
# RIELLO RTC-80

## High Efficiency Condensing Boiler
## 1000-5500 MBH

www.rielloboilers.com

RIELLO
Energy For Life

# CAPACITY RANGE

RTC-80 1000-5500

| Model | Input Power Min - Max MBH | AHRI Thermal Efficiency % | Working Pressure Max PSI | Working Temperature Max ºF | NOx Emission ppm |
|---|---|---|---|---|---|
| RTC 1000-80 | 102 - 1022 | 94% | 80 | 194 | <30 |
| RTC 1300-80 | 133 - 1325 | 94% | 80 | 194 | <30 |
| RTC 1700-80 | 170 - 1703 | 94% | 80 | 194 | <30 |
| RTC 2300-80 | 227 - 2271 | 94% | 80 | 194 | <30 |
| RTC 3000-80 | 303 - 3028 | 94% | 80 | 194 | <30 |
| RTC 3800-80 | 379 - 3785 | 94% | 80 | 194 | <30 |
| RTC 4700-80 | 473 - 4731 | 94% | 80 | 194 | <30 |
| RTC 5500-80 | 549 - 5488 | 94% | 80 | 194 | <30 |

ASME H

AHRI CERTIFIED www.ahridirectory.org
Commercial Boilers
AHRI Standard BTS-2000

INTERTEK ETL LISTED CND US

# DESIGNED FOR CONDENSING

Riello high-efficiency condensing boilers are designed both for retrofit and new construction projects. Project costs are reduced thanks to the high water content heat exchanger, which doesn't require a minimum flow rate and eliminates the need of an expensive dedicated boiler circulator. Best quality materials used for all components ensure high reliability and longer service life.

Condensing boiler technology is the most efficient and ecological form of fuel heating available today. In particular, this technology recovers the latent heat retained in flue gas condensation. This latent energy is normally discharged to the chimney and is wasted in other heating systems. Thanks to the lower fuel consumption combined with the lower heating costs, condensing boilers usually pay for themselves in few years, reducing costs up to 20% in comparison with conventional heating. Furthermore, a modern condensing heating system increases the value of the building as well as quality of life by reducing emissions. High efficiency condensing equipment achieves qualifying points for LEED certification of commercial buildings.

Large heat-transfer surfaces, a counter-flow heat exchanger design and dual inlets for different return water temperatures together optimize condensation opportunities.

The RTC condensing boiler series could be equipped with two-stage, fully modulating or premix forced-draft burners that achieve extremely low pollutant emissions meeting the most stringent NOx and CO requirements.

## FEATURES

### Fuel options

Natural gas, propane gas, #2 fuel oil

Dual fuel options: gas/gas, gas/light oil

### Performance

Efficiency up to 98%

10:1 turndown Ratio when firing on natural gas or propane

80 psi ASME pressure rating

Working temperature up to 194 °F

NOx Emissions capable of 30 ppm or less at all firing rates when firing on natural gas

Able to work with variable primary flow installations

Fully-condensing on natural gas/propane

Condensing capability on #2 fuel oil (<15 ppm sulfur content)

### Design: Structure and Materials

3-pass firetube counter-flow heat exchanger

High quality stainless steel heat exchanger with 316Ti upper combustion chamber and 316L lower tube bundle

Dual return water connections for optimized efficiency on multiple loop/ multiple temperature systems

Top connections for clean, simplified piping layout

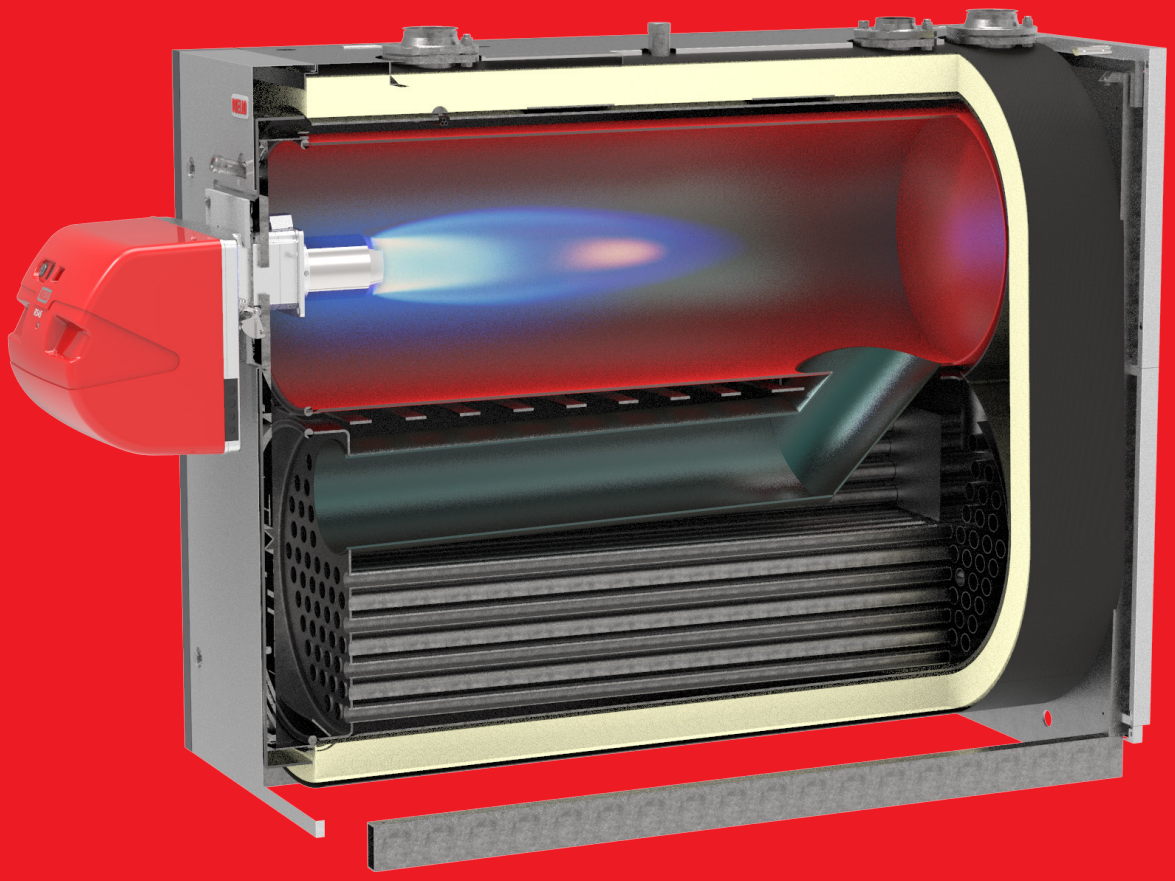
Jacket panels shipped separately for 'picture perfect' final installation

Hinged access doors for easy serviceability

### High performance and low installation costs

Simplified piping, no primary/secondary piping with extra circulator needed

# LOOKING INSIDE: DESIGN AND MATERIALS



## RTC-80 1000-5500

Easy installation and access to boiler rooms

High heating surface area within a compact footprint

Hydraulic connections on top for easy installation and clean piping layout

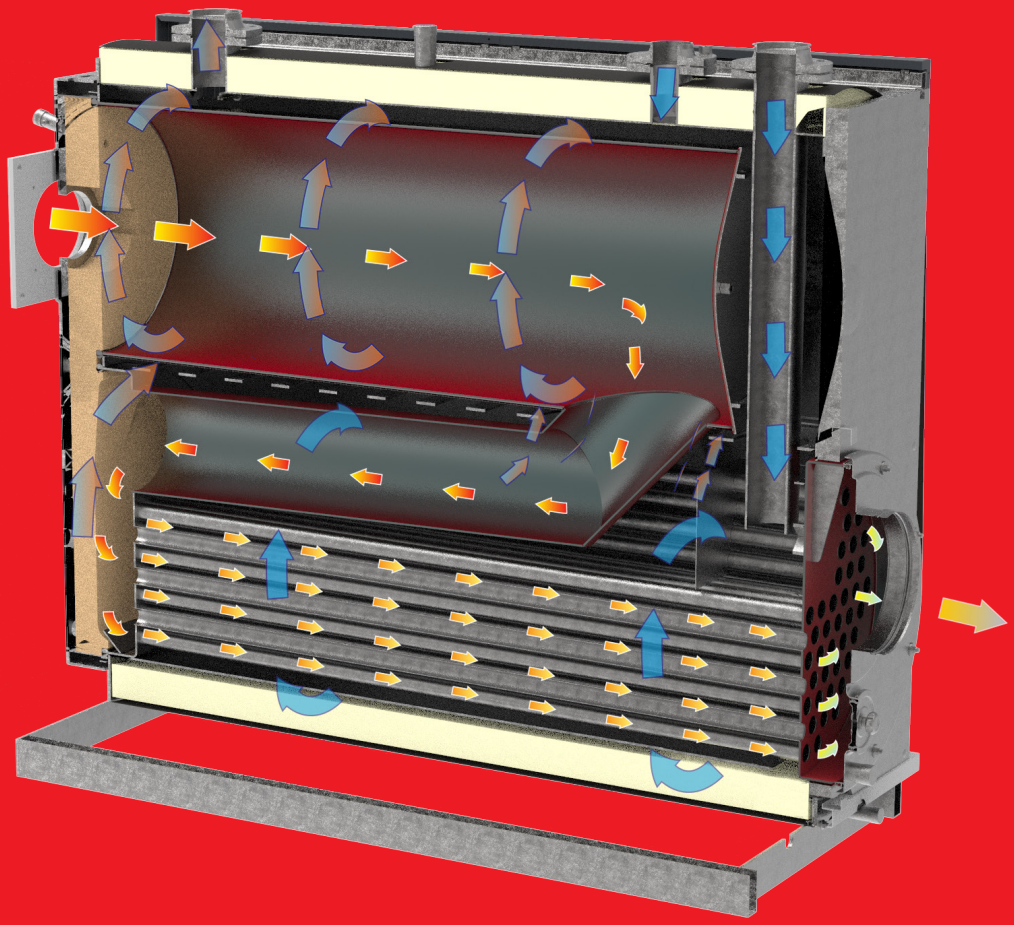
Double Return, low & medium temperature, to maximize condensing in multiple loop heating systems

3-pass, counterflow high-mass design

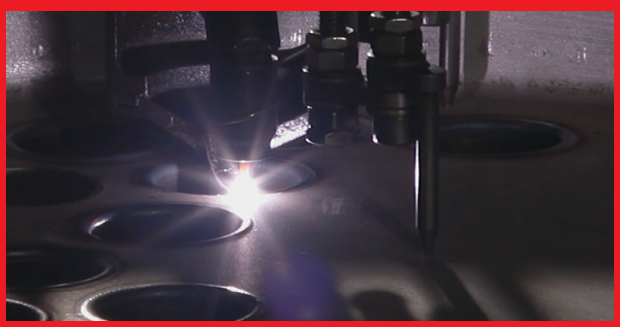
Designed for coupling with fully modulating, or premix forced-draft burners

Stainless steel 316Ti for:
- Combustion chamber
- Inversion tube
- Tube sheets

Stainless steel 316L for firetubes



The proprietary design allows natural convective circulation within the boiler to prevent overheating. This protects the boiler from damage in zero flow conditions.



Innovative Riello technology produced with the upmost attention to detail.

The production process takes place in modern state-of-art manufacturing facilities.

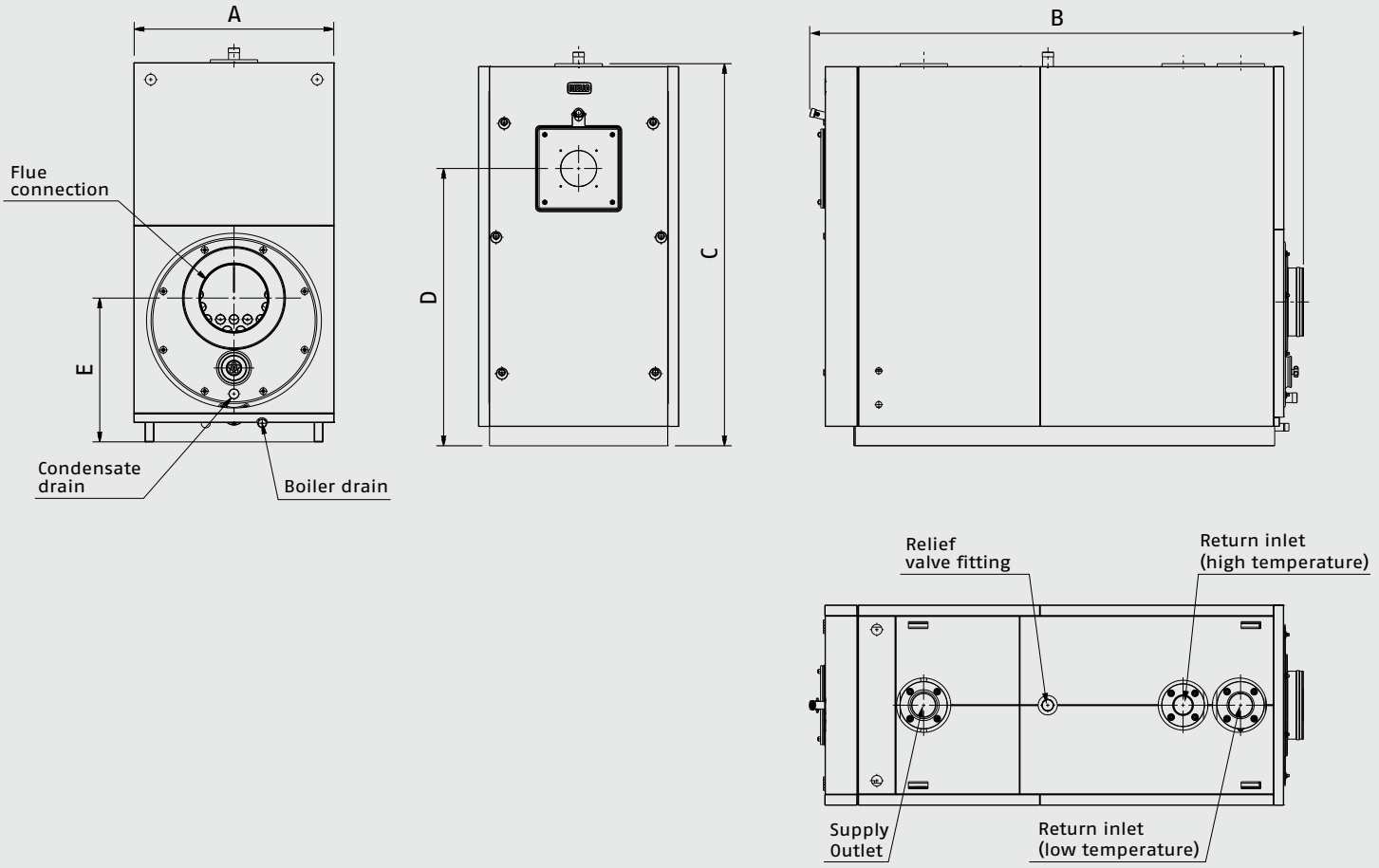
Automated robotic welding ensures consistent, impeccable quality welds.

# BURNER OPTIONS

| Type | Model | RTC 1000-80 | RTC 1300-80 | RTC 1700-80 | RTC 2300-80 | RTC 3000-80 | RTC 3800-80 | RTC 4700-80 | RTC 5500-80 |
|---|---|---|---|---|---|---|---|---|---|
| GAS | RS 28/M | ● | | | | | | | |
| | RS 28/E | ● | | | | | | | |
| | RS 38/M | ● | ●● | | | | | | |
| | RS 38/E | ● | ●● | | | | | | |
| | RS 45/M LN | ●● | ●● | ● | | | | | |
| | RS 45/E LN | ●● | ●● | ● | | | | | |
| | RS 50/M | | | ● | | | | | |
| | RS 50/E | | | ● | | | | | |
| | RS 68/M LN | | | ● | ●● | | | | |
| | RS 68/E LN | | | ● | ●● | | | | |
| | RS 70/M | | | ● | ●● | | | | |
| | RS 70/E | | | ● | ●● | | | | |
| | RS 100/M | | | | | ●● | ● | | |
| | RS 100/E | | | | | ●● | ● | | |
| | RS 120/M LN | | | | | ●● | ● | | |
| | RS 120/E LN | | | | | ●● | ● | | |
| | RS 130/M | | | | | | ● | ● | |
| | RS 130/E | | | | | | ● | ● | |
| | RS 160/M LN | | | | | | ●● | ●● | ●● |
| | RS 160/E LN | | | | | | ●● | ●● | ●● |
| | RS 190/M | | | | | | | ● | ●● |
| | RS 190/E | | | | | | | ● | ●● |
| DUAL FUEL | RLS 28 | ● | | | | | | | |
| | RLS 28/E | ● | | | | | | | |
| | RLS 38 | ● | ● | | | | | | |
| | RLS 38/E | ● | ● | | | | | | |
| | RLS 50 | | ● | ● | | | | | |
| | RLS 50/E | | ● | ● | | | | | |
| | RLS 70 | | | ● | ●● | | | | |
| | RLS 68/E | | | ● | ● | | | | |
| | RLS 100 | | | | | ●● | ● | | |
| | RLS 120/E | | | | | ●● | ● | | |
| | RLS 130 | | | | | | ● | ● | |
| | RLS 160/E | | | | | | ● | ● | ●● |
| | RLS 190 | | | | | | | ● | ●● |
| | RLS 190/E | | | | | | | ● | ●● |
| PREMIX | RX 400 | ●● | | | | | | | |
| | RX 500 | | ●● | ●● | | | | | |
| | RX 700 | | | ●● | ●● | | | | |
| | RX 850 | | | | ●● | ●● | | | |
| | RX 1000 | | | | | ●● | ●● | | |

● 0' Altitude
● 6000' Altitude

# DIMENSIONS




| Description | | RTC 1000-80 | RTC 1300-80 | RTC 1700-80 | RTC 2300-80 | RTC 3000-80 | RTC 3800-80 | RTC 4700-80 | RTC 5500-80 |
|---|---|---|---|---|---|---|---|---|---|
| A - Width | inch | 32.3 | 32.3 | 35.1 | 35.1 | 42.5 | 42.5 | 46.1 | 48.3 |
| | mm | 820 | 820 | 890 | 890 | 1080 | 1080 | 1170 | 1225 |
| B- Length | inch | 67.6 | 75.4 | 83.3 | 91.1 | 106.7 | 116.6 | 123.8 | 124.4 |
| | mm | 1715 | 1915 | 2115 | 2315 | 2710 | 2960 | 3145 | 3160 |
| C - Height | inch | 57.1 | 57.1 | 66.8 | 66.8 | 75.0 | 75.0 | 80.3 | 85.8 |
| | mm | 1450 | 1450 | 1695 | 1695 | 1905 | 1905 | 2040 | 2180 |
| D | inch | 40.6 | 40.6 | 48.6 | 48.6 | 54.8 | 54.8 | 58.9 | 62.6 |
| | mm | 1030 | 1030 | 1235 | 1235 | 1390 | 1390 | 1495 | 1590 |
| E | inch | 21.1 | 21.1 | 25.0 | 25.0 | 26.8 | 26.8 | 28.4 | 31.7 |
| | mm | 535 | 535 | 635 | 635 | 680 | 680 | 720 | 805 |

# TECHNICAL SPECIFICATIONS

| Model | RTC 1000-80 | RTC 1300-80 | RTC 1700-80 | RTC 2300-80 | RTC 3000-80 | RTC 3800-80 | RTC 4700-80 | RTC 5500-80 |
|---|---|---|---|---|---|---|---|---|
| Boiler category | ASME Section IV | | | | | | | |
| Max allowable working pressure | 80 psi | | | | | | | |
| Max allowable working temperature | 194 °F | | | | | | | |
| Water Connections Outlet & Low Temp. Inlet (Flanged) | 2-1/2" | 3" | 4" | 4" | 5" | 5" | 6" | 6" |
| High Temp. Inlet Water Connection | 2" | 2-1/2" | 3" | 3" | 3" | 3" | 4" | 4" |
| Min. Water Flow (GPM) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max. Water Flow (GPM) | 130.0 | 160.0 | 200.0 | 290.0 | 370.0 | 480.0 | 580.0 | 690.0 |
| Water Volume (gal) | 130.7 | 146.6 | 196.2 | 203.4 | 348.7 | 368.5 | 482.1 | 501.9 |
| Water Pressure Drop | 0.67 psi at 95GPM | 0.49 psi at 124 GPM | 0.44 psi at 162 GPM | 1.86 psi at 219 GPM | 1.76 psi at 285 GPM | 1.36 psi at 361 GPM | 1.45 psi at 447 GPM | 2.18 psi at 523 GPM |
| Turndown Ratio (Nat. Gas) | 10:1 | 10:1 | 10:1 | 10:1 | 10:1 | 10:1 | 10:1 | 10:1 |
| Venting/Air Intake Connection | 10" | 10" | 12" | 12" | 14" | 14" | 16" | 18" |
| Venting Materials | AISI 316L - AL29-4C (29% Cr - 4% Mo) | | | | | | | |
| Type of Fuel* | Natural, Propane and Digester gas<br>No. 2 fuel oil<br>Dual fuel | | | | | | | |
| NOx Emissions <30ppm Capability on Nat. Gas | yes | | | | | | | |
| Temperature Control Range | 80 °F to 194 °F | | | | | | | |
| Ambient Room Temperature Range | 32 °F to 140 °F | | | | | | | |
| Standard Listings & Approvals | ASME, ETL, AHRI | | | | | | | |
| Weight (dry) lbs. | 1,676 | 1,786 | 2,679 | 2,965 | 4,167 | 4,777 | 5,908 | 6,834 |
| Weight (wet) lbs. | 2,899 | 3,164 | 4,515 | 4,927 | 7,385 | 8,206 | 10,406 | 11,530 |
| Shipping Weight lbs. | 1,720 | 1,841 | 2,756 | 3,097 | 4,334 | 4,956 | 6,085 | 7,028 |

(*) Digester Gas ($H_2S$ content <15 ppm)
No. 2 Oil (Sulphur content <15 ppm)

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