CRONO 2-L, 3-L, 5-L, 10-L, 15-L, & 20-L

ROCA
BAXI GROUP

E

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

D

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

GB

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

I

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

F

Brûleurs fioul
Instructions d'Installation,
de Montage et de Fonctionnement
pour **L'INSTALLATEUR**

P

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

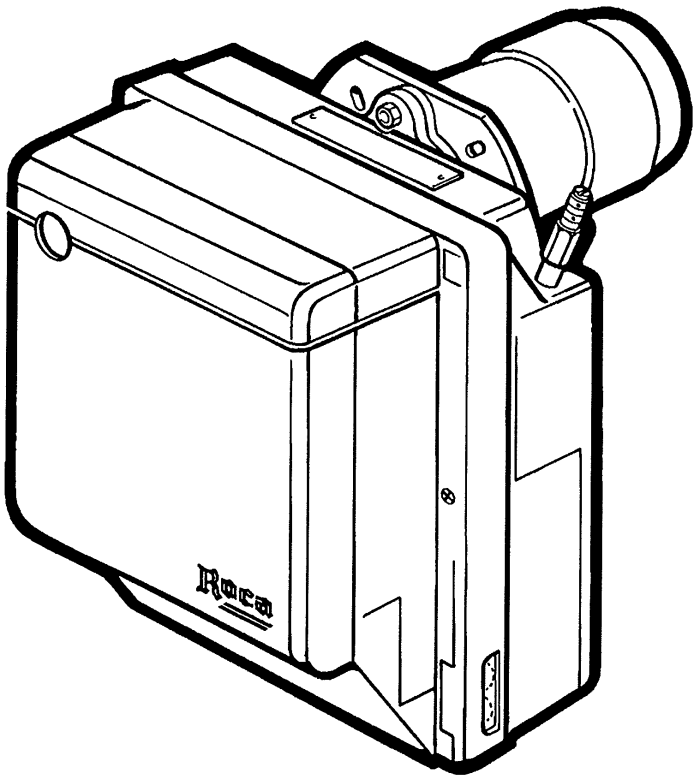

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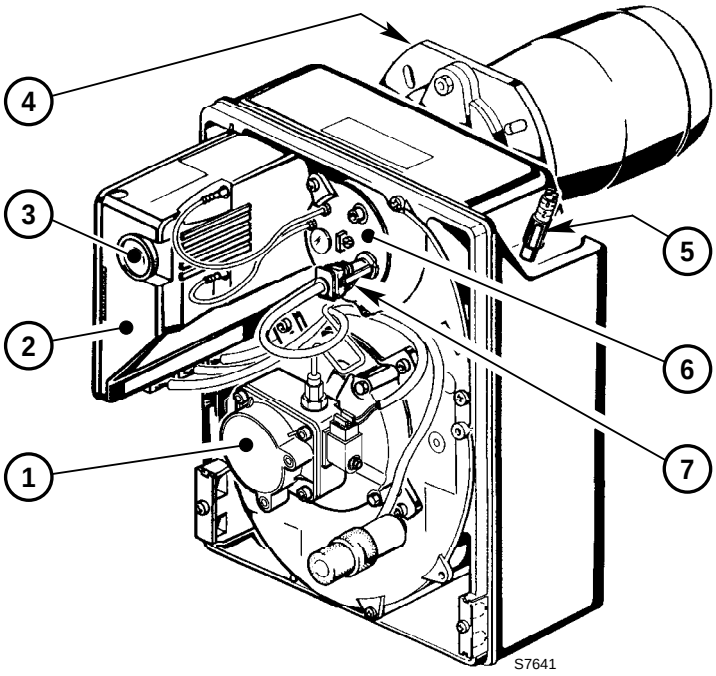
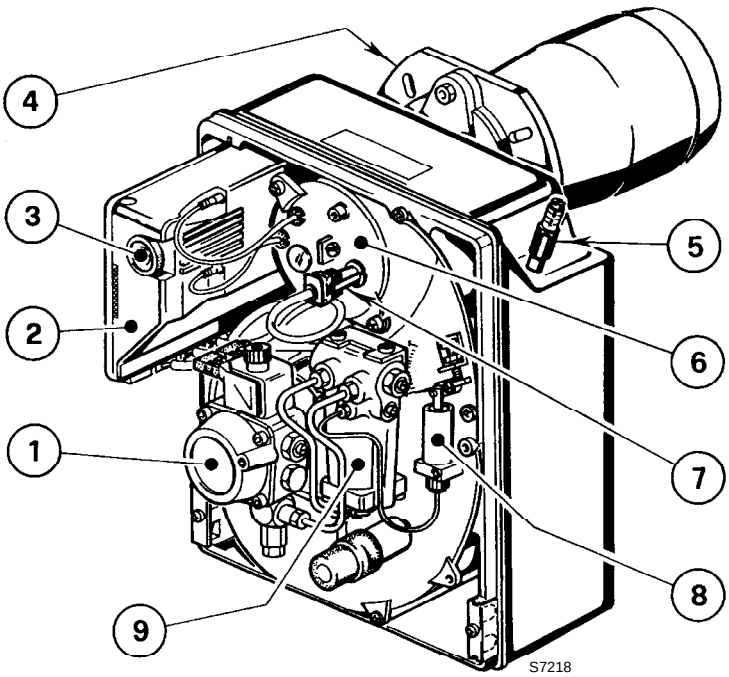
Fig. / Abb. 1

CRONO 2-L, 3-L, 5-L, 10-L, 15-L



CRONO 20-L



E Datos técnicos

Tipo CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Caudal	kg/h	1,2 ÷ 2,3	1,8 ÷ 3,2	1,3 ÷ 5	4 ÷ 10	7 ÷ 15	10 ÷ 20
Potencia t0rmica	kW	14,2 ÷ 27,3	21,3 ÷ 38	15 ÷ 60	47 ÷ 119	83 ÷ 178	118,5 ÷ 237
Combustible		Gasóleo, viscosidad 4 ÷ 6 mm^2/s a 20 °C:					
Alimentación eléctrica		Monofásica, ~50Hz 230V ± 10%					
Motor		0,85 A absorbidos 2750 rpm 289 rad/s			0,9 A absor. 2720 rpm 285 rad/s	1,9 A absor. 2750 rrpm 289 rad/s	2 A. absor. 2730 rpm 286 rad/s
Condensador		4 µF				6,3 µF	
Transformador de encendido		Secundario 8 kV – 16 mA					
Bomba		Presión: 8 – 15 bar					
Potencia eléctrica absorbida		0,29 kW			0,18 kW	0,385 kW	0,39 kW

GB Technical data

Type CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Output	kg/h	1.2 – 2.3	1.8 – 3.2	1.3 – 5	4 – 10	7 – 15	10 – 20
Thermal power	kW	14.2 – 27.3	21.3 – 38	15 – 60	47 – 119	83 – 178	118.5 – 237
Fuel		Gas oil, viscosity 4 – 6 mm^2/s at 20 °C					
Electrical supply		Single phase, ~50Hz 230V ± 10%					
Motor		Run current 0.85 A 2750 rpm 289 rad/s			Run current 0.9 A 2720 rpm 285 rad/s	Run current 1.9 A 2750 rpm 289 rad/s	Run current 2 A 2730 rpm 286 rad/s
Capacitor		4 µF				6.3 µF	
Ignition transformer		Secondary 8 kV – 16 mA					
Pump		Pressure: 8 – 15 bar					
Absorbed electrical power		0.29 kW			0.18 kW	0.385 kW	0.39 kW

F Données techniques

Type CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Débit	kg/h	1,2 ÷ 2,3	1,8 ÷ 3,2	1,3 ÷ 5	4 ÷ 10	7 ÷ 15	10 ÷ 20
Puissance thermique	kW	14,2 ÷ 27,3	21,3 ÷ 38	15 ÷ 60	47 ÷ 119	83 ÷ 178	118,5 ÷ 237
Combustible		Fioul domestique, viscosité 4 ÷ 6 mm^2/s à 20 °C					
Alimentation électrique		Monophasée, ~50Hz 230V ± 10%					
Moteur		0,85 A absorbés 2750 t/min 289 rad/s			0,9 A absorbés 2720 t/min 285 rad/s	1,9 A absorbés 2750 t/min 289 rad/s	2 A absorbés 2730 t/min 286 rad/s
Condensateur		4 µF				6,3 µF	
Transformateur d'allumage		Secondaire 8 kV – 16 mA					
Pompe		Pression: 8 – 15 bar					
Puissance électrique absorbée		0,29 kW			0,18 kW	0,385 kW	0,39 kW

D Technische Daten

Typ CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Durchsatz	kg/h	1,2 ÷ 2,3	1,8 ÷ 3,2	1,3 ÷ 5	4 ÷ 10	7 ÷ 15	10 ÷ 20
Brennerleistung	kW	14,2 ÷ 27,3	21,3 ÷ 38	15 ÷ 60	47 ÷ 119	83 ÷ 178	118,5 ÷ 237
Brennstoff		Heizöl-EL, Viskosität 4 ÷ 6 mm^2/s bei 20 ºC					
Stromversorgung		Einphase, ~50Hz 230V ± 10%					
Motor		Stromaufnahme 0,85 A 2750 U/min 289 rad/s			Stromaufn. 0,9 A 2720 U/min 285 rad/s	Stromaufn. 1,9 A 2750 U/min 289 rad/s	Stromaufn. 2 A 2730 U/min 286 rad/s
Kondensator		4 µF				6,3 µF	
Zündtransformator		Sekundärspannung 8 kV – 16 mA					
Pumpe		Druck: 8 – 15 bar					
Leistungsaufnahme		0,29 kW			0,18 kW	0,385 kW	0,39 kW

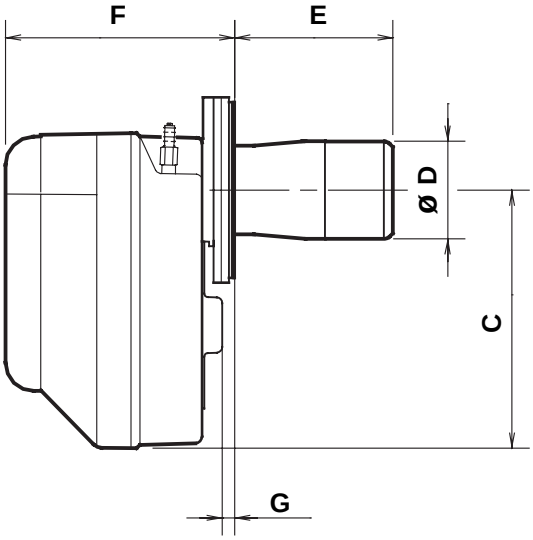
I Dati tecnici

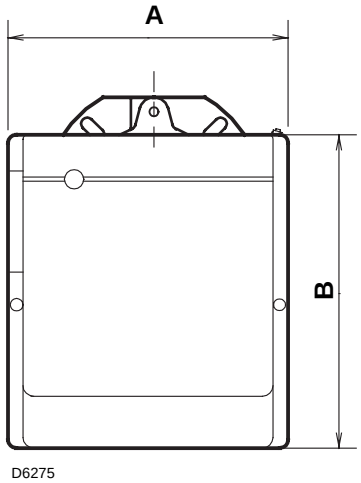
Tipo CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Portata	kg/h	1,2 ÷ 2,3	1,8 ÷ 3,2	1,3 ÷ 5	4 ÷ 10	7 ÷ 15	10 ÷ 20
Potenza termica	kW	14,2 ÷ 27,3	21,3 ÷ 38	15 ÷ 60	47 ÷ 119	83 ÷ 178	118,5 ÷ 237
Combustibile		Gasolio, viscosità 4 ÷ 6 mm^2/s a 20 ºC					
Alimentazione elettrica		Monofase, ~50Hz 230V ± 10%					
Motore		0,85 A assorbiti 2750 g/min 289 rad/s			0,9 A assorbiti 2720 g/min 285 rad/s	1,9 A assorbiti 2750 g/min 289 rad/s	2 A assorbiti 2730 g/min 286 rad/s
Condensatore		4 µF				6,3 µF	
Trasformatore di accensione		Secondario 8 kV – 16 mA					
Pompa		Pressione: 8 – 15 bar					
Potenza elettrica assorbita		0,29 kW			0,18 kW	0,385 kW	0,39 kW

P Dados técnicos

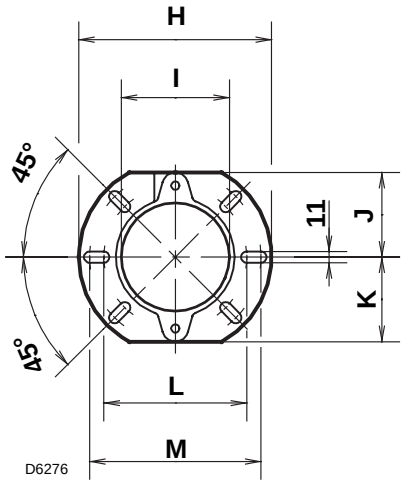
Tipo CRONO		2-L	3-L	5-L	10-L	15-L	20-L
Caudal	kg/h	1,2 ÷ 2,3	1,8 ÷ 3,2	1,3 ÷ 5	4 ÷ 10	7 ÷ 15	10 ÷ 20
Potência térmica	kW	14,2 ÷ 27,3	21,3 ÷ 38	15 ÷ 60	47 ÷ 119	83 ÷ 178	118,5 ÷ 237
Combustível		Gasóleo, viscosidade 4 ÷ 6 mm^2/s a 20 ºC					
Alimentação eléctrica		Monofásica, ~50Hz 230V ± 10%					
Motor		0,85 A absorvidos 2750 rpm 289 rad/s			0,9 A absor. 2720 rpm 285 rad/s	1,9 A absor. 2750 rpm 289 rad/s	2 A absor. 2730 rpm 268 rad/s
Condensador		4 µF				6,3 µF	
Transformador de ignição		Secundário 8 kV – 16 mA					
Bomba		Pressão: 8 – 15 bar					
Potência eléctrica absorvida		0,29 kW			0,18 kW	0,385 kW	0,39 kW

Dimensiones / Dimensions / Dimensions / Abmessungen / Dimensioni / Dimensões

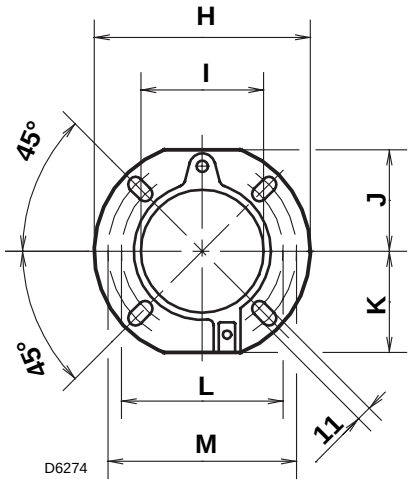




CRONO 2-L, 3-L, 5-L, 10-L



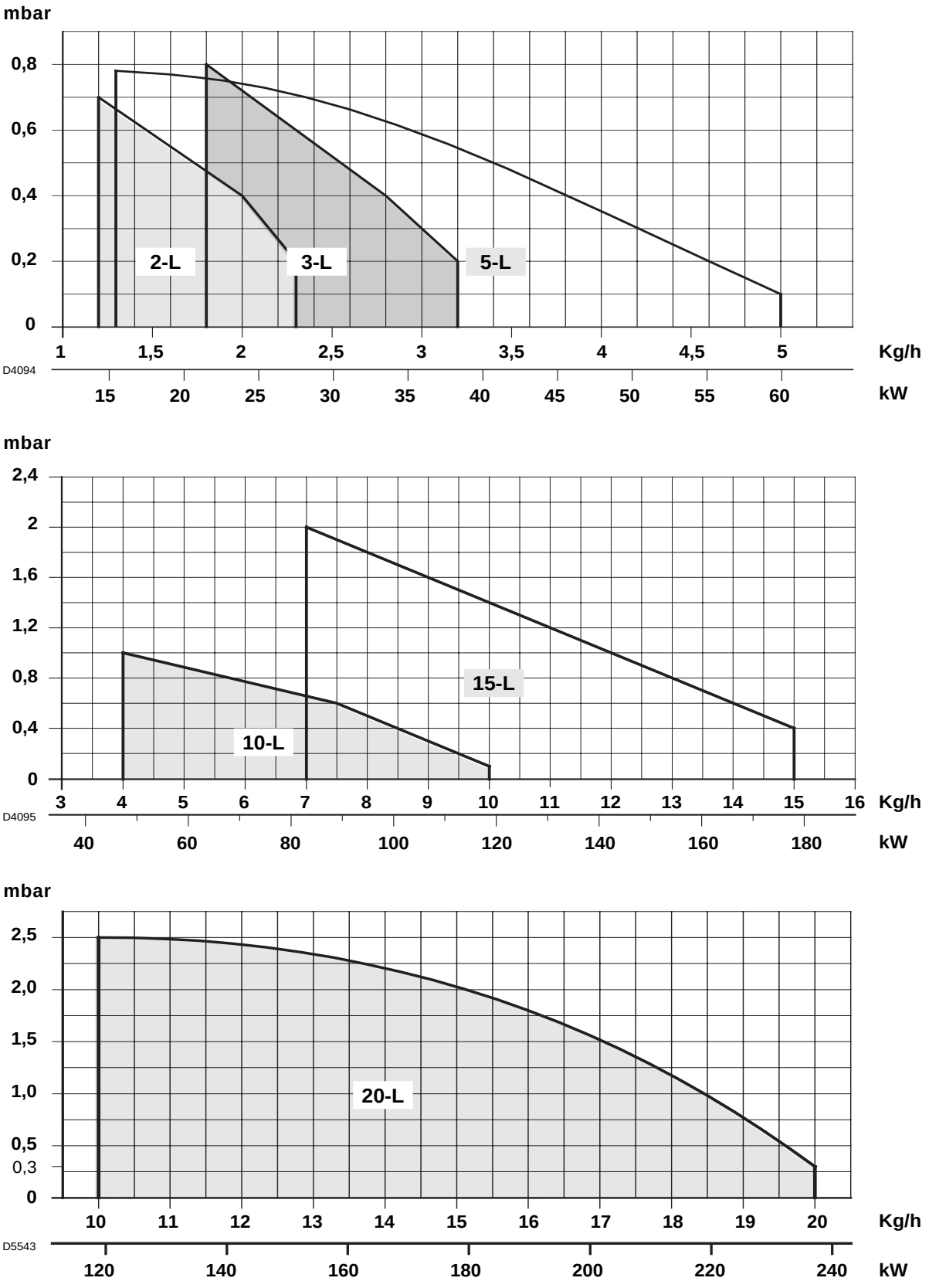
CRONO 15-L, 20-L



Modelo / Model / Modèle Modell / Modello / Modelo	A	B	C	øD	E	F	G	H	I	J	K	L	M
CRONO 2-L	234	254	210	90	105	211	17	180	91	75	72	130	150
CRONO 3-L	234	254	210	90	105	211	17	180	91	75	72	130	150
CRONO 5-L	234	254	210	84	112	196	4	180	91	72	72	130	150
CRONO 10-L	255	280	230	95	115	202	10	189	106	83	83	140	168
CRONO 15-L	300	345	285	123	142	228	12	213	127	99	99	160	190
CRONO 20-L	300	345	285	123	142	228	12	213	127	99	99	160	190

Campo de trabajo (según EN 267) / **Working fields** (as EN 267) / **Plages de travail** (selon EN 267)
Arbeitsfelder (nach EN 267) / **Campi di lavoro** (secondo EN 267) / **Campo de trabalho** (conforme EN 267)

Presión en cámara combustión / Pressure in the combustion chamber
Pression dans a la chambre de combustion / Druck im feuerraum
Pressione in camera di combustione / Pressão na câmara de combustão



Caudal de gasóleo / Potencia térmica
Output / Thermal power
Débit fioul / Puissance thermique
Heizöldurchsatz / Brennerleistung
Portata di gasolio / Potenza termica
Caudal / Potência térmica

Fijación a la caldera / Fixing to the boiler / Fixation à la chaudière
Befestigung am Kessel / Fissaggio alla caldaia / Fixação à caldeira

Fig. / Abb. 2

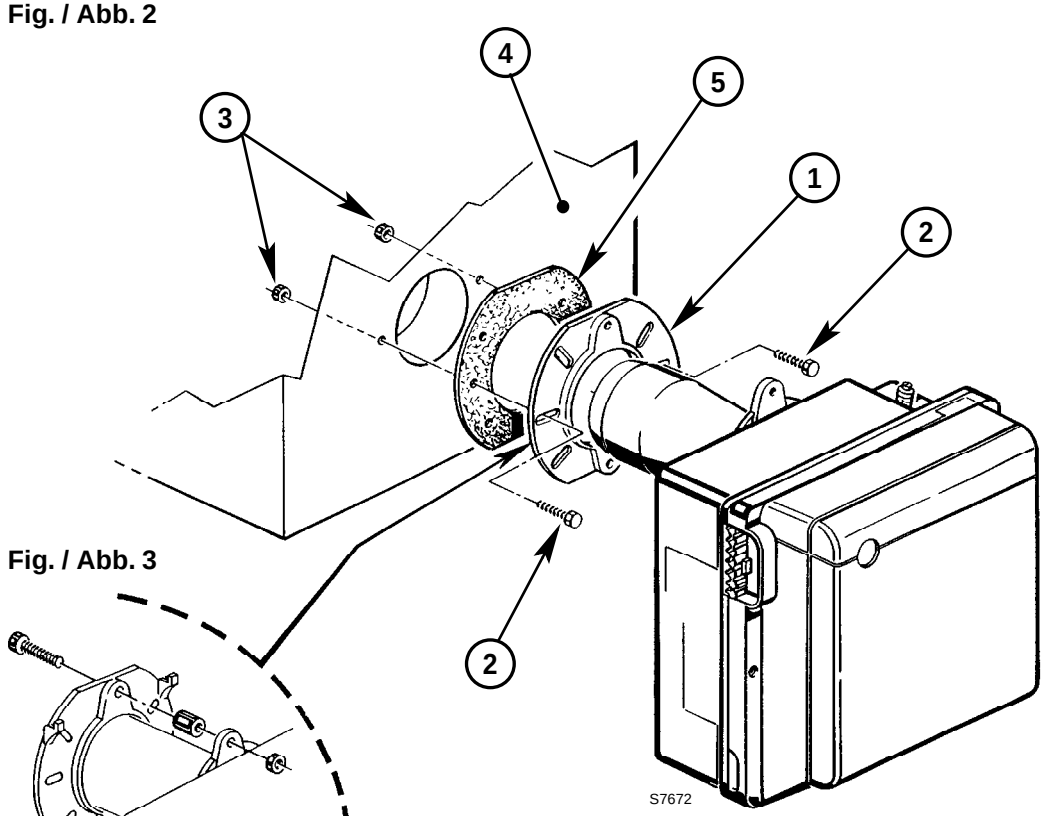


Fig. / Abb. 3

Fig. / Abb. 4

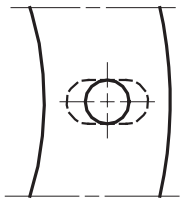
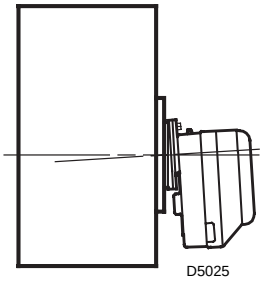


Fig. / Abb. 5



CRONO 15-L, 20-L

Alimentación del combustible / Fuel supply / Alimentation du combustible
Brennstoffversorgung / Alimentazione del combustibile / Alimentação do combustível

Fig. / Abb. 6

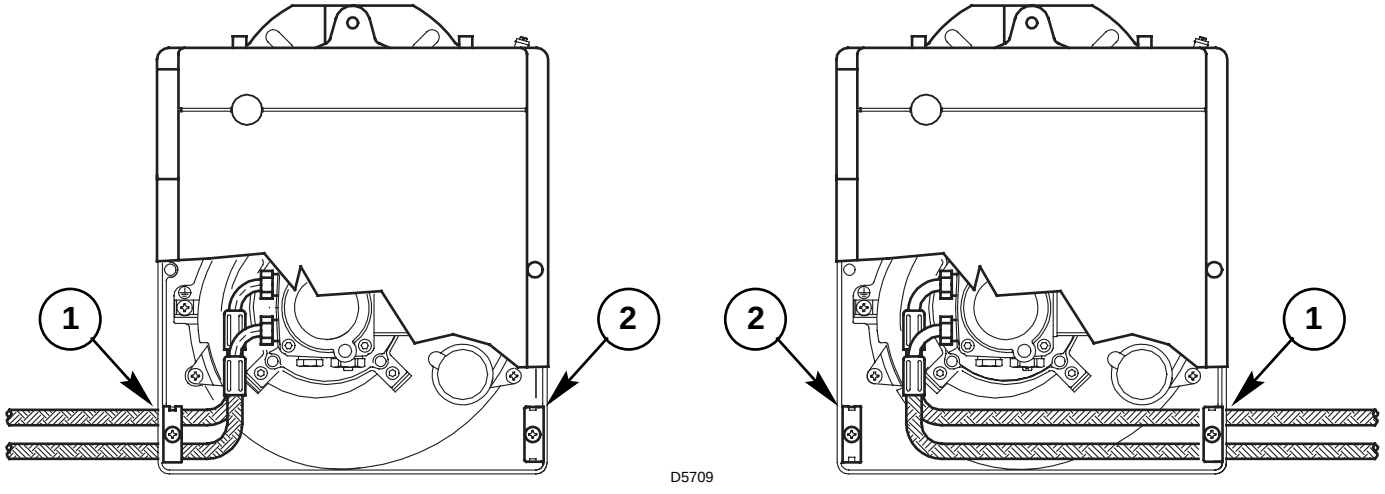
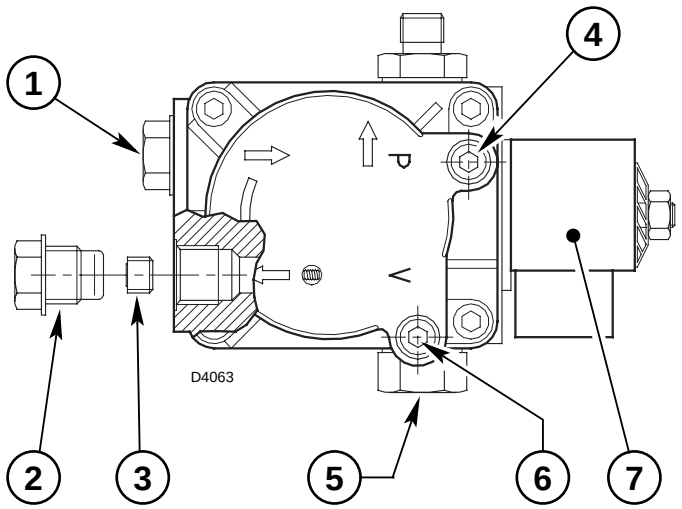


Fig. / Abb. 7

CRONO 2-L, 3-L, 5-L, 10-L, 15-L

SUNTEC PUMP



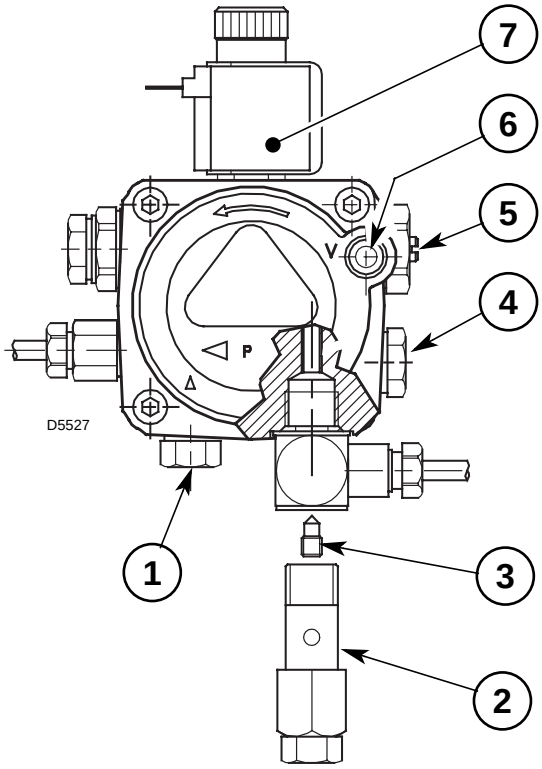
1 - Aspiración
1 - Suction line
1 - Aspiration
1 - Saugleitung
1 - Aspirazione
1 - Aspiração

2 - Retorno
2 - Return line
2 - Retour
2 - Rücklaufleitung
2 - Dado di ritorno
2 - Retorno

3 - Tornillo by-pass
3 - By-pass screw
3 - Vis by-pass
3 - By-pass-Schraube
3 - Vite by-pass
3 - Parafuso by-pass

CRONO 20-L

R.B.L. PUMP



4 - Racord de manómetro.
4 - Gauge connection.
4 - Raccord manomètre.
4 - Manometeranschluß.
4 - Presa per il manometro.
4 - Racord do manómetro.

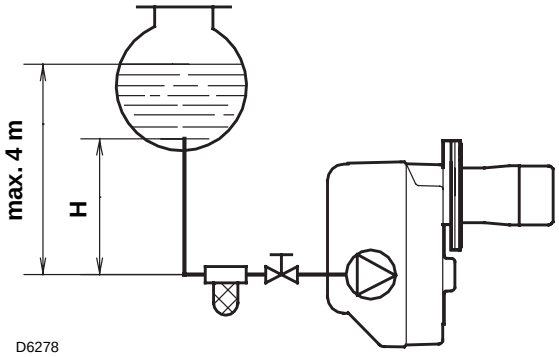
5 - Regulador de presión.
5 - Pressure adjuster.
5 - Régulateur de pression.
5 - Druckregler.
5 - Regolatore di pressione.
5 - Regulador de pressão.

6 - Racord de vacuómetro.
6 - Suction gauge connection.
6 - Raccord vacuomètre.
6 - Vakuummeteranschluß.
6 - Attacco vacuometro.
6 - Racord do vacuómetro.

7 - Válvula compuerta.
7 - Valve.
7 - Vanne.
7 - Ölmagnetventil.
7 - Valvola.
7 - Válvula de comporta.

Instalación no permitida en Alemania.
System not permitted in germany.
Installation pas autorisée en Allemagne.
In Deutschland nicht zulässige Anlage.
Impianto non ammesso in germania.
Instalação não autorizada na Alemanha.

Fig. / Abb. 8



H m	L m	
	øi 8 mm	øi 10 mm
0,5	10	20
1	20	40
1,5	40	80
2	60	100

H = Diferencia de nivel
H = Difference of level
H = Différence de niveau
H = Höhenunterschied
H = Differenza del livello
H = Diferença de nivel

L = Longitud máxima del tubo de aspiración
L = Max. length of suction line
L = Longueur maxi du tube d'aspiration
L = Max. Länge der Saugleitung
L = Lunghezza max. del tubo di aspirazione
L = Comprimento máxi, do tubo de aspiração

øi = Diámetro interior del tubo
øi = Internal diameter of the oil pipes
øi = Diamètre interne du tube
øi = Innendurchmesser der Leitung
øi = Diametro interno del tubo
øi = Diâmetro interior do tubo.

Fig. / Abb. 9

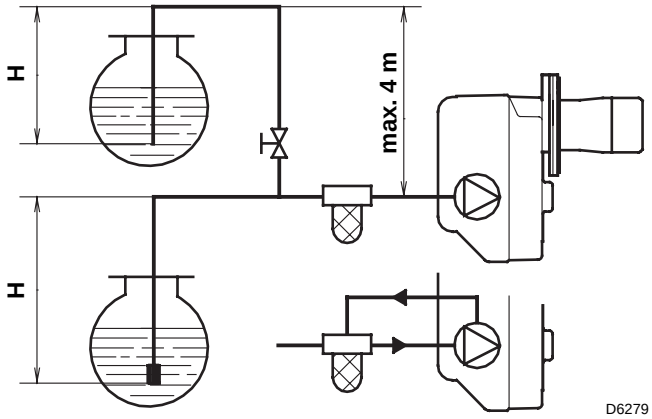
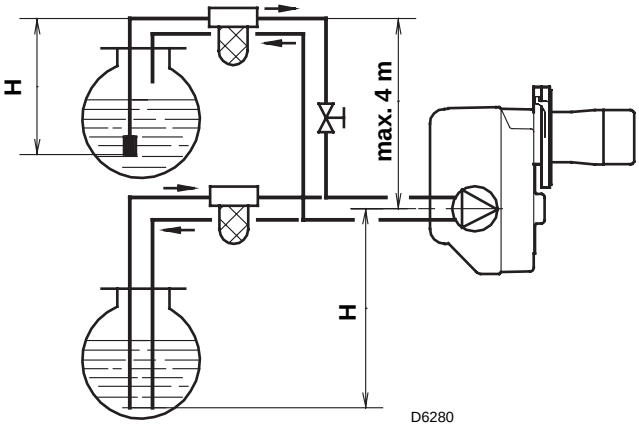


Fig. / Abb. 10



H m	L m	
	øi 8 mm	øi 10 mm
0	35	100
0,5	30	100
1	25	100
1,5	20	90
2	15	70
3	8	30
3,5	6	20

Es necesario instalar un filtro alimentación del combustible.
A filter should be installed in the fuel supply line.
Il est nécessaire d'installer un filtre d'alimentation du combustible.
Es ist notwendig, einen Filter für die Brennstoffzufuhr vorzusehen.
É necessario installare un filtro sulla tubazione di alimentazione del combustibile.
É necessário instalar um filtro de alimentação de combustível.

Fig. / Abb. 11

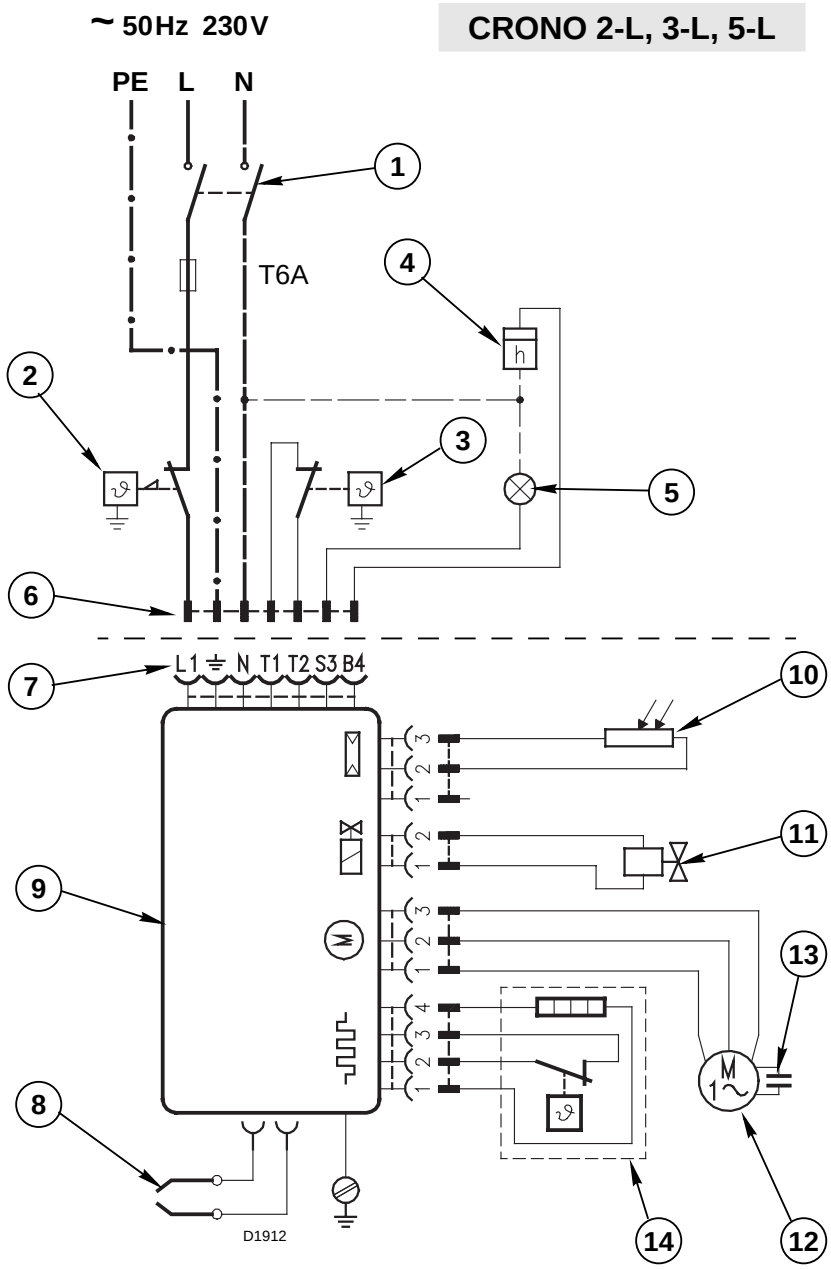
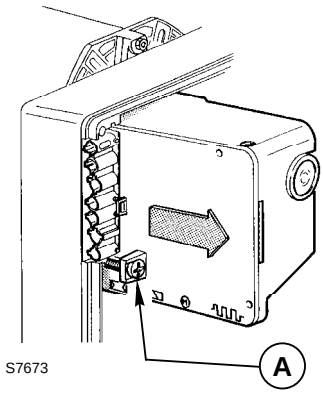


Fig. / Abb. 12



E

1 - Interruptor con fusible.
2 - Termostato seg. con rearme manual.
3 - Termostato regulación.
4 - Cuentahoras.
5 - Señalización de bloqueo a distancia.
6 - Conector macho de 7 terminales.
7 - Conector hembra de 7 terminales.
8 - Electrodos de encendido.
9 - Caja de control 553 SE.
10 - Fotoresistencia.
11 - Electroválvula.
12 - Motor.
13 - Condensador.
14 - Dispositivo precalentamiento con termostato para puesta en marcha.

GB

1 - Main switch.
2 - Limit thermosat with manual resetting.
3 - Regulating thermostat.
4 - Hours counter.
5 - Remote lock-out lamp.
6 - 7-pin plug.
7 - 7-pole socket.
8 - Ignition electrodes.
9 - Control box 553 SE.
10 - Photoresistance.
11 - Oil valve.
12 - Motor.
13 - Capacitor.
14 - Heater with start thermostat.

F

1 - Interrupteur général.
2 - Thermostat maxi. avec réarmement manuel.
3 - Thermostat de réglage.
4 - Compteur horaire.
5 - Signalisation de sécurité extérieure.
6 - Fiche 7 pôles.
7 - Prise 7 pôles.
8 - Electrodes d'allumage.
9 - Boîte de contrôle 553 SE.
10 - Cellule photorésistance.
11 - Vanne fioul.
12 - Moteur.
13 - Condensateur.
14 - Dispositif de préchauffage avec thermostat pour mise en marche.

Fig. / Abb. 11

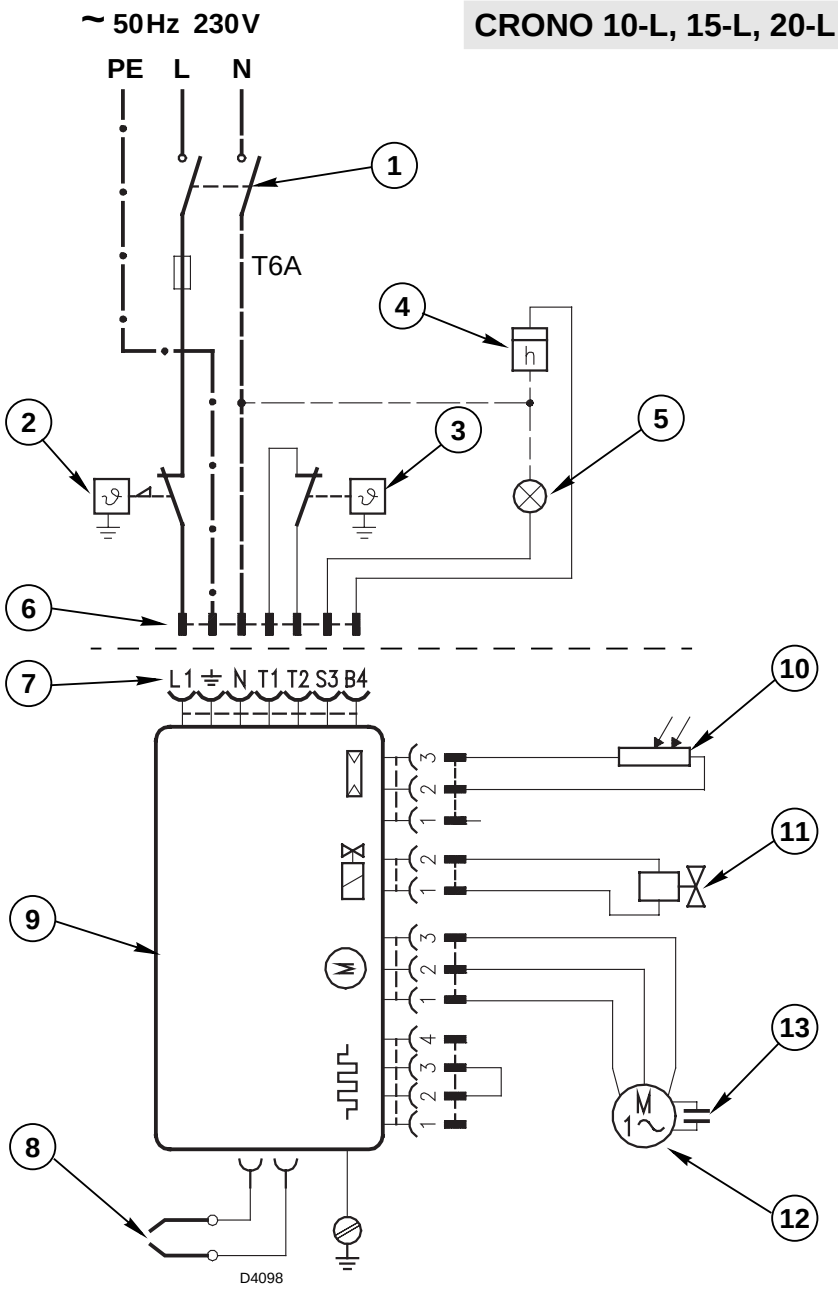
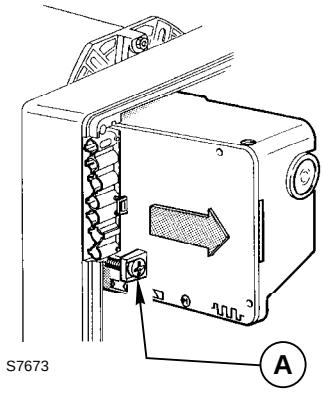


Fig. / Abb. 12



D

1 - Hauptschalter.
2 - Sicherheitstemperaturbegrenzer.
3 - Regelthermostat.
4 - Betriebsstundenzähler.
5 - Externe Störlampe.
6 - 7-poliger-Stecker.
7 - 7-poliger-Steckdose.
8 - Zündelektroden.
9 - Steuergerät 553SE.
10 - Photowiderstand.
11 - Ölventil.
12 - Motor.
13 - Kondensator.
14 - Vorwärmer mit Startfreigabethermostat.

I

1 - Interruttore con fusibile.
2 - Termostato di sicurezza con riarmo manuale.
3 - Termostato di regolazione.
4 - Contaore.
5 - Segnalatore di blocco a distanza.
6 - Connettore maschio a 7 punti.
7 - Connettore femmina a 7 punti.
8 - Elettrodi di accensione.
9 - Apparecchiatura 553SE.
10 - Fotoresistenza.
11 - Elettrovalvola.
12 - Motore.
13 - Condensatore.
14 - Riscaldatore con termostato di consenso all'avviamento.

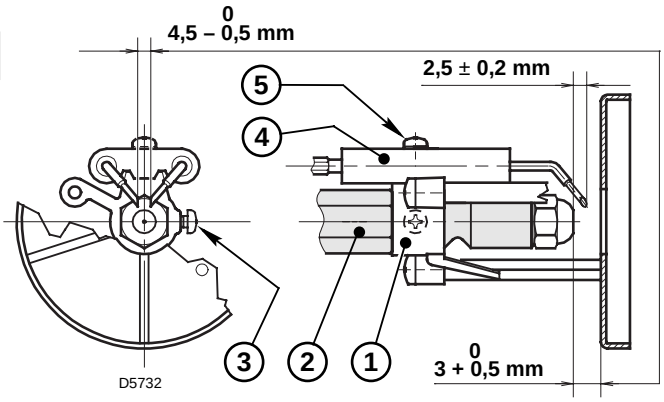
P

1 - Interruptor com fusível.
2 - Termostato de segurança com rearme manual.
3 - Termostato de regulação.
4 - Conta horas de serviço.
5 - Sinalização de bloqueio à distância.
6 - Conector macho de 7 terminais.
7 - Conector fêmea de 7 terminais.
8 - Eléctrodos de ignição.
9 - Caixa de controle 553SE.
10 - Fotorresistência.
11 - Electroválvula.
12 - Motor
13 - Condensador.
14 - Dispositivo de préaquecimento com termostato para entrada em funcionamento.

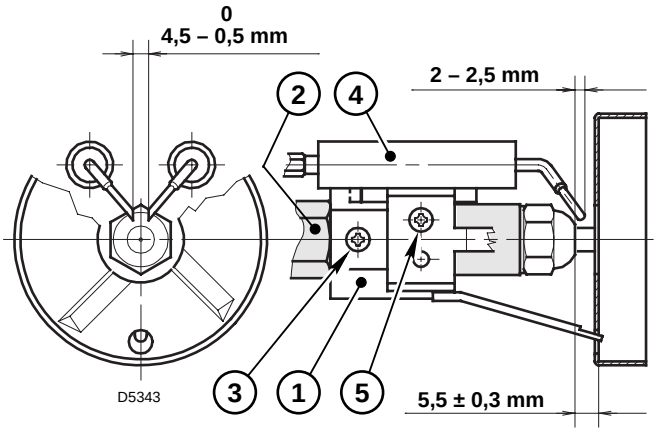
Regulación de los electrodos / Electrodes settings / Réglage des électrodes
Elektrodeneinstellung / Regolazione elettrodi / Regulaçao dos eléctodos

Fig. / Abb. 13

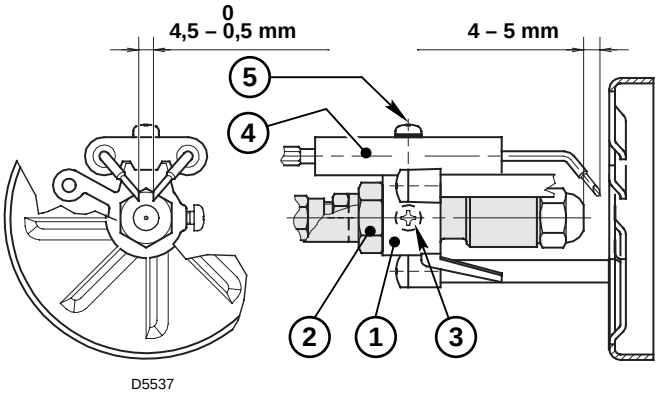
CRONO 2-L & 3-L



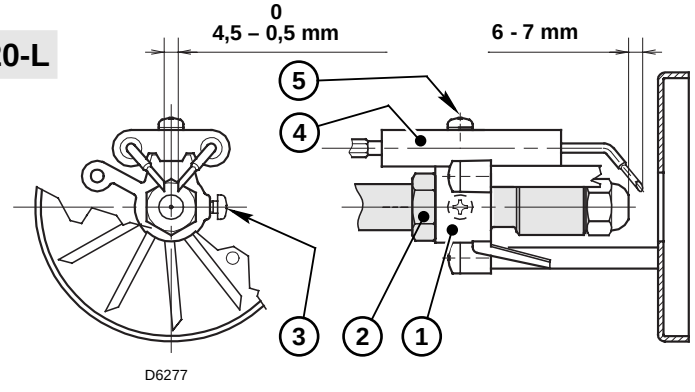
CRONO 5-L



CRONO 10-L



CRONO 15-L & 20-L



ATENCIÓN:
Deben respetarse estas distancias.

WARNING:
Measurements must be respected.

ATTENTION:
Les distances doivent être respectées.

ACHTUNG:
Diese Abstände müssen eingehalten werden.

ATTENZIONE:
Le misure indicate devono essere rispettate.

ATENÇÃO:
Devem respeitar-se estas distâncias.

Modelo quemador Burner model Modèle brûleur Brennermodell Modello bruciatore Modelo queimador	Boquilla Nozzle Gicleur Düse Ugello Boquilha			Presión bomba Pump pressure Pression pompe Pumpendruck Press. pompa Pressão bomba	Caudal Burner output Débit brûleur Durchsatz Portata Caudal	Regulación cabezal combustión Combustion head adjustment Réglage tête de combustion Brennerkopfeinstellung Regolazione testa di combustione Regulação cabeçal combustão	Regulación registro del aire Air damper adjustment Réglage volet d'air Luftklappeneinstellung Regolazione serranda Regulação registo de ar
	GPH	Angulo Angle Angle Winkel Angolo Ângulo	Tipo Type Type Typ Tipo Tipo	bar	kg/h ±4%	Indice Set-point Index Raste Tacca índice	Indice Set-point Index Raste Tacca índice
CRONO 2-L	0,30	80°	W-B	13	1,2	fijo, índice 2 / fix, set-point 2 fixe, index 2 / fest, Raste 2 tacca fissa 2 / fixa índice 2	0,1
	0,40	60°	W-B	12	1,5		0,3
	0,50	60°	W-B	12	1,9		0,9
	0,60	60°	W-B	12	2,3		3,5
CRONO 3-L	0,50	60°	W-B	12	1,9	fijo, índice 2 / fix, Set-point 2 fixe, index 2 / fest, Raste 2 tacca fissa 2 / fixa índice 2	0,7
	0,60	60°	W-B	12	2,3		1,0
	0,65	60°	W-B	12	2,5		2,6
	0,75	60°	W-B	12	2,9		4,9
	0,75	60°	W-B	14	3,2		5,8
CRONO 5-L	0,40	80°/60°	W-B	10	1,3	0,5	0,1
	0,50	60°	W-B	12	1,9	1,0	1,2
	0,60	60°	W-B	12	2,3	1,5	2,4
	0,65	60°	W-B	12	2,5	2,0	2,9
	0,75	60°	W-B	12	2,9	3,0	3,5
	0,85	60°	W-B	12	3,3	3,5	4,2
	1,00	60°/45°	W-B	12	3,8	4,5	5,1
	1,10	60°/45°	W-B	12	4,2	5,5	5,6
	1,25	60°/45°	W-B	12	4,8	6,0	6,3
	1,25	60°/45°	W-B	13	5,0	6,0	6,7
CRONO 10-L	1,00	60°	W-B	12	4,0	0	0,9
	1,10	60°	W-B	12	4,4	1	3,1
	1,25	60°	W-B	12	5,0	2	3,4
	1,50	60°	W-B	12	6,0	3	3,8
	1,75	60°	B	12	7,0	4	4,5
	2,00	60°	B	12	8,0	5	4,9
	2,25	60°	B	14	9,8	6	6,0
CRONO 15-L	1,75	60°	W-B	12	7,0	0	1,3
	2,00	60°	W-B	12	8,0	1	2,3
	2,25	60°	W-B	12	9,0	3	2,6
	2,50	60°	W-B	12	10,0	3,5	3,0
	3,00	60°	B	12	12,0	5	3,5
	3,50	60°	B	12	14,0	6	4,4
	3,50	60°	B	14	15,2	6	5,6

Fig. / Abb. 14

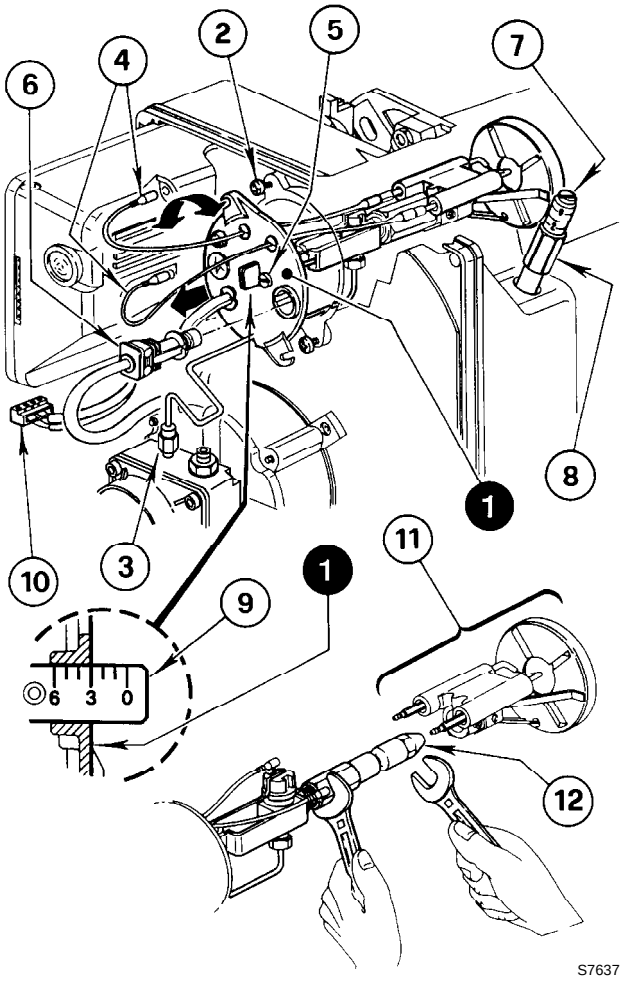
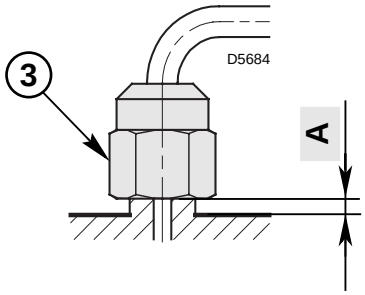


Fig. / Abb. 15



A

Enroscar justo a tope
Anziehen, ohne bis zum anschlag auszufahren
Tighten without moving backwards to the end
Serrer, mais pas jusqu'a la butée
Serrare senza portare a battuta
Não apertar a fundo

CRONO 20-L

Boquilla Nozzle Gicleur Düse Ugello Boquilha			Presión bomba Pump pressure Pression pompe Pumpendruck Pressione pompa Pressão bomba	Caudal Burner output Débit brûleur Durchsatz Portata Caudal	Regulación cabezal combustión Combustion head adjustment Réglage tête de combustion Brennerkopfeinstellung Regolazione testa di combustione Regulação cabeçal combustão	Regulación registro del aire Air damper adjustment Réglage volet d'air Luftklappeneinstellung Regolazione serranda Regulação registo de ar	
						Llama pequeña Low-flame Petite flamme Kleine Flamme Piccola fiamma Chama pequena	Llama grande High-flame Grande flamme Grosse Flamme Grande fiamma Chama grande
GPH	Angulo Angle Angle Winkel Angolo Ângulo	Tipo Type Type Typ Tipo Tipo	bar	kg/h ±4%	Indice Set-point Index Raste Tacca índice	Indice Set-point Index Raste Tacca índice	Indice Set-point Index Raste Tacca índice
2,50	60°	W	12	10	0,0	0,2	1,4
3,00	60°	W	12	12	1,0	0,4	2,1
3,50	60°	B	12	14	2,5	0,7	3,0
4,00	60°	B	12	16,1	4,0	0,9	3,5
4,50	60°	B	12	18,1	6,0	1,4	4,5
4,50	60°	B	14	20	6,0	1,4	6,0

Fig. / Abb. 16

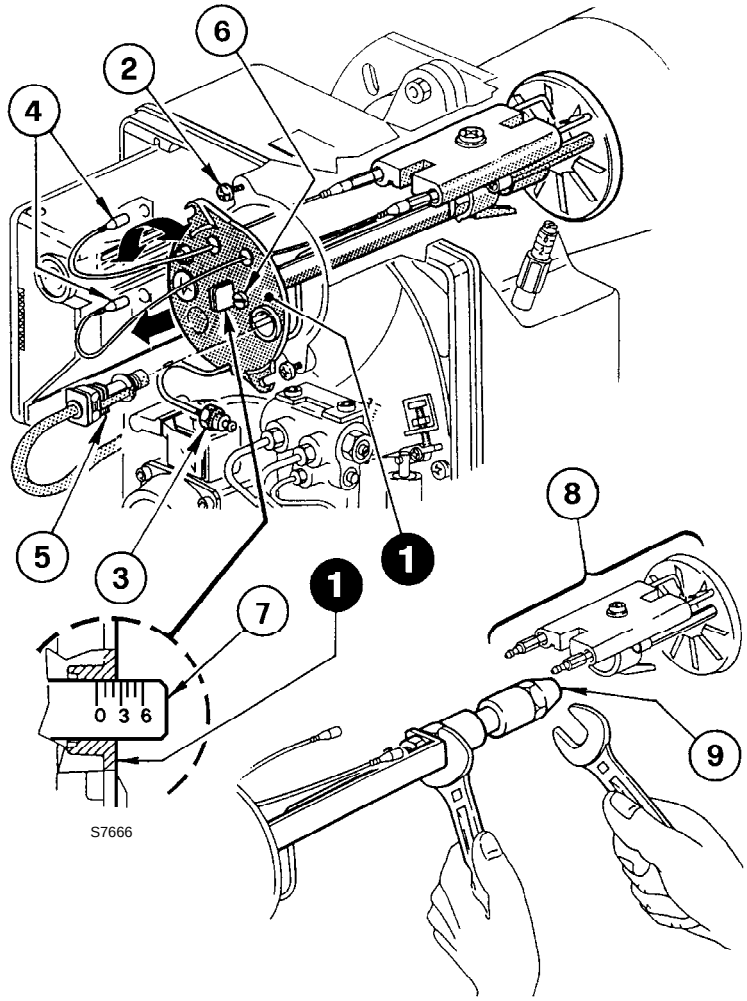
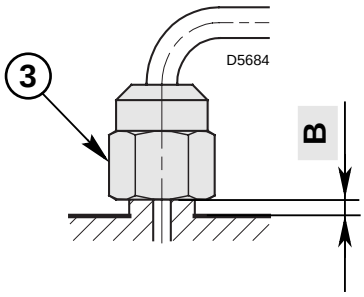


Fig. / Abb. 17



B

Enroscar justo a tope
Anziehen, ohne bis zum anschlag auszufahren
Tighten without moving backwards to the end
Serrer, mais pas jusqu'a la butée
Serrare senza portare a battuta
Não apertar a fundo

Fig. / Abb. 18

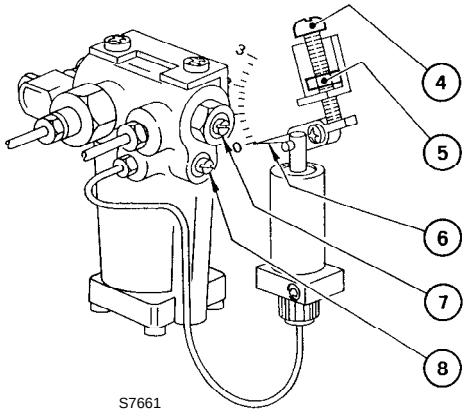
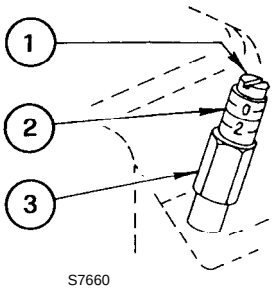


Fig. / Abb. 19



ENGLISH

1. MAIN FEATURES

- The burner meets protection level of IP 40, EN 60529·
- Burner with CE marking in conformity with EEC directives: EMC 89/336/EEC, Low Voltage 73/23/EEC, Machines 98/37/EEC and Efficiency 92/42/EEC.

2. BURNER DESCRIPTION

(Fig. 1, page 3)

One stage gas oil burner.

1. Oil pump
2. Control-box
3. Reset button with lock-out lamp
4. Flange with insulating gasket
5. Air damper adjustment
6. Nozzle holder assembly
7. Photoresistance
8. Hydraulic jack
9. Start delaying device

2.1 Burner equipment

Flange with insulating gasket 1
Screw and nuts for flange. 1
Screw and nuts for flange to be fixed to boiler . . . . . 2 or 4
Flexible oil pipes with nipples 2

3. TECHNICAL DATA

3.1 Technical data (Page 4)
3.2 Overall dimensions (Page 6)
3.3 Working fields (Page 7)

4. INSTALLATION

4.1 Boiler fixing (Page 8)

– Put on the flange (1) the screw and two nuts, (see fig. 3).
– Widen, if necessary, the insulating gasket holes (5), (see fig. 4).
– Fix the flange (1) to the boiler door (4) using screws (2) and (if necessary) the nuts (3) interposing the insulating gasket (5), (see fig. 2).
– For CRONO 10-L, 15-L and 20-L burners, after installation check that the burners are slightly tilted forward, as shown in fig. 5.

4.2 Fuel supply (Page 8)

The burner is designed to allow entry of the oil supply pipes on either side.
Depending on the oil supply pipes position (to the right or to the left hand side of the burner) the fixing plate (1) and closing plate (2) should be reversed, (see fig. 6).

4.3 Hydraulic systems (Page 9 and 10)

Warning:

– The pump is designed to allow working with two pipes. In order to obtain one pipe working it is necessary to unscrew the return plug or the connector (2), remove the by-pass screw (3) and then tighten the plug or the connector (2). (See fig. 7).
– Before starting the burner make sure that the return pipe-line is not clogged. An excessive back pressure would cause damage to the pump seal.

Priming pump (Page 8)

On the system in fig. 6 it is sufficient to loosen the suction gauge connection (6, fig.7, pag. 9) and wait until oil flows out.

On the systems in fig. 9 and 10 start the burner and wait for the priming. Should lock-out occur prior to the arrival of the fuel, await at least 20 seconds before repeating the operation. The pump suction should not exceed a maximum of 0.4 bar (30 cm Hg). Beyond this limit gas is released from the oil. Oil pipes must be completely tight.

In the vacuum systems (fig. 10) the return line should terminate within the oil tank at the same level as the suction line. In this case a non-return valve is not required. Should however the return line arrive over the fuel level, a non-return valve is required. This solution however is less safe than previous one, due to the possibility of leakage of the valve.

4.4 Electrical wiring (Fig. 11, pag. 11 and 12)

Attention:

Do not exchange neutral with phase.

Notes:

– Wires of 1 mm^2 section.
– The electrical wiring carried out by the installer must be in compliance with the rules in force in the Country.

Testing:

Check the shut-down of the burner by opening the thermostats and the lock-out by darkening the photoresistance.

Control box

To remove the control-box from the burner, loosen screw (**A**, fig. 12, page 11 or 12) and pull to the arrow direction, after removing all components, the 7 pin plug and earth wire.

In case of disassembly of the control box, retighten the screw (**A**) with a torque wrench setting of 1 – 1.2 Nm.

4.5 Electrodes settings (Page 13)

To have access to the electrodes carry out operations as described in chapter “5.2 or 5.8 Recommended nozzles ”.

Lean the diffuser disc-holder assembly (1) on the nozzle-holder (2) and lock it with screw (3).

For prospective adjustments of the electrodes assembly (4), loosen screw (5), (see fig. 13).

5. WORKING
BURNERS CRONO 2 - 3 - 5 - 10 e 15-L

5.1 Combustion adjustment.

In conformity with Efficiency Directive 92/42/EEC the application of the burner on the boiler, adjustment and testing must be carried out observing the instruction manual of the boiler, including verification of the CO and CO_2 concentration in the flue gases, their temperatures and the average temperature of the water in the boiler.
To suit the required appliance output, choose the proper nozzle and adjust the pump pressure, the setting of the combustion head, and the air damper opening in accordance with the following schedule at page 14.
The values shown in the table refer to 12.5% CO_2 at sea level and with light oil and room temperature of 20 °C.

5.2 Recommended nozzles :

Delavan type W–B.

To fit the nozzles, proceed as follows:
(See fig. 14, page 15)

➤ Remove nozzle-holder assembly (1) after loosening screws (2) and nut (3), remove the small cables (4) from the control box, the photoresistance (6) and the socket (10) for CRONO 2-L, 3-L and 5-L burners.

➤ Withdraw the small cables (4) from the electrodes, remove the diffuser disc-holder assembly (11) from the nozzle-holder assembly (1) after loosening screw (3, fig. 13, page 13).

➤ Screw the nozzle (12) correctly and tighten it as shown in the figure.

Attention:

During reassembly of the nozzle-holder assembly screw the nut (3) as shown in figure 15, page 15.

5.3 Pump pressure

The pump leaves the factory set at 12 bar.
To change it act on pump pressure adjust screw (5, fig. 7, page 9).

5.4 Combustion head setting

(CRONO 5–L, 10–L e 15–L) (Fig. 14, page 15)

It depends on the output of the burner and is carried out by rotating the setting screw (5) clockwise or anti-clockwise until the set-point marked on the regulating rod (9) is level with the outside plane of the nozzle-holder assembly (1).

– In the sketch the combustion head is set for an output of 0.85 GPH at 12 bar (bruciatore CRONO 5-L).
The set-point 3 of the regulating rod (9) is at the same level with the outside plane of the nozzle-holder assembly (1) as shown in the schedule pag. 14.

5.5 Air damper adjustment (Fig. 14, page 15)

– To vary the setting adjust the screw (7) after loosening the nut (8).

– When the burner shuts down the air damper automatically closes until a max. chimney depressure of 0.5 mbar.

5.6 Fuel heating
(CRONO 2–L, 3–L e 5–L)

In order to assure regular ignition and working also at low temperature the burner has an oil pre-heater fitted in combustion head. The pre-heater starts when thermostats close.
When the required temperature for ignition is reached the thermostat fitted on the nozzle holder starts the burner.
The pre heater remains energised during working and cuts out when the burner shuts-down.

BURNER CRONO 20-L

5.7 Combustion adjustment.

In conformity with Efficiency Directive 92/42/EEC the application of the burner on the boiler, adjustment and testing must be carried out observing the instruction manual of the boiler, including verification of the CO and CO_2 concentration in the flue gases, their temperatures and the average temperature of the water in the boiler.

To suit the required appliance output, choose the proper nozzle and adjust the pump pressure, the setting of the combustion head, and the air damper opening in accordance with the following schedule at page 15.

The values shown in the table refer to 12.5% CO_2 at sea level and with light oil and room temperature of 20 °C.

5.8 Recommended nozzles :

Delavan type W–B.

To fit the nozzles, proceed as follows:
(See Fig. 16, page 16)

➤ Remove nozzle-holder assembly (1) after loosening screws (2) and nut (3), remove the small cables (4) from the control box and the photoresistance (5).

➤ Withdraw the small cables (4) from the electrodes, remove the diffuser disc-holder assembly (8) from the nozzle-holder assembly (1) after loosening screw (3, fig. 13, page 13).

➤ Screw the nozzle (9) correctly and tighten it as shown in the figure.

Attention:

During reassembly of the nozzle-holder assembly screw the nut (3) as shown in figure 17, page 16.

5.9 Combustion head setting (Fig. 16, page 16)

It depends on the output of the burner and is carried out by rotating the setting screw (6) clockwise or anti-clockwise until the set-point marked on the regulating rod (7) is level with the outside plane of the nozzle-holder assembly (1).

– In the sketch the combustion head is set for an output of 0.85 GPH at 12 bar. The set-point 2.5 of the regulating rod (7) is at the same level with the outside plane of the nozzle-holder assembly (1) as shown in the schedule pag. 15.

5.10 Pump pressure and air output

The burner, in order to guarantee good smooth starts, irrespective of the type of boiler, is fitted with a hydraulic device which, independently of the control-box, reduces the fuel- and air-flow.

At ignition, the pressure at the nozzle is 9 bar.
After 3 - 9 seconds, it automatically increases to 12 bar.

The air-flow, initially adjusted to the low setting, is, at the change-over of pressure, automatically brought to the air-flow required for the big flame.

■ SETTING FOR THE LOW IGNITION-FLAME

Adjustment of air shutter (Fig. 18, page 16)

Unloosen the screw (8), by approximately one full turn; in this way, the burner remains permanently on low flame.
Unloosen the nut (5), turn the screw (4) until the indicator (6) reaches the position desired. Then lock the nut (5) and tighten the screw (8).

Adjustment start delaying device (Fig. 18, page 16)

This is set at 9 bar in the factory.
The pressure gauge must be mounted in place of plug (4, fig. 7, page 9). Should it be necessary to re-set or alter such pressure, this can be done, by adjusting screw (7), always after having loosened screw (8).

■ HIGH-FLAME SETTING

Air-damper adjustment (Fig. 19, page 16)

Loosen the nut (3), turn the screw (1), until the indicator (2) is in the required position. Then, lock the nut (3).

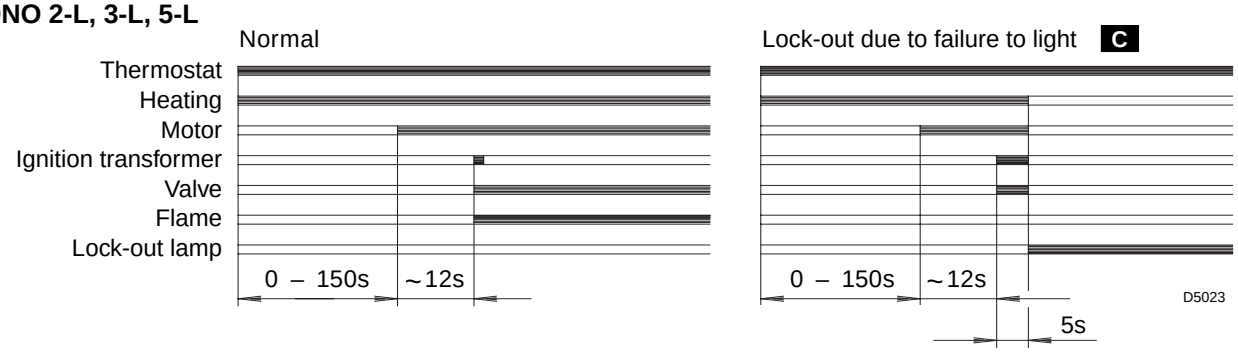
Pump-adjustment: (Fig. 7, page 9)

This is set in 12 bar in the factory.
The pressure gauge must be mounted in place of plug (4). Should it be necessary to re-set or alter such pressure, this can be done, by adjusting screw (5).

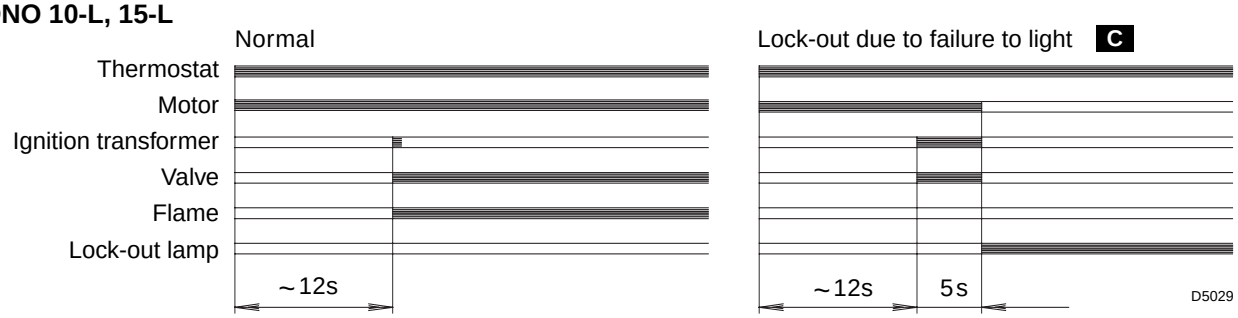
When the burner shuts down the air damper automatically closes until a max. chimney depressure of 0.5 mbar.

6. BURNER START-UP CYCLE

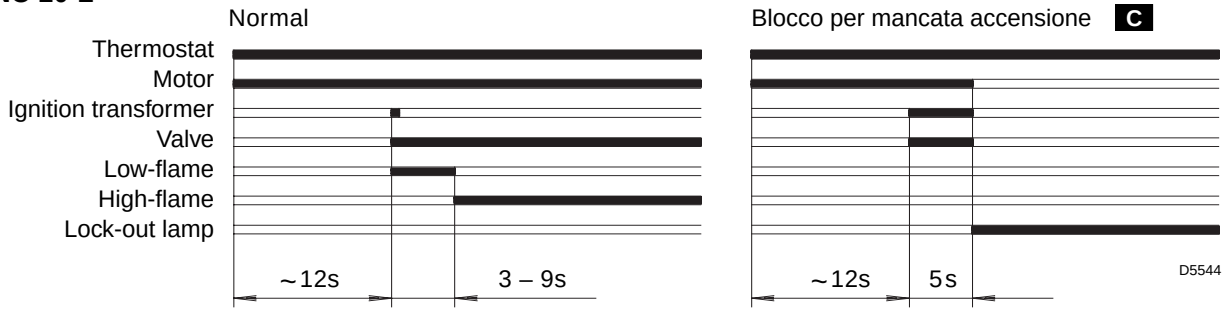
CRONO 2-L, 3-L, 5-L



CRONO 10-L, 15-L



CRONO 20-L



C Lock out is indicated by a lamp on the control box (3, fig. 1, page 3).

7. MAINTENANCE

The burner requires a periodic maintenance carried out by a qualified and authorized technician.

Maintenance is essential for the reliability of the burner, avoiding the excessive consumption of fuel and consequent pollution.

Before carrying out any cleaning or control always first switch off the electrical supply to the burner acting on the main switch of the system.

The basic checks are:

➤ Check that there are no obstructions or dents in the supply or return oil pipes.

➤ Clean the filter in the oil suction line and in the pump.

➤ Clean the photoresistance, (7, fig. 1, page 3).

➤ Check for correct fuel consumption.

➤ Replace the nozzle and check the correct position of electrodes (fig. 13, page 13).

➤ Clean the combustion head in the fuel exit area, on the diffuser disc.

➤ Leave the burner working without interruptions for 10 min. and correctly set all the components stated in this manual. Then carry out a combustion check verifying:

– Smoke temperature at the chimney.
– Content of CO_2 (%).
– Content of CO (ppm).
– Smoke value according to opacity smoke index according to Bacharach scale.

8. FAULTS / SOLUTIONS

Here below you can find some causes and the possible solutions for some problems that could cause a failure to start or a bad working of the burner. A fault usually makes the lock-out lamp light which is situated inside the reset button of the control box (3, fig. 1, page 3). When lock out lamp lights the burner will attempt to light only after pushing the reset button. After this if the burner functions correctly, the lock-out can be attributed to a temporary fault.

If however the lock out continues the cause must be determined and the solution found.

FAULTS	POSSIBLE CAUSES	SOLUTION
The burner will not start when the adjustment thermostat closes.	Lack of electrical supply.	Check presence of voltage in the L1 - N clamps of the 7 pin plug.
		Check the conditions of the fuses.
		Check that the thermostat limit is not locked out.
	The photoresistance sees false light.	Eliminate the light.
	Heater or start thermostats are faulty. (CRONO 2-L, 3-L and 5-L)	Replace them.
	The connections in the control box are wrongly inserted.	Check and completely connect all the plugs.
Burner runs normally in the prepurge and ignition cycle and locks out after 5 seconds ca.	The photoresistance is dirty.	Clear it.
	The photoresistance is defective.	Change it.
	Flame moves away or fails.	Check fuel pressure and output.
		Check air output.
		Change nozzle.
		Check the solenoid valve coil.
Burner starts with an ignition delay.	The ignition electrodes are wrongly positioned.	Adjust them according to the instructions of this manual.
	Air output is too high.	Set the air output according to the instructions of this manual.
	Nozzle dirty or worn.	Replace it.

Warning

The manufacturer cannot accept responsibility for any damage to persons, animals or property due to error in installation or in the burner adjustment, or due to improper or unreasonable use or non observance of the technical instruction enclosed with the burner, or due to the intervention of unqualified personnel.

Baxi Calefacción, S.L.U.
Salvador Espriu, 9 I 08908 L'Hospitalet de Llobregat I Barcelona
T. 93 263 0009 I TF. 93 263 4633 I www.baxicalefaccion.com
A BAXI GROUP company

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