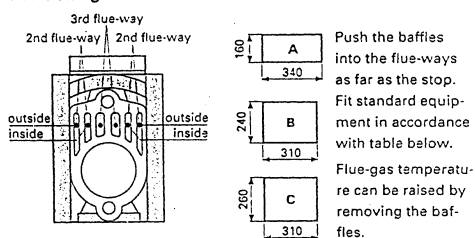


Setting data and operating instructions.

Type & No. of sections	Performance data at water temperature. Boiler flow 80°C, boiler return 60°C			Combustion chamber resistance
	Flue gas temperature at full load (approx.200°C)			
	kW	Oil kg/h	Nat. gas m ³ /h	mbar
Ca 7s-4	69	6.3	7.9	0.4
Ca 7s-5	95	8.7	11	0.6
Ca 7s-6	119	11	14	0.9
Ca 7s-7	150	13.6	17	1.3
Ca 7s-8	175	16.1	20	1.3
Ca 7s-9	205	18.6	23	1.5
Ca 7s-10	235	21.4	27	2.1

Positioning the baffles



Type Ca7S -	- 4	- 5	- 6	- 7	- 8	- 9	- 10
In 2nd flue-way outside	2 x C	2 x A	2 x C	2 x C	2 x A	2 x A	2 x A
inside	2 x B	2 x A	2 x B	2 x A	2 x A	2 x A	2 x A
In 3rd flue-way	2 x A	2 x A	2 x A	2 x A	-	-	-

The flue-gas temperature of a boiler depends on boiler water temperature and boiler capacity. If boiler water temperature is reduced, the flue-gas temperature is also reduced. If boiler capacity is reduced by means of a different burner setting or by the first stage of a two-stage burner, the flue-gas temperature is also reduced. The flue-gas temperature rises by some 20 - 40 K in the case of dirty heating surfaces, depending on the degree of fouling.

Influence of the baffles

If the baffles in the 3rd flue-way are removed, the flue-gas temperature rises by approx. 20 K; if the baffles in the 2nd flue-way are also removed, the flue-gas temperature rises by a total of approx. 40 K.

Influence of water temperature

A change of 10 K in the water temperature produces a change in flue-gas temperature of approx. 5 - 8 K.

Boiler water and return temperatures

The boiler is operated with low flue-gas temperatures in order to achieve maximum efficiency. If the boiler water or return temperatures are too low, there is a danger that heating surfaces will become fouled and encrusted. This results in higher flue-gas temperatures, makes boiler cleaning more difficult, and can in extreme cases cause damage.

The following conditions must be maintained:

With flue gas temperatures of less than 160°C and in low temperature systems		
oil-fired:	boiler water temperature	min. 50°C
	return temperature	min. 40°C
gas-fired:	boiler water temperature	min. 60°C
	return temperature	min. 45°C

Fault Finding

Boiler is off.

- Is boiler up to temperature? Check correct Settings of heating circuit controls.
- If automatic control does not operate, i.e. is faulty, switch off "Control" switch and regulate via "Manual" control. Consult specialist.
- If boiler temperature has dropped and burner indicates malfunction, refer to the burner supplier's instructions (press malfunction button).

HWS Water calorifier is cold

- Is boiler up to temperature? Check whether primary circulating pump is operating.
- If this is in order, vent the water calorifier primary pipework.

General check on whether:

- Fuse is intact
- Main switch is turned on and other controls are calling for heat
- Plug for general power supply is plugged in
- Burner plug is correctly plugged in
- Heating pump and primary circulating pump are operating
- Burner indicates malfunction, press reset button.
- Control is switched on and time switch shows correct time
- All valves are open
- Fuel is available
- All switches and knobs on the controls are set according to instructions
- Boiler has switched off due to excess temperature (reset high limit thermostat)

Maintenance

Clean the boiler regularly, proceeding as follows:

- Turn off main switch and control
- Open burner door and remove baffles
- Clean heating gas flue-ways and combustion chamber
- Install baffles
- Close burner door firmly; tighten nuts firmly; readjust hinges if door does not fit tightly
- Never tap water from the boiler for domestic use
- If the system is to be out of operation for an extended period, clean the boiler thoroughly, spray it out with a mixture of oil and graphite and close the door firmly
- If there is a frost hazard when the system is out of operation, drain the boiler. Leave the drain cock open (unless it contains anti-freeze)
- The calorifier must only be cleaned with organic acid. Mechanical de-scaling is not permitted.
- Perform maintenance of heating circuit control and burner according to the manufacturers' instructions.

Readjusting burner door and hinges

If the burner door does not fit tightly, move the hinge screws on the hinge side towards the boiler. 1 rotation corresponds to an adjustment of 2.5 mm. If necessary, have the door seal replaced by a specialist.

Hazards:

- Operate the boiler at a maximum temperature of 90°C. If the boiler overheats as a result of incorrect operation, switch the burner off immediately. Do not refill with water until the boiler has cooled off.
- Never fill the hot boiler with cold water.
- Flue-gas temperatures of less than 160°C can cause sooting in masonry chimneys. If the flue-gas temperature is too low, baffles can be removed.
- Never set the water calorifier to a temperature of more than 60°C.
- Consult the heating installer service dept. If heating gas flue-ways become severely fouled or condensation occurs.
- Use only extra light heating oil. Fill the tank only when the system is switched off. Start up no earlier than the next day, so that the dirt which has been disturbed in the tank can settle again.

Warranty

Permissible flow temperature:		95°C
Operating pressure	boiler	4.0 bar
Test pressure	boiler	6.2 bar
Operating pressure	water calorifier	10.0 bar
Test pressure	water calorifier	13.0 bar

Burner

Oil-fired pressure jet burner

Gas-fired pressure jet burner

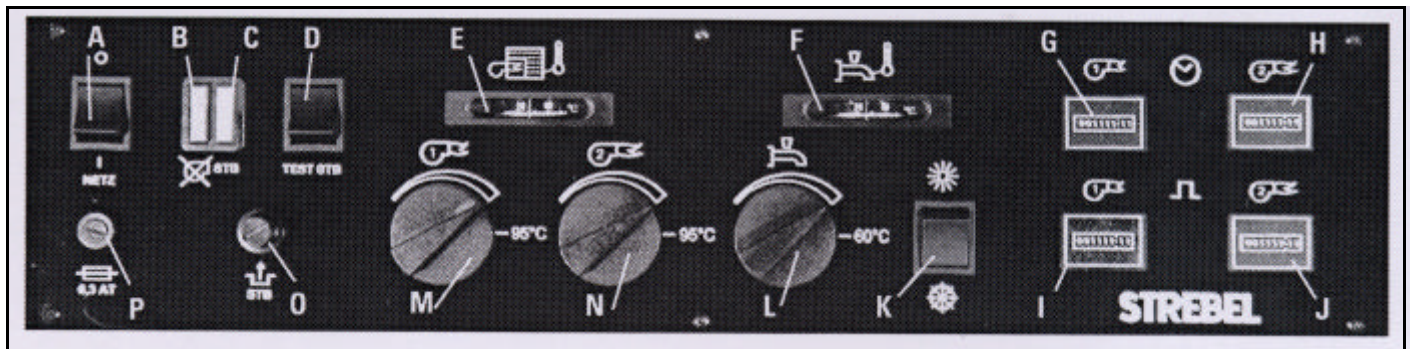
Refer to burners' operating instructions for putting the burner into operation.

Fuel

Extra light heating oil

Town gas, natural gas, piped gas and liquefied gas.

Instrument Control Panel Description



Key:

- A. Power On / Off switch.
- B. Burner lock-out indicator. (RED) - The red lamp will illuminate if the burner has gone to lock-out.
- C. High limit indicator. (ORANGE) - Illuminates if the high limit thermostat is activated. Has to be manually reset by removing cap from STB reset, and press button.
- D. High Limit Test Switch. (STB) - Overrides the control thermostat to enable limit thermostat test.
- E. Boiler Thermometer- Shows the actual boiler water temperature and has no influence on boiler temperature control.
- F. HWS Thermometer - Shows temperature of the HWS calorifier. (B2B version only)
- G. Hours Run Meter (blanked as standard) Burner Stage 1 - Shows running time of the stage 1 burner operation.
- H. Hours Run Meter (blanked as standard) Burner Stage 2 - Shows running time of the stage 2 burner operation.
- I. Frequency of Switching Meter for Stage 1. (blanked as standard).
- J. Frequency of Switching Meter for Stage 2. (blanked as standard).
- K. Summer / Winter Switch - For switching boiler between modes to supply HWS only in the summer period.
- L. Calorifier Control Thermostat - Set for the required hot water temperature (60°C Max.)
- M. Control Thermostat - Stage 1.
- N. Control Thermostat - Stage 2.
- O. Boiler Safety Limit Thermostat (STB) - Manual reset. Used when the boiler water temperature overheats. The water in the boiler must cool to around 80°C, to enable reset. (refer to point "C" above).
- P. Fuse (6.3A) - Protection for all the controls and any ancillary equipment connected back to the control panel. A defective fuse **MUST** be replaced with an identical one.

ATTENTION: Before a fuse is replaced, the instrument control panel must be isolated.