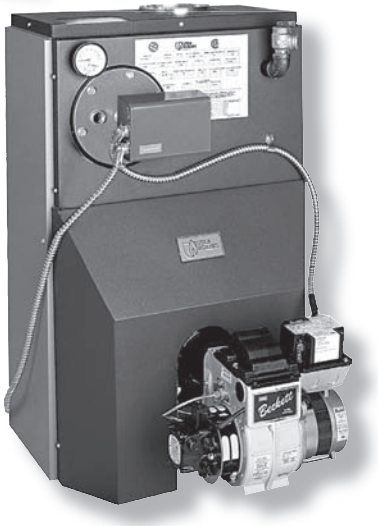
Starfire III Series
Cast Iron Oil-Fired Water Boiler

P/N# 240005813, Rev. 1.0 [10/05]

SPECIFICATIONS AND PERFORMANCE



86% AFUE Efficiency

ENERGY STAR

Available Heating Inputs of:

91 MBH through 385 MBH

Application – The Starfire III natural draft chimney vented oil-fired water boilers are available in twelve sizes with inputs of 91 to 385 MBH and AFUE of 86%. The Starfire III Series boilers feature a wet-base design to help overall efficiency by enclosing the combustion chamber with water on five sides therefore maximizing heat transfer. With the potential cost saving this represents, the Starfire III Series boiler will pay for itself in a few short years. All units are shipped with controls pre-wired and tested to ensure dependable performance. A smart design combined with low operating cost and a wide range of sizes make the Starfire III Series boiler an ideal choice for new or existing homes and light commercial applications.

Benefits:
- High efficiency, performance and low operating cost
- Wide range of sizes

Approvals – The cast iron boiler assembly is manufactured and tested in accordance with American Society of Mechanical Engineers (ASME) standards, and certified by Canadian Standards Association (CSA) in the US and Canada. The Annual Fuel Utilization Efficiencies (AFUE) and heating capacity are based on US DOE test procedures and FTC labeling regulations. AFUE and I=B=R ratings are certified in accordance with standards set by The Hydronics Institute Division of the Gas Appliance Manufacturers Association (GAMA). The Material and Equipment Acceptance number for the City of New York, is Mea# 182-86E.

Warranty – Utica Boilers backs its residential, cast iron heat exchanger with a Limited Lifetime Warranty. This Warranty is meant to protect your investment, but is also offered to illustrate our commitment to customer satisfaction.

FEATURES AND BENEFITS

Cast Iron Boiler Assembly – Boiler sections and push nipples are constructed of long life cast iron. When the boiler is heated, sections and push nipples expand and contract in the same proportion because they are constructed of like material, providing a positive watertight seal.

Benefit: Cast iron provides efficient heat transfer, reliability and strength, the cast iron push nipples insure a watertight seal.

Cabinet:
- Constructed of heavy gauge steel with a baked-on enamel finish
- Insulated to keep cabinet surface temperatures low.
- Sturdy cast-iron swing door allows for quick and easy inspection of the oil burner and combustion area
- Extra large flue ways allow for easy cleaning and set-ups.
- An integrated two-part flue collector making flue way openings easily accessible.
- A recessed target wall increases the chamber size and protects from accidental flue brush damage during normal maintenance.

Benefit: All components are easy to reach, greatly reducing the time spent on regular maintenance and service calls.

Quality Burner Options:
- A Beckett oil burner is normally supplied (unless other wise specified). Burners are equipped with:
  - nozzle
  - primary control
  - interrupted duty ignition
  - PSC motor and clean cut (solenoid) pump
- (Optional) A choice of Carlin or Riello, manufacturer approved oil burners are available.

SFH-W/WT SERIES CAST IRON OIL-FIRED WATER BOILERS

FEATURES AND BENEFITS *Continued*

Solenoid Oil Valve – Provides cleaner burning and quieter operation, included on all Beckett, Carlin and Riello burners.

Temperature/Pressure Gauge – Mounted in the supply line for most accurate monitoring of the boiler's operation.

High Limit Aquastat Control – The high limit aquastat control determines the maximum boiler water temperature and also provides a means for protecting the boiler and heating system from unsafe operating conditions which could damage the boiler. The aquastat has a factory preset of 180°F (82.2°C) water temperature. The high limit set point is field adjustable and may be set anywhere between 100°F (37.8°C) and 200°F (93.3°C). The field set point adjustment for each installation depends on the heating system's requirements.

Benefit: The aquastat is the brain of the boiler that controls the operation of the burner, circulator, and domestic coil. It also monitors water temperature to ensure safe, reliable operation.

Circulating Pump – Provides heat quickly and evenly by circulating hot water throughout the system (included with the boiler). Circulators are unmounted to simplify supply-side pumping.

SFH-W/WT SERIES STANDARD EQUIPMENT		OPTIONAL EQUIPMENT
Assembled boiler, wired and tested	Target wall/liner	**Electronic low water cut-off now available to meet the latest codes requirements**
Cast iron section and push nipples	A.S.M.E. relief valve	
Cast-iron swing door	Combustion temperature/pressure gauge	Tankless water heater, add: • Hot water coil • Triple aquastat relay
Aquastat control		
Circulator, Taco (field mounted)	Boiler drain valve	
Deluxe insulated cabinet		
Comes with AFG Beckett burner: • Clean cut solenoid pump • PSC motor • Interrupted duty ignition • Pre & post purge control	Two 2" supply tappings	Quick Pick Option Of: • Carlin Burner • Riello Burner
	Two 1 ½" return tappings	

SFH-W/WT SERIES DIMENSIONS						
Boiler No.	**A Lenght of Flush Jacket**	**B Front of Casting to Center Line of Flue Outlet**	**C Diamiter of Flue Outlet**	**D Front of Jecket to Flue**	**E Lenght of Jecket**	**Coil Tapping**
SFH-3	17 ⅞"	11 ¼"	6"	6 11/16"	13"	½"
SFH-4	21 ½"	12 ⅝"	6"	8 3/16"	16 ⅜"	¾"
SFH-5	25 ⅛"	14 ¼"	7"	9 13/16"	20 ¼"	¾"
SFH-6	29 ¼"	15 15/16"	8"	8 5/16"	23 ⅞"	¾"
SFH-7	32 ⅞"	17 15/16"	8"	8 5/16"	27 ½"	¾"

BOILER RATINGS & CAPACITIES

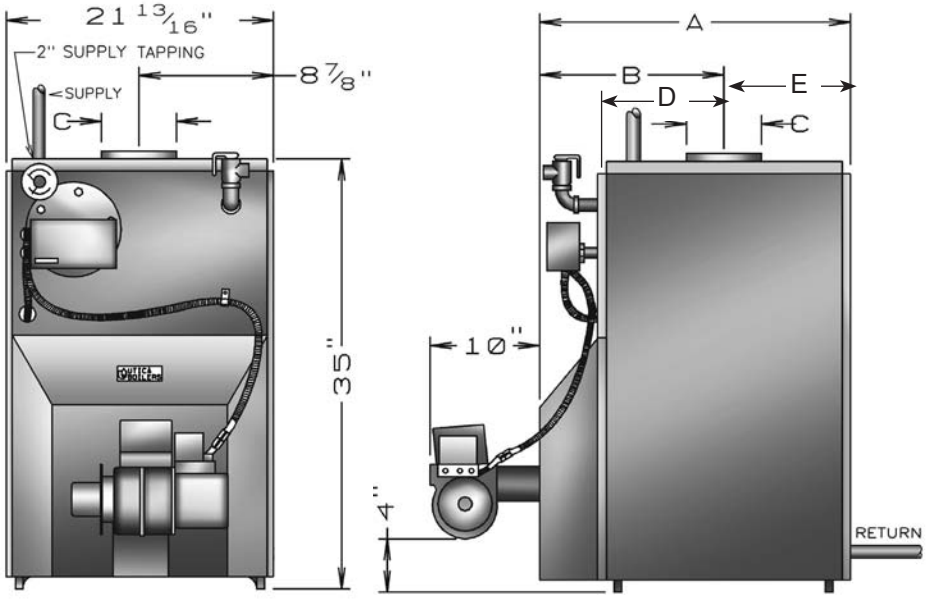
RATINGS AND DATA							OPTIONAL TANKLESS WATER HEATER CAPACITIES		
Boiler Model No. 1)	I=B=R Oil Burner Input 2)		D.O.E. Heating Capacity MBH	I=B=R Net Ratings 2) Water MBH	Nozzle Furnished 140 PSI 4)	A.F.U.E. Rating	Heater No.	Itermittent Draw Capacity (G.P.M.)	Boiler Water Content
	G.P.H.	MBH							
* SFH-365W	.65	91	79	68.7	.60 80°B	86.0	T3	*Available on Request*	10.5
SFH-3100W	1.00	140	117	102	.85 80° B	81.0	T3	3.25	10.5
*SFH-4100W	1.00	140	120	104	.85 80° B	86.0	T4	3.25	13.5
SFH-3125W+	1.25	175	144	125	1.10 60° B	80.0	T3	3.75	10.5
SFH-4125W	1.25	175	149	130	1.10 80° B	82.5	T4	3.75	13.5
*SFH-5125W	1.25	175	151	131	1.10 80° B	86.0	T4	3.75	16.5
SFH-4150W	1.50	210	175	152	1.25 80° B	81.0	T4	4.0	13.5
*SFH-6150W	1.50	210	181	157	1.25 80° B	86.0	T4	4.0	19.5
SFH-5175W	1.75	245	206	179	1.50 80° B H	81.5	T4	4.25	16.5
SFH-5200W	2.00	280	231	210	1.75 70° B H	81.0	T4	5.5	16.5
SFH-6225W	2.25	315	254	221	2.00 45° B	—	T4	5.75	16.5
SFH-7275W	2.75	385	307	267.1	2.25 60° B	—	T4	6.0	22.5

1) Add suffix "T" to denote boiler with tankless heater.
2) I=B=R burner capacity is based on an oil heating value of 140,000 Btu/gal. and with 13% CO_2.
3) Net ratings based on 170° F temperature in radiators and include 15% allowance for normal piping and pickup load. Consult manufacturers for unusual piping and pick-up requirements.
* All ratings subject to verification.
4) For equivelent square feet of radiation, divide I=B=R output by 150.

XPLANATORY NOTES

- 120 Volts, 15 Amps, & 60 Hz. required to operate this boiler.
- The MEA number for the SFH-W series is 182-86E
- For altitudes above 2,000 ft. ratings may be reduced at the rate of 4% for every 1,000 ft. above sea level.
- The MEA number for the Beckett burners used on the SFH-W are as follows:

MEA No. for Beckett Burners	
AF	156-77-E
AFG	213-83-E
AFII 85	24-92-E
AFII 150	456-90-E



BOILER CLEARANCES		
Unit	**Minimum Clearance to Combustible**	**Vent Pipe Minimum Clearance**
Top	24”	18”
Front	4”	
Flue Connector	9”	
Rear	6”	
Sides	6”	

Notes:

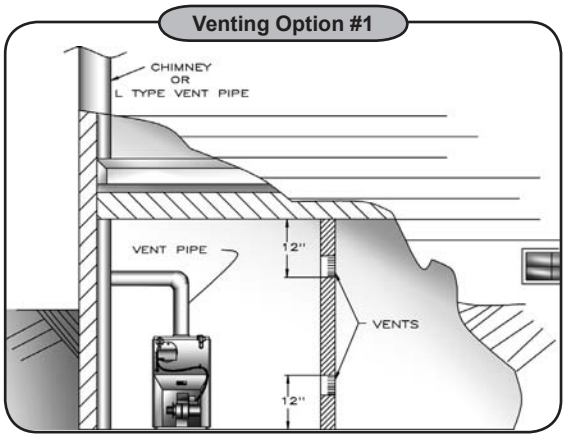
- *This unit must be set on a concrete or other noncombustible material base or floor.* ***IT MUST NOT BE INSTALLED ON CARPETING.***
- *Allow for greater clearance on access side for servicing.*

Ventilation of the boiler room must be adequate to provide sufficient air to properly support combustion

When a boiler is located in an unconfined space in a building of conventional construction frame, masonry or metal, infiltration normally is adequate to provide air for combustion and ventilation. However, in any building which has been altered to conserve energy or to minimize infiltration, the boiler area should be considered as a CONFINED SPACE. If there is any doubt, install air supply provisions for combustion and ventilation in accordance with section 5.3, Air for Combustion and Ventilation, of the NFPA 54 1988 code, the recommendations that follow, or applicable provisions of the local building codes.

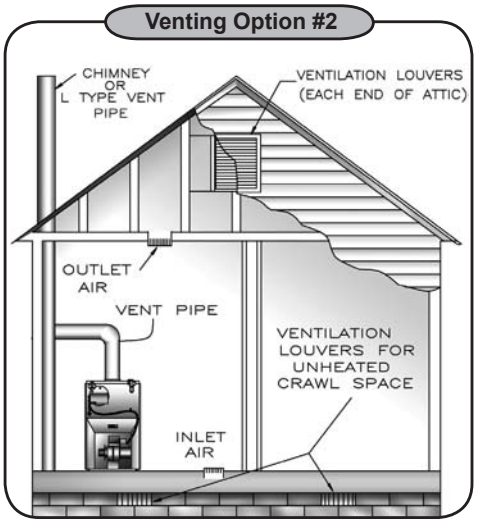
Samples of venting options follow.

Venting Option #1



When the boiler is installed in a confined space and all air is provided from the outdoors the confined space shall be provided with one or two permanent openings. When ducts are used, they shall be of the same cross sectional area as the free area of the area of the openings to which they connect. The minimum dimension of rectangular air ducts shall be not less than 3 x 3 inches or 9 square inches. ***Venting Option #1***

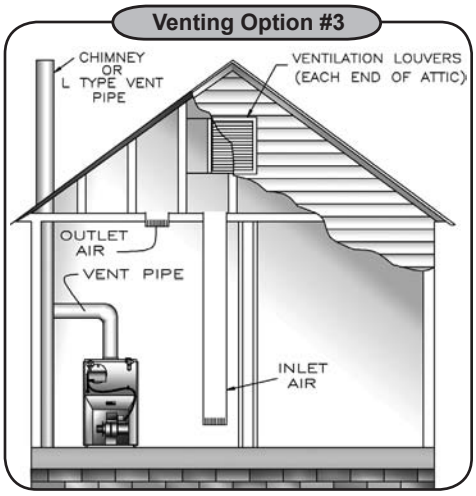
Venting Option #2



When directly communicating with the outdoors, each opening shall have a minimum free area of 1 square inch per 4,000 Btu per hour of total input rating of all equipment in the enclosure.

Venting Option #2

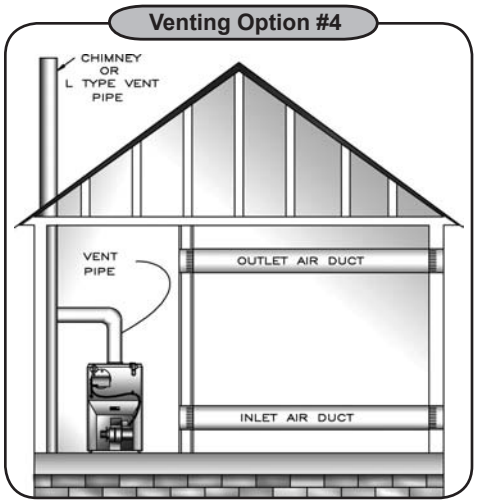
Venting Option #3



When communicating with the outdoors by means of vertical ducts, each opening shall have a minimum free area 1 square inch per 4,000 Btu per hour of total input rating of all appliances in the enclosed space.

Venting Option #3

Venting Option #4



If horizontal ducts are used, each opening and duct shall have a minimum free area 1 square inch per 2,000 Btu per hour of total input rating of all appliances in the enclosed space.

Venting Option #4

UTICA BOILERS

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