

**Hoval CombiVal WPE, WPER, WPEF**  
Compact device for domestic hot water

*Air/water heat pump*

- With fully hermetic reciprocating compressor, aluminium helical tube condenser in double shell, lamellar tube evaporator (Cu/Al) and thermostatic expansion valve
- Fan (2-stage)
- Air intake/outlet to the top or sideways
- Air intake/outlet aperture Ø 160 mm
- Refrigerant R134a
- Recirculated air/outside air mode
- Microprocessor comfort control. Different possibilities of combination of heat generators (heat pump, electric heating element and boiler). Independent fan functions for ventilation. Automatic legionella program, alarm with error display
- Defrosting operation
- Can be used in conjunction with photovoltaic (Smart Grid ready)
- Air temperature range -10 °C to +35 °C

*Calorifier*

- Calorifier made of steel with double enamel coating
- Volume 270 l
- WPER with enamelled plain tube heat exchanger for heating boiler operation (integral)
- Magnesium protective anode
- Electric heating 2.0 kW
- Thermal insulation from polyurethane, not removable
- Attractive red casing; upper cover and front panel black
- WPER (300): with integrated heater battery
- WPEF (300): with cleaning flange on the end




*Delivery*

- Heat pump with calorifier ready-assembled, insulated, lagged and wired
- Ready for operation
- Metal base available at extra charges

*On site*

- Charging pump and sensor for heating boiler operation
- Air ducting



Range				
CombiVal type			Refrigerant	Output kW
WPE	(300)		R134a	1.78
WPER	(300) <sup>1)</sup>		R134a	1.78
WPEF	(300) <sup>2)</sup>		R134a	1.78




<sup>1</sup> With integrated heating battery  
<sup>2</sup> With cleaning flange on the front

Calorifier heat pump



**Hoval CombiVal WPE, WPER, WPEF**  
Recirculated air/outside air mode. Air/water heat pump for water heating. Calorifier made of steel with double enamelled coating and electric heating built in.  
WPER: with integrated heating register.  
WPEF: with cleaning flange on the end.  
Cased and ready to plug in. Defrosting operation and microprocessor comfort control included.

Tests	
Hoval CombiVal	WPE (300)
Test number	WPZ-B-111-16-11

CombiVal type		Persons <sup>1</sup> approx.	Output kW	Heating surface m²
WPE		4	1.78	-
WPER		4	1.78	1.00
WPEF		4	1.78	-

Part No.

7016 339  
7016 340  
7016 341

<sup>1)</sup> Persons = number of persons who can be supplied with domestic hot water (approximate values).

Accessories (only for Hoval CombiVal WPER (300))



**Immersion sensor TF/2P/5/6T, L = 5.0 m with plug**  
for TopTronic® E controller modules/ module expansions with exception of basic module district heating/fresh water or basic module district heating com  
cable length: 5 m with plug  
sensor sleeve diameter: 6 x 50 mm  
dewpoint-proof  
operating temperature: -20...105 °C  
protection class: IP67

2056 788



**Immersion sensor TF/2P/5/6T, L = 5.0 m**  
for TopTronic® E controller modules/ module expansions with exception of basic module district heating/fresh water or basic module district heating com,  
cable length: 5 m without plug  
sensor sleeve diameter: 6 x 50 mm,  
dewpoint-proof,  
operating temperature: -20...105 °C,  
protection class: IP67

2055 888



**Immersion sensor TF/12N/2.5/6T, L = 2.5 m**  
for gas boiler with RS-OT  
Cable length: 2.5 m  
Sensor sleeve diameter: 6 x 50 mm,  
dewpoint-proof,  
operating temperature: -20...105 °C,  
protection class: IP67

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At TopTronic® E, immersion sensor is included in the boiler controller or in the heating controller set.

Service



**Commissioning**

Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Part No.

## CombiVal WPE, WPER, WPEF (300)

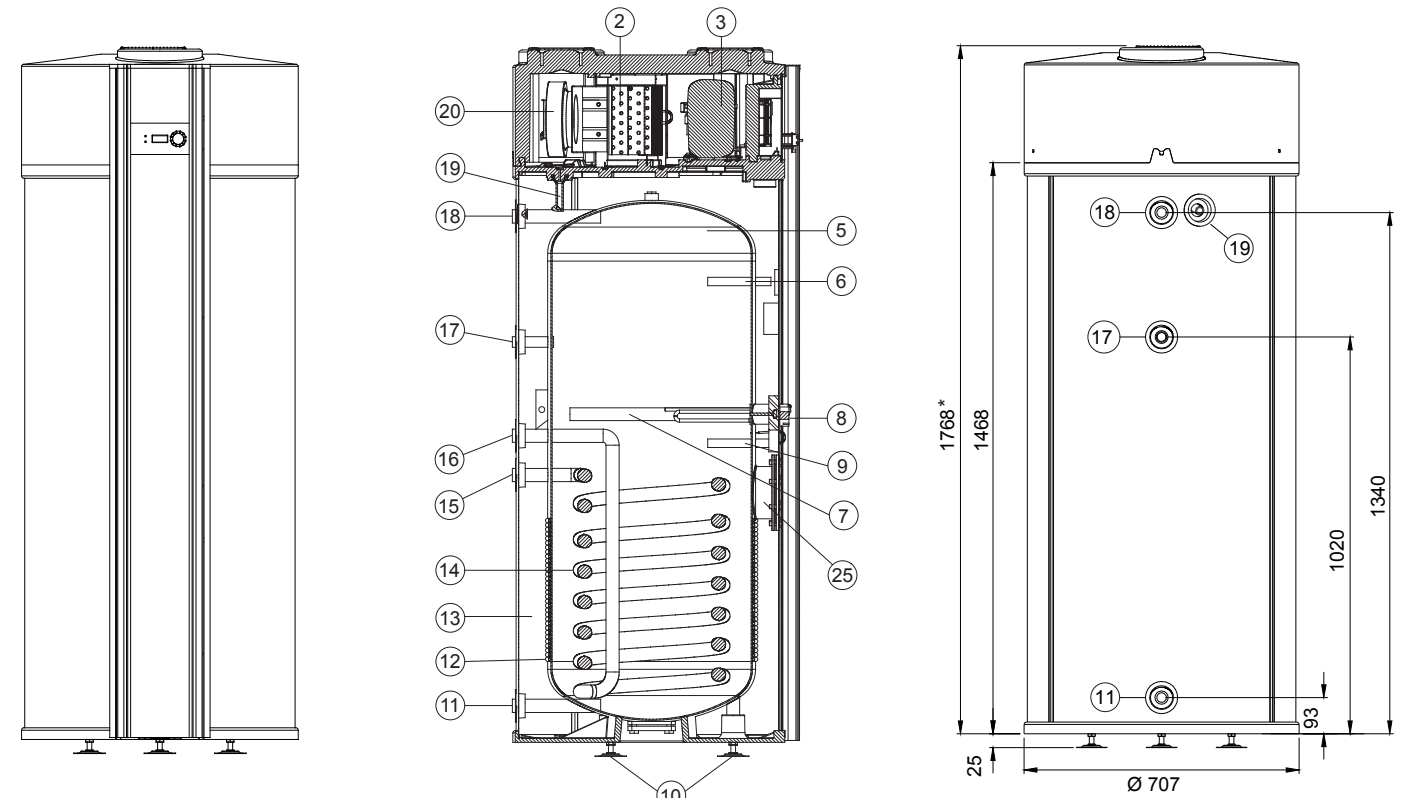
Type		WPE (300)	WPER (300)	WPEF (300)
• Content	litres	270	258	270
• Operating/test pressure	bar	6/12	6/12	6/12
<b>Max. operating temperature</b>				
• Max. heat pump operation	°C	62	62	62
• Boiler operation	°C	65	65	65
• Electric operation	°C	65	65	65
<b>Recommended economy temp.</b>				
• Heat pump operation	°C	48	48	48
• Polystyrene foam thermal insulation	mm	80	80	80
• Electrical power dissipation at 55 °C (EN16147:2011)	Watt	20	20	20
• Transport weight	kg	137	160	137
<b>Dimensions</b>				
• Height	mm	1780	1780	1780
• Diameter	mm	710	710	710
• Depth	mm	720	720	720
• Air inlet/outlet Ø	mm	160	160	160
<b>Heater coils (integral)</b>				
• Heating surface	m <sup>2</sup>	-	1.0	-
• Heating water	litres	-	5.9	-
• Flow resistance at 1 m <sup>3</sup> /h	mbar	-	25	-
• Operating pressure	bar	-	3	-
• Flow temperature maximum	°C	-	80	-
<b>Heat pump</b>				
• Refrigerant		R 134a	R 134a	R 134a
• Filling	kg	0.9	0.9	0.9
• Average heat output <sup>1)</sup>	kW	1.78	1.78	1.78
• Average electrical power consumption <sup>1)</sup>	kW	0.49	0.49	0.49
• Performance <sup>1)</sup>	COP	3.61	3.61	3.61
• Power consumption	A	2.0	2.0	2.0
• Max. starting current	A	9.6	9.6	9.6
• Electric fuse protection	A	13 T	13 T	13 T
• Max. supply air temperature	°C	35	35	35
• Min. supply air temperature	°C	-10	-10	-10
<b>Nominal air quantity (not under load)</b>				
• Stage 1	m <sup>3</sup> /h	200	200	200
• Stage 2	m <sup>3</sup> /h	300	300	300
<b>Ext. pressure</b>				
• Stage 1	Pa	80	80	80
• Stage 2	Pa	-	-	-
• Sound power level	dB(A)	59	59	59
<b>Sound pressure level 1 m</b>				
• Stage 1	dB(A)	49	49	49
• Stage 2	dB(A)	55	55	55
• Electrical immersion heater 230 V	kW	2.0	2.0	2.0
• Electric connection (device) voltage/frequency	V/Hz	230/50	230/50	230/50
• Hot water output/day <sup>2)</sup>	number of persons	4	4	4

<sup>1)</sup> According to the following standards: EN16147:2011, EHPA Testing Regulation V1.8 A20 / W10-53 (60 % r.h.), EN12102 und EN9614-2

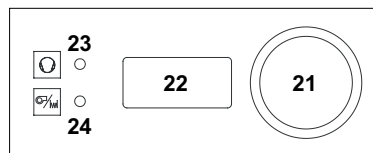
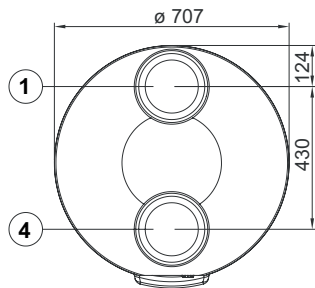
<sup>2)</sup> Number of persons who can be supplied with hot water at the plants without hot water circulation (approximate values without recharge).

## Hoval CombiVal WPE, WPER, WPEF

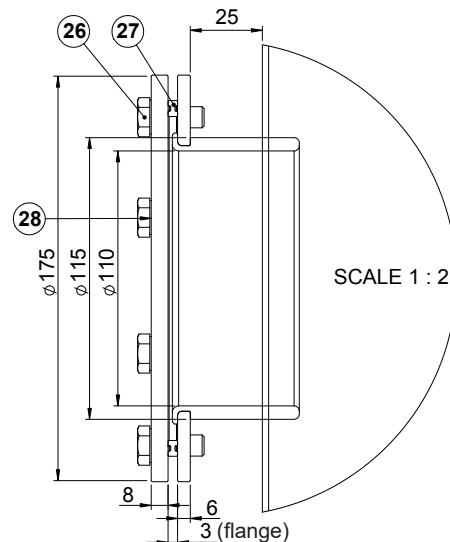
(Dimensions in mm)



\* with adjustable foot set 1890-1920 mm  
Tilting dimension with standard feet 1930 mm



## Cleaning flange with CombiVal WPEF



Deviations possible as a result  
of manufacturing tolerances.  
Dimensions +/- 10 mm

- 1 Air outlet Ø 160 mm
- 2 Evaporator
- 3 Compressor
- 4 Air inlet Ø 160 mm
- 5 Enamelled tank
- 6 Immersion tube for sensor Ø 15 mm, length 160 mm
- 7 Anode
- 8 Heating element
- 9 Immersion tube for operating sensor Ø 15 mm, length 160 mm
- 10 Adjustable feet
- 11 Cold water inlet R 1"
- 12 Safety condenser
- 13 Thermal insulation
- 14 Heating coil (only WPER)
- 15 Inlet heating coil (only WPER) R 1"
- 16 Outlet heating coil (only WPER) R 1"
- 17 Circulation nozzle R 3/4"
- 18 Hot water outlet R 1"
- 19 Condensate discharge (plastic, Ø DN 15)
- 20 Fan
- 21 Operating button - rotary push-button
- 22 Control panel (display)
- 23 Operating/warning light heat pump
- 24 Operating/warning light auxiliary heating
- 25 Cleaning flange Ø 110 mm (only WPEF)
- 26 Screw M12 x 25-8.8-Fe/Zn8 (PN-EN ISO 4017)
- 27 Flange seal Ø 174 x 3
- 28 Dummy flange

## Regulations and guidelines

The following regulations and guidelines should be complied with:

- technical information and installation guide of Hoval company
- DIN EN 1736: Refrigerating systems and heat pumps
- DIN EN 378: Refrigerating systems and heat pumps - Safety and environmental requirements
- DIN EN 13313: Refrigerating systems and heat pumps - Competence of personnel
- VDI Directive 2035: Protection against corrosion and boiler scale in heating and domestic hot water systems.
- Technical instructions on noise (TA-Lärm)
- Chemicals climate protection regulation

## Ecology

Ordinance on substances (federal)

- Handling of refrigerant art. 45 (professional authorisation)
- List of refrigerant and heat carrier fluids according to VWF (regulation about protection of waters from water-hazardous liquids) regulation article 22, Paragraph 2
- Sound protection regulation 814.331
- SN (Swiss norms) 253 120 (definitions of refrigerant)
- Local regulations

## Electric connection

- VSE (Association of Swiss Engineers) recommendations for connection of heat pump plants for heating and water heating to the network of electric power stations (2.29d, September 1983).
- Regulations of local electric power stations
- VDE directives
- Technical connection condition (TAB 2019) for connecting to the low voltage grid

## Planning and construction

- Low loss header
- Regulations of SVGW (Swiss Association for Gas and Water Supply) (especially guideline W3), as well as regulation of local water supply
- SN 253 130 Requirements to installation place
- Local fire police regulations as well as country-specific regulations
- Fire protection regulations of the VKF (Association of Cantonal Insurance Companies)
- Guidelines of SWKI (Swiss Association of Heat and Climate Engineers) 91-1 and aeration and deaeration of the heating room
- FWS (Swiss Society for Promotion of Heat Pumps) and AWP (Working Committee for Heat Pumps) guidelines and leaflets
- Guidelines "Procal corrosion and boiler scale protection in heating and industrial water plants".
- The LRV (air purity regulation) regulations must be kept (bivalent plants)
- Regulations concerning operating pressure and temperature
- EN 806 "Technical rules for drinking water installation".
- ÖNORM B 2531 (national supplement to EN 806).

## Installation

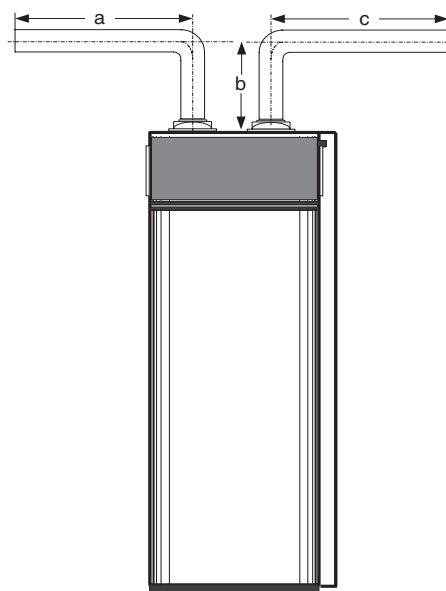
Hoval calorifier heat pumps type CombiVal WPE, WPER can be installed without a base in any unheated room with a floor drain for the condensate. The room temperature must not be below 6 °C with devices without additional heating system. Minimum room size 20 m³. The intake air should not contain any aggressive substances (ammonia, sulphur, chlorine, halogens, etc.).

## Air connection

Intake on top at front

Outlet on top at the back  
(see Dimensions)

- The length of air tubes with max. 2 bows amounts to:  
Intake/blow pipeline total length  
Ø 160 mm max. 3 m  
with extension to 200 mm:  
Ø 200 mm max. 7 m
- The indicated total length should not be exceeded!



Maximum total length = a + b + c + b

## Plumbing installation

- If possible the DHW distribution system should be without circulation.
- Select short pipeline configurations.
- Pay attention to compatibility of water pipelines and calorifier.

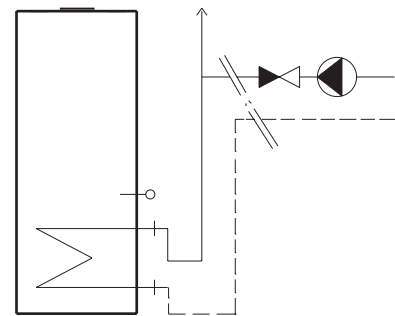
Using copper and galvanised steel tubes always pay attention to the succession of flow direction: copper after galvanised steel.

- The hot water pipes must be thermally insulated in accordance with the local regulations, as well as the currently valid building energy legislation.

- If water pipeline pressure is higher than 5 bar, a pressure reduction valve is to be fitted into the cold water pipeline.
- The condensate connection (at the rear of the heat pump, R 1/2") must be routed to the wastewater drain with plastic pipes via a siphon.
- The condensate drain can also be combined with the drain of the expansion water from the safety valve. Depending on the air humidity, up to 0.3 l/h condensate can occur.

## Heating assembly (WPER)

- The auxiliary heating coil must be equipped with a charging pump on site.
- There should be installed an automatic aspirator in the heating water flow.
- Flow and return should be connected in such a way, that with switched off charging pump (heating with heat pump or electrically) no back circulation and no gravity circulation can take place.
- Expansion of heating water must be always ensured (also during electric charging resp. heat pump operation).

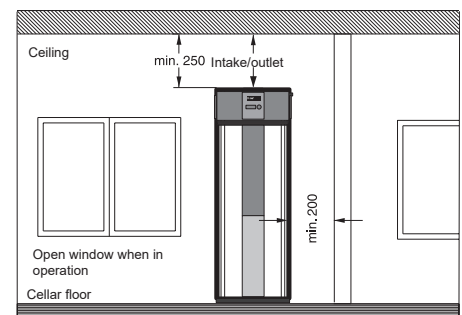


## Electric connection

- Ready-for-use wiring (plug with 2 m cable) (230 V socket or 230 V/50 Hz Schuko socket)

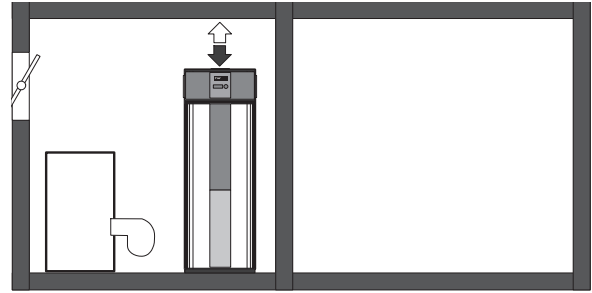
## Required space

- Installation area diameter 700 mm
- Minimum distance to the walls min. 200 mm
- Required space operation side min. 600 mm
- Minimum distance to the ceiling: 250 mm



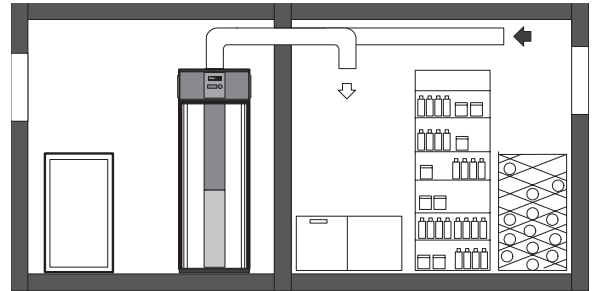
### Installation in the heating room

- *Air ducting*  
Air drawn from and blown into the room
- Recovery of unusable waste heat



### Installation in the heating room with heating only heat pump

- *Air ducting*  
Air drawn from and blown into the neighbouring room
- Min. room volume 25 m<sup>3</sup>
- Cooling, dehumidification (wine cellar, storeroom)



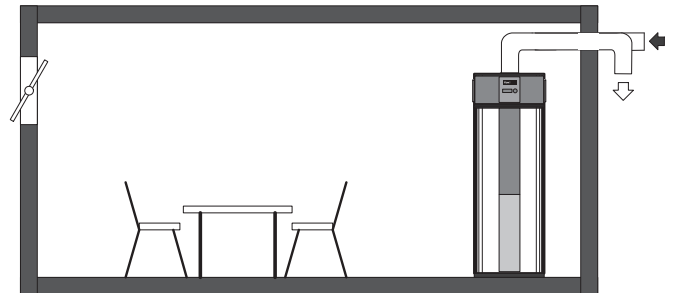
### Installation in the utility room

- *Air ducting*  
Air drawn from and blown into the room
- Min. room volume 20 m<sup>3</sup>
- Dehumidification, use heat of condensate (laundry room)
- Air intake grille must be cleaned monthly
- Clean evaporator at least 1 time per year



### Installation in recreation room

- *Air ducting*  
Inflow and outflow of air either from the room or from outdoors
- min. room volume 20 m<sup>3</sup>  
If the air guide shown in the drawing is used, the window can remain closed.



#### Air duct pipelines

- Intake/blow pipes made of plain tube, min. Ø 160 or 200 mm.
- Max. total length of pipeline should be 3 or 7 m, with max. 2 bows (90°). (For each further bow the total length of pipe must be reduced by 1 m.)
- Supply of pipeline incl. accessories by the customer (ventilating pipe made of plastic, aluminium or galvanised sheet steel).