

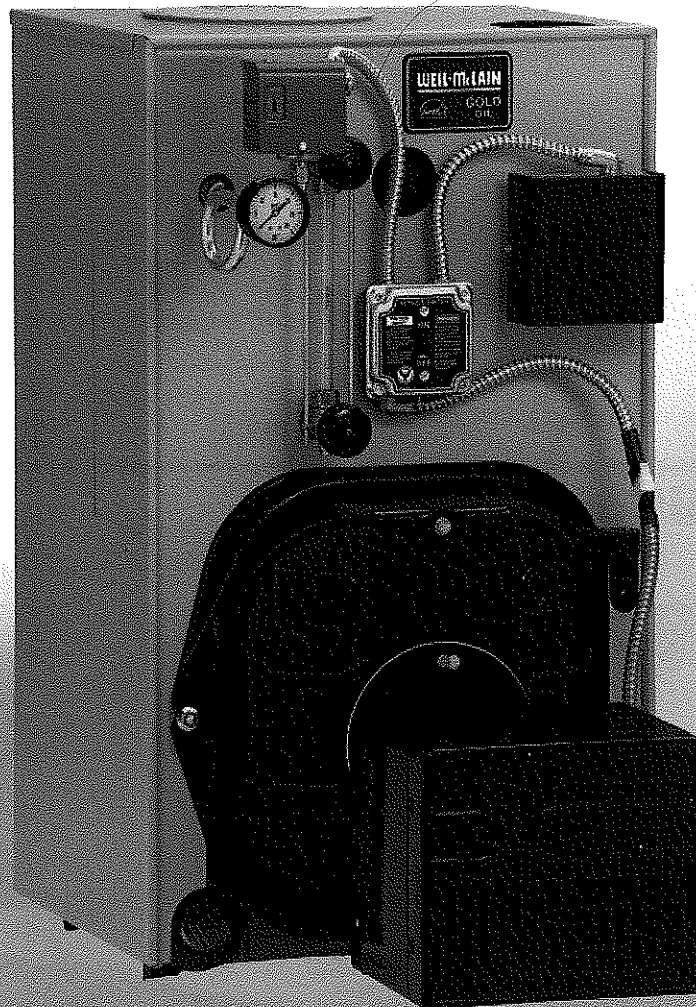
**Wm WEIL-McLAIN®**



**Oil-Fired Steam Boilers**

# Boiler Manual

- Installation
- Maintenance
- Startup
- Parts



Mobile Product  
Library

**WARNING**

This manual must only be used by a qualified heating installer/service technician. BEFORE installing, read all instructions in this manual and all other information shipped with the boiler. Perform steps in the order given. Failure to comply could result in severe personal injury, death or substantial property damage.

Part number 550-141-829/1211

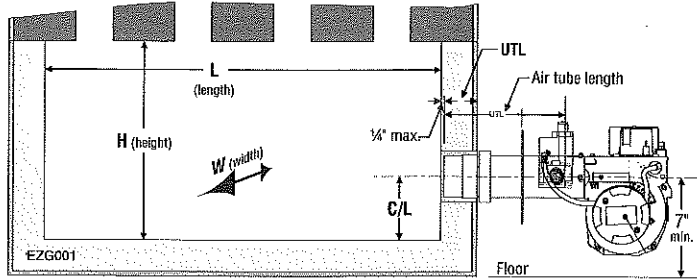
Where appliance instructions differ from this manual, follow the appliance instructions.

# 1. Prepare site • prepare burner • mount burner (continued)

## Inspect burner and components

**WARNING** Do not install or operate the burner if any component is damaged or if burner does not comply with the specifications or any other guidelines in this manual.

**Figure 3** Combustion chamber dimensions (see Table 1)



## Air tube insertion length (UTL)

Usable air tube length (UTL) is the distance from mounting flange to end of air tube. Verify that the end of the air tube will be flush with, or no more than 1/4 inch short of, the inside of the appliance combustion chamber front wall when the burner is mounted. See Figure 3 and Table 1 below for further information.

## Diffuser plate

Verify correct diffuser plate (item 2, page 3). Compare diffuser plate listed on air tube label with diffuser plate listed in Table 1.

## Gas orifice drill size

The gas orifice is drilled through a plate in the end of the orifice nipple (see item 6, page 3). Read the factory-drilled orifice size on the label attached to the burner air tube (see item 1, page 3) near the blower housing end. If the gas orifice size is not correct for your application, or if the label is illegible for any reason, check the orifice size directly and redrill orifice or replace if necessary, as follows (next page).

**Table 1** Burner specifications for EZGas Pro burners

Appliance Input BTU	Orifice Drill Size		Diffuser Plate	Air Band Type	Approx. Air Band Setting		
	Nat Gas	Propane			C Diffuser	B Diffuser	A Diffuser
Note 1	Note 2		Note 3		Note 4		
50,000 - 75,000	5/32	1/8	C	1-Slot	5%		
75,000 - 100,000	3/16	9/64	B or 9-Slot	1-Slot		5%	15%
100,000 - 125,000	7/32	11/64	B or 9-Slot	1-Slot		20%	30%
125,000 - 150,000	1/4	13/64	B or 9-Slot	1-Slot		30%	40%
150,000 - 175,000	9/32	7/32	B or 9-Slot	1-Slot		45%	70%
175,000 - 200,000	5/16	1/4	A or 9-Slot	2-Slot			30%
200,000 - 225,000	5/16	1/4	A or 9-Slot	2-Slot			35%
225,000 - 250,000	11/32	9/32	A or 9-Slot	2-Slot			45%
250,000 - 275,000	13/32	5/16	A	2-Slot			55%

Usable Tube Length for Insertion Depth		
Burners with welded flange have fixed insertion depths. Verify the insertion depth is correct for the appliance. On burners with adjustable flanges, the Usable Tube Length (UTL) available for setting the insertion depth varies with air tube length:		
Tube Length	UTL min.	UTL max.
10"	1 3/4"	3 1/2"
12	1 3/4"	5 1/2"
14	1 3/4"	7 1/2"

Note 1	Firing rate should be within +/- 5% of rated input for the appliance. High altitude applications: The maximum burner input at sea level is 275,000 Btuh. Reduce this capacity by 4% per 1,000 feet above sea level. Example- max. capacity at 5,000 feet is 220,000 Btuh (20% reduction). Pressurized firing: Maximum burner input decreases with increasing overfire pressure. Assume a reduction in maximum burner input of approximately 5% at 0.1 w.c. and 10% at 0.2 inches w.c. You will have to increase the air band opening to compensate for the increased pressure. Follow the procedures given in this manual to check combustion with instruments to determine the correct air band setting. Do not fire into a chamber with pressure higher than 0.2 inches w.c. and never fire at a higher pressure than recommended by the appliance manufacturer.
Note 2	Once the orifice is drilled, minor adjustments to the firing rate can be achieved by adjusting the gas valve outlet pressure between 3.2" and 3.8" w.c. If the rate remains too low, re-drill the orifice with a 1/64" larger bit (for details, see Make Final Burner Adjustments in Section 4 of this manual.)
Note 3	For BTU ranges that are covered by both the 9-Slot Diffuser Plate and the A or B Diffuser Plate, it is likely that either diffuser will work, but one may provide better combustion. The 9-slot's short flame pattern favors appliances with shorter combustion chambers.
Note 4	Use this as the starting setting only. Adjust air band setting, if necessary, after performing combustion testing (see page 13).

Minimum Chamber Dimensions (in inches) (VC= min. diam. Of vertical cylinder chamber)				
C/L	L	W	H	VC
Notes 3, 4, 5				
3	7	6	8	7
3	7	6	8	7
3 1/2	8	7	9	8
3 1/2	9	7	9	8 1/2
4	11	8	10	9 1/2
4	12	8	10	10
4 1/2	14	8	11	12
4 1/2	15	9	11	13
4 1/2	16	9	11	14
4 1/2	17	9	11	15

Note 3	Some tested appliances may operate satisfactorily with dimensions less than those noted in the table.
Note 4	Horizontal cylindrical chambers - diameter must be no less than column "W".
	Horizontal stainless steel cylindrical chambers - diameter at least 1 to 4 inches larger than column "W" above.
Note 5	A corbel may help heat transfer in a larger boiler of furnace, provided it is recommended by the appliance manufacturer.