Series
VENTS VUT EH

A16 control panel

Air handling units with the air flow up to **2200 m³/h** and heat recovery efficiency up to 88 % in sound-proof and heat-insulated casing with electric heater

Series
VENTS VUT WH

A13 control panel

Air handling units with the air flow up to **2100 m³/h** and heat recovery efficiency up to 78 % in sound-proof and heat-insulated casing with water heater

Description
The VUT EH air handling units with an electric heater and VUT WH units with a water heater are used in ventilation and air conditioning systems in commercial, office and other public or industrial premises that require an economical solution and a controlled ventilation system.

Modifications
VUT EH – an electric heater and air filters.
VUT WH – a water or glycol heater and air filters.

Casing
The casing is made of aluzinc steel with 25 mm thick mineral wool heat- and sound-insulating layer.

Filter
Two G4 panel filters for extract air ventilation are supplied with the unit.

Fans
The units are equipped with supply and exhaust centrifugal double-inlet fans with forward curved blades and built-in thermostat with automatic restart.

Heat exchanger
The heat exchangers have high efficiency and are made of polysterene. The unit is also equipped with the drain pan for condensate drainage.

Heater
The electric heater (for the unit VUT EH) or the water heater (for the unit VUT WH). The water heaters are designed for max. operating pressure 1.0 MPa (10 bar) and max. heat medium operating temperature 95 °C.

Automation and control system
The unit incorporates an integrated automation and control system with a multi-functional control panel with LCD display. The standard delivery set includes 10 m connection cable for connection to the remote control panel.

VUT EH control and protection functions
- control from the control panel: switching on/off, speed selection, timer, faults
- maintaining the set room temperature by the sensor on the control panel – smooth heating capacity control
- three-speed fan speed control (low-medium-high);
- unit operation according to daily and week schedule (timer adjustable from the control panel)
- safe start-up/shutdown of the fans
- electric heater overheating protection by the temperature sensor installed in the supply air duct and by two overheating thermostats, one thermostat activated at 60 °C with automatic reset and another thermostat activated at 90 °C with manual reset. Blowing of the heating elements for heat removing at the end of the heating cycle
- filter clogging control by engine filter time.

VUT WH control and protection functions
- control from the control panel: switching on/off, three-speed fan selection, selecting heating/cooling modes (if connected to duct heater); room temperature display;
- maintaining supply air temperature set from the control panel by controlling the circulation pump and actuating the heat medium regulating valve; input from the heat medium flow switch (pump alarm);
- Safe start-up/ shutdown of the fans, warming up of the water heater before start-up; return heat medium temperature control when the fan is off.
- Freezing protection of the water heating coils by the exhaust temperature sensor and the return heat medium temperature sensor.
- Control of the compressor and condensing unit of the water cooler by the room temperature sensor (for the models equipped with a duct air cooler).
- Actuating the external air dampers with a return spring.
- Unit operation according to week schedule (set at the system setup).
- unit shut down at signal from the fire alarm system;
- smooth bypass damper control in the bypassing mode to prevent the heat exchanger freezing.

Mounting
The unit is designed for indoor mounting. While mounting the unit provide the correct condensate collection and drainage. Access for the unit servicing and filter cleaning is from the side panels on the left from supply air side.

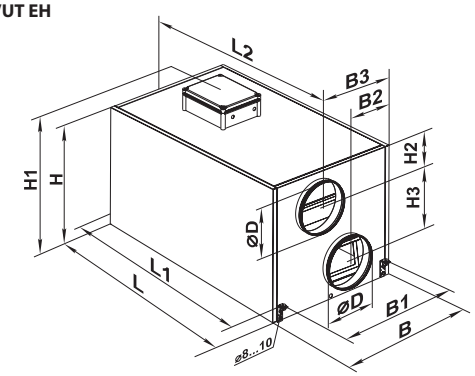
Designation key

Series	Rated air flow [m³/h]	Heater type	Duct connection	Row number of the heater	Service side (for VUT 1500 WH, VUT 2000 WH)
VENTS VUT	350; 500; 530; 600; 800; 1000; 1500; 2000	**E**: electric **W**: water	**H**: horizontal	**2**: two rows **4**: four rows	**L**: left side **R**: right side

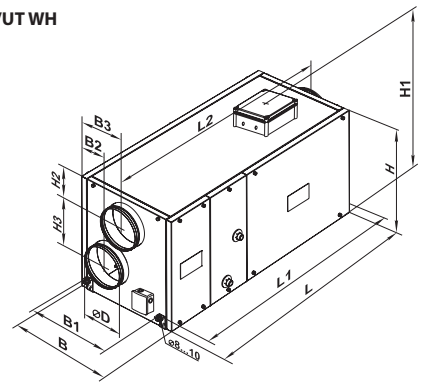
Unit overall dimensions

Type	Dimensions [mm]											
	ØD	B	B1	B2	B3	H	H1	H2	H3	L	L1	L2
VUT 350 EH	124	497	403	248	348	554	–	111	230	954	996	1054
VUT 500 EH	149	497	403	248	348	554	–	111	230	954	996	1054
VUT 530 EH	159	497	403	248	348	554	–	111	230	954	996	1054
VUT 600 EH	199	497	403	248	348	554	–	111	230	954	996	1054
VUT 800 EH	249	613	460	306	386	698	832	154	280	1071	1117	1171
VUT 800 WH	249	613	460	306	386	698	832	154	280	1071	1117	1171
VUT 1000 EH	249	613	460	306	386	698	832	154	280	1071	1117	1171
VUT 1000 WH	249	613	460	306	386	698	832	154	280	1071	1117	1171
VUT 1500 EH	314	842	581	320	520	814	947	201	595	1345	1388	1445
VUT 1500 WH	314	842	581	320	520	814	947	201	595	1345	1388	1445
VUT 2000 EH	314	842	581	320	520	814	947	201	595	1345	1388	1445
VUT 2000 WH	314	842	581	320	520	814	947	201	595	1345	1388	1445

VUT EH



VUT WH



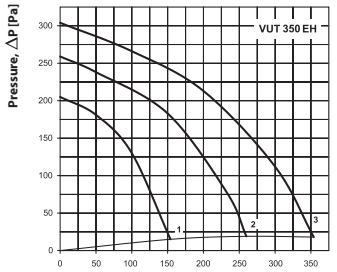
Accessories for air handling units

Model	G4 panel filter	Silencers		Back valves	Air dampers	Clamps	Summer blocks
							
VUT 350 EH	SF 438x215x48 G4	SR 125 600/900/1200	SRF 125 600/900/1200	KOM 125	KR 125	C 125	VL C4 300/300
VUT 500 EH		SR 150 600/900/1200	SRF 150 600/900/1200	KOM 150	KR 150	C 150	
VUT 530 EH		SR 160 600/900/1200	SRF 160 600/900/1200	KOM 160	KR 160	C 160	
VUT 600 EH		SR 200 600/900/1200	SRF 200 600/900/1200	KOM 200	KR 200	C 200	
VUT 800 EH	SF 550x253x48 G4	SR 250 600/900/1200	SRF 250 600/900/1200	KOM 250	KR 250	C 250	VL C4 300/300*2
VUT 1000 EH							
VUT 1500 EH	SF 780x273x48 G4	SR 315 600/900/1200	SRF 315 600/900/1200	KOM 315	KR 315	C 315	VL C4 300/384
VUT 2000 EH							
VUT 800 WH-4	SF 550x253x48 G4	SR 250 600/900/1200	SRF 250 600/900/1200	KOM 250	KR 250	C 250	VL C4 300/300*2
VUT 1000 WH-4	SF 780x273x48 G4	SR 315 600/900/1200	SRF 315 600/900/1200	KOM 315	KR 315	C 315	VL C4 300/384
VUT 1500 WH-4	SF 550x253x48 G4	SR 250 600/900/1200	SRF 250 600/900/1200	KOM 250	KR 250	C 250	VL C4 300/300*2
VUT 2000 WH-4	SF 780x273x48 G4	SR 315 600/900/1200	SRF 315 600/900/1200	KOM 315	KR 315	C 315	VL C4 300/384

Technical data

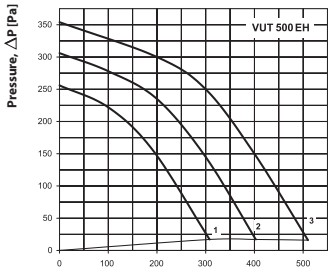
	VUT 350 EH	VUT 500 EH	VUT 530 EH
Voltage [V/Hz]		1~230/50-60	
Maximum fan power [W]	260	300	
Fan current [A]	1.2	1.32	
Electric heater power [kW]	3	3	4
Electric heater current [A]	13	13	17.4
Number of water (glycol) coil rows	–	–	–
Total unit power [kW]	3.26	3.3	4.3
Total unit current [A]	14.2	14.32	18.72
Air flow [m³/h]	350	500	530
RPM	1150	1100	1100
Noise level at 3m [dBA]	24-45	28-47	28-47
Transported air [°C]	-25...+40	-25...+40	-25...+40
Casing material	aluzinc	aluzinc	aluzinc
Insulation		25 mm mineral wool	
Extract filter		G4	
Supply filter		G4	
Connected air duct diameter [mm]	⌀125	⌀150	⌀160
Weight [kg]	45	49	49
Heat recovery efficiency	up to 78 %	up to 88 %	up to 88 %
Heat exchanger type		cross-flow type	
SEC Class		E	
Heat exchanger material		polystyrol	

VENTS VUT EH



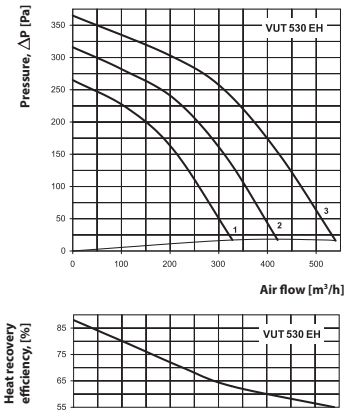
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	50	30	50	47	38	41	38	31	19
L_{wA} to outlet	dBA	58	38	53	56	53	47	45	37	25
L_{wA} to environment	dBA	33	23	22	32	26	19	17	22	18

VENTS VUT EH



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	54	34	52	49	40	46	42	33	22
L_{wA} to outlet	dBA	64	41	57	57	56	51	50	40	26
L_{wA} to environment	dBA	36	25	26	36	30	22	21	24	21

VENTS VUT EH

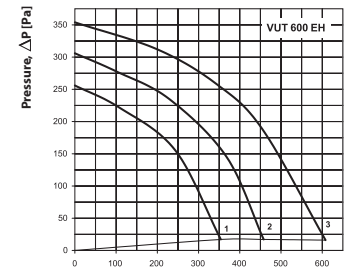


Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	56	34	50	48	42	46	41	35	21
L_{wA} to outlet	dBA	63	42	59	58	57	49	46	38	26
L_{wA} to environment	dBA	34	25	25	34	31	21	17	25	22

Technical data

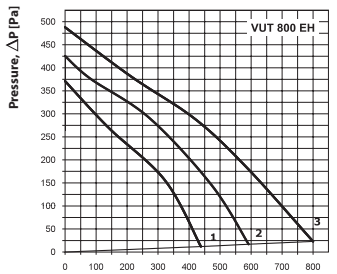
	VUT 600 EH	VUT 800 EH	VUT 800 WH-4
Voltage [V/Hz]	1~230/50-60	3~400/50-60	1~230/50
Maximum fan power [W]	390	490	
Fan current [A]	1.92	2.16	
Electric heater power [kW]	4	9	–
Electric heater current [A]	17.4	13	–
Number of water (glycol) coil rows	–	–	2 or 4
Total unit power [kW]	4.39	9.49	0.49
Total unit current [A]	19.1	15.16	2.16
Air flow [m³/h]	600	800	780
RPM	1350	1650	
Noise level at 3m [dBA]	32-48	48	
Transported air [°C]	-25...+40	-25...+40	
Casing material	aluzinc		
Insulation	25 mm mineral wool		
Extract filter	G4		
Supply filter	G4		
Connected air duct diameter [mm]	∅200	∅250	
Weight [kg]	54	85	88
Heat recovery efficiency	up to 85 %	up to 78 %	
Heat exchanger type	cross-flow type		
SEC Class	E		
Heat exchanger material	polystyrol		

VENTS VUT EH



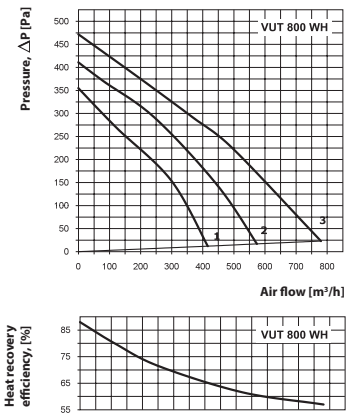
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	55	36	52	52	43	46	42	37	27
L_{wA} to outlet	dBA	67	45	60	62	59	52	53	43	32
L_{wA} to environment	dBA	39	28	29	38	34	25	20	25	26

VENTS VUT EH



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	60	57	55	56	60	53	48	46	43
L_{wA} to outlet	dBA	58	59	62	61	54	54	51	50	46
L_{wA} to environment	dBA	38	45	46	38	40	32	26	28	24

VENTS VUT WH

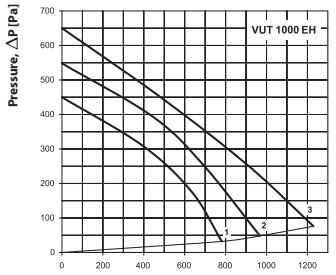


Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	56	58	56	57	59	54	50	51	44
L_{wA} to outlet	dBA	57	58	61	60	55	53	51	48	45
L_{wA} to environment	dBA	35	43	46	38	43	29	29	26	23

Technical data

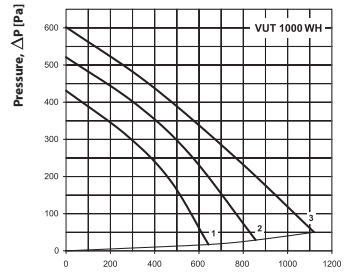
	VUT 1000 EH	VUT 1000 WH-4	VUT 1500 EH
Voltage [V/Hz]	3~400/50	1~230/50	3~400/50-60
Maximum fan power [W]	820		980
Fan current [A]	3.6		4.3
Electric heater power [kW]	9	–	18
Electric heater current [A]	13	–	26
Number of water (glycol) coil rows	-	2 or 4	–
Total unit power [kW]	9.8	0.82	18.98
Total unit current [A]	16.6	3.6	30.3
Air flow [m³/h]	1200	1100	1750
RPM	1850		1100
Noise level at 3m [dBA]	60		49
Transported air [°C]	-25...+40		-25...+40
Casing material	aluzinc		
Insulation	25 mm mineral wool		
Extract filter	G4		
Supply filter	G4		
Connected air duct diameter [mm]	∅250		∅315
Weight [kg]	85	88	96
Heat recovery efficiency	up to 78 %		up to 77 %
Heat exchanger type	cross-flow type		
Heat exchanger material	polystyrol		

VENTS VUT EH



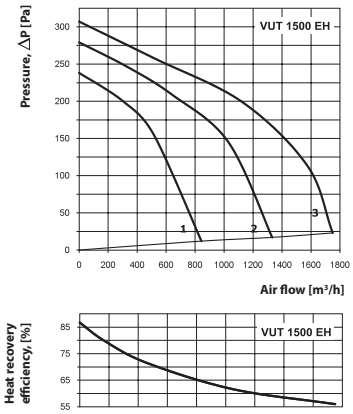
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	69	68	66	68	68	60	63	61	54
L_{wA} to outlet	dBA	70	70	73	70	65	65	62	59	58
L_{wA} to environment	dBA	49	54	55	49	51	41	37	36	33

VENTS VUT WH



Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	68	68	70	69	66	61	62	61	56
L_{wA} to outlet	dBA	70	68	69	69	68	64	61	59	58
L_{wA} to environment	dBA	47	55	56	48	55	38	40	36	34

VENTS VUT EH

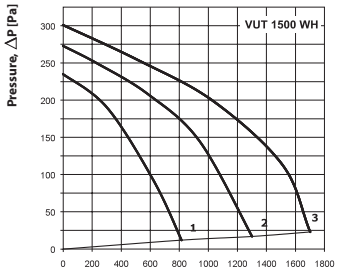


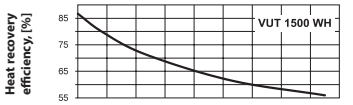
Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	66	69	71	68	64	64	51	51	48
L_{wA} to outlet	dBA	69	74	71	70	62	65	63	65	56
L_{wA} to environment	dBA	43	56	59	47	44	41	35	34	30

Technical data

	VUT 1500 WH-4	VUT 2000 EH	VUT 2000 WH-4
Voltage [V/Hz]	1~230/50	3~400/50-60	1~230/50
Maximum fan power [W]	980	1300	
Fan current [A]	4.3	5.68	
Electric heater power [kW]	–	18	–
Electric heater current [A]	–	26	–
Number of water (glycol) coil rows	2 or 4	–	2 or 4
Total unit power [kW]	0.98	19.3	1.3
Total unit current [A]	4.3	31.7	5.68
Air flow [m³/h]	1700	2200	2100
RPM	1100	1150	
Noise level at 3m [dBA]	49	65	
Transported air [°C]	-25...+40	-25...+40	
Casing material	aluzinc		
Insulation	25 mm mineral wool		
Extract filter	G4		
Supply filter	G4		
Connected air duct diameter [mm]	∅315		
Weight [kg]	99	96	99
Heat recovery efficiency	up to 77 %		
Heat exchanger type	cross-flow type		
Heat exchanger material	polystyrol		

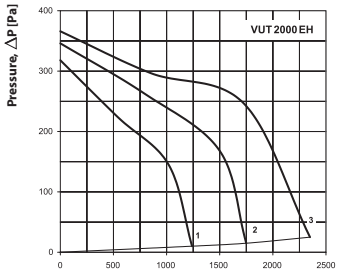
VENTS VUT WH

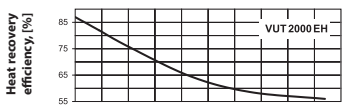




Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	64	72	67	65	62	65	56	55	48
L_{wA} to outlet	dBA	66	76	72	70	61	64	60	63	55
L_{wA} to environment	dBA	46	54	54	48	39	39	34	31	27

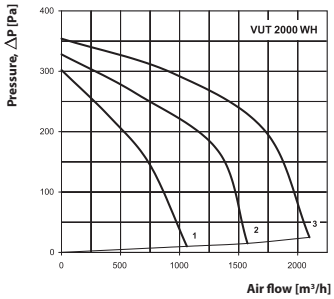
VENTS VUT EH

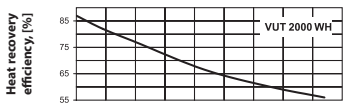




Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	75	80	82	80	72	71	66	66	59
L_{wA} to outlet	dBA	81	85	82	79	73	76	74	74	68
L_{wA} to environment	dBA	54	65	68	58	55	50	46	42	39

VENTS VUT WH

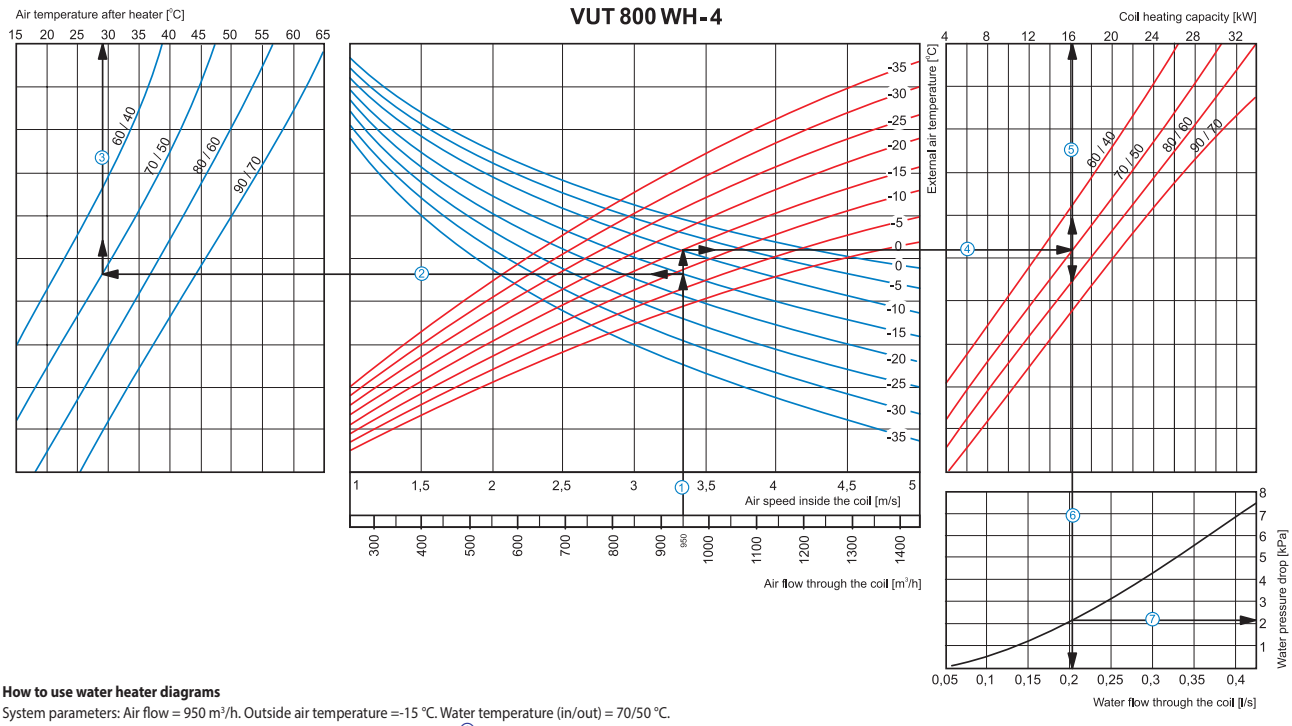




Sound-power level		Octave-frequency band [Hz]								
	Hz	Gen	63	125	250	500	1000	2000	4000	8000
L_{wA} to inlet	dBA	76	82	81	77	69	72	68	65	60
L_{wA} to outlet	dBA	79	86	80	79	74	75	70	74	68
L_{wA} to environment	dBA	58	66	64	58	51	48	45	41	38

Hot water coil parameters

VENTS VUT WH

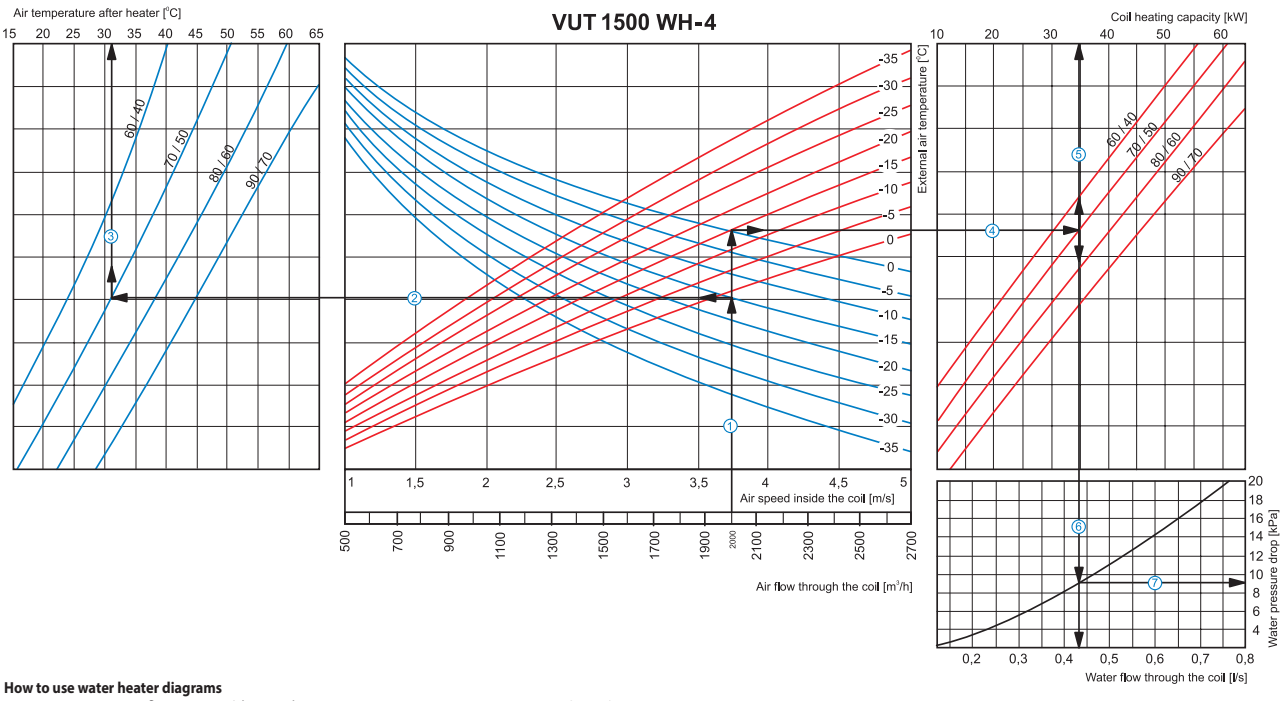


How to use water heater diagrams

System parameters: Air flow = 950 m³/h. Outside air temperature =-15 °C. Water temperature (in/out) = 70/50 °C.

- Air Speed. Starting from 950 m³/h on the air flow scale draw a vertical line ① till the air speed axis which makes about 3.35 m/s.
- Supply air temperature. Prolong the line ① up to the point where it crosses the outside air temperature (blue curve, e.g. -15 °C); then draw a horizontal line ② from this point to the left till crossing water in/out temperature curve (e.g. 70/50 °C). From this point draw a vertical line ③ to the supply air temperature axis on top of the graphic (+29 °C).
- Heating coil capacity. Prolong the line ① up to the point where it crosses the outside air temperature (e.g. -15 °C, red curve) and draw a horizontal line ④ from this point to the right until it crosses water in/out temperature curve (e.g., 70/50 °C), from here draw a vertical line ⑤ up to the scale representing the heating coil capacity (16.0 kW).
- Water flow. Prolong the line ⑤ down to water flow axis at the bottom of the graphic ⑥ (0.2 l/s).
- Water pressure drop. Draw the line ⑦ from the point where the line ⑥ crosses the black curve to the pressure drop axis. (2.1 kPa).

VENTS VUT WH



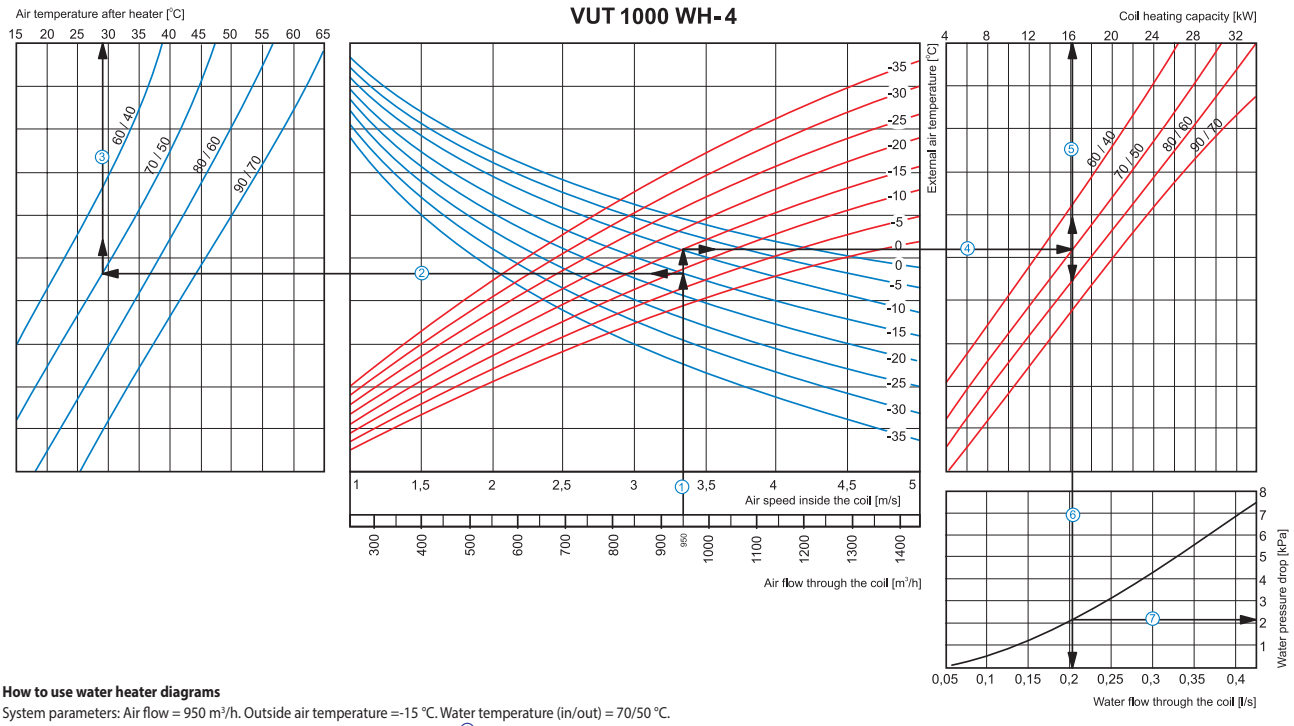
How to use water heater diagrams

System Parameters: Air flow = 2000 m³/h. Outside air temperature =-15 °C. Water temperature (in/out) = 70/50 °C.

- Air Speed. Starting from 2000 m³/h on the air flow scale draw a vertical line ① till the air speed axis which makes about 3.75 m/s.
- Supply air temperature. Prolong the line ① up to the point where it crosses the outside air temperature (blue curve, e.g. -15 °C); then draw a horizontal line ② from this point to the left till crossing water in/out temperature curve (e.g. 70/50 °C). From this point draw a vertical line ③ to the supply air temperature axis on top of the graphic (+31 °C).
- Heating coil capacity. Prolong the line ① up to the point where it crosses the outside air temperature (e.g. -15 °C, red curve) and draw a horizontal line ④ from this point to the right until it crosses water in/out temperature curve (e.g., 70/50 °C), from here draw a vertical line ⑤ up to the scale representing the heating coil capacity (35.0 kW).
- Water flow. Prolong the line ⑤ down to water flow axis at the bottom of the graphic ⑥ (0.43 l/s).
- Water pressure drop. Draw the line ⑦ from the point where the line ⑥ crosses the black curve to the pressure drop axis. (9.0 kPa).

Hot water coil parameters

VENTS VUT WH

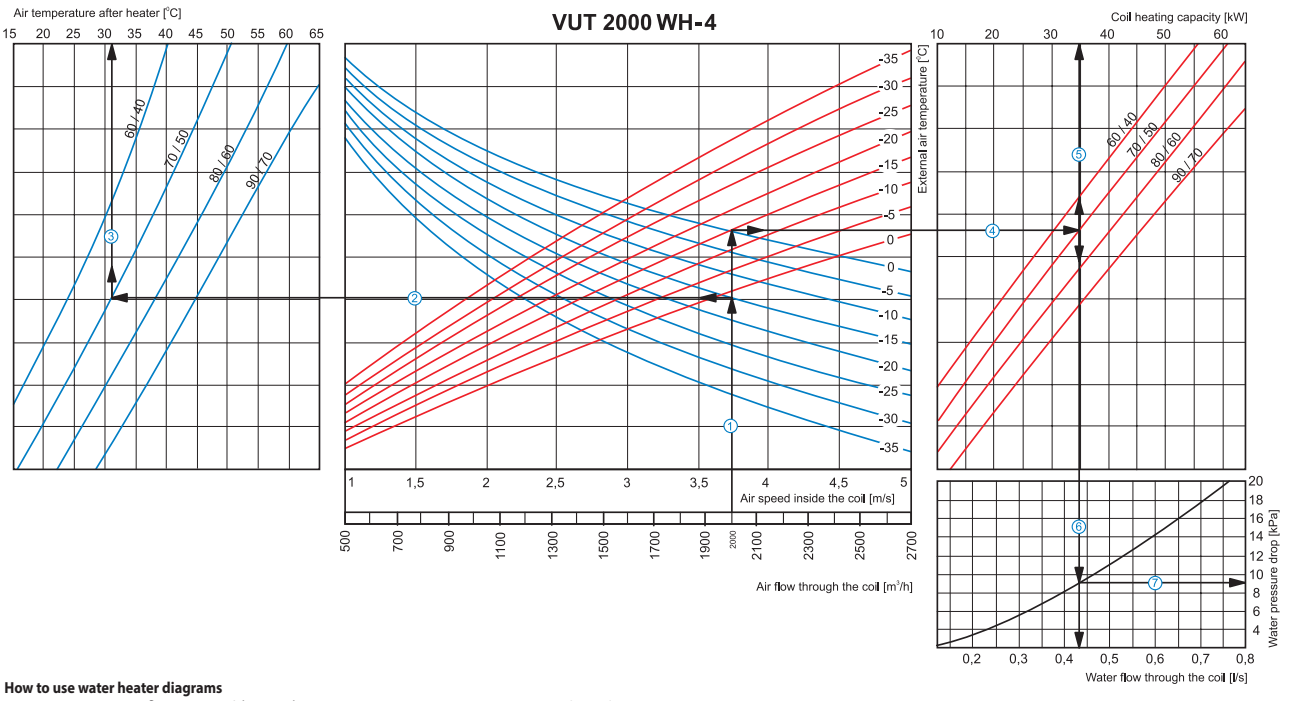


How to use water heater diagrams

System parameters: Air flow = 950 m³/h. Outside air temperature =-15 °C. Water temperature (in/out) = 70/50 °C.

- Air Speed. Starting from 950 m³/h on the air flow scale draw a vertical line ① till the air speed axis which makes about 3.35 m/s.
- Supply air temperature. Prolong the line ① up to the point where it crosses the outside air temperature (blue curve, e.g. -15 °C); then draw a horizontal line ② from this point to the left till crossing water in/out temperature curve (e.g. 70/50 °C). From this point draw a vertical line ③ to the supply air temperature axis on top of the graphic (+29 °C).
- Heating coil capacity. Prolong the line ① up to the point where it crosses the outside air temperature (e.g. -15 °C, red curve) and draw a horizontal line ④ from this point to the right until it crosses water in/out temperature curve (e.g., 70/50 °C), from here draw a vertical line ⑤ up to the scale representing the heating coil capacity (16.0 kW).
- Water flow. Prolong the line ⑤ down to water flow axis at the bottom of the graphic ⑥ (0.2 l/s).
- Water pressure drop. Draw the line ⑦ from the point where the line ⑥ crosses the black curve to the pressure drop axis. (2.1 kPa).

VENTS VUT WH



How to use water heater diagrams

System Parameters: Air flow = 2000 m³/h. Outside air temperature =-15 °C. Water temperature (in/out) = 70/50 °C.

- Air Speed. Starting from 2000 m³/h on the air flow scale draw a vertical line ① till the air speed axis which makes about 3.75 m/s.
- Supply air temperature. Prolong the line ① up to the point where it crosses the outside air temperature (blue curve, e.g. -15 °C); then draw a horizontal line ② from this point to the left till crossing water in/out temperature curve (e.g. 70/50 °C). From this point draw a vertical line ③ to the supply air temperature axis on top of the graphic (+31 °C).
- Heating coil capacity. Prolong the line ① up to the point where it crosses the outside air temperature (e.g. -15 °C, red curve) and draw a horizontal line ④ from this point to the right until it crosses water in/out temperature curve (e.g., 70/50 °C), from here draw a vertical line ⑤ up to the scale representing the heating coil capacity (35.0 kW).
- Water flow. Prolong the line ⑤ down to water flow axis at the bottom of the graphic ⑥ (0.43 l/s).
- Water pressure drop. Draw the line ⑦ from the point where the line ⑥ crosses the black curve to the pressure drop axis. (9.0 kPa).