MASCOT® FT

Residential Hydronic Combination Boiler

MFTCW	Wall Mounted Combination

Boiler / Water Heater
Indoor, Sizes 140, 199

Submittal Data

LAARS
Heating Systems Company

Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Project Name:

Location:

Contractor:

Standard Equipment

- High condensing efficiency 95% AFUE
- Low pressure drop, fire tube heat exchanger design
- Full modulation
  - 140MBH: 100% down to 20% of full fire (5:1 turndown)
  - 199MBH: 100% down to 10% of full fire(10:1 turndown)
- Sealed combustion chamber
- Pre-mix ceramic fiber burner
- Low NOx system exceeds the most stringent regulations for air quality – 17ppm NOx
- Horizontal or vertical direct vent
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Stainless steel heat exchanger with finned aluminum core fire tubes, welded construction
- ASME 30 psi (207kPa) working pressure heat exchanger

- ASME "H" stamp
- Inlet DHW filter
- Vent with PVC, CPVC or Polypropolene
- Natural gas or propane
- 30 psi (207kPa) ASME pressure relief valve
- Low lead compliant
- Gas leak detection
- Stainless Steel DHW indirect tank storage heat exchanger with priority for on-demand hot water
- Boiler pump wired and mounted inside jacket
- Built-in condensate trap and drain, priming not required
- Automatic air vent
- Pressure gauge
- Boiler water pressure switch
- Blocked vent pressure switch

- Blocked condensate pressure switch
- Burner site glass
- Electronic PID modulating control
- Direct spark ignition
- Customizable Freeze Protection
- Anti-short cycling
- Large user-interface and display
- Accepts external (0-10VDC) temperature setpoint signal
- Outdoor reset (sensor included)
- Outdoor air reset curve
- Manual reset high limit
- Wall mount bracket
- Field convertible between natural gas and propane
- 10-Year limited warranty

Boiler Data

Number of Units:

Fuel
☐ Natural*

Options
☐ Low Water Cut-off (shipped loose)

*Boilers shipped set up for use with Natural Gas and includes a Propane conversion kit.

Sizing Data

Model	Input		Output		AFUE	Gas Conn. Size	Heating Supply & Return Conn. Size	DHW Conn. Size	Shipping Weight	
	BTU/h	*kW*	**BTU/h**	*kW*		inches	inches	inches	**lbs**	*kg*
MFTCW140	**140,000**	*41*	**133,000**	*39*	95%	3/4 NPT	1 NPT	3/4 NPT	**111**	*50*
MFTCW199	**199,000**	*58*	**189,050**	*55*	95%	3/4 NPT	1 NPT	3/4 NPT	**130**	*59*

NOTES:

1. For other boiler ratings:

Boiler Horsepower: $HP = \dfrac{Output}{33,475}$ Radiation Surface: $EDR\ sq.\ ft. = \dfrac{Output}{150}$

Domestic Hot Water Capacity

Model	35°F Rise		45°F Rise		77°F Rise		Stored DHW	
	GPM *l/m*		**GPM** *l/m*		**GPM** *l/m*		**Gallons /** *liters*	
MFTCW140	**7.1**	*27*	**5.5**	*21*	**3.2**	*12*	**0.5**	*1.9*
MFTCW199	**9.8**	*37*	**7.7**	*29*	**4.8**	*18*	**0.5**	*1.9*

Clearances

APPLIANCE SURFACE	SUGGESTED SERVICE ACCESS CLEARANCE	
	INCHES	*CM*
Left Side	**8**	*20*
Right Side	**8**	*20*
Top	**18**	*46*
Back	**5/8**	*1.5*
Closet, Front	**3**	*8*
Front	**40**	*101*
Bottom	**24**	*61*
Vent	**1**	*3*

Electrical Data

Sizes	Boiler		
	Volts	Phase	Amps
140 and 199	120	Single	4

* Minimum 15A circuit required

Vent System

SIZES	INTAKE / EXHAUST Max Equivalent Vent and Air Pipe Length (each)					
	STANDARD 2-PIPE			STANDARD 2-PIPE		
	DIA.	**FT.**	*m*	DIA.	**FT.**	*m*
140 and 199	2"*	**50****	*15.2*	3"	**100**	*30.5*

* Must use 3x2 adaptor within 1ft (3cm) of boiler. Reference the Installation and Operation Manual for more details.

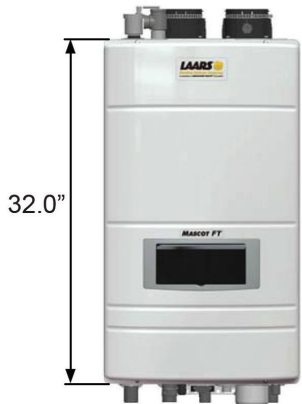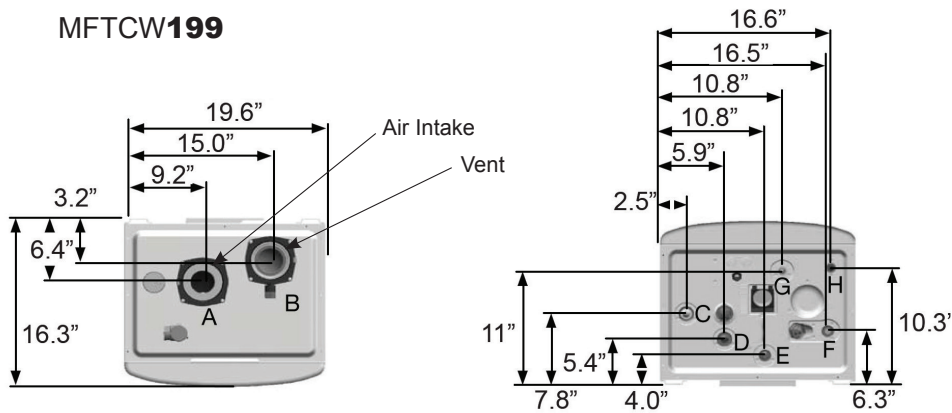**Propane models are limited to 25 equivalent feet of 2" vent.

Dimensional Data

MFTCW**140**
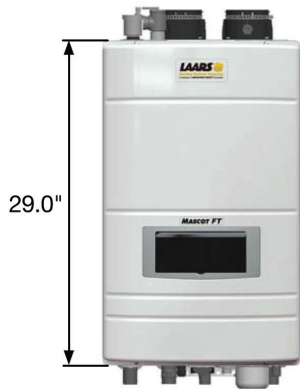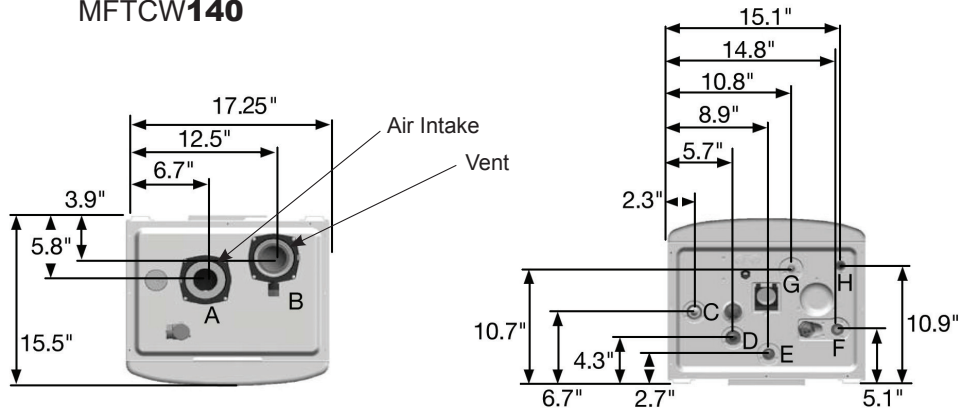
Air Intake
Vent

17.25"
12.5"
6.7"
3.9"
5.8"
15.5"

A
B

15.1"
14.8"
10.8"
8.9"
5.7"
2.3"
10.7"
4.3"
6.7"
2.7"
5.1"
10.9"

C
G
H
D
E
F

29.0"

	Description	Diameter
A	Air Intake collar	3"
B	Vent Pipe Collar	3"
C	'CH' Supply	1" NPT
D	'CH' Return	1" NPT
E	'DHW' Outlet	3/4" NPT
F	'DHW' Inlet	3/4" NPT
G	Gas Inlet	3/4" NPT
H	Condensate Line	1/2" NPT

MFTCW**199**

Air Intake
Vent

19.6"
15.0"
9.2"
3.2"
6.4"
16.3"

A
B

16.6"
16.5"
10.8"
10.8"
5.9"
2.5"
11"
5.4"
7.8"
4.0"
6.3"
10.3'

C
G
H
D
E
F

32.0"

	Description	Diameter
A	Air Intake collar	3"
B	Vent Pipe Collar	3"
C	'CH' Supply	1" NPT
D	'CH' Return	1" NPT
E	'DHW' Outlet	3/4" NPT
F	'DHW' Inlet	3/4" NPT
G	Gas Inlet	3/4" NPT
H	Condensate Line	1/2" NPT

Notes: