

mark®

Technical manual **EN**

building climate technology

MARK GSX 2021

0660150_R24



Read this document before installing the heater

Warning

Incorrect installation, adjustment, alteration, repair or maintenance work may lead to material damage or injury. All work must be carried out by certified, qualified professionals. If the appliance is not positioned in accordance with the instructions, the warranty shall be rendered void. This appliance is not intended for use by children or persons with a physical, sensory or mental handicap, or who lack the required experience or expertise, unless they are supervised or have been instructed in the use of the appliance by somebody who is responsible for their safety. Children must be supervised to ensure that they do not play with the appliance.

If the manual refers to an image or table, a number will be shown between square brackets, for example [3]. The number refers to images and tables at the back of the manual with the stated number.

1.0 General

1.1 Application

The GSX appliance is designed for heating industrial and other non-domestic areas. The appliances must be installed in a fixed installation, preferably above the work floor, taking into account minimum distances. Appliance type GSX is solely suitable for the free and direct intake of the air to be heated and the free discharge of heated air into the room.

If areas are to be heated in which corrosive vapours are present (chlorinated hydrocarbons in particular), which are either produced directly in the area, or which may be drawn in from the outside by the heater via a duct or an open connection, wall air heaters cannot be used because of the risk of corrosion to the heat exchanger.

Subject to change

The manufacturer is committed to constantly improving its products and reserves the right to make changes in the specifications without prior notice. The technical details are considered correct but do not form the basis for a contract or warranty. All orders are accepted according to the standard terms of our general sales and delivery conditions (available upon request). The information in this document is subject to change without notice. The most recent version of this manual is always available at www.markclimate.com/downloads.

1.2 Type indication

GSX	
G	Gas
S	Axial fan
X	Not condensating

All the types of appliance are listed in table [3]. The various types are shown in the rows, and technical information relating to the appliances is shown in the columns. See the key below.

Key to table [3]

- A Nominal load (upper value)
- B Nominal load (lower value)
- C Nominal power
- D Gas consumption for a specified gas type (15°) max/min
- D1 CO₂/O₂ for a specified gas type: max. load %
- D2 CO₂/O₂ for a specified gas type: min. load %
- D3 Gas pre-pressure for a specified gas type
- I Electrical supply
- J Electrical power
- K Appliance fuse rating
- L Protection class
- M Air displacement (20°C)
- N Air temperature rise
- O Throw
- P Ambient temperature min. /max.
- S Weight
- T Flue gas mass
- V Gas connection

Information for Belgium

- AA Nominal load (lower value) H gas / L gas
- BB Power H gas / L gas

1.3 General warnings

Incorrect installation, adjustment, alteration, maintenance or repair may lead to material or environmental damage and/or injuries. The appliance may therefore only be installed, adapted or converted by a skilled and qualified installer, taking into account national and international regulations. Faulty installation, adjustment, alteration, maintenance activity or repair shall render the warranty void.

Appliance

When installing wall air heaters, you must comply with the relevant national and, if applicable, regional and local regulations (e.g. gas company regulations, building regulations etc.). The wall air heater may be installed only in an area and position suitable for the purpose, see Chapter 2 Installation. In Belgium, the wall air heater must be installed in accordance with Belgian standard NBN D51-003.

Gas supply and connection

Before installation, check that the local distribution conditions, gas type and pressure and the current adjustment of the appliance all match. An approved gas stop cock must be fitted to the inner pipeline.

Flue gas route

Combustion air supply pipelines and combustion gas exhaust ducts should have as few bends as possible; in general, flow resistance should be kept to a minimum and in all cases, the diameter should be constant along the entire length. The exhaust duct may not rest on the heater, but should

be suspended efficiently! Follow the bracket instructions in chapter 10. If the flue gas exhaust duct passes along or through combustible walls or floors, the duct must be sufficiently far away from the combustible material to prevent fire.

1.4 Think of your safety

If you smell gas, you must not under any circumstances:

- Ignite an appliance
- Touch electrical switches or telephone from the area in question

Take the following action:

- Switch off the gas and electricity
- Activate the operational emergency plan
- Evacuate the building if necessary

2.0 Installation

2.1 Positioning the appliance

After unpacking, check the appliance for damage. Check that the information relating to the type/ model and the electrical voltage is correct. Install the appliance and any accessories to a sufficiently solid structure [2], taking into account the minimum free space required [1].

For GSX you should use the four M10-sized suspension points [21].

Note: the heat exchanger’s maximum temperature is approximately 500 °C. The appliance may be installed in an area where the ambient temperature lies between 0°C and 40 °C.

2.2 Positioning the flue gas exhaust system and air supply

The device only has the CE approval in combination with its flue gas system. The flue gas system includes: single flue set vertical or horizontal, extension pipes and elbows. Table [4] indicates which parts can be used per appliance type. The flue gas system must be installed according to the instructions attached.

The extension pipes must be laid in parallel. In exceptional cases, for example with thick roofs or walls, the roof or wall terminal may be extended concentrically by a maximum of 1 meter.

If a flue gas set is to be installed sideways to or through a flammable floor or wall, then there must be a minimum air gap of 25 mm around the flue gas sets. This to prevent fire and / or scorch hazard.

The mentioned flue gas products are made of aluminum or stainless steel.

The combustion air inlet pipes may consist of the same materials as specified for the flue gas discharge, but may also consist of materials mentioned in the table on pages 6-8. Other materials are not allowed.

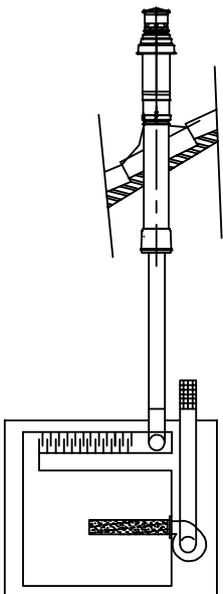
The maximum length of the flue gas system and combustion air inlet pipes is 6 meters and with 1x2 bends of 90°. Contact the manufacturer when exceeding the maximum discharge length.

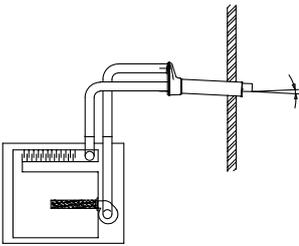
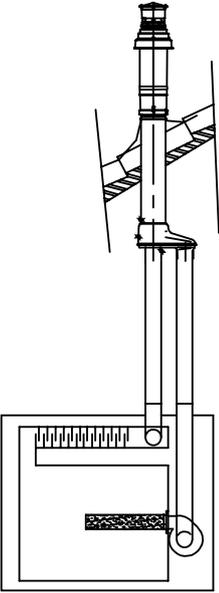
The roof and wall pass-throughs supplied by the manufacturer are identified by the following item numbers:

Appliance type	Roof pass-through C33	Wall pass-through C13
GSX 20/35	59 90 556	59 90 579
GSX 55/75/90	59 90 560	59 90 583

The extension pipes and bends of the gas flue exhaust system must satisfy the following requirements:

Appliance type	Minimum diameter
GSX 20/35	80 mm
GSX 55/75/90	100 mm

Type	Flue gas exhaust			Accessories		Installation remarks
	Appliance type	Ø	Article code	Ø	Artikel-nr.	
B53 	Single flue set vertical			ALU Extension pipe L=500		<p>The flue gas exhaust pipes must be made of aluminum or stainless steel. The combustion air inlet pipes can be made of stainless steel, aluminum or polyethylene.</p> <p>The maximum length of the flue gas system is:</p> <ul style="list-style-type: none"> - GSX 20: 5 meter pipe and 2 bends of 90°. - GSX 35-90: 6 meter pipe and 2 bends of 90°.
	20/35		5990556	80	5990727	
	55/75/90		5990560	100	5990728	
				ALU Extension pipe L=1000		
				80	5990732	
				100	5990736	
				ALU Bend 45°		
				80	5990734	
				100	5990738	
				ALU Bend 90°		
				80	5990733	
				100	5990737	
				Stainless steel Extension pipe L=500		
				80	5990201	
				100	5990211	
				Stainless steel Extension pipe L=1000		
				80	5990202	
				100	5990212	
				Stainless steel Bend 45°		
				80	5990204	
			100	5990214		
			Stainless steel Bend 90°			
			80	5990203		
			100	5990213		
			Air inlet mesh			
			80	3002532		
			100	3002533		

<p>C13</p> 	Single flue set horizontal			Flue gas exhaust		<p>The flue gas exhaust pipes must be made of aluminum or stainless steel. The combustion air inlet pipes can be made of stainless steel, aluminum or polyethylene.</p> <p>The maximum length of the flue system is: - GSX 20: 2x5 meter pipe and 2x2 bends 90°. - GSX 35-90: 2x6 meter pipe and 2x2 bends 90°.</p>
	20/35	80/125	5990579	ALU Extension pipe L=500		
	55/75/90	100/150	5990583	80	5990727	
				100	5990728	
				ALU Extension pipe L=1000		
				80	5990732	
				100	5990736	
				ALU Bend 45°		
				80	5990734	
				100	5990738	
				ALU Bend 90°		
				80	5990733	
				100	5990737	
				Stainless steel Extension pipe L=500		
				80	5990201	
				100	5990211	
				130	5990221	
			Stainless steel Extension pipe L=1000			
<p>C33</p> 	Single flue set vertical			80	5990202	
	20/35	80/125	5990556	100	5990212	
	55/75/90	100/150	5990560	130	5990222	
				Stainless steel Bend 45°		
				80	5990204	
				100	5990214	
				130	5990224	
				Stainless steel Bend 90°		
				80	5990203	
				100	5990213	
			130	5990223		

<p>C53</p>	Single flue set vertical			Combustion air	<p>C53: The condensate must be discharged efficiently, according to the applicable national regulations.</p>
	20/35	80/125	5990556		
	55/75/90	100/150	5990560		
	In combination with single flue set horizontal				
	20/35		5990511		
	55/75/90		5990512		
	OR				
	20/35		0703100		
	55/75/90		0703101		
	<p>C43</p>				
<p>C83</p>	Single flue set horizontal				<p>Applicable only if the combined flue gas system has sufficient natural draft: the unit does not have an internal non-return valve. Condensate is not allowed to flow back from the flue system into the unit.</p>
	20/35		5990511		
	55/75/90		5990512		

2.3 Condensate in the flue gas system

Condensate can form in the flue gas system when the air heater is heating up. Normally, this evaporates again when the unit is in operation for a longer period of time.

Smaller units are more sensitive to condensate formation. Therefore, place a T-piece with flue gas pipe kit if the following length is exceeded:

Type	Flue gas exhaust length
GSX 20	2 metre
GSX 35	3 metre
GSX 55	3 metre
GSX 75	5 metre
GSX 90	-

If a unit is placed in a cold room, colder than 10°C, condensate is more likely to form. The above lengths must then be shortened by 1 metre.

The condensate pipe, with siphon, must be protected against frost. The siphon must be connected to the sewer with an open connection. The condensate drain must comply with national and local regulations.

2.4 Gas connection

The installation of the gas pipeline and gas tap must comply with the relevant local and/or national regulations. The gas tap must be positioned within reach of the appliance [3]. If the connection line is subject to pressures above 60mbar, this gas tap must be closed. If there is any possibility of the presence of dirt in the gas, use a gas filter. Always blow through the gas pipe in compliance with the regulations prior to operating the appliance. If the appliance needs to be converted to a different type of gas than that indicated on the type plate, the supplier of the appliance must be contacted. The supplier can advise you which parts must be replaced in order to ensure correct operation of the appliance with the desired type of gas. Conversion to a different type of gas is not permitted in Belgium.

2.5 Electrical connection

Installation must comply with the relevant local and/or national regulations. Ensure that there is a correct connection group with a mains fuse. The electrical diagram is displayed on the appliance. A basic diagram for the GSX appliance can be found in chapter 8 and 9 Electrical diagram.

PLEASE NOTE:

- The appliance must be adequately earthed. The appliance must be fitted with an isolator switch which interrupts phase and zero (not earth).
- The isolator switch must be accessible at all times.
- Never, under any circumstances, allow the supply to the appliance to be interrupted by other switches. This could result in the appliance overheating.
- The unit is phase sensitive.

3.0 Controls

3.1 Room thermostat and reset button

The room thermostat must be located at a height of approx. 1.5m and not directly within the flow of warm air. Connect the room thermostat using a shielded data cable in accordance with the wiring diagram supplied for the appliance. Refer also to the technical information handbook supplied with the room thermostat. Incorrect connection will render the manufacturer's warranty void.

PLEASE NOTE:

- The maximum lengths and diameters are specified in the table [26].
- Earth the cable shielding to the appliance.
- For connecting multiple appliances, see [25] + [26].

3.2 Choice of bus cable

Selection of the correct type of bus cable is based on the specific model for the country concerned. When selecting the cable, the values noted in the technical details must be complied with. Bus cables of the appropriate specifications, which are offered in countries with an EIB market, are:

- | | |
|---------------------------------|--|
| – YCYM
EIB specification | Fixed system
Dry, damp, wet rooms
In the open air (no direct exposure to sunlight)
Face-fit, flush-fit, in conduits |
| – J-Y(st)Y
EIB specification | Fixed system
Only in interior spaces
Face-fit, in conduits |
| – JH(st)H | Halogen-free conduits, remote system |
| – A-2Y(L)2Y or A-2YF(L)2Y | Telephone ground cable, system in the outside area |

4.0 Start-up/shutdown

4.1 General

Before being packed, each appliance is fully tested for safety and correct operation. Among other checks, the gas pressure and CO₂ are set. You must however always check the gas pre-pressure. Never turn the adjustment screws without good cause. Do not forget to instruct the user on the proper use and operation of the appliance and peripherals.

4.2 Checks

- Switch off the electricity supply at the main switch.
- Set the room thermostat to the minimum temperature.
- Open the gas stop cock, then carefully purge the gas pipes of air and check for leaks. Under no circumstances use a naked flame! [27]
- Close the gas stop cock.
- In the case of the GSX, check whether the vanes in the air discharge port are set to the open position (open to a min. of 45°).
- Switch on the electrical supply at the main switch and set the room thermostat to maximum temperature. After the purge time has elapsed, the automatic ignition control will generate an electric spark and the safety valve on the gas control unit will open. Because the gas stop clock is closed, no flame will appear. The automatic ignition control will lock out after 4 attempts at ignition, each lasting about 5 seconds. After waiting for approximately 30 seconds, the automatic controller can be reset and the same cycle can be repeated.
- Open the gas stop cock, the appliance will now start up.
- Check the flame pattern at the main burner (clearly defined inner core, even combustion).
- In the case of appliances with an external fan, check that the maximum temperature increase of 30K is not exceeded.

4.3 Check that the room thermostat is functioning correctly

If the setting is lower than the ambient temperature, the burner will extinguish. At a setting higher than the ambient temperature, the burner should ignite.

4.4 Check the pre-pressure

The gas pre-pressure must be measured at the gas unit when the appliance is in operation. The pre-pressure is indicated on the appliance's type plate. To check, the volume of gas consumed [3] can be measured via the gas meter (temporarily switch off all other appliances that consume gas).

4.5 Check appliance operation.

Finally, check that the operation of the appliance cannot be influenced by other appliances close to it, localised air flows or corrosive or explosive vapours, etc.

4.6 Set the gas control unit [6]

Before being packed, each appliance is fully tested for safety and correct operation. The correct combustion values are set during this procedure. If checks indicate that the CO₂ value is different from that in table [3], adjustments may be made (difference of more than 0.2%). Never adjust set screws without the correct measuring equipment.

Legend [6]

- 1 Measuring point for gas pre-pressure
- 2 Measuring point for offset
- 3 Offset adjustment screw
- 4 Throttle adjustment screw

Step 1

Set the appliance to run at full operational load by pressing and holding the reset button of the unit for at least 5 seconds. The fault lamp in the reset button flashes at a high frequency. If the appliance will not fire up, you can try sealing the air opening in the gas mixer during ignition using your thumb and index finger. This makes the mixture richer and easier to ignite. Check the CO₂ when the appliance is operating at high output. If the CO₂ is too high, turn the throttle adjuster to the right (less gas). If the CO₂ is too low, turn the screw to the left (more gas). The correct CO₂ value is shown in table [3] (D1).

Step 2

Set the appliance to minimum load by shortly pressing the reset button of the unit. The fault lamp in the reset button flashes at a low frequency. Check the CO₂ against the value in table [3] (D2). If different, correct by turning the offset adjuster under the cap. To the left for lower CO₂, to the right for higher CO₂.

After setting the gas control unit press the reset button again (the light goes out).

4.7 Shutting down the heater

For short periods of time:

- Set the room thermostat to the minimum temperature.
- Do not switch off the electricity supply at the main switch as this may damage the maximum temperature and safety thermostat.

For longer periods of time:

- Set the room thermostat to the minimum temperature.
- After ± 5 minutes, the electrical power may be switched off.

5.0 Maintenance

5.1 General

The appliance must be subjected to maintenance at least once a year, more often if necessary. If applicable, ask a qualified installer for maintenance advice. Maintenance may only be carried out by qualified maintenance technicians. When carrying out maintenance, the appliance must have been shut down for an extended period. Make sure that you comply with all safety rules.

5.2 Cleaning

All gas-fired appliances require periodical maintenance. This maintenance work must be performed by qualified maintenance technicians.

- Before starting maintenance work, the gas and electrical supplies must be shut off. See also paragraph 4.7
- Check all gaskets and replace if required.
- The gas transport section is located on the side of the appliance in the electrical compartment. The gas transport section can be removed from the appliance as a single assembly. To do so, six M6 nuts must be removed and the electrical wiring disconnected.
- Removal of the gas transport section provides access to the burner and the ignition/ionisation electrode. It is recommended to replace the ignition/ionisation electrode yearly during regular maintenance.
- Check the burner surface for irregularities. Never use a steel brush!
- Clean the gas mixer using a soft brush. Make sure that no dust gets into the burner and the gas suction tube. Refit the gas transport section, reconnect the wiring and the gas and electrical supplies. [27]

6.0 Description of parts

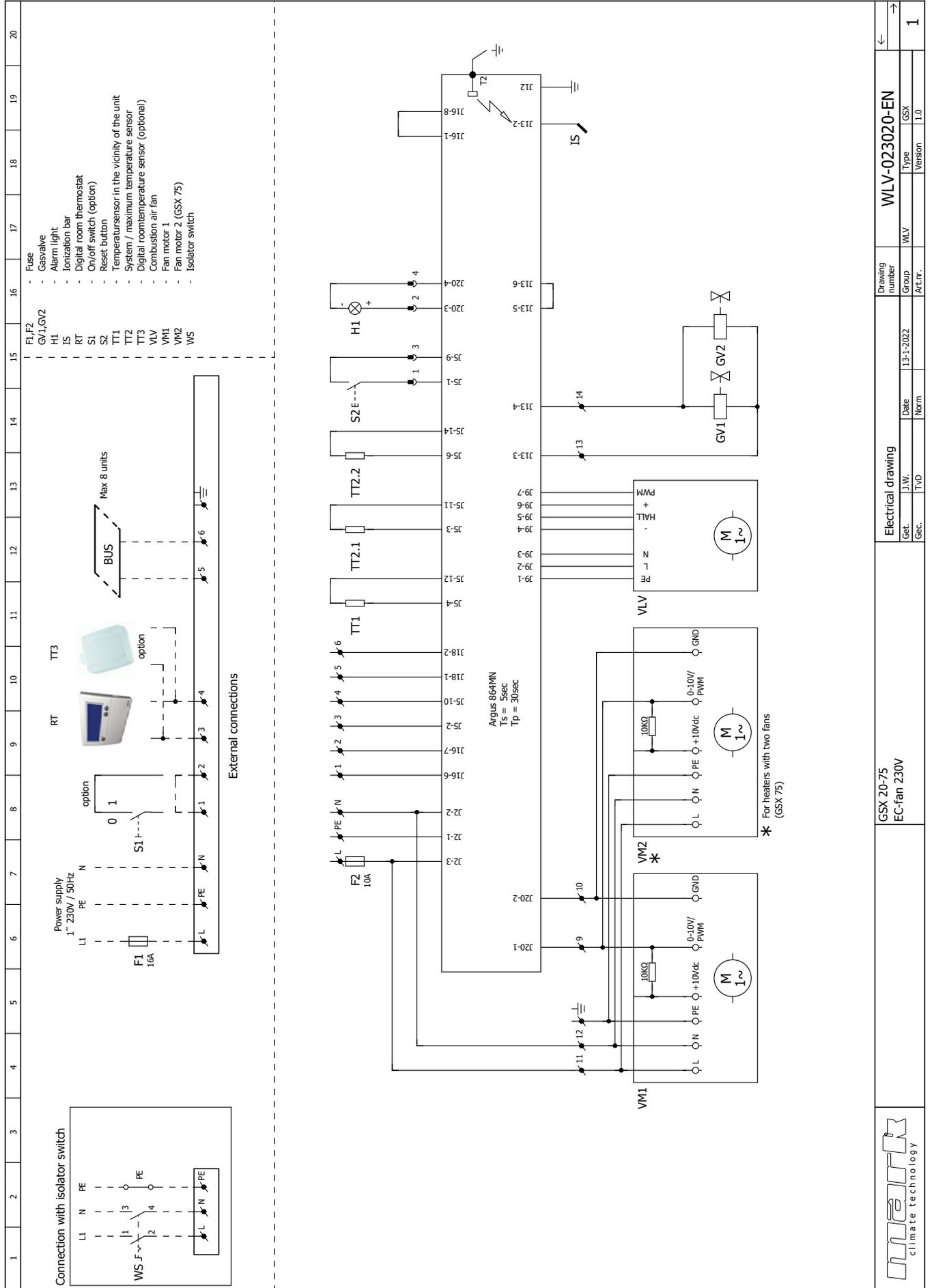
The parts are:

- Fan [7]
- Combustion air fan [8]
- Ignition set [9]
- Burner [11]
- Gas control unit [12]
- Ambient temperature sensor [13]
- Outlet temperature sensor / max [14]
- Gasket set [15]
- Microprocessor [16]
- Gas mixer [17]

7.0 Fault codes

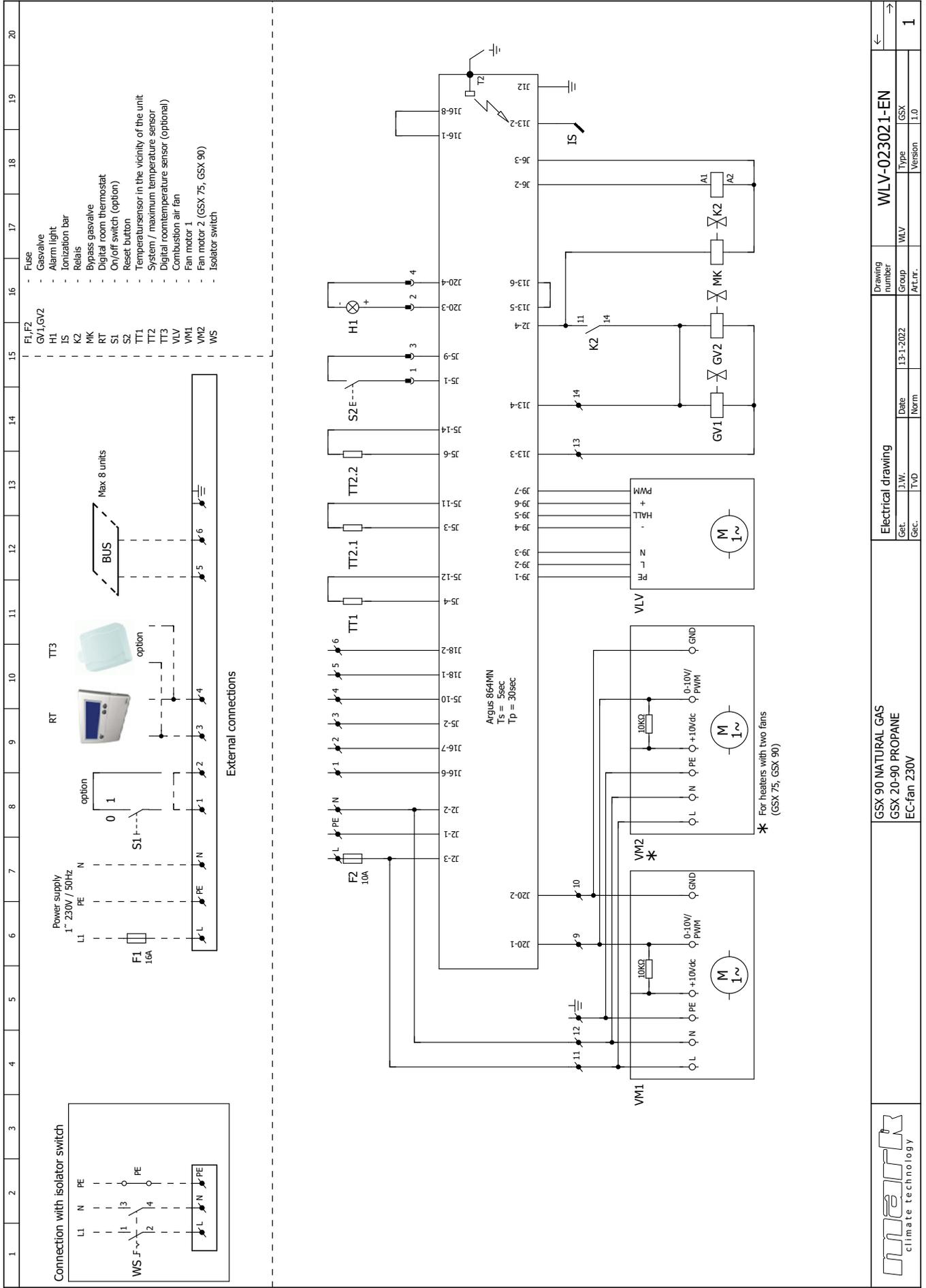
Code	Error	Description
01	Ignition failure	Ignition has failed (three attempts at ignition).
02	Gas valve relay/T max.	Maximum thermostat is open
03	Gas valve	Gas valve faulty / Wire connecting the gas valve to the burner control box is open-circuit or has been incorrectly connected.
10	Sensor diff too high	Temperature difference between both outlet temperature sensors is too high.
25	T max.	Maximum thermostat is open
31	Too many attempts to restart	Flame goes out (3x) when the device is in operation.
42	Choke relay broken	Relay of the choke valve is broken
43	Combustion air fan failure	The current speed of the combustion air fan deviates too much
65	Phase and zero back to front	Phase and zero not connected correctly
72	Air out sensor open	Outlet temperature sensor interrupted
73	Unit temp sensor open	Ambient temperature sensor interrupted
78	Air out safety open	Outlet temperature sensor interrupted
80	Air out shorted	Outlet temperature sensor has short circuited
81	Unit temp shorted	Ambient temperature sensor has short circuited
86	Air out safety shorted	Outlet temperature sensor has short circuited
<p><i>When a different error code displayed on the thermostat appears, press the Reset button. If the fault returns, please contact the vendor of the device.</i></p>		

8.0 Electrical diagram GSX 20 - 75 natural gas

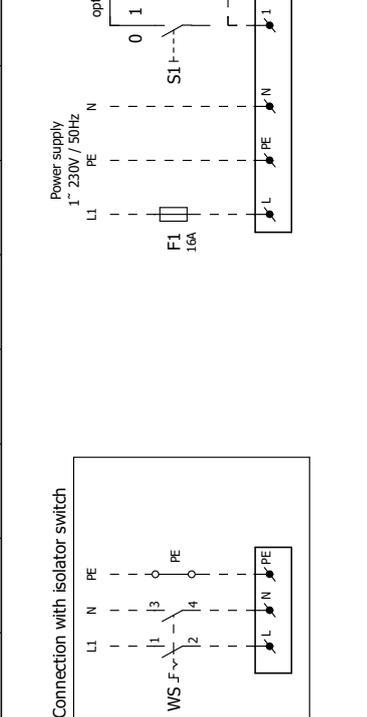
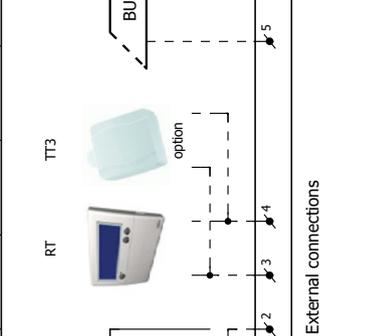
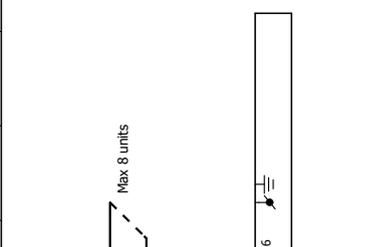


←		→	
Electrical drawing		WLV-023020-EN	
Get.	J.W.	Date	13-1-2022
Gecc.	T.V.D.	Norm	
Drawing number		WLV	
Group		Type	
Art.Lrr.		Version	
		1.0	
GSX 20-75 EC-fan 230V			

9.0 Electrical diagram GSX 90 natural gas Electrical diagram GSX 20 - 90 propane



- Fuse
- Gasvalve
- Alarm light
- Ionization bar
- Relays
- Bypass gasvalve
- Digital room thermostat
- On/off switch (option)
- Reset button
- Temperature sensor in the vicinity of the unit
- System / maximum temperature sensor
- Digital room temperature sensor (optional)
- Combustion air fan
- Fan motor 1
- Fan motor 2 (GSX 75, GSX 90)
- Isolator switch

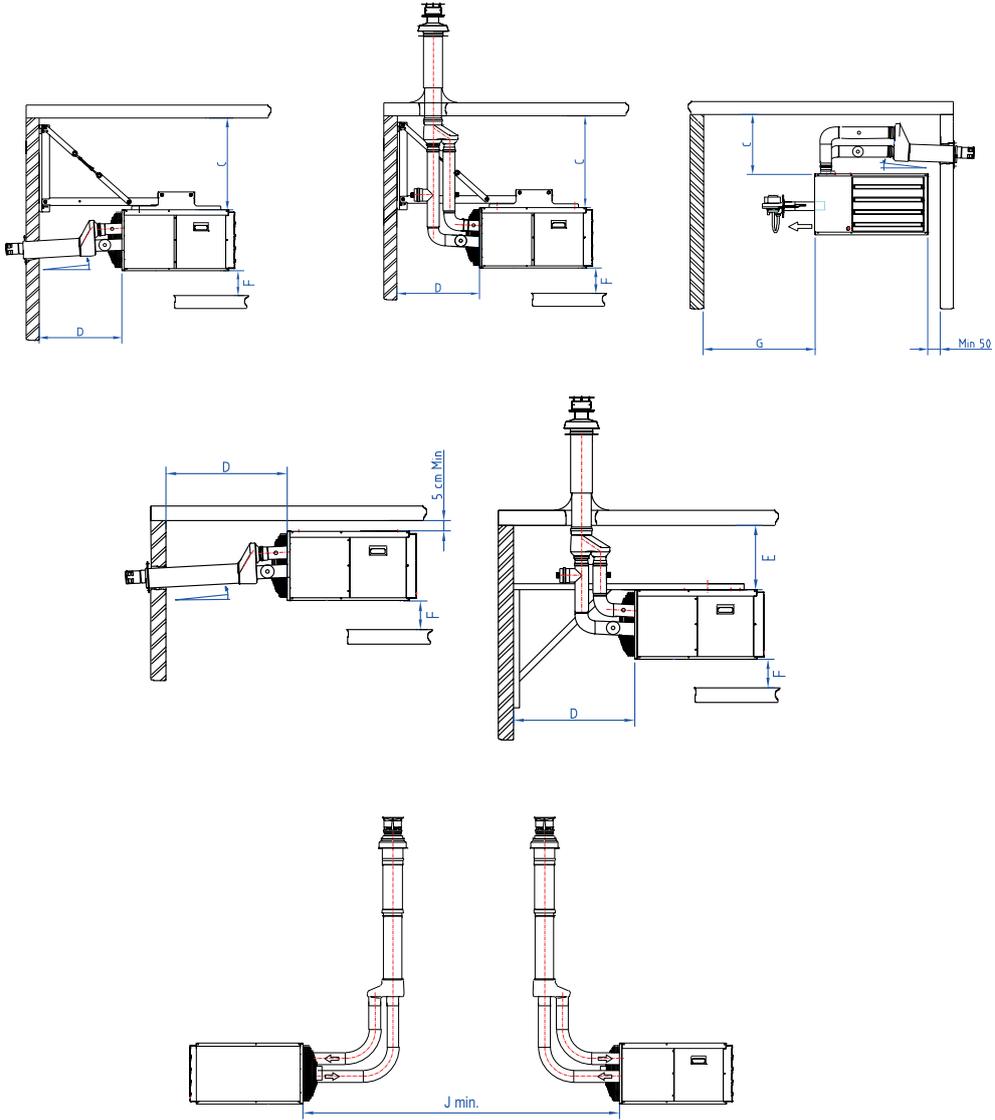


Electrical drawing		Drawing number		WLV-023021-EN	
Get.	J.W.	Date	13-1-2022	Type	GSX
Gecc.	T.V.D.	Norm		Version	1.0
GSX 90 NATURAL GAS GSX 20-90 PROPANE EC-fan 230V			1		

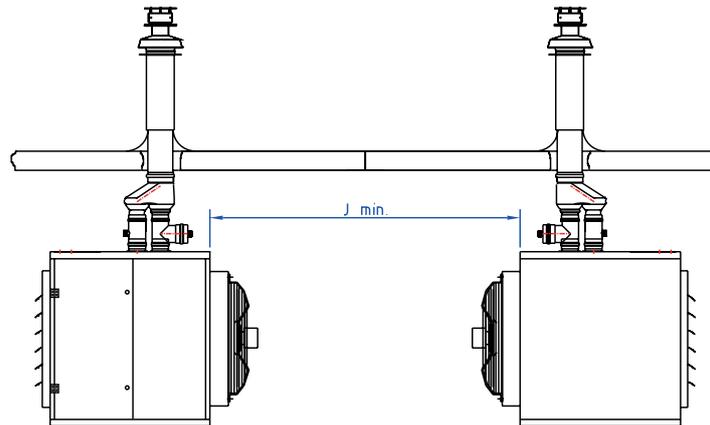
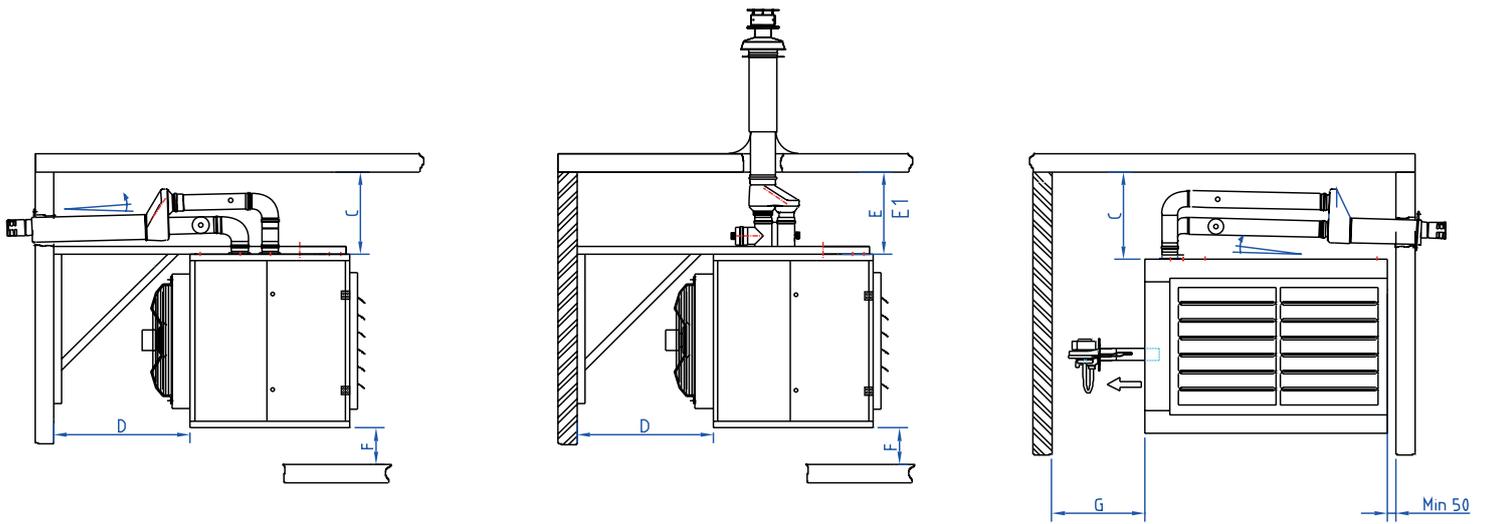


10.0 Bracket instructions

[20] Basic instructions	
Single-wall steel flue system	Air supply system
These basic requirements are only applicable to connecting pipes with the following characteristics:	These basic instructions are only applicable to air supply pipes with the following characteristics:
• Connection to a heater with built-in ventilator.	• Connection to a closed heater with built-in fan.
• Connection in the installation area of the appliance and in sight.	• Connection in the installation area of the appliance and in sight.
• Single-walled, rigid aluminium or stainless steel pipes with CE certification (cf EN 1856-1/2, PI, W).	• Aluminium, stainless steel or plastic air supply pipes.
• Maximum flue gas temperature of 160°C.	• Diameter air supply pipe of Ø80 to Ø130 mm.
• Diameters from Ø80 to Ø130 mm.	
Caution! This checklist includes some basic instructions. For further instructions for this unit paragraph 2.2.	Caution! This checklist includes some basic instructions. For further instructions for this unit paragraph 2.2.
Checklist	Checklist
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
General	General
<input type="checkbox"/> We recommend using the brackets of manufacturer Cox Geelen.	<input type="checkbox"/> Do not combine components of various materials or finished products for the connecting pipe.
<input type="checkbox"/> Do not combine components of various materials or finished products for the connecting pipe, except where the manufacturer of the system allows this. Exception to this rule: components tested according to Gastec Qa KE83-3 (thick-walled aluminium) and 5 (stainless steel).	<input type="checkbox"/> The minimum insertion length of sleeves and spigot ends is 40mm.
<input type="checkbox"/> The minimum insertion length of sleeves and spigot ends is 40mm.	<input type="checkbox"/> When using plastic air supply pipes make sure that the distance to the flue pipe is at least 35mm.
<input type="checkbox"/> Mount tension free.	<input type="checkbox"/> Mount tension free.
<input type="checkbox"/> Create a slope 3 degrees (so 50mm per meter) to the unit for a proper drainage of the condensate.	<input type="checkbox"/> Place the first bracket on a maximum of 0.5m pipe length from the unit.
Connecting and bracing	Horizontal and non-vertical pipes
<input type="checkbox"/> Brace every corner to or close to the sleeve. Exception when connecting to the unit:	<input type="checkbox"/> - Maximum bracket distance of 1m.
- If the connecting pipe is shorter than 0.25m before and after the first bend, the bracket at the first bend can be omitted.	<input type="checkbox"/> - Divide lengths between brackets evenly.
- Place the first bracket on a maximum of 0.5m pipe length from the unit.	Vertical pipes
Horizontal and non-vertical pipes	<input type="checkbox"/> - Maximum bracket distance of 2m.
<input type="checkbox"/> - Maximum bracket distance of 1m.	<input type="checkbox"/> - Divide lengths between brackets evenly.
- Divide lengths between brackets evenly.	Gaskets and seals
Vertical pipes	<input type="checkbox"/> Avoid damaging of the sealing rings by cutting of in an angle and deburring.
<input type="checkbox"/> - Maximum bracket distance of 2m.	<input type="checkbox"/> Seals of metal air supply pipes may be bolted or parked. This is not allowed for plastic air supply pipes.
- Divide lengths between brackets evenly.	<input type="checkbox"/> Guarantee the gas-tightness by using components that are provided with a seal.
Gaskets and seals	<input type="checkbox"/> If necessary lubricate sealing rings exclusively with max. 1% soap solution or water.
<input type="checkbox"/> Avoid damaging of the sealing rings by cutting of in an angle and deburring.	<input type="checkbox"/> Caution! Do not use grease, Vaseline, petroleum jelly or oil.
When using tension-proof connections follow the instructions of the manufacturer.	
<input type="checkbox"/> Do not screw or park connections.	
<input type="checkbox"/> It is not allowed to seal foam or paste (for example PUR, silicone, etc.).	
<input type="checkbox"/> If necessary lubricate sealing rings exclusively with max. 1% soap solution or water.	
<input type="checkbox"/> Caution! Do not use grease, Vaseline, petroleum jelly or oil.	



T	C ≥	D ≥	E ≥	F ≥	G ≥	J ≥
20	575	350	70	400 - 2500	430	1000

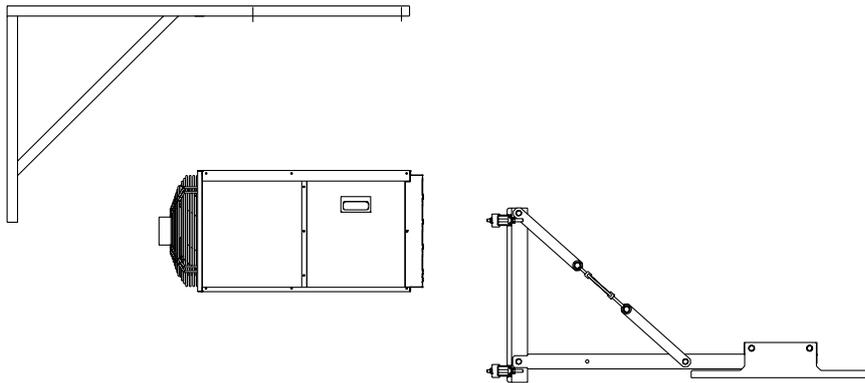


T	C ≥	D ≥	E ≥	E1* ≥	F ≥ - ≤	G ≥	J ≥
35	430	780	305	350	400 - 4000	600	1400
55	450	780	395	450	400 - 4500	600	1600
75	450	780	395	460	400 - 5000	600	1800
90	450	780	395	450	400 - 5000	700	2200

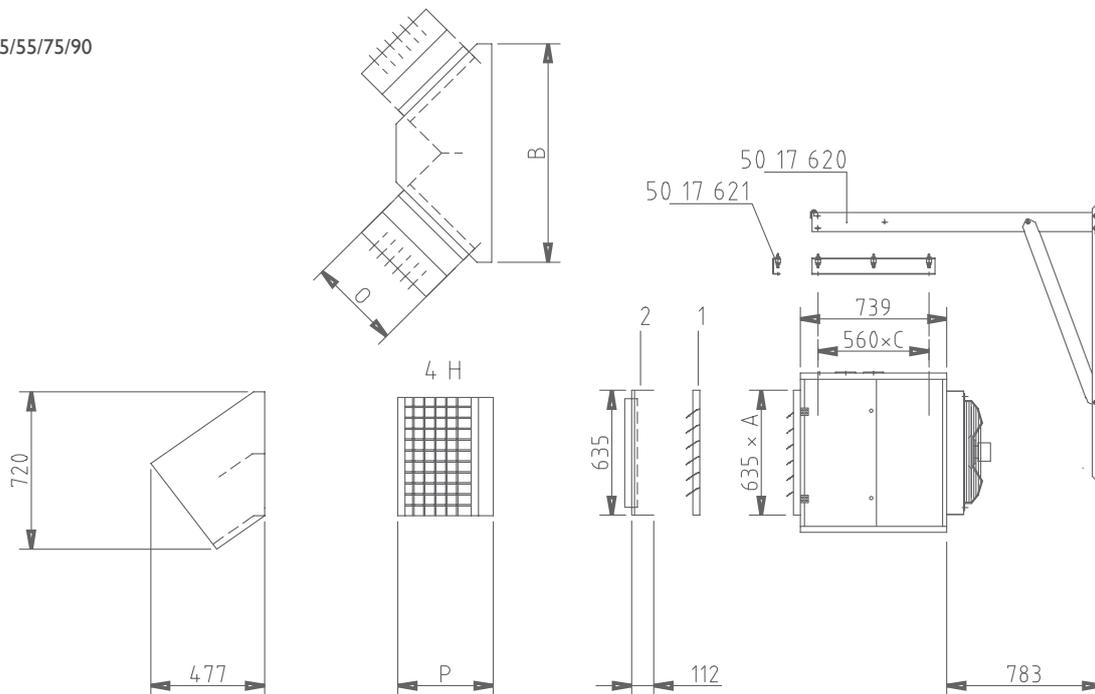
* Germany / Deutschland.

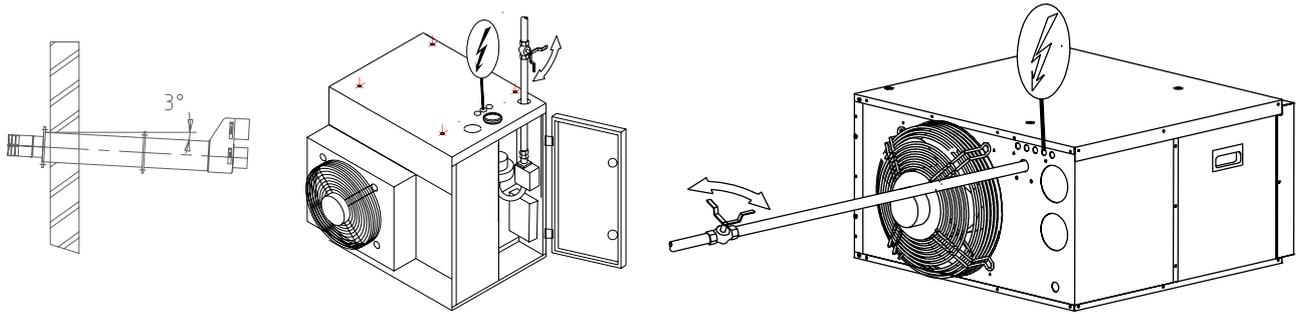
T	mm					kg	
	A	B	C	O	P	2	4H
35	760	760	470	320	314	5	12
55	1005	1005	715	490	490	7	18.5
75	1190	1190	890	620	620	9	26
90	1480	1480	1180	825	825	11.5	35.5

GSX 20



GSX 35/55/75/90

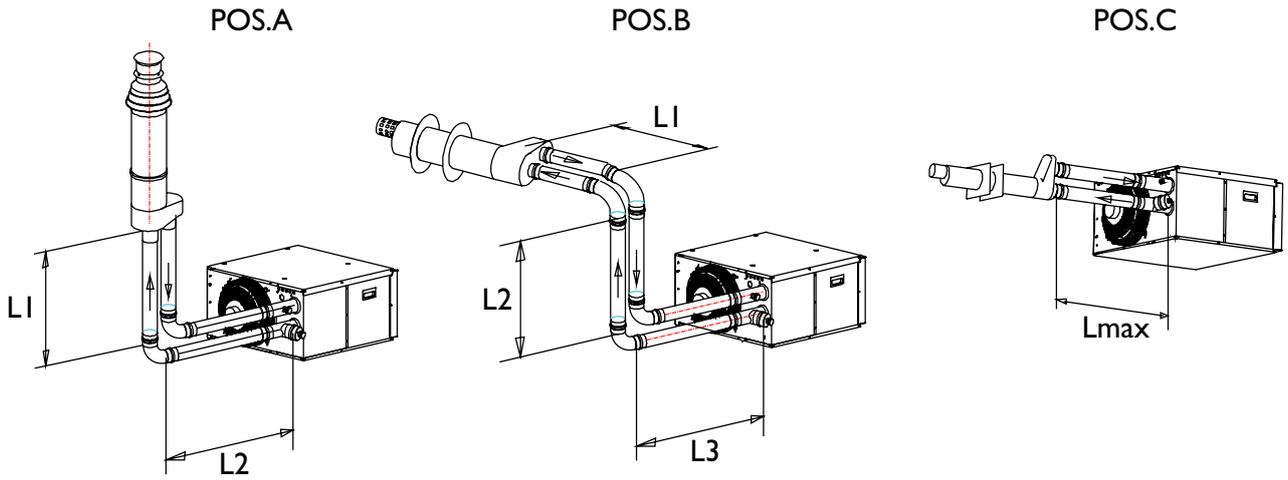




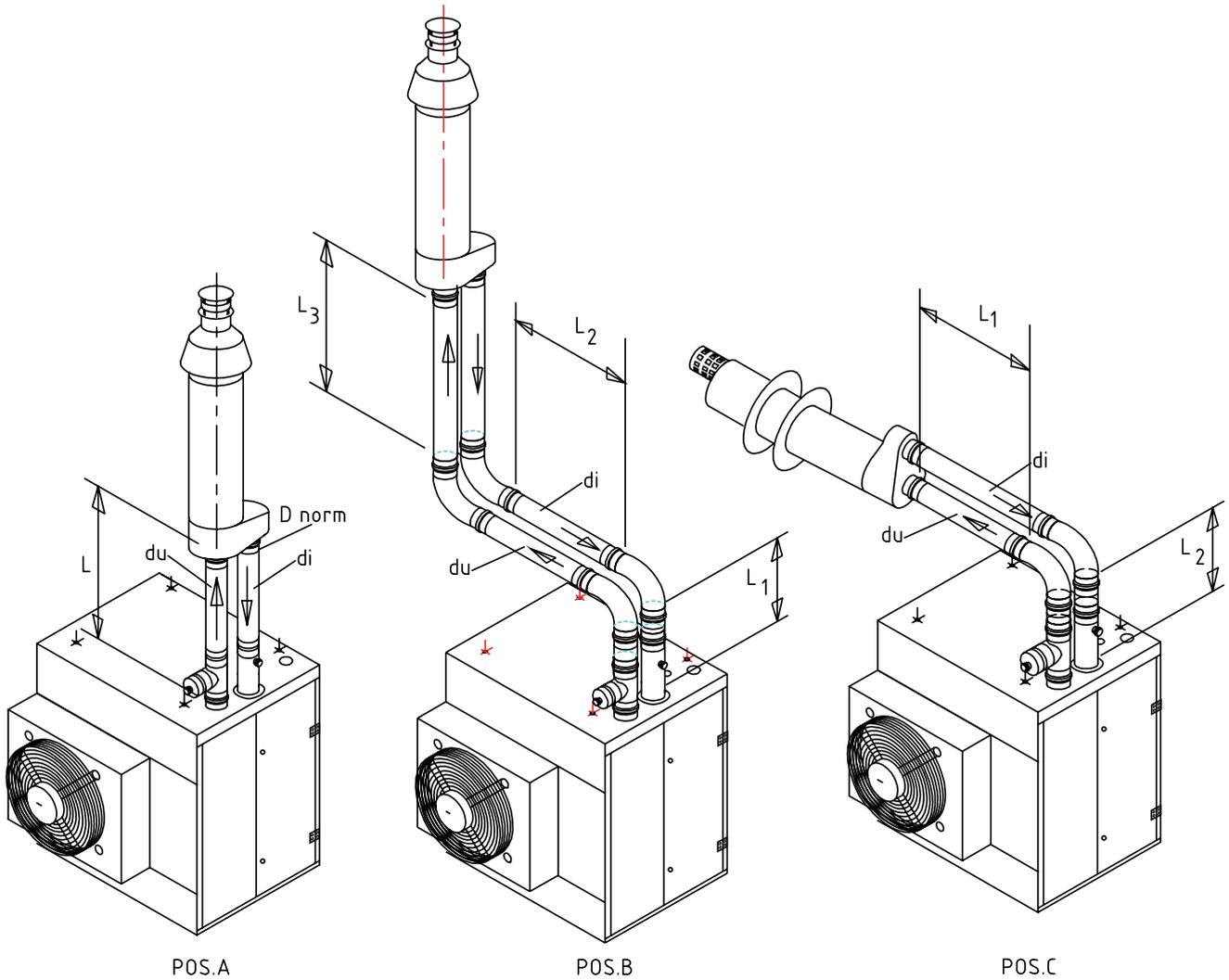
Type			20	35	55	75	90
A		kW	16,1 - 11,3	38,8 - 26,9	57,0 - 39,9	80,0 - 56,0	100,0 - 70,0
B		kW	14,5 - 10,2	34,9 - 24,2	51,3 - 35,9	72,0 - 50,4	90,0 - 63,0
C		kW	13,7 - 9,8	32,6 - 23,1	48,0 - 34,3	68,2 - 48,4	84,4 - 60,1
D	G25	m³/h	1,8 - 1,2	4,2 - 2,9	6,19 - 4,33	8,69 - 6,1	10,86 - 7,6
D1	CO ₂	%	8,9	9,0	9,0	9,0	9,0
D2	CO ₂	%	8,7	8,7	8,7	8,7	8,7
D3		mBar	25,0	25,0	25,0	25,0	25,0
D	G25.3	m³/h	1,80 - 1,20	4,20 - 2,90	6,17 - 4,33	8,65 - 6,10	10,81 - 7,60
D1	O ₂	%	5,2	4,9	4,9	5,1	4,9
D2	O ₂	%	5,8	5,4	5,4	5,5	5,3
D3		mBar	25,0	25,0	25,0	25,0	25,0
D	G20	m³/h	1,50 - 1,10	3,70 - 2,60	5,43 - 3,88	7,62 - 5,30	9,52 - 6,70
D1	CO ₂	%	8,8	8,8	8,8	8,8	8,8
D2	CO ₂	%	8,4	8,5	8,6	8,5	8,5
D3		mBar	20,0	20,0	20,0	20,0	20,0
D	G30	kg/h	1,14 - 0,79	2,75 - 1,93	4,05 - 2,84	5,67 - 3,97	7,10 - 4,97
D1	CO ₂	%	10,4	10,7	10,7	10,7	10,7
D2	CO ₂	%	10,0	10,3	10,3	10,3	10,3
D3		mBar	28-30 / 50*	28-30 / 50*	28-30 / 50*	28-30 / 50*	28-30 / 50*
D	G31	kg/h	1,13 - 0,79	2,72 - 1,89	3,99 - 2,79	5,59 - 3,91	6,99 - 4,89
D1	CO ₂	%	9,8	10,0	10,0	10,0	10,0
D2	CO ₂	%	9,4	9,7	9,7	9,7	9,7
D3		mBar	37 / 50*	37 / 50*	37 / 50*	37 / 50*	37 / 50*
I		V/Hz	230/50	230/50	230/50	230/50	230/50
J		kW	0,20	0,41	0,65	1,49	1,05
K		A	6,3	6,3	6,3	6,3	6,3
L		IP	00B	00B	00B	00B	00B
M		m³/h	2400 - 1800	5900 - 4800	9300 - 6300	14000 - 9200	16500 - 11800
N		ΔT	17,1 - 16,3	16,6 - 14,3	15,6 - 16,4	14,6 - 15,8	15,4 - 15,3
O		m	14	28	26	32	36
P		°C	-5 / 40°C	-5 / 40°C	-5 / 40°C	-5 / 40°C	-5 / 40°C
S		kg	50	89	101	123	139
T		kg/h	34	62	91	127	159
V			1/2" (M)	3/4" (M)	3/4" (M)	1" (M)	1" (M)

* NL BE DE AT 50 mBar

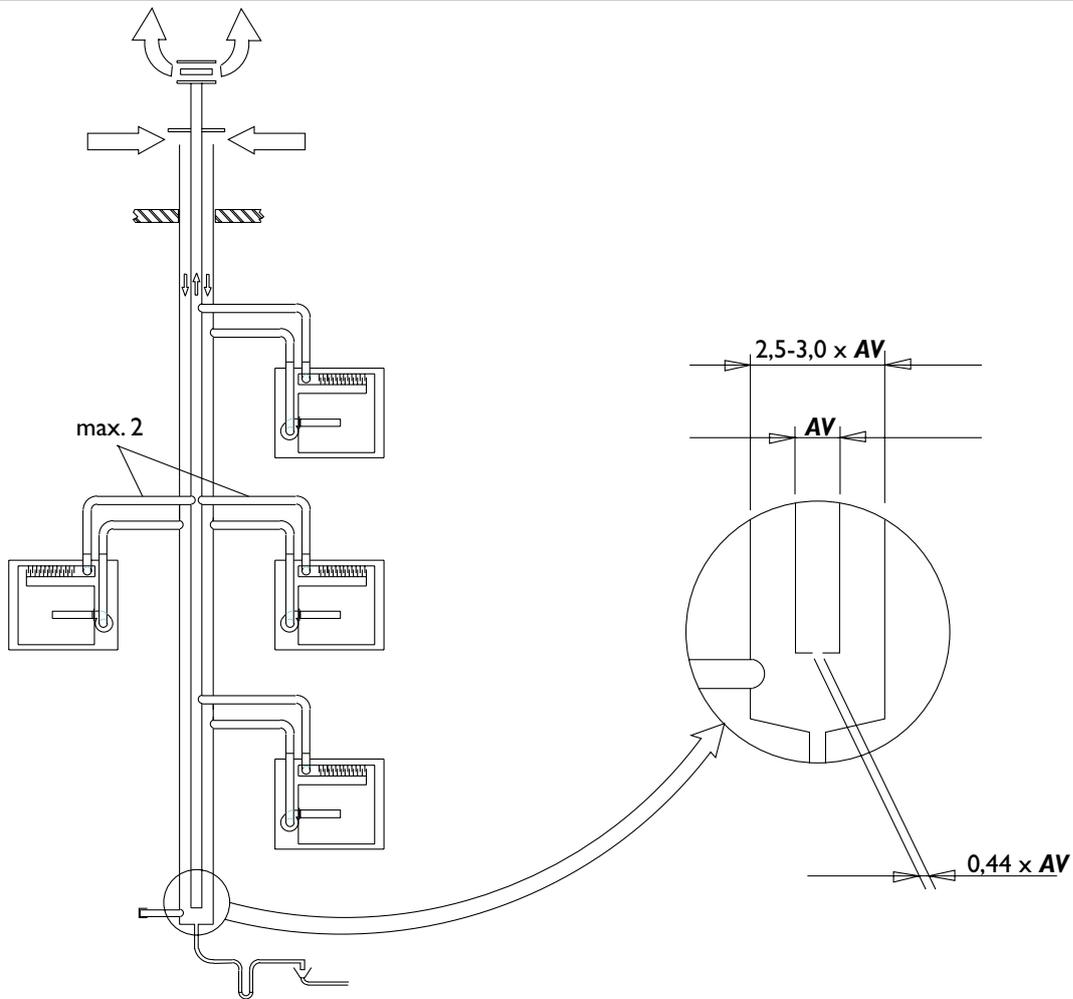
BE							
AA		kW	14,5 / 12,1	34,9 / 29,0	51,3 / 42,6	72,0 / 59,8	90,0 / 73,4
BB		kW	13,7 / 11,3	32,7 / 27,2	48,4 / 40,2	67,3 / 55,9	84,1 / 68,5



POS.A GSX 20: $L1 + L2 = \text{max } 5 \text{ mtr}^*$
 POS.B GSX 20: $L1 + L2 + L3 = \text{max } 5 \text{ mtr}^*$
 POS.C GSX 20: $L = \text{max } 5 \text{ mtr}^*$
 * § 2.3

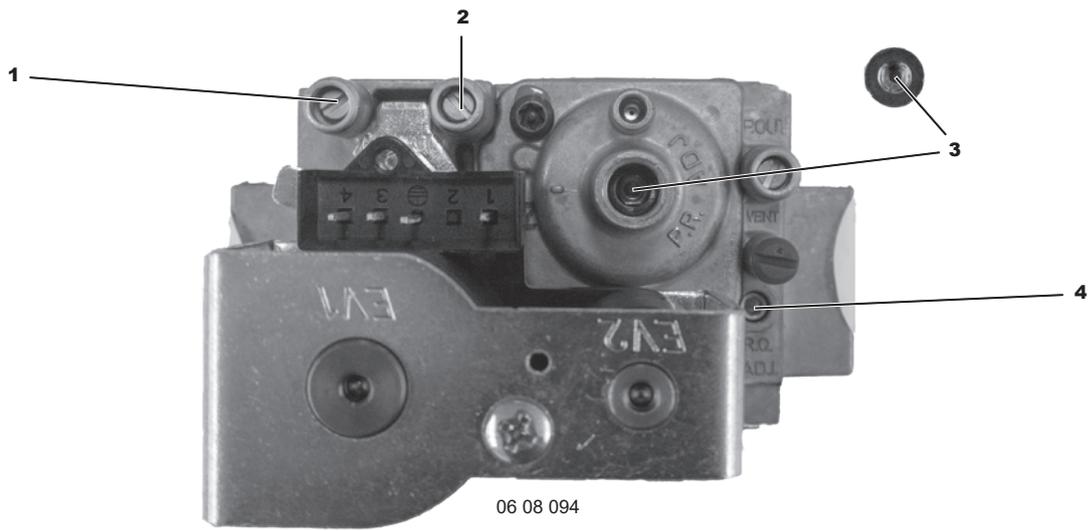


POS.A GSX 35-90: $L = \text{max } 6 \text{ mtr}^*$
 POS.B GSX 35-90: $L1 + L2 + L3 = \text{max } 6 \text{ mtr}^*$
 POS.C GSX 35-90: $L1 + L2 = \text{max } 6 \text{ mtr}^*$
 * § 2.3

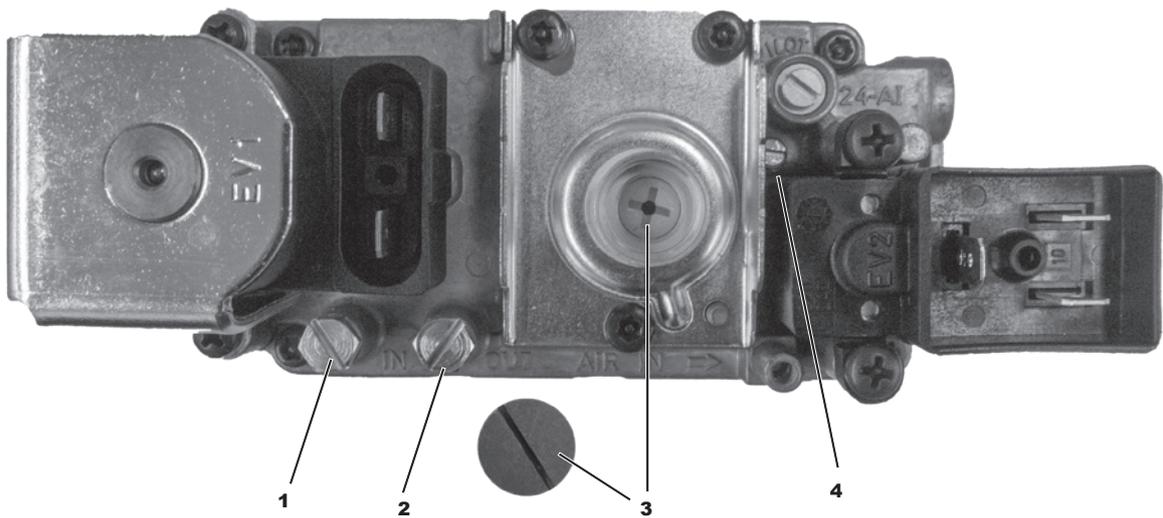


No. of units	T	20	35	55	75	90
		AV [cm ²]				
0						
1						
2		123	238	350	491	614
3		146	283	416	583	729
4		164	318	467	655	819
5		184	356	523	734	918
6		203	395	580	814	1017
7		225	436	640	898	1123
8		247	478	703	986	1233
9		270	524	769	1079	1349
10		294	571	839	1177	1471
11		321	622	914	1282	1603
12		346	672	987	1386	1732
13		374	726	1067	1497	1871
14		403	782	1148	1612	2014
15		432	838	1232	1728	2161
16		463	897	1318	1850	2313
17		494	958	1408	1976	2470
18		527	1022	1501	2107	2634
19		562	1090	1601	2247	2809
20		596	1157	1700	2386	2982

[6]

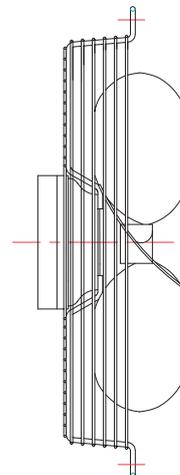


06 08 076



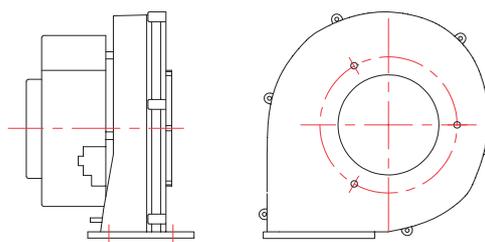
[7]

T	code
20	06 21 528
35	06 21 535
55	06 21 536
75	(2x) 06 21 535
90	(2x) 06 21 536



[8]

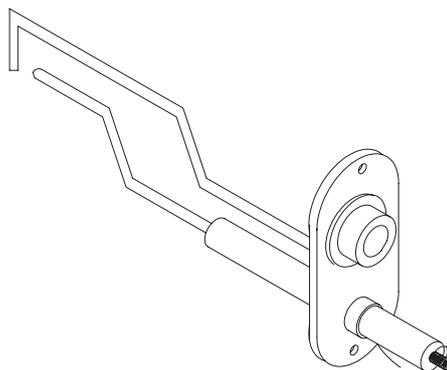
T	code
20/35	06 00 830
55/75/90	06 00 831



03-1403

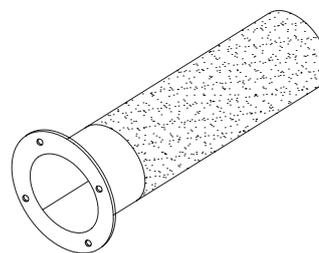
[9]

T	code
20/35/55/75/90	06 25 360

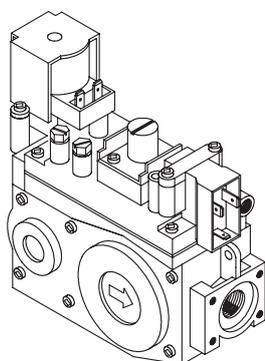


[11]

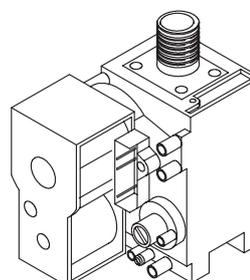
T	code
20/35	06 03 405
55/75/90	06 03 415



[12]



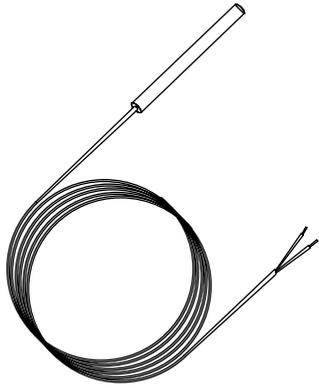
I2A



I2B

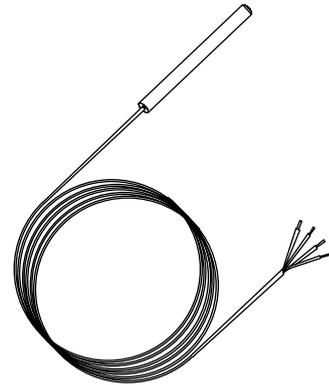
T	Gas type	code	Image
20/35	G20/G25/G25.3/G30/G31	06 08 094	I2B
55/75/90	G20/G25/G25.3/G30/G31	06 08 076	I2A
90	G20/G25/G25.3	06 08 050 (bypass)	I2A
20/35/55/75/90	G30/G31	06 08 050 (bypass)	I2A

[13]



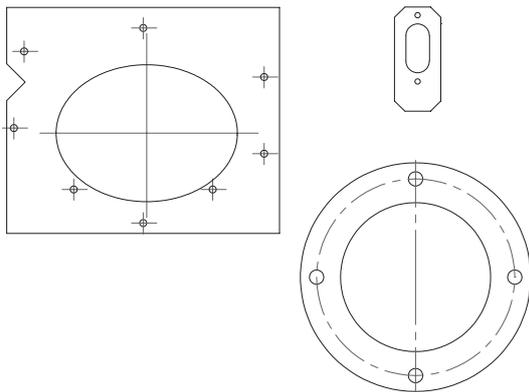
T	code
20 - 90	06 29 057

[14]



T	code
20 - 90	06 29 053

[15]

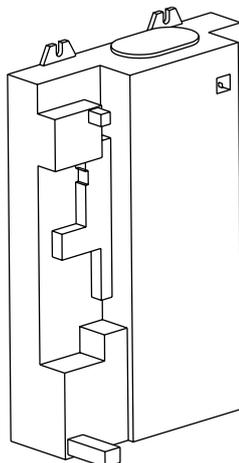


T	code
20	19 99 074
35 - 90	19 99 075

[16]

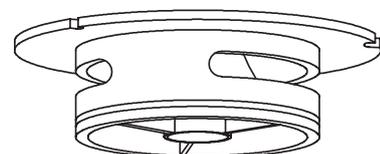
T	code G20/G25
20	30 05 630
35	30 05 631
55	30 05 632
75	30 05 633
90	30 05 634

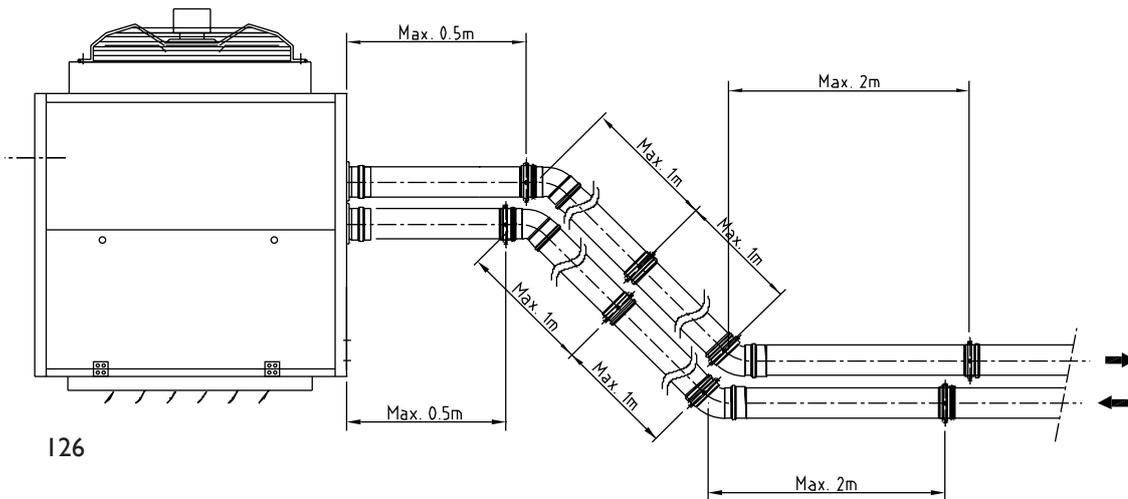
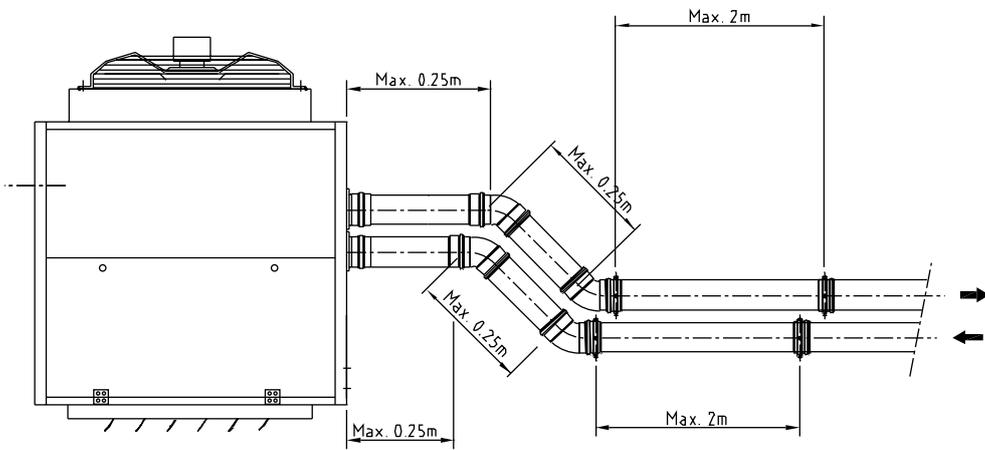
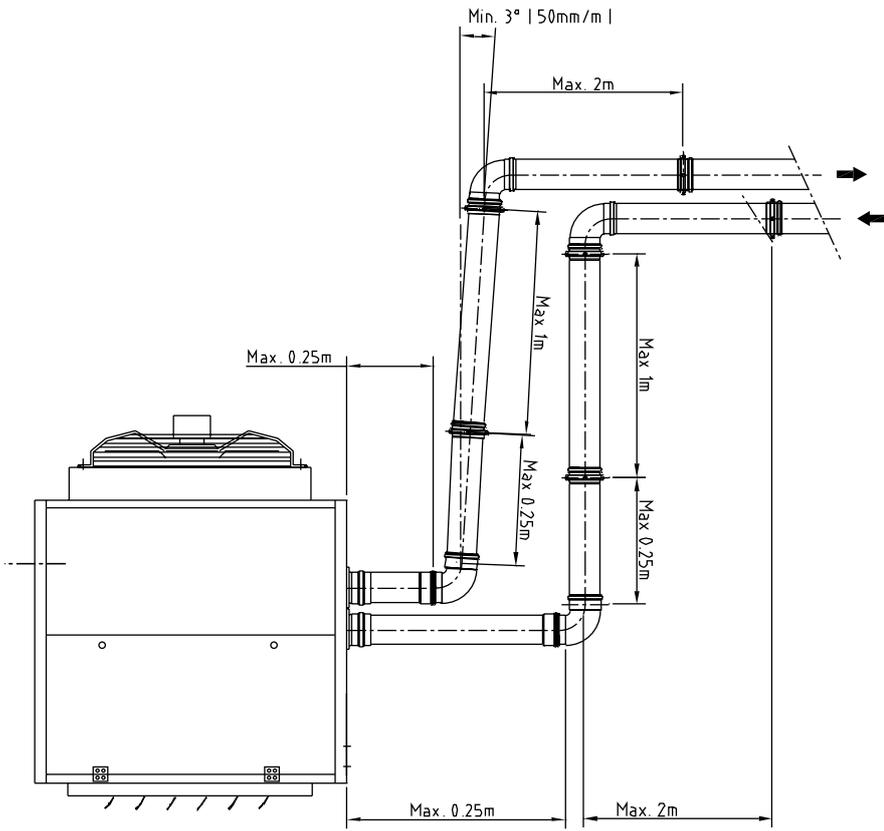
T	code G30/G31
20	30 05 635
35	30 05 636
55	30 05 637
75	30 05 638
90	30 05 639

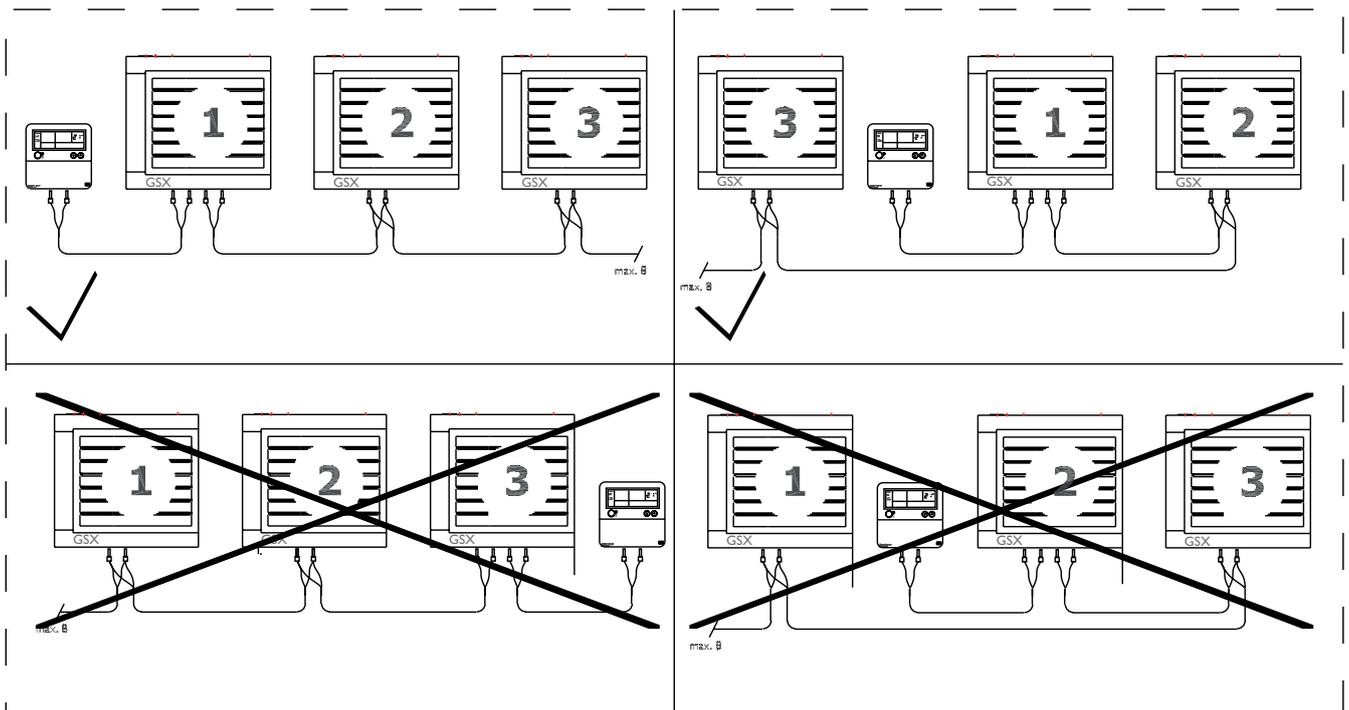
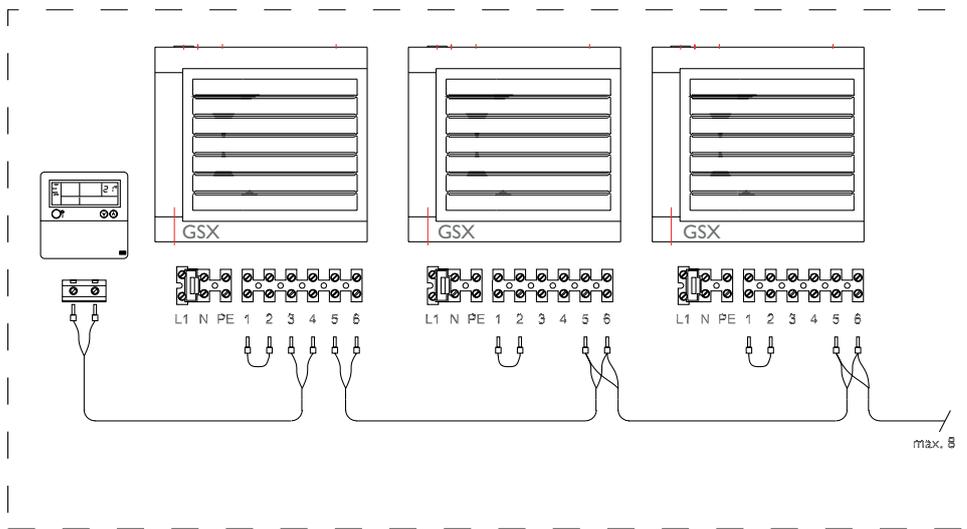
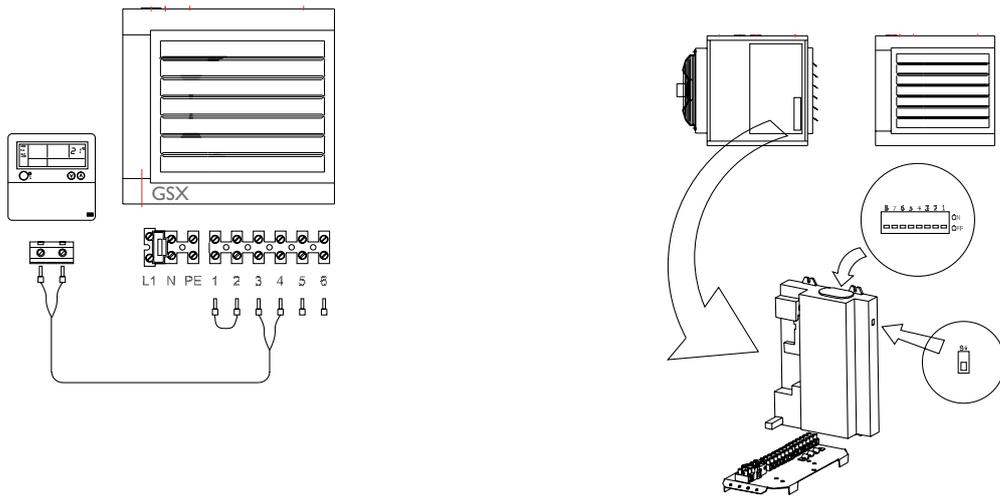


[17]

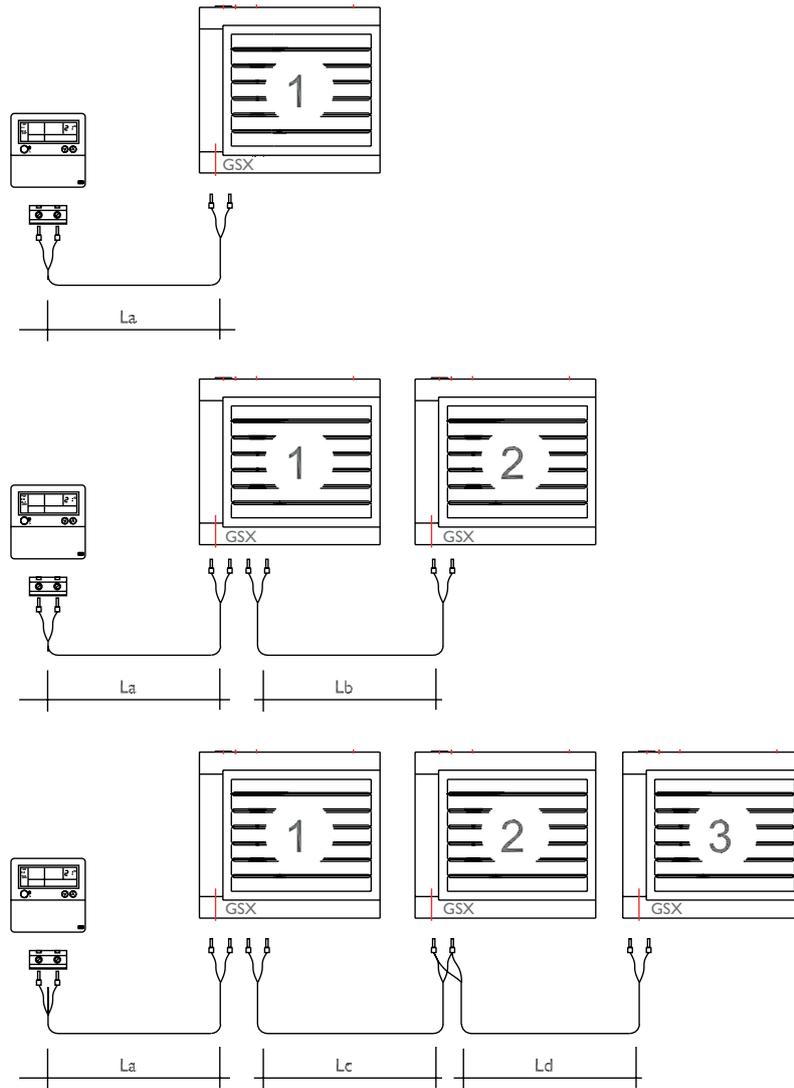
T	code
20	04 01 602
35	04 01 604
55/75	04 01 614
90	04 01 615



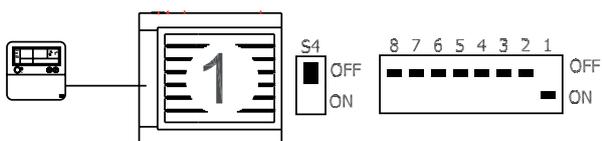




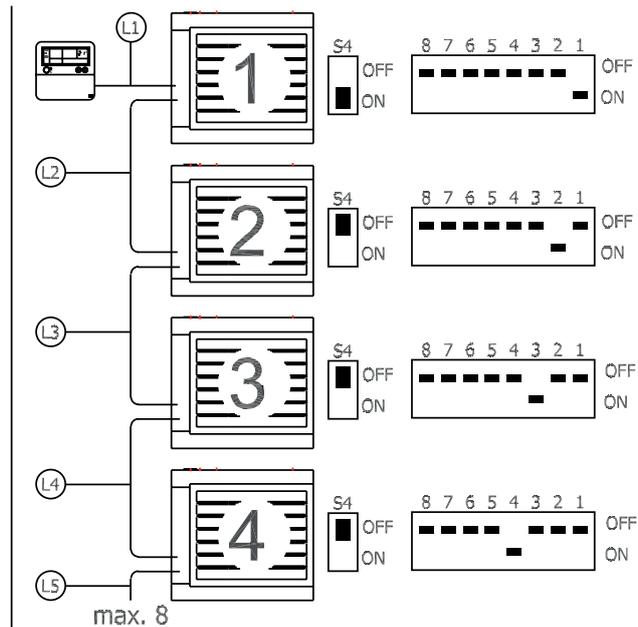
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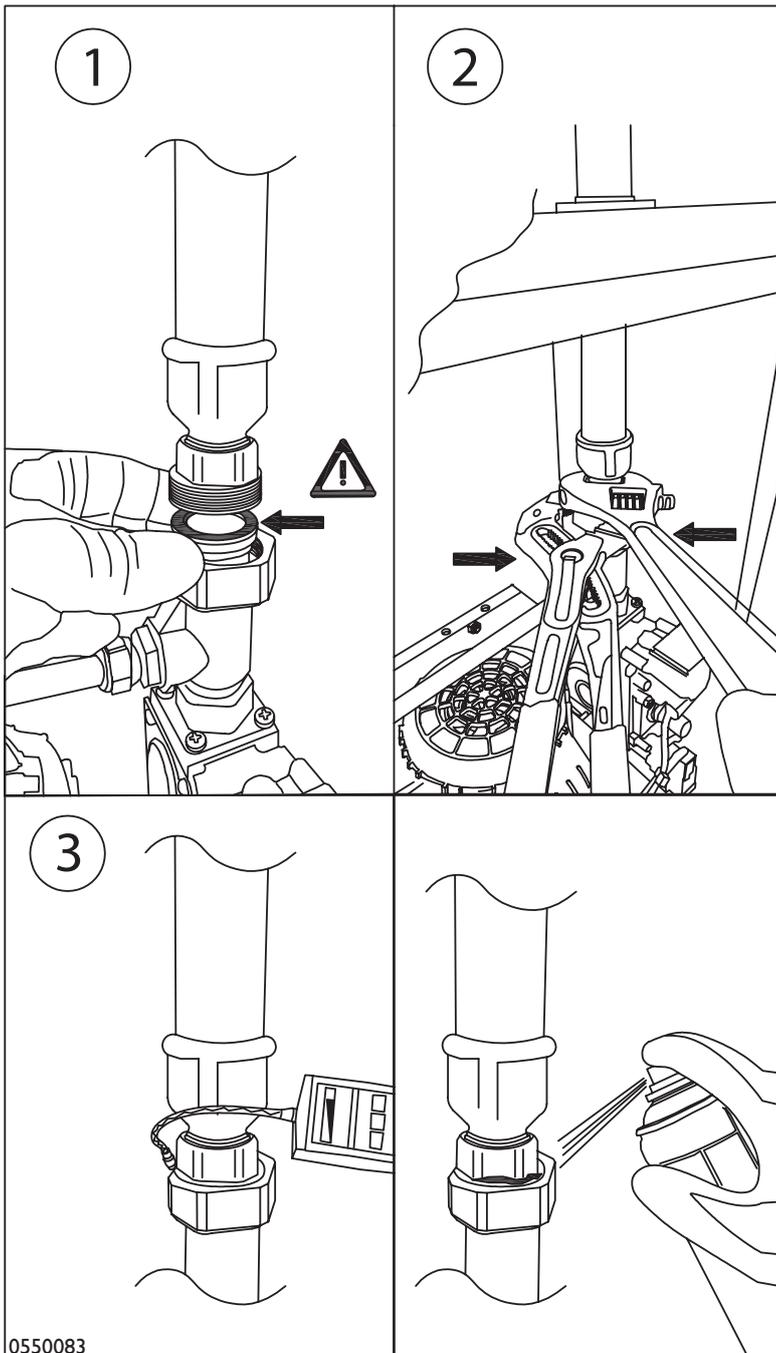


[26]



Ø	L1	L2+L3+L4+...L8
0.8mm ²	160m	800m
1.0mm ²	200m	1000m
1.5mm ²	300m	1500m





①

- EN** Caution! Check position of the gasket.
- DE** Vorsicht! Position der Dichtung prüfen.
- FR** Attention! Vérifier la position du joint.
- NL** Let op! Controleer de positie van de pakking.
- PL** Uwaga! Sprawdź pozycję uszczelki.
- RO** Atentie! Verificatie pozitia garniturii.

②

- EN** Always tighten the connection with 2 spanners.
- DE** Ziehen Sie die Verbindung immer mit 2 Schraubenschlüsseln an.
- FR** Toujours serrer la connexion avec clés.
- NL** Draai de koppeling altijd aan met 2 tangen.
- PL** Zawsze używaj 2 kluczy nastawnych do zaciśnięcia połączenia.
- RO** Strangeti intotdeauna conexiunea cu 2 chei.

③

- EN** Before starting up the unit: check for leakage of gas by means of a gas detection device or leakspray!
- DE** Vor der Inbetriebnahme des Gerätes: Kontrolle auf Gasaustritt durch Gaswarngerät oder Lecksuchspray.
- FR** Avant le démarrage de l'unité: vérifier les fuites de gaz au moyen de dispositif de détection de gaz ou pulvérisation d'étanchéité.
- NL** Voordat u het toestel gaat ontsteken: controleer voor gaslekkage door middel van een gaslek tester of lekspray!
- PL** Zanim uruchomisz urządzenie: upewnij się, że nie ma wycieku gazu, używając w tym celu detektora gazu lub wykrywacza w aerozolu.
- RO** Înainte de a porni unitatea: verificați dacă există scurgeri de gaz cu ajutorul dispozitivului de detectare a gazului sau prin pulverizare.

MARK BV

BENEDEN VERLAAT 87-89
VEENDAM (NEDERLAND)
POSTBUS 13, 9640 AA VEENDAM
TELEFOON +31(0)598 656600
FAX +31 (0)598 624584
info@mark.nl
www.mark.nl

MARK EIRE BV

COOLEA, MACROOM
CO. CORK
P12 W660 (IRELAND)
PHONE +353 (0)26 45334
FAX +353 (0)26 45383
sales@markeire.com
www.markeire.com

MARK BELGIUM b.v.b.a.

KERNENERGIESTRAAT 47 UNIT G
2610 WILRIJK (ANTWERPEN)
(BELGIË/BELGIQUE)
TELEFOON +32 (0)3 6669254
info@markbelgium.be
www.markbelgium.be

MARK DEUTSCHLAND GmbH

MAX-PLANCK-STRASSE 16
46446 EMMERICH AM RHEIN
(DEUTSCHLAND)
TELEFON +49 (0)2822 97728-0
TELEFAX +49 (0)2822 97728-10
info@mark.de
www.mark.de

MARK POLSKA Sp. z o.o

UL. JASNOGÓRSKA 27
42-202 CZĘSTOCHOWA (POLSKA)
PHONE +48 34 3683443
FAX +48 34 3683553
info@markpolska.pl
www.markpolska.pl

MARK SRL ROMANIA

STR. BANEASA NO 8 (VIA STR. LIBERTATII)
540199 TÂRGU-MURES, JUD MURES
(ROMANIA)
TEL/FAX +40 (0)265-266.332
office@markromania.ro
www.markromania.ro

