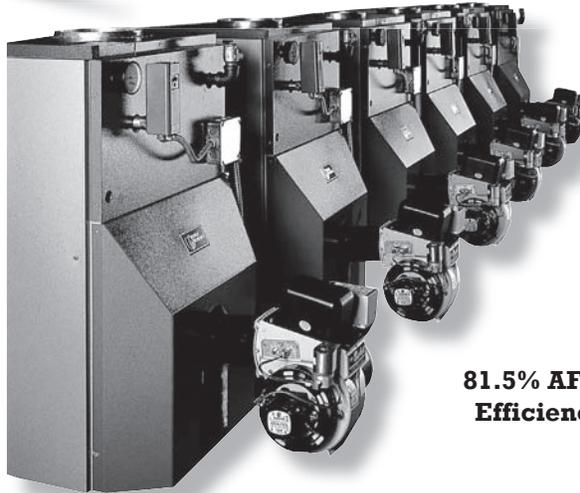




**SFM Constellation Series
Oil-Fired Multiple Commercial
Boiler System**

P/N# 240005911, Rev. 1.0 [12/05]



**81.5% AFUE
Efficiency**

Available Heating Inputs of:

315 Btuh through 3,080 Btuh

▲ **Application** – SFM Constellation oil-fired, hot water multiple commercial boiler is available in inputs 315 Btuh through 3,080 Btuh and is an ideal replacement or new construction choice for today’s commercial buildings requiring hot water heat fueled by oil. The SFM is composed of two or more modules allowing the option to step-fire individual boilers, only the modules necessary to meet the heating demand of the day are fired thus saving on fuel. Unlike massive one piece commercial boiler heat exchangers, individual modules are only 22” x 32” making them easy to install and fit through small doorways. In addition the SFM heating system can deliver AFUE efficiencies up to 81.5%. Based on Utica’s Starfire III, the SFM Constellation combines a smart design with quality components to provide outstanding efficiencies and reliable performance.

Benefits:

- Outdoor rest control step-fires only the only the modules necessary to meet the heating demand.
- High efficiency performance and low operating cost.

▲ **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. 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 commercial boiler, cast iron heat exchanger with a Limited One Year 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) choice of Carlin or Riello, manufacturer approved oil burners are available.

SFM OIL-FIRED MULTIPLE COMMERCIAL BOILER SYSTEM

FEATURES AND BENEFITS *Continued*

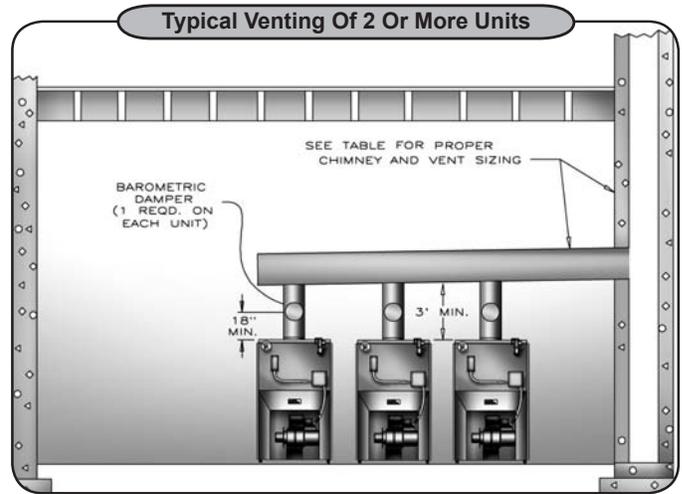
▲ **Solenoid Oil Valve** – Provides cleaner burning and quieter operation, included on all Beckett, Carlin and Riello burners.

▲ **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.



CHIMNEY OR VENT SIZES

| MODEL NO. | DIA. OF CHIMNEY OPENING (Breeching) | CHIMNEY SIZE (in. x in. x ft.) | FLUE OUTLET SIZE |
|-----------|-------------------------------------|--------------------------------|------------------|
| SFM6225W | 8 | 8X8X15 | 8" |
| SFM7275W | 9 | 8X12X15 | 8" |
| SFM24150W | 9 | 8X12X15 | 6" |
| SFM25175W | 9 | 8X12X20 | 7" |
| SFM25200W | 9 | 8X12X20 | 7" |
| SFM26225W | 9 | 8X12X20 | 8" |
| SFM27275W | 10 | 12X16X15 | 8" |
| SFM36225W | 12 | 12X16X15 | 8" |
| SFM37275W | 14 | 12X16X20 | 8" |
| SFM47275W | 14 | 12X16X15 | 8" |
| SFM57275W | 18 | 16X20X20 | 8" |
| SFM67275W | 18 | 20X20X15 | 8" |
| SFM77275W | 22 | 20X24X15 | 8" |
| SFM87275W | 22 | 20X24X20 | 8" |

BOILER CLEARANCES

| Unit | Minimum Clearance to Combustible | Vent Pipe Minimum Clearance |
|----------------|----------------------------------|-----------------------------|
| Top | 24" | 6" |
| Front | 24" | |
| Flue Connector | 9" | |
| Rear | 6" | |
| Sides | 12" | |

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.

SFM SERIES STANDARD EQUIPMENT

OPTIONAL EQUIPMENT

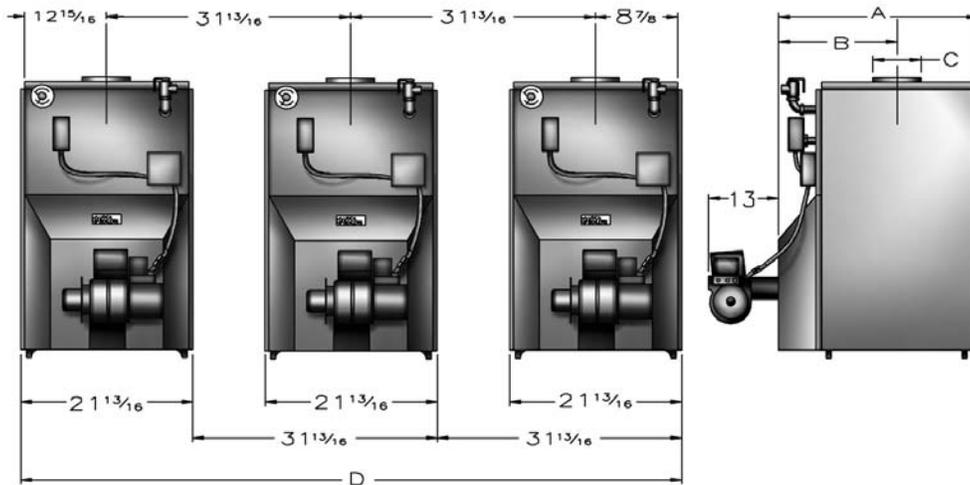
| | | |
|-------------------------------------|---------------------------------|---|
| Insulated jacket | Stainless steel burners | Electronic low water cut-off now available to meet the latest codes requirements |
| Boiler, assembled, wired and tested | 30 lb. A.M.S.E. relief valve | |
| Cast iron section and push nipples | Drain cock | Tankless water heater, add: • Hot water coil • Triple aquastat relay |
| Cast-iron swing door | Supply tapping 2" | |
| Target wall/liner | Return tapping 1 1/2" | |
| Hi-limit aquastat control | High limit & circulator control | Quick Pick Option Of: • Carlin Burner • Riello Burner |
| Temperature/pressure gauge | Circulator (field installed) | |
| Wiring harness | Primary control | |

BOILER RATINGS, CAPACITIES & DIMENSIONAL DATA

| SFM SERIES BOILER DATA | | | | | | | | | |
|------------------------|----------------|---------------------------------|--------------------|---------------------|------------------|--------------------|--------------|-------------------|-------------------|
| MODEL NO. OF MODULES | NO. OF MODULES | TOTAL BOILER WATER VOLUME (GAL) | BOILER WEIGHT LBS. | PUMP PRESSURE P.S.I | NOZZLE FURNISHED | FIRING RATE G.P.H. | INPUT M.B.H. | DOE OUTPUT M.B.H. | IBR OUTPUT M.B.H. |
| SFM6225W | 1 | 19.5 | 915 | 140 | 2.00 45B | 2.25 | 315 | 254 | 221.0 |
| SFM7275W | 1 | 22.5 | 1058 | 140 | 2.25 45B | 2.75 | 385 | 307 | 267.1 |
| SFM4150W | 2 | 27.0 | 1251 | 140 | 1.25 80B | 3.00 | 420 | 350 | 304.0 |
| SFM5175W | 2 | 33.0 | 1546 | 140 | 1.50 80B | 3.50 | 490 | 412 | 358.0 |
| SFM5200W | 2 | 33.0 | 1546 | 140 | 1.75 80B | 4.00 | 560 | 462 | 402.0 |
| SFM6225W | 2 | 39.0 | 1831 | 140 | 2.00 45B | 4.50 | 630 | 508 | 442.0 |
| SFM7275W | 2 | 45.0 | 2116 | 140 | 2.25 45B | 5.50 | 770 | 614 | 534.2 |
| SFM6225W | 3 | 58.5 | 2745 | 140 | 2.25 45B | 6.75 | 945 | 762 | 663.0 |
| SFM7275W | 3 | 67.5 | 3174 | 140 | 2.25 45B | 8.25 | 1155 | 921 | 801.3 |
| SFM7275W | 4 | 90.0 | 4232 | 140 | 2.25 45B | 11.00 | 1540 | 1228 | 1068.4 |
| SFM7275W | 5 | 112.5 | 5290 | 140 | 2.25 45B | 13.75 | 1925 | 1535 | 1335.5 |
| SFM7275W | 6 | 135.0 | 6347 | 140 | 2.25 45B | 16.50 | 2310 | 1842 | 1602.6 |
| SFM7275W | 7 | 157.5 | 7905 | 140 | 2.25 45B | 19.25 | 2695 | 2149 | 1869.7 |
| SFM7275W | 8 | 180.0 | 8464 | 140 | 2.25 45B | 22.00 | 3080 | 2456 | 2136.8 |

NOTES:

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% CO₂.
3. For equivalent square feet of radiation, divide I=B=R output by 150.
4. Net ratings based on 170 °F temperature in radiators and include 15% allowance for normal piping and pick-up load. Consult manufacturers for unusual piping and pick-up requirements.
5. Nozzle listed is for use with Beckett burner. When alternate burner is used, consult burner manufacturer's recommendations.
6. Electrical service to be 120 Volts, 15 Amps, 60 Hz. (Each Boiler).
7. The MEA number for the SFM series is 182-86E.
8. The MEA number for the AFG burner is 213-83-E.



| MODEL NO. | A | B | C | D |
|-----------|---------|---------|----|-----------|
| *SFM6225W | 29 1/4" | 13 5/8" | 8" | — |
| *SFM7275W | 32 7/8" | 13 5/8" | 8" | — |
| SFM24150W | 21 1/2" | 12 5/8" | 6" | 53 13/16" |
| SFM25175W | 25 1/8" | 14 1/4" | 7" | 53 13/16" |
| SFM25200W | 25 1/4" | 14 1/4" | 7" | 53 13/16" |
| SFM26225W | 29 1/4" | 13 5/8" | 8" | 53 13/16" |
| SFM27275W | 32 7/8" | 13 5/8" | 8" | 53 13/16" |

| MODEL NO. | A | B | C | D |
|-----------|---------|---------|----|------------|
| SFM36225W | 29 1/4" | 13 5/8" | 8" | 85 7/16" |
| SFM37275W | 32 7/8" | 13 5/8" | 8" | 85 7/16" |
| SFM47275W | 32 7/8" | 13 5/8" | 8" | 87 13/16" |
| SFM57275W | 32 7/8" | 13 5/8" | 8" | 149 1/16" |
| SFM67275W | 32 7/8" | 13 5/8" | 8" | 181 13/16" |
| SFM77275W | 32 7/8" | 13 5/8" | 8" | 212 11/16" |
| SFM87275W | 32 7/8" | 13 5/8" | 8" | 245 5/8" |

**SFM6225W & SFM7275W are Single Module Units*

SFM OIL-FIRED MULTIPLE COMMERCIAL BOILER SYSTEM

COMBUSTION AIR REQUIREMENTS (Minimum Opening In Square Inches)

| *UNCONFINED AREA | | **CONFINED AREA | | | |
|--|-----------|--|---------------------------------------|---------------------------------------|------|
| OUTSIDE COMBUSTION AIR | | INSIDE COMBUSTION AIR | OUTSIDE COMBUSTION AIR | | |
| 1 in. 2/5000 Btu (Paragraph 2)(Sq. in.) | | 1 in. 2/1000 Btu (Min. 100 in 2)(Opt.#1) (Sq. in.) | 1 in. 2/4000 Btu (Opt.#2)(Sq. in.) | 1 in. 2/2000 Btu (Opt.#2)(Sq. in.) | |
| Btu/h INPUT | 315,000 | 63 | 315 | 78.75 | 158 |
| | 385,000 | 77 | 385 | 96.25 | 193 |
| | 420,000 | 84 | 420 | 105 | 210 |
| | 490,000 | 98 | 490 | 123 | 245 |
| | 560,000 | 112 | 560 | 140 | 280 |
| | 630,000 | 126 | 630 | 158 | 315 |
| | 770,000 | 154 | 770 | 193 | 385 |
| | 945,000 | 189 | 945 | 237 | 473 |
| | 1,155,000 | 231 | 1155 | 289 | 578 |
| | 1,540,000 | 308 | 1540 | 385 | 770 |
| | 1,925,000 | 385 | 1925 | 482 | 963 |
| | 2,310,000 | 462 | 2310 | 578 | 1155 |
| | 2,695,000 | 539 | 2695 | 675 | 1348 |
| 3,080,000 | 616 | 3080 | 770 | 1540 | |

* Unconfined area: A space whose volume is not less than 50 cubic feet per 1000 Btu per hour of all appliances installed in that space (cubic feet of space = height x width x length).

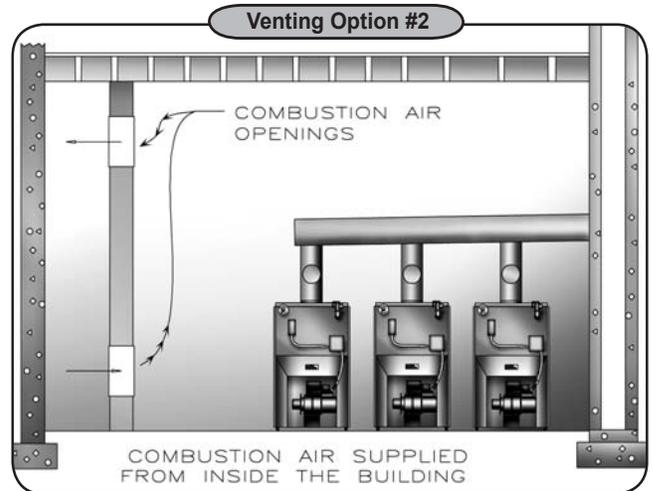
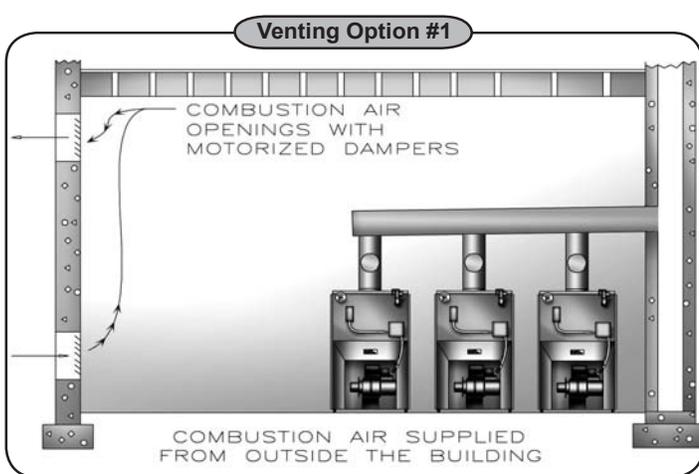
** Confined area: A space whose volume is less than 50 cubic feet per 1000 Btu per hour of all appliances installed in that space (cubic feet of space = height x width x length).

When a boiler is installed in a confined space, in a building of unusually tight construction, air for combustion and room ventilation must be obtained from outdoors or from spaces freely communicating with the outdoors. A permanent opening or openings having a total free area of not less than 1 square inch per 5,000 Btu per hour of total input rating of all appliances shall be provided. Ducts may be used to convey

make-up air from the outdoors and shall have the same cross-sectional area of the openings to which they are connected.

When the boiler is installed in a confined space and all air is provided from the outdoors, the confined space shall be provided with two permanent openings, one commencing within 12 inches from the top and one commencing 12 inches from the bottom of the enclosure. The openings shall communicate directly, or by ducts, with the outdoors or spaces (crawl or attic) that freely communicate with the outdoors to provide adequate air for ventilation and combustion. 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 #1**

When air for combustion and room ventilation is from inside buildings, the confined space shall be provided with two permanent openings, one starting 12 inches from the top and one 12 inches from the bottom of the enclosed space. Each opening shall have a minimum free area of 1 square inch per one thousand (1,000) Btu per hour of the total input rating of all appliances in the enclosed space, but must not be less than one hundred (100) square inches. These openings must freely communicate with the interior areas having adequate infiltration from the outside. **Venting Option #2**



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