

# HS • TARM

## TYPE MB-Solo Wood/Coal Boiler



### General Information

The HS Tarm Type MB-Solo is a new multi-purpose boiler for hot water heating systems. The MB-Solo is equipped to burn wood or coal, or can be supplied as an oil- or gas-fired boiler. Whichever model you choose, the MB-Solo gives you flexibility.

Installed as a solid fuel-fired boiler in combination with an existing oil- or gas-fired boiler, it allows you to heat your entire house and tap water by burning wood or coal. At your discretion, solid fuel may be relied upon to supply all your home's heat or merely part of it. If the fire should die down or be allowed to go out, automatic controls will activate the oil or gas burner on your present boiler to guarantee uninterrupted heat.

Installed by itself as an oil- or gas-fired boiler, the MB-Solo can be converted easily to operate on solid fuel — thus protecting you in the event of a power failure or interruption in your supply of oil or gas. And even if you never need to burn solid fuel, the MB-Solo operates as efficiently on oil or gas as any modern single-fuel boiler.

The MB-Solo's firebox is of generous size, with large cast-iron doors to facilitate wood loading and ash removal. The wood fire is controlled by a non-electric automatic draft regulator, which will safely maintain boiler temperature even during power failures.

Because the MB-Solo gives you the option of substituting firewood for costly commercial fuel, it makes possible dramatic reductions in fuel costs. And because it ends your absolute dependence on oil or gas, it

provides security against shortage of these increasingly scarce fuels.

### Combustion

The MB-Solo's firebox employs a base-burning arrangement which maximizes efficiency of solid-fuel combustion. As wood or coal is heated in any fire, it emits compounds, which, when burned, yield heat. When these compounds are not burned, they can represent a significant loss of efficiency. They can also produce soot or creosote, a tar-like deposit formed by the condensation of some flue gases when they are cooled. The MB-Solo's base-burning principle encourages burning of these compounds. The smoke leaves the boiler at the lower rear of the firebox, where flammable gases are drawn over the fire's hot coals. Additional air to aid in the combustion of these gases is provided by the air inlet in the upper door of the firebox and by the secondary air dial on the right side of the boiler. This secondary air dial meters air to a manifold at the bottom rear of the firebox (#26 on the side view diagram). The manifold preheats and injects this air into the hot gases leaving the firebox, enabling secondary combustion of otherwise unburned compounds in these gases to occur.

The MB-Solo is available in two different configurations for operation on oil or gas. For long-term service on these fuels, a burner plate is used in place of the upper firing door and a conversion plate is substituted for the grates. Where quick changeover between solid fuel and oil or gas is desired, the boiler can be supplied with a special door in place of the upper firing door. This "double-swing door" is a door frame with a solid-fuel firing door hinged to the right and a burner-mounting door hinged to the left. By swinging one door out and the other in, either type of fuel may be used on a moment's notice.

The firebox is surrounded by water on all sides and the bottom. This "wet-base" design allows for greater heat transfer, helping the MB-Solo to burn wood, coal, oil or gas with a high degree of thermal efficiency.

Due to the fact that the firebox is surrounded by water, the firebox walls are maintained at a relatively cool (200° F.) temperature. The low temperature of these walls precludes the use of wood with more than 20% moisture content. Use of such "green wood" will result in poor burning and excessive formation of creosote and soot. Well-seasoned wood is required for proper boiler operation.

### Controls & Accessories

HS Tarm Type MB-Solo boilers are manufactured for use with standard American central hot water heating systems. All threaded tappings accept standard American controls and equipment.

- All boilers are supplied with the following:
- Automatic draft regulator for the wood fire
  - Cast iron grates
  - Insulated jacket with orange-red baked enamel finish
  - ASME pressure relief valve for boiler
  - High limit (overheat) control
  - Cleaning tools

For operation on oil or gas, one of the following is required:

- Double-swing door
- Burner plate and conversion plate

In addition, the boiler is available with the following options:

- Tankless coil for domestic hot water
- Coal grates for burning coal or coke

The boiler is shipped on a pallet and has a lifting ring on top for ease of handling. The jacket and controls are packaged separately.

## Construction

The steel plate used in the MB-Solo boiler is unusually heavy. All plate that is exposed to flue gasses is over 1/4" in thickness. We invite comparison of the MB-Solo's total weight to that of any similar product.

Insulation fully lines the jacket, which is finished in an attractive orange-red enamel.

## 5-Year Limited Warranty

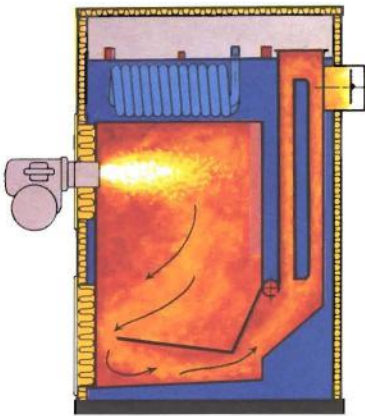
The HS Tarm Type MB-Solo has a limited warranty, a copy of which is provided with the boiler and is available from your dealer.

For more detailed information in connection with the HS Tarm Type MB-Solo, please read the OPERATING AND INSTRUCTION MANUAL that accompanies the boiler and is available from your dealer.

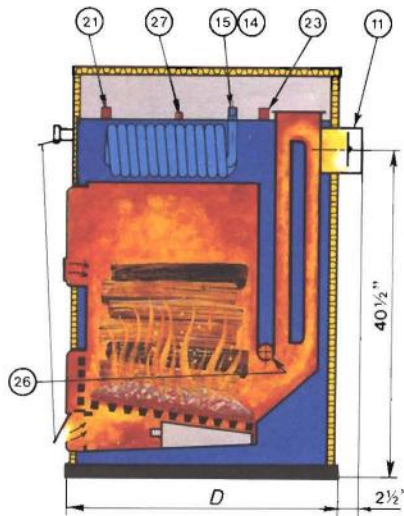
## Specifications

Type MB-Solo		30	40	55	75
Gross Output—Wood	Btu/hr	72,000	100,000	140,000	180,000
Gross Output—Oil	Btu/hr	120,000	160,000	220,000	300,000
Domestic Hot Water Output (Wood)	GPM	1.5	2.0	2.9	3.7
Width (B)	in	17 3/4	17 3/4	21	21
Length (D)	in	25 1/4	28 1/4	41 1/2	41 1/2
Width of Firebox	in	12 1/2	12 1/2	15 1/2	15 1/2
Length of Firebox	in	15 1/2	15 1/2	27 1/2	27 1/2
Distance (C)	in	8 3/4	8 3/4	11 1/4	11 1/4
1 Return	in	1 1/4	1 1/4	1 1/2	1 1/2
2 Flow	in	1 1/4	1 1/4	1 1/2	1 1/2
4 Tapping for Tridicator	in	3/4	3/4	3/4	3/4
5 Tapping for Aquastat	in	3/4	3/4	3/4	3/4
10 Extra Tapping	in	1/2	1/2	1/2	1/2
11 Flue Outlet (O.D.)	in	6	6	8	8
14 Hot Domestic Water	in	3/4	3/4	3/4	3/4
15 Cold Domestic Water Supply	in	3/4	3/4	3/4	3/4
16 Extra Tapping	in	1	1	1	1
18 Boiler Drain Tapping	in	1	1	1	1
20 Tapping for Draft Regulator	in	3/4	3/4	3/4	3/4
21 Extra Tapping	in	1/2	1/2	1/2	1/2
23 Tapping for Overheat Control	in	3/4	3/4	3/4	3/4
24 Preheated Secondary Air Control		X	X	X	X
26 Preheated Secondary Air Manifold		X	X	X	X
27 Vent Tapping	in	3/8	3/8	3/8	3/8
Door Size	in	10x12	10x12	10x12	10x12
Water Capacity	Gal	29	36	55	55
Weight-Boiler w/jacket	lb	594	770	1100	1177
Pressure Test-Boiler	psi	72	72	72	72
Pressure Test-Coil	psi	250	250	250	250
Minimum Flue Size	in	8x8	8x8	8x12	8x12
Minimum Chimney Height	ft	20	20	20	20

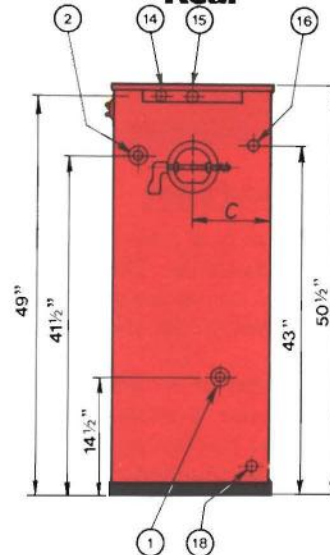
**Cross Section  
oil or gas combustion**



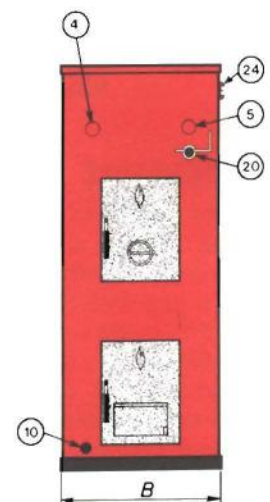
**Cross Section  
solid fuel operation**



**Rear**



**Front**



All specifications are subject to change without notice.

The responsibility for determining compliance with local and state codes is the obligation of the dealer.

Note: Adequate chimney draft is required for proper operation of all wood-fired boilers. Please observe minimum chimney requirements in the table above.



**HS • TARM**

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The Type MB-Solo boiler is approved by the Energy Testing Laboratory (Portland, Maine) and the Massachusetts Fire Marshal's Office.