Metro 100 XTL

G20/25

Installation manual *(GB / IE)*

Store this document in a safe place
Dieses Dokument bitte sorgfältig aufbewahren

CE

English

959.027.00.GB

GB

Contents

Preface

DRU, a manufacturer of gas-fired heating appliances, develops and produces products that comply with the highest quality, performance and safety requirements.
This guarantees that the user will be able to enjoy using his product for many years to come.
This appliance has a CE marking, which means that it complies with the essential requirements of the European gas appliance directive.
Two manuals are supplied with the appliance: the installation manual and the user manual.
As an installer, you must be competent in the field of atmospheric gas-fired heating.
The installation manual will give you the information you need to install the appliance in such a way that it will operate properly and safely.
This manual discusses the installation of the appliance and the regulations that apply to the installation. In addition, you will find technical data for the appliance and information on maintenance, any malfunctions that might occur and their possible causes.
The figures are included at the back of this booklet (Appendix 3).
Please carefully read and use this installation manual.
The following symbols are used in the manual to indicate important information:

Work to be performed
!Tip **Suggestions and recommendations**
!Caution **You will need these instructions to prevent problems that might occur during installation and/or use.**
Caution **You need these instructions to prevent fire, personal injury or other serious damages.**

After delivery, you should give the user manual and this installation manual to the user.

1. Introduction

The Metro 100 XTL is a room-sealed atmospheric gas-fired heating appliance.
This version of the Metro 100 XTL is suitable for natural gas. The safe operation of the appliance is guaranteed by the use of a second thermocouple fitted to the main burner.
A room-sealed appliance does not extract the combustion air from the living environment, but from outside. This is done by means of a combined flue gas discharge system / combustion air supply system. In this concentric system, the outer pipe functions as the air supply and the inner pipe functions as the flue gas discharge.
This system can be installed through the wall or through the roof.
These appliances are built within a chimney breast. For this, DRU has a number of chimney breasts in its range.
In order to reach a proper heat discharge, the chimney breast must be ventilated. DRU is able to supply various ventilation elements.
The adjustable height of the appliance can be increased by means of the extension legs that can be ordered from DRU.
The appliances are supplied with a wireless remote control that works on batteries.

2. CE declaration

We hereby declare that the design and construction of DRU's atmospheric gas-fired heating appliance comply with the essential requirements of the Gas Appliance Directive.

Product:	***atmospheric gas-fired heating appliance***
Type:	***Metro 100 XTL***
Applicable EEC directives:	***2009/142/EC***
Applied harmonized standards:	***NEN-EN-613***
	NEN-EN-613/A1

Internal measures by the company guarantee that appliances produced in series comply with the essential requirements of the prevailing EEC directives and the standards derived from them.
This declaration will lose its validity if adjustments are made to the appliance, without prior written permission by DRU.

M.J.M. Gelten
General manager
DRU verwarming B.V.
Postbus 1021, 6920 BA Duiven
Ratio 8, 6921 RW Duiven
www.dru.nl

3. SAFETY

3.1 General

Caution

- **Carefully read this chapter on safety, before you start performing installation or maintenance work;**
- **Please observe the general regulations and the precautions/safety instructions in this manual.**

3.2 Regulations

Please install the appliance in accordance with the applicable national, local and constructional (installation) regulations.

3.3 Precautions / safety instructions during installation

Carefully observe the following precautions/safety regulations:

- **you should only install and maintain the appliance if you are a competent installer in the field of atmospheric gas-fired heating;**
- **do not make any changes to the appliance;**
- **use non combustible and heat-resistant materials for the chimney breast, including the top of the chimney breast, the material in the chimney breast and the back wall against which the appliance will be placed;**
- **take sufficient measures to prevent temperatures of a wall behind the chimney breast becoming too high, including the materials and/or objects behind the wall;**
- **comply with the minimum required internal measurements of the chimney breast;**
- **ventilate the chimney breast by means of the ventilation holes, which will form a combined passage of at least 200 cm^2;**
- **only use the flue gas discharge / combustion air supply system supplied by DRU;**
- **mount the appliance using the wall brackets supplied;**
- **do not place the appliance too tightly against the back wall;**
- **make sure the space between the appliance's legs is kept free;**
- **do not cover the appliance and/or do not wrap it in an insulation blanket or any other material;**
- **make sure that combustible objects and/or materials have a distance from the appliance of at least 500 mm;**
- **only ever use the supplied wood/pebble set;**
- **place the wood/pebble set exactly as described;**
- **make sure the pilot burner and the space around it is kept free;**
- **make sure thermocouple 2 and the space around it are kept free;**
- **make sure there is no dirt in gas pipes and connections;**
- **mount a gas tap directly next to the appliance;**
- **check the connections for gastightness before using the appliance;**
- **use heat resistant electrical wiring;**
- **place the electrical wiring in such a way that they are free from the appliance;**
- **replace torn or broken panes;**
- **avoid blocking of the pressure equalization hatch(es) on top of the appliance;**
- **check whether the pressure equalization hatch(es) fit well onto the sealing surface, prior to building in the appliance;**
- **do not ignite the appliance until it is fully installed.**

4. Instructions

Observe the following items during installation in order to guarantee a proper and safe operation of the appliance:

- **mount the control box supplied as low as possible;**
- **avoid that the ignition cable runs over the receiver;**
- **avoid that the ignition cable touches or crosses the antenna;**
- **avoid that the ignition cable runs alongside metal parts, in order to prevent weakening of the spark;**
- **properly finish the edges in case of a tight construction;**
- **do not apply plaster on or over the flanges;**
- **avoid damaging the pane when removing/placing the glass window;**
- **clean the pane before you use the appliance, in order to prevent dirt from burning in the glass;**
- **make sure that the wires of thermocouple 2 cannot come into contact with hot parts.**

5. Removing the packaging

Note the following items when removing the packaging:

- **Check the appliance for damages during transport.**
- **If necessary, contact DRU Service.**

After removing the packaging, you should have the following components:

- **Socket spanner**; you will find it in the space between the assembly frame and the combustion chamber;
- **Decorative strips**; you will find them in the abovementioned space as well;
- **Box containing parts**; you will find it in the combustion chamber.

➠ **Remove the box containing parts from the combustion chamber.**
In appendix 1 / table 5 you can see which parts you should have after removing the packaging.
➠ **Contact DRU Service if you do not have all the parts after you finished removing the packaging.**
➠ **Dispose packaging in accordance with local regulations.**

6. Installation

Read this manual carefully to ensure a proper and safe operation of the appliance.

!Caution **Install the appliance in the order described in this chapter.**

6.1 Regulations

➠ **Observe the applicable (installation) regulations.**
➠ **Observe the regulations/instructions in this manual.**

6.2 Type of gas

The data plate indicates for which type of gas, gas pressure and for which country this appliance is intended. The data plate is connected to a chain. It should remain connected to the chain.

Caution **Check whether the appliance is suitable for the type of gas and the gas pressure used at the location.**

6.3 Gas connection

Place a gas tap in the gas connection, close to the appliance.

Caution
- **Make sure there is no dirt in gas pipes and connections;**
- **Prevent twisting the gas tap when connecting the gas pipe.**

The following requirements apply to the gas connection:
- use a gas pipe with the correct dimensions, so that no pressure loss can occur;
- the gas tap should have the CE marking;
- you should always be able to reach the gas tap.

6.4 Placing the appliance

Caution
- **Make sure that combustible objects and/or materials have a distance from the appliance of at least 500 mm;**
- **Always place the appliance against a wall of non combustible and heat-resistant material;**
- **Take sufficient measures to prevent temperatures of a wall behind the chimney breast becoming too high, including the materials and/or objects behind the wall;**
- **Do not make any changes to the appliance.**

!Caution
- **Take the adjustable height of the appliance into account; it depends on the setting of the adjustable feet (see fig. 1);**
- **If applicable, the extension legs should be fixed by means of self-tapping screws;**
- **Take the minimum internal construction depth of the appliance into account; Metro 100 XTL: 448 mm (see fig. 2.).**

!Tip **You can determine the construction height of the appliance (X in fig. 2) yourself (min. 248 mm).**

Place the appliance as follows:
➠ **Determine the location of the appliance.**
➠ **Determine the construction height of the appliance.**
➠ **Provide a gas connection at the location. For details, see section 6.3.**
➠ **Make a passage for the flue gas discharge/combustion air supply system with the following diameters. For details, see section 6.5.**
- **Ø160 mm for a wall terminal through non combustible material;**
- **Ø 250 mm for a wall terminal through combustible material;**
- **Ø160 mm for a roof terminal through non combustible material;**
- **Ø 250 mm for a roof terminal through combustible material.**

For adjusting the C Profile in relation to the construction frame, proceed as follows:

- **Loosen the M5 nuts by one stroke. (See figure 3) Slide the profile to the required distance in relation to the construction frame (15-30mm). Then retighten the nuts.**

- **Place the appliance on its destined location.**

The gas control is mounted under the appliance, at the burner plate. It should be disconnected and placed in the control box at a later stage. For placing the gas control in the control box, see section 6.7.
Follow the procedure described below:

- **Disconnect the pipes from the gas control (flexible gas pipe, aluminium pilot-flame pipe and thermocouple 1).**

!Caution **The red wire of thermocouple 2 must remain connected to the gas control.**

- **Disconnect the gas control from the burner plate by unscrewing the self-tapping screw.**
- **Carefully unwind the red and black wires of thermocouple 2.**
- **Lay the gas control together with the wires of thermocouple 2 in the direction of the control box.**

Caution
- **Make sure there is no dirt in gas pipes and connections;**
- **Avoid kinks in the pipes.**

- **Roll out the pipes in the direction of the control box.**
- **Roll out the ignition cable in the direction of the control box.**

!Caution **The data plate should remain connected to the chain.**

- **Place the chain with the data plate in the direction of the control box.**
- **Set the height of the appliance using the adjustable feet and**
- **Make the appliance level at the same time.**

Caution
- **Do not place the appliance too tightly against the back wall; this is guaranteed by dimensions of the construction frame;**
- **Make sure the space between the appliance's legs is kept free;**
- **Do not cover the appliance and/or do not wrap it in an insulation blanket or any other material.**

- **Attach the appliance to the wall, using the supplied key bolts (4). See appendix 3 figure 4.**
- **Use the hook to connect the threaded rods to the corners of the construction frame. See figure 5 and 6.**

!Caution **Adjust the threaded rod in such a way with the tensioning nut that you have sufficient setting space.**

- **Determine the height of the eye nut against the wall.**
- **Attach the eye to the wall using the supplied key bolt.**
- **Use hook to connect the threaded rod to the tensioning nut. Connect the other hook to the threaded rod using the connection nut.**
- **Connect the hook to the eye nut against the wall.**
- **Adjust everything, using the tensioning nut.**

6.5 Flue gas discharge / combustion air supply system

6.5.1 General

The appliance is of the C11/C31 type.
The appliance is connected to a combined flue gas discharge/combustion air supply system, hereafter referred to as the concentric system.
The passage to the outside can be made with a wall terminal (see section 6.5.2) or a roof terminal (see section 6.5.3).
If necessary, you can also use an existing chimney (see section 6.5.4).

Caution
- **Only use the concentric system supplied by DRU (Ø100 / Ø150 mm). This system has been tested together with the appliance. DRU cannot guarantee a proper and safe operation of other systems and does not accept any liability for this;**
- **For connecting to an existing chimney you should only use the chimney kit supplied by DRU.**

The concentric system is constructed from (the connection stump of) the appliance.
If structural circumstances require that the concentric system is placed first, the appliance can later be connected with a telescopic pipe piece.

6.5.2 Application with wall terminal

6.5.2.1 Construction of concentric system with wall terminal

The concentric system with wall terminal has to comply with the following conditions:

- First, a concentric pipe of at least 0.5 meters should be connected vertically to the appliance;
- The total vertical pipe length may have a maximum of 4 meters;
- A 90° bend is connected to the other end of the vertical part;
- When using 0.5 meter of vertical pipe length, the total horizontal pipe length can have a maximum of 2 meters (excluding wall terminal, see fig. 7a);
- When using a minimum of 1 meter up to a maximum of 4 meters of vertical pipe length, the total horizontal pipe length can have a maximum of 3 meters (excluding wall terminal, see fig. 7b and 7c).

Depending on the construction of the concentric system, the appliance must receive further settings; see Table 1 for determining the conditions and section 6.8, Adjusting the appliance, for the method.

Table 1: Conditions for the adjustment of the appliance with a wall terminal

G20/25					
Total number of meters vertical pipe length	**Total number of meters horizontal pipe length (excluding wall terminal)**	**See figure**	**Air inlet guide**	**Baffle**	**Distance of restriction in mm**
0,5	0 - 2	5a	NO	NO	OPEN
1 - 4	>0 - 3	5b	NO	NO	OPEN
1 - 4	0*	5c	YES, 13mm OPENING	NO	OPEN

* factory setting

6.5.2.2 Placing concentric system with wall terminal

Caution

- **Maintain a distance of at least 50 mm between the outside of the concentric system and the walls and/or the ceiling. If the system is built in (for instance) a cove, it should be made with non combustible material all around it.**
- **Use heat-resistant insulation material when passing through combustible material;**
- **The rosette (mounting inner plate) of the wall terminal is too small to seal the Ø 250 mm opening when passing through combustible material. That is why you should first apply a sufficiently large heat-resistant intermediate plate to the wall. Then, the rosette is mounted on the intermediate plate.**

!Caution **Some heat-resistant insulation materials contain volatile components that will spread an unpleasant smell for a prolonged time; these are not suitable.**

Place the concentric system as follows:

- **Build the system up from (the connection stump of) the appliance.**
- **Connect the concentric pipe pieces and the bend.**
- **On each connection, apply a clip binding with silicon sealing ring.**
- **Use a self-tapping screw to fix the clip binding to the pipe on locations that cannot be reached after installation.**
- **Apply sufficient clamps, so that the weight of the pipes does not rest on the appliance.**
- **Determine the remaining length of the wall terminal;**
- **Make sure the wall terminal has the right dimensions.**

!Caution

- **Make sure that the right insertion length is maintained;**
- **Place the wall terminal with the groove/folded seam at the top;**
- **Make sure the horizontal concentric pipe pieces are sloping towards the wall terminal, in order to prevent rain water from entering.**

- **Mount the rosette (mounting inner plate); if necessary, on a heat resistant intermediate plate when passing through combustible material.**
- **Attach the wall terminal from the outside with four screws in their respective holes.**

6.5.3 Application with roof terminal

6.5.3.1 Construction of concentric system with roof terminal

The concentric system with roof terminal has to comply with the following conditions:
- The construction of the chosen system has to be allowed. (See the procedure described below);
- First, a concentric pipe of at least 1 meter should be connected vertically to the appliance.

Depending on the construction of the concentric system, the appliance is set by placing the baffle and/or adjusting the air inlet guide.
In the following procedure you can see how the allowability of a concentric system can be determined and which settings are needed.

➠ **Determine the following data:**

1) The number of bends required (no distinction is made between 45° and 90° bends);
2) The total number of meters of horizontal pipe length;
3) The total number of meters of vertical and/or sloping pipe length (roof terminal excluded).

With these data and Table 2 you will be able to determine whether the concentric system is allowed.
In Table 3 you can see which setting the appliance requires.

Follow the procedure described below:

➠ **In the first 2 columns of Table 2, look for the number of bends required and the total horizontal pipe length.**

➠ **In the 3rd column of Table 2, look for the total vertical and/or sloping pipe length.**

If you end up in a box with the letter A, B, C, or D, the concentric system chosen by you is allowed.

➠ **Use Table 3 to determine which conditions apply for the baffle and/or the air inlet guide (for setting, see section 6.8).**

Examples

To clarify, we will give 2 examples to determine the allowability of a concentric system and the conditions for setting the appliance.
In Table 2 the route to be followed is indicated by arrows. The result is indicated by a box with a red border.

Example 1

1) 2 bends
2) 3 meters horizontal
3) 8 meters vertical/sloping

→ Construction of this concentric system is allowed.
→ Situation B applies for the adjustment of the appliance.

Example 2

1) 3 bends
2) 4 meters horizontal
3) 9 meters vertical/sloping

→ Construction of this concentric system is not allowed.

Table 2: Determination of the permissibility of a concentric system with a roof terminal													
G20/25	Total number of meters horizontal pipe length	Total number of meters vertical and/or sloping pipe length											
		1	2	3	4	5	6	7	↓8	↓9	10	11	12
no bends	0	B	B	B	C	C	C	C	C	D	D	D	D
2 bends	0	A	A	B	B	B	C	C	C	C	C	D	D
	1		A	A	B	B	B	C	C	C	C	C	
	2			A	A	B	B	B	C	C	C		
→	3				A	A	B	B	B	C			
	4					A	A	B	B				
	5												
3 bends	0	A	A	A	B	B	B	C	C	C	C	C	D
	1		A	A	A	B	B	B	C	C	C	C	
	2			A	A	A	B	B	B	C	C		
	3				A	A	A	B	B	B			
→	4					A	A	A	B				
	5												
4 bends	0	A	A	A	A	B	B	B	C	C	C	C	C
	1		A	A	A	A	B	B	B	C	C	C	
	2			A	A	A	A	B	B	B	C		
	3				A	A	A	A	B	B			
	4					A	A	A	A				
	5												
5 bends	-												

= situation is not allowed

Table 3: Conditions for the adjustment of the appliance with a roof terminal			
G20/25			
Situation	**Air inlet guide**	**Baffle**	**Distance of restriction in mm**
A	NO	NO	OPEN
B	YES, ADJUSTED TO 13MM	YES	55
C	YES, ADJUSTED TO 9MM	YES	45
D	YES, ADJUSTED TO 9MM	YES	40

6.5.3.2 Placing concentric system with roof terminal

The roof terminal can end in a sloping and a flat roof.
The roof terminal can be supplied with an adhesive plate for a flat roof or with a universally adjustable tile for a sloping roof.

Caution

- **Maintain a distance of at least 50 mm between the outside of the concentric system and the walls and/or the ceiling. If the system is built in (for instance) a cove, it should be made with non combustible material all around it;**
- **Use heat-resistant insulation material when passing through combustible material.**

!Caution **Some heat-resistant insulation materials contain volatile components that will spread an unpleasant smell for a prolonged time; these are not suitable.**

Place the concentric system as follows:

- **Build the system up from (the connection stump of) the appliance.**
- **Connect the concentric pipe pieces and, if necessary, the bends.**
- **On each connection, apply a clip binding with silicon sealing ring.**
- **Use a self-tapping screw to fix the clip binding to the pipe on locations that cannot be reached after installation.**
- **Apply sufficient clamps, so that the weight of the pipes does not rest on the appliance.**
- **Determine the remaining length of the roof terminal.**
- **Make sure the roof terminal has the right dimensions.**

!Caution **Make sure that the right insertion length is maintained.**

- **Connect the roof terminal to the concentric pipes.**

!Caution
- **Make sure that the universal tile fits well with the surrounding tiles;**
- **Make sure that the adhesive plate fits well onto the flat roof.**

6.5.4 Connection of existing chimney

It is possible to connect the appliance to an existing channel.
A flexible SS pipe is placed in the chimney for discharging flue gases. The surrounding space is used to supply combustion air.
The following requirements apply when connecting to an existing chimney:

- only allowed when used in combination with the special DRU chimney kit. The installation manual is also supplied;
- the dimensions should be at least 150 x 150 mm;
- the vertical length has a maximum of 12 meters;
- the horizontal length has a maximum of 3 meters;
- the existing chimney has to be clean;
- the existing chimney has to be tight.

If the appliance is installed into an existing chimney by means of a chimney kit, there may be a slight loss in heat output.

For setting the appliance, the same conditions/instructions apply as for the concentric system described above.

6.6 Placing the chimney breast

The appliance is designed to be mounted tightly in a new chimney breast.
In order to provide proper heat discharge, there should be sufficient space around the appliance.
The chimney breast should be ventilated sufficiently by means of ventilation holes.
This appliance is only suitable for construction using a chimney breast from promatec or other non combustible and heat-resistant material. (Thickness 15-30 mm)

Caution
- **Use non combustible and heat-resistant materials for the chimney breast, including the top of the chimney breast, the material in the chimney breast and the back wall of the chimney breast;**
- **The ventilation holes - which should be mounted as high as possible - should have a combined passage of at least 200 cm^2.**

!Caution **When placing the chimney breast, you should take the following into account:**
(see fig. 2)

- **the narrow flanges of the appliance's mounting frame;**
- **the location of the control box: it should be placed with a distance of 850 mm to the left or to the right of the appliance - as low as possible;**
- **the measurements of the control box; see Placing the Control Box section 6.7;**
- **the location of the ventilation holes;**
- **the measurements of the panes, so that they can be placed/removed after placing the chimney breast;**
- **the protection of the gas control and the pipes against cement and plaster.**

!Tip
- **You should preferably apply the ventilation holes on both sides of the chimney breast. You can use DRU ventilation elements.**

- **Check whether the concentric system is placed correctly.**
- **Check the fixture of the clip binding with self-tapping screws on places that cannot be reached later on.**
- **Maintain sufficient space around the appliance in the chimney breast, so the heat can escape:**
  - **minimum height: ca. 200 mm (fig. 8).**
- **Do not apply plaster on or over the flanges, because:**
  - **the heat of the appliance could cause cracks;**
  - **it will no longer be possible to remove/place the panes.**
- **When using plaster finishing, the chimney breast should dry for at least 6 weeks before it is taken into operation, in order to prevent cracks.**

6.7 Placing the control box

The control box is placed as low as possible in the chimney breast.

!Caution
- **Take the position of the appliance's legs into account. The shaded parts in fig. 2 show the locations where the control box can be mounted;**
- **The bottom of the control box may not be placed higher in the appliance, than the burner bed.**

A number of components are placed in the control box, such as data plate, gas control, receiver belonging to the remote control.

Proceed as follows, when placing the control box; see fig. 9 for details:
- **Make an opening in the chimney breast of 285 x 194 mm (h x w).**
- **Place the inner frame (1); unscrew bolts (5) for this.**

!Tip
- **When the chimney breast is made of bricks, the inner frame can be built with bricks at the same time;**
- **When using a different material, you can glue the inner frame or fix it with four flush screws.**

- **Mount the gas control to the brackets of the inner frame (2).**
- **Reconnect the pipes to the gas control.**

Caution
- **Avoid kinks in the pipes;**
- **Place the aluminium pilot burner pipe free from the floor and / or the wall;**
- **Tighten the flexible gas pipe and the pilot burner pipe until they are gastight.**

- **If applicable, connect the wires of thermocouple 1 to the gas control; see fig 10.**

Caution
- **First tighten the thermocouple by hand and;**
- **then tighten it a quarter turn using a suitable spanner.**

- **If necessary, blow clean the gas pipe.**
- **Connect the gas pipe to the gas tap.**
- **Bleed the gas pipe.**
- **Place the receiver (3); for connections, see section 7.1.**
- **Place the data plate (6).**
- **Fix the outer frame with door (4) to the inner frame using 2 socket cap screws.**

!Tip **You can place the outer frame in such a way, that the door turns to the left or to the right.**

6.8 Adjusting the appliance

The appliance has to be set in such a way that it works correctly in combination with the concentric system.
For that purpose, a baffle is placed and/or the air inlet guide is removed. The conditions for using a wall terminal are described in section 6.5.2.1, and for using a roof terminal in section 6.5.3.1.

6.8.1 Baffle (R)

The baffle (R) is supplied separately; see fig. 11a.

This is mounted as follows (see fig. 11b):

- **Unscrew the 8 self-tapping screws (S) from the middle plate (T).**
- **Remove this plate.**
- **Place the baffle.**
- **Use the template supplied to set the distance of the restriction (see fig. 12) as follows:**
  - **A distance of 40 mm means that the baffle is closed to a maximum level;**
  - **A distance of 45-55 mm is set by means of the template.**
- **Fix the baffle by using the socket cap screw (U).**
- **Place back the middle plate.**

6.8.2 Air inlet guide (L)

The air inlet guide is at the back, below the combustion chamber. In order to reach it, you must remove the vermiculite tray.
Ex works, the air inlet guide is mounted with an opening of 13mm.

If table 2 (page 10) indicates that the air inlet guide must be removed, please proceed as follows.

- **irst remove the vermiculite tray.**
- **Unscrew the self-tapping screws (indicated in figure 13) and remove the air inlet guide. Screw the self-tapping screws back in the appliance!**

If the opening should be made smaller to 9mm, you must screw the supplied air inlet cover plate onto the air inlet guide. (see figure 14)

Tip **If the self-tapping screws are difficult to reach, it is possible to remove the burner from the appliance by unscrewing the self-tapping screws (5x) indicated. (See figure 15)**

6.9 Placing the wood/pebble set

The appliance is supplied with a wood set or a pebble set.
The vermiculite that is used to fill the burner tray is black when using the wood set and has a natural colour when using the pebble set.
The figures do not always show the correct colours.

Caution **Strictly observe the following instructions to prevent unsafe situations:**

- **only ever use the supplied wood/pebble set;**
- **place the wood/pebble set exactly as described;**
- **make sure the pilot burner and the space around it are kept free from objects (see fig. 16a and fig. 16b);**
- **make sure that thermocouple 2 and the space around it are kept free from objects (see fig. 17a and fig. 17b);**
- **make sure that the slot between the burner tray and the tray surrounding the burner is kept free from objects;**
- **make sure there is no vermiculite's fine dust on the burner.**

6.9.1 Wood set

The wood set consists of black vermiculite (see fig. 18), chips (see fig. 19) and a number of branches.

- **Fill the burner tray with vermiculite; equally spread the vermiculite; see fig. 20.**

!Caution

- **You can influence the flame image by moving the vermiculite, yet**
- **the burner deck has to remain covered with vermiculite in order to prevent that the life expectancy of the burner is reduced.**

- **Fill the tray surrounding the burner with chips; equally spread the chips; see fig. 22.**

- **Identify branches A up to H by using fig. 21a.**

!Tip **Use the burn stains on the branches for identification.**

- **Place branches A up to D around the (main) burner (see fig. 21b and fig. 22):**
  - **First place branch B symmetrically in relation to the pilot burner;**
  - **Proceed with branches A, C and D.**
- **Then place branches E up to H that are lying over the burner (see fig. 21c).**

Caution **The branches should not completely cover the burner opening (see fig. 21d and fig. 22), because:**
- **the main burner will not ignite properly; which could result in unsafe situations;**
- **the appliance will become filthy more quickly, as a result of soot;**
- **the flame image may be affected.**

6.9.2 Pebble set

The pebble set consists of natural colour vermiculite; (see fig. 18) and white carrara stones.

➠ **Fill the burner tray with vermiculite; equally spread the vermiculite; see fig. 23a.**

!Caution
- **You can influence the flame image by moving the vermiculite, yet**
- **the burner deck has to remain covered with vermiculite in order to prevent that the life expectancy of the burner is reduced.**

➠ **Fill the burner tray and the tray surrounding the burner with carrara stones.**

➠ **Equally spread the carrara stones in one layer; see fig. 23a and fig. 23b.**

Caution **Incorrect placement of the stones, e.g. on top of each other, could have the following consequences:**
- **the main burner will not ignite properly, which could result in unsafe situations;**
- **the flame image is affected.**

6.10 Panes

!Caution
- **Avoid damaging the panes during removal/placing;**
- **Avoid/remove fingerprints on the panes, as they will burn into the glass.**
- **Always remove the side glass pane first.**

6.10.1 Removing the side pane

At the top and bottom of the side glass pane you will find springy window strips. First remove the lock bolts from these strips. Take the window strip by the handles and position it in relation to the upper or lower brackets. (parking position) See figure 24.

Tilt the top of the glass pane towards you and grab the glass pane at both sides. Lift the glass pane and tilt its bottom out of the appliance and remove it.

When mounting the side glass pane, you must proceed in reverse order.

!Caution: **When mounting the side glass pane, you must carefully place the springy window strips in front of the glass pane again, in order to avoid damaging the glass pane.**

6.10.2 Front pane

After placing the wood/pebble set you can place the front pane as described below.

!Caution
- **The DRU logo should be at the bottom right corner;**
- **The self-tapping screws must not be over-tightened, since otherwise they could break or strip the thread: tight=tight;**
- **Make sure that the front pane fits well onto the side panes.**

6.10.2.1 Side panes

The side panes should be removed in case of torn or broken panes.

6.10.2.1 Removing the front pane

When removing the front pane, you should follow the next steps, see fig. 25:

➠ **Remove the vertical decorative strips by pulling them off at the top first; turning them over parallel to the pane and then loosening them at the bottom.**

➠ **Remove the U-shape horizontal strip by gripping it with 2 hands in the slot and lifting it out.**

➠ **Unscrew the 6 self-tapping screws of the lower glass strip with 2 turns, using the socket spanner supplied.**

!Caution **Do not remove the self-tapping screws: leave them in place in the lower glass strip.**

➠ **Unscrew the 6 self-tapping screws from the upper glass strip, by using the socket spanner supplied.**

➠ **Remove the upper glass strip.**

➠ **Slide the glass pane to the side for approx. 20 mm.**

➠ **Slightly tilt the top of the pane towards you.**

➠ **Grab the pane at both sides.**

➠ **Lift up the pane and tilt the bottom of the pane towards you.**

➠ **Remove the pane.**

6.10.2.2 Placing the front pane

Placing the front pane will take place in reverse order of the removal procedure described above.

!Caution
- **The DRU logo should be at the bottom right corner;**
- **The self-tapping screws must not be over-tightened, since otherwise they could break or strip the thread: tight=tight;**
- **Make sure that the front pane fits well onto the side panes.**

!Caution **The self-tapping screws must not be over-tightened, since otherwise they could break or strip the thread: tight=tight.**

6.10.2.3 Removing the rear glass pane

Loosen the self-tapping screws of the vertical window strip by 2 strokes. Do not remove the strip! The remainder of the procedure is equal to that of the front glass pane.

7. Wireless remote control

The appliance is supplied with a wireless remote control.
Ignition, controlling the flame height and switching off are performed by a remote control that operates a receiver in the control box.
User Manual, chapter 4, Wireless Remote Control, describes the operation of the appliance including the way the remote control works.

Caution **Do not ignite the appliance until it is fully installed.**

Below, we will describe how the receiver is connected.

7.1 Receiver

The receiver should be connected to the appliance, before the batteries are installed.

Follow the procedure below (see fig. 26):

- **Fit the connection cable's brown plug to the receiver (see fig. 26, arrow F).**
- **Connect the white plug to the gas control.**

!Tip **The plugs have different sizes that correspond with the connectors.**

- **Connect the cables of thermocouple 1 to the receiver; (see fig. 26, arrows B).**

!Tip
- **The size of the eye corresponds with the size of the screw;**
- **The colours of eye and screw also correspond.**

- **Connect the black wire with the white plug of thermocouple 2 to the receiver (see fig. 26, arrow E).**

!Caution **Make sure that the wires of thermocouple 2 cannot come into contact with hot parts**

- **Connect the ignition cable to the receiver; (see fig. 26, arrow A)**
- **Connect power:**

  a) When using batteries, see section 7.1.1 below;

  b) When using an adapter:
  - **connect it to the receiver; (see fig. 26, arrow C);**
  - **insert the plug into the wall socket.**
- **Place the receiver (V) in the control box, as indicated on fig. 27.**
- **Bend the antenna out of the clips; see fig. 26, arrow D.**
- **Set the antenna straight.**

!Caution
- **Do not place the antenna (N) too close to the ignition cable and/or metal parts (for the correct position, see fig. 27);**
- **Do not place the ignition cable over and/or along metal parts: this will weaken the spark;**
- **Do not lay the ignition cable over the receiver: this could damage the receiver;**
- **Avoid dust on or in the receiver: cover it when performing work.**

7.1.1 Placing / replacing the batteries

Follow the procedure below when placing the batteries:

- **Open the door of the control box.**
- **Pick up the receiver.**
- **Slide the cover off.**
- **Place or remove the 4 penlite (AA type) batteries.**

!Caution
- **Avoid a short circuit between the batteries and metal objects/parts;**
- **Observe the "+" and "-" poles of the batteries and the holder;**
- **Use alkaline batteries.**

- **Slide back the cover.**
- **Place back the receiver.**

!Caution **Batteries are regarded as "small chemical waste" and may therefore not be disposed with the household rubbish.**

8. Final check

In order to check whether the appliance is working properly and safely, you must perform the following checks before the appliance is used.

8.1 Gastightness

Caution **All connections must be gastight.**

!Caution **The gas control can be subjected to a maximum pressure of 50 mbar.**

- **Check the connections for gastightness.**

8.2 Gas pressure / pre-pressure

The burner pressure is set at the factory; see data plate. It is not necessary to check the burner pressure.

Caution **The pre-pressure in house installations should be checked, as they can vary.**

- **Check the pre-pressure; see fig. 28 for the measuring nipple on the gas control.**
- **Contact the gas company if the pre-pressure is not correct.**

8.3 Ignition pilot and main burner

For igniting the pilot and main burners, see the User Manual, chapter 4, section 4.2, Remote Control.

Caution
- **During the ignition process, you are not allowed to operate control button B on the gas control manually;**
- **Always wait 5 minutes after the pilot burner has gone out, before you re-ignite the appliance.**
- **Do not turn the pilot burner lower by using the settings on the gas control.**

8.3.1 Pilot burner

- **Check the ignition of the pilot burner:**
- **the pilot burner should start at the first attempt.**

If the pilot burner does not ignite:

- **check if the ignition sparks:**

a) If not, the ignition cable is probably not lying free from metal parts;

b) If it does, there is probably still air in the pipe.

- **Bleed the pipe and/or**
- **Lay the ignition cable free from metal parts.**

Caution: **The pilot burner pipe must be protected against possible corrosion influences, e.g. moisture, falling cement, dirt falling down from a chimney, etc. The pilot burner pipe must be permanently kept free from the ground and the walls of the room in which the appliance is built.**

8.3.2 Main burner

Caution **The burner should ignite smoothly and should not pop as a result of delayed ignition.**

- **Check the function of the main burner from the standby (pilot burner) position:**
  - **after opening the gas valve, the main burner should burn within a few seconds.**

!Tip **When the gas valve is opened, the motor will run; this is audible.**

1) If the main burner does not burn:

- **Check if button A on the gas control is in the position ON;**
- **Check if the space surrounding the pilot burner is free from objects;**
- **Check the placement of the wood/pebble set.**
- **If necessary, correct the above mentioned faults.**
- **Test the main burner 5x for a good operation.**

2) If main burner ignites, but goes out again after approx. 22 seconds, please:

- **Check the wiring of thermocouple 2 for:**
  - Loose wiring;
  - Wrongly connected wiring;
  - Short-circuit;
  - Broken wire.
- **Check if thermocouple 2 is dirty.**
- **Check if thermocouple 2 is positioned correctly in the flame; see fig. 29.**
- **Check if thermocouple 2 is defective; see chapter 11, table 4 under J7.**
- **Check if the receiver is defective; see chapter 11, table 4 under J8.**
- **If necessary, correct the above mentioned faults.**
- **Test the main burner 5x for a good operation.**

8.4 Flame image

The flame image can only really be assessed when the appliance has been burning for several hours. Volatile components from paint, materials, etc., which evaporate in the first hours, will affect the flame image.

!Caution **If the chimney breast is made of stone-like materials or has a plaster finish, this may only take place 6 weeks after placing the chimney breast, in order to prevent shrinkage cracks.**

- **Check whether the flame image is acceptable.**

If the flame image is not acceptable, this can be due to:

- the evaporation of volatile substances;
- incorrect placement of the wood/pebble set;
- incorrect settings of the appliance.

- **If necessary, improve the placement of the wood/pebble set.**
- **If necessary, improve the settings of the appliance; for this, see section 6.8.**

9. Maintenance

Once a year the appliance should be checked, cleaned and, if necessary, repaired by a competent installer in the field of atmospheric gas-fired heating.
Check at least whether the appliance is working properly and safely.

Caution
- **Close the gas tap when performing maintenance work;**
- **Check the gastightness after repair;**
- **After replacing thermocouple 1 you should first tighten the swivel by hand and then give it another quarter turn with a suitable spanner;**
- **Do not turn the pilot burner lower by using the settings on the gas control.**

➠ **If required, clean the following components:**
- **the pilot burner;**
- **the space surrounding the pilot burner;**
- **the panes.**

!Caution
- **Remove/place the panes as described in section 6.10;**
- **Remove the deposit on the inside of the panes with a damp cloth or a non-abrasive detergent such as copper polish;**
- **Avoid/remove fingerprints on the panes, as they will burn into the glass;**
- **Replace a broken and/or cracked pane as described in section 6.10.**

Caution **If necessary, place back the wood/pebble set correctly; for this, see section 6.9.**

➠ **Inspect the flue gas discharge / combustion air supply system.**

Caution **You must always perform a final check.**

➠ **Perform a check as described in chapter 8.**

9.1 Parts

Parts that must be replaced, can be obtained from your supplier.

10. Delivery

You must explain to the user how he should operate the appliance. You should instruct her/him for instance on using the appliance for the first time, the operation of the remote control, annual maintenance.

Caution
- **Tell the user to close the gas tap immediately in case of malfunctions/bad performance and contact the installer in order to prevent dangerous situations;**
- **Indicate the location of the gas tap;**
- **Point out the precautions in the user manual concerning unintended ignition by other remote controls such as car keys and garage door openers.**

➠ **Instruct the user about the appliance and the remote control.**
➠ **When the appliance is started for the first time, point out that**
- **in order to avoid cracks in a chimney breast made of stone-like materials or finished with plaster, it should dry for at least 6 weeks prior to putting the appliance into operation**
- **when the appliance is stoked up for the first time, volatile components evaporate from paint, materials, etc.;**
- **when evaporating, the appliance should preferably be set at the highest level;**
- **the room should be well ventilated.**

➠ **Give the user manual and installation manual to the user (the installation manual should be kept near the appliance).**

11. Malfunctions

In the following table you will find an overview of malfunctions that might occur, the possible causes and the remedies.

Table 4: Diagnosis of malfunctions

Problem	Possible cause	Remedy
A. No transmission (motor will not run)	1. The (new) communication code between receiver and remote control must still be confirmed.	1. Hold down the reset button of the receiver, until you hear 2 sound signals; see fig. 30. Let go of the reset button after the second, longer sound signal and press button (small flame) or button (large flame) on the remote control within 20 sec., until you hear an extra long sound signal confirming that the new code has been set.
	2. Empty batteries.	2. Replace batteries. !Caution **Avoid short circuit between the batteries and metal parts of the appliance.**
	3. Receiver is damaged.	3. Replace the receiver and confirm the code (remedy 1).
	4. Remote control is damaged.	4. Replace the remote control and confirm the code (remedy 1).
	5. Motor cable at valve/receiver is broken.	5. Replace the motor cable.
	6. Bent pins of the 8-wire connector.	6. Make sure that the pins of the 8-wire connector are straight.
	7. If the receiver is surrounded by metal, this could decrease the transmission range.	7. Change the position of the antenna.
B. No ignition (spark)	1. Button A in position MAN.	1. Switch button A on the gas control to ON, see fig 27.
	2. Ignition cable runs over and/or alongside metal parts.	2 Do not place the ignition cable (S) over and/or along metal parts. This will weaken the spark; see fig. 27. If necessary, replace the ignition cable.
	3. Ignition pen corroded.	3. Replace the ignition pen.
	4. 60-second delay before the full restart is not yet finished.	4. Wait until the delay time has passed.
C. No sound signal	1. Receiver is damaged.	1. Replace the receiver and confirm the code (remedy 1 at A)
	2. 60-second delay before the full restart is not yet finished.	2. Wait until the delay time has passed.
D. One continuous sound signal of 5 sec. (Possible 7 short beeps prior to the 5 sec. sound signal)	1. Loose wiring between receiver and gas control.	1. Connect the wiring properly.
	2. Receiver is damaged.	2. Replace the receiver and confirm the code (remedy 1 at A)
	3. Bent pins of the 8-wire connector.	3. Make sure that the pins of the 8-wire connector are straight.
	4. Damaged magnetic valve.	4. Replace the gas control.
	5. Thermocouple 2 still too hot.	5. Wait until the thermocouple has cooled down sufficiently

Table 4: Diagnosis of malfunctions		
Problem	**Possible cause**	**Remedy**
E. No pilot burner flame	1. Air in the pilot burner pipe.	1. Flush the pipe or start the ignition process several times.
	2. Wires of thermocouple 1 have been cross-connected.	2. Check the polarity of the thermocouple wiring. Connect the thermocouple wiring properly, if necessary.
	3. No spark at the pilot burner.	3.1 Check if the ignition cable (S) is lying free from metal parts; see fig. 27. If necessary, move it away from the metal parts. 3.2 If necessary, replace the ignition cable. 3.3 If necessary, replace the ignition pen.
	4. Injector is blocked up.	4.1 Clean the injector. 4.2 If necessary, replace the injector.
F. Electronics keep sparking while the pilot burner is ignited	1. Receiver is damaged.	1. Replace the receiver and confirm the code (remedy 1 at A)
G. Pilot burner is burning, but magnetic valve closes after ca. 10 seconds or when the appliance gets hot	1. Thermocouple 1 does not function.	1.1 Measure the voltage, using a digital multimeter, set to mV range, by connecting the cables to the cable shoe. The cable shoe is located on the outside, directly next to the magnet nut at the rear of the gas control; see fig. 31. The voltage should be at least 5mV within 20 seconds. It may not be lower when the appliance is warm. If the voltage is too low: - the thermocouple should be placed better in the flame or - the thermocouple should be replaced. 1.2 Check the size of the pilot burner flame. Correct a flame that is too small. 1.3 Check the wiring of the thermocouple to the receiver. If necessary, replace the wiring.
	2. Batteries (almost) empty.	2. Replace the receiver's batteries. *!Caution* **Avoid short circuit between the batteries and metal parts of the appliance.**
H. There are short sound signals, but no sparks and no sound / clicks can be heard of the magnet opening the valve	1. Batteries (almost) empty.	1. Replace the receiver's batteries. *!Caution* **Avoid short circuit between the batteries and metal parts of the appliance.**
I. Pilot burner is burning, but there is no gas flow to the main burner	1. Button A in position MAN.	1. Turn button A on the gas control to ON; see fig 27.
	2. Appliance in the pilot flame position.	2. Increase the flame height by pressing button (large flame) on the remote control.
	3. Pre-pressure of the gas is too low.	3. Check pre-pressure. If necessary, contact gas company.
	4. Damaged magnetic valve.	4. Replace the gas control.

Table 4: Diagnosis of malfunctions		
Problem	**Possible cause**	**Remedy**
J. Main burner ignites, but goes out again after approx. 22 seconds.	1. Wiring of thermocouple 2 is loose.	1. Connect the wiring properly.
	2. Wires of thermocouple 2 have been cross-connected.	2. Connect the wiring properly.
	3. Short-circuit in the wiring of thermocouple 2.	3. Replace wiring.
	4. Broken wire in the wiring of thermocouple 2.	4. Replace wiring.
	5. Thermocouple 2 is dirty.	5. Clean the thermocouple.
	6. Thermocouple 2 is not positioned correctly in the flame (see fig. 29)	6. Position the thermocouple correctly in the flame.
	7. Thermocouple 2 is defective.	7. Check the voltage across thermocouple 2 just before the main burner goes out. If the voltage is lower than 1.8 mV, replace thermocouple 2.
	8. Receiver is defective.	8. Check the voltage across thermocouple 2 just before the main burner goes out. If the voltage is higher than 1.8 mV, replace the receiver.

Appendix 1 Parts included with the delivery

In the following table you can find the parts that are supplied with the appliance.

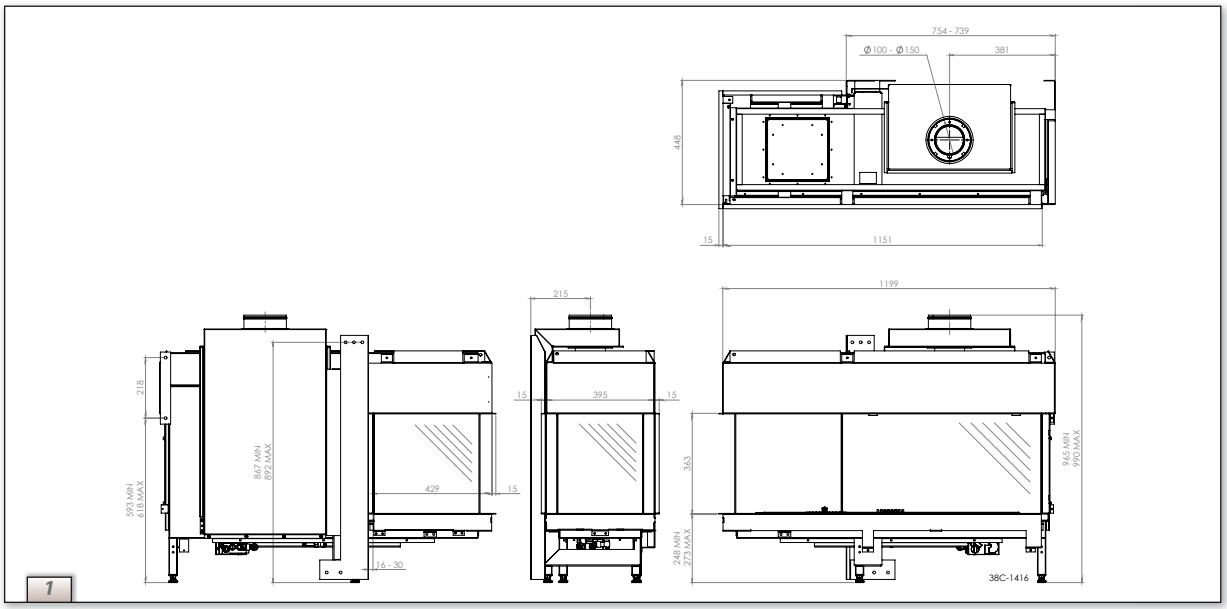
Table 5: Parts included with the delivery	
Part	**Quantity**
Wood/pebble set	1x
Control box	1x
Manual control box	1x
Installation manual	1x
User manual	1x
Decorative strip left	1x
Decorative strip right	1x
Decorative strip below	1x
Template for baffle	1x
Baffle	1x
Key bolts M8x 140x50	6x
Cover plate air inlet guide	1x
Threaded rod with fastener, hooks and eye nut	2x
Spare self-tapping screws for mounting the glass window	
Socket spanner 8 mm	1x
Remote control with receiver	1x
9V block battery	1x
Penlite battery (AA type)	4x
Pressure coupling 15 mm x G3/8"	1x

Appendix 2 Technical data

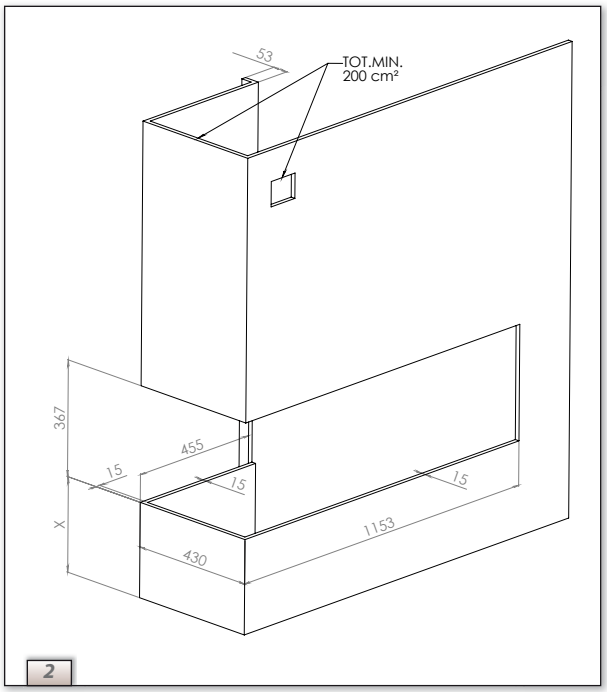
In the following table you can find the technical data of the Metro 100 XTL.

Table 6: Technical data			
Type		**C11/C31**	
Type of gas		G25	G20
Burner pressure	mbar	19	15.2
Nominal heat input (H_s)	kW	10.0	10.9
Nominal heat input (H_i)	kW	9.0	9.8
Nominal output	kW	7.5	8.3
Consumption	L/h	1100	1030
Burner injector	mm	2x Ø 1.50 1x Ø 1.45	2x Ø 1.50 1x Ø 1.45
Consumption on low output	L/h	610	576
Low setting injector	mm	Ø 1.90	Ø 1.90
Pilot burner injector	Kode	51	51
Efficiency class		2	2

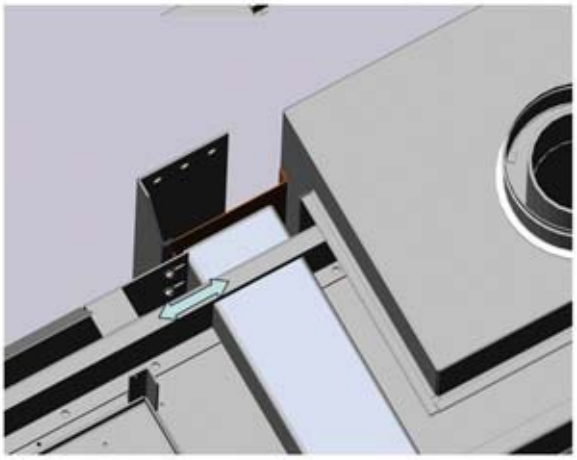
Appendix 3 Figures



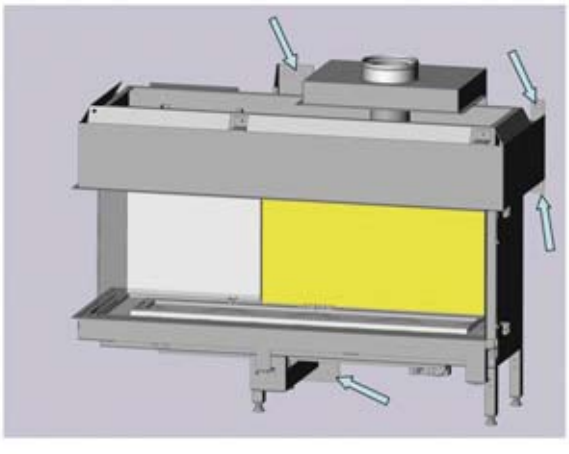
1



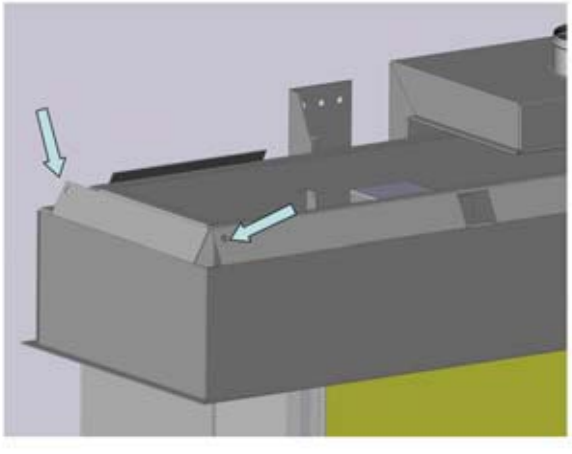
2



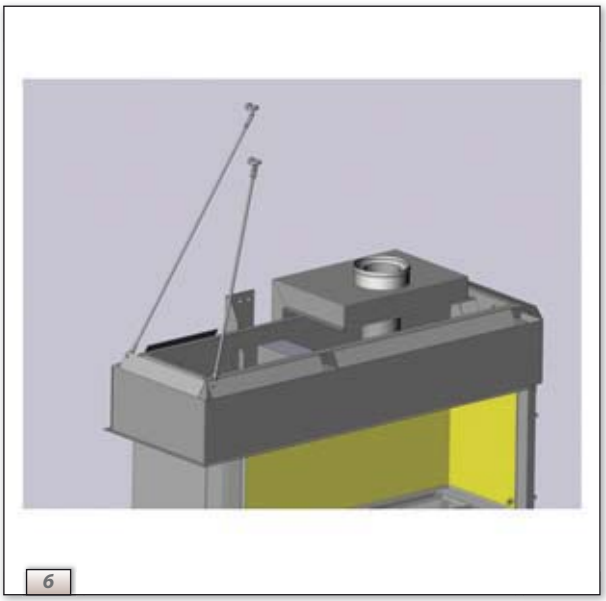
3



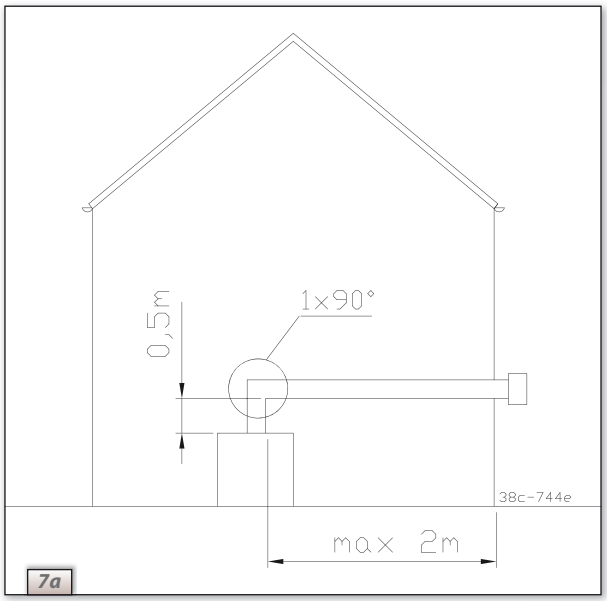
4



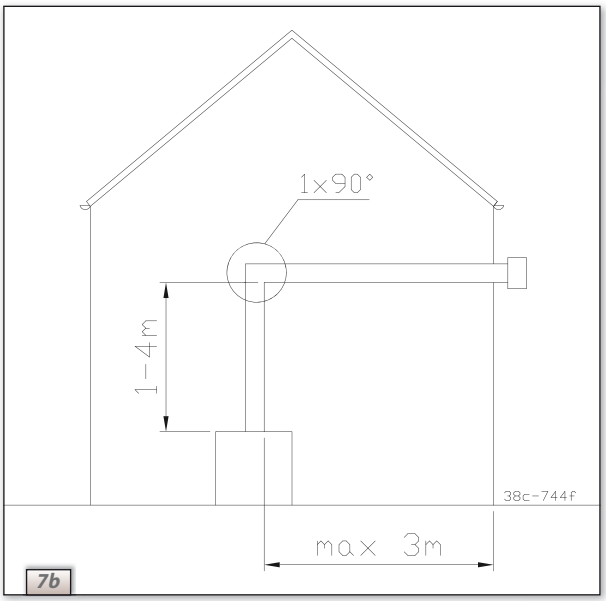
5



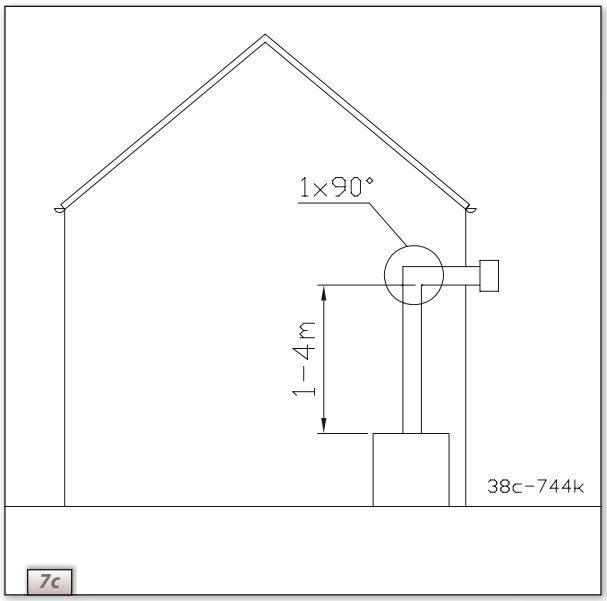
6


0,5m
1x90°
38c-744e
max 2m

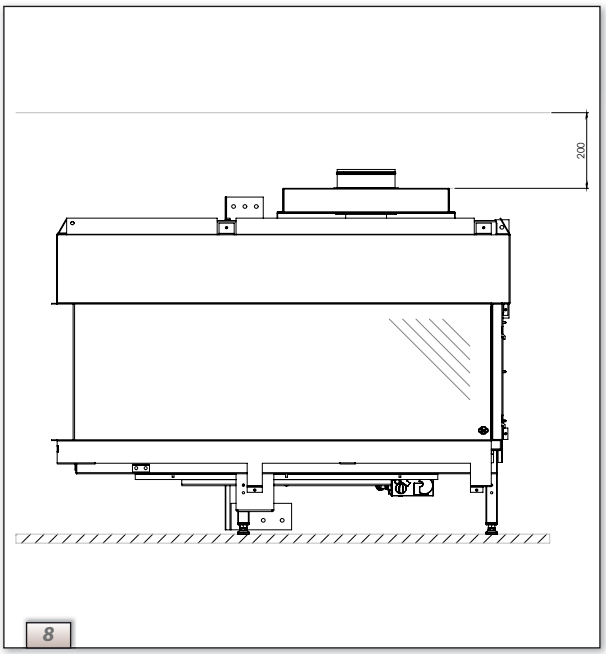
7a


1x90°
1-4m
38c-744f
max 3m

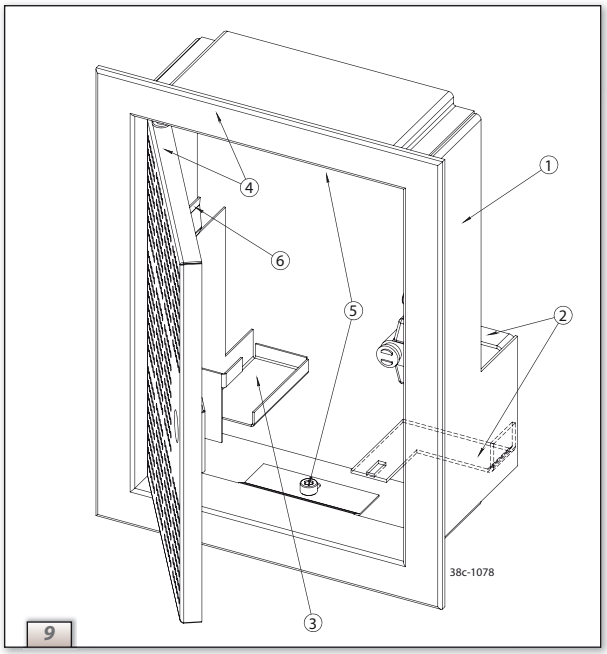
7b


1x90°
1-4m
38c-744k

7c

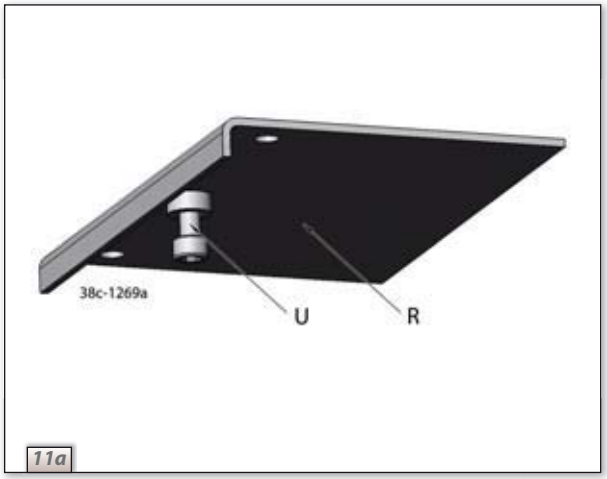

200

8

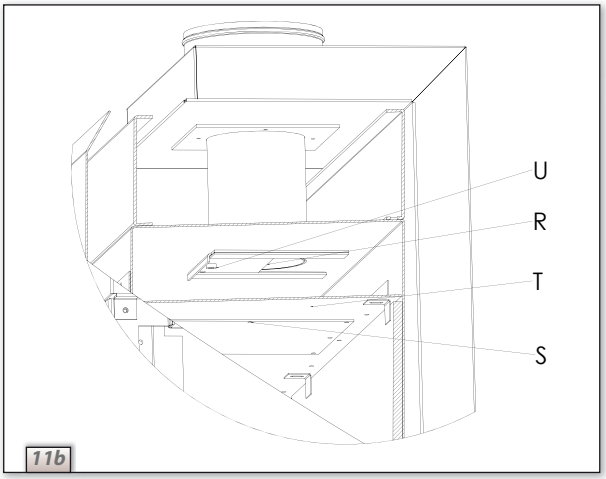


9

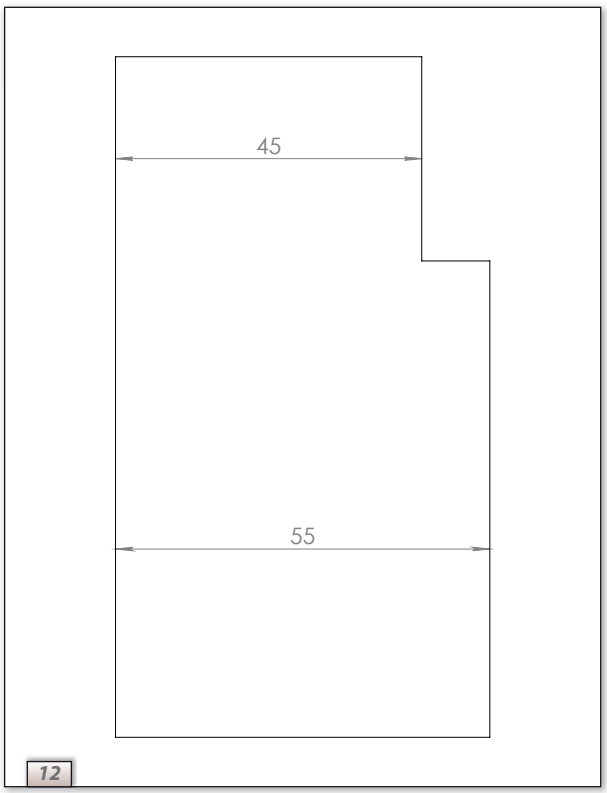
10



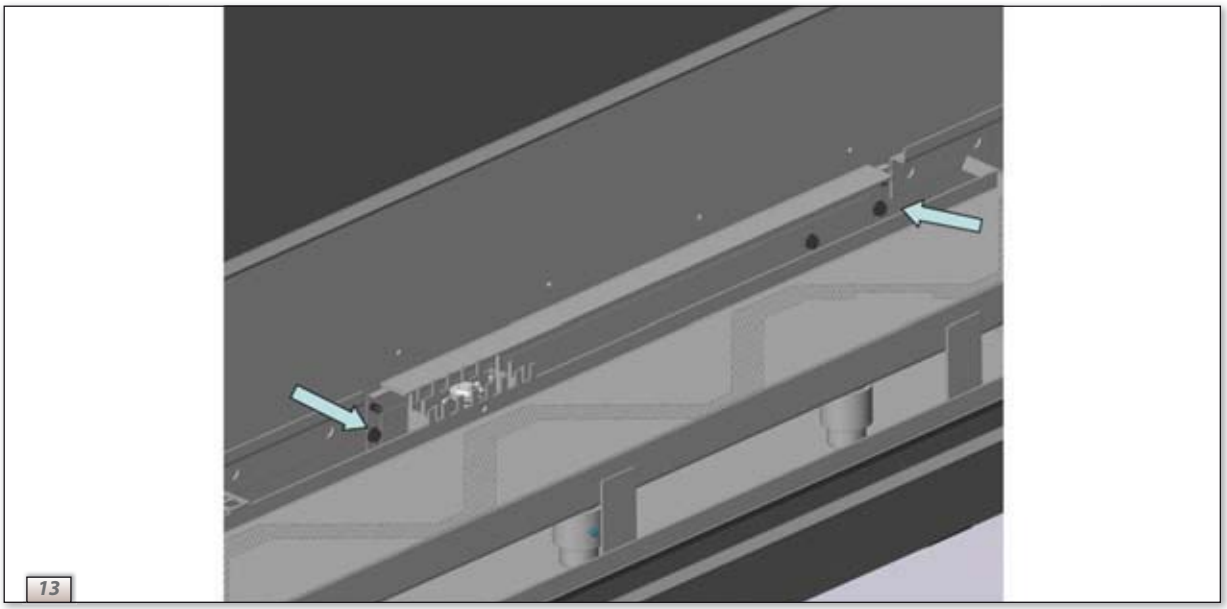
11a



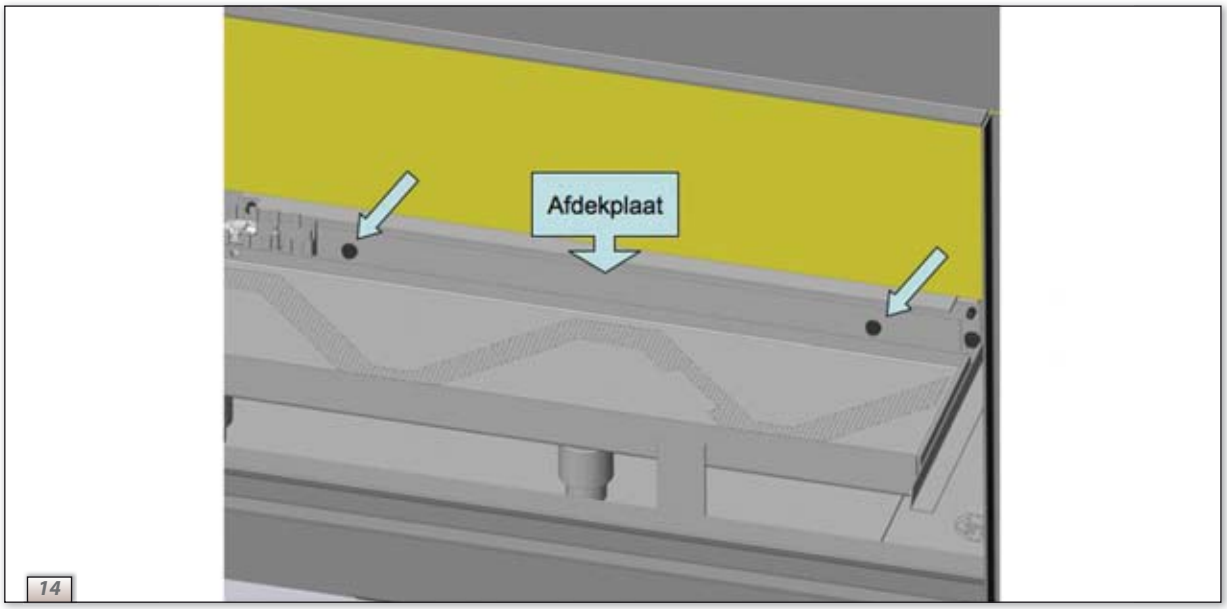
11b



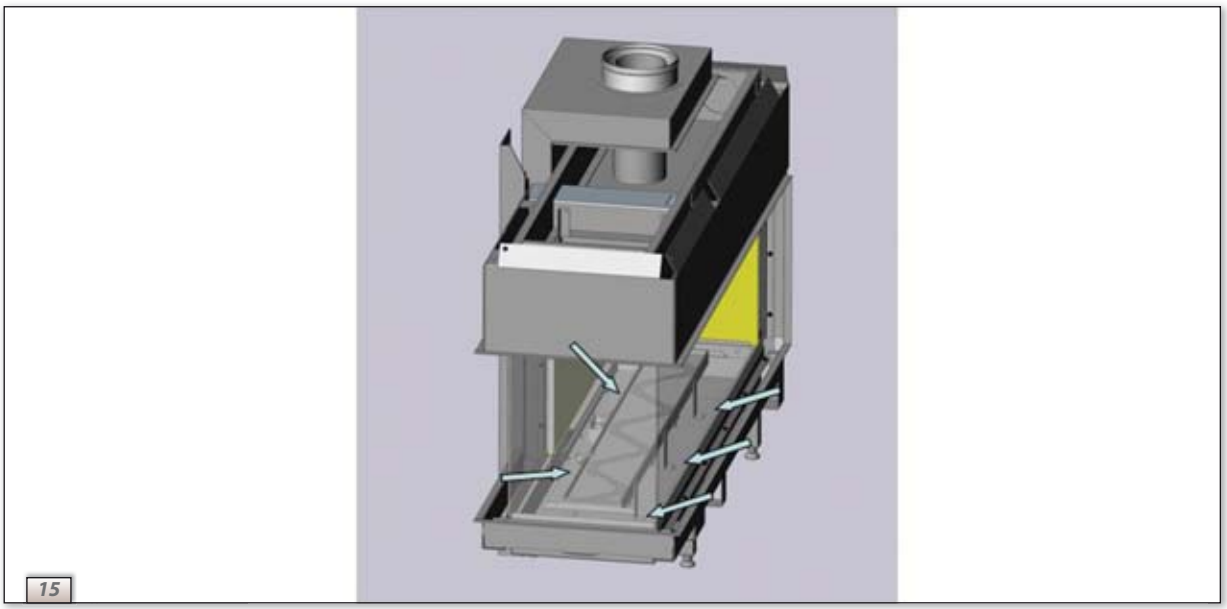
12



13



14



15


16a

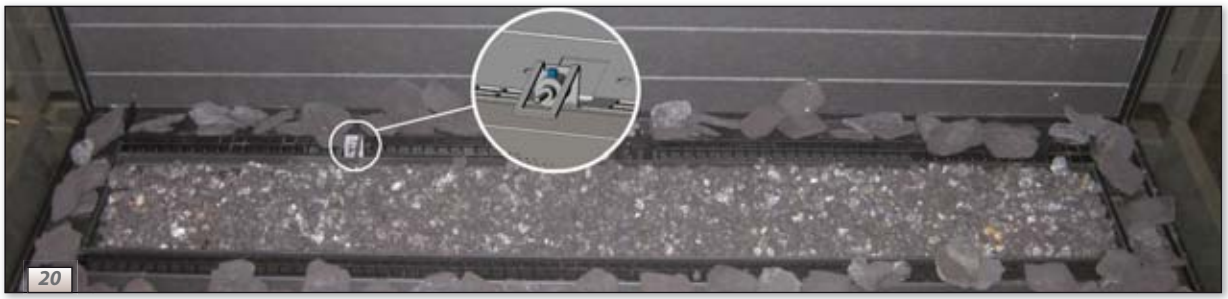

16b

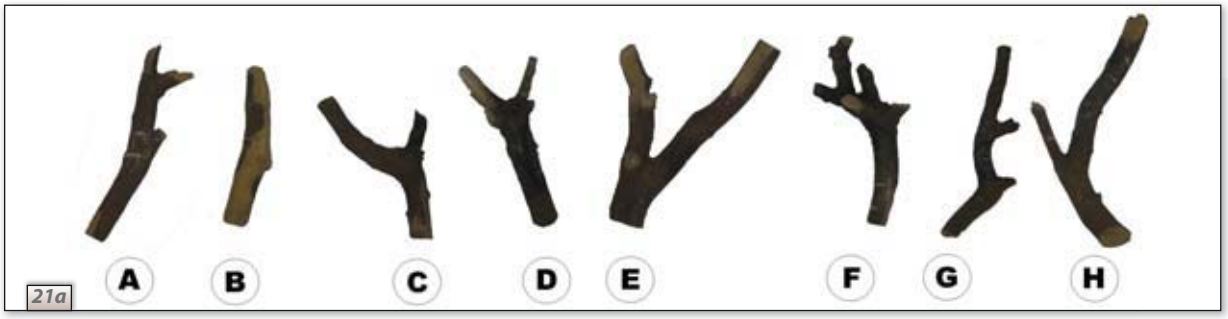

17a


17b

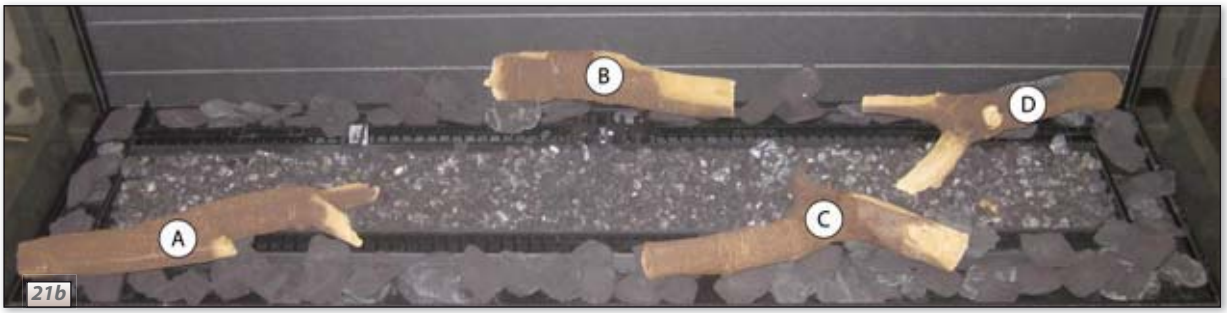

18


19

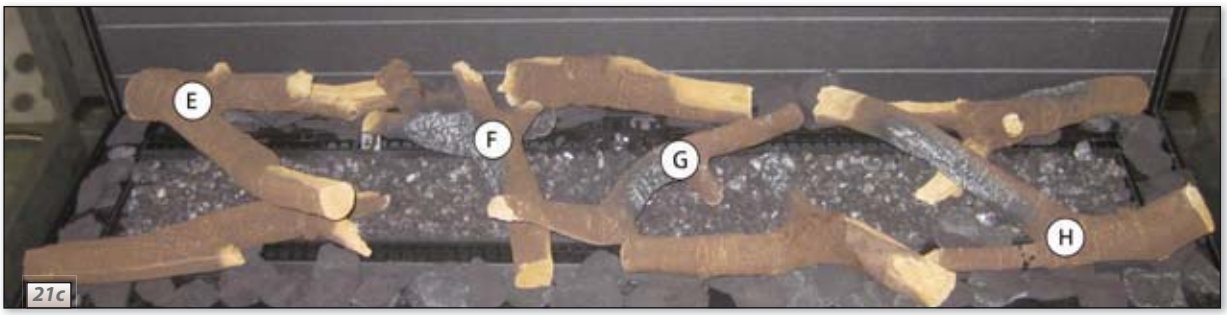

20



21a

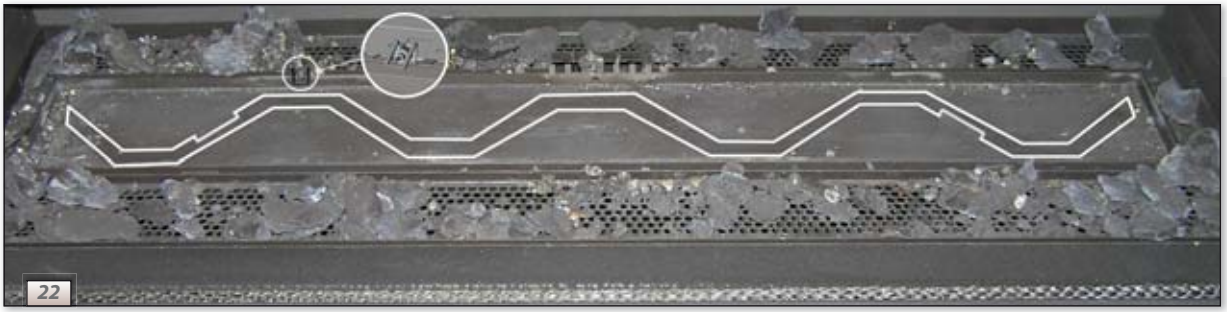


21b



21c

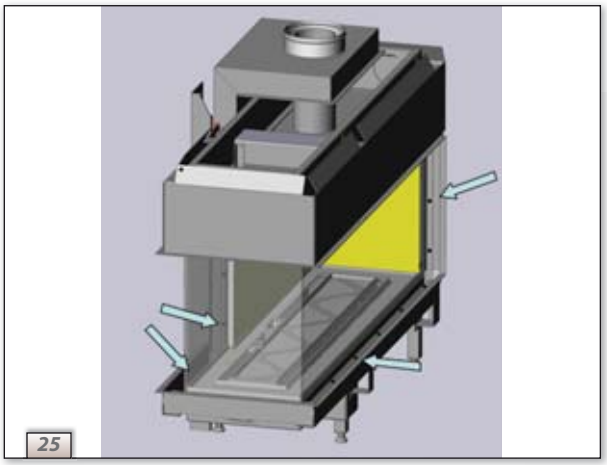

21d

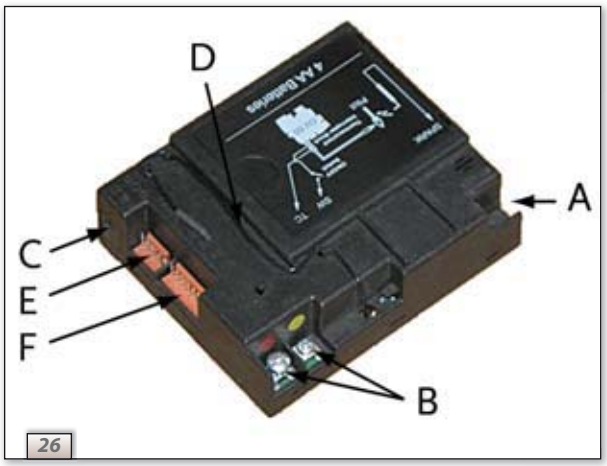

22


23a

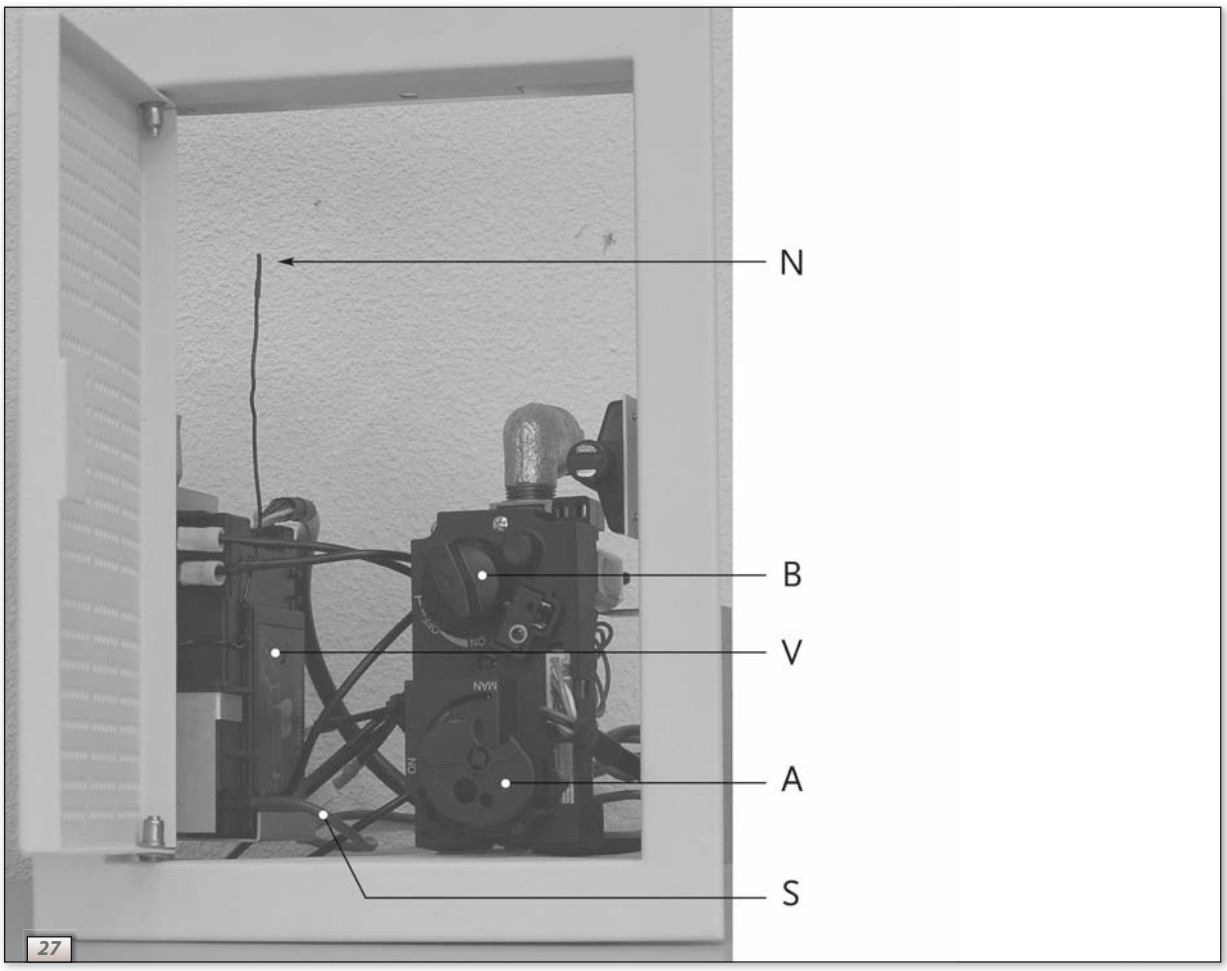

23b


24


25

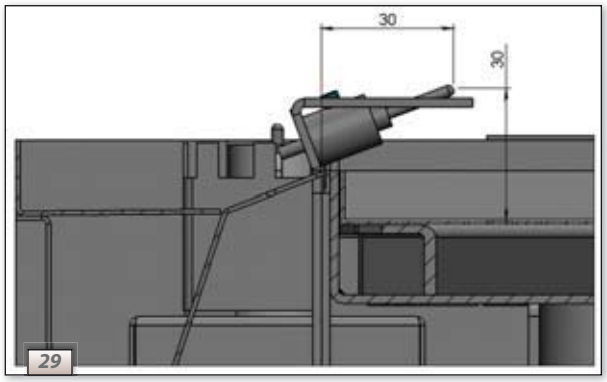


26



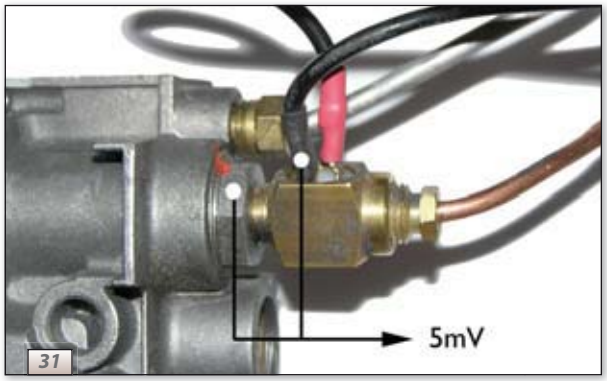
27


28



29

30



31

Notes

Notes

English

DRU Verwarming B.V.
The Netherlands
Postbus 1021, NL-6920 BA Duiven
Ratio 8, NL-6921 RW Duiven