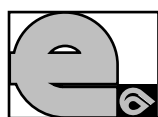
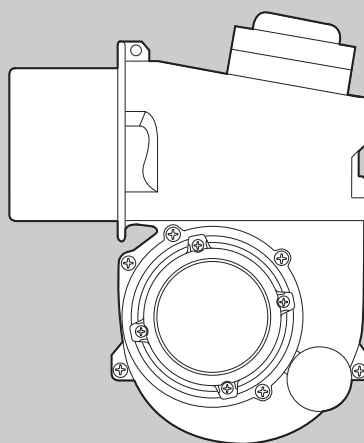


OIL BURNERS



Ecoflam
techniques for energy saving

MODELS



MINOR 1 BOILER 80 K

MINOR 1 BOILER 60 K

MINOR 1 BOILER 90 K Gas oil

MINOR 1 BOILER 100 K



LB 434

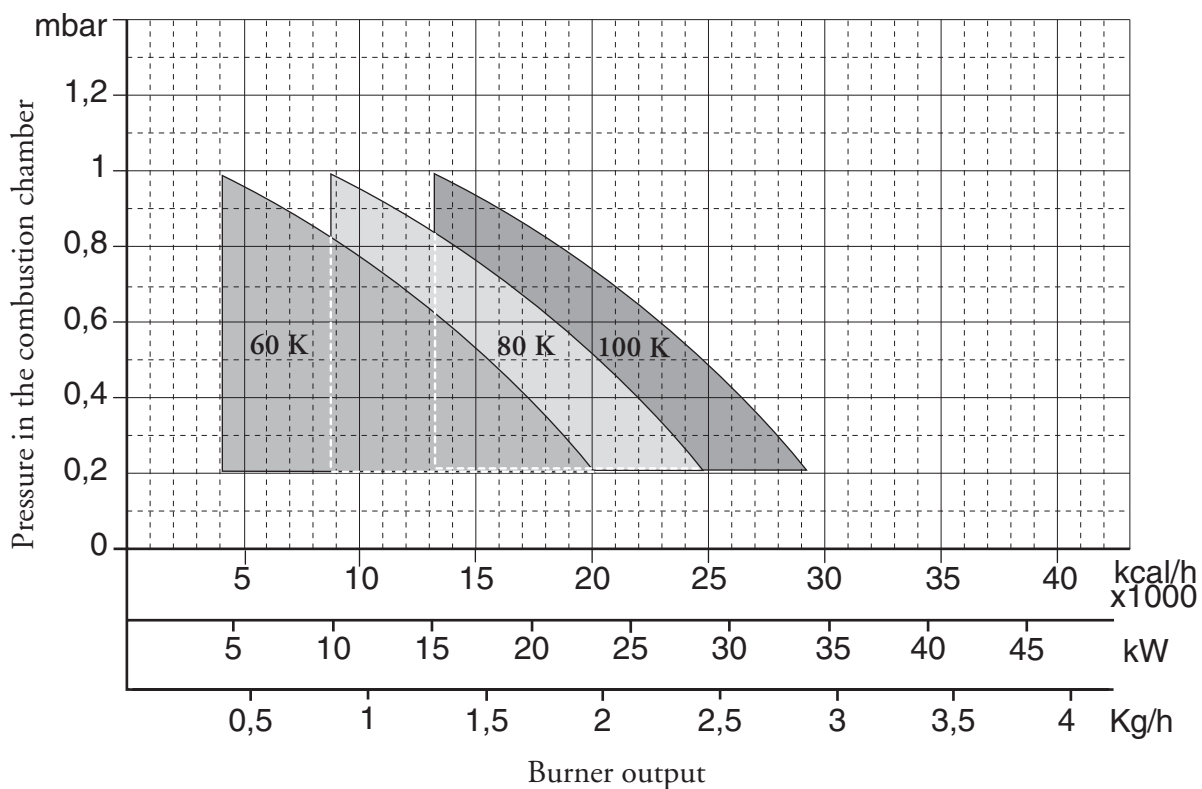
30.04.2004

TECHNICAL DATA

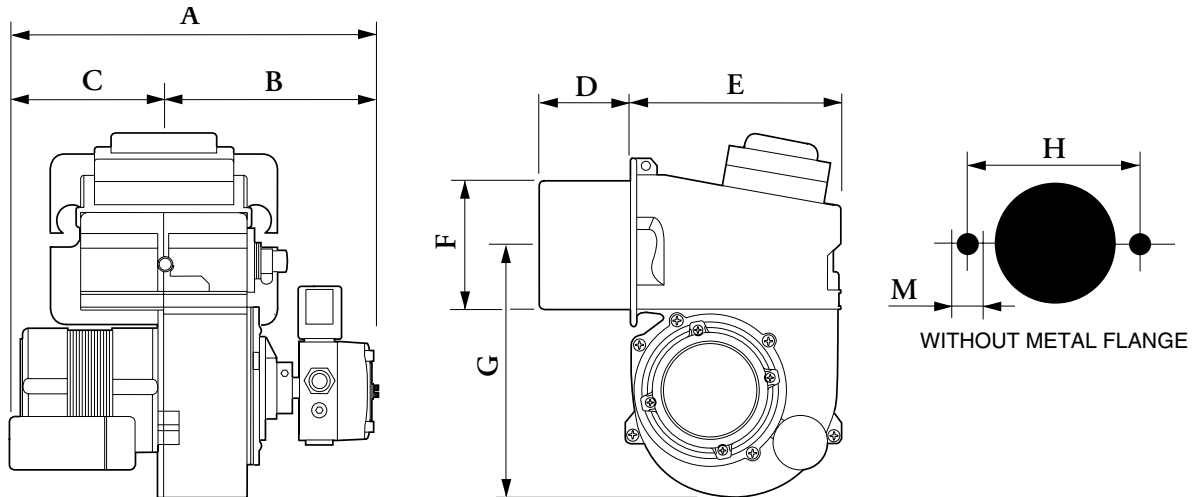
MODEL			MINOR 1 BOILER 60 K	MINOR 1 BOILER 80 K	MINOR 1 BOILER 100 K
Thermal power input	kW		19.92	29.5	34.2
	Btu/h		68,000	100,650	116,800
Oil flow-kerosene	kg/h		1,65	2.45	2.85
Oil flow-gas oil	kg/h		1,68	2.48	2.88
Voltage single phase 50 Hz	Volt		240	240	240
Motor	W		75	70	70
Capacitor	μF		3.5	3.5	3.5
RPM	N°		2,800	2,800	2,800
Ignition transformer	kV/mA		8/20	8/20	8/20
Control box	Landis		LOA 24	LOA 24	LOA 24
Fuel :	Kerosene	MJ/kg	43.3, visc.28 sec at 20°C		
	Gas oil	MJ/kg	42.7, visc.35 sec at 20°C		

ATTENTION :PRE-HEATER BURNERS MUST NOT BE USED FOR KEROSENE

WORKING FIELDS



OVERALL DIMENSIONS

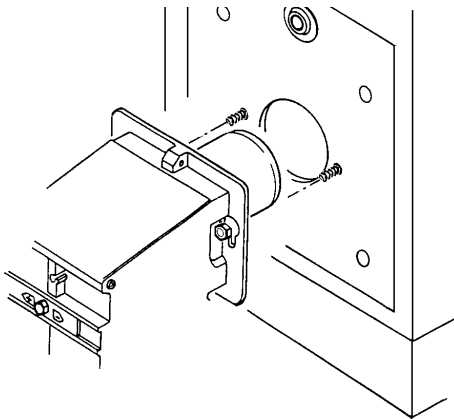


MODEL	A	B	C	D	E	F	G	H	M
MINOR 1 BOILER	225	135	90	54	145	89	160	125	M8

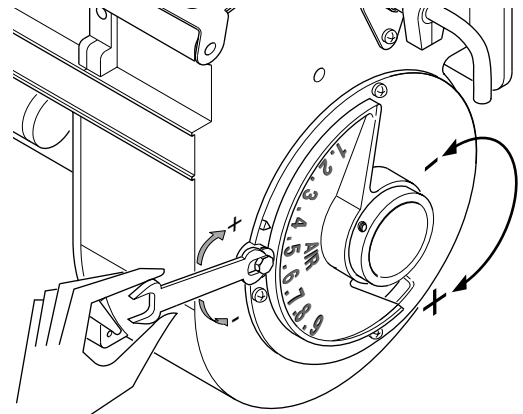
BURNER START - UP

Make sure there are no leaks on flexible oil line connections. Bleed air from the pump (see page 4). Install a suitable nozzle for the required output. Turn the thermostat to the required setting. The burner will purge for approximately 13 seconds. At this point the oil valve opens and oil is ignited. Regulate the pump pressure (see page 4). Regulate the air. In case of no ignition the burner goes to lock-out in 10 seconds.

INSTALLATION



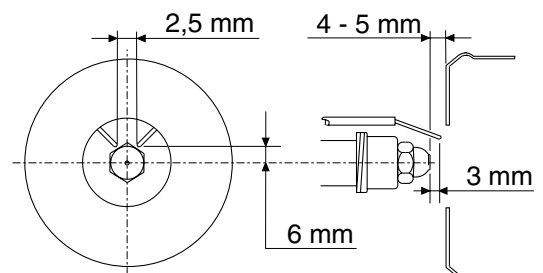
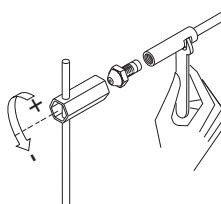
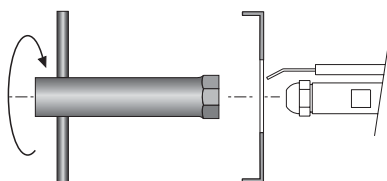
AIR REGULATION



NOZZLE REPLACEMENT

Remove the nozzle carefully taking great care not to damage the electrodes. Fit the new nozzle with the same care.

Notice : Always check the position of the electrodes after replacing the nozzle (see plan).



Ignition electrodes setting on firing head

Nozzle USgal/h	Spray angle	Spray pattern	Pump pressure	Output (kg/h)	Air damper adjustment
0,85 (C.E.N.)	80°	Danfoss S	7.4 bar (105 p.s.i.)	2,85 ± 20%	6
0,75 (C.E.N.)	80°	Danfoss S	7 bar (100 p.s.i.)		
0,65 (C.E.N.)	80°	Danfoss S	8.3 bar (120 p.s.i.)		5.7
0,55 (C.E.N.)	80°	Danfoss S	8.4 bar (122 p.s.i.)		6

FAULT FINDING

Burner does not start up

- Mains switch not on.
- Blown fuse.
- Boiler thermostats not made.
- Fault in control box.

Burner pre-purges and stops

- Fault in control box.

Burner does not ignite during cycle and stops

- Fault in control box.
- Fault in photo-resistor.

Burner does not ignite

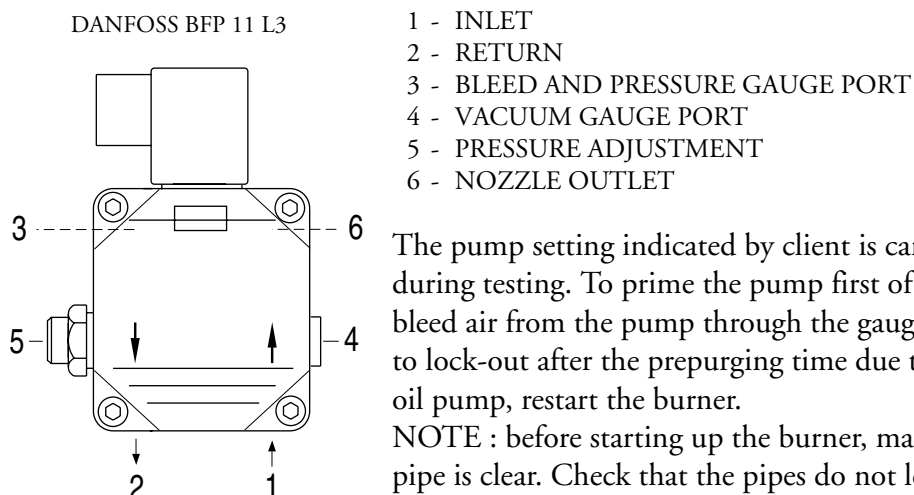
- Dirty ignition electrodes.
- Fault at electrodes.
- Electrodes installed wrongly.
- Faulty ignition transformer.
- Blocked nozzle.
- Nozzle needs replacing.
- Oil pressure too low.
- Blocked oil filter.
- Excessive combustion air for nozzle capacity.
- Fault in control box.

Burner ignites and then stops

- Faulty nozzle.
- Photo-resistor does not "see" flame.
- Excessive combustion air for nozzle capacity.
- Fault in control box.
- Oil pressure too low.
- Blocked oil filter.

PRIMING AND ADJUSTMENT OF THE PUMP

DANFOSS BFP 11 L3

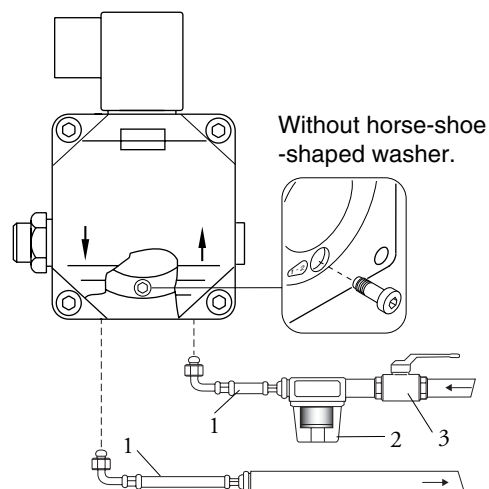


The pump setting indicated by client is carried out in the factory during testing. To prime the pump first of all start the burner and bleed air from the pump through the gauge port. If the burner goes to lock-out after the prepurging time due to lack of pressure in the oil pump, restart the burner.

NOTE : before starting up the burner, make sure that the return pipe is clear. Check that the pipes do not leak. It is advisable to use

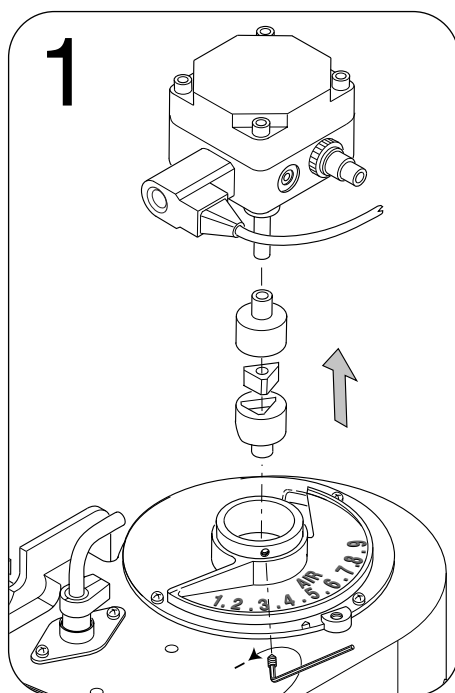
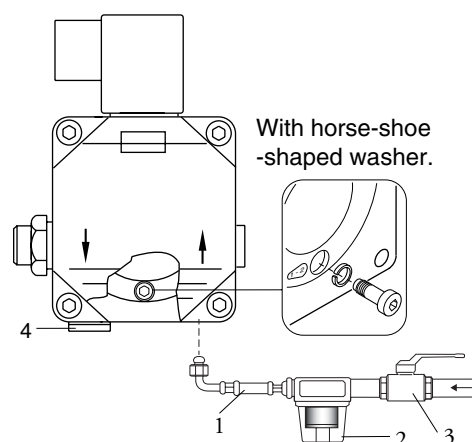
copper pipes. Do not exceed the depression limit of 4 mt.(0,45 bar) to keep low noise levels. The return pipe must reach the same level as the check valve at the bottom of the oil tank..

Two-pipe system



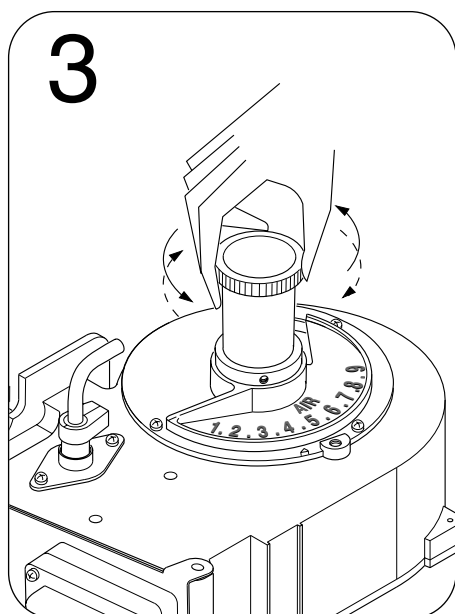
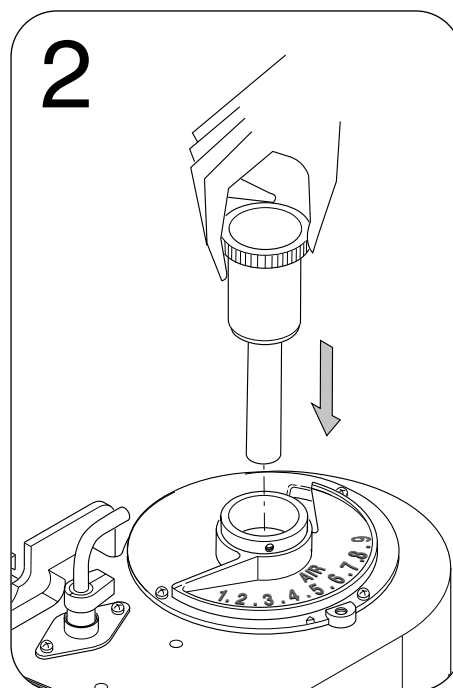
- 1 - HOSE
- 2 - OIL FILTER
- 3 - OIL COCK
- 4 - PLUG

One-pipe system



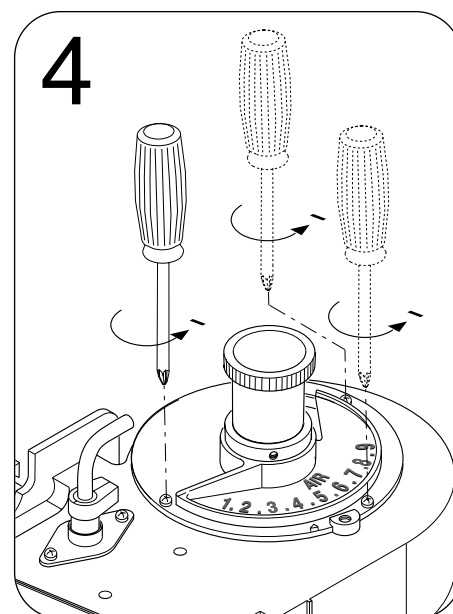
1) Take off pump and coupling.

2) Insert instrument in motor shaft.

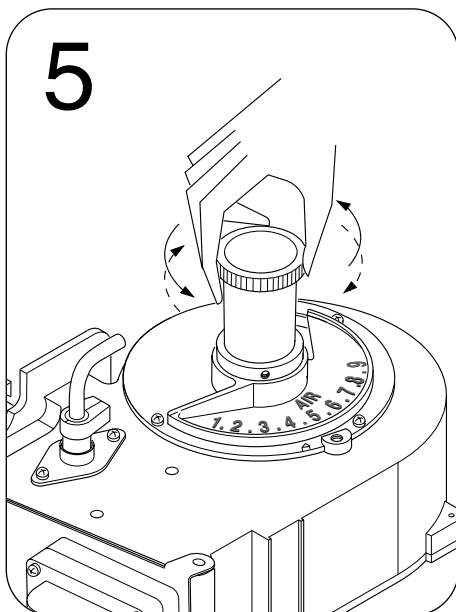


3) Check that the pump support is in the correct position by rotating the instrument.

4) If the instrument doesn't rotate easily on the motor shaft, loosen the 3 screws that lock the pump support.

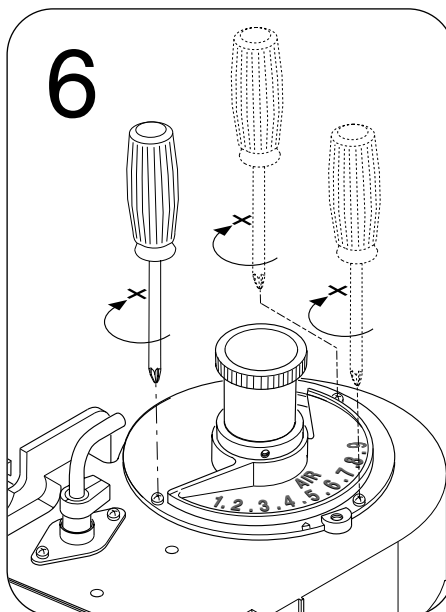


5



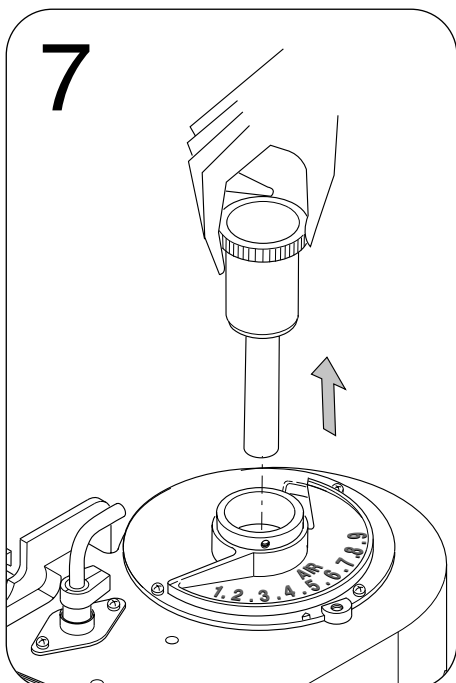
5) Turn the instrument until the pump support is in the correct position.

6



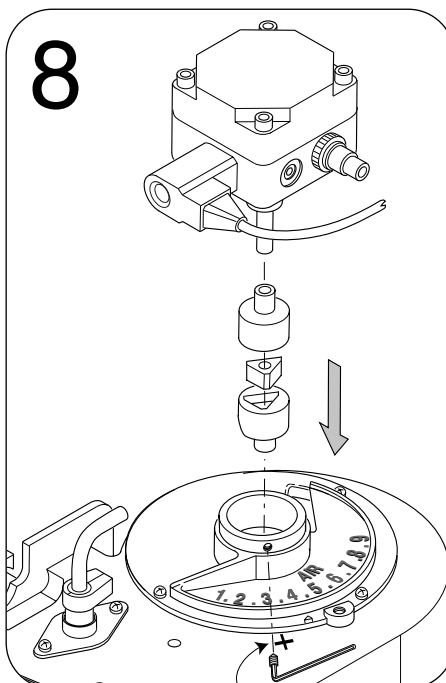
6) Fix the 3 screws to lock the pump support and check the instrument rotates easily.

7



7) Repeat the procedure until the instrument rotates easily in the motor shaft and then remove the instrument.

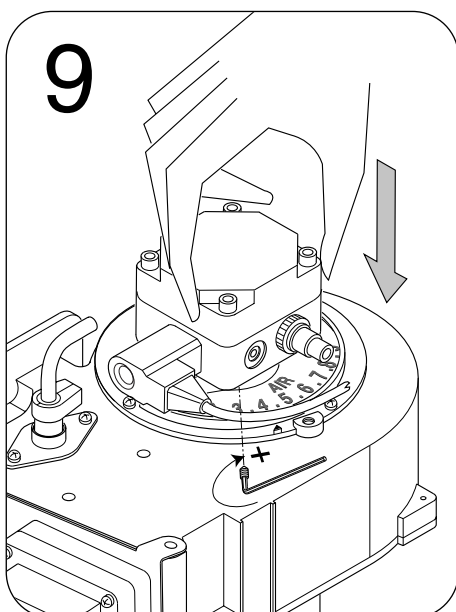
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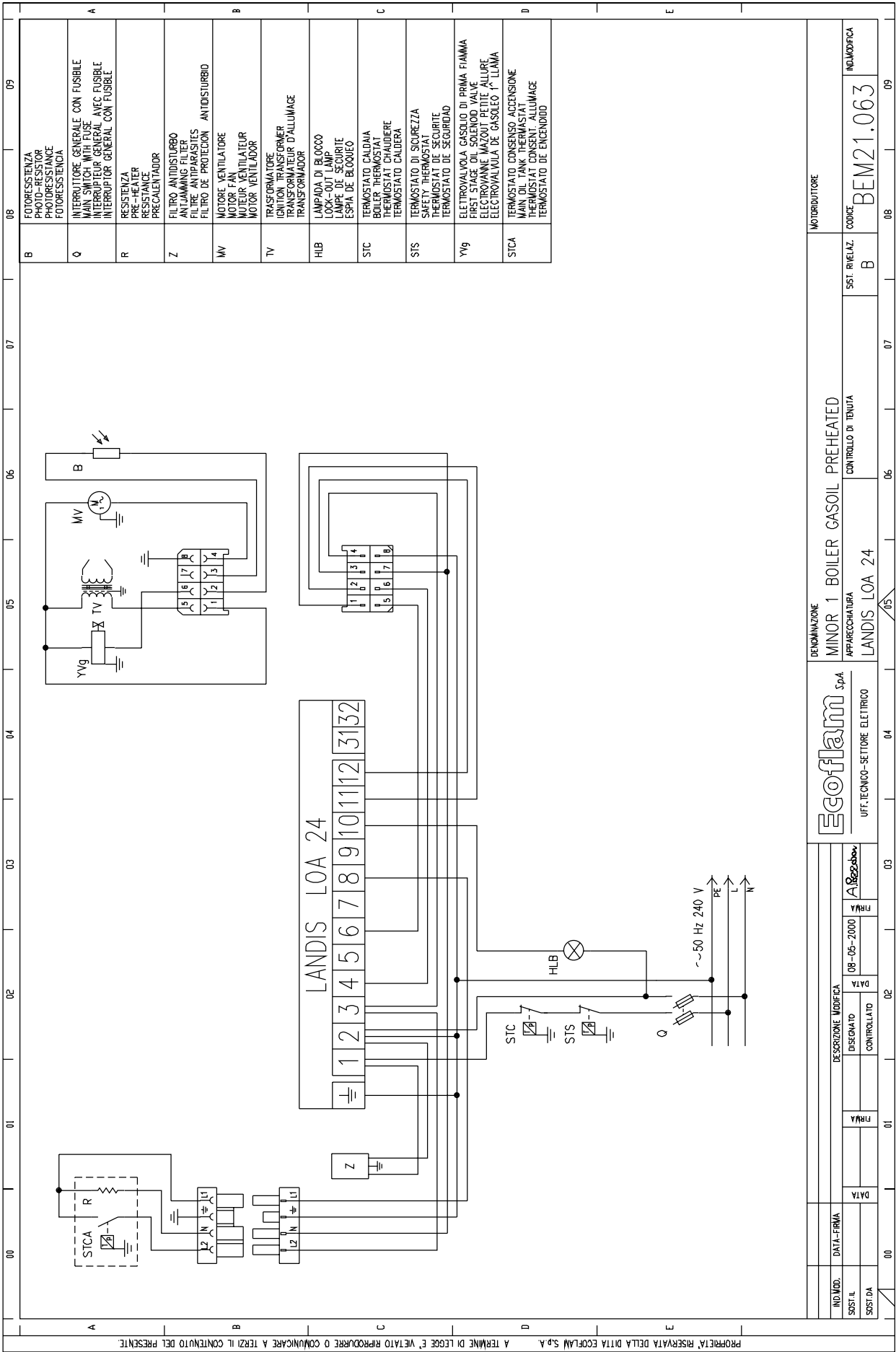


8) Fit coupling and pump

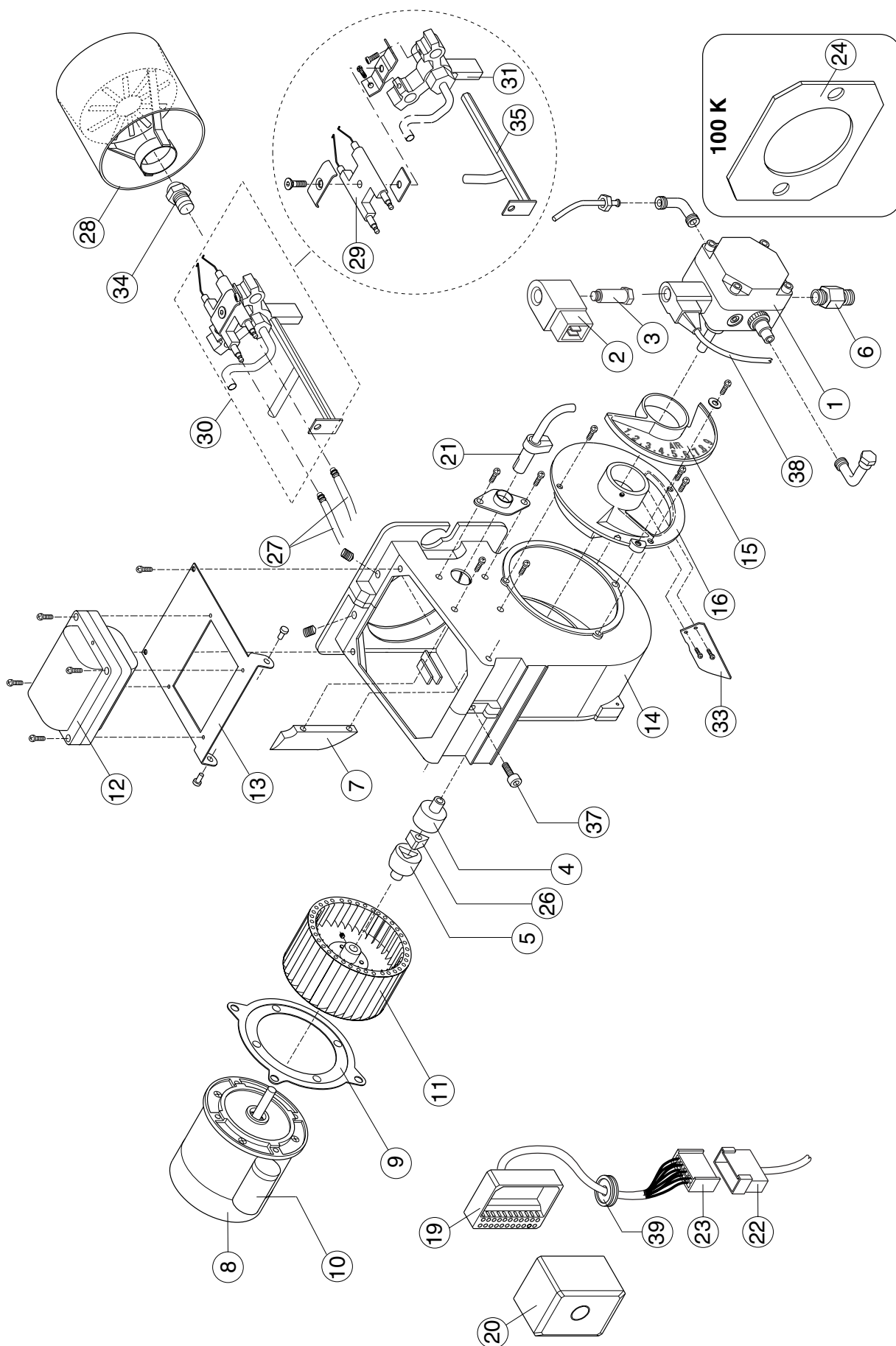
9) Fix the pump in it's place, keeping the cover pushed firmly down and fixing the screws at the same time.

9

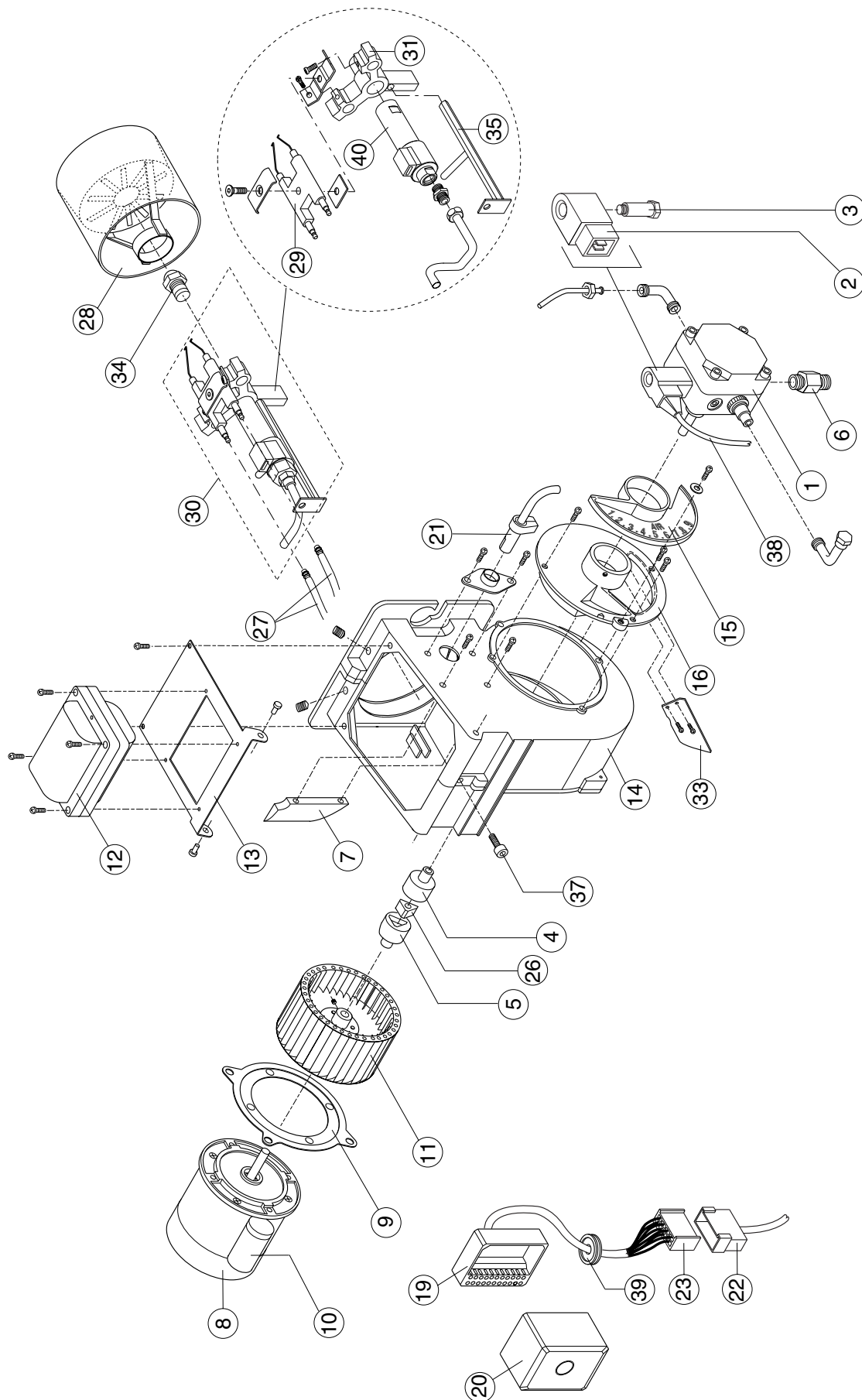




MINOR 1 BOILER



MINOR 1 BOILER 90 K Gas oil



N°	DESCRIPTION		MINOR 1 BOILER	MINOR 1 BOILER
			code	90 K Gas oil code
1	- OIL PUMP	DANFOSS BFP11 L3	P121/5	P121/5
2	- COIL	DANFOSS	V510/2	V510/2
3	- OIL VALVE	DANFOSS	V412/1	V412/1
4	- PUMP BLACK LATERAL COUPLING		BFC02032/1	BFC02032/1
5	- MOTOR BLACK LATERAL COUPLING		BFC02032/2	BFC02032/2
6	- NIPPLE		BFR01103/001	BFR01103/001
7	- FLAP		BFC02040	BFC02001
8	- MOTOR	70 W	M185/1	M185/1
	- PLUG AND LEAD FOR A.M. MOTOR		E1109	E1109
9	- SUPPORT		BFF03005/001	BFF03005/001
10	- CAPACITOR	3,5 µF	C107/8	C107/8
11	- FAN	99 x 43	BFV10001/001	BFV10001/001
12	- IGNITION TRANSFORMER	COFI E820 CM	T125/1	T125/1
	- PLUG AND LEAD FOR A.M. TRANSF.		E1108	E1108
13	- COVER		BFC09002/011	BFC09002/011
14	- FAN HOUSING		BFF04335/011	BFF04335/011
15	- AIR DAMPER	100 K	BFC08115/2	-
			BFC08115/1	BFC08115/1
16	- AIR CONVEYOR		BFC08114	BFC08114
17	- AIR DAMPER SCREW		-	-
18	- PUMP SUPPORT		-	-
19	- CONTROL BOX BASE	LANDIS	A402	A402
20	- CONTROL BOX	LANDIS LOA 24	A117/1	A117/1
21	- PHOTORESISTOR	LANDIS	A207/3	A207/3
22	- SOCKET		E405	E405
23	- PLUG		E405/1	E405/1
24	- GASKET	100 K	BFG02041	-
25	- FLANGE		-	-
26	- YELLOW ULTRAFLEX COUPLING		BFC02018	BFC02018
27	- CABLES		BFE01401/1	BFE01401/1
28	- BLAST TUBE		-	BFB01153/002
		60 K	BFB01104/002	-
		80 K	BFB01014/002	-
		100 K	BFB01061/102	-
29	- ELECTRODES		BFE01102	BFE01102
30	- FIRING HEAD	TC	GRIT5503/030	GRIT5503/030
31	- NOZZLE HOLDER	TC	GRCRO009/14	GRCRO009/14
32	- DIFFUSER		-	-
33	- FAN SCOOP		BFC08009/001	BFC08009/001
34	- NOZZLE SOLID SPRAY PATTERN	100 K	U1085/80 S	-
	NOZZLE SOLID SPRAY PATTERN	80 K	U1065/80S	-
	NOZZLE SOLID SPRAY PATTERN	60 K	U1055/80 S	-
	NOZZLE SOLID SPRAY PATTERN	90 K Gas oil	-	-
35	- ROD	TC	BFA05102/001	BFA05102/001
36	- INDEX		-	-
37	- SCREW		ZM06/12	ZM06/12
38	- CABLE	DANFOSS	E1103/051	E1103/051
39	- GASKET		E516/1	E516/1
40	- PRE-HEATER	FPHB5	-	PP110

TC = SHORT HEAD TL = LONG HEAD



DESIGN AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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