



Peak-performance  
heating systems

Revision 0 – April 2016

# COMBOMAX ULTRA

## Specifications

The **COMBOMAX ULTRA** is an electric boiler used for hydronic heating, and includes a copper heat exchanger submerged in the unit's tank that is used to instantly produce domestic hot water.

### IDENTIFICATION

The electric boiler with instantaneous indirect water heater is a COMBOMAX ULTRA made by THERMO 2000 Inc.

The specified size is:

- COMBOMAX ULTRA 50 (48 US gal)
- COMBOMAX ULTRA 70 (71 US gal)

The boiler's net output is \_\_\_\_\_kW at a voltage of 240V  or 208V  single phase with a frequency of 60 hertz. The boiler is 100% efficient.

### DESCRIPTION OF THE TANK AND EXCHANGER

The tank is made of high-density carbon steel. All joints are arc-welded using the GMAW method. The tank is designed for a maximum operating pressure of 30-psi and undergoes a 60-psi hydrostatic test in compliance with the CSA B51 and ASME codes. The boiler is equipped with steel injectors at the bottom of the tank for heating water return dispersal, and steel collectors in the upper part of the tank to channel the heated water to the boiler's outlet. The boiler is insulated with a 2"-thick layer of fibreglass. The 20-gauge steel's exterior surface is coated with baked epoxy-based paint.

The built-in heat exchanger is made with parallel copper coils, with a maximum allowable working pressure of 125 psi. All copper components comply with NSF 61 standards as described in the NSF International Standard Drinking Water Systems Components Health Effects document.

### DESCRIPTION OF THE ELECTRICAL AND CONTROLS

The heating elements are immersion-type with a copper sheath and a square flange. Each element can be replaced individually. The boiler is equipped with an UltraSmart controller for multi-stage modulation of the boiler power while allowing priority to domestic hot water production.

The boiler is equipped with a high temperature limit protection device controlling the activation of one or two main load contactors with a resistance of 50 amps, which are able to perform 250,000 operations when fully loaded. The control circuit is 24VAC and controls activation of the power relays supplying the heating elements. The control circuit can control the heat circulating pump and can authorize electric or auxiliary boiler operation on a Bi-Energy installation. The device is tested, certified and bears the CSA label for CSA standards C22.2 No. 165-92 in Canada, and UL834 in the United States.

---

## THERMO 2000 INC

500, 9<sup>e</sup> Avenue, Richmond (Québec) J0B 2H0  
TÉL.: 819 826-5613 FAX: 819 826-6370



Peak-performance  
heating systems

Revision 0 – April 2016

## STANDARD FEATURES

- An ASME-compliant safety valve set to trigger at 30 psi on the tank side
- An ASME-compliant temperature and pressure safety valve set to 125psi/210°F on the domestic hot water side
- A temperature and pressure indicator
- A ½" automatic air valve with shut-off valve for easy replacement
- A thermostatic mixing valve for domestic hot water
- A pressure reducer/regulator adjusted to 12psi
- An ASSE1012 and CSA B64-3 certified check valve for drinking water
- A ¾" drain valve to empty the tank
- A domestic hot water exchanger drain valve
- The tank has adjustable legs

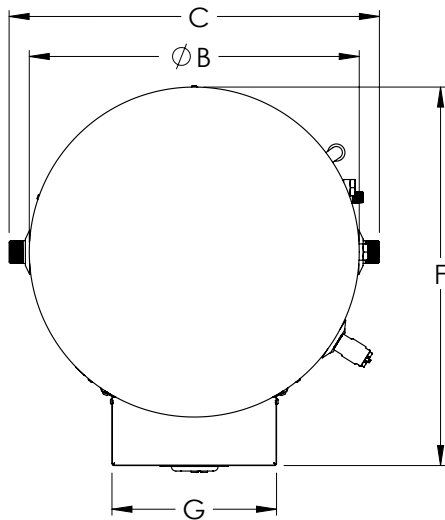
## WARRANTIES

The Combomax Ultra is covered by a 15-year warranty on the tank and the domestic hot water exchanger, and a 2-year warranty on accessories and electrical components.

---

## THERMO 2000 INC

500, 9<sup>e</sup> Avenue, Richmond (Québec) J0B 2H0  
TÉL.: 819 826-5613 FAX: 819 826-6370



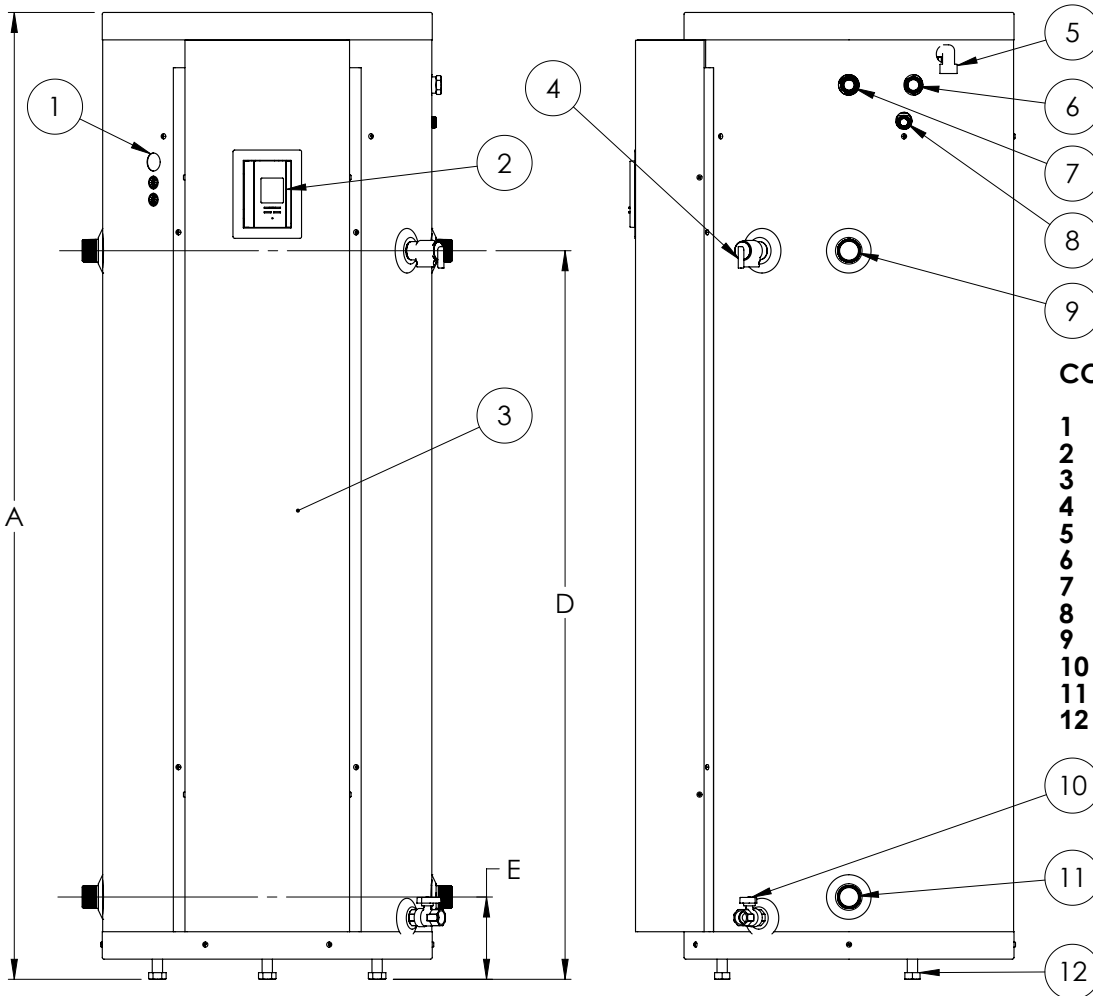
**TECHNICAL DATA**

Models (XX=Electric capacity)	Tank Volume	Domestic water connection	Boiler connection	Shipping weight
COMBOMAX® 70-XX	71 US gal.	3/4" Copper M	1-1/4" NPT M	410 lbs
COMBOMAX® 50-XX	48 US gal.	3/4" Copper M	1" NPT M	310 lbs

**ELECTRICAL DATA (240V / 1PH)**

Models (YY=Tank format)	KW*	Amps 240V/1PH	Elements	Stages
COMBOMAX® YY-4.5	4.5	19	1 X 4.5 KW	1
COMBOMAX® YY-7.5	7.5	31	1 X 3 KW + 1 X 4.5 KW	2
COMBOMAX® YY-9	9	38	2 X 4.5 KW	2
COMBOMAX® YY-12	12	50	2 X 6KW	2
COMBOMAX® YY-15	15	63	2 X 3 KW + 2 X 4.5 KW	4
COMBOMAX® YY-18	18	75	4 X 4.5 KW	4
COMBOMAX® YY-20	20	83	4 X 5 KW	4
COMBOMAX® YY-24	24	100	4 X 6 KW	4
COMBOMAX® 70-27	27	113	6 X 4.5 KW	6
COMBOMAX® 70-29	29	120	4 X 5 KW + 2 X 4.5 KW	6

\* = 208V / 1PH WILL GIVE 75% OF NOMINAL CAPACITY



**COMPONENT IDENTIFICATION**

- 1 Electrical access
- 2 "UltraSmart" controller
- 3 Electrical panel removable
- 4 Pressure relief valve 3/4NPTF
- 5 Pressure relief valve 3/4NPTF
- 6 Hot Water 3/4NPTF
- 7 Cold water 3/4NPTF
- 8 Expansion tank 1/2NPTM
- 9 Boiler Water Outlet
- 10 Tank drain valve 3/4NPTF
- 11 Boiler Water Inlet
- 12 Adjustable legs

**DIMENSIONS**

MODELS	A	B	C	D	E	F	G
	in.	in.	in.	in.	in.	in.	in.
COMBOMAX ULTRA 50	60	22	25	44	6	25 1/8	11 5/8
COMBOMAX ULTRA 70	70 1/2	24	27	53 1/8	6	27 5/8	12