

The HS-TARM Excel Multifuel Wood Gasification/Oil/Gas Boiler

HS-TARM Excel boilers provide a convenient, safe and environmentally friendly way to heat your home and domestic hot water with wood, oil or gas. Fully automatic controls will accurately maintain your wood fire and automatically switch to your oil or gas backup when the wood fire dies down. You have flexibility to burn the fuel of your choice.

The wood gasification technology utilized in these boilers produces unusually high overall boiler heating efficiency. Excel boilers use substantially less wood than

conventional wood boilers and outdoor water stoves. They burn so clean they are safer (virtually no smoke, creosote, or risk of chimney fire) and result in cleaner air for everyone.

A commitment to quality is evident in the construction and finish of all HS-TARM boilers. Excel boilers have been tested to CSA, ANSI, and UL safety standards. The doors are heavy cast iron. The boiler jacket is heavily insulated and is finished in an attractive enamel.

How the Excel Boilers Work

Wood burning

The combustion system employed in the Excel boilers has solved most of the problems associated with conventional wood boilers and water stoves.

Here's why: Wood gasification combustion begins when the whisper quiet fan is activated by the boiler control. As the fire burns, the smoke and wood gases are forced down through the coals and into the high temperature ceramic combustion chamber. Secondary air is injected into these super hot gases producing combustion temperatures of 1800°. This combustion is "complete" leaving no tars or vapors to form creosote in the heat exchanger, stove pipe, or chimney. The vertical heat exchange tubes are matched to the heat produced by the high temperature combustion resulting in very high heat exchange and combustion efficiencies. Thus, **overall** boiler heating efficiencies of up to 80% are achieved.

Excel boilers perform extremely well on wood as stand alone boilers, cycling on and off like an oil or gas boiler to meet the heating load.

The best installation for an Excel or any other boiler, however, is to install it with a

heat storage tank. This system results in even higher efficiency, easier firing, the ability to use wood 12 months a year, and longer boiler life. Most TARM owners who have storage tanks fire their boilers once on most winter days and once every 4-10 days when heating domestic hot water in the summer. Boilers not connected to a storage tank system should be fired with wood 3 times per day. Ask TARM USA Inc. for more information on heat storage .

Oil or Gas Burning

The Excel boilers have separate combustion chambers and heat exchange tubes for each fuel. This assures maximum efficiencies. In fact, the oil and gas test results on these boilers (up to 86% efficiency) meet or exceed most single fuel oil and gas models.

Multifuel Operation

During multifuel operation, the boiler will automatically switch from wood to oil or gas whenever the wood fire burns out. This means never having to wake to or come home to a cold house, even if the fire is out because you forgot to load wood.



▼ **The Excel 2000** is the world's most advanced and efficient Multi-fuel Boiler, burning multiple fuels at efficiencies of up to 86%.

▼ Until you burn wood in an HS-TARM boiler installed with a properly sized heat storage system, you won't know how easy it can be to heat with wood.

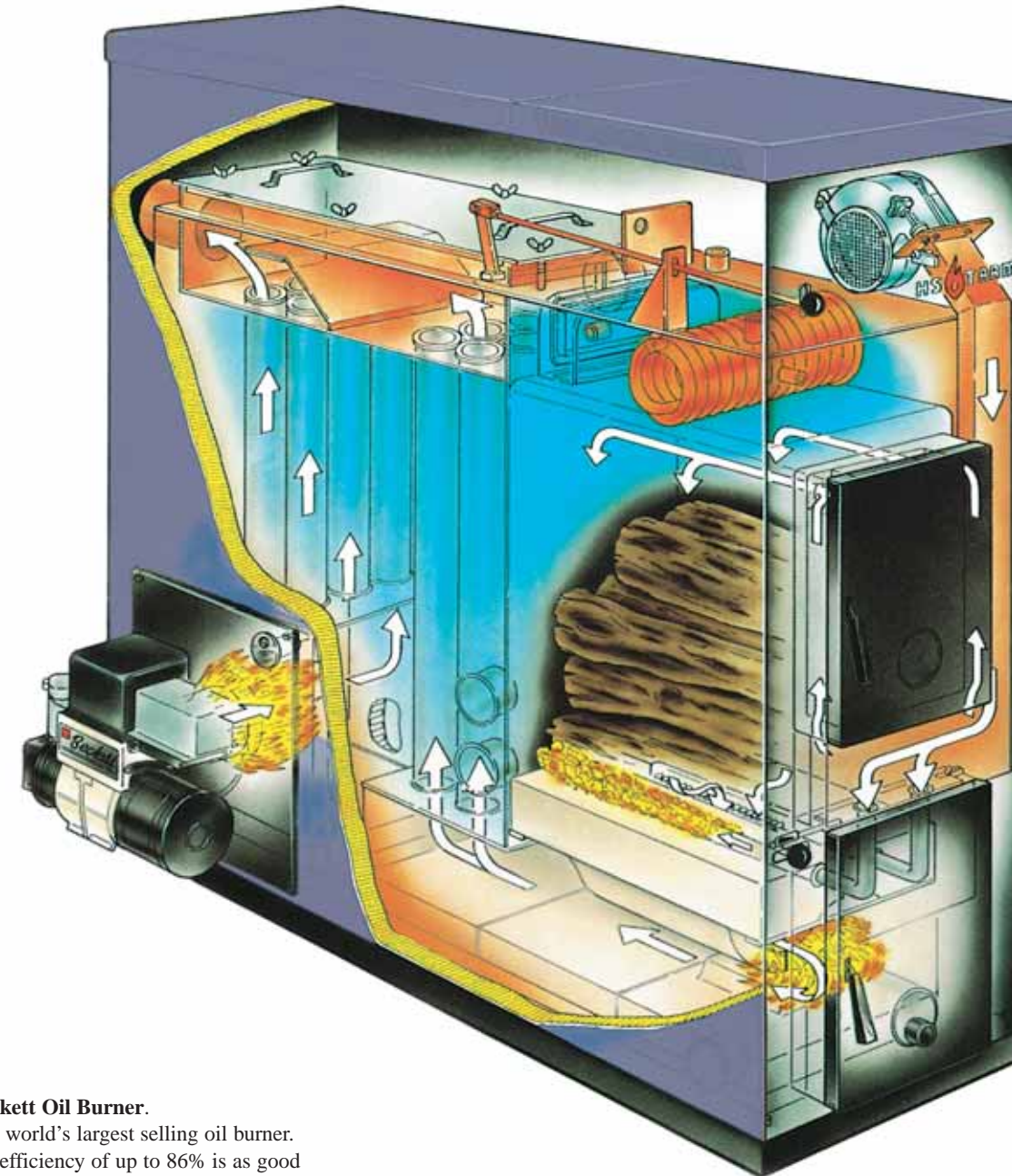
▼ **The unbeatable** heating system

▼ **Recent government** studies have shown that the burning of wood is environmentally safe and is actually helping to reduce the Greenhouse Effect.



▼ **Separate Firetube Heat Exchangers** ensure maximum efficiency with either fuel. Easy accessibility for cleaning.

▼ **1/4 inch** Boiler Plate Steel.



▼ **Beckett Oil Burner.** The world's largest selling oil burner. Oil efficiency of up to 86% is as good or better than most single fuel boilers.

▼ **Enameled Jacket.** Maintenance free jacket is finished in brilliant orange-red color. A full 2" of insulation keeps the heat where it belongs. Fit and finish reminiscent of a fine car.

▼ **64 gallons of water** (model 2000) surrounds all sides of the firebox and firetubes for maximum transfer.

▼ **Cast iron** doors and door frame.



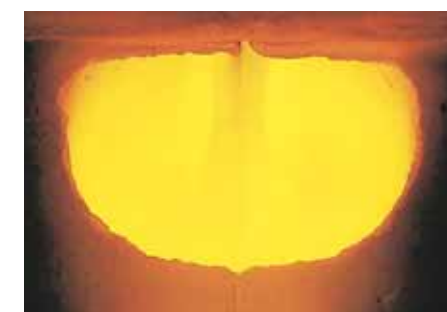
▼ **Tankless Hot Water Coil.** Finned copper coil provides hot water for household use (optional).



▼ **Combustion Fan.** This heavy-duty, quiet fan consumes less than 60 watts of electricity (less than a light bulb) while providing the draft needed to achieve high efficiency.



▼ **Ceramic Bricks.** These bricks make up the heart of the system. Special air injection slots built into these ceramics provide the oxygen needed for complete combustion.



▼ **Combustion Tunnel.** This is where the magic of "wood gasification" occurs. This is the view you will get when you look into the observation port on the lower door. Temperatures of over 2000 degrees are achieved, therefore utilizing all available energy in the wood.



Each Excel boiler is shipped with the following Standard Equipment:

- Boiler body, doors and jacket
- Oil or gas burner
- Fan, controls and wiring harness
- ASME Boiler Pressure Relief Valve
- Cleaning tools

Accessories:

- Enhanced Ash Hod
- Domestic Water Coil
- Thermostatic Tempering Valve
- Heat Storage System

For maximum flexibility of installation, the flue outlet may be mounted either on the right side of the boiler or the rear.

ASME stamped models required by some states and building codes. Check with your local building inspector.

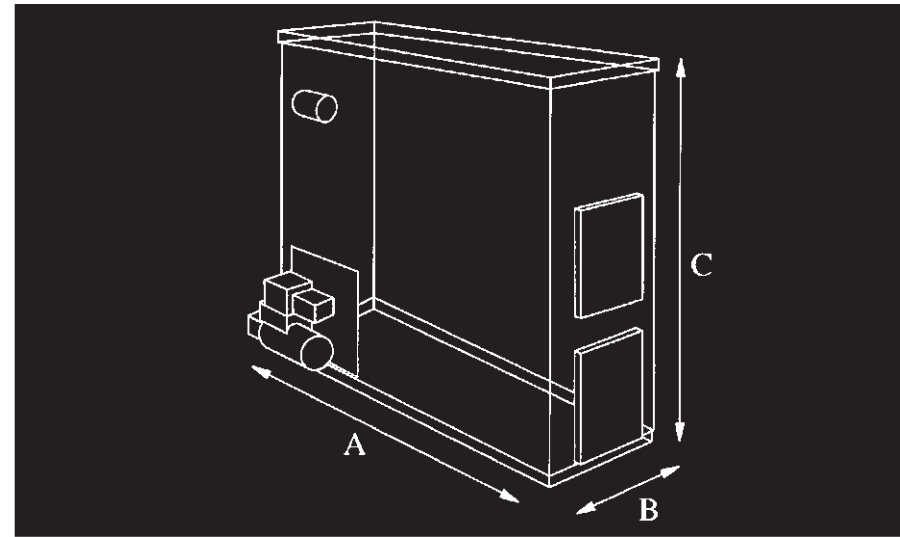
Both firetube heat exchangers, accessible when the cleanout cover is removed, may be cleaned quickly and easily with the flu brush supplied with the boiler.

20 year limited warranty

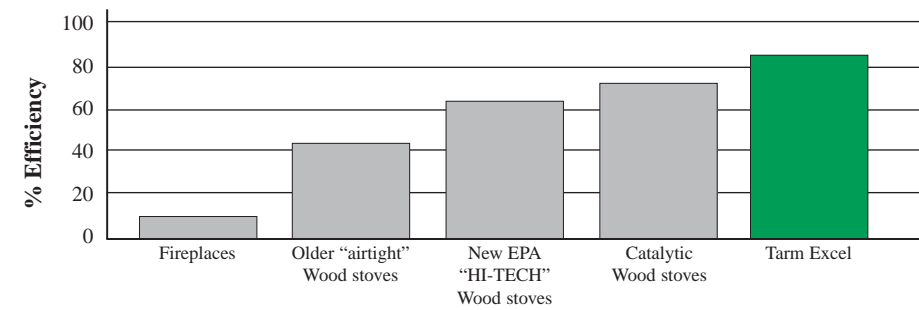
HS-TARM boilers are covered by a 20 year limited warranty, a copy of which is provided with the boiler.



Excel boiler with Storage Tank.



How the Excel Compares



Specifications

		Excel 2000	Excel 2200
Output Wood	BTU/hr	102,500	140,000
Output, Oil	BTU/hr	120,000	150,000
Output, Gas	BTU/hr	120,000	140,000
Firebox Volume	Cubic Ft	4.0	6.6
Log Length	in.	20	20
Water Volume	US GAL.	64	72
Weight of boiler complete	Lbs	1440	1610
Pressure test, boiler	PSI	45	45
Pressure test, coil	PSI	580	580

Dimensions

Dimension	Unit	Excel 2000	Excel 2200
Depth A	in.	54	54
Width B	in.	21	25
Height C	in.	52	54
Flue Size	in.	6	6
Height to Center of flue	in.	41 1/4	41 1/4
Tapping Size - Feed & Return	in.	1 1/4	1 1/4

EXCEL 2000

HIGH EFFICIENCY MULTI-FUEL BOILER



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