

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, electrical immersion heater and boiler). Independent fan functions for ventilation. Automatic legionella program, alarm with error display
- Defrosting operation
- Can be used in conjunction with photovoltaic (SmartGrid-ready)
- Air temperature range -10 °C to +35 °C



Calorifier

- Calorifier made of steel with double enamel coating
- Volume 270 dm³
- 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

Range

CombiVal Type			Refrigerant	Output kW
WPE (300)			R134a	1.78
WPER (300) ¹			R134a	1.78
WPEF (300) ²			R134a	1.78

¹ With integrated heating battery

² With cleaning flange on the front

Tests

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

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

Calorifier heat pump



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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.

CombiVal Type	Persons ¹ approx.	Output kW	Heating surface m ²
WPE	4	1.78	-
WPER	4	1.78	1.00
WPEF	4	1.78	-

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

Part No.

2016 339
2016 340
2016 341

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,
sensor may already be included in scope of delivery of heat generator/controller module/module expansion,
sensor characteristics:
KTY 81-210 (type 0),
operating temperature: -20...105 °C,
index of protection: 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,
sensor characteristics:
KTY 81-210 (type 0),
operating temperature: -20...105 °C,
index of protection: 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,
sensor characteristics:
KTY 81-210 (type 0),
operating temperature: -20...105 °C,
index of protection: 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.

CombiVal WPE, WPER, WPEF (300)

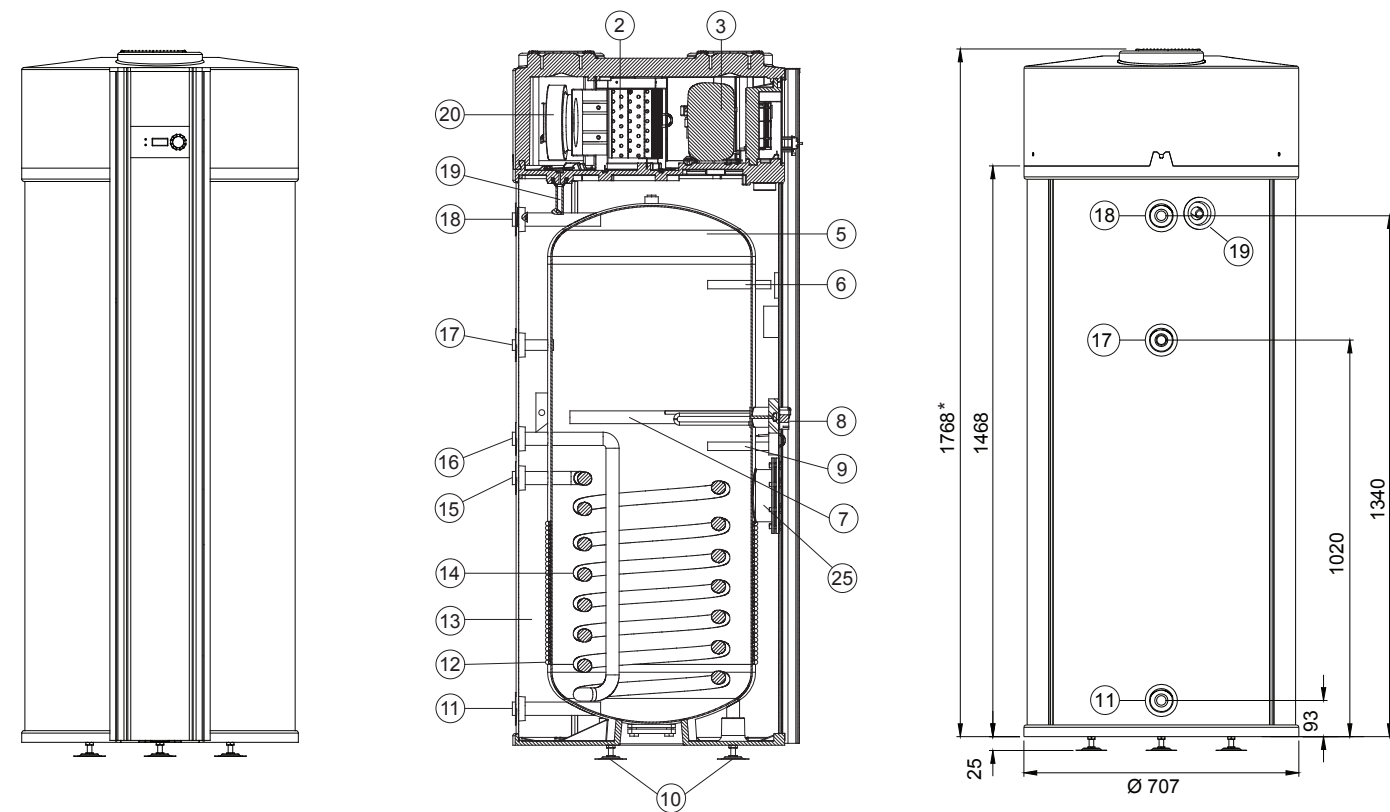
Type		WPE (300)	WPER (300)	WPEF (300)
• Content	litres	270	258	270
• Operating/test pressure	bar	6/12	6/12	6/12
Max. operating temperature				
• Max. heat pump operation	°C	62	62	62
• Boiler operation	°C	65	65	65
• Electric operation	°C	65	65	65
Recommended economy temp.				
• Heat pump operation	°C	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
Dimensions				
• Height	mm	1780	1780	1780
• Diameter	mm	710	710	710
• Depth	mm	720	720	720
• Air inlet/outlet Ø	mm	160	160	160
Heater coils (integral)				
• Heating surface	m ²	-	1.0	-
• Heating water	litres	-	5.9	-
• Flow resistance at 1 m ³ /h	mbar	-	25	-
• Operating pressure	bar	-	3	-
• Flow temperature maximum	°C	-	80	-
Heat pump				
• Refrigerant		R 134a	R 134a	R 134a
• Filling	kg	0.9	0.9	0.9
• Average heat output ¹⁾	kW	1.78	1.78	1.78
• Average electrical power consumption ¹⁾	kW	0.49	0.49	0.49
• Performance ¹⁾	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
Nominal air quantity (not under load)				
• Stage 1	m ³ /h	200	200	200
• Stage 2	m ³ /h	300	300	300
Ext. pressure				
• Stage 1	Pa	80	80	80
• Stage 2	Pa	-	-	-
• Sound power level	dB(A)	59	59	59
Sound pressure level 1 m				
• 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 ²⁾	number of persons	4	4	4

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

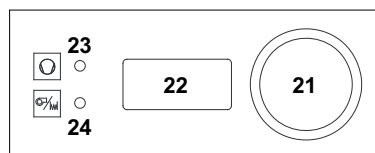
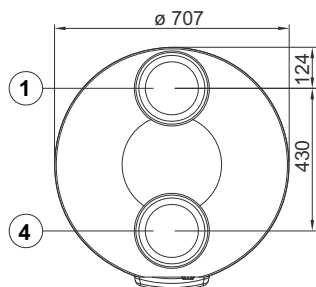
²⁾ Number of persons who can be supplied with hot water at the plants without hot water circulation (approximate values without recharge).

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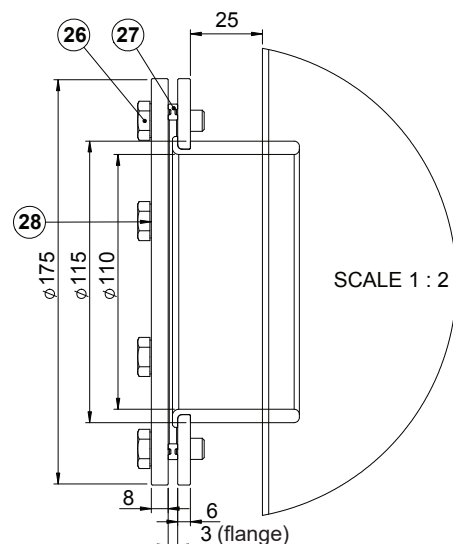
(Dimensions in mm)



* with adjustable foot set 1890-1920 mm
Tilting measure 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 M12x25-8.8-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)
- Cantonal and 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 2007) for connecting to the low voltage grid

Planning and construction

- Hydraulic switches
- 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
- Cantonal and 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 of type CombiVal WPE, WPER can be installed in every unheated room with floor drain for the condensed water. The room temperature must not be below 6 °C with devices without additional heating system. Minimum room size 20 m³.

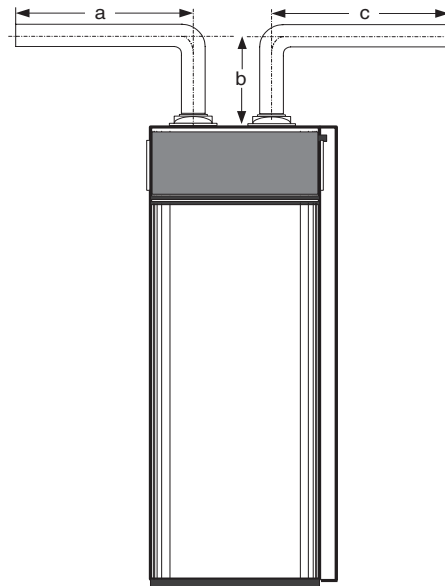
The intake air should not contain any aggressive substances (ammonia, sulphur, chlorine, halogens, etc.).

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.

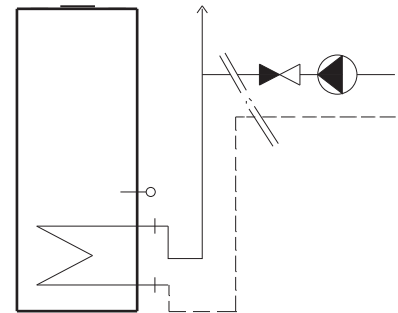
Using copper and galvanised steel tubes always pay attention to the succession of flow direction: copper after galvanised steel.

- The hot water pipes must be thermally insulated in accordance with the local (cantonal) regulations, as well as the currently valid Energy Saving Ordinance.

- If water pipeline pressure is higher than 5 bar, a pressure reduction valve is to be fitted into the cold water pipeline.
- Condensed water connection (at the rear of the heat pump, Ø DN 15) must be led away via siphon into the sewer. Condensed water drain can be dumped together with drainage of expansion water from the safety valve. Depending on humidity condensate can achieve 0.3 l/h.

Heating assembly (WPER)

- The additional heating coil must be provided with charging pump by the customer.
- 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).

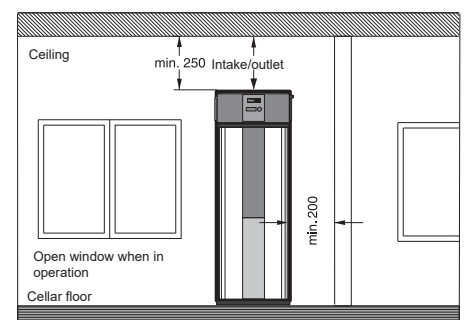


Electric connection

- Ready-for-use wiring (plug with 2 m cable) (power socket 230 V)

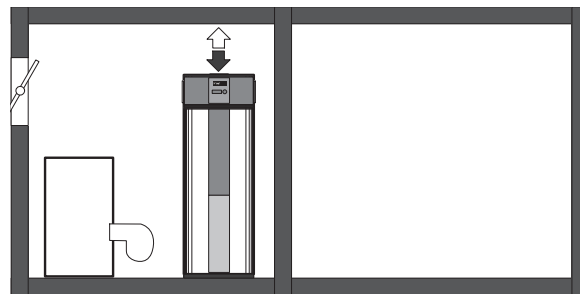
Required space

- 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



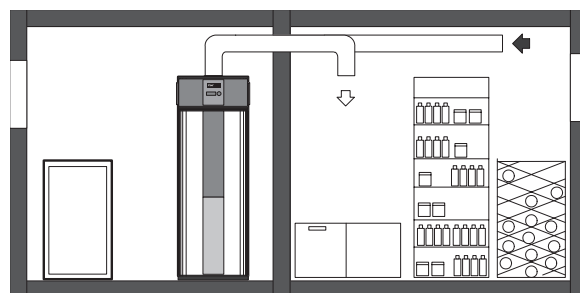
Installation in the heating room

- *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 m³
- Cooling, dehumidification (wine cellar, storeroom)

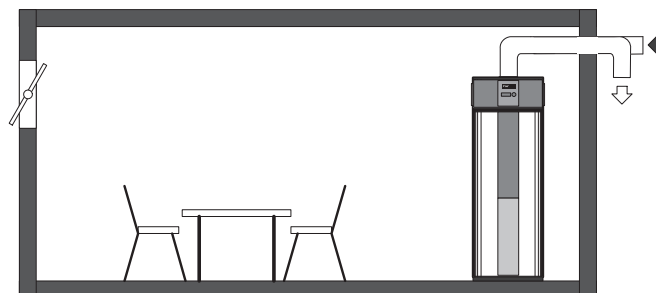


Installation in the utility room

- *Air ducting*
Air drawn from and blown into the room
- Min. room volume 20 m³
- Dehumidification, use of heat from condensed water (laundry)



- *Air ducting*
Air drawn from and blown either into the room or externally
- When the air is circulating, the window can be 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).