

Buderus

LOGANAGAS 04.33, 04.34 Cast Iron Gas Fired Boiler

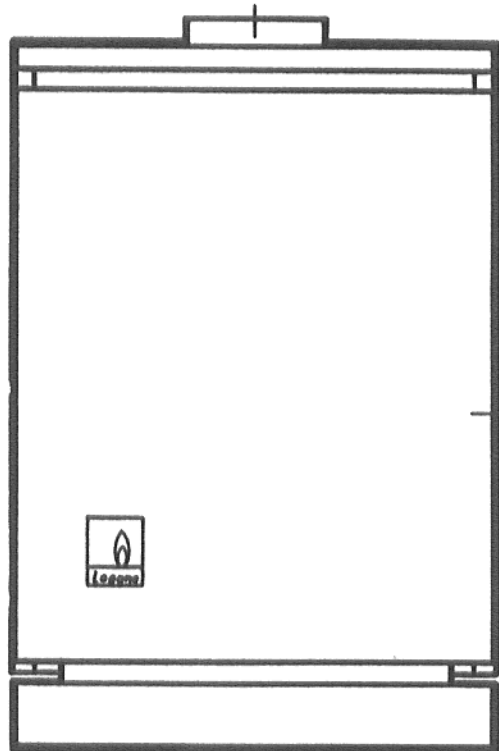
INSTALLATION AND SERVICE INSTRUCTIONS

IMPORTANT

Read this manual carefully
before lighting burners!



NOTE: Honeywell printed service instructions for Honeywell ignition control to be attached to these printed Installation and Service Instructions to form part of the complete instructions reqd. by appropriate standards.



CAUTION

The Owner's Information Manual is included with these installation instructions and must be left with the owner. Review this information with the owner and be sure he receives all instructions.

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I N T R O D U C T I O N

This manual is prepared to assist the contractor in installing and servicing of BUDERUS Cast Iron 04. (33,34) boilers.

Where queries exist concerning boilers already delivered, then the boiler model reference and boiler serial number must be quoted. Part identification is provided at the rear of this manual. If further information is required please contact BUDERUS area representative.

The 04.(33,34) boilers are gas fired, natural draft, open vented central heating units which cover a range of heat outputs from 42,320* Btu/h to 446,960 Btu/h.

Models 10 thru 71 series are C.G.A. certified for use with Natural and Propane gases, and for Sea Level or High Altitude application. Models 79 thru 110 series are C.G.A. certified for use with Natural gas only and for Sea Level operation only.

The boilers are floor mounted and intended for heating residential or commercial premises. They may be used in conjunction with an indirect storage heater for domestic hot water production.

The boilers are fitted with aspirating multi-bar burners and have integral draft hoods which can be connected to an open-vent system.

It is essential that a pump is fitted in the circulation system which must be kept in operation at all times when a boiler is in use.

NOTE: In the United States these units are for use with natural gas only and cannot be used with any other gas.

In Canada, models 10 thru 71 are for use with natural gas and propane gas; models 70 thru 110 are for use with natural gas.

* For boilers 04. (33,34)/10 thru 04.(33,34)/55 the output rating was determined during factory tests and have not been validated by A.G.A.

For C.G.A. certified boilers 04.(33,34)/10 thru 55 and the 04.34/63 thru 71, output rating is from 42,320 to 295,200 BTUH.

GENERAL INSTRUCTIONS

The 04.(33,34) boiler is design certified by the American Gas Association and for use with natural gas only. Models 04.(33,34)/10 thru 71 are Canadian Gas Association certified for use with natural or propane gas, and models 04.34/79 thru 110 are Canadian Gas Association certified with natural gas only.

NOTE: In the United States the installation of this boiler must comply with the requirements of the authority having jurisdiction, or in the absence of such requirements, to the National Fuel Gas Code, ANS Z223.1 (Latest Edition). Boilers must be installed in accordance with our instructions so as not to void our warranty.

In Canada this unit shall be installed in accordance with the requirements of the current standard CAN1-B149.2 "Installation Code for Gas Burning Appliances and Equipment" and with those installation regulations in force in the local area where the installation is to be made. These shall be carefully followed in all cases. Authorities having jurisdiction shall be consulted before installations are made.

Where required by the authority having jurisdiction, the installation must conform to American Society of Mechanical Engineers Safety Code for Controls and Safety Devices for Automatically Fired Boilers, No. CSD-1.

VENT

The flue pipe diameter must not be less than shown in the dimension table (page 6, item 'D'). A flue pipe adaptor is provided with each boiler and is marked with a part number. This part number is also indicated on the boiler name/rating plate. These part numbers should be checked to see that they match. If not, consult the dealer from whom you purchased the boiler.

If a single wall vent pipe is employed, a minimum clearance of 6 inches must be maintained to any combustible material.

If a listed type 'B' gas vent is employed, the minimum clearance which must be maintained to combustible materials shall be consistent with the markings applied directly to the vent pipe. Generally, this clearance will be 2 inches.

This boiler is provided with an integral draft hood, therefore a separate draft hood should not be installed.

All installed portions of the flue pipe assembly must be adequately supported for the design and weight of the vent sections employed. Listed vents shall be supported and spaced in accordance with the manufacturers instructions.

All horizontal run of vent pipe must pitch upwards a minimum of 1/4 inch per linear foot of horizontal pipe employed. Also, see "Vent Connections", page 19.

AIR SUPPLY

To provide for the safe and satisfactory operation of this boiler, a supply of fresh air must be available to the room in which this boiler is installed.

FOR BOILERS LOCATED IN UNCONFINED SPACES:

If the unconfined space is within a building of unusually tight construction, air for combustion, ventilation, and dilution of flue gases shall be obtained from outdoors or from spaces freely communicating with the outdoors. A permanent opening or openings having a total free area of not less than one square inch per 5,000 Btu per hour of total input rating of all appliances shall be provided. Ducts may be used to convey make-up air from the outdoors and shall be of the same cross-sectional areas as the free area of the opening to which they connect. The minimum dimension of rectangular air ducts shall be not less than 3 inches.

FOR BOILERS LOCATED IN CONFINED SPACES:

In the United States the confined space shall be provided with two permanent openings, one commencing within 12 inches of the top and one commencing within 12 inches of the bottom of the enclosure. In Canada, if the air supply is from outdoor, the confined space shall be provided with two permanent openings, one commencing within 12 inches of the top and one commencing not more than 18" nor less than 6" above the floor level. The openings shall communicate directly, or by ducts, with outdoors or spaces (crawl or attic) that freely communicate with outdoors.

1. When directly communicating with the outdoors, each opening shall have a minimum free area of one square inch per 4,000 Btu per hour of total input rating of all appliances in the enclosure.
2. When communicating with the outdoors through vertical ducts, each opening shall have a minimum free area of one square inch per 4,000 Btu per hour of total input rating of all appliances in the enclosure.
3. When communicating with the outdoors through horizontal ducts, each opening shall have a minimum free area of one square inch per 2,000 Btu per hour of total input rating of all appliances in the enclosure.
4. When ducts are used, they shall be of the same cross-sectional area as the free area of the openings to which they connect. The minimum dimension of rectangular air ducts shall be not less than 3 inches.

For further guidance concerning proper ventilation practices, consult your local building authority, local codes, or the National Fuel Gas Code, Z223.1 (NFPA Nbr. 54) (latest edition). Copies of this code are available through the American Gas Association, 1515 Wilson Boulevard, Arlington, Virginia 22209 or the National Fire Protection Association Batterymarch Park, Quincy, MA 02269.

In Canada consult the current standard CAN1-B149.1 or CAN1-B149.2 and/or local authorities for proper ventilation procedures.

READ INSTRUCTIONS CAREFULLY

Proper installation and adjustment of the burners and control equipment is necessary for the most safe and efficient operating of the gas boiler. The ratings shown on the rating and instruction plate mounted on the front bulkhead behind the front doors should not be exceeded.

Read this book carefully and also the instructions on the instruction plate, before attempting to light the burners.

BOILER CLEARANCES

This boiler is for indoor installation only. Boiler sizes 10 to 71 may be installed in alcoves, boilers of larger sizes (79 to 110) must be installed in a space larger in comparison to the size of the boiler.

The 04.(33,34) series of Buderus boilers are certified for installation on combustible floors. The base assembly installed on the boiler as you have received it must not be removed under any circumstances. The boiler must not be installed on carpeting.

Allow at least 33-1/2 inches in front for removal and servicing of burners. See note on page 6 for clearance required for controls and jacket assembly.

In the United States, the minimum clearance between the side and back jacket panels and any adjacent combustible building structure must not be less than 12 inches to the sides of the boiler and 14 inches to the back of the boiler for boilers 10 through 71, and 24 inches to the sides and back of the boiler for sizes 79 through 110.

In Canada, the minimum clearance between the side or back and any adjacent combustible building structure is 6 inches for models 10 thru 71, and 14 inches to the back and 12 inches to the sides of the boiler for sizes 79 thru 110.

A minimum clearance of one inch shall be provided between all hot water pipes and combustible construction through which they pass or are attached to.

A minimum of 6 inches shall be provided between the vent pipe and any adjacent combustible wall.

A minimum vertical clearance of 37 inches must be maintained from the top of the boiler to a ceiling or top of an alcove type enclosure.

TECHNICAL DATA

| <u>WATER CONNECTIONS</u> | <u>NPT</u> |
|--------------------------------------|------------|
| KV Heating Supply | 1-1/2" |
| KR Heating Return | 1-1/2" |
| SR Cold feed and expansion | 1-1/4" |
| SV Pressure relief valve connection | 1-1/4" |
| EL Heating water drain (either hand) | 1/2" |

NOTE:

Connections must be made as illustrated in Figure 3.

IMPORTANT

When planning the layout of the boiler room, allowance should be made for:

1. Clearance for burner withdrawal at the front of the boiler. See Fig.4.
2. R.H. and L.H. clearance for easy boiler assembly and servicing (12 inches*) minimum for single boiler installation.
3. Clearance at the rear for pipework and flue
4. Sufficient clearance for servicing, on all sides of the boiler.

* 24 inches for size 79 through 110

RATINGS

| <u>Model/Size</u> | <u>Input Rating* BTU/H</u> | <u>Output Rating* BTU/H</u> |
|--|--------------------------------|---------------------------------|
| <input type="checkbox"/> 04.(33,34)/10 | 52,900 | 42,320* |
| <input type="checkbox"/> 04.(33,34)/12 | 63,400 | 50,720* |
| <input type="checkbox"/> 04.(33,34)/15 | 81,500 | 65,200* |
| <input type="checkbox"/> 04.(33,34)/18 | 94,900 | 75,920* |
| <input type="checkbox"/> 04.(33,34)/23 | 121,000 | 96,800* |
| <input type="checkbox"/> 04.(33,34)/27 | 141,000 | 112,800* |
| <input type="checkbox"/> 04.(33,34)/31 | 162,000 | 129,600* |
| <input type="checkbox"/> 04.(33,34)/35 | 183,000 | 146,400* |
| <input type="checkbox"/> 04.(33,34)/39 | 203,000 | 162,400* |
| <input type="checkbox"/> 04.(33,34)/43 | 224,000 | 179,200* |
| <input type="checkbox"/> 04.(33,34)/47 | 244,000 | 195,200* |
| <input type="checkbox"/> 04.(33,34)/55 | 285,000 | 228,000* |
| <input type="checkbox"/> 04.(33,34)/63 | 326,000 | 260,800* |
| <input type="checkbox"/> 04.(33,34)/71 | 369,000 | 295,200* |
| <input type="checkbox"/> 04.34/79 | 409,000 | 327,200+ |
| <input type="checkbox"/> 04.34/87 | 450,000 | 360,000+ |
| <input type="checkbox"/> 04.34/100 | 519,000 | 415,200+ |
| <input type="checkbox"/> 04.34/110 | 558,700 | 446,960+ |

*Figures determined during factory tests, not validated by A.G.A.

+Figures determined during factory tests, not validated by C.G.A.

Installer to identify which model is installed.

• High altitude ratings are exactly 10 % less than shown above. Models 79 thru 110 are not C.G.A. certified either for High Altitude application or Page 5 for use with propane gas.

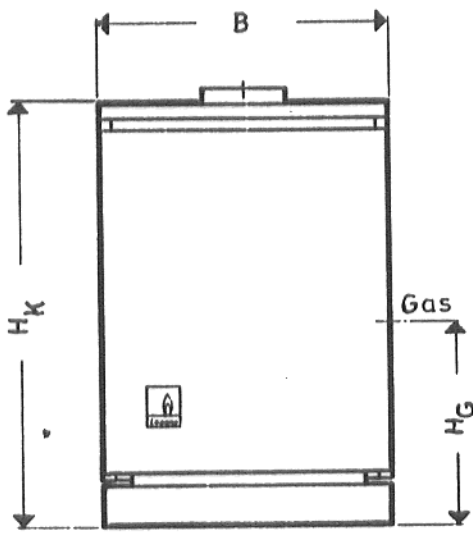


Fig. 1

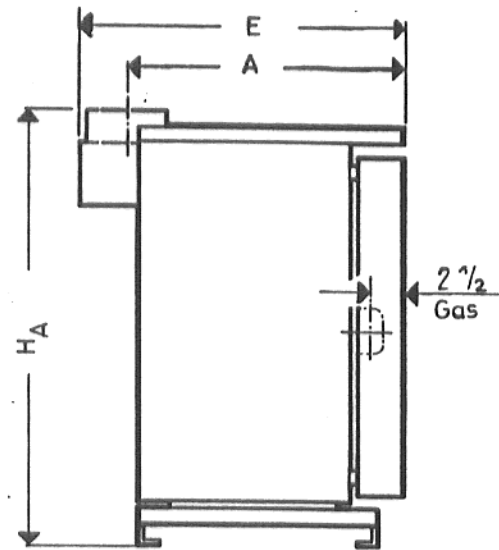


Fig. 2

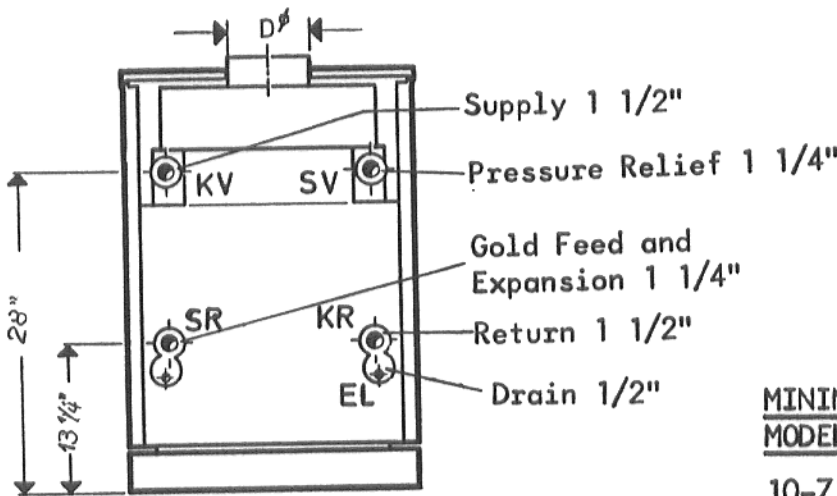
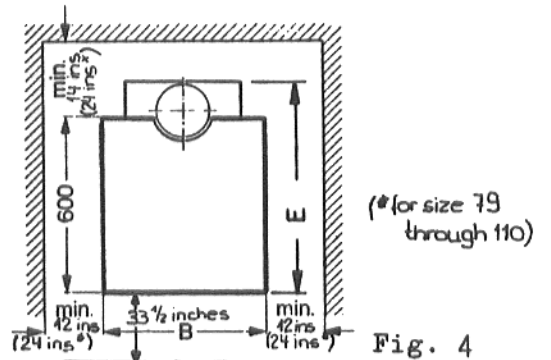


Fig. 3



(*for size 79 through 110)

Fig. 4

MINIMUM CLEARANCE TO COMBUSTIBLES:

| MODEL | SIDES | REAR |
|--------|-------|------|
| 10-71 | 6 | 6 |
| 79-110 | 12 | 14 |

VARIABLE DIMENSIONS

| Model/ Size | Overall height | Overall depth | Jacket width | Jacket height | Flue centre | Flue diam. | G.I. height |
|----------------|-----------------------|---------------|--------------|-----------------------|-------------|------------|-----------------------|
| | H _A ins | E ins | B ins | H _K ins | A ins | D ins | H _G ins |
| 04.(33,34)/10 | 41-1/4 | 26 3/4 | 15 | 36 3/4 | 24 1/8 | 5 | 17 3/16 |
| 04.(33,34)/12 | 41-1/4 | 26 3/4 | 15 | 36 3/4 | 24 1/8 | 5 | 17 3/16 |
| 04.(33,34)/15 | 41-1/4 | 26 3/4 | 15 | 36 3/4 | 24 1/8 | 5 | 17 3/16 |
| 04.(33,34)/18 | 41-1/4 | 26 3/4 | 15 | 36 3/4 | 23 3/4 | 5 | 17 3/16 |
| 04.(33,34)/23 | 41-1/4 | 26 3/4 | 15 | 36 3/4 | 23 3/4 | 5 | 17 3/16 |
| 04.(33,34)/37 | 41-1/4 | 27 1/2 | 18 1/2 | 36 3/4 | 24 1/8 | 6 | 17 3/16 |
| 04.(33,34)/31 | 41-1/4 | 27 1/2 | 18 1/2 | 36 3/4 | 24 1/8 | 6 | 17 3/16 |
| 04.(33,34)/35 | 41-1/4 | 28 3/4 | 22 | 36 3/4 | 24 5/8 | 7 | 17 3/16 |
| 04.(33,34)/39 | 41-1/4 | 28 3/4 | 22 | 36 3/4 | 24 5/8 | 7 | 17 3/16 |
| 04.(33,34)/43 | 41-1/4 | 28 3/4 | 25 1/2 | 36 3/4 | 24 5/8 | 7 | 17 3/16 |
| 04.(33,34)/47 | 41-1/4 | 28 3/4 | 25 1/2 | 36 3/4 | 24 5/8 | 7 | 17 3/16 |
| 04.(33,34)/55 | 43-5/8 | 29 1/2 | 27 1/2 | 39 1/8 | 25 1/16 | 8 | 17 3/16 |
| 04.(33,34)/63 | 43-5/8 | 29 1/2 | 31 1/8 | 39 1/8 | 25 1/16 | 8 | 22 11/16 |
| 04.(33,34)/71 | 43-5/8 | 29 1/2 | 34 5/8 | 39 1/8 | 25 1/16 | 9 | 22 11/16 |
| 04.34/79 | 43-5/8 | 30 1/2 | 38 3/16 | 39 1/8 | 25 1/2 | 9 | 22 11/16 |
| 04.34/87 | 43-5/8 | 30 1/2 | 41 3/4 | 39 1/8 | 25 1/2 | 9 | 22 11/16 |
| 04.34/100 | 43-5/8 | 31 1/2 | 45 1/4 | 39 1/8 | 26 1/16 | 10 | 22 11/16 |
| 04.34/110 | 43-5/8 | 31 1/2 | 48 13/16 | 39 1/8 | 26 1/16 | 11 | 22 11/16 |

Boiler Foundation

Locate the boiler on a level foundation. The weight of the boiler when it is full of water is substantial; ensure that a solid base foundation is established prior to installing the appliance. The boiler must not be installed on carpeting.

Refer to page 7 for dry weight of boilers.

Assembly of Units

04.(33, 34)/10 to 47 boilers are delivered completely assembled with boiler jacket, draught hood and insulation in position, (except for flue adaptor, which is shipped unassembled. See page 19 for vent pipe adaptor installation). Each unit is palletised and protected by a cardboard box.

04.(33, 34)/55 up to 04.34/110 boilers are supplied with the sections assembled and palletised but with the boiler jackets and draught hood packed separately for on site assembly. Refer to Figure 5A for complete assembly.

Unpacking before assembly

Unpack all boxes and cartons and check all parts received against packing slips. Every boiler is carefully inspected and tested before shipment from the factory and is delivered to the carrier in good condition. In case of damage or shortage, notify your carrier agent promptly. Examine all packing material carefully before discarding.

1. Assembly of Draught Hood.

Boiler viewed from the rear

A quantity of high quality silicone rubber is provided with each boiler, size 55 - 110. This silicone rubber must be applied generously to the area where the flue hood (2) comes into contact with the top of the heat exchanger. Secure the flue hood with the four machine bolts provided.

Attach draught hood (1) onto the back of flue hood (2) using the self tapping screws (3) provided. Place the baffle plate (4) on top of the flue-ways (5) to cover the front of the boiler. Fit the flue hood cover (6) using the wing nuts (7) provided, to the top of the flue hood (2). Position the shield plate (8) on the rear bulk head (9) and fix with the self tapping screws (19) provided. Slip the vent adaptor (10) onto the draught hood flue outlet and fix it with self tapping screw (3) provided.

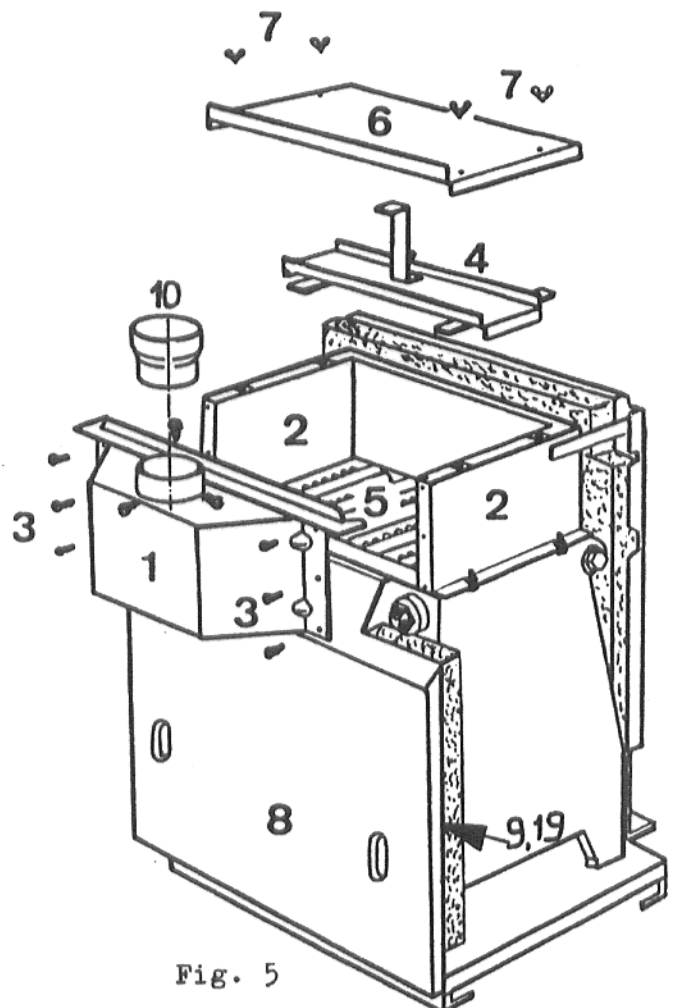


Fig. 5

2. JACKET ASSEMBLY

Jackets of 04.(33, 34)/10 to 04(33, 34)/47 boilers are factory assembled.

With the 04.(33, 34)/55 to 04.34/110 boilers, remove the jacket and insulation from the cardboard carton and assemble as indicated below.

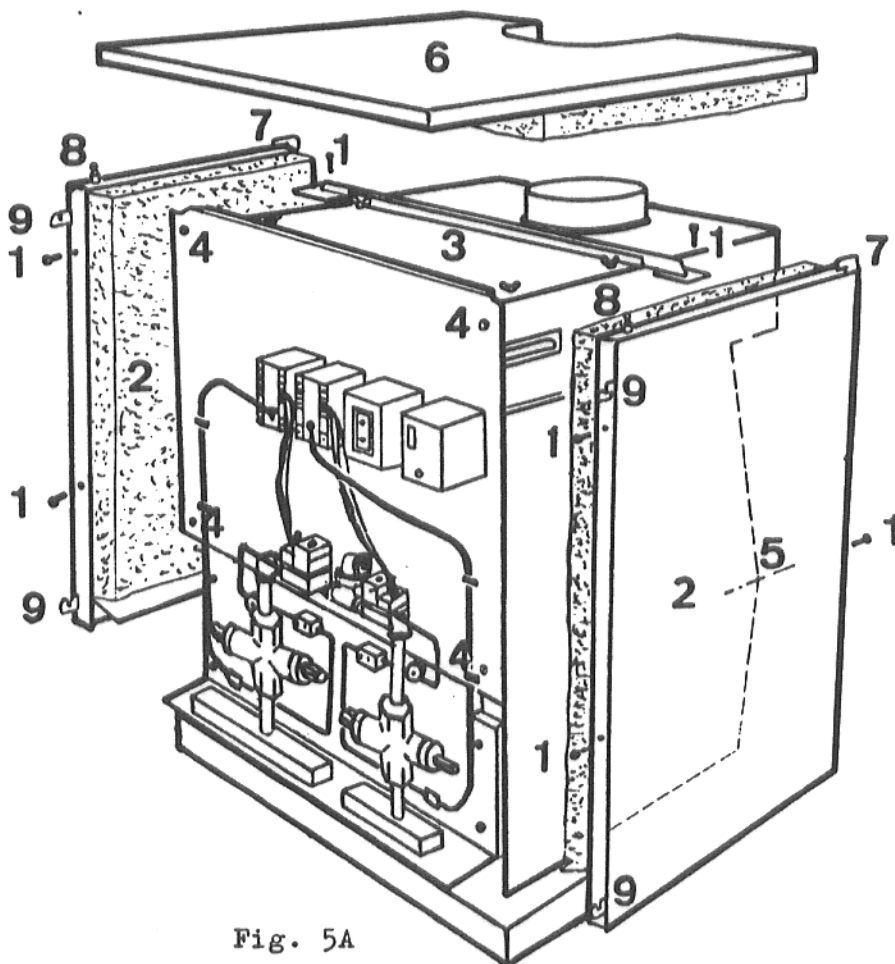


Fig. 5A

Position side panels (2) on the top cross member (3) and screw panels to front bulkhead (4) using the self tapping screws (1) provided. Align panels and screw to cross member and rear bulkhead (5).

Attach top panel (6) to hooks (7) at the top of the side panels and locate on pins (8) at the front.

The front door is placed on to the hooks (9) projecting from the edges of the side panels.

Handling and Locating of Units

Deliver boiler in crate to site
Maneuver the boiler as near as possible to its final location while still on the pallet and with all the packing still in position.

Undo bending straps, lift off cardboard box, take off front and top panels, slide boiler to right or left hand side.

Before doing so, take off the lateral wooden boards.

Lift boiler under bottom plate.

Place pipes under boiler and transport boiler to exact location.

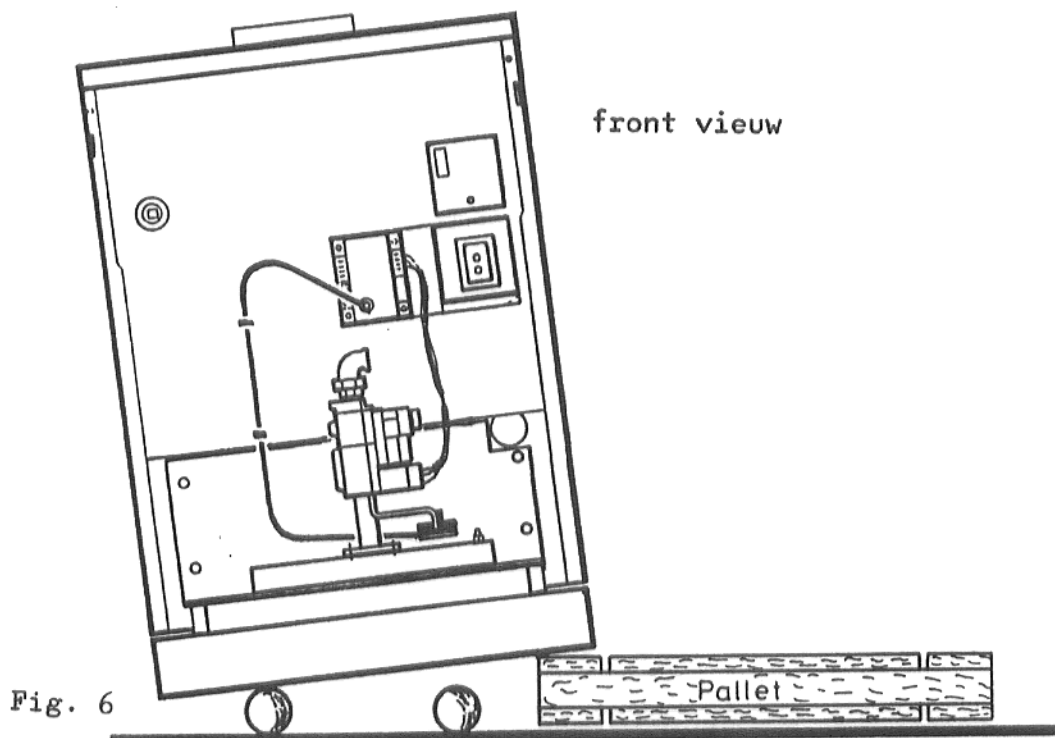


Fig. 6

IMPORTANT

1. Protect the sheet metal work, gas pipework, burner and controls at all times.
2. Never lift the boiler by any of these components.
3. If this boiler is installed above radiation level it must be provided with a low water cutoff device either as a part of the boiler or at the time of installation.

This cutoff device should be periodically inspected to ensure it is functioning properly.

PRESSURE RELIEF VALVE INSTALLATION

Pressure relief valve is supplied with the boiler.

Be sure the pressure relief valve is installed in the proper tapping as indicated in figures 7 and 8 below.

The relief valve outlet should be piped near to the floor, close to a drain when available. Do not pipe the relief valve discharge to any area where freezing temperatures could occur.

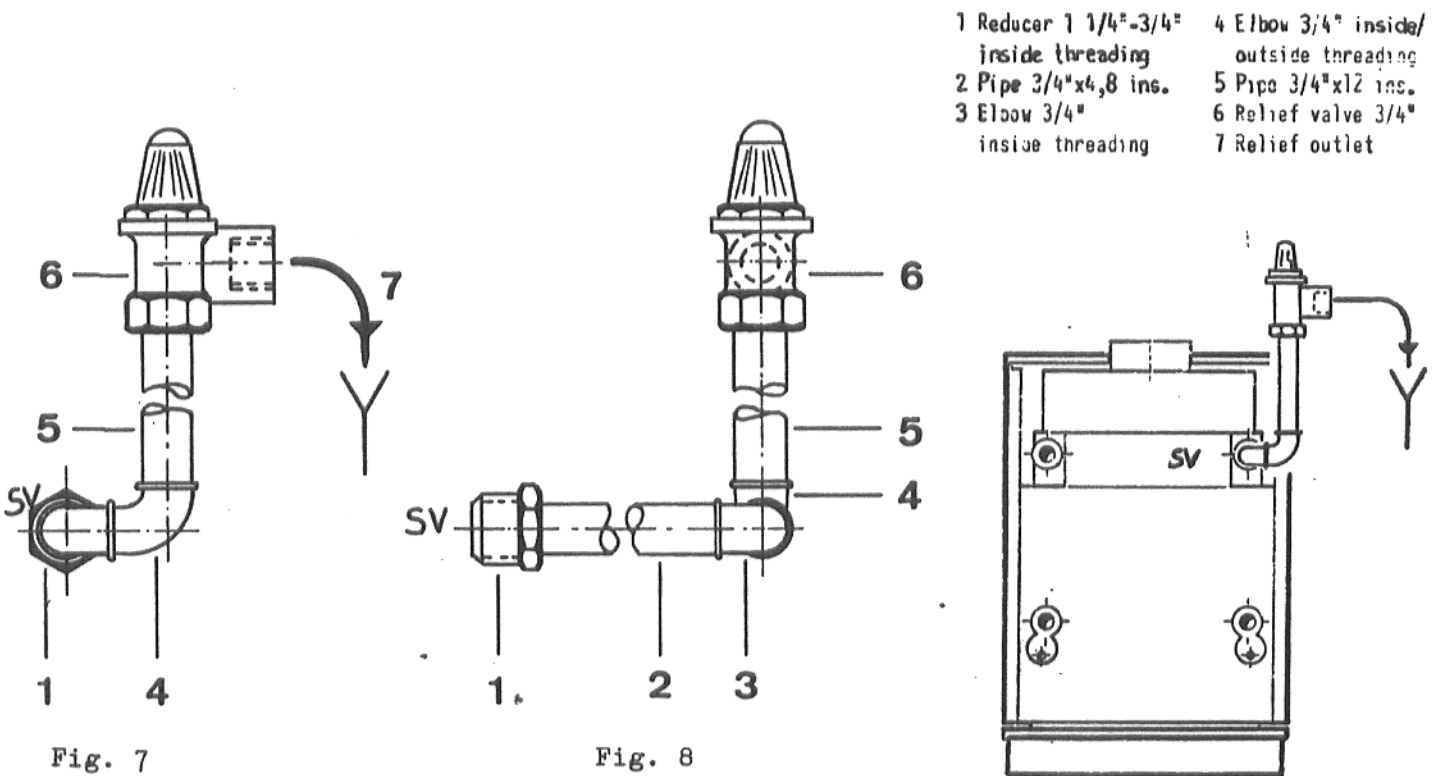


Fig. 7

Fig. 8

Fig. 9

WATER CONNECTIONS

Connections must be made as illustrated in Figure 9. Plug all unused tapings.

HYDROSTATIC PRESSURE TEST OF BOILER

The individual sections and the complete boiler have been pressure tested at the factory; however, the boiler should be visually checked at the joints to ensure that no leaks occur.

WATER CIRCULATION SYSTEM

General

It is essential that the water circulation system incorporate a pump, which must be in operation at all times when the boiler is in operation. The use of horizontal pipe runs should be avoided wherever possible in order to prevent air collecting in the system. If horizontal runs are unavoidable the pipe should rise upwards in the direction away from the boiler.

Isolating Valves

To facilitate servicing, isolating valves should be fitted on each side of a circulating pump, radiators, etc.

When the boiler is connected to heating coils located in air handling units where they are exposed to refrigerated air circulation, the piping shall be equipped with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.

When the boiler is used in conjunction with refrigeration systems, it shall be installed so that the chilled medium is piped in parallel with the heating boiler with appropriate valves to prevent the chilled medium from entering the heating boiler.

Frost Protection

Consideration should be given to fitting a frost thermostat which should be set to operate at a temperature of approximately 39°F.

Water Treatment

The need for water treatment will depend upon the chemical analysis of the water and the operating conditions. As with all efficient low water content boilers, particular attention is required in hard water areas.

SIZE GAS SUPPLY PIPING

The gas supply piping must be sized to provide the proper inlet gas pressure when the boiler is operating at the indicated rated input. For natural gas, the inlet gas pressure to the manual main shut-off gas valve (if supplied) should be 7" to 10.5 inches water column.

Determine the measured length piping from the gas meter to the boiler. Add to the measured length the additional length for each elbow or tee. Refer to the Pipe Delivery Schedule Table and determine the pipe size.

PIPE DELIVERY SCHEDULE TABLE

| Pipe Delivery Schedule | | | | | | | |
|--|---|--------|--------|------|--------|--|-----------------------------------|
| * Adjusted Length of Gas Supply Piping in Feet | o) Capacity of Pipe Sizes in Cubic Feet of Gas per Hour | | | | | Additional Length of Pipe to Be Added for Each Elbow or Tee Bend in Piping | |
| | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | Pipe Size in Inches | Additional Length of Pipe in Feet |
| 10' | 520 | 1050 | 1600 | 3050 | 4800 | 1" | 2.2' |
| 20' | 350 | 730 | 1100 | 2100 | 3300 | 1 1/4" | 2.9' |
| 30' | 285 | 590 | 890 | 1650 | 2700 | 1 1/2" | 3.3' |
| 40' | 245 | 500 | 760 | 1450 | 2300 | 2" | 4.3' |
| 50' | 215 | 440 | 670 | 1270 | 2000 | 2 1/2" | 5.1' |
| 75' | 175 | 360 | 545 | 1020 | 1650 | - | - |
| 100' | 150 | 305 | 460 | 870 | 1400 | - | - |
| 150' | 120 | 250 | 380 | 710 | 1130 | - | - |

*) Include measured length of gas supply and allowance in feet for number and size of fittings.

o) Flow capacity determined from Dr. Pole's Formula: Specific Gravity=0.60; Pressure Loss=0.30" W.C.

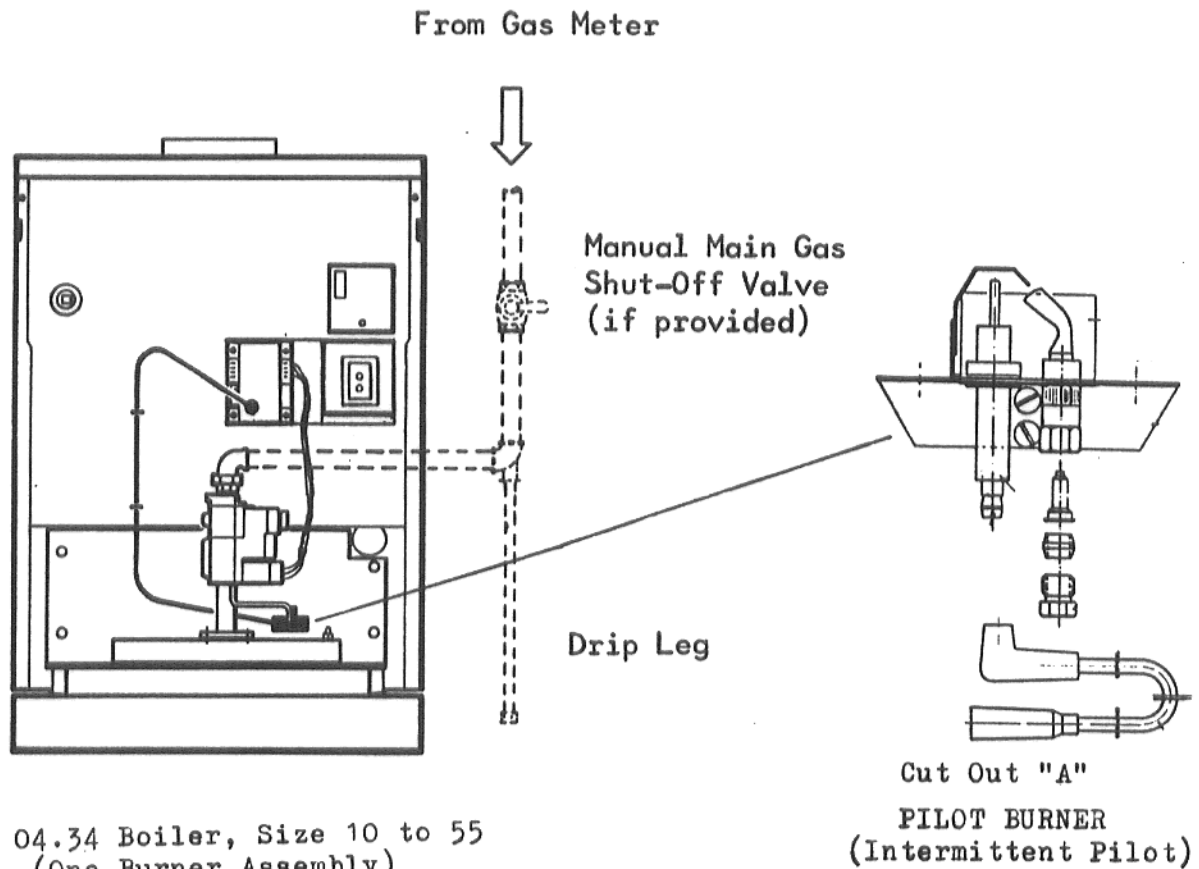


Fig. 10 04.34 Boiler, Size 10 to 55
(One Burner Assembly)

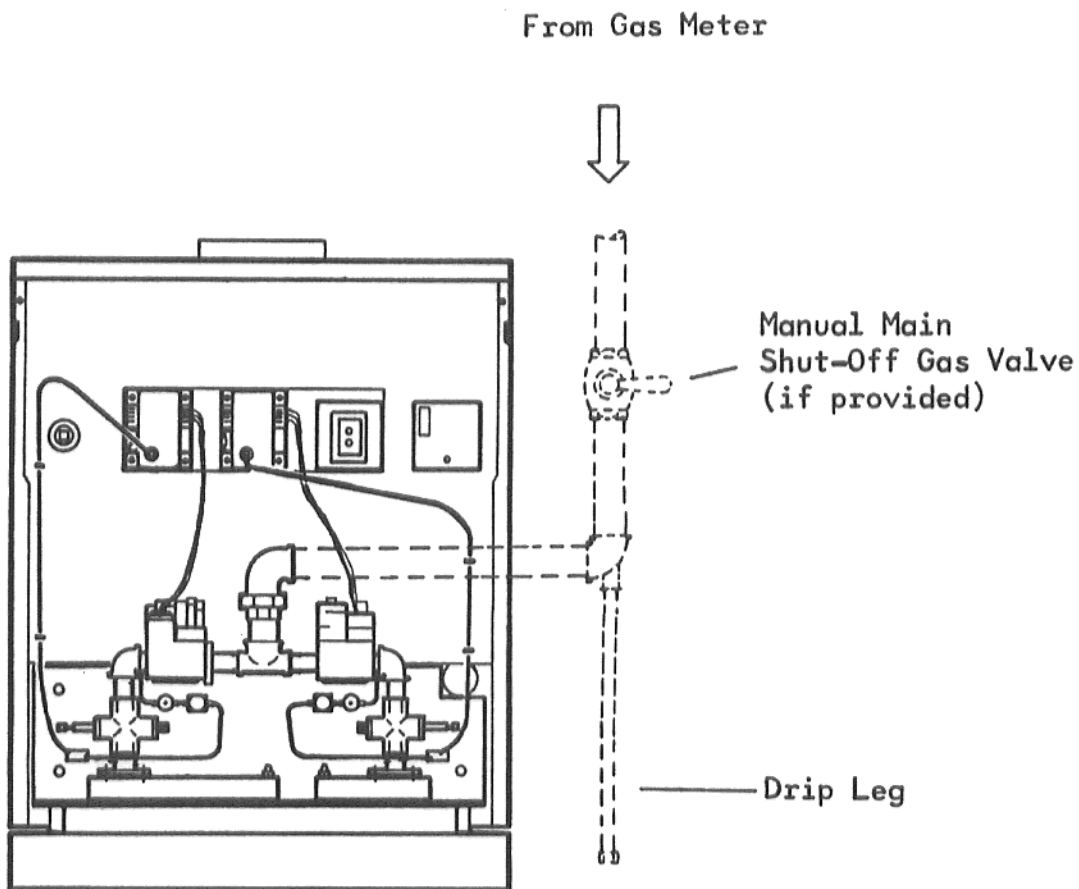


Fig. 11 04.34 Boiler, sizes 63-110
Note: pilot regulators, auto pilot gas valves and main test firing valves for boilers sizes 79-110 only.

The boiler and its individual shutoff 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 psig. Remove knockout disc from the jacket end panel at the end of the boiler to which the gas supply is to be piped.

The boiler must be isolated from the gas supply piping system by closing its individual manual shut off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig.

In the United States, the gas supply piping should be installed in accordance with the American National Standard Z223.1-1980 the National Fuel Gas Code.

In Canada, consult the current standard CAN1-B149.1 or CAN1-B149.2 "Installation Code For Gas Burning Appliances And Equipment" and/or local authorities having jurisdiction.

Connect the gas pipes to the gas control. Where the gas connection size is smaller than the calculated pipe size reduce the gas supply piping only at the inlet to the gas valve. A drip leg must be installed at the inlet of the gas connection to the boiler. The local utility may require that the drip leg be extended all the way to the floor. We strongly recommend a manual shut-off gas valve which should be located in the gas supply piping according to the local utility requirements. The gas supply piping must be supported by external hangers; not by the boiler or its accessories. Refer to figures on page 13.

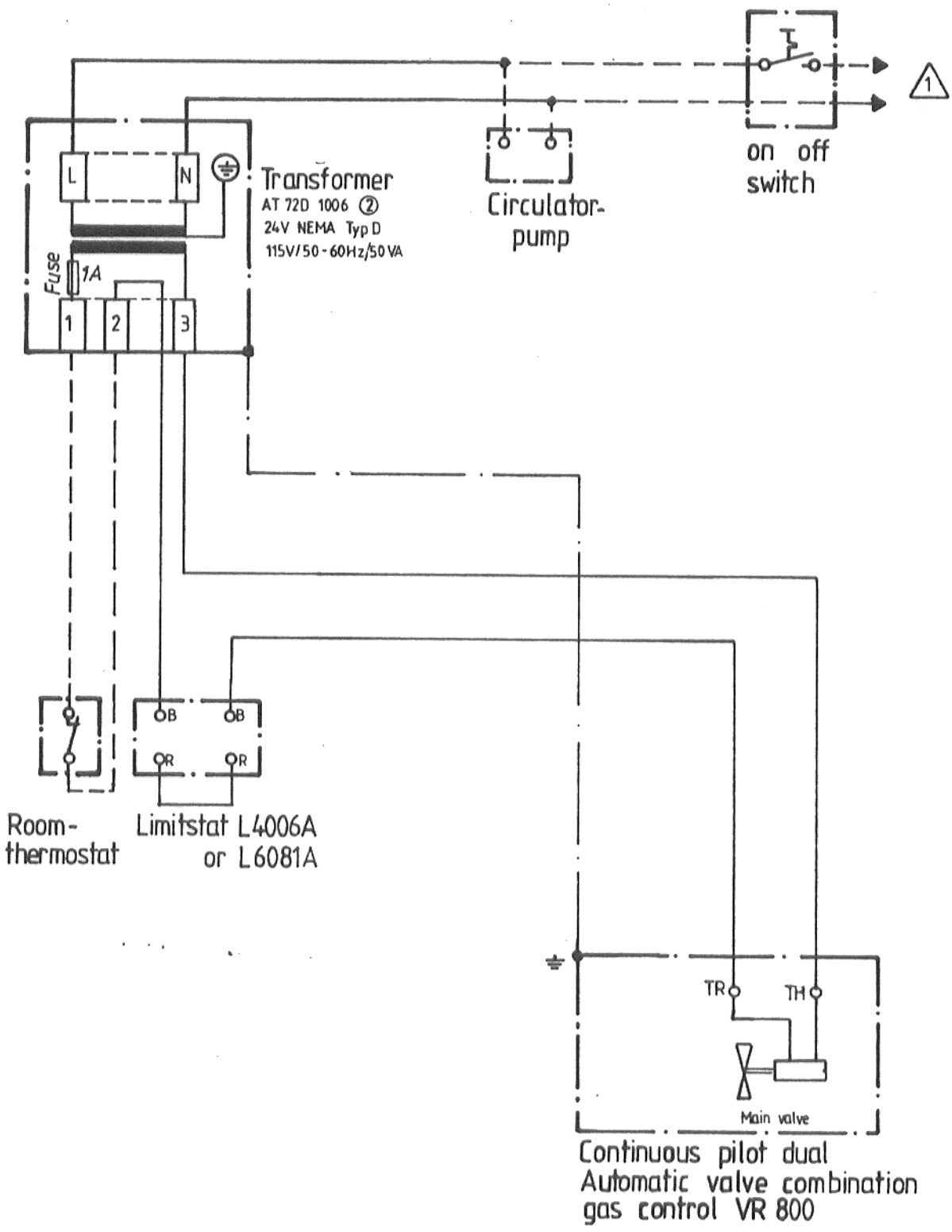
When turning on gas supply do not omit test for gas leaks as described on page 24. This test must be conducted before placing the boiler in operation.

ELECTRICAL SUPPLY

An external 120 VAC power supply must be available at or near the boiler location. Provisions are made in the boiler jacket for using flexible or semi-rigid conduit. A supply cord is not to be employed to feed electrical power to this boiler.

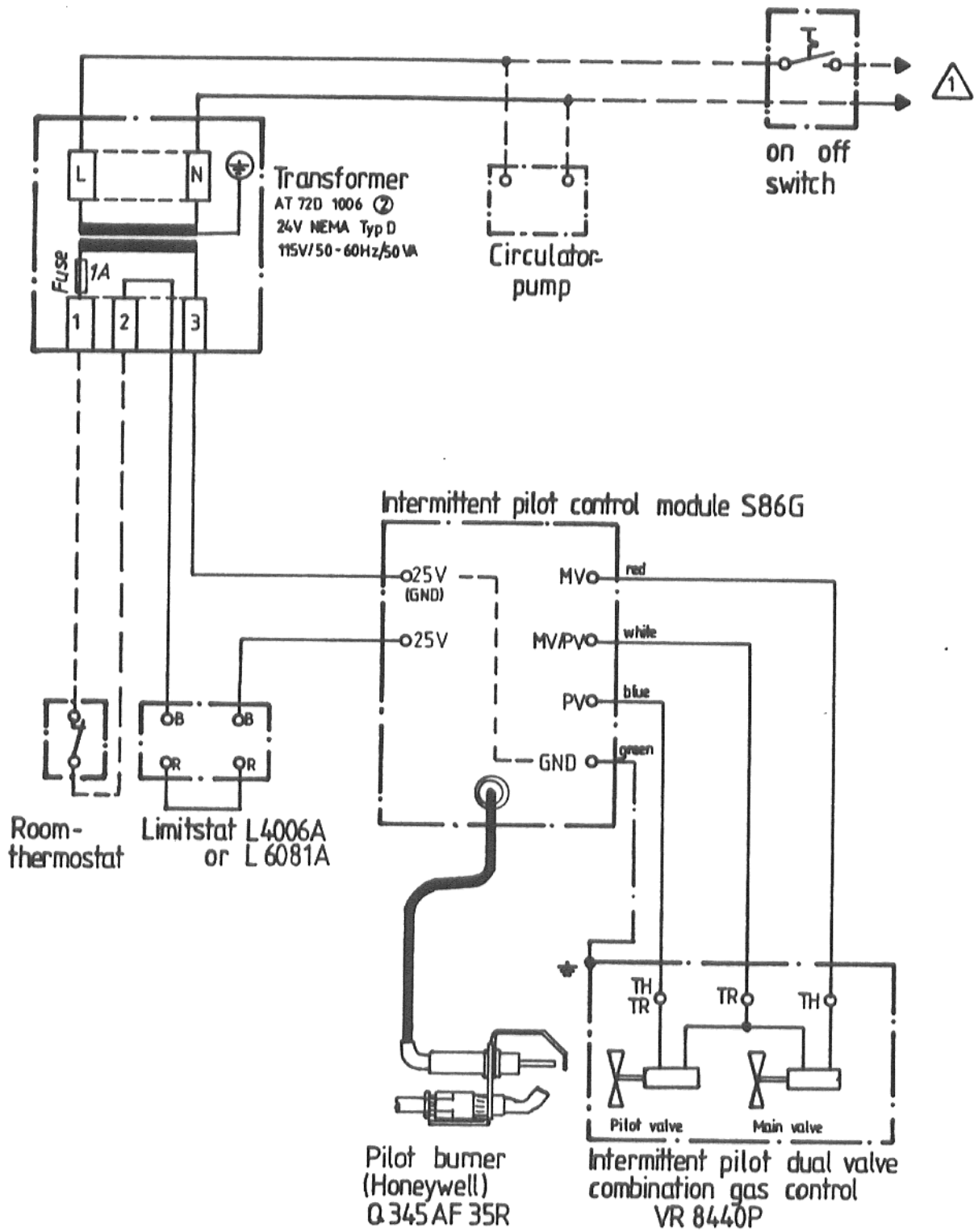
In the United States, this appliance must be electrically grounded in accordance with the requirements of the authority having jurisdiction, or in the absence of such requirements, with the National Electrical Codes, ANSI/NFPA No. 70-1980.

In Canada the appliance must be wired and electrically grounded in accordance with the requirements of the current CSA Standard C22-2 No. 1, the Canadian Electrical Code, Part 1 or with the requirements of the authority having jurisdiction.



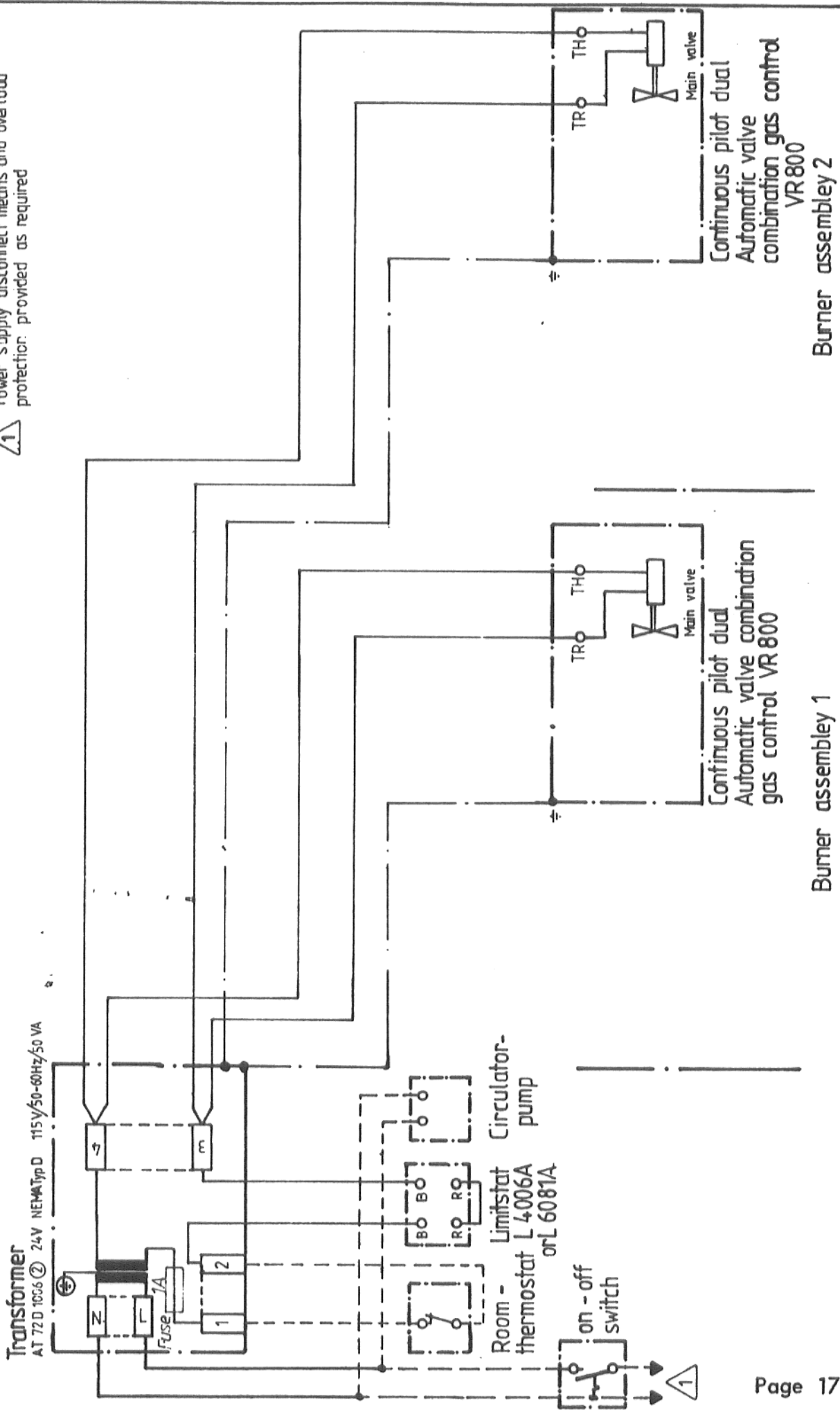
⚠ Power supply disconnect means end overload protection provided as required

| | | | | |
|----------------|---|--------------------------|--------------------------|-----------------|
| Buderus | Wiring diagram gas-boiler 04.33 model 10 to 55 CDN | ZgNr R 03-00-601-1069(4) | Schaltplan GAW 011...501 | |
| | Standing pilot | Sach Nr. 5000772 | Änderung 174 17 | Ausgabe 1/84 |



Power supply disconnect means and overload protection provided as required

⚠ Power supply disconnect means and overload protection provided as required



| | | | | | |
|----------------|--|--|------------------------------|--------------------|-----------------|
| Buderus | Wiring diagram gas-boiler 04.33 model 63to71 · CDN | | Zg.Nr: R03-00 - 601-1070 (4) | Schaltplan | GAW012...501 |
| | Standing pilot | | Sach Nr: 5000773 | Änderung 174,17 | Ausgabe 1/84 |

Burner assembly 1

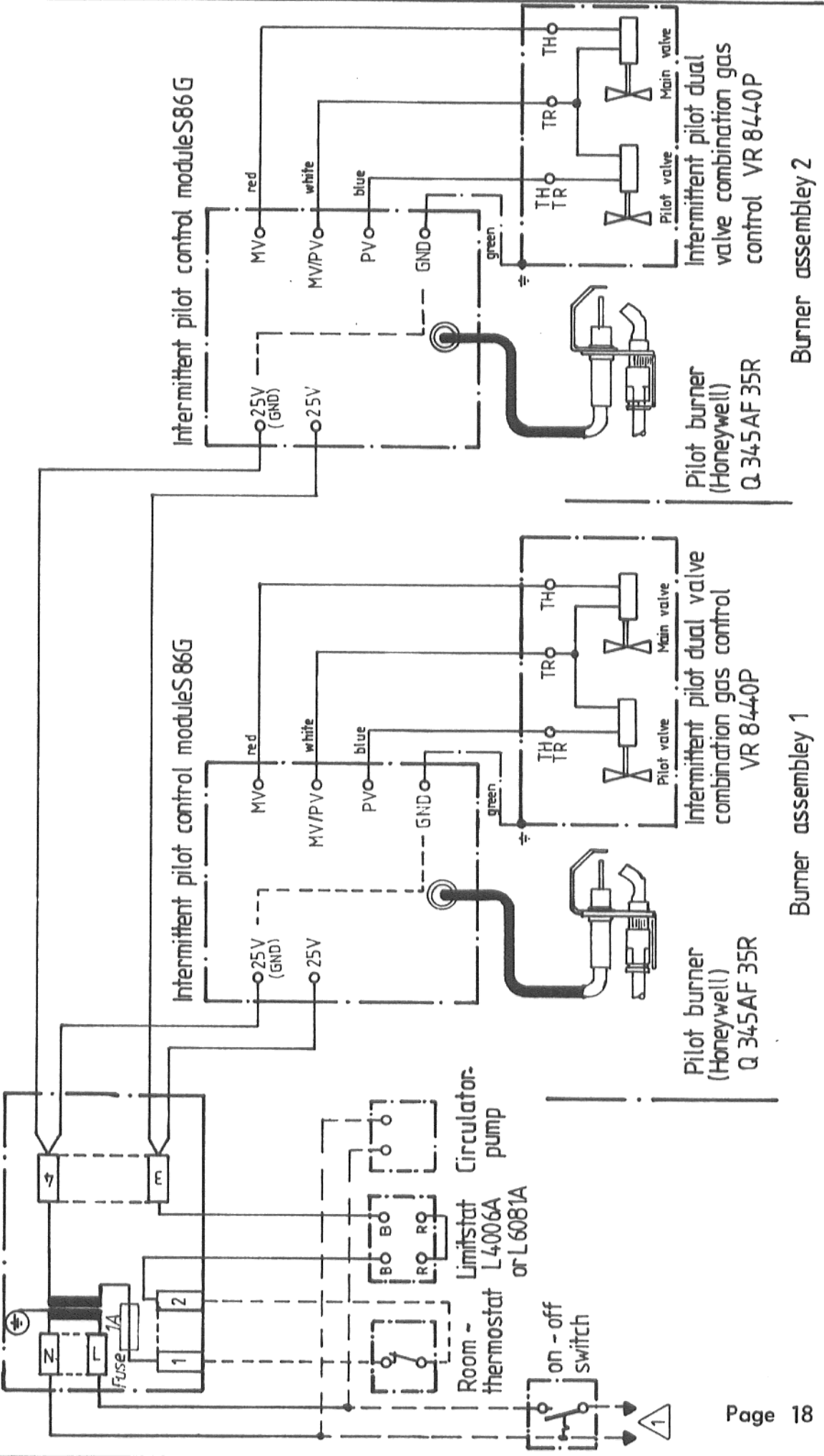
Burner assembly 2

Continuous pilot dual
Automatic valve combination
gas control VR 800

Continuous pilot dual
Automatic valve
combination gas control
VR 800

⚠ Power supply disconnect means and overload protection provided as required

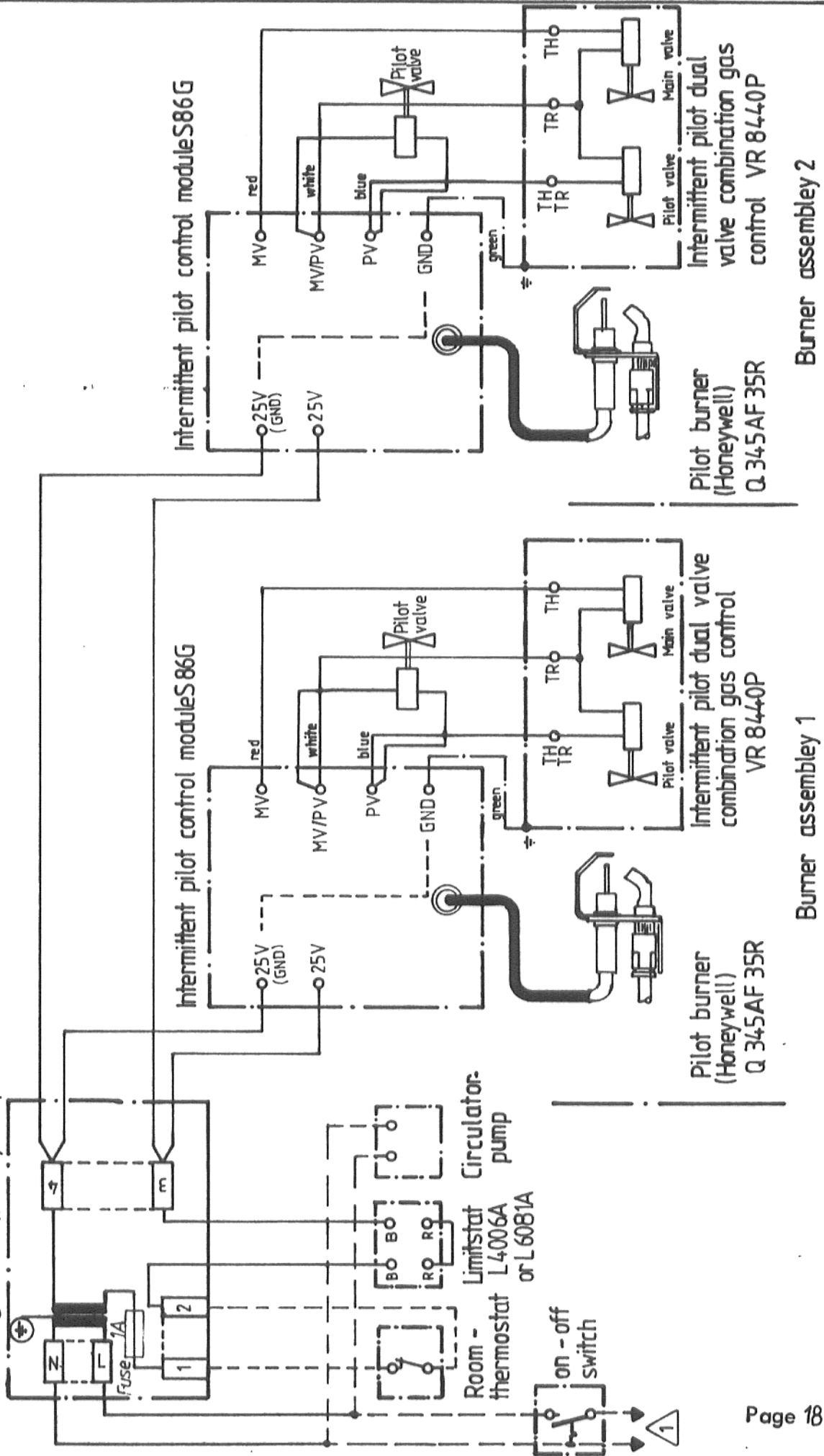
Transformer
AT 72 D 1006 ② 24V NEMA Typ D 115V/50-60Hz/50 VA



| | | | | |
|----------------|--|--|------------------------------|---------------------------------|
| Buderus | Wiring diagram gas-boiler 04.34 model 63 to 71 CDN/USA | | Zg.Nr: R03-00 - 601-1140 (4) | Schrittplan GAW015...501 |
| | Intermittent pilot | | Sach Nr. 1000796 | Änderung 174.17 Ausgabe 1/84 |

⚠ Power supply disconnect means and overload protection provided as required

Transformer
AT 72D 1006 24V NEMA Typ D 115V/50-60Hz/50 VA



| | | | | |
|----------------|---|--|---------------------------|-------------------------------|
| Buderus | Wiring diagram gas-boiler 04.34-model 79 to 110 CDN/USA | | Zg.Nr: R03-00-601-871 (4) | Schritplan GAW010..501 |
| | Intermittent pilot | | Sach Nr. 5000711 | Änderung 17.4.17 Ausgabe 1/84 |

VENT CONNECTION (also refer to VENT, Page 2)

The draft hood is incorporated at the rear of the boiler. A separate draft diverter is not required. All boilers shipped from the factory with the vent pipe adapter not installed. Follow the instructions outlined below, as well as figure 12. To install vent pipe, slip vent connector over the draft hood flue outlet and secure in place with (3) self tapping screws.

Connect the adapter outlet to the chimney of vent with full-sized (same diameter as adapter outlet) breeching. Where the installation permits, vertical venting of the combustion gases to the outside from the adapter outlet will afford best performance at lowest total cost. Where the boiler must be connected to a chimney or remote vent, the horizontal breeching should slope upward at least 1/4 inch per linear foot toward the chimney or vent. A vertical height of 3 feet to 5 feet of breeching before any elbow or horizontal breeching is recommended to reduce chances of flue gas spillage at the draft hood. Long horizontal breechings, excessive numbers of elbows or tees, or other obstructions which restrict the flow of combustion gases should be avoided.

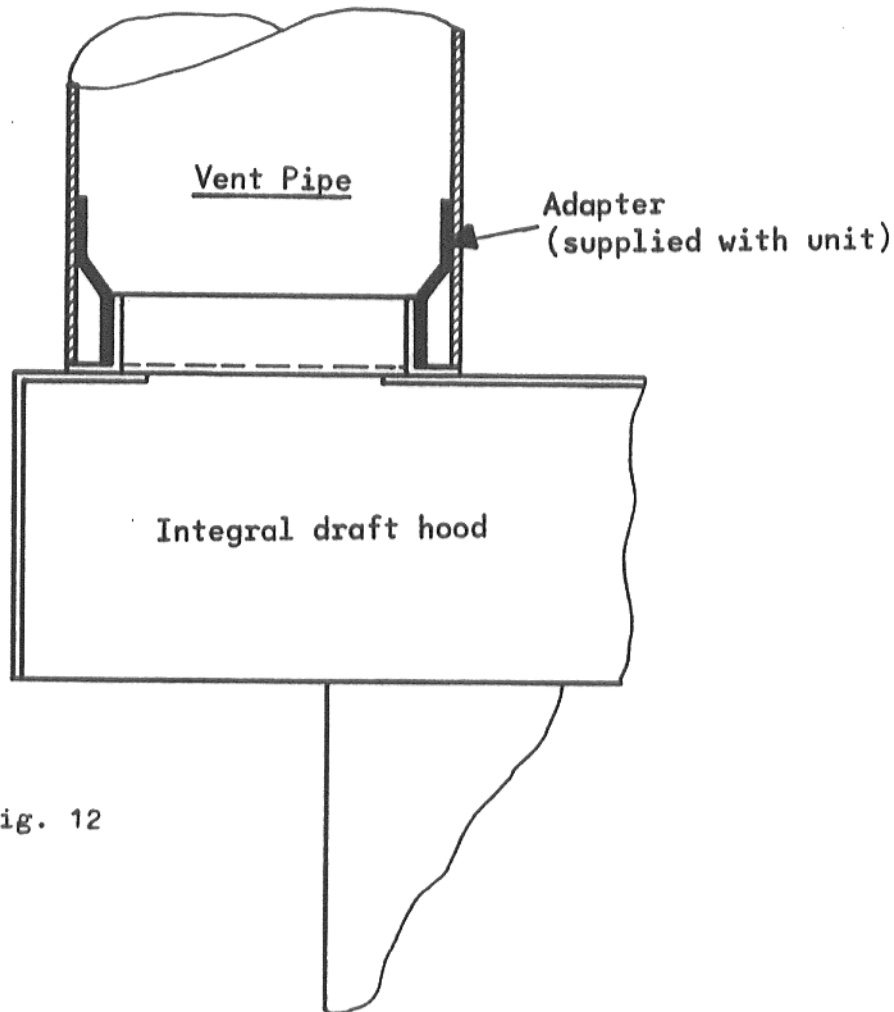


Fig. 12

It is essential that at least 40 inches of vent (including pipe and chimney) corresponding to 0.02 in WG (min. chimney draft) be fitted.

The weight of the vent pipes must not be carried by the draft hood but supported from the ceiling, roof or adjacent wall.

DISCONNECTION OF VENT

Facilities should be made for disconnecting the vent pipe from the boiler for inspection and cleaning by means of a split socket. Bends should be fitted with removable covers where appropriate for inspection and cleaning purposes.

CONDENSATION

Prevention of condensation within the vent should be an important factor in the design of the vent system. In order to minimize condensation the use of double walled vent pipe or insulation is recommended for new installations.

If required by the Authority having jurisdiction, a low water cutoff device shall be installed in the boiler piping system. Please refer to the instructions supplied with the low water cutoff device for the optimum installation, location and recommended electrical tie-in.

Note: After completing the installation of this boiler, all emergency gas and electrical shutoff devices shall be identified, so that in the event of emergency, the operator of the boiler can shut down the system completely.

A lubricated plug type manual test firing valve is provided downstream of the automatic gas control on boiler models 79 through 110. This valve is provided so that a complete "dry" run can be made on this boiler, without actually admitting gas to the main burners. To perform these tests (which must be conducted during the initial firing of the boiler), follow the lighting instructions procedure which begins on page 22 of this manual. Prior to starting these procedures, turn the main test firing valve (item 9, page 27) to the off position, (off position is obtained when the valve handle is perpendicular to the flow of gas through the manifold). While the boiler is in operation at the end of step 5 under "To Start Boiler", (make sure the test firing valve is off) follow the procedure outlined on the top of page 24 for complete gas leak detection.

Reference Honeywell Modell VR8440P ("Loganagas 04.34")

BEFORE STARTING THE BOILER

1. Be sure the boiler of heating system is filled with water to proper level.
2. In starting a new installation or if gas lines have been disconnected, air must be purged from the gas piping.
3. Turn off the power supply.
4. Turn on gas supply and purge air from gas line.
5. Before starting system, turn thermostat to its lowest setting.
6. Turn gas control knob clockwise to OFF. Do not attempt to relight pilot or start burner until combustion chamber has been thoroughly purged of possible gas accumulation. Wait at least 5 minutes for all unburned gas to vent.

TO START BOILER (LIGHTING INSTRUCTIONS)

NOTE: In the event of failure of any component, the system containing the failed component will not operate or will go into safety lockout. The system is completely self-checking on every call for heat each component must be functioning properly to permit operation. If system does not perform as outlined after completing CHECKOUT, refer to SERVICE to determine cause.

1. Turn on main manual shut off valve to boiler, if provided.
2. Turn on the power supply.
3. Turn gas control knob counterclockwise completely. Depress knob and continue to turn counterclockwise until you reach the ON position.
4. Set thermostat above room temperature to call for heat.
 - Spark should turn on and pilot gas valve should open at once.
 - Spark ignition should cut off when pilot flame is established.
 - Main gas valve should open and main burner ignites after gas reaches burner ports.
5. Repeat steps 3 and 4 for second control, if unit employs two separate controls.
6. Set thermostat to desired temperature.

NOTE: It may be necessary to try ignition 2 or 3 times in order to purge any air from the pilot line. If problems occur with start up, refer to troubleshooting guide.

TO SHUT DOWN BOILER (TEMPORARILY OR EMERGENCY)

1. Turn gas control knob clockwise to "OFF".
2. Turn off power supply.
3. Turn off main manual shut-off valve, if provided.
4. Turn thermostat to its lowest setting.

SAFETY SHUT CHECKOUT PROCEDURE

With the boiler in operation, remove the orange colored ignition cable from the gray colored ignition module. Within 8 seconds, the main burners will be extinguished. This indicates proper operation of the flame sensing safety circuit. If the main burners continue to operate when this cable is removed, shut the power supply to the boiler, and refer to "Operation and Checkout" procedure on page 10 of the owners manual which accompanies this boiler.

PROLONGED SHUT DOWN

1. Open the boiler front door.
2. Switch OFF the electricity supply to the boiler at the isolating switch and at the burner control switch on the module, if provided.
3. Switch OFF the electricity supply to the water circulating pump at the isolating switch.
4. Turn the gas control knob clockwise to OFF.
5. Set thermostat to its lowest setting.

To relight the boiler after a prolonged shut down, follow steps detailed in the lighting instructions.

THE BOILER SHOULD NEVER BE SHUTDOWN IF FREEZING CONDITIONS ARE EXPECTED.

IMPORTANT

1. This appliance must be grouped.
2. Do not obstruct air vents, ducts, grilles or other openings in the boiler room and ensure the free passage of ventilation and combustion air to the boiler.
3. Do not store objects around or on the boiler and keep access clear at all times.

WATER TREATMENT

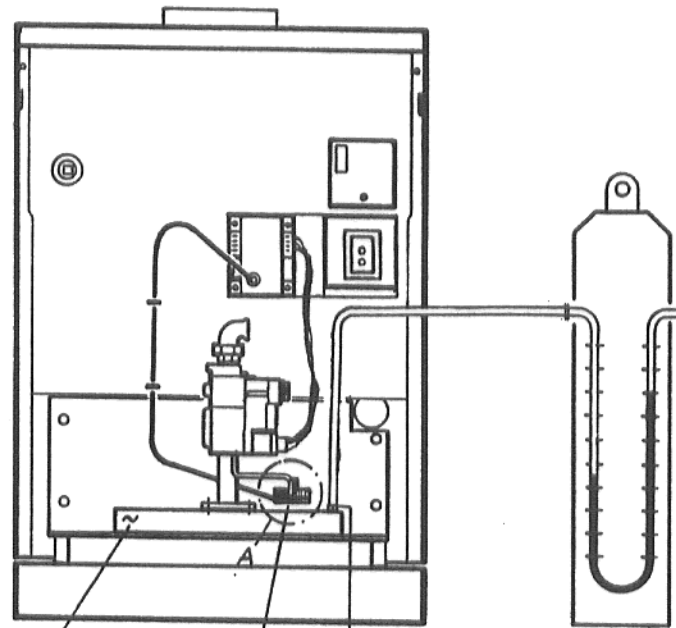
Where necessary water treatment should be carried out whenever the system is drained and refilled.

MAINTENANCE

At least once a year a periodic inspection of the boiler by a qualified service agency is necessary. On this occasion the boiler has to be checked as described in the OWNERS MANUAL, paragraphs SERVICE, CLEANING, and CHECKOUT.

All flue product carrying areas of the boiler, its vent system, and main and pilot burners shall be examined for continued safe operation. Particular attention shall be given to deterioration from corrosion or other sources.

04.33 Boiler
Size 10 to 55
(One burner
Assembly)

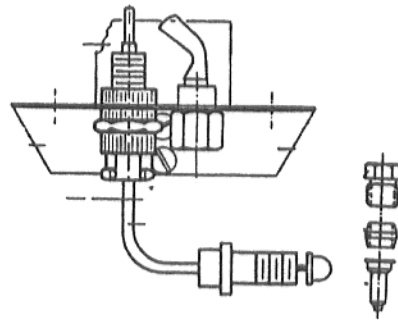


Pressure Gauge
(U-Pipe)

Fig. 15

Manifold

Pressure Test
Tapping



Cut Out "A"
PILOT BURNER
(Standing pilot and
Thermocouple)

NOTE: For boiler sizes 04.34/63 - 110 employing two burner assemblies the manifold pressure must be checked for each manifold separately.

C H E C K A N D A D J U S T B U R N E R I N P U T

On page 7 of this manual, a chart entitled "Gas Settings and Burner Details" gives information regarding correct manifold pressures and orifice sizes for all boiler models. Each boiler is equipped from the factory with the correct orifice, to achieve the proper input. The only variable item to be considered in determining the proper input rating is the gas supply pressure and the manifold pressure.

IMPORTANT

It is imperative that you do not exceed the manifold pressure listed on the chart on page 7 of this manual. The American Gas Association has certified the design of these boilers and Canadian Gas Association has certified these boilers only at the manifold pressures listed in this manual. This certification should be considered void if these manifold pressures are exceeded.

Refer to page 24 of this manual for the location of the inlet test pressure taps for the VR8440P, V800C or VR800C Honeywell control. Ensure that the main gas supply to the boiler is shut off before removing this pressure tap.

refer to page 25 of this manual for the location of pressure taps and method of connecting the manometer to the boiler manifold(s).

When you have completed the check of the manifold pressure, re-check all pressure tap plugs for gas leaks, as directed on page 24 of this manual.

The gas manifold and control assembly provided on this boiler met the safe lighting and performance tests as specified in the American National Standard Z21. 13-1977 and addendas.

HONEYWELL PARTS LIST

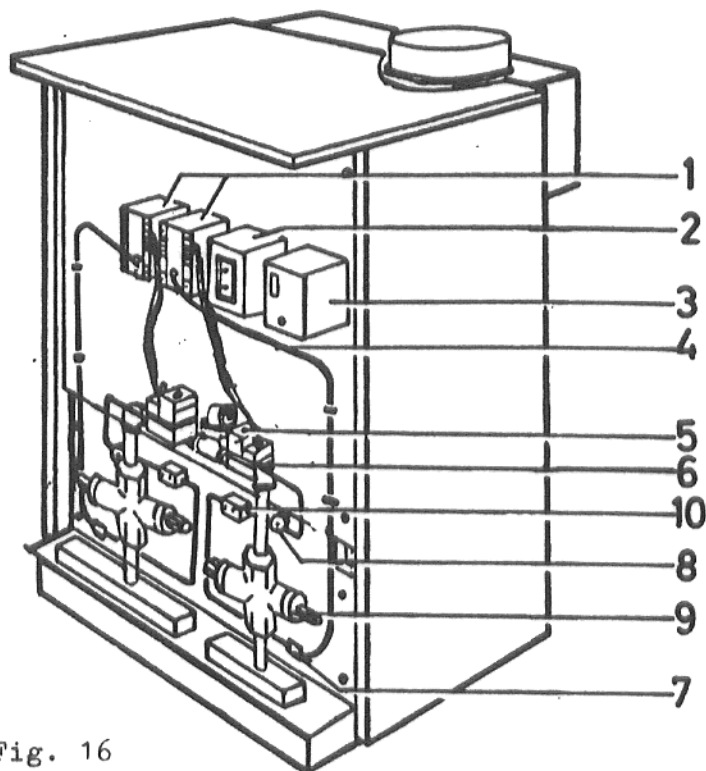


Fig. 16

1. *Intermittent Pilot Control Modul(s) (04.34 only)
2. Transformer
3. High/Limit Control
4. *Igniter-Sensor Cable (04.34 only)
5. *Connecting Cable Module-Control Valve (04.34 only)
6. *Combination Gas Control
7. *Pilot Burner
8. ●Pilot Gas Pressure Regulator
9. ●Main Test Firing Valve
10. ●Pilot Automatic Valve
11. Thermocouple (04.34 Series) not shown

NOTES: *One (1) only per unit (models 10 thru 55)
●Models (79 thru 110) only

REPLACEMENT PARTS FOR THE ENTIRE BOILER ARE AVAILABLE FROM THE FACTORY, OR YOUR LOCAL SERVICE ORGANIZATION.

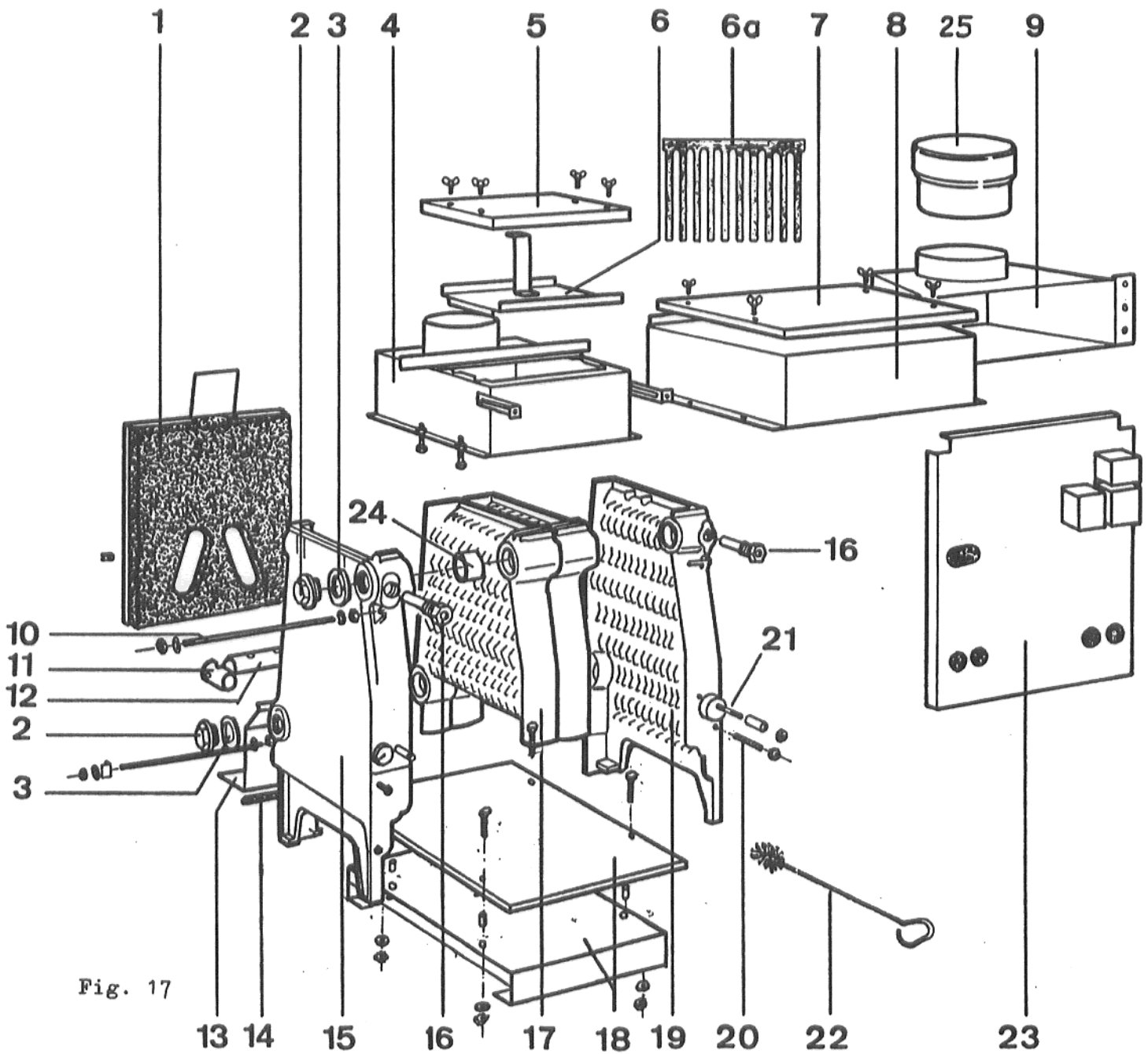


Fig. 17

PARTS LIST

- | | |
|--|---|
| <p>1 Rear Bulkhead 2 Plug 3 Gasket 4 Draft Hood for Boiler Size 10 up to 47 5 Draft Hood Cover for Boiler Size 10 up to 47 6 Baffle Plate (on all sizes except 39) 6a Baffle Fork (cast iron) - for size 15 only 7 Draft Hood Cover for Boiler Size 55 up to 110 8 Flue Collector for Boiler Size 55 up to 110 9 Draft Hood for Boiler Size 55 up to 110 10 Tie Bar 11 Connecting Piece for Inlet Water Distributing Pipe for Boiler Size 27 up to 110</p> | <p>12 Inlet Water Distributing Pipe for Boiler Size 27 up to 110 13 Shield Plate 14 Sealing Rope 15 Left End Section 16 Sensor Pocket 17 Middle Section 18 Non Combustible Base 19 Right End Section 20 Stud 21 Stud 22 Cleaning Brush 23 Front Bulkhead 24 Conical Nippel 25 Flue Adapter</p> |
|--|---|

ADDRESSES

IMPORTER:

CONTRACTOR:

MANUFACTURER: Buderus P.O. Box 1220 6330 Wetzlar
German Federal Republic

Edition: June 1986 925 866

Subject to modifications!