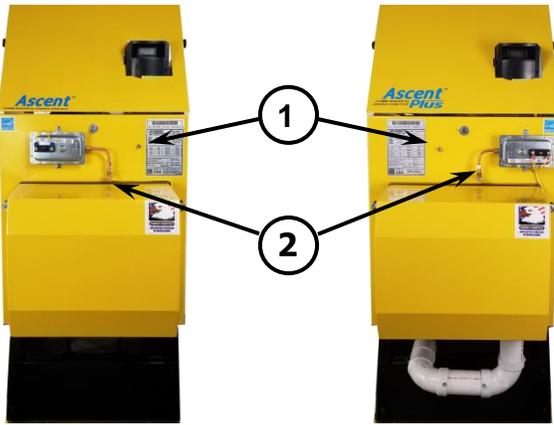




# Annual Tune Up and Inspection Ascent™ Combi & Ascent™ Plus Combi Gas Boilers

Please refer to installation manual and burner manual for complete details and for burners other than EZ-Gas.

## ANNUAL TUNE UP & INSPECTION



### Step 1 Initial Test (Draft Test & CO<sub>2</sub>)

If there is an optional Silent Burner Cover, make sure it is in place before testing.

1. Remove the 1/8" brass plug from the flue box plug (1) in the top right corner of the front cover. Check draft at the flue box (1) using a 12" long piece of 1/4" O.D. steel or copper tubing inserted approximately 8" into the boiler. Connect this tube to your test probe using a piece of hose.

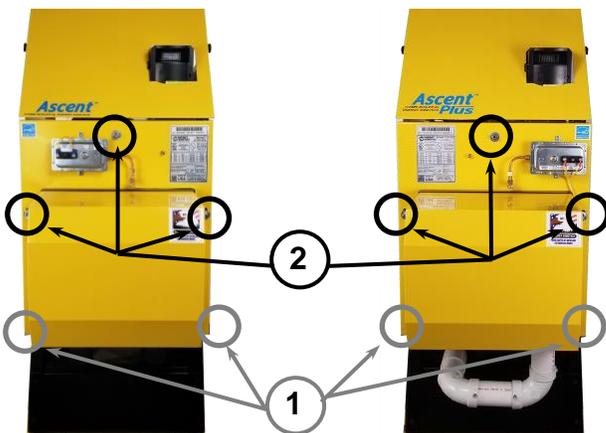
This must be negative for proper operation.

2. Check O<sub>2</sub> through the "over fire" test port (2). Insert the 12" long steel or copper tube approximately 8" in through the test port.

Nominal settings at the test port:

Natural: CO<sub>2</sub> : 8.6%-9.2%, O<sub>2</sub> : 5.5%-4.5%

Propane: CO<sub>2</sub> : 9.7%-10.7%, O<sub>2</sub> : 6.0%-4.5%



### Step 2 Open Front Cover

1. Loosen, but **DO NOT REMOVE** (2) lower nylock nuts on hinge bolts below burner.
2. Remove (3) upper nuts and support cover while opening.
3. Inspect burner head/end cone condition.

### Step 3 Inspect Flue Passage and Vent System

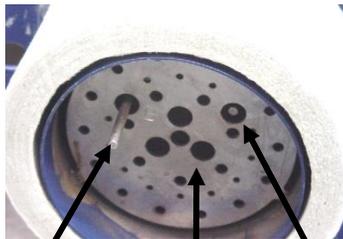
If passage is clean, no scale, then close cover and tighten all hardware evenly.

**Clean ONLY if dirty.**

Check vent system joints for proper connection, including Ascent Plus Combi flexible coupling clamps and condensate drain.

### Step 4 Clean Boiler

Remove stainless steel alloy combustion chamber using caution, it may be hot. Brush and vacuum the heat exchange surface if needed.



Flame Sense Rod Tip should extend in front of diffuser by 1-1/4".

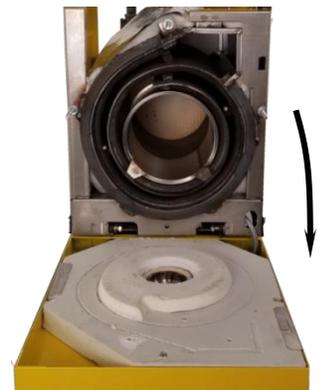
Ignitor Electrode Tip should be set back 1/16" from the inside surface of diffuser.

Diffuser Plate

### Step 5 Remove Drawer Assembly

(Refer to burner manual for detailed instructions on removal and for burners other than EZ-Gas)

1. Close the front cover and finger tighten a nut on the top center stud to hold the cover closed while working on the burner. Do not tighten the rest of the nuts at this time because you will need to open the cover up again to check the drawer assembly to the diffuser plate.
2. Check porcelain condition.
3. Check and clean flame sense rod.

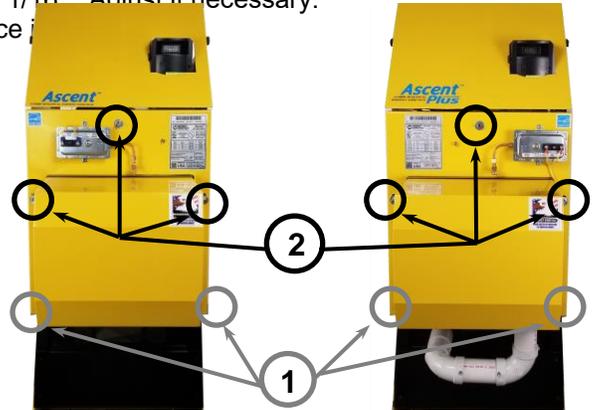


**Note: All burners require "Amulet" retention head protector.**

### Step 6 Check Burner

(Refer to burner manual for complete details and for burners other than EZ-Gas)

1. Check Fan/Air Inlet for dirt or lint.
2. Install drawer assembly carefully lining up the ignitor electrode and flame sense rod. Open the front cover and check, neither should be any closer to the diffuser plate than 1/16". Adjust if necessary.
3. Check amulet for cracking or other physical damage. Replace if necessary. (See amulet replacement section in installation manual).
4. Check burner diffuser plate.



### Step 7 Close Front Cover

1. Install (3) upper nuts and washers.
2. Tighten nuts (5) uniformly  
- DO NOT overtighten.
3. Check and tighten (5) rear cover nuts.
4. Check Flue Pipe.
5. Check chimney base and clean if necessary.

### Step 8 Zone controls

Open/Close zone valves or operate zone circulators several times to see that they move freely.



### Step 9 Plate Heat Exchanger Maintenance

1. Close the isolating ball valve located on the bypass circulator flange, connect a drain hose to the hydronic bypass Y-strainer, open flush valve, and flush into a bucket to remove debris. Close flush valve, remove drain hose, open isolating ball valve on bypass circulator flange, and confirm boiler pressure is adequate, adding makeup water if necessary.
2. Open a fixture and wait until hot water is continuously flowing. Turn the mixing valve up and down in temperature to ensure that it moves freely. Set the mixing valve temperature feeding the domestic hot water fixtures to the desired temperature of approximately 120°F using mixing valve instructions and hot water temperature gauge.

Note: If the domestic water supply is "hard" with high mineral or lime content, clean and flush plate heat exchanger and mixing valve when necessary. Symptoms include poor hot water quality or low domestic hot water flow. See Hot Water Maintenance for mineral cleaning and flushing instructions. Consider installing Scale Stopper (EK P/N: 10-0650) or water softener in hard water conditions so recurring plate heat exchanger cleaning will no longer be necessary in most circumstances.



① Bypass Y-Strainer Flush Valve

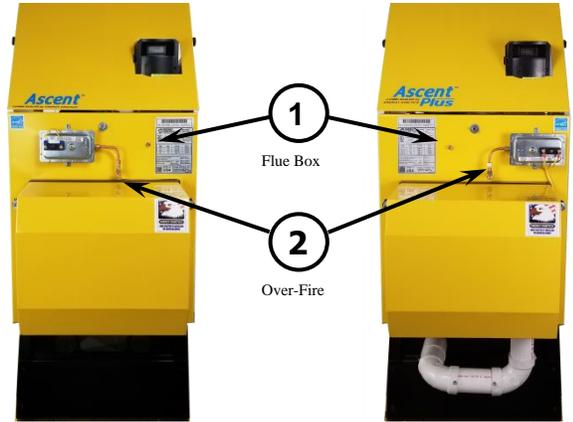
## Step 10 Start Burner & Check Safety Functions

### Check & Record:

1. Chimney: Draft at the breech should be slightly negative (at least -.02"wc).
2. Check CO<sub>2</sub> at "over fire" test port (2) per 'gas burner operation' section  
Natural: CO<sub>2</sub>:8.6%-9.2%, O<sub>2</sub> 5.5%-4.5% Nominal  
Propane: CO<sub>2</sub>:9.7%-10.7%, O<sub>2</sub> 6.0%-4.5% Nominal
3. CO Test: Carbon Monoxide must be less than 400ppm (Port 1).

### Stack Temp:

1. EK1T Ascent Combi - 350°-550°F measured at stack or flue box port
2. EK1T+ Ascent Plus Combi - 150°-300°F measured at the flue box port



### Test Ascent Hydrostat Safety High Limit operation:

1. Remove all heat and hot water calls so there is no heating load on the system. Disable all zone controls and DHW flow switch. Turn System switch off, then jumper T-T on the Ascent Hydrostat control to simulate a thermostat call.
2. Restore power. The burner should start shortly.
3. At approximately the High Limit set point, the Ascent Hydrostat control should shut off burner.
4. Turn off power and disconnect the T-T jumper. Reconnect zone controls and DHW flow switch.
5. Check safety lockout: Shut off fuel supply and operate burner to verify safety lockout.



### Power Vent and Sidewall Vent Only:

1. Disable power venter motor by disconnecting the orange motor power wire in the junction box.
2. Start burner. Safety lockout should occur in approximately 1 minute.
3. Restore power to the power venter motor.

**For Ascent Plus Combi ONLY**  
**See Troubleshooting Safety Pressure Switches Section for additional details.**

1. **Check proper operation of the blocked air intake detection switch:**
2. **Block air inlet to burner**
3. **Attempt to start the burner. Safety lockout should occur in approximately 1 minute.**
4. **Unblock air inlet to burner.**