# Replacement parts

**Figure 96** Miscellaneous parts

| Description | Model | Weil-McLain part number |
|---|---|---|
| Vent Termination Kit for 3" PVC | All | 383-500-397 |
| Vent Termination Kit for 3" Stainless Steel | All | 382-200-430 |
| Vent Termination Bird Screen 3" PVC (1 pc) | All | 383-500-105 |
| 3" PVC Concentric Vent Kit | All | 383-500-350 |
| Adapter 3-inch AL29-4C Vent Starter, FasNSeal | All | 560-907-717 |
| Adapter 3-inch AL29-4C Vent Starter, Z-Vent | All | 560-907-723 |
| Adapter 3-inch AL29-4C Vent Starter, Saf-T-Vent | All | 560-907-724 |
| Adapter 3-inch AL29-4C Vent Starter, CORR/GUARD | All | Contact Weil-McLain |
| Chemicals:<br>Antifreeze, aluminum-safe, Sentinel X500 . . . . . .<br>Corrosion inhibitor, Sentinel X100 . . . . . .<br>(one tube is shipped with boiler)<br>Sentinel X100 Inhibitor Test Kit. . . . . .<br>(one kit is shipped with boiler)<br>Cleaner, Sentinel X400. . . . . | All | <br>592-900-004<br>592-900-002<br><br>592-900-005<br><br>592-900-003 |
| Condensate neutralizer kit | All | 383-500-631 |

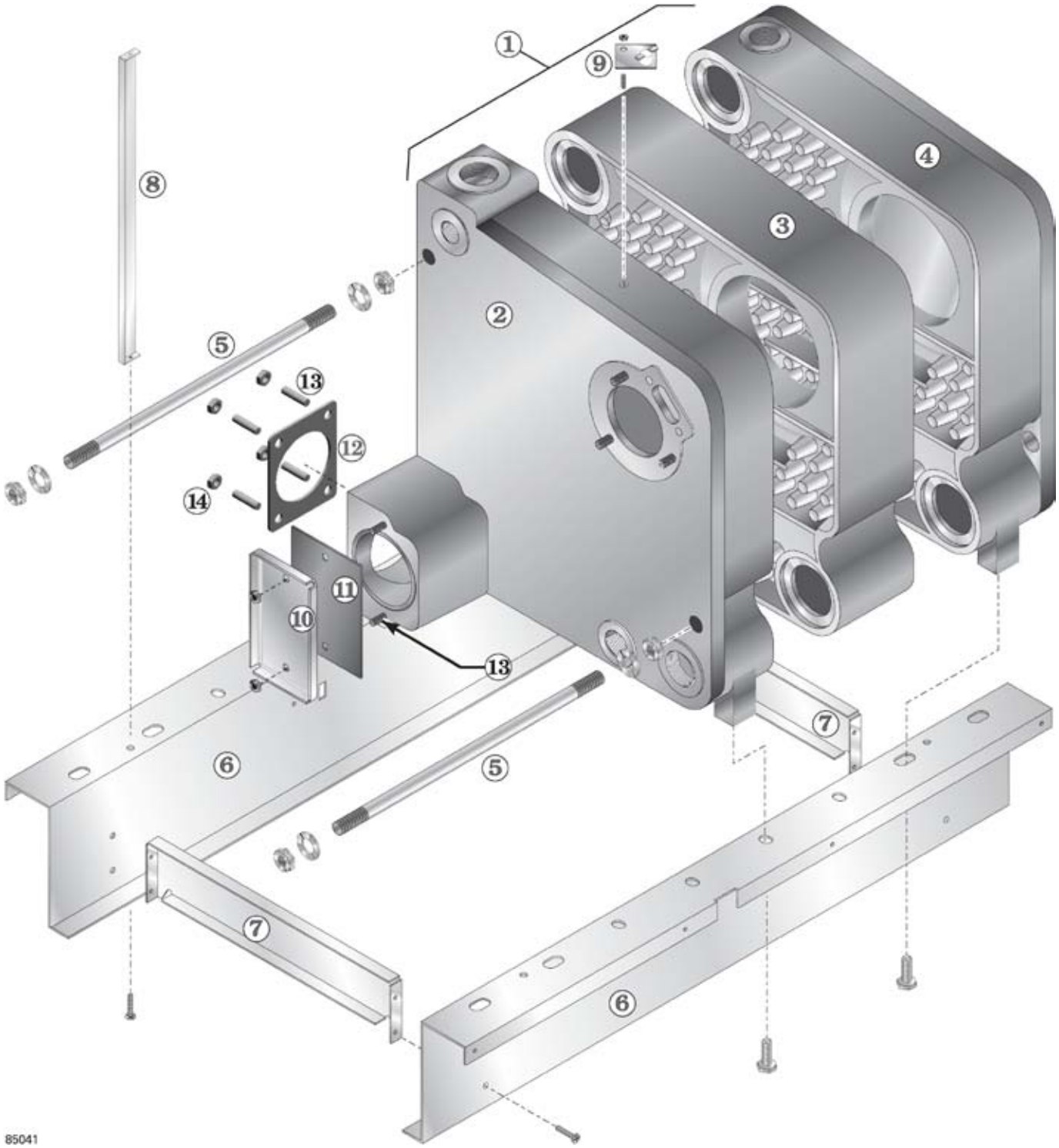
# Replacement parts *(continued)*

**Figure 97** Section assembly

| Item number | Description | Model | Weil-McLain part number |
|---|---|---|---|
| 1 | Block assembly, includes:<br>Front section, intermediate section, back section, square cut seals — 2", silicone sealant, tie rods, tie rod nuts, tie rod washers, blower flange gasket, igniter, igniter gasket, screws, lock washers, studs, nuts | 3<br>4<br>5<br>6 | 322-200-304<br>322-200-305<br>322-200-306<br>322-200-307 |
| 2 | Front section replacement kit, includes front section, square cut seals (4), silicone sealant, blower flange gasket, igniter gasket, studs (13), nuts (13) | All | 382-200-713 |
| 3 | Intermediate section (also required Section replacement kit) | All | 312-200-110 |
| 4 | Back section (also required Section replacement kit) | All | 312-200-130 |
| Not shown | Section replacement kit | All | 382-200-305 |
| 5 | Tie rods | 3<br>4<br>5<br>6 | 560-234-499<br>560-234-525<br>560-234-503<br>560-234-504 |
| 6 | Base rail legs — (2) per boiler | 3 & 4<br>5 & 6 | 452-100-173<br>452-100-174 |
| 7 | Base rail brace — (2) per boiler | All | 452-100-080 |
| 8 | Blower housing support | All | 452-100-111 |
| 9 | Block temperature limit switch | All | 382-200-375 |
| 10 | Inspection port cover | All | In Insp. port kit |
| 11 | Inspection port gasket | All | 590-317-628 |
| — | Inspection port kit (includes cover and gasket) | All | 542-200-181 |
| 12 | Recuperator connection gasket | All | 590-317-629 |
| 13 | Stud, 5/16" – 18 x 1¼" | All | 560-340-581 |
| 14 | Hex nuts (4 each), 5/16" / lock washers (4 each), 5/16" | All | Obtain locally |

# Replacement parts *(continued)*

**Figure 98** Section assembly



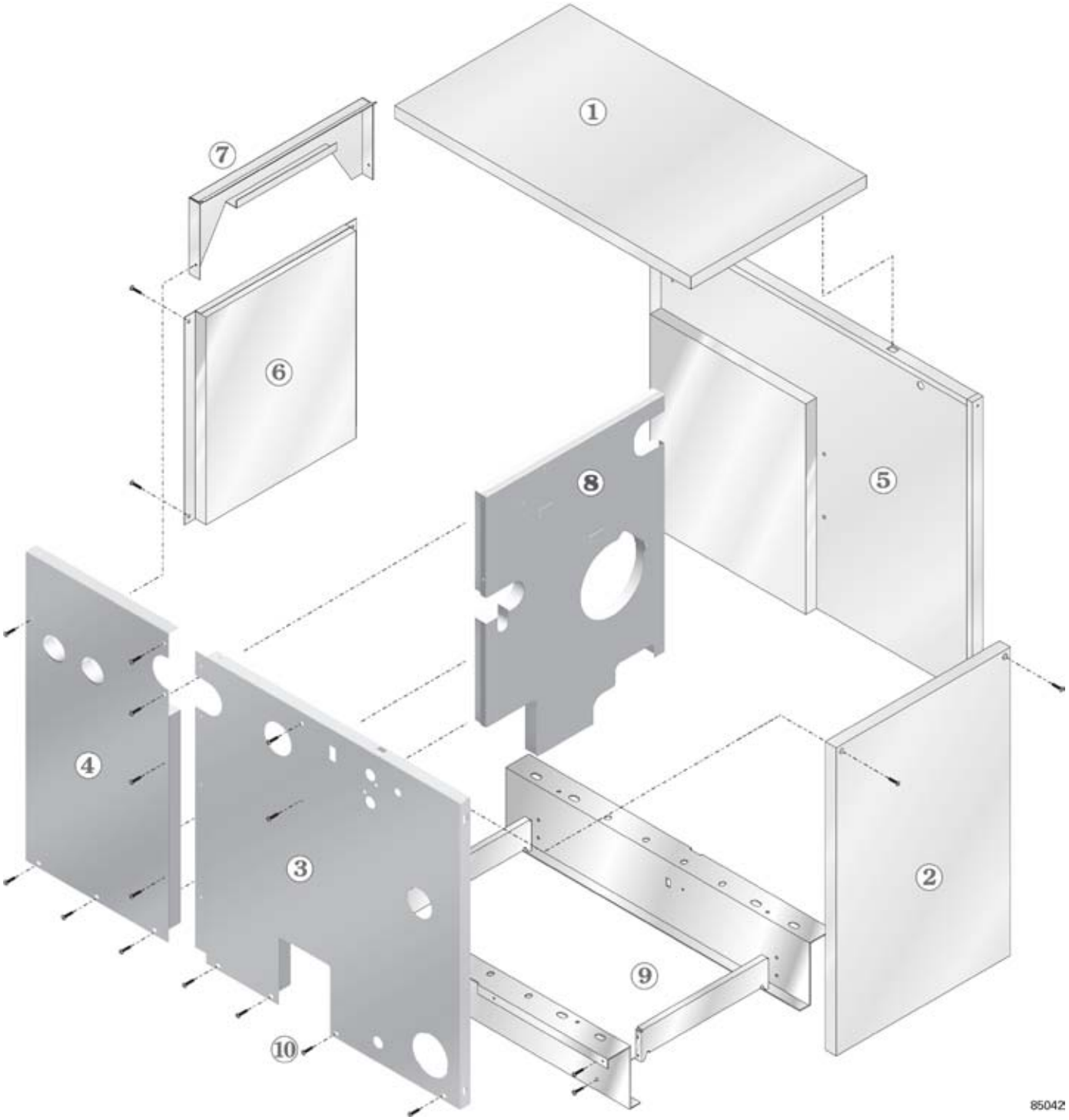
# Replacement parts *(continued)*

**Figure 99** Jacket assembly

| Item number | Description | Model | Weil-McLain part number |
|---|---|---|---|
| 1 | Jacket panel, top | 3 & 4<br>5 & 6 | 382-200-700<br>382-200-701 |
| 2 | Jacket panel, front | All | 382-200-702 |
| 3 | Jacket panel, left side, front | 3 & 4<br>5 & 6 | 382-200-703<br>382-200-704 |
| 4 | Jacket panel, left side, rear | 3 & 4<br>5 & 6 | 382-200-705<br>382-200-706 |
| 5 | Jacket panel, right side | 3 & 4<br>5 & 6 | 382-200-724<br>382-200-725 |
| 6 | Jacket panel, rear | All | 382-200-726 |
| 7 | Jacket brace | All | 422-200-178 |
| 8 | Jacket panel, interior | All | 382-200-727 |
| 9 | Base rail assembly | All | see Figure 97, page 90 items 6 and 7 |
| 10 | Screw, sheet metal type AB, serrated hex washer head Phillips #10 x ⅜" steel black phosphate | All | — |

# Replacement parts *(continued)*

**Figure 100** Jacket assembly



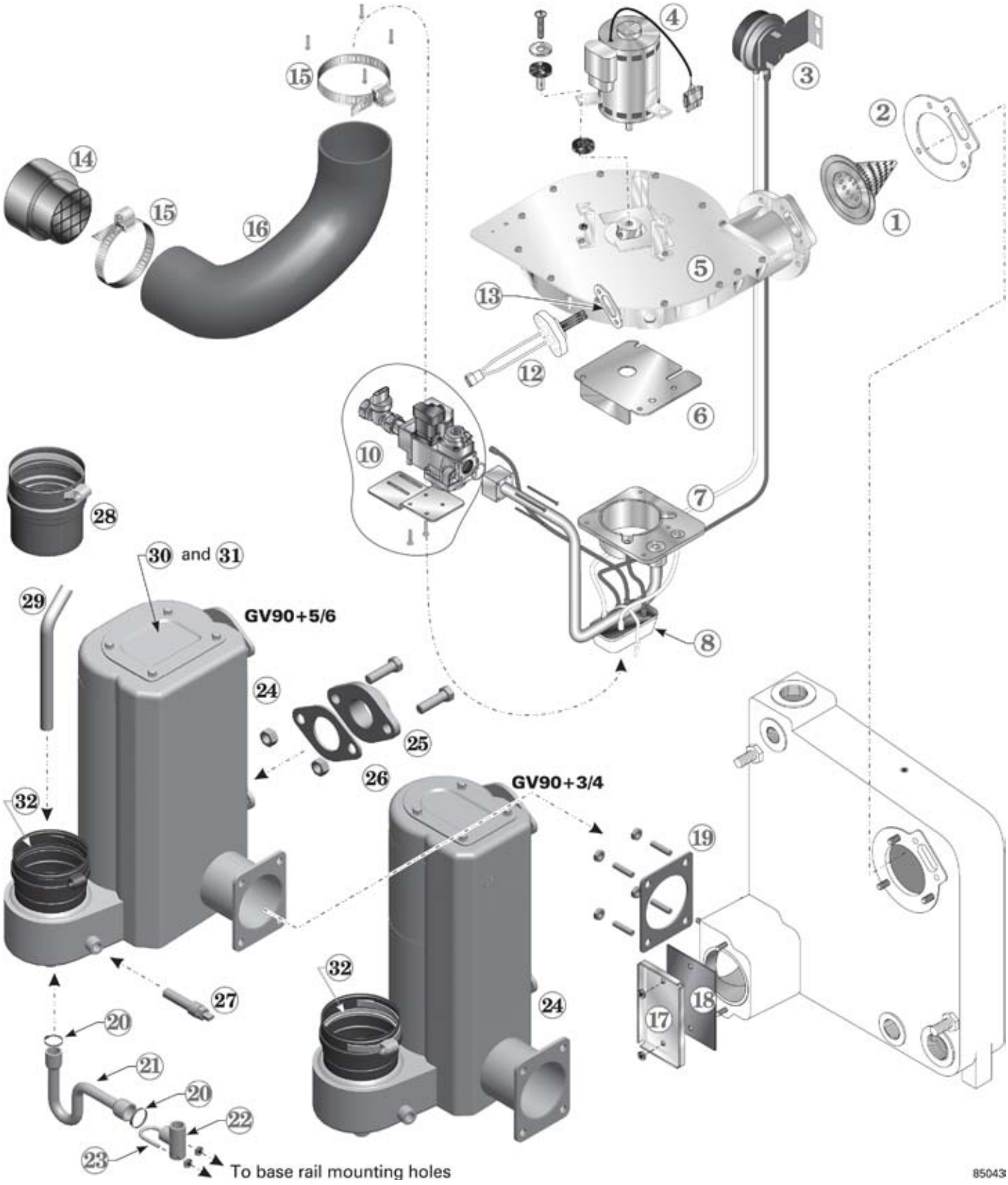
# Replacement parts *(continued)*

**Figure 101** Blower assembly

| Item number | Description | Model | Weil-McLain part number |
|---|---|---|---|
| 1 | Burner replacement kit, includes burner, blower flange gasket, igniter, igniter screws, igniter washers, igniter gasket | 3<br>4<br>5<br>6 | 382-200-320<br>382-200-325<br>382-200-330<br>382-200-335 |
| 2 | Blower flange gasket | All | 590-317-610 |
| 3 | Air pressure switch (0 to 5,500 feet elevation) | All | 382-200-723 |
| — | Air pressure switch (5,500 to 10,000 feet elevation) | All | Consult W-M factory |
| 4 | Blower motor replacement kit, includes blower motor, motor mounting grommets, screws, lock nuts and 9" Allen wrench | All | 382-200-345 |
| 5 | Blower housing assembly replacement kit, includes: blower housing, obsv. port, blower housing cover plate, blower motor mounting brackets, washer hold down bracket, lock nuts, motor mount grommets, blower motor, blower wheel, magnetic washer, silicone sealant, screws, blower flange gasket, igniter, igniter washers, igniter screws, igniter gasket | All | 382-200-340 |
| 6 | Conversion kit, ***natural to propane***, includes . . . . . .<br>Propane orifice plate, label | 3<br>4<br>5<br>6 | 510-811-926<br>510-811-927<br>510-811-928<br>510-811-929 |
| | Orifice plate, ***natural gas*** . . . . . | 3<br>4<br>5<br>6 | 510-811-934<br>510-811-935<br>510-811-936<br>510-811-937 |
| 7 | Gas/air manifold assembly, includes gas/air manifold, gas tubing, washers, screws, gas valve o-ring | All | 382-200-362 |
| 8 | Sense line condensate trap, includes sense line condensate trap and hoses | All | 382-200-409 |
| 10 | Gas valve kit, complete, includes gas valve, gas cock, 1/2" nipple, bracket, o-ring, screws | All | 382-200-411 |
| 12 | Igniter replacement kit, includes igniter and gasket | All | 511-330-148 |
| 13 | Igniter gasket | All | 590-317-599 |
| 14 | Inlet air tube w/grill | All | 382-200-310 |
| 15 | Hose clamp, 3” | All | 591-850-068 |
| 16 | Inlet air hose, 3" by 19" long | All | 562-302-573 |
| 17 & 18 | Inspection port cover and Inspection port gasket | All | see Figure 97, page 90 items 10 and 11 |
| 19 | Recuperator connection gasket | All | see item 24 |
| 20 | Condensate drain hose clamp | All | — |
| 21 | Condensate trap | All | 560-907-716 |
| 22 | ½” PVC condensate tee | All | — |
| 23 | Condensate tee U-clamp | All | — |
| 24 | Recuperator kit, includes recuperator, recuperator connection gasket, diamond flange gasket (2), connection hardware (4-nuts), flue gas thermal fuse | 3 and 4<br>5 and 6 | 382-200-714<br>382-200-715 |
| 25 | Diamond flange, 1” npt | All | see item 24 |
| 26 | Diamond flange gasket | All | 590-317-535 |
| 27 | Flue gas thermal fuse | All | 511-724-295 |
| 28 | In-line flue adapter with drain kit, includes in-line flue adapter with drain and drain hose (6 inches) | All | 382-200-716 |
| 29 | Flue drain hose kit, 6 inches | All | 382-200-717 |
| 30 | Recuperator cover plate | 3 and 4<br>5 and 6 | 593-000-002<br>593-000-003 |
| 31 | Recuperator cover plate gasket | 3 and 4<br>5 and 6 | 593-000-004<br>593-000-005 |
| 32 | Recuperator vent pipe seal | All | 593-000-006 |

# Replacement parts *(continued)*

**Figure 102** Blower assembly



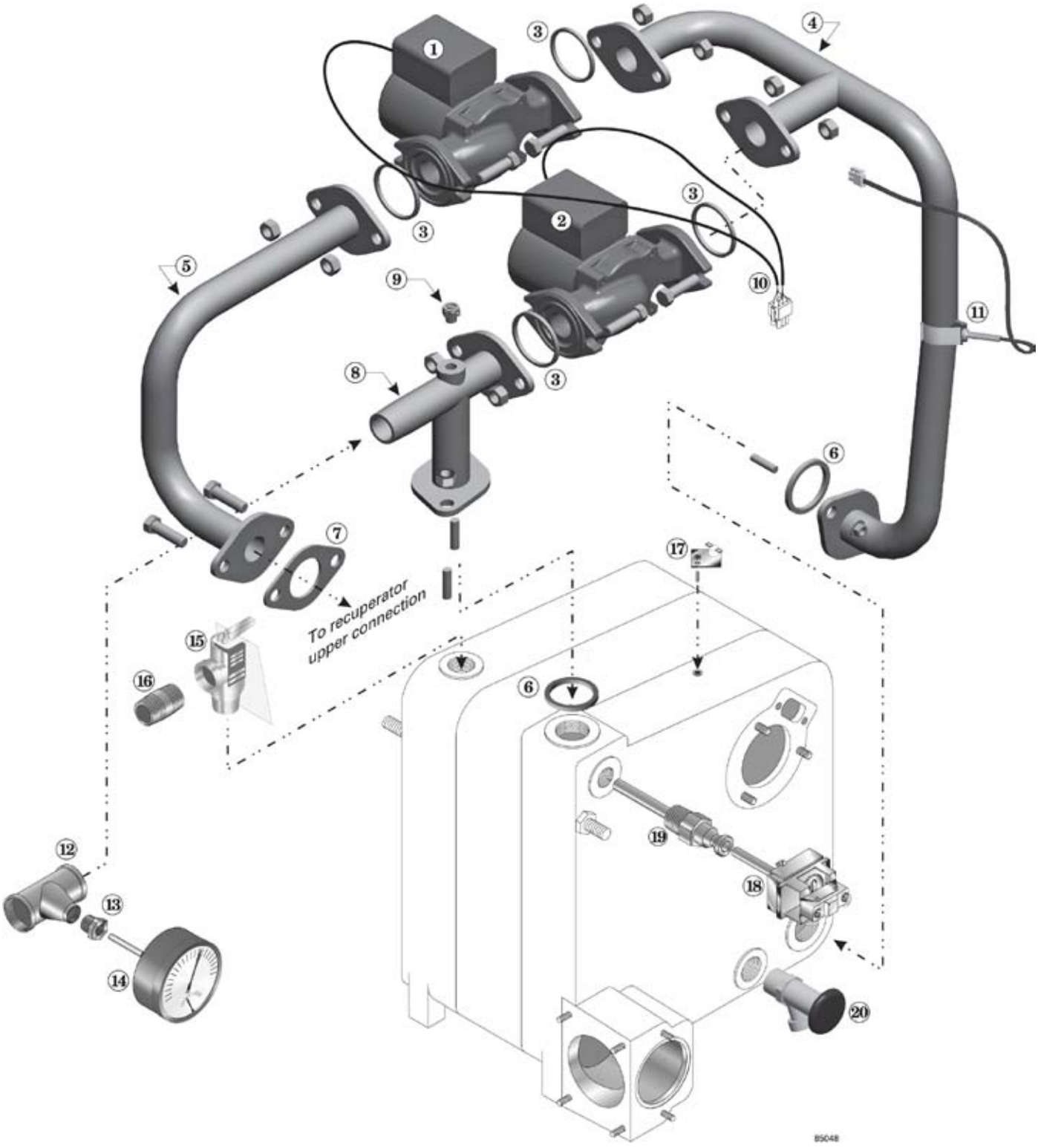
# Replacement parts *(continued)*

**Figure 103** Trim assembly

| Item number | Description | Weil-McLain part number |
|---|---|---|
| 1 | System circulator, Taco 007 | 511-405-113 |
| 2 | Bypass circulator, Taco 007 | 511-405-113 |
| 3 | Circulator gasket, Taco 110-339 | 590-317-543 |
| 4 | Manifold, casting/circulator kit, includes water manifold, circulator gasket (Taco 110-339) (2), square cut seal (manifold to casting) | 382-200-720 |
| 5 | Return manifold, recuperator/circulator kit, includes water manifold, circulator gasket (Taco 110-339) (1), diamond gasket | 382-200-721 |
| 6 | Square cut seal gaskets, casting, 2.31" | 572-800-011 |
| 7 | Diamond flange gasket | 590-317-535 |
| 8 | Supply manifold kit, includes water manifold, circulator gasket (Taco 110-339) (1), square cut seal (manifold to casting) | 382-200-722 |
| 9 | Coin-operated air vent, 1/8” NPT | 570-148-565 |
| 10 | Wiring harness, circulators to IBC | 591-391-824 |
| 11 | Return water temperature sensor and clip | 511-330-089 |
| 12 | Tee, 1” x 1” x ¾” | Obtain locally |
| 13 | Bushing ¾” x ¼” | Obtain locally |
| 14 | Temperature and Pressure Gauge, 1/4" NPT | 380-000-000 |
| 15 | 30 PSIG Relief Valve | 511-546-920 |
| 16 | Nipple, NPT — ¾” x 3” | Obtain locally |
| 17 | Block temperature limit switch | 382-200-375 |
| 18 | Limit control without well, 200 °F maximum setpoint | 382-200-719 |
| 19 | Limit control well, ½” NPT | 592-300-017 |
| 20 | Drain valve, ¾” NPT | 511-546-392 |

# Replacement parts *(continued)*

**Figure 104** Trim assembly



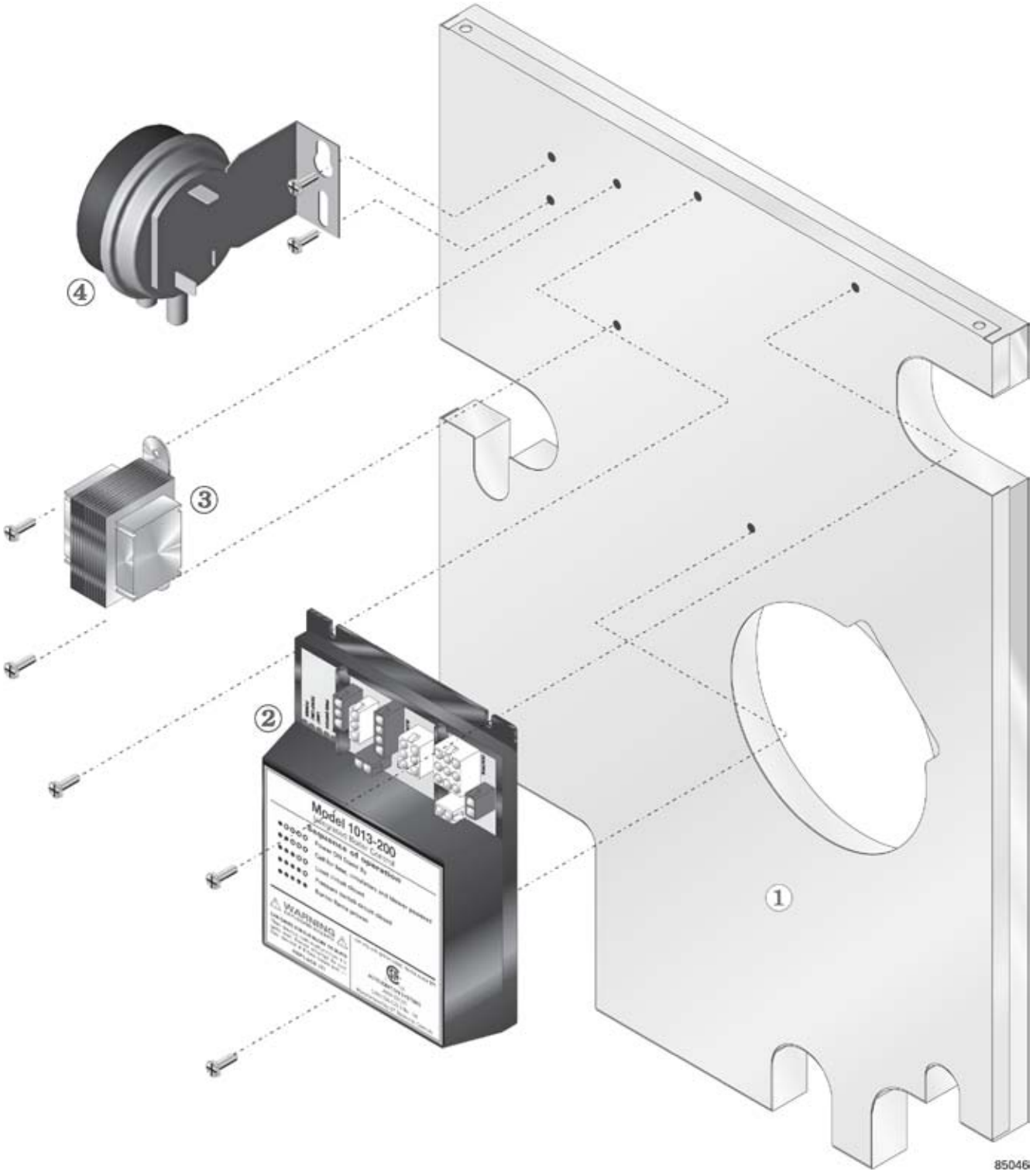
# Replacement parts *(continued)*

**Figure 105** Interior panel

| Item number | Description | Weil-McLain part number |
|---|---|---|
| 1 | Interior panel | see Figure 99, page 92, item 8 |
| 2 | Integrated boiler control assembly, includes IBC and screws | 382-200-448 |
| 3 | Transformer | 511-842-370 |
| 4 | Air pressure switch | see Figure 101, page 94 item 3 |
| 5 | Wiring harness, IBC to junction box (not shown) | 591-391-963 |
| 6 | Wiring harness, IBC to hot surface ignitor (not shown) | 591-391-819 |
| 7 | Wiring harness, IBC to system and bypass circulators (not shown) | 591-391-824 |
| 8 | Wiring harness, IBC to controls (not shown) | 591-391-964 |

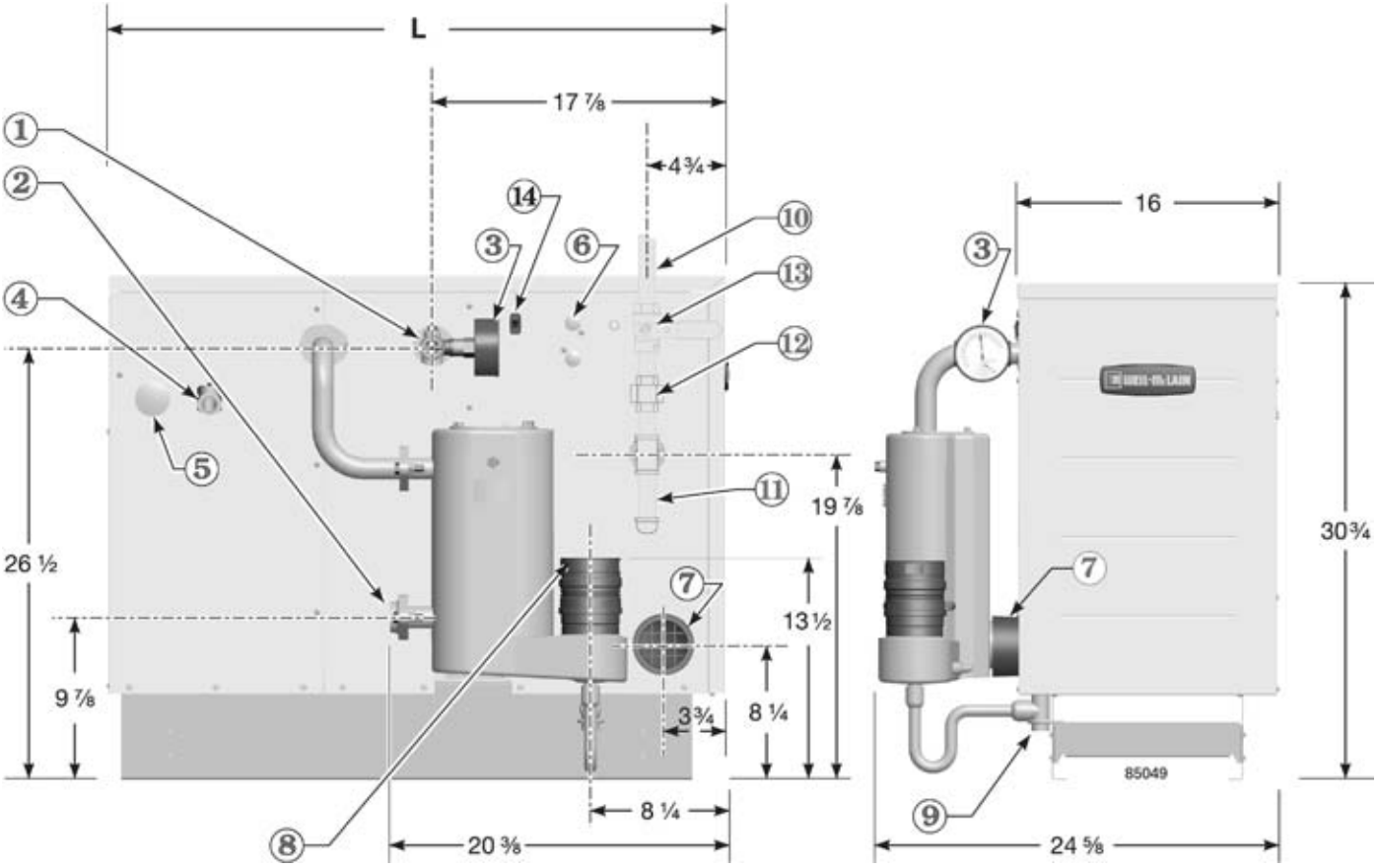
# Replacement parts *(continued)*

**Figure 106** Interior panel



# Dimensions and ratings

**Figure 107** Dimension drawing (see Figure 108, page 101 for dimensional table)




| Item number | Description |
|---|---|
| 1 | 1” NPT Supply |
| 2 | 1” NPT Return |
| 3 | Combination pressure-temperature gauge, 2 ½” short shank |
| 4 | ¾” NPT Relief valve outlet |
| 5 | Plug dome, 2” black |
| 6 | Junction box |
| 7 | Inlet air fitting, 3" PVC |
| 8 | Flue outlet, 3" PVC |
| 9 | ½” Condensate drain |
| 10 | ½” NPT Gas supply connection (provided by others) |
| 11 | Drip leg (provided by others) |
| 12 | Union (provided by others) |
| 13 | Manual main shutoff gas valve (provided by others) |
| 14 | ON/OFF switch |

# Dimensions and ratings *(continued)*

**Figure 108** Boiler dimensional and physical data (see Figure 107, page 100)

| Boiler model | Supply | Return | Length L | Gas connection size (Note 1) | Electrical service required (includes the internal circulators) | Boiler water content | Approx. shipping weight |
|---|---|---|---|---|---|---|---|
| | (inches NPT male) | (inches NPT female) | (inches) | (inches NPT female) | (amperes) | (gallons) | (pounds) |
| **GV90+3** | 1 | 1 | 30¾ | ½ | 15 | 3.8 | 313 |
| **GV90+4** | 1 | 1 | 30¾ | ½ | 15 | 4.7 | 353 |
| **GV90+5** | 1 | 1 | 37¾ | ½ | 15 | 6.0 | 423 |
| **GV90+6** | 1 | 1 | 37¾ | ½ | 15 | 6.9 | 464 |

Note 1: Gas piping from meter to boiler to be sized per local utility requirements.

**Figure 109** Boiler ratings

| Boiler model | CSA Input | DOE Heating capacity (Note 1) | Net I=B=R water rating (Note 2) | AFUE (Note 1) | Vent/ combustion air diameter | Boiler water content | % Input derate vs vent length *(Values shown are at maximum vent/air pipe length)* (Note 3) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Direct Exhaust Venting | | Direct Vent Venting | |
| | MBH | MBH | MBH | % | Inches | Gallons | Natural gas | Propane | Natural gas | Propane |
| **GV90+3** | **70** | **65** | **56** | **91.9** | 3" PVC | 3.8 | up to 0.7% | up to 1.4% | up to 1.5% | up to 2.8% |
| **GV90+4** | **105** | **97** | **84** | **91.2** | 3" PVC | 4.7 | up to 1.0% | up to 2.2% | up to 4.0% | up to 5.4% |
| **GV90+5** | **140** | **130** | **113** | **91.4** | 3" PVC | 6.0 | up to 4.0% | up to 4.0% | up to 7.0% | up to 8.0% |
| **GV90+6** | **175** | **161** | **140** | **91.0** | 3" PVC | 6.9 | up to 4.0% | up to 4.5% | up to 7.0% | up to 10.0% |

**Notes:**

1. Based on standard test procedures prescribed by the United States Department of Energy. Ratings also referred to as CSA Output. NOTE that only ***DOE Heating Capacity*** and ***AFUE*** are certified by AHRI. AFUE is also know as Annual Fuel Utilization Efficiency or Seasonal Efficiency.
2. Net I=B=R ratings are based on net installed radiation of sufficient quantity for the requirements of the building and nothing need be added for normal piping and pickup. Ratings are based on a piping and pickup allowance of 1.15 and are determined under the provisions governing forced draft boiler-burner units. An additional allowance should be made for unusual piping and pickup loads.
3. All of the boilers will automatically de-rate as vent length increases, due to the pressure loss through the vent. For vent/air pipe lengths less than the maximum, the derate equals the value above times vent length ÷ 100.
4. Boilers are tested for 50 PSIG working pressure.
5. GV90+ boilers are not available for millivolt systems.

# Dimensions and ratings *(continued)*

**Figure 110** Multiple GV90+ boilers — ratings and engineering data — maintain the clearances shown on pages 6 and 7 — see Figure 28, page 23 and Figure 29, page 23 for layout options

| Boilers in system Model GV90+ | | | | Total CSA input | DOE Heating capacity | Boiler H.P. | Net water ratings | Manifolded combustion air duct size |
|---|---|---|---|---|---|---|---|---|
| | | | | Input, MBH | Output, MBH | - | MBH | Square inches |
| **3** | **4** | **5** | **6** | - | Note 1 | - | Note 2 | Note 3 Figure 37, page 31 |
| 2 | | | | 140 | 130 | 3.9 | 112 | 70 |
| | 2 | | | 210 | 194 | 5.8 | 168 | 105 |
| | | 2 | | 280 | 260 | 7.8 | 226 | 140 |
| | | | 2 | 350 | 322 | 9.6 | 280 | 175 |
| 3 | | | | 210 | 195 | 5.8 | 168 | 105 |
| | 3 | | | 315 | 291 | 8.7 | 252 | 158 |
| | | 3 | | 420 | 390 | 11.7 | 339 | 210 |
| | | | 3 | 525 | 483 | 14.4 | 420 | 263 |
| 4 | | | | 280 | 260 | 7.8 | 224 | 140 |
| | 4 | | | 420 | 388 | 11.6 | 336 | 210 |
| | | 4 | | 560 | 520 | 15.5 | 452 | 280 |
| | | | 4 | 700 | 644 | 19.2 | 560 | 350 |
| 5 | | | | 350 | 325 | 9.7 | 280 | 175 |
| | 5 | | | 525 | 485 | 14.5 | 420 | 263 |
| | | 5 | | 700 | 650 | 19.4 | 565 | 350 |
| | | | 5 | 875 | 805 | 24 | 700 | 438 |
| 6 | | | | 420 | 390 | 11.7 | 336 | 210 |
| | 6 | | | 630 | 582 | 17.4 | 504 | 315 |
| | | 6 | | 840 | 780 | 23.3 | 678 | 420 |
| | | | 6 | 1050 | 966 | 28.9 | 840 | 525 |
| 7 | | | | 490 | 455 | 13.6 | 392 | 245 |
| | 7 | | | 735 | 679 | 20.3 | 588 | 368 |
| | | 7 | | 980 | 910 | 27.2 | 791 | 490 |
| | | | 7 | 1225 | 1127 | 33.7 | 980 | 613 |
| 8 | | | | 560 | 520 | 15.5 | 448 | 280 |
| | 8 | | | 840 | 776 | 23.2 | 672 | 420 |
| | | 8 | | 1120 | 1040 | 31.1 | 904 | 560 |
| | | | 8 | 1400 | 1288 | 38.5 | 1120 | 700 |

| | |
|---|---|
| **Note 1** | Based on standard test procedures outlined by DOE for individual boilers. |
| **Note 2** | Net I=B=R ratings are based on piping and pickup allowance of 1.15.<br>Consult Weil-McLain Technical Services for other allowances. |
| **Note 3** | All GV90+ installations require a separate vent pipe and termination for each boiler. **Vent piping cannot be manifolded**. Install and terminate vents as described in vent/air installation instructions in this manual.<br>Combustion air piping can be individually piped or manifolded. See Figure 37, page 31, for manifolded air piping. |

# Dimensions and ratings *(continued)*

**Figure 111** Engineering data — see page 101 for additional technical information

| Boiler Model | Water flow rate per boiler | | Vent/air pipe size — Provide a separate vent for each boiler Note 1 |
|---|---|---|---|
| | GPM @ 20°F rise | GPM @ 40°F rise | |
| **GV90+3** | 6.5 | 3.3 | 3” |
| **GV90+4** | 9.7 | 4.9 | 3” |
| **GV90+5** | 13.0 | 6.5 | 3” |
| **GV90+6** | 16.1 | 8.1 | 3” |

| | |
|---|---|
| **Note 1** | All GV90+ installations require a separate vent pipe and termination for each boiler. **Vent piping cannot be manifolded**. Install and terminate vents as described in vent/air installation instructions in this manual.<br>Combustion air piping can be individually piped or manifolded. See Figure 37, page 31, for manifolded air piping. |

# NOTES



Part number 550-142-054/0411

# NOTES *(continued)*

# NOTES

# Handling ceramic fiber and fiberglass materials

## HANDLING CERAMIC FIBER MATERIALS

**WARNING** Ceramic fibers can be converted to cristobalite in very high temperature applications. The International Agency for Research on Cancer (IARC) has concluded, "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).":

❑ Avoid breathing dust and contact with skin and eyes.

- Use NIOSH certified dust respirator (N95). This type of respirator is based on the OSHA requirements for cristobalite at the time this document was written. Other types of respirators may be needed depending on the job site conditions. Current NIOSH recommendations can be found on the NIOSH web site at http://www.cdc.gov/niosh/homepage.html. NIOSH approved respirators, manufacturers, and phone numbers are also listed on this web site.
- Wear long-sleeved, loose fitting clothing, gloves, and eye protection.

❑ Apply enough water to the combustion chamber lining or base insulation to prevent airborne dust.

❑ Remove combustion chamber lining or base insulation from the boiler and place it in a plastic bag for disposal.

❑ Wash potentially contaminated clothes separately from other clothing. Rinse clothes washer thoroughly.

### NIOSH stated First Aid

❑ Eye: Irrigate immediately

❑ Breathing: Fresh air

## REMOVAL OR INSTALLATION OF FIBERGLASS WOOL

**WARNING** This product contains fiberglass jacket insulation and ceramic fiber materials in combustion chamber lining or base panels in gas fired products. Airborne fibers from these materials have been listed by the State of California as a possible cause of cancer through inhalation.

❑ Avoid breathing dust and contact with skin and eyes.

- Use NIOSH certified dust respirator (N95). This type of respirator is based on the OSHA requirements for fiberglass wool at the time this document was written. Other types of respirators may be needed depending on the job site conditions. Current NIOSH recommendations can be found on the NIOSH web site at http://www.cdc.gov/niosh/homepage.html. NIOSH approved respirators, manufacturers, and phone numbers are also listed on this web site.
- Wear long-sleeved, loose fitting clothing, gloves, and eye protection.

❑ Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentration requiring additional protection.

❑ Wash potentially contaminated clothes separately from other clothing. Rinse clothes washer thoroughly.

### NIOSH stated First Aid

❑ Eye: Irrigate immediately

❑ Breathing: Fresh air

# Installation and service certificate

Boiler model _____ Series _____ CP number _____ Date installed _____

Measured Btuh input _____

- ☐ Installation instructions have been followed.
- ☐ Check-out sequence has been performed.
- ☐ Above information is certified to be correct.
- ☐ Information received and left with owner/maintenance person.

Installer _____ _____ _____
(company) (address) (phone)

_____
(installer's signature)

WEIL-McLAIN®

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