FAGOR
Industrial S.Coop.

TECHNICAL MANUAL

GAS OVENS
HVG and HCG

NOVEMBER 2001

INDEX

1 MODELS AND DIMENSIONS

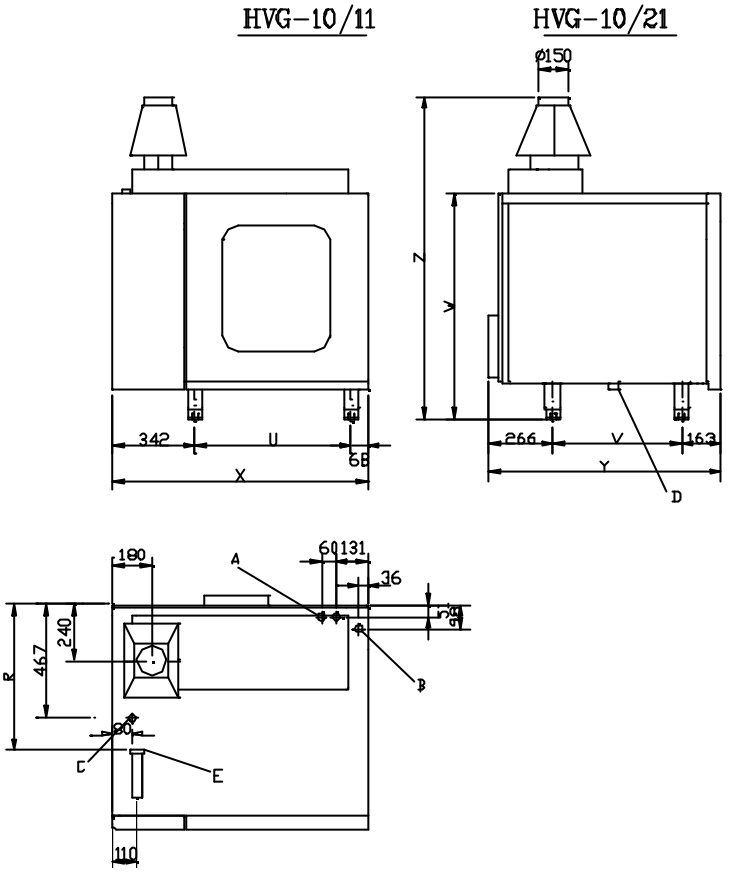


fig 1

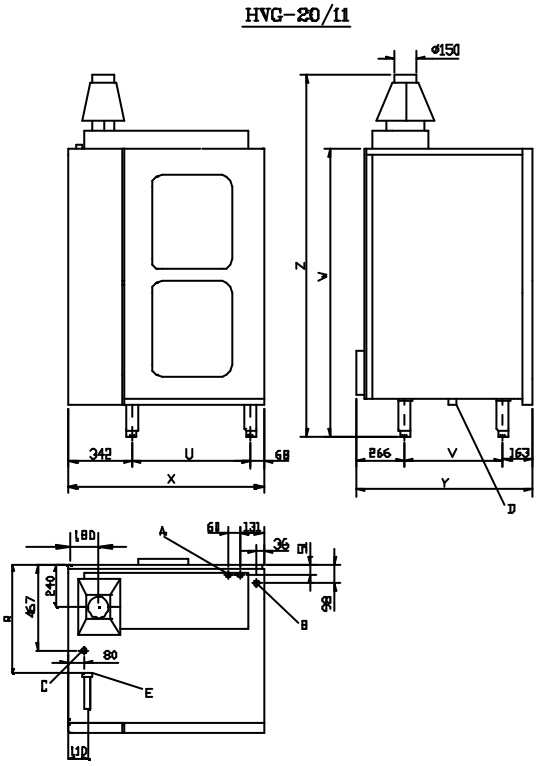


fig 2

HVG-20/21 HVG-2-20/11

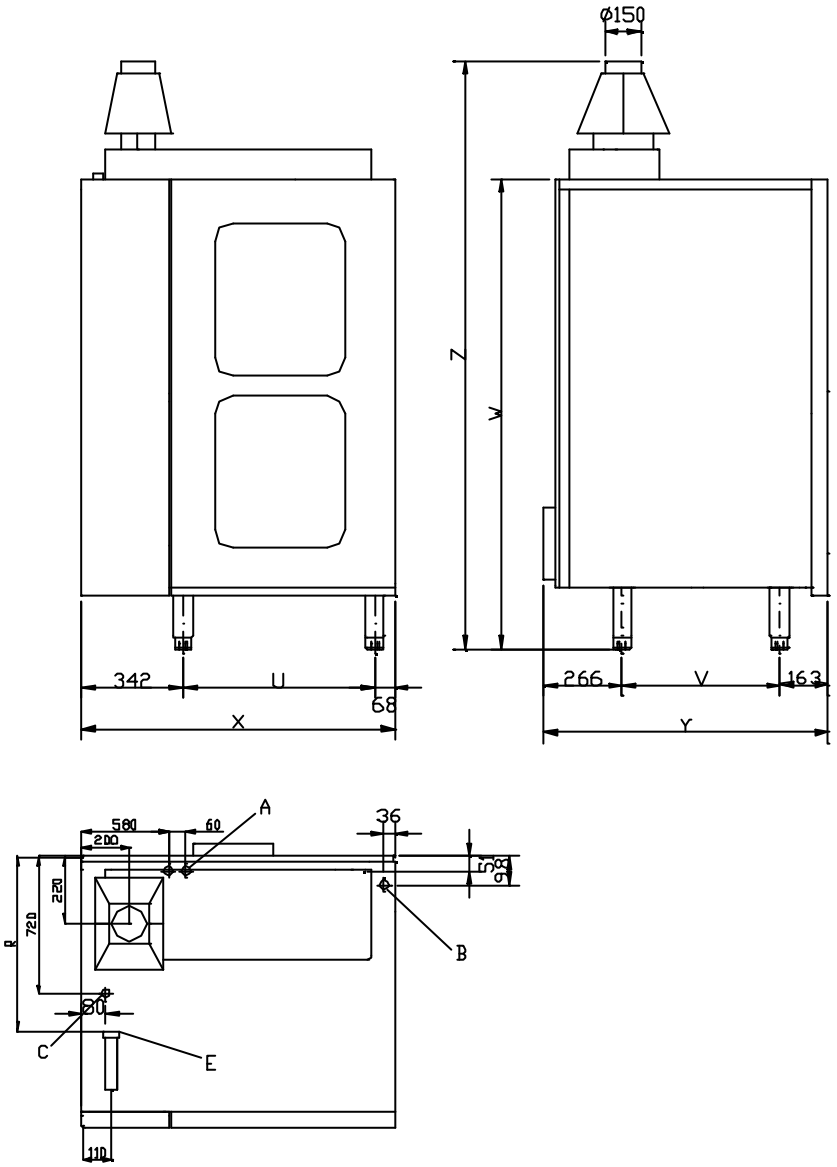


fig 3

HCG-6/11 HCG-10/11 HCG-10/21 HCG-2.10/11

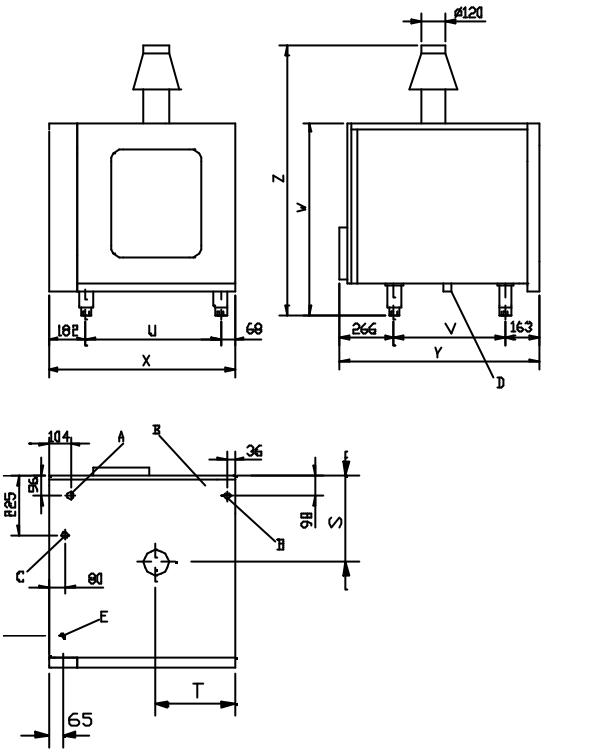


fig 4

HCG-20/11

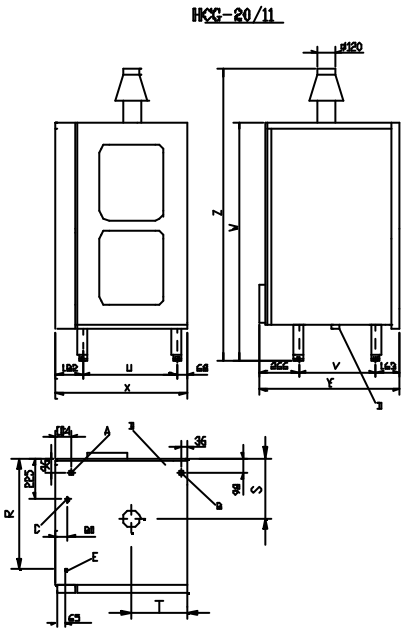


fig 5

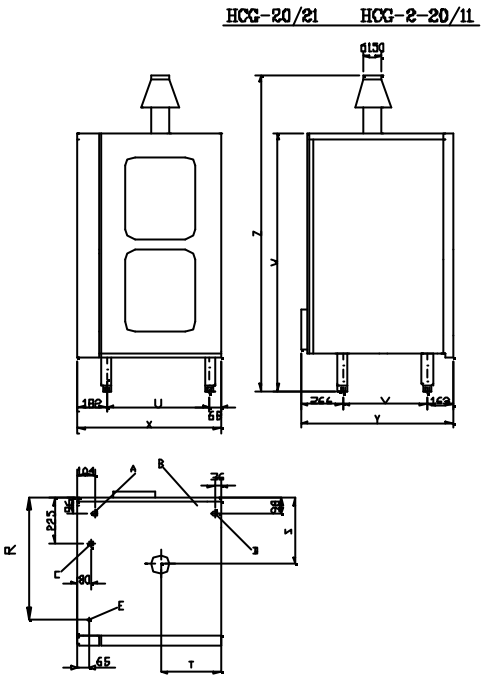


fig 6

A.- Soft water inlet RG ¾".
B.- General drain RG 1".
C.- Electrical supply inlet connector.
D.- Drain cleaning plug.
E.- Gas inlet RG ¾".

2 CHARACTERISTICS

MODEL				HVG-10/11	HVG-10/21 HVG-2-10/11	HVG-20/11	HVG-20/21 HVG-2-20/11
EXTERNAL DIMENSIONS	mm	Width X		1060	1180	1060	1180
		Depth Y		965	1170	965	1270
		Height without chimney W		925	925	1635	1635
		Height with chimney Z		1290	1290	2000	2000
		Width U		650	770	650	770
		Depth V		535	740	535	740
		Depth Gas R		600	800	600	900
Net weight (Kg.)				210	275	320	430
Electrical power Kw				0.4Kw	0.4Kw	0.6Kw	0.6Kw
Supply voltage	220-240V 1N	50-60Hz	Hose section	2x1,5+T			
			Fuse Int. General	10ª			
			Differential Device	30Ma			
Gas power	Kcal/h (Hs)			34,400	39,560	44,720	72,240
	BTU (Hs)			136,500	157,000	177,500	286,700
	Kw. (Hi)			40,000	46,000	52,000	84,000
Nominal consumption	Kg/h (29mb)Butane (G-30)			3,330	3,830	4,330	6,990
	Kg./h (37 mb) Propane (G-31)			3,280	3,770	4,265	6,890
	m³./h (20 mb) Natural gas (G-20)			4,235	4,870	5,500	8,890
	m³./h (25 mb) Natural gas (G-25)			4,555	5,170	5,665	9,840
	m³./h (8 mb) City gas (G-110)			000	000	000	000
	m³./h (8 mb) City gas (G-130)			000	000	000	000
	m³./h (8 mb) City gas (G-150)			000	000	000	000
Performance %	Hot air			90	90	90	90
	Steam (%)			85	85	85	85
Max. no. trays	GN 1-1			10	20	20	40
	GN 2-1			-	10	-	20
Maximum load weight in kg				50	100	100	200
Approximate water consumption (litres/hour)				30	30	30	50
Water inlet pressure Kg/cm				0.5---8			

MODEL				HCG-6/11	HCG-10/11	HCG-10/21 HCG-2-10/11	HCG-20/11	HCG-20/21 HCG-2-20/11
EXTERNAL DIMENSIONS	mm	Width X		900	900	1020	900	1020
		Depth Y		965	965	1170	965	1170
		Height without chimney W		695	925	925	1635	1635
		Height with chimney Z		1060	1290	1290	2000	2000
		Width U		650	650	770	650	770
		Depth V		535	535	740	535	740
		Depth Gas R		720	720	920	720	920
		Depth chimney S		380	380	450	380	450
		Width chimney T		370	370	430	370	430
Net weight (Kg.)				135	165	225	275	380
Electrical power Kw				0.40Kw	0.40Kw	0.40Kw	0.60Kw	0.60Kw
Supply voltage	220-240V 1N	50-60Hz	Hose Section	2x1.5+T				
			Fuse Int. General	10A				
			Differential Device	30mA				
Gas Power	Kcal/h (Hs)			12,000	16,340	21,500	26,660	36,120
	BTU (Hs)			47,800	64,850	85,300	105,800	143,300
	Kw. (Hi)			14,000	19,000	25,000	31,000	42,000
Nominal consumption	Kg/h (29mb)Butane (G-30)			1,165	1,580	2,080	2,580	3,495
	Kg./h (37 mb) Propane (G-31)			1,150	1,560	2,050	2,540	3,445
	m³./h (20 mb) Natural Gas (G-20)			1,480	2,010	2,645	3,280	4,435
	m³./h (25 mb) Natural Gas (G-25)			1,355	1,970	2,050	2,540	4,310
	m³./h (8 mb) City Gas (G-110)			000	000	000	000	000
	m. ³/h (8 mb) City Gas (G-130)			000	000	000	000	000
	m. ³/h (8 mb) City Gas (G-150)			000	000	000	000	000
Performance %	Hot air			90	90	90	90	90
	Steam (%)			-	-	-	-	-
Max. no. trays	GN 1-1			6	10	20	20	40
	GN 2-1			-	-	10	-	20
Maximum load weight in kg				30	50	100	100	200
Approximate water consumption (litres/hour)				15	15	30	30	35
Water inlet pressure Kg/cm				0.5---8				

3 LOCATION

It is recommendable to install the extractor hood to expel fumes to the exterior (see fig 7)

On the left-hand side, there must be a minimum space of 50 cm between the oven and the next appliance HVG. (see fig 8)

Likewise, the over must not be affected by the steam or heat from other appliances. The rear panel must be in place at all times.

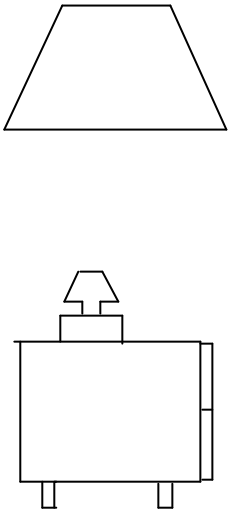


fig 7

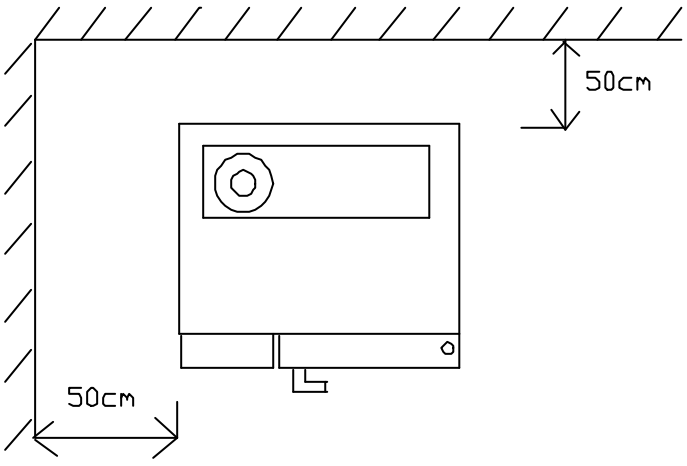


fig 8

4 INSTALLATION

Before proceeding to install the equipment, make sure that the type of gas set for the oven coincides with the gas supplied in the distribution network.

4.1 Electrical Connection.

- The mains voltage must be the one indicated on the characteristics plate.
- REMOVE THE LEFT-HAND SIDE PANEL in HVG models.
- EXTRACT CONTROL PANEL in HCG models
- Use a polychloroprene cable or another with the same characteristics (HO5RN-F).
- Place a general switch independent of the appliance in the mains outlet with a distance between contacts equal to or greater than 3 mm.
- A differential grounding shunt device must be installed.
- The appliance must be connected to ground.
- Access the electrical connections strip and fix the cable to the stuffing box, C (see).
- When installing a number of appliances in a line, these must be connected together to ground.

4.2 Water inlet.

- Only connect drinking water to the appliance.
- Make the connection to the water mains at point A (see .), using the hose supplied.
- The water inlet pressure must be between 0.5 and 8 Kg/cm².
- Install a filter and stop cock at the water inlet.
- For water with a hardness of over 10ºF, a water softening unit is required..
- Conductivity of the water 50-2000µS, lower conductivity optional.
  Minimum concentration of chlorides Cl under 150 mg./litres.

N the case of values of over 2000µS or when exceeding the limit value for chloride, place a hydrogen ion exchanger (see fig 9)

- Redox potential 300 mV, (alternatively chlorine content (CL2) lower than 0,1 mg/litre).

In the case of values of over 300 mV Redox potential, place an activated carbon filter (observe the filter maintenance intervals)
Sedimentation filter Un (0,08 mm) when the impurities in drinking water are high.

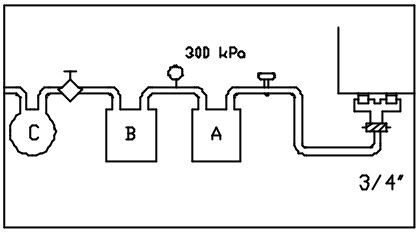


fig 9

4.3 Drain.

The connector hose must be steam resistant (100ºC).

4.4 Gas inlet.

The connection will be made with a hose fitted with a ½" and ¾" connection in HVG models.

A stop cock and pressure regulator must be installed between the appliance and the gas mains.

4.5 Exhaust fume outlet.

The oven must be installed under an extractor hood.(see fig 7)

4.6 Adaptation to different gases.

Gas ovens cannot be adapted to different gases.

5 CONTROL PANEL

HVG-10/11
HVG-10/21
HVG-2.10/11
HVG-20/11
HVG-20/21

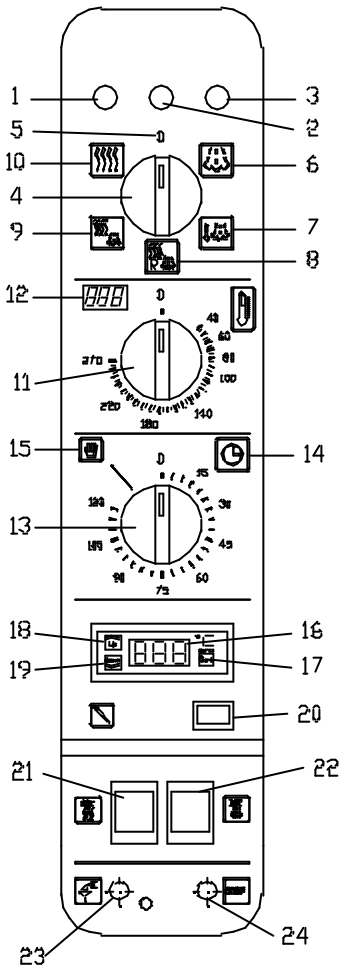


fig 10

1.- Chamber heating indicator.
2.- Oven ON indicator .
3.- Steam generator heating indicator.
4.- Mode selector.
5.- Oven OFF position .
6.- Steam mode position
7.- Low temperature steam mode position.
8.- Regeneration mode position.
9.- Mixed mode position.
10.- Hot air mode position.
11.- Temperature selector .
12.- Chamber temperature indicator.
13.- Time selector.
14.- Variable time position 0-120º. (AUTOMATIC)
15.- Indefinite time fixed position (MANUAL).
16.- Real temperature at probe core.
17.- Core temperature selector.
18.- Button to increase probe core selection.
19.- Button to reduce probe core selection.
20.- Probe core function selector.
21.- Chamber burner ignition reset button.
22.- Generator burner ignition reset button.
23.- Lime indicator.
24.- Machine out of service indicator.

HCG- 6/11
HCG-10/11
HCG-10/21
HCG-2.10/11
HCG-20/11
HCG-20/21

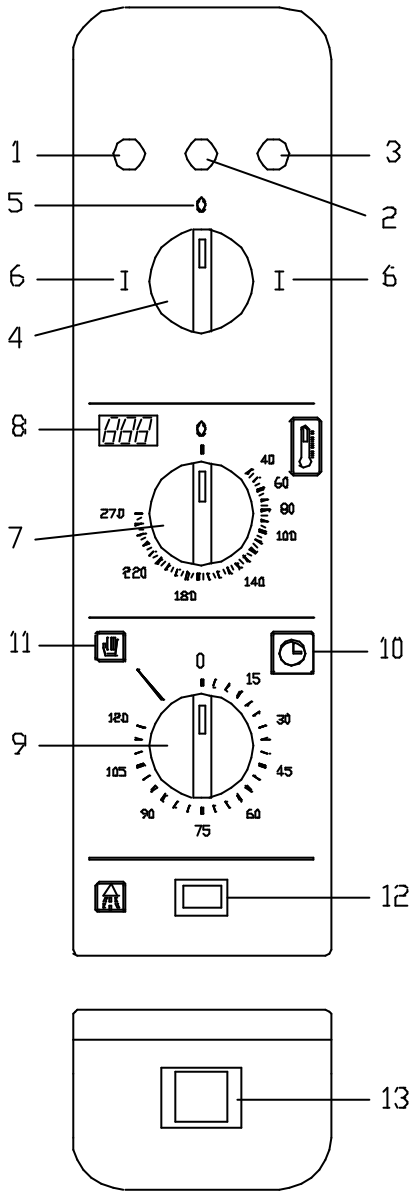
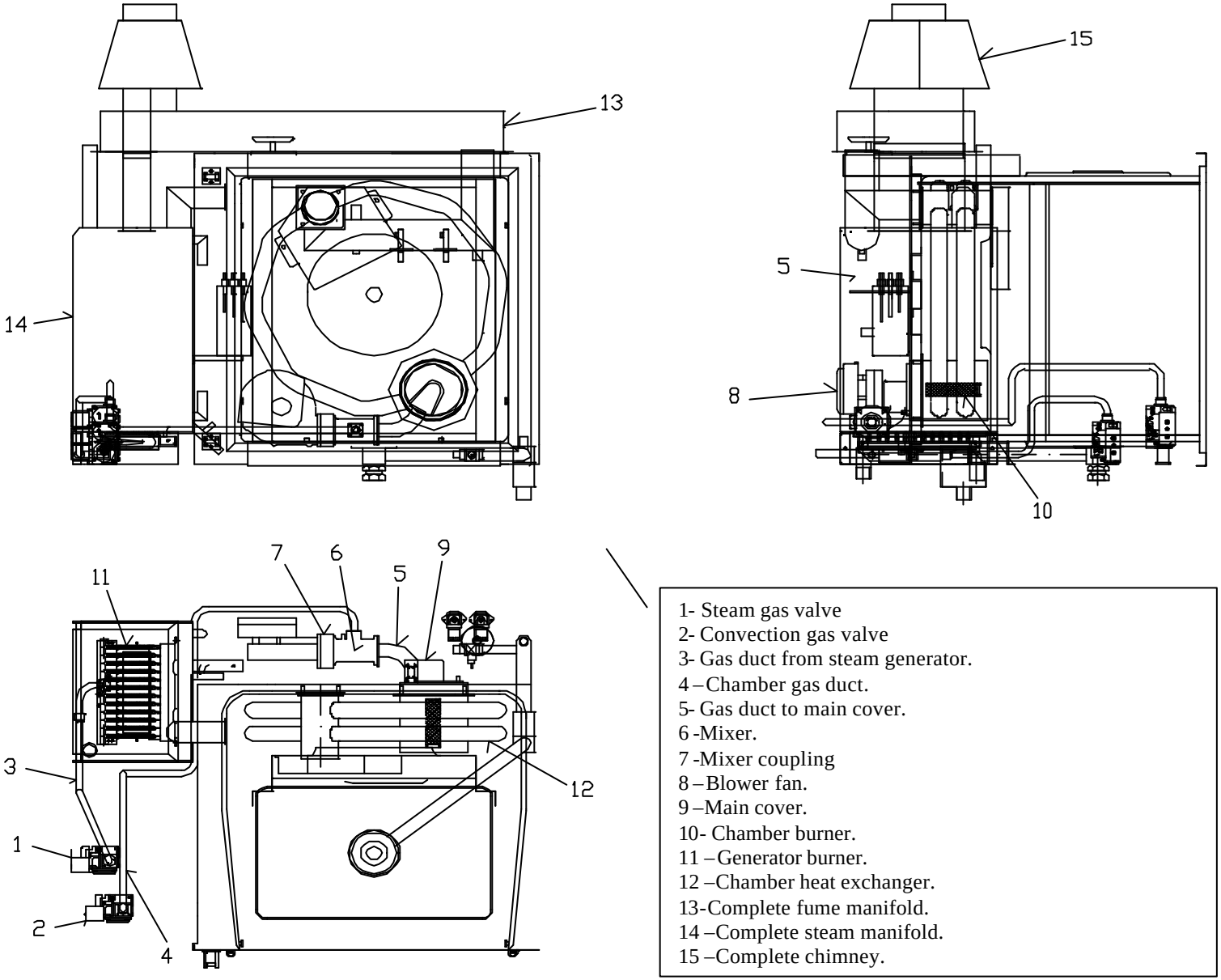


fig 11

1.- Chamber heating indicator.
2.- Oven ON indicator.
3.- Chamber water inlet indicator.
4.- General switch.
5.- OFF position (OFF).
6.- ON position (ON).
7.- Temperature selector.
8.- Real chamber temperature.
9.- Time selector.
10.- Variable time position 0-120' (AUTOMATIC).
11.- Indefinite time fixed position (MANUAL).
12.- Humidifier button.
13.- Ignition system reset button.

6 FUNCTIONAL DIAGRAM (HVG)



1- Steam gas valve
2- Convection gas valve
3- Gas duct from steam generator.
4 – Chamber gas duct.
5- Gas duct to main cover.
6 -Mixer.
7 -Mixer coupling
8 – Blower fan.
9 – Main cover.
10- Chamber burner.
11 – Generator burner.
12 – Chamber heat exchanger.
13-Complete fume manifold.
14 – Complete steam manifold.
15 – Complete chimney.

fig 12

Description of the most important components in the Convection Ignition System (Forced air burner):

VC: Premix centrifugal fan (air blower or supplier) . (fig 28)

This is an air supplier motor for combustion.

-VF: Frequency inverter. (fig-25)

This is the electronics that changes and controls the speed of the fan motor or blower by means of a voltage variation. We use this to define the two speeds at which the blower fan must work. Ignition speed S1 and maximum power speed S2.(fig 26)

-GV1-GV2:Convection gas valve.

This is a Honeywell modulating gas solenoid valve. (fig 24) This modulates the gas opening in accordance with the speed of the blower fan. Valve connected by means of a rubber tube to the blower fan by means of which it is possible to modulate the gas opening in accordance with the air pressure. (fig 23)

Valves are adjusted for each size of oven or type of gas in the factory only.

CEC: Convection ignition control

This is the electronics that carries out the ignition sequence (spark train- gas valve opening - flame detection) (fig 15-16)

Air washer: Washer that defines the amount of correct air for the furnace. (fig 29)

Mixer: This is the air-gas mixer for combustion. (fig 28)

BE: This is the spark plug that generates the spark for ignition.(fig 22)

BD: This is the ionisation flame detector. (fig 22)

TC: Chamber thermostat 30-270ºC

This is the electronic thermostat that controls the chamber temperature (fig. 56). This also has a contact fixed at 100ºC called T100.

Description of very important components in the Steam Ignition System (Atmospheric burner):

GV3-GV4: Steam gas valve.

Steam gas solenoid valve SIT 830.(fig 23)

CEV: Steam ignition control

This is the electronics that carries out the ignition sequence (spark - gas valve opening- flame detection) (fig 15-16)

CN: Water level control.

Electronics that control the generator water level. (fig 37)

BE: This is the spark plug that generates the spark for ignition.(fig 31)

BD: This is the ionisation flame detector.

RE1: Energy regulator.(fig 34)

Electro-mechanical component for controlling electrical contacts.

Note: In steam mode, the blower fan (VC) always works at ignition speed.

Blower fan sequence VC
Correct ignition.

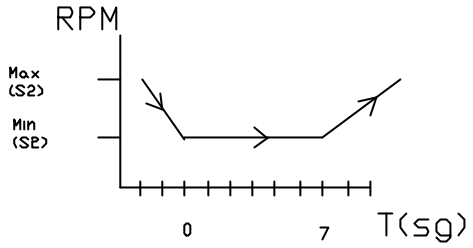


fig 13

Blower fan sequence VC
Incorrect ignition.

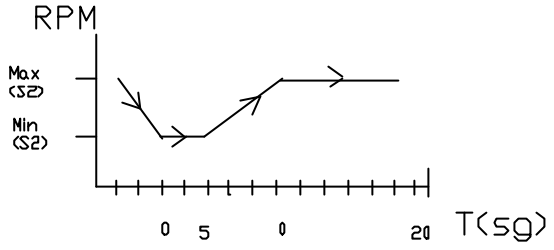


fig 14

Ignition control (CEC and CEV)

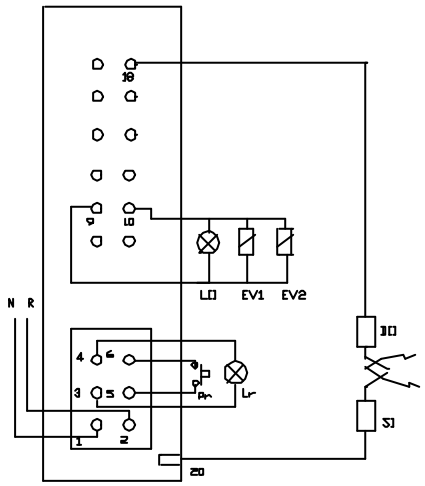


fig 15

CONNECTION

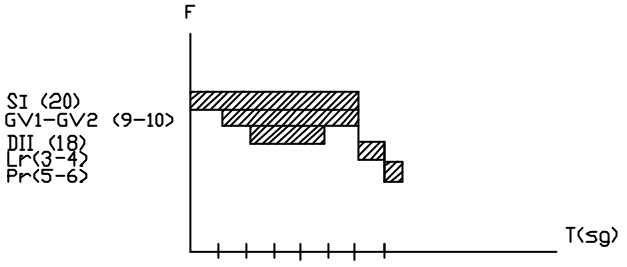


fig 16

IGNITION SEQUENCE

ACRONYMS	PR	LR	GV	SI	DII	LII
FUNCTIONS	RESET BUTTON	RESET LIGHT	GAS VALVE	SPARK PLUG	FLAME DETECTOR	HEATING INDICATION LAMP

FUNCTIONAL DIAGRAM HVG and HCG (CONVECTION MODE)

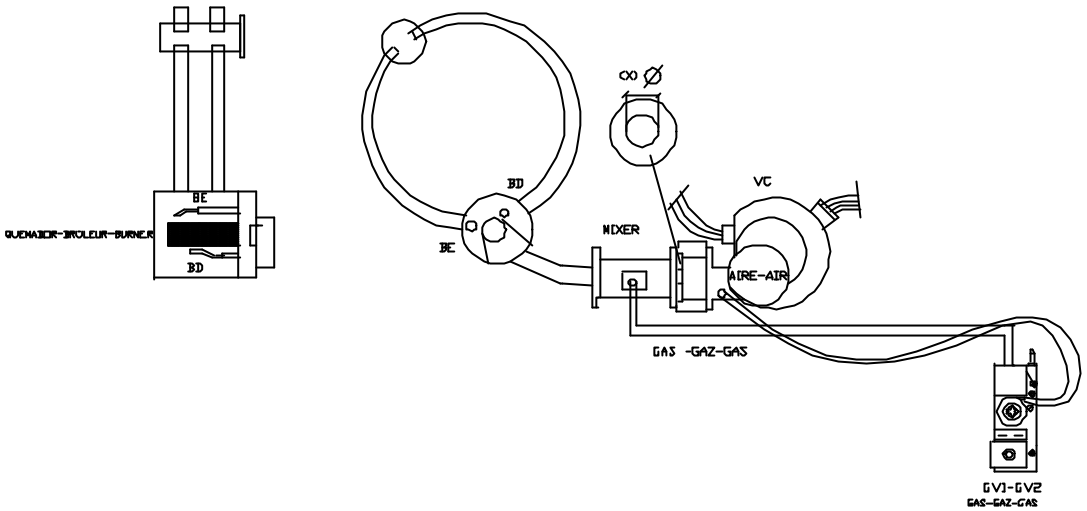


fig 17

HVG CONVECTION MODE (30-270ºC)

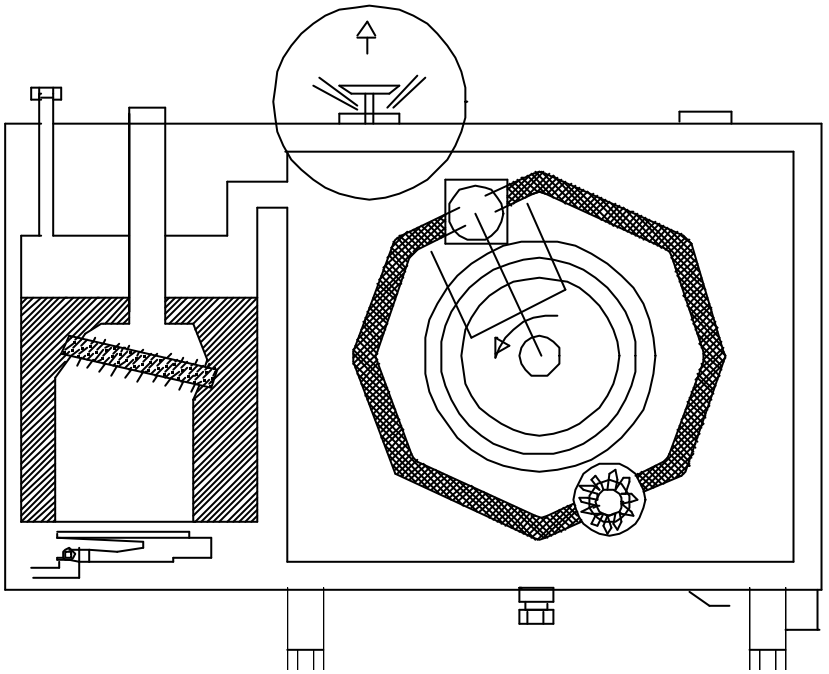


fig 18

CONVECTION MODE 30º-270ºC

Convection burner is working.
Chimney open.

FUNCTIONAL DIAGRAM HVG (STEAM MODE 100º C-ADJUSTABLE STEAM MODE 30-100º C)

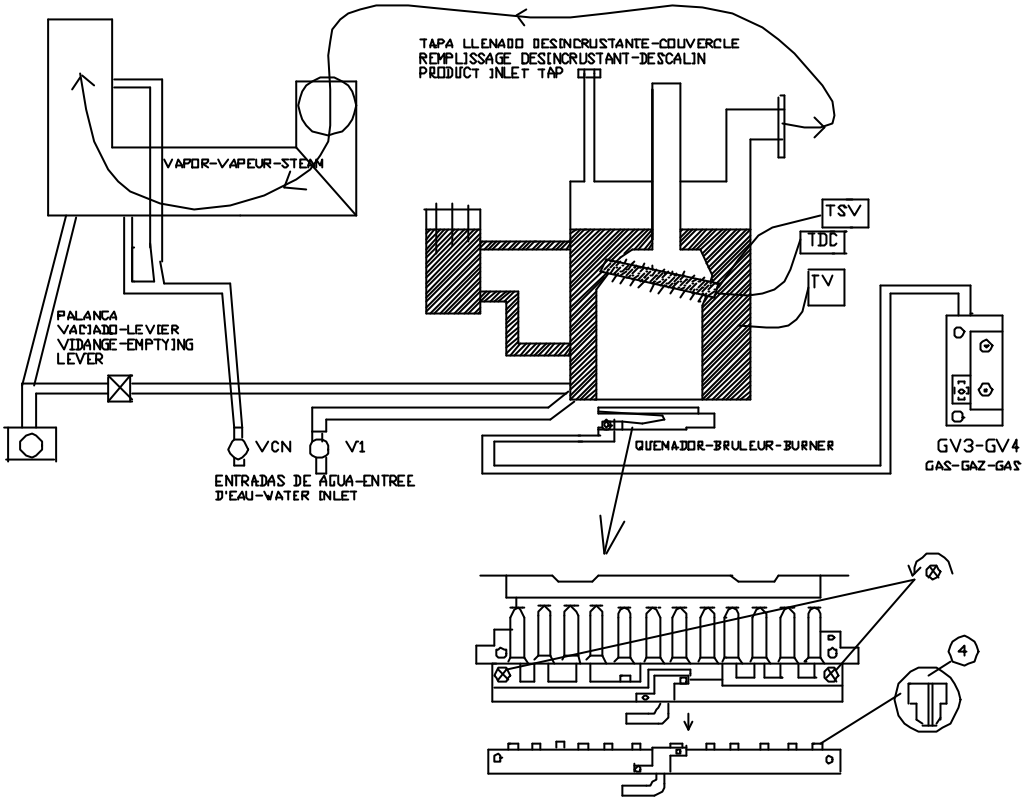


fig 19

HVG STEAM MODES 100ºC- ADJUSTABLE STEAM 30-100ºC

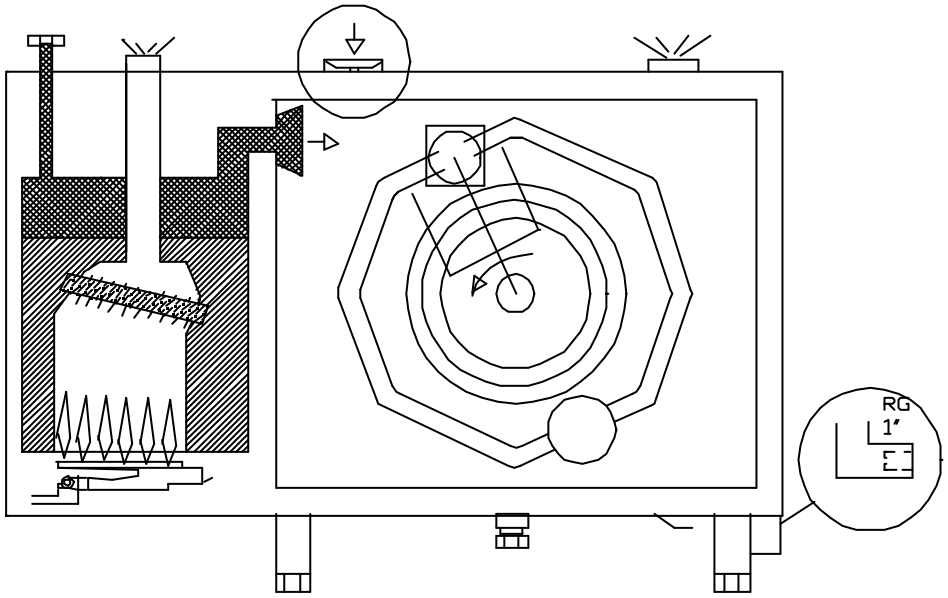


fig 20

STEAM MODES 100ºC-ADJUSTABLE STEAM

Convection burner is working.
Chimney closed.

HVG MIXED-REFRIGERATION MODES 30º-270ºC

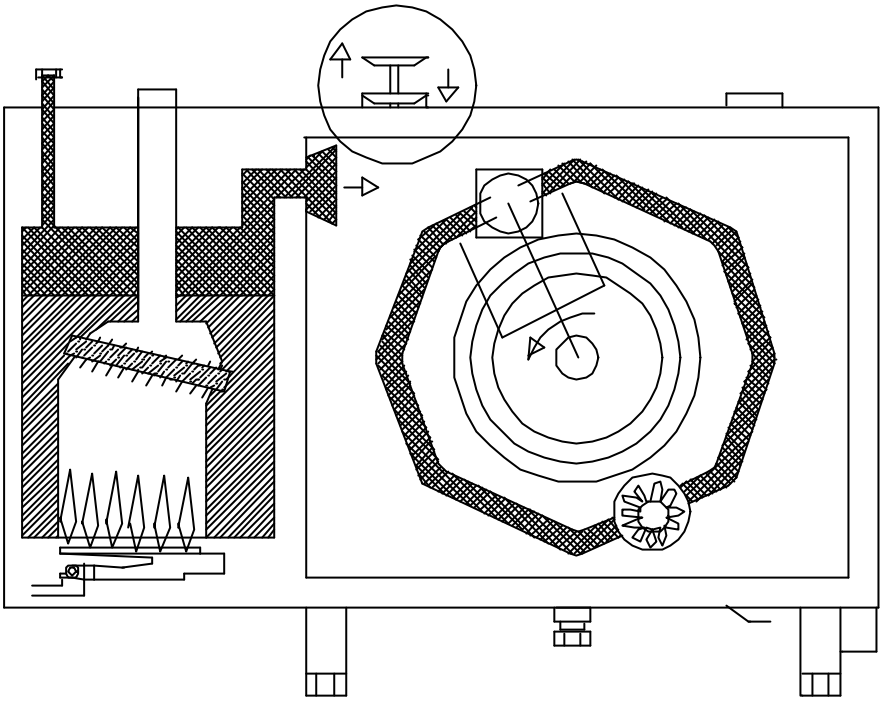


fig 21

REGENERATION MODE:

- Initial phase: Both burners simultaneously – chimney open.
-Temperature maintenance: Burners cycle alternatively. 1st Convection –chimney open and 2nd Steam- chimney closed. (Steam cycles in turn with the RE1 energy regulator 15 sec. ON and 15sec. OFF)

MIXED MODE:

-Initial phase: Convection burner – chimney open.
-Temperature maintenance: Burners cycle . 1st Convection –chimney open and 2nd Steam- chimney closed. (Steam cycles in turn with the RE1 energy regulator 15 sec. ON and 15sec. OFF)

7 FIGURES

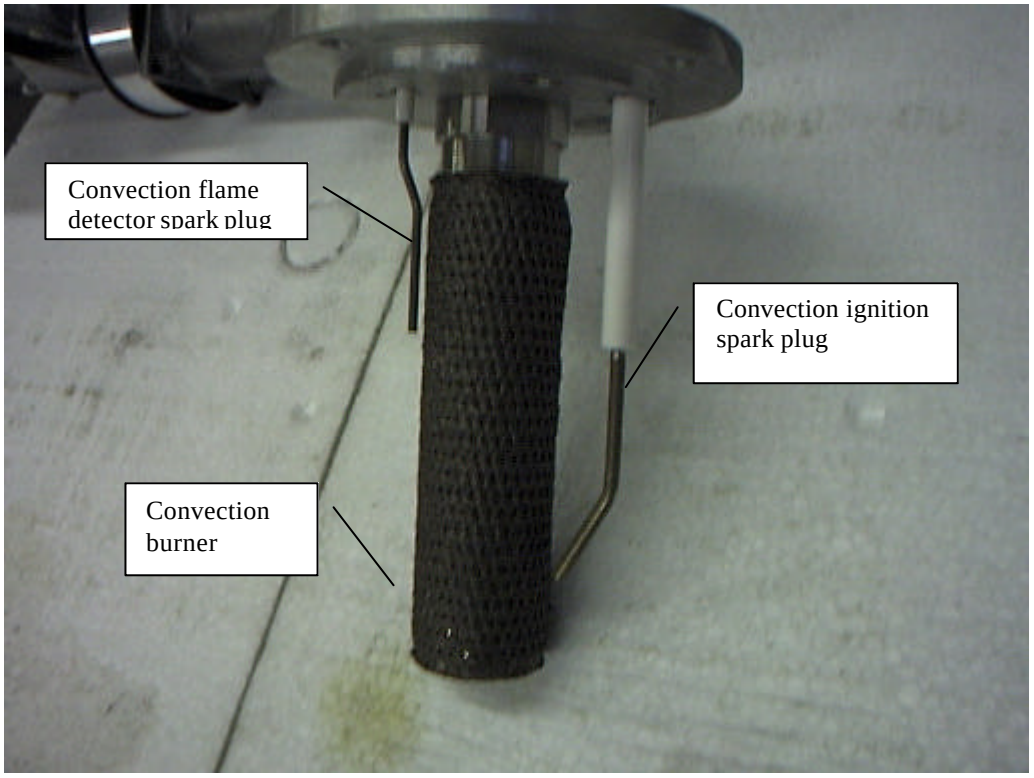


fig 22

DETAILED VIEW OF BURNER, IGNITION SPARK PLUG AND FLAME DETECTOR

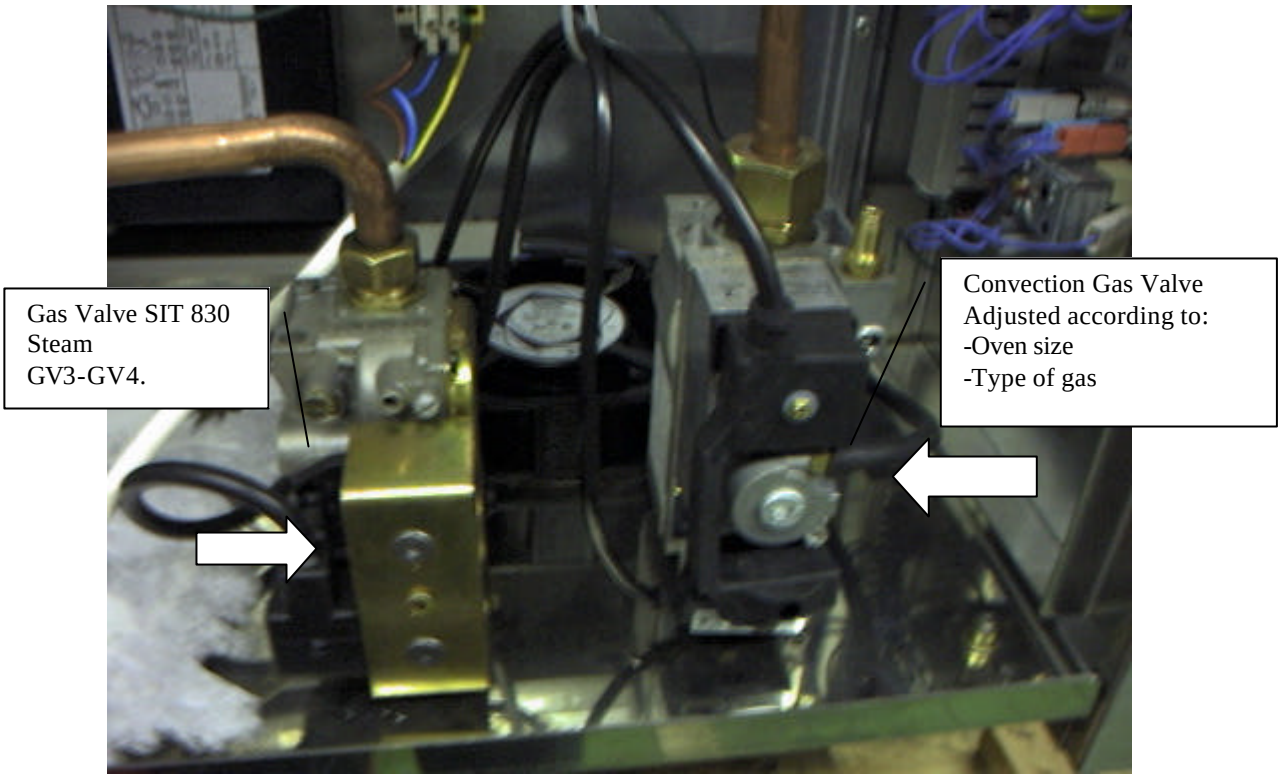


fig 23

VR 4605-VA 1041B Valve (Convection Gas Valve)

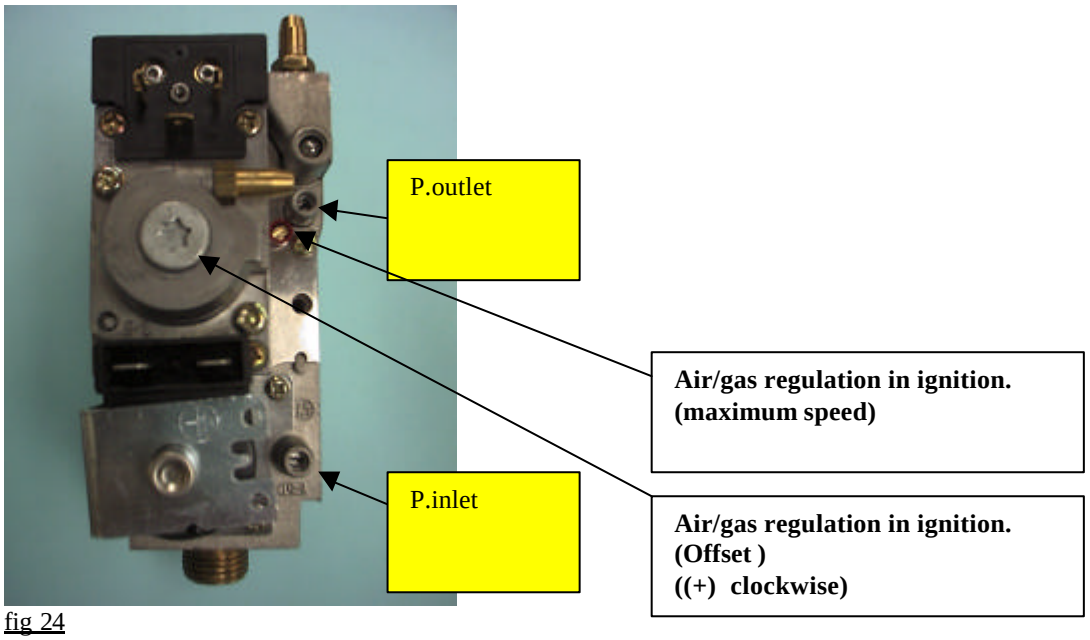


fig 24

Frequency inverter (T-083002)

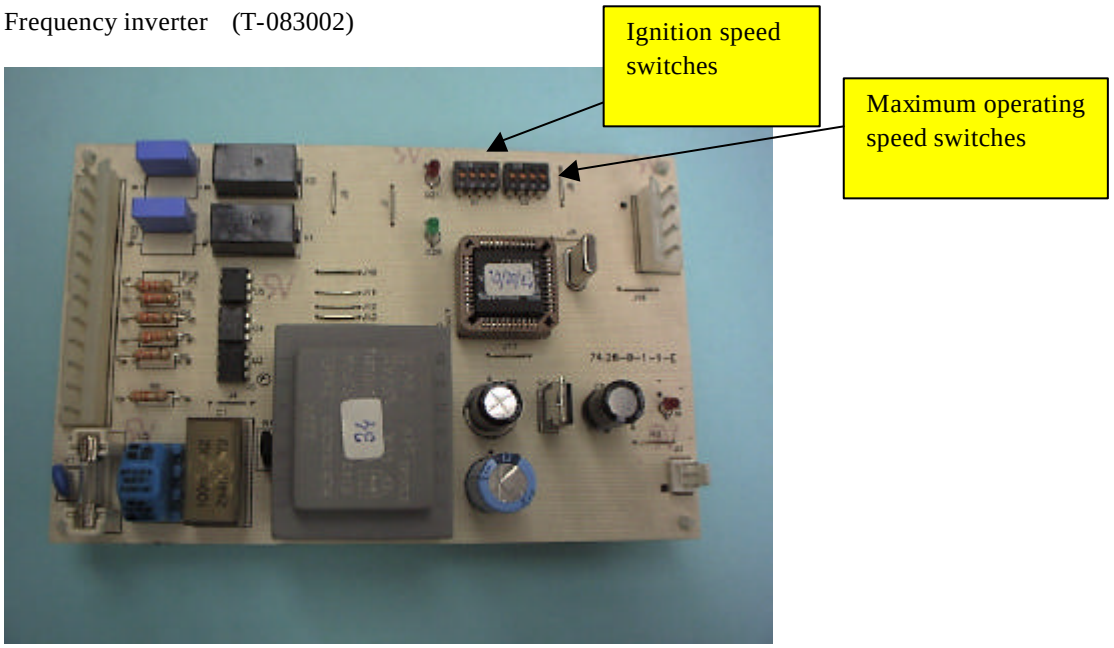
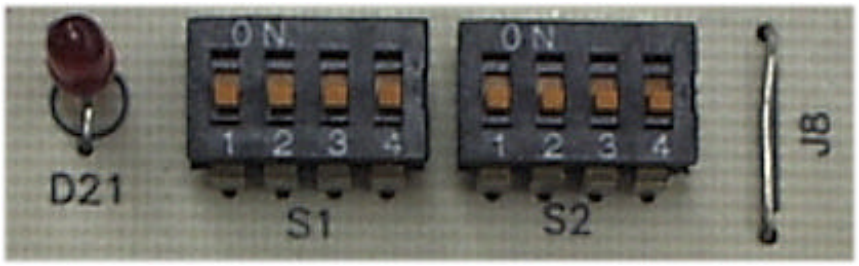


fig 25



Detailed view of frequency inverter switches

fig 26

DETAILED VIEW OF GAS AIR MIXTURE IN THE CONVECTION IGNITION SYSTEM AT REAR OF OVEN

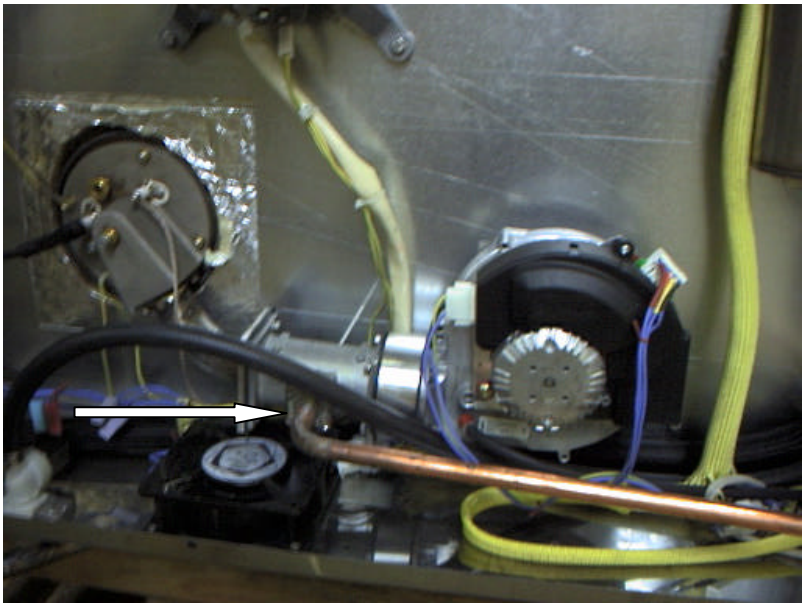


fig 27

DETAILED VIEW OF BLOWER, MIXER AND BURNER SUPPORT

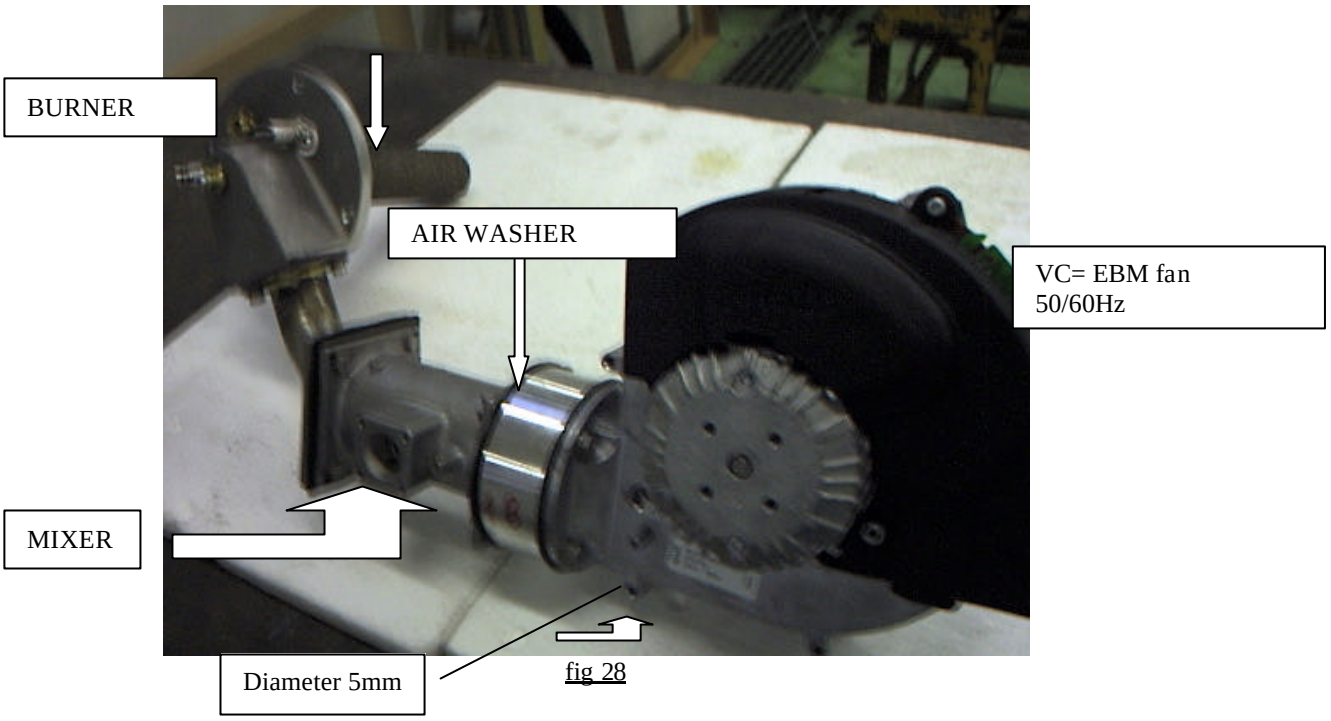


fig 28

DETAILED VIEW OF WASHER

fig 29

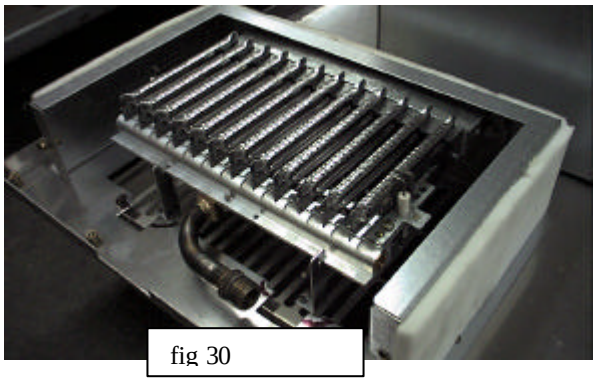


fig 30

Steam burner

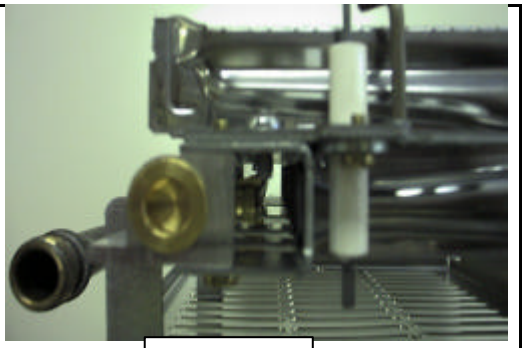


fig 31

Detailed view of steam burner

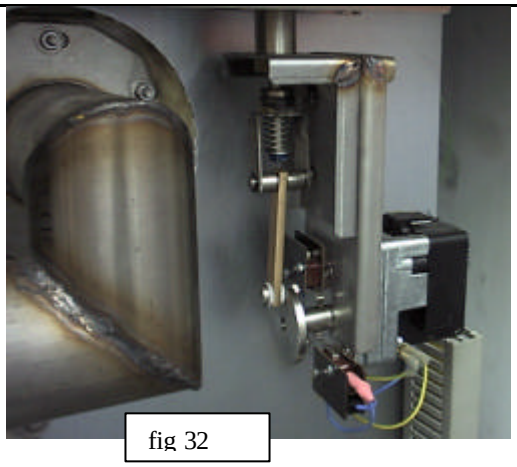


fig 32

Detail of chimney seal mechanism

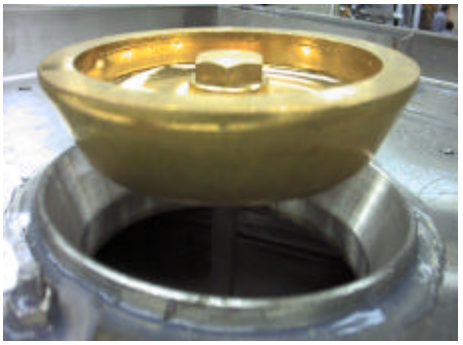


fig 33

Detailed view of chimney seal

fig 34

RE1 Energy regulator

fig 35

TV Steam thermostat

fig 36

TCN Condensation thermostat

fig 37

CN Level control

HVG (SIDE VIEW OF ELECTRICAL COMPONENTS)

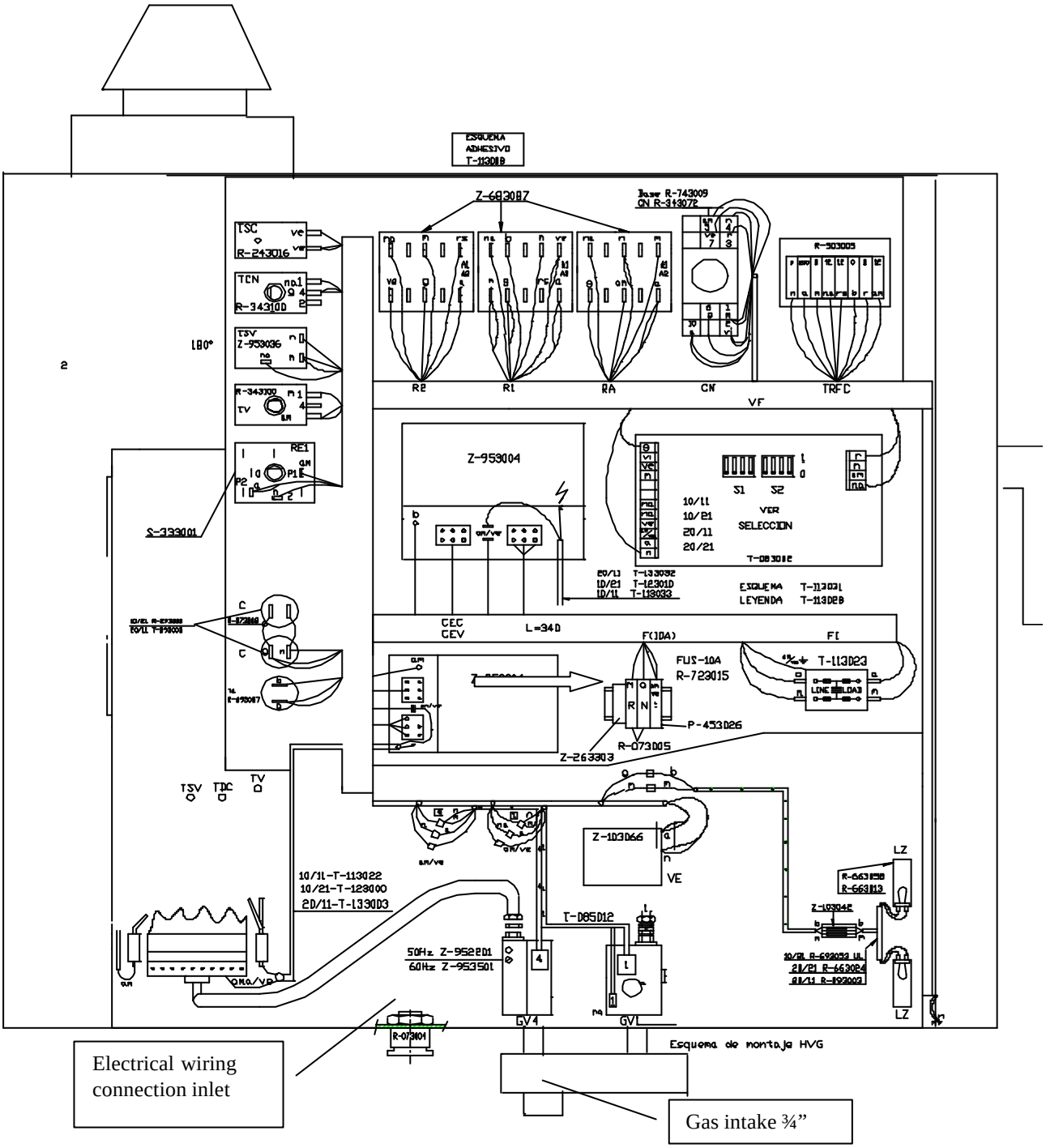


fig 38

HVG (REAR VIEW)

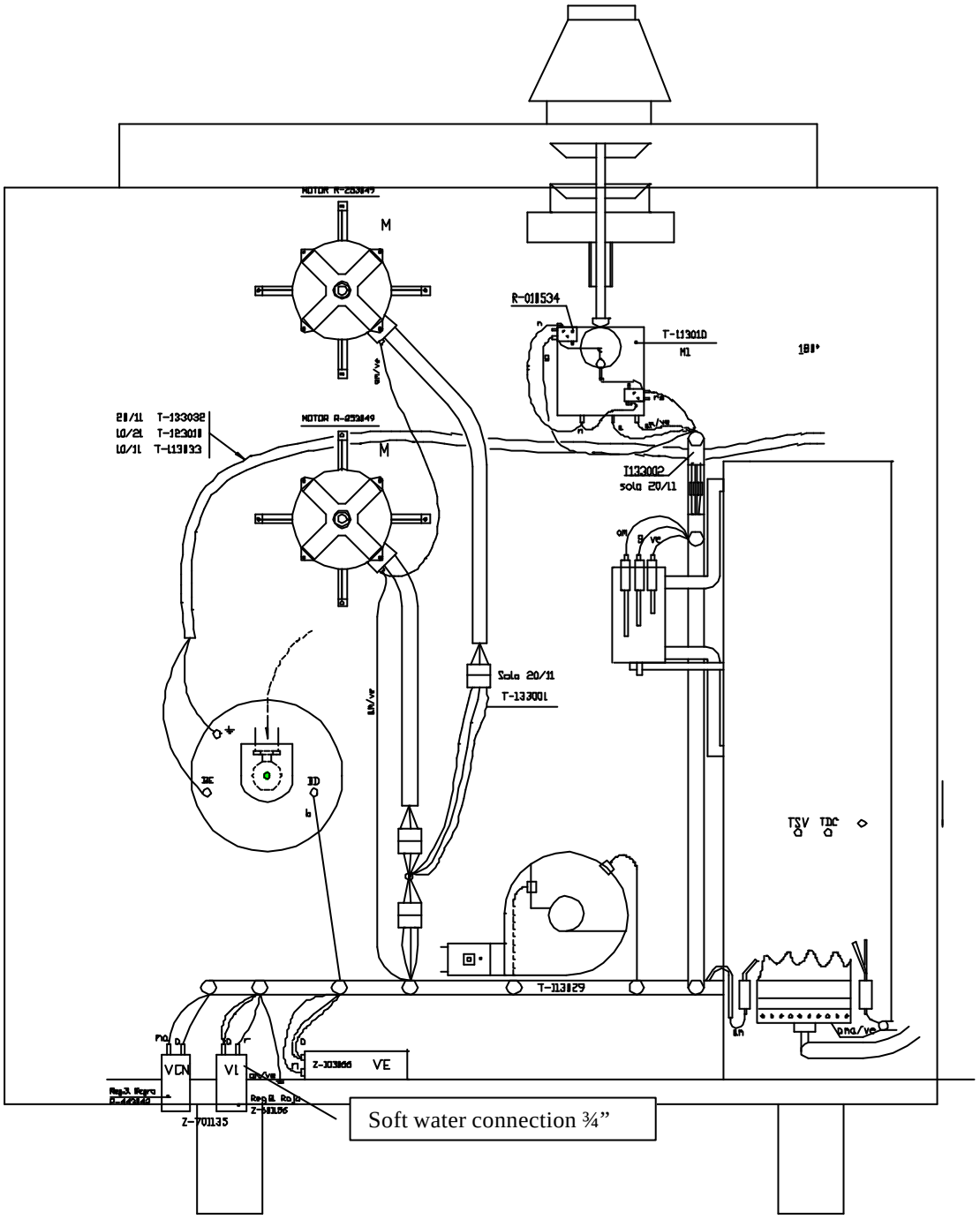


fig 39

8 ELECTRICAL DIAGRAMS AND ASSEMBLY DIAGRAMS

Acronyms

VF: Frequency inverter

VF2: CONTACT INDICATING THAT THE VC BLOWER FAN IS IN OPERATION.

VF1: CONTACT THAT CLOSES WHEN:

-**TC** = ON

-**BLOWER SPEED =** Slow blower ignition speed.

CEC: Convection ignition control.
CEV: Steam ignition control.

RE1: Energy regulator15sec=ON / 15sec =OFF

ESPA?OL

CODIGO DE COLORES:
r = roja
a = azul
m = marron
g = gris
n = negro
b = blanco
vi = violeta
am = amarillo
na = naranja
rs = rosa
ve = verde
am/ve = amarillo verde

COMPONENTES:

BD = Bujia de detector de llama
BE = Bujia de Encendido
C = Condensador Motor
C.E.C. = Control Encendido cÁmara
C.E.V. = Control encendido vapor
CN = Control nivel de agua
F = Fusible
FI= Filtro interferencias
FM = TÁrmico Motor
GV1 = ElectrovÁlvula de gas cÁmara (Control)
GV2 = ElectrovÁlvula de gas cÁmara (Seguridad)
GV4 = ElectrovÁlvula de gas vapor (Control)
GV5 = ElectrovÁlvula de gas vapor (Seguridad)
Ia = Micro chimenea abierta
Ic = Micro chimenea cerrada
IG = Interruptor general
IP = Interruptor puerta
IR = Selector regulador sonda nÚcleo
L1 = LÁmpara de funcionamiento
L2 = LÁmpara calentamiento cÁmara
L4 = LÁmpara entrada de vapor
L3 = LÁmpara indicador de bloqueo cÁmara
L5 = LÁmpara indicador de bloqueo vapor
L6 = LÁmpara seguridad de vapor
L7 = LÁmpara detección de cal
Lz = Luz interior cÁmara
M = Motor
M1 = Motor accionamiento chimenea
R2, R1, Ra = ReleÁ Auxiliar
REI= Regulador de energÍa
RSTC = Pulsador de rearme cÁmara
RSTV = Pulsador de rearme vapor
RTS = Regulador sonda nÚcleo
T100 = Termostato fijo 100ºC
Ta = Timbre avisador
TC = Termostato cÁmara
TCN = Termostato condensación
TDC = Termostato detección de cal
TP = Temporizador 0-120
TRF = Transformador
TSC = Termostato seguridad cÁmara
TSV = Termostato seguridad de vapor
TV = Termostato de vapor
VI = ElectrovÁlvula de agua de llenado
VC = Ventilador centrifuga premezcla
VCN = ElectrovÁlvula de agua de condensación
VE = Ventilador cuadro elÉctrico
VF = Variador de frecuencia

FRANÇAIS

CODES DE COULEURS:
r = rouge
a = bleu
m = marron
g = gris
n = noir
b = blanc
vi = violet
am = jaune
na = orange
rs = rose
ve = vert
am/ve = jaune/vert

COMPOSANTS:

BD = Veilleuse de dÉtection de flamme
BE =Veilleuse d'allumage
C = Condensateur moteur
C.E.C. = Controle d'allumage de chambre
C.E.V. = Controle d'allumage de vapeur
CN = Controle du niveau d'eau
F = Fusible
FI= Filtre interfÉrences
FM =Moteur thermique
GV1 = Electrovalve de chambre gaz (controle)
GV2 = Electrovalve de chambre gaz (sÉcuritÉ)
GV4 = Electrovalve de vapeur gaz (controle)
GV5 = Electrovalve de vapeur gaz (sÉcuritÉ)
Ia = Micro cheminÉe ouverte
Ic = Micro cheminÉe fermÉe
IG = Interruptor general
IP = Interrupteur de porte
IR = SÉlecteur rÉgulateur de sonde noyau
L1 = Lampe de fonctionnement
L2 = Lampe de chauffe chambre
L4 = Lampe d'arrivÉe de vapeur
L3 = Lampe tÉmoin de blocage de chambre
L5 = Lampe tÉmoin de blocage de vapeur
L6 = Lampe de sureté de vapeur
L7 = Lampe de dÉtection de calcaire
Lz = LumiÉre intÉrieure de chambre
M = Moteur
M1 = Actionnement moteur de cheminÉe
R2, R1, Ra = Relais auxiliaire
REI = RÉgulateur d'Énergie
RSTC = Bouton de rÉarmement de chambre
RSTV = Bouton de rÉarmement de vapeur
RTS = RÉgulateur de sonde noyau
T100 = Thermostat fixe 100°C
Ta = Sonnerie d'alarme
TC = Thermostat de chambre
TCN = Thermostat de condensation
TDC = Thermostat de dÉtection de calcaire
TP = Temporisateur 0-120
TRF = Transformador
TSC = Thermostat de sureté de chambre
TSV = Thermostat de surete de vapeur
TV = Thermostat de vapeur
VI = Electrovalve de remplissage d'eau
VC = Ventilateur de centrifugeuse de prÉmÉlange
VCN = Electrovalve de condensation d'eau
VE = Ventilateur tableau electrique
VF = Variador de frecuencia

ENGLISH

COLOUR CODE
r = red
a = blue
m = brown
g = grey
n = black
b = white
vi = violet
am = yellow
na = orange
rs = pink
ve = green
am/ve = yellow-green

COMPONENTS:

BD = Flame detector spark plug
BE = Ignition spark plug
C = Motor condenser
C.E.C. = Cooking chamber ignition control
C.E.V. = Steam ignition control
CN = Water level control
F = Fusible
FI= Interference filter
FM = Motor thermal switch
Cooking chamber gas solenoid valve (control)
GV2 = Cooking chamber gas solenoid valve (safety)
GV4 = Steam gas solenoid valve (control)
GV5 = Steam gas solenoid valve (safety)
Ia = Chimney open microswitch
Ic = Chimney closed microswitch
IG = Interruptor general
IP = Door switch
IR = Core probe regulator selector
L1 = On/off lamp
L2 = Cooking chamber heating lamp
L4 = Steam inlet lamp
L3 = Cooking chamber lock indicator lamp
L5 = Steam lock indicator lamp
L6 = Steam safety lamp
L7 = Lime detection lamp
Lz = Cooking chamber interior lamp
M = Motor
M1 = Chimney drive motor
R2, R1, Ra = Auxiliary relay
REI= Energy regulator
RSTC = Cooking chamber reset button
RSTV = Steam reset button
RTS = Core probe regulator
T100 = Fixed 100°C thermostat
Ta = Warning buzzer
TC = Cooking chamber thermostat
TCN = Condensation thermostat
TDC = Lime detection thermostat
TP = 0-120 timer
TRF = Transformer
TSC = Cooking chamber safety thermostat
TSV = Steam safety thermostat
TV = Steam thermostat
VI = Water filling solenoid valve
VC = Pre-mix centrifuge fan
VCN = Condensation water solenoid valve
VE = Switchboard fan
VF = Frequency inverter

DEUTSCH

FARBENCODE
r = rot
b = blau
m = braun
g = grau
n = schwarz
b = weiss
vi = violett
am = gelb
na = orangers
rs = rosa
ve = grün
am/ve = gelb/grün

KOMPONENTEN:

BD = Zundkerze des Flammendetektors
BE = Zundkerze der Zundung
C = Motorkondensator
C.E.C. = Zundkontrolle Kammer
C.E.V. = Zundkontrolle Dampf
CN = Kontrolle Wasserstand
F = Fusible
FI= Interferenzaffilter
FM = Thermomater
GV1 = Electroventil Gas, Kammer (Kontrolle)
GV2 = Electroventil Gas, kammer (Sicherheit)
GV4 = Electroventil Gas, Dampf (Kontrolle)
GV5 = Electroventil Gas, Dampf (Sicherheit)
Ia = Mikroschacht geoffnet
Ic = Mikroschacht geschlossen
IG = Hauptschalter
IP = Turschalter
IR = Wahlregler Kernsonde
L1 = Funktionsleuchtanzeige
L2 = Ermarnungsleuchtanzeige Kammer
L4 = Leuchtanzeige Dampfeintritt
L3 = Leuchtanzeige Blockierung Kammer
L5 = Leuchtanzeige Blockierung Dampf
L6 = Sicherheitsleuchtanzeige Dampf
L7 = Kalkonzeige
Lz = Innenbeleuchtung Kammer
M = Motor
M1 = Motorantrieb Mikroschacht
R2, R1, Ra = ReLÄ Auxiliar
REI= Hilfsrelais
RSTC = Bedienungstaste Durch, Aufladung Kammer
RSTV = Bedienungstaste Durch, Aufladung DampF
RTS = Kernsondenregler
T100 = Thermostat auf 100°C
Ta = Meldeklingel/Lautwerk
TC = Thermostat Kammer
TCN = Kondensationsthermostat
TDC = Thermostat Kalkanzeige
TP = Zeitschalter 0-120
TRF = Transformator
TSC = Sicherheitsthermostat Kammer
TSV = Sicherheitsthermostat Dampf
TV = Dampfthermostat
VI = Elektraventil Wasserfullung
VC = Zentrifugallufter Vermischung
VCN = Elektroventil Kondenswasser
VE = Schalttafelventilator
VF = Frequenzvandler

ITALIANO

CODICE DEI COLORI:
r = rosso
a = azzurro
m = marrone
g = grigio
n = nero
b = bianco
vi = viola
am = giallo
na = arancione
rs = rosa
ve = verde
am/ve = giallo/verde

COMPONENTI:

BD = Candela del rilevatore di fiamma
BE = Candela d'accensione
C = Condensatore motore
C.E.C. = Controllo accensione cabina
C.E.V. = Controllo accensione vapore
CN = Controllo livello d'acqua
F = Fusibile
FI= Filtro interferenze
FM = Termico Motore
GV1 = Elettrovalvola gas cabina (controllo)
GV2 = Elettrovalvola gas cabina (sicurezza)
GV4 = Elettrovalvola gas vapore (controllo)
GV5 = Elettrovalvola gas vapore (Sicurezza)
Ia = Micro camino aperto
Ic = Micro camino chiuso
IG = Interruttore generale
IP = Interruttore porta
IR = Selettore regolatore sonda nucleo
L1 = Lampadina di funzionamento
L2 = Lampadina riscaldamento cabina
L4 = Lampadina ingresso vapore
L3 = Lampadina indicatore di blocco cabina
L5 = Lampadina indicatore di blocco vapore
L6 = Lampadina di sicurezza vapore
L7 = Lampadina rilevatore di calcare
Lz = Luce interna cabina
M = Motore
M1 = Motore funzionamento camino
R2,R1,Ra = Relais ausiliario
REI= Regolatore d'energÍa
RSTC = Pulsante di riarmo vapore
RSTV = Regolatore sonda nucleo
RTS = Regulador Sonda Nucleo
T100 = Termostato fissa 100°C
Ta = Campanello avvisatore
TC = Termostato cabina
TCN = Termostato condensazione
TDC = Termostato rilevatore di calcare
TP = Timer 0-120
TRF = Transformador
TSC = Termostato sicurezza cabina
TSV = Termostato sicurezza vaspore
TV = Termostato vapore
VI = Elettravalvola acqua di riempimento
VC = Ventilatore centrifuga
VCN = Elettrovalvola acqui di condensazione
VE = Ventilatore quadro elettrico
VF = Variatore di frequenza

T-113028
HC-75483

HVG-10/11 HVG-10/21 HVG-20/11 HVG-20/21

IG	1 1a	2 2a	3 3a	4 4a	5 5a	6 6a	7 7a	8 8a	9 9a	10 10a
0			X							
1	X	X		X		X	X			
2	X	X		X			X			
3	X	X		X	X			X	X	X
4	X	X		X	X			X		X
5	X	X	X					X		

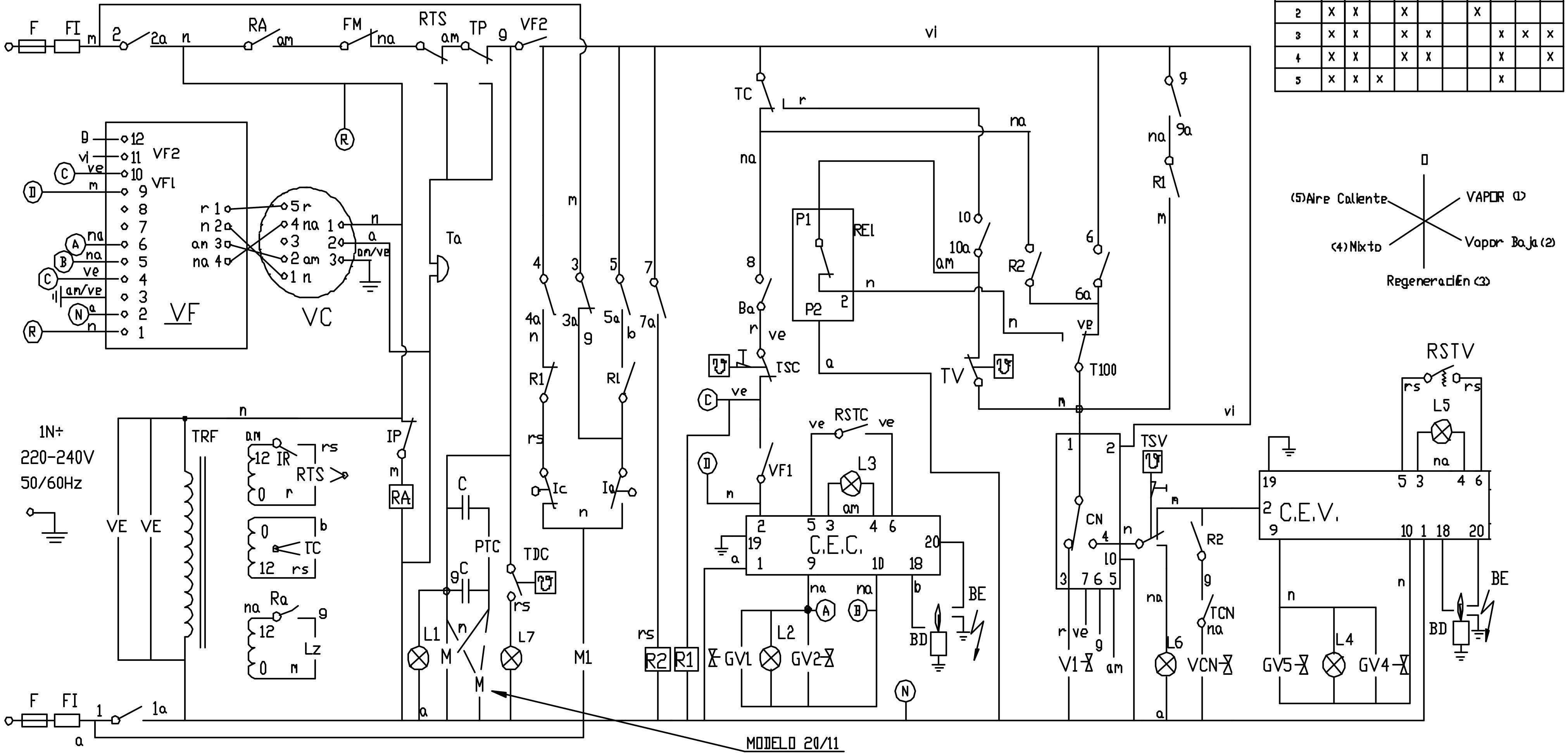


fig 40

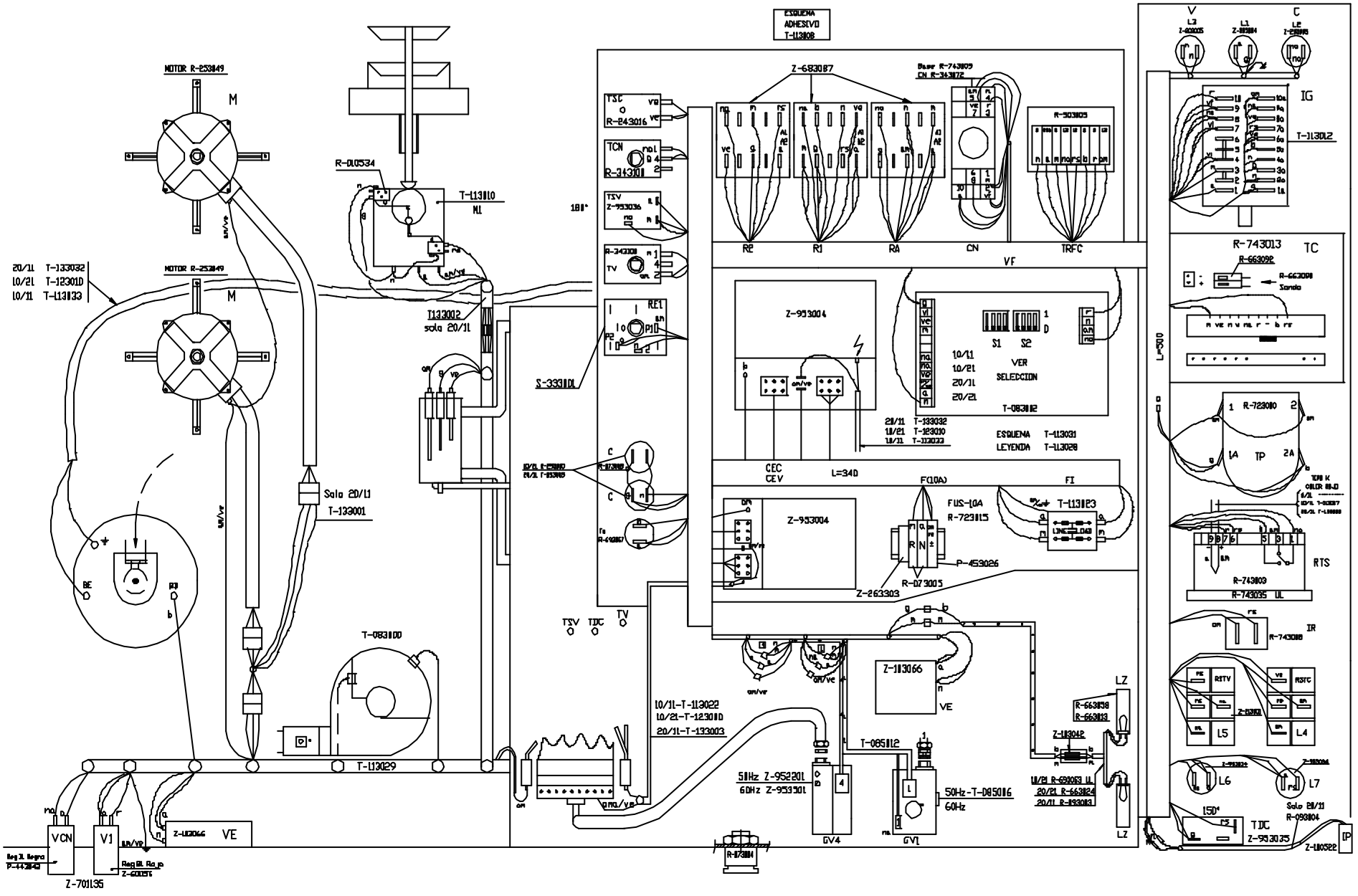
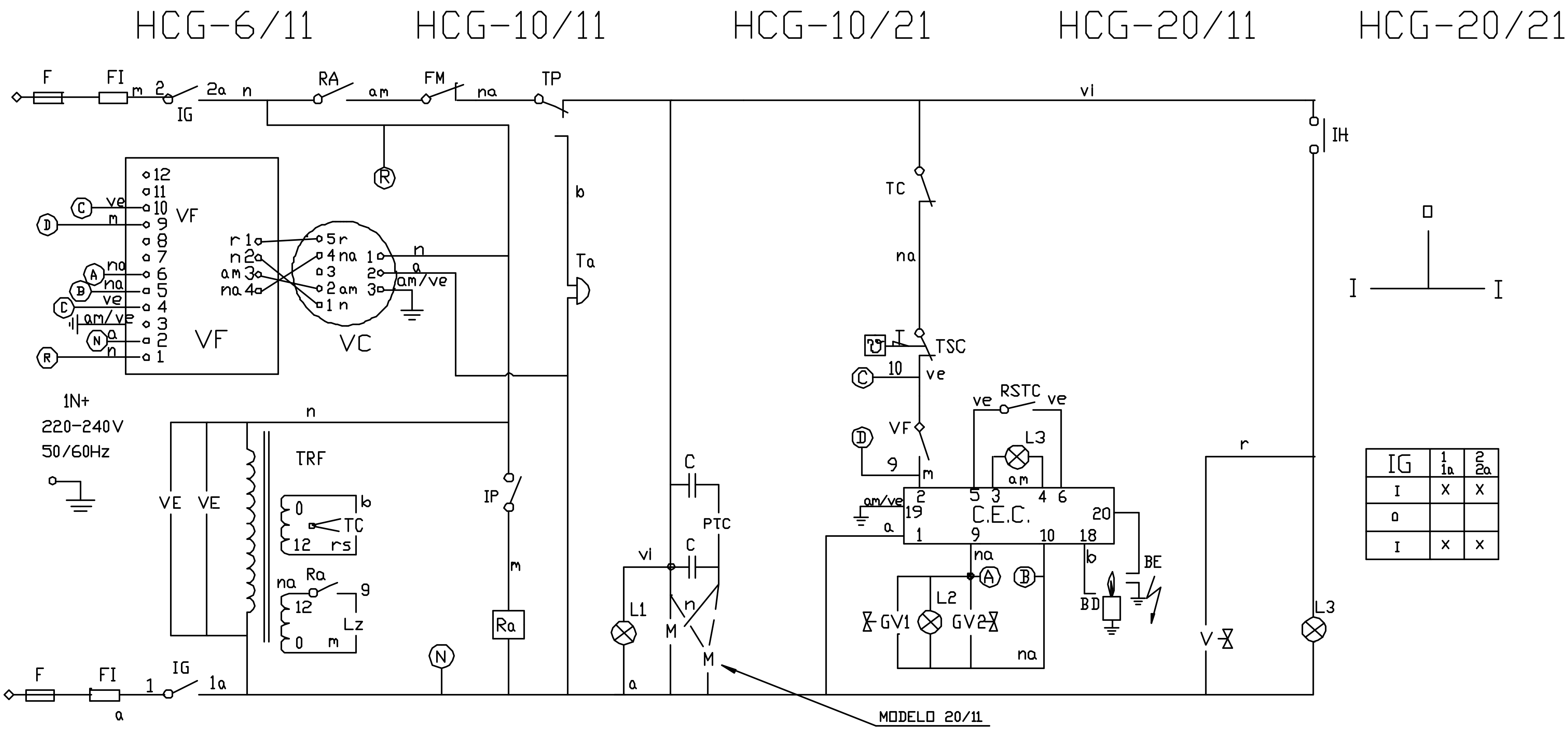

MOTOR R-253849
M
MOTOR R-253849
M
R-010534
T-113110
N1
T133002
sala 20/11
20/11 T-133032
10/21 T-123010
10/11 T-113133
Sala 20/11
T-139001
T-083100
T-113029
VCN
V1
VE
Z-701135
ESQUEMA
ADHESIVO
T-113108
Z-683087
Base R-743009
CN R-363172
TSC
R-843016
TCN
R-343101
TSV
Z-953036
R-343108
TV
RE1
P10
P2
S-333101
RE
R1
RA
CN
TRFC
R-503805
VF
Z-953004
S1
S2
10/11
10/21
20/11
20/21
VER
SELECCION
T-083112
21/11 T-133032
10/21 T-123010
10/11 T-133033
ESQUEMA T-113031
LEYENDA T-113028
CEC
CEV
L=340
F(10A)
FUS-10A
R-723115
FI
T-113123
P-453026
R-073005
Z-263303
TSV TDC TV
Z-113066
VE
10/11-T-113022
10/21-T-123010
20/11-T-133003
T-085112
50Hz Z-952201
60Hz Z-953301
50Hz-T-085016
60Hz
GV4
GV1
LZ
R-663038
R-663013
Z-113042
10/21 R-663024
20/11 R-663013
R-073004
V
C
IG
T-113012
R-743013
TC
R-663092
R-663098
Sonda
L=510
R-723080
1A
TP
2A
RTS
R-743003
R-743035 UL
IR
R-743088
RSTV
RSTC
L5
L4
L6
L7
Sala 20/11
R-093104
150°
TDC
Z-953035
TP
Z-180522

fig 41



IG	1 1a	2 2a
I	X	X
0		
I	X	X

fig 42

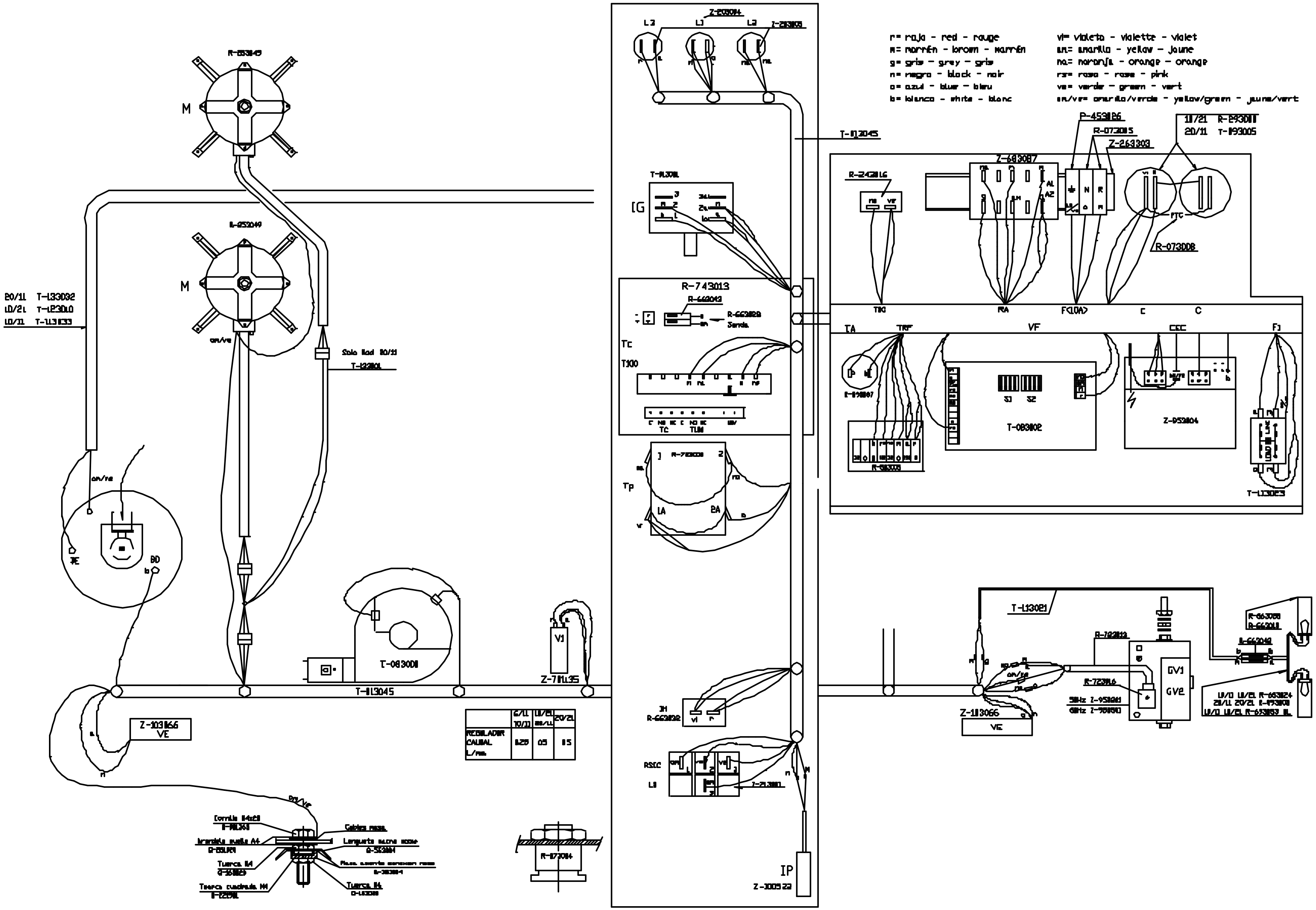

r= rojo - red - rouge
m= marrón - brown - marrón
g= gris - grey - gris
n= negro - black - noir
a= azul - blue - bleu
b= blanco - white - blanc
vi= violeta - violette - violet
am= amarillo - yellow - jaune
na= naranja - orange - orange
rs= rosa - rose - pink
ve= verde - green - vert
am/ve= amarillo/verde - yellow/green - jaune/vert
R-743013
T-083001
T-113045
Z-103166
VE
Z-113066
GV1
GV2
IP
M
BD

fig 43

9 PREVENTIVE MAINTENANCE

In order to guarantee the safe, cost-effective and non contaminating operation of your oven, periodic maintenance is essential. This allows you to keep it in good condition and prolongs its service life. Maintenance must be done by AUTHORISED TECHNICAL PERSONNEL, at least once a year. Servicing is of vital importance as the wear or damage of parts are gradual processes and so if a malfunction can be detected in time, the costs involved are low and the benefits with regard to safety and cost-effectiveness can be very high.

The one-year interval between servicing has been calculated based on an average use of 4 hours per day. If the unit is used intensively, for example in a catering company, serving must be done at shorter intervals.

1. CONVECTION SYSTEM

1.1 Ignition spark plug

Release and extract the combustion chamber.
Check its status and connections visually.
Clean the detector with “Scotch”
Set the oven to convection mode to activate the spark plug.
Check for correct ignition

1.2 Flame detector

Release and extract the combustion chamber.
Check its status and connections visually.
Clean the electrode with “Scotch”

1.3 Mains gas pressure

Check at appliance inlet.
Measure when the appliance is in operation.
(Measurements may be made at the gas valve inlet)

1.4 Gas circuit water-tightness

Check.

1.5 Heat exchanger

Check visually that it is in good condition.
Check the status of the graphite seals.
Replace if damaged.

2. STEAM SYSTEM

2.1 Lime scale indicator lamps.

If any of these light up, remove scale in oven as follows:

fig 44

1 Turn off the appliance.

2 Turn the water drainage lever "B". When empty, return the lever to the original position.

3 Extract plug A and pour in deliming liquid (14 litres) .

4 After 6 hours have elapsed, empty the steam generator by turning lever B.

5 Flush the deliming liquid inlet with water. Fit plug A.

6 Close lever B and put oven into operation in the steam mode at low temperature with the thermostat selector at 0 for 10 minutes.

7 Flush the cooking chamber using the shower fitting. Put the oven into operation in steam mode for 10 minutes.

8 Drain the steam generator on a daily basis.

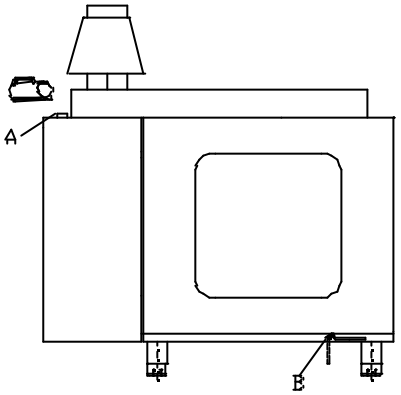


fig 45

2.2 Burner

Check that the burner turns on and operates correctly.
If there is no ignition spark, change the spark plug, check the cable and connections.
If the problem persists, change the electronic ignition box.

2.3 Boiler

Check that there are no drips.
If there are, change the boiler. In this case, also change the graphite seal that joins the boiler to the chamber.

2.4 Steam condensation thermostat

Make sure that this is working.

2.5 Boiler drainage

Check that the valve and drain are working correctly.

2.6 Water level

Check that this is working correctly and that water does not overflow.

3 OVEN DOOR

3.5 Seal
If this is cracked or damaged, replace.

3.6 Steam leaks
If there are any steam leaks, adjust the hinge and hooks

3.7 Door alignment
Adjust if necessary.

3.8 Handle
If this is loose, tighten or replace.

3.9 Drain
Check and clean if necessary.

3.10 Light
Replace lamp if necessary.

4 CHIMNEY

4.5 Seal
Clean surfaces and grease pins.
If there are any steam leaks, adjust the mechanism.
Change O-ring Q307067

5 CONTROL PANEL

5.5 Core probe
Check that this is working correctly. (To do this, start the oven in steam mode with the probe inside and wait until it reaches 98ºC)

Replace if damaged or adjust if loose.

5.6 Timer
Check status.

5.7 Electronic thermostat (convection)
Check visually and functionally in convection mode at 270ºC. Replace if this is not working correctly.

6 MISCELLANEOUS

6.5 Cooling fans
Check that these work.

6.6 Miscellaneous
Make a visual check of the entire oven.

10 TROUBLE SHOOTING

EFFECT	CAUSE	ACTION
1.-Oven does not operate in any mode. Green lamp L1 does not come on. Electronic thermostat display on.	1.1.Door switch IP 1.2.Motor thermal switch FM	1.1.Check – change or adjust 1.2.Check motor thermal switch wires (grey motor connection cables) or change motor.
2.-Convection burner does not turn on Green lamp L1 on. Electronic thermostat display on. Turbine motor working. Convection lamp L2 does not come on. Convection reset button L3 off.	2.1.Chamber thermostat TC 2.2.Safety thermostat TSC	2.1.Check contact TC 2.2. Check contact TSC
3.-Convection burner does not ignite. Green lamp L1 on. Electronic thermostat display on. Turbine motor working. Convection lamp L2 does not come on. Check no. of pluses of LED D21 of frequency inverter (three impulse sequence).	3.1. Faulty inverter VF or blower VC.	3.1 Change.
4 – Convection burner does not ignite. Green lamp L1 on. Convection lamp L2 comes on a moment and then turns off. Convection reset button L3 on. Check no. of pluses of LED D21 of frequency inverter (three impulse sequence).	3.1.Connect blower air/convection gas valve closed. 3.2.Blower connector rubber tube/convection gas valve broken. 3.3.False contact in ignition control. CEC 3.4 Faulty ignition control. CEC 3.5.Little or no gas 3.6.Flame detection failure 3.7.Gas flow ignited in low convection valve. 3.8.Convection gas valve. 3.9.Spark train failure.	3.1.Check and drill if it is a spare. 3.2.Check whether this is broken or blocked and replace 3.3.Check detection wiring 3.4.Change 3.5.Check with pressure gauge in gas valve 3.6.Check detector-burner position (5-6 mm) and connections or change detector. 3.7.Check dynamic pressure and increase. 3.8.Change gas valve. 3.9. Check position of burner spark plug (3-4 mm) and connections
5.-Noise during ignition	5.1.Excessive gas during ignition 5.2.Burner does not correspond to model 5.3.Type of gas does not correspond to model 5.4.Wrong frequency inverter switches. 5.5.Gas valve does not correspond to type of gas.	5.1.Check valve code corresponding to gas and model 5.2.Check pressures in gas valve in burner 5.3.Check pressures and model 5.4.Check and correct (Increase ignition speed). 5.5 Check and correct
6.- Ignition occurs suddenly with a slight explosion	6.1. Wrong frequency inverter switches 6.2 Type of gas does not correspond to model 6.3. Gas valve does not correspond to type of gas	6.1. Check and correct ignition speed. 6.2.Check pressures and model 6.3. Check and correct

7.- Oven operates for a time and then stops and starts again.	7.1.Motor thermal switch FM	7.1.Check that the three phases are connected correctly to motor. 7.1.Check whether there is dampness on external surfaces of motor 7.1.Check that the turbine turns in the correct direction 7.1.Change motor
8.-Does not generate any steam. Steam lamp L4 off	8.1.There is no water in mains or water valve V1 is faulty. 8.2.Steam generator drainage valve open. 8.3.Level electrodes coated with lime. 8.4.Faulty water level control CN	8.1. Check and correct 8.2.Correct 8.3.Clean 8.4. Check and correct
9.-Does not generate steam (but tries to ignite) Green lamp L1 on. Water level control not connected to power supply.	9.1.Frequency inverter failure VF 9.2.Faulty blower	9.1. Check and correct 9.2. Check and correct
10.-Does not generate enough steam Steam gas valve GV5-GV4 active	10.1Chimney open 10.2.Chamber probe broken 10.3.Thermostat T100 loose	10.1. Check and correct 10.2.Change probe 10.3.Adjust thermostat or change thermostat
11.-Does not generate any steam Lamp L4 off Lamp L6 on Lamp L7 on	11.1.Lime deposits on steam generator	11.1.Clean generator and reset thermostat TSV
12.-Generates steam Lamp L7 on	12.1. Lime deposits on steam generator	12.1. Clean generator and reset thermostat TDC.

NOTE: If lamps L3 are on (locked in convection mode) or L5 (locked in steam mode ignition) CORRECT AND RESET.

Frequency inverter failure modes T-083002:

1. **Single pulse of light** in red LED D21(fig 47).

Effect: Oven does not ignite. Reset button off.

Possible causes:

- 1.1 Signal cable between frequency inverter and fan (T-083000) is broken.
- (Check connector wires J2 of frequency inverter) connection 1-3
- 1.2 Broken fan card.
- 1.3 Broken frequency inverter

2. **Two pulses of light** in red LED D21. (fig 47)

Effect: Oven does not ignite. No flame detection. Reset button on.

Possible causes:

2.1 There is not gas supply.
- 2.2 Flame detector wires broken or with loose contacts.
- 2.3 Faulty INECO combustion control box.

2.4 Faulty spark plug wire or loose contact.
2.5 Spark plug not at correct distance to burner (3-4mm)
2.6 Faulty convection gas valve.
2.7 Air leak in rubber tube from blower to gas valve.

3. **Three pulses of light** in red LED D21 (fig 47)

Effect: Oven does not ignite. Reset button off.

Possible causes:

- 3.1 Speed detector cable between frequency inverter and fan is broken.
- (Check cables on connector J2 of frequency inverter) Connection 2-4
- 3.2 Faulty fan card.
- 3.3 Faulty frequency inverter.
- 3.4 Blower does not operate.

4. **Four pulses of light** on red LED D21. (fig 47)

Effect: Over operates. The oven reached temperature slowly because the blower does not reach maximum speed.

Possible causes:

- 4.1 Blower does not work properly.
- 4.2 Frequency inverter does not work properly.

5. **Five pulses of light** on red LED. D21 (fig 47)

Effect: The oven operates, but ignition is abrupt. The blower does not reach the minimum ignit speed.

Possible causes:

- 5.1 Blower does not work properly.
  5.2 Frequency inverter does not work properly.

6. **Continuous light** in red LED D21. (fig 47)

Effect: The oven does not ignite.
Possible causes:

- 6.1 Faulty ignition control, or broken internal ignition control fuse.

7. **All LEDs off**. D21 (fig 47)

Possible causes:

7.1 Check fuse.
7.2 Faulty inverter.

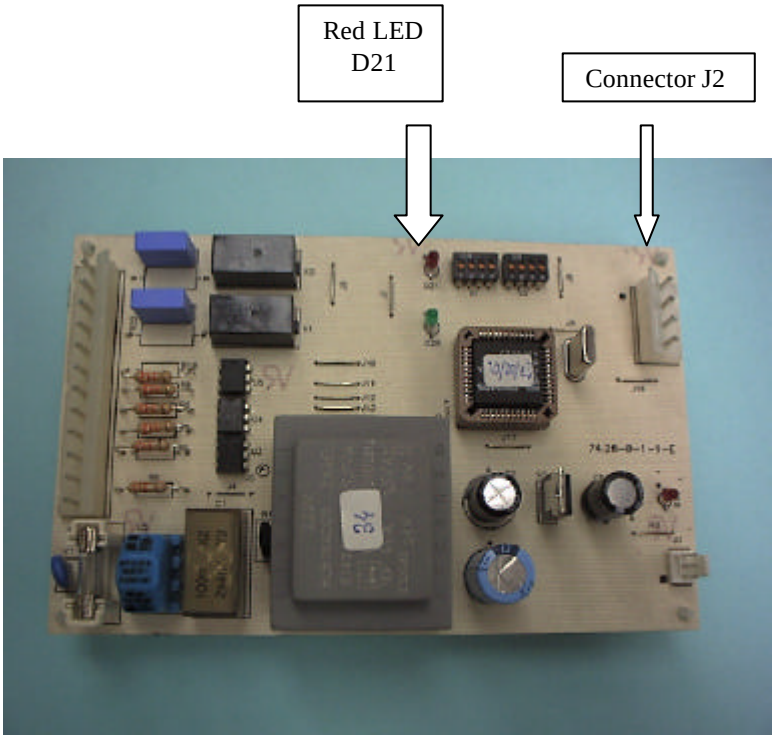


fig 46

Failure modes on display of electronic chamber thermostat:

If the following message appears on the electronic thermostat display:

_ _ 0 Thermocouple or chamber probe cut off.
-Check connection between thermocouple and electronic thermostat
-Change chamber probe

_ _ 1 NTC open.
-Change electronic thermostat.

_ _ 2 Selector potentiometer 30-270ºC broken.
- Change electronic thermostat.

_ _ 3 Selector potentiometer 100ºC broken.
- Change electronic thermostat.

Failure modes in core probe thermostat display:

If the following message appears on the electronic thermostat display:

"_ _ _" Short-circuited core probe.

"EEE" Core probe cut or not connected.

11 PARAMETERS AND ADJUSTMENTS

The pressure values in (mbar) are approximate. These are taken with an input pressure of 29 mbar Butane , 37 mbar Propane and 20 mbar Natural Gas

					Burner ON (V max)	Burner OFF
MODEL	V ignition S1	V maximum S2	Ø Air washer	Gas valve GV1-GV2	P out (mbar)	P out (mbar)
HCG 6/11 B.P.	Ve=1400 rpm	V=4500 rpm	Ø14: T-085013	T-085010	0:0,5	-0,8:-0,4
HCG 6/11 Prop. USA-60 Hz	"	V=5500 rpm	"	T-085016		
HCG 6/11 B.P. Australia	"	"	"	T-085010		
HCG 6/11 G.N.	Ve=2000 rpm	V=5000 rpm	"	T-085011		
HCG 6/11 G.N. USA-60 Hz	"	V=5500 rpm	"	T-085017		
HCG 6/11 G.N. Australia	"	"	"	T-085011		
HCG 10/11 B.P.	Ve=2000 rpm	V=4000 rpm	Ø18: T-115082	T-115097	0,3:1,1	-0,8:-0´3
HCG 10/11 Prop. USA-60 Hz	"	V=5000 rpm	"	T-115100		
HCG 10/11 B.P. Australia	"	"	"	T-115097		
HCG 10/11 G.N.	Ve=2500 rpm	V=4500 rpm	Ø20: T-115083	T-115098	1,3:3	-0,9:0,1
HCG 10/11 G.N. USA-60 Hz	"	"	"	T-115101		
HCG 10/11 G.N. Australia	"	"	"	T-115098		
HCG 10/21 B.P.	Ve=2000 rpm	V=5500 rpm	Ø18: T-115082	T-115097	0,5:1,8	-0,9:-0,3
HCG 10/21 Prop. USA-60 Hz	"	V=6000 rpm	"	T-115100		
HCG 10/21 B.P. Australia	"	"	"	T-115097		
HCG 10/21 G.N.	Ve=2500 rpm	V=6000 rpm	Ø20: T-115083	T-115098	2:4	-0,8:0
HCG 10/21 G.N. USA-60 Hz	"	"	"	T-115101		
HCG 10/21 G.N. Australia	"	"	"	T-115098		

					Steam generator	Burner ON	Burner OFF
MODELS	V ignition S1	V maximum S2	Ø Air washer	Gas valve GV1-GV2	Nozzles. (Qty=12)	P out (mbar)	P out (mbar)
HVG 10/11 B.P.	Ve=2000 rpm	V=4000 rpm	Ø18: T-115082	T-115097	Z-955899	0,3:1,1	-0,8:-0´3
HVG 10/11 Prop. USA-60 Hz	"	V=4500 rpm	"	T-115100	"		
HVG 10/11 B.P. Australia	"	"	"	T-115097	"		
HVG 10/11 G.N.	Ve=3000 rpm	V=4500 rpm	Ø20: T-115083	T-115098	Z-956104	1,3:3	-0,9:0,1
HVG 10/11 G.N. USA-60 Hz	"	"	"	T-115101	"		
HVG 10/11 G.N. Australia	"	"	"	T-115098	Z-956109		
HVG 10/21 B.P.	Ve=2000 rpm	V=5500 rpm	Ø18: T-115082	T-115097	Z-955899	0,5:1,8	-0,9:-0,3
HVG 10/21 Prop. USA-60 Hz	"	V=6000 rpm	"	T-115100	"		
HVG 10/21 B.P. Australia	"	"	"	T-115097	"		
HVG 10/21 G.N.	Ve=3000 rpm	V=5500 rpm	Ø20: T-115083	T-115098	Z-956104	2:4	-0,8:0
HVG 10/21 G.N. USA-60 Hz	"	V=6000 rpm	"	T-115101	"		
HVG 10/21 G.N. Australia	"	"	"	T-115098	Z-956109		

					Steam generator	Burner ON	Burner OFF
MODELS	V ignition S1	V maximum S2	Ø Air washer	Gas valve GV1-GV2	Nozzles. (Qty.=12)	P out (mbar)	P out (mbar)
HVG 20/11 B.P.	Ve=3000 rpm	V=6000 rpm	Ø22: T-135035	T-135037	Z-955899		
HVG 20/11 Prop. USA-60 Hz	"	"	"	T-135040	"		
HVG 20/11 B.P. Australia	"	"	"	T-135037	"		
HVG 20/11 G.N.	Ve=3500 rpm	V=6000 rpm	Ø26,3: T-135036	T-135039	Z-956104		
HVG 20/11 G.N. USA-60 Hz	"	"	"	T-135041	"		
HVG 20/11 G.N. Australia	"	"	"	T-135039	Z-956109		
HVG 20/21 B.P.							
HVG 20/21 Prop. USA-60 Hz							
HVG 20/21 B.P. Australia							
HVG 20/21 G.N.							
HVG 20/21 G.N. USA-60 Hz							
HVG 20/21 G.N. Australia							

SPEED SELECTORS **S1-S2** OF FREQUENCY INVERTER :

0	0000	800 r.p.m.	8	1000	2500 r.p.m.
1	0001	1000 r.p.m.	9	1001	3000 r.p.m.
2	0010	1200 r.p.m.	10	1010	3500 r.p.m.
3	0011	1400 r.p.m.	11	1011	4000 r.p.m.
4	0100	1600 r.p.m.	12	1100	4500 r.p.m.
5	0101	1800 r.p.m.	13	1101	5000 r.p.m.
6	0110	2000 r.p.m.	14	1110	5500 r.p.m.
7	0111	2200 r.p.m.	15	1111	6000 r.p.m.

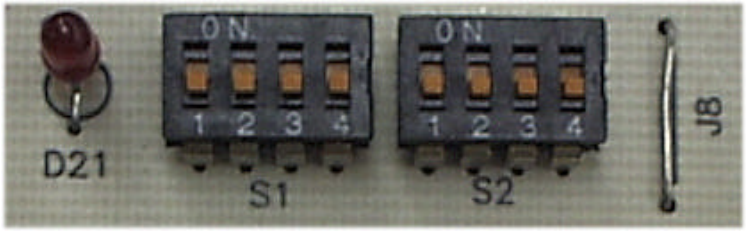
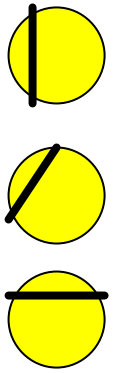


fig 47

TCN: Steam condenser adjustment

fig 48



Thermostat stud position 82ºC (Standard adjustment)

Thermostat stud position For economising water

Thermostat stud position In order not to waste water

Adjusting amount of steam in Mixed and Regeneration Mode.

The oven is adjusted for an optimum amount of steam, but if for any reason the user wants more, do the following:

1. Locate the energy regulator **RE 1**. this is regulated approximately to give 15 seconds of steam and 15 seconds without steam. Both in Mixed and Regeneration.

2.Turn clockwise to increase amount of steam.

Regulating steam in: **Regeneration and mixed mode**

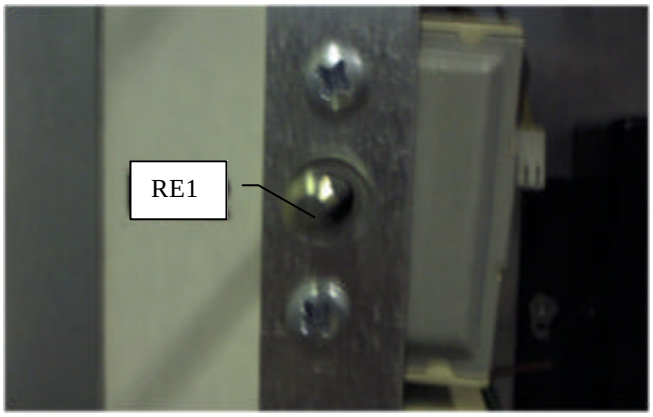


fig 49

Position of RE 2 Energy Regulator Pin

To obtain more steam, turn the pin clockwise

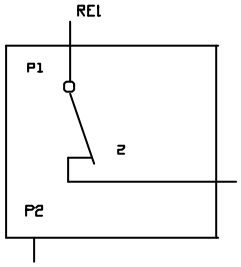


fig 50

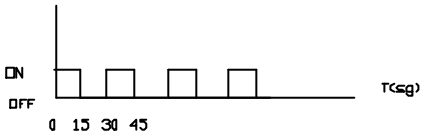


fig 51

Adjusting I K-type core probe thermostat K.(red case)

K-type thermocouple (Nickel-chrome/Nickel- aluminium) "Cr" probe type parameter in PSE

-Simultaneously activate core probe selector (1) and SET (2), holding SET down for approximately 4 seconds until "d1" appears on the display (3).(fig 53)

- With DOWN (5) move parameters until (3) "PSE" appears on display. (fig 54)

- With "PSE" on display press SET again and hold down.

- With SET held down, press “UP” to choose “Cr” parameter on display for K-type thermocouple. (fig 54)

Note: If, instead of “Cr” we select “Fe” this corresponds to the black J-type core thermostat (Iron – Costanta).

Core probe thermostat

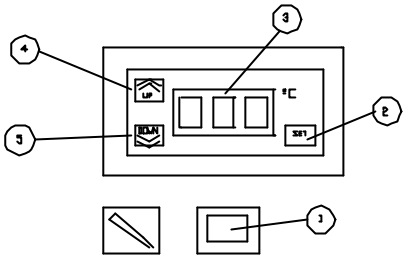


fig 52

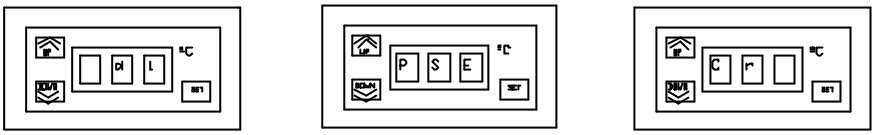


fig 53

Electronic chamber thermostat adjustment

1/ ADJUSTMENT OF MAXIMUM STEAM TEMPERATURE (100º C).

Move blue switch **1 to ON** . When the thermostat pin is turned the display must show 100. To adjust this value, turn potentiometer **P2** (fig 55)**.**

Once adjusted, set switch 1 to OFF position.

2/ ADJUSTMENT OF MAXIMUM CONVECTION TEMPERATURE (30 – 270º C)

Mover blue switch **2 to ON**. When the thermostat pin is turned the display must show a maximum temperature of 270º C. To adjust this value, turn potentiometer **P5** (this value is adjustable).

Once adjusted, set switch 2 to OFF position.

3/ ADJUSTMENT OF REAL TEMPERATURE INSIDE THE OVEN AND THE TEMPERATURE OF THE ELECTRONIC THERMOSTAT DISPLAY.

Insert a calibrated thermostat in the oven and set the furnace to work in STEAM mode.

When it is seen that the oven is working at a stable temperature of 100º C with respect to the thermometer inside, the temperature cut off at 100º C in steam mode is done with the electronic thermostat. The adjustment of the temperature cut off at 100ºC and display is done with the potentiometer **P3** with respect to the thermometer inside the oven.

NOTES

The adjustment of the electronic thermostat is carried out in accordance with the temperature reference indicated by the calibrated thermostat inserted indise the oven in order to control the real temperature .

Electronic Thermostat (R743013)

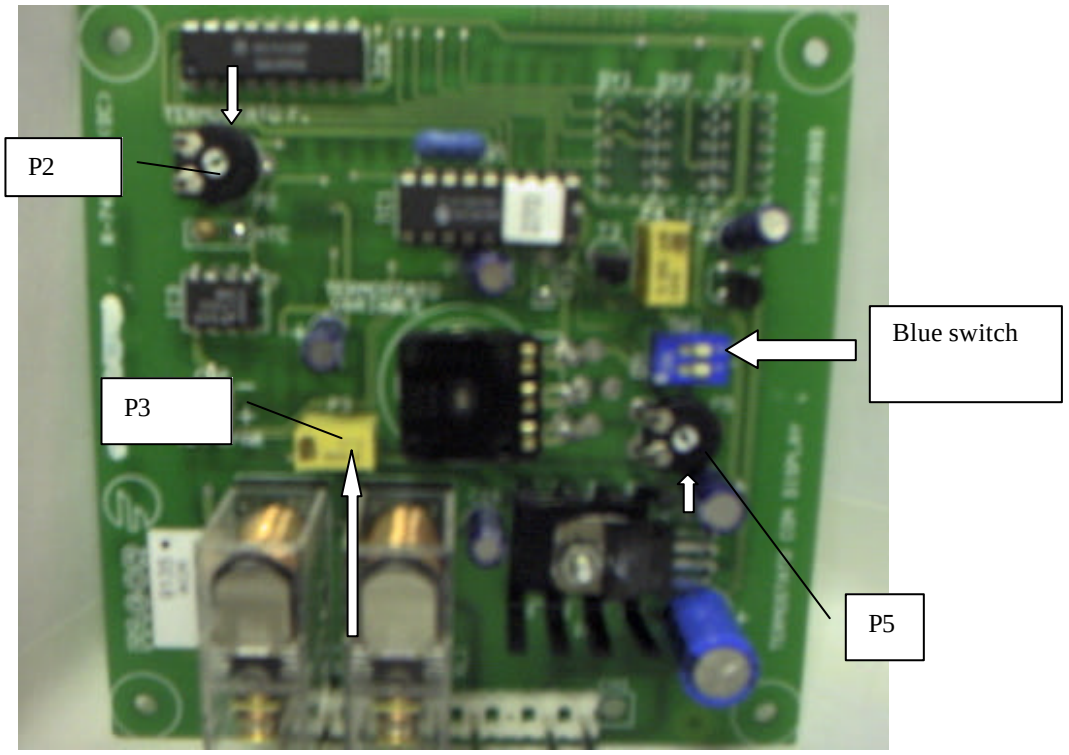


fig 54

Parameters for distance between Ignition Spark Plug . BD Flame detector with convection burner

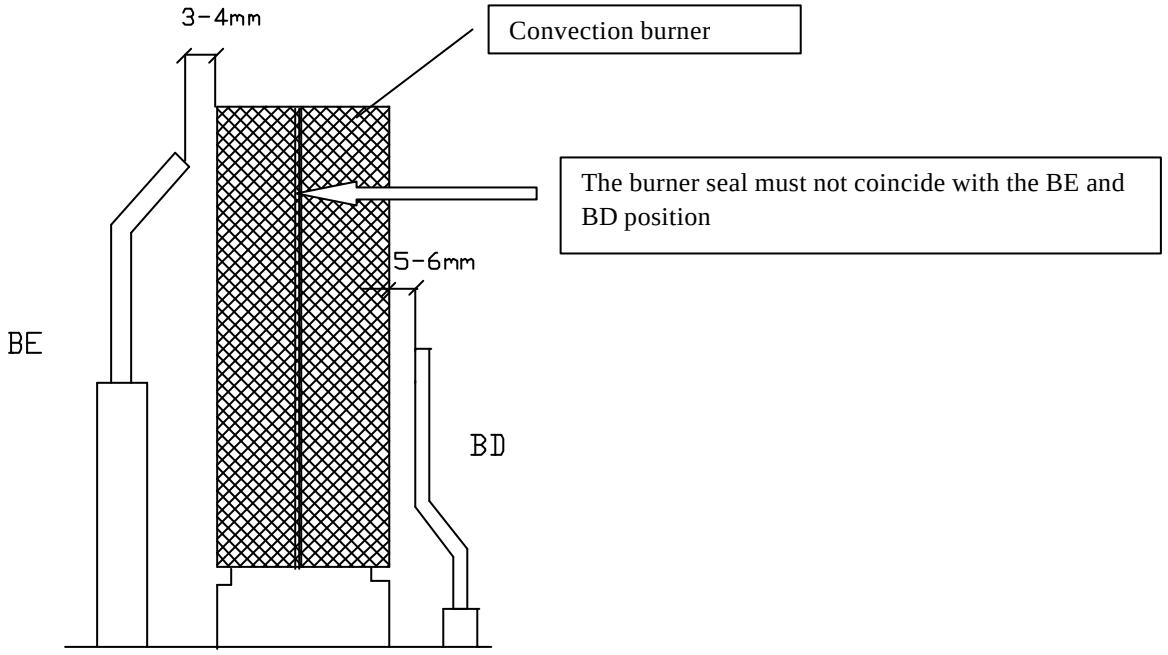


fig 55

12 RECOMMENDED SPARES

LIST OF RECOMMENDED SPARES IN HVG AND HCG CONVECTION OVENS

Z953004	Combustion control
S333001	Energy regulator
R343072	Level detector
R253049	Motor 230-240V 50/60Hz
T113030	Function selector switch
R743013	Electronic thermostat
T113010	50/60Hz chimney motor
Z100522	Door magnetic switch
Z200506	Door magnet.
T083002	Frequency inverter
T085711	Convection ignition electrode (6/11)
T115711	Convection ignition electrode (10/11, 10/21)
T115712	Convection detection electrode (6/11 ,10/11, 10/21)
T135704	Convection ignition electrode (20/11,20/21)
T135705	Convection detection electrode (20/11,20/21)
R725079	Electrode seal.
Q307067	O-ring
T083000	Fan EBM (6/11, 10/11, 10/21, 20/11) 50/60Hz
T143000	Fan EBM (20/21) 50/60Hz
Z952201	Valve SIT 830 50Hz
T085010	Adjusted convection gas valve BP (6/11) 50Hz
T085011	Adjusted convection gas valve GN (6/11) 50Hz
T115097	Adjusted convection gas valve BP (10/11 y 10/21) 50Hz
T115098	Adjusted convection gas valve GN (10/11 y 10/21) 50Hz
T135037	Adjusted convection gas valve BP (20/11) 50Hz
T135039	Adjusted convection gas valve GN (20/11) 50Hz
T155018	Adjusted convection gas valve BP (20/21) 50Hz
	Adjusted convection gas valve GN (20/21) 50Hz
T133004	Digital thermostat TIPO K
T113007	Core probe unit TIPO K (10/11 y10/21)
T133000	Core probe unit TIPO K (20/11 y20/21)
T085710	Convection burner (6/11)
T115710	Convection burner (10/11 y 10/21)
T145712	Convection burner (20/11 20/21)
Z955801	Steam burner
Z955802	Steam ignition electrode
Z955803	Steam detection electrode
1100002811	Complete steam generator KIT HVG (10/11, 10/21, 20/11)
T115037	Steam inlet seal

PROCESO TRANSFORMACIÓN TIPO GAS

IMPORTANTE: Para transformar el tipo de gas del horno se requiere cambiar y modificar las siguientes piezas**:**

-1/ Válvula gas convección GV1-GV2.
-2/ Arandela de aire.

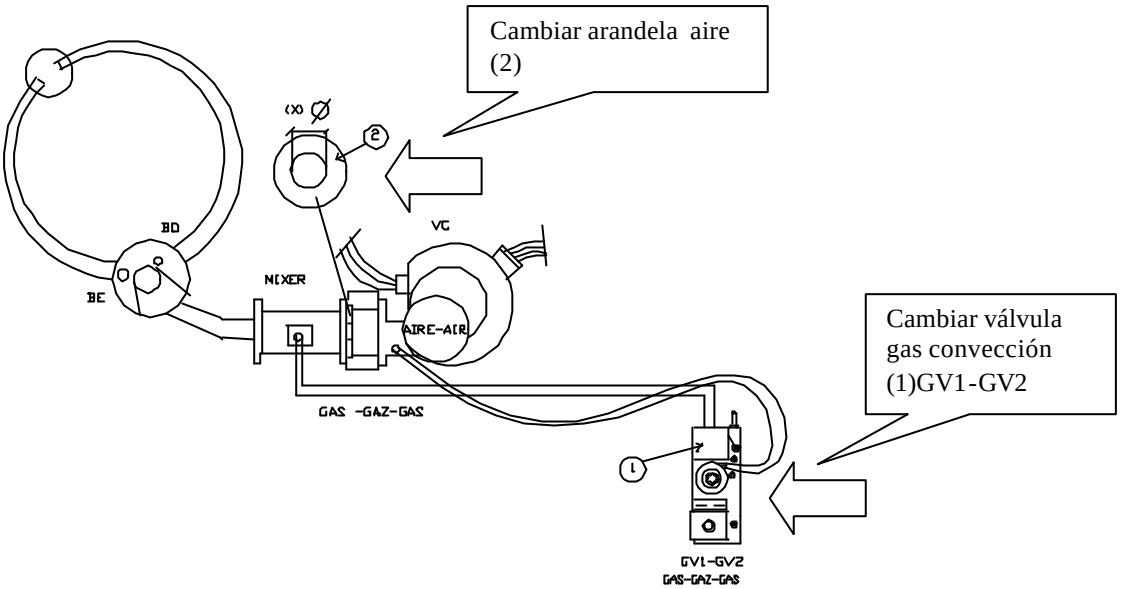
-3/ Posicionar los interruptores S1 y S2 del variador de frecuencia VF según indicaciones tabla de parámetros.

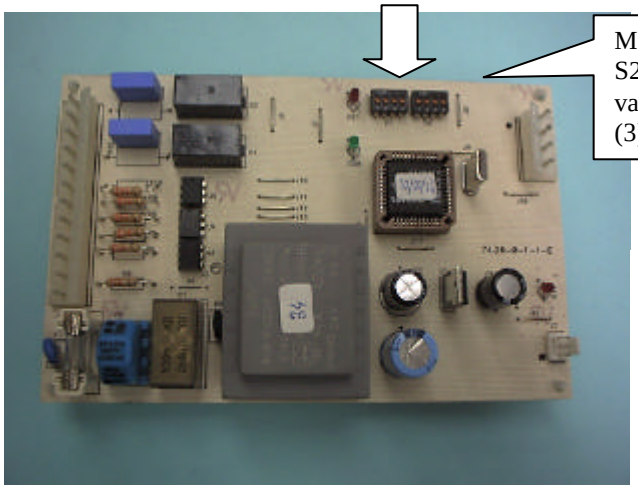
Además: Para modelos vapor HVGs

-4/ Inyectores de gas del generador vapor (solo en modelos HVG).

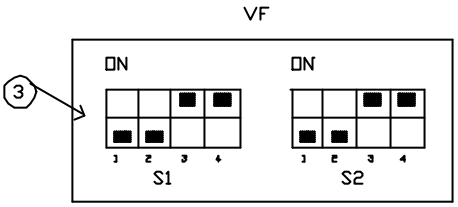
(VER TABLA CORRESPONDIENTE A PARÁMETROS y REGULACIONES POR MODELO)

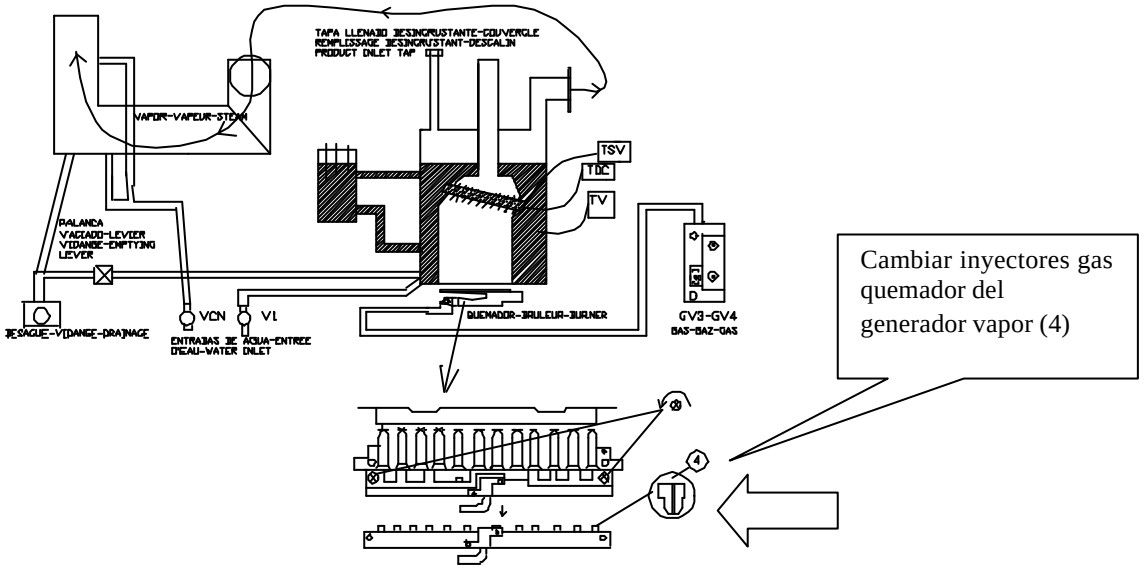
PIEZAS A CAMBIAR PARA CONVERSION A DIFERENTES GASES



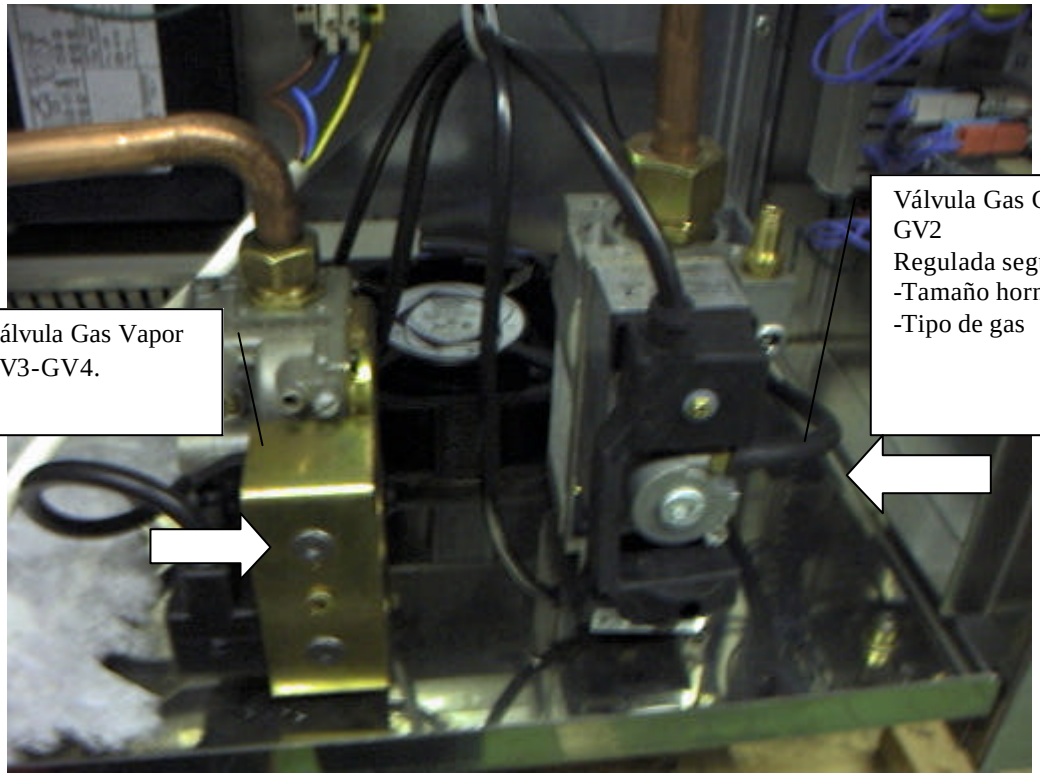


Modificar posición en S1 Y S2 los interruptores del variador de frecuencia VF (3)



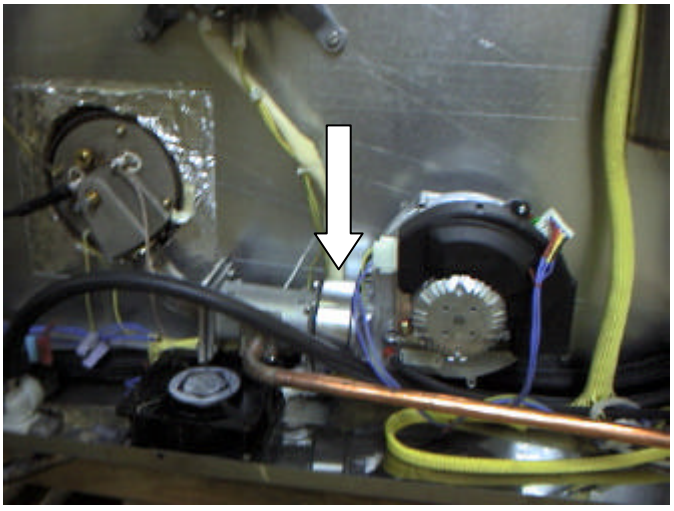


1º Cambiar válvula de gas convección.

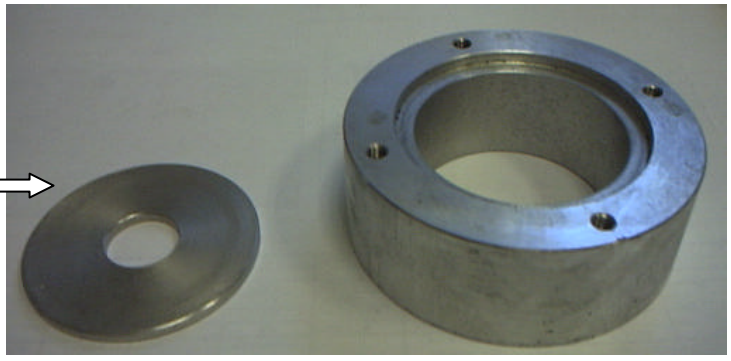


2º Cambiar arandela aire según indica detalle.

UBICACION DE LA ARANDELA DE AIRE

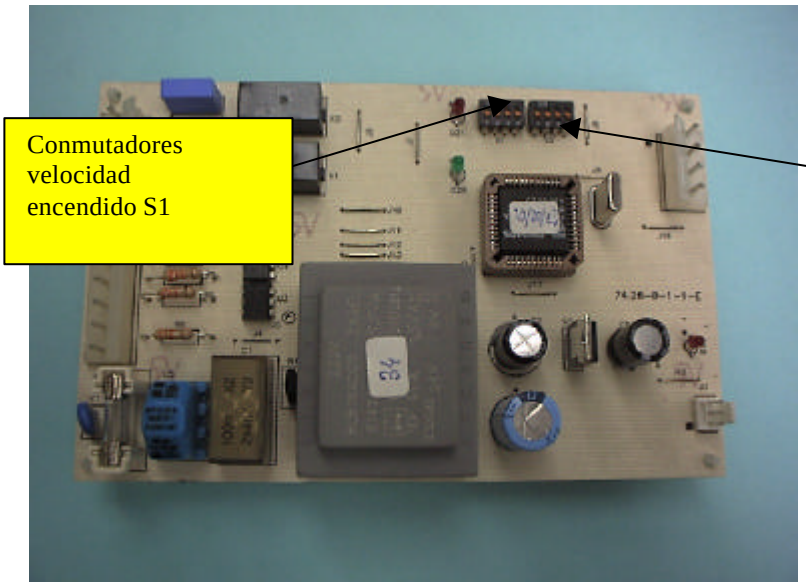


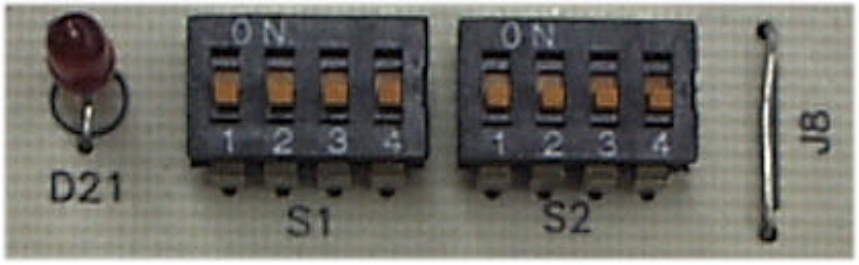
ARANDELA DE AIRE



3º Posicionar los interruptores del variador de frecuencia según modelo corresponda tanto en S1 y S2 según tablas.

Variador encendido HVG (T-083002)



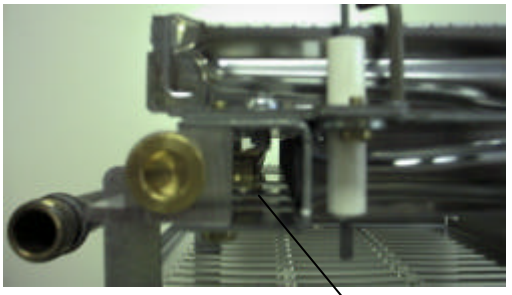


Detalle de los conmutadores del variador de frecuencia .

Posición ON (arriba)=1
Posición (abajo)=0

4º Cambiar inyectores gas quemador del generador de vapor (Solo HVG)

Quemador vapor



Detalle quemador vapor

PARAMETROS Y REGULACIONES

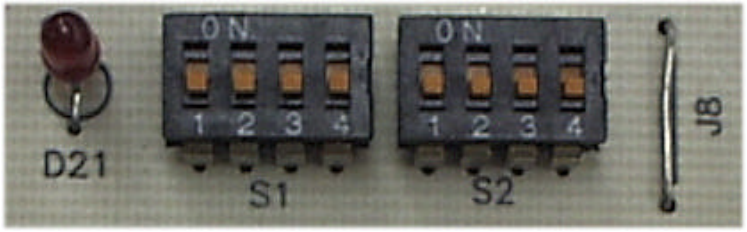
Los valores de presión en (mbar) son orientativos. Estos estan tomados con una presión de entrada de 29 mbar Butano , 37 mbar Propano y 20 mbar Gas Natural

					Quemador ON (V max)	Quemador OFF
MODELO	Vencendido S1	Vmáxima S2	Ø Arandela aire	Válvula de gas GV1-GV2	P out (mbar)	P out (mbar)
HCG 6/11 B.P.	Ve=1400 rpm	V=4500 rpm	Ø14: T-085013	T-085010	0:0,5	-0,8:-0,4
HCG 6/11 Prop. USA-60 Hz	"	V=5500 rpm	"	T-085016		
HCG 6/11 B.P. Australia	"	"	"	T-085010		
HCG 6/11 G.N.	Ve=2000 rpm	V=5000 rpm	"	T-085011		
HCG 6/11 G.N. USA-60 Hz	"	V=5500 rpm	"	T-085017		
HCG 6/11 G.N. Australia	"	"	"	T-085011		
HCG 10/11 B.P.	Ve=2000 rpm	V=4000 rpm	Ø18: T-115082	T-115097	0,3:1,1	-0,8:-0´3
HCG 10/11 Prop. USA-60 Hz	"	V=5000 rpm	"	T-115100		
HCG 10/11 B.P. Australia	"	"	"	T-115097		
HCG 10/11 G.N.	Ve=2500 rpm	V=4500 rpm	Ø20: T-115083	T-115098	1,3:3	-0,9:0,1
HCG 10/11 G.N. USA-60 Hz	"	"	"	T-115101		
HCG 10/11 G.N. Australia	"	"	"	T-115098		
HCG 10/21 B.P.	Ve=2000 rpm	V=5500 rpm	Ø18: T-115082	T-115097	0,5:1,8	-0,9:-0,3
HCG 10/21 Prop. USA-60 Hz	"	V=6000 rpm	"	T-115100		
HCG 10/21 B.P. Australia	"	"	"	T-115097		
HCG 10/21 G.N.	Ve=2500 rpm	V=6000 rpm	Ø20: T-115083	T-115098	2:4	-0,8:0
HCG 10/21 G.N. USA-60 Hz	"	"	"	T-115101		
HCG 10/21 G.N. Australia	"	"	"	T-115098		

					Generador vapor	Quemador ON	Quemador OFF
MODELOS	Vencendido S1	Vmáxima S2	Ø Arandela de aire	Válvula de gas GV1-GV2	Toberas. (cant=12)	P out (mbar)	P out (mbar)
HVG 10/11 B.P.	Ve=2000 rpm	V=4000 rpm	Ø18: T-115082	T-115097	Z-955899	0,3:1,1	-0,8:-0´3
HVG 10/11 Prop. USA-60 Hz	"	V=4500 rpm	"	T-115100	"		
HVG 10/11 B.P. Australia	"	"	"	T-115097	"		
HVG 10/11 G.N.	Ve=3000 rpm	V=4500 rpm	Ø20: T-115083	T-115098	Z-956104	1,3:3	-0,9:0,1
HVG 10/11 G.N. USA-60 Hz	"	"	"	T-115101	"		
HVG 10/11 G.N. Australia	"	"	"	T-115098	Z-956109		
HVG 10/21 B.P.	Ve=2000 rpm	V=5500 rpm	Ø18: T-115082	T-115097	Z-955899	0,5:1,8	-0,9:-0,3
HVG 10/21 Prop. USA-60 Hz	"	V=6000 rpm	"	T-115100	"		
HVG 10/21 B.P. Australia	"	"	"	T-115097	"		
HVG 10/21 G.N.	Ve=3000 rpm	V=5500 rpm	Ø20: T-115083	T-115098	Z-956104	2:4	-0,8:0
HVG 10/21 G.N. USA-60 Hz	"	V=6000 rpm	"	T-115101	"		
HVG 10/21 G.N. Australia	"	"	"	T-115098	Z-956109		

					Generador vapor	Quemador ON	Quemador OFF
MODELOS	Vencendido S1	Vmáxima S2	Ø Arandela de aire	Válvula de gas GV1-GV2	Toberas. (cant=12)	P out (mbar)	P out (mbar)
HVG 20/11 B.P.	Ve=3000 rpm	V=6000 rpm	Ø22: T-135035	T-135037	Z-955899		
HVG 20/11 Prop. USA-60 Hz	"	"	"	T-135040	"		
HVG 20/11 B.P. Australia	"	"	"	T-135037	"		
HVG 20/11 G.N.	Ve=3500 rpm	V=6000 rpm	Ø26,3: T-135036	T-135039	Z-956104		
HVG 20/11 G.N. USA-60 Hz	"	"	"	T-135041	"		
HVG 20/11 G.N. Australia	"	"	"	T-135039	Z-956109		
HVG 20/21 B.P.							
HVG 20/21 Prop. USA-60 Hz							
HVG 20/21 B.P. Australia							
HVG 20/21 G.N.							
HVG 20/21 G.N. USA-60 Hz							
HVG 20/21 G.N. Australia							

SELECTORES DE VELOCIDAD S1-S2 DEL VARIADOR DE FRECUENCIA :					
0	0000	800 r.p.m.	8	1000	2500 r.p.m.
1	0001	1000 r.p.m.	9	1001	3000 r.p.m.
2	0010	1200 r.p.m.	10	1010	3500 r.p.m.
3	0011	1400 r.p.m.	11	1011	4000 r.p.m.
4	0100	1600 r.p.m.	12	1100	4500 r.p.m.
5	0101	1800 r.p.m.	13	1101	5000 r.p.m.
6	0110	2000 r.p.m.	14	1110	5500 r.p.m.
7	0111	2200 r.p.m.	15	1111	6000 r.p.m.



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