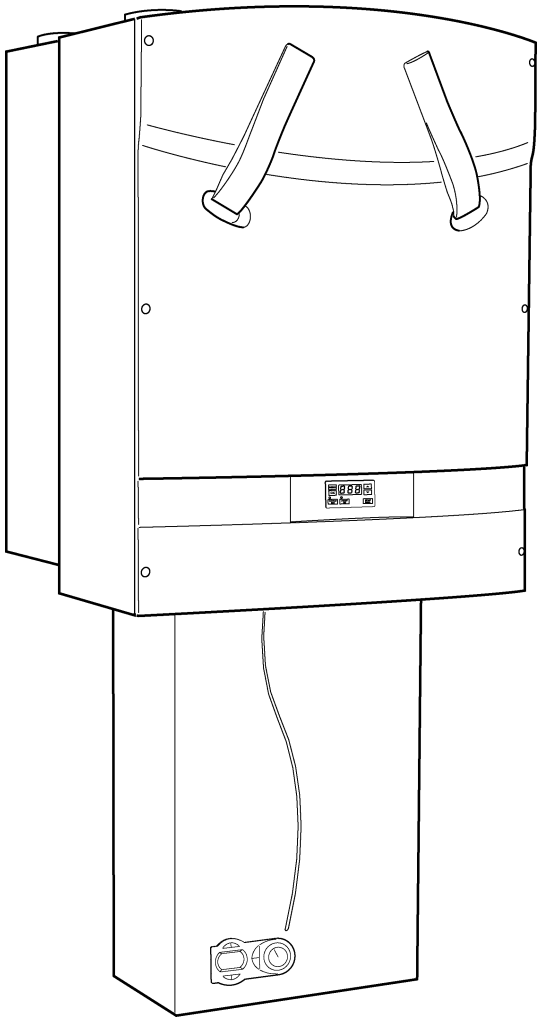
User manual

Assembly instructions

Multi-function device:

HR OPTIFOR OT-V



AGPO Ferroli

For warranty registration, see also: www.agpoferroli.nl under “warranty certificate”

AGPOFerroli
PO Box 3364, 4800 DJ Breda
Konijnenberg 24, 4825 BD Breda

Internet: www.agpoferroli.nl
E-mail: info@agpoferroli.nl

Consumer information
telephone number: 076 - 5 725 740
NB No faults can be reported to the above number. Report faults to your installer.

OpenTherm®

Dear user,

Congratulations on the purchase of your heating and ventilation appliance. In addition to high comfort, this appliance offers you low energy consumption, which is beneficial for you and the environment.

This user manual offers you various advice on how to use your appliance properly. We therefore recommend that you read and keep it carefully.

Warranty and registration
Via our website on the internet, you can easily register your device for the warranty.
See our website www.agpoferroli.nl under “warranty certificate”.

Of course you can also return the warranty card, which you will find at the end of this manual. We request that you register the warranty via the Internet within 30 days of the installation date or by returning the fully completed warranty card.

Installation
The appliance must be installed, commissioned and maintained by a recognized installer.

Maintenance
The filters of this appliance must be changed and valves cleaned every six months. In addition, major maintenance must be carried out once every 2 years (contact your installer for this).

Dear installer,

The second part of this manual is an installation manual, which also contains a fault analysis and explanation of the operation of the appliance.
The installation manual offers you a handy help when installing the appliance.

Points to consider before mounting
This chapter alerts you to important things you need to know before installation.

Assembly instruction
These instructions indicate how the appliance is installed and put into operation.

Maintenance, faults and service

Consult this chapter for maintenance and faults.

Operation and technical data

This chapter briefly explains how the appliance works.

You will also find the technical data and the electrical connection diagram here.

Liability

AGPO BV cannot be held liable for personal injury and / or material damage
was caused by non-compliance with this manual.

Data HR OPTIFOR OT-V:

Serial Number: .....

(see warranty card on page 29 of the manual)

Linked boiler

Type: ***MegaDens*** ☐ 3 ☐ 4 (SHR) ☐ 5 (SHR)

MegaLux ☐ 5 ☐ 6 ☐ a **(check correct type)**

Serial Number : . . . . L. . . . .

Always provide serial number (s). Important for warranty!

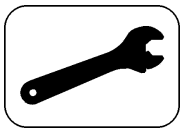
Telephone number installer or maintenance company:

We reserve the right to make changes / improvements to the product and accompanying information without prior notice. The most current version of this manual, which replaces all previous versions, can be found at www.agpoferroli.nl. Naturally, the content of the newer version of this manual can be used instead of the previously published versions.

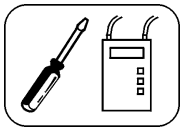
Document number: DRS 6013	version: 02	date: November 2007

User manual content

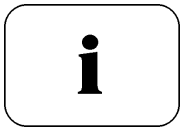
Contents of installation manual



Assembly instruction



Maintenance



Operation and technical data

User manual

1. GENERAL INFORMATION

1.1 Introduction

The HR OptiFor OT-V is an appliance that consists of two parts: a balanced ventilation unit with heat recovery and a heating appliance, see figure 1.1.
The HR OptiFor OT-V is equipped with a bypass. Chapter 11 explains the operation of the appliance.

A manual has been written for both parts of the appliance. This “manual” is for the ventilation unit of the HR OptiFor OT-V. The heating appliance has its own manual. Both devices are on one

mounting frame mounted. The installation instructions are described in 2e part of this manual. This partially replaces the installation instructions in the heating appliance manual.

The operation of the HR OptiFor OT-V is described in the user manual (H1 to H5).
Assembly, commissioning, technical data and fault analysis are included in the
Assembly instructions (H6 to H11).
This manual contains all information that contributes to a safe and optimal installation of the appliance. It is also intended as a reference book for service and maintenance work, so that these can be carried out in a responsible manner. This manual is binding for installation and operation.

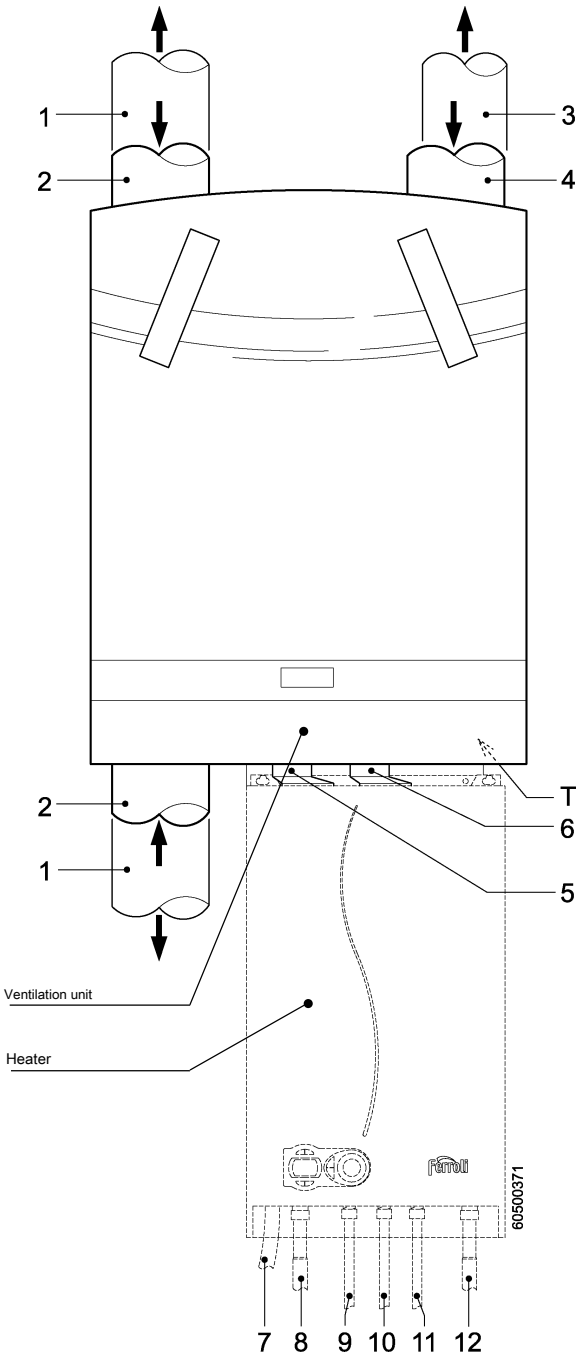
You can find the details of the supplied appliance on the type plate. The type plate of the HR OptiFor OT-V multifunctional appliance is attached to the bottom of the ventilation unit (see T in fig. 1.1)

We wish you much comfort.

Use according to purpose

The HR OptiFor OT-V is intended for extracting polluted air from a home and supplying fresh outside air to a home, hot tap water supply and heating a home. Any other use does not apply

in accordance with the destination.
The manufacturer does not accept any liability for any damage or injury resulting from this.



1 Supply house (to living room, kitchen and bedroom) Exhaust house
2 (from kitchen, hall / toilet and bathroom) Exhaust polluted air (to the
3 outside)
4 Fresh air supply (from outside)
5 Combustion air supply
6 Flue gas discharge
7-12 Consult the manual of the boiler T
Location type sticker HR OptiFor OT-V

Figure 1.1 The HR OptiFor OT-V with a boiler from the Megaline series, type MegaDens

1.2 For your safety: pay attention!

This device meets the strict European safety standards.
The CE mark indicates this.

Because natural gas (boiler) and 230V power supply are used for heating, we would like to draw your attention to a number of things:

230V electrical voltage
This device contains components that operate under a voltage of 230V. Do not remove the mantle from the appliance.

Fans
It should not be possible to touch the fans by hand, therefore ductwork must be connected to the HR OptiFor OT-V. The minimum channel length is 500mm.

Warm pipes and tubes
The pipes and radiators can reach 95 ° C. The flue gas outlet pipe can reach approx. 90 ° C during normal operation.
These also run through the ventilation part of the HR OptiFor OT-V. Make sure the
pipe connections always remain properly assembled.

Connecting heating appliance
The plug of the heating appliance must always be plugged into the socket in the bottom plate of the ventilation part and screwed into the strain relief and failure protection.

Calamity warning
If the windows and doors have to be closed in the event of an official warning for calamities (for example via a siren, radio or TV), the appliance must be switched off by pulling the perilex plug of the HR OptiFor OT-V from the wall socket.

General safety regulations

- Always observe the safety instructions in this manual and the manual of the heating appliance. Failure to follow the safety rules, warnings, notes and instructions could result in personal injury or damage to your device.

- The Perilex plug of the ventilation appliance must be able to be removed from the wall socket at all times, without the use of tools.

2. OPERATION, SETTINGS AND FAN FAULTS

Control panel overview

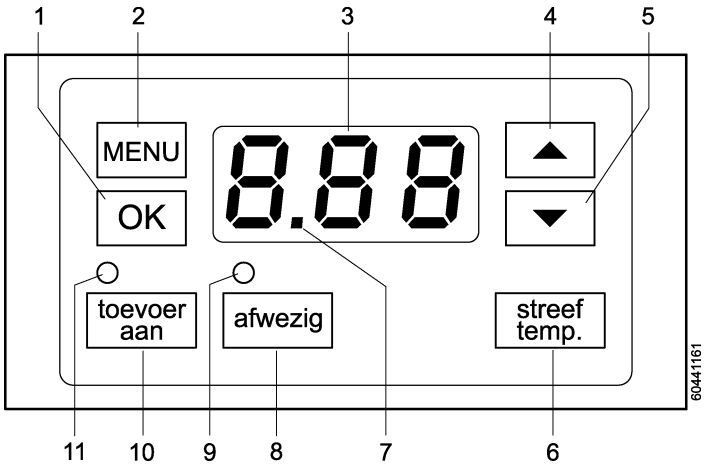


Figure 2.1: Control panel HR OptiFor OT-V.

Faults

No illuminated display:
Is the Perilex plug in the socket?

E failure:
If a fault has occurred in the appliance, this is indicated by the letter E in the display. The number after the letter E indicates which fault has occurred. Notify your installer and state the appliance type and fault number.

E80 - filter timer:
Clean or replace the filter and reset the timer with the OK button. Clean the supply and exhaust valves at the same time as cleaning / replacing the filter.

Service

The kitchen has a two-position switch or a motor-less extractor hood on which the two positions can be selected.

The following states can be shown on the appliance display:

Position 1: absence position
The unit works on the lowest adjustable ventilation position. This position cannot be selected with the switch.

- The mode is selected automatically when No hot water is used for 24 hours (with an OpenTherm connected combi boiler).
- The mode is canceled when hot water is used. The “kitchen” or “bathroom” switch is operated.

Position-1 can be switched manually using key 8 “absent”.

Position-2: normal position
The air supply and discharge of the house function at normal speed. Good air quality and normal moisture removal are assured.

Position-3: heat setting
This position is the maximum setting of the appliance and is selected using the kitchen switch.

Stand-t3
The air supply and exhaust of the house operate at the maximum setting for a predetermined time. This position is selected by means of an extra switch (usually in the bathroom). The duration is determined in menu P2 of the settings menu (see H 2.2).

PAY ATTENTION!

- Do not connect a motor extractor!
- Only remove the perilex plug from the wall socket if:
  - In case of calamities, it is recommended to close windows and doors.
  - service and maintenance work be performed.

1. **OK button**
Confirms a selected parameter or stores a value in memory. After filter cleaning, the filter message is reset.

2. **MENU button**
Provides access to the bathroom ventilation control settings menu.

3. **Display (display window)**
This shows the status of the device.

4. ▲ **test**
Increases a selected setting.

5. ▼ **test**
Decreases a selected setting.

6. **Aim temp. test**
This allows a target temperature to be set (default 21 ○ C). Increase or decrease the target temperature with the arrow keys ▲ or ▼. On the (internal) automatic bypass is controlled based on the temperature set here. The set temperature is aimed for. This makes it possible, mainly in summer, to refresh the house with outside air, during the evening and night period.

7. **Bypass LED**
LED off: bypass valve closed. LED on: bypass valve open.

8. **Absence key**
Manual control of the away mode.

9. **LED absence mode**
LED off: device is operating on automatic absence, normal or heat setting, based on tap water consumption or residents' choice.

LED on: device operates in absence mode, selected with key 8 “absent”.

10. **Feed to key**
This allows the supply fan to be switched on or off. When the supply is turned off, the bypass valve also opens.

11. **LED supply fan**
LED off: supply fan is turned off. LED on: Supply fan is on.

2.1 Switch-on delay control panel

To prevent unintentional key operation, the control panel is protected by a switch-on delay. This switch-on delay is 1.5 seconds and applies to the first key actuation. During the switch-on delay, the button must remain pressed.

———

2.2 Time-controlled heat setting

The heat setting can be switched on temporarily with an additional switch. This makes it possible, for example, to make a bathroom arrangement.

The time control is set via menu P2. Here you can set the on and off delay for the time-controlled cooking setting.

Set menu P2

To adjust the setting for the time-controlled heat setting, proceed as follows:

Step	Test	Display shows	Description
1	MENU	P 1	menu approx. 1.5 sec. Hold down until P1 appears
2	▲ (1x)	P2	menu P2 appears; *(time-controlled heat setting)*
3	OK (1x)	P21	menu P2 is opened. *the display shows:* *P21 = switch-on delay*
4	OK (1x)	0	menu P21 is opened. *the display shows:* *0 = no delay*
5	▲ or ▼	1	Increase or decrease the value to desired institution. *eg 35*
6	OK (1x)	P21	press 'OK' to complete the confirm the setting *(P21 reappears)*

Step	Test	Display shows	Description
7	▲ (1x)	P22	menu P22 appears *P22 = switch-off delay*
8	OK (1x)	30	Press “OK” *the display shows;* *the switch-off delay* *minutes*
9	▲ or ▼	35	Increase or decrease the value to desired institution. *eg 35*
10	OK (1x)	P22	Press 'OK' to confirm the setting. *it* dis *play again shows: P22*
11	MENU 2x	2	Press “MENU” twice in succession to select the to exit the setup menu. *the display will show the current ventilation mode again.*

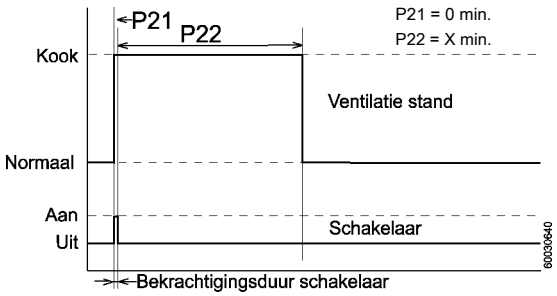
PAY ATTENTION !
The settings are only stored and used in the device when step 11 is carried out.

2.2 Operation of the time-controlled cooking setting

The operation of the time-controlled cooking setting also depends on the type of switch selected. See the blocks below for an explanation

Normally open push button switch

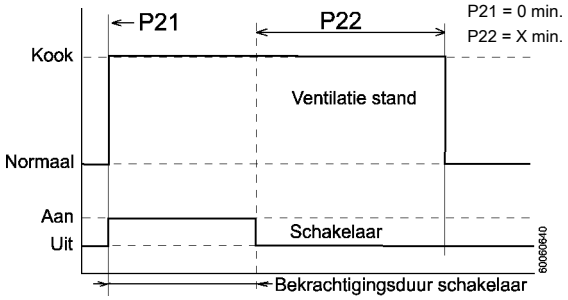
Normally open push button switch,
also called pulse switch.
These types of switches are normally open and are made only at the time of actuation. When the switch is released, the contact is broken



The switch is activated briefly (about 1 sec.). The appliance immediately switches to heat setting.
The switch-off delay (P22) starts to count down immediately. After the switch-off delay has been exceeded, the appliance will ventilate in normal mode.

On-off switch

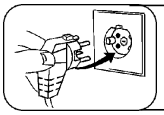
This type of switch may or may not be made, depending on the position of the switch.



The switch is made for a long time (longer than the time of P21). The appliance will immediately start ventilating on the heat setting. The moment the switch is broken, the appliance continues to re-ventilate at the heat setting during the switch-off delay (P22).

When P22 has expired, the appliance will start to ventilate in normal mode.

3. PUTTING THE APPLIANCE IN AND OUT OF OPERATION

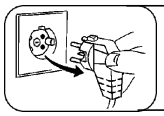


Commissioning

The HR OptiFor OT-V is switched on by opening the gas supply and placing the Perilex plug in the wall socket. The device will first perform an automatic self-test which will take approximately 1 minute. When the self-test has been successfully completed, the current ventilation setting appears on the display (eg.


). If a malfunction occurs no display message or an E-code visible on the display.

Then consult chapter 2.



Taking out of service

Take the appliance out of operation by removing the Perilex plug from the wall socket. Then close the gas tap.

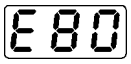
4. MAINTENANCE

4.1 General

User maintenance is limited to periodic cleaning of the filters and air supply and exhaust valves.

The following terms apply for this:
- In relation to the new-build home; clean filters.
- 2 months after moving into the house; replace filters.
- 4 months after the first filter change; clean filters by carefully suctioning it out with a vacuum cleaner.
- 6 months after filter cleaning; replace filters.

AGPO Ferroli recommends that you also clean the valves when you clean or replace the filters.


As a reminder that the filters must be cleaned, the code 'E80' appears in the display twice a year.

- The filters can be cleaned the first time.
- The filters must be replaced the second time.

The message 'E80' is reset by pressing the 'OK' button min. 1.5 sec. holding down.

The installation cannot be used without filters.

4.2 Cleaning filters

- Pull the filter holders out of the appliance (see fig. 4.1).
- Clean the filters carefully with a vacuum cleaner.
- Slide the filter holders back into the appliance. When replacing the filters, make sure that the left and right filters are not interchanged!

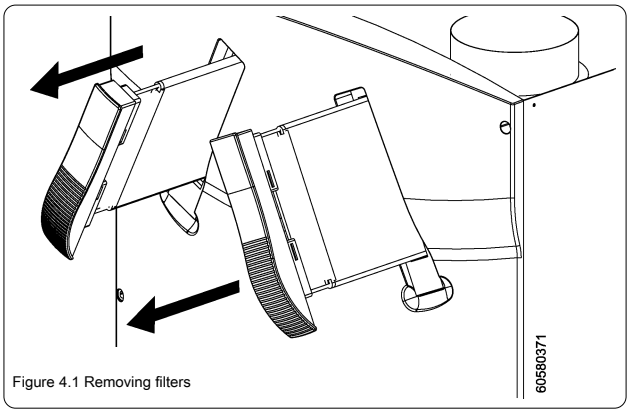


Figure 4.1 Removing filters

4.3 Cleaning valves

- Remove a valve from the wall or ceiling with a twisting motion. (The valves shown are from YOU StorkAir.)
- Clean it in a solution of soap and warm water. Rinse well and dry.
- Replace the valve.
- Repeat this procedure for all valves.

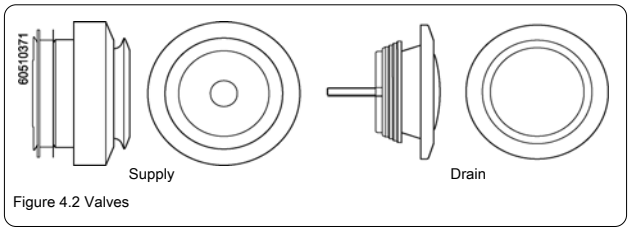


Figure 4.2 Valves

Do not swap the valves or change the set positions.

4.4 Motorless extractor hood

Only connect a motorless extractor hood to the HR OptiFor OT-V. An example is the pictured WK 600-2 from JE StorkAir. For service and maintenance work on the extractor hood, refer to the extractor hood manual.

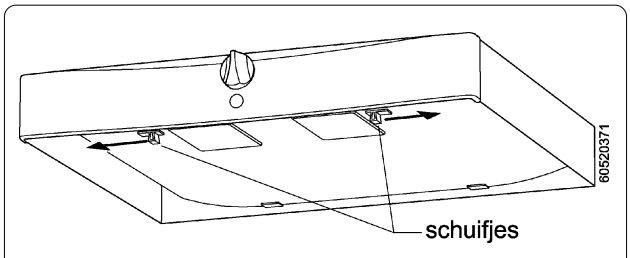
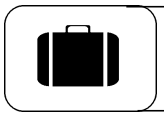


Figure 4.3 Motorless extractor hood WK 600-2

5. USER ADVICE

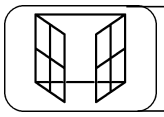
This chapter contains some recommendations for use for the proper functioning of your HR OptiFor OT-V, especially the use of the ventilation system.

Also refer to the relevant chapter of the boiler manual.



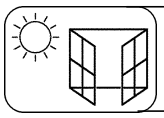
On vacation or a weekend away? Do not pull the perilex plug out of the socket

The HR OptiFor OT-V is equipped with an automatic absence control (Display mode [1]).
This control comes into effect when no tap water from the combi boiler has been used for 24 hours. As soon as tap water is used, the appliance returns to normal mode ([2]). In the away mode the fans run on low energy consumption, while the house is sufficiently ventilated. This guarantees the moisture balance in your home and prevents unpleasant smells. In addition, your boiler remains switched on and thus your installation is protected against freezing in the winter period.



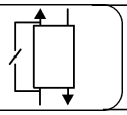
Windows open

A house in which an HR OptiFor OT-V has been installed is ventilated 24 hours a day. Airing the house through open windows is still possible. However, it is recommended to limit the airing to half an hour a day. Longer airing costs more energy for heating your home and is not necessary for the "freshness" of the home.



Free ventilation

In the summer period, you can open the windows for more than half an hour a day for continuous ventilation. In this situation, switch off the supply fan by pressing the button [toevoer aan] (see also chapter 2).
This reduces energy consumption for ventilation. However, the extract fan continues to function so that “dirty” air is extracted. NB. This position is automatically ended when the boiler for heating is switched on.



Target temperature (bypass)

The HR OptiFor OT-V is equipped with an automatic bypass function. With this bypass it is possible to ventilate your home with fresh outside air. This refreshment will mainly take place in the evening and night period, if the temperatures (outside and inside) allow this.

The operation of the bypass is set by pressing the key [streef temp.] (see chapter 2).
The value to be set here is the target temperature. The operation of the bypass is described in Chapter 11 “Operation and technical data”. Under normal circumstances, the bypass will open when the temperature in the house exceeds the set temperature and the outside temperature is below it. There is talk of refreshment of the house. It is emphatically stated that there is no cooling.

6. POINTS OF ATTENTION BEFORE ASSEMBLY

6.1 Regulations

Before installing the HR OptiFor OT-V, the following regulations must be taken into account

a. The building code referring to the following standards:

b.NEN 1078: Provision for gas with a maximum operating pressure of 500 mbar - Performance requirements - New construction, with accompanying code of practice (NPR 3378);

c. Existing gas installations directive, drawn up by EnergieNed;

d. EN 3028: safety requirements for central heating installations;

e.NEN 1010: safety provisions for low voltage installations;

f. NEN 1006: General regulations for drinking water installations AVWI with accompanying worksheets;

g. EN 1087: the standard for ventilation in residential buildings with accompanying explanation (NPR 1088);

h.NEN 2757: the standard for the supply of combustion gases and the discharge of flue gases;

i. NEN 3215: the standard for indoor sewerage in homes and residential buildings;

j. Fire regulations.

k. ISSO 62: quality requirements for balanced ventilation in homes.

l. Density requirements as set within Gastec QA, Attn. overpressure discharge systems, for the applied discharge material.

m. Publication GIW / ISSO 2007, Installation requirements for new-build single-family houses and apartments, if applicable.

n. Flue gas / ventilation air outlet must be designed as a flue gas outlet for a condensing central heating appliance. Materials used eg thick-walled aluminum, stainless steel or plastic.

- For all regulations, additions to standards or regulations or later regulations apply at the time of installation.

- The installation of the appliance may only be done by authorized persons. Recognition can be issued by energy companies, electricity and water distribution organizations.

- It is expressly stated that this technical installation manual is to be regarded as a supplement to the above instructions and that these instructions take precedence over the information in this manual.

6.2 Scope of supply

- Ventilation part HR OptiFor OT-V.
- 2 sealing caps ø150mm.
- Power cord with molded perilex plug, 1.5 m long.
- Mounting panel HR OptiFor OT-V.
- Condensate coupling set HR OptiFor OT-V.
- Manual HR OptiFor OT-V.
- Air supply and extract filter, quality EU3.
- 2 adapter sockets ø60 to ø80 for connection of heating appliance to the ventilation part.
- Built-in 230V socket with protective earth, strain relief and failure protection for connecting the heating appliance to the ventilation section.
- Connection for OpenTherm room thermostat (plug connector) and boiler (cable 1.4 meters).
- Connection for an extra switch (terminal block plug). Switch for time-controlled heat setting.
- For the scope of delivery of the boiler, see the manual of the boiler.

6.3 Appliance accessories (not included)

Valves;

Supply STH-1-125 1920120
Supply STH-1-125A (Clean Sector) 1920119
Disposal STB-1-125 1920100
Disposal STB-2-125 1920095
Drain hood (individual connection ø130) 2410015
Air supply wall grille (black) 1930045
Horizontal installation connection piece 2410080
Combination hood (Please contact AGPO Ferroli)

Required parts for a ventilation system:

- It is strongly advised to use a sound-insulating hose on the home supply and the home discharge (prescribed by ISSO 62). There is good experience with the Rodaflex Isophon II. A product with equivalent acoustic performance from another supplier can also be used.

- Two-position switch, for switching the ventilation positions.

- Single-pole switch (pulse or on / off), for switching the time-controlled cooking setting.

- Socket with perilex connection (within 1 meter of the appliance).

See also the heating appliance manual for the requirements for the entire installation.

6.4 Setup with collective supply and discharge channels

If, in the stacked construction, the air supply and exhaust ducts of the AGPO Ferroli HR OptiFor OT-V are connected to a collective duct, the dimensions of table 6.1 can be used for the duct diameter. If the circumstances permit, deviating duct diameters can be chosen. Please contact AGPO Ferroli for this.

Number of HR OptiFor devices	Discharge diameter in mm.	Supply diameter in mm.
1	130	150
2	200	200
3	250	250
4	300	300
5	350	355
6	400	400
7	450	450
8	500	500
9	500	500
10	550	560
11	600	630
12	600	630
13	650	710
14	650	710
15	700	710
16	700	710
17	750	800
18	750	800
19	800	800
20	800	800

Table 6.1: Collective channel diameters in relation to the number of connected number of devices

6.5 Take into account

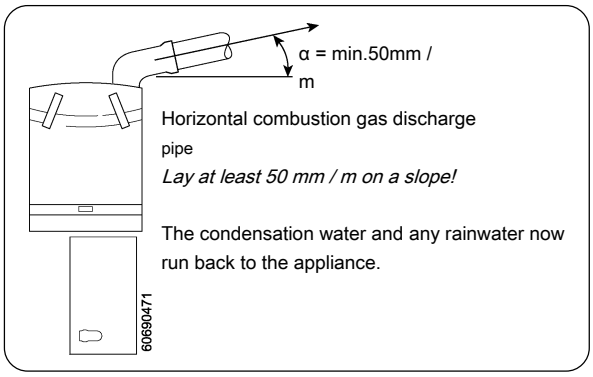
The following applies to all set-up situations:

- **Resistance**
  The appliance capacity is limited to 275 m3 / h at 150 Pa duct resistance.
  At more than 150 Pa, less than 275 m3 / h can be ventilated. Refer to chapter
  11.6 for fan capacity.

• Condensation or rainwater in the ventilation air outlet.

Because moisture may be present in the ventilation air (as a result of condensation or rain from the exhaust hood), the ventilation air discharge pipe must always be installed in a draining way towards the HR OptiFor OT-V. Always use a minimal pipe slope for this

of 50mm / m. The HR OptiFor OT-V transports this water to the domestic sewerage system.



• Limitation of load on the heating side.

The heating side load must in all cases be limited to 20.7 kW lower value (= 23 kW upper value). For this, set installer parameter 11 of the central heating appliance to;

MegaDens 3	P11 = max. 94
MegaDens 4, 4 SHR	P11 = max. 77
MegaDens 5.5 SHR	P11 = max. 58
MegaLux 5, 6, A	P11 = max. 58

To make this setting, consult the manual of the boiler

• Material flue gas / ventilation air outlet

The flue gas / ventilation air discharge channel must be designed as a flue gas discharge channel for a condensing central heating appliance. Only use materials intended for this purpose, such as thick-walled aluminum, stainless steel or plastic (PPs).

• Extra condensate separator in the flue gas discharge system

When using a plastic or stainless steel flue gas discharge system, an additional condensate separator must be placed directly on the appliance. It is recommended to use the same material as the flue gas discharge system.

• Condensation on ventilation air supply and discharge pipes

Because the temperature of the ventilation air pipes can get very low, these pipes can condense on the outside. Therefore insulate the ventilation air supply and the ventilation air outlet with a vapor-proof insulation material.

• Regulations for ventilation air (flue gas) exhaust system

Take into account the local requirements of, for example, fire brigade, nuisance law and gas company.

• Insulated roof terminal

Use insulated roof penetrations. This prevents unwanted condensation in the installation room and heat loss.

• Frost-free installation room

The installation room must be frost-free and well-maintained

ventilated.

• Possible icicle formation

If icicle formation can occur at the drains, do not situate the outlet in places where people can go or where damage can be caused by falling icicles.

• Sound production of a working appliance.

The unit produces a certain minimum amount of noise. Take this into account during installation and assembly by:

1) the appliance on a wall with a mass of 200 kg / m^3 to hang up.

2) not to place the appliance in a free set-up, but in its own set-up room.
3) the application of acoustic dampers (mandatory from ISSO 62) to the home supply and home discharge. There is good experience with the Isophon II hose from Rodaflex. Another brand of silencer with equivalent acoustic performance can also be used.

• Hanging the appliance

The appliance is designed as a hanging appliance. The wall against which the HR OptiFor OT-V is mounted must be flat and may not exceed 1 ° out of alignment. The wall should be of a stony

construction material with a minimum mass of 200 kg / m^2.

7. ASSEMBLY INSTRUCTION

This chapter provides a step-by-step explanation of how to mount and connect the HR OptiFor OT-V. For more detailed information, please refer to the other chapters or to the manual of the heating appliance.

Damage to the device
Report any damage to the appliance immediately to the supplier.

Points of attention for mounting
First read the previous chapter and the relevant chapters of the boiler manual.

Initial commissioning of the appliance

The next chapter explains the initial commissioning. Pay attention! Read this chapter carefully before commissioning the installation.

7.1 For your safety: pay attention!

This device meets the strict European safety standards.
The CE mark indicates this.
Because natural gas (boiler) and 230V power supply are used for heating, we would like to draw your attention to a number of things:

230V electrical voltage
This device contains components that operate under a voltage of 230V. Do not remove the mantle from the appliance.

Fans
It should not be possible to touch the fans by hand, therefore ductwork must be connected to the HR OptiFor OT-V. The minimum channel length is 500mm.

Warm pipes and tubes
The pipes and radiators can reach 95 ° C. The flue gas outlet pipe can reach approx. 90 ° C during normal operation.
These also run through the ventilation part of the HR OptiFor OT-V. Make sure the pipe connections always remain properly assembled.

Connecting heating appliance
The plug of the heating appliance must always be connected to the socket in the bottom plate of the ventilation section and screwed into the strain relief.

Calamity warning
If the windows and doors have to be closed in the event of an official warning for calamities (for example via a siren, radio or TV), the appliance must be switched off by pulling the HR OptiFor OT-V plug from the wall socket.

7.2 Hanging the appliance

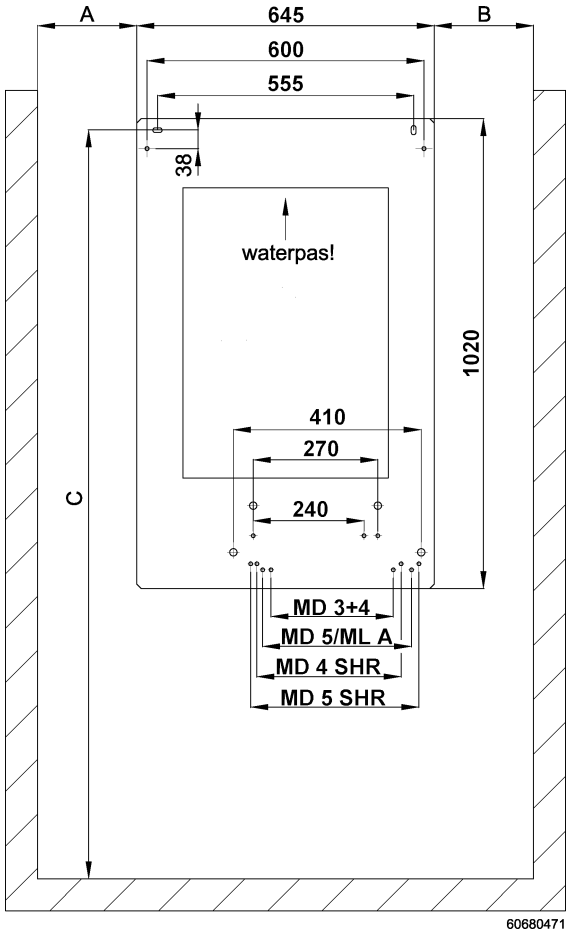
Mounting panel

In connection with the coupling between the ventilation and heating appliance, the HR OptiFor OT-V must be installed on the mounting panel supplied.

- Always mount the mounting panel to the wall first.
- Then attach the ventilation and heating appliance to the mounting panel.

Note: A prefab frame may be supplied with the heater for preparation of the pipes to be connected. This Pre-Fab frame can also be used on the mounting panel.

Figure 7.2 shows the mounting panel with installation dimensions and boiler options for both a vertical and a horizontal set-up.



Mount the frame horizontally level!

Measure:	a		B.		C.	
	advice	min.	advice	min.	advice	min. 160
Vertical edit		50	160	50	2165	1965
Horizontal edit	160	50	780 *	670 *	1420	1220

* When using a MegaDens 5SHR boiler

Figure 7.1 Mounting panel with placement for boiler hanging strip and installation dimensions

7.3 Boiler

Depending on the chosen boiler and the appliance setup, the air supply and flue gas outlet of the appliance must be connected as follows:

Vertical arrangement

In a vertical arrangement, the boiler is mounted under the ventilation unit. The boiler is connected to the 2 pipes (ø60), which protrude at the bottom of the ventilation unit (see figure 7.2). Two types of reducers to ø80 are supplied with the ventilation unit.

- Type A (fig. 7.2) for connecting a Mega-Dens or a MegaLux heating appliance.
- Type B (fig. 7.2) for connecting an Econpact heating appliance.

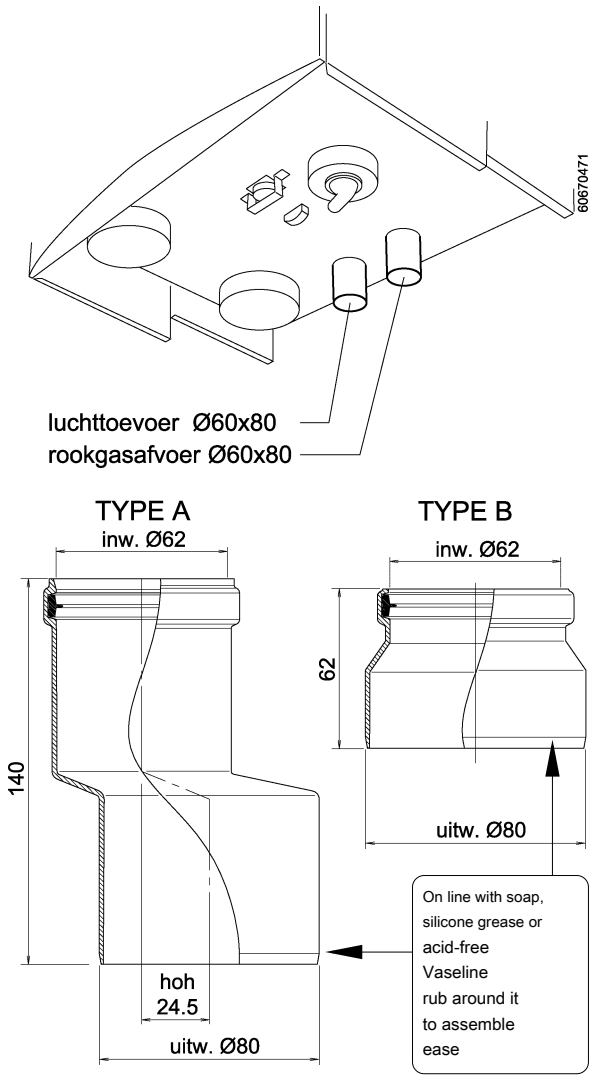


Figure 7.2 Reducers for vertical installation

Horizontal arrangement

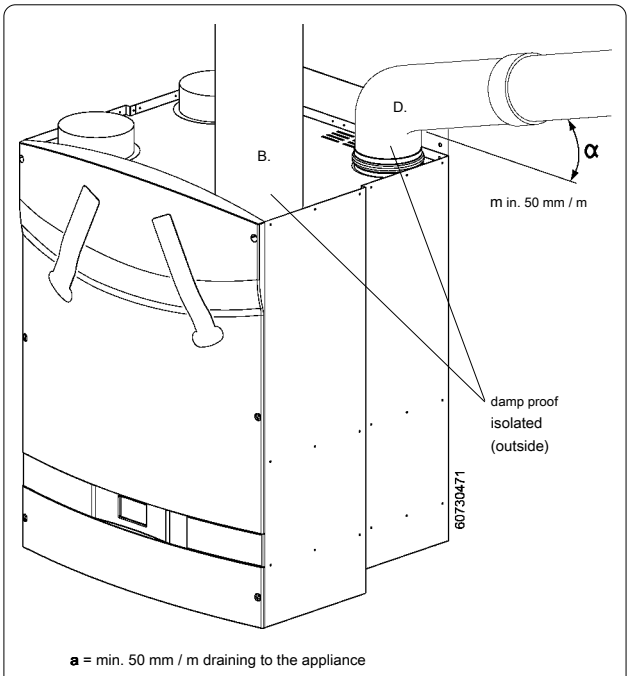
With a horizontal set-up, the boiler is mounted next to the ventilation unit and connected with a horizontal connection piece. Place the connection piece as indicated in figure 7.5.

The 2 pipes (ø60) at the bottom of the ventilation appliance must be closed with caps ø60 (part of the delivery).

7.4 Connecting air ducts

The connecting air ducts, minimum ø150mm (ø130mm for the outlet), must be installed with as little air resistance as possible and free from leakage. Do not use flexible channels. It is recommended to provide the ventilation system with a motorless extractor hood and supply and exhaust valves of the make JE StorkAir.

The air ducts, outside air supply (B) and ventilation air / flue gas outlet (D) must be insulated vapor-tight between the roof or wall outlet and the HR OptiFor OT-V (see fig. 7.3). This is to prevent condensation on the outside of the channel. The discharge channel (D) must be designed as a flue gas discharge channel for a condensing boiler. The exhaust duct (D) must be installed draining towards the ventilation appliance.



a = min. 50 mm / m draining to the appliance

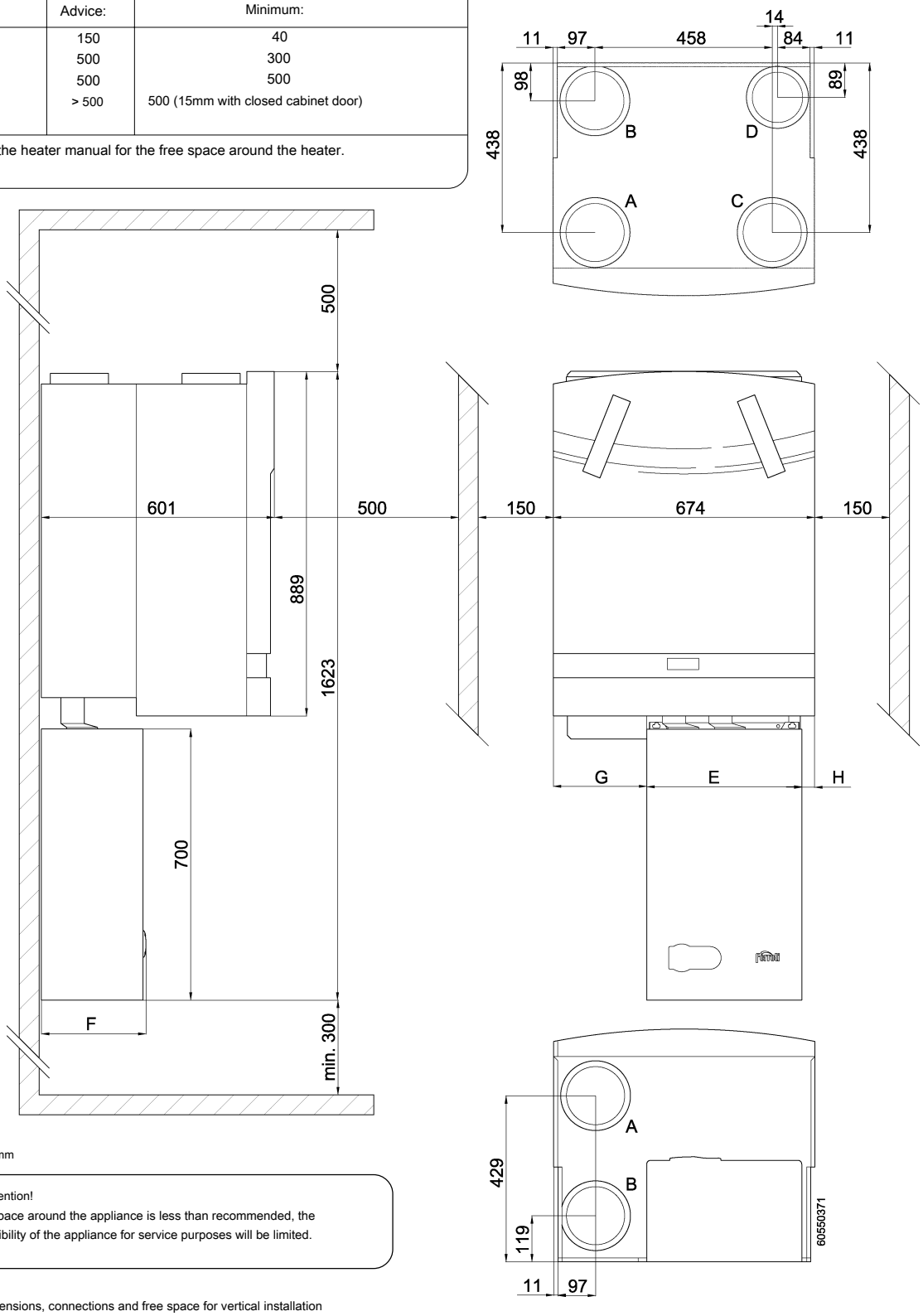
Figure 7.3 Implementation of the outside air connections

7.5 Condensation discharge

Condensation from the ventilation section is discharged through the siphon of the heating appliance. The connection between the ventilation part and the siphon is made using the supplied set “Condensation discharge coupling HR OptiFor OT-V”. See appendix I for the installation instructions for the condensation discharge coupling set.

7.6 Dimensions, connections and free space for vertical installation

Required free space around the HR OptiFor OTV	Advice:	Minimum:
• Sides	150	40
• Bottom	500	300
• Top	500	500
• Front side	> 500	500 (15mm with closed cabinet door)
• Refer to the heater manual for the free space around the heater.		



All dimensions in mm

Pay attention!
If the space around the appliance is less than recommended, the accessibility of the appliance for service purposes will be limited.

Figure 7.4 Dimensions, connections and free space for vertical installation

A = Return air house B = Supply (ø 150 mm) air house C = Outdoor air supply (ø 150 mm) (ø 150 mm) D = Ventilation air and flue gas outlet (ø 130 mm) E = Width of	MegaDens type:				MegaLux type:	
	3 and 4	5	4SHR	5SHR	5	a
heating appliance	400	450	450	500	450	450
F = Depth of heater	270	270	320	320	280	280
G = Distance left side HR OptiFor - heating appliance H = Distance heating	241	228	216	200	224	224
appliance - right side HR OptiFor H = Distance right side heating appliance	33	4	- - -	- - -	0	0
- HR OptiFor (Heater protrudes outside the HR OptiFor)			8	26		

7.7 Dimensions, connections and free space when installed horizontally

Required free space around the HR OptiFor OT-V	Advice:	Minimum:
• Sides	150	40
• Bottom	704	500
• Top	500	500
• Front side	> 500	500 (15mm with a closed cabinet door)
• Refer to the heater manual for the free space around the heater.		

Pay attention!

- If the space around the appliance is less than the advice, the accessibility of the appliance for service purposes will be limited.
- No mounting panel required, but allowed. Drawn coupling
- piece is not part of the appliance. For the item number of this connector, see Chapter 6.3.
- Signed 90 ° segment bend is not part of the delivery.

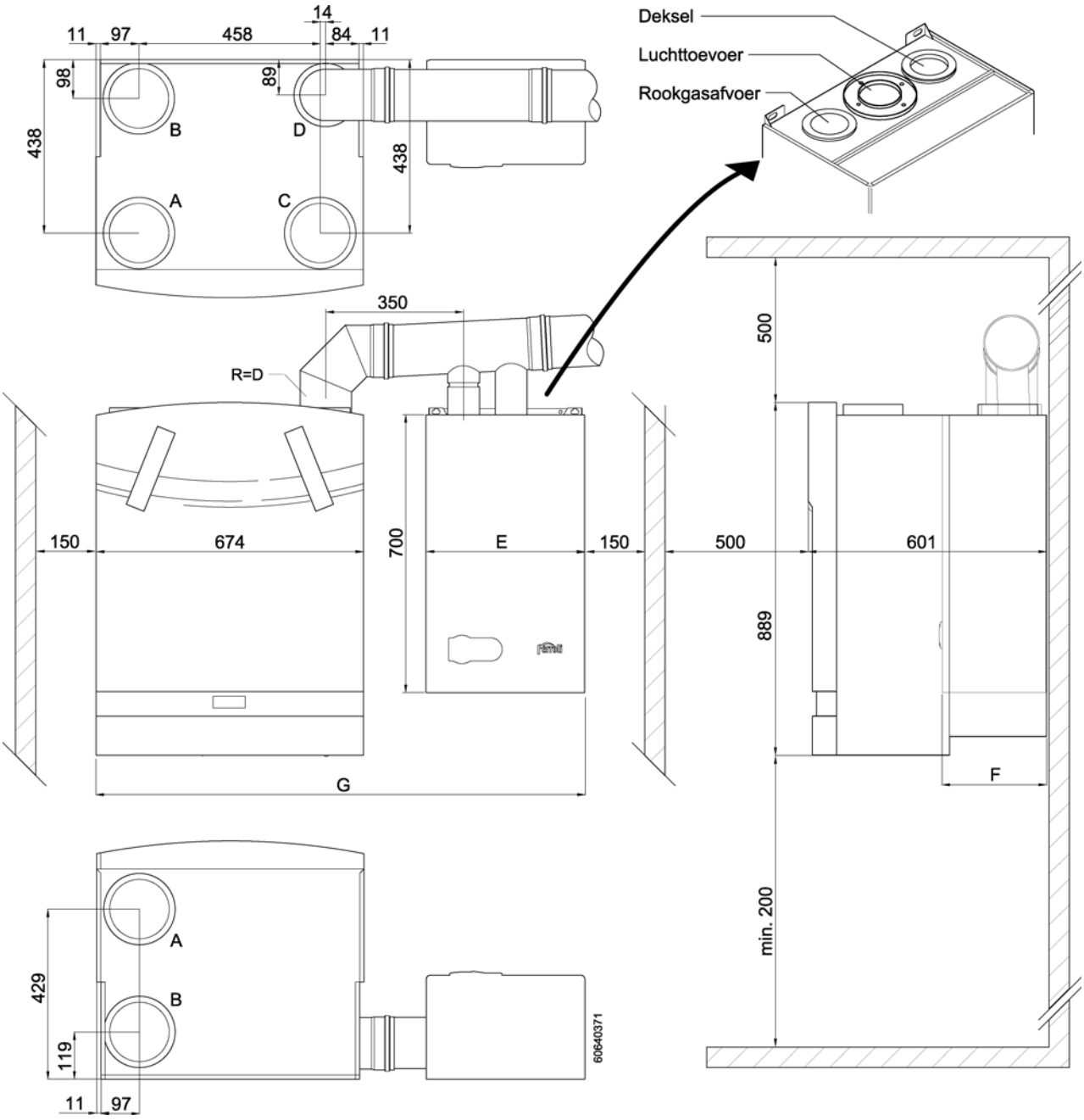


Figure 7.5 Dimensions, connections and free space when installed horizontally

All dimensions in mm

A = Return air house B = Supply air house C = Outdoor air supply D = Ventilation air and flue gas outlet (ø 130 mm) E = Width of	(ø 150 mm) (ø 150 mm) (ø 150 mm)	MegaDens type:				MegaLux type:	
		3 and 4	5	4SHR	5SHR	5	a
heating appliance	400	450	450	500	450	450
F = Depth of heating appliance. G =	270	270	320	320	280	280
Installation width	1236	1271	1243	1293	1267	1267

7.8 Electrical connections

7.8.1 Wiring Perilex wall socket

The normal and cooking mode of the HR OptiFor OT-V are selected by means of potential-free switches in the kitchen.

The switch must be fitted between L1 and L3 of the Perilex wall socket.

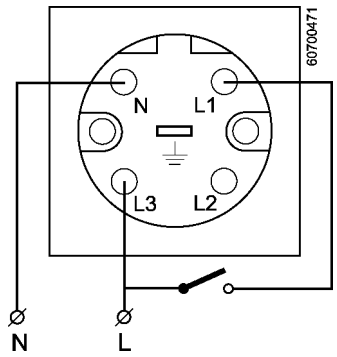


Figure 7.6 Perilex wall socket

Pay attention! Not suitable for connection to the three-phase mains (400V).

The switch can be installed separately or be part of a motorless extractor hood such as the WK600-2 from JE StorkAir (see fig. 7.7).

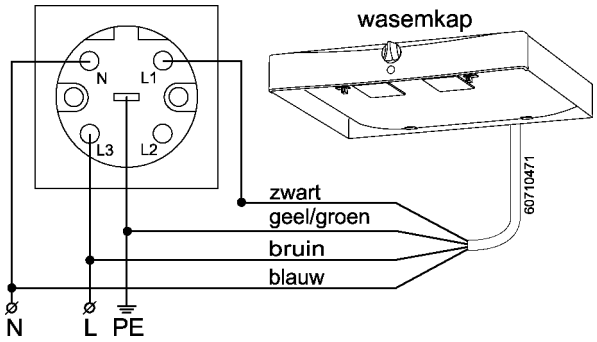


Figure 7.7 Connection to extractor hood

7.8.2 Electrical connections HROptiFor OT-V 1 OpenTherm

(figure 7.8)

connection of the boiler

When using a combi boiler, the automatic absence switch is activated. For this, a 2-core OpenTherm connection must be made between the ventilation unit and the boiler. The ventilation unit has a cable (1.4 m long) under the ventilation unit for this purpose

(1). Connecting this cable is necessary regarding the automatic absence control.

2 Connection OpenTherm thermostat

An OpenTherm thermostat can only be connected here.

3 Time-controlled cooking setting connection

The heat setting can be switched on temporarily using a timer control (eg as a bathroom switch). The switch (potential-free) to activate the timer must be connected to the terminal block here. The timer can be set in menu P2 (see chapter 2).

4 230V power supply for the boiler

A socket is included in the bottom plate of the ventilation unit. The boiler must be connected to this socket. All this in connection with security of the device. Both the strain relief (A) and the fail-safe device (B) must be fitted and secured!

The boiler may only be connected to the socket under the ventilation unit!

5 Perilex (power supply HR OptiFor OT-V)

When all previous connections have been made (also 7.8.1), the Perilex plug may be plugged into the wall socket. The wall socket must be within 1 meter from the bottom of the ventilation unit.

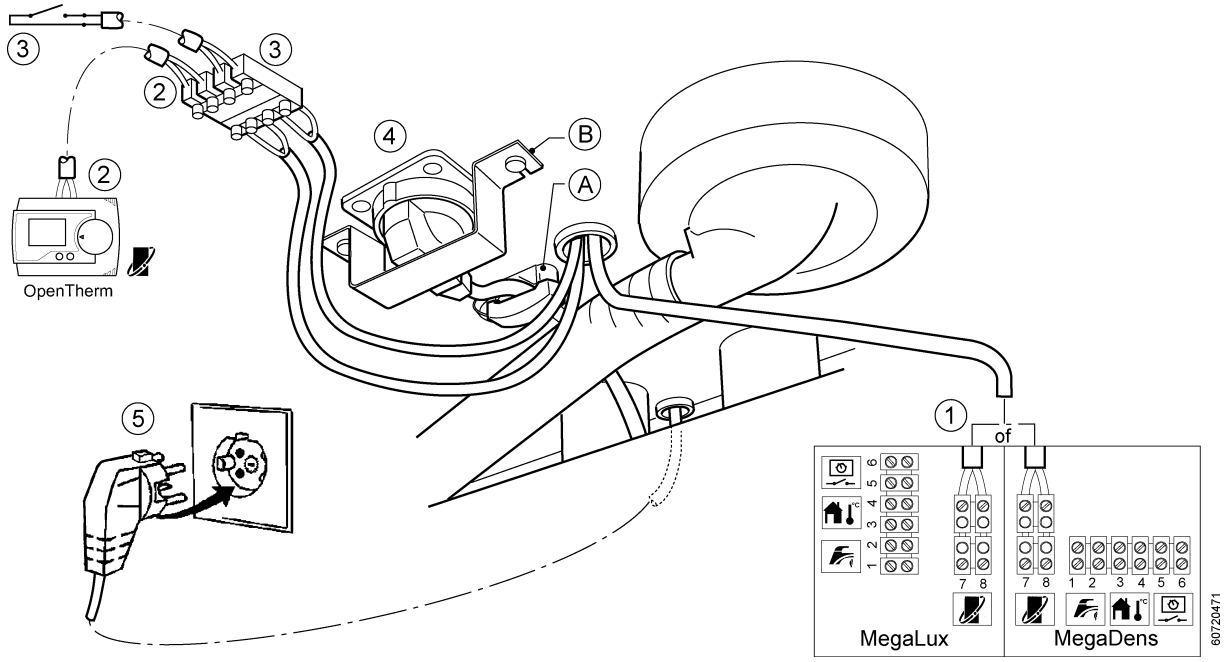
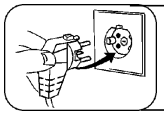


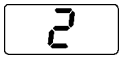
Figure 7.8 Electrical connections HR OptiFor OT-V

8. FIRST USE OF THE APPLIANCE

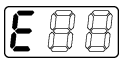


Commissioning

1. Open the gas tap on the heating appliance;
2. Plug the Perilex plug into the wall socket.
3. The device will start to run an automatic self-test, which takes approximately 1 minute. When the self-test has been successfully completed, the device is ready for use



After going through it startup program enters the device company. The ventilation level is shown on the display.



to give.

If a fault occurs, this is indicated by alternating ventilation position and display a code on the display. The code displayed is an “E” with a sequential number. The possible codes are explained in Chapter 10.2 together with possible solutions.

Instruct the user

- Clean and / or replace the filters at an interval of 1/2 year. Clean the filters in the new-build house and replace them 2 months afterwards (see also chapter 4 'Maintenance').

- Operation of the ventilation positions by means of a kitchen / hood switch and possibly a bathroom switch. Also explain how the away mode works.

- Also refer the user to Chap. 5 'User advice'.

PAY ATTENTION:
Also refer to the manual of the boiler when commissioning the HR OptiFor OT-V!

8.1 Menu structure and set up the device

Protection against accidental key actuation

The control panel is protected by a switch-on delay to prevent accidental key actuation. This switch-on delay is 1.5 seconds and applies to the first key actuation. During the switch-on delay, the button must remain pressed.

Fans control

If ON (▲) and DOWN (▼) buttons become simultaneously pressed, the display shows the current extract fan control.

Structure of the menus

Using the MENU, OP (▲), DOWN (▼) and the OK the following parameter menus can be selected:

Menu P2 Set time-controlled cooking setting Menu P3 Set ventilation settings Menu P4 Set read-out temperatures Menu P6 Read-out fault history Menu P7 Reset

The P2 menu can be used by the user and the installer, for example with a bathroom connection. The menus P3, P4, P6 and P7 can only be used by the installer via an “access code” (352) to be entered.

8.2 Access to menu P3, P4, P6 and P7

Step	Test	Display shows	Description
1	MENU	P1	menu approx. 1.5 sec. Keep pressed until P1 appears
2	▲ (1x)	P2	menu P2 appears; *(time-controlled heat setting)*
3	▲ (1x)	1- -	1st digit access code asked
4	▲ (3x)	3- -	Press the “UP” button 3x
5	OK (1x)	-2-	Press the “OK” button. 2nd digit access code asked
6	▲ (3x)	-5-	Press the “UP” button 3x
7	OK (1x)	- -3	Press the “OK” button. 3rd digit access code asked
8	▼ (2x)	- -2	Press the “DOWN” button twice
9	OK	P3	Press the “OK” button. Menu P3 appears. With the “UP” and “DOWN” key you can now select the menus P4, P6 and P7

To exit the program, press MENU twice. If no more buttons are pressed, the program will stop after 5 minutes and the display will show the ventilation setting again. An exception to this is menu P3; here a time of 30 min applies.

Setting example

Adjust the middle position of the supply fan to 50.

Step	Test	Display shows	Description
10	OK (1x)	P31	Exhaust fan (absence setting)
11	▲ (4x)	P35	Select P35 Supply fan (normal setting)
12	OK (1x)	40	Press “OK”. The current setting is displayed.
13	▲ (10x)	50	Press the “UP” key 10 times to set P35 to 50.
14	OK (1x)	P35	Press “OK”
15	MENU (2x)	2	Press 2x on “MENU” The set value is now stored in the appliance

8.3 Setting parameters

P2 Time delays

No. Description	Min.	Max.	Factory setting	Unit
21 Switch-on delay bathroom switch	0	15	0	Minutes
22 Switch-off delay bathroom switch	0	120	30	Minutes

P3 Ventilation

No. Description	Min.	Max.	Factory setting	Unit
31 Extract fan for absence mode	15	P32-1	40	
32 Exhaust fan normal mode	16	P33-1	55	
33 Exhaust fan for heat setting	17	100	90	
34 Supply fan for absence mode	15	P35-1	40	
35 Supply fan normal mode	16	P36-1	55	
36 Heat setting supply fan	17	100	90	
37 Current value extract fan. 38 Current value supply fan			Actual value Actual value	

P4 Temperatures

No. Description	Min.	Max.	Factory setting	Unit
41 Target temperature	19	28	21	° C
42 No function				
43 No function				
44 No function				
45 Current value of T1 (outside air sensor)			Actual value	° C
46 Current value of T3 (domestic extract air sensor) 47 Current value of T4 (outdoor extract air sensor) 48 No function			Actual value Actual value	° C ° C
49 No function				

P5 Not used

P6 Fault history

No. Description	Display text
61 Last malfunction 62 Second to last fault 63 Second to last fault	Display of fault / service code ('E' with sequence number) Display of fault / service code ('E' with sequence number) Display of fault / service code ('E' with sequence number)

P7 Reset

No. Description	0	1	Factory setting
71 Reset of alarm / fault condition 72 Global reset: All factory settings values are set again	No reset No reset	Reset Reset	0 0

8.4 Adjust the installation on the air side

To ventilate the house comfortably and correctly, the installation must be adjusted on the air side. For air-side adjustment, the ventilation quantity per room must be known (see also the Building Decree and the GIW / ISSO if applicable)

1. Close the windows and the outside doors.
2. Close the interior doors and check the presence of structural overflow devices (at least 12 cm^2 per l / s).
3. Make sure the bypass is closed.
4. Check that both fans are operating at two speeds.
5. Switch on the ventilation unit at the highest speed. Adjust the
6. valves as per the following preset table.

Supply STH-1-125	living room bedroom	13 mm 11 mm
Disposal STB-1-125	kitchen toilet bathroom	30 mm 12 mm 20 mm

7. If no volume flows per valve are known, open the valves as far as possible. Measure the air quantities, first supply air, then exhaust air. The measured air quantities deviate more than plus or minus 10% of the nominal air flow rates and if the majority of the deviations are plus, adjust all valves so that all deviations are plus. If the majority of the deviations are minus, make sure that all
8. deviations are minus. Also make sure that a supply valve and a drain valve remain fully open.
9. After this, the fan setting on the display can be changed. The lowest possible setting should be chosen in connection with energy consumption. Make sure the ratio between cooking / normal remains the same. To change the fan setting use menu P3, see H 8.3.
10. If the currently set air quantities still deviate too much, the valves can be adjusted.
11. After all valve positions have been determined, check the entire installation again.
12. Record the measured values on the enclosed setting sheet.
13. Switch the ventilation section to normal speed (position 2). The volume flow must now be set to at least 60% the maximum volume flow (60% x 275m^3/h = 165 m^3/h).

An adjustment report is included in Appendix III. Please fill this in for future reference.

9. MAINTENANCE

9.1 General information

Small and major maintenance

A distinction is made between minor and major maintenance. Small maintenance can be carried out by the resident himself. Major maintenance concerns 2 annual maintenance of components of the ventilation unit.

Minimum frequency of maintenance visits

Minor maintenance should be carried out on the appliance at least every 6 months. An exception to this is a recommended (extra) filter replacement 2 months after moving into a new-build home. Major maintenance should be carried out every 24 months.

Depending on the circumstances, it may be desirable to increase the maintenance frequency.

Type of maintenance	After	
When involving new-build house and / or commissioning HR OptiFor OT-V: Clean filters and valves.	0 months. initial	2 Mo.
Advice: Extra minor maintenance: *Replace filters and clean valves.*	2 months.	4 Mo.
Minor maintenance: *Clean filters and valves.*	6 months.	6 Mo.
Minor maintenance: *Replace filters and clean valves.*	12 Months.	6 Mo.
Minor maintenance: *Clean filters and valves.*	18 months.	6 Mo.
Major maintenance: *Replace filters and clean valves.* Components of the HR OptiFor *check, clean or replace.*	24 months.	

Maintenance and service report

A maintenance and service report is included in Appendix 2 of this manual. A good and fully completed report gives you or your colleague a clear picture of the history of this device. By completing this report it can also be demonstrated that maintenance work has been carried out. The stated scope of the maintenance intervals corresponds to the state of the art at the time of going to press. Changes can be made later for technical reasons. The most current version available, such as available on www.agpoferroli.nl, applies as maintenance instruction for this appliance.

9.2 For your safety: pay attention!

Maintenance boiler

Perform maintenance on the boiler at the same time as maintenance (small or large) to the HR OptiFor. See the boiler manual.

230V electrical voltage

This device contains components that operate under a voltage of 230V (PCBs and fans).

Always remove the perilex plug from the wall socket before performing maintenance on the appliance.

Warm pipes and channels

The flue gas outlet can reach approx. 95 ° C during normal operation. This also runs through the Ventilation part of the HR OptiFor OT-V.

sharp edges

The edges of the HR OptiFor sheet metal can be sharp.

9.3 Minor maintenance

Every 6 months, the HR OptiFor OT-V will indicate by means of code E80 that filter maintenance is required.

- The filters must be cleaned the first time.
- The second time it is recommended to replace the filters.

9.3.1 Cleaning filters

The filters are cleaned by removing them one by one from the appliance (see figure 9.1) and carefully sucking them out with a vacuum cleaner. After cleaning, replace the filter in the same opening.

9.3.2 Replacing filters

Remove the filters from the appliance (see fig. 9.1) and remove the filter cloths from the wire frames. To apply a new filter cloth, follow the instruction included with the original service filter set (see chapter 10.1 for part and art. No's).

9.3.3 Reset filter timer

After filter maintenance, code E80 is canceled by button OK approx. 5 sec. (the code disappears from the display). At the same time, the 6-month timer is also reset and the appliance will only show the filter service code E80 again after 6 months.

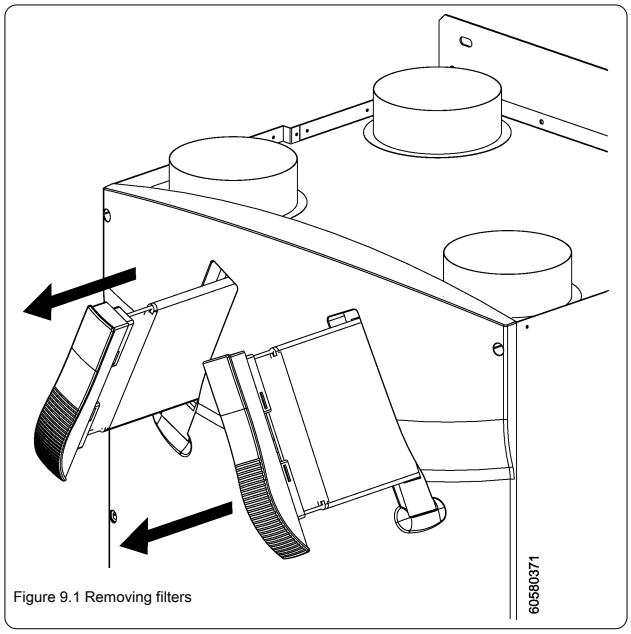


Figure 9.1 Removing filters

9.3.4 Cleaning the ventilation valves

- Remove a valve from the wall or ceiling with a twisting motion. (The valves shown are from

  YOU StorkAir.)
- Clean it carefully with a soft brush and a vacuum cleaner, if necessary with a solution of soap and warm water. Rinse well and dry.

- Replace the valve.
- Repeat this procedure for all valves.

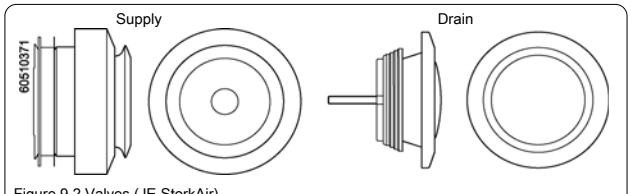
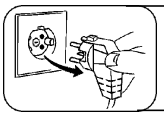


Figure 9.2 Valves (JE StorkAir)

Do not swap the valves or change the set positions.

9.4 Major maintenance



Set the room thermostat to low, do not use water and unplug the Perilex plug from the wall socket

Required documents and equipment (major maintenance)

- Volume flow meter such as a Flowfinder or a vane anemometer. An important advantage of a Flowfinder is that it is valve independent.
- Original adjustment report of the house.
- Multimeter (resistance / voltage AC-DC)

9.4.1 Remove the front of the HR OptiFor

1) Remove the filters from the lid.

2) Loosen the 6 fixing screws.

3) Remove the front of the appliance.

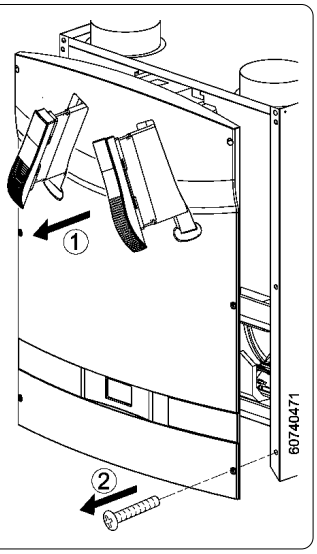


Figure 9.3 Remove the front

9.4.2 Cleaning the exchanger

- Remove the pressure plate from it appliance.

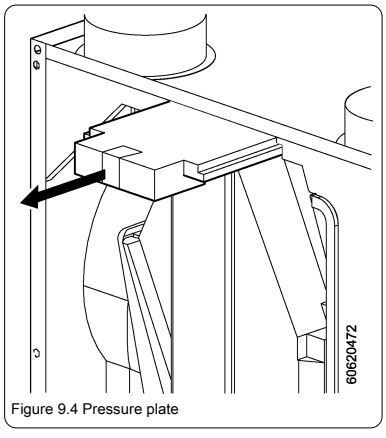


Figure 9.4 Pressure plate

- Remove the bypass valve and the foam part from the unit.

PAY ATTENTION!

The bypass is by means of a cord with plug with the print connected!

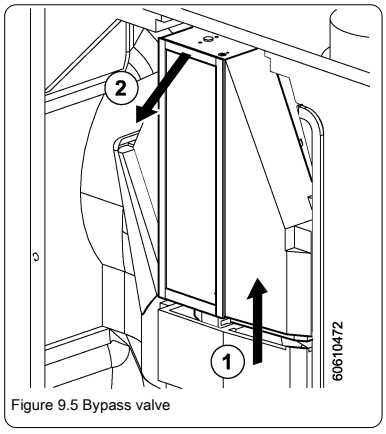


Figure 9.5 Bypass valve

- Remove the exchanger the device.

PAY ATTENTION!

Condensation water from the changer come!

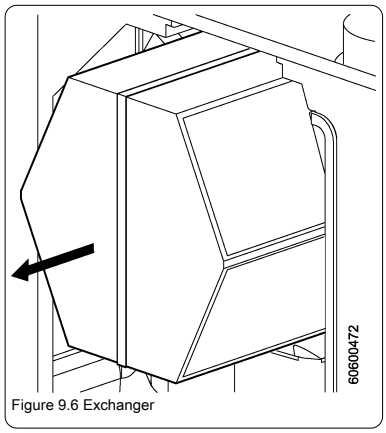


Figure 9.6 Exchanger

Clean the exchanger if necessary. To do this, immerse the exchanger completely in lukewarm water (max. 40 ° C) several times with detergent for the hand dishwashing. Dip the ribbed side in a vertical position. Then flush the exchanger with clean (warm) tap water (max. 40 ° C). Pick up the exchanger by the sides with both hands and shake the water out of the exchanger. Do not use aggressive or dissolving cleaning agents for cleaning, such as acetone, methylated spirits, machine dishwashing agents, etc.

9.4.3 Fans

- Remove the intake throats of the fans.
  FIG. 6.7 shows the delete sequence for the throat plate of the supply fan.
  The throat plate of the exhaust fan can in the same way be removed.

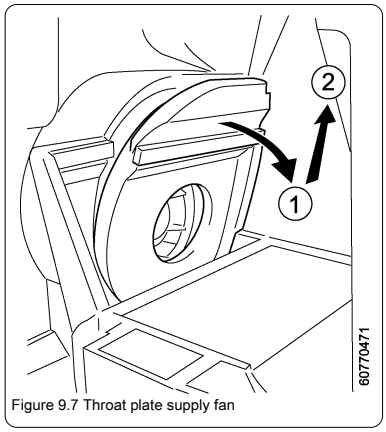


Figure 9.7 Throat plate supply fan

- Check the fans for dirt. If a fan is dirty, it can be cleaned with a soft brush and / or a vacuum cleaner.

Fan blades are provided with balancing weights. These must not be removed or moved.

9.4.4 Protection valve

To test the valve, it does not necessarily have to be removed from the appliance. The valve is also accessible via the discharge side of the exhaust fan. To measure the resistance, the plug of the valve must be disconnected from the print.

- Check that the safety valve (fig. 9.8, C) can move freely and that it is not contaminated.
- Check the valve electrically using a resistance meter.
  - Cover open:
    resistance is infinite, there is no contact.
  - Valve closed:
    resistance is (almost) 0 Ohm, there is contact.

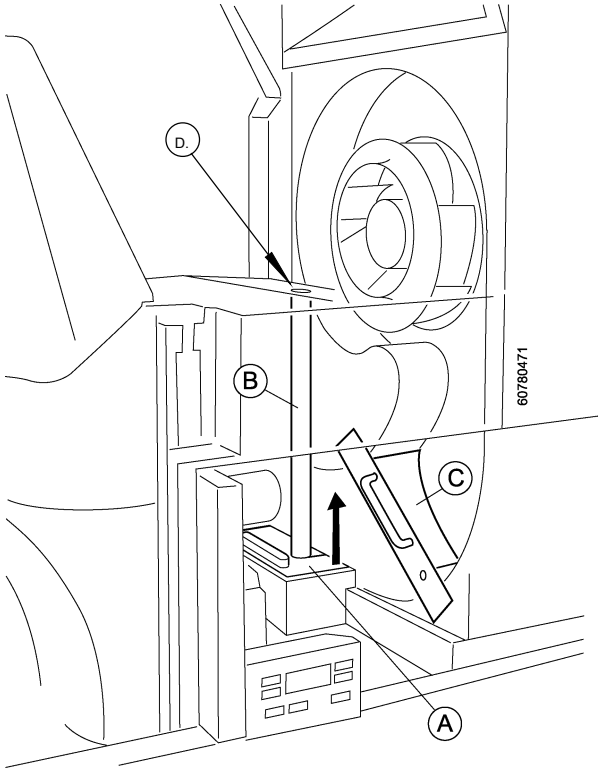


Figure 9.8 Safety valve and condensation drain (exploded view)

9.4.5 Condensation collection and discharge

- Remove the lid from the condensation collection (fig. 9.8, A) and check the collection for contamination and / or blockage.
- Check the condensate discharge (fig. 9.8, B) for dirt and / or blockage.

  Rinse with clean tap water if necessary. Then carefully pour water into the condensation tray (D)

9.4.6 Volume flows

- Check the volume flow per valve on the basis of the original adjustment report.
- If the volume flows deviate from the original reported value, adjust the unit again. Use the

  volume flows that are specified according to the building code. See also chapter for adjustment
  8.4 “Air-side adjustment of the installation

Rebuilding the ventilation unit

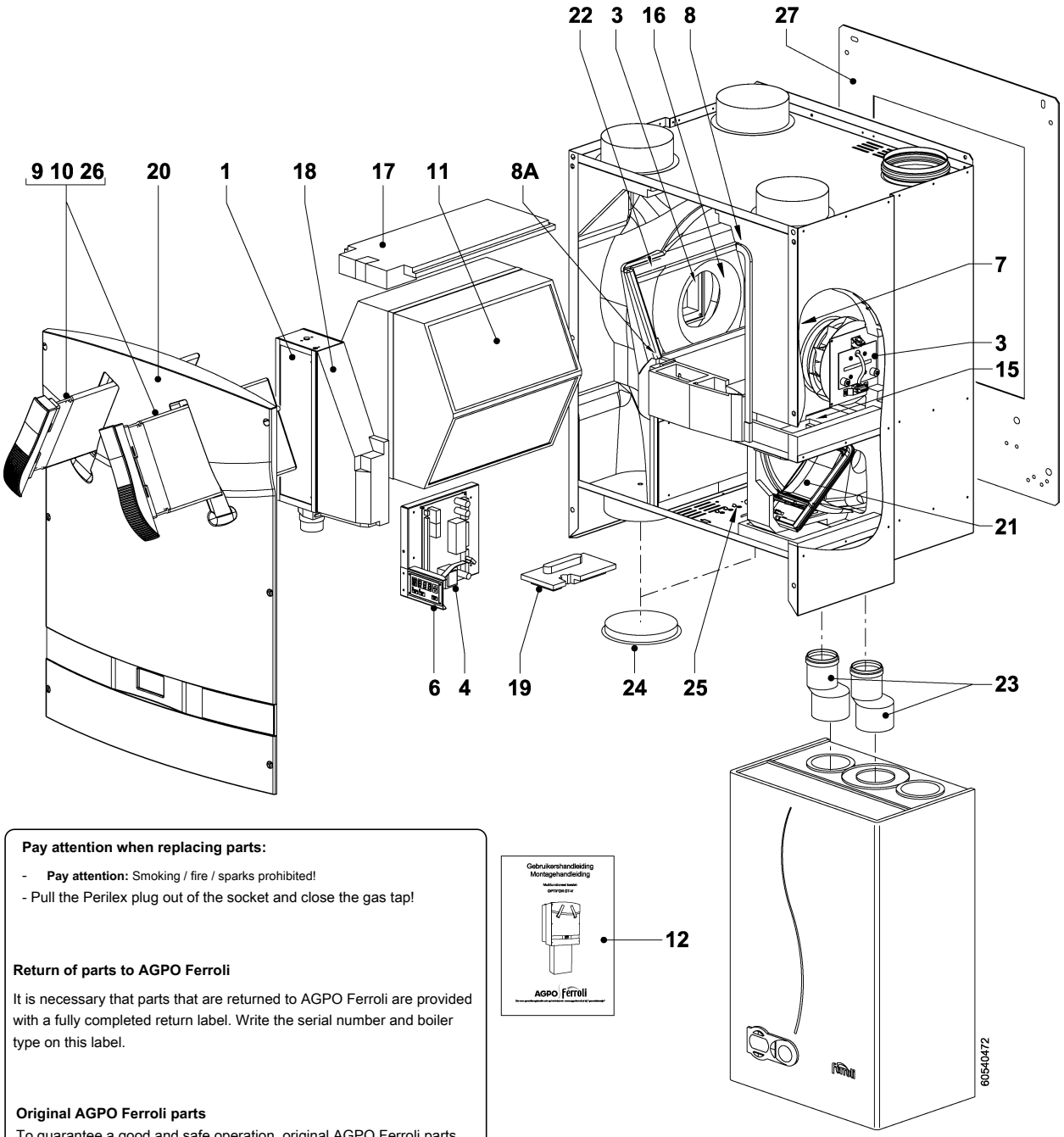
General: Make sure that the sealing profiles are not damaged during installation. Mount the whole in reverse

order back again:

1. Replace the inlet throats.
2. Replace the exchanger.
3. Replace by-pass with foam parts.
3. Refit remaining foam parts.
4. Reconnect bypass.
5. Attach front and filters.
6. Plug the Perilex plug into the socket.

10. SERVICE PARTS AND FAULTS

10.1 Overview of the appliance and service parts



Pay attention when replacing parts:

- **Pay attention:** Smoking / fire / sparks prohibited!
- Pull the Perilex plug out of the socket and close the gas tap!

Return of parts to AGPO Ferroli

It is necessary that parts that are returned to AGPO Ferroli are provided with a fully completed return label. Write the serial number and boiler type on this label.

Original AGPO Ferroli parts

To guarantee a good and safe operation, original AGPO Ferroli parts must always be used.

Figure 10.1 Exploded view HR OPtiFor OT-V

	Description ..... Order number
1	Bypass 3212019
3	Fan for supply and exhaust (fan on mounting plate) 3213003
4	Universal service print HR OptiFor OT (-V) .. 3212001 Control panel
6	HR OptiFor (incl. display holder) 3211011
7	Frost protection sensor (T4) (drain) 3211007
8	Bypass sensor right (T1) (outside) 3211008
8a	Bypass sensor Left (T3) (return) 3211006
9	Filter mat set (2 filters) 3211020
10	Filter composition (filter frame, handle, filter cloths and fastening clips) 3211014
11	RS counter flow exchanger 3211043
12	Manual HROptiFor OT-V .... DRS6013 Inflow throat drain
15	 3212105

	Description ..... Order number
16	Inflow throat supply 3212110
17	Pressure plate plate heat exchanger 3211115
18	Bypass foam part 3211120
19	Condensate tray lid 3211125
20	Front panel 3211100
21	safety valve 3211009
22	Sealing tape exchanger (Side, 2 pieces) 3211044
23	Sliding sleeve MegaDens / MegaLux boiler. 2410095 Sliding sleeve Econpact boiler (not shown) 3211050 Sealing cap niche bush ø150mm 3211135
24	
25	Tube membrane 3211016
26	Fastening clips filter: 10 pcs. in plastic bag. 3211021 Mounting panel
27	HR OptiFor OT-V
28	Sealing tape exchanger (front / rear, 1 meter) 3211043

10.2 Fault guide, causes and solutions

The device is fully controlled and monitored by built-in electronics. If a fault is detected anywhere in the unit, the unit will show an error code on the display and, depending on the type of fault, may switch off. The set ventilation level will then be displayed, alternated with the error code. This chapter provides a brief explanation of the malfunction code and possible causes.

No display

- Check the 230V supply of the perilex socket with a multimeter
- Check the wiring of the multiple switch;
- Check the fuses on the PCB.

Blocking faults (codes E81 to E84).

The device is locked. When the cause of the malfunction has been removed by the user, the service engineer or by itself, the appliance will automatically restart.

Right bypass sensor (T1 - outside)

- Temperature below -55 ° C or above 70 ° C.
- Check the electrical resistance of the right bypass sensor;
- Check bypass.

Left bypass sensor (T3 - return)

- Temperature below -10 ° C or above 70 ° C.
- Check the electrical resistance of the left bypass sensor;
- Check bypass.

Frost protection sensor (T4 - drain)

- Temperature below -15 ° C or above 70 ° C;
- Check the electrical resistance of the frost protection sensor.

Electrical resistance of the sensors

° c	Ohm	° c	Ohm	° c	Ohm
- 55	490	5	841	30	1040
- 15	713	10	886	35	1081
- 10	747	15	924	40	1122
- 5	781	20	961	70	1392
0	815	25	1000		

Data from the temperature sensors (tolerance ± 2 ° C).

Status codes (code E80).

The device displays the status.

Filter status

- Clean or replace filter;
- Reset code by pressing button “OK”.

Locking faults (other codes).

The device is locked and locked. The cause must be resolved. When the cause of the fault has been removed, the appliance must be reset by giving a reset using P72.

Supply fan not running.

- Check the 230V supply voltage of the fan (see page 28, electrical diagram);
- Check the 0-10 VDC control voltage of the fan (see page 28, electrical diagram).

Exhaust fan not running.

- Check the 230V supply voltage of the fan (see page 28, electrical diagram);
- Check the 0-10 VDC control voltage of the fan (see page 28, electrical diagram).

No 230V power supply to heating appliance

The protection has interrupted the 230V power supply to the heating appliance because too little air was removed for safe operation of the heating appliance. Faults are only reset by temporarily interrupting the 230V power supply of the HR OptiFor OT-V (Perilex plug from socket).

Check:

- whether the appliance can discharge sufficient air;
- whether the drain valves are open sufficiently;
- the drainage channels for blockage;
- whether the exhaust hood can extract sufficient air;
- the operation of the non-return valve.

Other Error Codes

Fault codes 82, 85, 88, 89, 90, and 91 are reserved for future use.

Determine software version:

When troubleshooting, it can be important to know the software version. To determine which version is in the appliance, the Perilex plug must be removed from the wall socket for approx. 10 seconds. Like the Perilex plug is plugged back into the wall socket, the software version (eg. 1.7) on the display, followed by the ventilation mode (2).

PAY ATTENTION!

Interrupting the power supply (Perilex plug from the wall socket) results in the error message being lost. So determine the software version if there is no error or when it is requested.

10.2.1 Power supply and ventilation mode selection

With a two-position switch in the kitchen, you can choose between normal and cooking mode. The table below indicates where a connection is made and where 230V can be measured. The contacts mentioned are the contacts on the control PCB, see page 28.

Display	Stand	Transfer	Measure 230V
1	Absent	- - -	L3 + N, L1 + N
2	Normal ---		L3 + N, L1 + N
3	Boil	L1 + N	L3 + N
t3	BKS	- - -	L3 + N, L1 + N

NB! only the Normal and Cooking mode can be operated with the 2-position switch. The Absence position cannot be operated with the multiple switch.

The heat setting can also be operated by means of an additional switch (eg in the bathroom). The heat setting is now switched on for a limited time, the default setting is 30 min. The display of the appliance indicates this by means of the code “t3”.

10.2.1 Replacing the fuse

1. Remove the filters and the front of the ventilation unit.
2. Remove the retaining screw in the front edge of the electronics tray.
3. Pull the carriage forward.

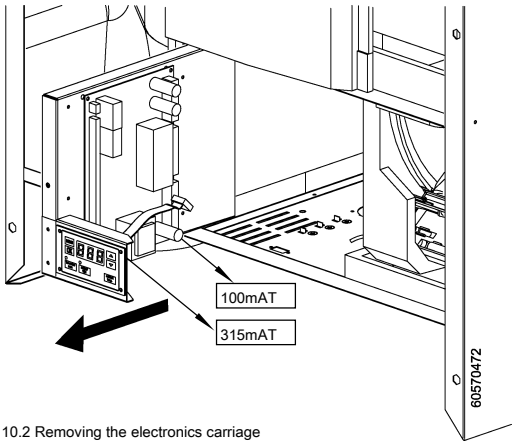


Figure 10.2 Removing the electronics carriage

4. Check and replace the defective fuse (see also page 28). The following fuses are used:

   • Glass fuse 5x20mm slow 315mA
   • Glass fuse 5x20mm slow 100mA

11. OPERATION AND TECHNICAL DATA

11.1 General

The HR OptiFor OT-V has a thermal efficiency of more than 95%, which means that reheating of the supplied outside air is no longer necessary. Balanced ventilation means that the quantities of supply and extract air are equal. A balance ventilation system with

heat recovery contributes to energy savings, a healthy indoor climate, an optimal living environment and prevents moisture problems.

The supply and extract valves in the living rooms, bedrooms and / or hall have been carefully set by the installer, so that the air supply and extract air are balanced. Therefore, nothing may be changed in these settings.

In order to obtain a good and draft-free air flow in the house, an opening has been deliberately left under the interior doors. When these openings are sealed, for example by door rubbers or even deep-pile carpet, the air flow in your home will stagnate. As a result, the system will no longer function optimally.

Balance ventilation system

A balanced ventilation system consists of (see fig. 11.1):
- a heat recovery unit (**A)**
- outside air intake duct (**B)**
- supply valves (**C)** in living room and bedrooms
- extraction valves (**D)** in bathroom, kitchen and toilet
- motorless extractor hood with switch (**E)**
- outlet (**F)** of polluted air
- heating appliance (**G)**

In stacked construction, the
outdoor air intake ducts and exhaust ducts of the appliances usually connected to collective supply and exhaust ducts.

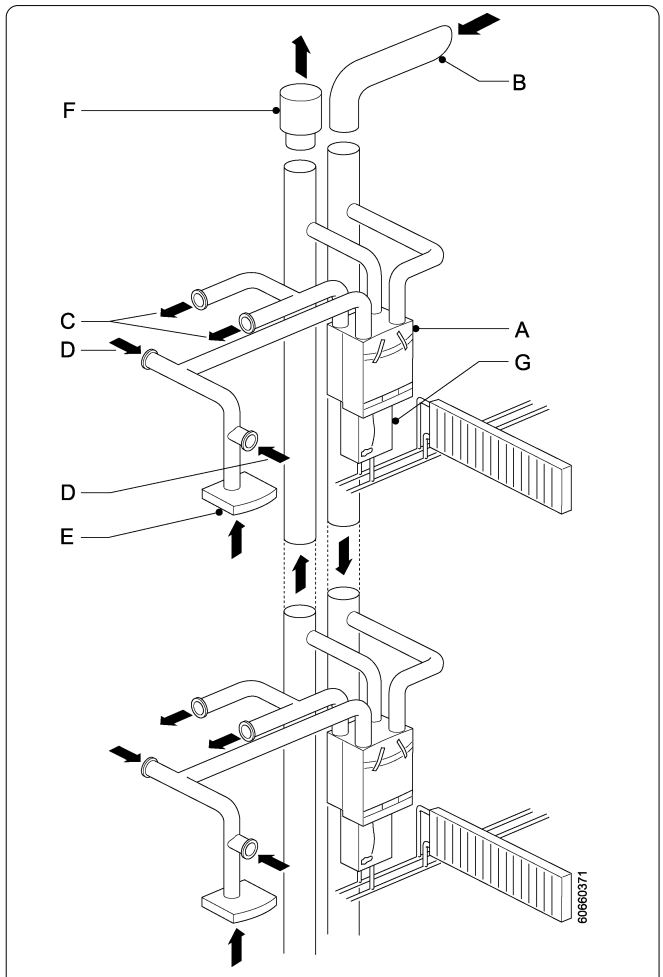


Figure 11.1 Balanced ventilation and heating in stacked construction

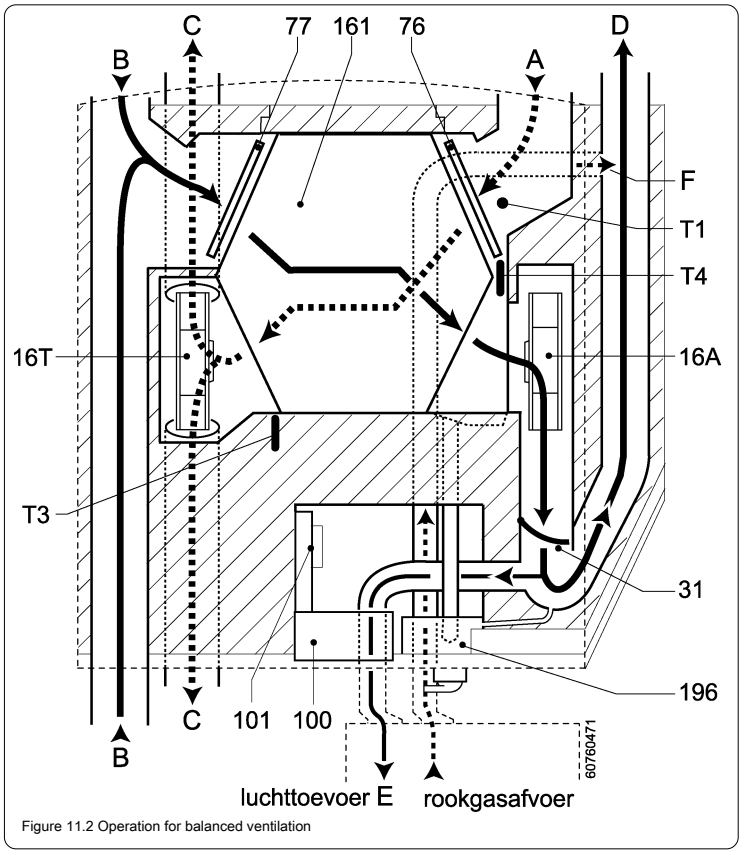


Figure 11.2 Operation for balanced ventilation

11.2 Operation of the balanced ventilation unit with heat recovery

Operation for balanced ventilation (fig. 11.2)

Fresh outside air flows into the appliance at (A), passes the supply sensor (T1) and is filtered in the supply filter (76) (filter class EU3). The filtered air flows through heat exchanger (161) and is sucked in by supply fan (16T). In the heat exchanger (161), the fresh outside air is heated by the heat of the exhaust air flowing past (separate flow paths). From the pressure side of the supply fan (16T), the fresh air is blown into the house via outlet (C), below, above or both.

'Dirty' home air flows into the appliance at (B), passes the exhaust air sensor (T3) and flows through the exhaust filter (77) (filter class EU3) into the heat exchanger (161). In the heat exchanger (161), the exhaust air transfers its heat to the fresh supply air flowing past (separate flow paths). Condensation can form during heat transfer. Condensation is collected in the condensate tray (196).

The cooled extract air passes through frost protection sensor (T4) and is extracted by extract fan (16A). Part of the air flows from the discharge side of the exhaust fan (16A) through the safety valve (31) and leaves the appliance at D. If there is a demand for heat from the central heating appliance, it sucks the combustion air from the pressure side of the exhaust fan, after the safety valve. Flue gases are fed back into the exhaust air at F, and then leave the appliance together with the exhaust air at exit (D).

11.3 Operation bypass valve (121)

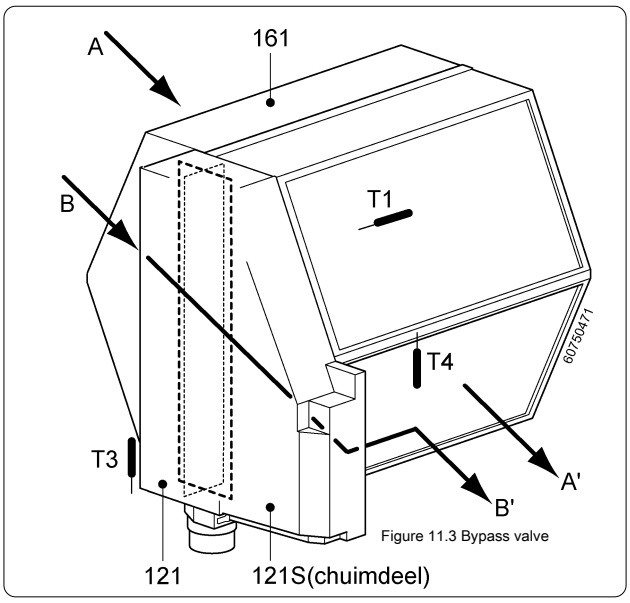


Figure 11.3 Bypass valve

A target temperature can be set on the display (101, fig. 11.2). The default setting is 21 ° C. The bypass valve (121, Fig. 11.3) opens when:

- sensor (T3) measures a temperature that is higher (a) than the set temperature (fig. 11.4).
- sensor (T1) measures a temperature that is lower (max. 2a) than the set temperature (fig. 11.4).

When the bypass valve is open, part of the warm exhaust air flows past the heat exchanger (161), whereby the supply air is heated (much) less and the set (desired) temperature is pursued.

The bypass valve (121) closes when sensor (T1) measures a temperature lower than 2a (after a time interval (b) of max. 30 min. (Anti-cycling time)).

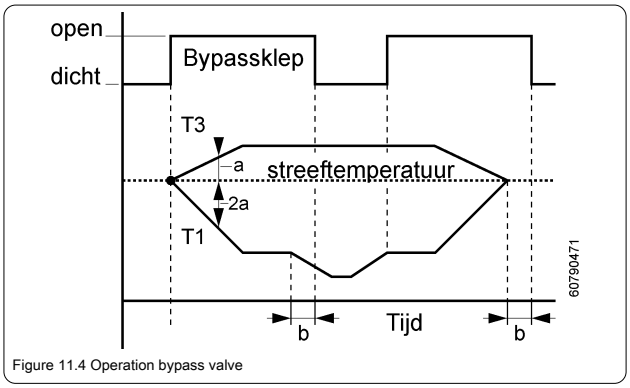


Figure 11.4 Operation bypass valve

In addition to the automatic operation described above, the valve also opens when the supply fan is switched off (see H2).

The valve always closes when there is a demand for heating or when the supply fan is switched on again.

11.4 Function of the safety valve (31)

The purpose of the safety valve (31) is to prevent exhaust air from flowing back to the house from the exhaust duct, via the ventilation device. In addition, the valve monitors the minimum flow (100m^3/h) of the exhaust fan. If the valve is less than 100m^3/h, exhaust fan (16A) is accelerated. The safety valve is checked for operation once every 24 hours when the appliance is started and during operation. The exhaust fan may come to a standstill here.

11.5 Operation of the appliance in case of imminent freezing of the heat exchanger

If the frost protection sensor (T4) measures a temperature lower than 2 ° C, the frost protection control is switched on. In that case, the supply fan (16T) is blown down to stabilize the temperature (T4) and raise it above 2 ° C. Normally, this control is sufficient to keep the appliance frost-free.

If the supply fan (16T), as a result of this regulation, is completely switched off and there is still airflow through the appliance due to wind pressure, for example, there is a risk of freezing. This risk is detected by the safety valve (31) as it must always speed up the exhaust fan (16A) to reach 100m^3/h discharge flow.

If extract fan (16A) operates at more than + 20% above its set value (menu P31, P32 or P33), it is assumed that the exchanger is freezing. In that case the defrosting program will be started. The defrost program means that the bypass valve is opened. The exchanger can defrost based on the outside temperature and the ambient temperature. After 6 hours, the bypass valve closes and the fan activation is determined. If there is no improvement, the bypass valve is immediately opened again.

When the exchanger has defrosted, this is noticeable because less fan power is required to produce a discharge flow of 100m^3/h. During the opening of the bypass valve, the speed of the exhaust fan decreases by 10%. Since this happens in a short period of time, it can be perceived as sound.

11.6 Available fan capacity

The graphs of figure 11.6 show the external available pressure in relation to the volume flow.

BUSY (in milibar and pascal);
The total duct resistance is the pressure difference on the inlet and outlet side of the ducts. This resistance must be overcome by the appliance fans. Therefore the differential pressure across the device is equal to the total duct resistance. The pressure must be measured on the wall of the duct or with a static pressure measuring tube. With both measuring methods there may only be flow past the measuring point and no flow into the measuring point.

VOLUME (in liters per second and cubic meters per hour); The displayed volume is the sum of the measured volumes on the intake or exhaust valves.

PAY ATTENTION! !
During the measurements, the bypass valve must be closed and the outside temperature must be above 0 ° C. Furthermore, the bypass valve and the safety valve must not influence the operation of the appliance (disconnect the plugs!). Restore the operation of the device after the measurement by reinserting the plugs and resetting the device

MEASUREMENT PROCEDURE with only top or bottom connection:

1) Determine the measuring points, B and T for the Supply
   A and R for the Drain
2) Check the outside temperature. If it is below 0 ° C, a separate sensor must be temporarily connected to T4 to measure in the installation room. Close the bypass and disable bypass and safety valve.
3)
4) Measure differential pressure across the measuring points.
5) Measure the volume flow over the Supply or Extract valves. Total volume is the sum of all supply or exhaust valves
6) Restore the operation of the appliance and reset the appliance via P72 (see chapter 8)

MEASUREMENT PROCEDURE with top and bottom connection:

1) ditto 1), 2), 3) and 4) above,
2) Measure both the top and bottom connections. The channel resistance is the greater of the two measurements
3) ditto 5) and 6) above

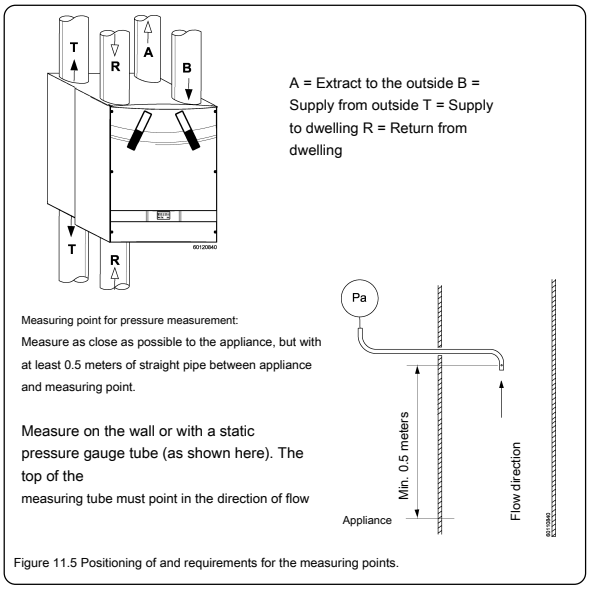


Figure 11.5 Positioning of and requirements for the measuring points.

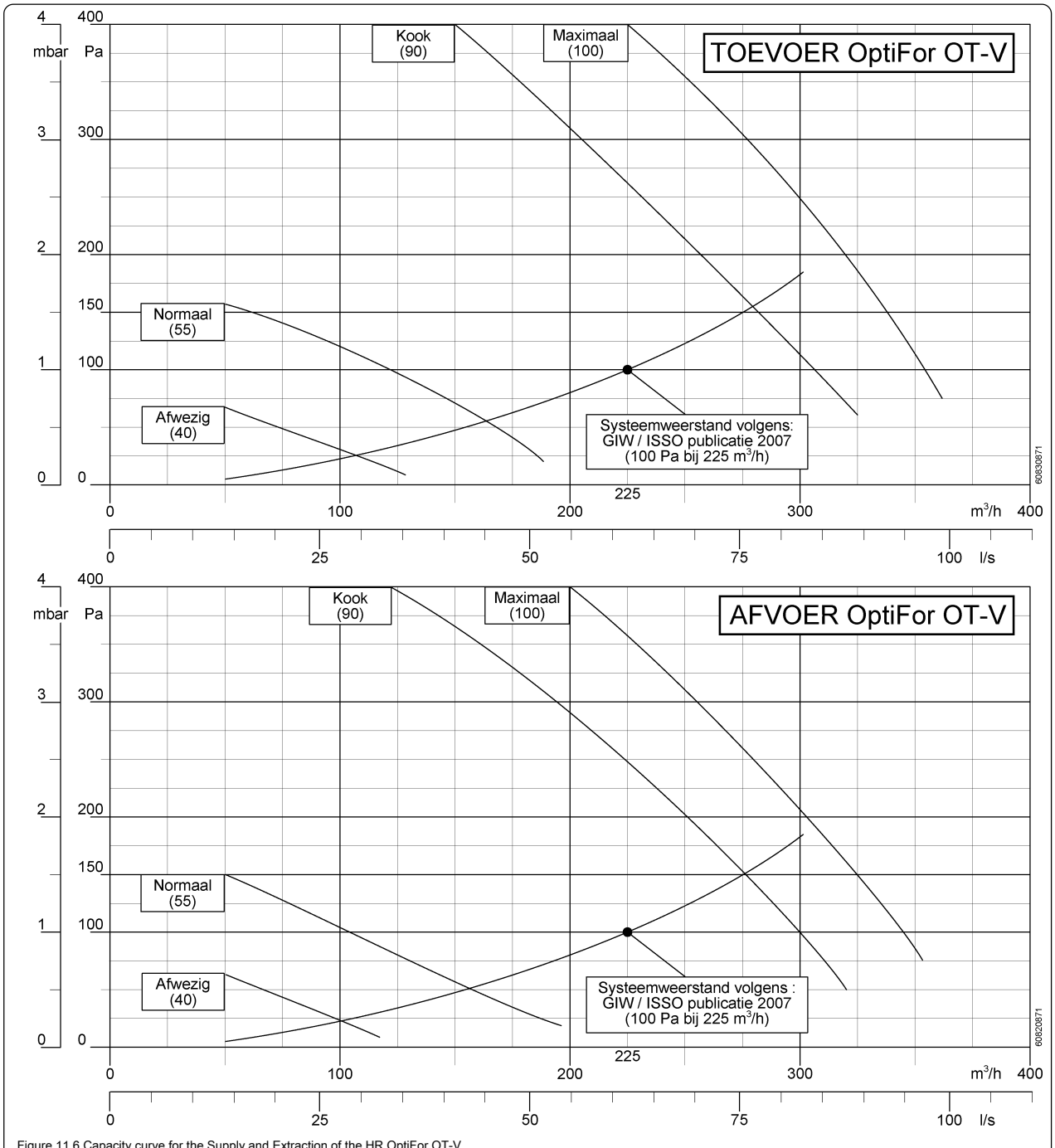


Figure 11.6 Capacity curve for the Supply and Extraction of the HR OptiFor OT-V

11.7 Technical data

Designation	Default setting	Value	Duckid
Ventilation capacity Design specification 275 m3/h at 150 Pa.			
Supply			
Absent 100 m3 / h	40	28 / 0.21	W / A
Normal 165 m3 / h	55	48 / 0.34	W / A
Boil 275 m3 / h	90	150 / 1.08	W / A
Maximum (With MegaLux 6) Cos		388 / 2.27	W / A
phi 165 m3 / h		0.61	
Connections			
Air connections		ø150	ømm internal
Flue gas connection		ø130	ømm internal
Condensation drain			via condensation drain
			heater
Materials			
HR changer		Polystyrene	
Interior		Polypropylene	
Others			
Thermal efficiency		96.3	%
Mass		42	kg

Acoustic information:

Appliance sound: Appliance set up in a room in accordance with NEN 5077

Channel specification in accordance with publication GIW / ISSO 2007 (100 Pa at 225 m3/h matches 150 Pa at 275 m3/h)

Cabinet appearance: (noise in the installation room) Frequency [Hz]	Absent (100m3/h) [dB]	Normal (165 m3/h) [dB]	Boil (275 m3/h) [dB]
125	21.4	28.0	43.9
250	23.0	29.3	50.4
500	20.0	27.2	52.9
1000	13.1	25.2	48.2
2000	4.4	22.3	46.7
dBA	**26.6**	**34.1**	**56.5**
Channel sound: (measured in the main channel)			
125	59.0	64.5	78.1
250	47.7	57.3	77.1
500	41.9	52.8	71.3
1000	31.5	43.0	62.4
2000	21.2	36.7	55.8
4000	8.1	26.4	49.3
8000	- 2.6	14.0	39.9
dBA	**47.6**	**55.0**	**72.5**

11.8 Electrical diagram ventilation appliance

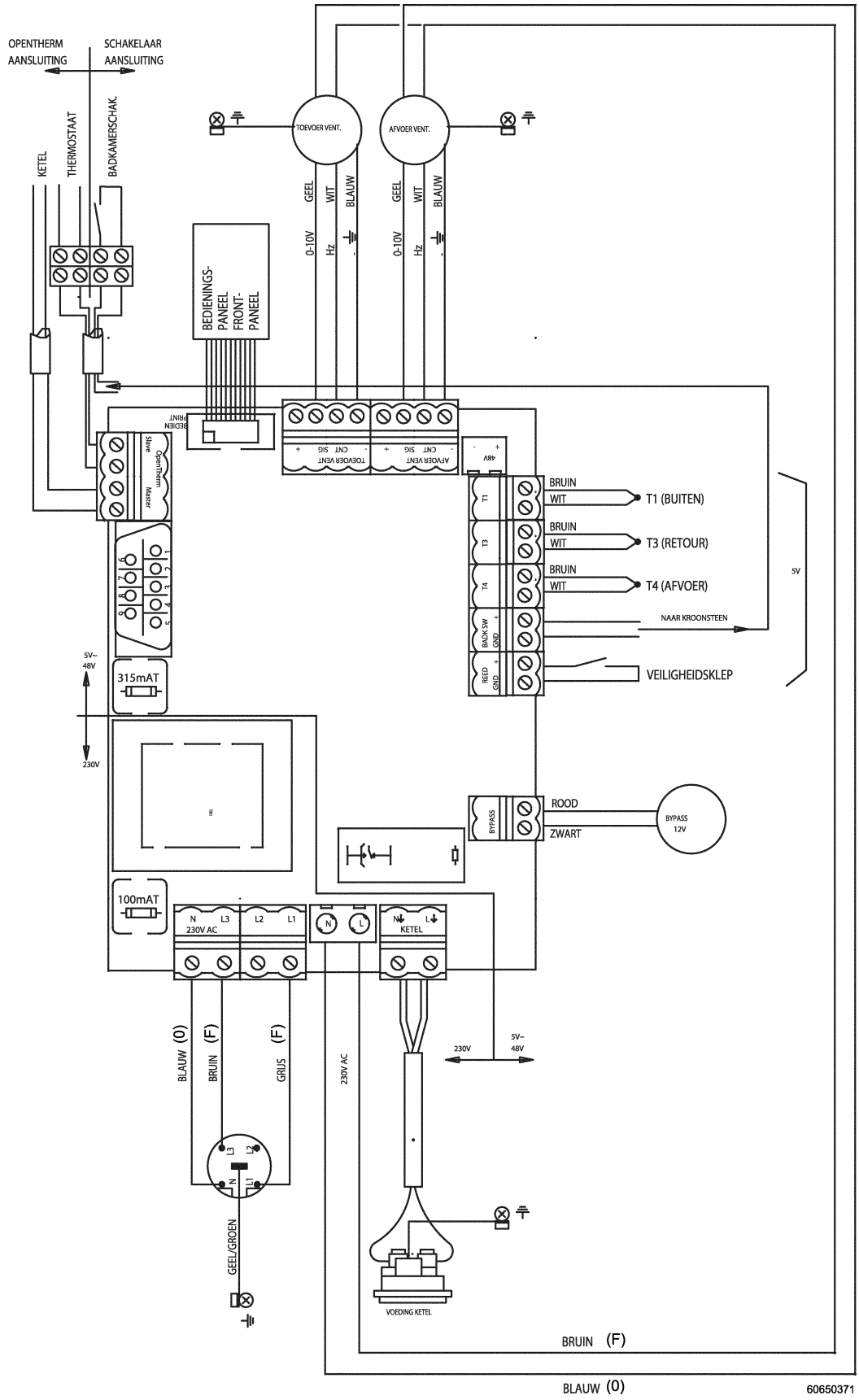


Figure 11.6 Electrical diagram of the ventilation part

12. CE MARKING

Declaration of Conformity:

Manufacturer: **AGPOFerroli eg**

Address: Rabbit Mountain 24
4825 BD Breda, The Netherlands

Hereby declares that the:

AGPOFerroli HROptiFor OT-V

Compliance with EC / EEC directives:

- Machinery Directive (98/37 / EC)
- Gas Appliances Directive (90/396 / EEC)
- Low voltage directive (73/23 / EEC)
- EMC directive (89/336 / EEC, 92/31 / EEC and 93/68 / EEC)

The following harmonized standards have been used:

- European standard for central heating appliances (EN-483)

WARRANTY REGISTRATION

WARRANTY CONDITIONS

This product is guaranteed by AGPO BV to the installer under the following conditions. The installer guarantees this product to the user under the same following conditions:

1 The warranty period is valid from the installation date and upon receipt at AGPO Ferroli (within 30 days from the installation date) of the fully completed and signed warranty card (signed by the installer and the owner) or by means of a fully completed warranty certificate on the internet: see www.agpoferroli.nl under “warranty certificate”.

2 The warranty period for the appliance and equipment is 2 years.

3 The appliance must be installed by a recognized installer in accordance with the applicable general and local regulations and with due observance of the installation and commissioning instructions provided by AGPO Ferroli.

4 The appliance must remain installed in its original location. The warranty will

5 lapse if:

- defects to the appliance are not reported in writing to the installer as soon as possible after they were discovered or could have been discovered;
- defects are caused by errors, improper use or negligence on the part of the consumer who has given the order or legal successor, or by external causes;
- during the warranty period, without the written permission of the installer of the appliance, an order has been given to a third party of whatever nature to make provisions on the appliance, or when such provisions have been made by the consumer himself.
- during the warranty period, periodic expert maintenance is not performed on equipment that requires maintenance;
- no demonstrable maintenance has been performed by an expert installation or maintenance company, in accordance with the listed maintenance instructions (at least once every 2 years). If a more up-to-date version of this maintenance instruction is listed on the internet (www.agpoferroli.nl, click on business), this most up-to-date version must be followed.

6 In the first instance, the consumer must invoke the warranty obligations described in this article in writing to the installer, within five working days after the fault or defect has been detected or could reasonably have been detected.

7 Furthermore, the provisions included in article 14 of our General Terms and Conditions of Sale and Payment, as filed at the Chamber of Commerce in Breda, under number 219 dated 9-10-1992.

AGPO Ferroli does not guarantee any consequential damage to the AGPO Ferroli device, other than with regard to a defect that falls under the warranty described above. AGPO Ferroli is furthermore not liable towards the user for pure financial damage and / or business damage of any kind suffered by the user.

Warranty card You can leave this copy in the manual

Name: _____

Address: _____

_____

Date of commissioning: . . -. . -. . . .

- ***HR OptiFor OT-V***
- Serial Number: . . . . . .

Always state the serial number (s).

Important regarding warranty!

Boiler data (tick the correct type)

- ***MegaDens*** ☐ ***3*** ☐ ***4 (SHR)*** ☐ ***5 (SHR)***
- ***MegaLux*** ☐ ***5*** ☐ ***6*** ☐ ***a***
- Serial Number: . . . . L. . . . .
- ***Another boiler, viz*** . . . . . .
- Serial Number: . . . . . .

Warranty card

You can register the data for the warranty via the internet, see www.agpoferroli.nl You can also send this warranty card, please within 30 days, to: AGPO Ferroli, Antwoordnummer 238, 4800 VB Breda

Installation address:

Name: _____

Street name + house number: _____

Postal code + city: _____

Owner's signature:

Supplied by (details of installer):

Name: _____

Street name + house number: _____

Postal code + city: _____

Signature of installer:

Device data:

Date of commissioning: . . -. . -. . . .

- ***HR OptiFor OT-V***
- Serial Number: . . . . . .

Always state the serial number (s).

Important regarding warranty!

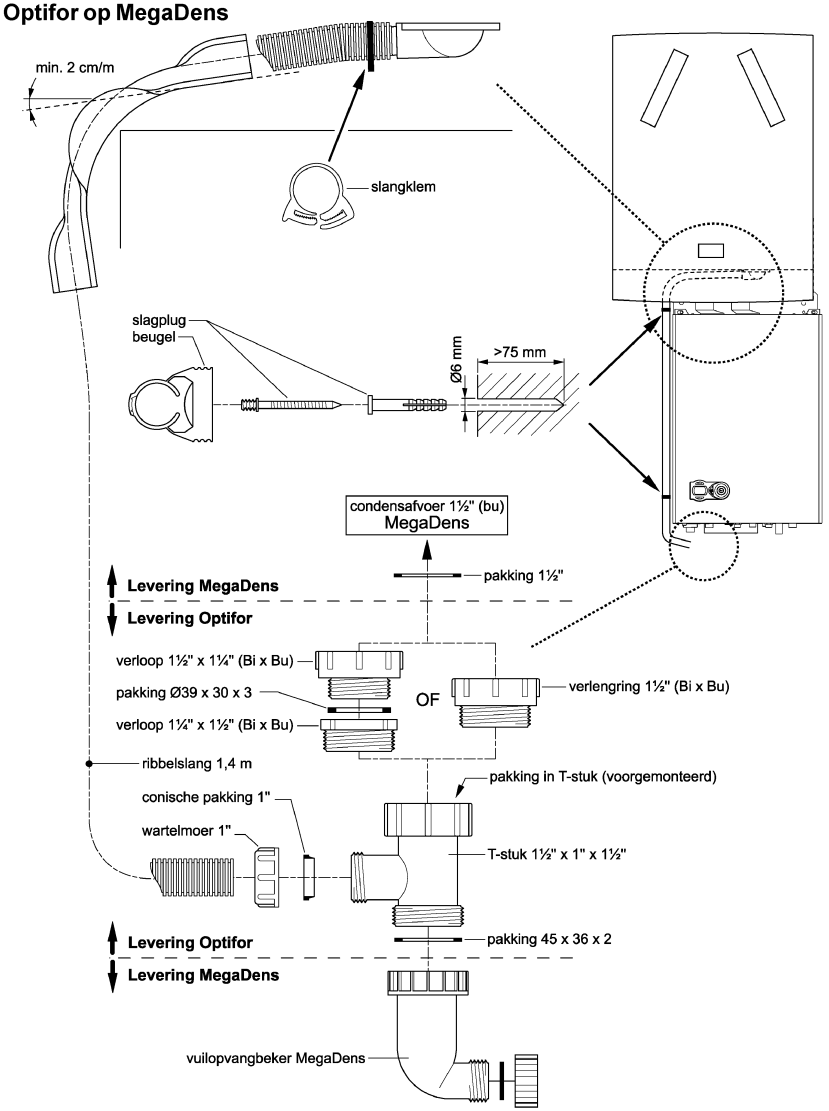
Boiler data (tick the correct type)

- ***MegaDens*** ☐ ***3*** ☐ ***4 (SHR)*** ☐ ***5 (SHR)***
- ***MegaLux*** ☐ ***5*** ☐ ***6*** ☐ ***a***
- Serial Number: . . . . L. . . . .
- ***Another boiler, viz*** . . . . . .
- Serial Number: . . . . . .

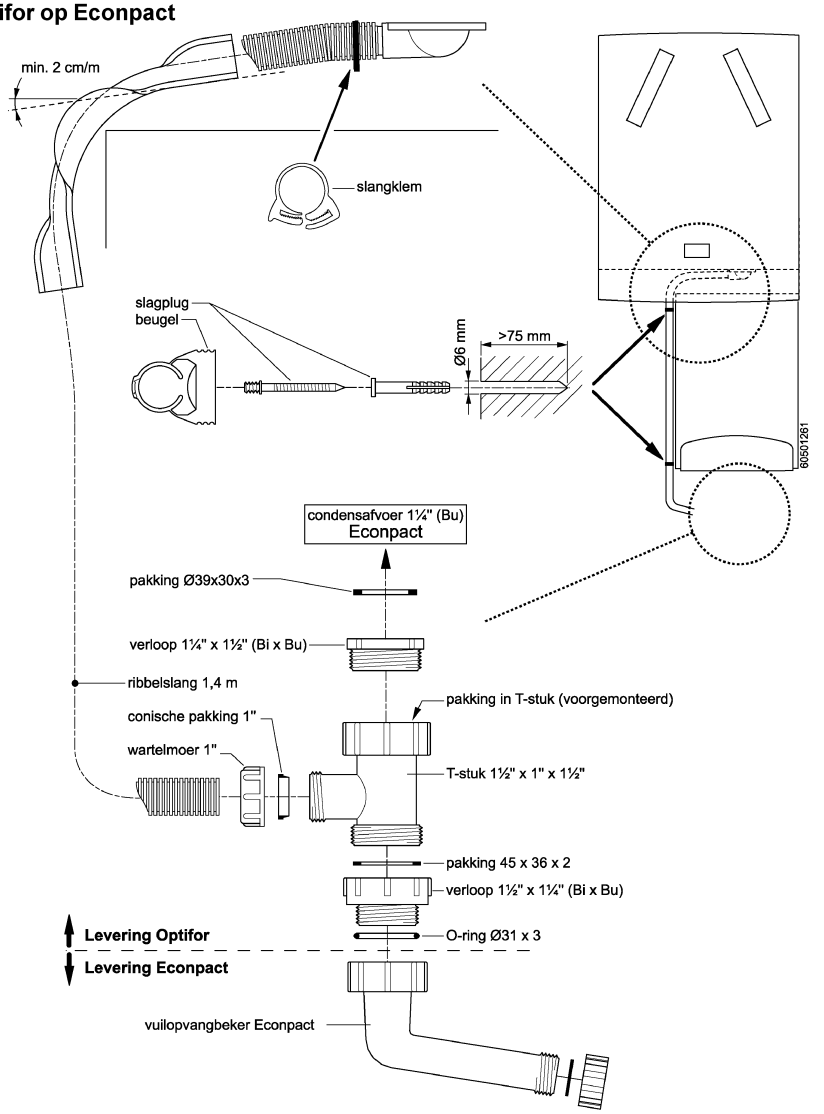
AGPO Ferroli

Aansluiten condensafvoer WTW-deel Optifor

Optifor op MegaDens



Optifor op Econpact



Appendix II: Maintenance and service report HR OptiFor OT-V

Commissioning date:	Device type:
Address:	Serial Number:
Installer:	
Installer code address:	

See Chapter 9 for an explanation of the points below		What to do*	Business year 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Minor maintenance																			
9.3.1	Filter cleaning	R.																	
9.3.2	Filter replacement	V.																	
9.3.3	Filter timer reset	I.																	
9.3.4	Clean valves	R.																	
Major maintenance																			
9.4.2	Cleaning the exchanger	R.																	
9.4.3	Cleaning the fans R.																		
9.4.4	Security valve	R / M Ohm																	
9.4.5	Condensation collection and drainage	R.																	
9.4.6	Volume flow control	M.	m3/h																

*** R =** cleaning **C =** to check **V =** to replace **I =** Set up **M =** measure. Enter the measured values or the relevant letter. Comments / malfunctions / replaced parts

	Service performed by:	
	Date of maintenance / service:	

Appendix III: Adjustment report HR OptiFor OT-V

Commissioning date:	Stamp Installer / maintenance company:
Address:	
Installer:	
Installer code address:	
Device type:	
Serial Number:	

SUPPLY:	**Requirement** m³/h (l/s)	**COOK** ..... m³/h (l/s)	**NORMAL** min. 60% of boil ..... m³/h (l/s) min. 100 m³/h (l/s)	**ABSENT**		
Stand		3	2	1	**Valve**	
Institution		P36 =	P35 =	P34 =	Type	Institution
Living room 1						
Living room 2						
Living room 3						
Bedroom 1						
Bedroom 2						
Bedroom 3						
.....						
.....						
Total:						
BUSY:		Dad	Dad	Dad		
Press side						
Suction side						
Total:						

DISPOSAL:	**Requirement** m³/h (l/s)	**COOK** ..... m³/h (l/s)	**NORMAL** 60% of boil ..... m³/h (l/s) min. 100 m³/h (l/s)	**ABSENT**		
Stand		3	2	1	**Valve**	
Institution		P33 =	P32 =	P31 =	Type	Institution
Kitchen 1						
Kitchen 2						
Bathroom						
Toilet						
.....						
.....						
Total:						
BUSY:		Dad	Dad	Dad		
Press side						
Suction side						
Total:						

25 m³/h = 6.9 l/s 50 m³/h = 13.9 l/s 75 m³/h = 20.8 l/s 100 m³/h = 27.8 l/s	125 m³/h = 34.7 l/s 150 m³/h = 41.7 l/s 175 m³/h = 48.6 l/s 200 m³/h = 55.6 l/s	225 m³/h = 62.5 l/s 250 m³/h = 69.4 l/s 275 m³/h = 76.4 l/s 300 m³/h = 83.3 l/s