

Free checklist from Deepseal · usedeepseal.com/boiler-maintenance-checklist · Version: October 2026 · Targets come from current boiler, burner and control manufacturers' manuals, the 2021 IMC, IRC and IFGC, ASME CSD-1 and National Board guidance, each sourced on the web page. The manual for the boiler in front of you, its rating plate and the local code override every number printed here. For trained technicians.

Boiler Maintenance Checklist · Annual Service Visit

Customer · site	[Customer] · [Street, City, State ZIP] · [Phone]	Date · technician	[Date] · [Name]
Boiler	[Make · model · serial] · input [] Btu/h · year []	Rating plate	MAWP [] psi · relief valve set [] psi
Boiler type	☐ Cast iron, atmospheric ☐ Power burner ☐ Condensing (mod-con) ☐ Combi ☐ Steam ☐ Oil-fired	Fuel · venting	☐ Natural gas ☐ Propane ☐ Oil · ☐ Draft hood / chimney ☐ Sealed PVC / CPVC / PP ☐ Barometric
System	☐ Baseboard ☐ Radiators ☐ Radiant ☐ Indirect water heater ☐ One-pipe steam ☐ Two-pipe steam · glycol ☐	Low-water cutoff	☐ Float ☐ Probe ☐ Built into the boiler ☐ None fitted
Jurisdiction	☐ Exempt (private residence or small apartment building) ☐ Certificate inspected: no. [] · expires [] · inspector []	This visit counts as	☐ Agreement visit [] of [] ☐ One-time service

How to use this sheet: sections A to F on every boiler. Appendix A for condensing boilers and combis, Appendix B for steam boilers, Appendix C for oil-fired boilers, Appendix D for boilers under a state or city certificate inspection (commercial buildings, and apartment buildings above the local exemption). Write a number in every reading cell; a blank cell reads as "not measured" to the next technician and to the inspector.

A. Safety first, before touching anything

Task	Reading / target	Result
☐ Ambient CO on entry and in the boiler room with the boiler firing (IFGC Appendix D, D102)	Entry [] ppm · boiler room [] ppm Below 30 ppm: continue · 30 to 70 ppm: sources off, open windows, appliance off until serviced · 70 ppm or more: evacuate, call 911	☐ OK ☐ Source found []
☐ Gas leak check at the meter, gas train and every joint to the boiler; soap solution or electronic detector, never an open flame (Weil-McLain, Peerless)		☐ No leaks ☐ Leak at []
☐ Boiler area clear: nothing stored against the boiler, no paint, solvents or gasoline nearby, combustion air openings open (Weil-McLain; National Board)		☐ OK ☐ Corrected
☐ CO alarms in the living space present and tested (Weil-McLain; Burnham ES2 annual list)	Alarms []	☐ Tested ☐ Recommended
☐ Look before opening: water on the floor, a wet relief valve discharge pipe, scorched paint or warped jacket panels (a sign of overheating, National Board), soot or rust at the draft hood		☐ None ☐ Noted []

B. Water side: hot water systems (steam: Appendix B)

Task	Reading / target	Result
☐ Cold fill pressure at the boiler gauge with the system cold; fill valve setting	Cold [] psi · fill valve [] psi Cast iron, residential: typically 12 psi (Weil-McLain, Burnham, Peerless) · condensing minimums: Lochinvar, Viessmann 12 · Alpine 14.5 · IBC 8 · Rinnai 13 (17 to 26 recommended)	☐ OK ☐ Adjusted
☐ Pressure at operating temperature, and the rise from cold	Hot [] psi · rise [] psi Weil-McLain: too high a rise means a waterlogged or undersized expansion tank · ECO Tec: never above 24 psig	☐ OK ☐ High
☐ Expansion tank: isolated and drained on the water side, precharge read at the air valve and set (Amtrol: check yearly, tank isolated and empty of water); water at the air valve means a failed diaphragm	Precharge [] psi Amtrol, Weil-McLain, Viessmann: equal to the cold fill pressure · Rinnai: 2 psi below it	☐ OK ☐ Recharged ☐ Replace
☐ Relief valve: set pressure not above the boiler MAWP; no valve between it and the boiler or in the discharge; discharge full size, pitched down, plain unthreaded end, ends where it can be seen; valve date code	Set [] psi · date code [] Discharge end: IMC 1006.6 and IRC 2024 not more than 6 in above the floor or receptor · IRC 2021 within 18 in of the floor · Weil-McLain and Watts at least 6 in above the floor drain	☐ OK ☐ Corrected
☐ Relief valve try-lever test per the valve tag. Before lifting an old valve, tell the customer it may not reseal and quote the replacement; a declined test is signed for in section F	Watts and Weil-McLain: at least once a year, reinspected every 3 years by a licensed contractor · Apollo/Conbraco and NBIC: quarterly, pressure test annually · IBC: every 2 months · Navien: at least every 3 years	☐ Tested, reseated ☐ Replaced ☐ Declined
☐ Low-water cutoff tested with the burner firing (probe: test button; float: blowdown), probe or chamber cleaned per its manufacturer. 2021 IMC 1007.1 and IRC M2002.5 require one on steam and hot water boilers, except coil and water-tube boilers with flow sensing	Hydrolevel: test annually; CG450 probe cleaned annually, Safgard 1100 cleaned every 5 years · McDonnell & Miller 751 (Alpine): replace the probe at 10 years, the control at 15	☐ Burner stopped ☐ Failed ☐ None fitted
☐ Air elimination: air separator and vents working, radiators or baseboard bled; fill valve and backflow preventer working		☐ OK
☐ Circulators and zone valves: every zone calls and heats; oiled-bearing circulators oiled (Weil-McLain annual list)	Zones heating [] of []	☐ OK ☐ Zone fault []
☐ System water: color, pH, inhibitor level, glycol concentration and freeze point; makeup water since last visit	pH [] · inhibitor [] · glycol [] % · freeze [] °F · makeup [] gal Weil-McLain WGO: pH 7.0 to 8.5 recommended · Weil-McLain ECO Tec: pH, antifreeze and inhibitor tested at least annually · Lochinvar, Alpine: glycol tested at least once a year · condensing boiler limits:	☐ OK ☐ Treated

Task	Reading / target	Result
	Appendix A	
☐ Boiler sections, piping and valves checked for leaks and corrosion; pressure/temperature gauge reads true		☐ OK ☐ Leak at []

C. Burners, heat exchanger and gas train (gas boilers)

Task	Reading / target	Result
☐ Burners and base cleaned; ports clear; pilot and main burner flames inspected (Weil-McLain annual list)		☐ Cleaned ☐ Issue
☐ Flue passages and heating surfaces brushed and vacuumed; draft hood and flue collector cleaned (Weil-McLain, Burnham ES2)		☐ Cleaned
☐ Pilot, igniter and flame sensor cleaned; flame signal read; pilot safety: pilot out, no main burner gas on a call for heat (IFGC App. D, D105.1)	Flame signal []	☐ OK ☐ Replaced []
☐ Inlet gas pressure with the boiler and every other gas appliance firing	[] in. w.c. Natural gas: Weil-McLain 5 to 13 · Peerless 63/64 5.0 to 13.5 · Burnham Independence 4.5 minimum · propane minimum 11 (Weil-McLain, Peerless, Burnham)	☐ In range ☐ Utility called
☐ Manifold pressure against the rating plate	[] in. w.c. · plate [] Atmospheric cast iron: 3.5 natural gas, 10 propane (Weil-McLain, Peerless, Burnham) · Peerless: within ±0.3 · Burnham: re-orifice outside 3.2 to 3.8	☐ OK ☐ Adjusted
☐ Firing rate clocked at the meter against the rating plate (Burnham ES2; Viessmann)	[] Btu/h · plate [] Btu/h	☐ OK
☐ Sediment trap (drip leg) and gas strainer checked (National Board annual list)		☐ OK

D. Venting and combustion analysis

Task	Reading / target	Result
☐ Draft hood boilers: connector pitch and joints, chimney or liner, vent damper; spillage test at the draft hood after 5 minutes of main burner operation (Weil-McLain, Peerless, Burnham)	Draft [] in. w.c. Peerless 211A: at least -0.02 in. w.c. within 12 in of the draft hood outlet	☐ No spillage ☐ Spills ☐ n/a
☐ Sealed vent and air intake: joints, gaskets, supports, terminations and screens (Appendix A)		☐ OK ☐ n/a
☐ Combustion analysis in the flue, ahead of any draft hood, after 5 minutes of main burner operation, with an analyzer that reports CO air-free	O2 [] % · CO2 [] % · CO [] ppm air-free · stack [] °F · eff. [] % Ceiling 400 ppm air-free (IFGC App. D, BPI-1200,	☐ Pass ☐ Adjusted ☐ Shut down

Task	Reading / target	Result
	ANSI Z21.13) · Burnham: normal under 50 ppm, over 100 is a combustion problem · the cast-iron manuals print no stack target: record it as the baseline	
☐ Non-condensing boilers: return water kept warm enough that flue gas does not condense (bypass, mixing valve or control)	Return [] °F Weil-McLain CGa, Peerless 63/64: no less than 130°F · Burnham ES2: condensation below 120°F	☐ OK ☐ Low

E. Controls and safeties

Task	Reading / target	Result
☐ Operating control and high limit: settings recorded; high limit proven by turning it below boiler temperature with the burner firing (CSD-1 Appendix D: annually)	Operating [] °F · high limit [] °F	☐ OK
☐ Every limit and cutoff on the wiring diagram (Weil-McLain); flame failure lockout, ignition safety shutoff, vent damper (Burnham ES2)	Lockout [] s	☐ OK
☐ Outdoor reset curve, supply setpoint, indirect water heater priority and setpoint; thermostat in each zone	Reset [] · DHW [] °F	☐ OK
☐ Line voltage at the boiler; connections tight; wiring clear of hot surfaces	[] V	☐ OK
☐ Cycle test from the thermostat: at least three cycles watched before leaving (National Board restart guidance)		☐ OK ☐ Fault []

F. Findings, readings to the record, sign-off

Item	Condition found	Recommended action	Price	OK?
				☐
				☐
				☐

Overall: ☐ Safe to operate ☐ Safe, repairs recommended ☐ Unsafe, shut down and tagged (reason: _____)

Technician	Name: _____ Signature: _____	Customer	Name: _____ Signature: _____
Relief valve test declined	☐ Customer declined the test and the replacement quote: _____	Next visit · record	Due [] · ☐ Readings entered in the agreement record · certificate due []

Appendix A: Condensing boilers and combis

Every condensing (mod-con) boiler and combi, on top of sections A to F. The boiler's own manual governs.

Task	Reading / target	Result
☐ Combustion analysis at high and low fire against the manufacturer's table; adjust only where the manual allows it	High: CO ₂ [] % CO [] ppm · Low: CO ₂ [] % CO [] ppm Natural gas CO ₂ % high / low: Lochinvar Noble 8.5–10.5 / 8.7–9.1 · Navien NHB-H 8.9 / 9.5 (±0.5) · Weil-McLain ECO Tec 80 9.25 / 8.75 (±0.5) · Alpine 8.2–9.9 / 7.9–9.9 · IBC 8.9–10.0 / 8.2–9.2 · Viessmann 6.9–11 any rate · CO max (ppm): Alpine 100 · ECO Tec 130 high, 50 low · Knight 150 · IBC 150 · Noble 200 · Viessmann 400	☐ In range ☐ Adjusted
☐ Burner door off: burner, refractory and gaskets inspected; gaskets replaced where the manual says every time	New every time: Viessmann 100-W burner door gasket · Weil-McLain ECO Tec burner and electrode gaskets, gas valve washer · others: if damaged	☐ New gaskets ☐ Reused, good
☐ Heat exchanger fire side cleaned by the manufacturer's method; flue-to-return temperature difference recorded	Flue [] °F – return [] °F = [] °F Clean when the flue exceeds return by 54°F (Lochinvar) or 50°F (Weil-McLain) · no metal brushes (Lochinvar, IBC) or any brush (Viessmann) · no solvents (Lochinvar, Weil-McLain, Alpine)	☐ Cleaned ☐ Clean, inspected
☐ Ignition and flame electrodes cleaned, gap checked, replaced if worn; flame signal read	Gap [] · flame signal [] Ignition gap: ECO Tec 4.5 mm · Alpine 0.17 in · AquaBalance 5/32 in · Viessmann 100-W 0.24 to 0.25 in · flame signal: Lochinvar 10 µA minimum at high fire · IBC 1.4 to 3.2 µA · ECO Tec 4 to 6 running	☐ OK ☐ Replaced
☐ Condensate trap cleaned and refilled, float ball free (Lochinvar, Weil-McLain); neutralizer outlet pH read, media replaced when spent	pH out [] Replace media below pH 6.0 (Navien) or 6.5 (IBC) · raw condensate pH 3 to 5 (Lochinvar)	☐ Trap done ☐ Media replaced
☐ Vent and intake: joints, gaskets, supports, terminations, screens (Alpine: vent gaskets annually)		☐ OK
☐ System water against this boiler's limits; built-in low-water cutoff or pressure switch tested (Navien 6 psi default · AquaBalance 9 ±2 · Prestige 10)	pH [] · hardness [] gpg · chloride [] ppm · glycol [] % pH Weil-McLain 7.0–8.5, Alpine 7.5–9.5, Navien 6.5–8.5, Knight 6.5–9.5 · hardness (gpg) Weil-McLain <7, Navien 12, Knight 5–15 · chloride (ppm) AquaBalance, Alpine <50, Noble 150, ECO Tec 200, Navien 250 · glycol max Navien 35%, Rinnai 40%, Weil-McLain 50%, Viessmann combi 30%	☐ OK ☐ Treated
☐ Combi: filters cleaned; plate exchanger flushed if scaled	Hot water [] °F at [] gpm	☐ OK ☐ n/a

Appendix B: Steam boilers

Low-pressure steam (15 psi and under), on top of sections A and C to F.

Task	Reading / target	Result
☐ Water line at the manufacturer's normal water line; glass clean, both valves open; skim if the water line bounces or the boiler surges	Level [] Weil-McLain: half the glass · Peerless 63/64: about two-thirds · IMC 1010.2.1: glass midpoint at the normal water level · skim until clear: Weil-McLain several hours, Burnham about an hour	☐ OK ☐ Skimmed
☐ Float low-water cutoff: blown down with the burner firing, burner stops; head off, chamber cleaned, new gasket	M&M 67: blow down weekly, disassemble annually, replace every 10 years · Burnham: switch and float at 5 years or 100,000 cycles · M&M 150S: head every 5 years	☐ Burner stopped ☐ Failed
☐ Probe low-water cutoff: probe removed, inspected and cleaned; tested with the burner firing	Scale on probe [] in Hydrolevel CG450: inspect annually; drain test stops the boiler within 15 seconds · Burnham: clean more often above 0.2 in of scale	☐ OK
☐ Second low-water cutoff (manual reset where required); slow drain or evaporation test where required	CSD-1 (2009) App. D: slow drain semiannually · Minnesota DLI evaporation test: feed off, burner stops before the water leaves the glass	☐ OK ☐ n/a
☐ Pressure control: pigtail cleaned; settings recorded; operation proven with the boiler firing	Cut-out [] psi · differential [] psi Burnham: cut-out 1 psi, differential 0.5 psi · Weil-McLain EG: never above 10 psig · Honeywell L404F: pigtail required	☐ OK ☐ Reset
☐ Safety valve: 15 psi, nothing in the line, discharge full size, near the floor; try lever per the tag	Set [] psi Burnham: not over 15 psi, discharge at least 6 in above the floor · Peerless: within 12 in of the floor · test: Weil-McLain EG monthly in season · Apollo quarterly	☐ OK
☐ Near-boiler piping: header height, Hartford loop, equalizer; leaks at the boiler	Header above water line [] in Header at least 24 in above the water line (Weil-McLain EG, Peerless 211A) · Hartford loop close nipple 2 to 4 in below it (Peerless) · no check valve in its place on gravity return (Burnham)	☐ OK
☐ Automatic water feeder: strainer cleaned, feed counter read and reset	Counter [] Hydrolevel VXT: counter and strainer annually, replace at 12 years	☐ OK ☐ n/a
☐ Air vents (one-pipe), steam traps (two-pipe); boiler water pH	Failed [] · pH [] Burnham: pH 7.0 to 11.0, chlorides ≤100 ppm, hardness ≤200 ppm	☐ OK

Appendix C: Oil-fired boilers

On top of sections A, B and D to F (section C is the gas train).

Task	Reading / target	Result
☐ Oil filter replaced, pump strainer cleaned, nozzle replaced with the exact specification on the boiler's table	Nozzle [] gph × []° [] Riello: filter at least once a year · Beckett: same specification, same nozzle manufacturer	☐ Done
☐ Electrodes cleaned, gapped and positioned; replaced if the tips are rounded (Beckett)	Beckett AFG (F, L1, V1 heads): 5/32 in gap, 5/16 in above center, 1/16 in ahead of the nozzle · Riello 40-F: 5/32 in gap, 13/64 in above the nozzle centerline	☐ OK
☐ Flue passages and baffles brushed and vacuumed; combustion chamber inspected		☐ Cleaned
☐ Pump pressure set to the boiler maker's table; pump cutoff checked	[] psig Weil-McLain WGO with Beckett: 150 to 175 · Burnham MPO-IQ: 180 · Peerless EC with Beckett: 140 · Riello on WGO: 140 to 160	☐ OK
☐ Smoke test, then combustion analysis	Smoke [] · CO ₂ [] % · O ₂ [] % · CO [] ppm · stack [] °F Smoke: zero (Weil-McLain, Peerless, Riello) · not over #1 (Burnham) · CO ₂ : 13% or less (Weil-McLain) · 11.5 to 13.0% (Burnham) · Peerless EC maximum 13.1% (13% on the EC(T)-e-06) · no oil manual read prints a CO limit: record it	☐ OK ☐ Adjusted
☐ Draft over the fire and at the breech; barometric damper set	Overfire [] · breech [] in. w.c. Weil-McLain WGO, Beckett, Peerless EC: overfire -0.01 to -0.02 · Burnham MPO-IQ: breech 0 to -0.03, overfire positive	☐ OK
☐ Cad cell cleaned and read; primary control safety lockout timed	[] Ω · lockout [] s Beckett GeniSys 7505: 0 to 1,600 Ω normal, 15 second lockout	☐ OK

Appendix D: Boilers under a state or city certificate inspection

Commercial buildings, and apartment buildings above the local exemption: most of the states on the web page inspect from six units up, Pennsylvania and Texas from five, New York City from six families. Intervals for low-pressure heating boilers run from every year to every three years. The state table is on the web page.

Task	Reading / target	Result
☐ Certificate of inspection posted at the boiler and current; next inspection date written down	Certificate [] · expires []	☐ Posted ☐ Overdue
☐ Last inspection report: every item closed	New York City: defects corrected within 90 days of the inspection	☐ Closed ☐ Open []
☐ Nameplate readable: ASME stamp, MAWP, input, relief valve capacity (Colorado: the first thing the inspector looks for)		☐ OK
☐ CSD-1 controls present, tested and written up with each device, set point and test result (CSD-1 CM-110; Michigan's rule asks for the same on a signed report)	Operating control · high limit with manual reset · low-water cutoffs (steam: two, CSD-1 CW-120) · emergency switch at the boiler room door · fuel train valves (Colorado guide, NYC review list)	☐ Tested, report left
☐ Fuel valve leak test (CSD-1 Appendix D: annually)		☐ Done
☐ Boiler log on site with the owner's readings and tests between visits (National Board log program; CSD-1 CM-130 operator checklist)	National Board: steam LWCO blown down daily, hot water LWCO tested monthly, relief valves lifted monthly, slow drain test semiannually · CSD-1 (2009): low-pressure LWCO weekly	☐ Present ☐ Started today
☐ Boiler room: no storage, combustion air open, passageway around the boiler, floor drain	IMC 1004.3: 18 in passageways · IMC 1004.6: floor drain · Colorado: no storage, no flammables	☐ OK
☐ Internal inspection due: boiler drained, handholes or manholes opened, new gaskets on hand (Colorado; Missouri DFS)		☐ Ready ☐ n/a

Keep this sheet with the customer's agreement record. Next year's technician compares against these readings (pressures, CO, flue temperature, flame signal, pH), the declined-test line protects the shop, and the completed visit is what the customer paid for. Free companions at usedeepsel.com: the maintenance agreement templates and the agreement tracking spreadsheet.