable heat output from 30-100%. The boiler does not require a heat storage tank.**
- **Exposed parts of the combustion chamber are constructed in acid-proof, stainless steel (AISI 316L). Remaining steel plates exposed to flue gas are 1/2 inch thick.**
- **Automatic shut-off to prevent fuel hopper burn back.**
- **Delivered completely assembled and ready - mounted with hopper, casing and control.**
- **Automated refilling of hopper available as optional extra.**

### About the Manufacturer

HS-TARM Multi-Heat boilers are manufactured by BAXI/AS.

BAXI A/S has grown to be Denmark's leading producer of central heating systems used to supply the space heating and domestic hot water needs of private dwellings.

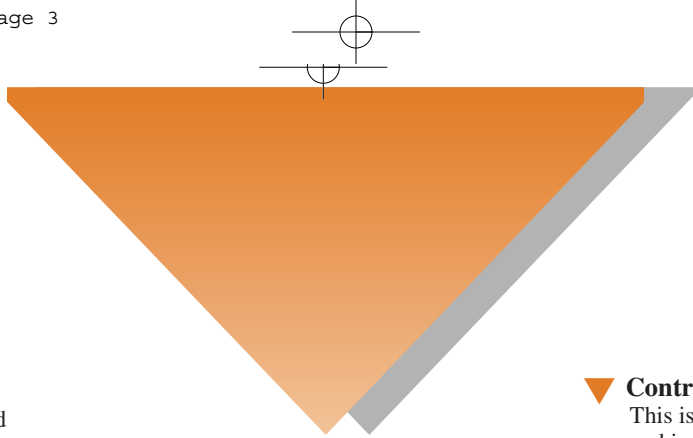
The production of BAXI A/S products is based on strict requirements for material and technical construction design. The

Multi-Heat boilers have been tested and certified by safety, air quality, and consumer organizations for use in Europe, the USA, and Canada.

It has always been a part of the company's objective that the products from BAXI A/S should satisfy the users requirements regarding both the functional quality and good taste. Currently, BAXI A/S carries out quality control in accordance with DS/ENISO-9001, which is an extensive, internationally recognized

standard for quality control systems. Reliability of operation, unique firing economy and, not least, consideration of the environment are factors which have been instrumental in placing BAXI A/S as an internationally recognized supplier of central heating boilers.

To maintain its leadership position, BAXI A/S constantly looks to develop and improve its products. There is never a compromise of principle, solid quality, high output or timeless design.



▼ **Solid Quality**

Flue-gas affected, water-cooled steel plates in the interior of the boiler are 6 mm thick and especially exposed parts of the combustion chamber are of acid-proof stainless steel.

▼ **Easy to place in the room where it is to be set up**

The flue-gas exit is from the top of the boiler and can be easily led to the chimney. The doors are reversible and can be opened towards the left or the right.

▼ **Control panel**

This is placed above the doors and is operated from the front.

▼ **Cleaning the boiler**

Removing ash and cleaning the fire tubes can easily be done from the front.



▼ **Multi-Heat**

Can be supplied with various sizes of fuel hoppers (see technical details). The door for the hopper is reversible so that it is possible to fill up fuel either from the back, or from the right or left side.

▼ **Wood pellets, and corn**

These are renewable, environmentally friendly, inexpensive domestic fuels which can replace imported, more expensive and environmentally straining fossil fuels.

**MULTI-HEAT**  
*A boiler for the future.*



The Multi-Heat is delivered as an assembled unit. The hopper is fastened with bolts. The boiler and the hopper can be separated so that internal transport is made easier.



The stoker boiler is delivered with an electronic control unit which regulates the flow of fuel and air for the combustion. Continuously variable output can be set from 100-30% during continuous operation. When the set temperature has been achieved, the blower will switch off and the control will switch over to "standby." In the "standby" setting, the fire is maintained by feeding a small quantity of fuel at long intervals into the combustion chamber and by running the blower briefly.

Furthermore, the control makes it possible to produce digital readings of the boiler temperature, return temperature and smoke temperature.



Behind the heavily insulated doors, it is possible to see the horizontal heat exchanger tubes with turbulators designed for maximum heat exchange efficiency. Behind the lowest door, the combustion chamber with the ceramic combustion zone can be seen. There is plenty of room for quick, easy cleaning and ash removal.



Draft stabilizer - extra equipment. Strong wind or a very high chimney can cause excessive draft. In such cases, the solution is building in a draft stabilizer. The best combustion is achieved with a suitable and stable chimney draft of 0.04-0.10 inches water column.



The gear motor turns the worm conveyor/auger and feeds the fuel into the combustion chamber at the proper rate.



The sturdy cover of the fuel hopper closes tightly so that burn-back is avoided.



When the side access cover between the boiler and the hopper is removed, it is possible to see the blower which provides the air necessary for combustion. Here, it is also possible to see the thermostat valve for the sprinkler which prevents retrograde combustion. Uppermost, it is possible to see the access cover for cleaning the flue chamber.



Wood pellets are produced as by-products from the wood industry, e.g. from chips and sawdust which are pressed into the pellets. 18 lbs. of wood pellets can substitute approx. 1 gallon of heating oil\*. (2.2 kilograms of wood pellets can substitute approx. 1 liter of heating oil).

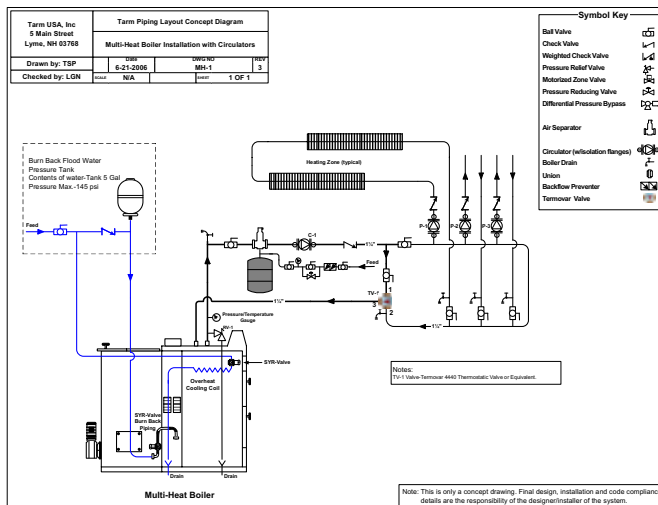


Corn, for example from fallow fields or set-aside land (energy crops) can well be used as fuel. 21 lbs. of corn can substitute approx. 1 gallon of heating oil\*. (2.5 kilograms of grain/corn can substitute approx. 1 litre of heating oil). Corn can form clinkers which must be removed from the combustion chamber as required. The auger extension must be fitted to help break up corn clinkers.



With the Automatic Feed Device. You can obtain maximum operating comfort and time-saving through installation of an Automatic Feed Device for wood pellets and corn. A grain type auger can be used to automatically transfer the fuel from an external bin or silo to the boiler's hopper.

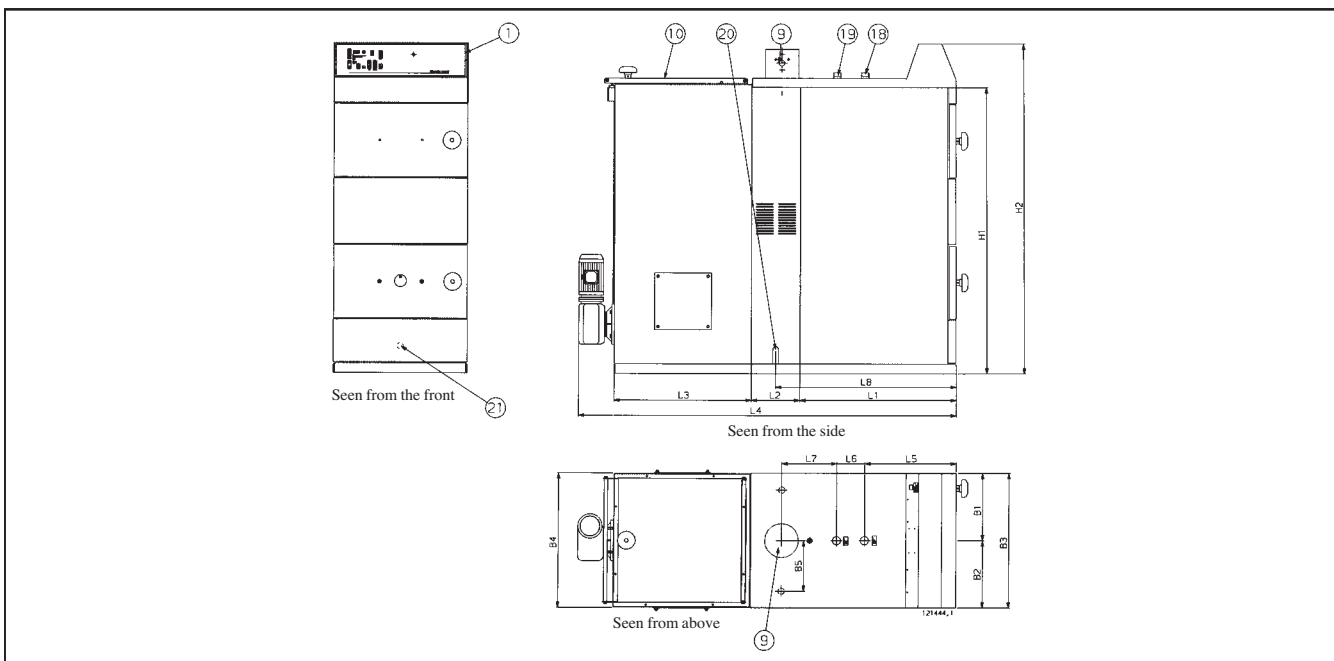
\*The equivalent heat values indicated are for guidance only since the comparison is dependent on several conditions, such as the composition and water contents of the biomass.



MULTI-HEAT can be installed as shown in this diagram.

It is possible to install the Multi-Heat with either closed or open expansion.

# Technical Data



MULTI-HEAT		Model 1.5	Model 2.5	Model 4.0
1.	Boiler control	X	X	X
9.	Flue pipe branch, external diameter	inch (mm)	5 1/8 (130)	5 7/8 (150)
10.	Hopper door, reversible	X	X	X
18.	Flow and expansion	inches	1	1
19.	Return	inches	1	1
20.	Connection of retrograde fire safety sprinkler	inches	1/2	1/2
H1	Height	inch (mm)	39 3/4 (1010)	50 3/8 (1280)
H2	Height	inch (mm)	45 7/8 (1165)	58 (1475)
L1	Depth of boiler	inch (mm)	23 (581)	27 1/2 (700)
L2	Measurement	inch (mm)	7 3/4 (197)	8 1/2 (217)
L3	Hopper depth	inch (mm)	19 1/2 (497)	24 1/4 (615)
L4	Measurement	inch (mm)	56 1/2 (1435)	62 1/2 (1578)
L5	Measurement	inch (mm)	14 1/5 (360)	11 1/2 (294)
L6	Measurement	inch (mm)	5 (125)	5 (125)
L7	Measurement	inch (mm)	6 1/2 (165)	9 3/4 (248)
B4	Hopper width, vol. cu.ft. 7 (200 litres)	inch (mm)	19 3/4 (504)	-
B4	Hopper width, vol. cu.ft. 12 1/2 (350 litres)	inch (mm)	35 3/4 (910)	-
B4	Hopper width, vol. cu.ft. 12 3/4 (360 litres)	inch (mm)	-	23 3/8 (600)
B4	Hopper width, vol. cu.ft. 21 (600 litres)	inch (mm)	-	39 1/2 (1000)
B1	Measurement	inch (mm)	10 (252)	11 7/8 (300)
B2	Measurement	inch (mm)	10 (252)	11 7/8 (300)
B3	Boiler width	inch (mm)	19 3/4 (504)	23 3/8 (600)
B5	Measurement	inch (mm)	8 1/2 (215)	8 7/8 (225)
	Gear motor, effect	W	120	370
	Blower motor	W	90	90
	Electricity consumption	W	300	460
	Electricity connection / circuit breaker 240 V - 60 Hz / 15 A		X	X

Type designation	Output BTU/hr (kW)	Hoppersize cu.ft. (liter)	Fuel	Weight lbs (kg)
MULTI-HEAT 1.5 - 200	51,200 (15)	7 (200)	Wood pellets	750 (340)
MULTI-HEAT 1.5 - 350	51,200 (15)	12 1/2 (350)	Wood pellets	849 (385)
MULTI-HEAT 2.5 - 360	85,300 (25)	12 3/4 (360)	Wood pellets	1169 (530)
MULTI-HEAT 2.5 - 600	85,300 (25)	21 (600)	Wood pellets	1389 (630)
MULTI-HEAT 2.5 - 360	85,300 (25)	12 3/4 (360)	corn	1279 (580)
MULTI-HEAT 2.5 - 600	85,300 (25)	21 (600)	corn	1500 (680)
MULTI-HEAT 4.0 - 360	146,700 (43)	12 3/4 (360)	Wood pellets	1279 (580)
MULTI-HEAT 4.0 - 600	146,700 (43)	21 (600)	Wood pellets	1500 (680)
MULTI-HEAT 4.0 - 360	146,700 (43)	12 3/4 (360)	corn	1279 (580)
MULTI-HEAT 4.0 - 600	146,700 (43)	21 (600)	corn	1500 (680)

**Equipment package:**

Complete stoker boiler consisting of:

- Boiler
- Casing with insulation
- Fuel hopper
- Worm conveyor
- Gear motor for conveying the fuel
- Blower
- Turbulators
- Ceramic insert
- Boiler control
- Micro-switch for hopper
- Overheat cooling coil
- Pressure vessel set for automatic water sprinkling
- Thermostatic retrograde combustion cut-out as well as internal electrical installation and cleaning tools

**Extra accessories:**

- Shunt valve
- Draft stabilizer for chimney/boiler flue outlet
- Automatic shunt control
- Automatic Feed Device

**Fuel:**

Suitable fuels: wood pellets and corn. Model 1.5 is principally developed for firing with wood pellets.

**Arrangement conditions:**

HS-Tarm Multi-Heat must be set-up in a room with sufficient supply of air. The magnitude of the air-intake must correspond to the inside diameter of the chimney, however at least 31 in\* (0.02 m\*.)

- The chimney draft must be 0.04-0.1 inch WC (1.0-2.5 mm water column).
- Local building code regulations in the area of the installation must be followed.
- ASME stamped models required by some states and building codes. Check with your local building inspector.
- Request, if necessary, further installation and operational guidelines with further information from Tarm USA.

**Warranty:**

Fully effective warranty as in accordance with warranty conditions from Tarm USA.

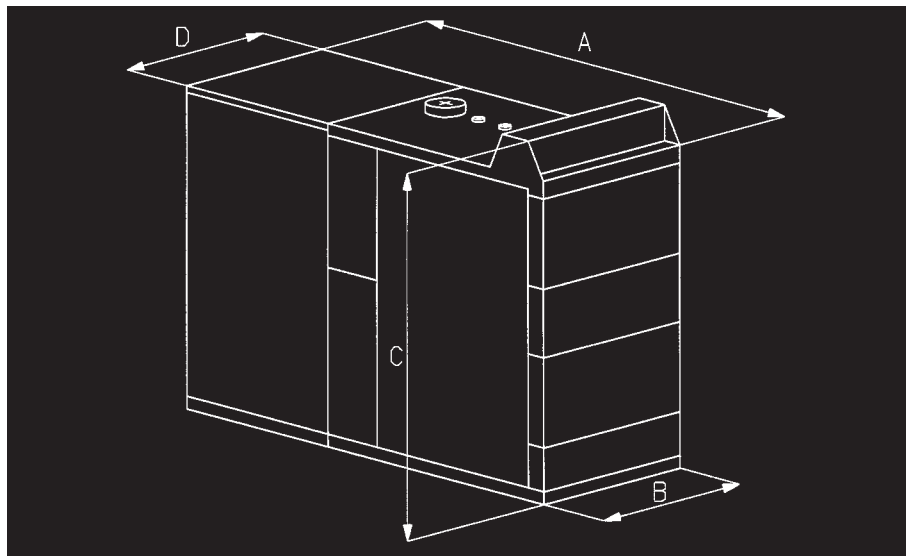
**Our offering of solid fuel boilers also comprises the following:**

- SOLO PLUS-wood gasification boilers.
- EXCEL MULTI-FUEL-wood gasification boilers with oil or gas back-up fuel.

NB: Type HS-Tarm Multi-Heat is supplied without built-in hot water supply.

\*\* Least recommended stand-by output while firing in "standby" so that the fire can be maintained.

\*\*\*This is the minimum smoke temperature which is recommended for minimum output. This smoke temperature is too low for normal operation with ordinary chimneys. We consider a smoke temperature of 212°F (100°C) to be the absolute minimum for ordinary chimneys. We have therefore built in an alarm on the smoke temperature at 212°F (100°C). This is to say that if the smoke temperature has been below 212°F (100°C) for half an hour, the boiler will stop. This alarm also ensures against continually filling up with fuel if the fire goes out.



**Technical data:**

MULTI-HEAT		Model 1.5	Model 2.5	Model 4.0
Operating temperature	°F (°C)	140-185 (60-85)	140-185 (60-85)	140-185 (60-85)
Output (nominal) with wood pellets	BTU/hr (kW)	51200 (15)	85300 (25)	146700 (43)
Output (nominal) with corn	BTU/hr (kW)	N/A	85300 (25)	146700 (43)
Output (minimum) with wood pellets	BTU/hr (kW)	15700 (4.6)	25600 (7.5)	40950 (12)
Output (minimum) with corn	BTU/hr (kW)	N/A	25600 (7.5)	40950 (12)
Output (stand-by) recommended **approx. BTU/hr (kW)		1700 (0.5)	2700 (0.8)	3300 (1.0)
Smoke temperature at nom. output, wood pellets	°F (°C)	302 (150)	356 (180)	356 (180)
Smoke temperature at nom. output, corn	°F (°C)	-	392 (200)	392 (200)
Smoke temperature at min. output, wood pellets ***	°F (°C)	212 (100)	230 (110)	230 (110)
Smoke temperature at min. output, corn	°F (°C)	-	239 (115)	239 (115)
Fuel consumption at nom. output, wood pellets	lbs/hr (kg/h)	7.5 (3.4)	12.6 (5.7)	22 (10)
Fuel consumption at nom. output, corn	lbs/hr (kg/h)	N/A	13.2 (6.0)	24.3 (11)
Test pressure, boiler	PSI (bar)	58 (4.0)	58 (4.0)	58 (4.0)
Approved fuel types:				
wood pellets, approx. 8% of moisture	inch (mm)	1/4-3/4 (5-20)	1/4-3/4 (5-20)	1/4-3/4 (5-20)
corn, approx. 15% of moisture		-	YES	YES

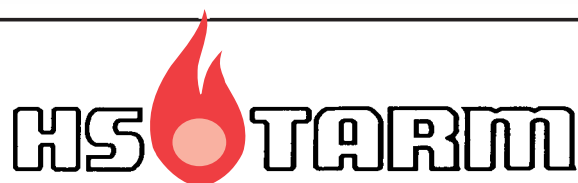
**Installation data:**

MULTI-HEAT		Model 1.5	Model 2.5	Model 4.0
A Depth - total	inch (mm)	56 1/2 (1435)	62 1/8 (1578)	66 5/8 (1693)
B Width - boiler	inch (mm)	19 3/4 (504)	23 5/8 (600)	23 5/8 (600)
C Height	inch (mm)	45 7/8 (1165)	58 1/8 (1475)	58 1/8 (1475)
D Width - hopper *	inch (mm)	19 3/4/35 1/3 (504/904)	23 3/8/39 1/2 (600/1000)	23 3/8/39 1/2 (600/1000)
Hopper volume	ft <sup>3</sup> (litre)	7/12 1/2 (200/350)	12 1/4/21 (360/600)	12 1/4/21 (360/600)
Height to Flue collar	inch (mm)	43 3/4 (1110)	57 1/4 (1455)	57 1/4 (1455)
Flue pipe branch - external diameter	inch (mm)	5 1/8 (130)	5 7/8 (150)	5 7/8 (150)
Weight - empty	lbs (kg)	750/849 (340-385)	1 389 (530-630)	168/1 1279/1500 (580-680)
Water contents	Us gal. (liter)	13 (50)	33 (125)	39 (150)

\* Necessary door opening: Width D + 2 inch.



Sold by:



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