

E

Grupos Térmicos

Instrucciones de Instalación,
Montaje y Funcionamiento
para el **INSTALADOR**

GB

Heating Units

Installation, Assembly
and Operating Instructions
for the **INSTALLER**

F

Groupes Thermiques

Instructions d'Installation,
de Montage et de Fonctionnement
pour l'**INSTALLATEUR**

D

Heizkessel

Installations-, Montage-
und Betriebsanleitung
für den **INSTALLATEUR**

I

GruppoTermico

Istruzioni per l'Installazione,
il Montaggio e il Funzionamento
per l'**INSTALLATORE**

P

Grupos Térmicos

Instruções de Instalação,
Montagem e Funcionamento
para o **INSTALADOR**

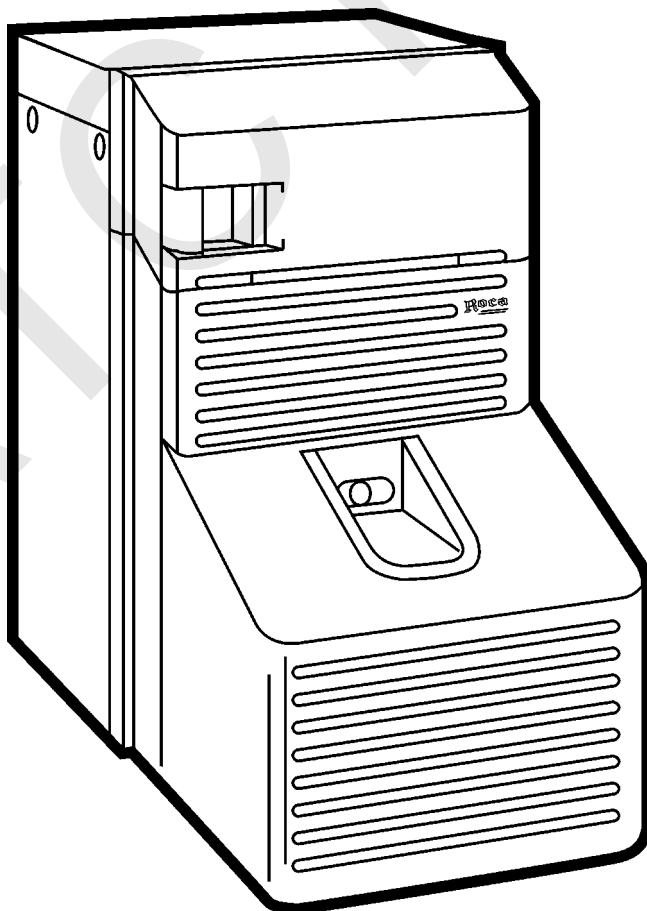


Fig. 1

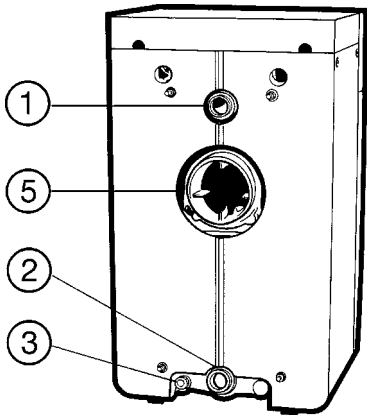


Fig.3

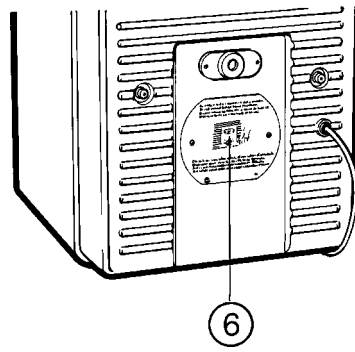


Fig. 4

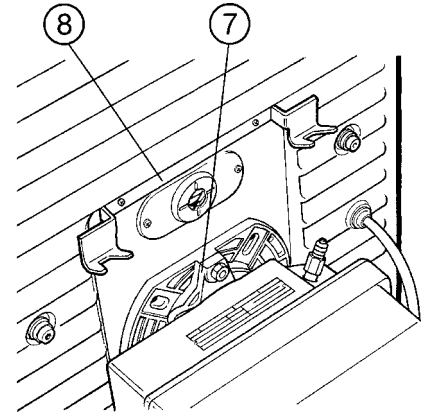


Fig. 2

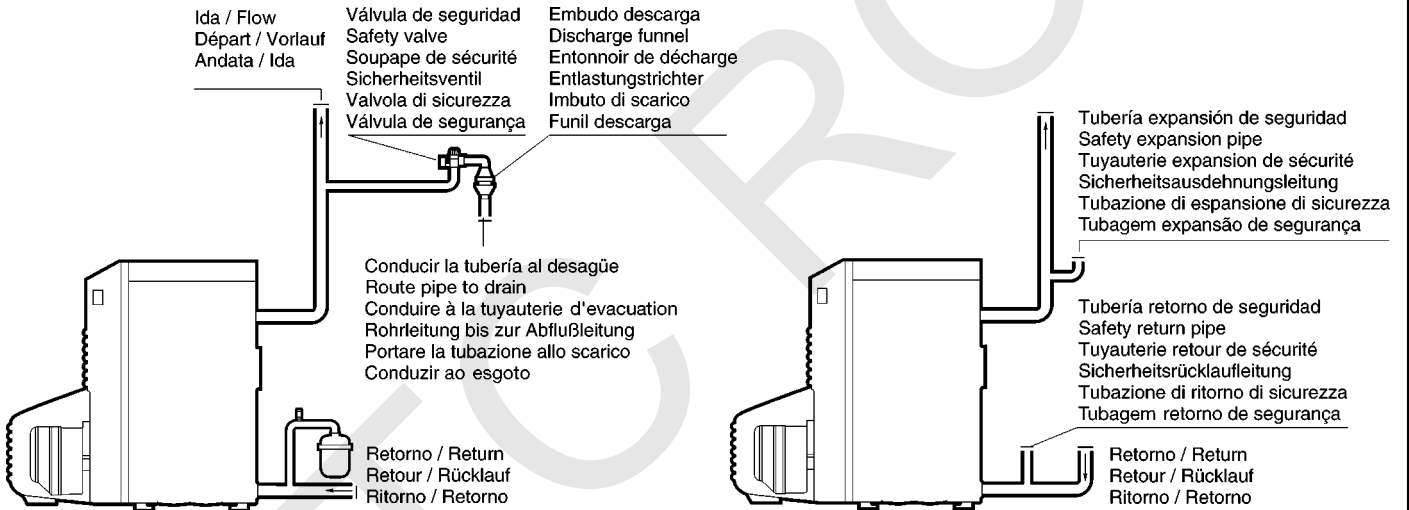


Fig. 5

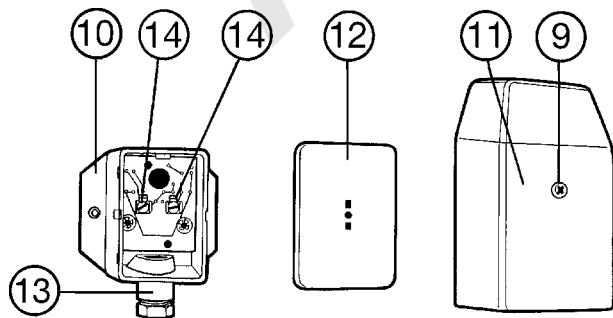


Fig. 6

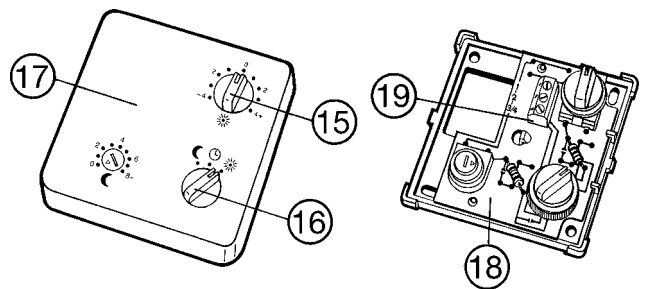
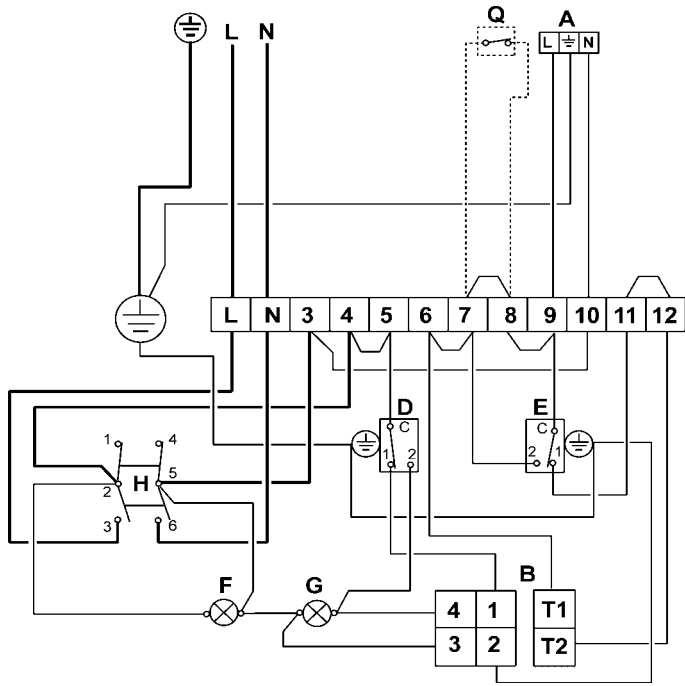
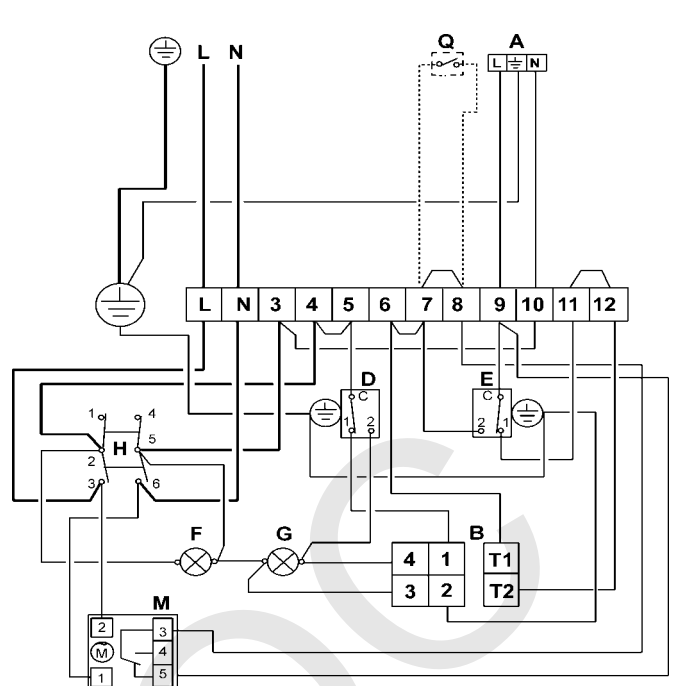


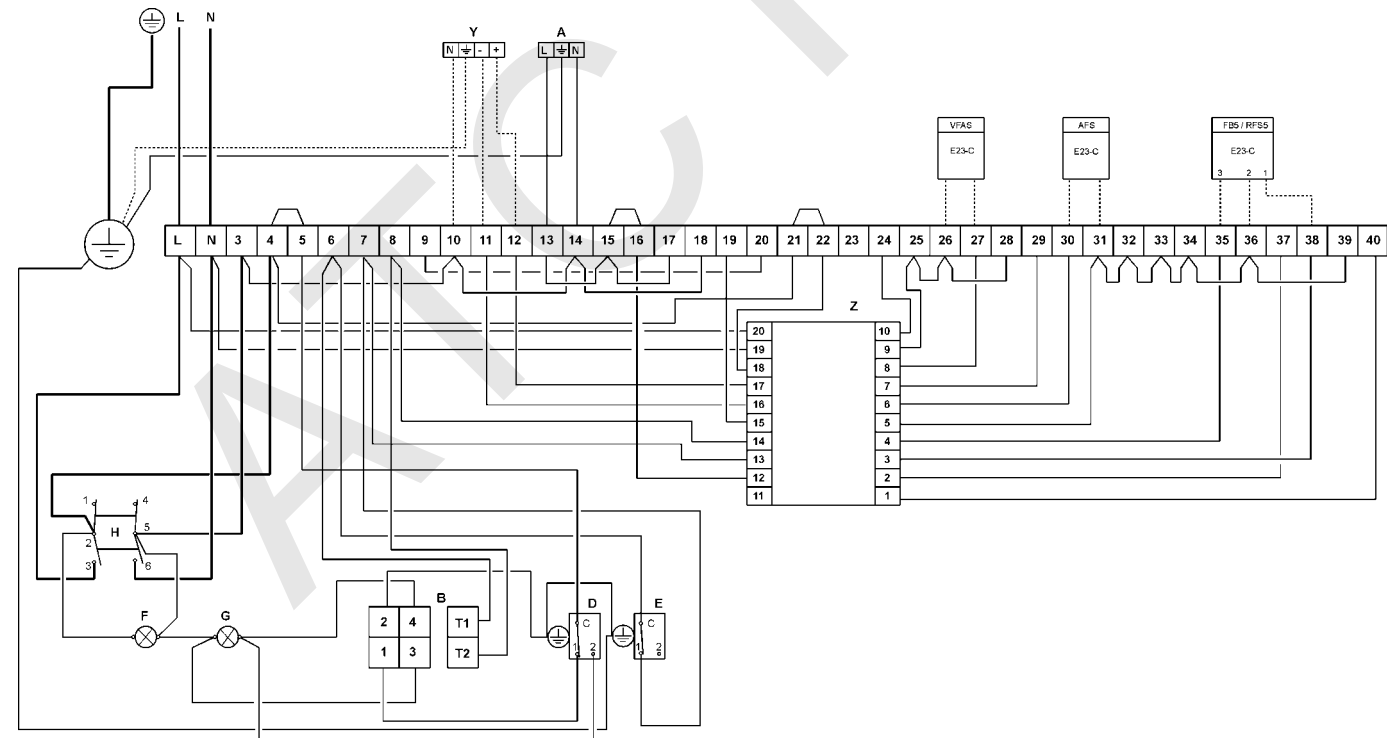
Fig. 7



CC-119



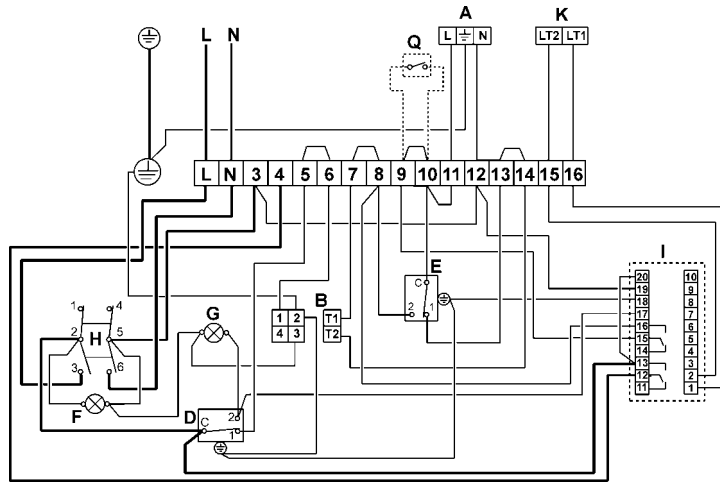
CC-119 R



CC-119 C

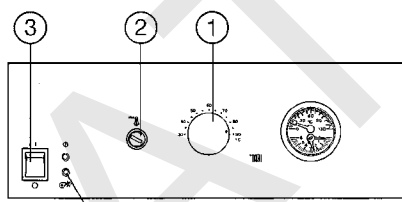
Fig. 7

CC-119 T



- | | | |
|--|------------------------------------|--|
| A Circulador | A Circulateur | A Circolatore impianto |
| B Quemador | B Brûleur | B Bruciatore |
| D Termostato de seguridad | D Thermostat de sécurité | D Termostato di sicurezza |
| E Termostato de regulación | E Thermostat de régulation | E Termostato di regolazione |
| F Señalización tensión | F Voyant de tension | F Led sotto tensione |
| G Señalización bloqueo quemador | G Voyant de blocage brûleur | G Led blocco bruciatore |
| H Interruptor general | H Interrupteur général | H Interruttore generale |
| I Teletherm | I Télétherm | I Teletherm |
| K Línea telefónica | K Ligne téléphonique | K Línea telefónica (comando telefonico) |
| M Reloj programador | M Horloge programmable | M Orologio programatore |
| Q Termostato de ambiente opcional | Q Thermostat d'ambiance | Q Termostato ambiente (optional) |
| Y Servomotor válvula 3 vías | Y Servomoteur vanne 3 voies | Y Servomotore valvola a tre vie |
| Z Central regulación | Z Centrale de régulation | Z Centralina di termoregolazione |
-
- | | | |
|--|--|---|
| A Pump | A Umwälzpumpe | A Circulador |
| B Burner | B Brenner | B Queimador |
| D Safety limit thermostat | D Sicherheitsthermostat | D Termóstato de segurança |
| E Control thermostat | E Regelthermostat | E Termóstato de regulação |
| F Power "on" indicator lamp | F Anzeige Spannung | F Sinalização de tensão |
| G Burner lockout indicator lamp | G Anzeige Brennerblockierung | G Sinalização de bloqueio do queimador |
| H Main switch | H Hauptschalter | H Interruptor geral |
| I Teletherm | I Teletherm | I Teletherm |
| K Telephone line | K Telefonleitung | K Linha telefónica |
| M Timer | M Schaltuhr | M Relógio programador |
| Q Ambient thermostat (optional) | Q (Auf Wunsch lieferbarer) Raumthermostat | Q Termóstato ambient (opcional) |
| Y Motorized 3 - way valve | Y Servomotor 3-Wege-Ventil | Y Servomotor válvula de 3 vias |
| Z Control centre | Z Regelowarte | Z Central de regulação |

Fig. 8



CC-119

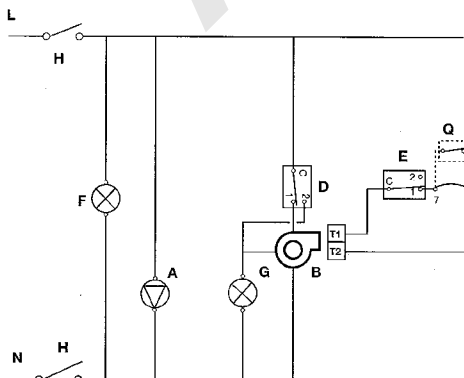
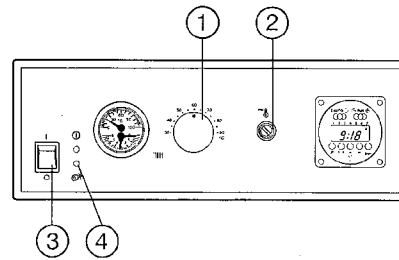


Fig. 9



CC-119 R

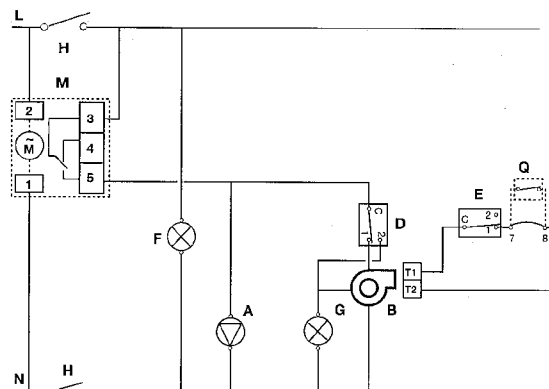


Fig. 10

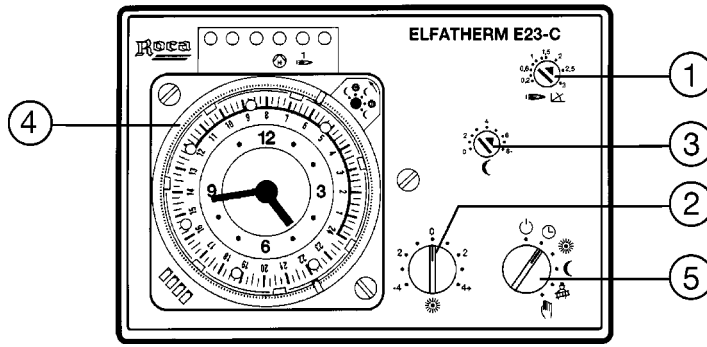


Fig. 11

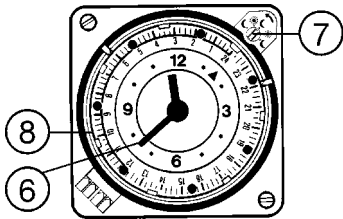


Fig. 12

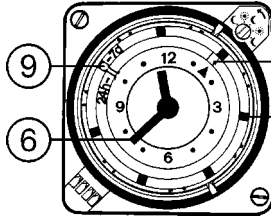
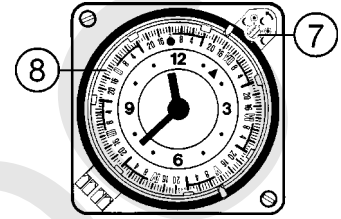


Fig. 13



Encaje diario (24 horas)
Daily notch (24 hours)
Encoche quotidienne (24 heures)
Tägliche Einrastung (24 Stunden)
Caletta programma gionaliere (24 ore)
Encaixe diário (24 horas)

Encaje semanal (7 dias)
Weekly notch (7 days)
Encoche hebdomadaire (7 jours)
Wöchentliche Einrastung (7 Tage)
Caletta programma settimanale (7 giorni)
Encaixe semanal (7 dias)

Fig. 14

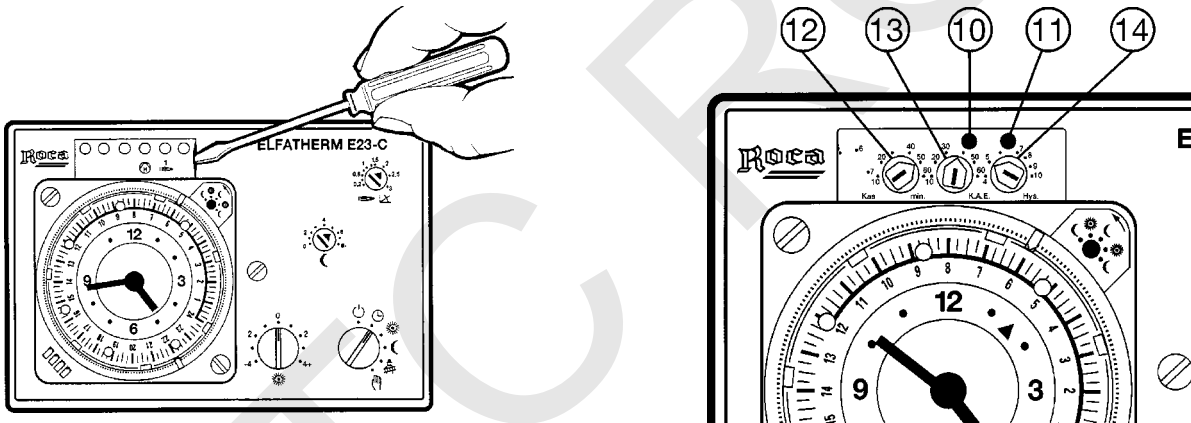


Fig. 15

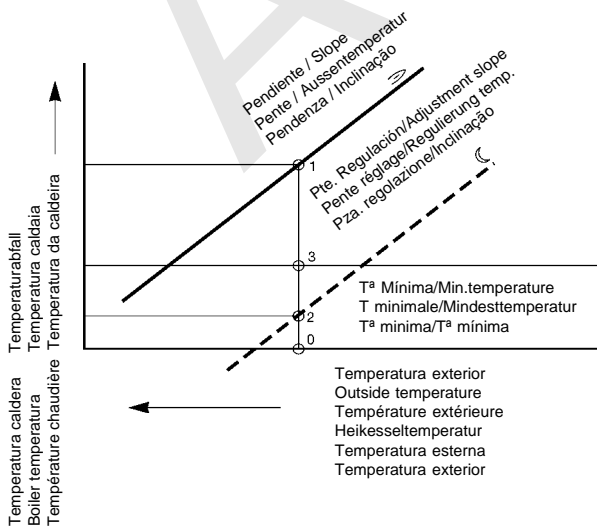


Fig. 16

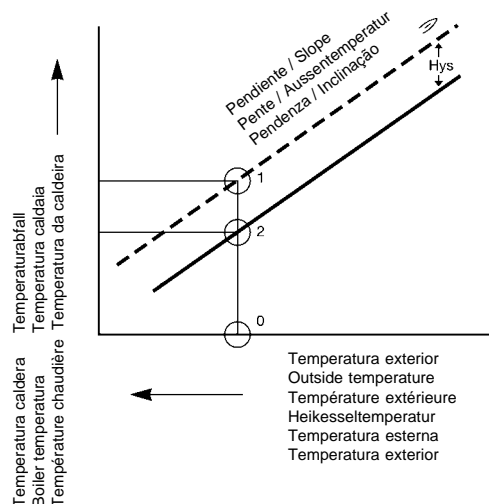


Fig. 17

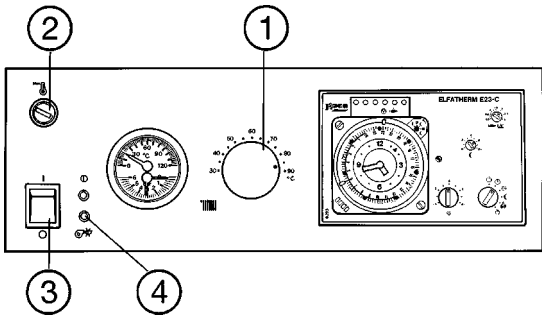
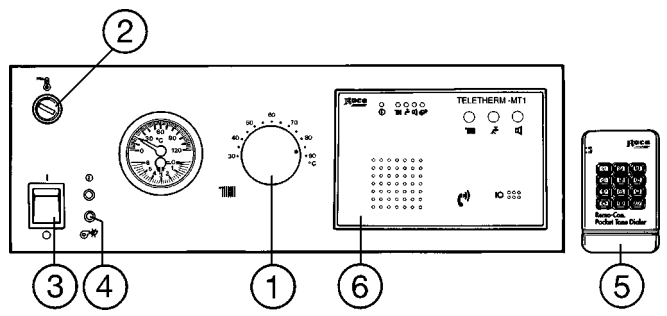
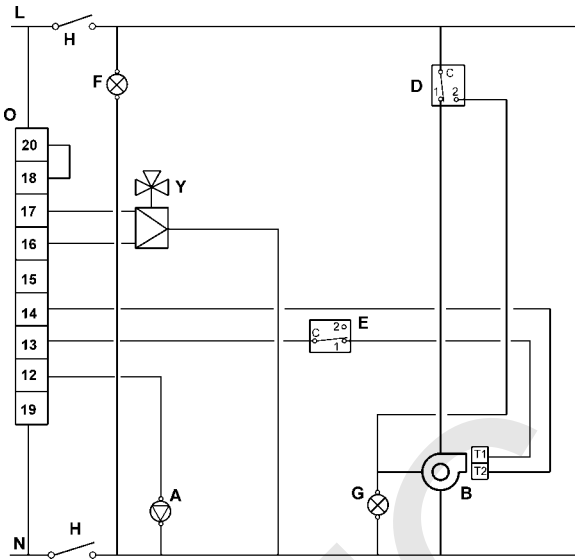


Fig. 18



CC-119 C



CC-119 T

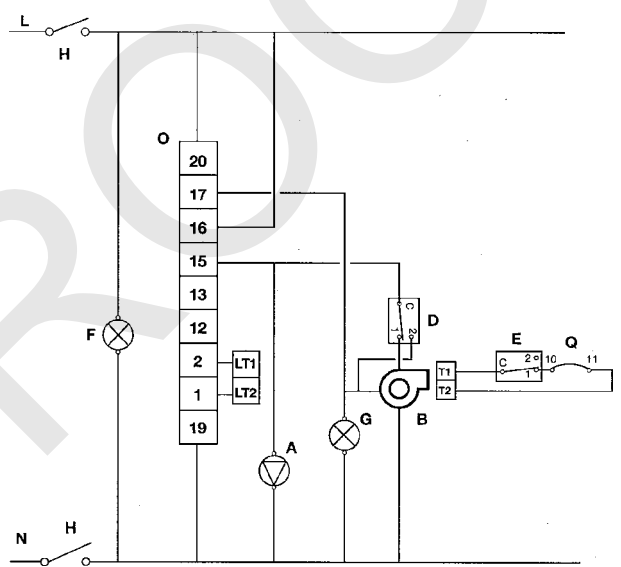


Fig. 19

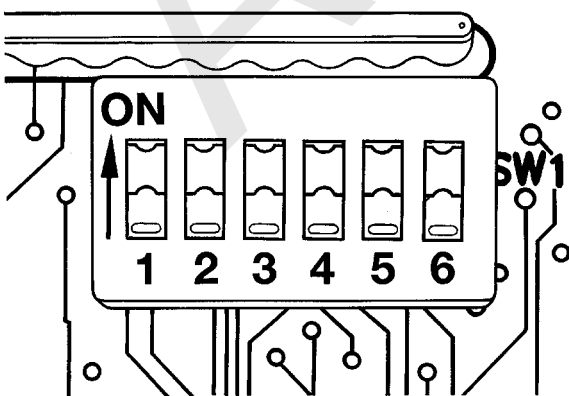
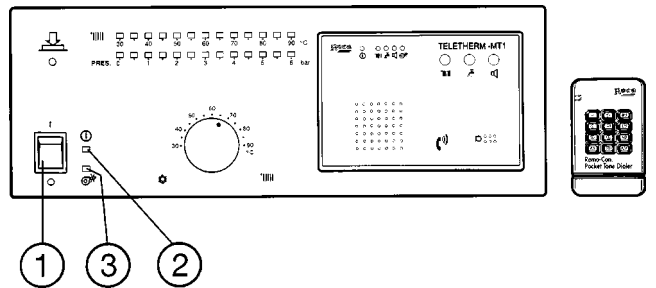


Fig. 20



Características principales / Main Features / Caractéristiques principales / Hauptmerkmale Caratteristiche principali / Características principais

Características eléctricas: / Electrical characteristics: / Caractéristiques électriques: / Elektrische Merkmale:
Caratteristiche elettriche: / Características eléctricas:
220-230V ~ 50 Hz

	Potencia nominal máxima / Maximum nominal output / Puissance nominale maximale Maximale Nennleistung / Potenza massima nominale / Potência nominal máxima (W)		
	Caldera / Boiler / Chaudière Kessel / Caldaia / Caldeira	Quemador / Burner / Brûleur Brenner / Bruciatore / Queimador	Circulador / Pump / Circulateur Umwälzpumpe / Circolatore impianto / Circulador
LAIA 20 GT	375	290	85
LAIA 25 GT	375	290	85
LAIA 30 GT	375	290	85
LAIA 35 GT	375	290	85
LAIA 45 GT	405	290	115

Grupo Térmico	Nº. de elementos	Potencia útil		Rendimiento	Capacidad agua, litros	Pérdida de carga circuito agua, mm.c.a.			
		Mínima	Máxima			Waterside Pressure	Drop (mm.wg)		
Heating Unit	Nº of sections	Heat output		Net efficiency	Water content	Waterside Pressure			
Groupe Thermique	N. éléments	Minimum	Maximum	Rendement utile	Capacité en eau, litres	Perte de charge			
		Puissance utile	Puissance maximale			circuit d'eau, mm.c.e.	Ladeverlust		
Heizkessel	Anzahl der Heizelemente	Mindestens	Höchstens	Nutzungsgrad	Wasserinhalt, liter	Wasserkreislauf mm WS			
Gruppo Termico	N. di elementi	Potenza utile	Potenza massima	Rendimento utile	Capacità d'acqua, litri	Perdita di carico lato acqua, mm.c.a.			
Grupo Térmico	Nº de elementos	Potência útil		Rendimento	Capacidade de água, litros	Perda de carga circuito água, mm.c.a.			
		Mínima	Máxima			Δt=10 °C	Δt=20 °C		
		kcal/h	kW	kcal/h	kW	%			
LAIA 20 GT*	3	15.000	17,44	19.000	22,09	90,3	19	35	8
LAIA 25 GT**	3	19.000	22,09	24.000	27,91	90,4	19	35	8
LAIA 30 GT	4	24.000	27,91	28.000	32,56	90,5	26	75	15
LAIA 35 GT	5	28.000	32,56	35.000	40,70	90,8	32	100	23
LAIA 45 GT	6	35.000	40,70	43.000	50,00	90,9	39	145	38

* Con silenciador.
** Con turbuladores y silenciador.
* With silencer.
** With turbulators and silencer.

* Avec piège à son.
** Avec turbulateurs et piège à son.
* Mit Schalldämpfer.
** Mit Wirblern und Schalldämpfer.

* Con silenziatore.
** Con turbulatori e silenziatore.
* Com silenciador.
** Com turbuladores e silenciador.

Grupo Térmico Modelo	Resistencia pasos humos (mm.c.a.)*	Cotas (mm)		Ida	Retorno	Conexiones (*) Desagüe	Circulación
		A	B				
Heating Unit Model	Flue circuit drop (mm.w.g.)*	Dimensions (mm)		Flow	Return	Connections (*) Drain connec.	Circulation
Groupe Thermique Modèle	Résistance conduits de fumées (mm.c.e.)*	Cotes (mm)		Départ	Retour	Raccordements (*) Vidange	Circulation
Heizkessel Modell	Widerstand Rauchleitungen (mm WS)*	Maße (mm)		Vorlauf	Rücklauf	Anschlüsse (*) Abfluß	Umwälzung
Gruppo Termico Modello	Perdita di carico lato fumi (mm.c.s.)*	Dimensioni (mm)		Mandata	Ritorno	Conexiones (*) Scarico	Circolatore
Grupo Térmico Modelo	Resistência passagem fumos (mm.c.a.)*	Cotas (mm)		Ida "a"	Retorno "b"	Ligações (*) Esgoto "c"	Circulação "d"
		A	B				
LAIA 20 GT	0,9	505	200	1"	1"	1/2"	1"
LAIA 25 GT	1,5	505	200	1"	1"	1/2"	1"
LAIA 30 GT	0,7	625	200	1 1/4"	1 1/4"	1/2"	1 1/4"
LAIA 35 GT	1,4	745	185	1 1/4"	1 1/4"	1/2"	1 1/4"
LAIA 45 GT	2,5	865	185	1 1/4"	1 1/4"	1/2"	1 1/4"

* Con exceso de aire e ≅ 20%
* With excess air e ≅ 20%

* Avec excès d'air e ≅ 20%
* Mit Luftüberschuß e ≅ 20%

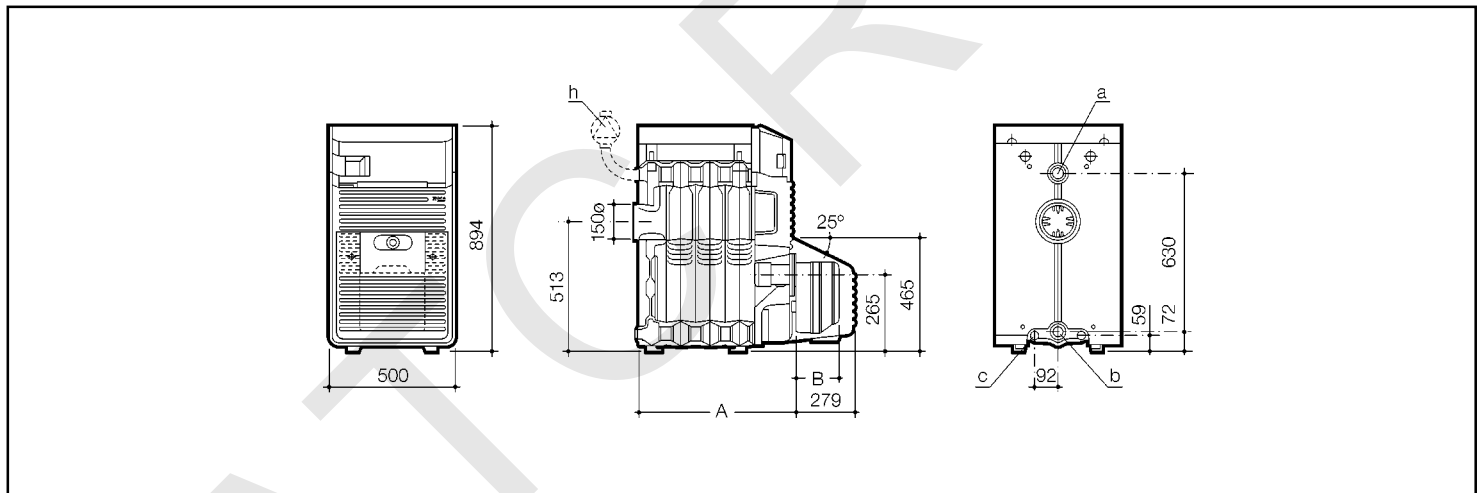
* Con eccesso di aria e ≅ 20%
* Com excesso de ar e ≅ 20%

Grupo Térmico Modelo	Circulador	Potencia absorbida (W)	Quemador de gasóleo	Potencia absorbida máx. (W)	Peso aprox. kg
Thermal Unit Model	Pump	Power input (W)	Oil burner	Power input (W)	Approx. weight kg
Groupe Thermique Modèle	Circulateur	Puissance absorbée (W)	Brûleur au gazole	Puissance absorbée (W)	Poids approx. kg
Heizkessel Modell	Umwälzpumpe	Leistungsaufnahme (W)	Dieselm Brenner	Leistungsaufnahme (W)	Gewicht ca.
Gruppo Termico Modello	Circolatore	Potenza assorbita (W)	Bruciatore a gasolio	Potenza assorbita (W)	Peso appross. kg
Grupo Térmico Modelo	Circulador	Potência absorvida (W)	Queimador gasóleo	Potência absorvida (W)	Peso aprox. kg
LAIA 20 GT	MYL-30	90	CRONO-3L	290	171
LAIA 25 GT	MYL-30	90	CRONO-3L	290	173
LAIA 30 GT	PC-1025	90	CRONO-3L	290	207
LAIA 35 GT	PC-1025	90	CRONO-5L	290	243
LAIA 45 GT	PC-1025	117	CRONO-5L	290	277

Temperatura máxima de trabajo: 100°C.
 Presión máxima de trabajo: 4 bar.
 Max. working temperature: 100°C.
 Max. working pressure: 4 bar

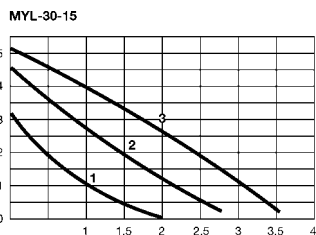
Température maxima de service: 100°C.
 Pression maxima de service: 4 bar.
 Maximale Betriebstemperatur: 100°C.
 Maximaler Betriebsdruck: 4 bar.

Temperatura massima di lavoro: 100°C.
 Pressione massima di lavoro: 4 bar.
 Temperatura máxima de serviço: 100°C.
 Pressão máxima de serviço: 4 bar.



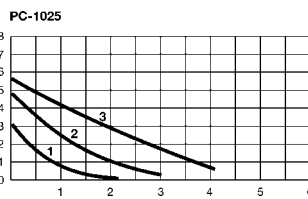
Características hidráulicas circuladores / Pump Hydraulic Features Caractéristiques hydrauliques circulateur / Hydraulische Daten der Umwälzpumpen Caratteristiche idrauliche dei circolatori / Características Hidráulicas dos circuladores

Altura manométrica m.c.a.
 Static head in mm.w.g.
 Hauteur manométrique en m.c.e. Altura manométrica en m.c.a.



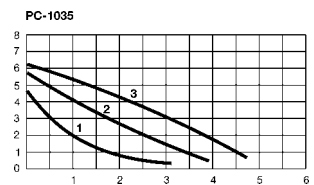
Caudal en m³/h Durchflußmenge m³/h
 Flow rate in m³/h Portata m³/h
 Débit m³/h Caudal m³/h

Altura manométrica m.c.a.
 Static head in mm.w.g.
 Hauteur manométrique en m.c.e. Altura manométrica en m.c.a.



Caudal en m³/h Durchflußmenge m³/h
 Flow rate in m³/h Portata m³/h
 Débit m³/h Caudal m³/h

Altura manométrica m.c.a.
 Static head in mm.w.g.
 Hauteur manométrique en m.c.e. Altura manométrica en m.c.a.



Caudal en m³/h Durchflußmenge m³/h
 Flow rate in m³/h Portata m³/h
 Débit m³/h Caudal m³/h

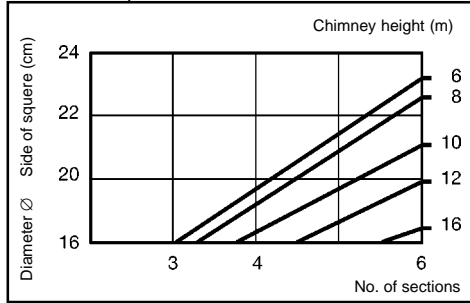
Delivery

The LAIA Heating Units are supplied in a single palletised package, protected for transport and which contains:

- Boiler, fully assembled and wired.
- Burner.
- Pump.
- Burner nozzle.
- Burner silencer cover.

Installation

- Observe current Regulations.
- Calculate the size of the chimney, adjusting section and height according to the graph, with the object of obtaining the output shown on the data nameplate.



Note:

To remove possible residues deposited in the chimney base after cleaning the boiler flues, it is advisable to have a handhole in the base for this purpose. When approved chimneys are being fitted, the maker's dimensions should be respected.

- Ensure there is 220V 50 Hz single-phase earthed power point as well as a water supply and drain near the installation site of the Heating Unit.

Assembly

Location

Transporting the boiler to its final position can be done with the help of two metal tubes of up to 3/4" Ø. For this:

- With the Allen key fixed inside the control panel cover, loosen the two bolts that fix the door to the front section.
- Open the door.
- Insert the tubes in the four holes provided for this purpose in the front and back sections and shift the boiler.
- Check that the boiler is level on its chosen installation base and that there is sufficient clearance from surrounding walls to permit future maintenance operations.

Minimum clearance between the side panel, on the hinge side of the door, and the wall should be 30 cm, with 10 cm on the opposite.

Connecting to the central heating installation

- Remove the protection caps from the tappings (1), (2) and (3) and connect the flow and return respectively as well as fitting a drain tap. (Fig. 1).

Connecting the pump

It should be placed preferably in the flow pipe, as close as possible to the boiler and with the shaft always in a horizontal position. The arrow stamped on the pump body pointing upwards.

Safety devices

- Fit the specific safety devices for open vented or sealed system installations, according to the corresponding diagram. In all cases the diameters of the safety conduits will conform to the dimensions given for them in the current regulations. (Fig. 2).

Connection to the chimney

- Connect the flue duct to the opening (5) in the boiler and carefully pack round the joint.

Watertight test

- Fill the system with water and check that there are no leaks in the hydraulic circuit.

Changing the direction of door opening (optional)

- Remove the four bolts that fix the upper cover to the sides of the casing, using the Allen key fixed inside the cover of the control panel.
- Remove the top cover of the boiler.
- With the Allen key, loosen the two bolts that fix the door to the front section and open it.
- Remove the terminal strip, cable clamps and earth connection (with CC-119 and CC-119R control panels only) from the right-hand panel and free the wiring and capillaries from their clamps.
- Raise the door together with the pivots and insert them in the hinge-holes of the front section to hang the door.
- Mount the terminal strip, cable clamps and earth connection (with CC-119 and CC-119R control panels only) onto the left-hand panel. Secure the wiring and capillaries with the clamps provided for this purpose.
- Replace the top cover and bolt it in place.
- Hang the flue brush on the right-hand panel.
- Bring the door near the front section, parallel to it, until the sealing strip comes into contact with the section rib. Hold the door fast by tightening the screw nearest the hinge first and then the opposite one.

Burner

- Remove the two fixing rivets and the burner refractory protector (6) from the burner opening. (Fig. 3).
- Fit the clamp (7), adapted for Roca burners and supplied with the corresponding burner, on the door (Fig. 4).
- Fix the burner to the clamp fitted on the door, according to its accompanying instructions and connect the fuel supply. Make the electrical connection to the control panel by means of the fitted connector.
- Remove the support (8) from the cover packing and fix it to the door of the boiler with the two bolts supplied.
- Hang the cover on the support.

Components of control unit

AFS Outdoor sensor

Situate it outside, facing North and at a height of more than 2.5 metres from ground level (Fig. 5).

- Loosen the screw (9) and separate the sensor (10) from its solar protector (11).
- Remove the cover (12), press-fitted to the sensor.
- Insert the lead through the cable entry (13) and connect it to the terminals (14).
- Fit the cover, fix the sensor by its metal base with the supplied accessories and replace the solar protector.

FB5 Remote Control or RFS5 ambient sensor (optional)

Locate either of them in the room chosen for controlling the system from there. The RFS5 sensor at a height of about 1.5 metres from floor level.

- Press controls (15) and (16) to separate the cover (17) from the base (18).
- Make the electrical connections to the three terminals on the strip (19). (Fig. 6).
- Fix the base with the accessories provided and press fit the cover to it.
- Move the switches on the rear part of the unit from "int" to "ext". To do this, use the Allen key fixed inside the cover of the control panel

to loosen the two bolts which fix the door to the front section and open it to gain access to the base of the unit.

- Loosen the union bolt between the body and the base of the unit, press-fitted, and separate them.
- Once the switches are moved, assemble the unit and close the door.

Electrical connections

Do the relevant wiring on the terminal strip provided for this purpose, in accordance with the diagrams in Fig. 7 (CC-119), (CC-119 R), (CC-119 C) and (CC-119 T).

The installation should include a switch, a circuit breaker or other omnipolar disconnect switch that isolates all power supply lines to the unit.

The maximum power (W) that the components not supplied with the boiler can consume, depending on the control panel installed, is:

	CC-119	CC-119R	CC-119C	CC-119T
Burner	850	850	350	850
Pump	1750	1750	350	1750
DHW pump	-	-	-	-
3-way valve	-	-	-	-
Storage tank	2800	2800	2800	2800

The connection of external appliance not supplied with the boiler should be done through approved wiring harness type ES- N05VV5-F of the following sizes:

Pump:	3x1 mm ²
DHW pump:	3x1 mm ²
Burner:	3x1 mm ²
Ambient thermostat:	2x1 mm ²
Servomotor:	4x1 mm ²

Note

Wire the ambient thermostat (optional) to terminals 7 and 8 in control panels CC-119 and CC-119R, or else to terminals 10 and 11 in control panel CC-119T, removing the existing jumper plug. Next carry out the following operations:

- Remove the four bolts that fix the top cover, using the Allen key inside the control panel cover.
- Detach the top cover from the boiler.
- Wire the external appliances to the terminal strip and fasten the cables with the ties provided.
- Place the top cover over the boiler and make sure that the cables pass through the appropriate entry on the rear of the top cover.
- Screw down the top cover.

Operation

Operations prior to the first lighting, with control panel of the CC-119 range

- Lower the cover of the control panel.
- Check that the installation is full of water and put the fixed pointer of the combined temp/altitude gauge in the position that corresponds to the water head of the installation.
- Bleed the air from the installation and radiators.
- In installations with a closed expansion vessel refill with water, if necessary, until the position of the mobile pointer of the temp/altitude gauge is slightly higher than that of the fixed one. Where an open expansion vessel has been installed, refill until the mobile pointer levels off with the fixed one.

First lighting

Control Panel CC-119

- 1 - Set the control thermostat (1) to 80°C. Check its correct operation and also that of the safety limit thermostat (2). (Fig. 8). Adjust the ambient thermostat (optional) to the required temperature.

- 2 - Turn on the main On/off switch (3). Burner and pump start running.
- 3 - Check the pump and burner for correct operation. Regulate the latter according to its accompanying instructions.
- 4 - When the safety limit thermostat has operated, remove its protection and press the button.
- 5 - Bleed the air and check, with the installation under normal operating conditions, that the radiators reach the required temperature.
- 6 - Check that there are no leaks of flue gases.
- 7 - Check the safety devices of the burner. The red pilot lamp (4) lit indicates burner lockout.

Control Panel CC-119R

1 to 7 - These operations are identical to those given for the CC-119 Control Panel. (Fig. 9).

Control Panel CC-119C

Electronic control centre (Fig. 10)

- ① Slope selector
- ② Sun selector
- ③ Moon selector
- ④ Timer
- ⑤ Program selector

Slope Selector

Place it on the resultant value for the installation in question, based on design temperatures.

Max. flow temp. - 30°C

$$\text{Slope} = \frac{\text{Max. flow temp.} - \text{Outside temp.}}{\text{Ambient temp.} - \text{Outside temp.}}$$

Evaluation example

Calculate the slope of an installation for:

- Max. water flow temperature = 80°C
- Room temperature = 20°C
- Outside temperature = -5°C

$$\text{Slope} = \frac{80 - 30}{20 - (-5)} = \frac{50}{25} = 2$$

Sun Selector

Put it in the position corresponding to the required ambient temperature, according to the Table.

Position SUN	Reduction/Increase in ambient temp.
-4	-8 °C
-2	-4 °C
0	0 °C
+2	+4 °C
+4	+8 °C

Moon Selector

Put it in the position corresponding to the required reduction in ambient temperature with respect to that selected on the Sun Selector, according to the Table.

Position MOON	Reduction in ambient temp.
0	0 °C
-2	4 °C
-4	8 °C
-6	12 °C
-8	16 °C

With the incorporation of an ambient sensor, the relationship between the position of your Moon Selector and the reduction in ambient temperature is shown in the Table.

Position MOON	Reduction in ambient temp.
0	0 °C
-2	2,5 °C
-4	5 °C
-6	7,5 °C
-8	10 °C

Approx. values of Ohmic resistance					
AFS Outdoor sensor and KFS Boiler sensor		Ambient sensor RFS5		Remote control FB5	
-20 °C	690Ω	Position "0" of SUN potent.		Position of SUN potent.	
-10 °C	755Ω				
0 °C	825Ω				
10 °C	895Ω	15 °C	561Ω	-4	490Ω
20 °C	970Ω	20 °C	512Ω	0	512Ω
25 °C	1.010Ω	25 °C	468Ω	+4	535Ω
30 °C	1.050Ω				
40 °C	1.130Ω	Position "0" of MOON potent.		Position of MOON potent.	
50 °C	1.220Ω				
60 °C	1.310Ω				
70 °C	1.405Ω	10 °C	1.148Ω	0	1.047Ω
80 °C	1.505Ω	15 °C	1.096Ω	-4	1.023Ω
90 °C	1.605Ω	20 °C	1.047Ω	-8	1.000Ω

Timer

The timer for alternate Sun-Moon operation has a wound up reserve of about 50 hours.

1 - Daily Programme

- It is factory-set. The red (Sun) and blue (Moon) cams should be moved on the rotary ring to the times chosen for the start of both programmes.
- To set the time on the clock, move the minute hand (6) until the ▲ symbol coincides with the present time. (Fig. 11)

The rotary indicator (7) should show the programme that has been set.

2 - Weekly programme

- Remove the rotary ring (8), press-fitted to the dial.
- Turn the minute hand (6) until the pin (9) on the green ring moves to a notch on the yellow one. (Fig. 12).
- Turn the rotary ring and snap it on the dial so that the ▲ symbol coincides with the present day of the week (1 = Monday) and the time of day (turn the minute hand if necessary).
- Set the weekly programme with the cams provided. (Fig. 13).

3 - Switching from weekly to daily programme

- Remove the rotary ring from the dial.
- Turn the minute hand until the pin (9) on the yellow ring moves to fit the notch on the green one.
- Turn the rotary ring and snap it on the dial.
- Set the clock at the correct time and establish the daily programme.

Programme selector

The Control Centre is switched "off". It does not regulate but the clock is working. For outside temperatures below 0°C, the Moon programme starts automatically. The installation is always protected against the risk of freezing.

Regulation according to the alternate Sun-Moon programmes established

Permanent Sun regulation.

Permanent Moon regulation

Position prior to combustion analysis. Set the boiler thermostat to its maximum value. Adjustment in accordance with the outside temperature cancelled. The pump is "on" and the burner operates at full output.

In case of anomaly in the regulating equipment.

Adjust the boiler temperature through the thermostat. Pump "on"

Service indicator lamps

When lit they show the functioning of the pump (10) and burner (11). (Fig. 14).

Burner low temperature cut-out

With the control "min" (12) we can set the minimum temperature of the water in the boiler for disconnecting the burner in the Moon programme. (Fig. 15).

Adjustable from 10°C up to 60°C. It is factory-set at 50°C.

Adjustment cut-out

Adjustment connection

- 0 - Outside temperature considered.
- 1 - Boiler temperature regulation, Burner disconnection ("OFF").
- 2 - Boiler temperature regulation, Burner connection ("ON").
- 3 - Min. boiler temperature selected. Burner disconnection ("OFF").
- 2-3 - Boiler temperature differential between connection and disconnection of the burner during the night setback regulation.

Rapid heating of the boiler

With the "KAE" (13) control, full running of the installation is optimized on starting up or passing from a Moon programme to a Sun programme. Whilst the temperature of the water in the boiler does not reach the selected value, the burner operates but the pump does not.

Adjustable from 10°C up to 60°C. It is factory-set at 10°C.

It should be set 5°C below the "minimum" temperature selected on fitting the KFS sensor.

Temperature differential

With the "Hys" control (14) we can set the value of the difference that will exist, with the installation under normal working conditions, between the temperatures of the water in the boiler when the burner is switched "on" or "off". (Fig. 16). Adjustable from 4°C up to 10°C. It is factory-set at 5°C.

0 - Burner start-up.

1 - Burner disconnection ("OFF").

2 - Burner connection ("ON").

Note:

The adjustments made with "min" and "KAE" potentiometers have priority over the "Hys" differential.

1 - Set the control thermostat (1) to its maximum value. Check its correct operation and also that of the safety limit thermostat (2). (Fig. 17).

2 - Turn on the main On/off switch (3). The burner and pump will start working according to the outside temperature and the adjustments programmed in the control centre.

3-7 - These operations are identical to those for the CC-119 control panel.

Control Panel CC-119T

1-7 - These operations are identical to those given for the CC-119 control panel (Fig. 18).

Telephone module

It is made up of two parts: a portable transmitter (5) with service switch, keypad and loudspeaker and a separate receiver (6) mounted on the control panel for connecting to the telephone line.

Country selection

To select the country where the telephone module has been installed, proceed as follows:

- Place the transmitter on the receiver's microphone, key in the sequence * * ≠ 0 * * and then the digit of the required country, in accordance with the table below:

Digit	Country where installed	Language
1	Spain	Spanish
2	France	French
3	Italy	Italian
4	Belgium	French
5	Portugal	Portuguese
6	Germany	German
7	United Kingdom	English
8	Other countries	Tone Code

The receiver will give message 10 "Select Function" in the language of the country that has been selected. In the case of "other countries", the message will be: two short tones (the first, high-pitched).

From this moment, synthesized messages will be given in the language of the selected country, or through a Tone Code (*) for "other countries", and the electrical operation will be adapted to the requirements of the country's current regulations. The original configuration of the module is for its installation in Spain.

The selected country holds until a new one is selected, regardless of power cuts.

(*) List of messages transmitted as Tone Codes.

- A) Long tone (half a second) = "Dial the Code", "Dial New Code" or "Right Code".
- B) A very low tone = "Wrong Code" or "Blocked Boiler".
- C) A low tone = "Out of Work"
- D) A medium-pitched tone = "Heating"
- E) Two medium-pitched tones (D + D) "Domestic Hot Water"
- F) A high-pitched tone = "In Service"
- G) Two short tones (the first, higher-pitched) "Select Function"

The combination of tones is equivalent to numbered messages, according to the following list:

- Message 1 = "Roca" + A
- Message 2 = A + G
- Message 3 = B + A
- Message 4 = A
- Message 5 = A
- Message 6 = D + F
- Message 7 = D + C
- Message 8 = E + F
- Message 9 = E + C
- Message 10 = G
- Message 11 = Scale of three short tones, gradually lower
- Message 12 = Scale of three short tones, higher-pitched
- Message 13 = B + D + C
- Message 14 = B + E + C

Remote control operation

The maximum length of a telephone call is four minutes; after this time the call is interrupted. If the receiver does not receive any tone from the transmitter within 30 seconds, the call will also be interrupted.

- Dial the telephone number where the receiver is installed; at the eighth signal this will transmit message 1 "Roca Heating; Dial the Code", which will be audible in the telephone ear-piece.

- Bring the transmitter near to the mouthpiece of the telephone and key in the four digits of the Access Code. The factory-set Access Code is 0000.

- a) If the keyed in code is not correct, the receiver gives message 3 "Wrong Code; Dial the code". After five failed attempts, communication will be interrupted. If less than four digits are keyed in, the communication will be broken; and if more digits are keyed in, depending on what they are, it is possible that some function will be started (when the first four numbers coincide with the correct code and the others with some function).

- b) If the keyed in code is correct, the receiver gives message 2 "Right code; Select Function" and waits to receive digits 1, 2 or *, according to the required mode.

Changing the code

Press "*" and 1 in that order. The receiver gives message 5 "Dial New Code".

- Key in the four digits of the new code and then "*". The receiver says again: "Dial New Code".
- Again key in the four digits of the new code.
 - a) If the two series of digits are not the same, the receiver gives message 4: "Dial the Code" and the procedure for changing the code must be repeated from the start.
 - b) If the two series of digits were the same, the receiver says: "Right Code. Select Function" and waits to receive one of these digits: 1, 2 or "*", according to the required mode.

Consulting or changing the "Heating" service

On pressing key No. 1 on the transmitter, the receiver gives out message 6 "Heating Working" or message 7 "Heating out of Work". To change the service status, press key No. 1 again.

Consulting or changing the "Domestic Hot Water" service

When key No. 2 is pressed on the transmitter, the receiver gives message 8 "Hot Water Available", or message 9 "Hot Water Unavailable".

To change the status, press key No. 2 again.

Receiver configuration

The "standard" configuration is for a storage tank with no electric heater. The "alternative" configuration is for a storage tank with electric heater, in which case, should the boiler fail to operate because of some fault, it will still be possible to get hot water with the electric heater on.

When key No. 1 is pressed on the transmitter, the receiver gives message 13 "Blocked Boiler; Heating out of Work". On pressing No. 2, the receiver says: "Hot Water Available" or "Hot Water Unavailable". To switch back to the Hot Water Service, press 2 again.

With the "standard" configuration, should the boiler fail to operate because of some fault, when No. 1 is pressed on the transmitter, the receiver gives message 13 "Blocked Boiler; Heating Out of Work". On pressing No. 2, the receiver gives message 14 "Blocked Boiler; Hot Water Out of Work".

- Key in *, #, =, 3 and * in that order. The receiver gives message 11 "Standard Configuration" (factory-set) or message 12 "Alternative Configuration". The configuration now selected will hold until the above series is keyed in again, when the receiver will change and will give the message which corresponds to the new configuration.

Receiver Operation

When the receiver is connected to the mains, the green LED (1) lights up and the LED remains unlit. The receiver will not admit tones from the transmitter through the mouthpiece nor send messages through the loudspeaker.

The receiver has three buttons: "Heating", "Domestic Hot Water" and "Loudspeaker".

"Heating" selection

Press "Heating". The LED (1) :

- Lights up = Heating Service operating normally.
- Does not light up = Heating Service "off".

"Domestic Hot Water" Service

Press "DHW". The LED (2) :

- Lights up = DHW Service operating normally
- Does not light up = DHW Service "off".

"Loudspeaker" selection

- 1 - Position "OFF".

Press "Loudspeaker" (except when connecting the receiver to the mains for the first time).

The LED is unlit and the receiver:

- Does not admit incoming tones from the transmitter through its loudspeaker.
- Does not send out messages through its loudspeaker.
- Admits telephone messages at the eighth signal.
- Gives messages through the telephone line.

- 2 - Position "ON"

Press "Loudspeaker". The LED lights up and the receiver:

- Admits incoming tones from the transmitter through its mouthpiece
- Sends out messages through its loudspeaker
- Admits telephone messages at the eighth signal.
- The "loudspeaker" LED flashes slowly while there is a call which is being answered by the receiver.

- 3 - Position "OFF"

Press "Loudspeaker" for three seconds. The LED flashes rapidly and the receiver:

- Is disconnected from the telephone line.
- Does not answer any call.

Press "Loudspeaker" to return to the "ON" position.

Lockout

The red LED (3) lit up means that the boiler has "locked out".

Direct operation on the receiver microphone

All the functions that can be done by telephone can also be done by resting the transmitter's loudspeaker on the receiver's microphone.

- Put the "Loudspeaker" key in the "ON" position. The LED lights up.
- Bring the loudspeaker on the back of the transmitter close to the receiver's microphone.
- Follow the steps described in the "Remote Control Operation" section, keeping in mind that:
 - It is not necessary to key in the digits of the access code.
 - Press 0. The message "Roca Heating"; Select Function" is given.

If, during these operations, a telephone call is received, it is given priority, cancelling the orders given through the receiver's microphone.

Control Panel CCE-120 T

It incorporates a telephone module whose characteristics and operation are identical to those for the CC-119T control panel.

Control Thermostat

It fixes the set point temperature of the water in the boiler. The adjustment range is limited by the maximum and minimum temperature values selected through the switches (see "Switches for selecting operating options").

- Maximum temperature values = 90°C and 30°C (factory-set = 90°C).
- Minimum temperature values = 50°C and 30°C (factory-set = 50°C).

A third switch permits, according to the thermal inertia of the installation, an adjustment differential ranging between 4°C and 8°C (factory-set = 8°C). Disconnection and connection of the burner are done for:

- Set point temperature = disconnection ("OFF").
- Set point temperature - differential connection ("ON").

Anti-freeze mode

It protects the installation from the effects of low temperatures.

Set the wheel of the control thermostat at its minimum value; the 30°C LED flashes slowly indicating that the service in question has been interrupted.

By selecting the anti-freeze mode on the heating thermostat, the operation of an optional ambient thermostat is overridden.

The anti-freeze mode process is as follows:

- 1 - Initial stand-by position.
 - The temperature of the water in the boiler and storage tank are continuously measured.
When the water temperature drops below 8°C a "pump cycle" is initiated.
- 2 - Pump cycle.
 - Pumps run for 30-minute cycles, which are repeated until:
 - All temperatures measured during a cycle exceed 8°C, in which case the stand-by position is resumed.
 - A temperature below 4°C is sensed, in which case a "burner cycle" is initiated.
- 3 - Burner cycle.

The burner runs for 30-minute cycles, with a water temperature differential of 8°C between "ON" and "OFF" and 50°C setpoint temperature. The pumps also runs. These cycles are repeated until all measured temperatures exceed 4°C at any one cycle, and then a pump cycle is initiated.

Safety limit thermostat

It "locks out" the burner for a water temperature of 100°C. It is reset manually.

Temperature display

During operation, the temperature of the water in the boiler is shown by the lighting of specific LEDs every 5°C. The 30°C LEDs are lit all the time.

Pressure display

During operation, the lighting of specific LEDs shows the relative pressure in the boiler in relation to the atmospheric pressure, every 0.5 bar, from 0 bar to 4 bar. The 0 bar LED is lit all the time.

Pump operation

- For temperatures of water in the boiler < 25°C, the pump does not run, except during the anti-freeze mode, and:
- After 24 hours without running the pump runs for a minute.
- After the stopping of the burner through the action of an ambient thermostat (optional), the pump runs for 30 minutes.

Switches for selecting operating options (Fig. 19)

Situated on the rear of the control panel. It is factory-set at "ON".

Switch 1 (BPRES)

The original setting limits the operating pressures between 0.3 bar and 3.8 bar. For pressure values other than these, the boiler will "lock out". Changing the position of the switch overrides this limitation (safety for pressure).

Switch 2 (DIFE)

The factory setting fixes at 8°C the energizing/ de-energizing differential of the boiler and tank control thermostats. The change of position sets the same differential at 4°C.

Switch 3 (VIS)

The factory setting belongs to the fault signalling for the User. The change of position offers signalling for the Installer; in this case, the fault LED flashes slowly even if there are no faults. Please refer the "Troubleshootin Table".

Switch 4 (RJCA)

In their factory setting, the timers (optional) for Heating and Domestic Hot Water control their services only. Changing the position, the Heating timer controls both services.

Switch 5 (PRI/PAL)

Its factory setting establishes priority for the Domestic Hot Water over Heating. The change of position overrides this priority.

Switch 6 (RCAL)

Keep it in its original setting when the tank is not fitted with an electric Heater. The change of position will be necessary when the tank is fitted with an electric Heater.

First lighting

Control panel CCE-120T

- 1 - Set the controls on the panel to the value that corresponds to the installation and required operation (Fig. 20). Set the ambient thermostat (optional) to the required temperature.
- 2 - Turn on the main switch (1). The green LED (2) lights up.
- 3 - Check that the pump and burner are running correctly. Adjust the burner in accordance with its accompanying instructions.
- 4 - Bleed the air, and with the system running under normal conditions, check that the radiators reach the required temperature.
- 5 - Check that there are no leaks of flue gases.
- 6 - Check the burner safety devices. The red LED (3) "on" means that the burner has "locked out".

Approx. values			
Temperature sensor	Pressure sensor		
-20 °C	123,5Ω	0 bar	0,3 V
-10 °C	73,5Ω	0,5 bar	0,77 V
0 °C	45,1Ω	1 bar	1,24 V
10 °C	28,5Ω	1,5 bar	1,71 V
20 °C	14,9Ω	2 bar	2,18 V
30 °C	12,3Ω	2,5 bar	2,65 V
40 °C	8,3Ω	3 bar	3,12 V
50 °C	5,8Ω	3,5 bar	3,59 V
60 °C	4,1Ω	4 bar	4,06 V
70 °C	2,9Ω		
80 °C	2,1Ω		
90 °C	1,6Ω		
100 °C	1,2Ω		
110 °C	0,9Ω		
120 °C	0,7Ω		
125 °C	0,6Ω		

Important recommendations

- If the installation is located in an area with risk of freezing, some anti-freeze product should be added to the water in proportion to the minimum outside temperature of the place.
- We recommend that the properties of the water in the system be:
pH: 7,5 ÷ 8,5
Hardness: 8 ÷ 12 French degrees (*)

(*) One French degree is equivalent to 1 gram of Calcium Carbonate per 100 litres of water.

- If it were absolutely necessary to add water to the system, wait until the boiler is completely cold before doing so.

Note:

Characteristics and performance qualities subject to change without notice.

CE Marked

The LAIA/GT Heating Units comply with the European Directives 89/336/CEE on Electromagnetic Compatibility and 73/23/CEE on Low Voltage.

Lockout	Stoppage of	User's indication	Installer's indication (Note 1)	Cause of fault	On removing cause of fault
Yes	Burner	<ul style="list-style-type: none"> Fault LED flashes rapidly. 90°C LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. 90°C LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Excess temp. of water (>100 ° C) 	<ul style="list-style-type: none"> Press unlocking button. Note 2. Change position of VIS switch if necessary (Installer)
Yes	Burner and pump	<ul style="list-style-type: none"> Fault LED lit permanently. Temp. LEDs off. Pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. Only 90, 80, 70 and 60 °C LEDs lit = safety limit thermostat fault. Only 50, 40 and 30 °C LEDs lit = control thermostat fault. All temp. LEDs flashes = fault in some undetermined thermostat. Pressure indication. 	<ul style="list-style-type: none"> Fault in control/safety thermostat. Short circuit in some thermostat. Open circuit in some thermostat. Adjustment differential >10°C. 	<ul style="list-style-type: none"> Change position of VIS switch. Press unlocking button.
Yes	Burner	<ul style="list-style-type: none"> Fault LED flashes rapidly. 4-bar LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. 4-bar LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Excess pressure. 	<ul style="list-style-type: none"> Press unlocking button. Note 3. Change position of VIS switch if necessary (Installer)
Yes	Burner and pump	<ul style="list-style-type: none"> Fault LED blinks rapidly. 0-bar LED blinks rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. 0-bar LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Lack of pressure. 	<ul style="list-style-type: none"> Press unlocking button. Change position of VIS switch if necessary (Installer)
Yes	Burner and pump	<ul style="list-style-type: none"> Fault LED lit permanently. Pressure LEDs off. Temperature display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. All pressure LEDs flash rapidly. Temperature display. 	<ul style="list-style-type: none"> Fault in pressure sensor. Short circuit in some thermostat Open circuit in some thermostat 	<ul style="list-style-type: none"> Change position of VIS switch. Press unlocking button.
Yes	Burner and pump	<ul style="list-style-type: none"> Fault LED lit permanently. Temp. & pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Max. temp. selection (TMAX) lower than min. temp. 	<ul style="list-style-type: none"> Change position of VIS switch. Press unlocking button.
Yes	Burner and pump	<ul style="list-style-type: none"> Fault LED lit permanently. Temp. & pressure LEDs off. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. All temp. & pressure LEDs flashes rapidly. 	<ul style="list-style-type: none"> Safety circuit out of service. 	<ul style="list-style-type: none"> Switch off the mains supply and switch it on again. Press <u>unlocking button</u>.
No	Temperature adjustment (no change)	<ul style="list-style-type: none"> Fault LED lit blinks rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Fault LED flashes rapidly. Temp. & pressure display. 	<ul style="list-style-type: none"> Burner lockout. 	<ul style="list-style-type: none"> Press unlocking button on the burner itself. Change position of VIS switch if necessary (Installer)

Note 1

As long as the VIS switch (5) is in the "Installer's Indication" position, the fault LED flashes slowly for normal operation. Change the position of the switch to put the LED out.

Note 2

The pump runs. The burner will not run until it is manually unlocked once the temperature has dropped below 80°C.

Note 3

The pump runs. The burner will be "off" until the pressure falls 1.5 bar with respect to the selected limit; it will not run until it is manually unlocked.