

Preventive Maintenance for Liquid Heating Fuel Burners



A properly performed tune-up ensures a heating system operates at peak safety, efficiency, reliability, and cleanliness

During a tune-up, the technician adjusts and inspects the system to reduce safety risks such as fire or carbon monoxide issues and verifies that all safety controls function correctly. Using a combustion analyzer, the system is set for maximum efficiency, helping customers conserve fuel and lower costs while identifying opportunities for upgrading to newer, more efficient equipment. Reliability is improved by replacing critical wear components before failure, inspecting and correcting potential issues, and lubricating parts according to manufacturer guidelines. Cleanliness is addressed by ensuring the system runs with minimal environmental impact and by leaving the equipment and surrounding area clean and orderly, reinforcing professionalism and customer confidence.

1 Upon Arrival

- Greet customer
- Discuss Concerns
- Verify remote/emergency switch operation
- Leave switch OFF

2 Visual Inspection

- Protect work area
- Verify limit control settings
- Record nozzle/filter/fuel unit
- Run burner briefly if unit idle
- Check draft (breach & over-fire)
- Shut unit OFF

3 Fuel Tank

- Inspect tank condition
- Check for water
- Tighten plugs/fittings
- Notify supervisor & customer if water found

4 Fuel Lines & Filter

- Inspect fuel line (leaks, kinks, routing)
- Verify no compression fittings
- Replace fuel filter
- Inspect filter head & seals
- Restore oil supply & check for leaks

5 Fuel Unit

- Clean/replace strainer
- Bleed fuel unit (air-free)
- Install pressure gauge
- Verify operating pressure
- Test cutoff & safety timing

6 Nozzle/Drawer Assembly

- Mark drawer position
- Replace nozzle
- Inspect adapter
- Clean & set electrodes
- Clean air tube & cone
- Reinstall in correct position

7 Burner Motor & Fan

- Inspect housing for fuel
- Lubricate motor (if applicable)
- Check shaft play & coupling
- Clean fan & air inlets
- Verify wiring & connections

8 Ignitor & Cad Cell

- Clean ignitor contacts
- Verify electrode contact
- Clean cad cell eye
- Verify flame sighting

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9 Flue & Venting

- Inspect flue pipe & supports
- Brush flue pipe
- Check draft regulator
- Inspect chimney/vent termination
- Service power venter (if equipped)

10 Heat Exchanger/Combustion Area

- Remove baffles
- Brush & vacuum passages
- Clean combustion chamber
- Inspect refractory
- Reinstall baffles

11 Reassemble

- Reinstall components
- Seal air leaks as needed

12 Fire Unit & Check Operation

- Observe flame
- Cycle burner
- Check high limit operation

13 Combustion Analysis

- Smoke
- Draft
- CO₂
- Net Stack Temp
- Adjust burner as required
- Remove test jumpers

14 System Checks

(choose one)

- Hot Water Warm Air Steam
- Verify all limits & safeties
- Check circulators / blower
- Inspect filters/belts (warm air)
- Test LWCO (steam)

15 Reset & Cleanup

- Reset controls & thermostats
- Clean unit & work area
- Remove debris & used parts

16 Documentation & Customer Review

- Complete service card
- Record nozzle & settings
- Review with customer
- Explain recommendations
- Obtain signature



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This checklist is offered without warranty of any kind as to the accuracy of its contents. It is solely for the use of professional service technicians. The user accepts full responsibility for any consequence arising from its use.

In all cases, all codes and regulations and equipment manufacturer's instructions take precedence over what is presented in this checklist.

Tools of the Trade

- ✓ Standard wrenches: a set of 1/4" through 3/4" standard open and box wrenches
- ✓ Adjustable wrenches: an eight-inch and a ten-inch handle adjustable wrench
- ✓ Socket wrench kit: 1/4" to 3/4"
- ✓ Pliers: groove joint pliers (commonly called water-pumps or channel locks®), linesman pliers, locking pliers (such as Vise Grips®) and needle nose pliers
- ✓ Allen wrenches (hex keys)
- ✓ Screwdrivers: an assortment of slotted & Phillips heads
- ✓ Nut drivers: 3/16", 1/4", 3/8" & 1/2"
- ✓ Wire cutter & stripper
- ✓ Filter wrench
- ✓ Scraping tool (single edge razor)
- ✓ Tubing cutters: 3/4" regular & mini
- ✓ Flaring tool
- ✓ Flashlight with spare batteries
- ✓ Drop light
- ✓ Jumper leads w/ insulated alligator clips
- ✓ Tape measure: 12' minimum
- ✓ Drill & drill bits