

## CombiVal WPE (300), WPER (300) , WPEF (300) Calorifier/heat pump



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**1. Important addresses**

Heating installer

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. no. \_\_\_\_\_

Heating plumber

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. no. \_\_\_\_\_

Electrical installer

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. no. \_\_\_\_\_

Dear Hoval customer,

In the Hoval calorifier/heat pump, you have purchased a product that is built to the highest quality standards using state-of-the-art technology.

- Please check the items delivered, to ensure that they match your order and that nothing is missing. Also check for any damage incurred during transport and notify your installer or the nearest Customer Service centre if necessary. Claims made at a later date cannot be accepted for insurance reasons.
- For the correct installation and operation of your heat pump, all applicable laws, regulations and standards, in particular the regulations set down by the relevant electricity company, must be observed. In case of queries, please contact your installer or the nearest Hoval Customer Service centre.
- Before commissioning, the installation must be inspected, and the system must be approved for use by the installer.
- To ensure safe, economical and trouble-free operation, only operate your Hoval heat pump in accordance with these operating instructions.
- The heat pump may only be used for the purposes for which it was designed, and for which it has been approved by Hoval.
- Do not make any modifications to the unit, as this will invalidate any legal claims. Conversion kits must be installed and approved by the licensed installer or Hoval Customer Service.
- *In the event of a fault or damage, please contact Hoval Customer Service to inquire about the necessary repairs. It is essential to shut down the unit to prevent damage.*

With the purchase of a Hoval product you also obtain a comprehensive warranty, in accordance with our terms of sales and warranty.

With proper use, the ownership of your Hoval calorifier/heat pump will be a pleasure, and above all will provide you with a reliable and economical source of hot water.

## 2. Safety instructions

Installation and service work on heat pumps can be dangerous, on account of high pressures, live parts and the location of the installation.

Heat pumps may only be installed, commissioned and maintained by trained, qualified servicing staff.

When working on this unit, all safety instructions in the relevant documents, on adhesive labels or plates on the unit itself and all other safety precautions in force must be observed.



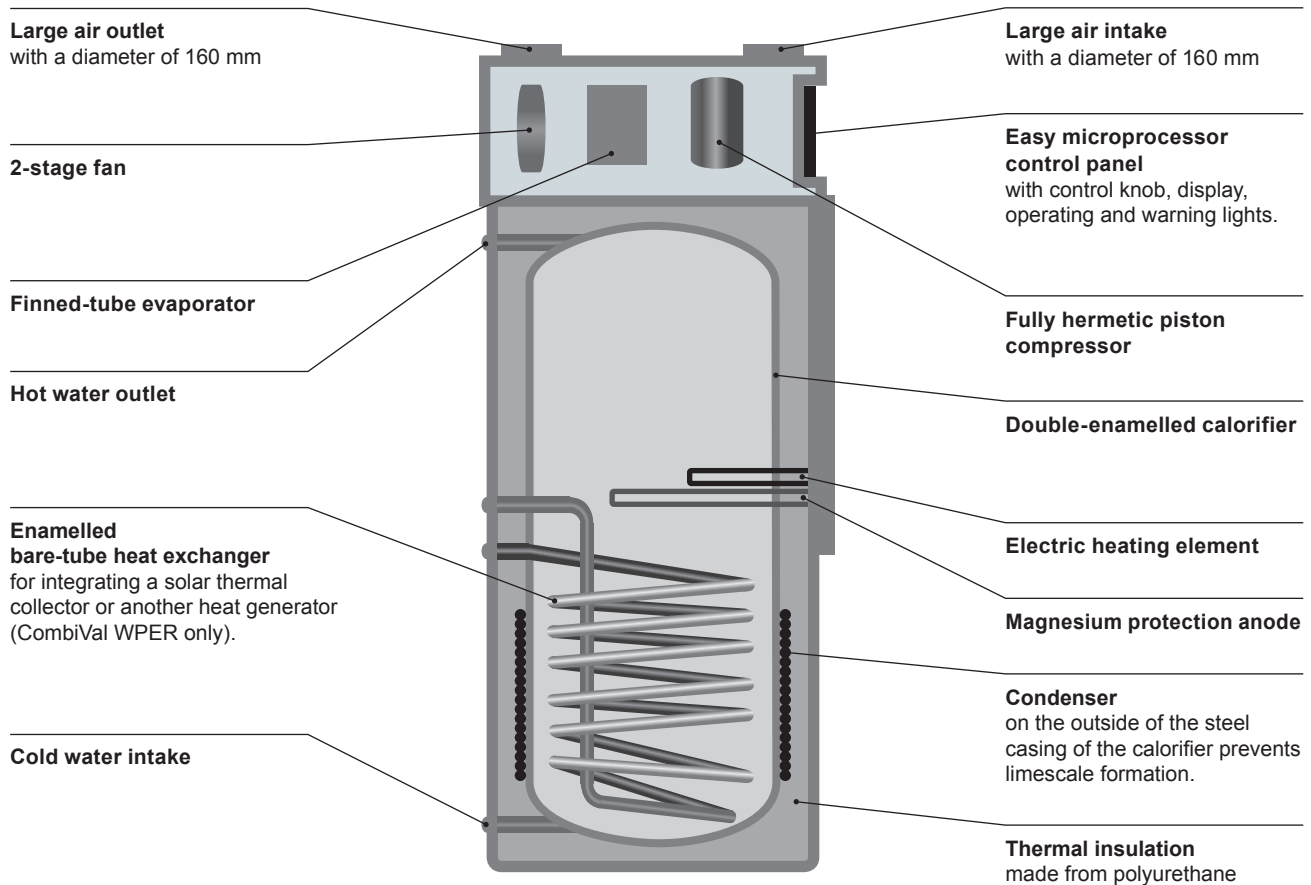
### Caution

**Before carrying out maintenance and service work, always unplug the unit from the mains.**

### 3. Description

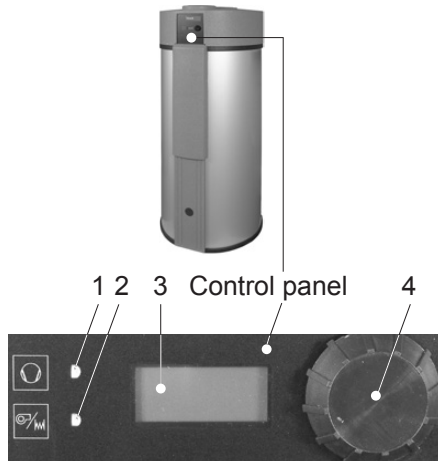
The calorifier/heat pump CombiVal WPE/WPER extracts a large part of the energy for the hot water supply from the ambient indoor air, which is available for free, for example from the room in which it is situated.

With the aid of the integrated heat pump, energy is drawn from the ambient air, thus heating the water. This saves up to two thirds of the energy costs associated with the hot water supply.



**Fig 01**

## 4. Operation



- 1 Operating and fault indicator Heat pump  
Green=on, orange=standby  
Red=fault
- 2 Operating and fault indicator  
Additional heating (boiler or electric heating element)  
Green=on, orange=standby  
Red=fault
- 3 Display
- 4 Control switch

### General note

The electronic controller has 2 program levels:

- Main menu (user level)
- Service menu (technician level)

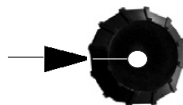
During operation, the main menu is the *standard display*. In the user level, the functions can be read off the display (3) (at the top, with status or settings at the bottom). The display is activated by turning or pressing the program switch (4) (the display will light up).

### Control switch

- Turning =  
Select value, set values



- Pressing =  
Change, confirm



1. Press and release: a *flashing line/number* will appear = setting can be changed.  
If the change is not "acknowledged" (press again briefly), it will not take effect.
2. Press and hold (> 3 sec) = switch to service menu.

### 4.1 User level (main menu)



There are 12 options (information or functions):

#### Display

#### 1. Actual hot water temperature



Actual value display

#### 2. Evaporator temperature



Actual value display

#### 3. Alarm/fault

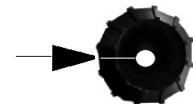


Alarm/fault code

0 = no fault

1-10 = see page 10

Acknowledge = press



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4. Operating status data

Status  
H. water



Heat pump in hot water mode  
Further information:

- Off
- DrawDown = HP is in standby mode according to timer circuit
- Legionel = heating to 60°C in operation
- Le.Work = Legionella programme active
- Le.End = Legionella programme successfully completed

Defrost mode:

- Defrost gas
- Defrost air
- Defrost off
- Defrost stop

5. Target hot water temperature

Target

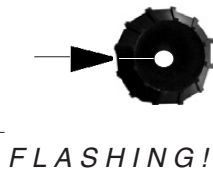
HW Target  
45 °C



Target hot water temperature

The set hot water temperature can be changed as follows:  
1. Press the switch

HW Target  
45 °C



2. Turn the switch

until the desired hot water temperature is shown (e.g. 50 °C)

HW Target  
50 °C



2. Press the switch =

acknowledge (the new set temperature is now in effect). The setting should be between 45 °C and 55 °C!

6. Min. hot water temperature

T min  
35 °C



Target minimum temperature

This is set in the same way (see point 5, hot water temperature). If the temperature falls below this value, the additional heating selected in the operating mode (point 8) will be switched on.

7. Min. hot water temperature

T2 min  
10 °C



Similar function to «T min».

Is used for the «shutdown function» and «holiday function». The factory setting is «10 °C»

8. Heat pump operating mode

H. pump  
HP + EL



This is where the heat sources are selected:

- HP + EL  
Heat pump and electric heating element enabled
  - Off
  - HP = heat pump only
  - EL = electric heating element only
  - Boiler = boiler only
  - HP + Boi. = heat pump and boiler
- Only set the installed combination.

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## 9. Protection against Legionella

Legionel  
On

- On = The hot water temperature is increased to 60 °C every 14 days
- Off = no protection

## 10. Clock

Clock



- Factory setting 12:00
- The time can be set under (<<ClockSet>>). To do this, first set the current hour and then the current number of minutes

## 11. Timer Off

Timer  
Off

- The timer function enables timer-controlled hot-water production with a daily time frame. To do this, first set the time under (<<Clock>>).
- For the starting point, first select the hour in (<<Start HP .. h>>) and then the minutes in <<Start HP .. min>>.
- The end time is set in the same way in (<<Stop HP>>).
- The legionella programme has priority irrespective of the timer function.
- If the power is interrupted, the timer function is stored by a battery for approx. 1-2 hours. If the power is interrupted for a period of time longer than this, the function must be reprogrammed.

## 12. Configuring separate fan

FanConf  
1

Mode display

This function is intended for separate ventilation with the fan when the heat pump is in standby mode:

- 1 = Fan speed 1 (lower quantity of air)
- 2 = Fan speed 2 (greater quantity of air)
- 0 = No separate ventilation function for the fan. Fan only to be used when heat pump in operation!

## 13. Fan mode (speed selection)

FanMode  
2

Fan speed in operation

- 1 = Speed 1 = low speed/quantity of air
- 2 = Speed 2 = higher speed/quantity of air

## 14. Photovoltaic yield

PV yield  
OFF

If the system is connected to a solar power plant which enables operation of the hot-water heat pump (HWHP), the following settings can be selected:

- «OFF» = the solar power plant is not connected to the system or is deactivated.
- «HP» heat pump only, «EL» electric heating element only, «HP+EL» = the solar power plant enables the selected mode when sufficient solar power is available.

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15. Photovoltaic heat pump



- 5 °C – T max: Target temperature range when PV function activated. This parameter determines the target HW temperature to be reached solely by the HP when the PV function is activated.

16. Photovoltaic and electrical additional heating (electric heating element)



- 5 °C – T max: target temperature range when PV function activated. This parameter determines the target HW temperature to be reached solely by the electrical additional heating when the PV function is activated.

17. Holiday absence function



- «OFF»  
«1 week»  
«2 weeks»  
«3 weeks»  
«3 days»  
«Manual» (see also point 18)  
Deactivation/activation of the absence function and of the min. HW temperature «T2 min».

18. Days absent



- 1-99  
Individual specification of days absent (if «Manual» was selected under point 17). The HW temperature can be reduced as low as «T2 min»

19. Remaining days absent



- 0-99  
Display of the remaining days absent.

20. Boost function



- «OFF»  
«ON»  
Is activated to cover a short-term increased need for HW. The BOOST function uses maximum power «HP+EL» until «T max» is reached, or for a maximum of 1 hour.

21. Fan



- «OFF»  
«15»  
«30»  
When activated, the fan will be paused for 15 or 30 seconds per hour of operation.



## 5. Description of the control functions

### 5.1 Calorifier mode

Heating up of the calorifier is carried out by the heat pump, electric heating element and boiler, jointly or individually, depending on the settings. The function of the calorifier mode is controlled via the user program:

Heat pump: operating mode H. water. Temperature control: via sensor value ( $T_{max} = \text{setpoint}$  and  $T_{min}$ ). The heat pump is switched on if the temperature falls below the set target and switched off when the target is reached. If the heat pump is switched off, the HW target temperature is achieved using the selected additional heating (hysteresis: HP  $\pm 1$ -3 K; additional heating  $\pm 1$  K).

The heat pump is switched off automatically when the temperature falls below the evaporation temperature of  $-18\text{ }^{\circ}\text{C}$ . The operating status is displayed on the control panel.

(See page 5: display 3)

### 5.2 Defrost mode

Defrost mode (hot gas bypass) activates automatically when required. Defrosting using the defrost valve is initiated (fan off) when the temperature at the evaporator is  $< -2\text{ }^{\circ}\text{C}$ .

Defrosting ends when the temperature at the defrost sensor reaches a value of  $+5\text{ }^{\circ}\text{C}$ . If this value is not reached within 20 minutes, defrosting is stopped and normal operation resumes. The defrost interval lasts 2 hours.

### 5.3 Protection against Legionella

If, as a general rule, little water is required (extended dwell time of the water in the calorifier), activation of the protection against Legionella function is recommended. When the function is activated (see user program), the water is periodically heated to  $60\text{ }^{\circ}\text{C}$ .

## 6. Alarm/fault display

### 6.1 Types of error

There are 3 types of message (see below). Three different messages can be shown on the display at the same time. Press the setting knob on the control panel once to acknowledge and reset the message.

- The **information message** does not affect the function of the calorifier/heat pump; however, it notifies the user of a problem that should be remedied as soon as possible (message 8, 9 and 10).
- In the event of **refrigerant circuit error messages**, the supply of hot water by the heat pump is interrupted. If the electrical additional heating is activated, this takes over the hot water supply until the target hot water temperature is reached (error message 3, 4, 5 and 6).
- In the event of **error messages for the overall system**, the hot water supply is stopped completely. These messages are most likely due to a sensor error (error message 1 and 2).

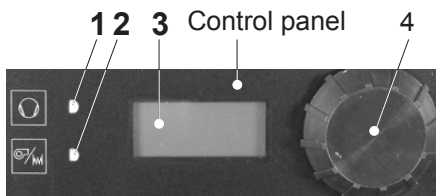
The user can view the error messages in the display. The error messages are acknowledged by pressing the setting knob. Before the calorifier/heat pump returns to normal operation, the error must be rectified and acknowledged. If the error is not rectified, the error message will remain on the display. If several error messages occur at the same time, these will be shown in the second line of the display, listed in order of priority. The pressure switch error messages 5 & 6 are dealt with as follows.

Error message 5 (pressure switch error message appearing for the first time): the heat pump is switched off. The heat pump starts up again if the pressure normalises of its own accord. In the case of error message 5, the indicator LED (1) flashes red. As soon as the error is rectified (or has resolved itself), the indicator LED automatically changes to orange (flashing). After the error message has been acknowledged, the indicator LED then indicates the operating or standby mode of the calorifier/heat pump (= indicator LED permanently green or orange).

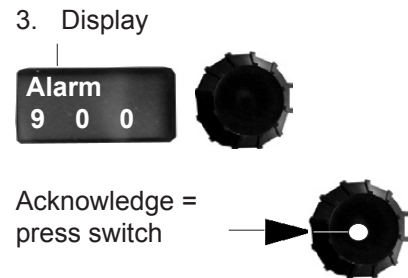
If the same error occurs again within 6 hours of the first error message, error message 6 is displayed. The heat pump is switched off. The HP can only start up again after the error has been rectified and the error message has been acknowledged. In the case of error message 6, the indicator LED (1) flashes red. As soon as the error is rectified, and once the error message has been acknowledged by pressing the setting knob, the calorifier/heat pump then changes to the operating or standby mode (= indicator LED permanently green or orange).

#### Indicator LED: error messages

The indicator LED (1) of the heat pump is flashing red: Error message for the refrigerant circuit or information message. Both indicator LEDs (1 + 2) flashing: storage tank sensor faulty, it is not possible to heat up the water.



1. Operating and fault indicator, heat pump.  
*Flashing red = fault in alarm group 2 or 3*
2. Operating and fault indicator, additional heating (boiler or electric heating element).  
*Both indicators (1 + 2) flashing red = fault in alarm group 1*



### 6.2 Overview of error messages

Error number	Indicator LED		Cause of error	Effect
	No. 1	No. 2		
1	flashing (red)	flashing (red)	Short circuit on temperature sensor in upper region of storage tank	Heat pump and additional heating switched off.
2	flashing (red)	flashing (red)	Temperature sensor in upper region of storage tank disconnected.	Heat pump and additional heating switched off.
3	flashing (red)		Short circuit on temperature sensor on the evaporator.	Compressor is switched off.

Error number	Indicator LED		Cause of error	Effect
	No. 1	No. 2		
4	flashing (red)		Temperature sensor on evaporator disconnected.	Compressor is switched off.
5	flashing (red)		First pressure switch error message	Compressor is switched off and restarts automatically once the error is rectified. Acknowledge the error message to dismiss it.
6	flashing (red)		Second pressure switch error message	Compressor is switched off and will restart only after the error has been rectified and acknowledged and the calorifier/heat pump has been reset.
9	–		–	–
10	flashing (red)		The target temperature for the protection against Legionella function has not been reached.	Information

**7. Fault determination**

You can minimise the risk of a fault occurring by signing up to a maintenance contract. Should something goes wrong despite this, go through the fault checklist below. Make sure that you have complied with the instructions in the manual.

If you are unable to rectify the fault with the aid of the checklist, please contact Hoval Customer Service.

**Type CombiVal WPE, WPER**

Fault	Cause	Remedy
Alarm message in display	See error display	• See error display
Electrical fault No display	• No power to the plug • Main switch turned off	• Replace fuse • Turn on the main switch
Electrical heating does not heat despite being switched on	• Overheating • Electrical connection faulty	• Reset safety thermostat • Replace
Electrical heating does not heat although the function is switched on	• Electrical connection faulty • Pump faulty • Pump blocked	• Replace • Replace } Inspection by heating engineer
	• Boiler not in standby position	• Check standby position, prepare
Fault no. 5 or 6	• High-pressure fault	• Clean

## Type CombiVal WPE, WPER

Fault	Cause	Remedy
Discharge of condensate during operation	• Condensate drain blocked	• Clean
Odour	• No drain trap fitted • No water in drain trap	• Install drain trap • Top up water

## 8. Operation/maintenance/service

### 8.1 Operation and maintenance

To ensure problem-free operation, a yearly check should be carried out.

### 8.2 General checks

To detect possible irregularities in its operation, the heat pump should be visually inspected at regular intervals.

- Keep the unit casing and the area around the unit clean.
- Wipe the installation regularly with a damp cloth to remove dust and contamination. In this way, leakage points are identified sooner and can be repaired.
- From time to time, check that all connections are secure.
- From time to time, check that the operating voltage and phase unbalance are still within the specified limits.
- Performance checks

The temperature difference between the air intake and the air outlet should be approx. 5-7 K. Larger temperature differences indicate reduced air flow rate (check supply and exhaust ducts); a difference below 4 K indicates that the heat pump is not functioning correctly (notify customer service).

#### Important

The hot water storage tank is coated with a double layer of enamel on the inside.

The tank coating is designed for normal drinking water quality. If the aggressiveness of the drinking water used is above average, no guarantee can be given unless special protective measures are taken.

### 8.3 Magnesium protection anode

- **The magnesium protection anode must be checked 2 years after commissioning at the latest. The subsequent control intervals are then set depending on the condition of the anode at the first check.**

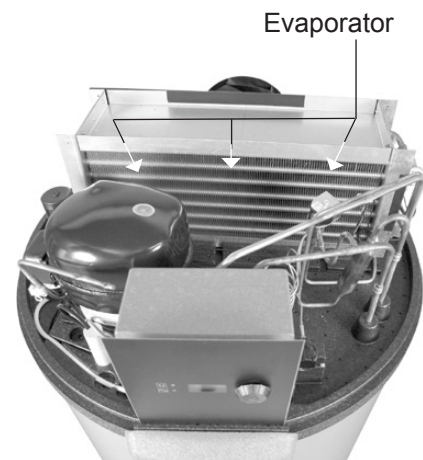
In areas with a high chalk content (over 16°dH or 28°f respectively), a check should be made after 2-3 years. Ask your heating engineer or Hoval Customer Service.

### 8.4 Cleaning the air duct

- Take care to ensure that the air inlet and exhaust openings are freely accessible and not blocked by objects or dirt.
- Likewise check protective grilles to ensure they are clean. This also applies to any exhaust ducts that are present.
- The inlet and exhaust air grilles and the evaporator must be checked for dirt regularly, and cleaned when necessary (see image below). The top cover can be removed to clean the evaporator.



**Caution:**  
Unplug the power cord before opening



**Refrigerant circuit:**  
Work on the internal circuit of the heat pump (compressor, condenser, evaporator, expansion valve etc. and including the circuit pipework) may only be carried out by authorised persons.

### 8.5 Service



**Important:**  
Unplug the power cord before carrying out any work on the unit!

#### Shut-down

The heat pump can be shut down by switching off the calorifier/heat pump at the control panel (see Operation).

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