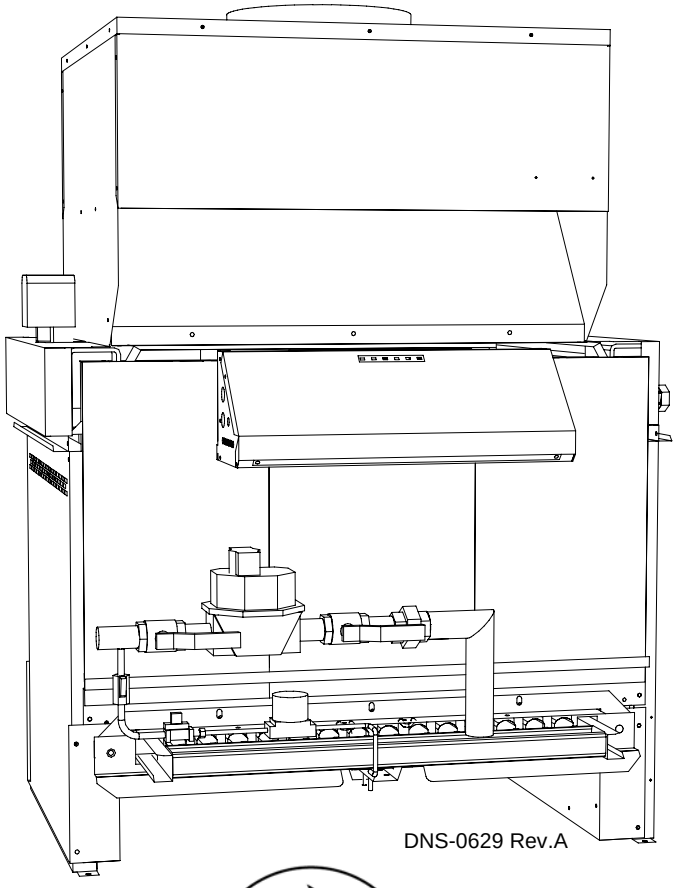
Installation Instructions and Homeowner's Manual



DNS-0629 Rev.A

Model:

HGC

GAS FIRED HOT WATER BOILER AND WATER HEATER

Save these instructions for future reference

Manufactured by:

UTC Canada Corporation
ICP DIVISION
3400 Industrial Boulevard
Sherbrooke, QC Canada
J1L 1V8

Caution : Do not tamper with the unit or its controls. Call a qualified service technician.

Printed in Canada 2006/03/15 X40036 Rev. C

PART 1
INSTALLATION

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE, COMBUSTIBLE OR CORROSIVE VAPOURS AND LIQUIDS IN THE VICINITY OF THIS APPLIANCE.

1) HGC LINE

HGC boilers and water heaters are natural or propane gas fired units and are available with inputs ranging from 404,000 BTU/h to 1,1515,000 BTU/h. The model designations are as follows:

FIGURE 1
HGC Series

HGC - 0000 - XX – X X X X

Aquastat :
N : Standard

Evacuation **:**
N : Chimney
V : SWV HGC-808 to HGC-1313

Relief valve :
1 : 150 Lbs (HGC-HW)
5 : 50 Lbs (HGC-AC)
9 : 90 Lbs (HGC-AC)

Ignition and gas type :
E : Electronic, natural
P : Constant, Propane (HGC-0404 to HGC-0909)
C : Constant, Natural

Heat exchanger :
AC : Steel
HW : Stainless steel

Capacity (Input) in thousands of BTU/h

0404	0505	0606
0707	0808	0909
1010	1111	1212
1313	1414	1515

Unit name :
HGC : Commercial Gas Hydronic

2) DESCRIPTIONS OF MAIN COMPONENTS

2.1) Heat exchanger

The heat exchanger consists of ten (10) integral copper finned tubes assembled between two (2) steel manifolds. A double pass system is used. Standard components used in conjunction with the exchanger include a temperature/pressure gauge, a safety valve, a temperature limiting device, a flow switch and a drain valve.

2.2) Gas train

The gas train consists of a removable burner tray assembly. Basically, the gas train incorporates a combination gas control (valve and pressure regulator), and a complete ignition system including a pilot.

2.3) Draft hood

All models use an integral type draft-hood that must be used without alteration.

2.4) Type of ignition

The HGC series is available with two types of ignition:

a. A constantly burning pilot;

b. An intermittent pilot, that functions on demand.

2.5) Modulation

The HGC series is equipped with a 2-stage gas valve that reduces the input by 50%. This staging is possible by using an external control (dry contact), provided by the installer.

2.6) Flow switch

All HGC boilers are equipped with a factory installed flow switch. This flow switch is located on the heat exchanger manifold and is factory wired.

WARNING

It is compulsory to have the flow switch functional at all times. If the flow switch is defective, it must be changed before attempting to restart the unit (never use a jumper to by-pass the flow switch contact). This may void your warranty.

If it is necessary to replace the flow switch, use the "Watts #FS10-C-SS" model. When replacing, the blade length varies depending on the unit capacity. Thus, for models **"HGC-0404 to HGC-0909" the blade must be 3 1/4" (82.6 mm) long from the holding screw center line to the blade end, while on models "HGC-1010 to HGC-1515" the blade must be 1 3/4" (44.5 mm) long.**

Note: Leave the blade already installed on the flow switch, add the necessary blade to reach the desired length or cut the blade if needed.

We recommend that you have a qualified technician install your appliance.

3) DELIVERY

Check your unit carefully upon delivery for any evidence of damage that may have occurred during shipping and handling. Make sure that the information on the boiler rating plate matches your needs and your invoice. Any claims against the shipper for damages or lost parts must be made without delay.

4) INSTALLATION

Your unit must be installed according to the regulations established by competent authorities. Consult the latest edition of the Installation codes CAN/CGA B149.1 or B149.2 for current guidelines.

4.1) Location

The unit must be installed in a clean and dry area, as close as possible to the chimney or power vent**.**

WARNING

Any excessive accumulation of dust around the boiler must not be tolerated, especially construction related dust such as dry plaster dust and insulation fibres.

Non observance of this Warning may cause the warranty to become null and void.

These particles of dust tend to be sucked in by the burners and clog them leading to possible severe soot formation.

WARNING

This unit must be installed on a non-combustible floor and cannot be installed directly on carpet or wooden floor.

4.2) Minimum clearances

The following clearances from combustible materials must be respected.

Top :	N/A
First side :	24"
Rear :	9"
Flue-pipe :	9"
Front :	N/A
Other side :	9”
Floor:	Non Combustible

5) COMBUSTION AIR SUPPLY

The space where the unit is located must provide sufficient fresh air for proper combustion. Consult the appropriate sections of the CAN/CGA B149 code for more details. When the unit is located in an enclosed area, such as a boiler room, where outside air cannot be supplied, two fresh air openings must be provided. One must be located 6" to 18" from the floor, the other as close as possible to the ceiling. Consult the CAN/CGAB149 codes.

WARNING

The unit must be completely isolated from corrosive chemical vapours and excessively moist air. FAILURE TO COMPLY WITH THIS CONDITION MAY RENDER YOUR WARRANTY NULL AND VOID. When a mechanical air supply device is used, the installer must make certain that no air movement is created around the unit. Furthermore, this mechanical device (fan, damper, etc.) must be electrically connected to the unit to lockout the latter in case of breakdown.

6) GAS SUPPLY AND PIPING

Gas piping must be installed in accordance with CAN/CGA B149 and local regulations. Table 1 gives the minimum pipe diameters for each model. Please note that the low pressure gas piping must never be smaller in diameter than the gas valve inlet. A manual cut-off valve must be installed as close as possible to the appliance

7) ELECTRICAL WIRING

All wiring must comply with regulations by local authorities and the “Canadian Electrical Code - CSA C22.1/ Part I”

The unit must be connected to a protected circuit of 15 Amps. with a single phase voltage of 120 VAC to 60 Hz. The installer must wire the unit according to the appropriate electrical diagram.

Consult the following figures for the appropriate electrical diagrams.

Figure 3.1 : Constantly burning pilot with 2-stage gas valve;
Figure 3.2 : Electronic ignition with 2-stage gas valve.

Please note that HGC boilers and water heaters require water circulation whenever the burners are on.

CAUTION

FAILURE TO CIRCULATE WATER THROUGH THE EXCHANGER WHEN THE BURNERS ARE OPERATING VOIDS THE WARRANTY.

The unit is equipped with a 120/24 VAC step down transformer for all internal needs. All 24 VAC connections are factory wired. A supplementary 120/24 VAC step down transformer shall be planned for if external equipment requires 24 VAC voltage (i.e. zone valves, etc.).

On all units the external terminals “1” and “2” are for the connection of a room thermostat or an operating control (aquastat, indoor-outdoor control, etc.). Simply putting a jumper on “1” and “2” and having the appliance run on its High Limit Control is inefficient and not recommended.

WARNING

If any of the original wires, as supplied with the appliance, must be replaced, they must be replaced with 16 gauge TEW (105ºC) wire or its equivalent.

TABLE 1
Suggested gas piping dimensions

Model	Distance from the unit gas regulator, in equivalent feet, for a pressure loss of less than 0.5" W.C.					
	0-25	25-50	50-100	100-200	200-300	300-500
HGC-0404	1 ¼"	1 ¼"	1 ½"	2"	2"	2"
HGC-0505	1 ¼"	1 ¼"	1 ½"	2"	2"	2"
HGC-0606	1 ¼"	1 ½"	2"	2"	2"	2 ½"
HGC-0707	1 ½"	1 ½"	2"	2"	2 ½"	2 ½"
HGC-0808	1 ½"	1 ½"	2"	2"	2 ½"	2 ½"
HGC-0909	1 ½"	2"	2"	2 ½"	2 ½"	3"
HGC-1010	1 ½"	2"	2"	2 ½"	2 ½"	3"
HGC-1111	2"	2"	2 ½"	2 ½"	3"	3"
HGC-1212	2"	2"	2 ½"	2 ½"	3"	3"
HGC-1313	2"	2"	2 ½"	3"	3"	3"
HGC-1414	2"	2"	2 ½"	3"	3"	3"
HGC-1515	2"	2"	2 ½"	3"	3"	4"

The front of the control panel is equipped with indicator lights. The function of each light (from left to right) is as follows:

a. L1 : GREEN - Call for heat on the unit. A call for heat is defined by continuity between terminals "1" and "2".

b. L2 : RED - Lack of water circulation in the heat exchanger. The flow switch contact is open.

c. L3 : RED - The water temperature in the heat exchanger is too high. The High Limit Control contact is open.

d. L4 : RED - No flame. There is no voltage between the main gas valve terminals, even if there is a call for heat (L1 on).

e. L5 : GREEN - The main gas valve is operating (low or high fire).

f. L6 : GREEN - The main gas valve is operating on the second stage (high fire).

8) WATER PIPING

8.1) Overview

A pressure regulator must be installed on the water feed line to the unit and adjusted to a pressure lower than the unit safety valve setting. The system must be equipped with a circulating pump, expansion tank, air vents and maintenance valves as indicated in Figures 3.3 to 3.6 (depending on the system). The installation of a by-pass between the return and supply pipes is good plumbing practice and ensures a good return temperature in the heat exchanger.

8.2) Variable volume water system:

Heating systems incorporating zone valves, zone circulators or 3-way mixing valves, operate with reduced water circulation through the unit. Therefore, the installation must be planned for a minimum required circulation of water through the unit. A water flow lower than the minimum threshold could result in a significant water temperature elevation and provoke knocking noises, vibration and short cycling. All these conditions are unstable and damaging to the appliance. Size your circulating pump so that there will always be a minimum flow of water through the unit, as recommended in Table 3. If short cycling persists, the use of the second stage of the main gas valve (2-stage gas valve is standard equipment) should be considered.

8.3) Special note concerning low temperature systems

For proper operation and to prevent condensation on the external surfaces of the heat exchanger, the return temperature of your HGC unit must always exceed 100°F. A transition period below that temperature is acceptable, but a permanent return temperature below 100°F voids your warranty.

8.4) Use of glycol as thermal fluid

It is permissible to use a mixture of water and glycol as thermal fluid in the heat exchanger of the boiler. The proportion of glycol in the mixture must not exceed 50%.

9) DRAFT HOOD

The draft hood shipped with your HGC unit must be installed without any modifications and fastened to the collar of the appliance with the help of metal screws.

10) VENTING

10.1) Chimney

WARNING

An inadequate chimney can result in an improper unit operation.

The chimney must have sufficient draft to ensure normal, safe operation of the appliance. Consult the installation code CAN/CGA B149. Also, the installation must conform to regulations of authorities having jurisdiction.

PART 2
OPERATION

1) FUEL

Use only natural gas or propane gas. Never use any other type of gas.

2) STARTING UP YOUR SYSTEM

2.1) Filling your system with water

All existing piping must be drained and cleaned with fresh water before filling the new HGC unit.

1. Close all manual air vents and open the cold water feed valve to fill the system slowly.
2. Purge the air from the system by letting the circulating pump run. Check for proper operation of the automatic air vents and manually actuate the manual air vents.
3. Check the water level in the expansion tank. It should be one quarter full.
4. Check the system pressure and adjust the pressure regulator as needed.
5. Check the system for leaks after the unit has reached normal operation temperature.

2.2) Lighting the pilot

WARNING

On all types of ignition, wait a minimum of 5 minutes before attempting to relight the pilot.

2.2.1) Constantly burning pilot

1. Press down the “pilot stat” control button and light the pilot with a match.
2. Hold down the button for 30 seconds to help purge air from the pilot gas line.
3. Release the button.
4. The pilot should stay lit. If not, check the thermocouple and its connection to the pilot stat control,
5. The pilot flame should envelop the thermocouple. If it does not, adjust the flame by turning the screw on the pilot regulator located on the pilot gas line.

2.2.2) Intermittent pilot

This system activates the pilot upon demand. You do not have to manually light the pilot.

2.3) Lighting the main burners

WARNING
On all types of ignition, wait a minimum of 5 minutes before attempting to relight the pilot.

Simulate a demand by jumping terminals “1” and “2” located on the exterior of the unit control panel. On all types of ignitions, the ignition should be smooth without flame roll-out or orifice burning.

2.4) Verifications and adjustments

Once the main burners are in operation the following points must be checked:

2.4.1) Manifold pressure

Install a pressure gauge downstream from the gas valve in the pressure tap provided on the vertical section of the gas train pipe. The pressure observed after five (5) minutes of operation should correspond to the value specified on Table 2. If you have to adjust the pressure, do so by turning the main setting screw on the gas valve

TABLE 2
Manifold pressure

Model	Options	Pressure ("W.C.)	
		Natural	Propane
HGC-0404 to HGC-1515	CS, ES	Minimum : 1.0 Maximum : 3.2	Minimum : 2.5 Maximum : 10.5 (HGC-0404 to HGC-0909 only)

2.4.2) Pilot control safety checks

Constantly burning pilot

1. Cut the gas supply by closing the firing valve upstream of the main gas valve.
2. The valve must close within 90 seconds. You should hear a “CLICK” sound.

Intermittent pilot

1. Cut the gas supply by closing the firing valve upstream of the main gas valve.
2. The control circuit should close the valve within 1 second.

2.4.3) Temperature control limit check

Adjust the temperature control limit below the present water temperature. The gas supply to the burners should stop immediately. Set the control for a higher temperature and the burners should come on again.

2.4.4) 2 stage modulation gas valve

With the boiler running, turn the setting of the control that causes the 2nd stage to open the circuit. The gas flow to the burners should decrease on the contact opening.

2.4.5) Gas leaks

Check the whole system for gas leaks after the installation is completed. Use a solution of soap and water on the pipe joints.

DANGER

If there is a strong smell of gas due to a major leak:

1. Open the windows,
2. Do not activate any electrical switches,
3. Extinguish all flames,
4. Immediately call your gas supplier from another building.

PART 3
MAINTENANCE

Your boiler should be inspected once a year by a qualified technician.

The following points require particular attention:

1.1) Heat exchanger

The heat exchanger should be checked for soot deposits. If necessary, follow the procedures below to clean the heat exchanger. Consult Figure 2.

1. Remove the burner tray to prevent the soot from falling on the burners;
2. Remove the connecting flue-pipe and the draft hood;
3. Remove the "V" shaped baffles on the heat exchanger;
4. Clean the tubes with a suitable brush;
5. Vacuum the debris at the bottom of the unit;
6. Reinstall the parts.

1.2) Drawer assembly (burner tray)

Your HGC boiler is equipped with a burner tray to allow you to remove the burners and manifold without dismantling the appliance. To remove the burner tray, disconnect the union on the gas piping and disconnect the wiring harness. Pull out the tray.

1.3) Combustion chamber

While the burner tray and the draft hood are removed, use a light to thoroughly check the condition of the combustion chamber and repair if needed.

1.4) Flue-pipe and connecting pipe

Inspect and clean if necessary.

1.5) Miscellaneous

a. If a mechanical fresh air intake device is used, check if it is functioning properly.

b. Inspect the circulating pump and lubricate if necessary.

c. Test the high temperature limit control and the operation controls.

d. Test the safety valve.

PART 4
INFORMATION

Model: _____ Serial number: _____

Date of installation of the boiler: _____

Service telephones – day: _____ Night: _____

Dealer's name and address: _____

_____

_____

RESULT OF START-UP TEST

Gas inlet pressure: _____ "W.C.

Gas outlet pressure: _____ "W.C.

Heat exchanger water inlet temperature: _____ °F or °C

Heat exchanger water outlet temperature: _____ °F or °C

Water pressure of distribution system: _____ Psi

Hi-limit temperature adjustment: _____ °F or °C

Test performed by: _____

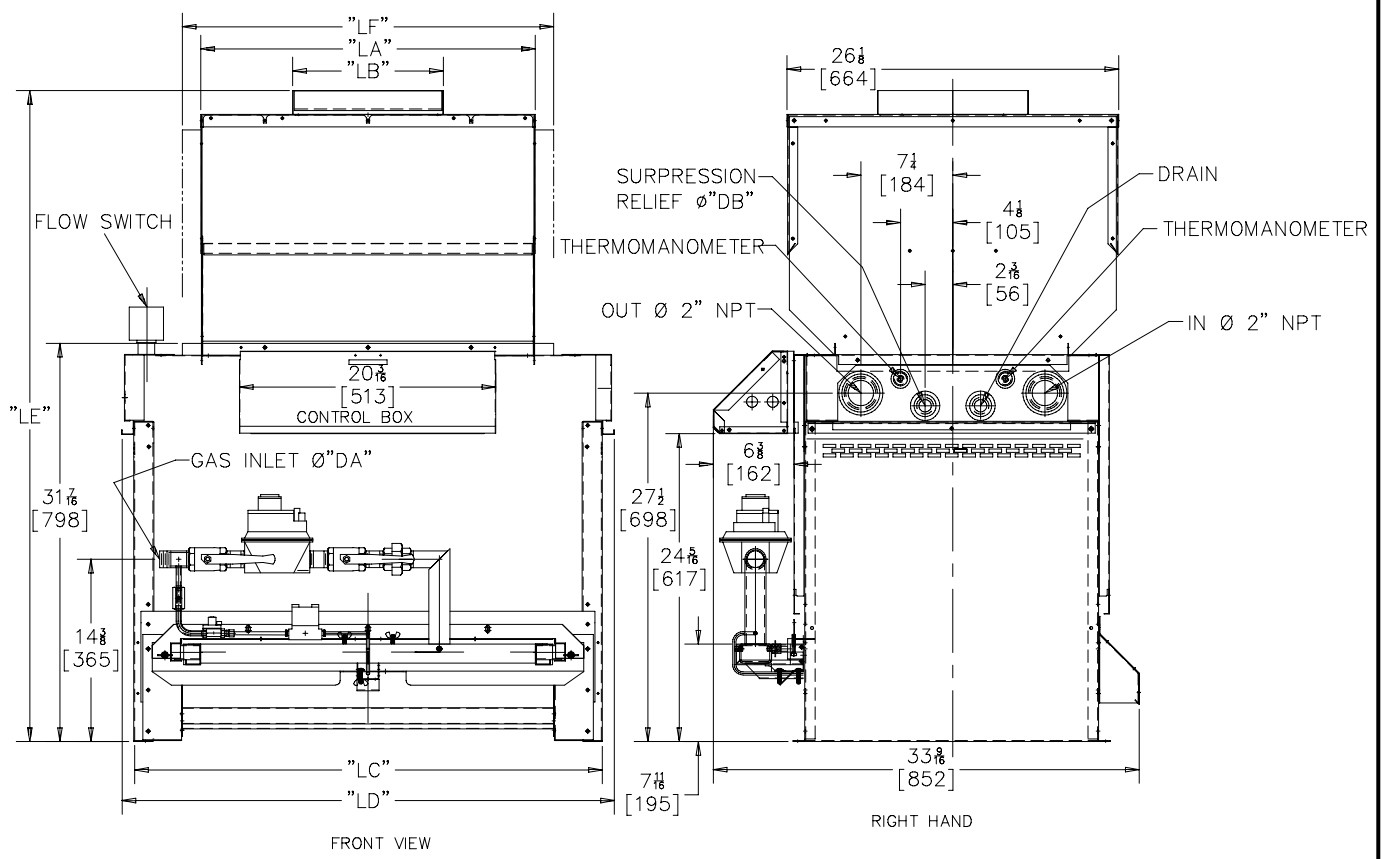
FIGURE 2
Technical specifications

Model	Input (BTU/h)	Minimum Input (BTU/h)	Output (BTU/h)	USGPM at 20°F Delta T	Pressure drop (ft of water)	Recovery rate USGPH Delta T - 100°F
HGC-0404	404,000	202,000	323,200	32.4	1	378
HGC-0505	505,000	250,000	404,000	40.6	1	472
HGC-0606	606,000	300,000	484,800	48.7	1	567
HGC-0707	707,000	350,000	565,600	56.8	1	661
HGC-0808	808,000	400,000	646,400	64.9	1.1	755
HGC-0909	909,000	450,000	727,200	73.0	1.3	850
HGC-1010	1,010,000	500,000	808,000	81.1	1.5	944
HGC-1111	1,111,000	550,000	888,800	89.2	1.7	1039
HGC-1212	1,212,000	600,000	969,600	97.3	2.3	1133
HGC-1313	1,313,000	650,000	1,050,400	105.5	3.1	1228
HGC-1414	1,414,000	700,000	1,131,200	113.6	3.2	1322

Notes : - The capacities are identical for natural and propane gas.

- Propane gas is offered only with a constantly burning pilot (CS) and it is available on models “HGC-0404” to ”HGC- 0909” inclusively.

FIGURE 2

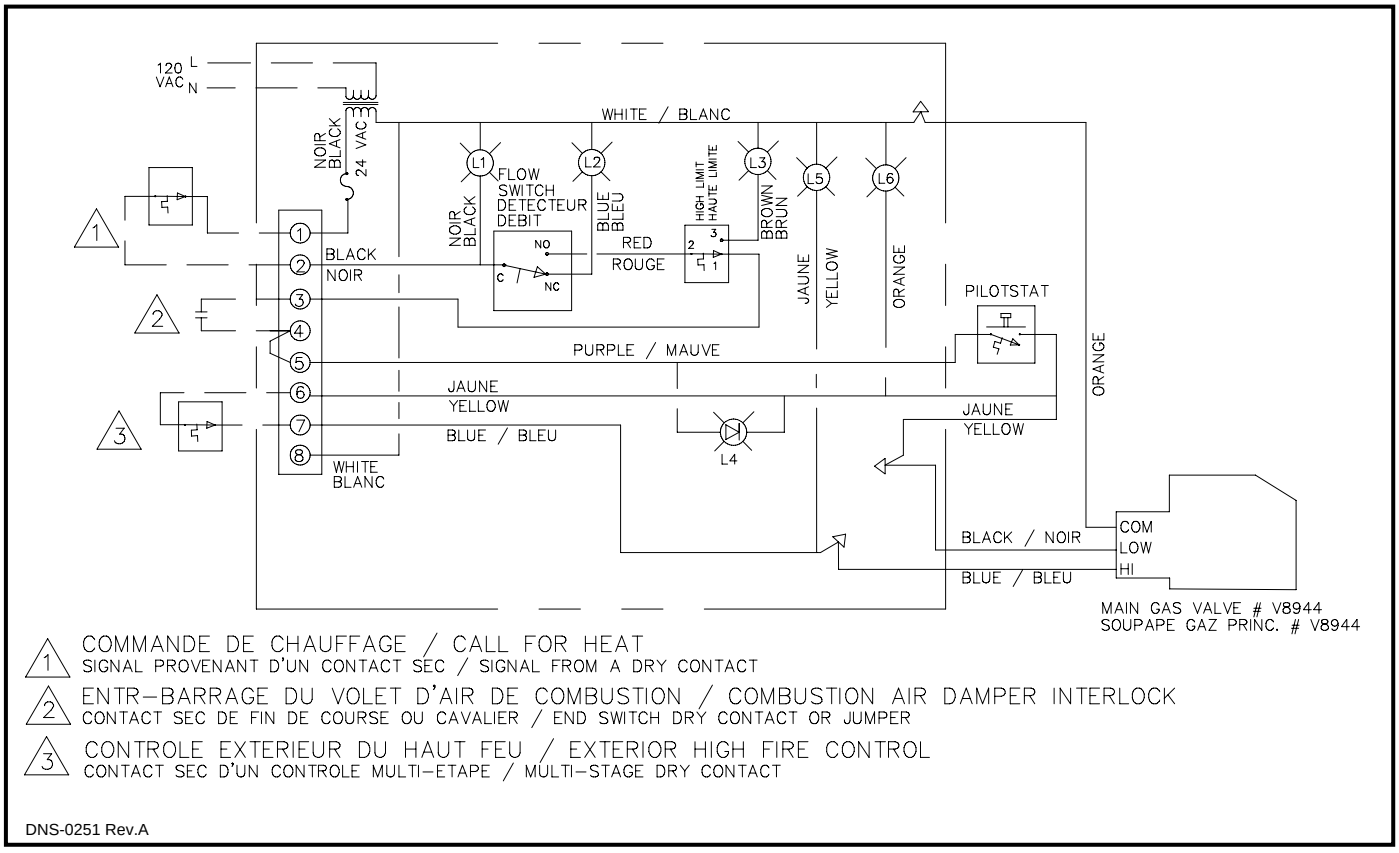


Model	"LA"		"LB"		"LC"		"LD"		"LE"		"LF"		"DA"	**"DB"	
HGC-(HW)	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	mm	In.	50	90
404	19.00	483	10	254	25.50	648	27.50	699	51.50	1308	19.00	483	1.00	3/4	3/4
505	22.50	572	10	254	30.00	762	31.50	800	51.50	1308	22.50	572	1.00	3/4	3/4
606	26.50	673	12	305	33.50	851	35.00	889	51.50	1308	26.50	673	1.00	3/4	3/4
707	30.00	762	12	305	37.00	940	39.00	991	51.50	1308	30.00	762	1.00	3/4	3/4
808	34.00	864	14	356	40.50	1029	42.50	1080	51.50	1308	34.00	864	1.00	3/4 x 1	3/4
909	34.00	864	14	356	44.50	1130	46.50	1181	59.50	1511	37.50	953	1.00	3/4 x 1	3/4
1010	41.50	1054	16	406	48.50	1232	50.00	1270	59.50	1511	41.00	1041	1.25	1x1 1/4	3/4
1111	41.50	1054	16	406	52.00	1321	54.00	1372	59.50	1511	45.00	1143	1.25	1x1 1/4	3/4
1212	41.50	1054	16	406	56.00	1422	57.50	1461	59.50	1511	49.00	1245	1.25	1x1 1/4	1x1
1313	52.50	1334	18	457	59.50	1511	61.50	1562	59.50	1511	52.50	1334	1.25	1x1 1/4	1x1
1414	52.50	1334	18	457	63.50	1613	65.00	1651	59.50	1511	56.00	1422	1.25	1x1 1/4	1x1
1515	52.50	1334	18	457	67.00	1702	69.00	1753	59.50	1511	60.00	1524	1.25	1x1 1/4	1x1

** "DB" -**Boiler** safety valve diameter, operating at 50 Psi or 90 Psi.

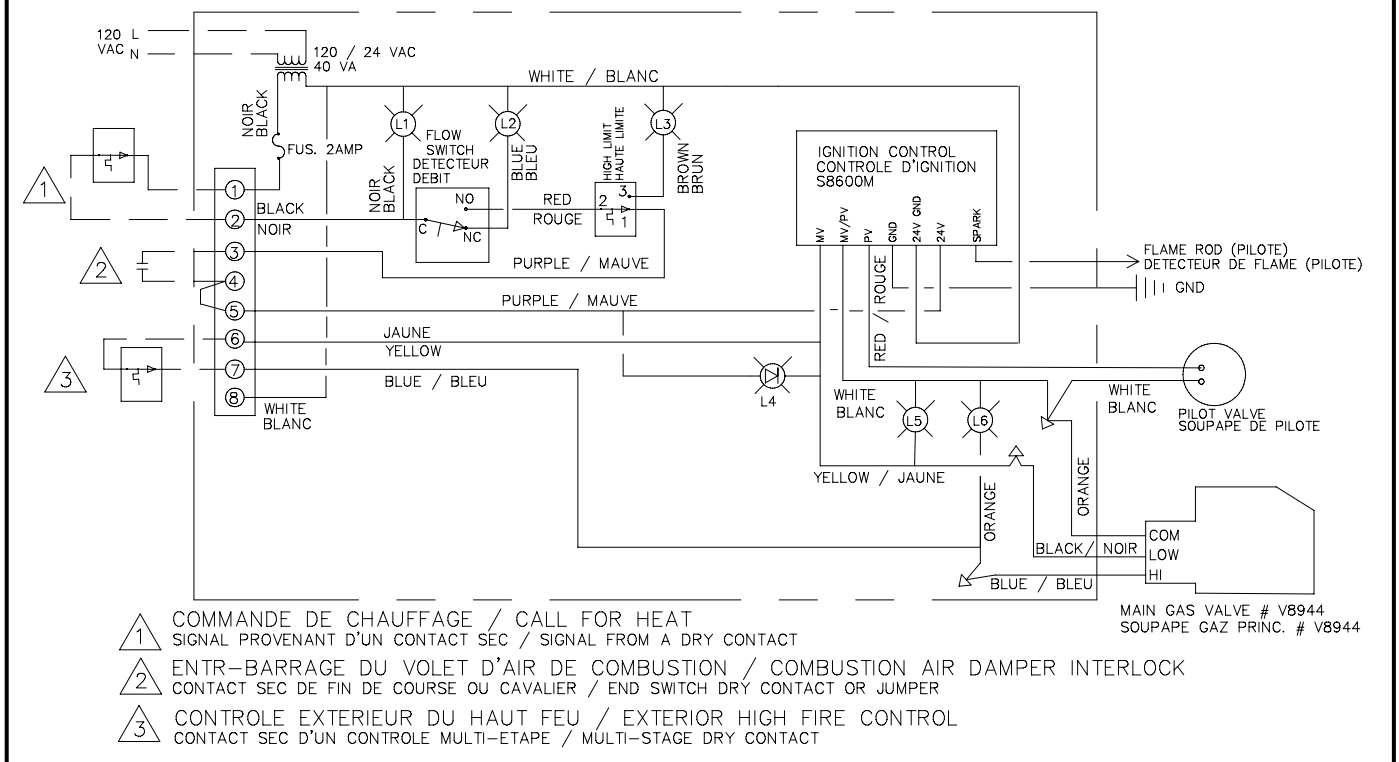
-Water Heater safety valve diameter, operating at 150 Psi = 3/4 in. X 3/4 in., on all models.

FIGURE 3.1
HGC 0404 to 0909 constant pilot with natural venting



DNS-0251 Rev.A

FIGURE 3.2
HGC 0404 to 1515 electronic pilot with natural venting



DNS-0252 Rev. A

FIGURE 3.3
Electrical wiring, electronic ignition and sidewall vent (HGC 0404 to HGC 0707)

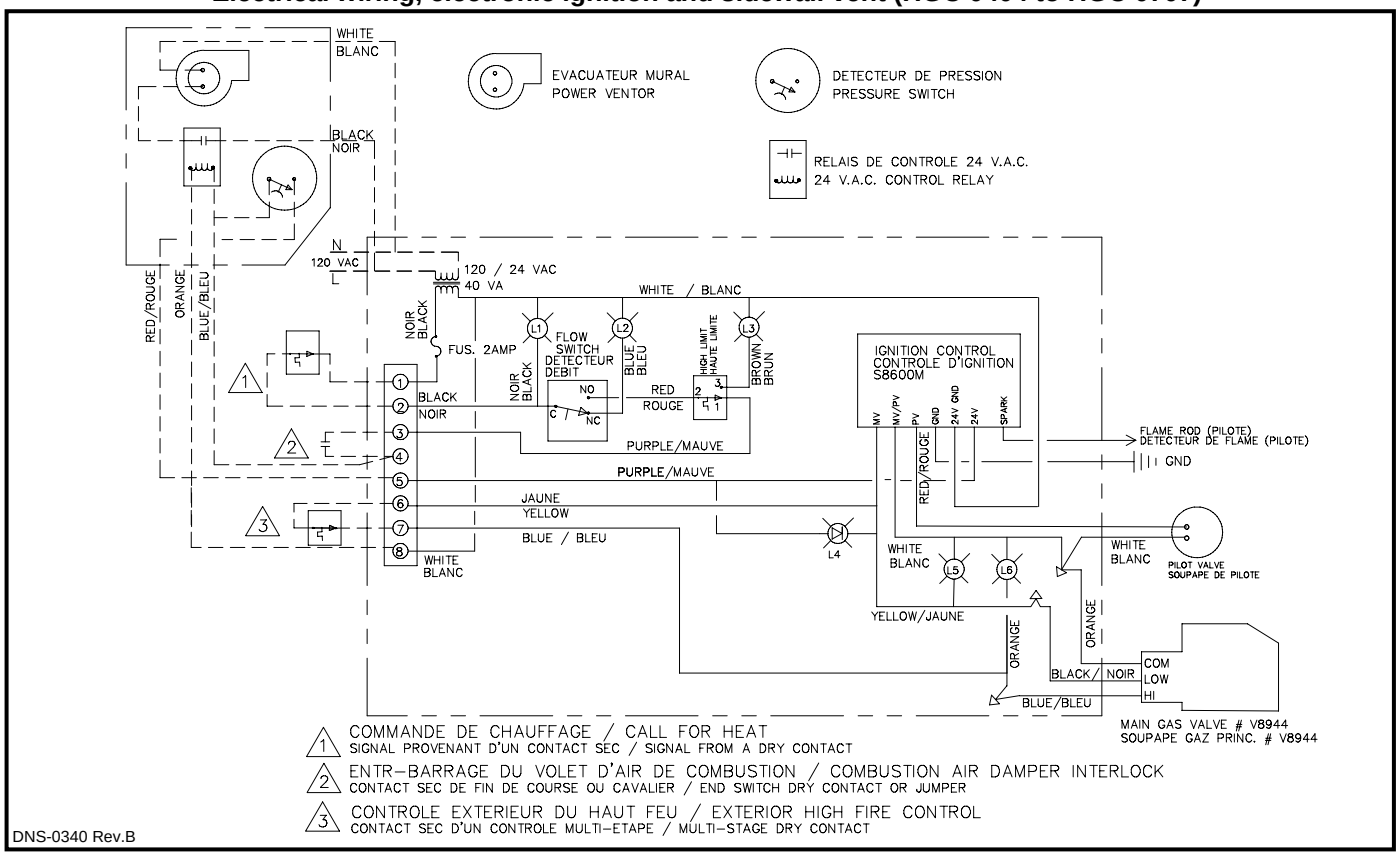


FIGURE 3.4
Electrical wiring, electronic ignition and sidewall vent (HGC 0808 to HGC 1313)

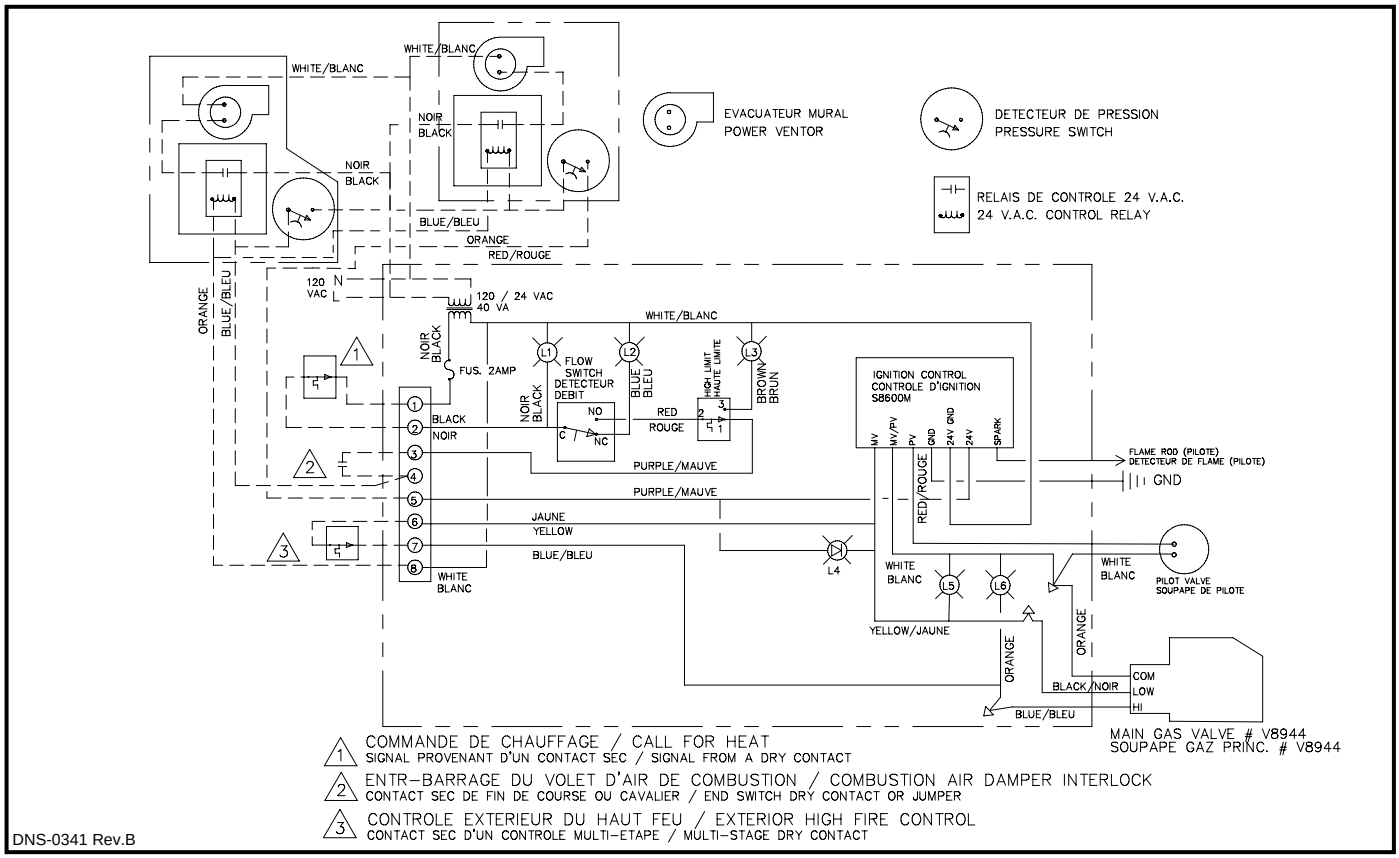


FIGURE 3.5
Electrical wiring, constant pilot and sidewall vent (HGC 0404 to HGC 0707)

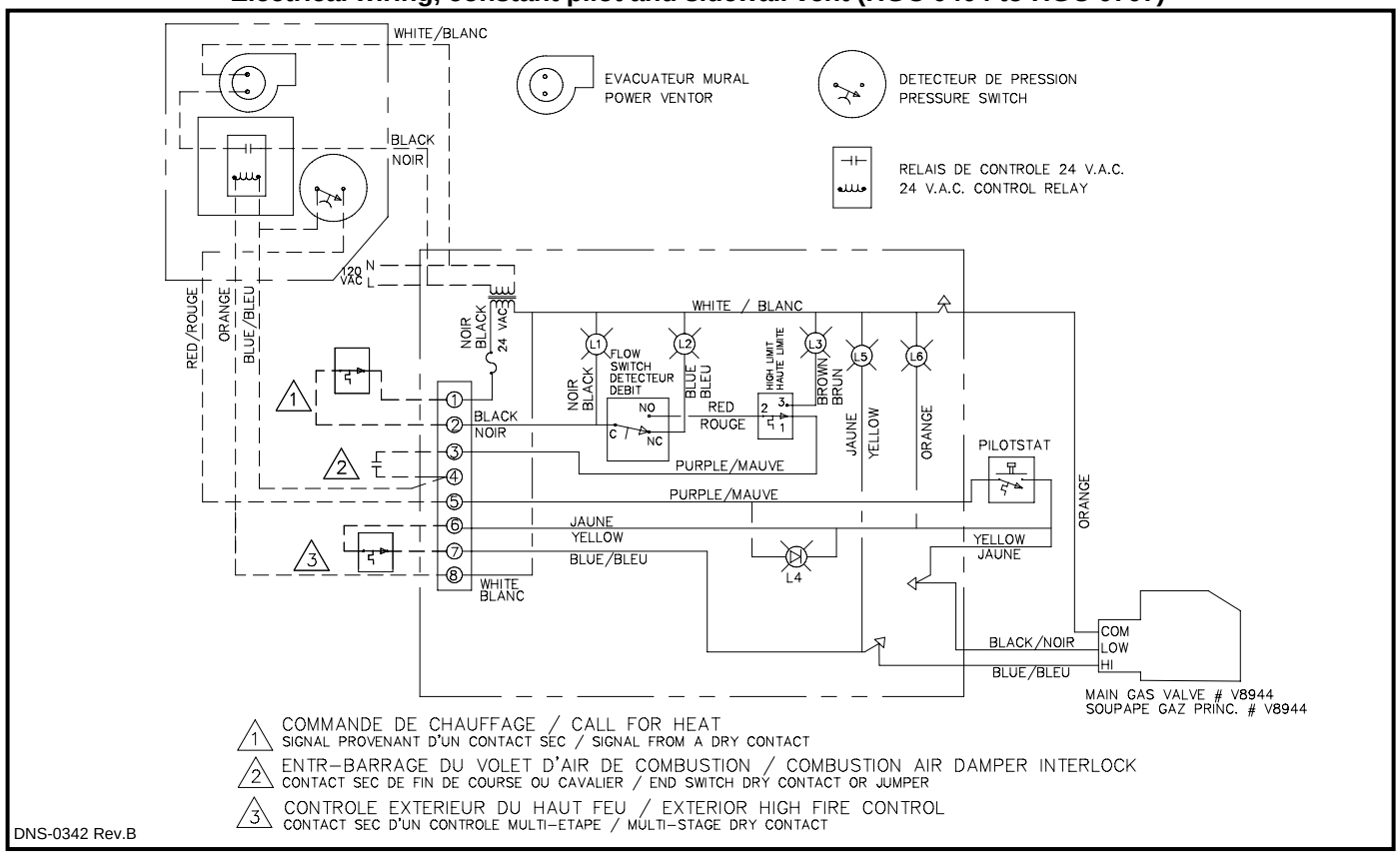


FIGURE 3.6
Electrical wiring, constant pilot and sidewall vent (HGC 0808 to HGC 1313)

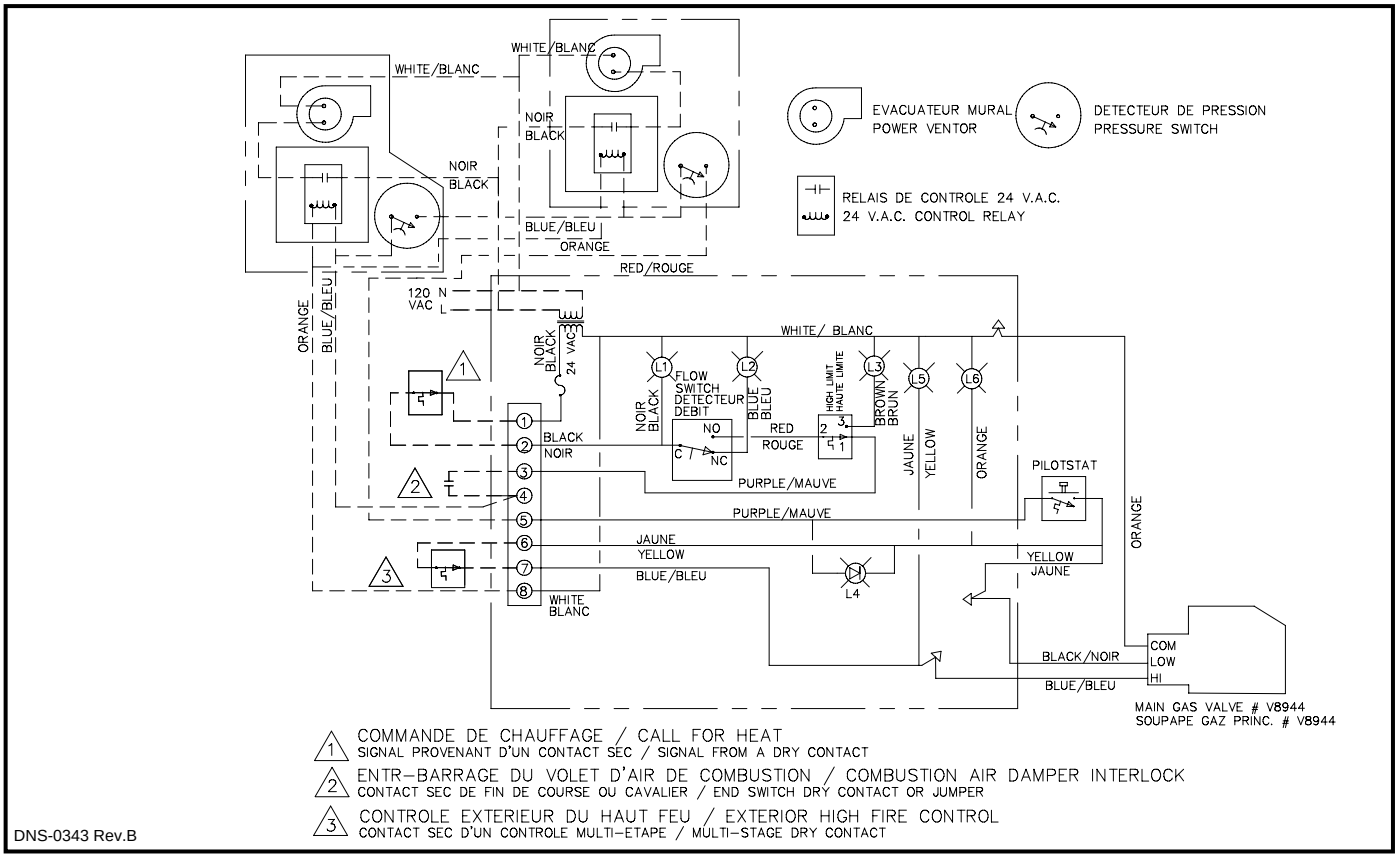


FIGURE 3.7
Typical primary - secondary piping system

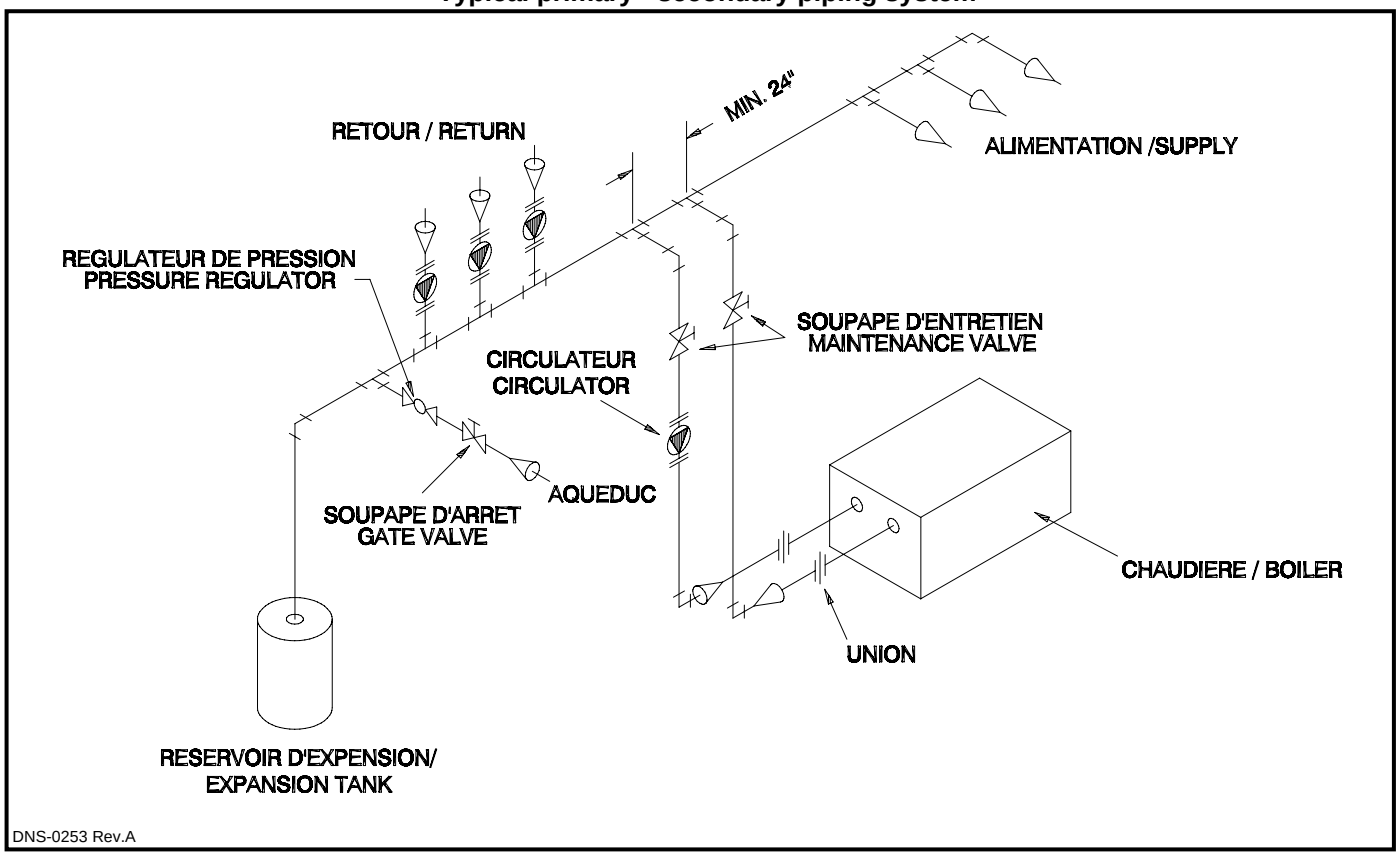


FIGURE 3.8
Typical primary - secondary piping system with by-pass

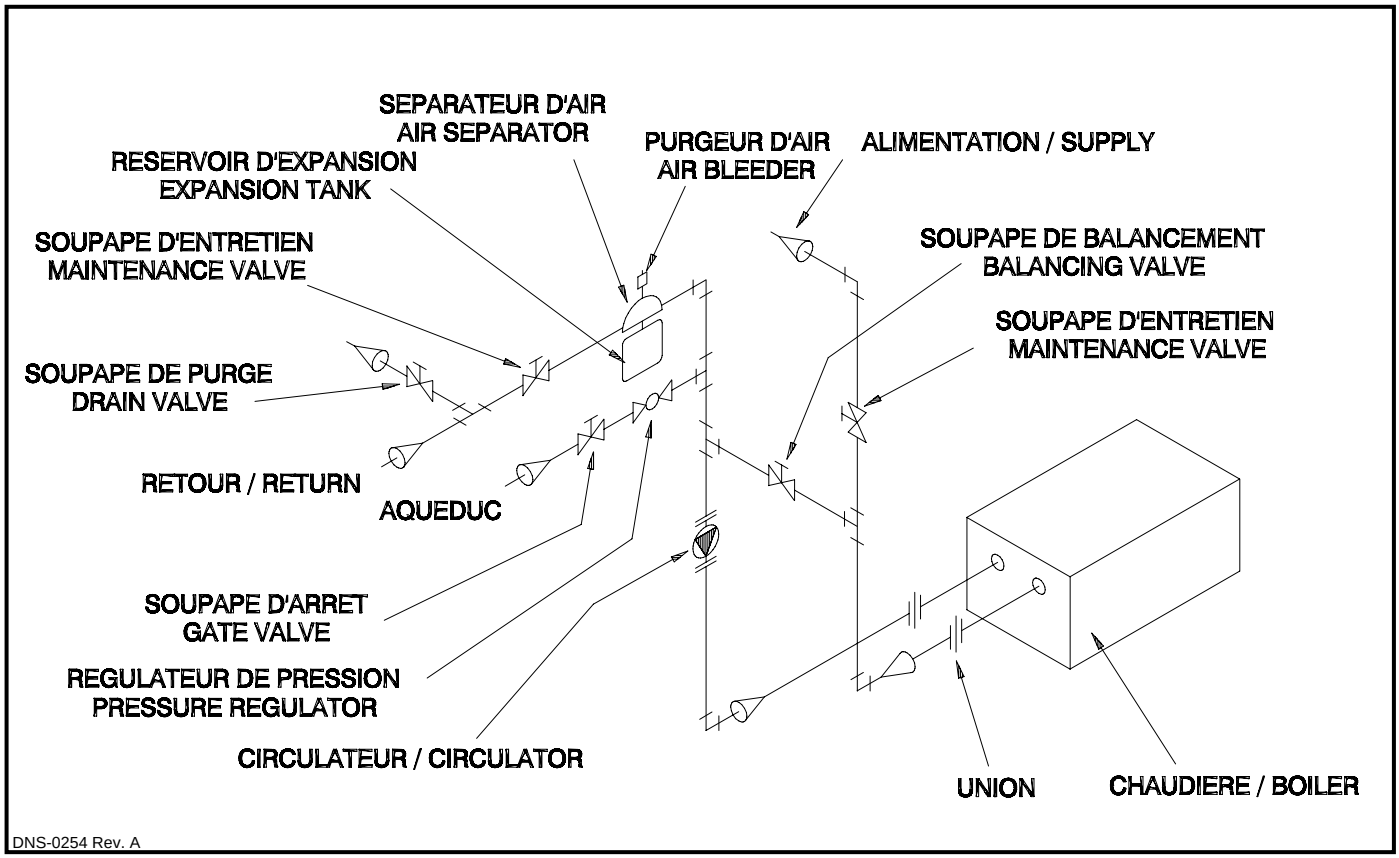


FIGURE 3.9
Typical 3 way valve piping system

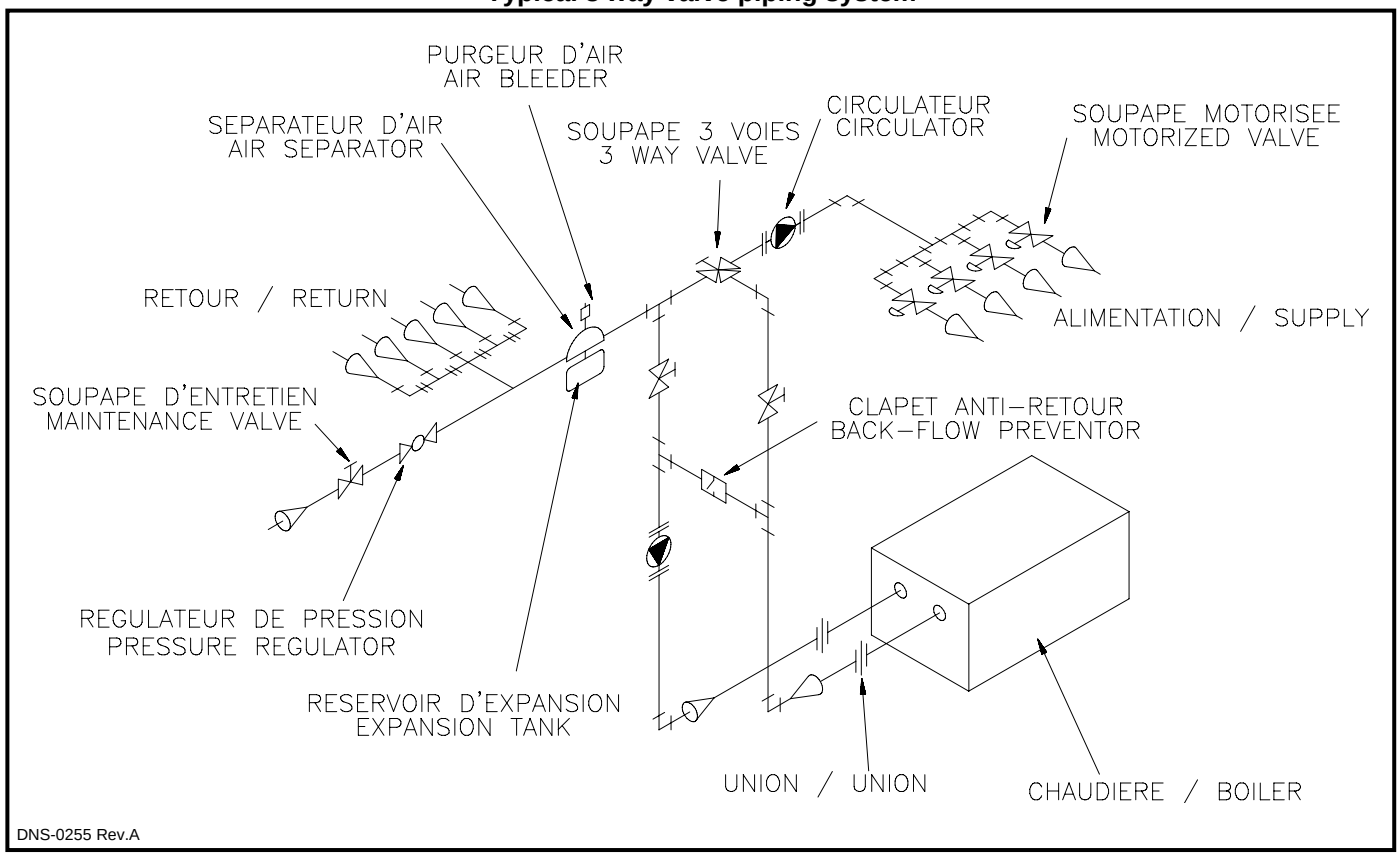
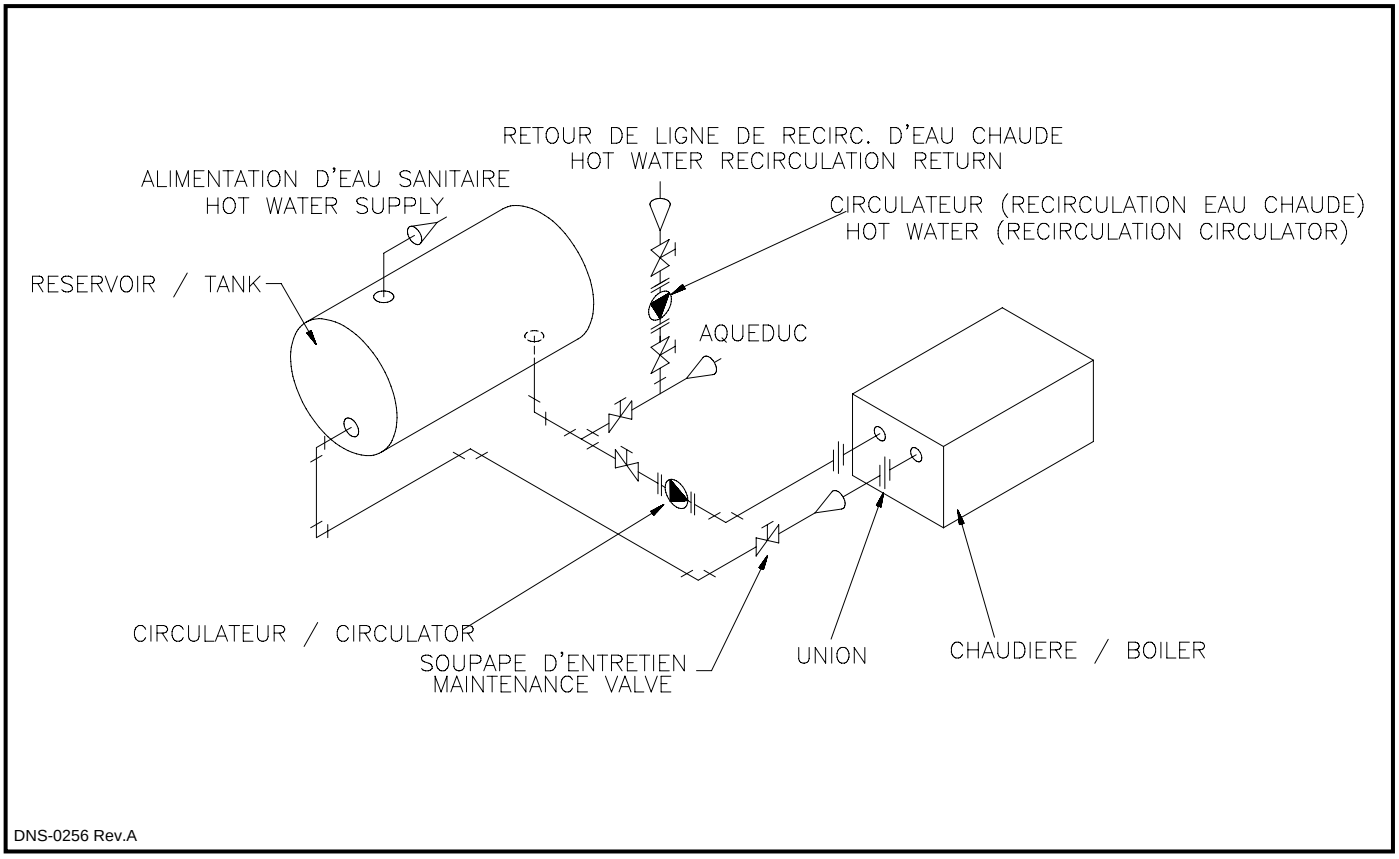
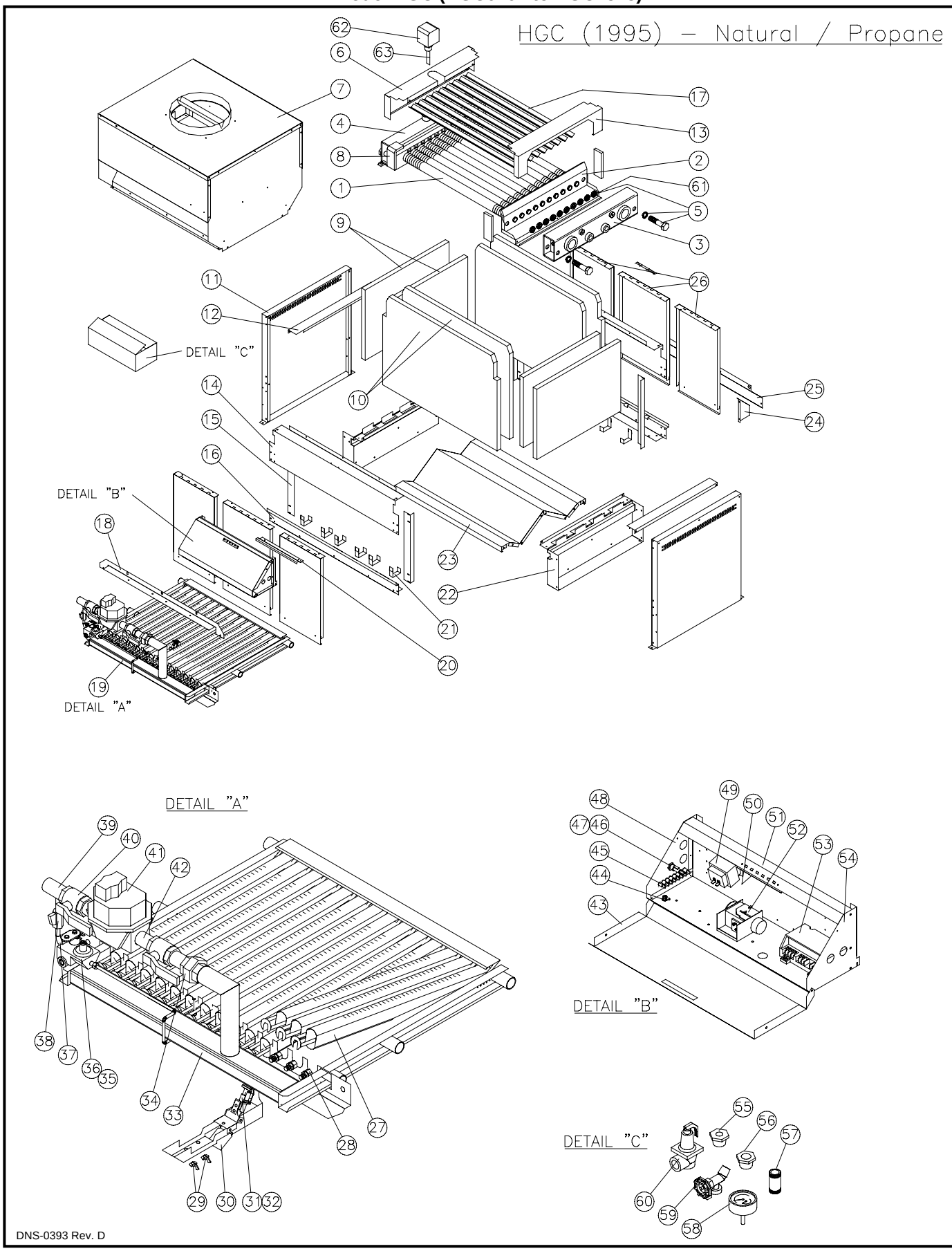


FIGURE 3.10
Typical domestic hot water production piping system



PARTS LIST

Model HGC (HGC0404 to HGC1515)



DNS-0393 Rev. D

PARTS LIST

Model HGC (HGC0404 to HGC1515)

ITEM	DESCRIPTION	NUMBER	COMMENTS
1A	Heat Exchanger	B01562-XX	For Hydronic Heating only
1B	Heat Exchanger	B01563-XX	For Domestic Hot Water only
2	Support Plates Kit	K15001-XX	
3A	Inlet-Outlet Header	K15002-01	HGC - Heating (AC)
3B	Inlet-Outlet Header	K15002-02	HGC - Hot Water (HW)
4A	Intermediate Header	K15003-01	HGC - Heating (AC)
4B	Intermediate Header	K15003-02	HGC - Hot Water (HW)
5	Header gasket Kit	K15004	Bolts, Nuts & Gaskets for 2 Headers
6	Header outside panel (Left)	B01609	
7	Complete Assembled Draft-Hood	B01550-XX	
8	Heat Exchanger corners Insulation Kit	K15005	Includes 4 pieces
9	Combustion Chamber Ceramic Insulation Kit	K15006	Includes all parts for 2 sides
10	Combustion Chamber Ceramic Insulation Kit	K15007-XX	Includes all Front & Rear Panels
11	Exterior Side Panel	B01589	
12	Combustion Chamber Support	B01582	
13	Header outside panel (Right)	B01608	
14	Combustion Chamber Front & Rear Top Support	B01584-XX	By Unit
15	Combustion Chamber Corner angle	B01585	By Unit
16	Comb. Chamber Front & Rear Bottom Support	B01583-XX	By Unit
17	Heat Exchanger Baffles Kit	K15008-XX	
18	Front superior Burner Plate	B01594-XX	
→ 19A	Complete Gas Train	B01621-01TO 06	CS Models - With Pilot & Valves - Natural Gas
→ 19B	Complete Gas Train	B01621-07 TO 12	CS Models - With Pilot & Valves - Propane Gas
→ 19C	Complete Gas Train	B01617-XX	ES Models - With Pilot & Valves
20	Well Protector	B01624	HGC-1212 and up
21	Insulation supports Kit	K15012	Kit of 20
22	Combustion Chamber Interior Side Panel	B01592	By Unit
23	Floor	B01603-XX	
24	Rear Inlet Air Side panels Kit	K15013	Left and Right Side
25	Rear Inlet Air Panel	B01598-XX	
26	Front & Rear panels Kit	K15014-XX	For 1 Front OR Rear Kit
27	HGC Burner	B00043-01	By Unit
28A	Orifice	B01239-01	By Unit - Propane Gas
28B	Orifice	B01239-02	By Unit - Natural Gas
29	Wing Nuts Kit	K15015	Kit of 20
30	Pilot Drawer Kit	K15016	includes the Air Baffle
31A	Constant Pilot	R03G003	CS Models
31B	Electronic Pilot	R03H006	ES Models
31C	.010" Propane Insertion orifice	R04G001	CS Models - Propane Only
32A	30" Thermocouple	R02K002	CS Models
32B	36" Ignition Cable	R03Z010	ES Models
33	Manifold Assembly	B01618-XX	Without Valves and Controls
34A	1" Union	G10F002	HGC-0909 and lower
34B	1 1/4" Union	G10F003	HGC-1010 and up
35	Pilotstat	R03F001-1	CS Models
36	Pilot Solenoid Valve	R01Z008	ES Models
37	Pilot line	K15017	
38	Pilot manual shut-off Valve	G11H004	
39A	Pilot Nipple	B01619-01	HGC-0909 and lower
39B	Pilot Nipple	B01619-02	HGC-1010 and up
40A	1" Main manual shut-off Valve	G11H001-2	HGC-0909 and lower
40B	1 1/4" Main manual shut-off Valve	G11H002-2	HGC-1010 and up
41A	1" Main valve	R01G003	HGC-0909 and lower - CS & ES Natural
41B	1 1/4" Main valve	R01G009	HGC-1010 and up - ES Natural
41C	1" Main valve	R01G010	HGC-0909 and lower - CS Propane
42A	1" X 2 1/2" Nipple	G01K003	HGC-0909 and lower - By Unit
42B	1 1/4" X 2 1/2" Nipple	G01L001	HGC-1010 and up - By Units
43	Electrical Box Cover	K15018	Complete with Label
44	Ground Kit	K01012	
45	8 positions BUCK style Terminal Strip	L05F003-1	

PARTS LIST

Model HGC (HGC0404 to HGC1515)

ITEM	DESCRIPTION	NUMBER	COMMENTS
46	3A Fuse time-delay	L01G008	
47	Complete Fuse-Holder	L02G001-1	
48	Electrical Box Side Panel	B01356-02	Left Side
49	40VA Transformer	L01F003-2	
50	L.E.D. Electrical Card	B01613	
51	Electrical Box	B01601	
52	Single Aquastat	R02F012	
53	Electronic Ignition Control	R03I005	ES Models only
54	Electrical Box Side Panel	B01356-01	Right Side
55	1 X 1/2 Hexagonal Bushing	G08F004	For Drain valve
56	1 X 3/4 Hexagonal Bushing	G08F005	For Relief valve (Certain models only)
57	3/4" X 2" Nipple	G01J002	For Relief valve (Certain models only)
58A	0-60 PSI Tridicator	R02L001	HGC - Heating (AC)
58B	0-250 PS Tridicator	R02L003	HGC - Hot Water (HW)
59	1/2" Drain Valve	G11Z001-1	
60A	50# 3/4 X 3/4 Relief Valve	G11F021	HGC - 0404 to -0707 Heating (AC)
60B	50# 3/4 X 1 Relief Valve	G11F022	Models HGC-0808 & HGC-0909 Heating (AC)
60C	50# 1 X 1-1/4 Relief Valve	G11F023	Models HGC-1010 & more Heating (AC)
60D	150# 3/4 X 3/4 Relief Valve	G11F011	All Hot water (HW) models
60E	90# 3/4 X 3/4 Relief Valve	G11F009	HGC-0404 to -1111
60F	90# 3/4 X 1 Relief Valve	G11F010	HGC-1212 to -1515
61	Gasket	A00004	By Unit
62	Flow Switch	B00739-YY	YY= for 0404 to 0909, YY=02 for 1010 to 1515
63	Flow Switch paddle	B01931-02	

TABLE OF VARIABLES

When the part number changes depending of the size of the furnace, complete the code (in the column “NUMBER”) by changing the X with the number corresponding in the following table.

Model	XX	Model	XX	Model	XX
HGC-0404	1	HGC-0808	5	HGC-1212	9
HGC-0505	2	HGC-0909	6	HGC-1313	10
HGC-0606	3	HGC-1010	7	HGC-1414	11
HGC-0707	4	HGC-1111	8	HGC-1515	12