

SUGGESTED SPECIFICATIONS



PO BOX 447
NEW BERLINVILLE, PA 19545-0477

Series 211A Atmospheric Gas-Fired Boilers

I. GENERAL REQUIREMENTS

- A. The boiler(s) shall be of a low pressure, cast iron, atmospheric gas design and shall be tested and design certified to the current ANSI Z21.13 standard and listed in the International Approval Services Directory of A.G.A. and CGA Certified Appliances and Accessories.
- B. The boiler(s) shall be capable of developing full A.G.A. listed gross output at 100% firing rate and shall include the A.G.A. Certification Seal for Appliances.
- C. The boiler(s) shall be listed in the I=B=R Ratings Directory and shall bear the I=B=R Emblem.
- D. The boiler(s) will be Peerless Model _____ for (natural) (LP) gas with an A.G.A. Gross Output of _____ MBH and a Net I=B=R (Water) (Steam) Rating of _____ MBH.
- E. The boiler(s) shall be constructed in accordance with the provisions of Section IV of the ASME Boiler and Pressure Vessel Code and shall be stamped with the required ASME symbol. Each boiler section shall be hydrostatically pressure tested for a maximum allowable working pressure of (50) (80) PSIG for water and 15 PSIG for steam.
- F. The boiler(s) shall be field assembled and hydrostatically tested in accordance with the manufacturer's installation instructions. All work shall be completed in a neat and workmanlike manner.
- G. *Optional Factory Assembled Sections:*
The boiler(s) shall be provided with factory assembled sections. The sections shall be assembled with individual draw rods and flow port gaskets. High temperature sealing rope shall be used to provide a permanent gas-tight seal between the sections. The boiler(s) shall be hydrostatically tested in accordance with Section IV of the ASME Boiler and Pressure Vessel Code for a maximum allowable working pressure of (50) (80) PSIG for water and 15 PSIG for steam.
- H. *Optional Factory Packaged Boilers:*
The boiler(s) shall be factory packaged with jacket, burners, trim and controls mounted and wired. The sections shall be assembled with individual draw rods and flow port gaskets. High temperature sealing rope shall be used to provide a permanent gas-tight seal between the sections. The boiler(s) shall be hydrostatically tested in accordance with Section IV of the ASME Boiler and Pressure Vessel Code for a maximum allowable working pressure of (50) (80) PSIG for water and 15 PSIG for steam. The boiler(s) shall be fire-tested (*optional*) for a functional check of all components prior to shipment.

II. BOILER CONSTRUCTION FEATURES

- A. The boiler sections shall be assembled using individual draw rods between each section for ease of assembly and to evenly distribute tension between the sections.
- B. Each section shall be evenly spaced with spacing pads and high temperature sealing rope shall be used to provide a permanent gas-tight seal between the sections.
- C. Flow port gaskets shall be used at each port opening to provide a permanent water-tight seal between the sections.
- D. The boiler(s) shall be furnished with an insulated steel base. The base shall be painted with high temperature black paint and insulated with high temperature insulation.

II. BOILER CONSTRUCTION FEATURES, CONT'D

- E. The boiler(s) shall be furnished with a cleanout plate located on each end section for ease of inspection and cleaning of the flueways. The cleanout plates shall be sealed to the boiler with high temperature sealing rope.
- F. The boiler(s) shall be provided with aluminized steel main burners of a one piece slotted port design. The burners shall be designed to provide quiet ignition and extinction.
- G. The boiler(s) shall be furnished with (a) corrosion resistant aluminized steel flue collector(s) and (a) horizontal-to-vertical draft hood(s). The flue collector(s) shall be sealed to the top of the boiler sections with high temperature sealing rope.
- H. The boiler(s) shall be provided with an insulated steel flush jacket with a painted finish. The jacket shall be designed to permit installation after the supply and return piping is connected.

III. BOILER FOUNDATION

- A. A concrete housekeeping pad shall be provided as recommended by the boiler manufacturer if the boiler room floor is not level or if additional structural support is needed.

IV. INSPECTION TAPPINGS (Optional)

- A. All intermediate sections shall be provided with 1-1/2" NPT inspection tappings located in front at the bottom. The tappings shall be plugged with (brass plugs) (nipples and caps).

V. TANKLESS WATER HEATERS (Optional for water boilers)

- A. The boiler(s) shall be provided with an internal tankless water heater rated at _____ GPM at a 40°F to 140°F temperature rise.
- B. The boiler(s) shall be provided with a low limit temperature control set to maintain a 200°F boiler water temperature.

VI. BOILER TRIM AND CONTROLS

For Water Boilers:

- A. The boiler(s) shall be provided with a safety relief valve set to relieve at (30) (50) (80) PSIG. The valve shall conform to Section IV of the ASME Boiler and Pressure Vessel Code.
- B. The boiler(s) shall be provided with a combination pressure-temperature gauge to indicate the boiler pressure and temperature.
- C. The boiler(s) shall be provided with an operating temperature control and a manual reset high limit temperature control.
- D. The boiler(s) shall be provided with a (float type) (probe type) low water cut-off.

For Steam Boilers:

- A. The boiler(s) shall be provided with a safety valve set to relieve at 15 PSIG. The valve shall conform to Section IV of the ASME Boiler and Pressure Vessel Code.
- B. The boiler(s) shall be provided with a compound steam gauge to indicate boiler pressure.
- C. The boiler(s) shall be provided with a water gauge glass and gauge cocks.
- D. The boiler(s) shall be provided with an operating pressure control and a manual reset high limit pressure control.
- E. The boiler(s) shall be provided with one (1) float type and one (1) probe type low water cut-off.

VII. STANDARD GAS CONTROL TRAIN

- A. The gas control train shall be factory assembled and shall include a manual shut-off gas valve, gas pressure regulator and two (2) diaphragm gas valves. A high gas pressure switch (*Optional on 211A-04 thru 12*) shall be furnished with each gas train. *Note: 211A-11 thru 37 furnished with one (1) diaphragm gas valve and one (1) solenoid gas valve per gas train. 211A-19 thru 37 includes two (2) gas trains.*

VII. STANDARD GAS CONTROL TRAIN, CONT'D

- B. Inlet gas pressure to the gas train under full flow conditions shall be a minimum of (5.0") (7.0") (10.0") W.C. and a maximum of 14.0" W.C. for natural gas, and a minimum of 11.0" W.C. and a maximum of 14.0" W.C. for LP gas.
- C. If the inlet gas pressure exceeds 14.0" W.C., a lock-up type gas pressure regulator shall be installed in the main gas supply to the boiler(s) to provide a maximum lock-up gas pressure of 14.0" W.C.

Contact factory for information and specifications on 211A-38 thru 46.

VIII. COMBUSTION CONTROLS FOR NATURAL GAS

211A-04 thru 10: (Natural Gas)

Standard Controls:

- A. The boiler(s) shall be provided with an HSP-1 Ignition System, which shall include one (1) Honeywell S8610 electronic spark ignition module and one (1) intermittent burning electronically supervised safety pilot with 100% shut-off.

Optional controls (In lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an E1-M* Ignition System, which shall include one (1) Honeywell RM7890C Flame Safeguard Control and one (1) constant burning electronically supervised safety pilot with 100% shut-off.
*(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

or

- A. The boiler(s) shall be provided with an E1-E* Ignition System, which shall include one (1) Honeywell RM7890A Flame Safeguard Control and one (1) intermittent burning electronically supervised safety pilot with 100% shut-off.
*(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panel is required:

- B. Furnish a prewired MSP Electronic Control Panel, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed door for dust resistance. The panel shall include color-coded wiring, RM7890 Flame Safeguard with alarm contacts, Q7800A subbase, and numbered terminal strip for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-11 thru 15: (Natural Gas)

Standard controls:

- A. The boiler(s) shall be provided with an HSP-1 Ignition System, which shall include one (1) Honeywell S8610 electronic spark ignition module, one (1) intermittent burning electronically supervised safety pilot and one (1) constant burning thermally supervised safety pilot with 100% shut-off.

Optional controls (In lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an HSP-2 Ignition System, which shall include two (2) Honeywell S8610 electronic spark ignition modules and two (2) intermittent burning electronically supervised safety pilots with 100% shutoff.

or

- A. The boiler(s) shall be provided with an E2-M* Ignition System, which shall include two (2) Honeywell RM7890C Flame Safeguard Controls and two (2) constant burning electronically supervised safety pilots with 100% shut-off.
*(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

or

- A. The boiler(s) shall be provided with an E2-E* Ignition System, which shall include two (2) Honeywell RM7890A Flame Safeguard Controls and two (2) intermittent burning electronically supervised safety pilots with 100% shut-off.
*(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

VIII. COMBUSTION CONTROLS FOR NATURAL GAS, CONT'D

Specify following if prewired control panel is required:

- B. Furnish a prewired MSP Electronic Control Panel, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed door for dust resistance. The panel shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strip for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-16 thru 25: (Natural Gas)

Standard controls:

- A. The boiler(s) shall be provided with an HSP-1 Ignition System, which shall include one (1) Honeywell S8610 electronic spark ignition module, one (1) intermittent burning electronically supervised safety pilot and two (2) constant burning thermally supervised safety pilots with 100% shut-off.

Optional controls (in lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an HSP-3 Ignition System, which shall include three (3) Honeywell S8610 electronic spark ignition modules and three (3) intermittent burning electronically supervised safety pilots with 100% shut-off.

or

- A. The boiler(s) shall be provided with an E3-M* Ignition System, which shall include three (3) Honeywell RM7890C Flame Safeguard Controls and three (3) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

or

- A. The boiler(s) shall be provided with an E3-E* Ignition System, which shall include three (3) Honeywell RM7890A Flame Safeguard Controls and three (3) intermittent burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

Specify following if prewired control panels are required:

- B. Furnish two (2) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-26 thru 33: (Natural Gas)

Standard controls:

- A. The boiler(s) shall be provided with an HSP-1 Ignition System, which shall include one (1) Honeywell S8610 electronic spark ignition module, one (1) intermittent burning electronically supervised safety pilot and three (3) constant burning thermally supervised safety pilots with 100% shut-off.

Optional controls (In lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an HSP-4 Ignition System, which shall include four (4) Honeywell S8610 electronic spark ignition modules and four (4) intermittent burning electronically supervised safety pilots with 100% shut-off.

or

- A. The boiler(s) shall be provided with an E4-M* Ignition System, which shall include four (4) Honeywell RM7890C Flame Safeguard Controls and four (4) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

or

- A. The boiler(s) shall be provided with an E4-E* Ignition System, which shall include four (4) Honeywell RM7890A Flame Safeguard Controls and four (4) intermittent burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

VIII. COMBUSTION CONTROLS FOR NATURAL GAS, CONT'D

Specify following if prewired control panels are required:

- B. Furnish two (2) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-34 thru 37: (Natural Gas)

Standard controls:

- A. The boiler(s) shall be provided with an HSP-1 Ignition System, which shall include one (1) Honeywell S8610 electronic spark ignition module, one (1) intermittent burning electronically supervised safety pilot and four (4) constant burning thermally supervised safety pilots with 100% shut-off.

Optional controls (In lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an HSP-5 Ignition System, which shall include five (5) Honeywell S8610 electronic spark ignition modules and five (5) intermittent burning electronically supervised safety pilots with 100% shut-off.

or

- A. The boiler(s) shall be provided with an E5-M* Ignition System, which shall include five (5) Honeywell RM7890C Flame Safeguard Controls and five (5) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

or

- A. The boiler(s) shall be provided with an E5-E* Ignition System, which shall include five (5) Honeywell RM7890A Flame Safeguard Controls and five (5) intermittent burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panels and specify Paragraph "B" below.)

Specify following if prewired control panels are required:

- B. Furnish three (3) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

Contact factory for information and specifications on 211A-38 thru 46.

IX. COMBUSTION CONTROLS FOR LP GAS

211A-04 thru 10: (LP Gas)

- A. The boiler(s) shall be provided with an E1-M* Ignition System, which shall include one (1) Honeywell RM7890C Flame Safeguard Control and one (1) constant burning electronically supervised safety pilot with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panel is required:

- B. Furnish a prewired MSP Electronic Control Panel, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed door for dust resistance. The panel shall include color-coded wiring, RM7890 Flame Safeguard with alarm contacts, Q7800A subbase, and numbered terminal strip for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

IX. COMBUSTION CONTROLS FOR LP GAS, CONT'D

211A-11 thru 13: (LP Gas)

Standard controls:

- A. The boiler(s) shall be provided with an E1-M* Ignition System, which shall include one (1) Honeywell RM7890C Flame Safeguard Control, one (1) constant burning electronically supervised safety pilot and one (1) constant burning thermally supervised safety pilot with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Optional controls (In lieu of standard): [Specify as required]

- A. The boiler(s) shall be provided with an E2-M* Ignition System which shall include two (2) Honeywell RM7890C Flame Safeguard Controls and two (2) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panel is required:

- B. Furnish a prewired MSP Electronic Control Panel, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed door for dust resistance. The panel shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strip for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Control" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-14 thru 15: (LP Gas)

- A. The boiler(s) shall be provided with an E2-M* Ignition System which shall include two (2) Honeywell RM7890C Flame Safeguard Controls and two (2) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below)

Specify following if prewired control panel is required:

- B. Furnish a prewired MSP Electronic Control Panel, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed door for dust resistance. The panel shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strip for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-16 thru 25: (LP Gas)

- A. The boiler(s) shall be provided with an E3-M* Ignition System which shall include three (3) Honeywell RM7890C Flame Safeguard Controls and three (3) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panels are required:

- B. Furnish two (2) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have a gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

211A-26 thru 33: (LP Gas)

- A. The boiler(s) shall be provided with an E4-M* Ignition System which shall include four (4) Honeywell RM7890C Flame Safeguard Controls and four (4) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panels are required:

- B. Furnish two (2) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

IX. COMBUSTION CONTROLS FOR LP GAS, CONT'D

211A-34 thru 37: (LP Gas)

- A. The boiler(s) shall be provided with an E5-M* Ignition System which shall include five (5) Honeywell RM7890C Flame Safeguard Controls and five (5) constant burning electronically supervised safety pilots with 100% shut-off. *(Add suffix "P" for ignition system with prewired control panel and specify Paragraph "B" below.)

Specify following if prewired control panels are required:

- B. Furnish three (3) prewired MSP Electronic Control Panels, which shall be constructed of heavy gauge metal with a baked enamel finish and have gasketed doors for dust resistance. The panels shall include color-coded wiring, RM7890 Flame Safeguards with alarm contacts, Q7800A subbases, and numbered terminal strips for ease of field wiring. Also included shall be a 10 ampere fuse, switches for "Power", "Pilot" and "Main Valve", and signal lamps for "Power On" (Clear), "Pilot On" (Amber), "Main Valve On" (Green) and "Flame Failure" (Red).

Contact factory for information and specifications on 211A-38 thru 46.

X. OPTIONAL BOILER CONTROLS (Specify as required)

211A-04 thru 37: (Natural gas only)

- A. The boiler(s) shall be provided with an MFSC Modulating Firing System to modulate boiler input at 50% or 100% according to changes in the heating load requirements. The system shall maintain a fixed (water temperature) (steam pressure) using (temperature controllers) (pressure controllers) located in the main system supply header.

211A-04 thru 37: (Natural gas only)

- A. The boiler(s) shall be furnished with a Mod-U-Pak Modulating Firing System to modulate boiler input at 50%, 75%, or 100% according to changes in the heating load requirements. (*Specify required control set*)
1. Control set #1, for hot water boilers, provides a fixed system water temperature using temperature controllers located in the main system supply header. Boiler input will modulate at 50%, 75%, or 100% to maintain the system water temperature set point. A modulation by-pass switch shall be provided for testing purposes.
 2. Control set #2, for hot water boilers, provides a variable system water temperature using an indoor-outdoor reset controller. Boiler input will modulate at 50%, 75%, or 100%, based on outside air temperature, to maintain the system reset water temperature. A modulation by-pass switch shall be provided for testing purposes.
 3. Control set #3, for steam boilers, provides a fixed system steam pressure using pressure controllers located in the main system supply header. Boiler input will modulate at 50%, 75% or 100% to maintain the system pressure set point. A modulation by-pass switch shall be provided for testing purposes.
- B. The boiler control system shall comply with the requirements of _____
- _____
- _____

Specify the name of any code(s) to be complied with (FM, IRI, CSD-1, etc.). Refer to current Trade Price List for availability of optional controls.