Oil/Gas-Fired Near-Condensing Hot Water Boiler

De Dietrich GT 530A and GT530AE Series

Assembly, Installation and Service Manual

Product may not be exactly as shown.

De Dietrich

www.dedietrichboilers.com

DDR_G30A/AE _ISM_V4.0 03/2014

Guideline of Notices

Warning:
indicates presence of hazards that can cause, if not avoided, severe personal injury, death or substantial property damage.

Caution:
indicates presence of hazards that will or can cause, if not avoided, minor personal injury or property damage.

Notice:
Application comment for optimum use of equipment and adjustment as well as useful information.

Reference to an other instruction book.

Observe the following symbols

DANGER
due to explosion of gas.

- Work only on gas components when you have a license to do so.
- Note that the assembly of gas and vent connections, the initial start-up, the electrical connections, the maintenance and service can only be performed by a licensed service contractor or technician.

DANGER
due to electricity.

- Prior to doing any work on the heating system, disconnect all electrical power to the boiler at the emergency switch.
- It is NOT sufficient to shut off only the boiler control!

CAUTION!
SYSTEM DAMAGE
due to improper installation.

- Observe local and state codes as well as common industry practices during the installation and operation of the heating appliance.

CAUTION!
SYSTEM DAMAGE
due to inadequate cleaning and maintenance.

- A boiler cleaning and maintenance should be performed annually. Verify complete system operation at the same time.
- Correct the problem immediately to prevent damage to the system!

Caution:
Refer to User's Manual regarding the carcinogenic hazard of crystalline silica that may be found during installation, servicing and removal of this boiler.

Safety Considerations

Please observe the following safety instructions.

Read this manual carefully.

Correct installation and adjustment of the burner and the control panel is a precondition for safe, efficient operation of the gas boiler.

Read this manual and the specifications on the safety label carefully before attempting to put the burner into operation.

Do not store or use gasoline or other flammable liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS:
- Do not try to light any appliance.
- Do not touch any electric switch, do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the Fire Department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

Warning:
Improper installation, adjustment, and/or operation could cause carbon monoxide poisoning resulting in injury or death.
This product must be installed and serviced by a professional service technician who is experienced and qualified in hot water boiler installation and gas combustion.

Caution: Strict compliance with these instructions is a precondition for the correct operation of the boiler.

IMPORTANT
Service on this boiler should be undertaken only by trained and skilled personnel.
Keep boiler area clear and free from combustible materials, gasoline and other flammable vapors and liquids.
Do not place any obstruction in the boiler room that will hinder the flow of combustion and ventilating air.
Read these instructions carefully before proceeding with the installation of boiler. Post instructions near boiler for reference by owner and serviceman.
Maintain instructions in legible condition.

"Installation of this equipment must be in accordance to National and local codes having jurisdiction"

[Canadian Installations] CSA B139 for Oil & CSA B149 for Gas
[USA Installations] NFPA 31 for Oil & NFPA 54/ANSI Z223.1 for Gas.

The boiler must be connected to a venting system that will safely exhaust all flue gases in an effective manner.

The boiler is certified to use only these fuels listed below, do not burn garbage or paper, never leave combustible material near it. Do not burn gasoline, crankcase draining or any other fuel containing gasoline.

Natural Gas, Propane Gas & # 2 Fuel Oil

Contents

Regulations and guidelines

The installation and operating instructions shown here are given as a guide for installation and operation and are not meant to replace any State or Local Codes that may apply to the individual installation. Good engineering practice should be used. Any deviation from laws or regulations or industry Code or these instructions will void the boiler warranty and any other responsability or liability of the De Dietrich Thermiques S.A.

Only a qualified and licenced heating professional is to carry out the removal, installation, startup and maintenance of this boiler. The boiler must be installed according to all national and local codes having jurisdiction. The operation of the boiler must be verified and all safety controls checked. Any defect or abnormal operations must be corrected immediately. The entire system requires annual service and cleaning at least once a year.

Installation codes

• THE BOILER SHALL BE ASSEMBLED AND INSTALLED BY A QUALIFIED PROFESSIONAL ONLY. STRICT COMPLIANCE WITH THESE INSTALLATION AND OPERATING INSTRUCTIONS IS A PRECONDITION FOR THE CORRECT AND GUARANTEE OF THE BOILER.

• THE INSTALLATION MUST CONFORM TO THE REQUIREMENTS OF THE AUTHORITY HAVING JURISTRICTION OR, IN THE ABSENCE OF SUCH REQUIREMENTS, TO THE CAN/CGA B-149 FUEL GAS INSTALLATION CODES AND CSA B-139 OIL INSTALLATION CODES.

• WHERE REQUIRED BY THE AUTHORITY HAVING JURISTRICTION, THE INSTALLATION MUST CONFORM TO THE STANDARD FOR CONTROLS AND SAFETY DEVICES FOR AUTOMATICALLY FIRED BOILERS ANSI/ASME CSD-1.

• THE INSTALLATION OF THE RELIEF VALVE SHALL BE CONSISTENT WITH ANSI/ASME BOILER PRESSURE VESSEL CODE, SECTION IV CSA B51.

• THE BOILER MUST NOT BE INSTALLED ON CARPETING.

• IF AN EXTERNAL ELECTRICAL SOURCE IS UTILIZED, THE BOILER WHEN INSTALLED, MUST BE ELECTRICALLY BONDED TO GROUND IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISTRICTION OR, IN THE ABSENCE OF SUCH REQUIREMENTS, WITH THE CANADIAN ELECTRICAL CODE PART 1, CSA C22.1, ELECTRICAL CODE.

LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING CAN CAUSE IMPROPER OPERATION AFTER SERVICINGS. "VERIFY PROPER OPERATION AFTER SERVICE".

General

The boilers of the **GT530 AE** range are automatic independent hot-water boilers designed for connecting to a flue which require a separate fuel oil or gas burner.

1 Boilers covered by this document

The GT 530AE boilers are pressurized hot water heating boilers, connected to a flue, fitted with an independent burner using domestic fuel oil or gas.

The boiler is equipped with standard control panel.

2 Uncrating

Upon arrival, check shipment to ensure all parts have been shipped. Inspect all items for delivery damage. Report all damage and shortages to the delivery carrier. Report any damage and shortages to the Distributor.

Safety and Warranty Information

Symbols used

Read this manual carefully before installing the boiler or putting it into operation. This manual must be retained for future reference. If the information in this manual is not followed exactly, a fire or explosion may result causing property/product damage, serious personal injury and possibly death. Make sure all the requirements detailed in this manual are understood and completed.

	DANGER	Indicates the presence of a hazardous situation which, if ignored, will result in death, serious injury or substantial product/property damage.
	WARNING	Indicates a potentially hazardous situation which, if ignored, can result in danger, serious injury or substantial product/property damage.
	CAUTION	Indicates a potentially hazardous situation which, if ignored, may result in minor injury or product/property damage.
	Notice	Indicates special instructions or installation, operation or maintenance, which are important to equipment but not related to personal injury hazards
	Best Practices	Indicates recommendations made by De Dietrich for the installers which help to ensure optimum operation and longevity of the equipment.

Professional licensed heating contractor

The assembly, installation, adjustment, service and maintenance of this boiler must be performed by a professional licensed heating contractor.

Boiler Documentation

Make sure to read all documentation related to the product before starting the installation. The product documentation should be stored near the boiler where it can be accessed for future reference.

Advice for the owner

When the installation has been completed, the heating contractor has to familiarize the operator/ owner with the installed equipment as well as any safety precautions and requirements, and shut-down procedures. The heating contractor also needs to inform the operator/owner of the need for professional annual servicing of the boiler prior to the heating season.

Contaminated air

Chemicals can contaminate the air and cause by-products during the combustion process. These by-products are poisonous to the occupants and very destructive to De Dietrich boilers.

Carbon monoxide

Flue products can flow into living spaces if improperly installed, adjusted, serviced or maintained. The flue gases contain carbon monoxide which is poisonous.

Fresh air

Adequate ventilation and combustion air must be provided for the equipment as it requires fresh air for safe operation. Make sure the equipment is installed ensuring an adequate supply of fresh air.

Boiler venting

Always operate the boiler with an installed vent system. Carbon monoxide poisoning can be caused by an improperly installed vent system. All combustion products must be vented safely to the outdoors.

Warranty

The information in this manual and any other related manuals must be read and proper procedures followed.
The warranty is rendered null and void if the procedures are not followed as prescribed.

Note:
Some products may not be exactly as illustrated. Information contained herein is deemed as accurate as possible. Clarification of material supply, pipe sizing, thread type, and typographical errors should be noted as soon as possible. Dimensions have been converted from the Metric standard. Fractional rounding may affect dimensional tolerances

Operation

Before operating the boiler, make sure you fully understand its method of operation. Your heating contractor should always perform the initial start-up and explain the system. Any warranty is null and void if these

Flue gas smell

- Deactivate heating equipment.
- Open windows and doors.
- Do not try to light any appliances.
- Do not touch any electrical switches, do not use any phone in your building.
- Immediately call your heating contractor or gas supplier from a neighbour's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Working on the equipment

All personnel working on the equipment or the heating system must have the proper qualifications and hold all necessary licenses.
Ensure main power to equipment, heating system, and all external controls have been deactivated. Close main gas supply valve. Take precautions in all instances to avoid accidental activation of power during service work.

Dangerous conditions

- Deactivate main power immediately.
- Close gas supply valve.

⚠ CAUTION

Incomplete combustion and poisonous gases result if the fresh air intakes in the mechanical room are closed. Never close these openings.

Maintenance and cleaning

Regular inspection and service by a qualified heating contractor is critical to the performance of the boiler. Neglected maintenance impacts the warranty; regular cleaning and maintenance ensures clean, environmentally friendly and efficient operation. We recommend a maintenance contract with a qualified heating contractor.

For safe operation

We recommend that you frequently:

- Check for debris which could obstruct the flow of flue gases. The vent or chimney must not be blocked. A blocked or partially blocked vent or chimney can cause flue gases to leak into the structure. Flue gases leaking into the house can cause injury or death. Blocked or partially blocked chimneys must have the blockage removed by a qualified heating contractor.
- Check pressure gauge for correct system (water) pressure.
- Check for water on the floor from the discharge pipe of the pressure relief valve or any other pipe, pipe joint, valve or air vent.
- Check for moisture, water, or appearance of rust on the flue gas pipes, their joints as well as vent dampers, or side wall vent terminals (if so equipped).
- Ensure that nothing is obstructing the flow of combustion and ventilation air and no chemicals, propane tanks, garbage, gasoline, combustible materials, flammable vapors and liquids are stored (not even temporarily) in the vicinity of the boiler.
- Do not allow unsupervised children near the boiler.
- Service/inspection of the boiler and the system is recommended once a year. Maintenance, service and cleaning are specified in the Installation instructions.
- Before the heating season begins, the boiler with its burners should be serviced by a qualified heating contractor. Service contracts may be established through gas suppliers or licensed contractors in your area.

⚠⚠ WARNING

There are no user serviceable parts on the boiler, burners or control. Failure to heed this warning can cause property damage, severe personal injury, or loss of life.

⚠ CAUTION

Improper installation, adjustment, service, or maintenance can cause flue products to flow into living space. Flue products contain poisonous carbon monoxide gas which can cause nausea or asphyxiation resulting in severe personal injury or loss of life.

⚠ CAUTION

Should overheating occur or the gas supply fail to shut off, do not disconnect the electrical supply to the pump. Instead, shut off the gas supply at a location external to the appliance.

⚠ CAUTION

This appliance may sometimes contain crystalline silica. When installing or removing this appliance, you should wear protective gloves, clothing and mask to prevent any type carcinogenic illness.

⚠ CAUTION

The operator/ultimate owner is required to have the heating boiler, burners, and controls checked, as a minimum once per year, by the original installer or by a competent heating contractor familiar with the equipment. Defects must be corrected immediately.

Do not use this boiler if any part has been under water. Immediately call a qualified heating contractor to inspect the boiler and to replace any part of the control system and any gas control which has been under water.
Do not store chemicals containing chlorine or other corrosive materials near the boiler, such as bleach, cleaning solvents, detergents, acids, hair spray, spray cans, paint thinners, paint, or water softener salt.

Important

Do not use the boiler if any section of it has been subjected to water or submerged in water. Immediately call your service company to inspect and replace any part of the control system and gas components which have been subjected to water or submerged in water.

Boiler modification and spare parts

This boiler uses specific original manufactured parts. The boiler must not be modified or non-OEM parts used without the written approval from DDR Americas Inc.

Carbon monoxide

The installation of carbon monoxide detectors is highly recommended by the U.S. Consumer Product Safety Commission for buildings with gas burning equipment. Sources of carbon monoxide include exhaust vents for gas appliances or wood burning fireplaces that are not properly vented, malfunctioning furnaces and exhaust fumes from idling cars.
Carbon monoxide is a colourless and odourless gas that is highly toxic. It can interfere with the delivery of oxygen by the blood to the body. Exposure to low levels of CO can cause headaches, confusion, nausea, dizziness, fatigue, and shortness of breath. High level exposure of CO can cause impaired vision, convulsions, coma and possibly death.
Have a qualified service technician inspect the heating equipment exhaust vent pipes and chimney flues on a yearly basis.
In winter, inspect the exhaust vents for the dryer, furnace, wood burning or gas stove, fireplace and heat recovery ventilator to ensure they are not obstructed by snow build-up.
Carbon monoxide detectors should be installed and maintained in buildings that house gas burning equipment. It is recommended to use a carbon monoxide detector that is in compliance with a nationally recognized standard such as ANSI/UL 2034-2002 or CSA 6.19-01.

Codes

Installation, servicing and maintenance of this product must be performed by a licenced and trained heating contractor, experienced in hot water heating boilers as well as gas and oil combustion. The installation must conform to all national and local codes having jurisdiction:

- In Canada, CSA B149.1 Gas Code and CSA B139 Oil Code.
- In USA, ANSI Z223.1 (NFPA 54) Gas Code, NFPA 31 Oil Code and ASME CSD-1 Automatically Fired Boilers.

If you have any technical questions or need assistance with this product, please call your local Sales Representative or DDR Americas Inc.

Standards applied

We hereby certify that the series of appliances specified hereinafter are in compliance with the latest standards described, and that they are manufactured and marketed in compliance with the requirements of the following North American standards:

- ASME Section IV
- CSA B51
- ANSI Z21.13-CSA 4.9 - Gas fired steam and hot water boilers.
- CAN/CGA 2.17-M91 - Gas fired appliances for use at high altitude.
- CGA P.2-1991 (R1999) - Testing method for measuring annual fuel efficiencies or residential furnaces and boilers.
- ANSI/UL 726 - Oil fired boiler assemblies.
- CSA B140.7- Oil burning equipment: steam and hot water boilers.
- CSA B140.0- Oil burning equipment: general requirements.
- CSA B212- Energy utilization efficiencies of oil fired furnaces and boilers.
- CAN/CSA C22.2 No.0-M91 - General requirements - Canadian electrical codes part II.
- CSA C22.2 No.3-M1988 - Electrical features of fuel burning equipment.
- UL795 - Commercial and industrial gas heating equipment.
- CAN1-3.1-M77 - Industrial and commercial gas fired package boilers.
- UL353 - CSA 22.2 No. 24

Requirements for installation in the state of Massachusetts

Boiler Installations within the Commonwealth of Massachusetts must conform to the following requirements:

• Boiler must be installed by a plumber or a gas fitter who is licensed within the Commonwealth of Massachusetts.
• Prior to unit operation, the complete gas train and all connections must be leak tested using a non-corrosive soap.
• The vent termination must be located a minimum of 4 feet above grade level. If side-wall venting is used, the installation must conform to the following requirements **extracted from 248 CMR 5.08 (2):**

(a) For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:
1. INSTALLATION OF CARBON MONOXIDE DETECTORS: At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gasfitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gasfitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detectors.

a. In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.
b. In the event that the requirements of this subdivision cannot be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.

2. APPROVED CARBON MONOXIDE DETECTORS: *Each carbon monoxide detector as required in* accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.
3. SIGNAGE: A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, **"GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS". (Continued)**

Requirements for installation in the state of Massachusetts (continued)

4. INSPECTION: The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08(2)(a)1 through 4.
(b) EXEMPTIONS: The following equipment is exempt from 248 CMR 5.08(2)(a)1 through 4:

1. The equipment listed in Section 10 entitled "Equipment Not Required To Be Vented" in the most current edition of NFPA 54 as adopted by the Board; and
2. Product Approved side wall horizontally vented gas fueled equipment installed in a room or structure separate from the dwelling, building or structure used in whole or in part for residential purposes.

(c) MANUFACTURER REQUIREMENTS - GAS EQUIPMENT VENTING SYSTEM PROVIDED. When the manufacturer of Product Approved side wall horizontally vented gas equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for installation of the equipment and the venting system shall include:

1. Detailed instructions for the installation of the venting system design or the venting system components; and
2. A complete parts list for the venting system design or venting system.

(d) MANUFACTURER REQUIREMENTS - GAS EQUIPMENT VENTING SYSTEM NOT PROVIDED. When the manufacturer of a Product Approved side wall horizontally vented gas fueled equipment does not provide the parts for venting the flue gases, but identifies "special venting systems", the following requirements shall be satisfied by the manufacturer:

1. The referenced "special venting system" instructions shall be included with the appliance or equipment installation instructions; and
2. The "special venting systems" shall be Product Approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

(e) A copy of all installation instructions for all Product Approved side wall horizontally vented gas fueled equipment, all venting instructions, all parts lists for venting instructions, and/or all venting design instructions shall remain with the appliance or equipment at the completion of the installation.

…….[End of Extracted Information From 248 CMR 5.08 (2)]……

Water pipe freezing hazard

⚠⚠ WARNING

Serious property damage and/or personal injury can occur if the pipes are not protected from freezing resulting in the pipes bursting. The boiler may also shut down. Turn off the water supply and drain the water pipes or protect them from freezing when leaving the home unattended for long periods of time during very cold weather conditions.

The boiler is designed to provide a comfortable and warm environment and is not designed for the prevention of frozen water pipes. In case an unsafe condition occurs, the boiler has been designed and equipped with several safety devices that will shut down the boiler and stop it from restarting.
If the boiler is dormant for an extended period of time during cold winter weather, the water pipes may freeze and burst which can result in extensive water damage and lead to mold growth. A variety of molds can cause serious health and respiratory problems. If water damage should occur, immediately dry the affected areas to avoid the possibility of mold growth.
If the building will be empty for an extended period of time in old winter conditions, then the following steps should be taken:

- Turn off the building's water supply, drain the pipes and add some antifreeze for potable water for the toilet tanks and drain traps.
- Have the building monitored and checked during cold winter weather and call a qualified service technician if necessary.
- Remote temperature sensors are available which will alert someone if freezing conditions occur in the building.

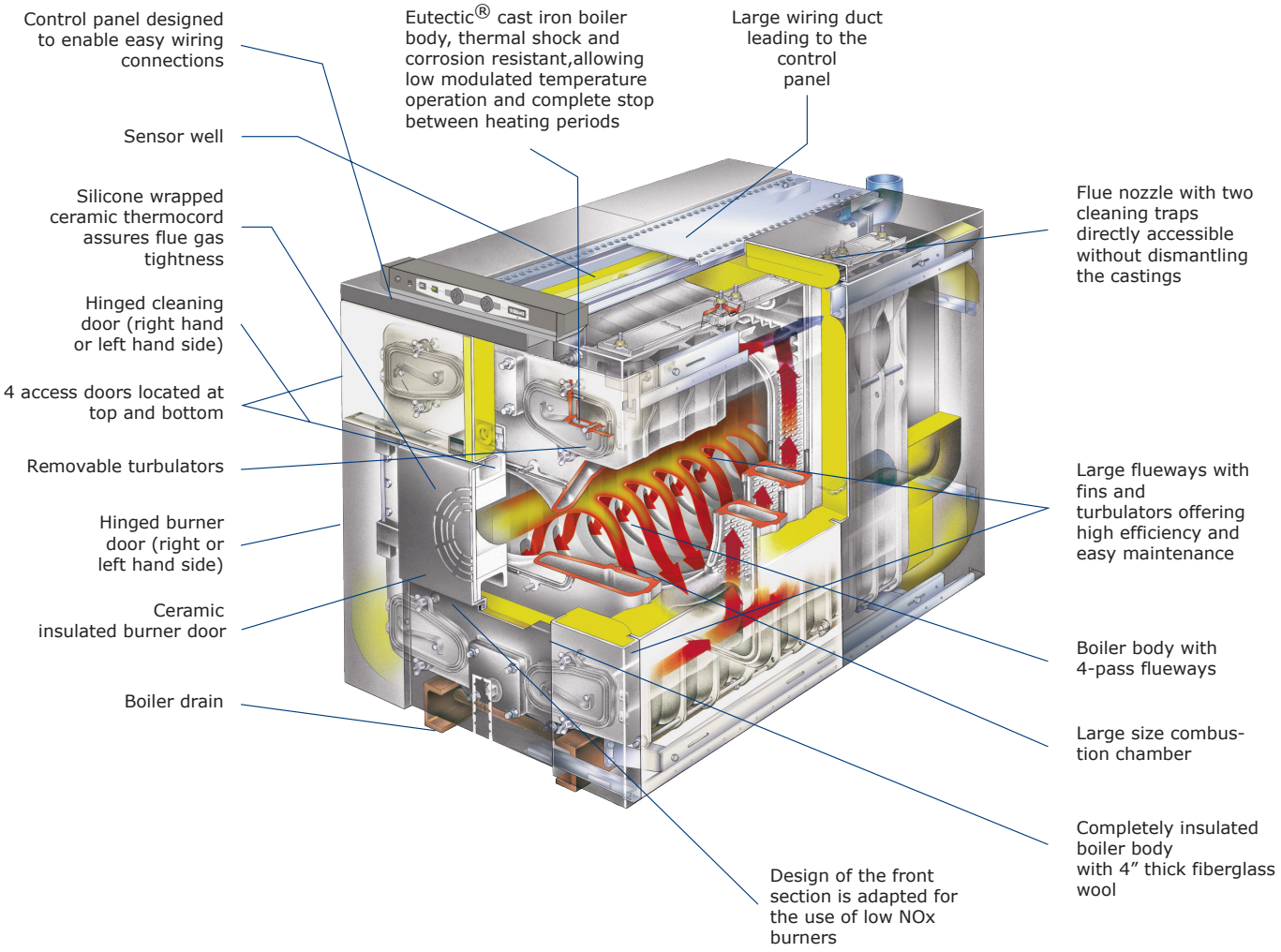
Combustion sources and ventilation air contaminants

Contaminants are likely to be found in these areas:

- Auto body shops
- New construction
- Metal manufacturing plants
- Swimming pools
- Refrigeration repair shops
- Garages with workshops
- Furniture refinishing shops
- Plastic manufacturing plants
- Hobby rooms and remodelling areas
- Dry cleaners and laundromats
- Photo processing companies
- Beauty salons

Contaminants found in various products:

- Paint and varnish removers
- Chlorinated cleaners and waxes
- Glues and cements
- Swimming pool chemicals containing chlorine
- Refrigerant leaks
- Water softener salt containing sodium chloride
- Cleaning products such as chlorine-based bleaches, detergents and cleaning solvents
- Spray cans containing chlorofluorocarbons
- Muriatic and hydrochloric acid
- Calcium chloride utilized in thawing
- Permanent wave solutions
- Adhesives utilized for building products and other similar items
- Fabric softeners used in clothing dryers



Unpacking

Upon arrival, check shipment to ensure all parts have been shipped.
Inspect all items for delivery damage. Report all damage and shortages to the delivery carrier. Report any damage and shortages to the Distributor.

Technical Specifications

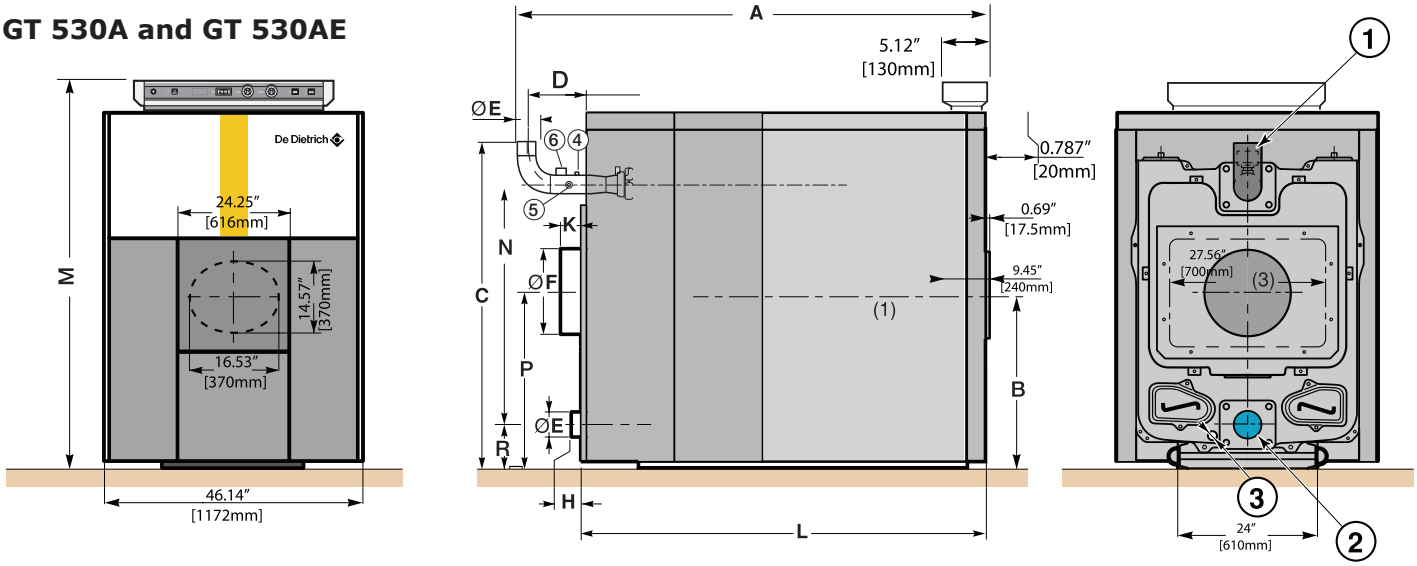
Item		Unit	Boiler Model Gt 530A Series										
			-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25
Firing Sequence			Sonsult Burner Technical Data										
Gas Input (CSA)		MBH	3,749	3,966	4,254	4,470	4,759	4,975	5,191	5,480	5,696	5,984	6,201
		kW	1,099	1,162	1,274	1,310	1,395	1,458	1,521	1,606	1,669	1,754	1,817
# 2 Fuel Oil Input (CSA)		USGPH	26.00	27.50	29.50	31.00	33.00	34.50	36.00	38.00	39.50	41.50	43.00
Output [Gas-Oil] (CSA)		MBH	3.194	3.379	3.624	3.809	4.054	4.239	4.423	4.669	4.853	5.099	5.283
		kW	936.2	990.2	1,062.2	1,188.3	1,188.3	1,242.3	1,296.3	1,368.3	1,422.3	1,494.3	1,548.3
NET I=B=R Water Rating GT		MBH	2,778	2,938	3,152	3,312	3,526	3,685	3,846	4,060	4,220	4,434	4,594
Cast Iron sections		#	15	16	17	18	19	20	21	22	23	24	25
Flue-way baffles		#	6	6	6	6	6	8	8	8	8	8	8
Water capacity		US Gal	183.09	193.13	203.17	213.21	223.25	239.10	249.14	259.18	269.22	279.26	289.30
		Liter	693	731	769	807	845	905	943	981	1019	1057	1095
Water resistance Delta T = °F	18°F	Ft.H_2O	3.28	1.09	1.28	1.45	1.75	2.00	2.21	2.48	2.70	3.01	3.27
	27°F	Ft.H_2O	1.46	0.48	0.57	0.64	0.78	0.89	0.98	1.10	1.20	1.34	1.45
	36°F	Ft.H_2O	0.82	0.27	0.32	0.36	0.44	0.50	0.55	0.62	0.68	0.75	0.82
Combustion chamber Dimensions	Diameter (equivalent)	Inch	27.32										
		mm	694										
	Depth	Inch	62.76	67.13	71.50	75.87	80.24	86.18	90.55	94.92	99.29	103.66	108.03
		mm	1,594	1,705	1,816	1,927	2,038	2,189	2,300	2,411	2,522	2,633	2,744
	Volume	Ft^3	21.54	22.95	24.72	26.13	27.54	29.66	31.08	32.49	33.90	35.31	37.08
		m^3	0.61	0.65	0.7	0.74	0.78	0.84	0.88	0.92	0.96	1	1.05
MAWP (Water)		PSIG	ASME IV Rating Class 30 - 90 PSIG										
Min. Safety Relief Capacity		MBH	3,513	3,717	3,986	4,190	4,459	4,663	4,865	5,136	5,338	5,609	5,811
S3NA	Electrical connection	V/P/H	120/1/60 < 15A										
	Max. Water Temp. Safety Limit [MR]	°F/ °C	248/120										
	Operating Water Temperature Range	°F/ °C	Adjustable 104-212/ 40-100 Factory preset stop at 185°F/85°C optional Hi Temperature kit available										
Chamber resistance		Inch w.C	0.96	1.00	1.04	1.09	1.15	1.21	1.25	1.29	1.33	1.37	1.41
		mbar	2.4	2.5	2.6	2.7	2.85	3	3.1	3.2	3.3	3.4	3.5
Gas-Vent Category		#	I,II,III,IV or Sidewall										
Boiler vent Connection		Inch	16	16	16	16	16	16	16	18	18	18	18
Weight (Dry)		lb	7,416	7,851	8,280	8,719	9,092	9,575	10,004	10,437	10,869	11,259	11,678
		kg	3,364	3,561	3,756	3,955	4,124	4,343	4,538	4,734	4,930	5,107	5,297

Technical Specifications

Item		Unit	Boiler Model Gt 530AE Series						
			-26	-27	-28	-29	-30	-31	-32
Firing Sequence			Sonsult Burner Technical Data						
Gas Input (CSA)		MBH	6,483	6,652	6,825	7,166	7,505	7,849	8,190
		kW	1,900	1,950	2,000	2,100	2,200	2,300	2,400
# 2 Fuel Oil Input (CSA)		US GPH	43.8	45.8	47.7	49.7	51.6	53.6	55.5
Output [Gas-Oil] (CSA)		MBH	5,524	5,668	5,815	6,105	6,394	6,687	6,978
		kW	1,618.8	1,661.1	1,704.2	1,789.4	1,874.1	1,959.9	2,045.1
Cast Iron Sections		#	26	27	28	29	30	31	32
Flue-way baffles		#	10	10	10	10	10	10	10
Water capacity		US Gal	299.40	309.50	319.60	329.70	339.80	349.90	360.00
		Liter	1,133	1,171	1,209	1,248	1,286	1,324	1,362
Water resistance Delta T = °F	18°F	Ft.H_2O	3.48	3.67	3.86	4.26	4.67	5.1	5.56
	27°F	Ft.H_2O	1.55	1.63	1.72	1.9	2.07	2.27	2.5
	36°F	Ft.H_2O	0.87	0.92	0.97	1.06	1.17	1.28	1.39
Combustion chamber Dimensions	Diameter (equivalent)	Inch	27.32						
		mm	694						
	Depth	Inch	113.97	118.34	122.71	127.08	131.45	135.82	140.19
		mm	2,895	3,006	3,117	3,228	3,339	3,450	3,561
	Volume	Ft^3	38.66	40.25	41.84	43.43	45.02	46.61	48.20
		m^3	1.095	1.14	1.19	1.23	1.28	1.32	1.37
ASME MAWP (Water)		PSIG	90 PSI-CRN Design registered for each Canadian Province						
Min. Safety Relief Capacity		MBH	6,076	6,234	6,396	6,716	7,034	7,356	7,676
S3NA	Electrical connection	V/P/H	120/60/1 < 15 amp fused						
	Max. Water Temp. Safety Limit [MR]	°F/ °C	Fixed non adjustable 248°F [120°C]						
	Operating Water Temperature Range	°F/ °C	Adujstable 104-212°F [40-100°C] factory preset stop at 185°F [85°C]						
Chamber resistance		Inch w.C	1.51	1.60	1.75	1.85	1.90	2.10	2.30
		mbar	3.8	4.0	4.4	4.6	4.7	5.2	5.7
Gas-Vent Category		#	Cat I,II,III & IV- Direct vent (Sealed Combustion)						
Boiler vent Connection		Inch	20	20	20	20	20	20	20
Weight (Dry)		lb	12,111	12,501	13,891	13,281	13,671	14,061	14,451
		kg	5,494	5,670	5,847	6,024	6,201	6,378	6,555

Technical Specification

GT 530A and GT 530AE



(1) Boiler Supply 5" ANSI 150# welded neck flange
(2) Boiler return, 5" ANSI 150# welded neck flange
(3) Drain, 3/4" NPT
(4) 1/2" NPT port for temperature and pressure gauge
(5) 3/4" NPT port for low water cut-off control (LWCO)
(6) 2# NPT tapping for safety Relief valve.

Note: additional tappings may be required if redundant controls are required

Item		Boiler Model GT 530A											Boiler Model GT 530AE						
		-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	-32
A	Inch	98.19	102.56	106.93	112.68	117.05	122.99	127.36	131.73	136.1	140.47	144.84	154.37	158.74	163.11	167.48	171.85	176.22	196.65
	mm	2,494	2,605	2,716	2,862	2,973	3,124	3,235	3,346	3,457	3,568	3,679	3,921	4,032	4,143	4,254	4,365	4,476	4,995
B	Inch	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	37.14	37.14	37.14	37.14	37.14	37.14	37.14
	mm	791	791	791	791	791	791	791	791	791	791	791	943.35	943.35	943.35	943.35	943.35	943.35	943.35
C	Inch	58.58	58.58	58.58	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	62.2	62.2	62.2	65.0	62.2	62.2	62.2
	mm	1,488	1,488	1,488	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,579	1,579	1,579	1,579	1,579	1,579	1,579
D	Inch	16.09	16.13	16.96	16.97	17.84	15.90	15.95	16.73	16.8	17.62	17.67	19.63	19.56	16.06	16.88	16.93	17.71	17.79
	mm	409	410	430	431	440	404	405	425	427	448	449	498	497	408	429	430	450	452
ØE**	Inch	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	mm	139.7	139.7	139.7	159	159	159	159	159	159	159	159	139.7	139.7	139.7	139.7	139.7	139.7	139.7
ØF*	Inch	15.75	15.75	15.75	15.75	15.75	15.75	18	18	18	18	18	20	20	20	20	20	20	20
	mm	400	400	400	400	400	400	450	450	450	450	450	500	500	500	500	500	500	500
H	Inch	-1.22	-1.18	-0.354	-0.315	0.512	-1.417	-1.378	-0.551	-0.512	0.315	0.354	1.02	-2.48	-2.44	-1.61	-5.11	-5.07	-4.25
	mm	-31	-30	-9	-8	13	-36	-35	-14	-13	8	9	26	-63	-62	-41	-130	-129	-108
K	Inch	0.748	0.709	0.118	0.157	0.984	-0.945	-0.905	-0.0787	-0.0394	0.787	0.827	1.81	1.69	-1.65	-0.04	-0.04	0.99	0.99
	mm	-19	-18	3	4	25	-24	-23	-2	-1	20	21	46	-43	-42	-1	-1	25	25
L	Inch	88.39	92.72	96.26	100.59	104.13	112.01	116.34	119.88	124.21	127.76	132.09	135.62	139.96	147.8	151.37	155.7	159.25	163.58
	mm	2,245	2,355	2,445	2,555	2,645	2,845	2,955	3,045	3,155	3,245	3,355	3,445	3,555	3,755	3,845	3955	4,045	4,155
M	Inch	65.75	65.75	65.75	65.75	65.75	65.75	65.75	65.75	65.75	65.75	65.75	68.75	68.75	68.75	68.75	68.75	68.75	68.75
	mm	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,746	1,746	1,746	1,746	1,746	1,746	1,746
N	Inch	42.52	42.52	42.52	42.52	42.52	42.52	42.52	42.52	42.52	42.52	42.52	45.52	45.52	45.52	45.52	45.52	45.52	45.52
	mm	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080	1156	1156	1156	1156	1156	1156	1156
R	Inch	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	7.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87
	mm	200	200	200	200	200	200	200	200	200	200	200	276	276	276	276	276	276	276
P	Inch	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	32.09	35.09	35.09	35.09	35.09	35.09	35.09	35.09
	mm	815	815	815	815	815	815	815	815	815	815	815	891.28	891.28	891.28	891.28	891.28	891.28	891.28

F*- Nominal length. Consult vent supplier for correct sizing.

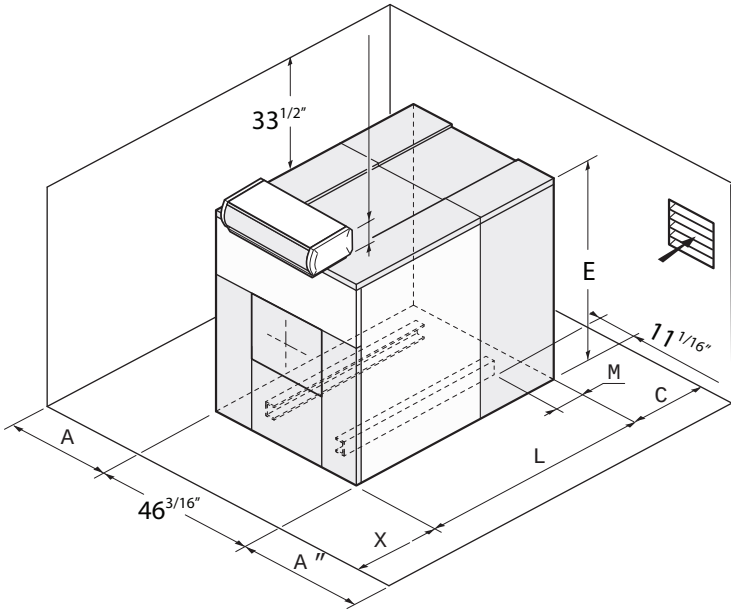
E-** 5" ID- 5.5" OD Outside diameter

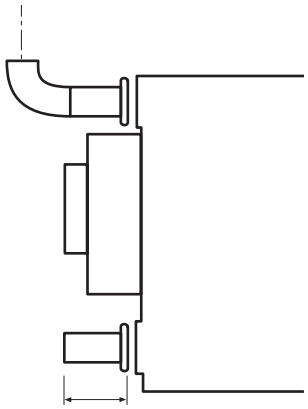
Clearances

The GT 530A/AE boiler has a sturdy underframe, it does not need any special base although a house keeping pad is recommended to keep steel parts out of casual water. Its combustion chamber is closed, so it is not necessary to place it on a fireproof floor, but the floor must be able to bear the weight of the boiler subject to state and local code NFPA 31 and state Fire Marshall.
The minimum dimensions shown on the following drawing are provided as recommendations and guidelines for service access.

⚠ CAUTION

Do not install boiler on combustible flooring or carpet. Clearance shown are to combustible materials and servicing.





If A= 47 1/4" (burner door opening side), **A'=20''**.

If A= 20'', **A'=47 1/4"** (burner door opening side) dimensions to be adapted to the space required for the burner when the door is open.

Dimensions "X" = 40'' minimum(1.5m per code) or burner length in front of the boiler plus **24''** for service.

Ref.		GT 530A											GT 530AE						
		-15	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29	-30	-31	32
C min	In	5.9	5.9	14.57	14.57	14.57	25.59	25.59	25.59	38.58	38.58	38.58	60	57.4	56.5	57.4	53.8	55.4	54.7
	mm	150	150	370	370	370	650	650	650	980	980	980	1,524	1,457.9	1,435.1	1458	1,366.5	1407.1	1389.3
E	In	61.68	61.68	61.68	61.68	61.68	61.68	61.68	61.68	61.68	61.68	61.68	64.68	64.68	64.68	64.68	64.68	64.68	64.68
	mm	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1566.6	1,642.9	1,642.9	1,642.9	1,642.9	1,642.9	1,642.9	1,642.9
L	In	88.37"	92.68"	96.18"	100.62"	104.12"	112"	116.31"	119.87"	124.25"	127.75"	132.12"	135.62	139.96	147.8	151.37	155.7	159.25	163.58
	mm	224.4	235.40	244.29	255.57	264.46	284.48	295.42	304.46	315.59	324.48	335.58	3445	3555	3755	3845	3955	4045	4155
M	In	12.75"	10.62"	12.62"	10.43"	11.31"	10.62"	12.75"	10.62"	12.75"	9.87"	11.87"	11.57	15.1	15.03	14.21	17.71	17.67	16.85
	mm	323.8	269.7	320.5	264.9	287.2	269.7	323.8	269.7	323.8	250.6	301.4	294	383	382	361	450	449	428

Combustion Air Requirements

⚠⚠ WARNING

- Inadequate combustion air supply will result in carbon monoxide [CO] development
- Ensure boiler room is provided with an obstruction free combustion air sources.
- Sources must be sized to provide ample supply, more than one opening maybe required.
- Ensure boiler installed with proper clearance to combustible materials
- Do not store combustible materials, flammable fluids or Vapours near the boiler
- Do not operate the boiler under a negative building pressure

The combustion air supply depends on the volume and construction of the building, more than one combustion air supply source or openings maybe required. Combustion air sources that are provided by mechanical device or electrically operated must be interlocked with the boiler/burner to ensure that are in the correct position.
The combustion air supply must be from a source that is free from airborne contaminates such as dust, fumes, corrosive elements, hydrocarbons and any other known air containments. If the combustion air quality is unknown or is a concern, please consult the factory for assistance. Failure in complying with any of these requirements will result in void of product warranty. Particular installation areas and other equipment occupying the same room, precautions regarding the combustion air supply and quality.

- Rural areas
- Chemical plants
- Automotive shops
- Beauty shops
- Paint shops
- Agricultural
- Green houses
- Mechanical rooms
- Other fuel burning equipment

The combustion air supply/source must be sized in accordance to local and national codes.

- Canada - CSA B149 for gas installations
- Canada - CSA 139 for oil installations
- US - ANSI z223.1/NFPA 54 for gas installations
- US- NFPA 31 for oil installations

Consult local building codes, for any other additional combustion air supply or source requirements.

Combustion Air Supply

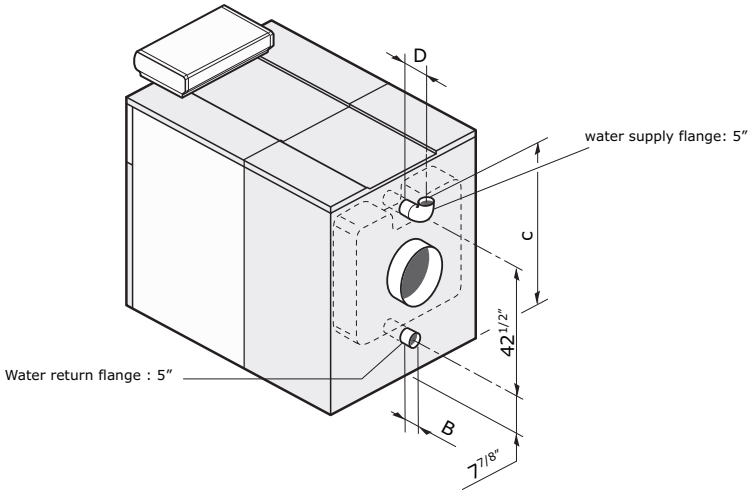
Boilers operating in atmosphere that contains fluorides or chlorides such as beauty shops and automotive repair garages where air conditioning services are performed or industrial application that may have corrosive elements in the air must have a clean source of combustion and ventilations air. Boiler damage by contaminants will avoid the warranty and any other responsibility or liability of DDR Americas Inc.

⚠⚠ WARNING

Ensure boiler room is adequately ventilated and clear and free from combustible materials, gasoline and other flammable vapours and liquids.

Installation Specifications

Piping



	GT530A											GT530AE						
	-15	**-16**	**-17**	**-18**	**-19**	**-20**	**-21**	**-22**	**-23**	**-24**	**-25**	**-26**	**-27**	**-28**	**-29**	**-30**	**-31**	**-32**
B	-1.22"	-1.18"	-0.354"	-0.315"	0.512"	-1.417"	-1.378"	-0.551"	-0.512"	0.315"	0.354"	1.81"	1.85"	-1.65"	-0.83"	-0.83"	-0.196"	-0.196"
	-31	-30	-9	-8	13	-36	-35	-14	-13	8	9	46	47	-42	-21	-21	-5	-5
C	58.58"	58.58"	58.58"	59.2"	59.2"	59.2"	59.2"	59.2"	59.2"	59.2"	59.2"	62.2"	62.2"	62.2"	65.0"	62.2"	62.2"	62.2"
	1,488	1,488	1,488	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,504	1,579	1,579	1,579	1,579	1,579	1,579	1,579
D	16.09"	16.13"	16.96"	16.97"	117.84"	15.90"	15.95"	16.73"	16.8"	17.62"	17.67"	19.63"	19.56"	16.06"	16.88"	16.93"	17.71"	17.79"
	409	410	430	431	440	404	405	425	427	448	449	498	497	408	429	430	450	452

⚠⚠⚠ DANGER

- Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Refer to the user’s information manual provided with this boiler installation and services must be performed by a qualified installer, service agency or the gas supplier.
- This boiler must be installed in accordance with local codes, if any: if not follow CAN/CGA B149, Installation Codes, as applicable.
- This boiler needs fresh air for safe operation and must be installed so there are provisions for adequate combustion and ventilation air.
- This boiler must be properly vented.
- This appliance may require a special venting system. Refer to chimney or vent installation instructions.

⚠ CAUTION

Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance.

Recommendations

- The installation must be made in accordance with codes in effect.
- An expansion tank has to be connected to the system Safety valve must be connected to the boiler piping without any valve or stop installed between the device and the boiler.
- Pressure reducing valve and back flow preventer on boiler make up water feed.
- The boiler when used in connection with a refrigeration system must be installed so the chilled medium is piped in parallel with the boiler with the appropriate valves to prevent the chilled medium from entering the boiler
- The boiler piping system of hot water boiler connected to heating coils located in the air handing units where thy may be exposed to refrigerated air circulation must be equipped with flow control valves or other automatic means to prevent gravity circulation of the boiler water during the cooling cycle.

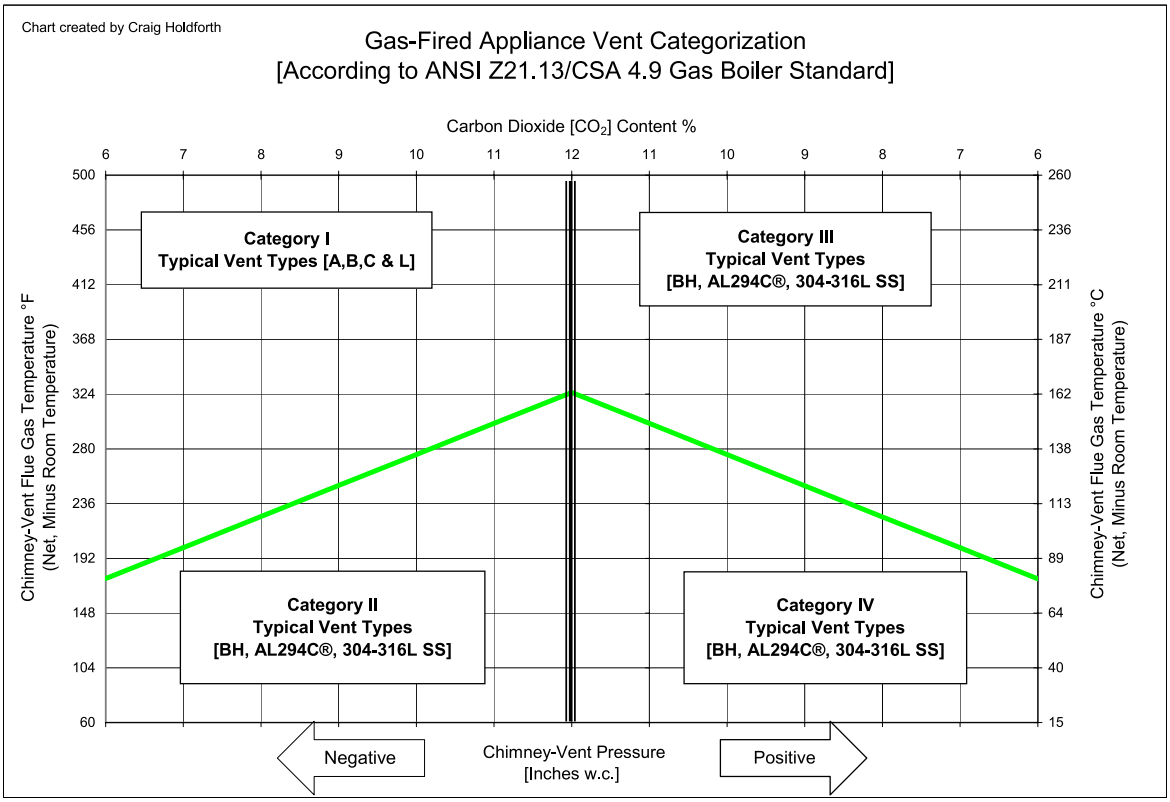
Filling

The boiler may be filled using the drain tap or water make-up system.
Filling should be done at a slow flow rate in order to purge all the air continued in the system through air vents installed at the system high points filling is always done with circulating pumps stopped.

Minimum Safety value Flow according to the maximum boiler output

Source: ASME Boiler and Pressure Vessel Code IV

Chart A



Replacement procedures

- When an existing boiler is removed from a common venting system, the common venting system is likely to be too large for proper venting of the appliances remaining connected to it.
- At the time of removal of the existing boiler, the following steps shall be followed with each appliance remaining connected to the common venting system placed in operation, while the other appliances remaining connected to the common venting system are not in operation.

(a) Seal any unused openings in the common venting system,

(b) Visually inspect the venting system for proper size and horizontal pitch and determine there is no blockage or restriction, leakage, corrosion and other deficiencies which could cause an unsafe condition,

(c) Insofar as is practical, close all building doors and windows and all doors between the space in which the appliances remaining connected to the common venting system are located and the other spaces of the building. Turn on clothes dryers and any appliance not connected to the common venting system.
Turn on any exhaust fans such as range hoods and bathroom exhausts, so they will operate at the maximum speed. Do not operate a summer exhaust fan. Close fire place dampers.

(d) Place in operation the appliance being inspected. Follow the lighting instructions. Adjust thermostat so appliance will operate continuously,

(e) Test for leakage at the draft hood relief opening after 5 minutes of main burner operation.

(f) After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and any other gas-burning appliance to their previous condition of use,

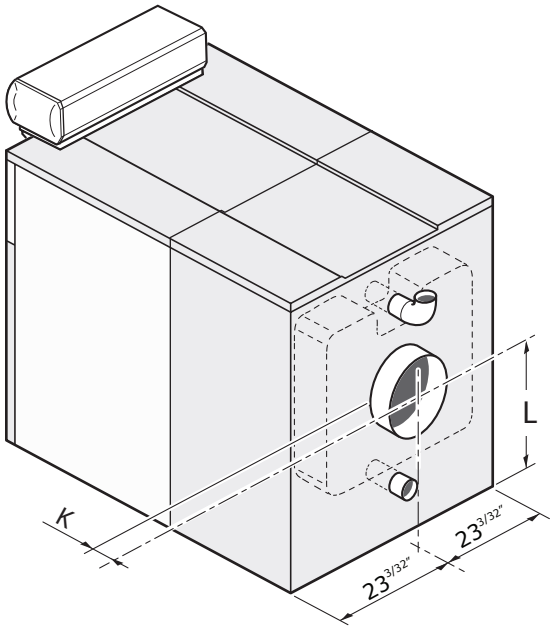
(g) Any improper operation of the common venting system should be corrected so the installation conforms with the National Fuel Gas Code, ANSI Z223.1 and/or CAN/CGA B149 Installation Codes. When resizing any of the common venting system, the common venting system should be resized to approach the minimum size as determined using the appropriate tables in Part II of the National Fuel Gas Code, ANSI Z223.1 and/or CAN/CGA B149, Installation Codes.

(h) The minimum distance from adjacent public walkways, adjacent buildings, openable windows and building openings shall not be less than those values specified in the National Fuel Gas Code ANSI Z223.1 and/or CAN/CGA B149, Installation Codes.

A : Chimney connection :
- GT 530A-15 to 530A-21 = 16”/400 mm
- GTE 530A-22 to GT 530A-25 = 18”/450 mm
- GT 530 -32 AE = 20"/508 mm

The boiler must be connected to a chimney-venting system that will safely discharge all flue gases to the outside in an effective manner.
The boiler breeching and chimney venting must be sized according to local and national code requirements.

Dimensional information required for connection of the boiler

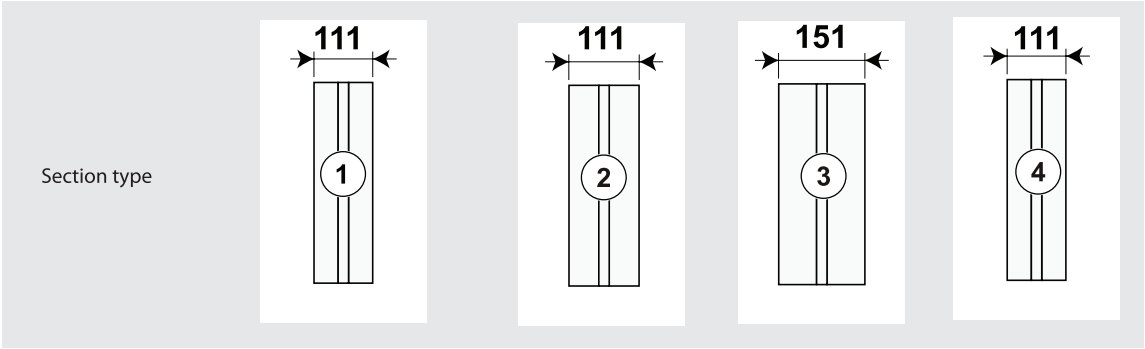


		GT530A											GT530A						
		-15	**-16**	**-17**	**-18**	**-19**	**-20**	**-21**	**-22**	**-23**	**-24**	**-25**	**-26**	**-27**	**-28**	**-29**	**-30**	**-31**	**-32**
K	In	-.74″	-.70"	0.12″	.15"	.98″	-.94″	-0.90″	-0.07″	-.032"	0.78″	0.82″	2.6	2.6	-0.87	-0.04	-0.04	0.99	0.99
	mm	-19.0	-18.0	3.0	4	25	-24	-23	-2	-1	20	21	66	66	-22	-1	-1	25	25
L	In	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	32.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1
	mm	815	815	815	815	815	815	815	815	815	815	815	891	891	891	891	891	891	891

Assemble the boiler body from the rear to the front :

- assemble the **rear** section,
- assemble **all** the normal **intermediate sections,**
- assemble **all** the special **intermediate sections,**
- assemble the **front section.**

The number of sections of each type is provided in the table below



1 Rear Section

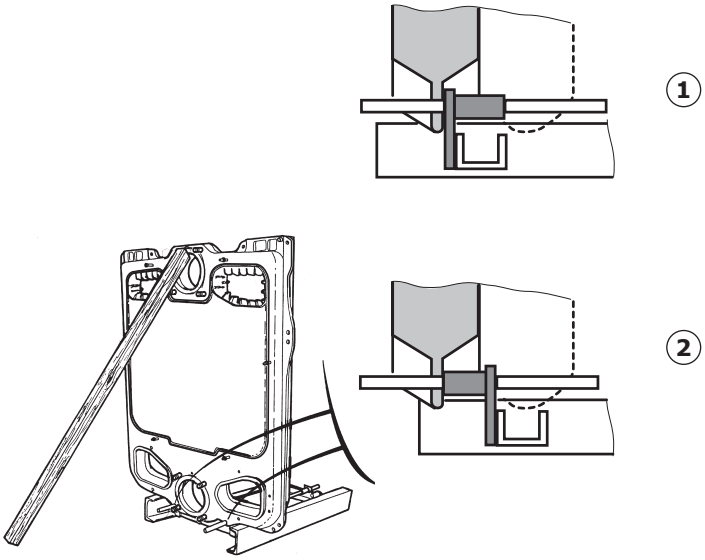
2 Normal intermediate

3 Special intermediate

3 Fornt section

GT 530A-15	1	10	3	1
GT 530A-16	1	11	3	1
GT 530A-17	1	12	3	1
GT 530A-18	1	13	3	1
GT 530A-19	1	14	3	1
GT 530A-20	1	14	4	1
GT 530A-21	1	15	4	1
GT 530A-22	1	16	4	1
GT 530A-23	1	17	4	1
GT 530A-24	1	18	4	1
GT 530A-25	1	19	4	1
GT 530AE-26	1	20	4	1
GT 530AE-27	1	21	4	1
GT 530AE-28	1	22	4	1
GT 530AE-29	1	23	4	1
GT 530AE-30	1	24	4	1
GT 530AE-31	1	25	4	1
GT 530AE-32	1	26	4	1

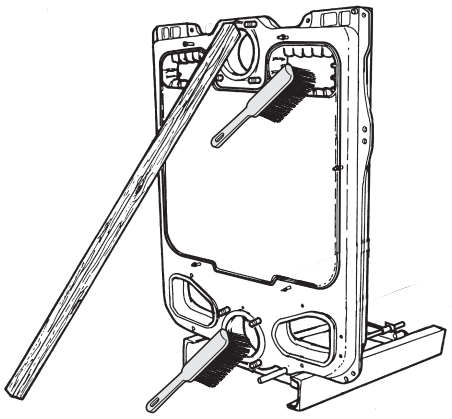
1



1	Boilers : 14, 16, 18, 20, 22, 24 sections
2	Boilers : 15, 17, 19, 21, 23, 25,26, 27,28, 29,30, 31,32 sections

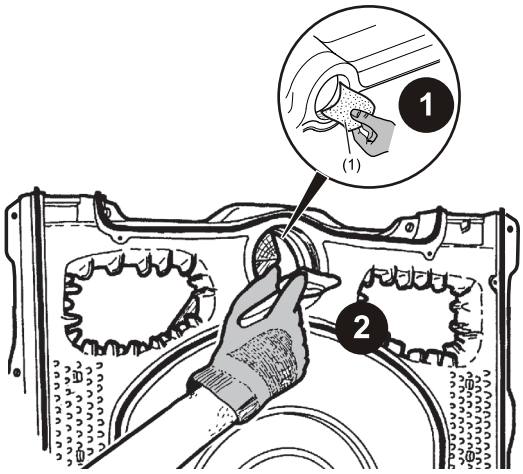
- Establish the location of the frame on the basis of the opening direction of the boiler door and the length of the burner. Leave enough clearance at the rear of the boiler for water connections and the distributing tube.
- Fit the rear section on the frame, behind the fastening brackets (see detailed drawing) and prop it up.
- Insert the lower assembly rods in the holes of the rear section and the fastening brackets of the frame, in order to position the rear section correctly according to the frame

2



- Clean all the openings in the section with a brush or a fine to medium wire wheel. Remove any deposit on the bottom of the section.

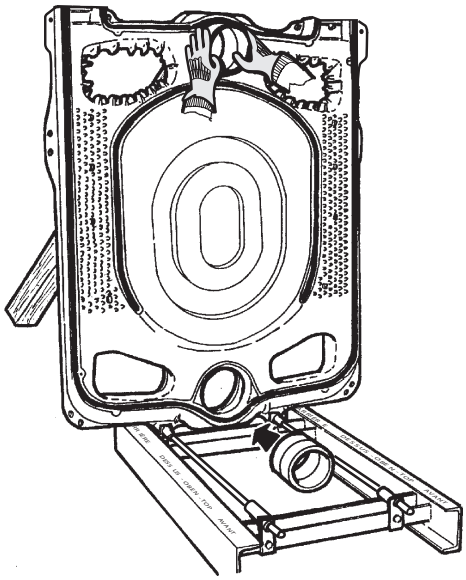
3



Handle the nipples with gloves as there might be sharp edges.

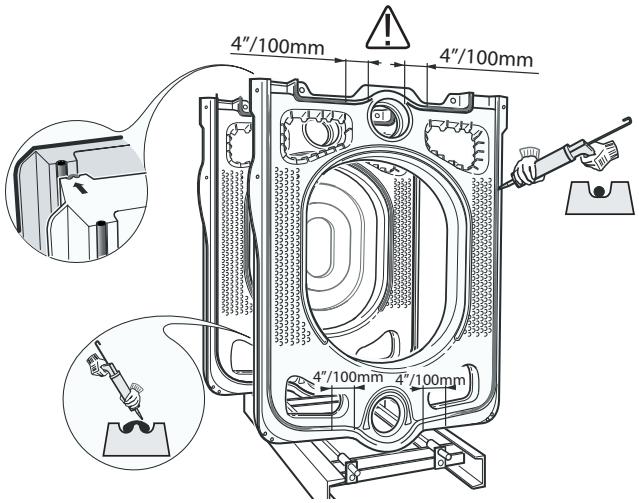
1. Remove any traces of rust protective paint with a fine to medium wire wheel so that the surface is perfectly smooth.
2. Coat with the nipple coating with the sections.

4



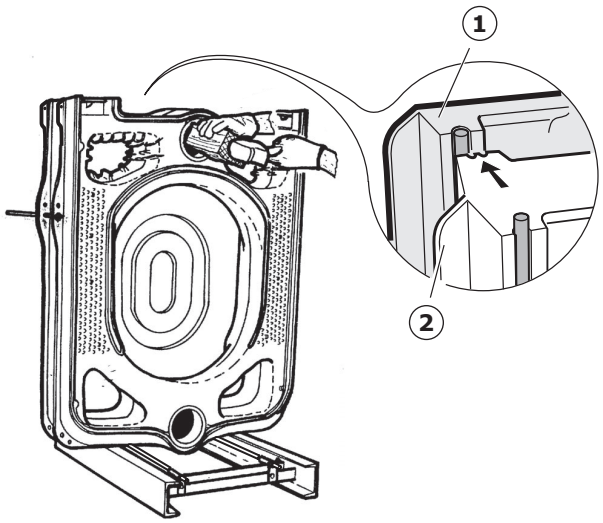
- Gently push in the 2 nipples. Ensure they are square and not pushed in at any angle.

5



- Fill the bottom of the W groove opposite the U groove for the intermediary parts (located on the periphery of the section) with a continuous bead of DOW CORNING silicone, approximately Ø 3/16" / 5 mm diameter.

6

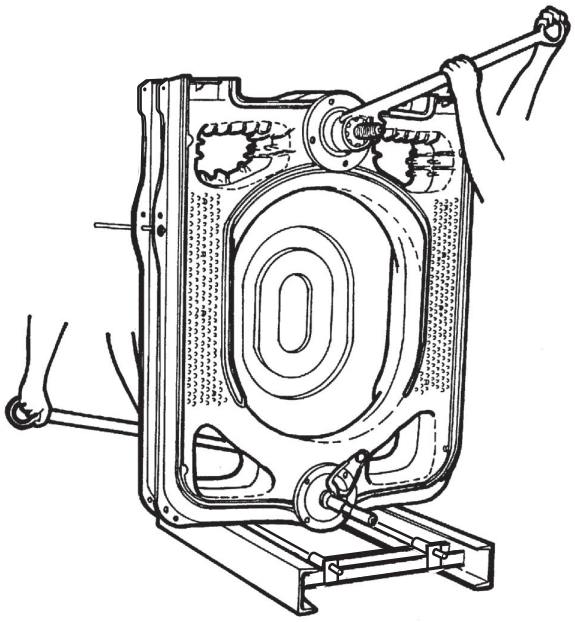


(1) Rear section

(2) Intermediate section

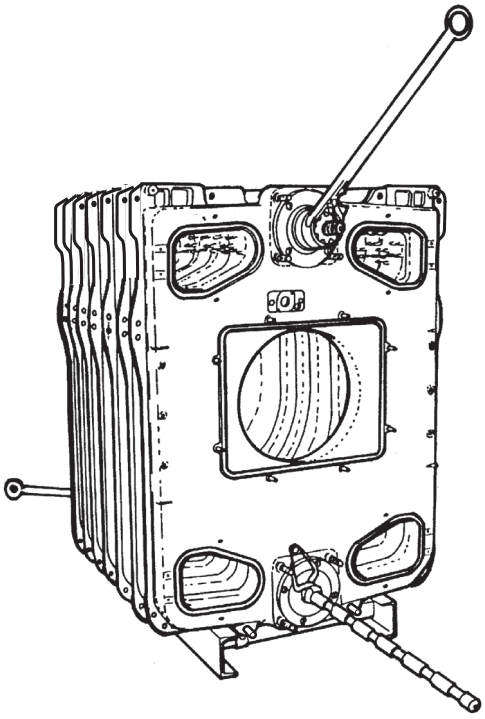
- Place the first normal intermediate section, making sure that it is turned in the right direction, i.e. with the flattening groove against the thermocord.
- For safety, insert a lateral assembly rod (supplied) in the holes of the 2 sections.
- Push the section gently and simultaneously on to the 2 nipples of the rear section with a hammer and a piece of wood positioned in line with the bores.

7



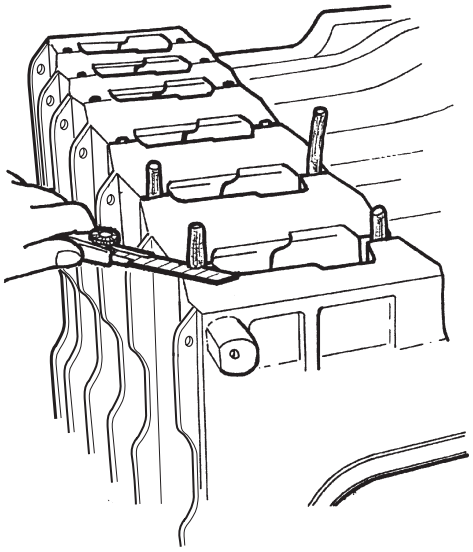
- Put the assembly tool in position.
- Tighten gradually so as to bring together the upper and lower connections evenly and simultaneously.

8



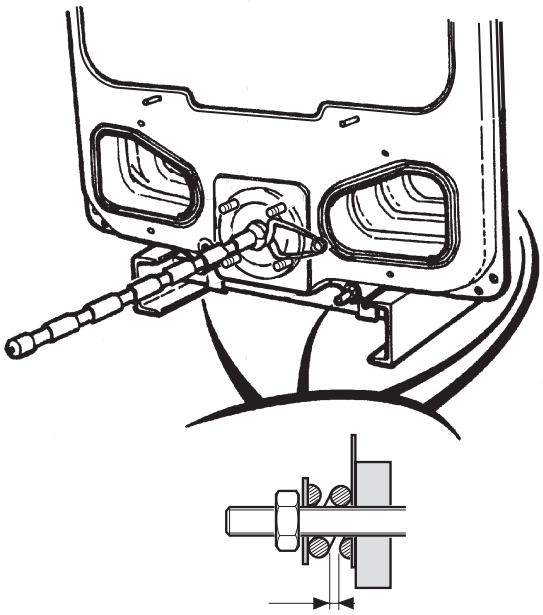
- Assemble the remaining intermediate sections one by one according to the procedure in step **3-10**
- First assemble the normal intermediate sections, then the special ones. Leave the assembly tool in place.

9



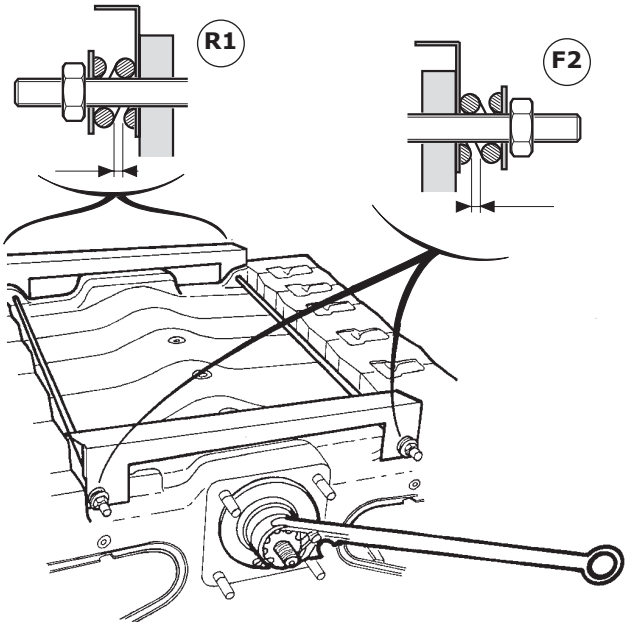
- Trim off any projecting ends of the thermocords flush with the coast sections.

10. Fitting the upper and lower assembly rods



- On the lower assembly rods, fit the following at each end in the given order : an expansion spring, a washer and a nut (the holes of the front lugs must be aligned with the holes of the frame brackets as the assembly rods are used to make the boiler body integral with the frame).
- Stop tightening as soon as the gap between the spring spires is equal to about 2 mm.

11



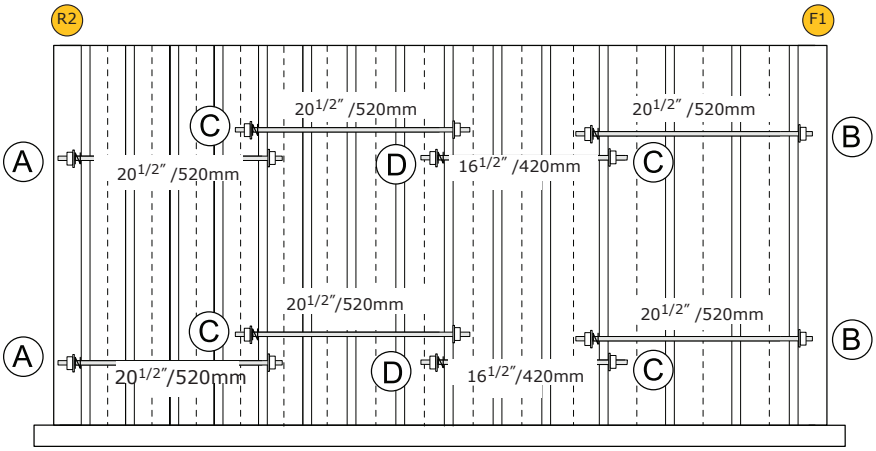
(R1) Rear

(F2) Front

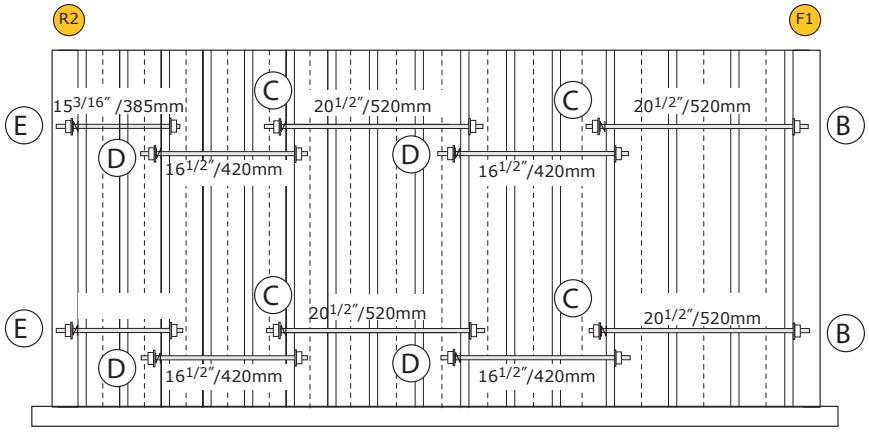
- Put in place the upper assembly rods in the two front and rear lugs. For 26-32 sections boilers, the provided extension and coupling (M14 x 42mm) will be required.
- Mount the 2 crosspieces (supplied in package MR245/246) with their bends turned backwards and fasten them to the rods with an expansion spring, 1 nut and 1 washer
- Remove the assembly tool.

12. Assembling the side assembly rods

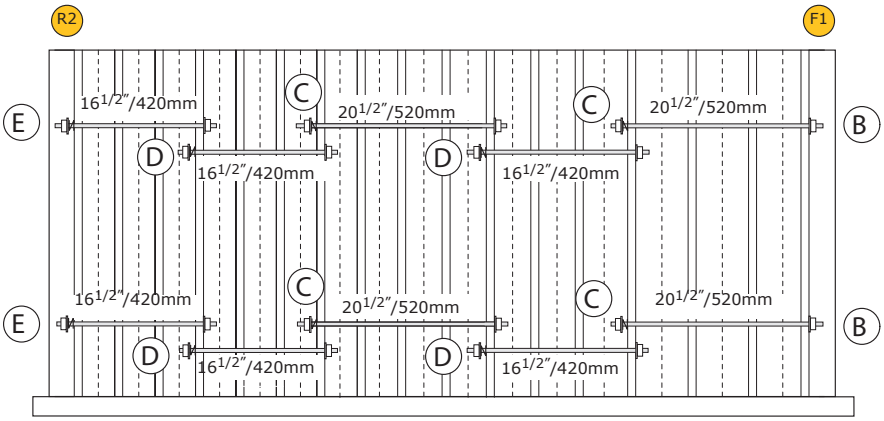
- The side assembly rods must be assembled from the rear to the front.
- The rods must be inserted in the holes stated in the diagrams (the lugs of the sections in which the assembly rods are to be inserted have 2 holes).
- Place the expansion spring and washer on the rear of each rod.
- Stop tightening the nuts as soon as the gap between the spires of the springs is about 1 mm



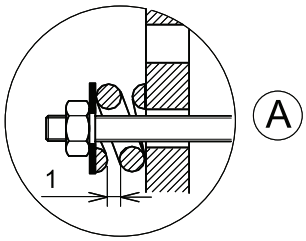
GT 530A-15

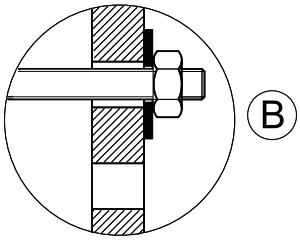


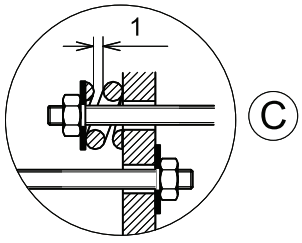
GT 530A-16

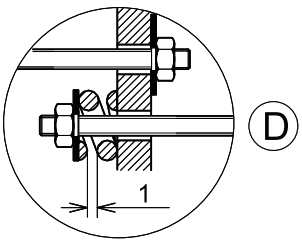


GT 530A-17



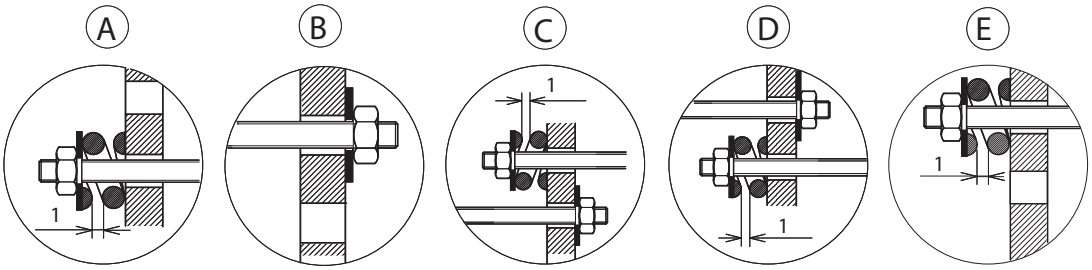


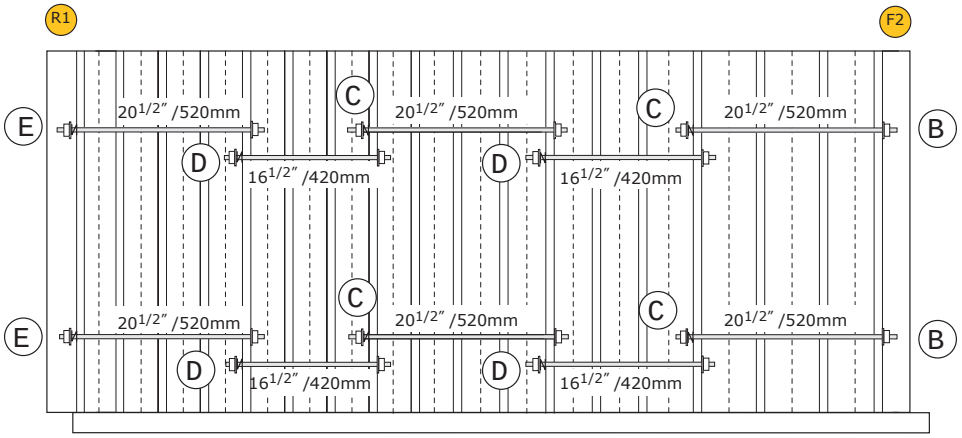




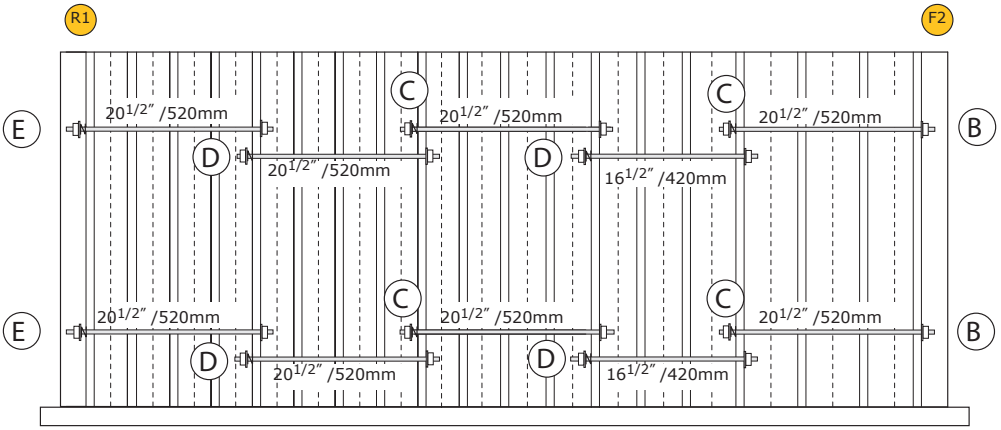
F1 Front R2 Rear

Assembly + Set up

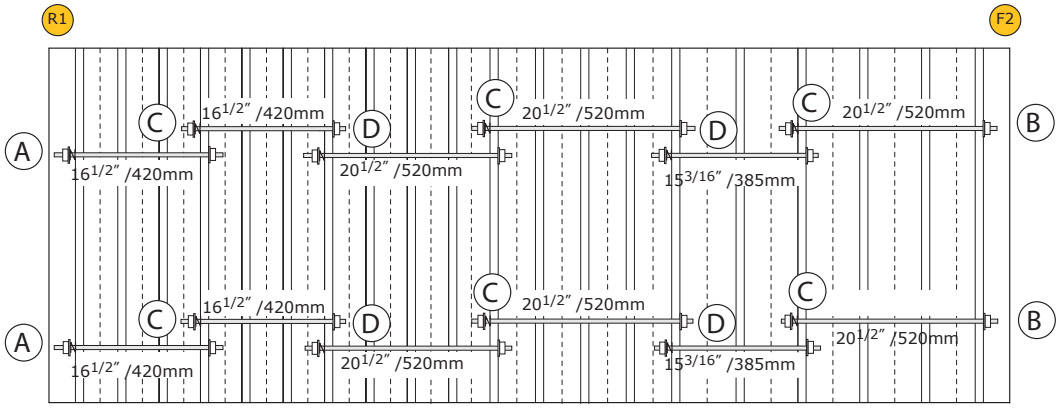




GT 530A-18

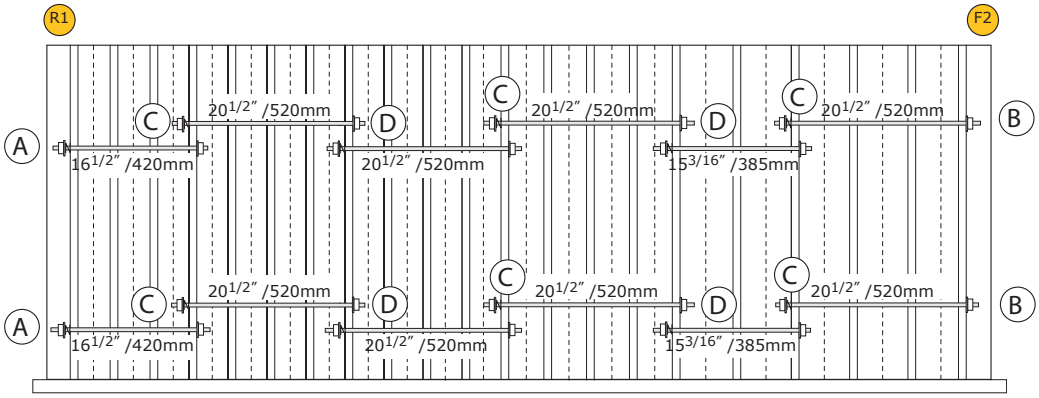


GT 530A-19

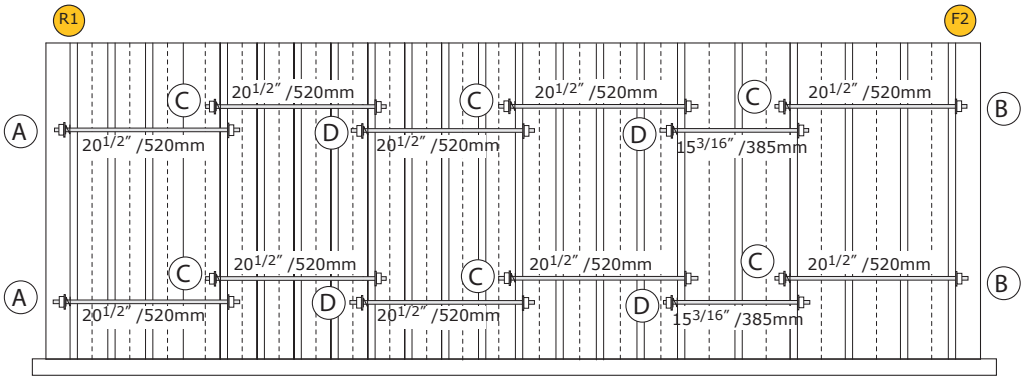


GT 530A-20

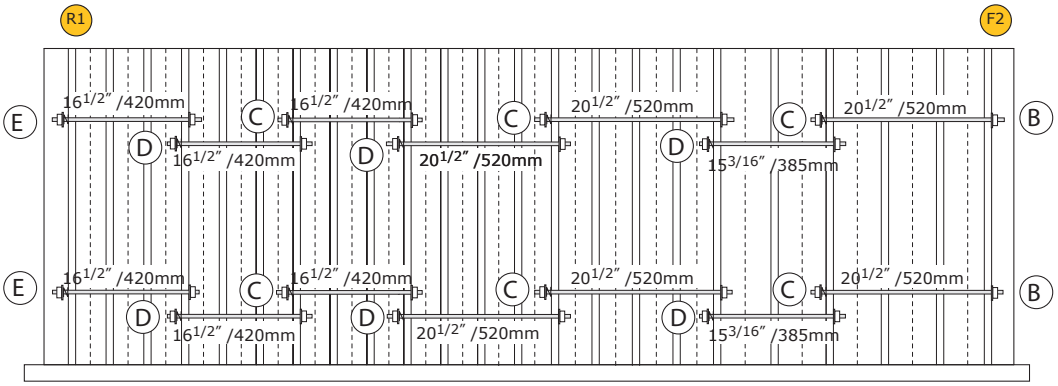
F1 Front R2 Rear



GT 530A-21

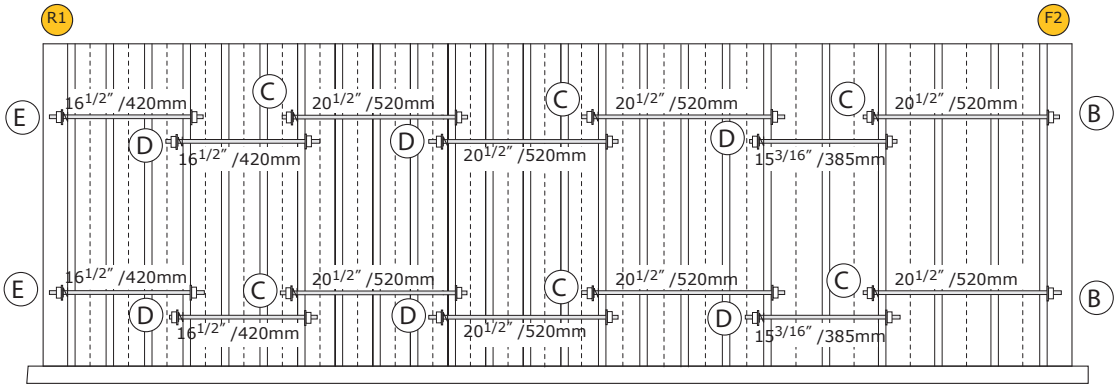


GT 530A-22

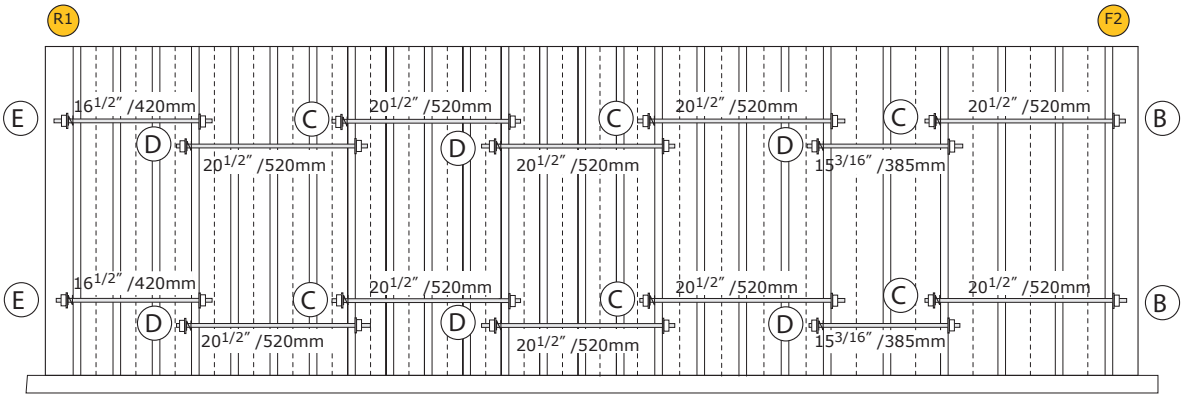


GT 530A-23

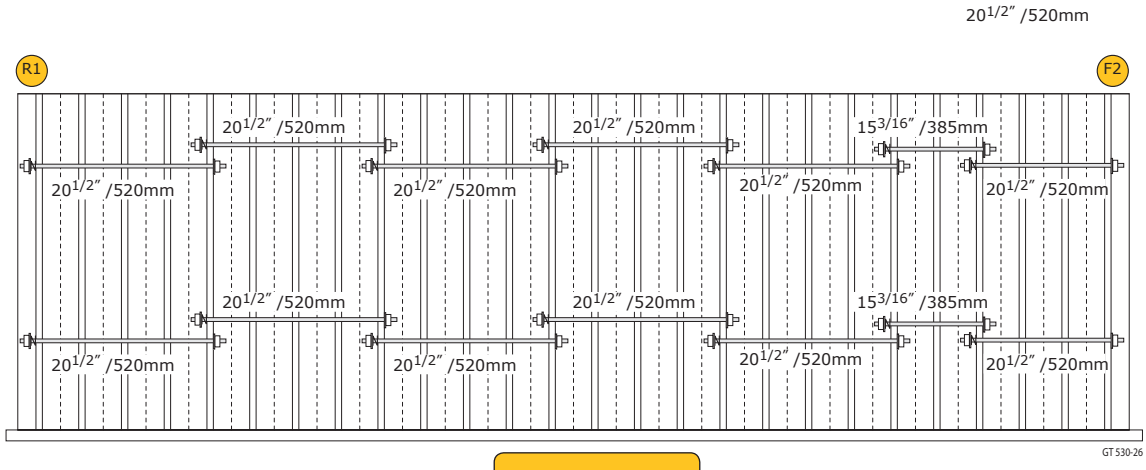
F1 Front R2 Rear



GT 530A-24

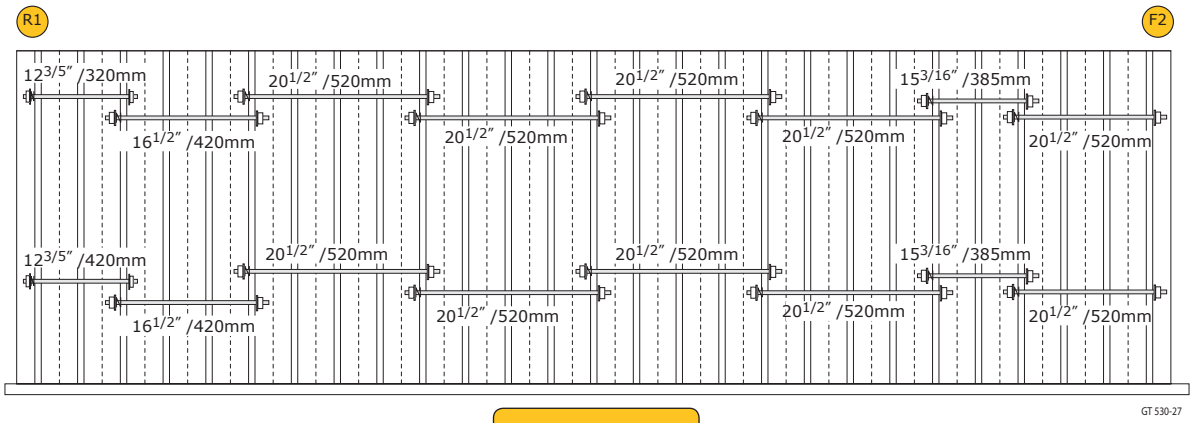


GT 530A-25

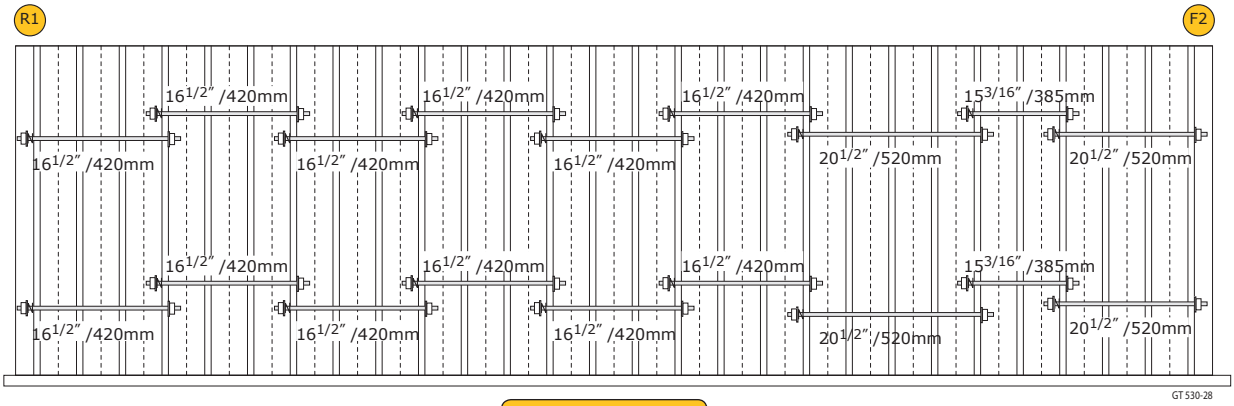


GT 530AE-26

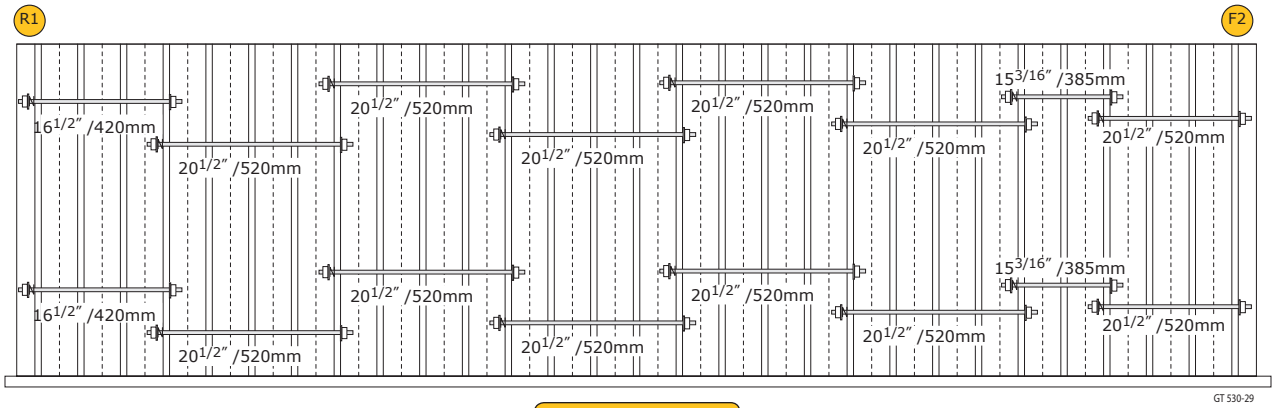
F1 Front R2 Rear



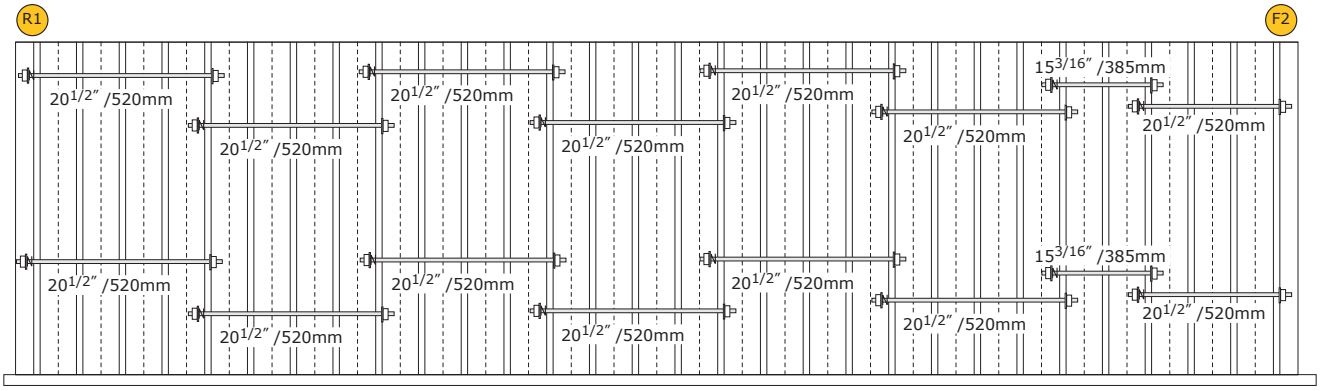
GT 530AE-27



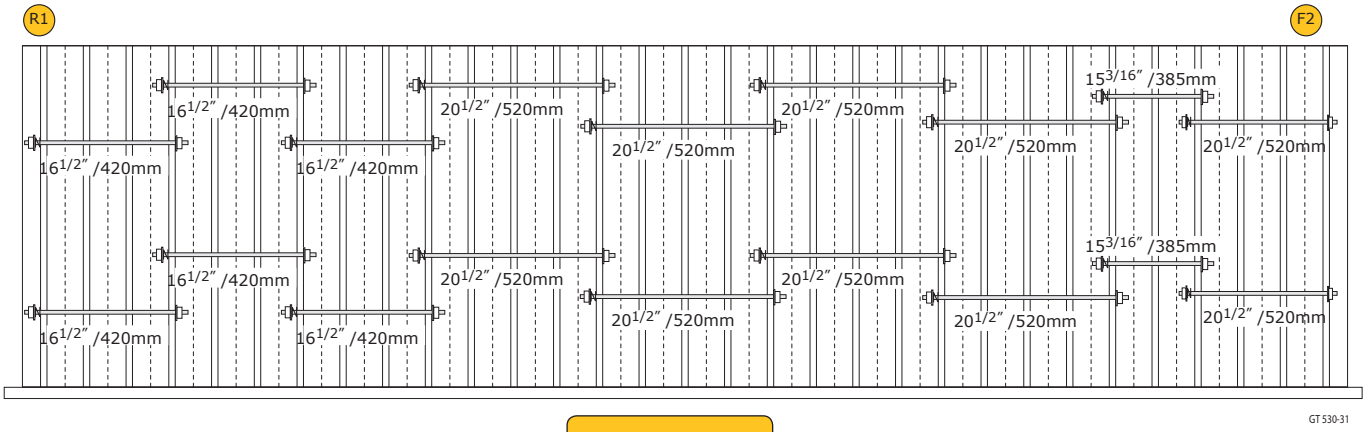
GT 530AE-28



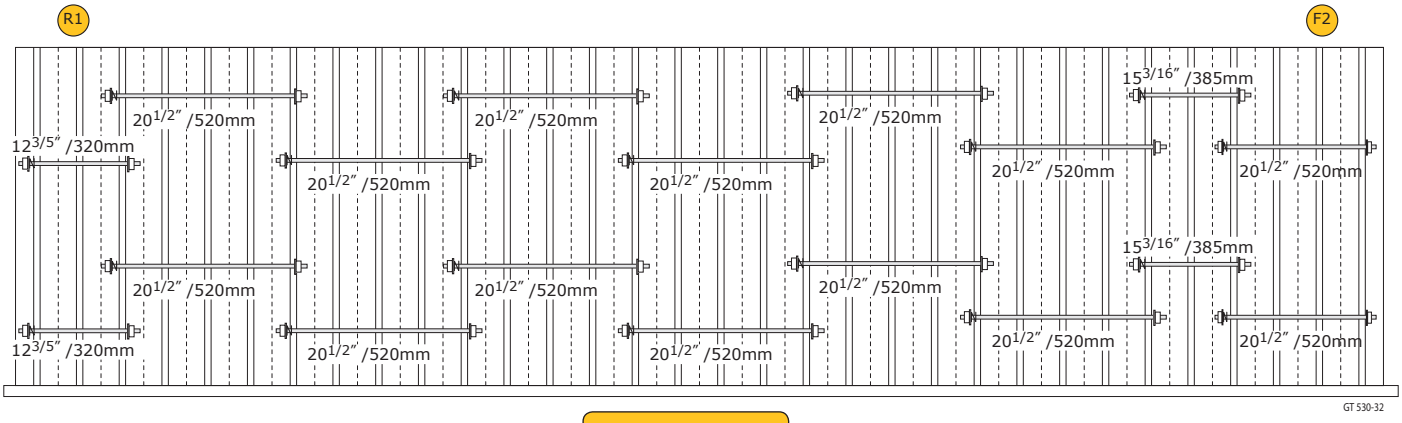
GT 530AE-29



GT 530AE-30



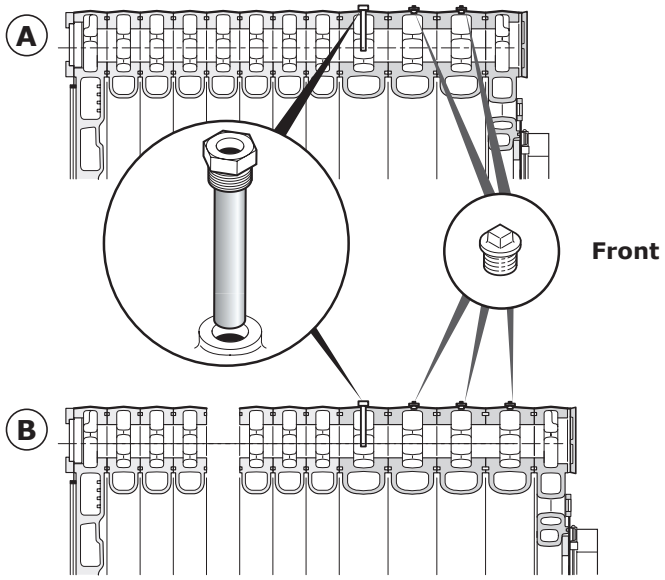
GT 530AE-31



GT 530AE-32

13. Assembling the pocket and the plugs

GT 530A 15-19



GT 530A 20-32

- **Assemble the well for the thermostats and thermometer in :**

  The third special intermediate section -5$^{15/16}$" /151mm wide, 1/2'' hole for GT 530A-15 to GT 530A-19

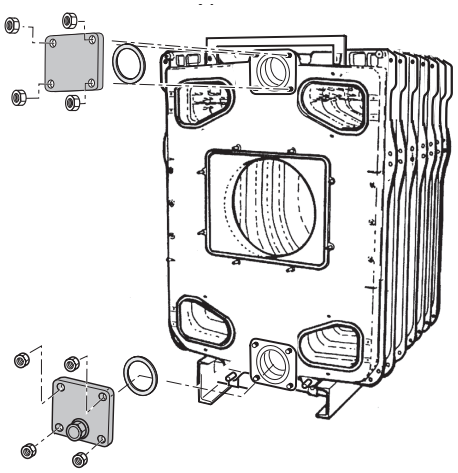
  or

  the fourth special intermediate section - 5$^{15/16}$" /151mm wide, 1/2'' hole for GT 530A-20 to GT 530AE-32.

- Plug the 2 free 1/2'' holes for GT 530-15 to GT 530A-19 or the 3 free 1/2'' holes for GT 530A-20 to GT 530AE-32 in the special intermediate sections.

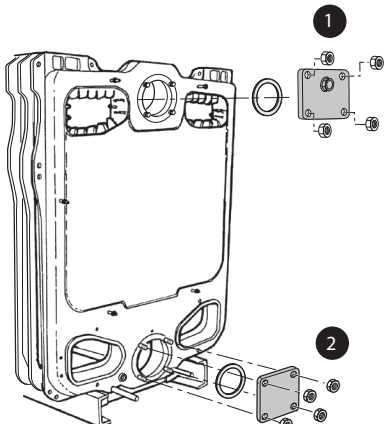
Fitting the upper and lower front flanges

- Fit the plain flange onto the upper connection of the front section (using 4 M18 nuts), with the Ø 6$^{11/16}$ X 8$^{3/4}$ / 170x222 gasket in between (first soak the gasket in warm water prior Touse).
- Fit the flange with the sludge removal hole onto the lower connection of the front section (hole in the lower part of the flange) using 4 M18 nuts, with the gasket in between (soak in warm water first).



14. Hydrostatic Test

After assembling the boiler body, the installer must carry out a water tightness test at a pressure equal to 1.5 times the operating pressure (that is 135 Psig Max. of 145) a minimum 20 minutes. The test must be done at room temperature with a city water tempreature not less than 60°f/15°C.

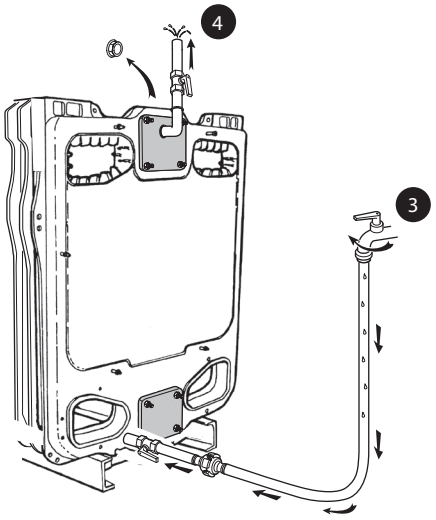


- Fit a square flange with hole facing upwards onto the upper flange with outlet piece.
- Fit a blind square flange onto the lower flange with return piece.

15

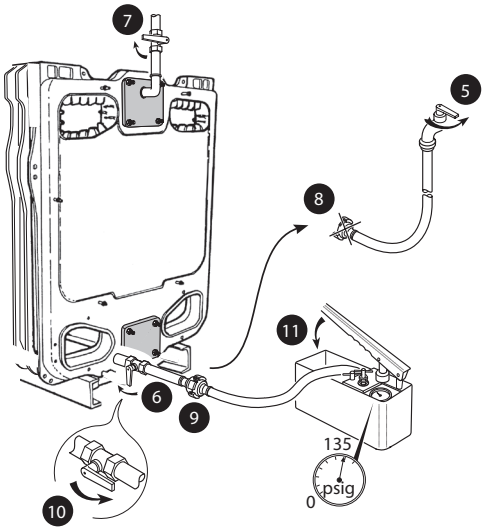
⚠ CAUTION

Ensure that all the air in the boiler is vented to avoid any bursting of the body



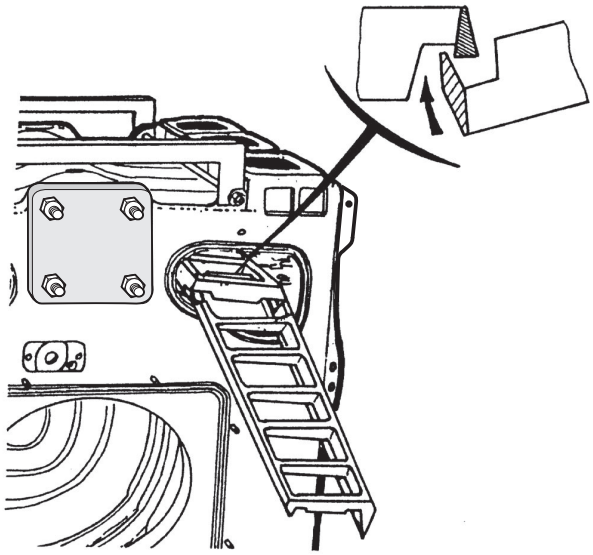
16

- Maintain the required pressure for at least 20 minutes at 135 Psig. Any drop in pressure indicates a leak in the boiler body.
- After the hydrostatic test, drain the boiler and remove all the parts used for the test.



17

Assembling the baffle



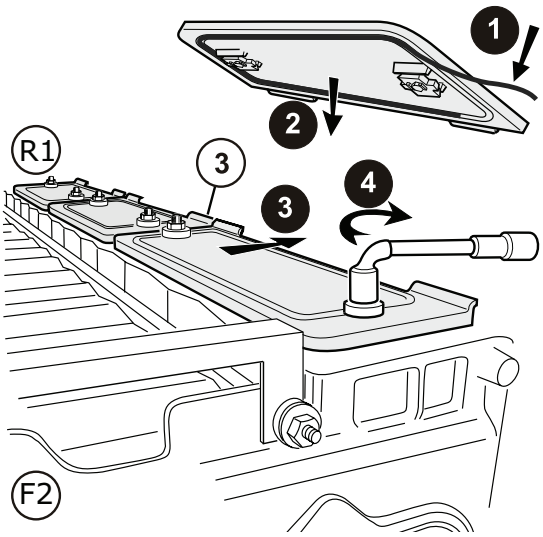
Boiler	GT 530A -15 to 19	GT 530A-20 to 25
Total number of baffles	6	8
Package no.	CM 22 + CM 23	2XCM 23

Boiler	GT 530AE -26 to 28	GT 530AE-29 to 32
Total number of baffles	8	10
Package no.	2XCM 23	2XCM23 + CM22

- Put the baffles into place in the upper front flue ways, taking care to interlock them with each other before inserting them.

18

Assembling the sweeping Covers



F2 Front R1 Rear

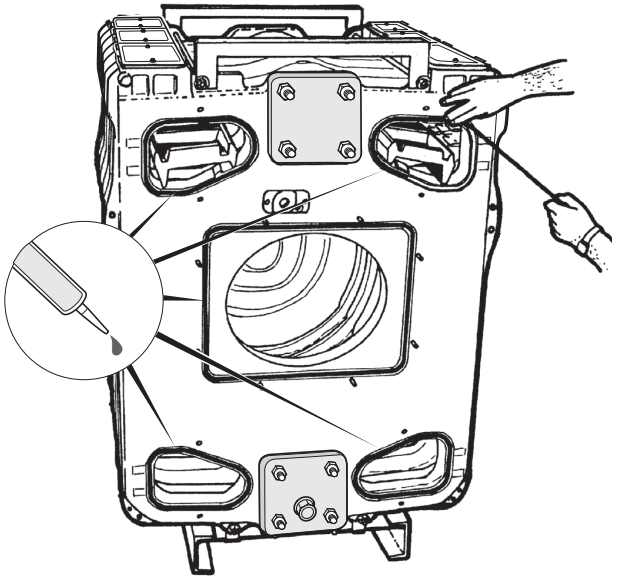
i Each cover is fitted with a system whereby it can only be mounted with the handles turned outward.

1. The covers are numbered from 1 to 4, and must be fitted with thermocord. The length of the thermocord depends upon the cover and is given below.
2. Place the 2 no. 1 sweeping covers (with the handles turned outward) on either side of the boiler starting from the front. Distribute the other covers evenly.
   - ▶ Fit the two locks of each cover between the sections.
3. Push the cover towards the outside of the boiler, to the closed position.
4. Fasten the two brass nuts of each cover.

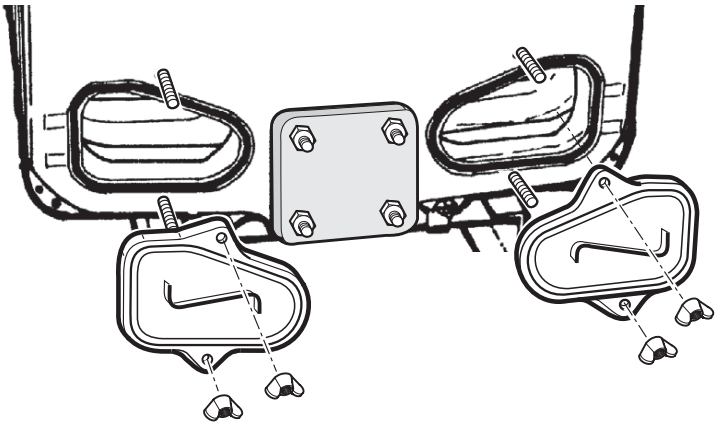
Cover Model	No.1	No.2	No.3	No.4
Boiler type	Number of sweeping covers per type			
	Front			Rear
GT 530A-15	2	4		2
GT 530A-16	2	4	2	
GT 530A-17	2	6		
GT 530A-18	2	2	6	
GT 530A-19	2	6		2
GT 530A-20	2	6	2	
GT 530A-21	2	8		
GT 530A-22	2	6	2	2
GT 530A-23	2	6	4	
GT 530A-24	2	8	2	
GT 530A-25	2	10		
GT 530AE-26	2	8	2	2
GT 530AE-27	2	10		2
GT 530AE-28	2	10	2	
GT 530AE-29	2	12		
GT 530AE-30	2	10	2	2
GT 530AE-31	2	12		2
GT 530AE-32	2	12	2	
Thermocord Length	52.5” /1,335mm	43.7”/1,110mm	35”/890mm	26.18 /665mm

19

- Insert the thermocord in the sealing groove on each side and hold it in place with a few drops of silicone filler.



20. Installing the lower trap Cleaning



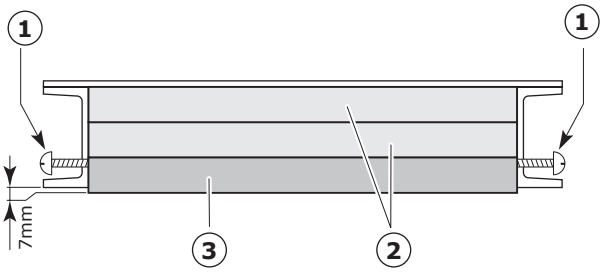
- Insert the thermocord in the sealing groove of the 2 lower flue ways, on the rear and front of the boiler.
- Put the 4 cleaning doors on the lower flue ways and fasten with the wing nuts.

21. Installing the burner/boiler door

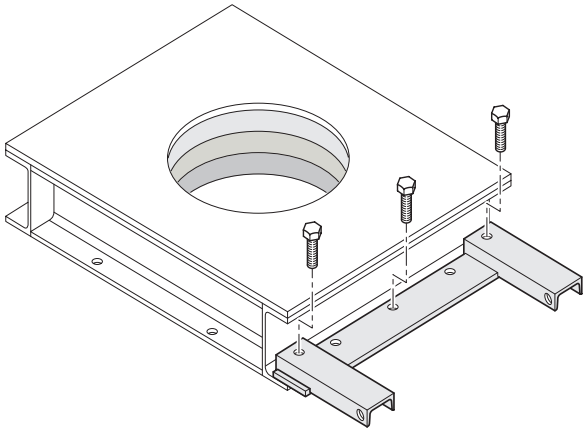
(1) 2 screws SIM 3.94x25.4

(2) Refractory felt

(3) Rigid refractory plate

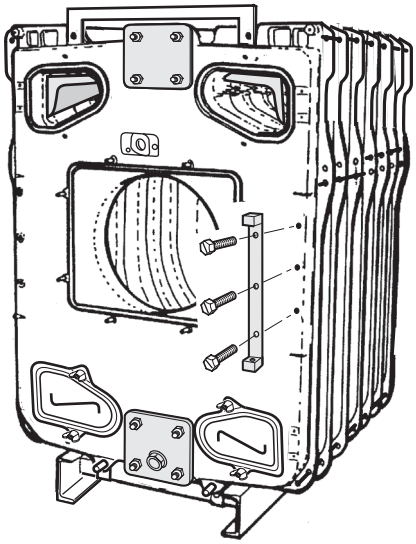


- Put the furnace door insulating material in place and retain it with the 4 screws SIM 3.94x25.4.



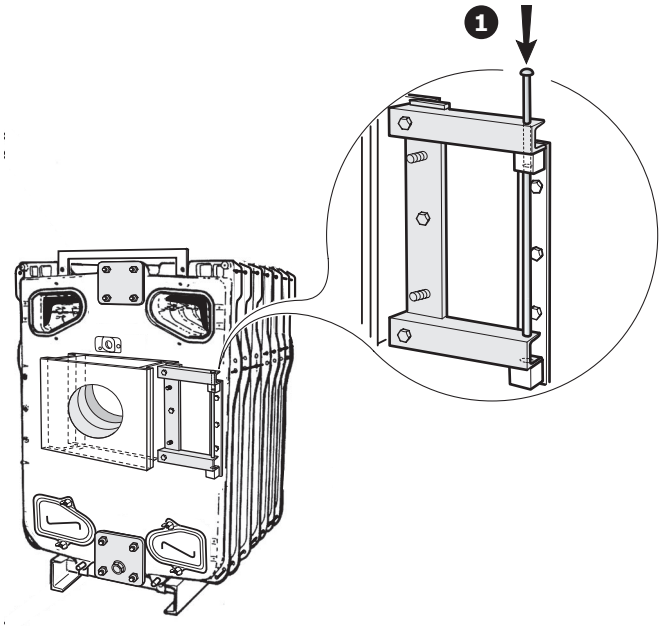
- Place the burner/boiler door on the floor and fasten the door hinge onto the door with 3 screws HM 12.

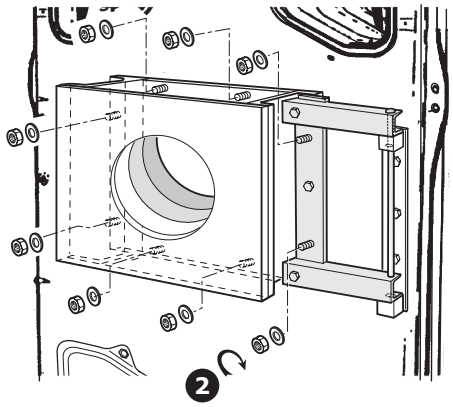
22. Installing the hinge of the burner door



▶ Attach the burner the furnace door hinge on the right or left-hand side of the front section by means of 3 screws HM 12x25.

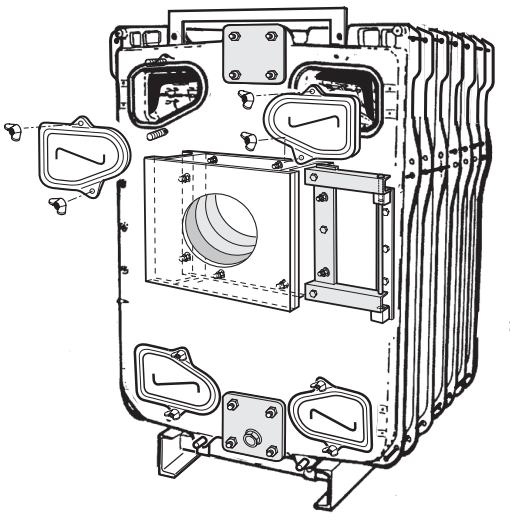
23





- Fit the door onto the hinge by inserting the pin.
- Close the burner door on the 8 studs and fasten with 8 washers and nuts.

24

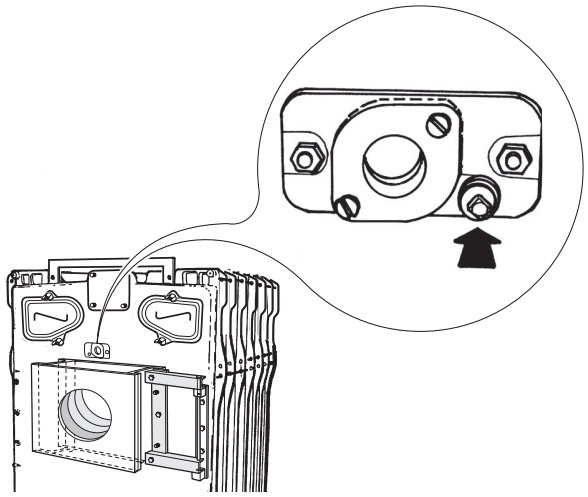


- Instal the 2 Cleaning doors of the upper flue ways and fasten with the wing nuts.

25. Flame inspection window

Flame inspection window

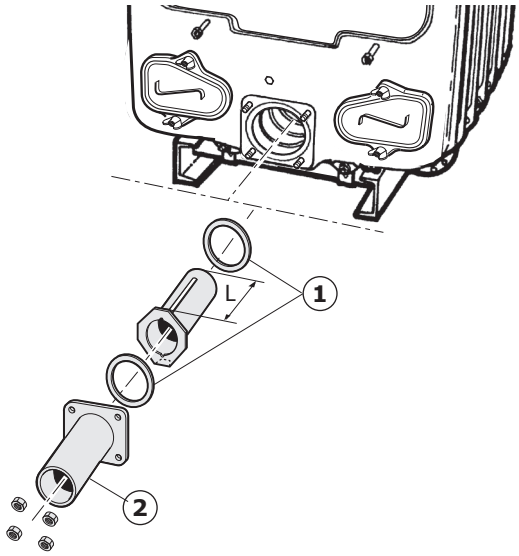
- The flame inspection window is fitted with a 1/4" tapped hole for chamber pressure measurements and block vent chamber device.



26. Assembling the return lange on GT 530A-15 to GT 530AE-32

- Fit the water balancing tube onto the boiler return with a 170x222mm/6$^{11/16}$"X8$^{3/4}$" gasket in between (first soak the gasket in warm water).
- Fit the heating return flange with a 170x222/ 6$^{11/16}$"X8$^{3/4}$" gasket in between (first soak the gasket in warm water) and fasten it with 4 nuts H 18.

Boiler type	Length in mm
GT 530A-15 to GT 530A-16	15"/380mm
GT 530A-17 to GT 530A-19	23·62"/600mm
GT 530A-20 to GT 530A-22	34.62"/880mm
GT 530A-23 to GT 530A-25	47.62"/1210mm
GT 530AE-26 to GT 530AE-27	65.00"/1650mm
GT 530AE-28 to GT 530AE-29	82.28"/2090mm
GT 530AE-30 to GT 530AE-32	99.6"/2530mm



(2) = FA126A to FA132A

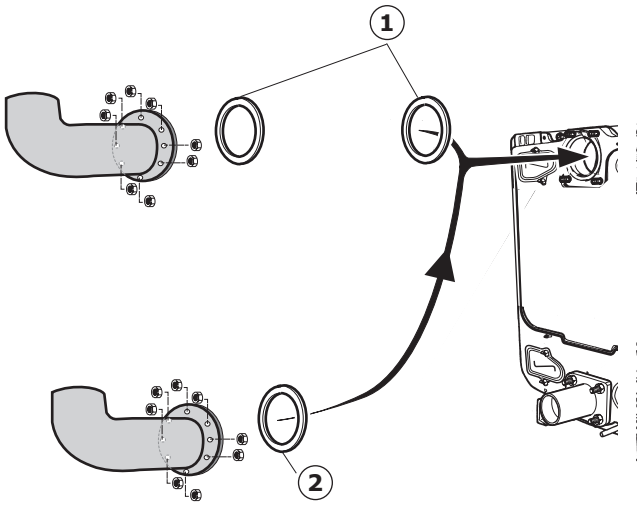
(1) = FA126B to FA132B

26. Assembling the supply lange on GT 530A-15 to Gt 530AE-32

GT 530A-15 (1) Package FA111

GT 530A-16 to GT 530A-25 (1) Package FA112 to FA121

GT 530AE-26 to GT 530AE-32 (1) Package FA126B to FA132B



- **GT 530A-15**

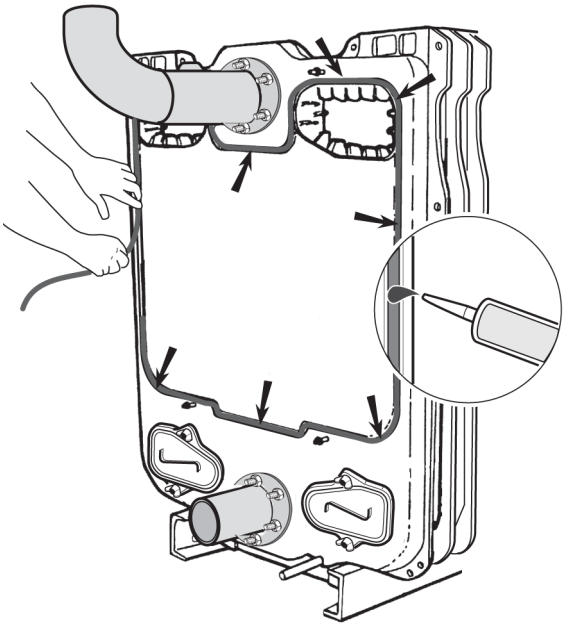
- Place the nozzle turned outside from the boiler with a Ø $61^{1/16}$"X$8^{3/4}$" / 170x222 gasket in between (first soak the gasket in warm water).
- Assemble the flange with angled piece so that the angle is turned upward, with a $6^{11/16}$"X$8^{3/4}$" /170x222 gasket in between (first soak the gasket in warm water) and fasten with 4 nuts H18.

- **GT 530A-16 to GT 530AE-32**

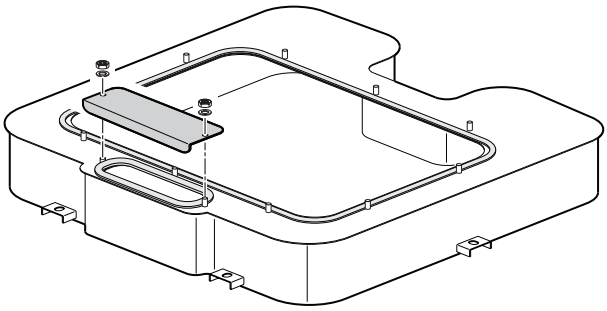
- Assemble the flange with angled piece so that the angle is turned upward, with a Ø $6^{11/16}$"X$8^{3/4}$" /170x222 gasket in between (first soak the gasket in warm water) and fasten with 4 nuts H 18.

27. Installing the Flue Outlet

- Carefully insert the 9/16"/15mm gasket in the groove of the rear section and hold it in place with a few drops of silicone.



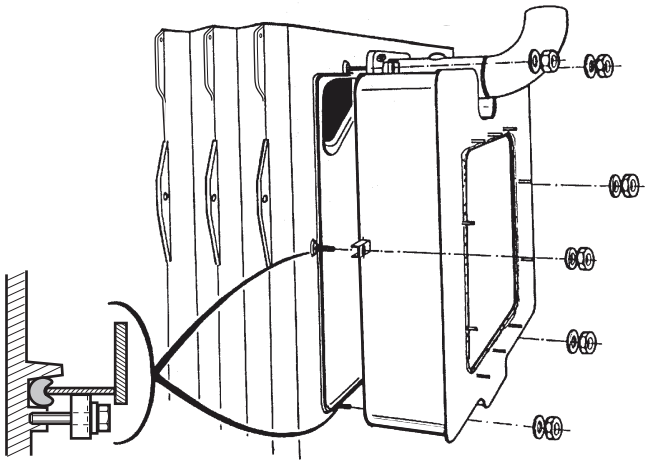
28



i Before assembling the flue gas box, grease all bolts, studs and screws with high-temperature grease (field supplied).

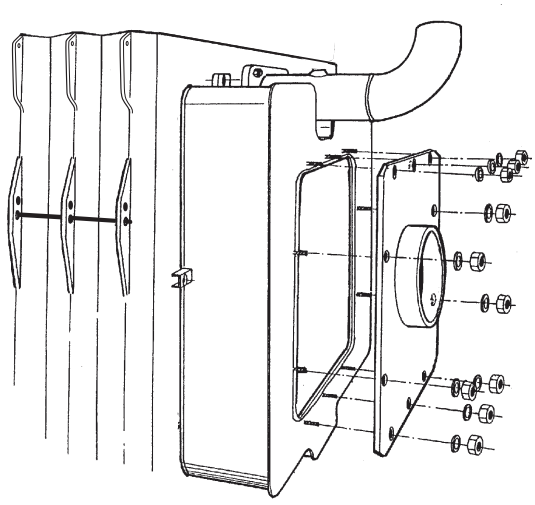
- Put in place the thermocord .
- Put the sweeping cover in place and fasten with 2 nuts H10 and Ø 3/8"/10mm washers.

29. Assembling the flue gas outlet



- The flue gas outlet is fastened to the rear by means of 6 studs, washers and Ø 9/16"/12mm nuts.

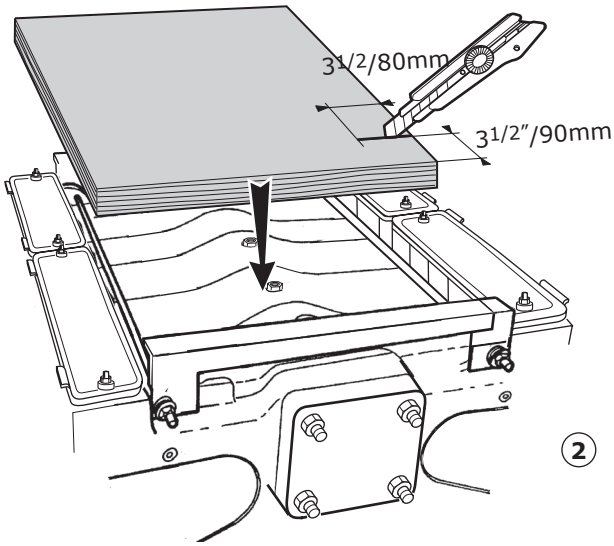
31.



- First attached the steel connecting plate to the chimney connection flue; then fasten that plate or the plate with a connecting piece with 10 nuts H10 and 3/8"/10 washers.

32. Installing the top insulating material (FA30 to FA36)

GT 530A-15 to Gt 530A-17

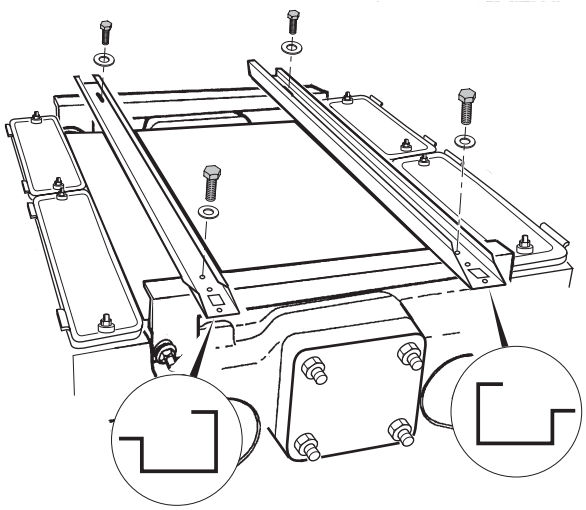


(2) Front

- Put in place the 23 5/8" 600mm mm wide (packages FA35 to FA36) top insulating material on the body of the boiler

Number of section	GT 530A-15+16	GT 530A-17
Length (mm)	82 11/16"/ 2,100	86 5/8/2,200

33. Installing the cable channels (FA16 to FA27)

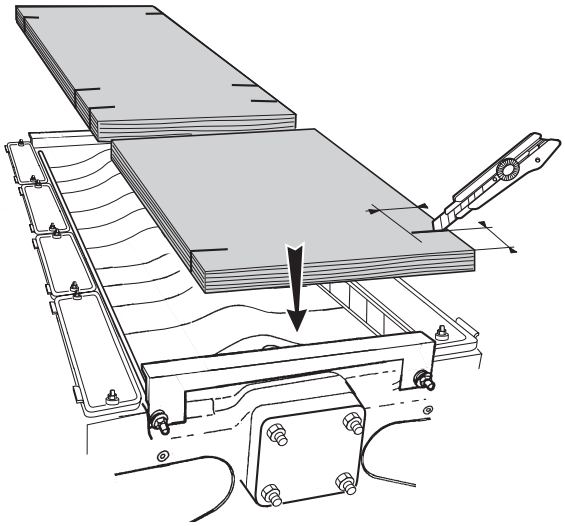


- Place the cable channels so that their bevelled end is at the front.
- Fasten with 2 screws H8 x 16 and L8 washers in the third hole starting from the front and opposite the special nut.
- Fasten at the rear with 2 screws H8 x 16 and L8 washers opposite the oblong holes and special nut.

(1) Rear

34. Installing the top insulating material (FA37 to FA41)

GT 530A-18 to Gt 530AE-32

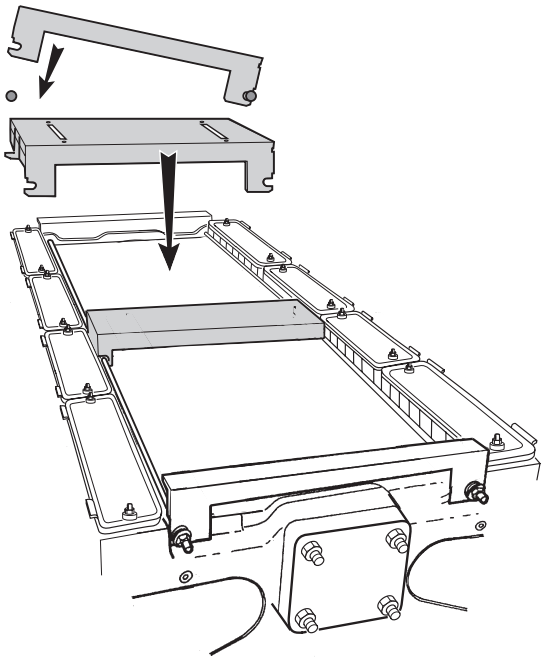


- Put in place the 2 pieces of insulating material (width 600 mm; packages FA37 to FA41) on the body of the boiler.
- Push the insulating material under the front and rear crosspieces.
- 26-32 sections Use provided spare insulation and cut to fit the gap.

35. Installing the intermediate piece (MR 245)

GT 530A-18 to Gt 530A-25

- Assemble the intermediate piece on the assembly rods by fitting one slotted side onto one rod and using the flexibility of the other rod.



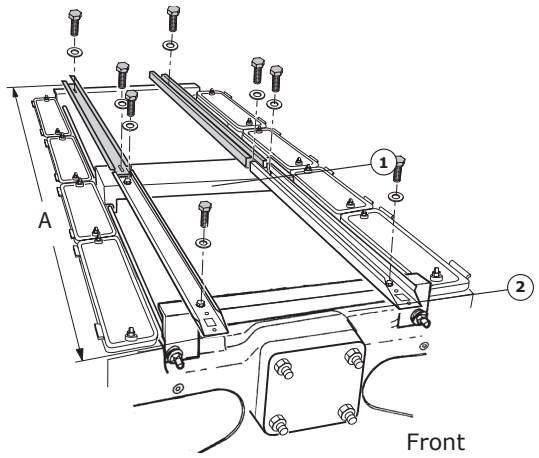
36. Installing the cable channels (FA16 To FA24)

GT 530A-18 to Gt 530A-25

1. Package FA16
2. Package FA17 to FA24

GT 530AE-26 to Gt 530AE-32

1. Package FA18-FA24-Mount
2. Package FA24-Reversed



GT 530A

Number of sections	18	19	20	21	22	23	24	25
Length(in/mm)	98.87”/2,510	102·37”/2,600	110.25”/2,800	114.25”/2,910	118·12”/3,000	122·43”/3,110	126”/3,200	130.31”/3,310

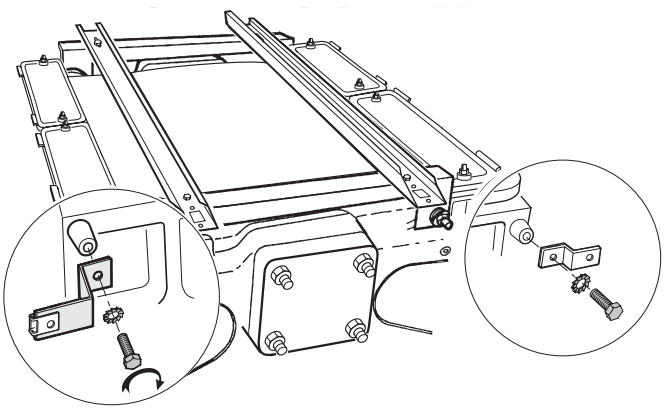
GT 530AE

Number of sections	26	27	28	29	30	31	32
Length(in/mm)	134.6/3420	138.9/3530	143.3/3640	147.6/3750	151.9/3860	156.2/3970	160.6/4080

- Place the cable channels so that their bevelled end is to the front.
- Fasten with 2 screws H8 x 16 and L8 washers in the third hole starting from the front and opposite the special nut.
- Fasten them to the intermediate piece and the rear crosspieces with 2 screws H8 x 16 and L8 washers.
- Align the 2 additional cable channels with the two others.
- Fasten them to the intermediate piece and the rear crosspieces with 4 screws (H8 x 16) and L8 washers.

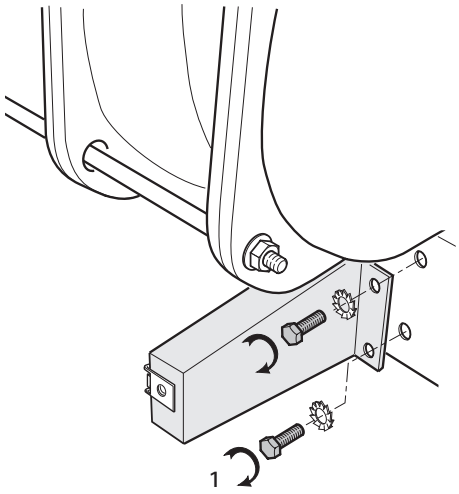
37. Installing the casing positioning brackets (MR245 or MR246)

- Fas ten the positioning brackets (package MR245 or MR246) onto the right and left-hand upper bosses of the front section with : 2 screws H8 x 16 and 2 serrated washers (1/2” /13mm wrench).



38. Installing the lower rail support brackets (MR 245 or MR 246)

• Example for a GT 530A

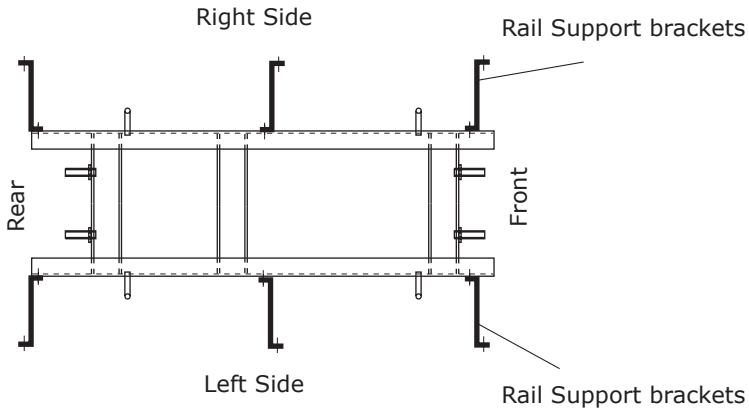


▶ Fasten the lower rail support brackets using H8 x 16 screws + Serrated washer.

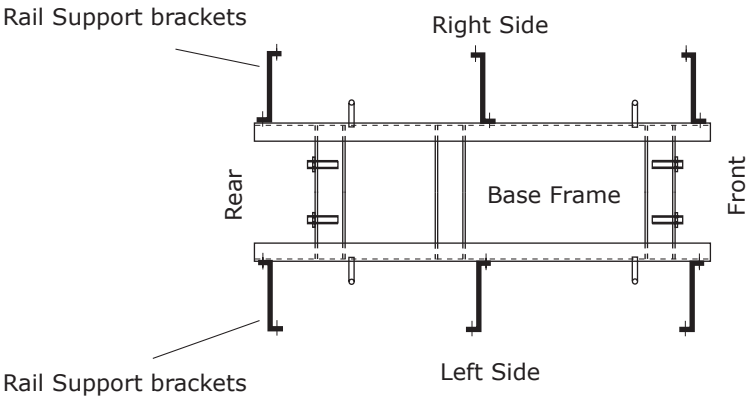
Note: For the assembly direction, see the following drawings

39. Assembly Direction of lower rail Support bracket

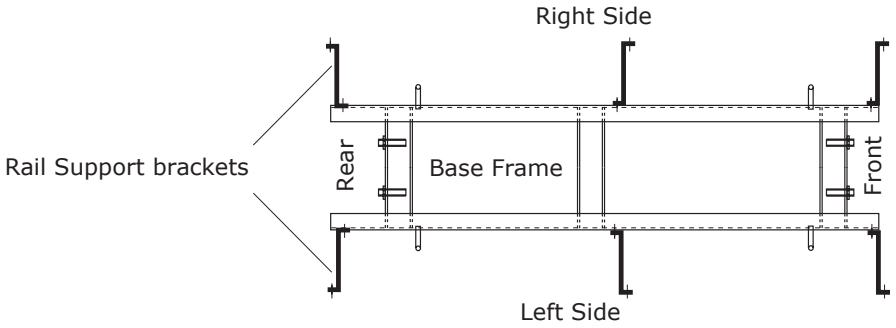
GT 530A-15 and Gt 530A-15



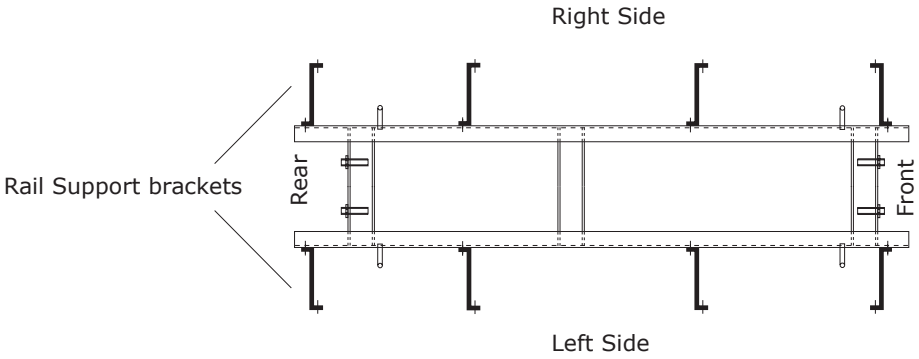
GT 530A-16



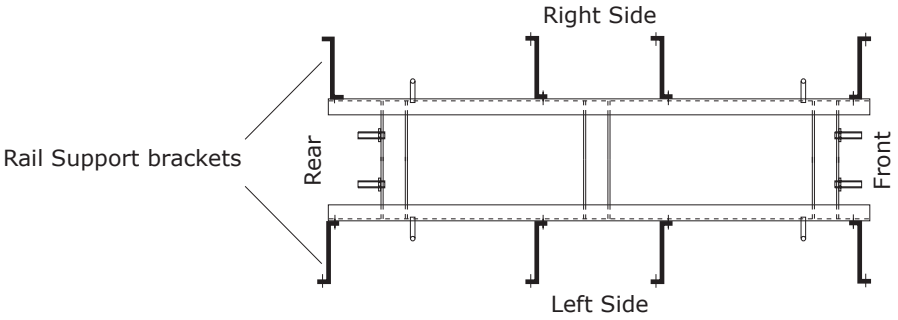
GT 530A-17



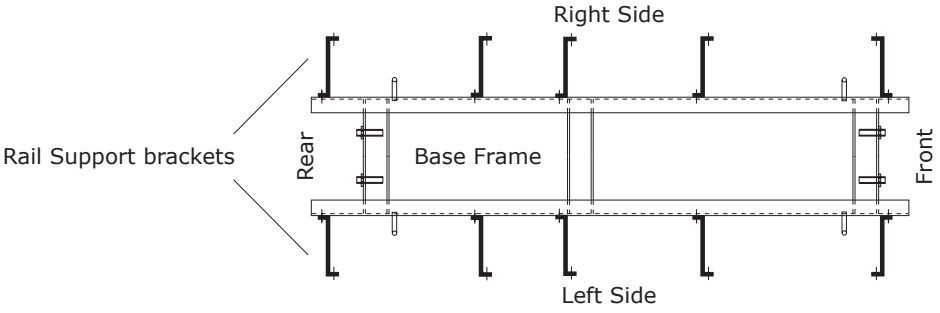
GT 530A-18 and GT 530A-20



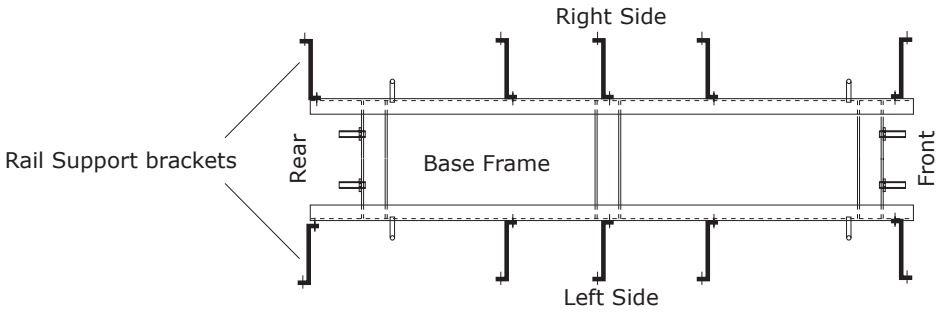
GT 530A-19 and GT 530A-21



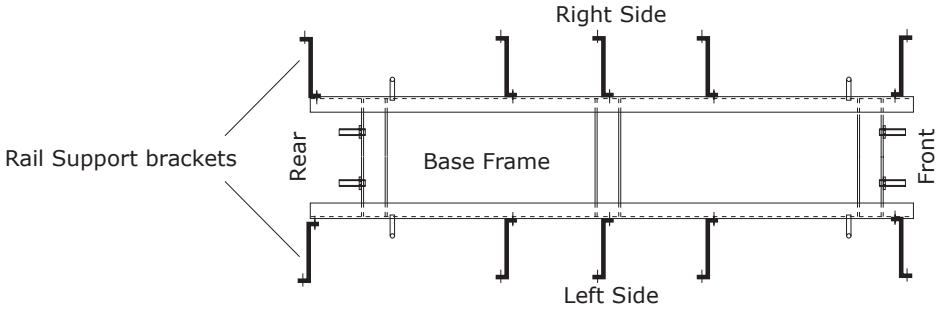
GT 530A-22 and GT 530A-24



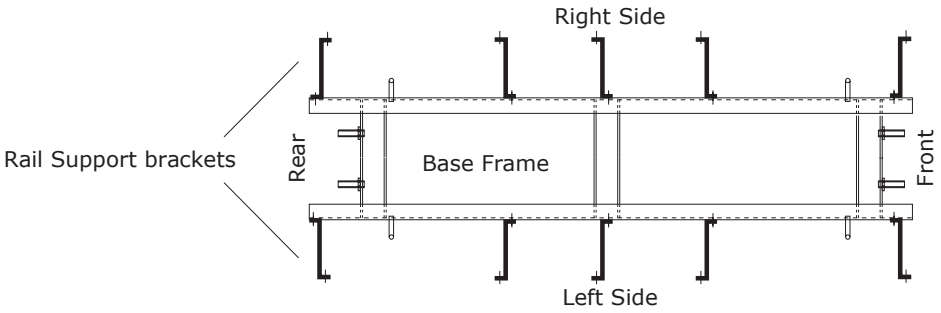
GT 530A-23 and GT 530A-25



GT 530AE-26 /27/28/29/32

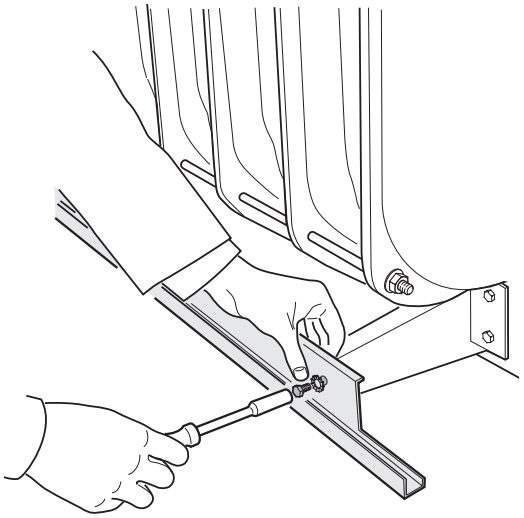


GT 530AE-30 /31



40. Installing the lower rail support brackets (FA17 to FA27)

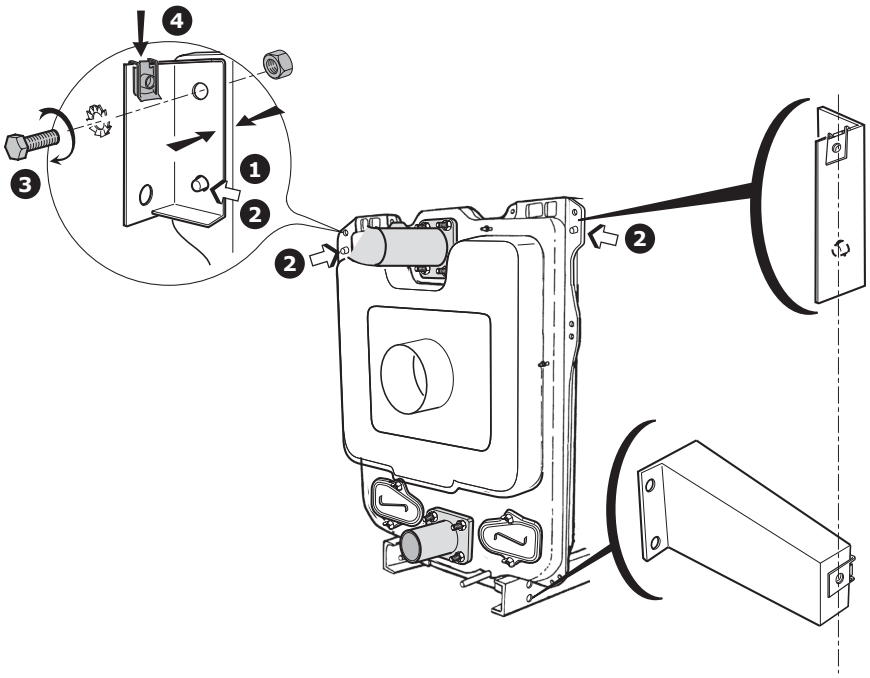
GT 530A-18 and GT 530A-20



- Fasten the lower rail with H8 x 30 screws and L8 washers.
- The other rail support brackets are fastened opposite the holes provided on the lower rail.

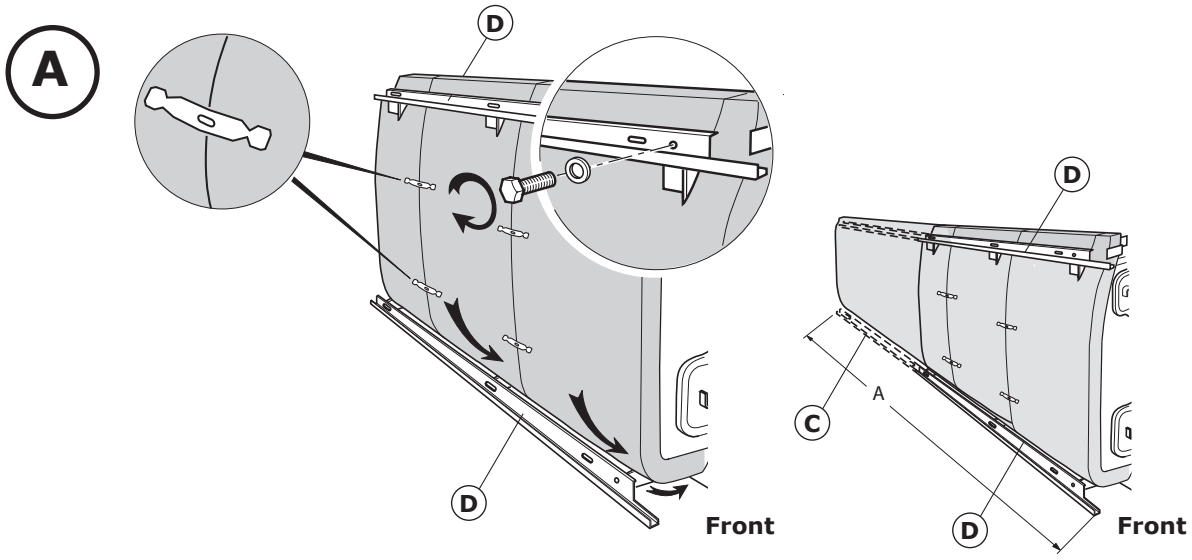
Length required while assembling the 2-piece rails (boilers with 18 to 25 sections), see fig.12.

41. Installing the fastening brackets of the upper and lower rails (MR245 or MR246)



1. Fix the fastening bracket of the upper rails (MR245 or MR246) on the upper lug (these brackets must be vertically aligned with the lower rail support brackets).
2. Fit the bracket onto the stub.
3. Fasten with 1 screw H10 x 50 and serrated washers and H10 nuts.
4. Assemble 1 "Rapid" nut on the top of the bracket with the tapped shaft on the inside.

42. Fitting the rails (FA17 to FA27)



A : GT 530A-15 to GT 530A-17

- Fix the upper rail with H8 x 30 screws and L8 washers (the first hole from the front end of the rail must be opposite the first fastening bracket, and similarly with the other brackets).
- Push the insulation behind the lower rail and underneath the boiler.
- Join the pieces of insulation to each other with the clips.

B : GT 530A-18 to GT 530A-25

- Fix the upper rail with H8 x 30 screws and L8 washers (the first hole from the front end of the rail must be opposite the first fastening bracket, and similarly with the other brackets).
- Fix the additional upper and lower rails, making sure you comply with dimension A (refer to the table below).
- Push the installation behind the lower rail and underneath the boiler.
- Join the pieces of installation to each other with the clips.

C: 26-30 sections

Some modification may be required

Boiler	Package (C)	Package (D)
GT 530A-15		FA 25
GT 530A-16		FA 26
GT 530A-17		FA 27
GT 530A-18	FA 16	FA 17
GT 530A-19	FA 16	FA 18
GT 530A-20	FA 16	FA 19
GT 530A-21	FA 16	FA 20
GT 530A-22	FA 16	FA 21
GT 530A-23	FA 16	FA 22
GT 530A-24	FA 16	FA 23
GT 530A-25	FA 16	FA 24
GT 530AE-26	FA 18	FA 24
GT 530AE-27	FA 19	FA 24
GT 530AE-28	FA 20	FA 24
GT 530AE-29	FA 21	FA 24
GT 530AE-30	FA 23	FA 24
GT 530AE-31	FA 24	FA 24
GT 530AE-32	FA 24	FA 24

Length required while assembling the 2-piece rails (boiler with 18 to 25 sections):

Number of sections	18	19	20	21	22	23	24	25
Length(mm-A)	98·43" /2500	103"/2615	108.87"/2765	114.25/22875	116.75/2965	121.06/3075	124.83"/3165	12893/3275

Length required while assembling the 2-piece rails (boiler with 26 to 32 sections):

Number of sections	26	27	28	29	30	31	32
Length(mm-A)	133.2/3385	1375/3495	141.9/3605	146.2/3715	150.5/3825	154.9/3935	159.2/4045

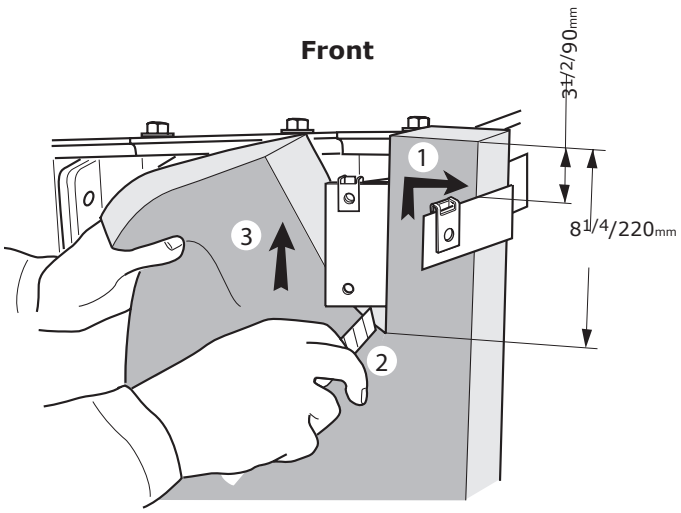
43. Installing the insulation

1. Place the side insulating material against the positioning bracketand cut it so that it is flush with the upper lug on which the rail fastening bracket is fixed, along a $8^{1/2}$"/220mm length.

2. Push the insulating material in behind the lug and the rail fastening bracket.

3. Distribute the insulating material evenly so that you have the same side insulating material on either side of the boiler.

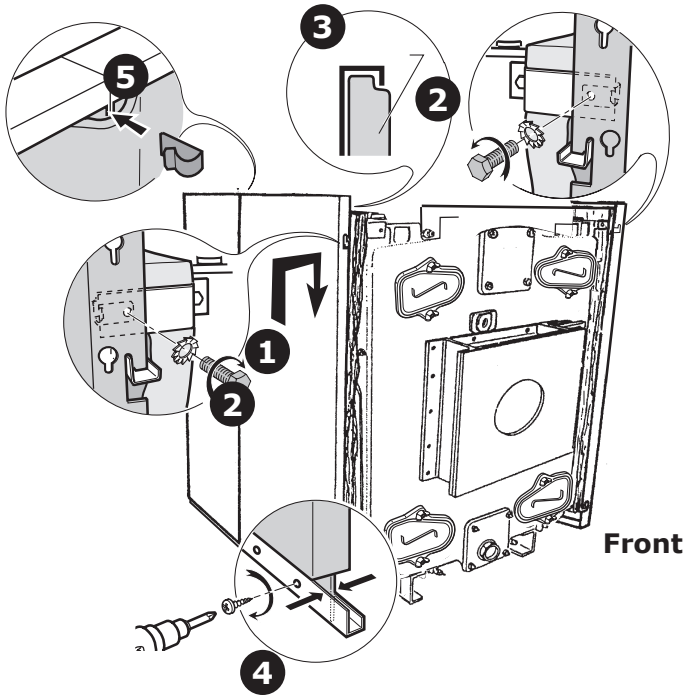
   Cut the insulation similary along the fastening brackets.



Boiler Model	Side Insulation (in/mm)				
	Front ◄				Rear
GT 530A-15	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		
GT 530A-16	$47^{1/4}$/1200	$15^{3/4}$/400	$23^{5/8}$/600		
GT 530A-17	$47^{1/4}$/1200	$15^{3/4}$/400	$23^{5/8}$/600		
GT 530A-18	$47^{1/4}$/1200	$47^{1/4}$/1,200			
GT 530A-19	$47^{1/4}$/1200	$47^{1/4}$/1,200			
GT 530A-20	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400	$23^{5/8}$/600	
GT 530A-21	$47^{1/4}$/1200	$15^{3/4}$/400	$47^{1/4}$/1,200		
GT 530A-22	$47^{1/4}$/1200	$15^{3/4}$/400	$47^{1/4}$/1,200		
GT 530A-23	$47^{1/4}$/1200	$23^{5/8}$/600	$47^{1/4}$/1,200		
GT 530A-24	$47^{1/4}$/1200	$23^{5/8}$/600	$47^{1/4}$/1,200		
GT 530A-25	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400	Cut to Fit Blank Roll Supplied	$47^{1/4}$/1,200
GT 530AE-26	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-27	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-28	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-29	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-30	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-31	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200
GT 530AE-32	$47^{1/4}$/1200	$15^{3/4}$/400	$15^{3/4}$/400		$47^{1/4}$/1,200

44.

1. First assemble the panels on the front side using the assembly length table below and continue up to the rear section.
2. Fix the front side panels to the positioning brackets with H8 x 16 screws and serrated washers.
3. Push the insulating material into the top of the side panels with the electric screwdriver (2 screws per panel).
4. Fasten the panels to the lower rails by means of the self-drilling screws.
5. Fasten the side panels to each other with the clips.



Boiler Type	Side panels (in/mm)					
	Front ◄				► Rear	
GT 530A-15	37/940	$23^{5/8}$/600	$23^{5/8}$/600			
GT 530A-16	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600			
GT 530A-17	37/940	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400		
GT 530A-18	$41^{3/8}$/1050	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400		
GT 530A-19	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400		
GT 530A-20	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600		
GT 530A-21	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600		
GT 530A-22	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400	
GT 530A-23	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400	
GT 530A-24	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	
GT 530A-25	MR4	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	
GT 530Ae-26	MR4	FA11	FA11	FA10	FA10	FA10
GT 530Ae-27	MR5	FA11	FA11	FA10	FA10	FA10
GT 530Ae-28	MR5	FA11	FA11	FA11	FA10	FA10
GT 530Ae-29	MR4	FA11	FA11	FA11	FA11	FA10
GT 530Ae-30	MR5	FA11	FA11	FA11	FA11	FA10
GT 530Ae-31	MR4	FA11	FA11	FA11	FA10	FA10 FA10
GT 530Ae-32	MR5	FA11	FA11	FA11	**FA11**	FA11

Panels:

$15^{3/4}$"/400mm long panel in package (FA10)

$23^{5/8}$"/600mm long panel in package (FA11)

37"/940mm long panel in package (MR4)

$41^{3/8}$/1,050mm long panel in package (MR5)

45.

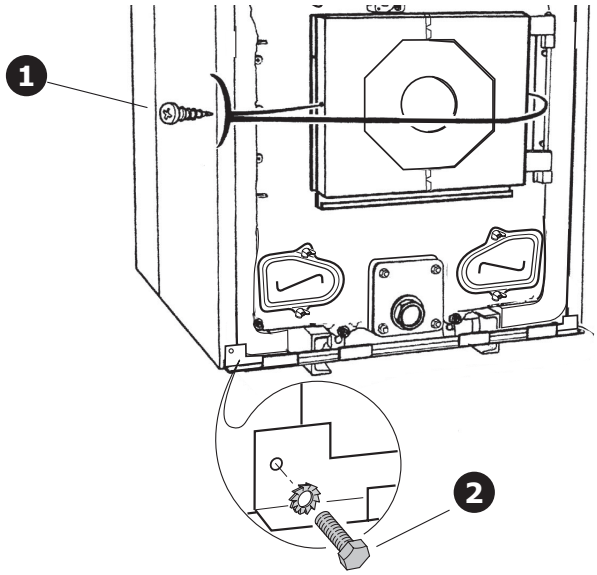
Installing the boiler door and lower crosspiece bracket (MR245 or MR246)

1. Put the boiler door in place (package MR245 or MR246) and fasten with 2 tapping screws (Ø 3.94 x 12.7). The boiler door may be cut in 2 at the micro-joints.
2. Attach the casing support lower crosspiece (package MR245 or MR246) with 2 screws (H6 x 20) and 2 serrated washers.

Note :

- A 1/8 diameter hole needs to be drilled on each side of the burner mounting plate to accept the 2 self tapping screws.

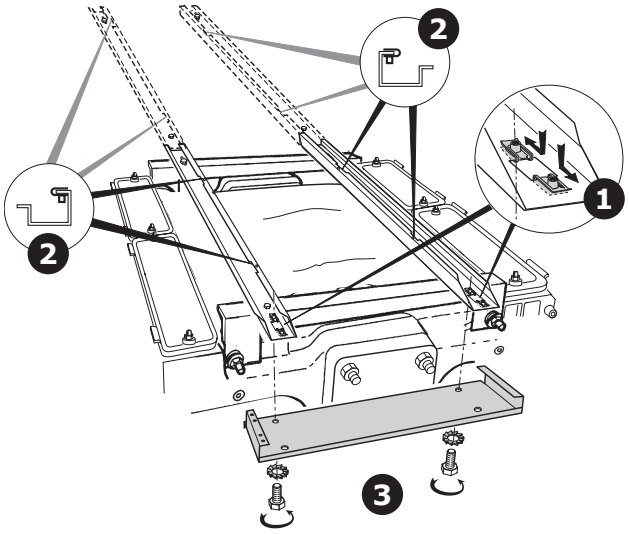
- On the larger model bolt hole patterns, you must clear the boiler door to clear the 4 mounting studs for the burner door



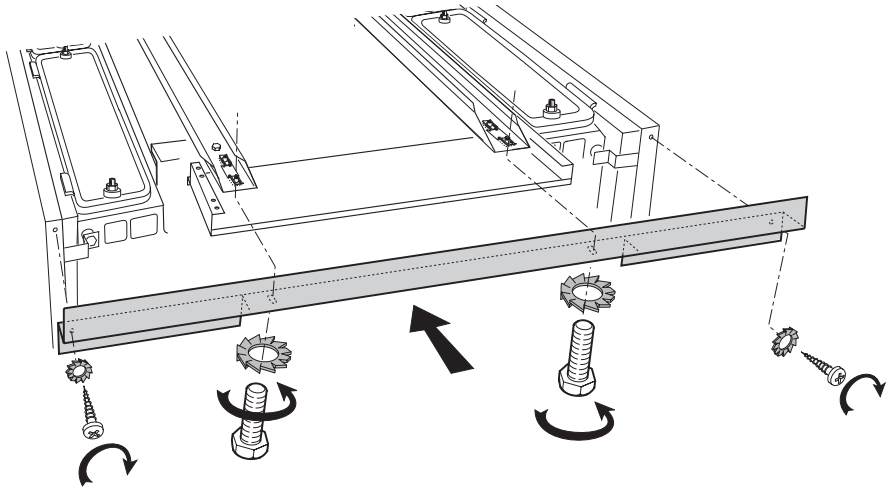
46.

Installing the control panel bracket (MR245 or MR246)

1. Fit the 4 "Rapid" nuts on the front of the cable channels.
2. Fit the "Rapid" nuts in the slots:
   4 "Rapid" nuts for 15 to 17 sections.
   8 "Rapid" nuts for 18 to 25 sections.
3. Attach the control panel bracket (package MR245 or MR246) underneath the 2 cable channels by means of 2 screws (H8 x 16) and 2 serrated washers.



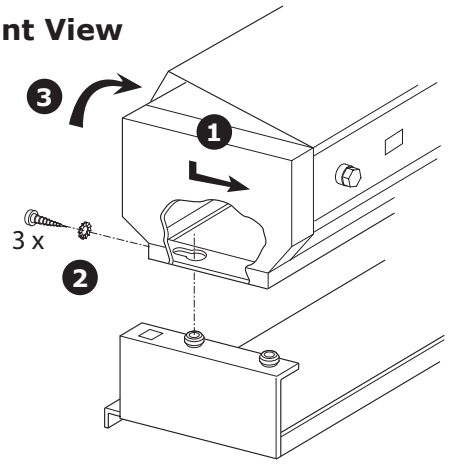
47. Standard control panel (MD5 and MR246)



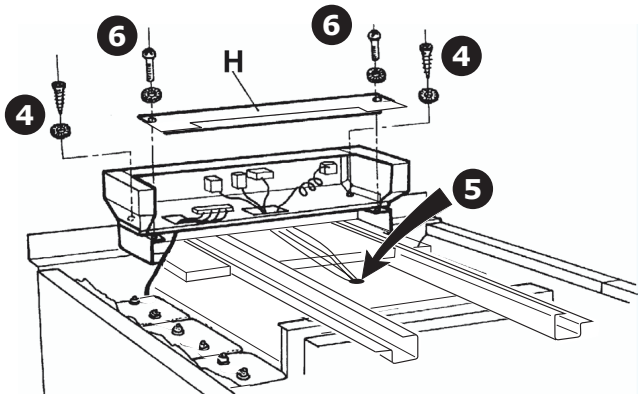
- Put the front crosspiece in place (package MR245 or MR246) and fasten with 2 screws (H8x30) and Ø 3.94 tapping screws (x 12.7) and serrated washers.

48. Installing the MD5 control panel

Front View



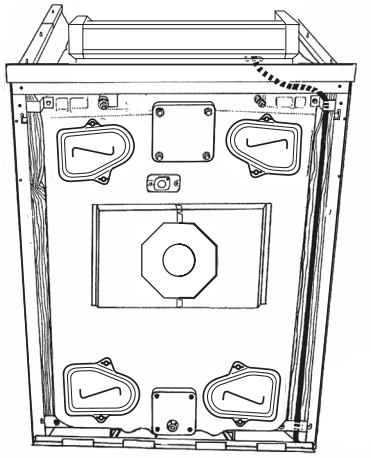
Rear View



1. Position the control panel on the rear bushes.
2. Remove the 3 screws .
3. Open the control panel (3 screws at the back).
4. Secure the control panel (2 self-tapping screw 3,94 x 25 + Serrated washers).
5. Carefully unroll the various temperature sensor bulbs and bring them out of the control panel through the opening in the bottom on the panel. Cut out the top instulation to free the boiler pocket.
6. Secure the rear cover H (MR245 or MR246) to the panel support using 2 screws EC CB 4 x 40 and serrated washers. Close the control panel.

49. Electrical Connections

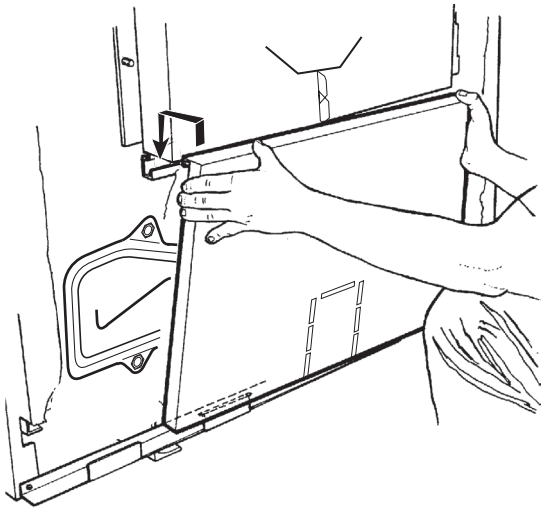
All connections are made with the terminal boxes designed for that purpose on the back of the boiler's control panel



- Bring the **burner cable** behind the casing support and down to the burner between the side panel and insulating material.

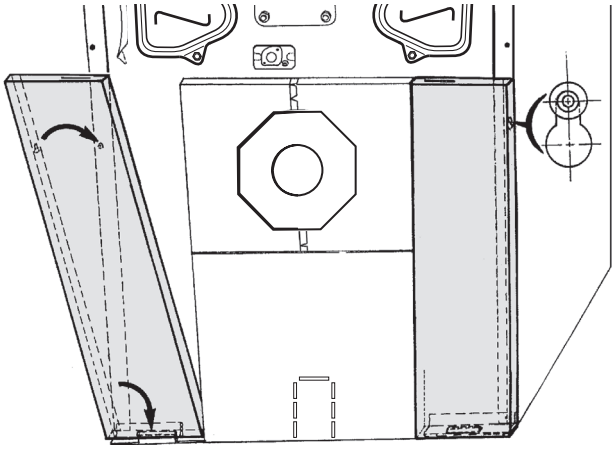
Refer to the control panel instructions to make the electrical connections.
see the "Electrical connections" section of the instructions supplied with the control panel

50. Installing the lower front panel (MR245 or MR246)

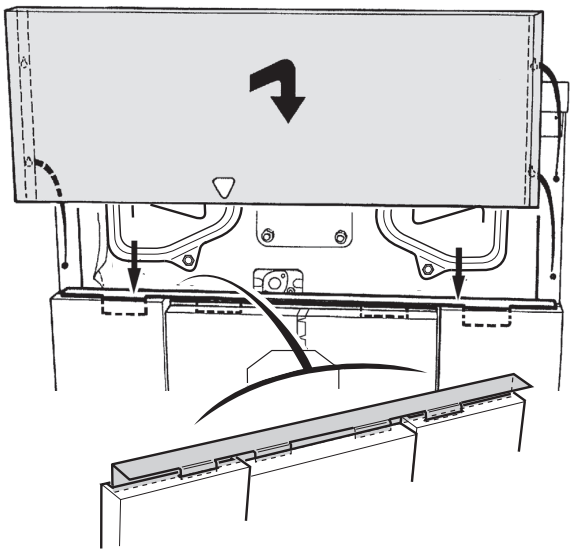


- Place the insulation in the lower central front panel (black cloth facing outward).
- Fit the lower central front panel (package FA5 or FA6) onto the lower front crosspiece and attach it to the boiler door.

51. Installing lower front side panels (MR245 or MR246)

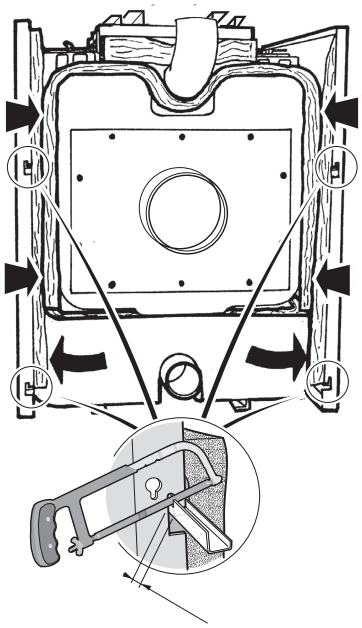


52. Installing the front top panel (MR245 or MR246)



- Place the retaining crosspiece on the left and right-hand front panels, taking care to place the 2 central tabs behind the furnace door panel.
- Attach the upper front panel onto the side panels via the 4 studs.

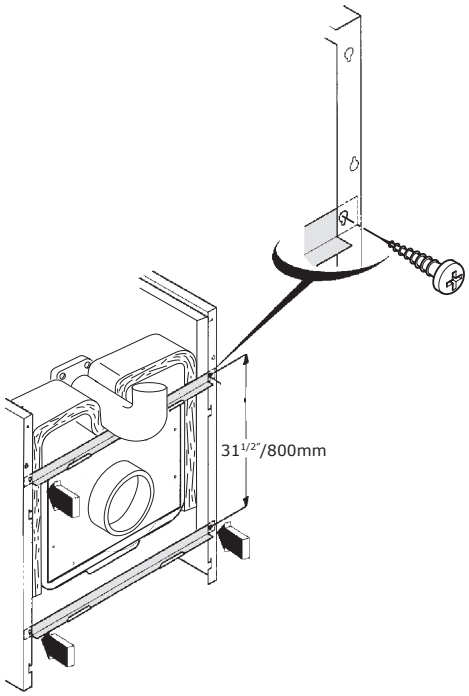
53. Installing the Fluegas box insulation (MR245 or MR246)



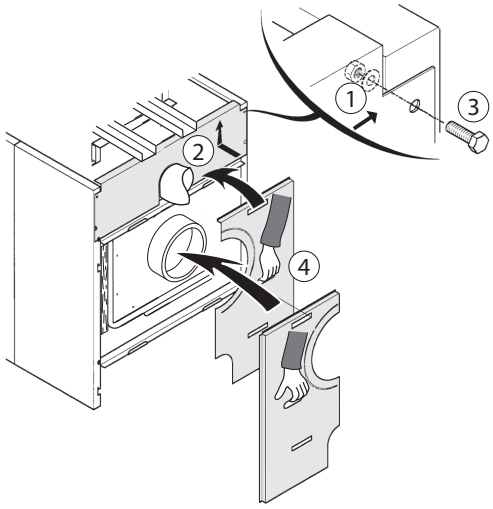
- Install in place the flue gas box insulation and the lower rear insulation.
- If the side crosspieces overlap at the rear by more than 7/8”/10mm, we advise you to saw them off using a hacksaw.

54. Installing the rear crosspieces (MR245 or MR246)

- Attach the 2 rear crosspieces (package MR245 or MR246) behind the bend of the rear side panels and fasten each crosspiece to the side panels using 2 screws (Ø 3.94 x 12.7).



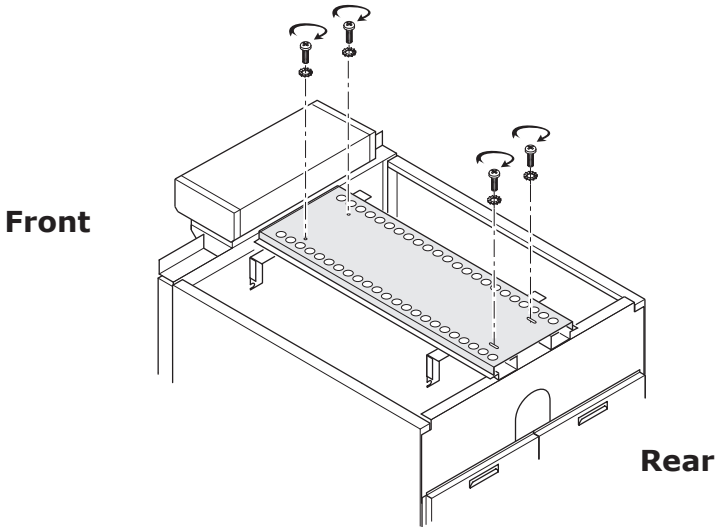
55. Installing the rear casing panel (MR245 or 246)



1. Attach the 2 clip-on nuts on the side panels.
2. Attach the upper rear panel onto the studs and push it up.
3. Fasten with 2 screws H8 x 16 and serrated washers.
4. Attach the 2 lower rear panels onto the rear crosspieces.

56. Installing the cable channel Cover:

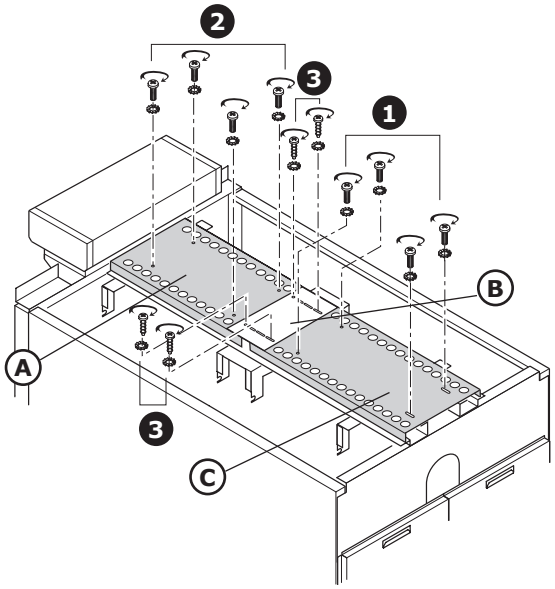
GT 530A-15 to GT 530-17



- Position the central plate on the cable channels with the round holes towards the front of the boiler.
- Attach with H8 x 30 screws and serrated washers.

57. Installing the side covers

GT 530A-18 to Gt 530A-25



Ⓐ Package FA17 to FA24

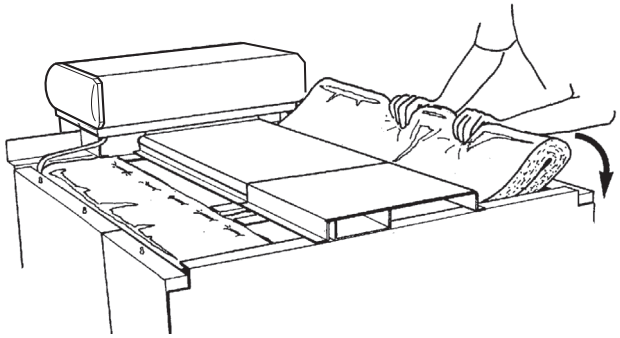
Ⓑ Package MR246

Ⓒ Package FA16

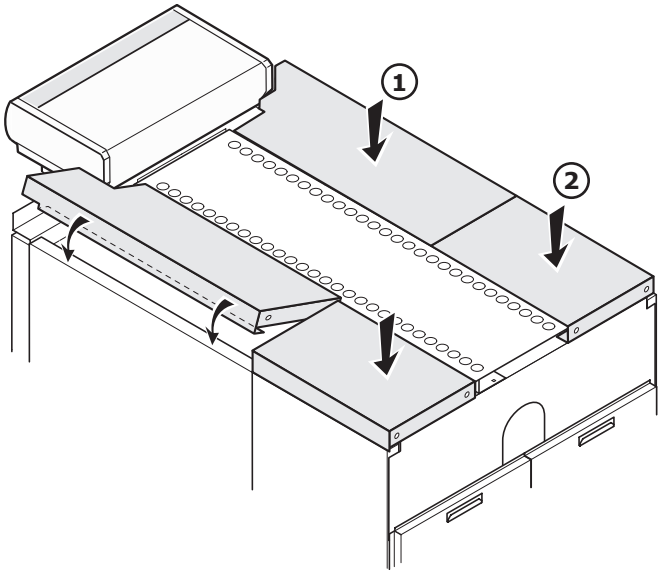
1. Position the rear plate, which is $47^{1/4}$ /1200 mm long. Attach 2 screws H8 x 30 and serrated washers.
2. Position the front plate with the round holes towards the front of the boiler. Attach 4 screws H8 x 30 and serrated washers.
3. Attach the joining plate with the round holes towards the front of the boiler with 4 tapping screws and serrated washers.

55. Installing the sweeping cover insulation (FA35 to FA41)

- Put in place the sweeping cover insulation
  - GT 530A-15 to GT 530A-17 : 2 pieces.
  - GT 530A-18 to GT 530A-25 : 4 pieces.



56. Installing the side Covers (FA5 to FA11)



① Package FA8 to FA9.

② Package FA10 to FA11

▶ Place the side covers from the front to rear. They have the same lengths as the side panels.

Boiler Type	Side panels (in/mm)					
	Front ◄				► Rear	
GT 530A-15	37/940	$23^{5/8}$/600	$23^{5/8}$/600			
GT 530A-16	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600			
GT 530A-17	37/940	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400		
GT 530A-18	$41^{3/8}$/1050	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400		
GT 530A-19	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400		
GT 530A-20	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600		
GT 530A-21	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600		
GT 530A-22	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400	
GT 530A-23	$41^{3/8}$/1050	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	$15^{3/4}$/400	
GT 530A-24	37/940	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	
GT 530A-25	MR4	$23^{5/8}$/600	$23^{5/8}$/600	$23^{5/8}$/600	$15^{3/4}$/400	
GT 530Ae-26	MR4	FA11	FA11	FA10	FA10	FA10
GT 530Ae-27	MR5	FA11	FA11	FA10	FA10	FA10
GT 530Ae-28	MR5	FA11	FA11	FA11	FA10	FA10
GT 530Ae-29	MR4	FA11	FA11	FA11	FA11	FA10
GT 530Ae-30	MR5	FA11	FA11	FA11	FA11	FA10
GT 530Ae-31	MR4	FA11	FA11	FA11	FA10	FA10 FA10
GT 530Ae-32	MR5	FA11	FA11	FA11	**FA11**	FA11

Panels:

$15^{3/4}$″/400mm long panel in package (FA10)

$23^{5/8}$″/600mm long panel in package (FA11)

37″/940mm long panel in package (MR4)

$41^{3/8}$/1,050mm long panel in package (MR5)

Oil or gas connections

Specific technical information supplied with the burner

- The boiler and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psig (3.5kPa).
- The boiler must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.5 kPa).
- The boiler shall be installed such that the gas ignition system components are protected from water (dripping, spraying, rain, etc.) during appliance operation and service (circulator replacement, condensate trap, control replacement, etc.).
- The boiler and its gas connection must be leak tested before placing the boiler in operation,
- After placing the boiler in operation, the ignition system safety shutoff device must be tested,
- Provision for vent, bleed and gas relief lines (when applicable).
- A sediment trap must be provided upstream of the gas controls.
- Location of manual main shutoff valve outside the jacket when codes require.

i Refer to the instructions Supplied with the burner

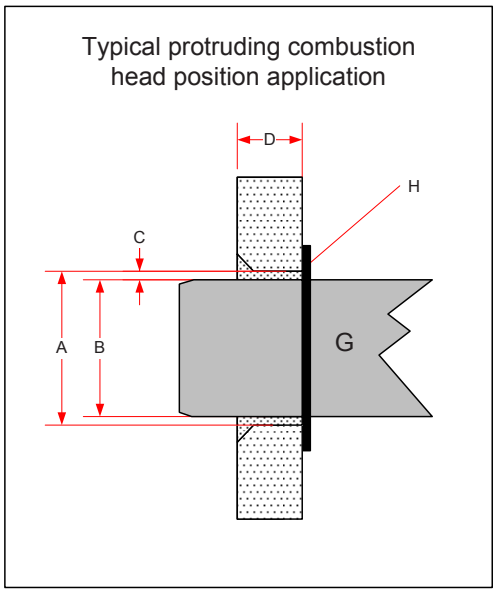
Electrical Connections

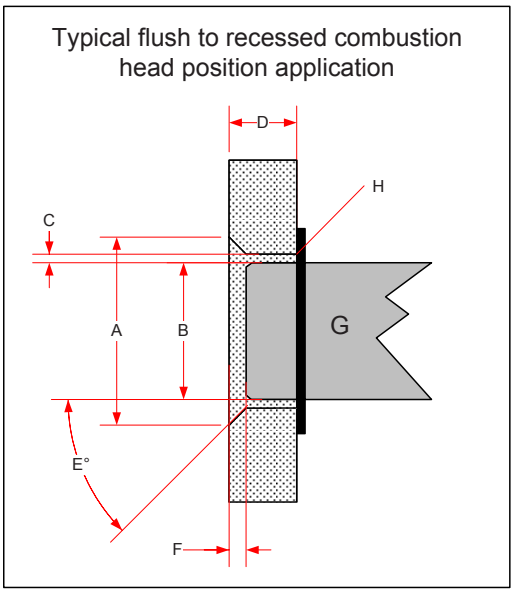
1-Wiring
Wiring in accordance with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the Canadian Electrical Code Part 1, CSA C22.1, Electrical Codes.

⚠⚠ WARNING

Label all wire prior to disconnecting, when servicing the control. Wiring errors may cause improper and dangerous operation. Verify for proper operation after service.

Burner installation on boiler burner door





A	Overall diameter including gap between head and refratory material, including tappering
B	Burner combustion head diameter (consult burner documentation)
C	0.18 –0.3 Inch gap between combustion head and refractory material
D	Burner door thicknessgt 530a = 5.51” /140Mm

E	Degree of tapper required on refactory material to allow proper flame pattern
F	Maximum position combustion head shall be recessed in the refractory material ¼ -½ inch max
G	Burner combustion head
H	Burner flange with appropiate gasket

ATTENTION INSTALLER:

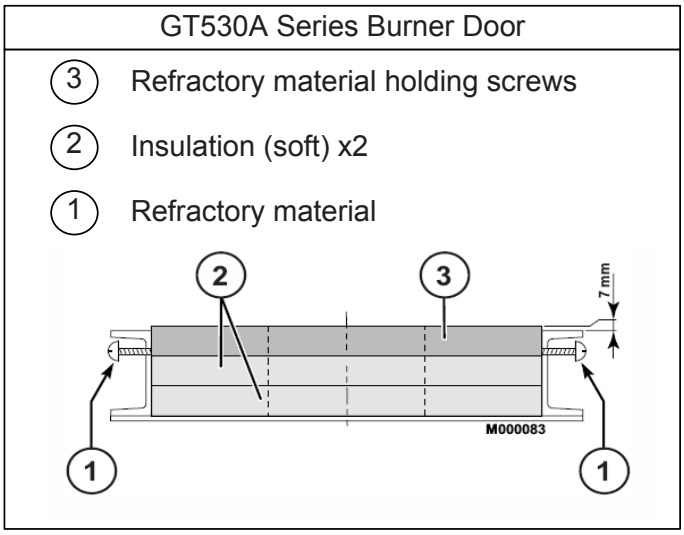
The burner as provided may have the burner mounting bolts attached, but the door refractory insulation has not be modified. This must be done by the installer.

Please consult the burner mounting instructions, for any special modifications required,

The refactory can be easily cut with a sharp knife or any fine tooth cutting blade.

Note:

1. Burners that have a flush combustion head position will require that the insulation be tappered to allow sufficent space for proper flame pattern. Do not recess combustion head inside refractory material more than ½ inch [12mm]
2. Burners that the combustion head is protruding past the refactory material, no tappering is required. Consult burner manufacturer to ensure combustion head protruding into combustion chamber is acceptable.

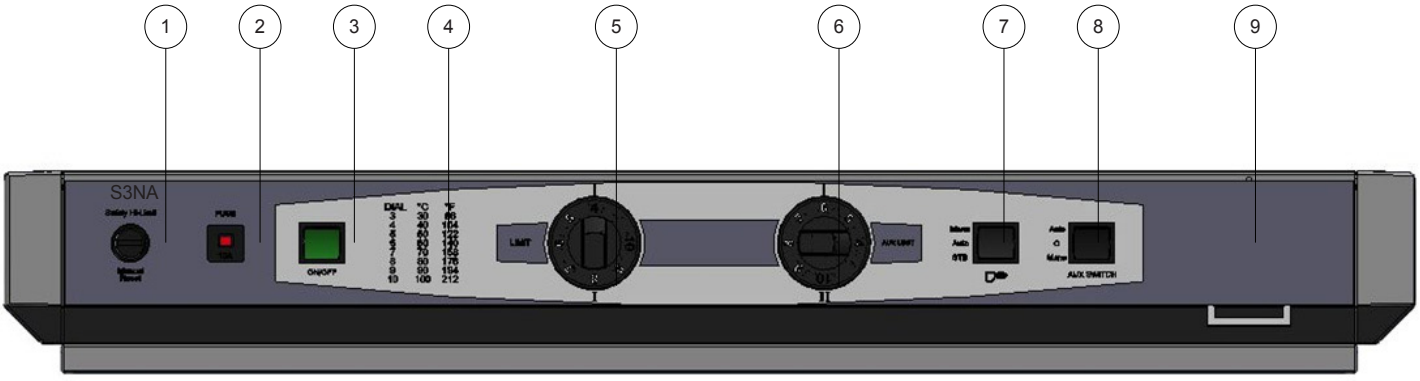


⚠⚠ WARNING

when cutting refractory special care must be taken or damage to refractory will occur. Damage caused by mistakes will not be covered under warranty.

De Dietrich Cast Iron Boiler Temperature Controller Model S3NA (standard version)

OVERVIEW OF COMPONENTS



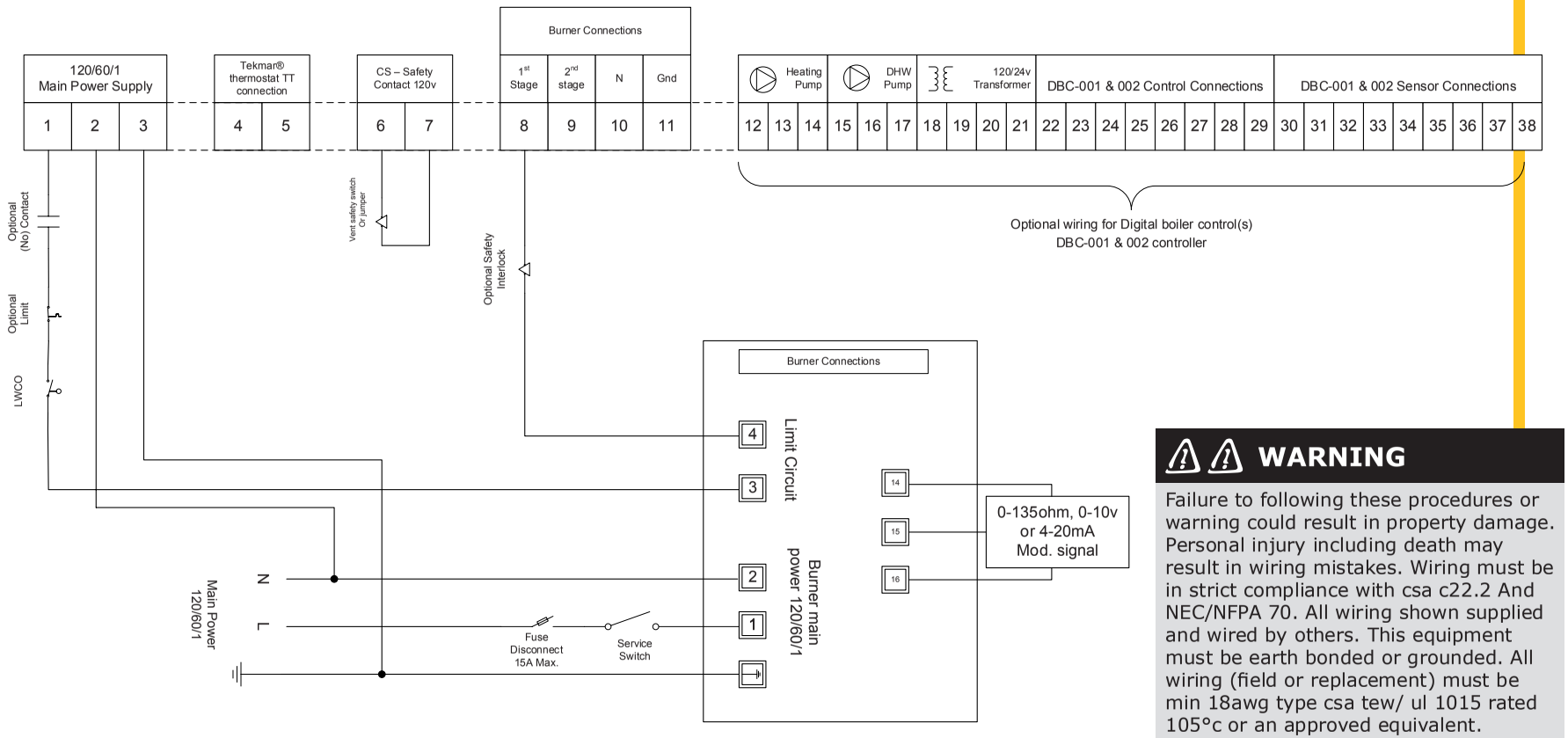
1	*Safety Hi-Limit (Manual Reset) Fixed Setting 120°C [248°F]*
2	*Panel fuse protection (resettable-breaker) 250v 10A rated*
3	*Main ON/OFF Switch*
4	*Operating limits dial conversion*
5	*Limit adjustable 40-100°C [104-212°F]*
6	*Aux Limit adjustable 40-100°C [104-212°F] optionalusage, for 2 stage control (L-H-L) or additional operating limit, additional relay required not provided*
7	*Man/Auto/STB 3 position operating switch:Man = Local paneloperationAuto = Remote control operation–separate operating control required. STB = Testing Safety limit function*
8	*Aux Switch –Optional usage (not part of safety circuit) consult factory for appropriate use and applications.*
9	*Provisional panel knockout for optional digital control offering (consult factory for availability)*

⚠⚠ WARNING

- *All replacement and field wiring min 18awg. Type TEW or 1015 CSA/UL approved.*
- *It is the sole responsibility of the installer/owner that the controls are operating correctly*
- *Wiring mistake can lead to personal injury (including death) or property damage. Mark all wires when prior to servicing or replacing wires or components.*
- *All water piping shall be arranged to avoid spray or ingestion of water on control*
- *Do not operate control if ingested or damaged by water. Do not attempt to repair, lockout and tag equipment replace control immediately.*

S2NA or S3NA Temperature control Panel (Internal wiring by DDR-De Dietrich Factory)

Panel Application Wiring
Full Modulating Operation



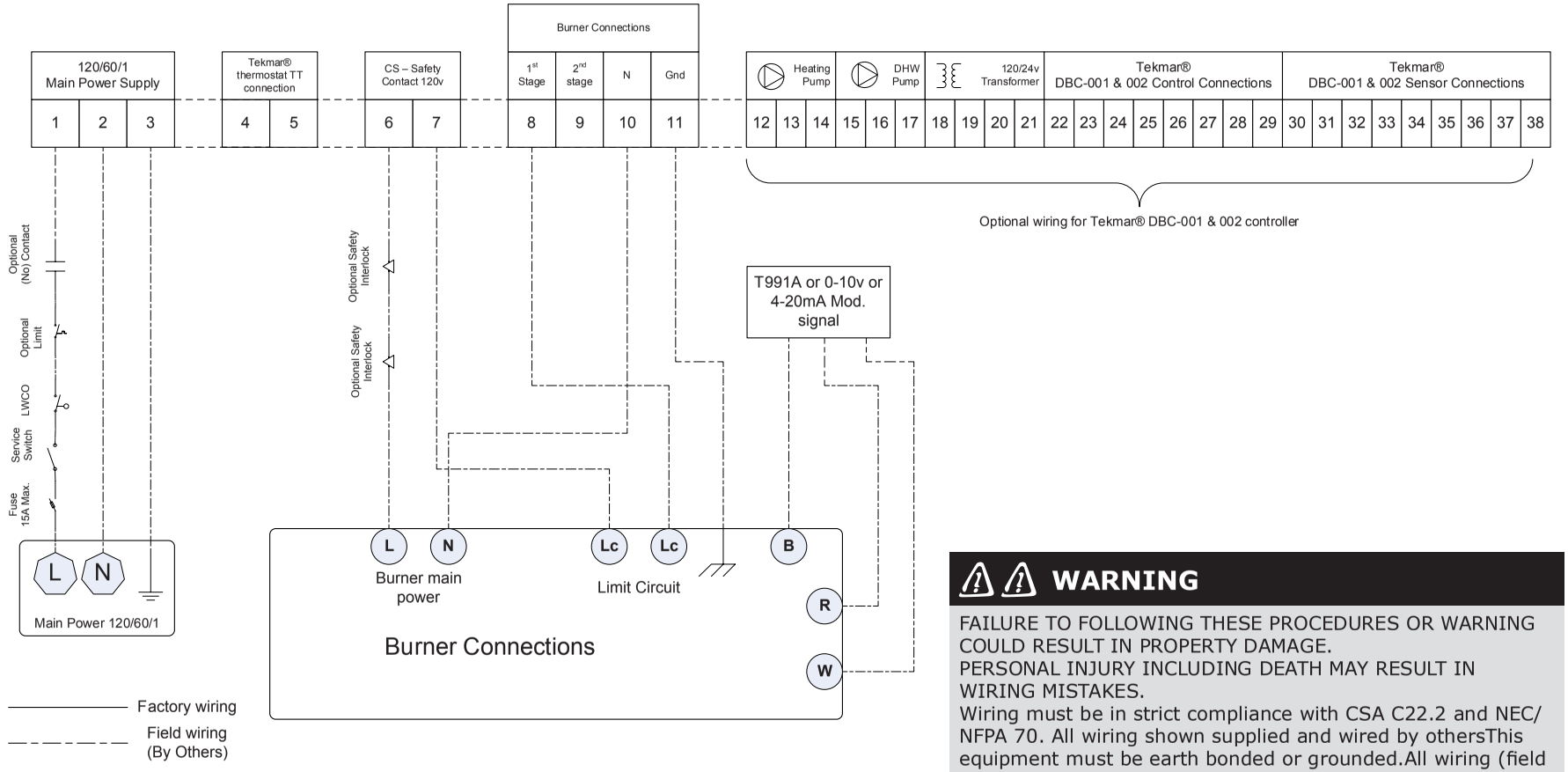
——	*All field wiring shown by others*
1	*Burner terminals*
1	*Boiler panel terminals*

⚠⚠ WARNING

Failure to following these procedures or warning could result in property damage. Personal injury including death may result in wiring mistakes. Wiring must be in strict compliance with csa c22.2 And NEC/NFPA 70. All wiring shown supplied and wired by others. This equipment must be earth bonded or grounded. All wiring (field or replacement) must be min 18awg type csa tew/ ul 1015 rated 105°c or an approved equivalent.
All wiring and panels must be shielded from spray or ingestion of water. Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.
It is the responsibility of the installer/ owner to verify the controls are functioning correctly and are adjusted correctly. Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.
• Line voltage wiring and low voltage sensor wiring must use separate wire conduits.
• Label all wires prior to disconnecting them for service.

S2NA or S3NA

Panel Application Wiring
Full Modulating Operation



——	Factory wiring
- - - - -	Field wiring (By Others)

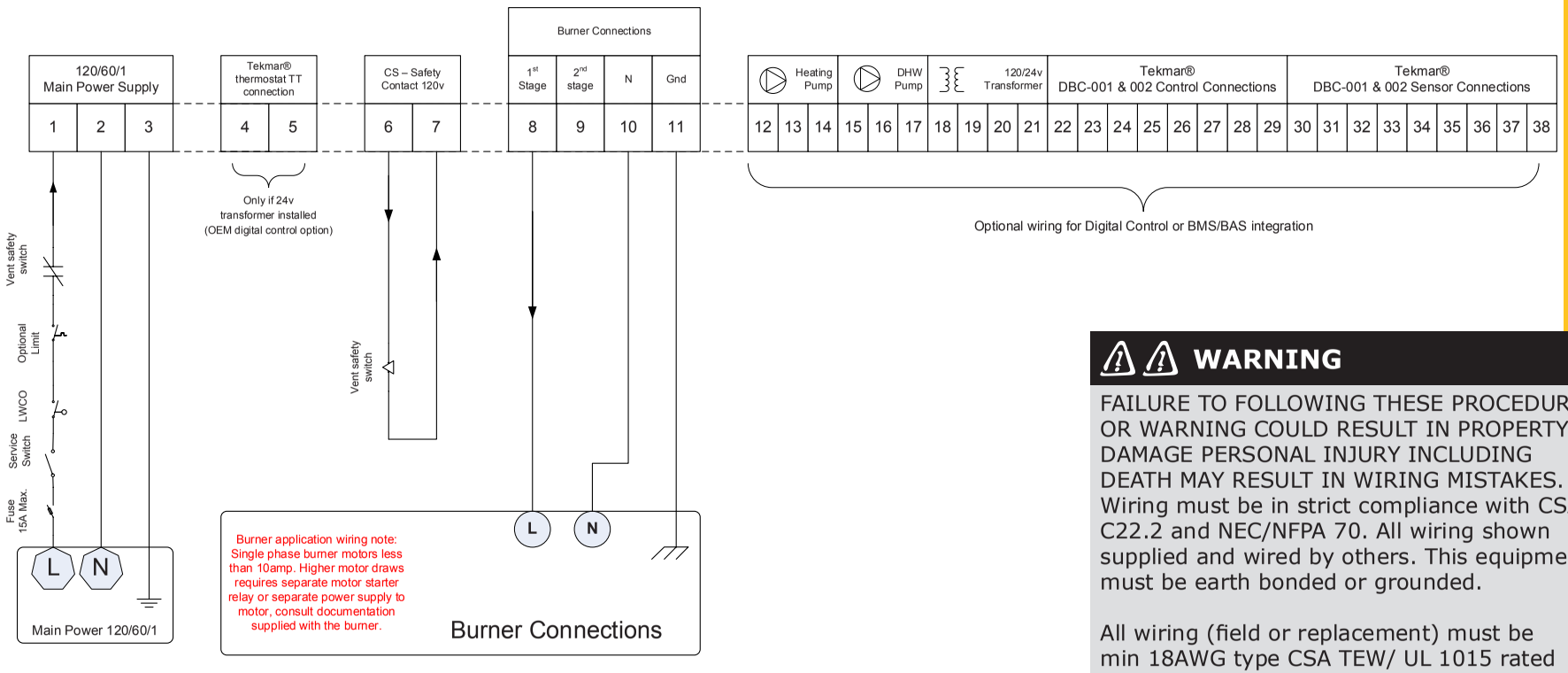
⚠⚠ WARNING

FAILURE TO FOLLOWING THESE PROCEDURES OR WARNING COULD RESULT IN PROPERTY DAMAGE.
PERSONAL INJURY INCLUDING DEATH MAY RESULT IN WIRING MISTAKES.
Wiring must be in strict compliance with CSA C22.2 and NEC/ NFPA 70. All wiring shown supplied and wired by othersThis equipment must be earth bonded or grounded.All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent.
All wiring and panels must be shielded from spray or ingestion of water.Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced.It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.
Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

S2NA (ME50) or S3NA (MD5) Temperature control panel (Internal wiring by DDR-De Dietrich factory)

Panel Application Wiring
ON/OFF (single stage) operation



→	*Electrical flow direction (Always observe)*
—	*Field wiring (By Others)*
L	*Main power supply (fused)*
L	*Burner connections*

⚠⚠ WARNING

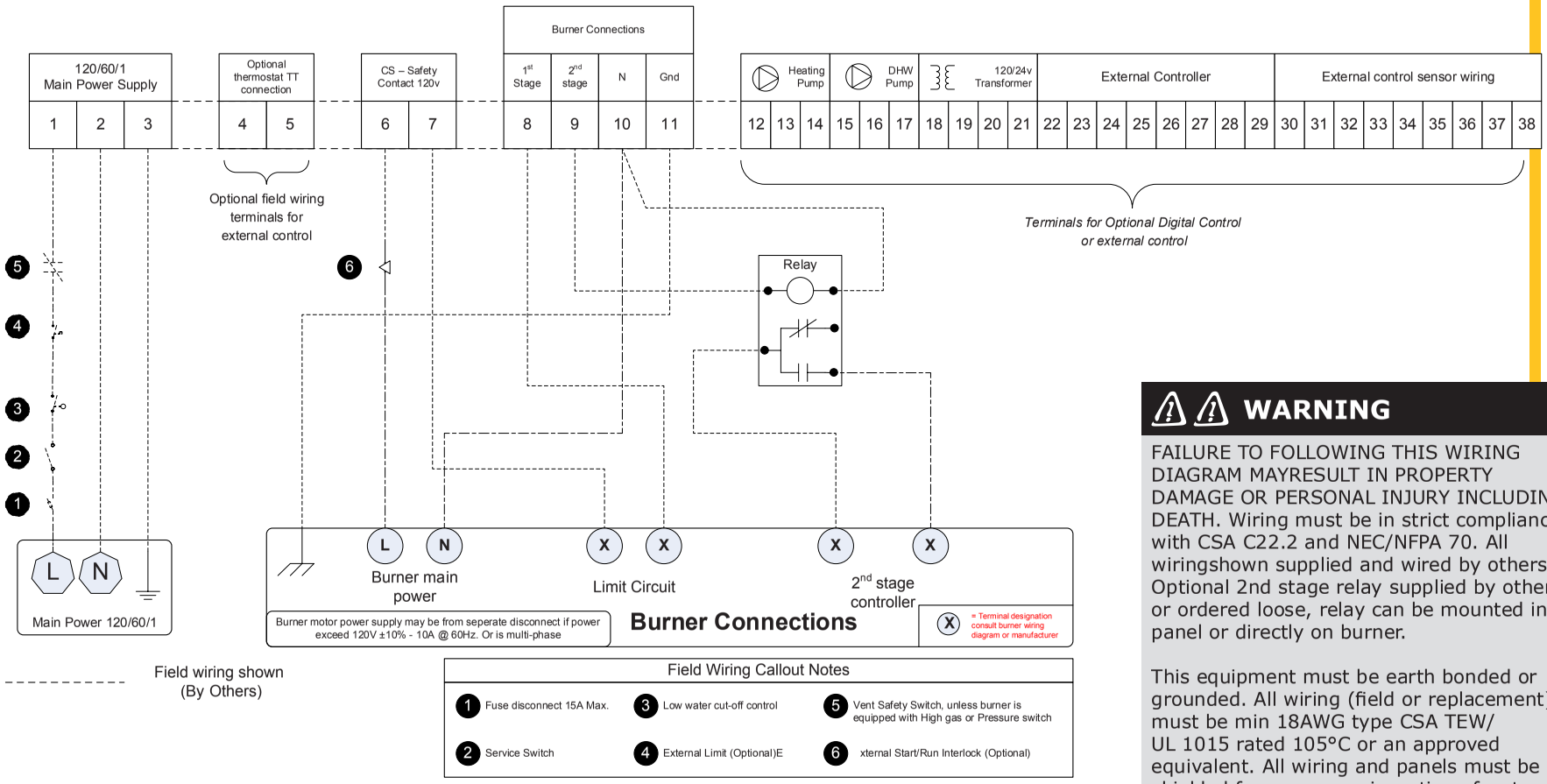
FAILURE TO FOLLOWING THESE PROCEDURES OR WARNING COULD RESULT IN PROPERTY DAMAGE PERSONAL INJURY INCLUDING DEATH MAY RESULT IN WIRING MISTAKES. Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70. All wiring shown supplied and wired by others. This equipment must be earth bonded or grounded.

All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent. All wiring and panels must be shielded from spray or ingestion of water. Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced. It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly. Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel.Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

S2NA (ME50) or S3NA (MD5) Temperature control panel (Field Wiring Diagram) Internal Wiring by DDR

Riello or Wieshaupt Burner Typical Panel Wiring Application 2-Stage (L-H-L) Operation



⚠⚠ WARNING

FAILURE TO FOLLOWING THIS WIRING DIAGRAM MAYRESULT IN PROPERTY DAMAGE OR PERSONAL INJURY INCLUDING DEATH. Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70. All wiringshown supplied and wired by others. Optional 2nd stage relay supplied by others or ordered loose, relay can be mounted in panel or directly on burner.

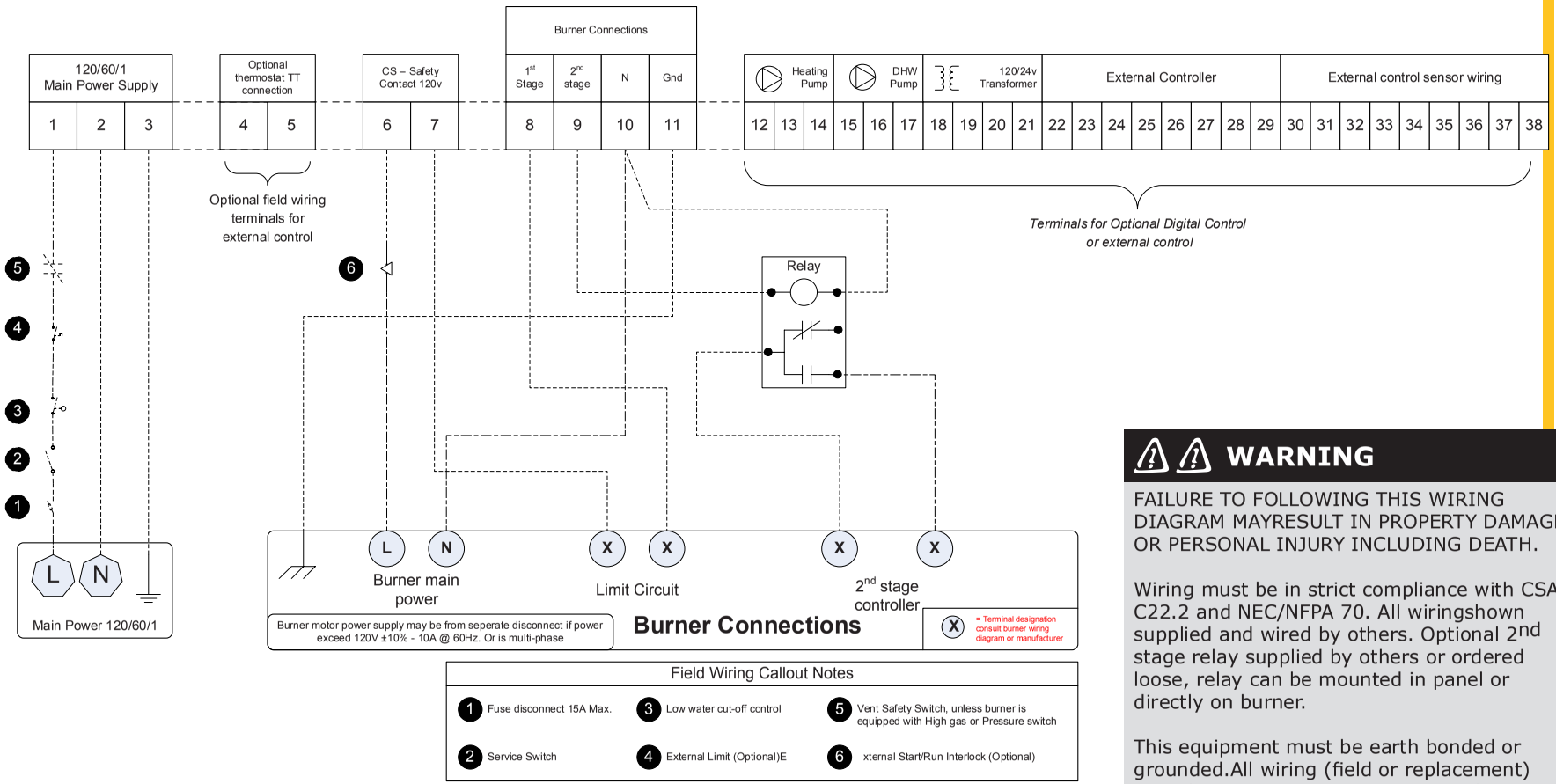
This equipment must be earth bonded or grounded. All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent. All wiring and panels must be shielded from spray or ingestion of water. Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly. Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel. Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

– – – *Field wiring shown (By Others)*

S2NA (ME50) or S3NA (MD5) Temperature control panel (Field Wiring Diagram)

Internal wiring by DDR-De Dietrich Factory



Field Wiring Callout Notes

1. Fuse disconnect 15A Max.
2. Service Switch
3. Low water cut-off control
4. External Limit (Optional)E
5. Vent Safety Switch, unless burner is equipped with High gas or Pressure switch
6. xternal Start/Run Interlock (Optional)

– – – *Field wiring shown (By Others)*

⚠⚠ WARNING

FAILURE TO FOLLOWING THIS WIRING DIAGRAM MAYRESULT IN PROPERTY DAMAGE OR PERSONAL INJURY INCLUDING DEATH.

Wiring must be in strict compliance with CSA C22.2 and NEC/NFPA 70. All wiringshown supplied and wired by others. Optional 2nd stage relay supplied by others or ordered loose, relay can be mounted in panel or directly on burner.

This equipment must be earth bonded or grounded.All wiring (field or replacement) must be min 18AWG type CSA TEW/ UL 1015 rated 105°C or an approved equivalent. All wiring and panels must be shielded from spray or ingestion of water. Any portion of the control which has been subject to spray or ingestion of water, the entire control must be replaced. It is the responsibility of the installer/owner to verify the controls are functioning correctly and are adjusted correctly.Suitable wire protection and strain relief's are required (upstream & downstream) of the control panel. Line voltage wiring and low voltage sensor wiring must use separate wire conduits.

LABEL ALL WIRES PRIOR TO DISCONNECTING THEM FOR SERVICE.

Filling the system

Filling shall be performed with a low flow rate from a low point in the boiler room in order to ensure that all the air in the boiler is bled from the high point of the system. All the pumps must be stopped before filling (included shunt pump(s)).

i Refer to the water quality Manual

⚠ CAUTION

Instructions for starting up the boiler for the first time after the system is fully or partly drained:
If all the air is not bled naturally to an expansion vessel which opens out onto the air, the system must include manual bleeder valves, in addition to automatic bleeder valves with the capability to bleed the system by themselves when it is operating, the manual bleeder valves are used to bleed all the high points of the system and to make sure that the filled system is free of air before the burner is turned on.

⚠ CAUTION

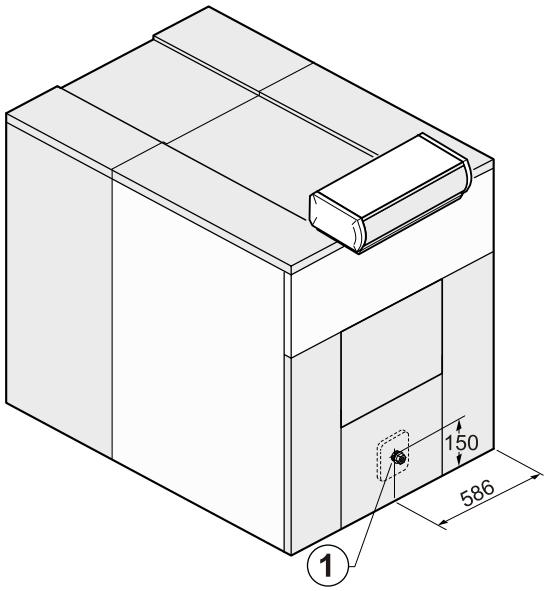
Do not add cold water suddenly into the boiler when it ishot.

Sludge removal

A tapped Ø 2” hole with a plug has been provided on the bottom of the front of the boiler. Fit a 1/4 turn valve (not supplied) on the opening to remove the sludge.

Sludge removal leads to the draining of large quantities of water, so remember to refill the system after the operation.

i Never replace a boiler in an existing system without carefully rinsing the system first. Install a sludge decanting pot on the return pipe, very close to the boiler.



(1) *2” tapped sludge removal hole*

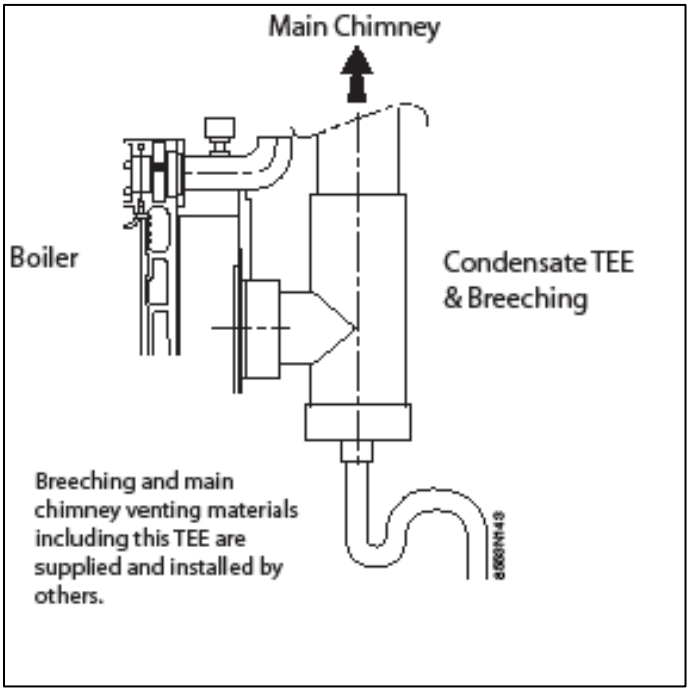
Boiler breeching and main chimney

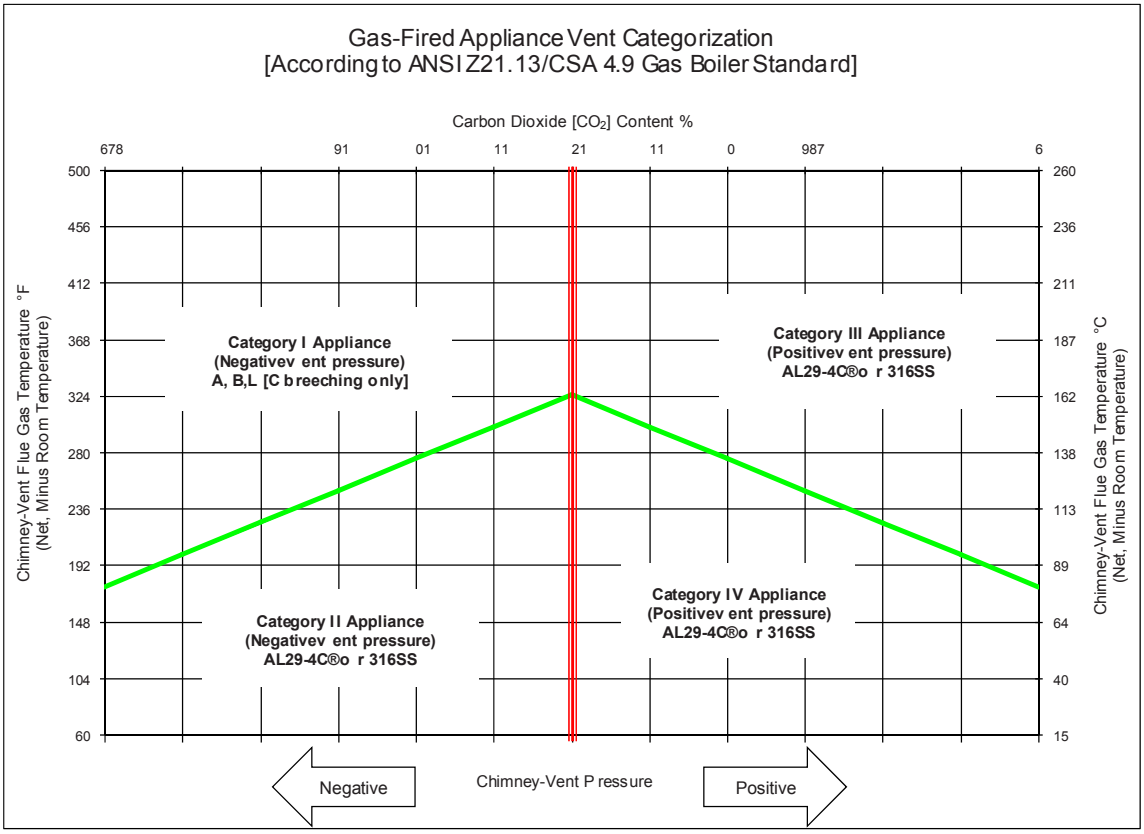
De Dietrich GT Series boilers are a high performance boiler. The flue gas temperature can be less than 320°F [160°C]. Special attention is required for the venting of the boiler according to the specific site operating conditions.

⚠⚠ WARNING

The De Dietrich boiler can be operated at low flue gas temperatures. As a result flue gas condensation may occur and could accumulate in the breeching and main chimney. Suitable provision for flue gas condensation draining is required. A condensate TEE fitting shall be provided on the main chimney as close as possible to the boiler breeching collar (See fig 8553N143). Any horizontal portion of the breeching shall be kept to minimum.

A vent category chart has been provided to further assist the heating specialist to determine and evaluate whether the correct venting is applied for each gas vent category.





Gas Vent Category I - High Temperature Operation Applications:

Consult a chimney-venting specialist or professional engineer for the sizing of the breeching and main chimney in accordance to local and national gas codes CSA B149.1-05 & ANSI Z223.1 (NFPA 54) and sized accordingly to the appropriate tables or methods of chimney vent sizing as local jurisdiction will accept.

1. An approved type "B or L" vent may be used under these operating conditions.
   a. Category I - Negative breeching pressure range from 0 to -0.09 inches water column [0 to 0.22 mbar]
   b. Return water temperature is greater than 140°F [60°C]
   c. The flue gas temperature is greater than 252°F [122°C] to a maximum of 473°F [245°C]
   d. Double acting draft control device may be employed, but is not necessary for correct operation of the boiler. Consult a chimney-vent specialist for the correct usage and application.

Application Note: If a barometric draft control is not used it is mandatory that a vent safety device, either equipped on burner or venting (gas, combustion head or vent pressure switch, WMO-1 vent safety switch or FTS-6 spill switch).

Gas Vent Category III - High Temperature Operation Applications:

The vent shall be sized by a chimney venting specialist or professional engineer using methods or vent calculations that are acceptable to National and local codes having jurisdiction.

2. Listed Industrial Type Factory Built Chimney system. Listed Type BH Class I/II 245C maximum, or special vent system fabricated from AL29-4C® or SS316L.
   a. Category III – Positive breeching pressure range from 0 to +0.20 inches water column [0 to 0.50mbar]
   b. The vent shall be sized by a chimney venting specialist or professional engineer using methods or vent calculations that are acceptable to National and local codes having jurisdiction. A maximum 16 ft. [5m] horizontal breeching length to the main chimney TEE fitting. The vent shall then extend vertically 5 ft. [1.5m] minimum to a 246 ft. [75m] maximum, through the ceiling roof.
   c. Return water temperature is greater than 140°F [60°C]
   d. The flue gas temperature is greater than 252°F [122°C] to a maximum of 473°F [245°C]
   e. Do not use any barometric draft control on positive vent pressure systems as flue gas spillage will contaminate inside air quality.

Application Note: it is mandatory that a vent safety device be employed, either equipped on burner or venting (gas, combustion head or vent pressure switch)

Oil or Dual Fuel Applications:

   a. Listed Industrial Type Factory Built Chimneys system or special vent system fabricated from AL29-4C® or SS316L sized in accordance to the appropriate table in the CSA B139-00 or NFPA 31.
   b. Negative breeching pressure range from 0 to -0.09 inches water column [0 to 0.22 mbar]
   c. A single acting draft control device may be employed as required, but is not necessary for correct operation of the boiler. Consult a chimney-vent specialist for the correct usage and application.

Application Note: If a barometric draft control is not used it is mandatory that a vent safety device, either equipped on burner or venting (gas, combustion head or vent pressure switch, WMO-1 vent safety switch or FTS-6 spill switch).

Gas Vent Category II, III & IV - Low Temperature Operation Applications:

These vent systems shall be sized by a chimney venting specialist or professional engineer using methods or vent calculations that
are acceptable to National and local codes having jurisdiction Listed Industrial Type Factory Built Chimney system.

1. Listed Type BH Class I/II 245C maximum, or special vent system fabricated from AL29-4C® or SS316L.
2. The vent shall then extend vertically 5 ft. [1.5m] minimum to a 246 ft. [75m] maximum, through the ceiling roof.
3. Condensate drain TEE fitting shall be provided on the boiler breeching as close a practical to avoid any accumulation of flue gas condensation
4. Follow the vent manufacturers recommended and supplied instructions regarding, vent connection cleaning, sealing, supporting.
5. Category II - Negative breeching pressure range from 0 to -0.09 inches water column [0 to 0.22mbar]
6. Category III & IV – Positive breeching pressure range from 0 to +0.20 inches water column [0 to 0.50mbar]
7. Do-not use a barometric draft control on positive vent pressure systems as flue gas spillage will contaminate the inside air quality.

Application Note: it is mandatory that a vent safety device be employed, either equipped on burner or venting (gas, combustion head or vent pressure switch)

APPLICATION NOTE: (Other than Sidewall or Direct Vent, sealed combustion air applications)

All venting systems must be sized by experienced venting specialists using available codes or by acceptable engineering methods,
a final sizing sheet of the venting and calculation must show how the venting was sized and designed. A final approval by local
authorities is advised. The calculation sheet shall be secured and a copy provided on site.

WARNING-CAUTION: (General Venting)

- For low temperature operating applications, it is recommended to use vent types 'BH' (AL29-4C®) or SS316L, provided the venting is listed to ULCS636-1995 or UL 1738 or as stipulated in CSA B149.1-05 or ANSI Z223.1/ NFPA 54 Type 'BH' Class I/II-245C maximum. Consult a qualified venting supplier/specialist for assistance in sizing and selections of suitable venting.
- Do not puncture or drill holes in the chimney or venting unless as described by the venting manufacturer printed instructions.
- The chimney must be finished with a rain cap or finishing cone and must provide suitable protection against rain, downdrafts, birds and rodents.
- Pipe the condensate drain separately to a floor drain or condensate pump/sump.
- Use only materials that are designed and acceptable for use with condensate for the condensate piping.
- Each condensate drain must contain an (P-Trap) anti-siphon/pigtail to prevent the flue gas flow through the condensate piping.
- Consult local authorities and national codes regarding the disposal of flue gas condensate into public waste water system.
- Flue gas condensate is very aggressive and corrosive, which could lead to failure of the venting system or drains.
- Do not install any fittings in the condensation lines.
- The flue gas condensation may require a neutralization system before entering the drain. Consult a chemical treatment company for neutralizer system.
- If a flue gas condensation neutralization system has been installed, a posted routine inspection schedule shall be posted for periodic monitoring and cleaning of the condensate collection and disposal system. Routine inspections shall determine that there is no blockage in the condensate fittings or lines and that the condensate flows freely on a daily basis. Condensation neutralization materials requires replenishing, the PH level shall be maintained around 7 (neutral). Consult a water chemical specialist for application and maintenance assistance.
- Any horizontal portions of the breeching or main chimney must be sloped upwards ¼" per linear foot [21mm/m] from the boiler to the vent terminal.
- The boiler requires a vent system that will produce sufficient draft at all times to ensure safe and correct operation of the boiler. The vent system must exhaust all flue gases to the outside in a safe and effective manner.
- An improperly sealed venting system could result in carbon monoxide (CO) poisoning. Ensure adequate support and fastening of the vent system, according to the vent manufacturers recommended or supplied instructions for proper support, fastening and sealing requirements.
- Co-venting with other appliance shall conform to NFPA 54/ANSI Z223 or CSA B149.1-05 gas installation code and sized in accordance to the appropriate table in Annex C. as applicable. Any unused opening must be sealed.
- Any improper operation of the venting system shall be corrected.
- Operating the De Dietrich GT Series boiler at low return/supply temperatures will cause a reduction of the flue gas temperature, creating excessive wet-vent periods or flue gas temperatures nearing the dew point temperature. In these applications the venting material must be able to resist corrosion of flue gas condensation.

1 Specific technical information supplied with the burner

- The boiler and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5kPa),
- The boiler must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa),
- The boiler shall be installed such that the gas ignition system components are protected from water (dripping, spraying, rain, etc.) during appliance operation and service (circulator replacement, condensate trap, control replacement, etc.),
- The boiler and its gas connection must be leak tested before placing the boiler in operation,
- After placing the boiler in operation, the ignition system safety shutoff device must be tested,
- Provision for vent, bleed and gas relief lines (when applicable),
- A sediment trap must be provided upstream of the gas controls,
- Location of manual main shutoff valve outside the jacket when codes require.

Electrical

1-Wiring
Wiring in accordance with the requirements of the authority having jurisdiction or, in the absence of such requirements, with the Canadian Electrical Code Part 1, CSA C22.1, Electrical Codes.

Warning:
Label all wire prior to disconnecting, when servicing the control. Wiring errors may cause improper and dangerous operation. Verify for proper operation after service.

Combustion air supply must be sized in accordance to local and national codes
CSA B149.1 -.2 & CSA B139
ANSI Z223.1 & NFPA 31

FOR YOUR SAFETY READ BEFORE OPERATING

WARNING:
If you do not follow these instructions exactly, a fire or explosion may result causing properly damage, personal injury or loss of life.

A. This appliance does not have a pilot. It is equipped with an ignition device wich automatically lights the burner. Do not try to light the burner by hand.
B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
D. Do not use this appliance if any part has been under water. Immediately call a qualified technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

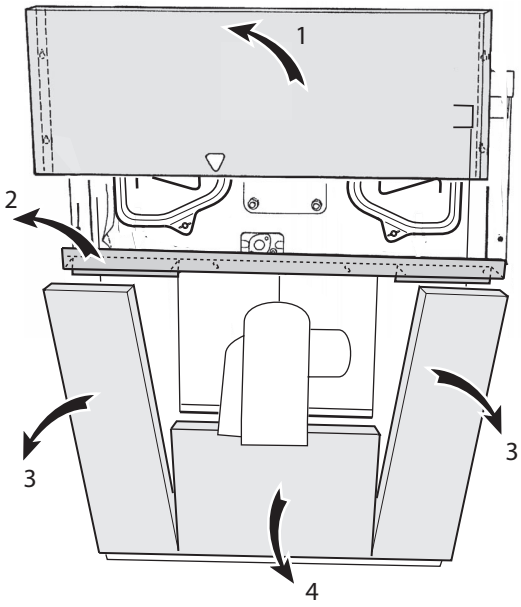
- Inspect for proper baffling insertion into flue passes. All cleanout doors properly sealed. Burner door closed and properly latched.
- Gas and oil systems ready. Proper vent connections. Required combustion and ventilation air provided.
- Waterside of system properly filled and vented of air.
- Lighting instruction followed.
- To be performed by a licensed tradesperson in accordance with the guidelines shown in this manual. Follow burner manufactures instructions.
- Mandatory factory start-up report to be completed and returned to comply with the warranty process.
- Proper operating instructions of equipment to be related to operating personnel.

Boiler

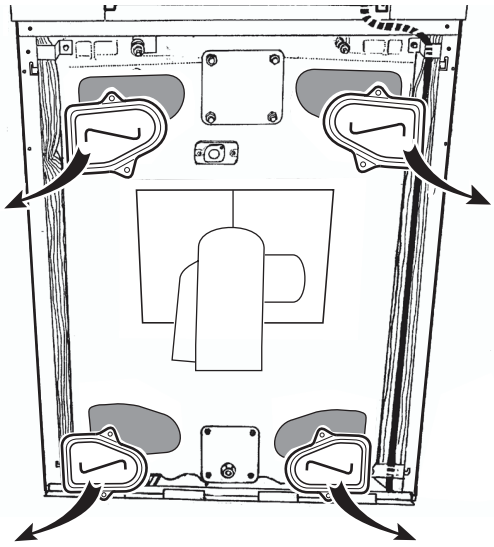
It is not advisable to drain an installation, except in case of absolute necessity. Check regularly the water level of the installation and top it off if necessary, avoiding a sudden inlet of cold water in the hot boiler. This operation can only be done a few times a year ; otherwise, look for the leak and remedy it without delay.

The good performance of the boiler depends on its
degree of cleanliness.
Cleaning of the boiler must be carried out as often as required and at least, as for the chimney once a year or more, according to the regulations in force.
The operations described below shall only be performed with the boiler and the power supply of

1

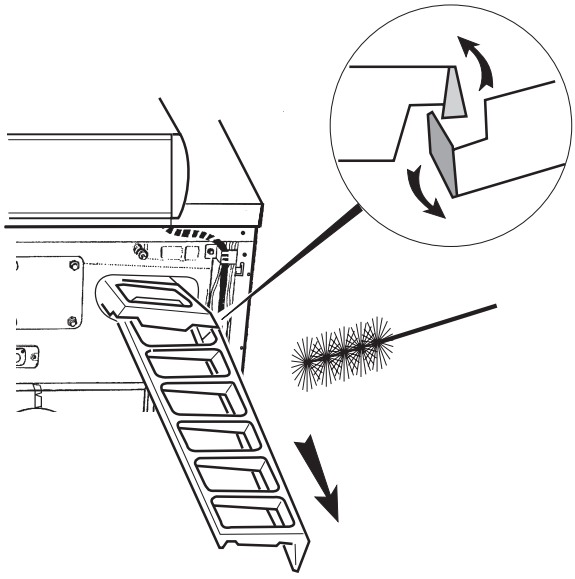


2

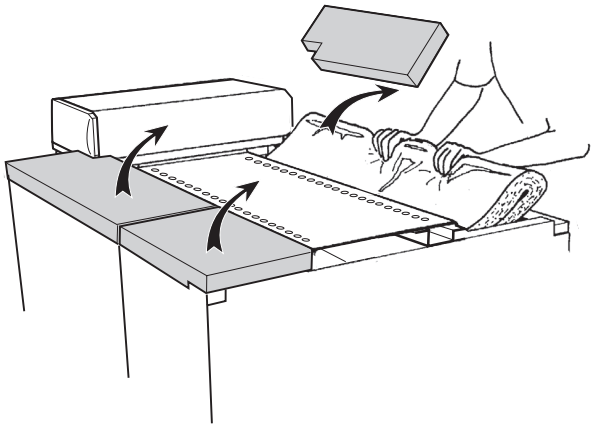


• Cleaning flue gas passes:
For this purpose:
- Switch off the electricity supply to the boiler, let boiler cool.
- Remove the upper front panel.
- Remove the retaining upper front crosspiece and then the lower left and right-hand front panels.
- Remove the lower front panel.
- Unfasten the wing nuts and remove the four cleaning doors.

3

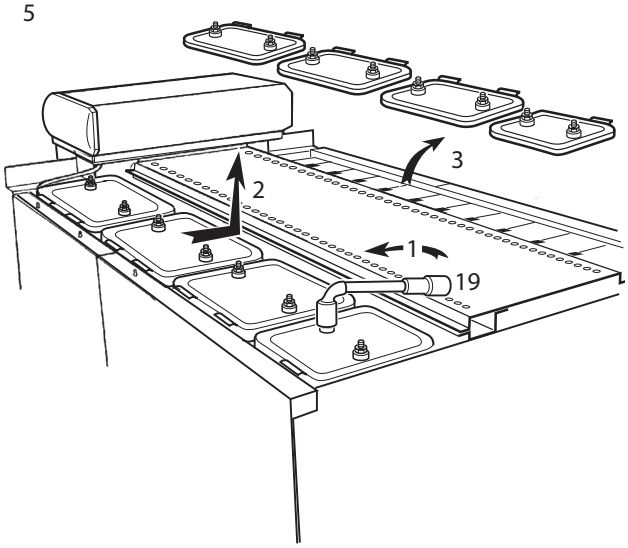


4

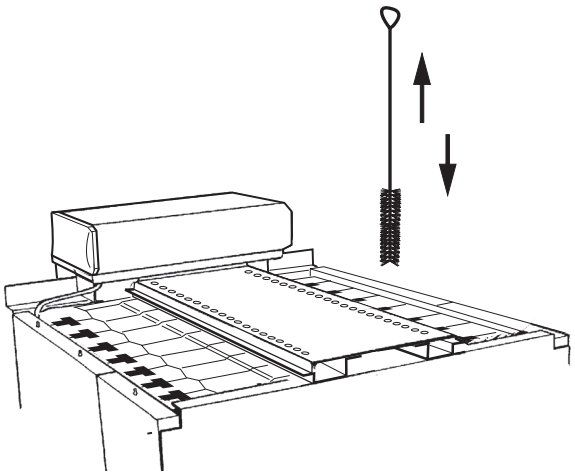


- Remove the baffle plates from the upper flue ways.
- Carefully brush the four flue ways with the brush supplied for that purpose.
- Brush the baffle plates as well.
- If possible, use a vacuum cleaner.
- Remove the left and right-hand casing covers.
- Remove the top insulation.

5

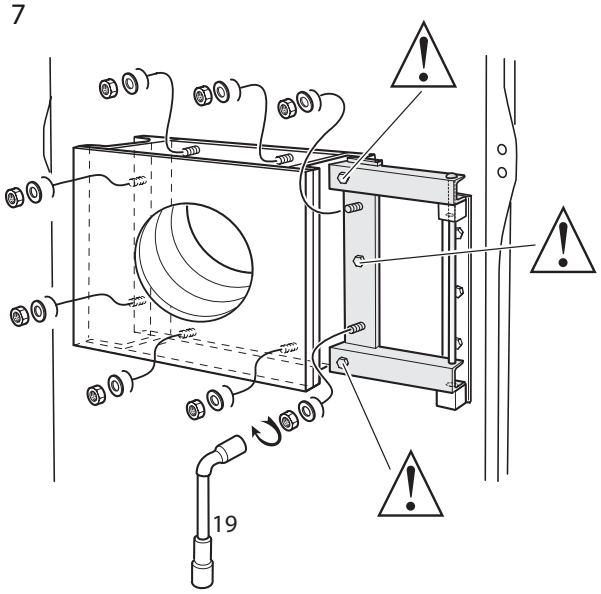


6



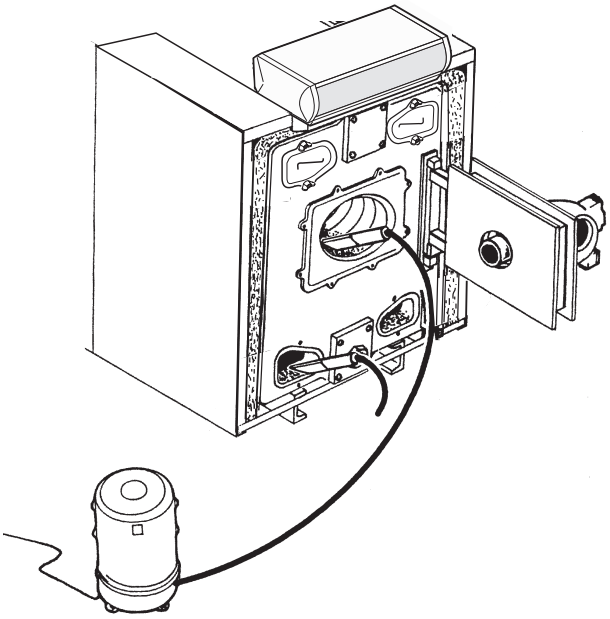
- Unfasten the nuts up to the stop.
- Push in the handles of the cleaning covers.
- Remove the cleaning covers.
- Brush the vertical plates.
- Put back the cleaning covers, insulation and casing covers by reversing the procedure above.
- Put the baffle plates back in place. Interlock them with each other while fitting them into the flue ways.
- Close the upper cleaning doors.

7



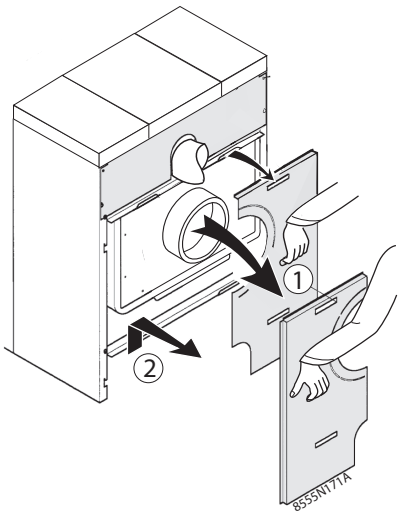
Unscrew the eight closing nuts and open the burner.

These screws must not be unfastened in any event.



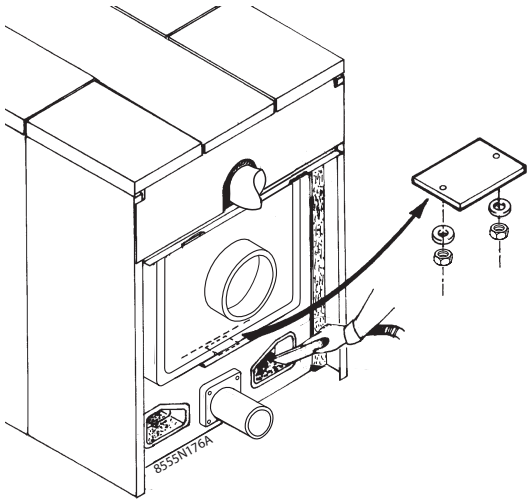
- Brush out the inside of the furnace.
- Clean the soot accumulated in the burner and lower flue ways witha vacuum cleaner.
- Close the lower cleaning doors.
- Put back the front casing panels by reversing the removal procedure.

9



- Remove the lower rear panels.
- Remove the lower rear crosspiece.
- Remove the lower insulation on the rear.

10



- Unfasten the wing nuts and remove the lower left and right-hand cleaning doors.
- Remove any soot deposit with a scraper or a vacuum cleaner.
- Open the lower cleaning cover of the flue gas box (two H 10 nuts + Ø 10 washers).
- Remove the soot.
- Put back the cleaning cover and doors.
- Put back the lower insulation, the crosspiece and panels by reversing the removal procedure.

5.5 All Side-wall and direct Vent termination locations installation precautions:

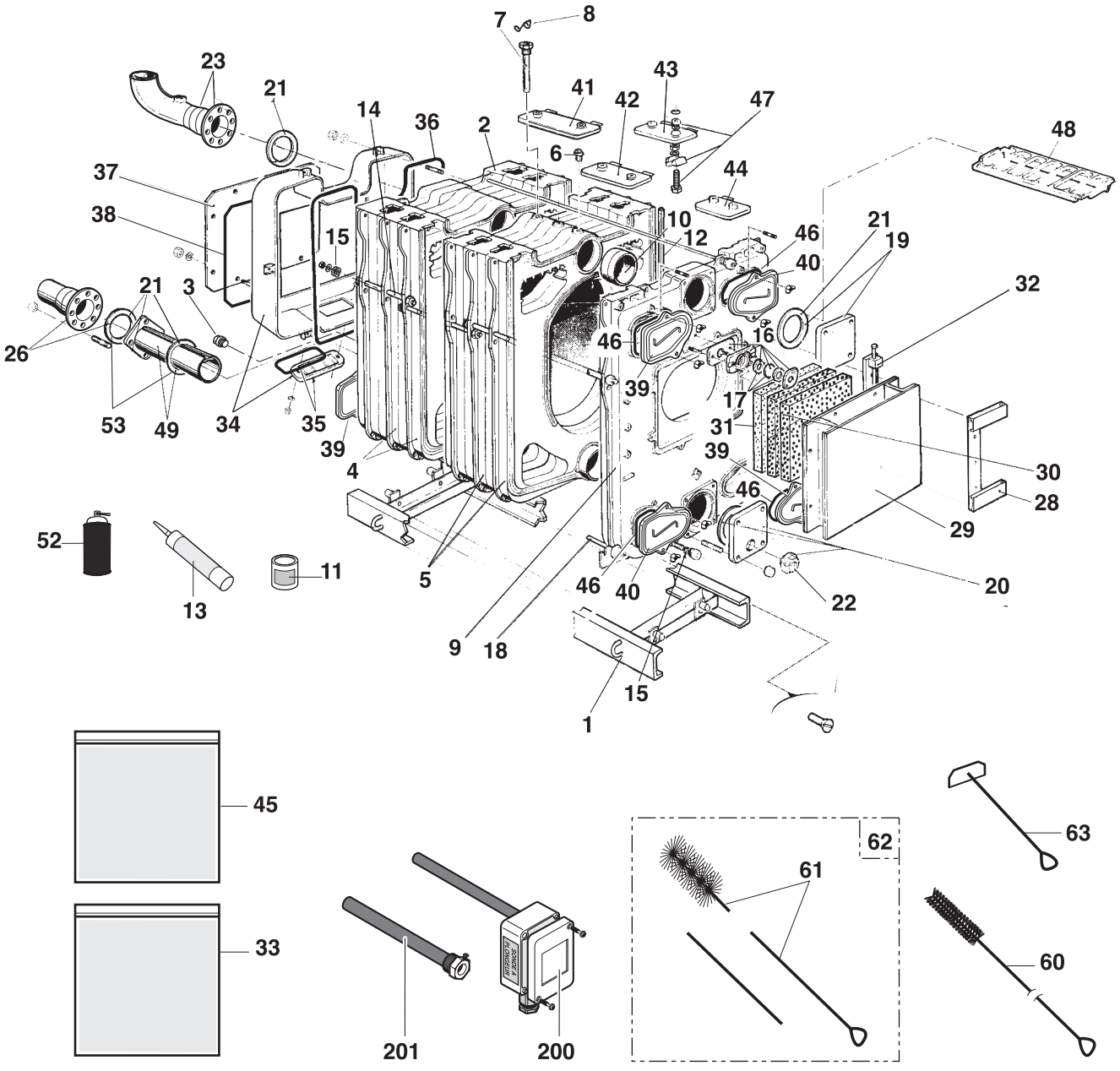
- The boiler and the chimney must be carefully cleaned.
- Shut the boiler doors to avoid any air flow inside.
- If the boiler has been stopped for several months, we also advise removing the flue connection and cap it.

Service and maintenance schedule

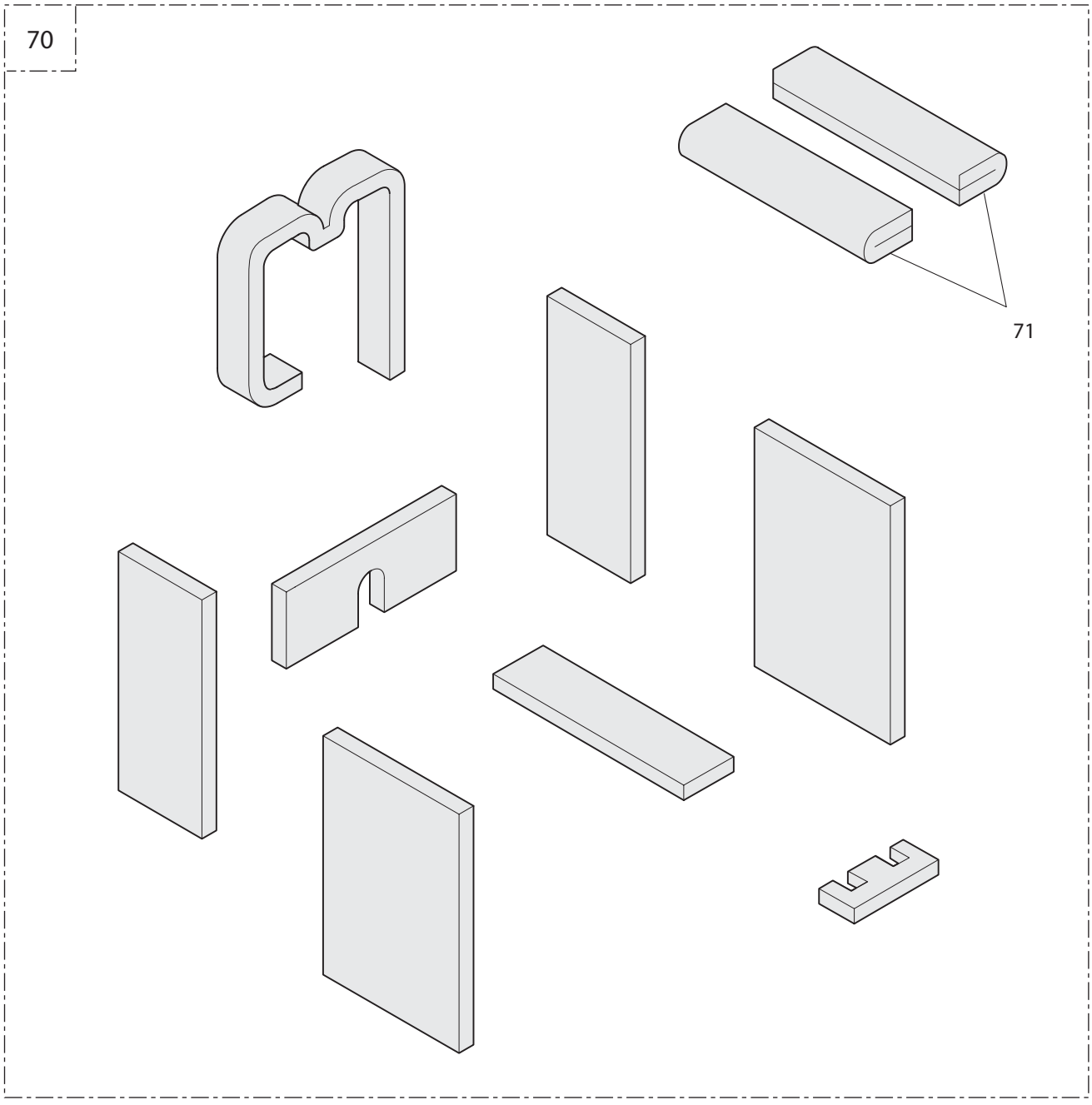
- Require annual system inspection of the heating boiler, burner and controls by qualified service personnel,
- Heating system check for safety control functions, system pressure, leaks, combustion and ventilation air should be done on a monthly schedule.

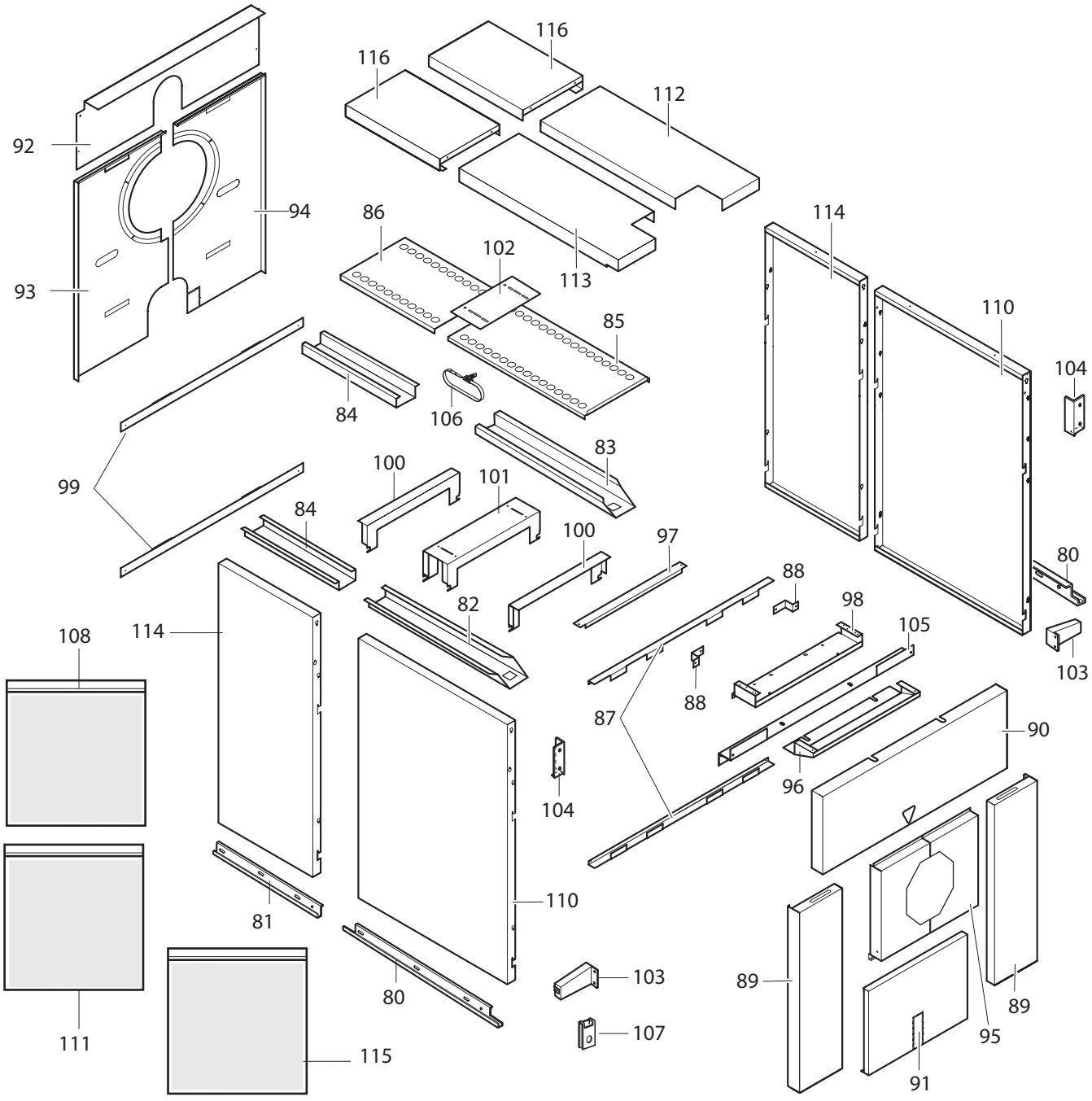
While ordering spare parts, do not forget to provide the code number given in the list opposite the part reference.

BOILER BODY



Insulation




116
116
112
92
94
86
102
113
114
93
85
110
104
84
106
83
99
100
101
84
100
97
88
80
82
98
105
108
114
88
103
87
90
104
96
110
81
80
103
89
89
111
107
95
115
91

Ref.	Code no.	DESCRIPTION
BOILER BODY + ACCESSORIES		
1	30000-6597	Complete frame 15 sections
1	30000-6598	Complete frame 16 and 17 sections
1	30000-6599	Complete frame 18 and 19 sections
1	30000-6610	Complete frame 20 and 21 sections
1	30000-6611	Complete frame 22 and 23 sections
1	30000-6612	Complete frame 24 and 25 sections
1	30000-6613	Complete frame 26 and 27 sections
1	30000-6614	Complete frame 28 and 29 sections
1	30000-6615	Complete frame 30/31/32 sections
Body + accessories		
2	8259-8500	Complete rear section
3	9495-0140	3/4" plug. # 290
4	8228-0001	Normal intermediate section
5	8228-0002	Special intermediate section
6	9495-0110	1/2" plug. # 290
7	8500-0027	1/2" pocket
8	9758-1286	Spring for pocket
9	8228-0003	Complete fr ont section
10	8006-0212	Painted nipple 148.62 dia.
11	9430-5027	Putty for nipple (300 g)
12	9508-6032	Silicone-coated fiberglass seal (Thermocord)
13	9428-5095	Silicone filler tube (310 ml)
14	8015-8927	Assembly rod, 12 dia. - 11 13/16"
14	8015-8928	Assembly rod, 12 dia. - 15 15/32"
14	8015-8929	Assembly rod, 12 dia. - 16 17/32"
14	8015-8930	Assembly rod, 12 dia. - 20"15/32
15	9754-0120	Spring for assembly rod
16	8015-8902	Complete indicator with frame
17	8015-7700	Sight glass + gaskets
18	8015-8915	Assembly rod, 14 dia. - 70 45/64", 15 sections
18	8015-8916	Assembly rod, 14 dia. - 75 1/8, 16" sections
18	8015-8917	Assembly rod, 14 dia. - 79 9/16", 17 sections
18	8015-8918	Assembly rod, 14 dia. - 83 31/32", 18 sections
18	8015-8919	Assembly rod, 14 dia. - 88 27/64", 19 sections
18	8015-8920	Assembly rod, 14 dia. - 94 13/32", 20 sections
18	8015-8921	Assembly rod, 14 dia. - 98 55/64", 21 sections
18	8015-8922	Assembly rod, 14 dia. - 103 17/64, 22 sections
18	8015-8923	Assembly rod, 14 dia. - 107 23/32", 23 sections
18	8015-8924	Assembly rod, 14 dia. - 112 1/8", 24 sections
18	8015-8925	Assembly rod, 14 dia. - 116 17/32", 25 sections
19	8259-5500	Blind square flange + gasket
20	8259-5501	Square flange with 2" tapped hole + gasket
21	9501-4155	Gasket 222 x 169.5 mm
22	8249-0011	2" plug
23	8259-1502	Flange with outlet piece + gasket
26	8555-5543	Flange with return piece + gasket
28	8228-8905	Complete articulation of burner plate
29	8259-0538	Plain burner door
30	9755-0235	Burner door guard

Ref.	Code no.	DESCRIPTION
31	9755-0236	Burner door insulation
32	8008-8915	Burner plate hinge
33	8555-8592	Bag of screws for cleaning doors
34	8555-5528	Flue gas outlet + braid
35	8208-0010	Cast-iron cleaning cover
36	8504-6115	15 Dia. Thermocord gasket
37	8259-0540	Connection plate Dia. 16"
37	8259-0546	Connection plate Dia. 18"
37	8259-0547	Connection plate Dia. 20"
38	9508-6041	19/32 x 23/64 adhesive gasket
39	8555-5514	Left-hand cleaning door + braid
40	8555-5541	Right-hand cleaning door + braid
41	8555-5510	N1 cleaning cover + braid
42	8555-5511	N2 cleaning cover + braid
43	8555-5512	N3 cleaning cover + braid
44	8555-5513	N4 cleaning cover + braid
45	8555-8593	Bag of screws for cleaning door
46	8508-6032	Silicone-coated fiberglass seal
47	8555-5515	Complete lock
48	8259-0010	Upper baffle
49	8259-5503	Water Balancing tube + gasket for 15 and 16 sections
49	8259-5504	Water Balancing tube + gasket for 17 to 19 sections
49	8259-5505	Water Balancing tube + gasket for 20 to 22 sections
49	8259-5506	Water Balancing tube + gasket for 23 and 24 sections
49	8259-5507	Water Balancing tube + gasket for 25 sections
49	8259-7255	Water Balancing tube + gasket for 26-32 sections
52	9434-5102	Retouching spray paint - anthracite grey
52	9434-5104	Retouching spray paint - ivory
53	9501-4156	Gasket 4"
Cleaning tools		
60	9696-8026	Brush for plate
61	8013-8704	Metal brush + 70 55/64" long rod for 15 sections
62	8015-8716	Metal brush + 51 13/16" long rod + extension for 16 to 22 sections
62	8015-8723	Metal brush + 70 55/64" long rod + extension for 23 to 25 sections
63	9750-5103	47 1/4" long scraper
63	9750-5106	59 1/16" long scraper
63	9750-5108	70 55/64" long scraper

Ref.	Code no.	DESCRIPTION
INSULATION		
		Insulation for body
70	8555-5521	Complete insulation for body, 15 sections
70	8555-5522	Complete insulation for body, 16 and 17 sections
70	8555-5523	Complete insulation for body, 18 and 19 sections
70	8555-5524	Complete insulation for body, 20 sections
70	8555-5525	Complete insulation for body, 21 and 22 sections
70	8555-5526	Complete insulation for body, 23 and 24 sections
70	8555-5527	Complete insulation for body, 25 sections
		Insulation for cleaning covers
71	8555-5534	Complete insulation for cleaning covers, 15 sections
71	8555-5535	Complete insulation for cleaning covers, 16 and 17 sections
71	8555-5536	Complete insulation for cleaning covers, 18 and 19 sections
71	8555-5537	Complete insulation for cleaning covers, 20 sections
71	8555-5538	Complete insulation for cleaning covers, 21 and 22 sections
71	8555-5539	Complete insulation for cleaning covers, 23 and 24 sections
71	8555-5540	Complete insulation for cleaning covers, 25 sections
		BOILER CASING
80	8555-8008	48 15/64″ long rail
80	8555-8009	53 3/4″ long rail
80	8555-8010	58 5/64″ long rail
80	8555-8011	61 39/64″ long rail
80	8555-8012	65 61/64″ long rail
80	8555-8013	69 31/64″ long rail
80	8555-8014	73 13/16″ long rail
80	8555-8015	79 23/32″ long rail
80	8555-8016	85 15/64″ long rail
80	8555-8017	89 9/16″ long rail
80	8555-8018	93 7/64″ long rail
81	8555-8021	49 1/16″ long supplementary rail
82	8555-8035	49 39/64″ long left-hand wiring duct
82	8555-8036	55 1/8″ long left-hand wiring duct
82	8555-8037	59 29/64″ long left-hand wiring duct
82	8555-8038	63″ long left-hand wiring duct
82	8555-8039	67 21/64″ long left-hand wiring duct
82	8555-8040	70 55/64″ long left-hand cable channel
82	8555-8041	75 13/64″ long left-hand cable channel
82	8555-8042	81 7/64″ long left-hand cable channel
82	8555-8043	86 5/8″ long left-hand cable channel
82	8555-8044	90 15/16″ long left-hand cable channel
82	8555-8045	94 31/64″ long left-hand cable channel
83	8555-8048	49 39/64″ long right-hand wiring duct
83	8555-8049	55 1/8″ long right-hand wiring duct
83	8555-8050	59 29/64″ long right-hand wiring duct
83	8555-8051	63″ long right-hand wiring duct
83	8555-8052	67 21/64″ long right-hand wiring duct
83	8555-8053	70 55/64″ long right-hand wiring duct
83	8555-8054	75 13/64″ long right-hand wiring duct
83	8555-8055	81 7/64″ long right-hand wiring duct
83	8555-8056	86 5/8″ long right-hand wiring duct
83	8555-8057	90 15/16″ long right-hand wiring duct
83	8555-8058	94 31/64″ long right-hand wiring duct
84	8555-8080	47 5/64″ long additional wiring duct
85	8555-8066	44 17/32″ long central upper top cover
85	8555-8067	50 1/32″ long central upper top cover
85	8555-8068	54 3/8″ long central upper top cover
85	8555-8069	57 29/32″ long central upper top cover
85	8555-8070	62 1/4″ long central upper top cover
85	8555-8071	65 25/32″ long central upper top cover
85	8555-8072	70 7/64″ long central upper top cover
85	8555-8073	76 1/32″ long central upper top cover
85	8555-8074	81 17/32″ long central upper top cover
85	8555-8075	85 7/8″ long central upper top cover
85	8555-8076	89 13/32″ long central upper top cover
86	8555-8079	47 5/64″ long additional central top cover
		Common parts
87	8259-8014	Lower front crosspiece
88	8555-8515	Fastening bracket for front side panel
89	8259-8818	Complete lower front side panel
90	8555-8516	Complete upper front panel
91	8555-8517	Complete lower front panel
92	8555-8518	Upper rear panel
93	8259-8021	Lower left-hand rear panel
94	8259-8022	Lower right-hand rear panel
95	8259-0518	Panel for burner door
96	8555-8519	Control panel trim
97	8555-8520	Rear cover for standard control panel
98	8555-8521	Control panel bracket
99	8259-8055	Lower rear crosspiece
100	8555-8522	Upper crosspiece
101	8555-8526	Intermediate upper crosspiece
102	8555-8082	Joining central plate
103	8555-8523	Lower tab of rail
104	8555-8022	Upper bracket
105	8555-0526	Upper front crosspiece
106	9532-0780	Ring
107	9775-8859	Rapid nut
108	8555-8525	Fasteners for common parts
		Front side casing
110	8555-8503	37″ long front side panel
110	8555-8504	41 1/3″ long front side panel
111	8555-8514	Fasteners for front side panel

112	8555-8508	37″ long right-hand upper front plate for cleaning
112	8555-8509	41″1/3 long right-hand upper front plate for cleaning
113	8555-8511	37″ long left-hand upper front plate for cleaning
113	8555-8512	411/3″ long left-hand upper front plate for cleaning

	Rear side casing	
114	8555-8500	153/4″ rear side panel
114	8555-8501	235/8″ long front side panel
115	8555-8513	Fasteners for rear side panel
116	8555-8505	153/4″ long upper rear plate
116	8555-8506	235/8″ long upper rear plate for cleaning

CONTROL PANEL (S3NA MD5)

S3NA Panel Main Components		
Item	Decription	DDT Part #
1	Safety Hi Limit (MR) 120°C [248°F]	9536 5605
2	Breaker 10A	9534 0286
3	Eluminated ON/OFF Main switch	9532 5027
4	Operating Limit 40-100°C [104-212°F]	9536 5604
5	2nd Stage Limit 40-100°C [104-212°F]	9536 5604
6	Man/Auto/STB switch	9532 5362
7	Aux switch (non safety)	9532 5050