mark®
CLIMATE TECHNOLOGY

Technical manual **EN**

MARK INFRA HE

0661620

Read this document before installing the appliance

EN

Warning

An incorrectly performed installation, adjustment, alteration, repair or maintenance activity may lead to material damage or injury. All work must be carried out by approved, qualified professionals. If the appliance is not positioned in accordance with the instructions, the warranty shall be voided. This appliance is not meant for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are under supervision or are instructed about the use of the appliance by a person who is responsible for their safety. Children should be monitored to make sure that they will 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. All measurements are in millimeters unless otherwise indicated.

1.0 General

1.1 Application

The Infra radiant heater heats the room through a fully automatic gas burner with electrical ignition and complete protection. The flue gases are conducted by the heater tubes, which makes them hot. On account of the danger of corrosion, radiant heaters cannot be used in areas where there are corrosive fumes. This relates in particular to chlorinated hydrocarbons which are either produced directly in the area, or may be drawn in from the outside by the heater via a connection or an open connector.

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 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 designation

Infra HE 35-9 (+)
Infra HE 50-12 (+)

(-) : Standard flue
\+ : Incl. flue gas cooler

The gas technical data per unit are shown in Table **[1A].** See the explanation below.

T type
A1 nominal load (GCV)
A2 minimal load (GCV)
B1 nominal load (NCV)
B2 minimal load (NCV)
E gas consumption (m^3/h)
E1 CO_2/O_2 for specified gas type max load %
E2 CO_2/O_2 for specified gas type min load %
E3 gas inlet pressure for specified gas type

The general data per device are shown in Table **[1B]**. See the explanation below.

F1 electrical supply
F2 electrical power
G flue gas temperature
I diameter flue gas discharge / air supply
J admissable flue gas flow resistance
K diameter gas connection
L minimum distance **[2B]**
M recommended mounting height horizontal
N recommended mounting height at 30° angle
O protection level
P weight
Q flue gas mass (kg/h)

1.3 General warnings

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

Appliance

When installing radiant heaters, observe the national and, if applicable, regional and local regulations (e.g. gas company regulations, building regulations etc.). Installation of a radiant heater is only permitted in an area and a position suitable for the purpose, see Chapter 2 Positioning the appliance.

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 and flexible connection must be fitted to the inner pipeline.

Flue gas exhaust and outlet vent / exhaust duct

Combustion air supply pipelines and flue gas exhaust ducts should contain as few bends as possible. In general, the resistance should be kept to a minimum and in all cases the diameter should be constant along its entire length.The duct may not rest on the radiant heater but should be suspended efficiently! If the flue gas exhaust duct passes along or through combustible walls or floors, the duct must be sufficiently free (> 20mm) to prevent fire.

1.4 Think of your safety

If you smell gas, it is expressly prohibited
– To ignite an appliance
– To touch electrical switches, or to telephone from the area in question
Take the following actions
– Switch off the gas and electricity
– Activate the operational emergency plan
Evacuate everyone from the building

2.0 Positioning the appliance

After unpacking, check the unit for damage. Check the accuracy of the type/model, the voltage (230V) and the gas type. When determining the suspension height, remember to keep a sufficient distance from any crane gantries. If necessary, shield any flammable goods. Place the appliance and any accessories on a sufficiently solid structure, taking into account the minimum required free space. Wall-mounting support frames are available to order. **[2A][2B]**

INFRA HE

The radiant heater can be suspended with galvanised chains with links with a minimum diameter of 4 mm and with 10 mm cross bars with good rust protection. In order to suspend the radiant heaters in the right way, it is advisable to use gripple cable suspension sets with which the radiant heaters can be readily adjusted to the correct height.The radiant heaters can be suspended at a maximum inclination of 30°. If the radiant heaters are suspended inclined, the burner is installed horizontally TO THE LOWESTTUBE on the right, as seen from the heated area.The radiant heater must be mounted with the flue sloping with a drop of approximately 25 mm **[3]**.

2.1 Mounting instructions

See enclosed installation instructions.

2.2 Positioning the flue and combustion air supply

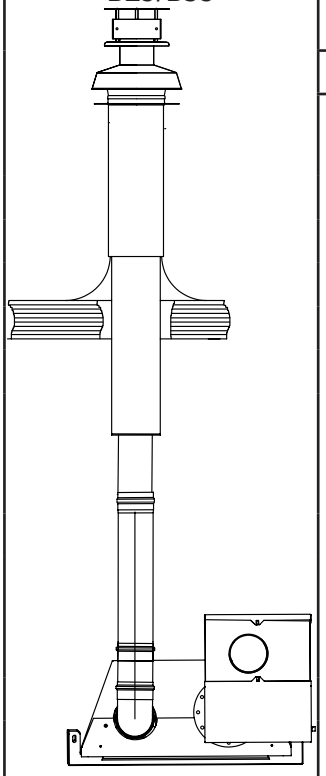
The device only has the CE approval in combination with its flue gas system. The flue gas system includes: single flue set vertical or horizontal, extension pipes and elbows. The table below i\ndicates which parts can be used per appliance type. The flue gas system must be installed according to the 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 stainless steel or aluminium, or have an inner pipe of the same material. This has been chosen because of the maximum flue gas temperature.
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 7-9. Other materials are not allowed.

Device type	Nominal diameter
35-9 50-12	100 mm 100 mm

Flue pipe lenghts higher than stated in the table below have a risk of condensation. See **§2.7.**

Device type	Flue pipe lenght
35-9	> 2,0 m
50-12	> 4,2 m
35-9+	0,0 m
50-12+	0,0 m

Caution:
- The maximum lenght of the flue gas discharge and combustion air inlet is: 2x6 meter pipe and 2x3 bends 90°
- Discharge material with a different resistivity can influence the length of the total supply and discharge route.

Type	**Flue gas exhaust**			**Accessories**		**Installation remarks**
	Appliance type	**Ø**	**Article code**	**Ø**	**Article code**	
B23/B53 	Single flue set vertical			ALU Extension pipe L=500		The flue gas exhaust pipes must be made of aluminium or stainless steel. The maximum lenght of the flue gas discharge is: 6 meter pipe, with 3 elbows 90°.
	35-9 / 50-12		5990560	100	5990728	
				ALU Extension pipe L=1000		
				100	5990736	
				ALU Elbow 45°		
				100	5990738	
				ALU Elbow 90°		
				100	5990737	
				Stainless steel Extension pipe L=500		
				100	5990211	
				Stainless steel Extension pipe L=1000		
				100	5990212	
				Stainless steel Elbow 45°		
				100	5990214	
				Stainless steel Elbow 90°		
				100	5990213	
				Air inlet mesh		
				100	3002533	

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 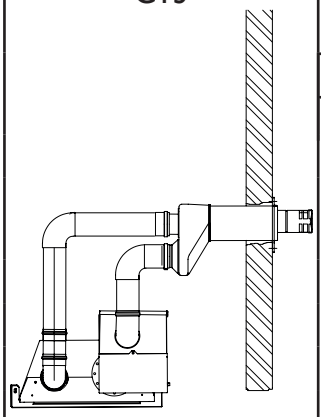 </td>
<td colspan="3">Single flue set horizontal stainless steel</td>
<td colspan="2">Flue gas exhaust</td>
<td rowspan="2">The flue gas exhaust pipes must be made of aluminium or stainless steel.

The maximum lenght of the flue gas discharge is: 2x6 meter pipe, with 2x3 elbows 90°.</td>
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<td>35-9 / 50-12</td>
<td>100/150</td>
<td>5990583</td>
<td colspan="2">ALU Extension pipe L=500
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ALU Extension pipe L=1000
100 5990736
ALU Elbow 45°
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ALU Elbow 90°
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Extension pipe stainless steel L=500
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 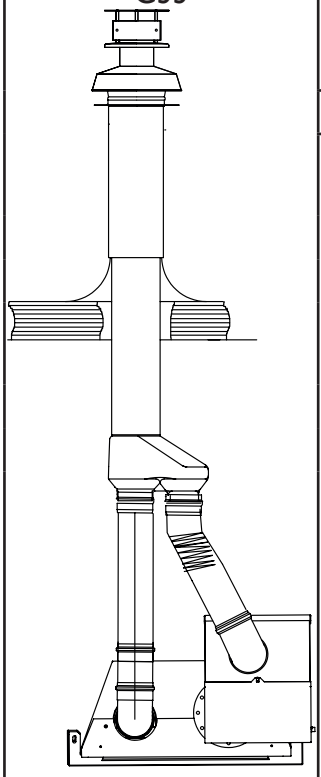 </td>
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<td colspan="2">Extension pipe stainless steel L=1000</td>
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<tr>
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<td>5990560</td>
<td colspan="2">130 5990222
Elbow stainless steel 45°
100 5990214
130 5990224
Elbow stainless steel 90°
100 5990213
Flue gas cooler
100 5990521</td>
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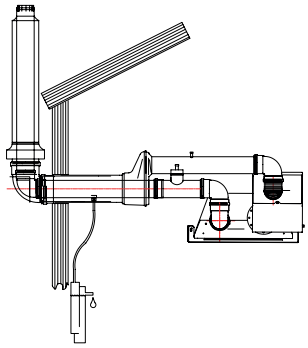
  </td><td colspan="3">Single flue set horizontal</td><td colspan="2">Combustion air</td><td rowspan="11"></td></tr>
<tr><td colspan="3" rowspan="2"></td><td colspan="2">Stainless steel or ALU extension pipe (see above)</td></tr>
<tr><td>35-9 / 50-12</td><td>100/150</td><td>5990560</td><td colspan="2">OR</td></tr>
<tr><td colspan="3">In combination with single flue set horizontal</td><td colspan="2">PE Extension pipe L=500</td></tr>
<tr><td>35-9 / 50-12</td><td></td><td>5990512</td><td>100</td><td>5989206</td></tr>
<tr><td colspan="3">OR</td><td colspan="2">PE Extension pipe L=1000</td></tr>
<tr><td>35-9 / 50-12</td><td></td><td>0703101</td><td>100</td><td>5989211</td></tr>
<tr><td colspan="3" rowspan="5"></td><td colspan="2">PE Elbow 45°</td></tr>
<tr><td>100</td><td>5989233</td></tr>
<tr><td colspan="2">PE Elbow 90°</td></tr>
<tr><td>100</td><td>5989236</td></tr>
<tr><td colspan="2">Flexible connection intake side</td></tr>
<tr><td>100</td><td>5018057</td></tr>
<tr><td colspan="3" rowspan="2"></td><td colspan="2">Condensation drain kit</td></tr>
<tr><td>100</td><td>3100570</td></tr>
</table>

Type B **[5]**. B23/B53
The combustion air is drawn in from the room and flue gases are discharged outside. The maximum lenght L of the flue pipe is six metres, including 3 bends of 90°. In this application only a vertical roof pass-through in a flat roof is permitted. The supplied mesh guard should be placed on the combustion air intake. To supply the appliance with sufficient combustion air, this system should only be used if at least 2 m3/kW per hour is ventilated. If significant pollution or low pressure is likely to occur in the room, a closed design of type C must always be used.

Type C **[6]**. C13
The maximum lenght L of the intake and flue pipe is six metres, including 3x2 bends of 90°. Each additional right-angled bend shortens the lenght by 2 metres. If possible, use bends of 45°. The gas flue must have an incline of at least 3° from the appliance.

Type C **[7]**. C33
The maximum lenght of the intake and flue pipe is six metres, including 3 x 2 bends of 90°. Each additional bend shortens the lenght by 2 metres. If possible, use bends of 45°.

Type C **[8]**. C53
The maximum length L of the supply and discharge is six meters, including 3 x 2 bends 90°. If possible, use 45° bends. Through the outer wall, the maximum lenght of the flue may be extened with 3 meters. The outlet must be located above the facade. To make sure that the combustion air is heated as little as possible, the combustion air intake needs to be placed immediately after the bend outside (fresh air). Because the flue gases will condense, the condensate must be discharged efficiently, according to the applicable national regulations.

2.3 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 **[9].** If the connection line is subject to pressures above 60mbar, this gas tap must be closed. In the event of any doubt about entrained dirt, apply a gas filter. It is necessary to make the last section of the gas connection flexible by means of an approved flexible connecting hose or a copper expansion loop. The flexible gas hose must be positioned in such a way that an appliance in operation can expand freely. Make sure that no tension or twisting can occur on the flexible connection.

When connecting the gas line, excessive torque should not be applied to the internal connection of the burner.

The lenght of the flexible gas hose must be such that the following expansion can be absorbed:
Infra HE 35-9 : 50 mm
Infra HE 50-12 : 50 mm

2.4 Electrical connection [10]

The installation must comply with the relevant local and/or national regulations and should be protected with a fuse of max. 10A. Ensure that there is a correct connection set with main fuse. The electrical diagram for the appliance can be found at the back of this manual. **PLEASE NOTE**: The unit is phase sensitive and will only operate when it has been appropriately earthed.

2.5 Pintherm Infra HE Connect / black bulb sensor

Position the controller in a draught-free location, exposed to direct radiation at a height of around 1.5m from the floor. Connect the controller in accordance with the electrical diagram for the appliance. The controller must be located at a height of approx. 1.5m and not directly within the flow of warm air. Connect the controller 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 controller. Incorrect connection will render the manufacturer's warranty void. The minimum cable lenght between the Pintherm Infra HE Connect and the unit should be 10m.

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]**

2.6 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	Fixed system
	EIB specification	Dry, damp, wet rooms
		In the open air (no direct exposure to sunlight)
		Face-fit, flush-fit, in conduits
–	J-Y(st)Y	Fixed system
	EIB specification	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

2.7 Condensation drain kit

If the flue pipe lenght extends the lenght as mentioned in **§2.2** a condensation drain should be installed. The flue gas pipe siphon (deliverable on request) must be connected to the appliance. The flue gas pipe siphon must connect to the odour trap siphon in the drainage system to the sewer via an open connection. Make sure that the siphon is protected against frost (risk of freezing) **[4]**. The condensation drain should fulfill national and local regulations.

2.8 Flue gas cooler [13]

To increase the efficiency, a flue gas cooler can be installed. To prevent blockage of the flue pipe area by condensation water, the installation must be installed under un angle of 3° to the siphon. The setting of the surface contact thermostat is 80°C.

3.0 Start-up / shutdown

3.1 General

Before being packed, each appliance is fully tested for safety and correct operation.This includes the setting of the gas pressure and burner pressure. However, always check the pre-pressure. Never turn set screws incorrectly. Do not forget to instruct the user on the proper use and operation of the appliance and peripherals. After assembly and before commissioning, remove the instruction stickers from the pipes. When a new Infra unit is started up for the first time it will produce some smoke, as a result of the evaporation of the preservative oils present. It is therefore necessary to ensure sufficient ventilation during start-up. A newly installed Infra should be allowed to operate for at least 1 hour before starting a flue gas analysis. This prevents the measuring equipment being damaged.

3.2 Checking activities

– Switch off electricity main switch.
– Set the room thermostat to the minimum temperature.
– Open the gas stop cock, then carefully purge the gas pipes and check for leaks. Under no circumstances use an open flame!
– Close gas stop cock.
– Switch on electricity main switch.
– Set room thermostat to maximum temperature.
– Open the gas stop cock, the appliance will now start up.

3.3 Check that the room thermostat functions correctly

At a setting below the ambient temperature the burner should switch off. At a setting higher than the ambient temperature the burner should ignite.

3.4 Set the gas control unit [11]

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 CO_2 value is different from that in table **[1]**, adjustments may be made. Never adjust set screws without the correct measuring equipment.

Legend **[11]**
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 supplying 10VdC at connector 1 and 2 + disconnecting Modbus. Check the CO_2 when the appliance is operating at high output. If the CO_2 is too high, turn the throttle adjuster to the right (less gas). If the CO_2 is too low, turn the screw to the left (more gas). The correct CO_2 value is shown in table **[1]** (E1).

Step 2
Set the appliance to minimum load by supplying 2VdC. Check the CO_2 against the value in table **[1]** (E2). If different, correct by turning the offset adjuster under the cap. To the left for lower CO_2, to the right for higher CO_2.

After setting the gas control unit connect Modbus again.

3.5 Check the pre-pressure
Make sure that during the checking of the unit, the unit is not turned off by the room thermostat. To avoid the unit being turned off by the room thermostat, set the room thermostat to the highest setting. Connect a pressure gauge to the pressure tap and measure the gas pressure (B). For the correct gas pressure see the type plate of the unit.

3.6 Checking the environment
Finally, check that the operation of the appliance cannot be influenced by other objects close to the unit. In particular, pay attention to items with potential for explosive or corrosive fumes, etc.

3.7 Shutting down the heater
For short periods of time:
- Set the room thermostat to the minimum temperature.

For longer periods of time:
- Set the room thermostat to the minimum temperature.
- Close the gas tap.
- Switch off the main switch.

3.8 Condensation drain (if applicable)
- Fill the siphon with water before starting up the unit.

4.0 Maintenance

4.1 General
The appliance must be maintained at least once a year,more often if necessary. If applicable, ask a qualified installer for maintenance advice. When performing maintenance, the appliance must have been shut down for an extended period. Make sure that you comply with all safety rules.
- Check the position of the ionisation and ignition electrodes **[12].** If necessary, correct and/or clean them.
- Check the burner and return pipes for soot and/or condensation. If necessary, clean them.

- Check the connections between the flanges and bend to make sure that they are still completely tight.
- Open the gas stop cock, switch on the main switch and set the room thermostat to its highest setting.
- With the appliance in operation, check the CO_2/O_2 levels and the flame quality.
- Check the flame protection by closing the gas stop valve.
- 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 sectoin tube. Refit the gas transport section, reconnect the wiring and the gas and electrical supplies **[27]**.
- In case of a replacement of the combustion air fan, the original restriction and connection flange should be transferred.

5.0 Description of parts

Faulty parts may only be replaced by original parts from the manufacturer.

5.1 Ignition electrode [12]

This method of protection makes use of the ability of a flame to conduct electricity. It is important that the ionisation electrode should not be in contact with earth, and that the appliance is also properly earthed. The gas control produces a spark between the earth and the ignition electrode. This causes the gas/air mixture to ignite. It is important that the preset opening between the two ignition electrodes should be 3 mm. The distance between the electrode and burner surface should be 9mm.

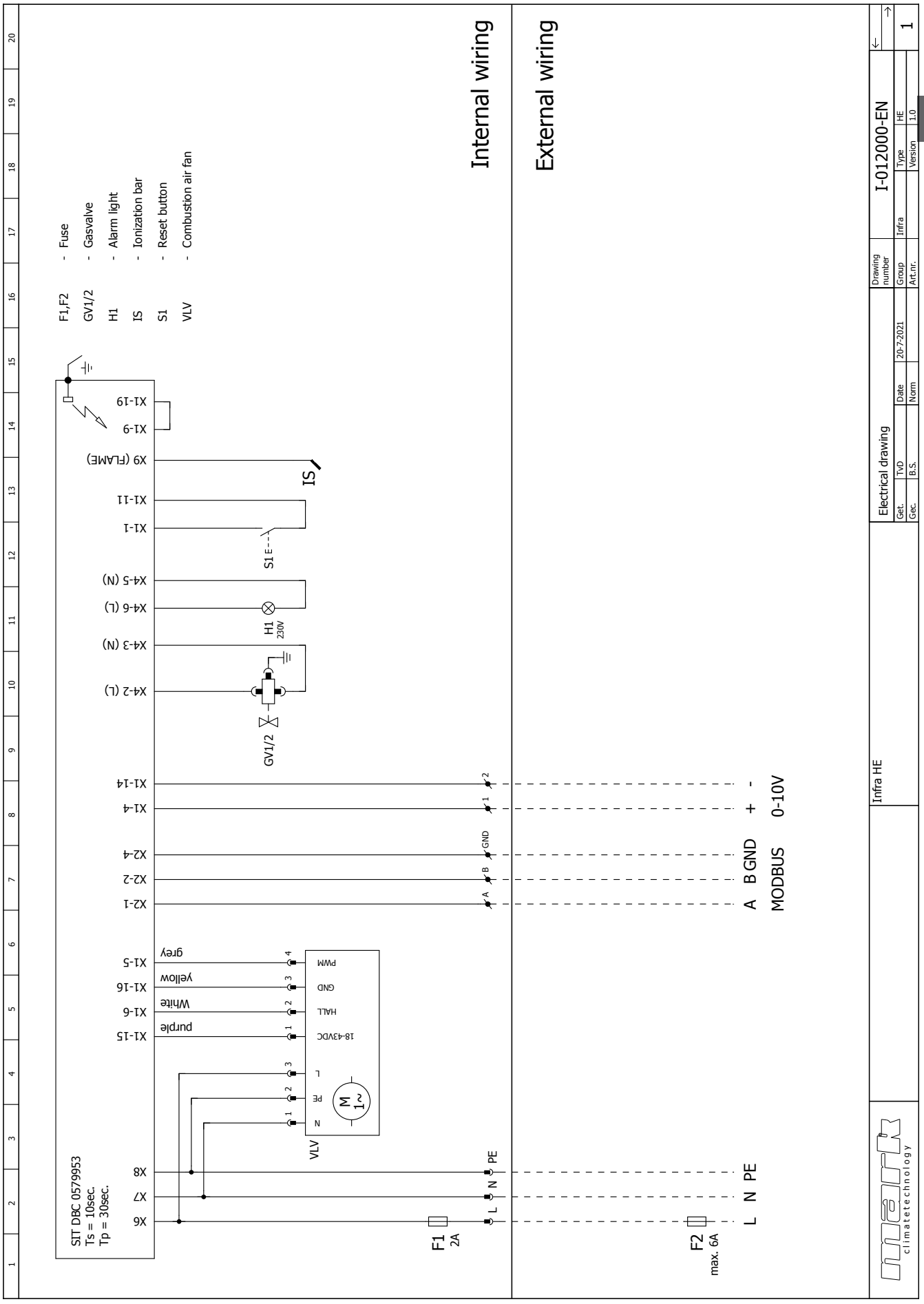
5.2 Gas control unit [11] / Combustion air fan [14]

In case of a defect of the gas control unit or the combustion air fan, it must be replaced by a type with exactly the same code number, as indicated in table **[11]** + **[14]**.

6.0 Fault codes

Fault code	Short description
233	F09 No ignition
232	F10 Flame fault
237	F11 False flame
230	F13 Fan speed Low
231	F14 Fan speed High
250	Too many resets attempts (6) within 15 minutes

7.0 Electrical diagram Infra HE



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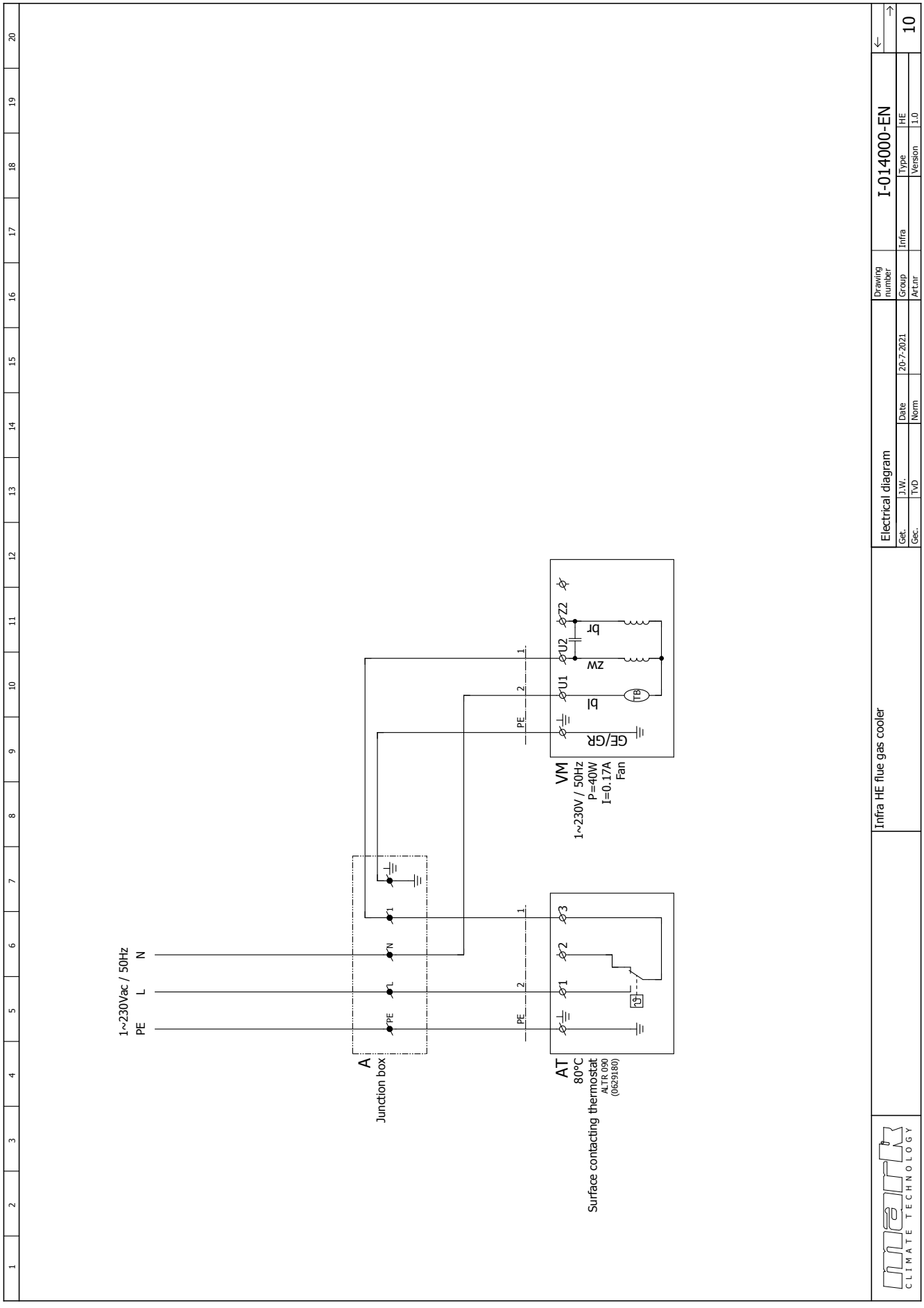
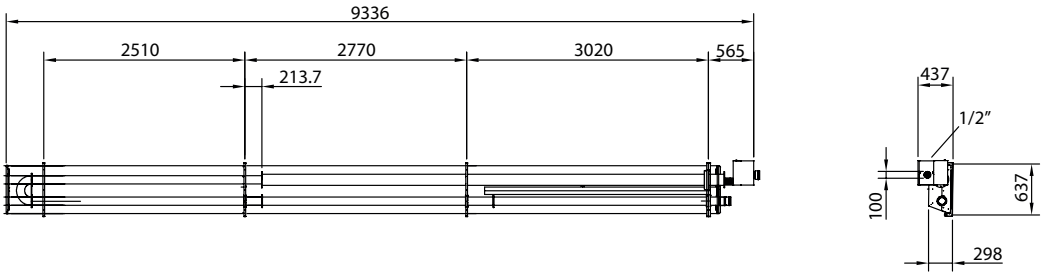
8.0 Electrical diagram Flue gas cooler



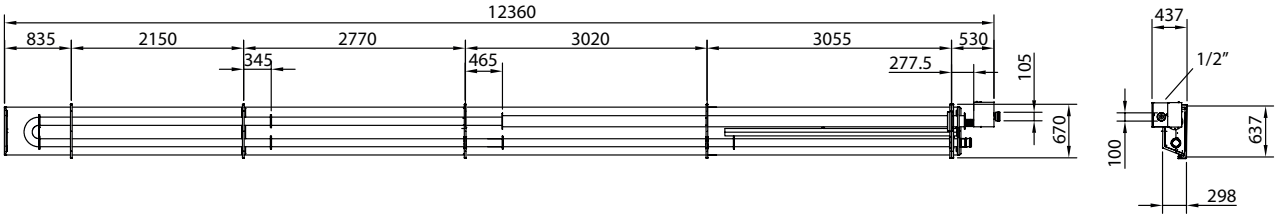
	[20] Basic instructions
	Single-wall steel flue system
	These basic requirements are only applicable to connecting pipes with the following characteristics:
	• Connection to a heater with built-in ventilator.
	• Connection in the installation area of the appliance and in sight.
	• Single-walled, rigid aluminium or stainless steel pipes with CE certification (cf EN 1856-1/2, P1, W).
	• Maximum flue gas temperature of 250°C.
	• Diameters from Ø80 to Ø100 mm.
	Caution! This checklist includes some basic instructions. For further instructions for this unit paragraph 2.2.
☑	Checklist
	General
☐	We recommend using the brackets of manufacturer Cox Geelen.
☐	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).
☐	The minimum insertion length of sleeves and spigot ends is 40mm.
☐	Mount tension free.
	Connecting and bracing
☐	Brace every corner to or close to the sleeve. Exception when connecting to the unit:
	- If the connecting pipe is shorter than 0.25m before and after the first ben, the bracket at the first bend can be omitted.
	- Place the first bracket on a maximum of 0.5m pipe length from the unit.
	Horizontal and non-vertical pipes
☐	- Maximum bracket distance of 1m.
	- Divide lengths between brackets evenly.
	Vertical pipes
☐	- Maximum bracket distance of 2m.
	- Divide lengths between brackets evenly.
	Gaskets and seals
☐	Avoid damaging of the sealing rings by cutting of in an angle and deburring.
☐	Do not screw or park connections.
☐	It is not allowed to seal foam or paste (for example PUR, silicone, etc.).
☐	If necessary lubricate sealing rings exclusively with max. 1% soap solution or water.
☐	**Caution!** Do not use grease, Vaseline, petroleum jelly or oil.

	Air supply system
	These basic instructions are only applicable to air supply pipes with the following characteristics:
	• Connection to a closed heater with built-in fan.
	• Connection in the installation area of the appliance and in sight.
	• Aluminium, stainless steel or plastic air supply pipes.
	• Diameter air supply pipe of Ø80 to Ø100 mm.
	Caution! This checklist includes some basic instructions. For further instructions for this unit paragraph 2.2.
☑	Checklist
	General
☐	Do not combine components of various materials or finished products for the connecting pipe.
☐	The minimum insertion length of sleeves and spigot ends is 40mm.
☐	When using plastic air supply pipes make sure that the distance to the flue pipe is at least 35mm.
☐	Mount tension free.
	Connecting and bracing
☐	Place the first bracket on a maximum of 0.5m pipe length from the unit.
	Horizontal and non-vertical pipes
☐	- Maximum bracket distance of 1m.
	- Divide lengths between brackets evenly.
	Vertical pipes
☐	- Maximum bracket distance of 2m.
	- Divide lengths between brackets evenly.
	Gaskets and seals
☐	Avoid damaging of the sealing rings by cutting of in an angle and deburring.
☐	Seals of metal air supply pipes may be bolted or parked. This is not allowed for plastic air supply pipes.
☐	Guarantee the gas-thightness by using components that are provided with a seal.
☐	If necessary lubricate sealing rings exclusively with max. 1% soap solution or water.
☐	**Caution!** Do not use grease, Vaseline, petroleum jelly or oil.

INFRA 35-9



INFRA 50-12



[1A]

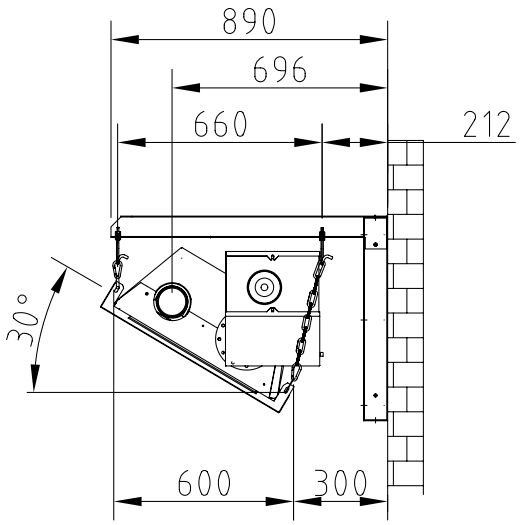
T			35-9	50-12
A1		kW	38,9	55,6
A2		kW	19,4	27,8
B1		kW	35,0	50,0
B2		kW	17,5	25,0
E	G25	m^3/h	4,14 - 2,07	5,98 - 2,98
E1	CO2	%	9,0 (+/- 0,1)	9,0 (+/- 0,1)
E2	CO2	%	8,7 (+/- 0,1)	8,7 (+/- 0,1)
E3		mBar	20,0	20,0
E	G25.3	m^3/h	4,12 - 2,06	5,86 - 2,94
E1	O2	%	5,0 (+/- 0,2)	5,1 (+/- 0,2)
E2	O2	%	5,3 (+/- 0,2)	5,4 (+/- 0,2)
E3		mBar	25,0	25,0
E	G20	m^3/h	3,66 - 1,83	5,23 - 2,63
E1	CO2	%	8,9 (+/- 0,1)	8,8 (+/- 0,1)
E2	CO2	%	8,6 (+/- 0,1)	8,6 (+/- 0,1)
E3		mBar	20,0	20,0

BE				
A		kW	29,7 - 15	43,0 - 21,1
B		kW	26,2 - 13,9	38,0 - 21,1

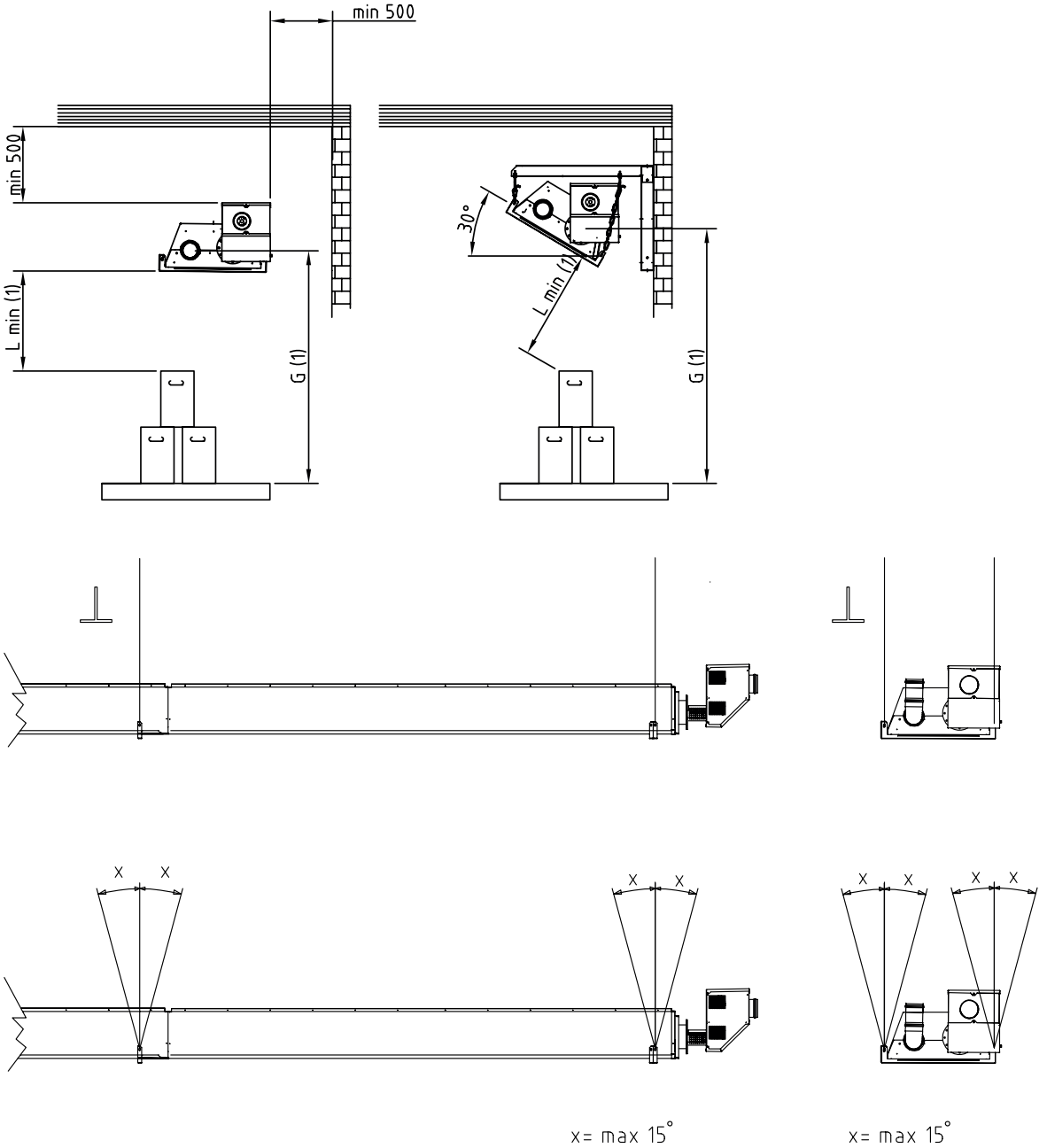
[1B]

T			35-9	50-12
F1		V/Hz	230/50	230/50
F2		W	81 - 30	115 - 39
G		°C	223	221
I		Ø-Ø	100	100
J		mm	120	115
K			1/2”	1/2”
L		m	2,3	2,5
M		m	5,5	6,8
N		m	5,0	6,3
O		IP	00B	00B
P		kg	245	322
Q		kg/h	60,8	87,9

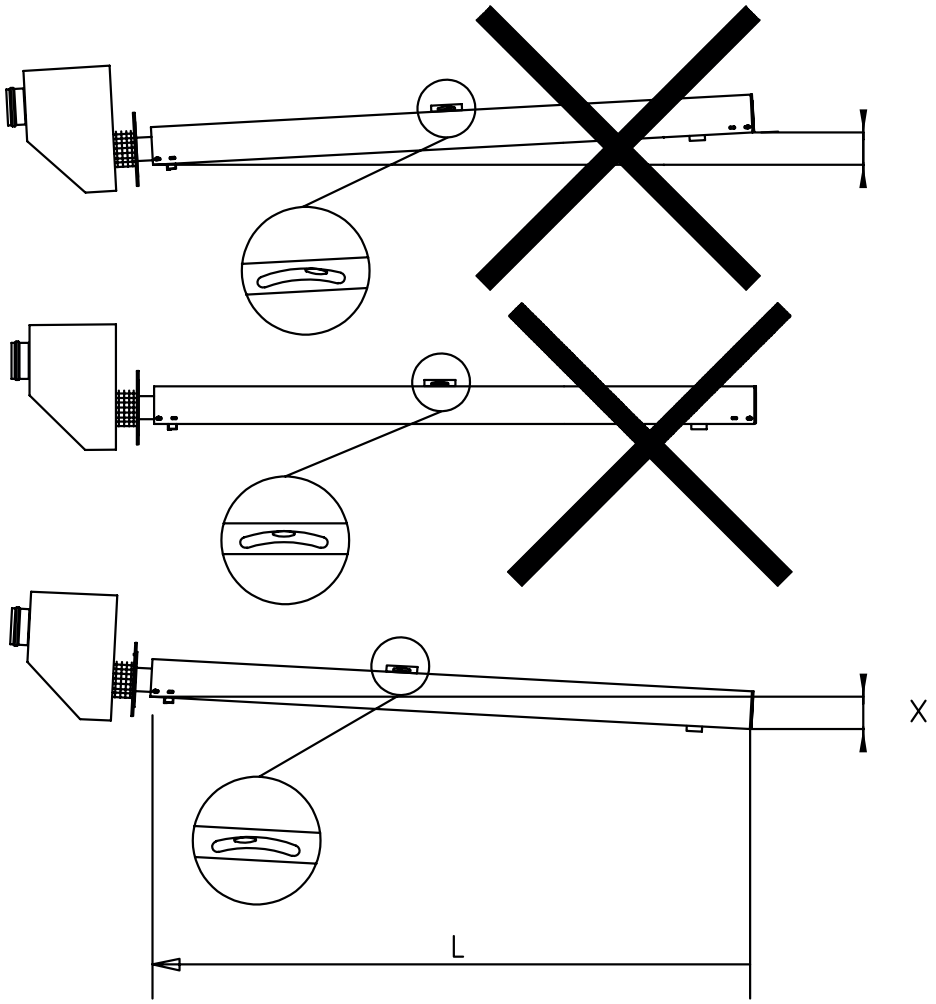
[2A]


890
696
660
212
30°
600
300

[2B]

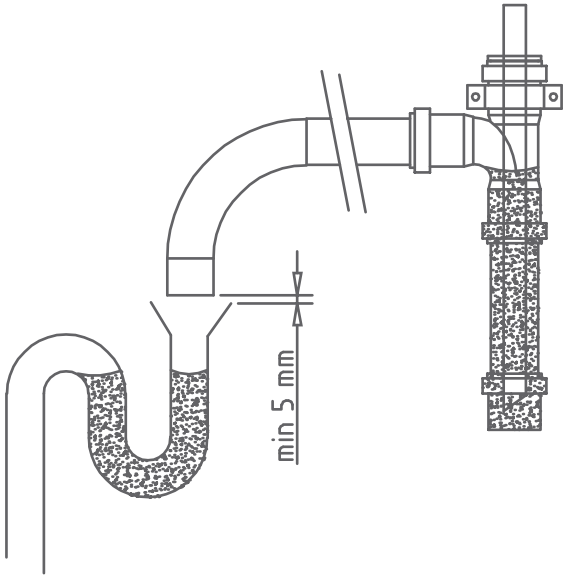

min 500
min 500
L min (1)
G (1)
30°
L min (1)
G (1)
x
x
x
x
x
x
x
x
x= max 15°
x= max 15°

[3]

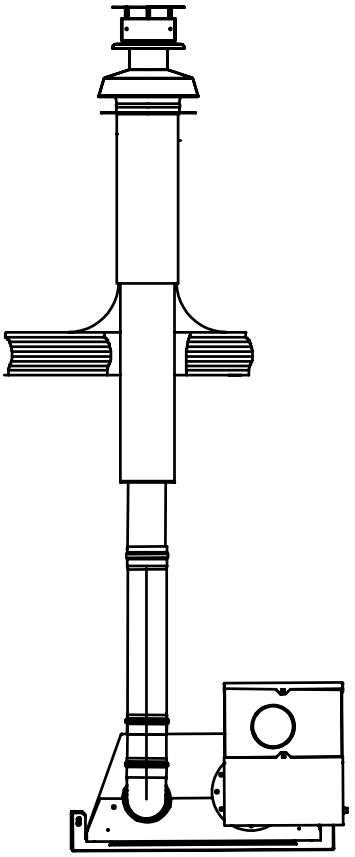


$$\frac{X}{L} = \frac{1}{100}$$

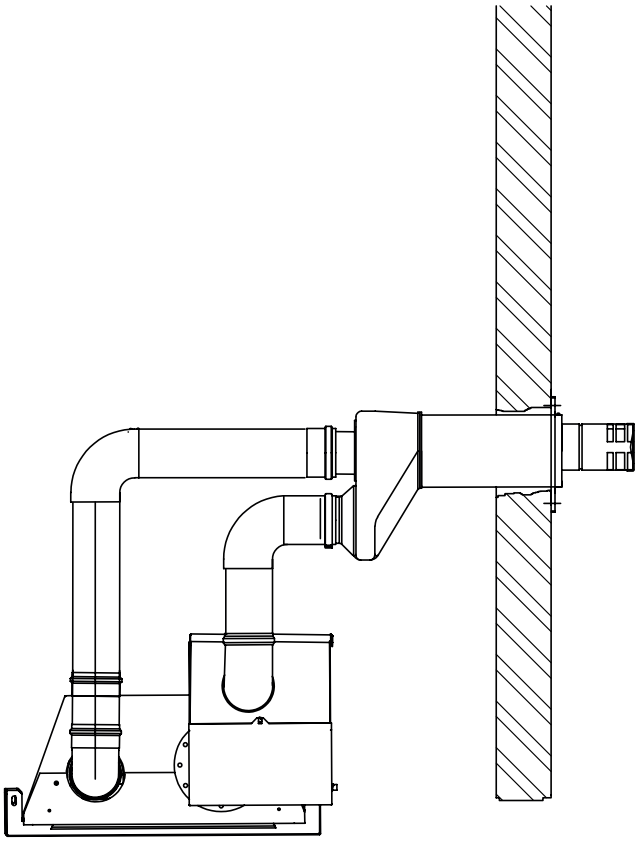
[4]



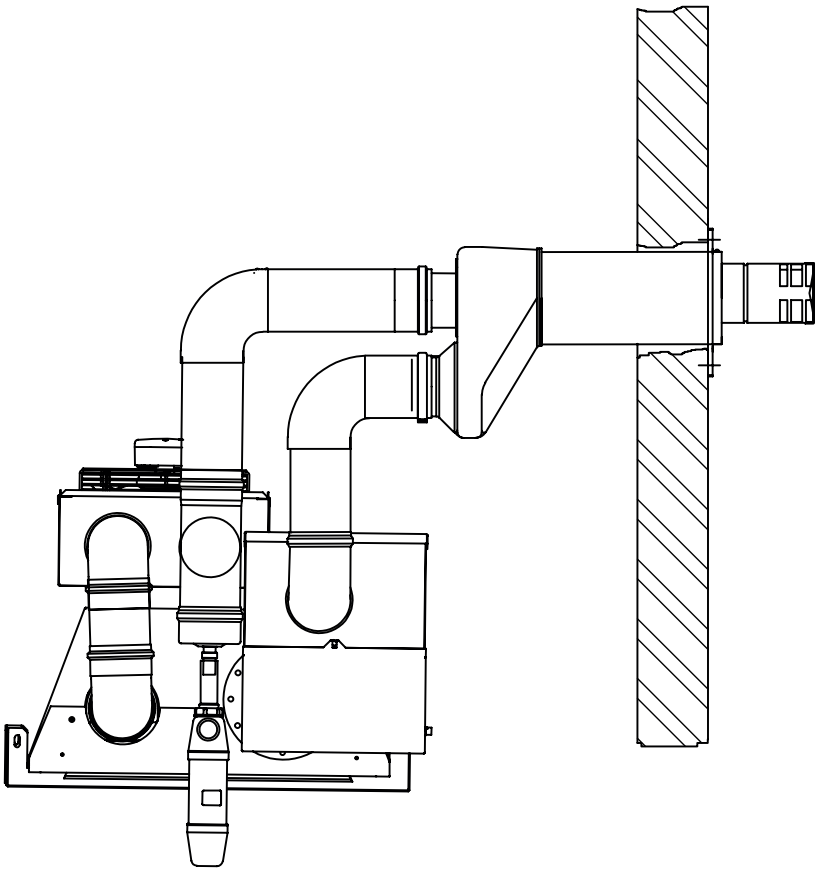
[5] B23 / B53



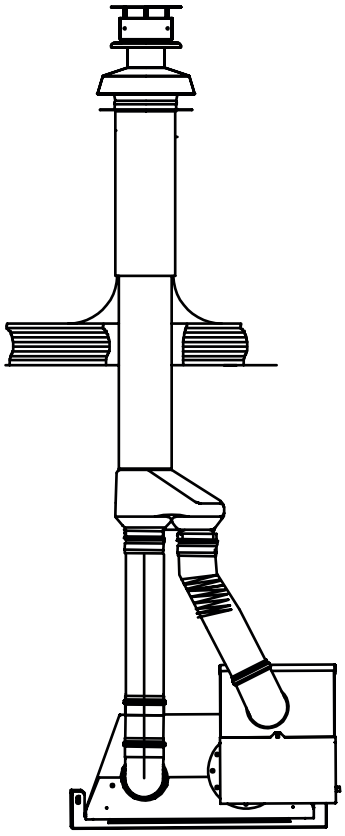
[6] C13



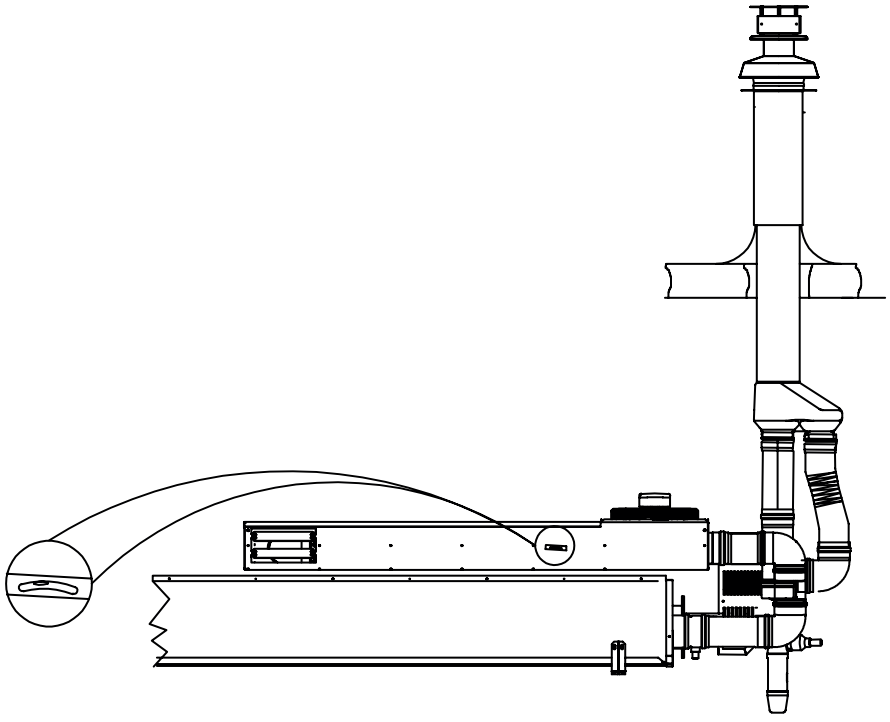
[6] C13++

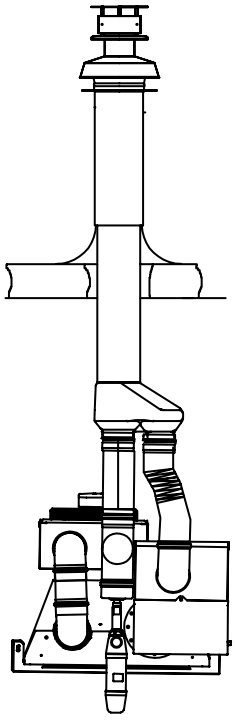


[7] C33

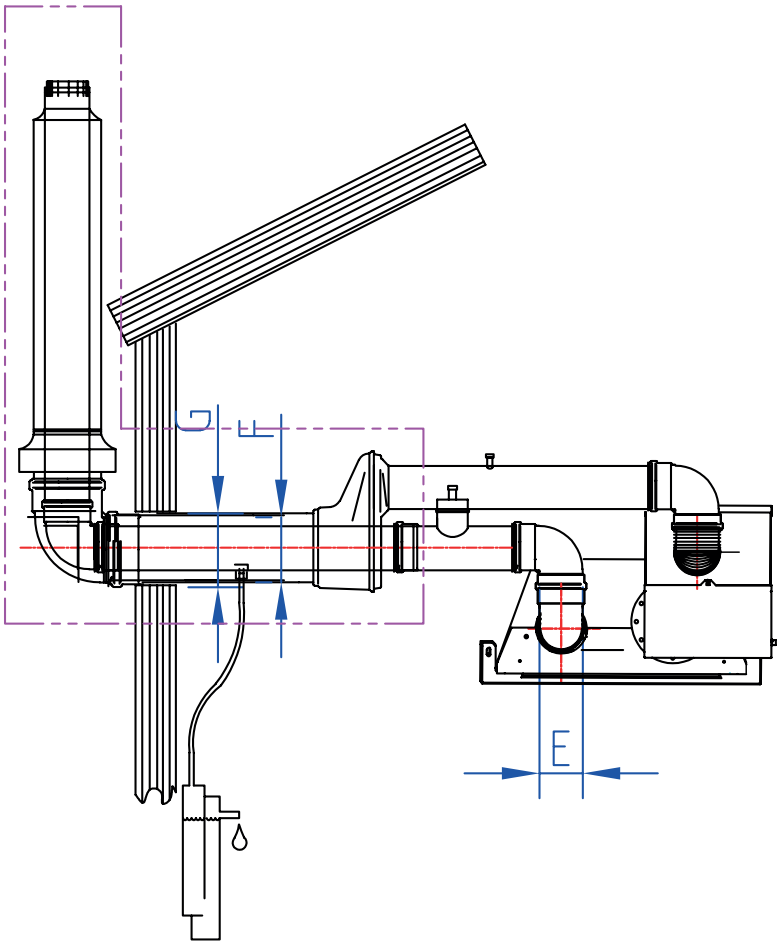


[7] C33++

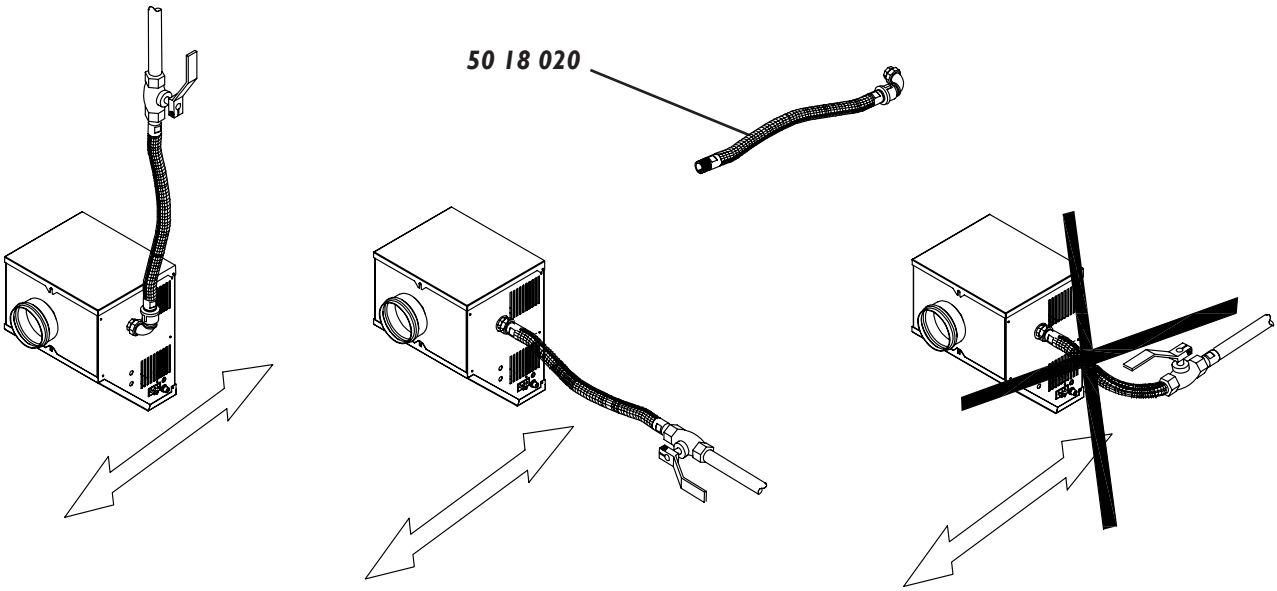


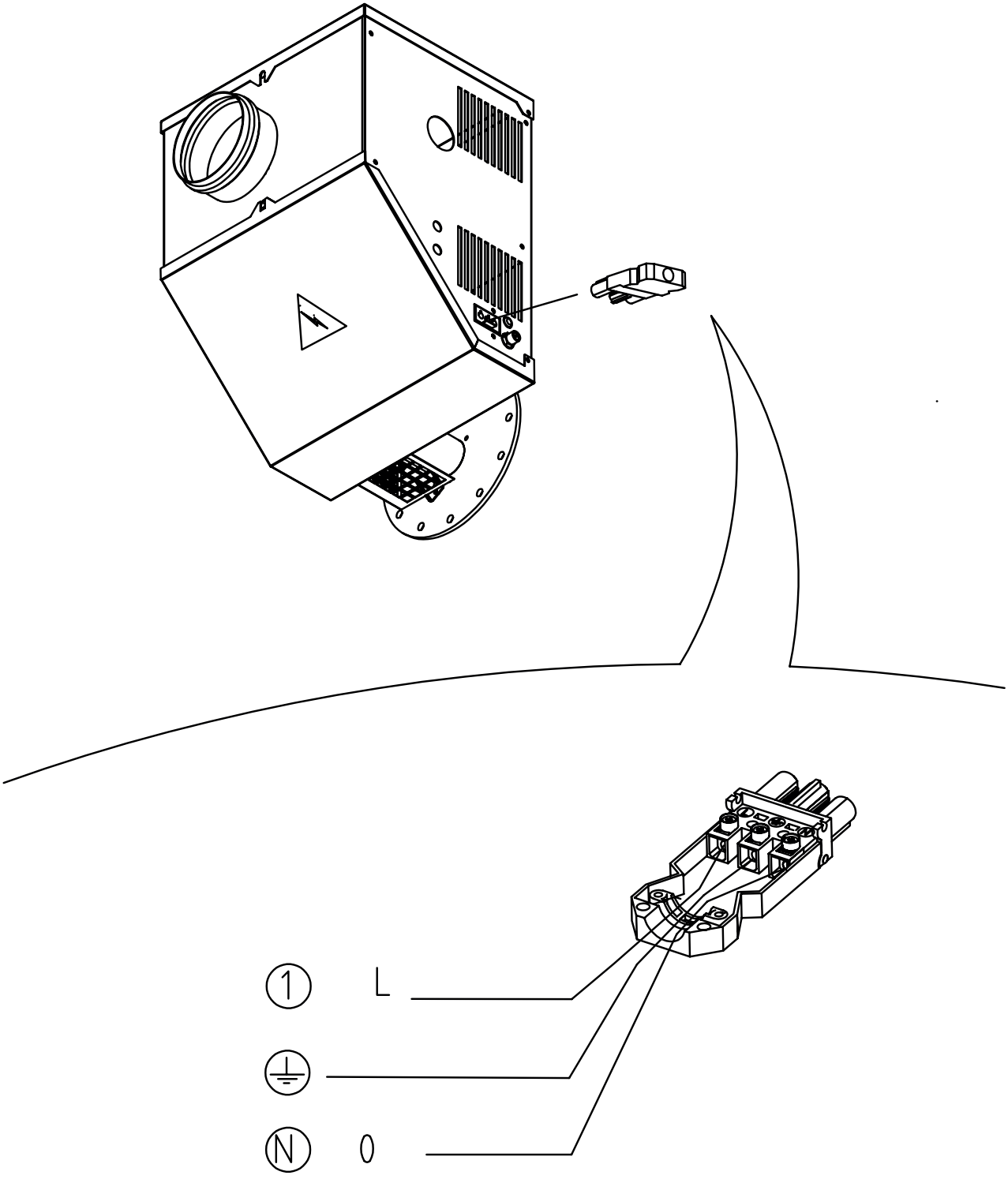


[8] C53

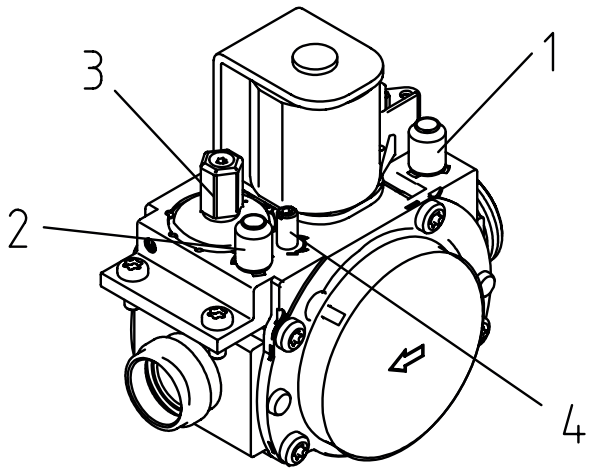


[9]



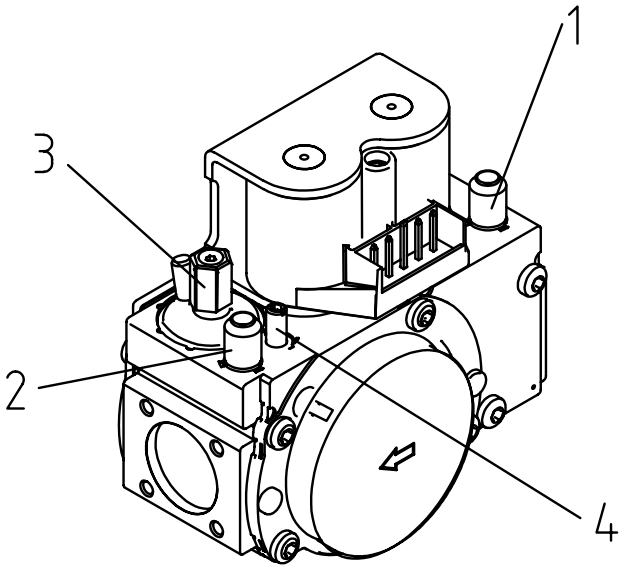

1
L
N
0

[11]



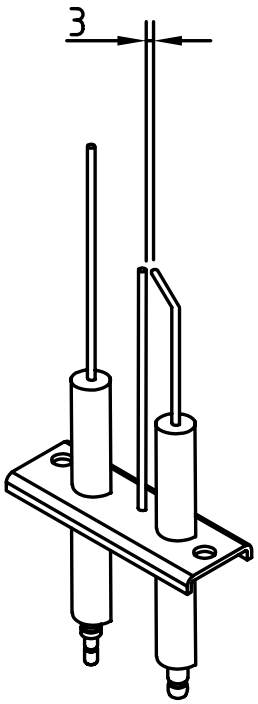
35-9 (06 08 100)

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



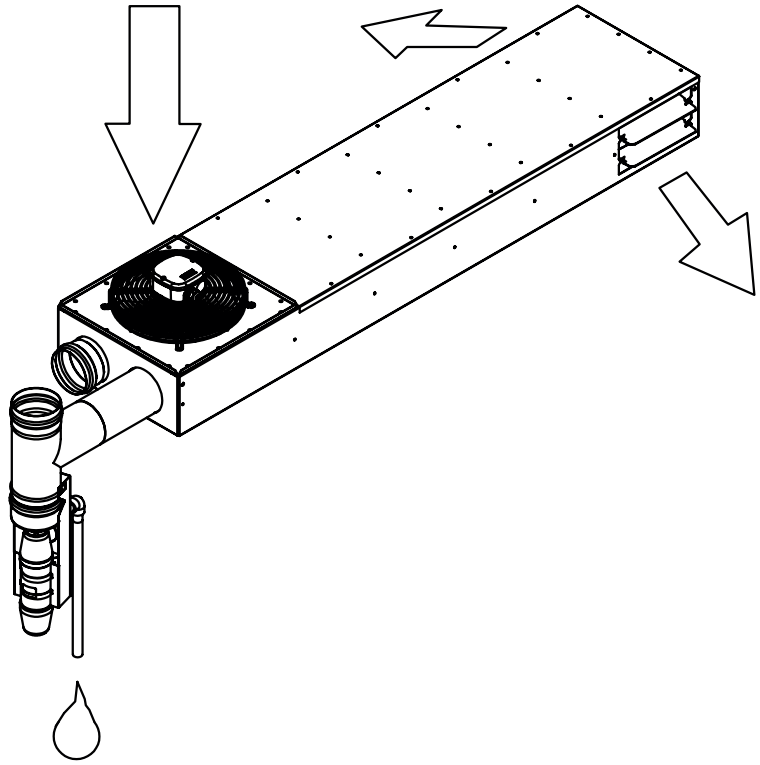
50-12 (06 08 101)

[12]



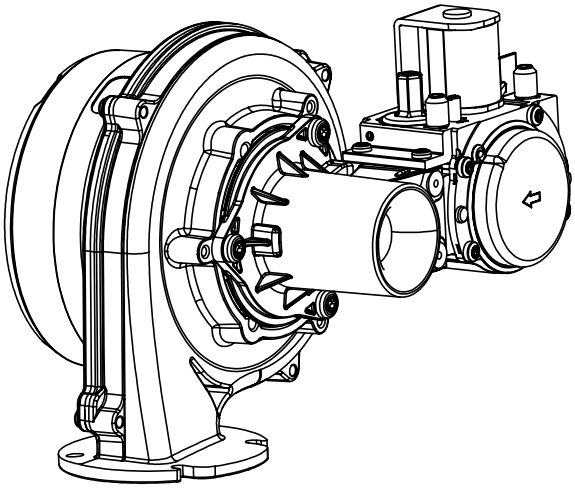
06 25 385

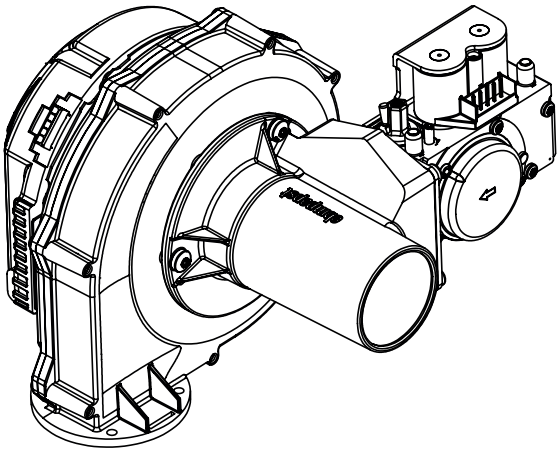
[13]



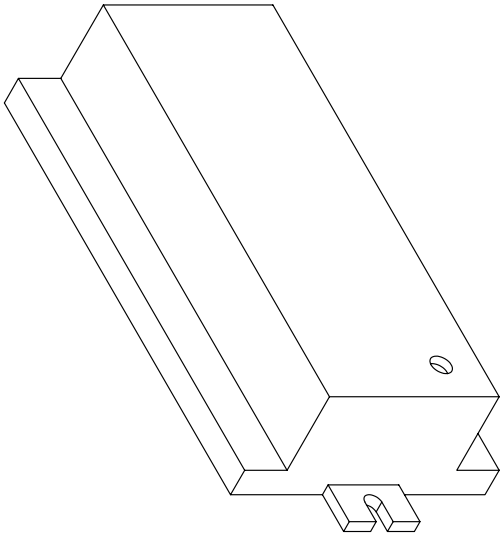
[14]

Type	G20/G25
35-9	06 08 100
50-12	06 08 101





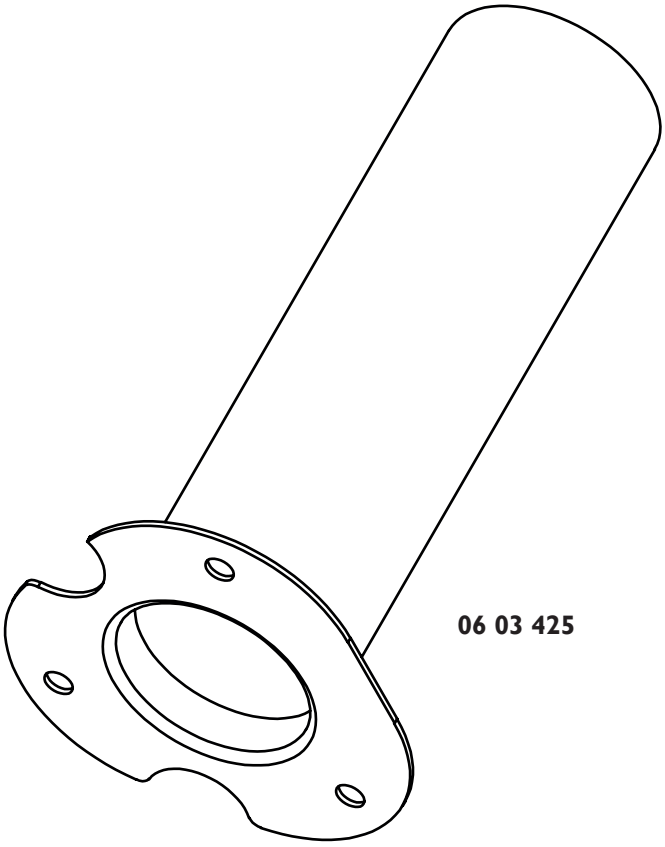
[15]



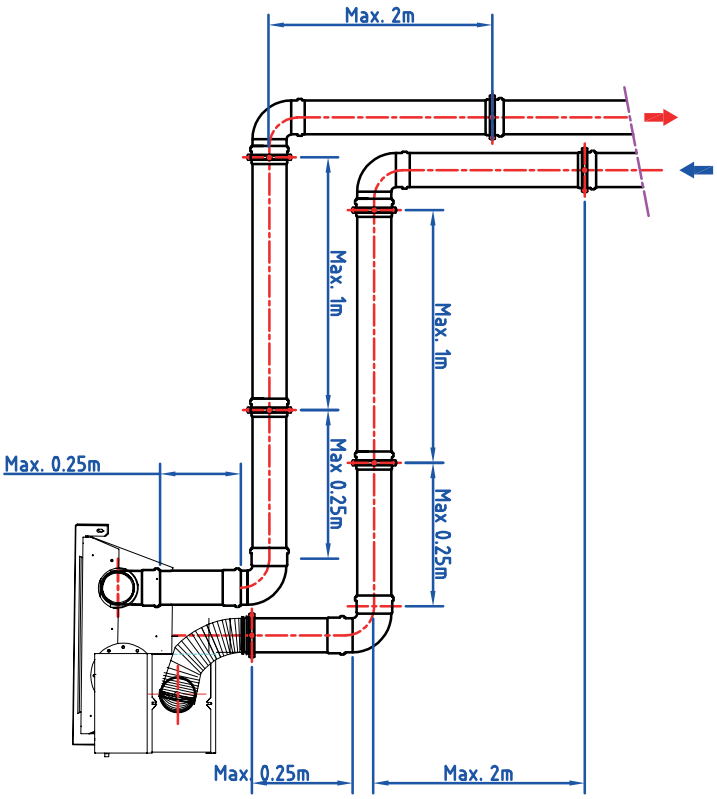
35-9	30 05 700
50-12	30 05 701

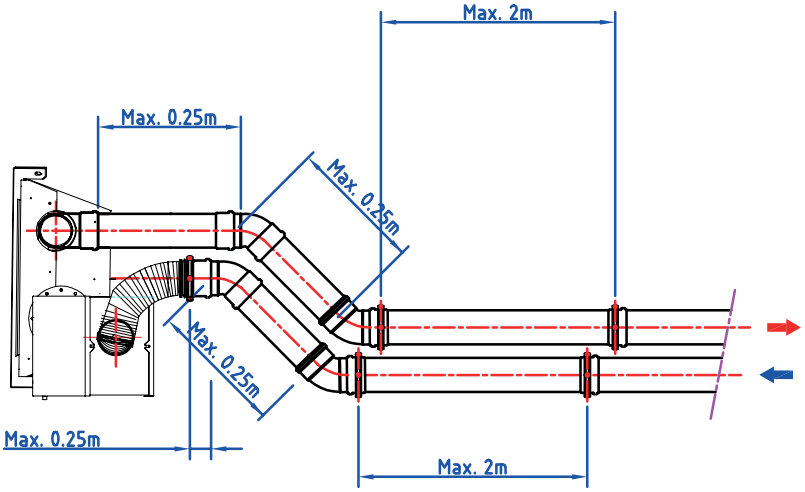
EN

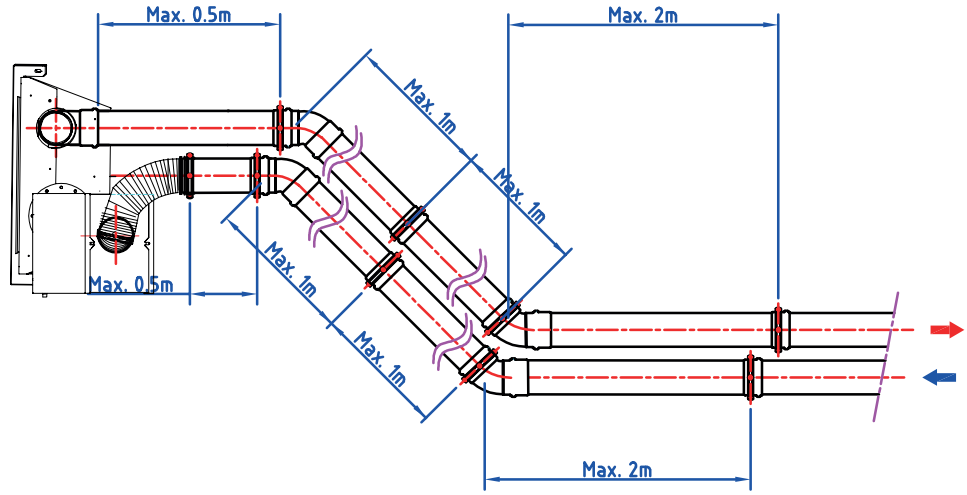
[16]

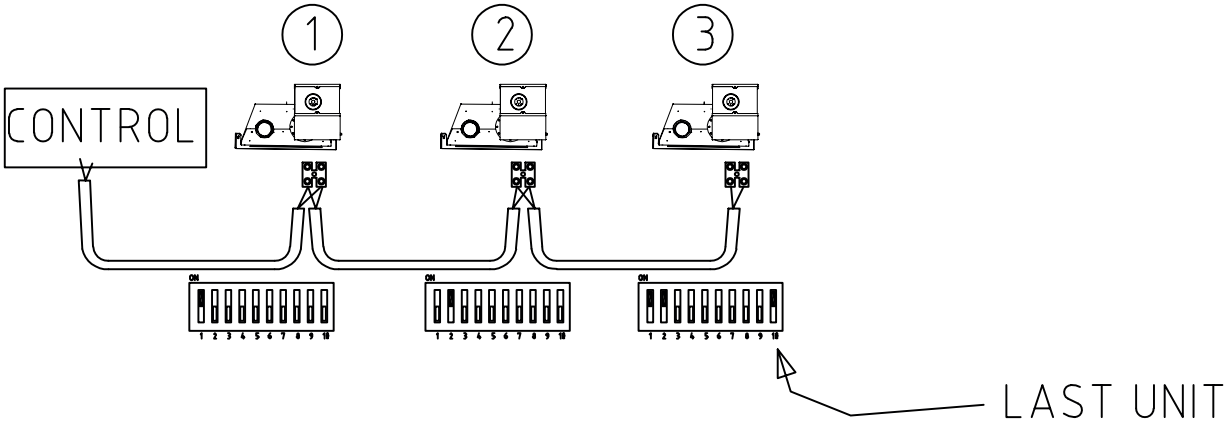


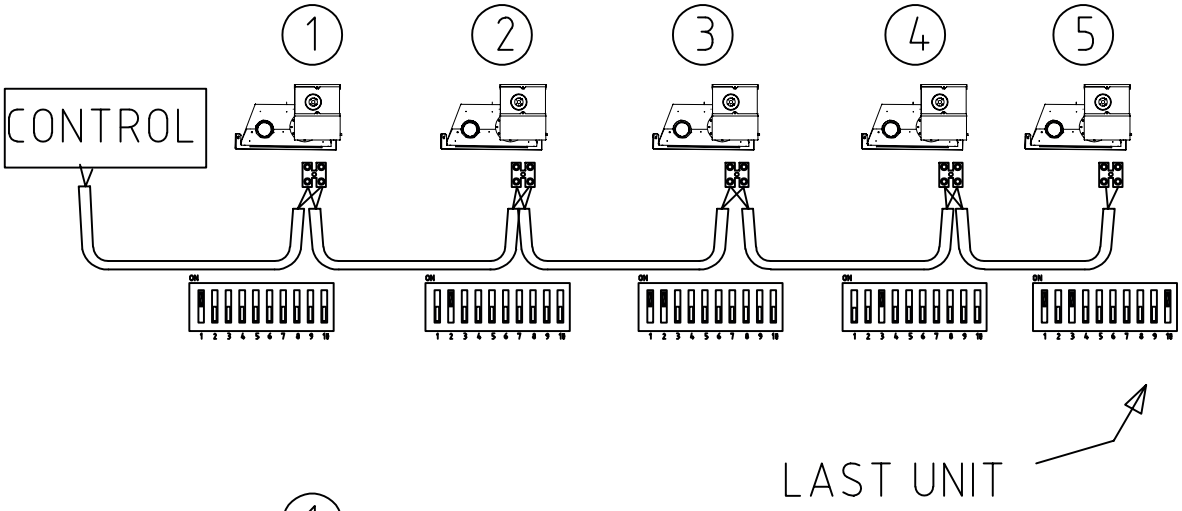
06 03 425

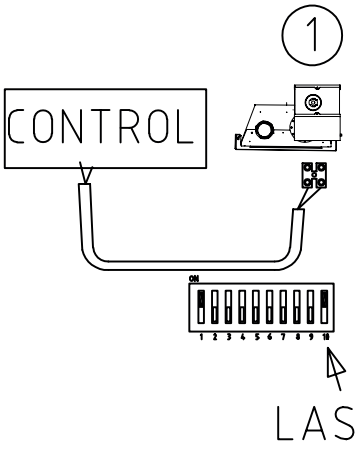

Max. 2m
Max. 1m
Max. 1m
Max. 0.25m
Max 0.25m
Max 0.25m
Max 0.25m
Max. 2m

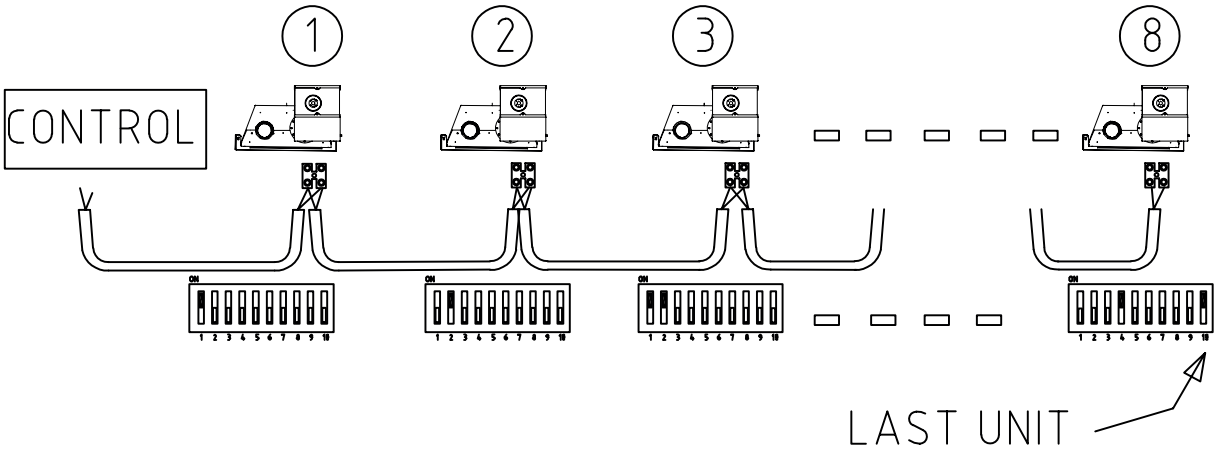

Max. 2m
Max. 0.25m
Max. 0.25m
Max. 0.25m
Max. 0.25m
Max. 2m


Max. 0.5m
Max. 2m
Max. 1m
Max. 1m
Max. 1m
Max. 1m
Max. 0.5m
Max. 2m

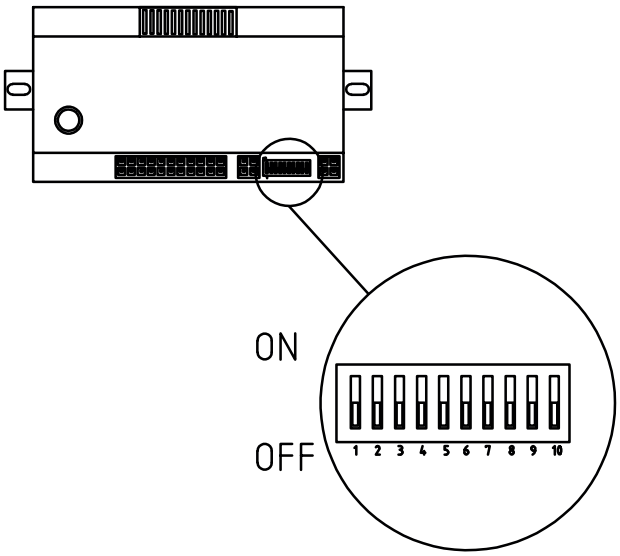

1
2
3
CONTROL
LAST UNIT


1
2
3
4
5
CONTROL
LAST UNIT

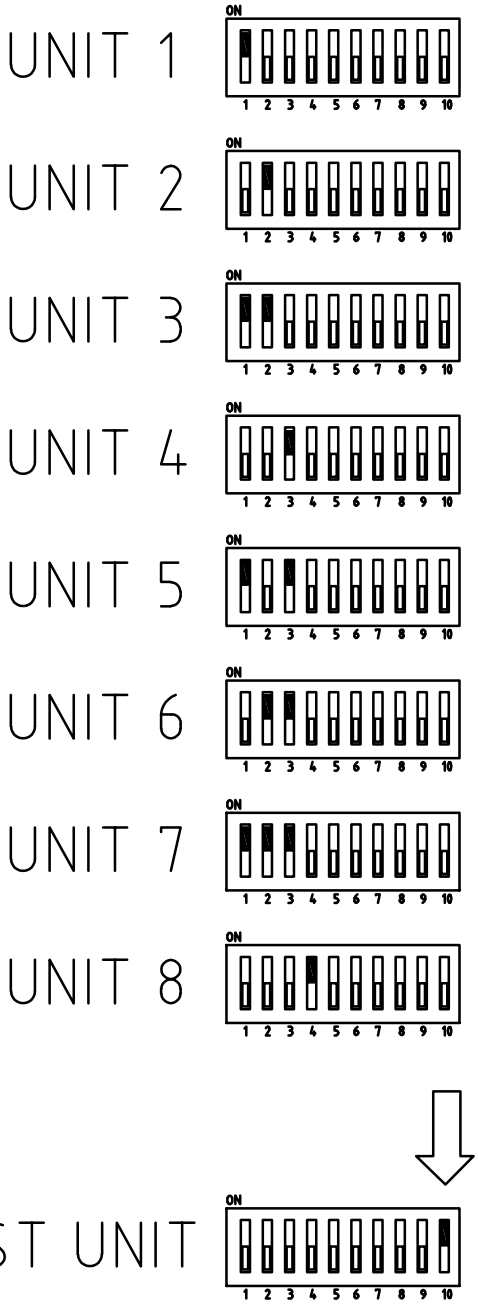

1
CONTROL
LAST UNIT


1
2
3
8
CONTROL
LAST UNIT

[26]



Ø	L total
0.8 mm²	800m
1.0 mm²	1000m



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