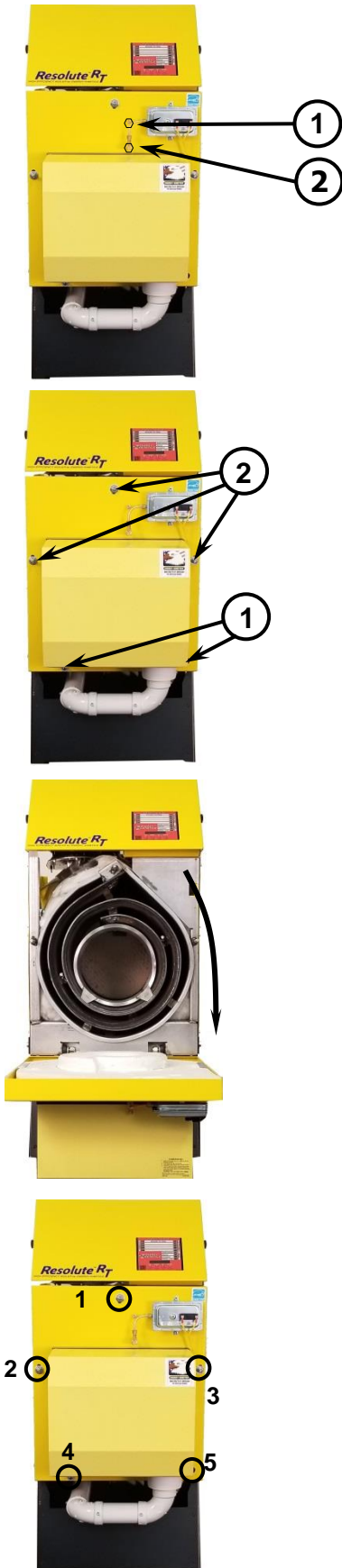


ANNUAL TUNE UP & INSPECTION

Please refer to owner and installation manual for complete details.



Step 1 Initial Test (Draft Check & CO₂)

Make sure air box cover is in place before testing.

1. Remove 1/8" brass plug flue box test port (1) next to the puff switch. Check draft through the flue box (1) using 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.

Draft must be negative.

2. Check CO₂ through the "over fire" test port (2). Insert the 12" long steel or copper tube approximately 8" in through the test port.

Refer to the section 'Burner Operation' for acceptable combustion readings.

Oil-fired: 10% to 11% CO₂ target

Step 2 Open Front Cover

1. Remove Tec screws and air intake pipe
2. Loosen, but **DO NOT REMOVE** (2) lower nylock nuts on hinge bolts.
3. Remove (3) upper nuts and support cover while opening.
4. 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 connections, including flexible coupling clamps and condensate drain.



Step 4 Clean Boiler

Note: If there is heavy scale in last pass:

1. Check for cold returns.
2. Open by-pass valve fully.
3. Set Energy Manager Option Switch 1 to "ON".
4. Check zone valve operation.

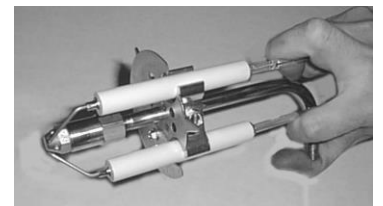


Step 5 Close Front Cover

1. Install (3) upper nuts and washers.
2. Tighten nuts (5) uniformly.
3. Check Vent Pipe.
4. Check Vent hood.
5. Reconnect the air intake.

Step 6 Remove Drawer Assembly

1. Check Electrode Setting.
2. Check Porcelain Condition.
3. Check Nozzle for coking/heat.
4. Replace nozzle if necessary. See installation manual for nozzle selection.



Step 7 Check Burner

1. Check end cone through air tube opening with drawer assembly removed.
2. Check Fan/Air Inlet for dirt or lint.
3. Install drawer assembly and check ignitor.
4. Check Filter condition. Replace annually or if vacuum exceeds 7" for single pipe systems.
5. Check flexible oil line for leaks or corrosion. Gently bend hose along its length to check for hardening. Replace immediately if any of these conditions are present.

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

Step 8 Check Zone Valves

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

Step 9 Backflush Plate Heat Exchanger

1. Close the valve underneath the domestic hot water circulator.
2. Open drain valve to backflush the heat exchanger.
3. If domestic water supply is "hard" (lime), consider installing Scale Stopper (Item no. 10-0650).
4. Set temperature feeding hot water tank (above heat exchanger) by adjusting the ball valve below the bronze circulator. Adjust the ball valve with the burner running and a continuous flow of hot water from a fixture. You should just be able to hold your hand on the pipe.

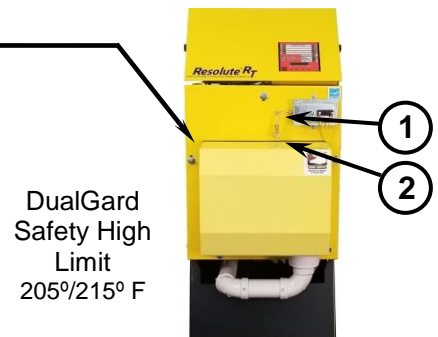


Step 10 Start Burner & Check Safety Functions

Check & Record: Make sure air box cover is in place before testing.

1. Draft Test: Draft at the breech should be negative (at least $-0.10''$ wc, although it may be substantially higher depending on the vent system).
2. Check CO₂ at "over fire" test port (2) in tee with blocked vent switch. Refer to the section 'Burner Operation' for acceptable combustion readings
Nominal 10% to 11% CO₂
3. Smoke Test: Must be zero smoke. A trace is not acceptable.
4. Stack Temp: 190°-290° F. (at flue box port)

5. Verify DualGard 205°/215° F.
6. Test Safety High Limit operation:
 - i. Remove all heat and hot water calls (No input lights on left side of manager).
 - ii. Turn System switch off, then remove red sensor lead from the left side quick connect.
 - iii. Restore power. The 100° light will flash on the manager's temperature display, and the burner should start momentarily.
 - iv. At approximately 205° F to 215° F, the high limit should shut off burner.
7. Check safety lockout: Shut off fuel supply and operate burner to verify safety lockout.
8. Check draft Dilution Air Exhaust Fan proving switch:
 - A. With burner running, turn off option switch 2 on the Energy Manager, which will turn off the Dilution Air Exhaust Fan (inducer).
 - B. The fan proving switch will open, removing power from the burner motor. Safety lockout should occur after the primary control recycles operation.
 - C. Turn on option switch 2 on the Energy Manager, to restore operation.
9. Check proper operation of the blocked air intake detection switch:
 - A. Block air inlet to burner
 - B. Attempt to start the burner. Safety lockout should occur in approximately 1 minute.
 - C. Unblock air inlet to burner.



Smoke test

