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Valparaiso, IN 46383
888-432-8924 • Fax 219-462-7985
www.heatwagon.com

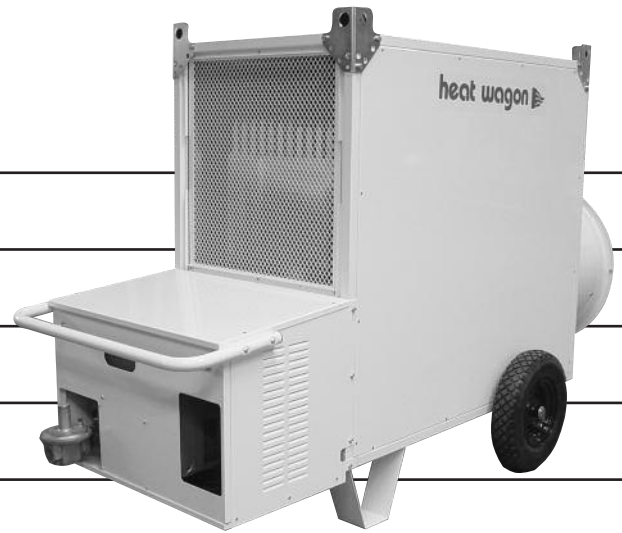
Installation and Maintenance Manual

Please retain this manual for future reference.

VF/VG700C

VF/VG900C

Construction Heater



CAUTION: Do not use this heater in a space where gasoline or other liquids having flammable vapors are stored.

CONSTRUCTION HEATER GENERAL HAZARD WARNING:

Failure to comply with the precautions and instructions provided with this heater, can result in death, serious bodily injury and property loss or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/or electrical shock.

Only persons who can understand and follow the instructions should use or service this heater.

If you need assistance or heater information such as an instruction manual, labels, etc., contact your local Heat Wagon dealer or the manufacturer.

W A R N I N G

Fire, burn, inhalation, and explosion hazard. Keep solid combustibles, such as building materials, paper or cardboard, a safe distance away from the heater as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles, or products such as gasoline, solvents, paint thinner, dust particles or unknown chemicals.

Not for home or recreational vehicle use!
Heater is not intended for use in pest remediation.

WARRANTY

All new Heat Wagon and Sure Flame heaters and fans are guaranteed against defective materials and workmanship for one (1) year from invoice date.

Warranty repairs may be made only by an authorized, trained and certified Heat Wagon dealer. Warranty repairs by other entities will not be considered. Warranty claims must include model number and serial number.

LIMITATIONS

Warranty claims for service parts (wear parts) such as spark plugs, igniters, flame rods will not be allowed. Diagnostic parts such as voltage meters and pressure gauges are not warrantable.

Evidence of improper fuel usage, fuel pressures outside of manufacturer's specification, poor fuel quality, and improper electric power, misapplication or evidence of abuse may be cause for rejection of warranty claims.

Travel time, mileage and shipping charges will not be allowed. Minor adjustments of heaters are dealers' responsibility. Defective parts must be tagged and held for possible return to the factory for 60 days from date of repair. The factory will provide a return goods authorization, (RGA) for defective parts to be returned.

No warranty will be allowed for parts not purchased from Heat Wagon.



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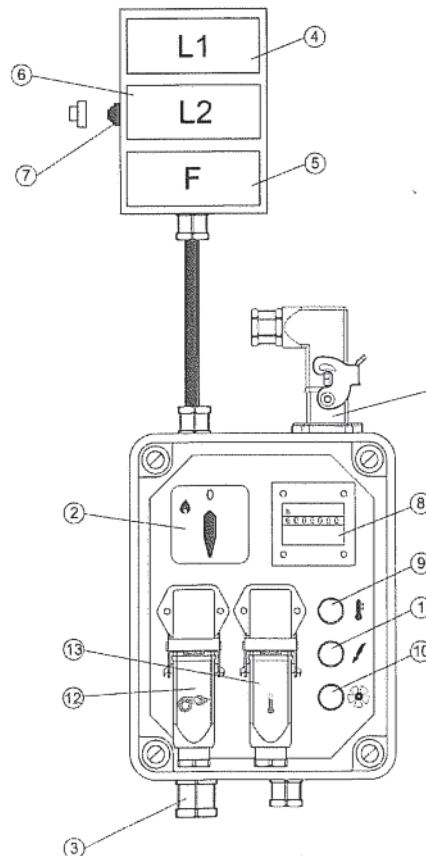
TECHNICAL SPECIFICATIONS		V700	V700C	V900	V900C
Heat input	[kBtu/h]	700	700	900	900
Air flow	[cfm]	7.420	7.420	8.830	8.830
Heat output	[kBtu/h]	595	595	765	765
Oil N°2 Max fuel consumption	[GPH]	5.17	5.17	6.64	6.64
Natural gas fuel consumption	[CFH]	684.9 ¹	684.9 ¹	880.6 ¹	880.6 ¹
Propane fuel consumption	[CFH]	274.7 ²	274.7 ²	353.2	353.2
Power supply	Phase	1	1	1	1
	Voltage [V]	240	240	240	240
	Frequency [Hz]	60	60	60	60
Electric consumption	[kW]	2.120	2.120	2.120	2.120
	[A]	7,0	14.8	13.2	13.9
Diesel burner model		Riello 40 F15	Riello 40 F15	Riello 40F 20	Riello 40F 20
Nozzle	[USgal/h]	3,50 GPH 60° B	3,50 GPH 60° B	4.5 GPH 60° B	4.5 GPH 60° B
Gas burner model (natural gas or propane)		Riello 40 G750	Riello 40 G750	Riello 40 G750	Riello 40 G750
Gas supply pressure: natural gas		min 7" w.c. max 14" w.c.	min 7" w.c. max 14" w.c.	min 7" w.c. max 14" w.c.	min 7" w.c. max 14" w.c.
Gas supply pressure: propane		min 8" w.c. max 14" w.c.	min 8" w.c. max 14" w.c.	min 8" w.c. max 14" w.c.	min 8" w.c. max 14" w.c.
Static pressure	[in WC]	0,4	0,8	0,4	0,8
Flue diameter	[in]	7,9	7,9	7,9	7,9
Compulsory flue draft	[in WC]	0,05	0,05	0,05	0,05
Maximum air temperature	*F	250,0	250,0	250,0	250,0
JUMBO Dimensions, L x W x H	[in]	85x35x53	101 x 35 x 53	95 x 38 x 59	114 x 38 x 58
Weight	[lb]	550	550	793	815
Manifold Pressure	NG	2.8" W.C.	2.8" W.C.	3.8" W.C.	3.8" W.C.
	Vapor Propane	2.8" W.C.	2.8" W.C.	5.2" W.C.	5.2" W.C.

→ Pump 160 psi

¹ 3.7 Orifice
² 2.0 Orifice

Note: V900/V900C,
long combustion tube

CONTROL BOARD



- 1 CONTROL LAMP
- 2 CONTROL KNOB HEAT - STOP - VENTILATION ONLY
- 3 POWER CORD FASTENER
- 4 OVERHEAT SAFETY THERMOSTAT, L1
- 5 FAN THERMOSTAT, F
- 6 LIMIT THERMOSTAT WITH MANUAL RESTART, L2
- 7 THERMOSTAT RESET SWITCH
- 8 HOUR COUNTER
- 9 OVERHEAT THERMOSTATS CONTROL LAMP, L1, L2
- 10 FAN STOP CONTROL LAMP
- 11 HEATED DIESEL FILTER PLUG
- 12 BURNER PLUG
- 13 ROOM THERMOSTAT PLUG

DESCRIPTION

These space heaters have been designed for use in small to medium-sized rooms and buildings where a fixed or mobile heating system is required.

Heat is produced by combustion and the heat from the smoke is transmitted to the fresh air through the metal walls of the combustion chamber and the heat exchanger. The combustion chamber is of the type where smoke circulates twice.

The air and smoke pass through separated ducts, both of which are welded and sealed. When, after combustion, the waste gases have cooled, they are expelled through a duct which must be connected to a chimney or chimney flue. The chimney or chimney flue must be big enough to guarantee that the smoke is expelled efficiently.

The air which is used in combustion is aspirated directly from the room or building which is being heated. It is therefore of utmost importance that the room or building be properly ventilated so that enough fresh air is circulating at all times.

The air outlet can be replaced by outlet panels with two or four openings, all of which must be kept open.

These heaters can operate with burners that are fuelled by diesel oil #2 max., natural gas or propane.

Warning



Only the burners which are chosen and supplied by the manufacturer can be used. If another type of burner is used the heater no longer complies with CSA / UL regulations.

Applied burners are listed in the final "TECHNICAL CHARACTERISTICS" sheet

There are three safety devices which are activated in case of serious malfunction. The Burner Control Device, which is mounted on the burner and has a restart button, automatically stops the burner if the flame goes out. The Overheat Thermostat, L2, of the manual restart type, is activated if the temperature of the combustion chamber rises above the set maximum limit; the warning light (9) lights up and the heater stops working. The Thermal Relay, RM, is activated if the fan motor starts to use more electrical current than the maximum permitted limit; the warning light (10) lights up and the heater stops working.

If any of these safety devices are activated you should check carefully what the problem actually is before pressing the restart button and starting the heater off again ("OBSERVED FAULTS, CAUSES AND REMEDIES").

Overheat safety thermostat, L1, shuts down the heater if air flow is not sufficient to cool off combustion chamber: the heater will restart automatically as soon as the heater has cooled down enough (The lamp (9) lights up and then it cuts down).

GENERAL ADVICES

The heater is designed and approved for use as a construction heater in accordance with Standard ANSI Z83.7 - CGA 2.14.

Intended use is the temporary heating of buildings or structures under construction, alteration or repair.

Warning



CHECK WITH YOUR LOCAL FIRE SAFETY AUTHORITY IF YOU HAVE QUESTIONS ABOUT APPLICATIONS.

Here are a few general guidelines which should be followed:

- Follow the instructions in this booklet very carefully.
- Don't install the heater in places where there may be a risk of fire or explosion.
- Inflammable material should be kept at a safe distance from the heater (Minimum 6 feet).
- All fire prevention regulations must be adhered to.
- The room or building which is being heated must be sufficiently ventilated so that the heater has enough air to function properly.
- The heater must be near a chimney or chimney flue and a suitable electric switchboard.

- Don't let animals or children near the heater.
 - Make sure heater is inspected before each use, and at least annually by a qualified service person.
 - After use make sure the disconnecting switch is off.
- When using any type of space heater it is obligatory:
- not to exceed the maximum level of heat output of the furnace ("TECHNICAL SPECIFICATION TABLE");
 - to make sure that there is adequate air circulation and air supply to the heater and that nothing is obstructing the aspiration and expulsion of air; movement of air may be obstructed in various ways including placing covers or other objects on the heater or positioning the heater too near a wall or other large object. If the airflow is not adequate, the combustion chamber will overheat and the overheat safety thermostat L1 will turn the burner off and on continuously ("OBSERVED FAULTS, CAUSES AND REMEDIES").

INSTALLATION

Warning

The following operations must be carried out by qualified personnel only.

ELECTRICAL CONNECTIONS AND SETTINGS

The space heater is supplied along with the safety and control devices which are indispensable to the correct functioning of the unit. The electric switchboard, burner, the fan thermostat, overheat safety thermostat and the overheat thermostat with manual restart have already been connected.

Warning

Power supply cord of proper dimension shall be connected to the main switchboard and heater shall be grounded.

Electrical grounding shall be in compliance with the National Electrical Code ANSI/NFPA 70 or the CSA C22.1 Canadian Electrical Code, Part I.



The following operations must now be carried out:

- Plug in the power cord having read the adhesive label which details electricity supply characteristics.
- The burner must be connected to the fuel supply (Burner Instruction Manual).
- Connect the burner to the electricity supply with the burner plug.
- Connect accessories such as the room thermostat or clock to the unit's electric switchboard with the thermostat plug.

Having completed all these operations check carefully that all electrical connections correspond to the wiring diagram. When the heater is first turned on you must check that the fan does not use more current than the maximum permitted limit.

Finally, to regulate the burner follow the instructions in the Burner Instruction Manual.

CONNECTION TO HOT AIR DUCTS

The space heater provides heat by releasing and dispersing hot air. An air head is supplied with each unit but it can be replaced by other types of head with two or four openings which allow for flexible tubes in heat distribution. The screws which hold the original outlet in place should be removed and the new outlet should be screwed on in place of the old.

The new head may be connected to new air ducts if the user wishes to satisfy specific needs. In this case and in particular if the diameter and length of the ducts have been changed or if the number of bends has been modified, air output may vary. Consequently it is very important to check and regulate air output when any modification is made to air heads or air ducts. In all circumstances you must ensure

that:

- The fan motor does not absorb more current than the maximum permitted limit;
- The volume of air flow corresponds to the recommended level.

If the heater is equipped with centrifugal fan and if the volume of hot air differs from preset values proceed as follows (Fig. 1):

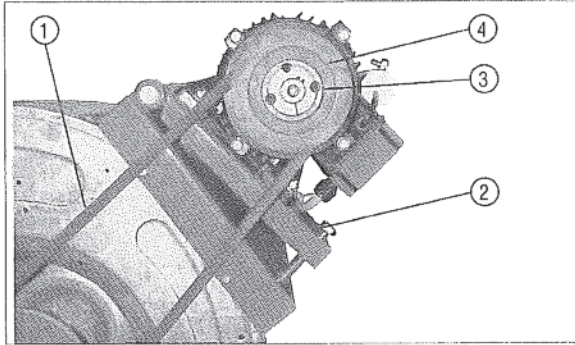


Fig. 1

- 1) Remove the aspiration grill which is on fan motor side of the unit.
- 2) Remove the screws (2) from the motor slide.
- 3) Remove the belt (1).
- 4) Loosen the bolts (3).
- 5) Turn the pulley clockwise and anti-clockwise in order to increase or reduce the volume of air.
- 6) Tighten the bolts (3).
- 7) Put back the aspirations grill
- 8) Repeat operations from (1) to (7) until the correct volume of air flow has been achieved.

DRAFT

The evacuation smoke flues shall be made with steel.

Efficient combustion and trouble-free working of the burner depend on efficient flue draft. The unit must be connected to the chimney flue in accordance with current legal regulations and in line with the following guidelines:

- The tube which carries the smoke should cover as short a distance as possible and should slant upwards.
- There should be no sharp bends in the tubes and the diameter of the tubes must never be reduced.
- Every heater must have its own chimney.
- Flue draft must at least correspond to the minimum compulsory level in the Technical Specifications.

ANALYSIS OF COMBUSTION WASTE PRODUCTS

The probes which check the composition of combustion waste products and smoke temperature must be positioned as indicated in Fig. 2.

When these tests have been completed the hole which was drilled for the probe must be sealed with a material which is resistant to high temperatures and which ensures that the tube remains airtight.

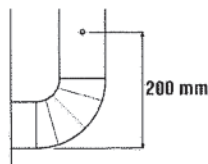


Fig. 2

CONNECTION TO FUEL SUPPLY

To connect the burner to the fuel supply follow the instructions in the Burner Instruction Manual.

The gas burner can use both natural gas or propane. Burners are predisposed at factory to be used with propane. If natural gas shall be

used, burners shall be adapted according to the instruction manual of the burner.

In case of connection of heater to natural gas, the installation shall conform with local codes, or, in the absence of local code, with the National Fuel Gas Code ANSI Z223.1/NFPA and the Natural Gas and Propane Installation Code, CSA B149.1.

In case of connection of heater to propane supply cylinder, the installation shall conform with local codes or, in the absence of local code, with the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/FNPA 548 and the Natural Gas and Propane Installation Code, CSA B149.1.

Heater must be located at least 6 ft in the U.S. or 10 ft in Canada from any propane gas container.

Propane gas cylinder shall be in compliance with national standards and shall be arranged to provide for vapor withdrawal from the operating cylinder.

The gas shall be turned off at the propane supply cylinder when the heater is not in use.

Visually inspect hose assembly prior to each use of the heater. If it is evident there is excessive abrasion or wear, or the hose is cut, it must be replaced prior to the heater being put into operation.

After installation, proper instruments or devices shall be used to check and avoid any gas leakage. Gas leakage testing shall be regularly operated.

NOTE: Manifold Pressure - Natural Gas 2.8" W.C. 3.7 Orifice
Vapor Propane 2.8" W.C. 2.0 Orifice

REGULATION OF COMBUSTION - 1st OPERATION

After having checked the hermetic seal and of combustion waste products line, heater may be operated for the first time.

To perform regulation of combustion correctly, combustion waste products must be analyzed using appropriate instruments: values recommended by actual standards must be reached.

The regulation procedure has been on the Burner Instruction Manual; final values of CO₂ shall be correspondent to excess air factor of 1,2 (12,5 for gas-oil, 9,7% for G20, 9,6% for G25, 11,7% for G30 and 11,7% for G31) while CO level shall be less than 75 ppm.

INSTRUCTIONS FOR USE

SWITCHING ON

- Set the control knob (2) in position "0";
- Turn on the disconnecting switch on the electric switchboard;
- If the unit is operated manually turn the control knob to . The burner starts up, the combustion chamber heats up and then the fan starts;
- If the unit operates automatically set the room thermostat at the desired level and turn the control knob (2) to : the heater will now start and stop automatically.
- If the heater doesn't start after you have completed the above operations consult the Troubleshooting section of this manual.

TURNING OFF

In manual operation turn control knob (2) to "0" or turn off control thermostat in automatic operation.

The burner stops while the fan turns itself on and off until the combustion chamber has completely cooled down.

Warning



Never stop the heater by simply turning off the disconnecting switch on the electric switchboard. The electrical supply must only be disconnected when the fan has come to a complete stop.

VENTILATION

When the control knob is turned to the symbol the heater operates in continuous fan mode.

MAINTENANCE

Warning



The following operations must be carried out by qualified personnel only. Before carrying out any maintenance operation the heater must be disconnected from the mains. Therefore:

- Stop the machine as instructed above
- Turn off the disconnecting switch on the electric switchboard.
- Wait until the heater has cooled.

CLEANING THE HEAT EXCHANGER AND THE COMBUSTION CHAMBER

For the heater to operate efficiently the heat exchanger and combustion chamber must be cleaned after a period of prolonged use and more frequently if too much soot builds up. Soot builds up when there is not enough chimney draft, when the fuel is of very poor quality, when the burner is regulated incorrectly or when the heater is switched on and off too frequently. If the heater starts vibrating when it is turned on there is probably too much soot.

To get at the heat exchanger (1) take off the front panel (3) and then remove the smoke box panel (2) and remove baffle plates (7). To get at the combustion chamber (4) remove the burner (5).

CLEANING THE FAN

Remove any dirt or extraneous material from the mesh of the aspiration grill (6) and if necessary clean the propeller with an air-suction tool.

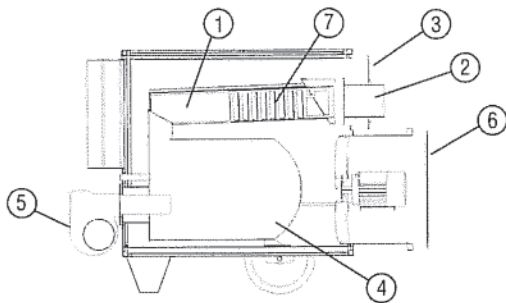


Fig. 3

CLEANING THE BURNER

For the heater to work efficiently the burner must be serviced regularly by an Authorized Service Technician. All cleaning, servicing and regulation operations must be carried out as indicated in the Burner Instruction Manual.

Warning



After every type of technical maintenance, please verify that the machine starting regularly.

TRANSPORTING AND MOVING THE HEATER

To move the heater use the front handles and back wheels.

Warning



Before moving the unit:

- Turn it off as indicated above.
- Disconnect electricity by pulling out the plug.
- Wait until the heater cools down

Suitable equipment must always be used when moving a unit and the instructions given above must be scrupulously adhered to.

Warning



Never try to lift the heater manually. Doing so could result in physical injury.

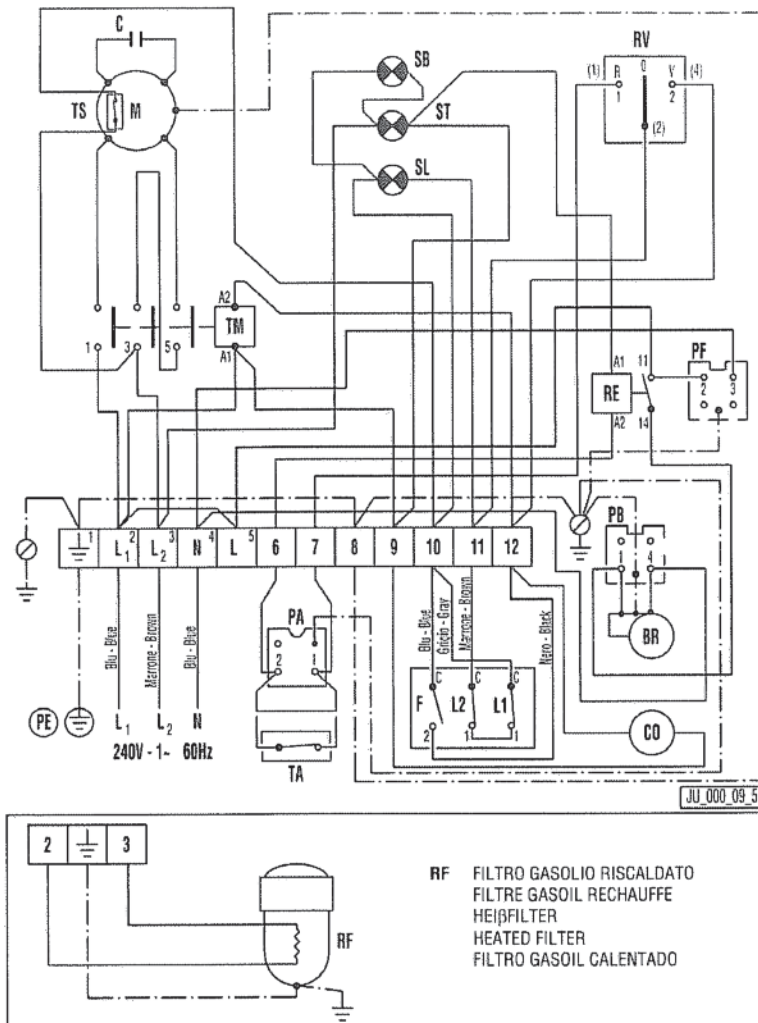
If heater is connected to propane supply cylinder and it is to be stored indoors, the connection between the propane cylinder and the heater must be disconnected and the cylinder removed from the heater and stored in accordance with Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and CSA B149.1, Natural gas and Propane Installation Code.

OBSERVED FAULTS, CAUSES AND REMEDIES

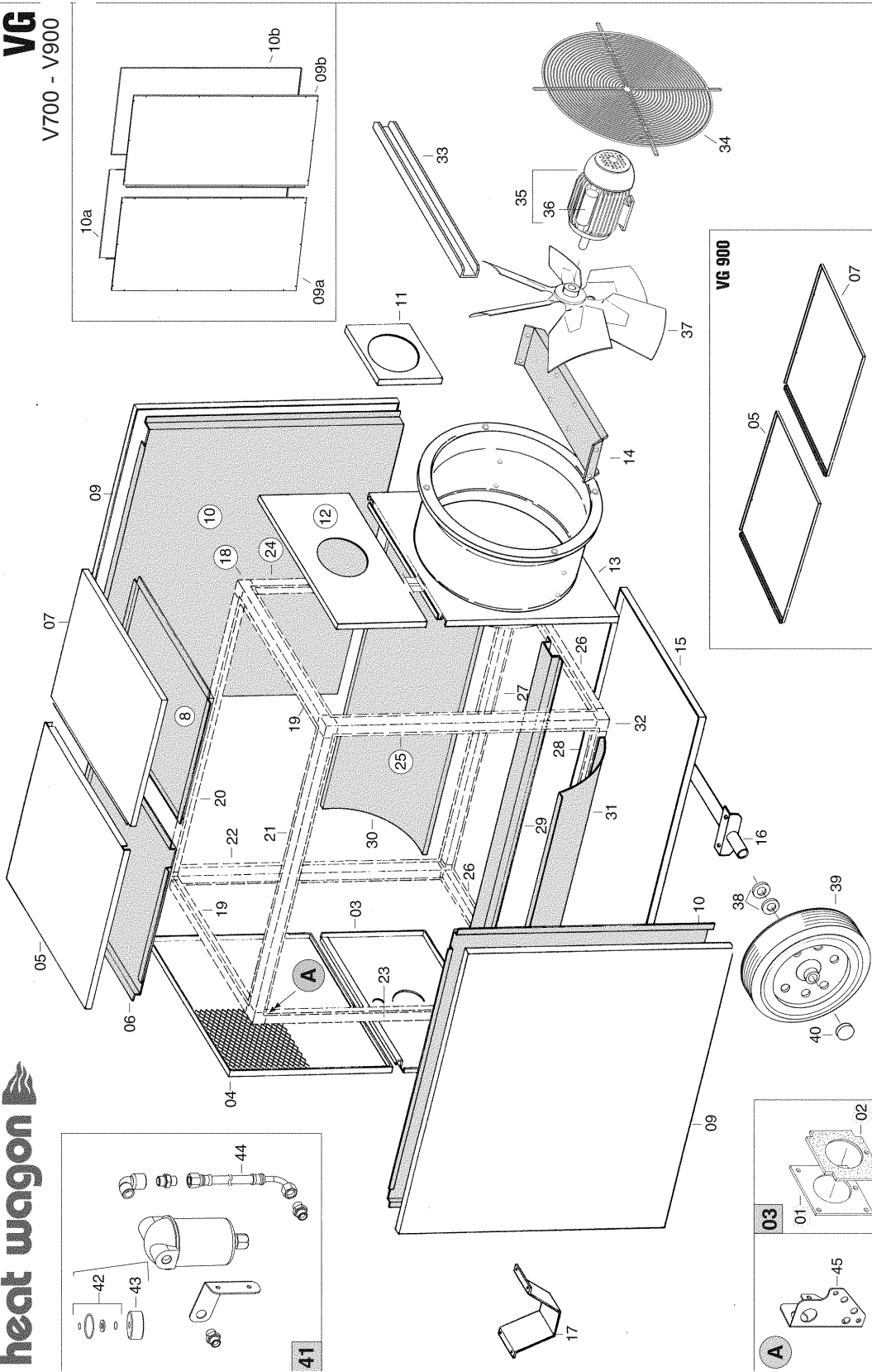
OBSERVED FAULT	CAUSE	REMEDY
• The heater won't start	• Faulty electrical supply	<ul style="list-style-type: none"> • Check function and positioning of main switch • Check power cord • Check electrical connections • Check fuses
	• Wrong positioning of main switch	• Put main switch in correct position
	• Wrong setting of room thermostat	<ul style="list-style-type: none"> • Check setting of room thermostat • Check function of room thermo-stat
	• Safety device (burner, thermostat L2, fan thermal relay) not reset after repairs	<ul style="list-style-type: none"> • Press the appropriate restart button: <ul style="list-style-type: none"> • burner (button on control device) • thermostat (button (6)) • fan thermal relay (button (11))
• Overheat safety thermostat L1 cuts out (the lamp (9) lights up and then it cuts down)	• The combustion chamber has overheated	<ul style="list-style-type: none"> • Check fuel flow • Check position registers, draw - holes, etc. • Remove extraneous material from air ducts and ventilation grills
• Limit thermostat L2 cuts out (warning lamp (9) lights up)	• Excessive combustion chamber over heating	<ul style="list-style-type: none"> • Check as indicated above • If fault persists contact our Service Center
• Thermal relay TM cuts out (warning light (10) lights up)	• Fan motor current absorption is excessive	<ul style="list-style-type: none"> • Heater with helicoidal ventilator: remove eventual debris preventing free flow of air on intake and outlet. Check length of air ducts, reduce if excessive. • Heater with centrifugal ventilator: check setting of transmission belt as indicated in chapter ("CONNECTION TO HOT AIR DUCTS"). • Always check that current absorption remains below value indicated on motor manufacturer plate
• The burner starts up, the flame doesn't light up and the reset light on the control device comes on	• Burner not working correctly	<ul style="list-style-type: none"> • Press the reset button to turn on the heater. If the same problem arises again call and Authorized Service Technician
• The fan doesn't start up or starts up late	• No electrical power	• Check fuses
	• F thermostat out of order	• Check electrical connections
	• Winding of motor burnt or interrupted	• Check the thermostat, set it and replace it if necessary
	• Capacitor burnt (mod. "M")	• Replace the fan motor
	• Motor bearings blocked	• Replace the capacitor
• The fan vibrates or makes unusual noise	• Extraneous material on fan blades	• Replace the bearings
	• Not enough air circulation	• Remove extraneous material
• Not enough heat	• Wrong burner set-up	• Remove obstacles to air circulation
		• Call an Authorized Service Technician

WIRING DIAGRAM

VG700 - VF700
VG900 - VF900



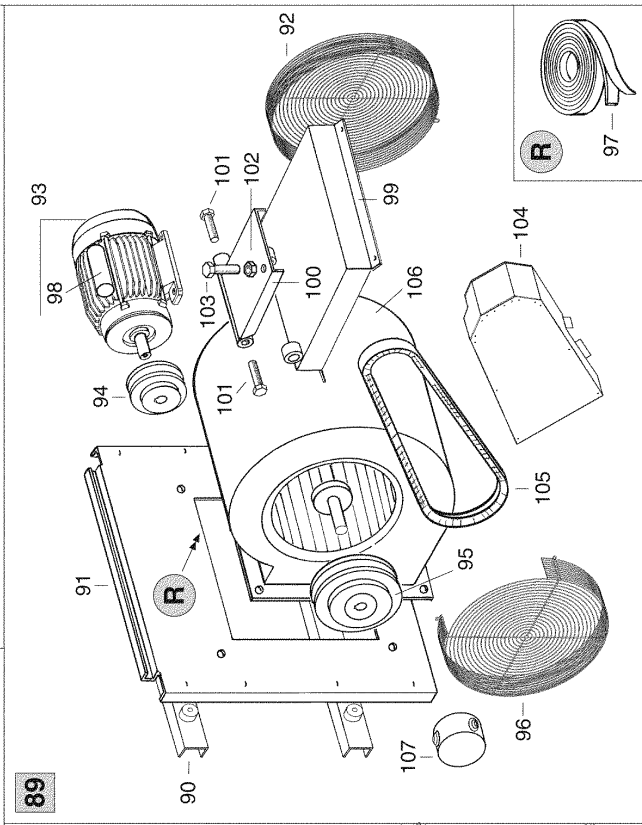
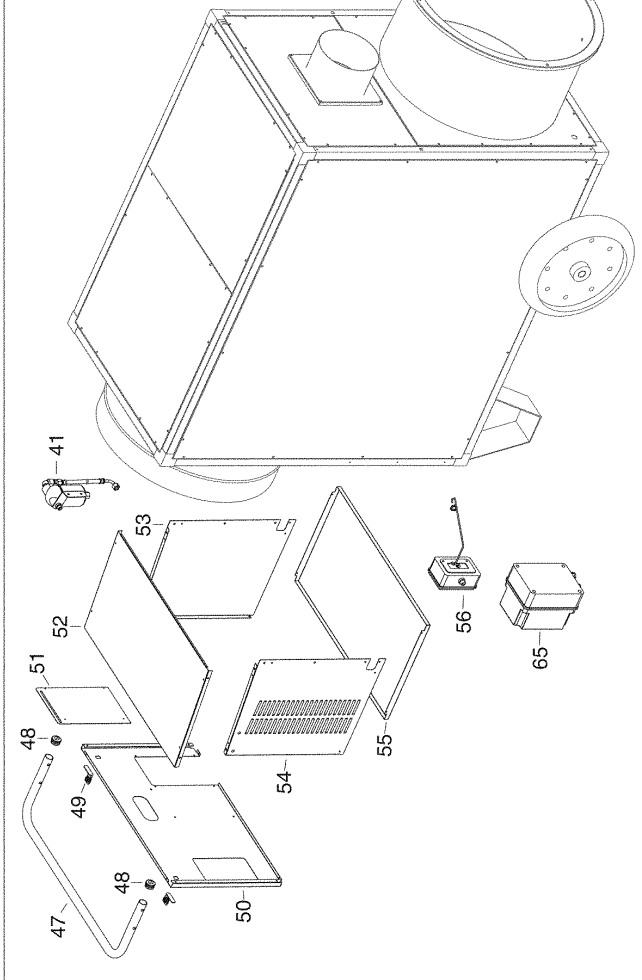
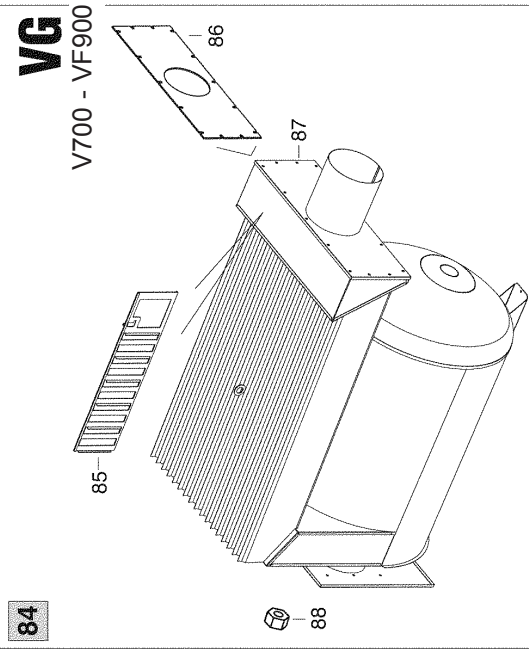
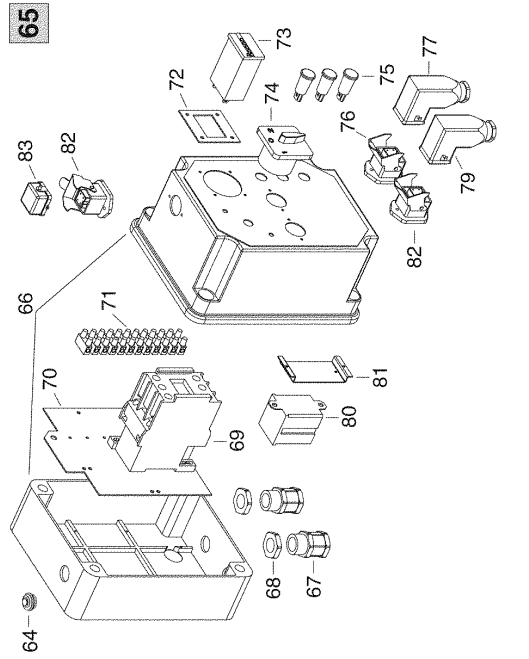
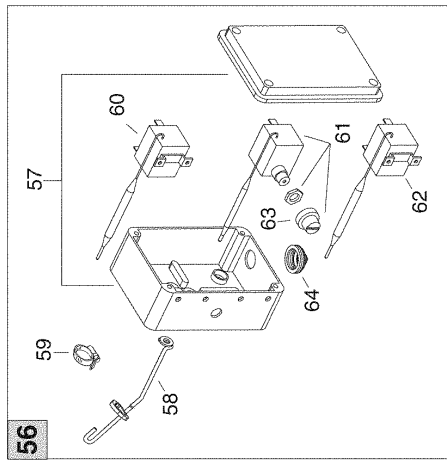
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|----|----------------------|----|-----------------------|
| TS | FANS THERMAL RELAY | SB | FAN STOP CONTROL LAMP |
| TM | FANS TELE-CONTACTOR | PB | STECKDOSE BURNER PLUG |
| C | CONDENSER MOTOR | CO | HOUR-COUNTER |
| PA | ROOM THERMOSTAT PLUG | PF | HEATED FILTER PLUG |
| RE | RELAY 220V/60Hz | | |



heat wagon

VG

V700 - VF900



Pos.	Cod.	€	V 700	V 700/C	V 900	V 900/C	PART LIST	€	V 700	V 700/C	V 900	V 900/C	PART LIST
01	G04230-9005						Burner support						
02	T10634						Burner plate seal 210x210x5						
03	G04018-9010						Burner panel						
04	G04175-9010						Outlet air panel						
05	G01086-9010						Front upper panel						
06	G01720-9010						Inner front upper panel						
07	G01716-9010						Rear upper panel						
08	G01718						Inner rear upper panel						
09	G01720-9010						Side panel						
09a	G01683-9010						Side front panel						
09b	G01685-9010						Side rear panel						
10	G01722						Inner side panel						
10a	G01684						Inner panel front panel						
10b	G01686						Inner panel rear panel						
11	G01687-9010						Chimney flange Ø150						
12	G01724-9010						Chimney panel						
13	G01726-9010						Fan support panel						
14	G01728						Motor support plate						
15	G01730-9010						Bottom panel						
16	G01732-9010						Wheel axle						
17	G01691-9010						Front support						
18	U10103-9010						Aluminum joint						
19	G01693-9010						Upper front short angle steel						
20	G01736-9010						Upper long SX angle steel						
21	G01738-9010						Upper long DX angle steel						
22	G01740-9010						Vertical front SX angle steel						
23	G01696-9010						Vertical front DX angle steel						
24	G01744-9010						Vertical back SX angle steel						
25	G01698/1-9010						Vertical back DX angle steel						
26	G04222-9010						Lower short angle steel						
27	G04223-9010						Lower long SX angle steel						
28	G01752-9010						Lower long DX angle steel						
29	G01754						Comb. chamber support						
30	G01756						Comb. chamber SX support						
31	G01758						Comb. chamber DX support						
32	U10101-9010						Aluminum joint						
33	G01908-9010						Reinforced frame						
34	P30139						Inlet grill						

Pos.	Cod.	€	V 700	V 700/C	V 900	V 900/C	PART LIST	€	V 700	V 700/C	V 900	V 900/C	PART LIST
35	E10682-220						Motor HP 2 110/60 mono						
36	E10683-220						Motor HP 3 220/60 mono						
37	E11235						Capacitor 25 µF						
38	T10230-1						Fan Ø500 23°						
39	M20111						Fan Ø580 18°						
40	M20111						Washer Ø26xØ44x4						
41	M20202						Wheel Ø300 - Ø25						
42	Ø2AC550						Wheel holder						
43	T20241						Kit Oil pre-heaters filter 1/4"						
44	T20242						OR KIToil filter						
45	B58012						Filter cartridge						
46	G04181-9010						Hoses						
47	G04050-9010						Flask						
48	C30328						Upper back short angle steel						
49	M20418						Handle						
50	G04190-9010						Plug						
51	G04191-9010						Wing nut-lock						
52	G04193-9010						Casing front panel						
53	G04194-9010						Flap door						
54	G04196-9010						Burner casing top cover						
55	G04197-9010						Burner casing SX cover						
56	G04200-9010						Burner casing DX cover						
57	G04202-9010						Tank casing lower panel						
58	G04203-9010						EI control box						
59	G04205-9010						Electrical components box						
60	G04206-9010						Bulbs holder						
61	G00218						Clip						
62	E20719-02						Thermo stat TY95 30/90 °C Campini						
63	P30159						Thermosta t TY95H 120 °C Campini						
64	C30712						Thermosta t TY95 0/60 °C Campini						
65	E50748						Safety thermostat plastic profile						
66	E50749						Cable protection Ø19						
67	E50747						EI control box						
68	E50750						Electrical components box						
69	C30343						Electrical components box						
70	G00221						Electrical components box						
71	G00222						Cable fastener PG 13.5						
72	G00223						Ring nut PG13.5						
73	E20707-55						Contacto Wimec KN22-00 V110-60						
74	E20949						Plate for electrical components						
75	E20950						Terminal board 12 el. mmq 10						
76	E10419						Hour-counter support plate						
77	E10446						Hour-counter						
78	G04042						Control knob						
79	E20301						Red pilot lamp Ø12 V230						
80	G04041						Thermostat plug 3P + T						
81	S10104						Plate plug 3P + T						
82	E11021						Plate plug 4P + T						
83	E10109						Relay Finder 65.31 AC						
84	E20640						Relay flange						
85	E20677						Thermostat plug 4P + T						
86	E20678						Drain plug						
87	E11120												
88	G04207												
89	E20639												
90	E20665												

Pos.	Cod.	€	V 700	V 700/C	V 900	V 900/C	PART LIST
84	G01773 G01672		•	•	•	•	Combustion chamber
85	G01759 G01673		•	•	•	•	Baffle plate
86	T10635 T10633		•	•	•	•	Chimney seal 438x248x5 Chimney sea 551x248x5
87	G01760 G01674		•	•	•	•	Chimney cover
88	I25001		•	•	•	•	Female plug 1"
89	G04209 G04210			•		•	Centrifuge air fan
90	G01767-9010 G01675-9010			•		•	Reinforced frame
91	G01769-9010 G01676-9010			•		•	Fan panel
92	P30140 P30137			•		•	Protection grille
93	E10683-220 E10684-220			•		•	Motor HP 3 220/60 mono Motor HP 4 220/60 mono
94	C10929			•		•	Sheave Ø105 Var. Ø24
95	C10904			•		•	Sheave Ø160 1B Ø25
96	P30141 P30138			•		•	Protection grille
97	C30401			•		•	Seal 3x15
98	E11237 E11236			•		•	Capacitor 70 µF Capacitor 50 µF
99	G02001 G02002			•		•	Mounting plate on fan case
100	G01998 G01999			•		•	Motor support plate
101	M10234			•		•	Screw TE M12x55
102	M10714			•		•	Nut M12
103	M10221			•		•	Screw TE M12x55
104	G04214-9005 G04215-9005			•		•	Crankcase
105	C10923 C10930			•		•	Belt B43 Belt B50
106	AN006-1 AN007-1			•		•	Fan AT 15/15 Fan AT 18/13
107	E20712			•		•	El. components box 80x80

Parts Not Shown

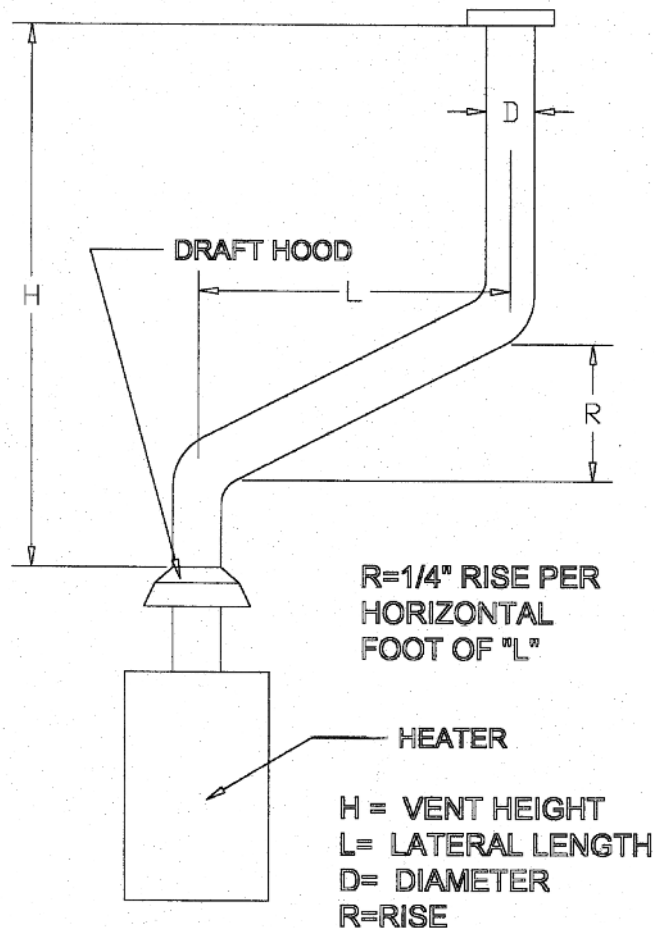
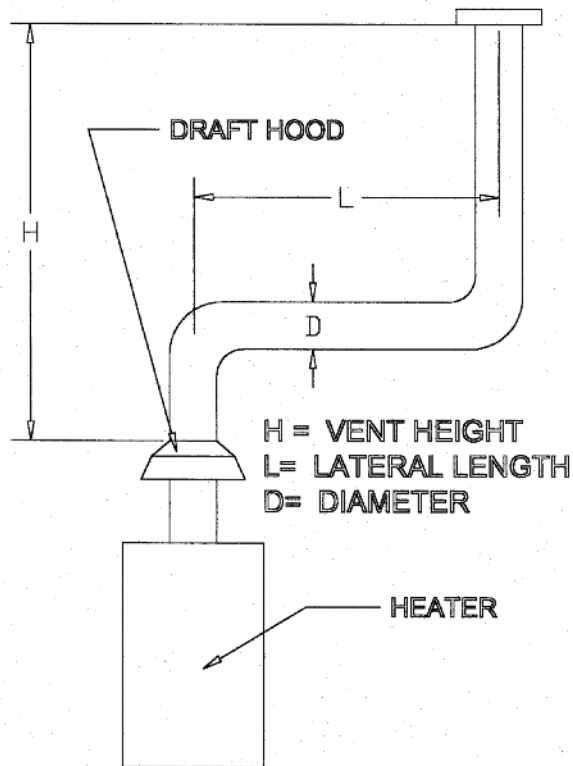
(Gas Pipe Train)

Maxitrol Regulator (RV61) PN C5852400

Asco Solenoid PN C5850607

Dungs Valve PN C5850017

EXHAUST FLUE PIPE GUIDELINES



CAPACITY OF TYPE B DOUBLE-WALL VENTS SERVING A SINGLE DRAFT HOOD-HEATER x 1000 BTU'S

FOR INDOOR APPLICATIONS

		VENT DIAMETER (D) INCHES			
		8	10	12	14
TOTAL VENT HEIGHT (H) FEET	LATERAL LENGTH (L) FEET				
6	0	370	570	850	1170
	2	285	455	650	890
	6	273	435	630	870
	12	255	406	610	840
8	0	415	660	970	1320
	2	322	515	745	1020
	8	303	490	720	1000
	16	281	458	685	950
10	0	450	720	1060	1450
	2	355	560	850	1130
	10	330	525	795	1080
	20	300	486	735	1030
15	0	525	840	1240	1720
	2	414	675	985	1350
	15	373	610	905	1250
	30	328	553	845	1180
20	0	575	930	1350	1900
	2	470	755	1100	1520
	10	443	710	1045	1460
	20	410	665	990	1390
30	0	650	1060	1550	2170
	2	535	865	1310	1800
	20	473	784	1185	1650
	40	415	705	1075	1520

REFERENCE CHARTS

**VAPOR PROPANE QUICK
REFERENCE HOSE
CHART**

Hose Length in Feet	BTU 1 Million	
	1/2PSI	10PSI
10	1-1/4	3/4
25	1-1/4	3/4
35	1-1/4	3/4
50	-	3/4
75	-	3/4
100	-	3/4
125	-	3/4
150	-	3/4
175	-	3/4
200	-	3/4
225	-	3/4

**NATURAL GAS QUICK
REFERENCE HOSE
CHART**

Hose Length in Feet	BTU 1 Million			
	<1PSI	1PSI	2PSI	5PSI
10	1-1/2	1-1/4	3/4	3/4
25	2	1-1/4	3/4	3/4
35	2	1-1/4	3/4	3/4
50	2	1-1/4	1-1/4	3/4
75	2	1-1/4	1-1/4	3/4
100	2	1-1/4	1-1/4	3/4
125	2-1/2	1-1/2	1-1/4	3/4
150	2-1/2	1-1/2	1-1/4	3/4
175	2-1/2	1-1/2	1-1/4	3/4
200	2-1/2	1-1/2	1-1/4	3/4
225	2-1/2	1-1/2	1-1/4	3/4

VAPORIZATION RATES IN BTUH @ 0 DEG. F							
TANK SIZE	NUMBER OF TANKS MANIFOLDED	PERCENTAGE OF TANK FILLED					
		10%	20%	30%	40%	50%	60%
250	1	12,690	169,200	197,400	225,600	253,800	282,000
	2	279,180	372,240	434,280	496,320	558,360	620,400
	3	486,027	648,036	756,042	864,048	972,054	1,080,060
500	1	198,135	264,180	308,212	352,240	396,270	440,300
	2	435,897	581,196	687,066	774,928	871,794	968,660
	3	758,857	1,011,809	1,180,451	1,349,079	1,517,714	1,686,349
1000	1	354,240	472,320	551,040	629,760	708,480	787,200
	2	779,328	1,039,104	1,212,288	1,385,472	1,558,656	1,731,840
	3	1,356,739	1,808,985	2,110,483	2,411,980	2,713,478	3,014,976

NOTE: USE FOLLOWING MULTIPLIERS FOR OTHER AIR TEMPERATURES

- For -10° F multiply x 0.50
- For + 10°F multiply x 1.5
- For +20°F multiply x 2.0
- For +40°F multiply x 3.0
- For +50°F multiply x 3.5
- For +60°F multiply x 4.0

LPG Kit

The LPG kit allows the above burners, suitable to run on natural gas, to burn LPG.

TECHNICAL FEATURES

The thermal output and working field of burners converted to use LPG are the same as those for the use of natural gas. (See burner technical instructions).

GAS Family 3:

Net calorific value: 24 - 34 kWh/m³

21,000 - 29,300 kcal/m³

Min. pressure 25 - max. 50 mbar.

LIST OF KIT'S COMPONENTS

Quantity	Component
1	Washer
1	Diffuser 2
1	Adhesive label
1	Technical instructions

CONVERSION

On the combustion head of the burners, that natural gas diffuser should be replaced with the one used for LPG, and a washer should be added.

Proceed as follows: (Fig. A)

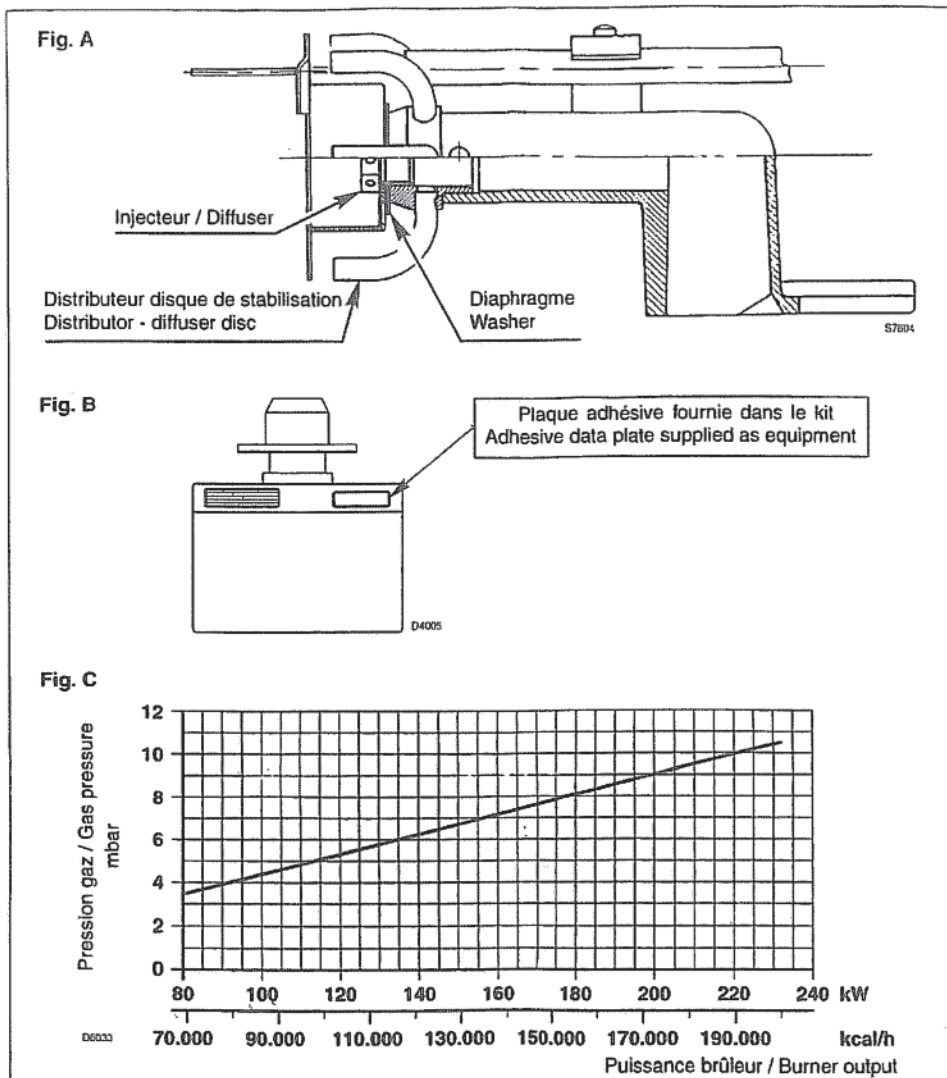
- Disassemble the ignition electrode and the ionisation probe.
- Take the distributor-diffuser disc off after removing the diffuser.
- Insert the washer, re-assemble the distributor-diffuser disc and fix the diffuser (stamping 2) sent as equipment.
- Reassemble the electrode and the ionisation probe in the position foreseen in the instructions for the natural gas.
- Affix the adhesive label as illustrated in Fig. B.

COMBUSTION HEAD ADJUSTMENT

This is the same as for the burners running on natural gas. (See burner technical instructions).

CORRELATION BETWEEN GAS PRESSURE AND BURNER OUTPUT (Fig. C)

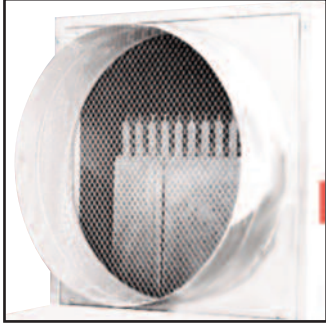
Pressure measured at the pipe coupling of the burner working with LPG (Net calorific value 23,000 kcal/m³), with combustion chamber at 0 mbar.



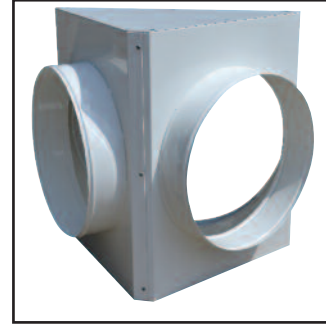
Propane Orifice Kit
PN BIE 3000886

Natural Gas Orifice
PN BIE 3006703

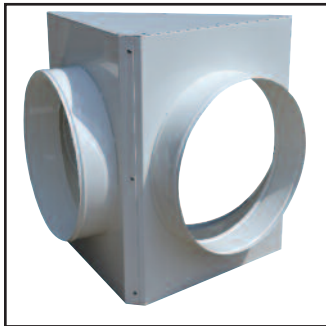
ACCESSORIES



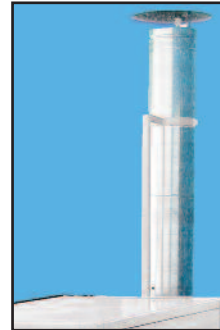
SINGLE DUCT ADAPTOR - V700
#AR702
Duct #WD2425 - 24" x 25'



SPLIT DUCT ADAPTOR - V700
#AR712
Duct #WD2025 - 20" x 25'



SPLIT DUCT ADAPTOR - V900
#AR912
Duct #WD2025 - 20" x 25'



CHIMNEY SUPPORT KIT
#AR714



VF700 On Optional
225 gal. Fuel Cell



PUMP PRESSURE GAUGE
#99AM003