GOLD GV

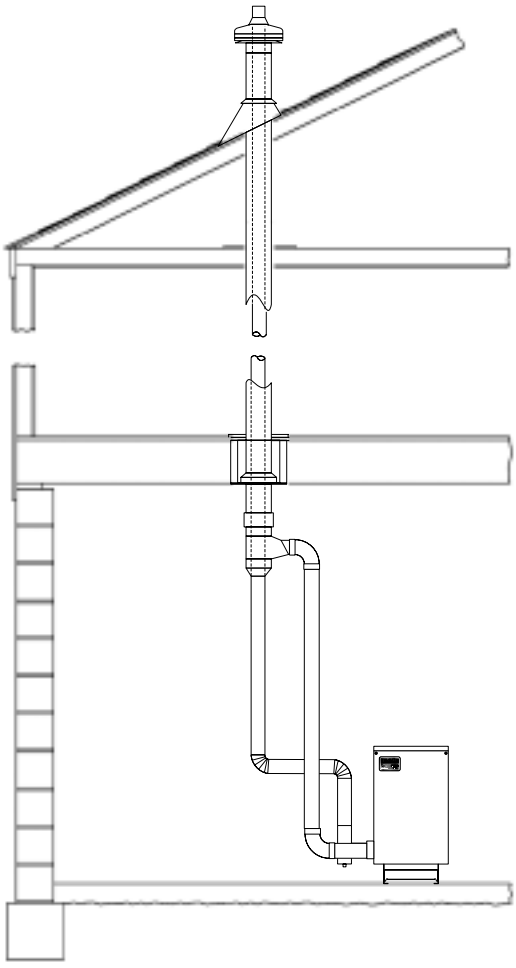
Water Boiler — Series 3 & 4

Venting Supplement

Direct Vent Through-Roof or Through-Unused-Chimney

For use with Weil-McLain Through-Roof or Through-Unused-Chimney Termination Kit

Kit part # 382-200-435



27201

Part number 550-110-272/0601

Please...read this page first

Hazard definitions

The following defined terms are used throughout these Instructions to bring attention to the presence of hazards of various risk levels or to important information concerning the life of the product.

DANGER Indicates presence of hazards that **will cause severe** personal injury, death or substantial property damage.

WARNING Indicates presence of hazards that **can cause severe** personal injury, death or substantial property damage.

CAUTION Indicates presence of hazards that **will or can cause minor** personal injury or property damage.

NOTICE Indicates special instructions on installation, operation or maintenance that are important but not related to personal injury or property damage.

To the installer:

DANGER Boiler must be vented and supplied with combustion air as described in this Supplement. Failure to do so will result in severe personal injury, death or substantial property damage.

WARNING This Venting Supplement must only be used by a qualified installer/service technician. Read these Instructions completely before beginning the installation. Failure to follow all instructions can cause severe personal injury, death or substantial property damage.

To install a new vent system follow instructions in:

- This Venting Supplement.
- GV Boiler Manual.
- Weil-McLain venting supplements for FasNSeal™, Saf-T Vent®, StaR-34 or Z-Vent II.
- Vent pipe manufacturer's instructions supplied with vent material.

Table of contents

Parts

Table 1 Lists parts, which must be provided by others.

Figure 1 Shows parts, which are provided in the Weil-McLain Through-Roof or Through-Unused-Chimney Termination Kit

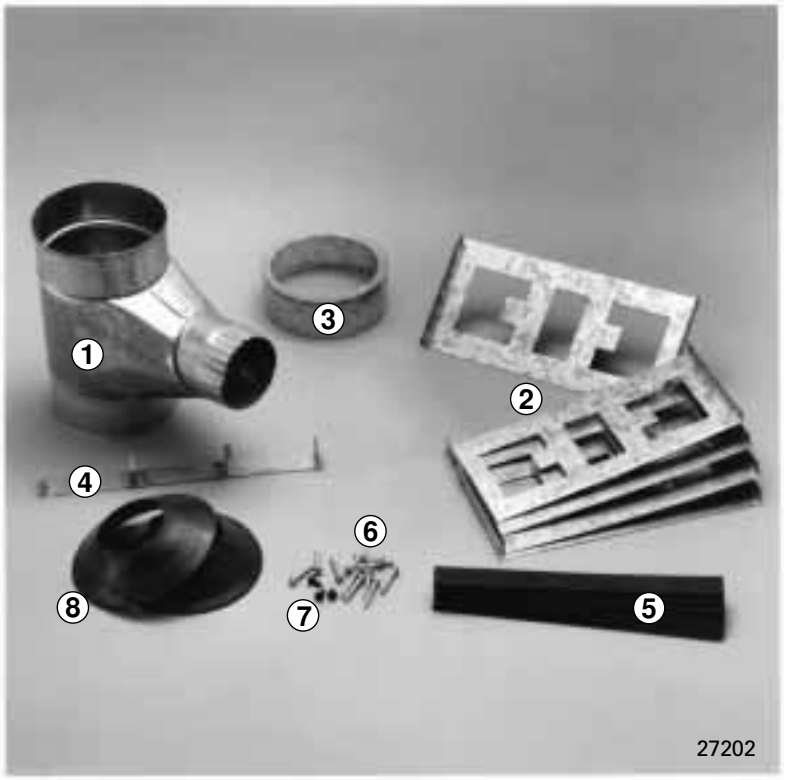
Table 1 Parts provided by others

Description	Quantity
Rain cap, galvanized, 5"	1
Adjustable flashing, type B, 5"	1
Fire stop for each floor or attic penetration	1
Storm ring, type B, 5"	1
Support, type B, 5"	1
Draft hood connector, type B, 5"	1
Adequate “B Vent” with clamp rings for combustion air run (less than 30 feet)	--
Adequate 3" vent material for vent run and elbows from one of the following (See **Note 1**): Heat-Fab, Inc. — Saf-T Vent® Flex-L International, Inc. — StaR-34 ProTech Systems — FasNSeal™ Z-Flex®, Inc. — Z-Vent II	--
Adequate sealant specified by vent pipe manufacturer’s instructions	--
Adequate 3" PVC, galvanized or dryer vent for combustion air supply piping between tee and boiler	--

Notes:
1. Do not mix types of vent material. CSA certification will be void.

Parts continued

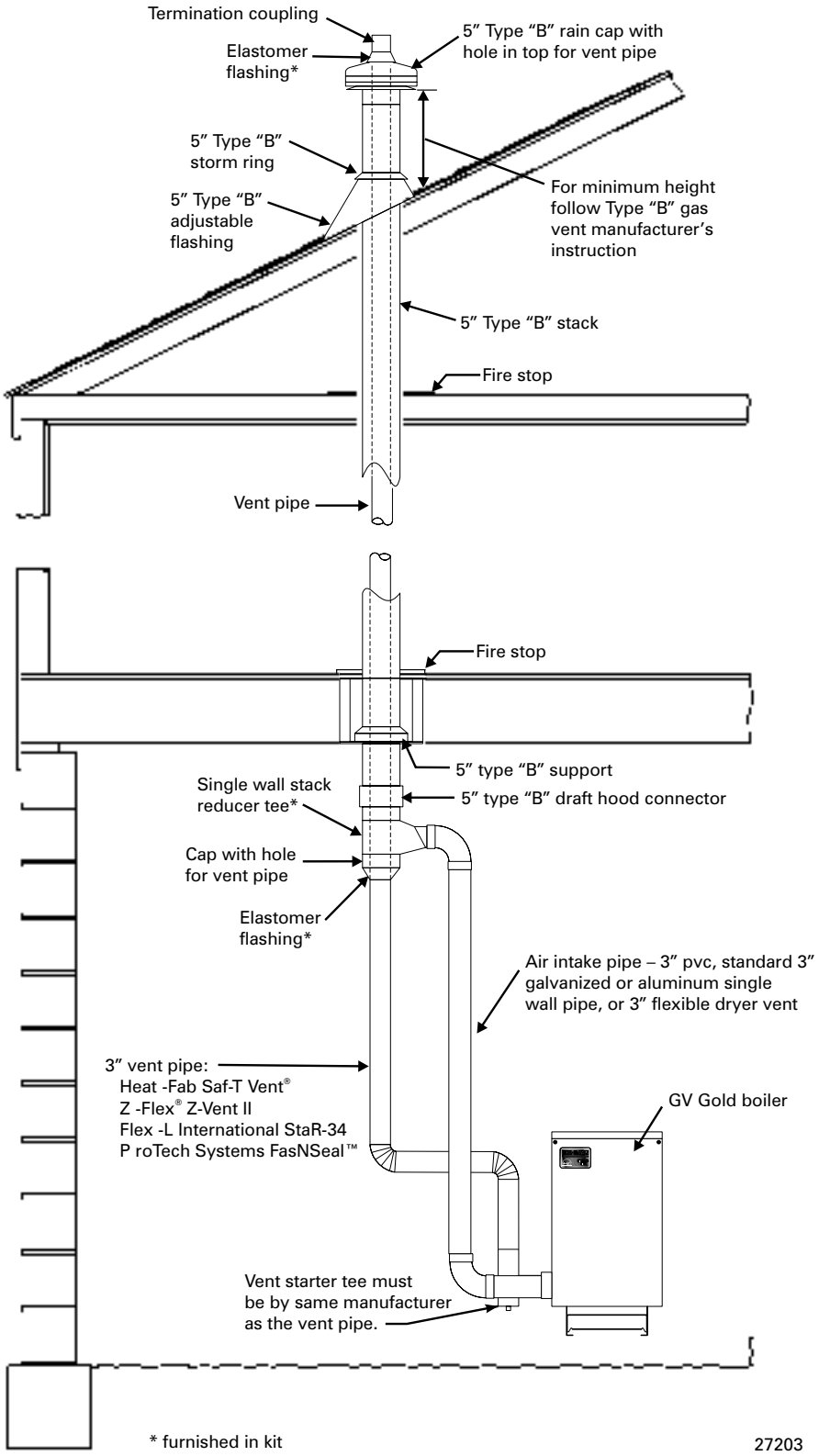
Figure 1 Parts provided in kit



Item number	Description	Quantity
1	Tee, galvanized 5" x 5" x 3"	1
2	Vent clamp	5
3	Bottom cap galvanized with 4 ½" hole	1
4	Vent support	1
5	Elastomer grippers	11
6	Screws sheet metal type A, #10 x 1 ¼"	11
7	Screws sheet metal type A, #10 x ½"	3
8	Elastomer flashing	2

Parts continued

Figure 2 Parts assembly illustration



Installation

Definitions

This is a direct vent installation, which differs from the non-direct venting through-roof installation as shown in the Weil-McLain vent manufacturer's special gas vent system Vent and Combustion Air Venting Supplements. See below for definitions.

Direct vent — Uses outside combustion air with combustion air piping sealed at all joints and seams. Also known as "sealed combustion".

Non-Direct vent — Uses inside combustion air with no combustion air piping.

Vent limits

The following is a list of vent limitations:

- "B-Vent" sections must be straight — no elbows.
- Maximum "B-Vent" combustion air run length is 30 feet.
- Total vent or combustion air pipe equivalent length can be no more than 80 feet (see **Table 3** to calculate).

Pre-installation planning

Codes

Follow national, state, local or provincial codes or regulations when venting GV boiler.

No connectivity

Do not connect:

- Any other appliance to combustion air run or vent piping.
- When installing through chimney — no other appliance can be vented into or through the chimney.
- Multiple boilers to common vent.

Vent length limits

1. Position boiler as close as possible to vertical run.
2. Determine vent system length and potential boiler derate. See page 8 for configuration example. "B-Vent" length and total equivalent length cannot exceed limits listed above.

Materials and construction

1. Seal all "B-Vent" combustion air joints with approved silicone sealant (Dow Corning 700™ or 732™, General Electric 108 or 800, or sealant specified by vent pipe manufacturer).
2. Construct vent joints per vent pipe manufacturer's instructions including use of their specified sealant. Vent pipe enclosed in "B-Vent" combustion air piping must also have vent clamps with elastomer grippers installed per these instructions.
3. Use only one of the following for vent piping:
   - Heat-Fab, Inc. — **Saf-T Vent®**
   - Flex-L International, Inc. — **StaR-34**
   - ProTech Systems — **FasNSeal™**
   - Z-Flex®, Inc. — **Z-Vent II**

   Do not mix types of vent material. CSA certification will be void.
4. Install boiler per GV Boiler Manual.

Installation continued

Configuration example

Follow the steps and sample information below to determine a vent system length and potential boiler derate. (See Vent length limits on the previous page.)

Known factors :

- Vent and combustion air piping per Figure 3
- Boiler model number example: GV-5
- 2 elbows on vent connector piping
- 2 elbows on combustion air connector piping
- **20 feet of "B-Vent" length (no elbows)** — Note: maximum allowable length = 30 feet.

Step 1 Find maximum connector pipe length of **combustion air connector piping** based on known factors:

- length of "B-Vent", **L = 20 feet**
- number of elbows in combustion air connector piping = **2**

Go to **Table 2** to determine maximum connector pipe length, which in this case is **40 feet.** (L = 20 and number of elbows = 2)

See **Figure 3** — Combined length of **A, B and C,** in Figure 3, must be equal to or less than the maximum connector pipe length found in **Table 2.** If combined length of **A, B and C** is too long, consider moving the boiler closer or reducing the number of elbows (where possible) to shorten the combustion air run.

Step 2 Find maximum **vent connector piping** based on known factors:

- length of "B-Vent", **L = 20 feet**
- number of elbows in vent connector piping = **2**

Go to **Table 2** to determine maximum connector pipe length, which in this case is **40 feet.** (L = 20 and number of elbows = 2)

See **Figure 3** — Combined length of **D and E** must be equal to or less than the maximum connector pipe length found in **Table 2.** If combined length of **D and E** is too long, consider moving the boiler closer or reducing the number of elbows (where possible) to shorten the combustion air run.

Step 3 Look at the results from steps 1 and 2. Select the connector piping which had the **shorter** maximum connector length, which in either step = **40 feet**. Use this piping information for the following step (4).

Step 4 Calculate the **total equivalent length** of the connector piping selected in Step 3 by adding together the following (see **Note** in **Table 3**):

1. "B-Vent" length **20 feet**
2. number of elbows x 10 feet **20 feet**
3. maximum allowable length **40 feet**

The **total equivalent length** is **80 feet.**

Step 5 From **Table 3**, obtain the **reduced DOE output of a GV-5 boiler with 80 feet total equivalent length**. For this example Table 3 shows **113 MBH.**

Installation continued

Table 2

Maximum connector pipe length, each:

- vent connector pipe
- combustion air connector pipe

"B-Vent" length (feet) L	Total number of elbows						
	1	2	3	4	5	6	7
	Max. length from boiler to "B-Vent"						
5	65	55	45	35	25	15	5
10	60	50	40	30	20	10	--
15	55	45	35	25	15	5	--
20	50	40	30	20	10	--	--
25	45	35	25	15	5	--	--
30	40	30	20	10	--	--	--

Note:
Vent connector pipe length = **D + E**
Combustion air connector pipe length = **A + B + C**

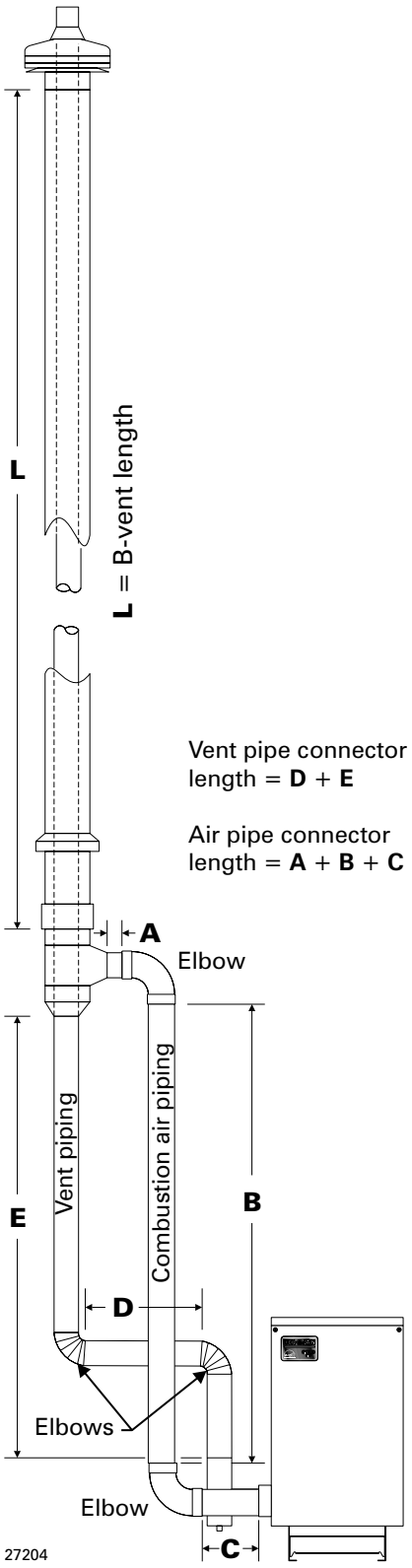
Table 3

Reduced DOE output (MBH) at sea level

Boiler model number	Total equivalent length (see Note)			
	20	40	60	80
	Reduced DOE output (MBH)			
GV-3	60	60	60	60
GV-4	91	90	89	87
GV-5	119	116	115	113
GV-6	148	144	140	138

Note: Total equivalent length =
"B-Vent" length, **L**
+
10 ft x number of elbows
+
maximum allowable length from **Table 2**

Figure 3 Configuration example illustration



Installation — assembly

Step 1 — Construct combustion air run

WARNING Follow vent pipe manufacturer's instructions to assemble and seal joints. Sealant recommended by vent pipe manufacturer must be used as indicated in their instructions. Vent and combustion air connector piping must be sealed gas-tight to prevent possibility of flue gas spillage and carbon monoxide emissions, resulting in severe personal injury or death.

1. Install 5" type "B" support, "B-Vent" combustion air run, flashing, fire stops and storm collar per manufacturer's instructions. Apply approved sealant to each "B-Vent" joint. See Figure 4.

2. Install type "B" draft hood connector to bottom of combustion air run. Seal with approved sealant.

3. From top or bottom of combustion air run, install vent piping. Top of vent piping must extend 3" above top of rain cap. See Figure 2, page 6. Bottom of vent piping must extend 18" below draft hood connector.

   At each vent joint:

   a. Follow vent pipe manufacturer's instructions to assemble and seal joints. Sealant recommended by vent pipe manufacturer must be used as indicated in their instructions.

   b. Apply 2 self-adhesive elastomer grippers to vent clamp. Grippers must be positioned on clamp as shown in the Figure 5. Bend out 2 ears on vent clamp.

   c. Fasten clamp around vent pipe with 2 – 1 ¼" screws in top and bottom holes, about every 5 feet. See Figure 6. Tighten screws until clamp does not turn or slide around vent piping.

Figure 4

Figure 5

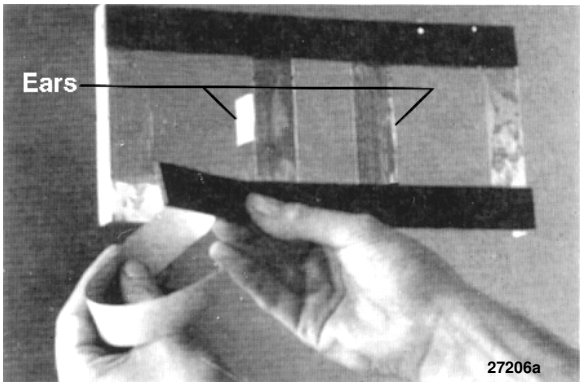


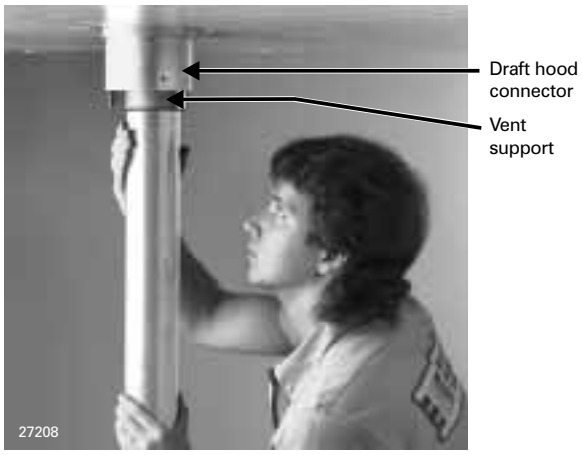
Figure 6

Installation — assembly continued

Step 2 — Install vent support

1. Apply 1 elastomer gripper to vent support.
2. Install vent support around vent piping just below draft hood connector as shown in the picture above. Fasten support around vent piping with 1 – 1¼" screw.
3. Tighten screw until support does not turn or slide around vent piping.

Figure 7



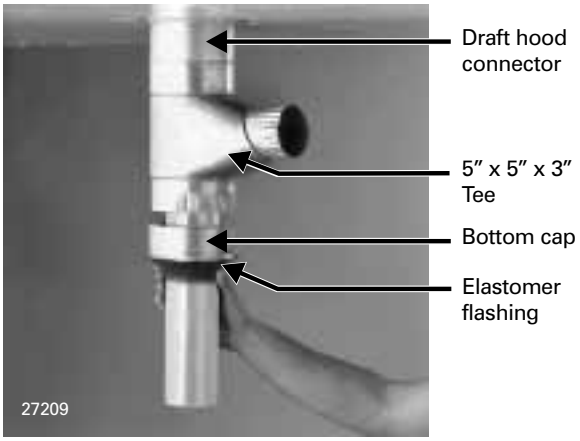
Step 3 — Install 5" x 5" x 3" tee

1. Slide tee over vent piping and attach uncrimped end to bottom of draft hood connector:
   a. Drill 3 holes about 120° apart in tee for ½" length sheet metal screws.

WARNING **Do not allow drill to penetrate vent pipe.** Drill holes carefully in tee and use only ½" screws to fasten tee to draft hood connector. Failure to do so can damage vent pipe, causing severe personal injury or substantial property damage.

   b. Seal all seams and screws with approved sealant.
2. Secure bottom cap to tee with duct tape. Slide elastomer flashing up around vent pipe and tuck lip into cap's bottom opening. Seal with approved sealant.

Figure 8

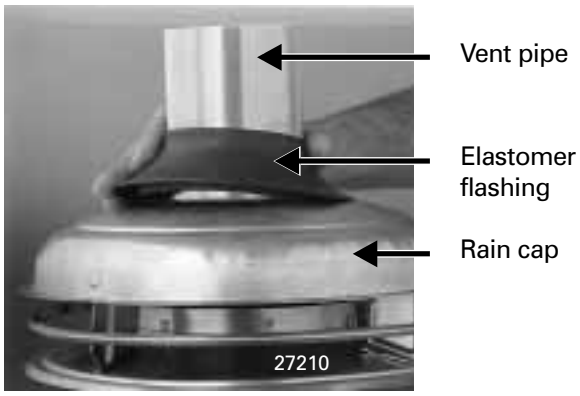


Installation — assembly continued

Step 4 — Install rain cap

1. On roof, cut 4½" hole in top of rain cap and install cap over protruding vent pipe. Slide elastomer flashing down around vent pipe and tuck lip into cap's top opening.
2. Connect termination coupling to vent pipe using vent pipe manufacturer's specified sealant.

Figure 9



Step 5 — Finish installation

1. Complete vent piping to boiler, making sure to follow vent pipe manufacturer's instructions and Weil-McLain vent manufacturer's special gas vent system Vent and Combustion Air Venting Supplements.
2. Use any of the following to install combustion air connector piping from tee to boiler, making sure to seal all joints and seams:
   a. 3" Flexible dryer vent — A piece of 3" galvanized is required at each end to adapt. Seal all pipe joints and seams between pipe and dryer vent with approval sealant.
   b. Galvanized or aluminum single wall pipe — Seal all joints and seams using approved sealant.
   c. 3" PVC — Seal all joints using PCV cement.

WEIL-McLAIN

Weil-McLain
500 Blaine Street
Michigan City, IN 46360-2388
http://www.weil-mclain.com