



INSTALLATION AND SERVICING

VANGUARD L 340 - 7000

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal.

For the very latest copy of literature for specification and maintenance practices visit our website www.idealcommercialboilers.com where you can download the relevant information in PDF format.



GENERAL

VANGUARD L - PERFORMANCE DATA (340 - 1850)																							
Boiler Size		340		420		510		630		760		870		970		1100		1320		1570		1850	
Output Nominal Range	kW	255	340	315	420	385	510	480	630	580	760	660	870	750	970	860	1100	1000	1320	1200	1570	1400	1850
Input Nominal Range	kW	277	371	342	459	418	557	520	688	630	830	715	950	815	1060	935	1200	1087	1442	1304	1715	1520	2020
Efficiency Full Load - Net	%	92.06	91.64	92.11	91.50	92.11	91.56	92.31	91.57	92.06	91.57	92.31	91.58	92.02	91.51	91.98	91.67	92.00	91.54	92.02	91.55	92.11	91.58
Efficiency Part Load - Net	%	93.69	93.69	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90
Hydraulic Resistance Max @Δ15K	mbar	15.7	27.5	8.8	16.7	13.7	24.5	20.6	37.3	14.7	25.5	18.6	32.4	23.5	40.2	17.6	29.4	19.6	34.3	18.6	32.4	25.5	44.1
Gas Side Resistance	mm w.g	17	34	16	29	24	43	32	55	29	51	33	57	29	49	32	52	37	67	35	60	42	73
Water Content	L	298		398		462		565		671		753		836		1040		1242		1418		1617	
Max Operating Pressure	bar	6		6		6		6		6		6		6		6		6		6		6	
Boiler weight (dry)	kg	629		796		919		1049		1341		1447		1553		1821		2030		2780		3280	
Flow connection (T1)		DN80		DN100		DN100		DN100		DN125		DN125		DN125		DN150		DN150		DN175		DN175	
Return connection (T2)		DN80		DN100		DN100		DN100		DN125		DN125		DN125		DN150		DN150		DN175		DN175	
Safety valve/Expansion (T3)		Rp 2		Rp 2		Rp 2		Rp 2		DN65		DN65		DN65		DN80		DN80		DN100		DN100	
Drain connection (T4)	in	Rp 3/4		Rp 3/4		Rp 3/4		Rp 3/4		Rp 1 1/4		Rp 1 1/4		Rp 1 1/4		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2	
Flue connection (T5)	mm	250		250		250		300		350		350		350		400		400		450		450	
Max Burner Blast Tube Dia (T6)	mm	220		220		220		220		270		270		270		320		320		320		320	
GAS FIRING DATA																							
Gas Flow Rate	m ³ /hr	25.8	34.5	31.8	42.7	38.9	51.8	48.4	64	58.6	77.2	66.5	88.4	75.8	98.6	87	111.6	101.1	134.1	121.3	159.5	141.4	187.9
Flue Gas CO2	%	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
Flue Gas Temp - Amb Temp	degC	145	153	147	155	149	154	151	163	157	161	147	160	153	165	156	163	159	167	159	165	154	166
Flue Gas Mass Flow Rate	kg/hr	416	558	514	690	628	837	782	1034	947	1248	1075	1428	1225	1593	1405	1804	1634	2167	1960	2578	2285	3036
OIL FIRING DATA																							
Oil Flow Rate	L/hr	28.4	38.1	35.1	47.1	42.9	57.2	53.4	70.7	64.7	85.2	73.4	97.6	83.7	108.9	96	123.2	111.6	148.1	133.9	176.1	156.1	207.4
Flue Gas CO2	%	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Flue Gas Temp - Amb Temp	degC	156	164	158	166	160	165	162	175	168	173	158	172	164	177	167	175	170	179	170	177	165	178
Flue Gas Mass Flow Rate	kg/hr	424	568	524	703	640	853	796	1053	965	1271	1095	1455	1248	1623	1432	1838	1664	2208	1997	2626	2328	3093

GENERAL

VANGUARD L - PERFORMANCE DATA (2200 - 7000)

Boiler Size		2200		2650		3000		3500		4000		4500		5000		5500		6000		6500		7000	
Output Nominal Range	kW	1700	2200	2000	2650	2300	3000	2700	3500	3040	4000	3420	4500	3800	5000	4180	5500	4560	6000	4940	6500	5320	7000
Input Nominal Range	kW	1845	2400	2170	2890	2492	3280	2930	3825	3297	4371	3638.3	4838.7	4064.2	5421.8	4446.8	5914	4877	6506.2	5255.3	6989.2	5689.8	7590.5
Efficiency Full Load - Net	%	92.14	91.67	92.17	91.70	92.30	91.46	92.15	91.43	92.21	91.51	94.00	93.00	93.50	92.22	94.00	93.00	93.50	92.22	94.00	93.00	93.50	92.22
Efficiency Part Load - Net	%	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	93.90	94.66	93.65	94.15	92.87	94.66	93.65	94.15	92.87	94.66	93.65	94.15	92.87
Hydraulic Resistance Max @Δ15K	mbar	20.6	33.3	27.5	47.1	35.3	60.8	53	82.4	53	83.4	68.6	83.4	78.5	103	93.2	113	98.1	132.3	103	147.1	108	172
Gas Side Resistance	mm w.g	39	65	43	76	35	60	47	78	60	80	51	88	65	110	60	100	68	120	61	105	69	120
Water Content	L	2086		2324		2667		4162		4455		6012		6012		7058		7058		7909		7909	
Max Operating Pressure	bar	6		6		6		6		6		6		6		6		6		6		6	
Boiler weight (dry)	kg	4145		4465		5110		6700		7500		8310		8310		9300		9300		12600		12600	
Flow connection (T1)		DN200		DN200		DN200		DN200		DN250		DN250		DN250		DN250		DN250		DN250		DN250	
Return connection (T2)		DN200		DN200		DN200		DN200		DN250		DN250		DN250		DN250		DN250		DN250		DN250	
Safety valve/Expansion (T3)		DN125		DN125		DN125		DN125		DN125		DN125		DN125		DN125		DN125		DN125		DN125	
Drain connection (T4)	in	Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2		Rp 1 1/2	
Flue connection (T5)	mm	520		520		570		620		620		660		660		660		660		720		720	
Max Burner Blast Tube Dia (T6)	mm	380		380		380		400		400		500		500		500		500		500		500	

GAS FIRING DATA

Gas Flow Rate	m ³ /hr	189.5	246.5	222.8	296.8	255.9	336.8	300.9	392.8	338.6	448.9	373.6	496.9	417.4	556.8	456.6	607.3	500.8	668.1	539.7	717.7	584.3	779.5
Flue Gas CO ₂	%	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
Flue Gas Temp - Amb Temp	degC	154	164	154	163	154	168	154	168	154	167	112	133	122	147	112	134	122	147	112	134	122	147
Flue Gas Mass Flow Rate	kg/hr	2773	3607	3262	4344	3746	4930	4404	5754	4956	6570	5469	7273	6109	8150	6684	8890	7331	9780	7900	10505	8553	11410

OIL FIRING DATA

Oil Flow Rate	L/hr	189.5	246.5	222.8	296.8	255.9	336.8	300.9	392.8	338.6	448.9	373.6	496.9	417.4	556.8	456.6	607.3	500.8	668.1	539.7	717.7	584.3	779.5
Flue Gas CO ₂	%	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
Flue Gas Temp - Amb Temp	degC	165	176	165	175	165	180	165	180	165	179	120	143	130	157	120	143	130	157	120	143	130	157
Flue Gas Mass Flow Rate	kg/hr	2825	3675	3323	4425	3816	5023	4487	5862	5049	6693	5571	7410	6223	8303	6809	9056	7468	9963	8047	10703	8713	11624

Note.

*Fuel rates and flue gas data relate to maximum output ratings.
Gas firing data relates to the use of NATURAL GAS ONLY.
Details for the use of LPG are available on request from Ideal.
Natural gas consumption is calculated using a calorific value of 38.7MJ/m³ (1038Btu/ft³) gross or 34.9MJ/m³ (935Btu/ft³) nett at 15°C and 1013.25mbar.*

HEALTH & SAFETY DOCUMENT NO. 635

The electricity at work regulations, 1989. The manufacturer's notes must NOT be taken, in any way, as overriding statutory obligations.

IMPORTANT. These appliances are CE certified for safety and performance. It is, therefore, important that no external control devices, e.g. flue dampers, economisers etc., are directly connected to these appliances unless covered by these Installation and Servicing Instructions or as otherwise recommended by **Ideal** in writing. If in doubt please enquire.

Any direct connection of a control device not approved by **Ideal** could invalidate the certification and the normal appliance warranty. It could also infringe the Gas Safety Regulations and the above regulations.

Assembly and Installation Instructions for Ideal Vanguard L heating boilers should be read in conjunction with the general technical data tables enclosed and any other technical publication supplied with the burner.

NOTE TO THE INSTALLER: LEAVE THESE INSTRUCTIONS ADJACENT TO THE BOILER.

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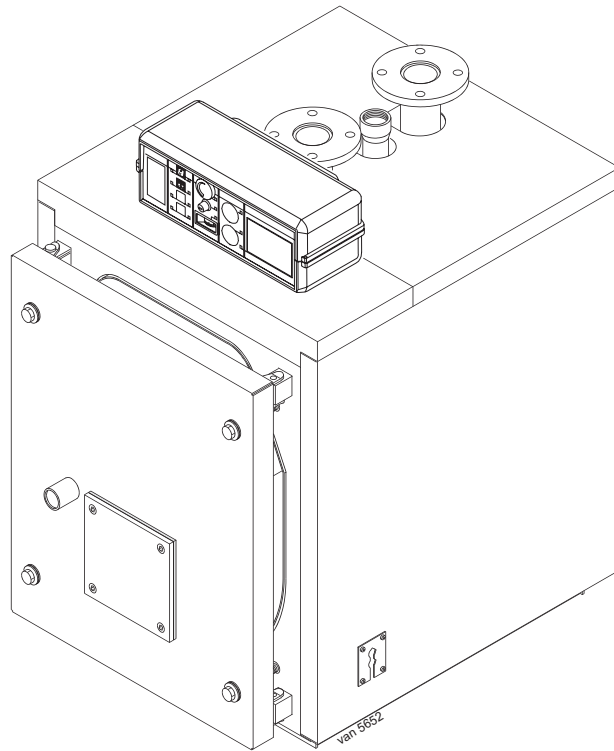
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CAUTION. To avoid the possibility of injury during the installation, servicing or cleaning of this appliance, care should be taken when handling edges of sheet steel components.

Vanguard 'L'

Gas and Fuel Oil

Destination Countries: GB, IE



INTRODUCTION

The Vanguard L boilers are a range of steel shell pressure jet boilers offering high efficiency operation, ease of maintenance, fuel flexibility and low emissions.

Suitable for oil or gas operation the Vanguard L range is supplied in a choice of 22 standard models, rated in outputs from 340kW to 7000 kW. The range has a maximum operation pressure of 6 bar.

Designed with a large combustion chamber that is positioned in the lower part of the heat exchanger, the Vanguard L range ensures maximum heat transfer efficiency (up to 92.5% net).

Through the use of an increased number of flue ways tubes which are positioned in the hottest area of the heat exchanger and constructed from a thicker steel construction than that of traditional boilers.

Burners

The Vanguard L boiler range is designed for the application of proprietary pressure jet burners operating with either gas or oil. A burner matching matrix held at Ideal Boilers enables the selection of the burner type at the point of purchase.

The burner type and controls selection will provide the option of two stage or modulating firing.

Duty

The range of boiler is suitable for: combined indirect pumped domestic hot water and central heating systems; independent indirect pumped domestic hot water or central heating systems.

Fully pumped systems may be open vented or sealed.

The range of boilers is NOT suitable for:

1. Gravity DHW systems.
2. Gravity heating systems.
3. Direct domestic hot water supply.

SAFETY

Current Gas Safety (Installation and Use) Regulations or rules in force.

It is law that all gas appliances are installed and serviced by a Gas Safe Registered Engineer in accordance with the regulations below. Failure to install appliances correctly could lead to prosecution. It is in your own interest, and that of safety, to ensure the law is complied with.

The following must be conformed with:

Current Building Regulations and Clean Air Act

Water Authority Regulations

Local Authority Regulations and Regional Bylaws

Gas Safety Regulations

Any special regional requirements of local Electricity and Gas undertaking.

Fire Service and Insurance Company requirements.

In the interests of safety, a competent installer should be employed to effect the installation of the appliance. Manufacturer's notes must NOT, in any way, be taken as overriding statutory obligations.

The installation of the boiler MUST also be in accordance with the latest I.E.E. (BS7671) Wiring Regulations, local buildings regulations, bye-laws of the local water authority, the building regulations and the Building Standards (Scotland) and any relevant requirements of the local authority.

Detailed recommendations are contained in the following Codes of Practice:

BS 799 Pt4 & 7	Oil burning equipment.
BS 799 Pt5	Oil storage tanks.
BS 5410 Pt2	Installation for space heating, hot water and steam supply.
BS 5854	Flues and flue structures in buildings.
BS 5885 Pt1	Gas burners - with inputs 60kW and above.
BS 6644	Installation of gas fired hot water boilers of rated input between 70kW and 1.8MW net (2nd and 3rd family gases).
BS 6880	Low temperature hot water heating systems of output greater than 45kW.
Part 1	Fundamental and design considerations.
part 2	Selection of equipment.
part 3	Installation, commissioning and maintenance.
BS 6891	Installation of low pressure gas pipework of up to 28mm (R1) in domestic premises (2nd family gas).
EN 303.1	Heating boilers with forced draught burners. General requirements.
EN 303.2	Heating boilers with forced draught burners with atomizing oil burners.
EN 304	Test code for heating boilers for atomizing oil burners.
2006/95 EEC	Low voltage directive. (Relevant standard is EN60335.1)
2004/108 EEC	Electromagnetic Compatibility Directive. (Relevant standards are EN50081.1, EN50082.1 and EN55014.)

92/42 EEC	Boiler Efficiency Directive
2009/142 EEC	Gas Devices Directive. (Relevant standards are EN303.1, EN303.2 and EN304.)
IGE/UP/1	Soundness testing and purging of industrial and commercial gas installation.
IGE/UP/2	Gas installation pipework, boosters and compressors on industrial and commercial premises.
IGE/UP/10	Installation of gas appliances in industrial and commercial premises.

SAFE HANDLING OF SUBSTANCES

Care should be taken when handling the boiler insulation panels, which can cause irritation to the skin. No asbestos, mercury or CFCs are included in any part of the boiler or its manufacture.

GAS SUPPLY

The local gas supplier should be consulted, at the installation planning stage, in order to establish the availability of an adequate supply of gas. An existing service pipe must NOT be used without prior consultation with the local gas supplier.

A gas meter can only be connected by the local gas supplier or by a Gas Safe Registered Engineer.

An existing meter should be checked, preferably by the gas supplier, to ensure that the meter is adequate to deal with the rate of gas supply required. A minimum working gas pressure of 17.5mbar MUST be available at the boiler inlet for Natural gas and 37mbar for Propane.

Do not use pipes of smaller size than the burner inlet gas connection.

The complete installation MUST be tested for gas soundness and purged in accordance with the appropriate standards listed above.

Gas Boosters

A gas booster is required if the gas pressure available at the burner is lower than that required by the burner manufacturer to attain the flow rate for maximum burner input rating.

Location of the booster requires careful consideration but should preferably be closer to the burner rather than the gas meter. Ventilation should also be considered to ensure ambient temperatures do not exceed designed recommendations. Further guidance is provided in IGE/UP/2 as listed above.

FLUE INSTALLATION

IMPORTANT

It is the responsibility of the installer to ensure that products of combustion discharging from the terminal cannot re-enter the building or any other adjacent building.

Fan dilution systems may be incorporated into the flue system. However, ventilation must take into account the additional air requirement of the boiler house and interlocking must be provided to ensure adequate air flow is attained before burner operation proceeds.

The flue must be installed in accordance with the appropriate standards listed on page 6.

GENERAL

WATER CIRCULATION SYSTEM

The system pump **MUST** be connected to the boiler.

The boiler must **NOT** be used for direct hot water supply. The calorifier **MUST** be of the indirect type.

The appliances are **NOT** suitable for gravity central heating nor are they suitable for the provision of gravity domestic hot water.

The calorifier and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing - particularly where pipes run through roof spaces and ventilated underfloor spaces.

The boiler must be vented.

Draining taps **MUST** be located in accessible positions, which permit the draining of the whole system - including the boiler and hot water storage vessel. They should be at least 1/2" BSP nominal size and be in accordance with BS. 2879.

The central heating system should be in accordance with the relevant standards listed on page 6.

Due to the nature of the boiler the heat stored at the point of shutdown of the burner must be dissipated in order to avoid overheating. In order to allow pump operation after burner shutdown the boiler control box incorporates a pump overrun facility. In order to make use of this, the pump must be supplied from the terminals inside the boiler. Note: for pumps requiring greater than 1.0amp current or using 3 phase they must be connected via a relay.

WATER TREATMENT FOR HOT WATER AND HEATING BOILERS

There is a basic need to treat the water contained in all heating and indirect water systems, particularly open vented systems. It is assumed, incorrectly, that because boilers are operating in conjunction with what is apparently a closed circuit an open vented system will not, under normal circumstances, allow damage or loss of efficiency due to hardness salts and corrosion once the initial charge of water has been heated up a few times.

1mm of lime reduces the heat transfer from metal to water by 10%.

In practice the deposition of these salts is liable to cause noises from the boiler body or even premature boiler failure. Corrosion and the formation of black iron oxide sludge will ultimately result in premature radiator failure.

Open vented systems are not completely sealed from the atmosphere if proper venting and expansion of system water is to be achieved. The same tank is used to fill the system with water and it is through the cold feed pipe that system water expands into the tank when the boiler passes heat into the system.

Conversely, when the system cools, water previously expelled is drawn back from the tank into the system together with a quantity of dissolved oxygen.

Even if leakage from the heating and hot water system is eliminated there will be evaporation losses from the surface of the tank which, depending upon ambient temperature, may be high enough to evaporate a large portion of the system water capacity over a full heating season.

There will always be corrosion within a heating or hot water system to a greater or lesser degree, irrespective of water characteristics, unless the initial fill water from the mains is treated. Even the water in closed systems will promote corrosion unless treated. For the reason stated, **Ideal** strongly recommend that when necessary the systems is thoroughly cleaned, prior to the use of stable inhibitor, which does not require continual topping up to combat the effects of hardness salts and corrosion on the heat exchangers of the boiler and associated systems.

Ideal advise contact directly with specialists on water treatment such as:

Betz Dearborn Ltd or Widnes, Cheshire, Tel: 0151 424 5351	Fernox Manufacturing Co. Ltd. Tandem House, Marlowe Way, Croydon, Surrey, CR0 4XS Tel: 0870 601 5000
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ELECTRICAL SUPPLY

WARNING This appliance must be earthed.

Control Panel:

A 230V - 50Hz. Fused at 4 amps.

Wiring external to the appliance **MUST** be in accordance with the current I.E.E. (BS7671) Wiring Regulations and any local regulations which apply.

Burner and Pump:

These may be 1ph or 3ph. Refer to manufacturer's instructions.

The point of connection to the mains should be readily accessible and adjacent to the boiler.

LOCATION OF THE BOILER

The boiler must stand on a non-combustible floor (i.e. concrete or brick) which must be flat, level and of a suitable load bearing capacity to support the weight of the boiler (when filled with water) and any ancillary equipment.

If the boiler is mounted on a plinth then the dimensions must exceed the plan area of the boiler by at least 75mm on each side.

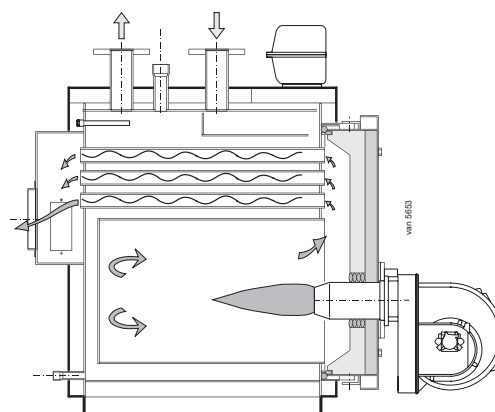
The boiler must not be fitted outside.

1 BOILER WATER CONNECTIONS

The Vanguard L boilers are provided with flanged connections for both flow and return.

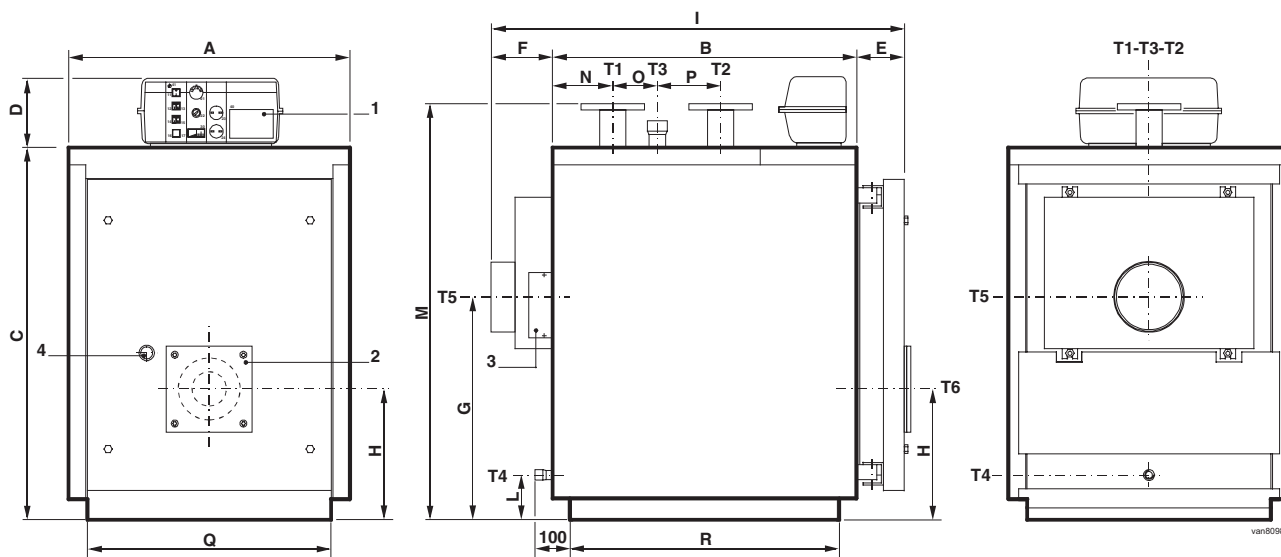
Dimensions vary depending on the boilers output, details can be found in the Tables on pages 8-12.

The boiler shell is also provided with separate connections for a drain and safety valve.



2 BOILER DIMENSIONS

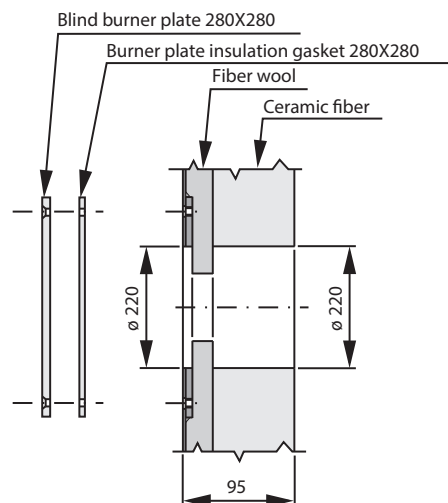
Vanguard L 340 - 630



1. Control Panel
2. Burner mating flange with gasket
3. Flue collector hood cleaning door
4. Flame inspection tube with pressure test nipple and cooling line connection

- T1. Flow connection
- T2. Return connection
- T3. Safety valve and expansion connection
- T4. Drain connection
- T5. Flue connection
- T6. Burner connection

Detail for Door Drilling Vanguard L 340-630



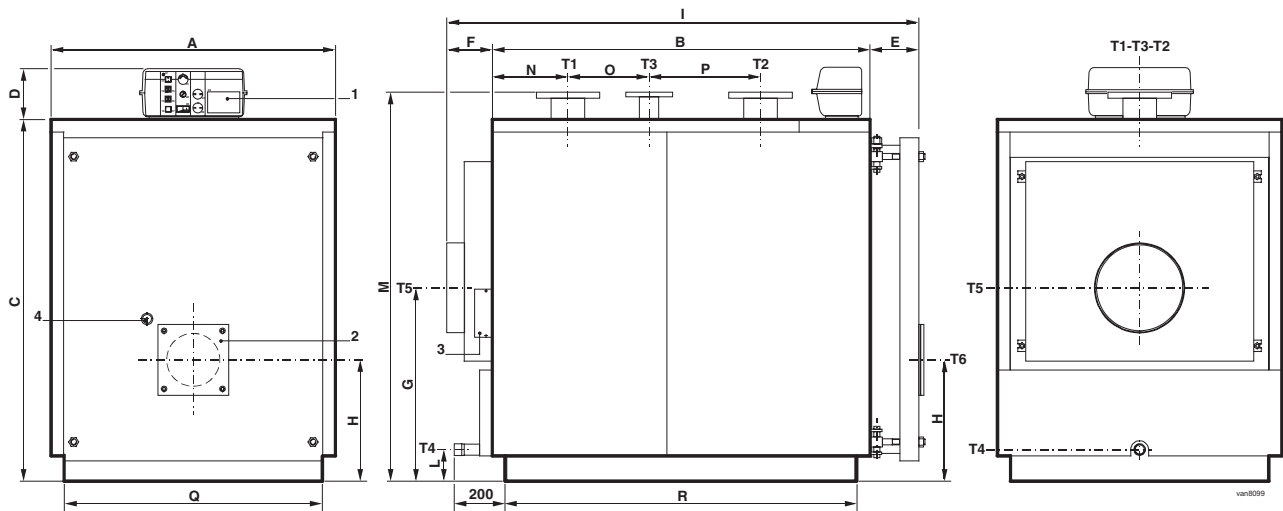
DIMENSION	MODEL			
	340	420	510	630
A	860	890	890	890
B	1210	1275	1470	1780
C	1182	1352	1352	1352
D	190	190	190	190
E	139	139	139	139
F	190	190	190	190
G	708	748	748	748
H	400	440	440	440
I	1541	1606	1801	2113
L	130	125	125	125
M*	1310	1485	1485	1485
N	215	255	255	255
O	340	285	480	790
P	250	315	315	315
Q*	750	780	780	780
R*	1112	1177	1372	1682

* Minimum dimensions for boiler room access requirements.

GENERAL

3 BOILER DIMENSIONS CONT'D

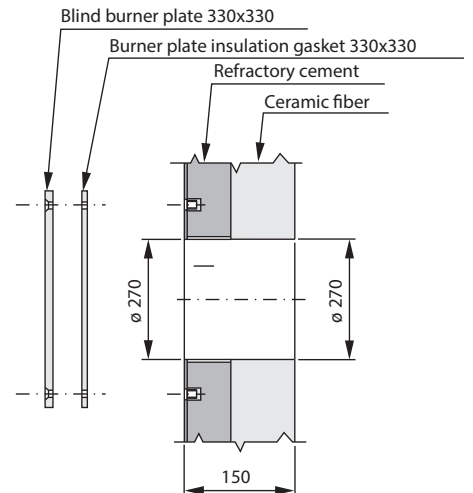
Vanguard L 760 - 970



1. Control Panel
2. Burner mating flange with gasket
3. Flue collector hood cleaning door
4. Flame inspection tube with pressure test nipple and cooling line connection

- T1. Flow connection
- T2. Return connection
- T3. Safety valve and expansion connection
- T4. Drain connection
- T5. Flue connection
- T6. Burner connection

Detail for Door Drilling Vanguard L 760-970



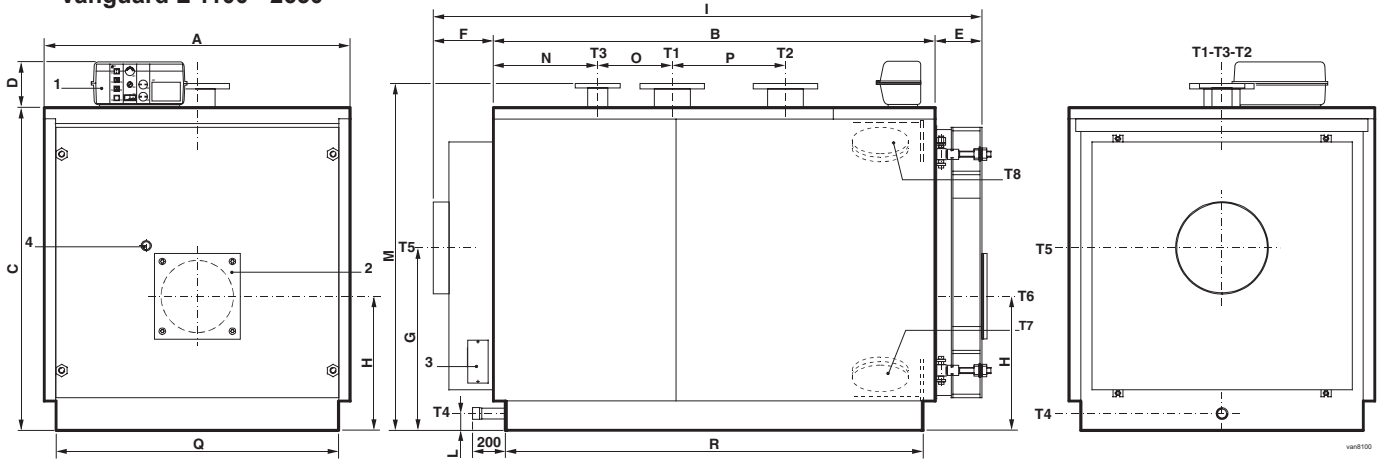
DIMENSION	MODEL		
	760	870	970
A	1122	1122	1122
B	1605	1800	1995
C	1432	1432	1432
D	190	190	190
E	195	195	195
F	190	190	190
G	765	765	765
H	480	480	480
I	1989	2184	2379
L	125	125	125
M*	1540	1540	1540
N	298	298	298
O	435	630	825
P	440	440	440
Q*	1020	1020	1020
R*	1504	1699	1894

* Minimum dimensions for boiler room access requirements.

GENERAL

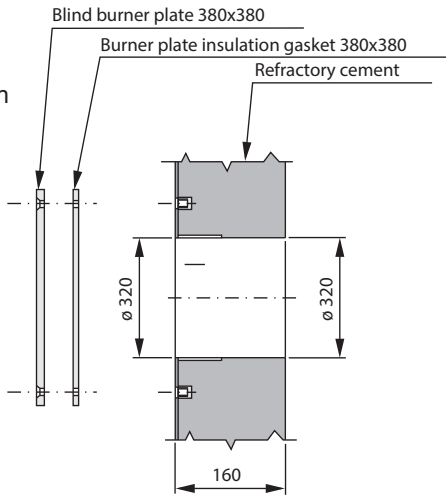
4 BOILER DIMENSIONS CONT'D

Vanguard L 1100 - 2650

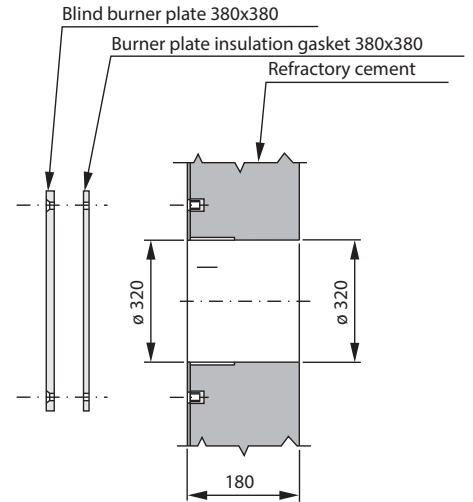


1. Control Panel
2. Burner mating flange with gasket
3. Flue collector hood cleaning door
4. Flame inspection tube with pressure test nipple and cooling line connection
- T1. Flow connection
- T2. Return connection
- T3. Safety valve and expansion connection
- T4. Drain connection
- T5. Flue connection
- T6. Burner connection
- T7. Sludge hole
- T8. Hand hole

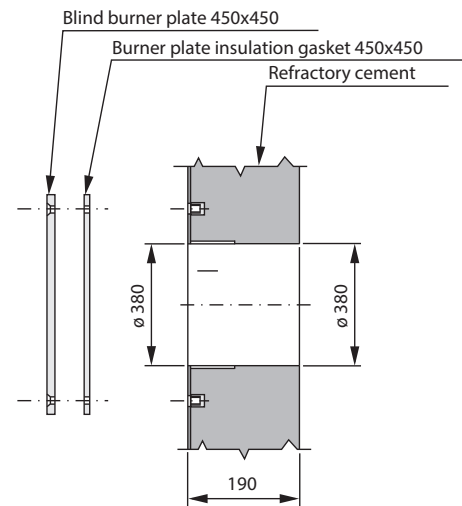
**Detail for Door Drilling
Vanguard L 1100-1320**



**Detail for Door Drilling
Vanguard L 1570-1850**



**Detail for Door Drilling
Vanguard L 2200-2650**



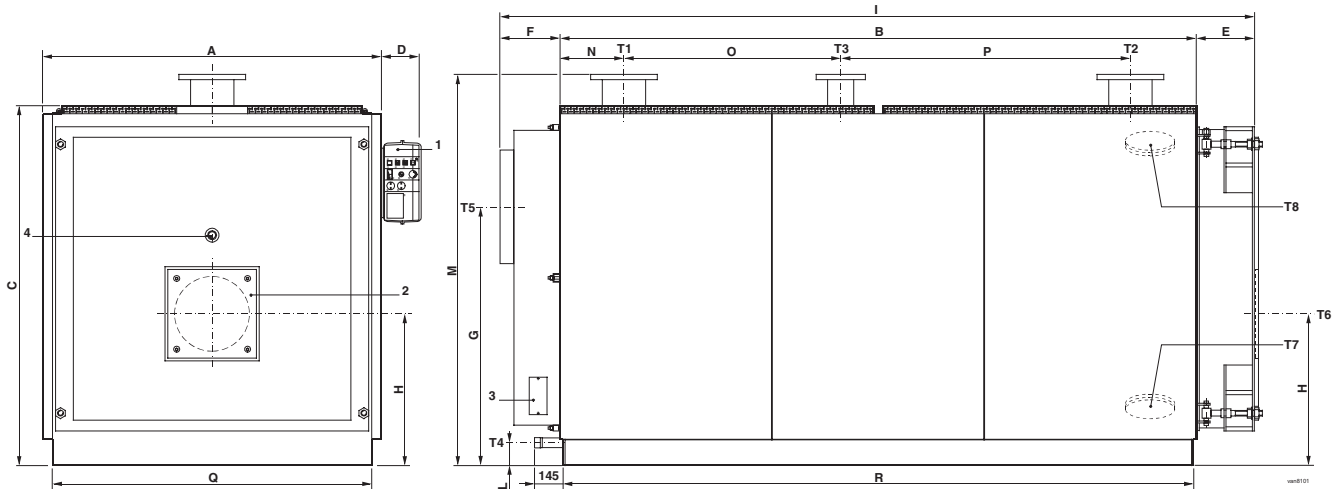
DIMENSION	MODEL					
	1100	1320	1570	1850	2200	2650
A	1352	1352	1462	1462	1622	1622
B	1952	2292	2282	2652	2692	3014
C	1432	1432	1542	1542	1702	1702
D	190	190	190	190	190	190
E	207	207	227	227	259	258
F	187	187	272	272	274	273
G	810	810	880	880	950	950
H	595	595	640	640	690	690
I	2346	2686	2781	3151	3225	3545
L	180	180	75	75	75	75
M*	1540	1540	1650	1650	1810	1810
N	461	461	561	561	661	662
O	330	670	510	880	670	990
P	500	500	550	550	700	700
Q*	1250	1250	1360	1360	1520	1520
R*	1846	2186	2176	2546	2590	2910

* Minimum dimensions for boiler room access requirements.

GENERAL

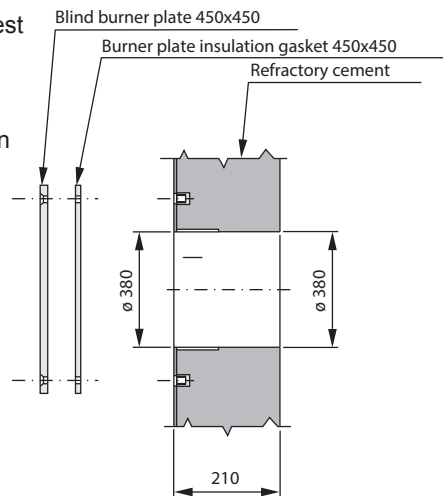
5 BOILER DIMENSIONS CONT'D

Vanguard L 3000 - 4000

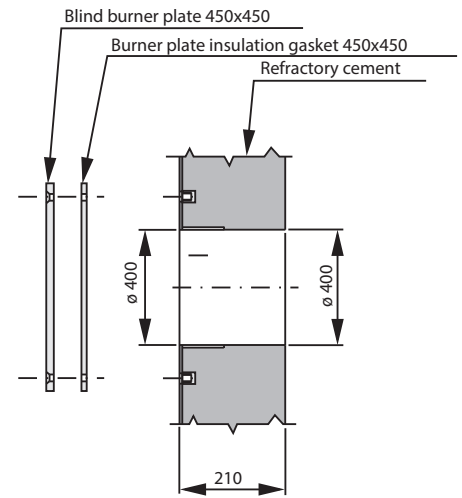


1. Control Panel
2. Burner mating flange with gasket
3. Flue collector hood cleaning door
4. Flame inspection tube with pressure test nipple and cooling line connection
- T1. Flow connection
- T2. Return connection
- T3. Safety valve and expansion connection
- T4. Drain connection
- T5. Flue connection
- T6. Burner connection
- T7. Sludge hole
- T8. Handhole

**Detail for Door Drilling
Vanguard L 3000**



**Detail for Door Drilling
Vanguard L 3500-4000**



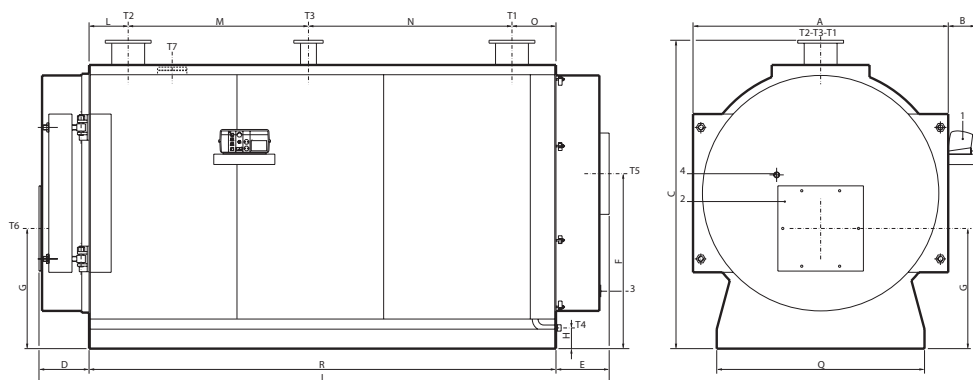
DIMENSION	MODEL		
	3000	3500	4000
A	1720	1970	1970
B	3230	3194	3594
C	1830	2090	2090
D	190	190	190
E	295	325	325
F	340	390	360
G	1315	1535	1535
H	772	915	915
I	3835	3879	4279
L	115	144	144
M*	1990	2271	2271
N	325	377	777
O	1100	1060	1060
P	1330	1280	1420
Q*	1620	1870	1870
R*	3200	3164	3564

* Minimum dimensions for boiler room access requirements.

GENERAL

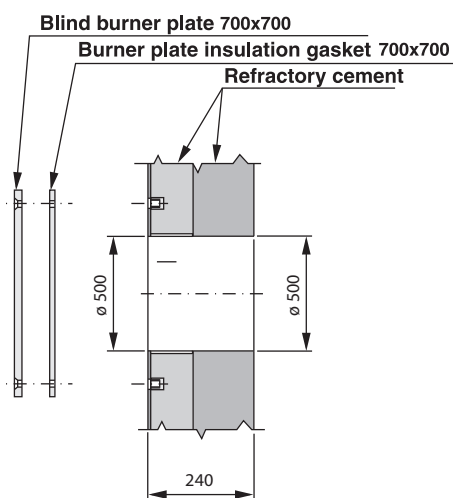
6 BOILER DIMENSIONS CONT'D

Vanguard L 4500 - 7000

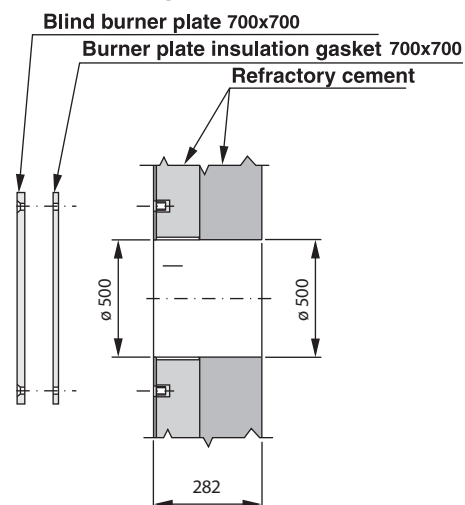


- 1. Panel Board
- 2. Burner fixing plate
- 3. Smoke chamber cleaning door
- 4. Sight glass
- T1. CH flow
- T2. CH return
- T3. Expansion vessel connection
- T4. Boiler drain
- T5. Flue socket
- T6. Max. burner blast tube dia.
- T7. Inspection door

**Detail for Door Drilling
Vanguard L 4500-6000**



**Detail for Door Drilling
Vanguard L 6500-7000**



DIMENSION	MODEL					
	4500	5000	5500	6000	6500	7000
A	2088	2088	2214	2214	2380	2380
B	226	226	240	240	240	240
C*	2533	2533	2653	2653	2860	2860
D	417	417	437	437	509	509
E	445	445	465	465	595	595
F	1437	1437	1550	1550	1650	1650
G	987	987	1007	1007	1100	1100
H	170	170	167	167	224	224
I	4682	4682	4872	4872	5484	5484
L	320	320	320	320	325	325
M	1475	1475	1475	1475	2920	2920
N	1665	1665	1815	1815	670	670
O	360	360	360	360	465	465
Q*	1700	1700	1700	1700	1850	1850
R*	3820	3820	3970	3970	4380	4380

* Minimum dimensions for boiler room access requirements.

7 BOILER LOCATION AND CLEARANCES

HANDLING

The boiler can be moved into position by lifting, through the upper hooks(s), or by the use of rollers placed under the strong L profiles of the basement. If necessary, due to the dimensions of the boiler, it is possible to remove the front door and the smoke chamber to facilitate the introduction in the boiler house.

POSITIONING IN THE BOILER HOUSE

The installation of the boiler must be in accordance with the relevant requirements of the Gas Safety Regulations, current I.E.E. Regulations, local water authority bye-laws and it should also comply with any relevant requirements of the local gas supplier, local authority and the relevant Standard Codes of Practice and building regulations.

The boiler house must be ventilated through permanent openings having a total surface not lower than 1/30th of the floor area of the boiler house, with a minimum of 0.5 m².

Ventilation by grilles communicating directly with the outside air is required at both, high and low levels.

Do not obstruct the grates of aspiration of the air or dissipation of the heat.

The boiler must be positioned so that there is enough space available for the following:

- Access around the boiler fore servicing
- Space to open the boiler front door
- Space to access the burner.

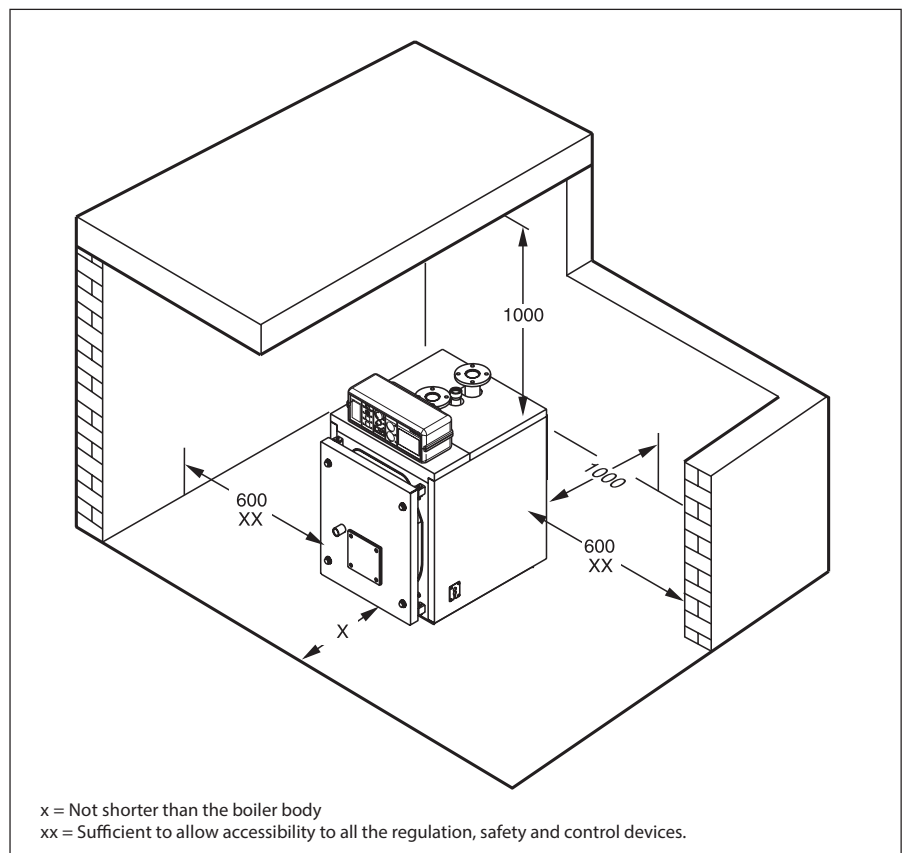
The installation of the boiler as close as possible to the chimney position is highly recommended.

To allow the cleaning of the smoke pipes, in front of the boiler a clearance equal to the length of the boiler, has to be available.

With the boiler door opened at 90°, the distance between the front of the door and the adjacent wall must be equal, at least, at the length of the burner

The boiler must stand on a non-combustible floor (i.e. concrete or brick), of dimensions Q x R (see dimensions table) which must be flat, level and of a suitable load bearing capacity to support the weight of the boiler (when filled with water) and any ancillary equipment.

Once the installation has been made the boiler must result perfectly horizontal and well stable (to avoid vibrations and noise).



8 OPEN VENTED SYSTEM - minimum static head requirements

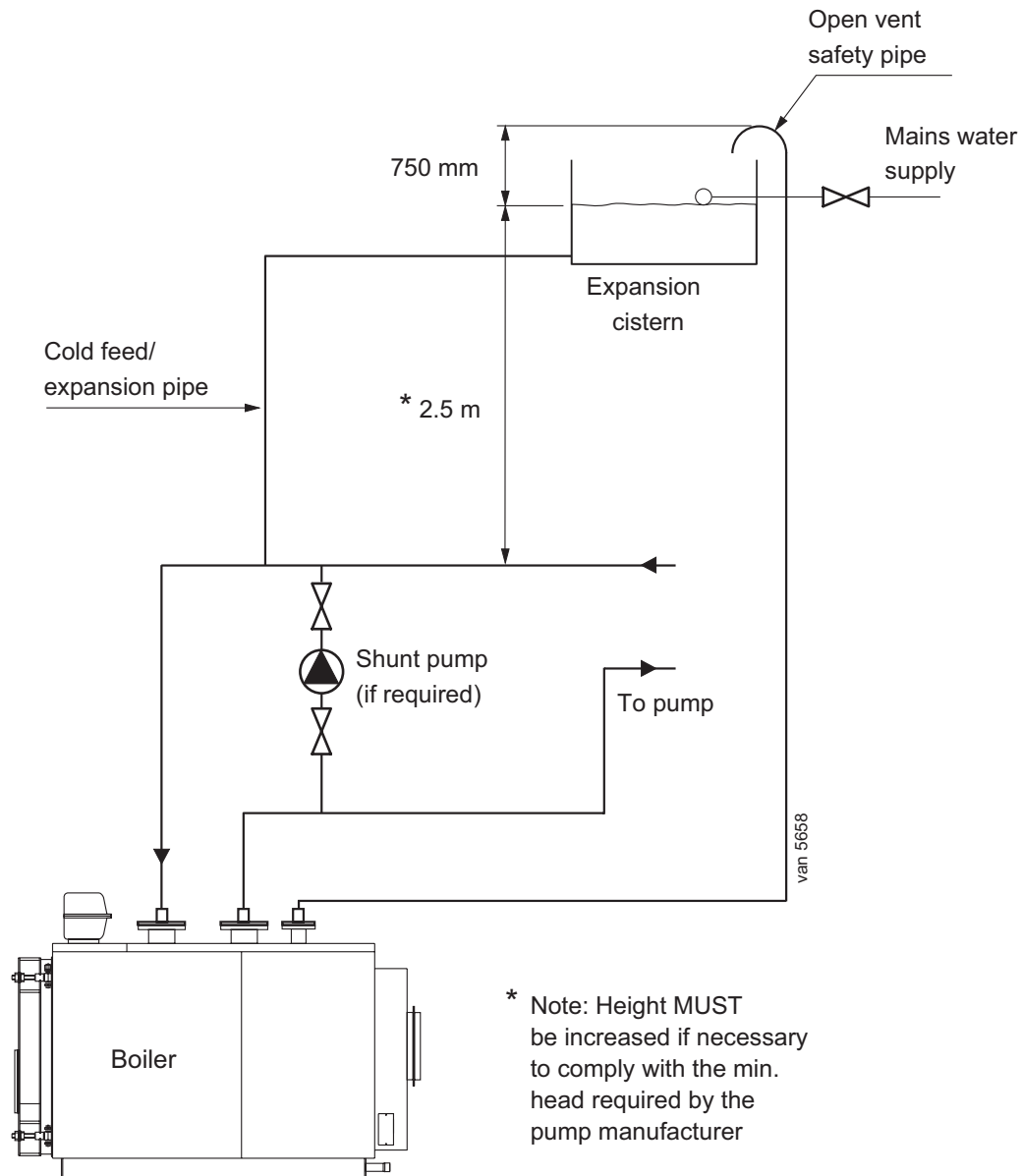
The Vanguard L boiler has a minimum static head requirement of 2.5 metres (8 feet approx.) depending on the particular characteristics of the system design (see diagram).

The information provided is based on the following assumptions:

1. An open vent/safety pipe connection is made from the Safety Valve and Expansion connection point on the boiler body.
2. A cold feed/expansion pipe connection is made to the system return pipe within 0.75m of the boiler return connection.
3. The maximum flow rate through the boiler is based on a temperature difference of 11°C (20°F) at full boiler output with the circulating pump positioned in the flow of the system.

4. The boiler is at the highest point of the system. Systems designed to rise above the flow connections will, of course, automatically require a minimum static head higher than shown.
5. The position of the open vent/safety pipe above the expansion cistern water level is given as a guide only. The final position will depend upon particular characteristics of the system. Pumping over of water into the expansion cistern should be avoided.
6. Both open vent/safety pipe and cold feed/expansion pipes must be of adequate diameter to suit the output of the boiler (see table below).

Boiler Output kW	Open Vent (mm)	Cold Feed (mm)
151 to 300	38	32
301 to 600	50	38
above 600	63	50



* Note: Height MUST be increased if necessary to comply with the min. head required by the pump manufacturer

9 SEALED (PRESSURISED) SYSTEM

Working pressure 6 bar maximum.

Particular reference should be made to BS 6644: Section 6 and Guidance note PM5 "automatically controlled steam and hot water boilers" published by the Health and Safety Executive.

The information and guidance given below is not intended to override any requirements of either of the above publications or the requirements of the local authority, gas or water undertakings.

In general commercial closed pressurised systems are provided with either manual or automatic water make up.

In both instances it will be necessary to fit automatic controls intended to protect the boiler, circulating system and ancillary equipment by shutting down the boiler plant if a potentially hazardous situation should arise.

Examples of such situations are low water level and operating pressure or excessive pressure within the system.

Depending on circumstances, controls will need to be either manual or automatic reset.

In the event of a shutdown both visual and audible alarms may be necessary.

Expansion vessels used must comply with BS. 4814 and must be sized on the basis of the total system volume and initial charge pressure.

Initial minimum charge pressure should not be less than 0.5 bar (7.2 psi) and must take account of the static head and specification of the pressurising equipment. The maximum water temperatures permissible at the point of minimum pressure in the system are specified in Guidance Note PM5.

When make up water is not provided automatically it will be necessary to fit controls which shut down the plant in the event of the maximum system pressure approaching to within 0.5 bar (5 psi) of the safety valve setting.

Other British Standards applicable to commercial sealed systems are:

- BS6880: Part 2
- BS 1212
- BS 6281: Part 1
- BS 6282: Part 1
- BS 6283: Part 4

10 VENTILATION

Safe, efficient and trouble-free operation of conventionally flued gas boilers is vitally dependent on the provision of an adequate supply of fresh air to the room in which the appliance is installed.

Ventilation by grilles communicating directly with the outside air is required at both high and low levels. The minimum free areas of these grilles must be according to the following scale in Table below.

Ventilation Requirements

Required area (cm²) per kW of total rated input (net)

	Boiler Room	Enclosure
Low level (inlet)	4	10
High level (outlet)	2	5

Note.

Where a boiler installation is to operate in summer months (e.g. DHW) additional ventilation requirements are stated, if operating for more than 50% of time. (Refer to BS 6644)

Position ventilation grilles to avoid the risk of accidental obstruction by blockage or flooding. If further guidance on ventilation is required then consult BS 6644.

The supply of air by mechanical means to a space housing the boiler should be by mechanical inlet with natural or mechanical extraction. Mechanical extract ventilation with natural inlet must not be used.

Where a mechanical inlet and a mechanical extract system is applied, the design ventilation flow rates should be as in BS 6644.

Note.

For mechanical ventilation systems an automatic control should be provided to cause safety shutdown or lockout of the boiler(s) in the event of failure of air flow in either inlet or extract fans.

IMPORTANT. *The use of an extractor fan in the same room as the boiler (or in an adjacent communicating room) can, in certain conditions, adversely affect the safe operation of the boiler.*

Where such a fan is already fitted (or if it is intended to fit an extractor fan after installation of the appliance) the advice of the gas supplier should be obtained.

11 FLUING

General

Flues shall be constructed of suitable materials. The installer must respect the usual precautions (dilution, piping, 'T' for removal of condensation) in order to prevent deterioration of the chimney.

Routing

The route of any flue shall be as direct as practicable avoiding horizontal runs and 90° bends.

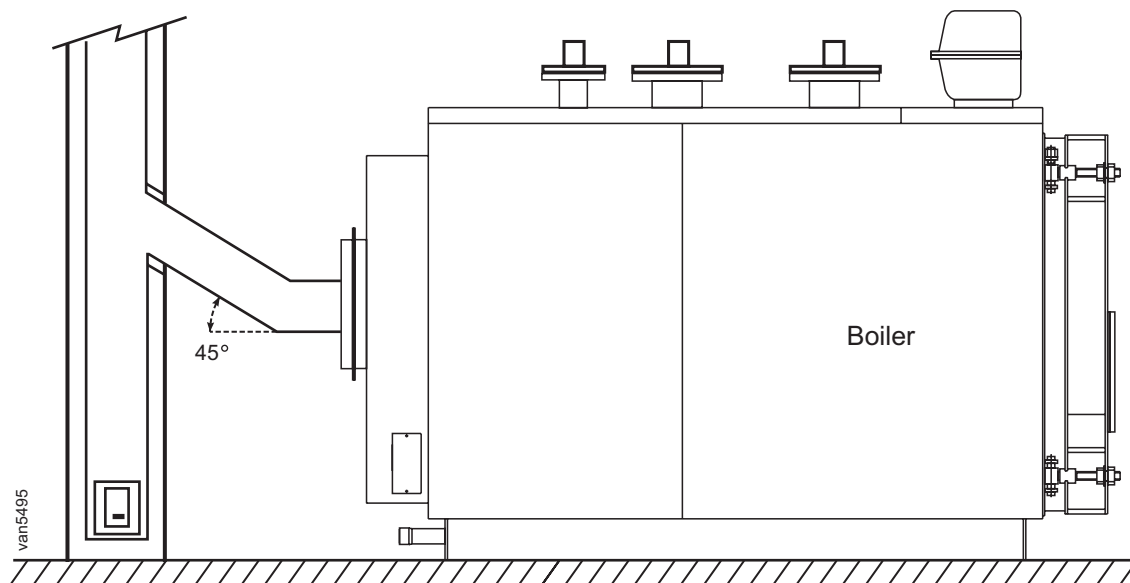
Entry into a masonry chimney shall be inclined upwards at 45°.

Flue Size

Refer to applicable regulations while determining the size and height of the flue. Please note that Vanguard L boilers have pressurised and sealed combustion chambers and that the pressure at the outlet must not exceed 0 mbar.

Detailed recommendations relating to the design of flues for GAS fired appliances are quoted in BS. 6644 and IGE/UP/10, whilst BS. 5410 Pt. 2 similarly applies to OIL fired boilers.

Flues should not be less in diameter than the boiler outlet connection size. Refer to pages 1 & 2.



INSTALLATION

12 PACKAGING

The boiler is supplied in the following packages:

- Boiler body assembly
- Separate jacket parts
- The control pack, accessory pack, literature pack and hardware items are stored inside the combustion chamber.

Check that all these packages are complete and have been correctly received on site.

Refer to Frames 13 and 14.

13 JACKET COMPONENTS

LIST OF JACKET'S COMPONENTS

BOILER MODEL No.	340	420	510	630	760	870	970	1100	1320	1570	1850	2200	2650	3000	3500	4000
Box Code VAL	04	05	06	09	12	14	16	19	21	24	26	29	31	35	38	38
Right Side Jacket	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Left Side Jacket	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Upper Rear Jacket	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Lower Rear Jacket	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-
Upper Front Jacket	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Upper Rear Right Jacket	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Upper Rear Left Jacket	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-
Upper Rear Central Right Jacket	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Upper Rear Central Left Jacket	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Support for the Upper Jacket	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Body Insulation	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Insulation	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Rear Insulation	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Central Body Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Rear Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2
Spare Parts Plastic Bag	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Box Code VAL				07	10	10	10	17	17	22	22	27	27	33	36	36
Front Right Side Jacket	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1
Front Left Side Jacket	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1
Front/Rear Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Upper Front Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supp. for the Right Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Supp. for the Left Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Front Insulation	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-
Front Body Insulation	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1
Upper Front Insulation	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-
Lower Front Insulation	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-
Spare Parts Plastic Bag	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-
Box Code VAL				08	11	13	15	18	20	23	25	28	30			
Rear Right Side Jacket	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-
Rear Left Side Jacket	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-
Rear Insulation	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-
Rear Body Insulation	-	-	-	1	1	1	1	1	1	1	1	1	1	-	-	-
Central Body Insulation	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Box Code VAL													32	34	37	37
Central Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2
Central Right Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Central Left Side Jacket	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Central Body Insulation	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Rear Body Insulation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Box Code VAL																39
Central Side Jacket																2
Central Right Side Jacket																1

INSTALLATION

INSTALLATION

14 ACCESSORIES BOX COMPONENTS

in Combustion Chamber

BOILER MODEL No.	340	420	510	630	760	870	970	1100	1320	1570	1850	2200	2650	3000	3500	4000	4500	5000	5500	6000	6500	7000		
Box Code VAL	42	43	43	44	44	44	44	45	45	46	46	47	47	48	49	72	73	73	73	73	73	73		
PLASTIC BAG	Arcuated Spring	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1		
	Elastic Claw for Ins. Fastening	10	16	16	16	18	18	18	20	20	22	22	26	26	29	29	35	-	-	-	-	-	-	
	Round Brush ϕ 41 mm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	
	Round Brush ϕ 56 mm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	
	Nut	-	-	-	-	-	-	-	16 M20	16 M20	16 M20	16 M20	24 M20	24 M20	24 M20	24 M20	24 M20	24 M24	24 M24	24 M24	24 M24	24 M24	24 M24	24 M24
	Nut	16 M16	16 M16	16 M16	16 M16	20 M16	20 M16	20 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	8 M16	
	Screw	16 M16X70	16 M16X70	16 M16X70	16 M16X70	16 M16X70	16 M16X70	16 M16X70	16 M20X80	16 M20X80	16 M20X80	16 M20X80	24 M20X80	24 M20X80	24 M20X80	24 M20X80	24 M20X80	24 M24X80	24 M24X80	24 M24X80	24 M24X80	24 M24X80	24 M24X80	
	Screw	-	-	-	-	4 M16X60	4 M16X60	4 M16X60	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	8 M16X70	
	Plastic Strap 160x3	6	6	6	6	6	6	6	6	6	6	6	6	6	-	-	-	-	-	-	-	-	-	
	Flange Gasket	-	-	-	-	1 DN65	1 DN65	1 DN65	1 DN80	1 DN80	1 DN100	1 DN100	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	
	Flange Gasket	2 DN80	2 DN100	2 DN100	2 DN100	2 DN125	2 DN125	2 DN125	2 DN150	2 DN150	2 DN175	2 DN175	2 DN200	2 DN200	2 DN200	2 DN200	2 DN250	2 DN250	2 DN250	2 DN250	2 DN250	2 DN250	2 DN250	
	Multiple Cable Clamp	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	-	
	Flange	-	-	-	-	1 DN65	1 DN65	1 DN65	1 DN80	1 DN80	1 DN100	1 DN100	-	-	-	-	-	-	-	-	-	-	-	
Flange	2 DN80	2 DN100	2 DN100	2 DN100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Ceramic Fiber 25x25	-	-	-	-	-	-	-	-	-	-	-	-	-	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660		
Ceramic Fiber 25x25	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.3660	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320	1 lg.7320		

15 HARDWARE ITEMS

in Combustion Chamber

BOILER MODEL No.	340	420	510	630	760	870	970	1100	1320	1570	1850	2200	2650	3000	3500	4000	4500	5000	5500	6000	6500	7000
Bush Handle	1 lg.700	1 lg.800	1 lg.500	1 lg.700	1 lg.600	1 lg.700	1 lg.900	1 lg.900	1 lg.700	1 lg.700	1 lg.500	1 lg.600	1 lg.900	1 lg.600	1 lg.600	1 lg.600	1 lg.600	1 lg.600	1 lg.600	1 lg.600	1 lg.600	1 lg.600
Bush Handle Extension	1 lg.550	1 lg.550	1 lg.1100	1 lg.1100	1 lg.1100	1 lg.1100	1 lg.1100	1 lg.1100	1 lg.550	1 lg.550	2 lg.1100	2 lg.1100	2 lg.1100	1 lg.550	1 lg.550	2 lg.550	2 lg.550	2 lg.550	2 lg.550	2 lg.550	2 lg.550	2 lg.550
Bush Handle Extension	-	-	-	-	-	-	-	-	1 lg.1100	1 lg.1100	-	-	-	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100	2 lg.1100
Flange	-	-	-	-	-	-	-	-	-	-	-	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125	1 DN125
Flange	-	-	-	-	2 DN125	2 DN125	2 DN125	2 DN150	2 DN150	2 DN175	2 DN175	2 DN200	2 DN200	2 DN200	2 DN200	2 DN200	2 DN250	2 DN250	2 DN250	2 DN250	2 DN250	2 DN250
Turbulator Extractor	-	-	-	-	-	-	-	-	-	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.980	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000	1 lg.1000
Turbulator Extractor	1 lg.570	1 lg.570	1 lg.570	1 lg.570	1 lg.570	1 lg.570	1 lg.570	1 lg.570	1 lg.980	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbulator Core	33 lg.700	44 lg.700	44 lg.700	44 lg.700	58 lg.700	58 lg.700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbulator	33	44	44	44	58	58	58	69	69	84	84	109	109	123	99	99	118	118	138	138	168	168

Control Pack (all models)

- Control Panel
- 7 Way Burner Cable
- Instruction Sheet

Literature Pack (all models)

- Ideal Installation and Servicing Instructions
- Ideal User's Instructions
- Ideal Data Plate
- Ideal Log Book - Pressure Jet
- Ideal Warranty Literature
- Ideal Casing Badge
- 7 Pole Burner Plug
- 4 Pole Burner Plug
- 4 Way Burner Cable

INSTALLATION

16 FLUE CONNECTION

1. Complete the secondary flue connection.
2. Seal with an approved boiler putty.
3. A split socket should be fitted immediately above the boiler to facilitate disconnection of the flue.

17 CASING ASSEMBLY

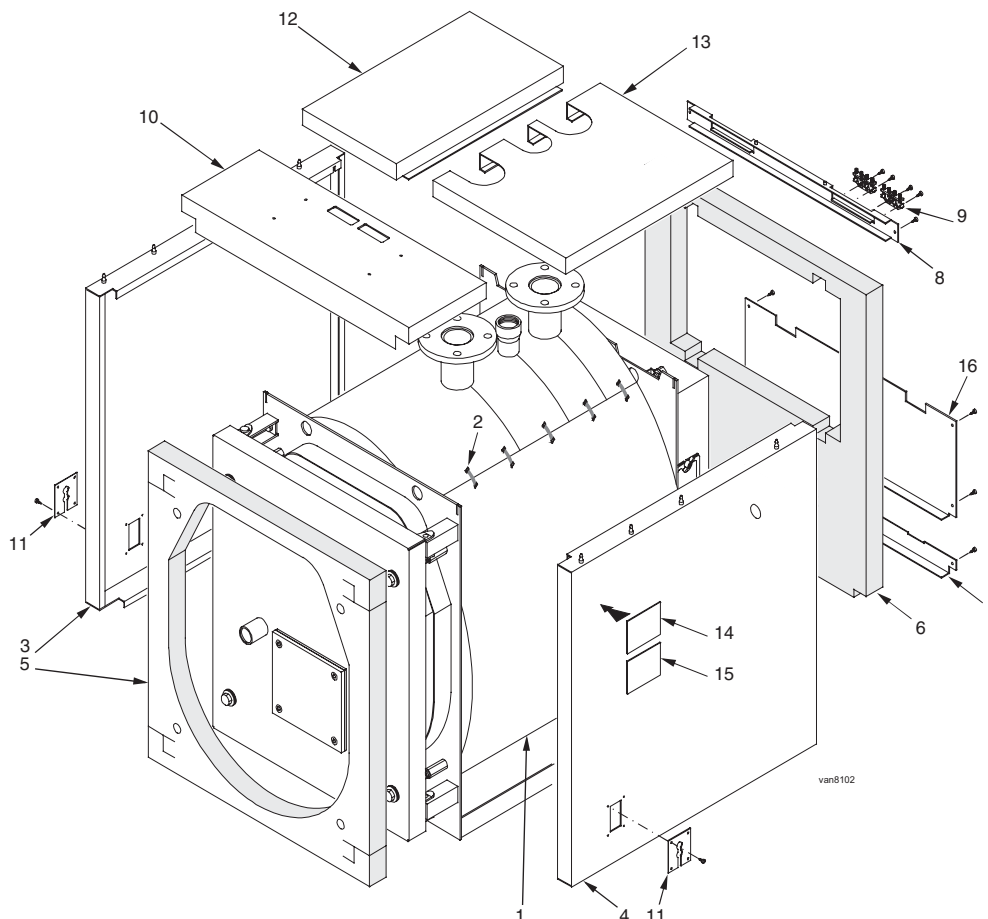
Vanguard L 340 to 630

For boiler models 340 to 510 the casing and insulation are contained in one carton and for model 630 in 3 cartons.

Assembly of the casing should be carried out in the following steps:

Refer to diagram below for details

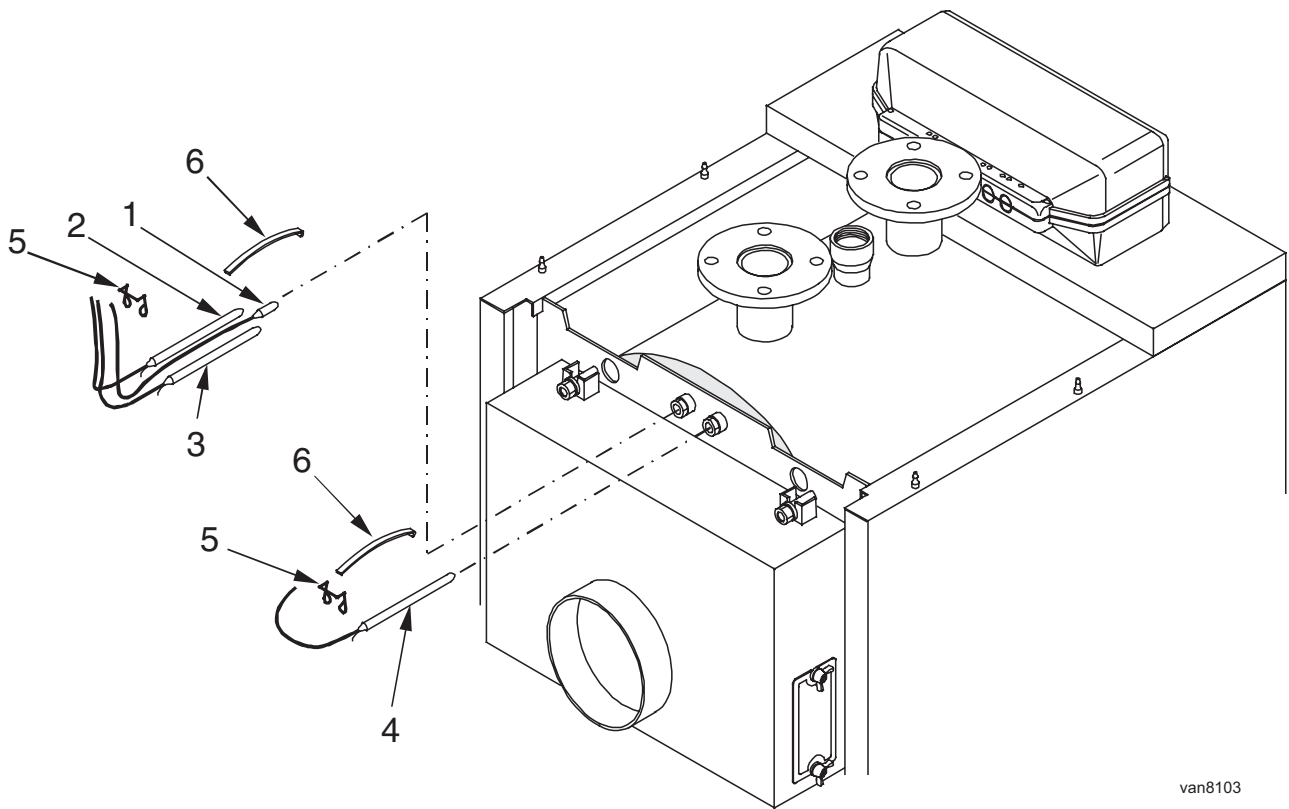
- A. Fit the insulation blanket (1) onto the boiler shell and secure in to place using the elasticated straps (2) provided, ensuring that the metal clips grip in to the external surface of the insulation.
- B. Locate the side panels (3) and (4) with the lower bend inside the bottom L profiles and the upper bend in the seats of front and rear tube plates.
To determine which is the left and right panel ensure that the cable clamp plates are positioned toward the front edge.
- C. Open the combustion chamber door and fit the front insulation (5), inserting the hinges in the pre-cuts. Insert the side end of the insulation under the bend of the two side panels (3 and 4).
- D. Fit the rear insulation (6), fix the rear lower and upper retaining strips (7 and 8), with the self tapping screws. Fit the plastic cable clamps (9) to the upper rear panel (8).
- E. Fit the 'Ideal' badge to the front edge of the front top panel (10) and secure with the rubber fixings.
- F. Fit the control panel to front top panel. Refer to Frame 18. Remove the upper shell of the control panel and insert the capillaries of thermometer and thermostats through the slots. Position the front top panel and press on to the side panels.
- G. Insert the thermometer and thermostat bulbs in the sensor pockets as shown in Frame 18 and connect the mains, the burner, the pump(s) and any equipment to the control panel. Refit the upper shell of the control panel.
Guide the burner plug through the side cable clamp plate (11) and clamp the cable using the cable clamp supplied. Fix the side cable clamp plates to the casing side panels. Fit the cables leaving the boiler from rear panel, with the plastic screws of the cable clamps (9).
- H. Position the top panels (12 and 13) and press them against the side panels.
- I. Remove the protective paper film from data plate and ventilation requirement label (14 and 15) and fit them at the top front corner of the most accessible side panel after removal of dust from the surface.
Data plate and ventilation requirements labels are in the plastic bag containing the documents.



INSTALLATION

18 POSITION OF THERMOMETER/THERMOSTAT SENSOR IN THE BULB HOLDER

Vanguard L 340 to 970



van8103

LEGEND

1. Thermometer bulb
2. Operation thermostat bulb
3. Safety thermostat bulb
4. Minimum temp. thermostat bulb
5. Sensor retaining clip
6. Contact spring

19 CASING ASSEMBLY

Vanguard L 760 to 970

For these boiler models the casing and insulation are contained in 3 cartons.

Assembly of the casing should be carried out in the following steps:

Refer to diagram below for details.

A. Fit the insulation blanket (1) onto the boiler shell and secure into place using the elasticated straps (2) provided, ensuring that the metal clips grip into the external surface of the insulation.

B. Locate the side panels (3) and (4) with the lower bend inside the bottom L profiles and the upper bend inside the upper L profile. The head of the self tapping screw fixed to the L profile has to coincide with the slot on the bend of the side panel.

To determine which is the left and right panel ensure that the cable clamp plate (5) is positioned toward the front edge.

Fix the countersink screws (8) to the side panels pos. 3b and 4b, inner rear side.

C. Open the combustion chamber door and fit the front insulation (6), inserting the hinges in the precuts.

Insert the side end of the insulation under the bend of the two side panels (3 and 4).

D. Fit the rear insulation (7), fix the rear lower panels (9) with pins and springs and the upper panel (10) with the self tapping screws (8). Fit the plastic cable clamps (11) to the upper rear panel (10).

E. Fit the 'Ideal' badge to the front edge of the front top panel (12) and secure with the rubber fixings.

F. Fit the control panel to front top panel (12). Remove the upper shell of the control panel and insert the capillaries of thermometer and thermostats through the slots.

G. Insert the thermometer and thermostat bulbs in the bulb holders as shown in Frame 18 and connect the mains, the burner, the pump(s) and any equipment to the control panel. Refit the upper shell of the control panel.

Guide the burner plug through the side cable clamp plate (5) on the left or right side opposite the burner door hinge and clamp the cable using the cable clamp supplied.

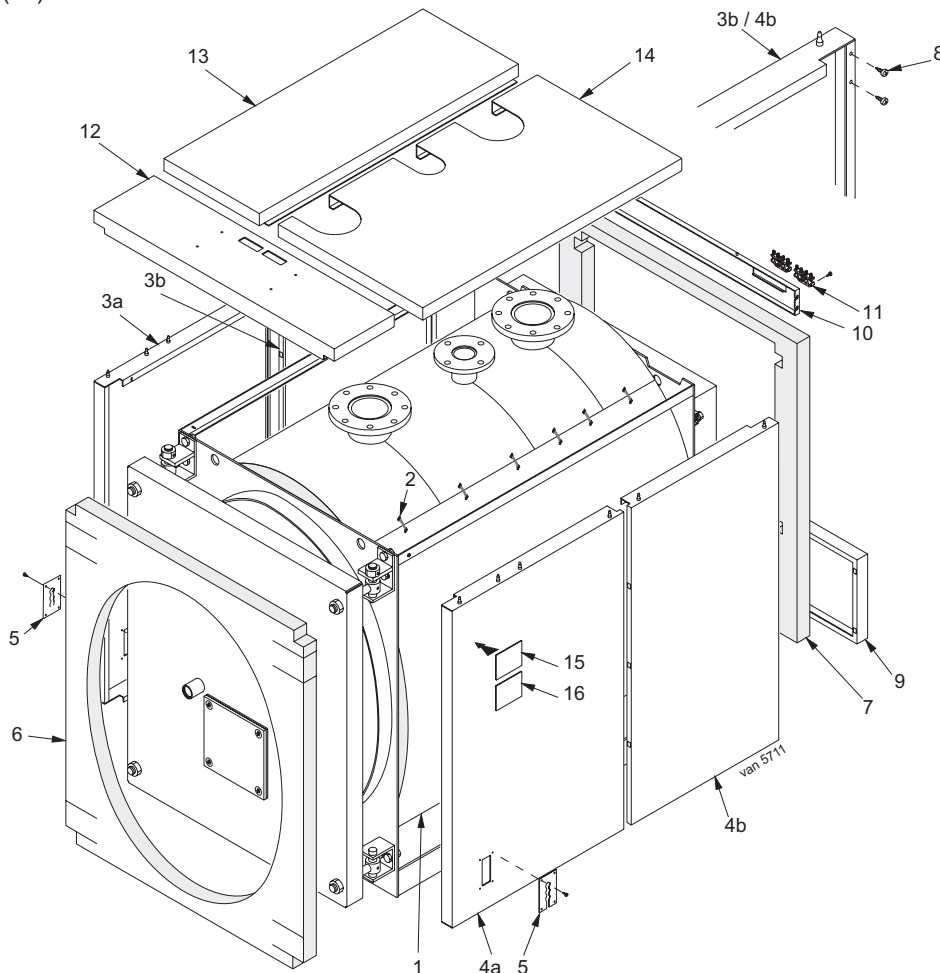
Fix the side cable clamp plates to the casing side panels.

Fit the cables leaving the boiler from the rear panel, with the plastic screws of the cable clamps (11).

H. Position the top panels (13 and 14) and press them against the side panels.

I. Remove the protective paper film from data plate and ventilation requirement label (15 and 16) and fit them at the top front corner of the most accessible side panel after removal of dust from the surface.

Data plate and ventilation requirements labels are in the plastic bag containing the documents.



INSTALLATION

20 CASING ASSEMBLY

Vanguard L 1100 to 2200

For these boiler models the casing and insulation are contained in 3 cartons.

Assembly of the casing should be carried out in the following steps:

Refer to diagram below for details

A. Fit the insulation blanket (1) onto the boiler shell and secure into place using the elasticated straps (2) provided, ensuring that the metal clips grip into the external surface of the insulation.

B. Locate the side panels (3) and (4) with the lower bend inside the bottom L profiles and the upper bend inside the upper L profile. The head of the self tapping screw fixed to the L profile has to coincide with the slot on the bend of the side panel.

To determine which is the left and right panel ensure that the cable clamp plate (5) is positioned toward the front edge.

C. Open the combustion chamber door and fit the front insulation (6), inserting the hinges in the precuts.

D. Fit the rear upper panel (7), and fit the plastic cable clamps (8) to it.

E. Fit the 'Ideal' badge to the front edge of the front top panel (9) and secure with the rubber fixings.

F. Fit the control panel to front top panel (9). Remove the upper shell of the control panel and insert the capillaries of thermometer and thermostats through the slots.

G. Insert the thermometer and thermostat bulbs in the bulb holders as shown in Frame 23 and connect the mains, the burner, the pump(s) and any equipment to the control panel.

Refit the upper shell of the control panel.

Guide the burner plug through the side cable clamp plate (5) on the left or right side opposite the burner door hinge and clamp the cable using the cable clamp supplied.

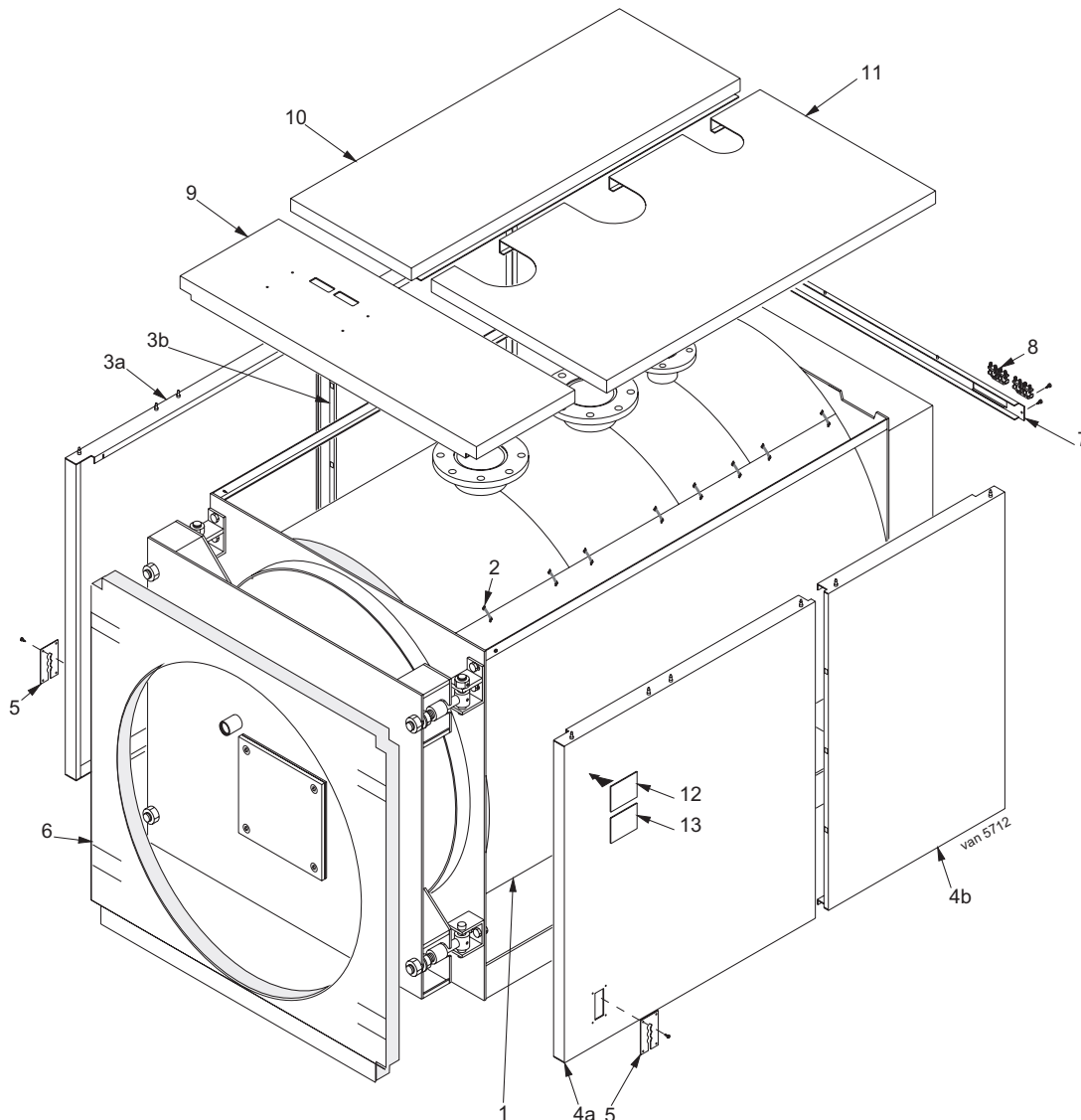
Fix the side cable clamp plates to the casing side panels.

Fit the cables leaving the boiler from rear panel, with the plastic screws of the cable clamps (8).

H. Position the top panels (10 and 11) and press them against the side panels.

I. Remove the protective paper film from data plate and ventilation requirement label (12 and 13) and fit them at the top front corner of the most accessible side panel after removal of dust from the surface.

Data plate and ventilation requirements labels are in the plastic bag containing the documents.



21 CASING ASSEMBLY

Vanguard L 2650

For this boiler model the casing and insulation are contained in 4 cartons.

Assembly of the casing should be carried out in the following steps:

Refer to diagram below for details.

A. Fit the insulation blanket (1) onto the boiler shell and secure into place using the elasticated straps (2) provided, ensuring that the metal clips grip into the external surface of the insulation.

In order to fit the bulb holders in the upper part of the shell a cut has to be made.

B. Locate the side panels (3) and (4) with the lower bend inside the bottom L profiles and the upper bend inside the upper L profile. The head of the self tapping screw fixed to the L profile has to coincide with the slot on the bend of the side panel.

To determine which is the left and right panel ensure that the cable clamp plate (5) is positioned toward the front edge.

C. Fit the rear upper panel (6), and fit the plastic cable clamps (7) to it.

D. Open the combustion chamber door and fit the front insulation (15), inserting the hinges in the pre-cuts.

E. Fit the 'Ideal' badge to the front edge of the front top panel (8) and secure with the rubber fixings.

F. Fit the control panel to front top panel (8). Remove the upper shell of the control panel and insert the capillaries of thermometer and thermostats through the slots.

G. Insert the thermometer and thermostat bulbs in the bulb holders as shown in Frame 23 and connect the mains, the burner, the pump(s) and any equipment to the control panel.

Refit the upper shell of the control panel.

Guide the burner plug through the side cable clamp plate (5) on the left or right side opposite the burner door hinge and clamp the cable using the cable clamp supplied.

Fix the side cable clamp plates to the casing side panels.

Fit the cables leaving the boiler from the rear panel with the plastic screws of the cable clamps (7).

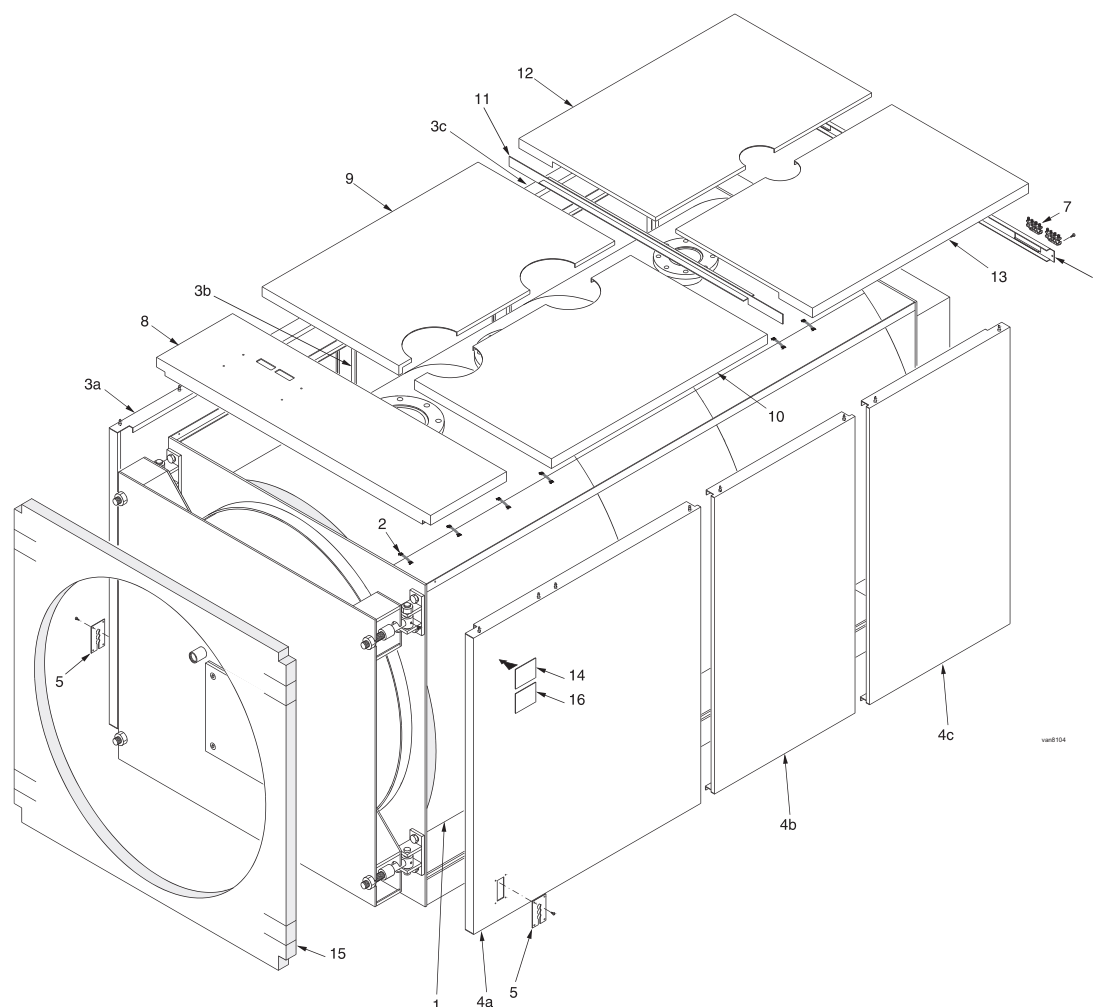
H. Position the top panels (9 and 10) and press them against the side panels.

I. Fit the support (11) positioning it under the rear side of the top panels (9 and 10).

J. Fit the rear top panels (12 and 13) and press them against the side panels.

K. Remove the protective paper film from data plate and ventilation requirement label (14 and 15) and fit them at the top front corner of the most accessible side panel after removal of dust from the surface.

Data plate and ventilation requirements labels are in the plastic bag containing the documents.



INSTALLATION

22 CASING ASSEMBLY

Vanguard L 3000 to 4000

For these boiler models the casing and insulation are contained in 3 cartons.

Assembly of the casing should be carried out in the following steps:

Refer to diagram below for details

- A.** Fit the insulation blanket (1) onto the boiler shell and secure in to place using the elasticated straps (2) provided, ensuring that the metal clips grip into the external surface of the insulation.

Make a convenient cut in the upper part of the insulation blanket to get easy access to the bulb holders.

- B.** Position the L.H. side panels (2 & 3) with the lower bend inside the bottom L profiles and hook them to the screws fitted to the upper square tube.

To determine which one of the front side panels is the left or the right ensure that the cable clamp plates (7) are positioned facing toward the front edge.

- C.** Position the R.H. side panels (6 and 3) with the lower bend inside the bottom L profiles and hook them to the screws fitted to the upper square tube.

To determine which one of the front side panels is the left or the right ensure that the cable clamp plates (7) are positioned facing toward the front edge.

- D.** Fit the control panel board to the left or right front side panel. Remove the upper shell of the control panel and insert the capillaries of the thermometer and thermostats through the slots.

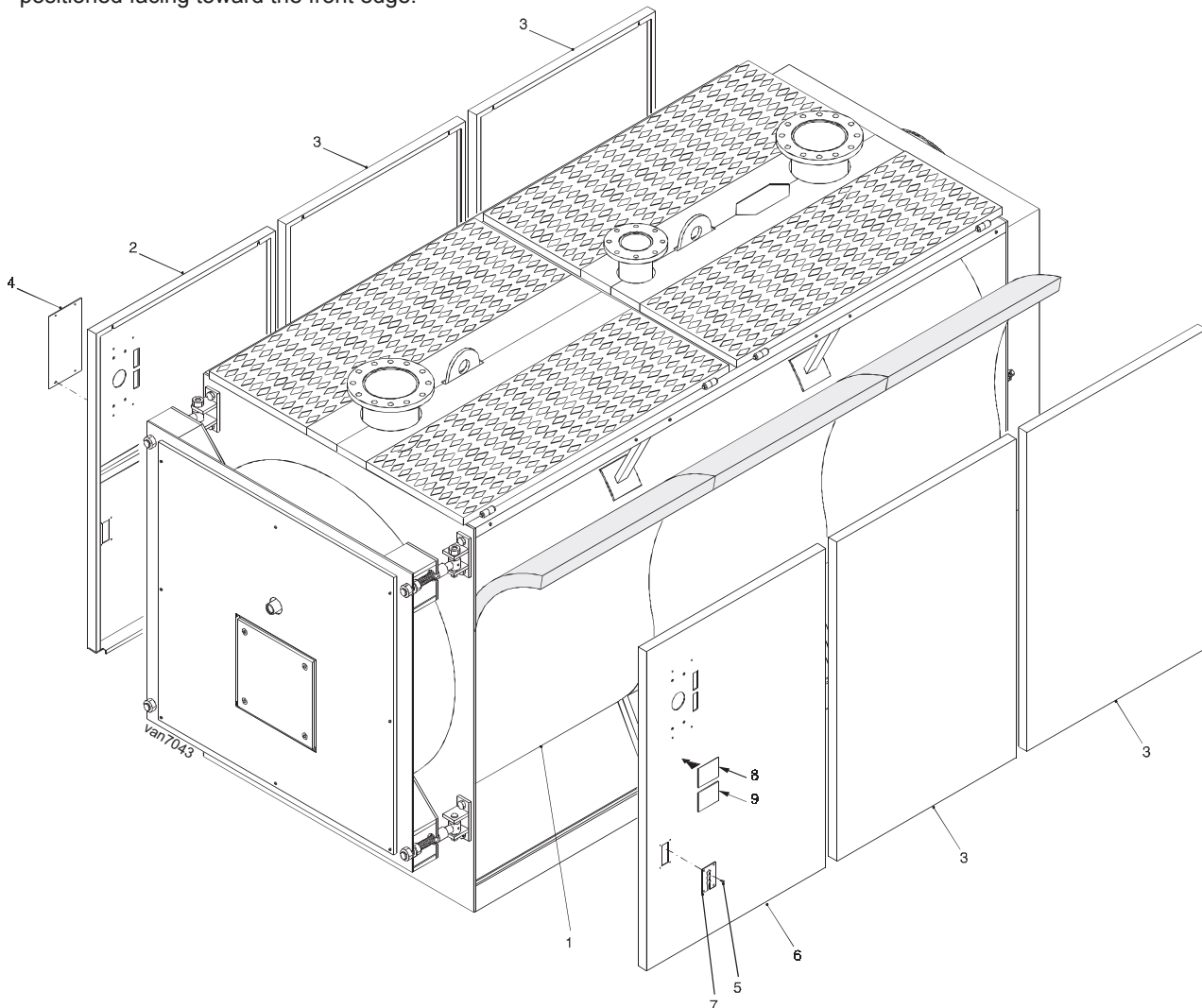
- E.** Insert the thermometer and thermostat bulbs in the bulb holders as shown in Frame 23 and connect the mains, the burner, the pump(s) and any equipment to the control panel.

Refit the upper shell of the control panel.

Guide the burner plug through the side cable clamp plate (7) on the left or the right side opposite the burner door hinge and clamp the cable using the cable clamp supplied. Fix the side cable clamp plates (5) to the casing side panels (2 & 6).

- F.** Remove the protective paper film from data plate and ventilation requirement label (8 and 9) and fit them at the top front corner of the most accessible side panel after removal of dust from the surface.

Data plate and ventilation requirements label are in the plastic bag containing the documents.



INSTALLATION

23 POSITION OF THE THERMOMETER/THERMOSTAT SENSORS IN THE BULB HOLDER

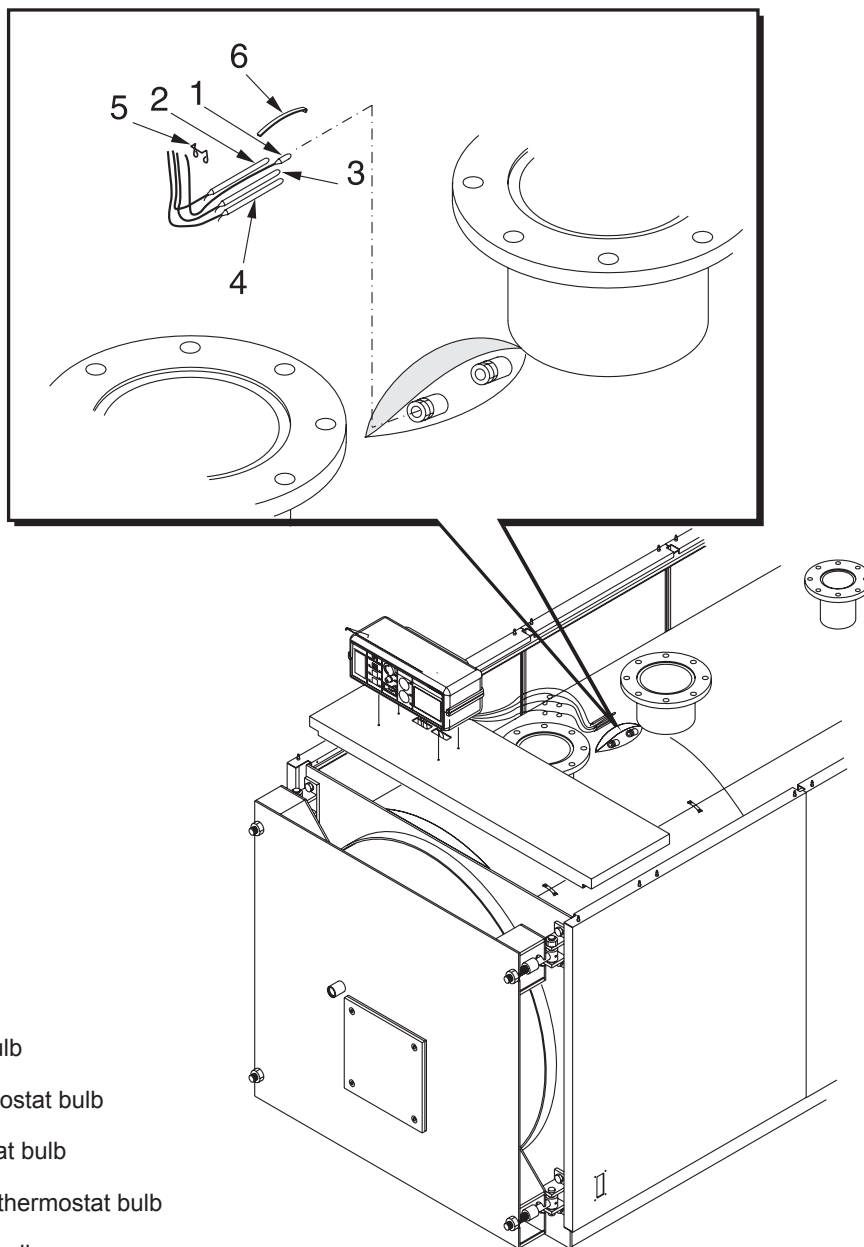
Vanguard L 1100 to 4000

Insert the sensors in the bulb holder in the upper part of the boiler, in the following order:

1. Thermometer
2. Operating (H/L) thermostat
3. Safety thermostat
4. Minimum thermostat

Ensure that the sensors are inserted to the bottom of the bulb holder and then secure them with the retaining clip (5).

In case some other thermostat is necessary, its sensors will be put in the 2nd bulb holder together with the contact spring (6) to improve the sensitivity.



LEGEND

1. Thermometer bulb
2. Operation thermostat bulb
3. Safety thermostat bulb
4. Minimum temp. thermostat bulb
5. Sensor retaining clip
6. Contact spring

24 CASING ASSEMBLY

Vanguard L 4500 TO 7000

The boilers 4500 to 7000 are supplied with the casing already mounted, therefore the assembly of the panel board, to proceed in the following way:

Refer to diagram below for details.

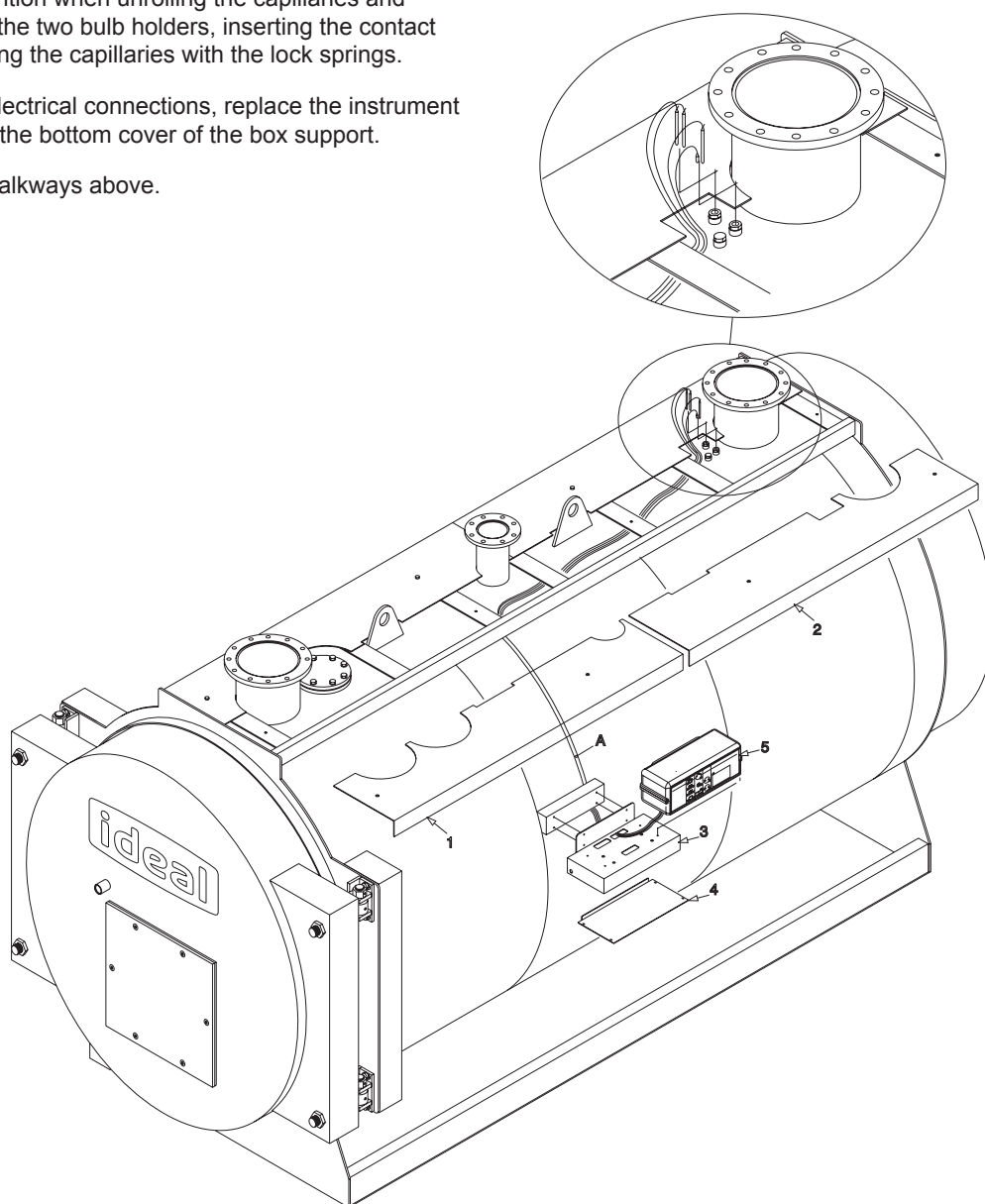
- A. Get off the two RH side upper walkways (pos 1 and 2).
- B. Attache the box to the instrument panel support bracket on the right side of the boiler.
- C. Remove the bottom cover, pos. 4, out of the box support of the instrument panel.

Fix the instrument panel (pos. 5) to the support pos. 3.

- D. After removal of the two side screws from the panel board, rotate its cover towards the front and insert the cables and the capillaries of thermometer and thermostats through the slots on its base. Insert the capillaries of the thermostats in the pipe foreseen for their passage that is found under the casing (see detail "A").

Pay particular attention when unrolling the capillaries and insert the bulbs in the two bulb holders, inserting the contact springs and stopping the capillaries with the lock springs.

- E. After making the electrical connections, replace the instrument panel and replace the bottom cover of the box support.
- F. Replace the two walkways above.



INSTALLATION

25 DOOR ASSEMBLY - VANGUARD L 340 to 630 MODELS

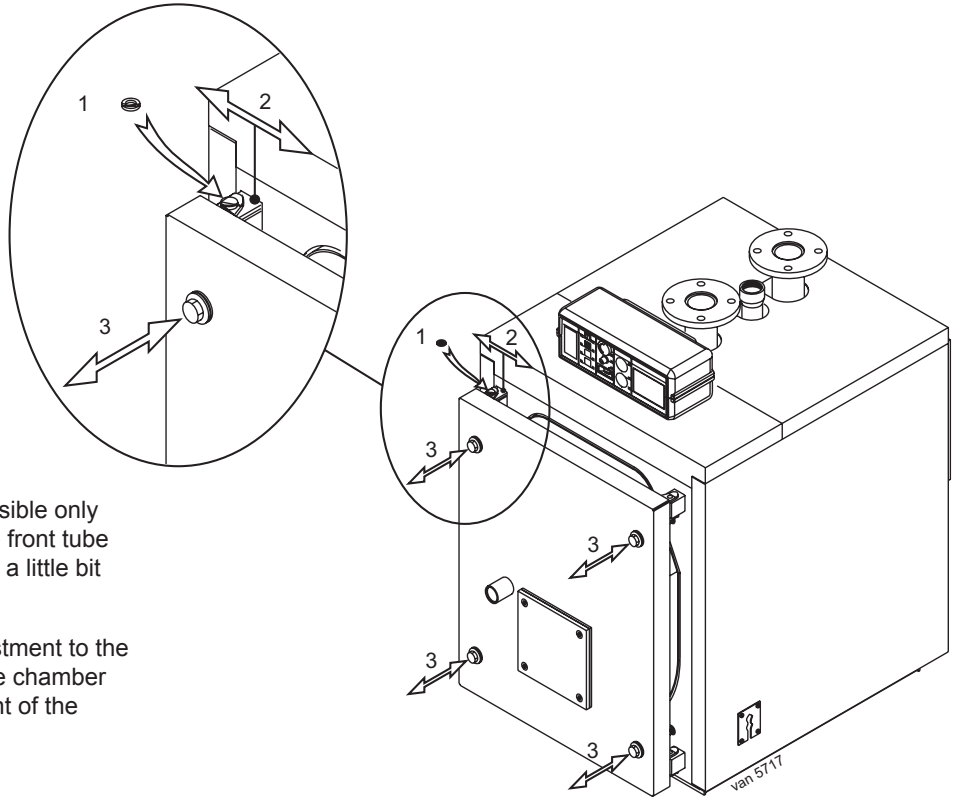
The combustion chamber door is fitted with four fixing points, two on the left hand side which are normally used as hinges.

The right hand side fixings are made with fastening bolts.

The door mounting can be reversed so that it hinges from left to right.

Door Adjustment

1. Vertical door adjustment: is possible only by adding washers of the right thickness under the hinge on which the door rotates.
2. Transverse door adjustment: is possible only by loosening the hinges fixed to the front tube plate of the boiler and moving them a little bit sideways.
3. Axial door adjustment: further adjustment to the position of the door in relation to the chamber can be achieved through adjustment of the screws.



26 DOOR ASSEMBLY - VANGUARD L 760 to 970 MODELS

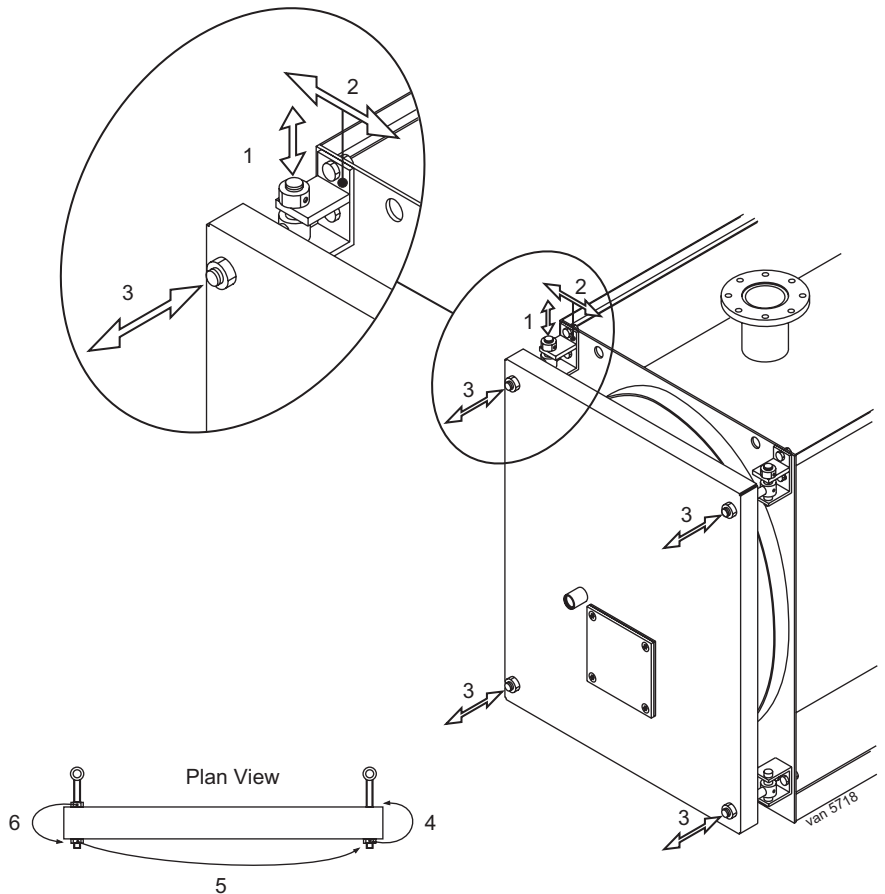
The combustion chamber door is fitted with four fixing points, two on the left hand side which are normally used as hinges.

The right hand side fixings are made with fastening bolts.

The door mounting can be reversed so that it hinges from left to right. However, when reversing the door the counternuts will have to be moved from left to right, following the sequence shown 4, 5 and 6.

Door Adjustment

1. Vertical door adjustment: is possible by means of rotation of nut after removal of the grub screw.
2. Transverse door adjustment: is possible only by loosening the hinges fixed to the front tube plate of the boiler and moving them a little bit sideways.
3. Axial door adjustment: further adjustment to the position of the door in relation to the chamber can be achieved through adjustment of the nuts and counternuts.



INSTALLATION

27 DOOR ASSEMBLY - VANGUARD L 1100 to 7000

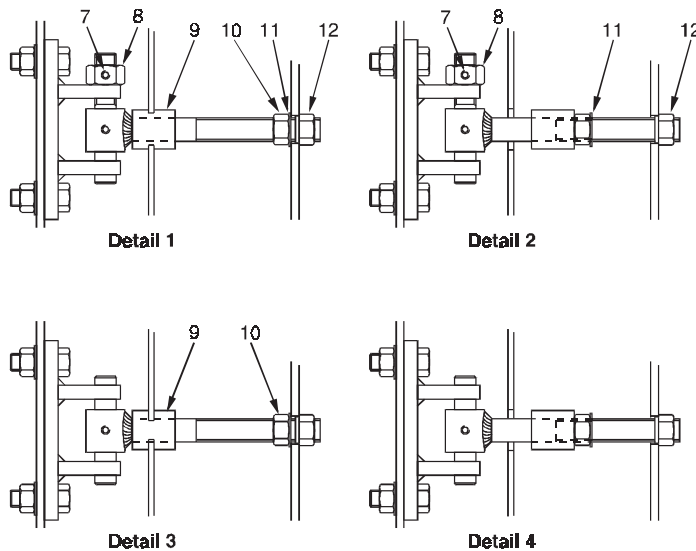
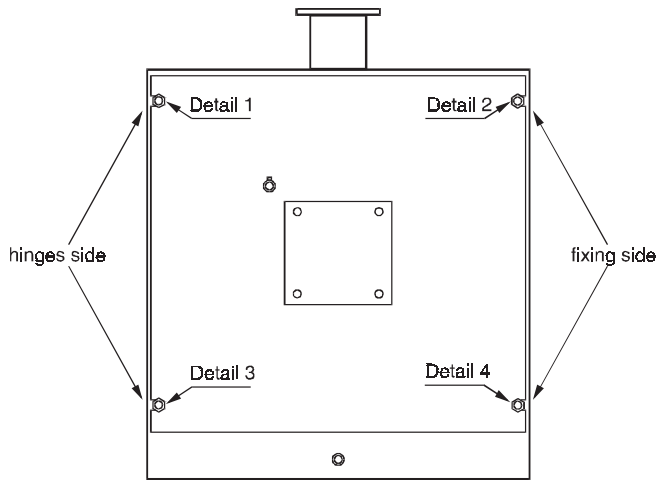
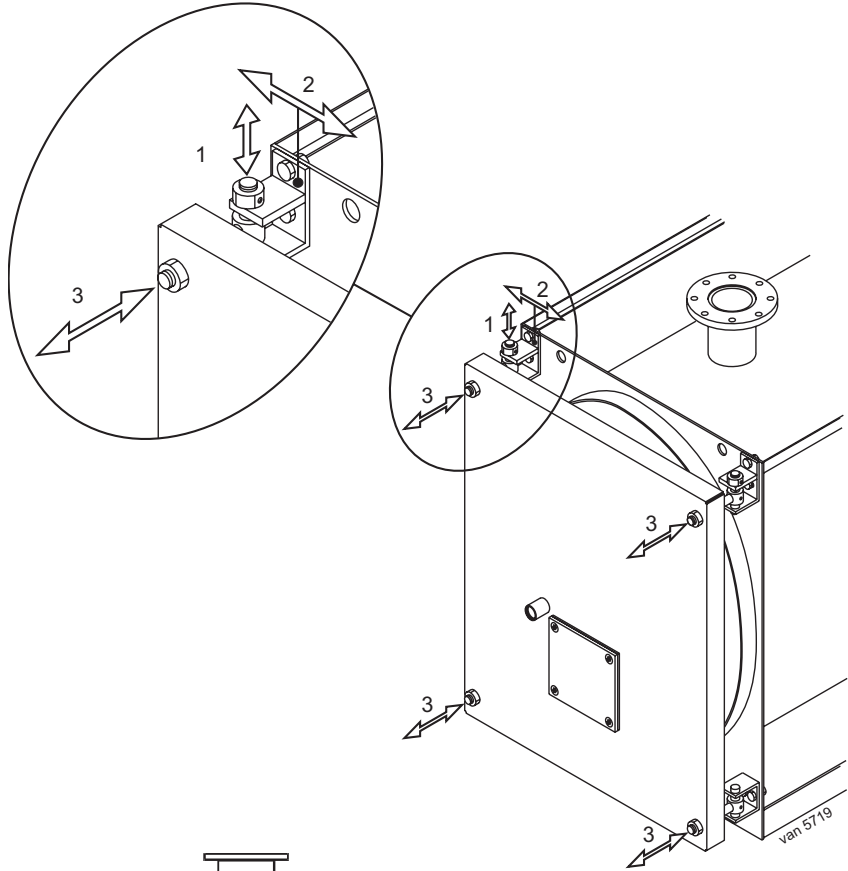
The combustion chamber door is fitted with four fixing points, two on the left hand side which are normally used as hinges.

The right hand side fixings are made with fastening bolts.

The door mounting can be reversed so that it hinges from left to right. However, when reversing the door the bushing (9), nut (10) and washer (11) will have to be moved as shown below (details 1 and 3 for hinge side) (details 2 and 4 for hinge side).

Door Adjustment

1. Vertical door adjustment: is possible by means of rotation of nut after removal of the grub screw.
2. Transverse door adjustment: is possible only by loosening the hinges fixed to the front tube plate of the boiler and moving them a little bit sideways.
3. Further adjustment to the position of the door in relation to the chamber can be achieved through adjustment of the nuts (12) and counter nuts (10).



28 BURNER

The Vanguard boiler range is suitable for use with oil, gas, or dual fuel burners. Nuway, EOGB and Riello burners can be supplied as standard.

Burners from other manufacturers can be supplied on request.

Burners will be supplied for on/off or high/low operation.

Modulating burners can be supplied on request.

Burner Door

Burner doors have been pre-drilled to match the standard burners offered. Should another manufacturer's burner be used then it is the responsibility of the burner manufacturer to match the burner to the doors available.

Burner Mounting

When mounting the burner to the boiler front door, check for soundness around the burner flange and its gasket. Each boiler is supplied with a length of ceramic fibre rope (cross section 25x25 mm). This rope has to be put around the burner tube to completely seal the tube and the hole in the door insulation.

Gas Supply

The gas supply **MUST** be sized in accordance with British Gas recommendations and be prefabricated in compliance with CP 331 Pt 1 and any Local Gas Board installation standards.

The Local Gas Board should be contacted, at a stage prior to installation, for any advice or information required. Details and advice, relating to the use of L.P.G. for firing the Ideal Vanguard L range of boilers, are available on request to **Ideal**.

Oil Storage Tank

The oil storage tank, oil supply pipe and connections to the burner unit **MUST** comply with the requirements of BS 779 and CP 5410.

The installation should conform to the recognised standards of good practice in the trade and comply with the relevant Codes of Practice, Building Regulations and Local Authority, Fire and Insurance requirements.

Conformity of the Burner

All the burners equipping the Vanguard L boilers must be CE certified and must conform to the following directives and standards;

- Gas Appliances Directive (90/396/CEE)
- EN 267 - Automating oil burners of monoblock type testing
- EN 676 - Automatic forced draught burners for gaseous fuels.

Choice of the Burner

The correct choice and the adjustment of the burner are fundamental for the best operation of the boiler and then they shall be accurate and not under evaluated.

The burner will be selected by a verifying that its working diagram (fuel flow rate - pressure in the furnace) is compatible with the same features declared for the boiler.

Remember that the smoke side resistance, i.e. the counterpressure in the furnace, are referred to "0" draught at the chimney base.

It is also convenient that the burner blast tube has its length not shorter than that shown in the table and that the flame has a shape suitable to the characteristics of the Vanguard L furnace.

In fact to better exploit all the heating surface of the reversed flame furnace, it is necessary to use burners capable to guarantee a long and narrow flame at all operating conditions or also at minimum input in case of two stage or modulating burners.

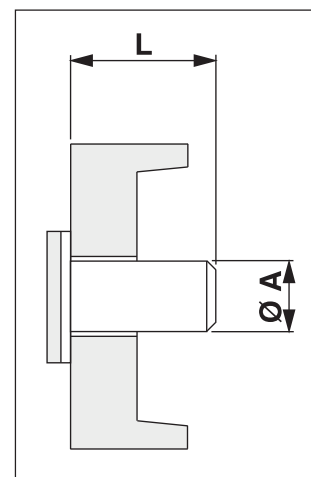
Too short flames can cause a localised overheating of the front part of the furnace, and the combustion products, not sufficiently cooled down, entering the smoke pipes at a too high temperature, can cause important damages to the boiler.

The burner manufacturing companies are available to supply the flame dimensions developed by their burners.

More informations are given in the paragraph "Commissioning".

Burner Blast Tube Minimum Length

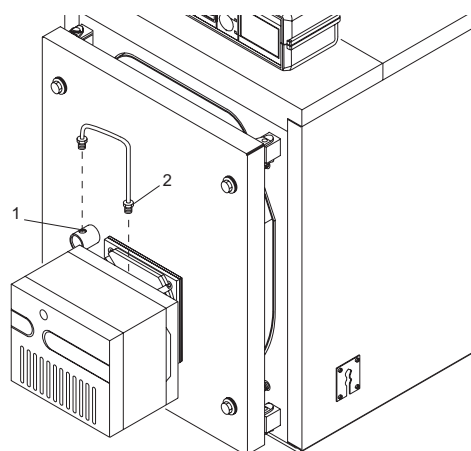
Model	Ø A mm	L mm
340-630	220	250
760-970	270	270
1100-1320	320	300
1570-1850	320	320
2200-2650	380	350
3000	380	400
3500-4000	400	400
4500-6000	500	480
6500-7000	500	630



29 FLAME INSPECTION

The Vanguard boiler range is provided with a sightglass tube placed above the burner door.

The sightglass tube has a thread (1) suitable for a pressure gauge and or for a cooling line (2) (not supplied) connection as shown in the diagram.

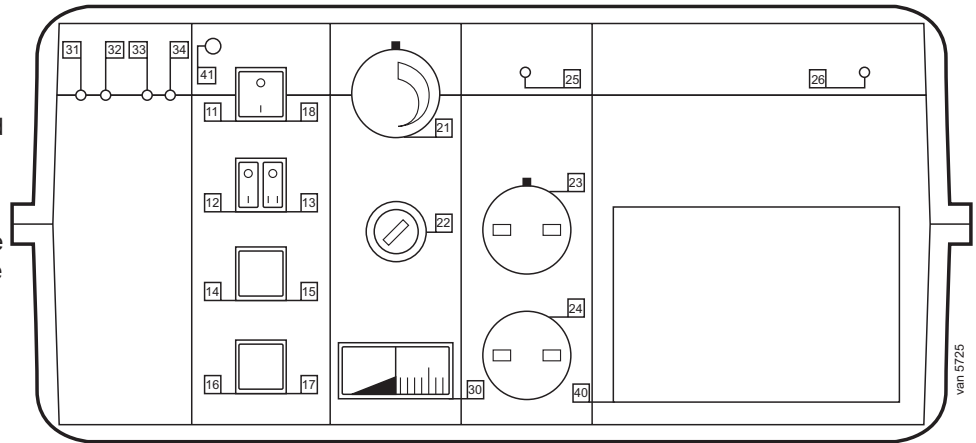


INSTALLATION

30 STANDARD PANEL BOARD

PANEL BOARD TYPE 24969 - FUNCTIONS DESCRIPTION

Through the main switch **11** the panel board and all the equipments connected to it will be under power. The switches **12** & **13** switch On and OFF the power to the burner and the Heating pump (via a relay, if necessary). With the thermostat **21** the working temperature of the boiler can be adjusted. This thermostat is provided with a DPDT contact, for the control of a two stage burner. The differential between the switching points of the two double pole is 6°C (not adjustable). The minimum thermostat, accessible through the opening of the panel board cover, switches OFF the C.H. pump during the reaching of the steady state and up to the obtention of 50 °C within the boiler. On the electrical supply line to the boiler a switch with fuses is to be foreseen.



11. Boiler ON/OFF Switch (illuminated)
Position I . . ON. Position O . . OFF.

12. Burner Switch
Position I . . ON. Position O . . OFF.

13. Pump Switch
Position I . . ON. Position O . . OFF.

21. Boiler ON/OFF, High/Low Thermostat
(High fire 54°C - 84°C, low fire 60°C - 90°C)

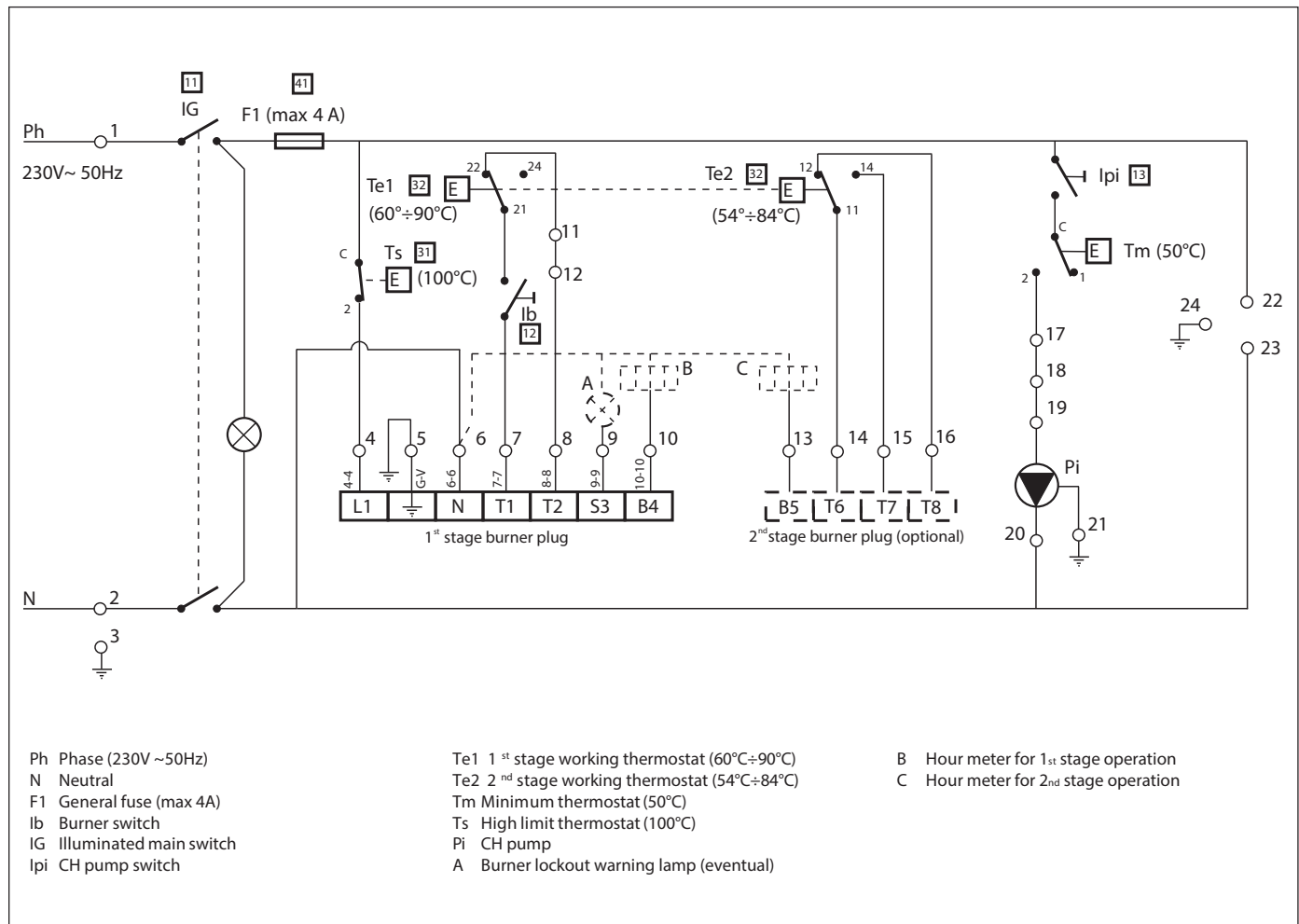
22. Boiler Safety Thermostat
(Set at 100°C) with manual reset.

24. Minimum Thermostat
(Set at 50°C) Controls the pump operation.

30. Thermometer
Indicator flow temperature.

41. Fuse
Rated at 4 amps.

ELECTRICAL WIRING DIAGRAM FOR SINGLE PHASE BURNER AND PUMP



INSTALLATION

31 WIRING HARNESS

The Burner control circuit may be fitted with 1 or 2 standard European connector-plugs (as supplied) and can be fitted directly to the burners fitted with connector-sockets. In the case of a burner not fitted with sockets, connect the leads to the terminal bar on the burner, proceeding as follows:

No (9) [1] Control circuit live interrupted in panel by Safety Thermostat TS and panel ON/OFF switch IG. Connect to the control circuit live terminal of burner.

Note.

The connector terminal for this control phase must be separate from those of the power supply phase(s) which are wired directly to the burner via the installer supplied burner mains relay.

No (8) [N] Neutral from control panel interrupted by panel ON/OFF switch. Connect to Neutral terminal of burner control box.

No (7) T1 Live feed from burner control circuit downstream of burner ON/OFF switch. Connect to live side of first stage control thermostat (High temperature setting).

No (6) T2 Return from 1st stage control thermostat (High temperature setting). Live on this lead, hence on T2 allows burner to fire on low fire in a 2 stage burner.

No (10) S3 Burner lockout indicator. Feeds signal from lockout terminal on burner control box to a remote lock out indicator.

No (4) B4 Feed to 1st stage operating indicator from burner low fire control. Indicates low fire in operation. Essentially feed back from live on No (6) T2.

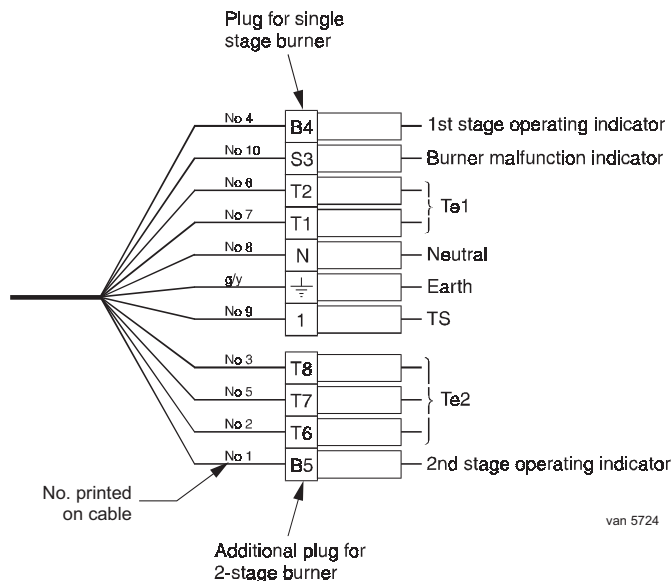
No (2) T6 Live feed from burner control circuit downstream of burner ON/OFF switch. Connects to live side of 2nd stage control thermostat (low setting thermostat).

No (3) T8 Return from 2nd stage control thermostat (low temperature setting). Live on this lead, hence on T8 allows burner to fire on high fire in a 2 stage burner.

No (5) T7 Back contact from 2nd stage control thermostat (low temperature setting). Live on this lead, hence T7 indicates high fire out of operation (used for modulating burners only).

No (1) B5 Feed to 2nd stage operating indicator from burner high fire control to boiler panel. Indicates high fire in operation. Essentially feed back from live on No (3) T8.

g/y Earth



32 HEATING PUMP OVERRUN

The heating pump overrun is controlled by the minimum temperature thermostat.

33 FUEL OIL OR GAS CONNECTIONS

Refer to the instructions supplied with the burner.

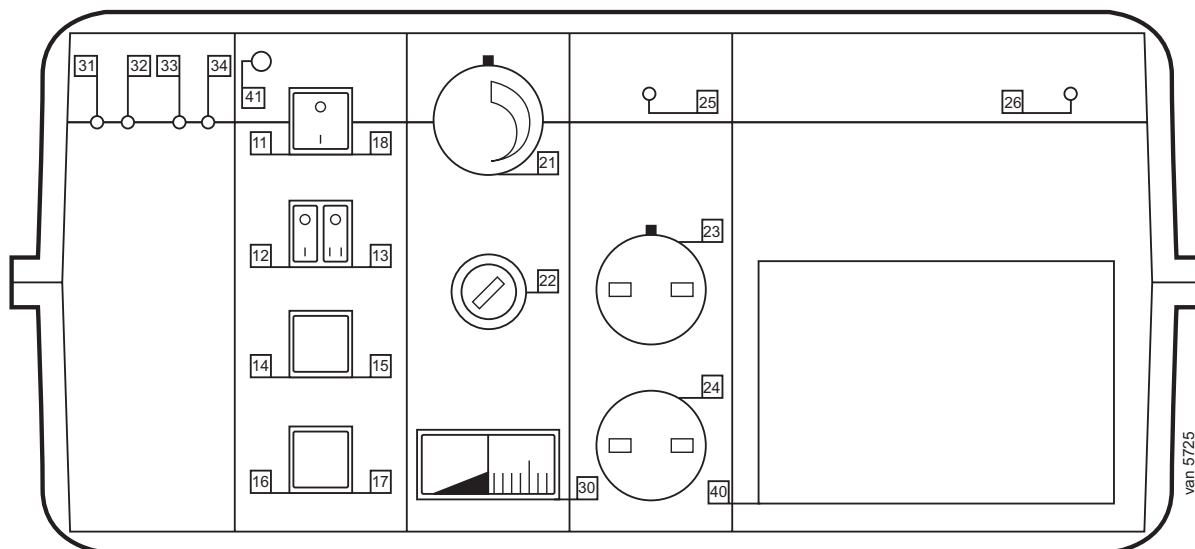
INSTALLATION

34 COMMISSIONING AND TESTING

IMPORTANT. Domestic hot water circuits (if they exist) and heating circuits must have been filled and bled, and leak tightness tests must have been carried out on them, in accordance with the instructions for the domestic hot water calorifier (if existing) and boiler.

Refer to the following instructions to start up the boiler.

- the instructions delivered with the burner.
- the instructions delivered with the domestic hot water calorifier, (if existing).



11. Boiler ON/OFF Switch (illuminated)
Position I . . ON. Position O . . OFF.

12. Burner Switch
Position I . . ON. Position O . . OFF.

13. Pump Switch
Position I I . . ON. Position O . . OFF.

21. Boiler ON/OFF, High/Low Thermostat
(High fire 54°C - 84°C, low fire 60°C - 90°C)

22. Boiler Safety Thermostat
(Set at 100°C) with manual reset.

24. Minimum Thermostat
(Set at 50°C) Controls the pump operation.

30. Thermometer
Indicator flow temperature.

41. Fuse
Rated at 4 amps.

Control of Water Temperature

The water temperature is controlled by the boiler thermostat (item 21). The temperature range of the thermostat is 50° - 90°C for ON/OFF operation. For boilers fitted with high/low burners the thermostat also incorporates a feature which automatically controls the burner changeover from high fire to low fire at a fixed 6° below the flow temperature setting (i.e. 44°C - 84°C).

35 POSITIONING OF THE TURBULATORS

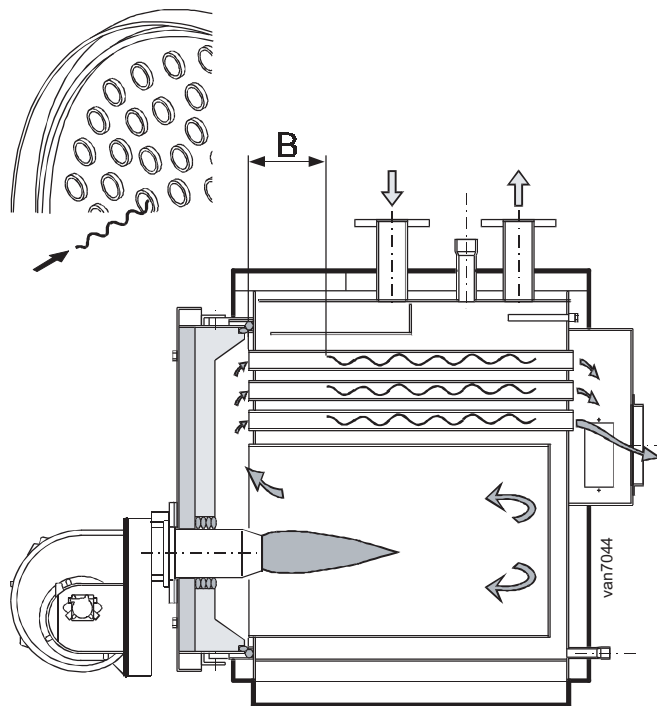
The Vanguard L boilers are designed to be used in an output range to improve the seasonal efficiency and the possibility to be adopted in all the heating installations. The output must be adjusted at the commissioning stage, according to the system designer indications and, in any case, within the operation range for each boiler model, by the burner technician, which will determine the fuel throughput.

In any case **the turbulators will be placed, inside the relevant smoke pipes, at a distance, from the front tube plate, as shown in the picture on the right.**

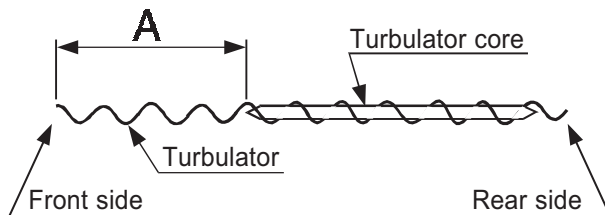
When using the boiler at minimum output the smoke temperature will not be lower than 160°C.

In contrary case, before get in touch with our After Sale Service Dept. ascertain that the turbulators are in all the smoke pipes. The commissioning of the burner must be performed under the responsibility of a specialised and well trained burner technician, authorised by the burner manufacturer.

In that occasion a commissioning report has to be filled out.



POSITION OF THE CORE INSIDE THE TURBULATOR (ONLY FOR MODELS VA L 340-870)



VA L 340	A =	320
VA L 420	A =	390
VA L 510	A =	560
VA L 630	A =	700
VA L 760	A =	590
VA L 870	A =	810

Note: In the case of boiler use at minimum output, do not place the core inside the turbulator.

POSITION OF THE TURBULATORS INTO THE BOILER SMOKE PIPES

Model		At min. output	At max. output
VA L 340	B =	200	200
VA L 450	B =	250	250
VA L 510	B =	200	200
VA L 630	B =	300	300
VA L 760	B =	330	330
VA L 870	B =	340	340
VA L 970	B =	370	370
VA L 1100	B =	200	200
VA L 1320	B =	410	310
VA L 1570	B =	910	750

Model		At min. output	At max. output
VA L 1850	B =	1100	900
VA L 2200	B =	1290	1130
VA L 2650	B =	1470	1260
VA L 3000	B =	1540	1380
VA L 3500	B =	100	100
VA L 4000	B =	500	500
VA L 4500	B =	500	500
VA L 5000	B =	500	500
VA L 5500	B =	600	600
VA L 6000	B =	600	600
VA L 7000	B =	900	900

INSTALLATION

36 COMMISSIONING AND TESTING CONT'D

A. ELECTRICAL INSTALLATION

1. Checks to ensure electrical safety should be carried out by a competent person.
2. ALWAYS carry out the preliminary electrical system checks, i.e. earth continuity, polarity, resistance to earth and short circuit, using a suitable meter.

B. FOR GAS INSTALLATION

1. The whole of the gas installation, including the meter, should be inspected and tested for soundness and then purged in accordance with the recommendations of the relevant standards listed on page 4.

WARNING. Whilst effecting the required gas soundness test and purging air from the gas installation, open all windows and doors, extinguish naked lights and DO NOT SMOKE.

37 INITIAL LIGHTING

1. Check that the system has been filled and the boiler is not air locked - air in the boiler could damage the heat exchanger.
2. Check that all the drain cocks are closed and any valves in the flow and return are open.
3. Check that the GAS SERVICE COCK IS ON.
4. Unscrew the overheat reset button cap (22) and press the reset button.
5. Set the boiler thermostat (21) to maximum.
6. Switch the burner switch (12), and pump switch (13) to the ON position.
7. Switch the electricity supply ON and check that all the external controls are calling for heat. Set main boiler switch (11) to on.
8. The burner will commence the ignition sequence. If the burner has failed to light then it will lock out. Press the reset button to restart the ignition sequence.
9. Operate the boiler for 20 minutes and for gas fired boilers check the gas rate (Pages 1 & 2).
10. Refer to the burner instructions for specific operating features.

38 GENERAL CHECKS

Make the following checks for correct operation.

1. The correct operation of ANY secondary system controls should be proved. Operate each control separately and check that the main burner or circulating pump, as the case may be responds.
2. Water circulation system;
 - a. With the system HOT examine all water connections for soundness.
 - b. With the system still HOT, turn off the gas or oil burner, water and electricity supplies to the boiler and drain down to complete the flushing process.
 - c. Refill and vent the system, clear all air locks and again check for water soundness.
 - d. Balance the system.
3. Finally set the controls to the User's requirements.

39 HANDING OVER

ROUTINE OPERATION

Describe the function of the boiler and system controls and show how they are adjusted and used.

Hand these Installation and Servicing Instructions, User's Instructions and Log book to the customer and request him to keep them in a safe place for ready reference.

IMPORTANT. Point out the owner that the boiler must have regular maintenance and cleaning, at least annually, in order to ensure reliable and efficient operation. Regular attention will also prolong the life of the boiler and should preferably be performed at the end of the heating season.

Recommend that a contract for this work should be made with a Gas Safe Registered Engineer for gas fired boilers.

40 SYSTEM MAINTENANCE

Water Level

Check the water level in the installation regularly, and if necessary top it up without allowing a sudden inlet of cold water into the hot boiler.

The operation should only be necessary a few times per season; if it has to be done more frequently, there is probably a leak which should be found and corrected without delay.

Safety Devices

Check that safety devices, and particularly the heating circuit safety valve, are working correctly at regular intervals, and at least when the boiler is cleaned.

Draining

It is recommended that an installation should not be emptied unless absolutely necessary.

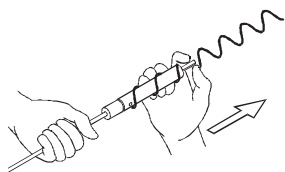
For example: when leaving for several months and/or there is a risk of frost in the building.

In the event of a long shutdown of the boiler we would recommend the following:

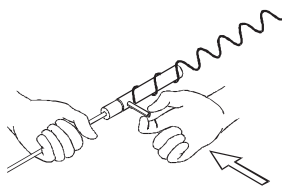
1. The boiler must be fully maintained.
2. IF the boiler is to be isolated during the winter period then we would advise that the system be treated with an antifreeze to prevent the heating water from freezing. Otherwise drain the system completely.

41 TURBULATORS REMOVAL

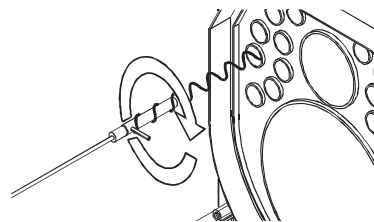
Detail 1:
Fit the brush handle extension onto the turbulator remover.
Withdraw the pin from turbulator.



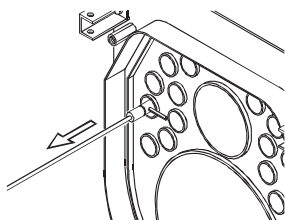
Detail 2:
Fit the pin in the radial hole with a hammer.



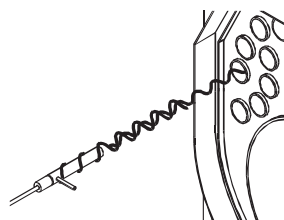
Detail 3:
Screw the turbulator remover onto the turbulator.



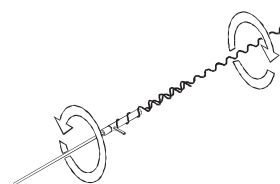
Detail 4:
Turn up to unblock the turbulator.



Detail 5:
Withdraw the turbulator.



Detail 6:
Turn the remover counterclockwise to release the turbulator.



van7046

The procedure from detail 3 to 6 has to be repeated for all the turbulators.

42 SAFETY

For boilers with gas burners

It is the law that any service work must be carried out by a Gas Safe Registered Engineer.

WARNING. Always turn off the gas supply at the gas service cock, and switch off and disconnect the electricity supply to the appliance and any external controls before servicing.

IMPORTANT. After completing the servicing or replacement of components always:

- Test for gas soundness
- Check the water system is correctly filled and free of air. Air in the boiler could cause damage to the heat exchanger.
- With the system hot examine all water connections for soundness.
- Check the gas rate and measure the combustion CO/CO₂ content.
- Complete the boiler log book.
- Carry out functional checks as appropriate.

43 SERVICING SCHEDULE

To ensure the continued safe and efficient operation of the appliance it is recommended that it is checked at regular intervals and serviced as necessary. The frequency of servicing will depend upon the installation condition and usage but should be carried out at least annually.

Ideal does not accept any liability resulting from the use of unauthorised parts or the repair and servicing of appliances not carried out in accordance with the Company's recommendations and specifications.

1. Light the boiler and carry out function checks, noting any operational faults.
2. Run the boiler for 10 minutes and then check the burner rate.
3. Refer to the commissioning report or log book for the previous set up details and check for any changes.
4. Close off the fuel supply to the burner.
5. Ensure that the boiler has been cooled to ambient temperature.
6. Isolate the mains supply to the boiler and burner.
7. Open the combustion chamber door after disconnecting the supply pipe to the burner.
8. Remove the nuts and swing the burner door open to clean the burner. (Refer to burner manufacturers instructions)
9. Remove the turbulators.
10. Thoroughly clean the flue tubes and turbulators.
11. Remove the rear cleanout covers and dispose of the debris/soot that may have accumulated.
12. Replace the rear cleanout covers after first inspecting and if necessary replacing the seal.
13. Replace the flue turbulators into the flue tubes.
14. Check the condition of the combustion chamber door insulation.
15. Check the condition of the combustion chamber door seal.
16. Close the combustion chamber door.
17. Re-assemble the burner connections
18. After completion of servicing refer to previous frame for reference to final safety checks.
19. Complete the log book.

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Technical Training

The Ideal Technical Training Centre offers a series of first class training courses for domestic, commercial and industrial heating installers, engineers and system specifiers.

For details of courses please ring:..... 01482 498432



Ideal Boilers Ltd. pursues a policy of continuing improvement in the design and performance of its products. The right is therefore reserved to vary specification without notice.

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Registered Office

Ideal Boilers Ltd., PO Box 103, National Avenue, Kingston Upon Hull, HU5 4JN

Tel 01482 492251 Fax 01482 448858

Registration No. London 322 137

Ideal Technical Helpline: 01482 498376

www.idealcommercialboilers.com