

**PARKER HOT WATER BOILER
INSTALLATION & START-UP CHECK-OFF SHEET**

FACILITY

COMPANY/ADDRESS:

_____ **BOILER MODEL NO.:** _____

_____ **FUEL:** _____ **SALES ORDER NO.** _____

_____ **SERIAL NO.:** _____

PHONE: _____ **DATE:** _____

CONTACT: _____ **INSTALLING CONTRACTOR:** _____

I. GENERAL

A thoroughly qualified and experienced Boiler and Burner Technician should be employed to provide the initial boiler start-up, as well as any subsequent servicing. If boiler is a Power Burner or Low NOx Premix Metal Fiber Burner System, then use this sheet in addition to sheets for start-up and tuning of Powered or Low NOx Burners.

The installer and a representative of the Owner and/or person or persons responsible for operating and maintaining the unit should be present during the initial start-up to assume responsibility for gas, water, electrical and vent systems. A Service Representative may also be required by the local utility on gas fired equipment. Instructions regarding the proper care and maintenance of the unit should be outlined with these people present. In some States or Jurisdictions it is required that the Boiler Inspector be notified or present before start-up.

Before beginning start-up, the start-up technician should thoroughly study installation instructions and become completely familiar with the exact sequence of operation and boiler controls. This should include review of wiring schematic and the boiler gas train components.

II. EQUIPMENT REQUIRED

- | | | |
|------------------------|--------------------------------|---|
| 1. Hand tools | 4. Barometric damper weights | 7. Combustion Analyzer Required-if
Low NOx or Power Burner |
| 2. Gas pressure gauges | 5. Gas line soap test solution | |
| 3. Draft gage | 6. Volt meter | |

III. BOILER INSTALLATION		YES	NO	REMARKS
1.	Required Installation Permits obtained for boiler, electrical, vent, gas and plumbing.			
2.	Boiler installed on a concrete floor or non-combustible base.			
3.	Boiler installed in approved room and properly protected from weather and drafts. Insure no flammable materials or fumes are in room or can enter room.			
4.	Boiler installed in accordance with manufacture's instructions & code, adequate space for accessibility to inspect and service. Proper control panel access and clearance.			
5.	Proper air openings provided conforming to Code and Manufacturer's instructions.			
6.	Insure no negative pressure in room. If any sort of exhaust fans are present in boiler room, insure that boiler draft is not affected. Draft inducer and engineered flue system may be required.			
7.	Proper electrical service to boiler with disconnect per Code, interface wiring per diagram.			
8.	Proper earth ground connected to green ground screw in Parker panel by Electrician.			
9.	Relief valve type, setting and capacity is correct for boiler and system.			
10.	Relief valve discharge independently piped full size, discharging to safe location. Pipe properly supported and union provided at valve. Sch. 40 black steel recommended.			
11.	Draft hood or barometric damper properly installed on boiler.			

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III. BOILER INSTALLATION (continued)		YES	NO	REMARKS
12.	Flue gas spillage switch mounted and wired (if provided).			
13.	Vent stack full size with proper height and termination point.			
14.	Unrestricted vent cap on top to protect from weather and down drafts. Stack termination meets code.			
15.	Vent stack weight properly supported (not supported on boiler).			
16.	Vent stack is installed in accordance with Local Code Regulations for proper fire protection.			
17.	Check gas devices for proper venting, provide goosenecks.			

IV. BOILER AND SYSTEM		YES	NO	REMARKS
1.	Notify appropriate facility personnel, system installer or owner that boiler starting is occurring. It is their responsibility for water system start and initial air removal. Have their individuals insure that water system is complete, safe and ready for operation.			
2.	Hot Water Supply outlet connected proper size from top outlet header on side temperature control is installed.			
3.	Hot Water Return inlet connected proper size on inlet.			
4.	Drain valve installed on bottom header and routed to drain.			
5.	Operating control installed on system in addition to the high limit furnished with boiler. Remote wiring and/ or sensor mounting and wiring installed if appropriate.			
6.	Installer and owner to verify all system components are rated at or above relief valve setting & boiler temperature capability.			
7.	Proper system installation with sufficient expansion on closed system. Expansion Tank correct size, ASME Labeled with sight glass.			
8.	Cold water supply make-up to system conforming to Parker Instructions and Code with proper shut-off and back flow device.			
9.	Air separation device properly installed.			
10.	System pump(s) properly installed.			
11.	Valves in system open, pump rotation proper direction.			
12.	Circulate system when safe. Purge air from system.			
13.	Insure pump runs at all times boiler is energized. It is recommended pump runs for short duration after there is no longer a call for heat. Insure flow thru boiler at all times.			
14.	Insure any boiler float type low water cutoffs, (if furnished) have pressure rating safe for system.			
15.	Hot Water System properly cleaned and treated (refer to Parker Bulletin CWT-201).			

V. ITEMS WHICH NEED TO BE CORRECTED:

1. _____
2. _____
3. _____

VI. START-UP		YES	NO	REMARKS
If boiler is a Low NOx Premix Metal Fiber Burner System or Power Burner Model, refer to additional supplemental start up sheets.				
1.	Tighten all electrical terminals, conduit and linkages.			
2.	All boiler gas valves turned off.			
3.	Gas line blown out, thoroughly cleaned, tested for leaks. Install gas pressure gauges of proper ranges upstream and at burner manifold downstream test tap.			
4.	System installer, plumber, owner and/or Gas Co. technician shall if safe turn on gas at meter and bleed air from gas line to proper safety standards if required to allow safe gas flow to boiler.			

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VI. START-UP-continued	Y	N	REMARKS
5. Gas line size proper.			
6. Shut-off valve with handle and union installed ahead of boiler.			
7. Gas pressure at test opening on boiler inlet to Manufacturer's specifications and boiler nameplate. LPG models require 1-5 PSI.			
8. Remove cabinet door on pilot side.			
9. Check burners for proper position on orifices.			
10. Insure proper boiler water circulation.			
11. Check electrical wiring per wiring diagram. With Boiler Controls Switch off, turn on electrical to boiler if safe, hot lead (black wire) should read 115 VAC to ground, neutral white wire should read 0 VAC to ground. (Not applicable if 3 Phase power is provided.)			
12. Turn Boiler Controls Switch on. (Main Burner Switch Off.)			
13. Check low water cutoff control or controls for proper installation and operation. Test for proper manual reset function.			
14. Insure no personnel are near boiler door. Note flame rollout could occur on cold boiler start up so insure safety of all present. Light pilot - see Lighting Instructions.			
15. With pilot safely "on" open main downstream gas cock at boiler. Check burner for smooth light.			
16. Check burners for foul burning or burning on orifice.			
17. Re-light boiler. Check igniter and flame light-off system for proper operation. Replace cabinet door.			
18. Close pilot and down stream valve and try and re-light boiler. Check for flame failure lockout.			
19. On flame safeguard controls where flame signal can be monitored, record pilot _____ and main flame signals.			
20. Set high fire gas pressure. Record setting _____. See "Maximum Manifold Pressure" on heater label and table. Confirm that pressure holds with all appliances firing. Check inlet gas pressure also.			
21. Soap test all boiler gas lines and tubing, with boiler firing. Repair any leaks.			
22. Set temperature control to desired temperature. Off point _____ °F. Differential _____ °F. Never below 140°F to prevent condensation.			
23. Check operation of high limit control, setting _____ °F.			
24. Adjust firing rate control i.e. modulating control or high/low control to suite job conditions. Record low fire gas pressure _____. " Caution: Never set low fire gas pressure below recommended ranges.			

MANIFOLD GAS PRESSURE & DRAFT REFERENCE TABLE

MODEL	GAS PRESSURE		DRAFT	
	HIGH MAXIMUM	LOW MINIMUM	DRAFT HOOD	BAROMETRIC
Atmospheric Natural Gas Boiler	4.0"	1.0"	0.01" – 0.02"	0.04" – 0.06"
LPG Atmospheric Boiler	18"	11"	0.01" – 0.02"	0.04" – 0.06"
9.5 LA	5.6-6.0"	NA	0.01" – 0.02"	0.04" – 0.06"
30LA, 40LA, 50LA	5.6-6.0"	4.0"	0.02" – 0.04"	0.04" – 0.06"

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VI. START-UP - continued		YES	NO	REMARKS
25.	If optional digital temperature control is installed, refer to special instructions in manual. Insure control is in heat mode, wired properly sensor mounted and wired. Set on/off point, differential, range, etc. record and test for proper operation. Record table manifold gas pressure			
26.	Check all electrical interface points i.e. remote start-stop, alarm dry contacts, alarm, run status if provided as shown on wiring diagram. Insure interface voltages are correct.			
27.	Insure that no wires have been connected to panel which will by pass any safety controls or interfere with proper boiler operation. Any relays switching burner control circuit wiring must be electromechanical type, rated 115VAC, 8 AMP as a minimum.			
28.	Set and test low gas pressure switch (if furnished) setting _____ "W.C.			
29.	Set and test high gas pressure switch (if furnished) setting _____ "W.C.			
30.	Test operation of flue gas and heat spill switches (if furnished).			
31.	Check operation of IRI vent valve (if furnished). Insure discharge is to safe location with rain and bug protection. Recommend owner establish Program to continually monitor this valve.			
32.	With boiler firing and boiler room doors closed, check vent for flue gas leaks or spillage.			
33.	If barometric damper is furnished, adjust draft per table with barometric damper weights. Insure free damper movement and double nut damper weight to prevent loosening. If draft hood, insure proper draft record setting _____ " W.C.			
34.	Check that barometric damper is secured into vent with pivot arm in horizontal position to allow free movement. Insure damper secured to tee and screws (do not interfere with damper swing).			
35.	Check entire System for insulation, leaks & proper installation.			
36.	Check boiler and verify no leaks, damage or defective parts.			
37.	Replace all gas test point plugs.			
VII. FINAL INSTRUCTIONS & RECOMMENDATIONS TO OPERATOR		YES	NO	REMARKS
1.	Review Operating Instructions.			
2.	Review steps in Starting Boiler.			
3.	Review Shutdown Instructions.			
4.	Review Water Treatment Procedure.			
5.	Review Tune-up, Annual Maintenance and Inspection Procedures.			

VII. LIST ANY ITEMS THAT ARE NOT APPROVED AS SATISFACTORY OR THAT MAY BE QUESTIONABLE:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

START-UP PERFORMED BY _____ **DATE** _____