WEIL-McLAIN®
www.weil-mclain.com

ULTRA OIL™
HIGH-EFFICIENCY OIL BOILER
Water - Chimney or Direct Vent | 99-173 MBH
Series 3 | Efficiency 87%

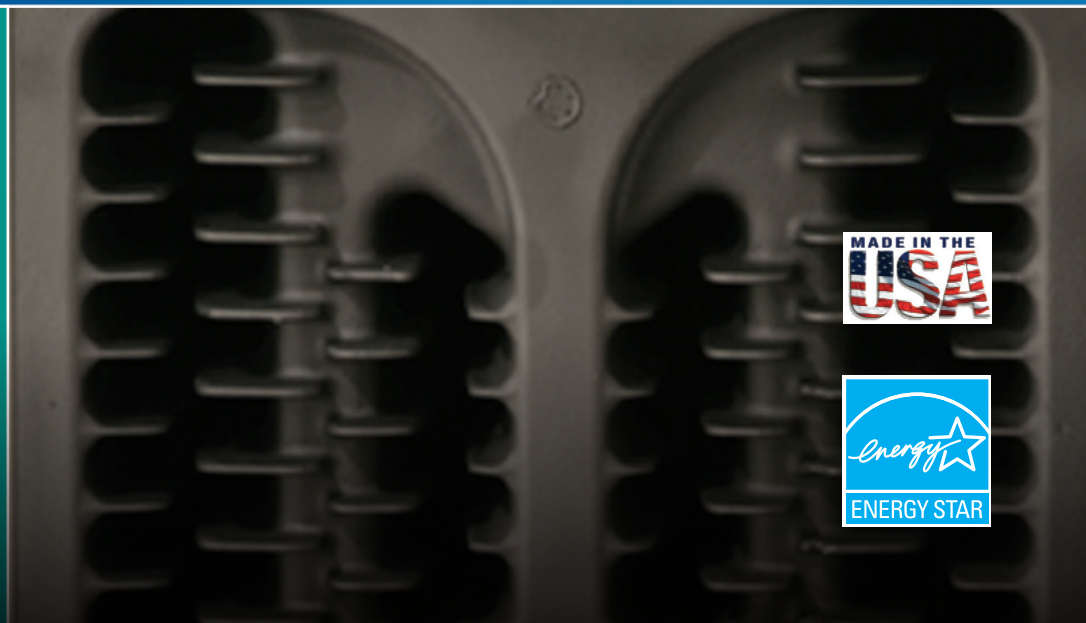
- Durable 3-pass heat exchanger design
- Easy to install and service
- Made in USA with Weil-McLain quality

HIGH EFFICIENCY CAST IRON OIL BOILER AT 87% AFUE

Ultra Oil™

APPLICATIONS INCLUDE:

Residential
Light Commercial
Multiple Boilers
Indirect-fired Water Heating
Radiant Heating
...And Much More



MADE IN THE USA

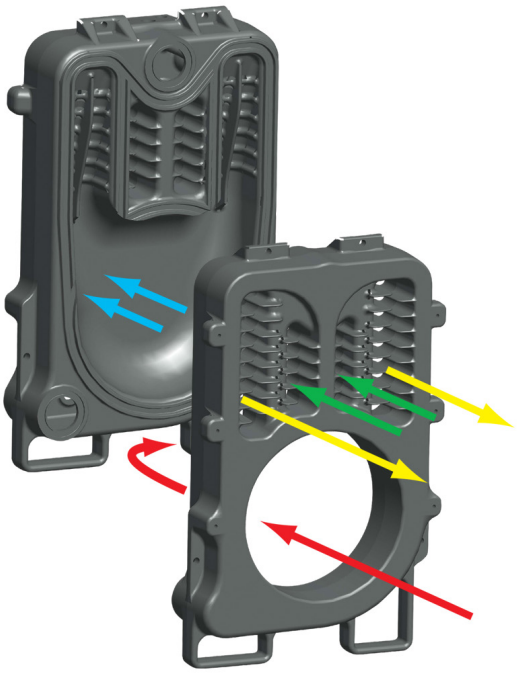
ENERGY STAR

WEIL-MCLAIN LEADS THE INDUSTRY WITH ITS PREMIUM, SMART, DURABLE OIL BOILER.

With an extensive list of features for both contractors and homeowners including:

- Proven three-pass cast iron heat exchanger with captured elastomer seals
- Pre-wired for an optional fully-integrated control system that can manage automated applications
- Adaptable door design and interchangeable side panels that can accomodate most installation conditions
- Venting options - chimney or direct vent
- Burner options - Beckett NX or AFG, Carlin and Riello
- All housed in a sleek, innovatively styled jacket with rear piping and wiring openings, and concealed controls for an appliance-like appearance.

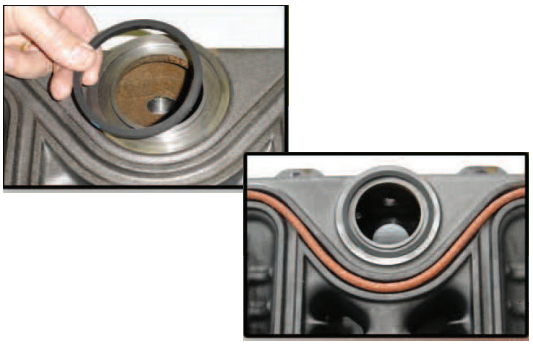
THREE PASS DESIGN



WEIL-MCLAIN PROVEN TECHNOLOGY

Weil-McLain has been using a three pass design concept for over 70 years because it provides better flame control, and more efficient fuel utilization, which reduces heating costs. The Ultra Oil has incorporated finite element modeling to enhance overall boiler operation.

- Computer designed flueway fins increase the heat transfer surface area, which extracts more heat and increases efficiency without penalizing boiler back pressure
- The wider flueways decrease the negative impact of fouling
- An added benefit of the three pass design is the horizontal configuration, which makes virtually all of the combustion chamber, turnaround, and flueways visible from the front of the boiler for easy cleaning and maintenance
- Silicone coated fiberglass rope insures a positive seal
- Revolutionary rear section design directs the flue gas flow into the flueways without sacrificing pressure drop through the inner and the outer flueways which eliminates rear refractory



CAPTURED SEALS-OVER 45 YEARS OF RELIABLE PERFORMANCE

Boiler sections will expand and contract as they heat and cool. Our captured seal allows the cast iron to move while preventing leaks, unlike rigid metal push nipples. The flexible elastomer sealing rings guarantee a watertight seal while the precision-machined port grooves secure them in place, and protect them from the contaminants of the water.

DISTINCTIVE STYLING

JACKET AND SIDE PANEL DESIGN - STYLISH APPEARANCE & EASY ACCESS

Ultra Oil has a modern appearance that combines appliance-like design features for placement in high traffic living spaces, with easy serviceability for the contractor and homeowner.

- The snap-on front jacket panel allows easy entry to the full access burner door
- The left and right side panels are interchangeable which eliminates installation mistakes
- All piping, wiring, and venting connections are located in the rear of the boiler for a cleaner look
- The entire housing and top control tray can be easily removed for hand trucking

REVERSIBLE SWING - AWAY DOOR - FLEXIBLE INSTALLATION OPTIONS

Ultra Oil features a full access, reversible swing-away door, which exposes virtually the entire combustion area and all flue-ways for simplified inspection, cleaning, and maintenance. This design also incorporates a mounting bracket that can be installed on either the left or right side of the front section for installation in small, confined spaces and corners.

- Removable door lessens the overall weight when trucking
- The symmetrical design enhances strength and durability
- Bolts on both sides create a uniform consistent seal
- A quick-disconnect plug cuts burner power when the door is open

VENTING OPTIONS

CHIMNEY OR DIRECT VENT

The Ultra Oil boiler provides venting installation flexibility. It can be easily vented to an existing chimney, or direct vented using a pre-packaged termination and combustion air kit.

- Barometric damper included when venting to a chimney
- No chimney needed, and direct vent options provides better indoor air quality by protecting against possible contaminated inside air
- No power-assisted fan needed to help exhaust flue products
- Direct vent kit includes 15′ of vent pipe and an outside termination cap

BURNER OPTIONS

BECKETT™, CARLIN™ OR RIELLO

- Beckett NX - (Chimney or Direct Vent)
- Beckett AFG - (Chimney Vent Only)
- Carlin - (Chimney Vent Only)
- Riello - (Chimney or Direct Vent)

CONCEALED CONTROLS

TOP MOUNTED, HINGED CONTROL POD- AND INTEGRATED CONTROL SYSTEM

The top mounted hinged control POD includes a factory installed external service switch and temperature/pressure gauge for easy viewing. The unique, angled POD provides control system protection from dirt, moisture and temperature fluctuations, and includes a combination temperature control and low water cutoff. Factory assembled, pre-wired terminal strips simplify field wiring of incoming power, mounted circulators and additional limit controls that may be required by local codes. The wiring strip also includes dedicated terminals to quickly and easily install the optional Advanced Features Module (AFM) during or after the initial installation.

ADVANCED FEATURES MODULE

OPTIONAL ADVANCED FEATURES MODULE (AFM)

Designed by Weil-McLain and Tekmar® exclusively for the Ultra Oil boiler, the Advanced Features Module (AFM) was developed with the heating contrator in mind. The easy-to-read display takes the guesswork out of determining system operation, and easy to understand symbols indicate which devices the control has turned on, and whether the control and system is functioning as it should. The digital display can be mounted on the panel, or up to 500 feet away from the boiler.

AFM FEATURES INCLUDE:

- Dual Boiler Operation - The AFM will control two boilers to supply the required target temperature. The minimum time between each boiler operation is the fire delay setting plus the minimum inter-stage delay setting.
- Equal Run Time Rotation - The AFM includes an adjustable setting to control the firing order of the boilers to ensure that both boilers receive equal amounts of use.
- Boiler Outdoor Reset - The AFM operates the boiler(s) to maintain the boiler supply temperature based on the outdoor air temperature and the boiler characterized heating curve settings.
- Mixing Outdoor Reset - The AFM is capable of providing a reset supply water temperature from the primary boiler loop to a secondary mixed loop when a mixing device is used (variable speed pump or floating action valve).
- Indirect Domestic Hot Water Operation - The AFM has three different settings for DHW operation based upon pipe configuration: DHW in parallel no priority, DHW in parallel with priority, and DHW in primary/secondary no priority. The AFM also has DHW limits to prevent freeze-up and DHW post purge and mixing purge to maximize efficiency.
- Setpoint Operation - The AFM has two setpoint modes available: setpoint in parallel where the primary pump does not turn on, but may operate on either a boiler demand or a DHW demand, and primary pump during setpoint where the primary pump is powered.
- The AFM also includes powered pump ouputs, warm weather shut down, built-in pump and valve exercising and thermal shock protection functionality.

Outdoor Reset

Low Temperature Mixing

DHW Priority

Set Point Operation

STANDARD AND OPTIONAL

STANDARD EQUIPMENT:

- Three-pass cast iron heat exchanger with captured elastomer seals
- Reversible swing-away burner door
- Silicone coated fiberglass sealing rope
- Boiler drain valve
- Relief valve (30psi)
- Attractive jacket design
- Hinged control POD
- Service switch
- Temperature/pressure gauge
- Factory wired terminal strips with labeled wires (pre-wired to accept external limits such as high limit and low water cut off)
- Combination limit and low water cut off
- Quick disconnect burner plug
- Barometric damper
- Circulator

High Capacity Coil Design

AQUA Plus Indirect-Fired Water Heaters

OPTIONAL EQUIPMENT:

- Beckett NX-(Chimney or Direct Vent)
- Beckett AFG-(Chimney Vent Only)
- Carlin-(Chimney Vent Only)
- Riello-(Chimney or Direct Vent)
- Direct vent kit
- 50 psi relief valve

ADVANCED FEATURE MODULE (AFM)

- Outdoor Reset
- Low Temperature Mixing
- Setpoint Operation
- DHW Priority
- DHW Priority Override
- DHW Post Purge
- Stage Fire Two Boilers
- Minimum Boiler Setting
- Automatic Boiler Differential
- Boiler Protection
- Warm Weather Shutdown
- Freeze Protection
- Mixing Device Exercise
- Pump Exercise
- Test Sequence
- LCD Remote Display
- Run Hours Log
- Plug-in Terminals

ENDLESS HOT WATER

Weil-McLain brings you the perfect match. An Aqua Plus® indirect-fired water heater and an Ultra Oil boiler are the best value combination for all your comfort heating and hot water needs.

Get more hot water when you need it, all at a lower operating cost.

DIMENSIONS

DIMENSIONS	UO-3RE*	UO-3E	UO-4E	UO-5E
Supply Tapping	1 ½"	1 ½"	1 ½"	1 ½"
Return Tapping	1 ½"	1 ½"	1 ½"	1 ½"
Depth-With Burner (B)	37"	37"	41"	45"
Depth-Boiler (L)	25"	25"	29"	33"

DATA	UO-3RE*	UO-3E	UO-4E	UO-5E
Chimney Rectangle	8"x 8"	8"x 8"	8"x 8"	8"x 8"
Chimney Round	6"	6"	6"	6"
Chimney Height	15'	15'	15'	15'
Water Volume	15.00 Gal.	15.00 Gal.	18.25 Gal.	21.50 Gal.
Approximate Shipping Weight	636	636	737	852

RATINGS

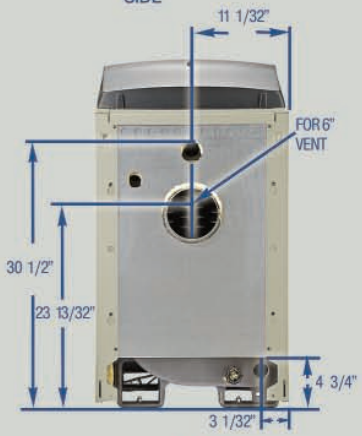
RATINGS	UO-3RE*	UO-3E	UO-4E	UO-5E
Burner Capacity (GPH)	0.80	1.00	1.20	1.40
CSA Input (MBH)	112	140	168	196
DOE Heating Capacity (MBH)	99	123	148	173
Net Ratings (MBH)	86	107	129	150
DOE Seasonal Efficiency AFUE (%)	87	87	87	87
Draft Loss Through Boiler (inches wc)	.000	.020	.025	.040

*The .80 GPH firing rate is achieved by changing the burner nozzle, refer to burner instructions or boiler's rating label for correct selection. For Beckett AFG, also use the burner low fire rate baffle included in burner carton.

In the interest of continual improvements in product and performance, Weil-McLain reserves the right to change specifications without notice.

FRONT

SIDE



BACK

INTERMEDIATE

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