

Installation Manual

Installation Instructions

Gas-Fired Steam Boiler Bases



Gas-Fired Boiler Base Model GM

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 **Cleveland**

FOR YOUR SAFETY
Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

⚠ WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

⚠ DANGER

ELECTRIC SHOCK HAZARD

DEATH, INJURY, or EQUIPMENT DAMAGE can result from touching any component inside this appliance when the power is connected.

Whenever possible disconnect the power while installing, servicing, or testing.

When installation, service, or tests require power to be connected; use extreme caution and every possible precaution and safety measure while installing, servicing, or testing this appliance.

Post instructions to be followed if the user smells gas.
Display the instructions in a prominent location.
Obtain the instructions from the local gas supplier.

⚠ WARNING

Do not connect the drain connection to any drain material that cannot sustain 180° Fahrenheit.

Using drain material that cannot withstand 180° Fahrenheit can result in injury, equipment damage, and property damage.

**ALL SERVICE MUST BE PERFORMED BY A QUALIFIED
CLEVELAND RANGE AUTHORIZED TECHNICIAN
KEEP THIS MANUAL FOR REFERENCE**

This manual may be subject to new technical developments, modifications, and unforeseen errors.

DO NOT INSTALL OR OPERATE OR ATTEMPT TO INSTALL OR OPERATE THIS APPLIANCE OR ANY ACCESSORIES WITHOUT READING COMPLETELY AND FULLY UNDERSTANDING THIS MANUAL

Cleveland Range appliances are intended for other than household use.

⚠ DANGER

The boiler base Tabletop is **NOT** a supporting surface.
Death, Injury or Equipment Damage will result from mounting or placing anything on the Tabletop.

Cleveland STATEMENT OF POLICIES

LIMITED WARRANTY

CLEVELAND RANGE products are warranted to the original purchaser to be free from defects in materials and workmanship under normal use and service for the standard warranty period of one year from date of installation or 18 months from date of shipment, whichever comes first.

CLEVELAND RANGE agrees to repair or replace, at its option, f.o.b. factory, any part which proves to be defective due to defects in material or workmanship during the warranty period, providing the equipment has been unaltered, and has been PROPERLY INSTALLED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH THE CLEVELAND RANGE OWNER'S MANUAL.

CLEVELAND RANGE agrees to pay any FACTORY AUTHORIZED EQUIPMENT SERVICE AGENCY (within the continental United States, and Hawaii) for reasonable labor required to repair or replace, at our option, f.o.b. factory, any part which proves to be defective due to defects in material or workmanship, during the labor warranty period. This warranty includes travel time not to exceed two hours and mileage not to exceed 50 miles (100 miles round-trip), BUT DOES NOT INCLUDE POST START-UP, TIGHTENING LOOSE FITTINGS, MINOR ADJUSTMENTS, MAINTENANCE, CLEANING OR DESCALING.

The standard labor warranty allows factory payment of reasonable labor required to repair or replace such defective parts. Cleveland Range will not reimburse the expense of labor required for the repair or replacement of parts after the standard warranty period, unless an Extended Labor Warranty Contract has been purchased to cover the equipment for the balance of the warranty period from the date of equipment installation, start-up, or demonstration.

PROPER INSTALLATION IS THE RESPONSIBILITY OF THE DEALER, THE OWNER-USER, OR INSTALLING CONTRACTOR, AND IS NOT COVERED BY THIS WARRANTY. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes. Cleveland Range equipment is built to comply with applicable standards for manufacturers, including UL, ANSI, NSF, ASME/Ntl. Bd., CSA, and others.

BOILER (Steam Generator) MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER-USER AND IS NOT COVERED BY THIS WARRANTY. The use of good quality feed water is the responsibility of the Owner-User (see Water Quality Recommendations below). THE USE OF POOR QUALITY FEED WATER WILL VOID EQUIPMENT WARRANTIES. Boiler maintenance supplies, including boiler hand hole gaskets, are not warranted beyond the first 90 days after the date the equipment is placed into service. Preventive maintenance records must be available showing descaling per applicable Cleveland Operator Manual for Boiler Proration Program considerations.

WATER QUALITY RECOMMENDATIONS

TOTAL DISSOLVED SOLIDS	less than	60 parts per million
TOTAL ALKALINITY	less than	20 parts per million
SILICA	less than	13 parts per million
CHLORIDE	less than	30 parts per million
pH FACTOR	greater than	7.5

The foregoing shall constitute the sole and exclusive remedy of original purchaser and the full liability of Cleveland Range for any breach of warranty. THE FOREGOING IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED, INCLUDING ANY WARRANTY OF PERFORMANCE, MERCHANTABILITY, OR FITNESS FOR PURPOSE, AND SUPERSEDES AND EXCLUDES ANY ORAL WARRANTIES OR REPRESENTATIONS, OR WRITTEN WARRANTIES OR REPRESENTATIONS, NOT EXPRESSLY DESIGNATED IN WRITING AS A "WARRANTY" OR "GUARANTEE" OF CLEVELAND RANGE MADE OR IMPLIED IN ANY MANUAL, LITERATURE, ADVERTISING BROCHURE OR OTHER MATERIALS.

CLEVELAND RANGE'S liability on any claim of any kind, including negligence, with respect to the goods or services covered hereunder, shall in no case exceed the price of the goods or services, or part thereof, which gives rise to the claim. IN NO EVENT SHALL CLEVELAND RANGE BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES IN THE NATURE OF PENALTIES.

LIMITED EXTENDED WARRANTY COVERAGE

The purchase of a Limited Extended Warranty Contract extends the standard warranty coverage to the purchased period of time (one to two years) from the date of installation, start-up, or demonstration, whichever is sooner.

*An additional two years Parts and Labor Warranty can be purchased with each piece of Cleveland equipment for an additional 2% of the List Price per year. The 2% of list price charge will be the net invoice amount for each year of extended warranty purchased.

- Extended warranty must be purchased at the same time the equipment is purchased.
- Extended Warranty has the same exclusions as stated in our standard warranty.

Second year limited extended warranty coverage on Cleveland Steamers when purchased with a water filter applies to water related components only.

INSTALLATION MANUAL
Gas-Fired Boiler Base Model GM
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CHAPTER 1 PRODUCT INFORMATION

A. Product Information

- This manual covers the installation of Cleveland Range Gas-Fired Steam Boiler Bases, Model GM and covers the standard features and options available on this model.
- Other than selection of options, there are presently no significant design, parts, or operating differences among appliances with this model number.
- Instructions for equipment attached to GM Boiler Bases are separate.
- Figures 2-1 and 2-2 illustrate the dimensions, clearances, and major external features of Steam Boiler Bases

B. Product Information Plate

The Product Information Plate inside the cabinet door of the appliance lists:

- Model
- Serial Number
- Clearances
- Power and Wiring Requirements
- Fuel Gas Type and Requirements
- BTU/HR

C. Electrical Diagram Location

The Electrical Diagram is located on the inside of the cabinet door.

CHAPTER 2 GENERAL INSTALLATION INFORMATION

A. Laws, Codes, and Regulations

This equipment should be installed only by qualified, professional plumbers, pipe fitters, and electricians.

1. The installation of this appliance must conform with:
 - a. The National Fuel Gas Code, ANSI Z223.1 / NFPA 54 (latest edition), or the Natural Gas and Propane Installation Code CSA B149.1, or local codes, as applicable.
 - b. The National Electrical Code, ANSI/NFPA 70 (latest edition), or the Canadian Electrical Code, CSA C22.2, or local codes, as applicable.
 - When installed, the appliance must be electrically grounded in accordance with the above.
 - NOTE: This appliance is not GFI (GFCI) compatible.
 - c. The *Food Code* (latest edition) of the Food and Drug Administration (FDA).
2. This equipment is to be installed to comply with the applicable federal, state, or local plumbing codes.
3. This appliance is equipped with a Boiler as defined by Section IV of the ASME Boiler and Pressure Vessel Code (latest edition). In addition to compliance with all applicable codes and regulations, compliance with all laws regarding Boilers and Pressure Vessels, including, but not limited to, operator training, and obtaining permits and licenses is required before starting the Boiler.
4. Installation instructions must be read in their entirety before starting installation of this appliance.
5. Install this appliance according to the policies and procedures outlined in this manual.
6. Installation must comply with all local fire and health codes.

DANGER

Improper installation, adjustment, alteration, service, or maintenance of this appliance, or installation of a damaged appliance can result in DEATH, INJURY, EQUIPMENT DAMAGE, and void the warranty.

NEVER install damaged appliances, equipment, or accessories.

ALWAYS have installation and service performed by qualified Cleveland Range authorized personnel.

B. Inspect for Shipping Damage

- If the appliance is damaged or damage is suspected:
 1. Submit a Damage Claim to the Shipper immediately.
 2. Inform your dealer at once.
 3. Inform Cleveland Range in writing within three (3) days.

DANGER

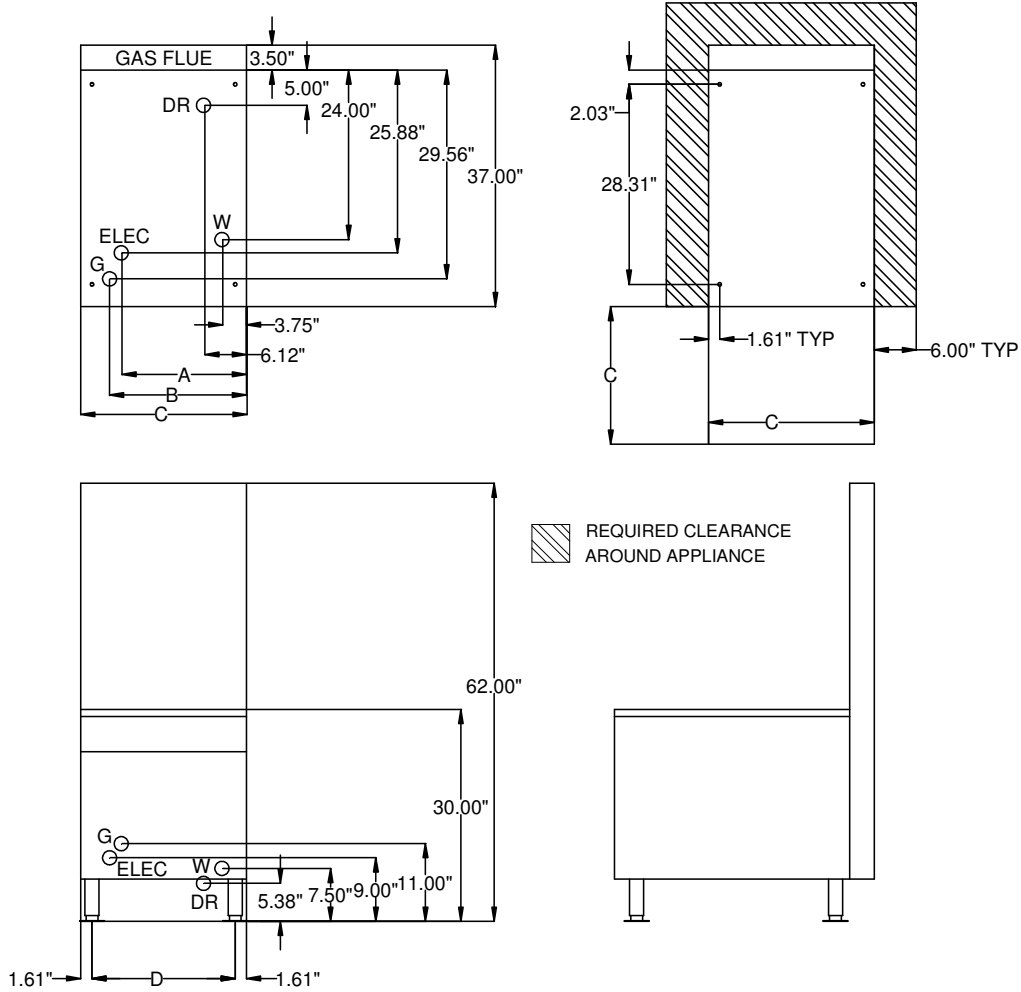
Operating this appliance out of level can cause DEATH, INJURY, and EQUIPMENT DAMAGE.

This appliance must be level both front-to-back and side-to-side in all installations.

NEVER operate this appliance out of level.

If this appliance is suspected to be out of level, shut it down at once and call your qualified Cleveland Range authorized service agency immediately.

C. Product Views



KEY	
DR	DRAIN CONNECTION *
W	WATER CONNECTION
ELEC	ELECTRIC CONNECTION
G	GAS CONNECTION

*This is the connection point for the drain line.
 Note: The drain MUST NOT be located beneath the appliance itself.

	A	B	C	D
24-GM	17.84"	19.50"	23.62"	20.40"
36-GM	23.25"	25.325"	35.43"	32.22"

Figure 2-1
PRODUCT VIEWS
 Plan, Front, and Side Views, Dimensions in Inches
 24-GM SHOWN

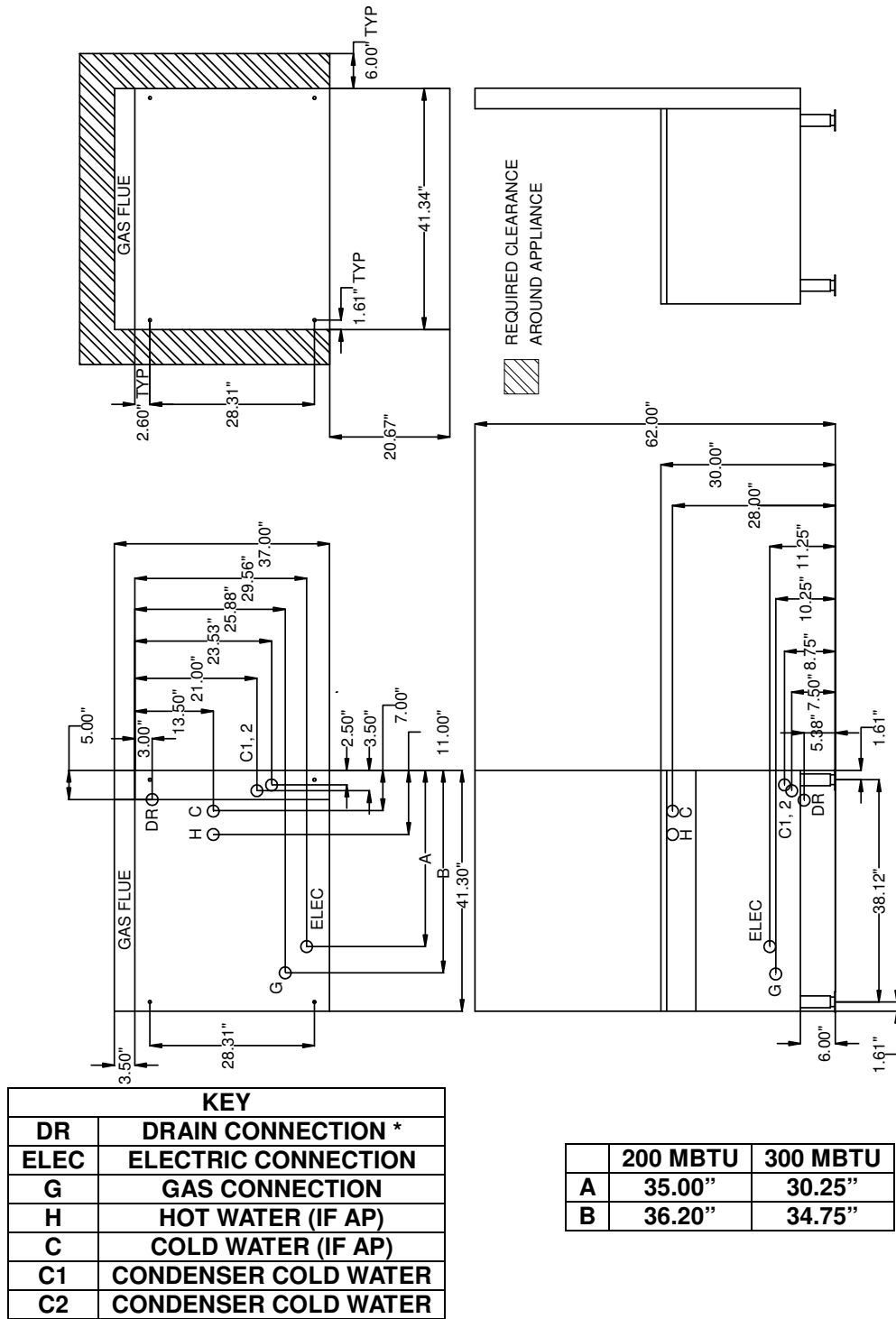


Figure 2-2
PRODUCT VIEWS
 Plan, Front, and Side Views, Dimensions in Inches
 42-GM for 42-CKGM-200 and 300 SHOWN

CHAPTER 3 INSTALLATION

DANGER

High Heat Hazard
Do NOT run utility lines under the Steam Boiler Base.
Heat or water from the Boiler and heat from the burners or heaters can damage utility lines and cause DEATH, INJURY, and EQUIPMENT DAMAGE.

A. Select a Location

1. For safe and efficient operation:
 - a. Installation must comply with all local fire and health codes.
 - b. A 6" (six inch) clearance must be maintained at the sides and rear of the appliance. **This appliance must be installed only in a non-combustible location.** See Figures 2-1 and 2-2.
 - c. The location selected must be capable of supporting this appliance.
 - The operating weight of a 24-GM-200 is 650 lbs, and a 36-GM-300 is 786 lbs.
 - d. Position the appliance so it will not tip or slide.
 - e. The operating surface must be level enough to allow leveling with the adjustable legs. This appliance **MUST** be level both front to back and side to side before operation.
 - f. A suitable drain must be available within 12 feet of this appliance. Do NOT install the appliance directly over a drain.
 - g. The location must include space for Operating and Service/Secondary Clearances and the Exhaust Hood. See Figure 2-1.

WARNING

This appliance must be installed only in a non-combustible location.
All clearance requirements above, below, and around this appliance are for non-combustible locations only. Installation in a combustible location or failure to maintain required clearances and additional distances as needed can result in INJURY and EQUIPMENT DAMAGE.
Consult manufacturers' literature, and sales and service agencies as needed.

- h. KEEP THE APPLIANCE AREA FREE AND CLEAR OF COMBUSTIBLES.
- i. Proper air supply for ventilation and combustion is REQUIRED for and CRITICAL to safe, efficient operation of this appliance.
- j. Make sure the air vents of this appliance are not blocked with or by anything.
- k. Allow for sufficient extra distance if a "high heat source," e.g. a broiler, is located next to this appliance. Contact Cleveland Range at 216-481-4900 or 1-800-338-2204 for recommendations.
- l. Do NOT install this appliance directly over a drain. Steam rising up out of the drain will adversely affect operation, hamper cooling air circulation, and damage electrical and electronic components.

B. Exhaust Hood Requirements

1. This gas fired appliance must be installed under a suitable ventilation hood as required by the National Fuel Gas Code, ANSI Z223.1/NFPA 54 and ANSI Z83.11-2004 / CSA 1.8-2004.
2. The ventilation hood system must include an interlock to prevent the operation of this appliance without the operation of the ventilation hood.
3. The exhaust hood must extend over the gas flue opening and meet the following requirements:
 - a. This gas fired appliance must be vented in accordance with all local, state and national codes for venting gas fired appliances.
 - b. The exhaust hood must be sized for the cumulative ventilation requirements of all the gas-fired appliances in the area under the hood, including this appliance.
 - The BTU/HR for a 24-GM-200 is 200,000 BTU/HR.
 - The BTU/HR for a 36-GM-300 is 300,000 BTU/HR.
 - Call Cleveland Range for BTU/HR of other gas boiler bases.
 - c. If an existing hood does not meet all specifications, a new one must be constructed.
 - d. When determining hood size, include operating clearances. See Figure 2-1.

C. Position and Level the Appliance

1. Move the appliance into position.
2. Place a level along the bottom edge of the appliance.
3. Use the adjustable legs of the appliance to level it front-to-back and side-to-side.

DANGER

High Heat Hazard

**Do NOT run utility lines under the Steam Boiler Base.
Heat or water from the Boiler and heat from the burners or heaters can damage utility lines and
cause DEATH, INJURY, and EQUIPMENT DAMAGE.**

D. Gas Supply

Post instructions to be followed if the user smells gas.
Display the instructions in a prominent location.
Obtain the instructions from the local gas supplier.

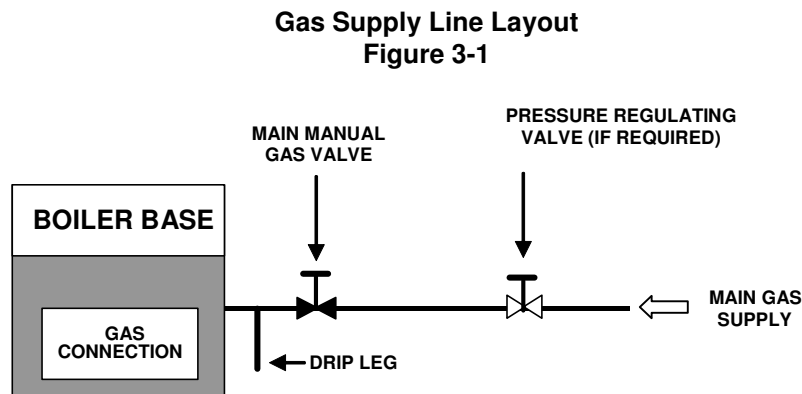
1. Gas Supply Requirements
 - Gas supply type **MUST** match the type of gas shown on the rating plate.
 - Gas supply pressure must **NOT** exceed 14" water column
 - Gas supply pressure must be within the pressure range shown below when using 1" NPT gas line and a 3/4" NPT connection
 - Natural gas pressure at 1000 BTU/CF must be 5 1/2" – 14" water column.
 - Propane gas pressure must be between 11" – 14" water column.
 - If the gas or propane supply pressure exceeds 14" water column, a pressure regulating valve (pressure regulator) must be installed in the gas supply line to reduce pressure to this appliance. See Figure 3-2.

2. Gas Supply Line Requirements

The Installer/Owner is responsible for furnishing and installing gas supply lines, valves, regulators, and accessories.

When installing gas supply lines and accessories, observe the following:

- a. Refer to Figure 3-1 for the recommended layout of the gas supply lines.
- b. Use non-hardening pipe thread sealant resistant to LP gas.
- c. The 3/4" NPT gas inlet is on the bottom of the appliance.
- d. Install main manual shut off valve between the gas supply and the appliance. See Figure 3-1. This main manual shut off valve is called the "Main Manual Gas Valve."
- e. Install a sediment trap (drip leg) in gas supply line. See Figure 3-1.



3. Test Gas Supply Lines

- a. Check all connections for proper tightness.
- b. Remove the control side panel to inspect internal gas connections. Do not replace the panel until installation is complete.
- c. Open the gas supply valves.
- d. Check all lines and connections for leaks, both inside and outside this appliance, with soap and water solution.
- e. All leaks must be corrected before attempting to operate this appliance.

4. Pressure Test Gas Supply Lines

If pressure testing is required, this appliance must be disconnected or isolated from the gas supply piping system during pressure testing as follows:

- The appliance and its individual shutoff valve (Main Manual Gas Valve) must be **disconnected** from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (14" water column or 3.45 kPa).
- The appliance must be **isolated** from the gas supply piping system by closing its individual manual shutoff valve (Main Manual Gas Valve) during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (14" water column or 3.45 kPa).

E. Water Supply

1. Water Supply Quality Requirements

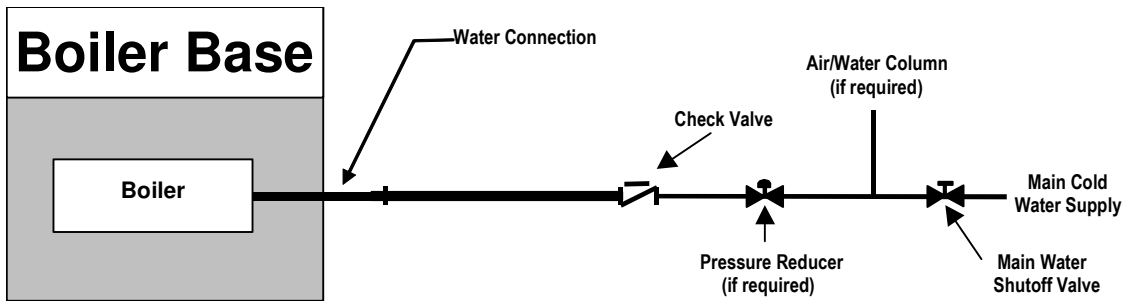
NOTICE

The use of good quality feed water as listed in the Cleveland Range Limited Warranty is the responsibility of the Owner-User.

See Water Quality Recommendations as listed in the Cleveland Range Limited Warranty.

THE USE OF POOR QUALITY FEED WATER WILL VOID EQUIPMENT WARRANTIES.

- a. Contact Cleveland Range for details on how to provide water per Minimum Water Quality Requirements in the Warranty, or how to increase the frequency of maintenance, cleaning, and descaling.
 - b. Poor water supply quality degrades performance.
 - c. Check the quality of supply water before designing the water supply by contacting a local water treatment specialist for on-premises water analysis.
 - d. Softened or chlorinated water damages the boiler by increasing corrosion. Carbon type filters are required before water enters the boiler if supply water is softened or chlorinated.
 - e. If a water treatment system must be installed to achieve acceptable water quality, install it **BEFORE** connecting the water supply lines.
 - f. If analysis shows that supply water is below Minimum Water Quality:
 - **EITHER** a water treatment system and/or carbon filter must be installed in the line feeding the Boiler.
 - **OR** the frequency of maintenance, cleaning, and descaling must be increased beyond that recommended in the maintenance schedule. "See Setting the Descale Required Light" in this Chapter.
2. Connect the Water Supply Lines
- The Installer/Owner is responsible for the water connection of this appliance.
 - This appliance is to be installed to comply with all applicable federal, state, or local plumbing codes.
 - **Connect this appliance to COLD WATER** The condenser system and boiler will not work properly if they are connected to HOT or WARM water.
 - See Figure 3-2.
 - a. **Water supply must have a minimum dynamic (flow) pressure of 35 psi (2.4 kg/cm²) and a maximum static pressure of 60-psi (4.1 kg/cm²).**
 - b. **If the static pressure is above 60 psi, a pressure regulator must be used and set at approximately 50 psi. Pressure above 60 psi can damage solenoid valves.**



**Figure 3-2
Cleveland Range Water Supply Arrangement**

c. Installation Requirements:

- Apply non-hardening pipe thread sealant to threaded connections.
- The Boiler Base has a 1/4" NPT female fittings its underside for the Boiler.
- Install a manual water shut-off valve (Main Water Shutoff Valve) (not provided) between the cold water supply line(s) and the appliance.
- The National Sanitation Foundation (NSF) requires installation of a check valve (or other approved anti-backflow / anti-siphon device) (not provided) in all supply lines in accordance with and as required by local, state, and national health, sanitation and plumbing codes.
- A 40 mesh water strainer (dirt filter), Cleveland Range Part Number 19870, is factory installed.
- Flush the water supply lines before connecting the lines to the appliance.

1) Test Water Supply Lines

- a. Check all connections for proper tightness.
- b. Remove the side panels to inspect the water connections inside the appliance.
- c. Open the water supply valves.
- d. Check all lines and connections for leaks, both inside and outside the appliance.

F. Electric Power Supply

- The electric supply must match all electrical and wiring requirements specified on the rating plate.
- NOTE: This appliance is **NOT** Ground Fault Interrupter (GFI or GFCI) compatible.
- NOTE: The Electrical Diagram is located on the inside of the cabinet door.

The connection must be made as follows:

1. Install a main disconnect switch and a separate fuse or breaker for this appliance as shown in Figure 3-4. The fused disconnect switch is referred to as the “Main External Power Switch.”
2. Do not use a GFI (GFCI) circuit. This appliance is not GFI compatible.
3. **Do NOT use a power cord.**
4. Make the electrical connection using flexible conduit, per local code. See Figure 3-5.

<h1>⚠ WARNING</h1>
<p>This appliance is not GFI (GFCI) compatible. Do not use a GFI (GFCI) circuit. Using a GFI (GFCI) circuit can result in injury, equipment damage, and property damage.</p>

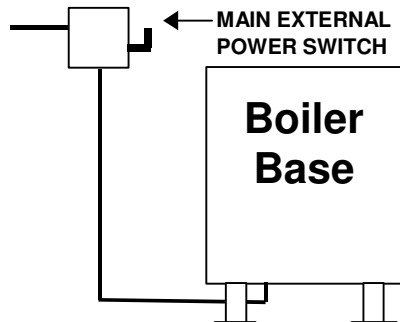


Figure 3-4
Electrical Layout

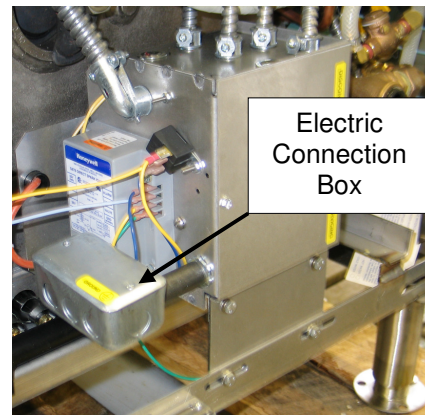


Figure 3-5
Hardwire Connection

G. Free Air Vented Drain Line

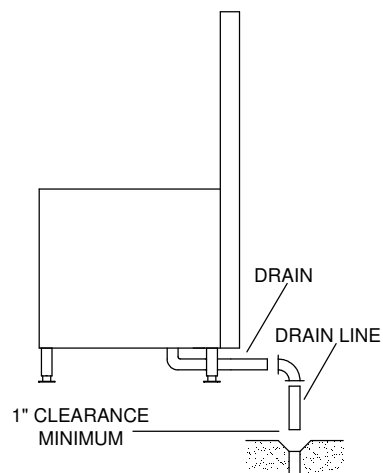
DANGER

DEATH, INJURY, EQUIPMENT and PROPERTY DAMAGE will result from improper installation of drain outlet lines. Install free air vented drain lines as described in this manual.

NOTICE: Furnishing and installing drain lines and drainpipe is the responsibility of the Installer/Owner.

The following restrictions and requirements are critical to the safety of personnel and equipment, and must not be violated under any circumstances:

1. The drain lines must be installed in compliance with the *Food Code* (latest edition) of the Food and Drug Administration (FDA), and any other applicable national, state, or local codes and regulations.
2. The drain line must be free air vented, have gravity flow from the appliance, and terminate outside the perimeter of the appliance.
3. Free air venting requires a minimum 1" clearance between the end of the drain line and the top of the floor drain. See Figure 3-5.
4. Do NOT install the appliance directly over a drain. Steam rising up out of the drain will adversely affect operation, hamper cooling air circulation, and damage electrical and electronic components.
5. Do NOT connect the appliance's drain connection to any drain material that cannot sustain 180° F.
6. Do NOT connect any other drain from any other equipment to the drain line of this appliance.
7. Do NOT connect the drain outlet extension line directly into a floor drain or a sewer line.
8. Do NOT connect this appliance's drain directly to drains or to the plumbing of any other equipment.
9. Do NOT install a trap or shutoff in the drain line.
10. **Drainpipe Size and Length Guidelines:**
 - Do NOT make a drainpipe outlet extension more than 12 feet long.
 - Do NOT use more than three elbows.
 - **Up to 6' pipe:** 1 1/2-inch pipe and fittings are acceptable.
 - **Up to 2 elbows:** 1 1/2-inch pipe and fittings are acceptable.
 - **6' to 12' pipe:** 2-inch pipe and fittings are required.
 - **3 elbows on any extension:** 2-inch pipe and fittings are required.
11. Refer to Figures 2-1 and 3-5.
 - a. Connect the drain to the appliance.
 - b. While assembling the pipes and fittings of the drain outlet extension, use non-hardening pipe thread sealant.
 - c. Thread fittings together FINGER TIGHT ONLY! DO NOT USE A WRENCH!



**Figure 3-5
Typical Drain Layout**

H. Installation Checklist

Installation Check List		
TASK	REFERENCE Page Number	COMPLETED (Initial and Date)
Preparation	Pg. 2	
Check Operating Location Clearances	Figure 2-1, 2-2, Pg. 5	
Test Supply Water Quality	Warranty, Pg. 8	
Water Supply Requirements Met	Pg. 8	
Electric Power Requirements Met	Rating Plate, Pg. 10	
Gas Supply Requirements Met	Rating Plate, Pg. 7	
Exhaust Hood Requirements Met	Pg. 6, Figure 2-1, 2-2	
Installation	Pg. 5	
Check Level Front-to-Back and Side-to-Side	Pg. 6	
Check Drain Line Connection	Pg. 11	
Check Exhaust Hood Function	Pg. 6	
Check Electrical Supply Connection	Pg.10	
Check Water Supply Connection	Pg. 8	
Leak Test Water Supply Lines	Pg. 9	
Check Gas Supply Connection	Pg. 7	
Leak Test Gas Supply Connection	Pg. 7	

Notes:

CHAPTER 4 STARTUP PROCEDURE

DANGER

DO NOT TRY TO LIGHT BURNERS WITH A FLAME.

This appliance has an electronic ignition system, which automatically lights burners, senses flame, and controls gas flow.

Burners cannot be lit with a flame.

DEATH, INJURY, OR EQUIPMENT DAMAGE may result from trying to light burners with a flame.

DANGER

Without power, there is NO safe method of operation of this appliance.

DO NOT ATTEMPT TO START OR OPERATE this appliance during a power failure.

DEATH, INJURY, AND/OR EQUIPMENT DAMAGE may result.

Problems? See the Installer's Troubleshooting Guide at the end of this manual.

Burner Ignition Test (Lighting and Shutdown Instructions)

NOTE: Perform this test before Startup Test Procedure

NOTE: For new installations, or when air in gas lines is suspected, it may be necessary to bleed the air from the gas lines. Bleed air as close as possible to the inlet of the automatic gas valve.

A. Lighting Instructions (Test of function of pilot light and burner ignition system.) for GAS

1. If not already done:
 - a. Test the water supply lines.
 - b. Open the 1/4" manual water valve (ball valve).
 - c. Close the 3/4" drain valve (ball valve).
 - d. Leak test the gas supply lines.
 - e. Check that the ON/OFF valve of automatic gas control valve is in the ON position.
 - f. Open the Main Manual Gas Valve.
2. Turn the Main External Power Switch OFF.
3. Control Panel Settings (if applicable):
 - a. ON/OFF Switch: OFF. (If ON/OFF model.)
 - b. MANUAL/TIMED Switch: TIMED. (If dial timer model.)
 - c. TIMER DIAL: 0 minutes. (If dial timer model.)
4. Turn ON the electrical power to the appliance at the Main External Power Switch.
 - a. When initial power is supplied to the appliance with the ON/OFF switch in the OFF position, a 3-minute automatic blowdown cycle starts.
 - b. This cycle drains and rinses the float chamber and the drain valve.
 - c. This cycle stops after 3 minutes OR when the ON/OFF switch is changed to the ON position.
5. Turn ON the electrical power to the appliance at the ON/OFF switch.
 - a. The red indicator in the ON/OFF switch lights.
 - b. The red "Low Water" indicator lights.

- c. The Boiler fills with water.
 - d. The “Low Water” indicator goes out.
 - e. The burner does NOT light.
 - f. The amber indicator in the Reset/Steam switch lights.
6. PRESS the Reset/Steam switch.
- a. The igniter initiates a spark and gas is supplied to the pilot for 90 seconds.
 - b. If the pilot does not light in 90 seconds then the ignition system locks out.
 - 1) Reset system by waiting 5 minutes.
 - 2) Turn the Main External Power Switch OFF and back ON.
 - 3) PRESS the Reset/Steam switch.
- 4) If burner does NOT light after two attempts, go to Step 8.**
7. When the burner lights, the Boiler begins heating and Boiler pressure rises to operating pressure as indicated by the Boiler Pressure Gauge.
- a. After the operating pressure is reached, the burners cycle on and off to maintain operating pressure.
 - b. End this test here and go to the Shutdown Instructions
8. Wait 5 minutes and then repeat Steps 2-6 up to three more times.
- **EITHER:** If the burner does NOT light after repeating Steps 2-6 four times, go to the Shutdown Instructions and call a qualified Cleveland Range authorized service representative to adjust the burner controls.
 - **OR:** If the burner lights in four or less tries of Steps 2-6, go to Step 7.

B. Shutdown Instructions

1. Turn OFF the electrical power to the appliance, at both the ON/OFF Switch and the Main External Power Switch.
2. Turn OFF the gas supply at Main Manual Gas Valve.

CHAPTER 5 OPERATING TESTS

Startup Test Procedure for the 24&36-GM Gas Boiler Bases

This procedure evaluates the function of the operating controls of this appliance.

A. Startup Procedure with the Appliance De-Energized.

1. Start with the Main External Power Switch OFF.
2. Check the fuses or circuit breakers for proper size.
3. Make sure the water supply line valves are open.
4. Make sure the Main Manual Gas Valve is open.
5. Go to B. "Boiler Drain and Rinse Cycle Inspection."

DANGER

ELECTRIC SHOCK HAZARD

DEATH, INJURY, or EQUIPMENT DAMAGE can result from touching any component inside this appliance when the power is connected.

Whenever possible disconnect the power while installing, servicing, or testing this appliance.

When installation, service, or tests require power to be connected to this appliance: use extreme caution and every possible precaution and safety measure while testing or servicing this appliance.

B. Boiler Drain and Rinse Cycle Inspection (3-Minute Blowdown Cycle)

1. Turn OFF the Main External Power Switch.
2. Turn OFF the ON/OFF switch.
3. Turn the Main External Power Switch ON to start the 3-Minute Blowdown Cycle.
 - a. Watch for plumbing leaks:
 - b. If there are leaks:
 - 1) Turn OFF the Main External Power Switch.
 - 2) Repair leaks.
 - 3) Start this test over.
4. The automatic blowdown cycle opens the fill and rinse valves.
5. The drain valve remains open.
6. Stop the blowdown cycle before it is complete by turning the ON/OFF switch ON.
 - a. The operating controls energize
 - b. The red ON indicator in the ON/OFF switch lights.
 - c. Blowdown stops
 - d. The Boiler fills
 - The Low Water light turns ON while the Boiler is filling.
 - The Low Water light turns OFF when the Boiler is full.
7. Start a 3-minute blowdown cycle by turning the ON/OFF switch OFF.
8. A steady stream of water flows from drainpipe into the floor drain.
9. After the 3-minute blowdown cycle ends, no water flows into the float column or out of the drainpipe.
10. **Go to C.** "Operating Test Procedures."

C. Operating Test Procedures

1. Turn OFF the Main External Power Switch.
2. Turn OFF the ON/OFF switch.
3. Turn ON the Main External Power Switch.
 - a. The 3-minute blowdown cycle starts.
 - b. Turn the ON/OFF switch ON.
 - The red ON indicator in the ON/OFF switch lights.
 - The automatic blowdown cycle stops.
 - c. Water rises in the sight glass.
 - d. When water reaches the safety level sensor AND there is NO pressure in the Boiler, the amber light in the Reset/Steam switch lights.
 - e. Press the Reset/Steam switch to light the burner.
 - f. The amber light goes out, the burner lights, and Boiler pressure rises to operating level.
 - g. Check the Low-Water Safety Circuit:
 - 1) Let the appliance continue to steam in MANUAL mode.
 - 2) Close the Main Water Shutoff Valve.
 - 3) Water steams out of the Boiler.
 - 4) Water in the Boiler drops below the safety level sensor.
 - 5) The burner shuts OFF.
 - 6) Open the Main Water Shutoff Valve.
 - 7) The Boiler refills to the safety level and the amber light in the Reset/Steam switch lights.
 - 8) Press the Reset/Steam switch to resume steaming.
 - h. Turn the ON/OFF switch OFF.
 - i. Wait for blowdown to end.
 - j. Turn OFF the Main External Power Switch.
 - k. Replace all panels and sheeting.
 - l. Turn ON the Main External Power Switch.

CHAPTER 6 OPTIONAL EQUIPMENT

Modular Interconnect

IMK Kit

P/N 409351, 409355, 409358, 4093513

DANGER

Improper installation, adjustment, alteration, service, or maintenance of a Power Take-Off Kit or Modular Interconnect Kit, or installation of a Power Take-Off Kit or Modular Interconnect Kit damaged during shipment or storage can cause DEATH, INJURY, AND EQUIPMENT DAMAGE.

Also, any of these conditions may void the Warranty.

Power Take-Off and Modular Interconnect Kits are designed for installation by a qualified Cleveland Range authorized service representative. These kits must be installed according to the policies and procedures outlined in this manual and supplemental instructions.

- **These kits are intended for use when interconnecting Cleveland Range products only.**
- **Misuse of these kits, or parts therein, can result in personal injury, product or property damage, and voiding of product warranties.**
- **Installation must be made by a qualified Cleveland Range authorized Service Representative.**

The Modular Interconnect Kit (IMK) attaches to the PTO and connects the Boiler to a direct connect steam powered appliance. A direct connect steam powered appliance is one that has no Boiler or other steam generator and uses steam piped in from another source to operate. The IMK cannot be used to connect steam sources together.

See Installation Instructions P/N 260ALF and P/N 260WS for details.

DANGER

**PRESSURIZED STEAM HAZARD.
DO NOT CONNECT MULTIPLE STEAM SOURCES TOGETHER WITH THE
MODULAR INTERCONNECT KIT OR BY ANY OTHER METHOD.
DEATH, INJURY, OR EQUIPMENT DAMAGE CAN RESULT.**

CHAPTER 7 INSTALLER'S TROUBLESHOOTING GUIDE

The Troubleshooting Guide is a list of symptoms of problems that may occur during routine operation.

- “Problem” (left column) lists common operating problems.
- “Possible Cause” (center column) lists causes of problems in the order they should be checked.
- “Remedy / Reference” (right column) lists fixes for problems from easiest to hardest.
- “Notes” in “Remedy / Reference column are at end of the Troubleshooting Guide.

ATTEMPTING TO REPAIR OR CORRECT PROBLEMS REQUIRING A QUALIFIED CLEVELAND RANGE AUTHORIZED SERVICE REPRESENTATIVE VOIDS THE WARRANTY

PROBLEM	POSSIBLE CAUSE	REMEDY/REFERENCE
Power indicator light does not turn ON when ON/OFF switch is in the ON position.	Power turned OFF at Main External Power Switch.	Turn ON power at Main External Power Switch.
	Inoperative controls.	See Note 1.
Power ON, low water indicator light is ON and Boiler does not fill. (See also “Unit drains continuously”, below)	Water supply to appliance shut off.	Open Main Water Shutoff Valve.
	Main Water Shutoff Valve to Boiler feed is closed.	Open manual valve in feed line located behind the sliding lower right side panel.
	Water line strainer is clogged.	Clean water supply strainer.
	Supply pressure is low. Inadequate water supply system.	Low supply pressure can cause long fill times. Make sure that compartments are turned OFF during the first Boiler fill. See Note 3.
	Inoperative solenoids or controls.	See Note 1.
Boiler drains continuously.	Manual drain valve is open.	Close manual drain valve located behind the lower right-side sliding panel.
	Drain valve is stuck partially open.	Turn ON/OFF switch to the OFF position for one minute to flush the drain valve. Turn the switch back to the ON position. See Note 4. If condition persists, see Note 1.
	Inoperative controls.	See Note 1.
Control panel POWER indicator light ON, low water indicator light is OFF, pressure reset switch light is ON and Boiler does not make steam. (Boiler Pressure Gauge reads zero).	Boiler system needs reset.	Press RESET/STEAM switch. See Note 4.
Control panel POWER indicator light ON, low water indicator light, and pressure reset switch are OFF and Boiler does not make steam. Boiler will not light. (Boiler Pressure Gauge reads zero).	Gas supply valve TO appliance is closed.	Turn OFF Main External Power Switch and open gas supply valve. Turn Main External Power Switch ON. See Note 4.
	Gas supply valve IN appliance is closed.	Turn OFF Main External Power Switch. See Note 1.
	Unit is locked out.	See Note 4.
	Inoperative controls.	See Note 1.

PROBLEM	POSSIBLE CAUSE	REMEDY/REFERENCE
Control panel POWER indicator light is ON, Boiler is pressurized and compartments will not cook	Compartment door steam shut off switch (SCS): switch not engaged. (If appliance has this option.)	Close door completely.
	Inoperative controls or solenoids.	See Note 1.
Water leaking from water pipes or drain lines.	Plumbing needs repair.	See Note 3.
Water leaking from bottom of cabinet.	Broken or loose plumbing inside appliance cabinet.	Turn OFF power at Main External Power Switch. Close Main Water Shutoff Valve. See Note 1.
Amber light in reset switch lights, and Boiler stops producing additional steam. Low water light remains OFF.	High-pressure switch has been activated.	Turn OFF power. See Note 4. If condition repeats itself, turn off Main External Power Switch. See Note 1.
	Inoperative controls.	See Note 1.
Amber light in reset switch lights, and Boiler stops producing steam. Low Water Light is ON, or Low Water Light came ON briefly.	Water solenoid to the Boiler has failed.	See Note 1.
	Drain solenoid has failed	See Note 1.
	Water pressure is low (or was low briefly).	Turn OFF power. See Note 4. If condition repeats itself, turn OFF Main External Power Switch. See Note 3.
	Manual drain is not completely closed.	Close manual drain completely (located on the front of the boiler).
	Inoperative controls	See Note 1.
Abnormal amount of steam coming from drain during drain cycle.	Flush solenoid has failed.	See Note 1.

NOTES

1. If the problem is inside the appliance, call a qualified Cleveland Range authorized service representative or Cleveland Range. (Please have the model number and serial number ready when calling.) Cleveland Range will not pay for warranty repairs by unauthorized maintenance and repair centers.
2. Proper installation of this appliance is the responsibility of the Owner-User. Refer to the Cleveland Range Warranty.
3. Repairs to external plumbing should be done by a Licensed Plumber.
4. To restart the unit, follow the Lighting (Start-Up) instructions in this manual.
5. Repairs to external wiring should be done by a Licensed Electrician.
6. For more information on products and services, contact your nearest Authorized Sales Representative.
7. Call Cleveland Range at 216-481-4900 for preventative maintenance programs, descaling kits, descaling information, and water treatment systems.