

Duct cooler-heate

CHDW



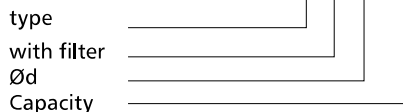
Overview

The CHDW duct cooler-heater is designed for domestic ventilation systems and allows the supply air to be cooled in summer and reheated in winter. The casing is made of galvanised steel insulated with 24 mm thick rubber matting. Inside the casing is a 6-row aluminium heat exchanger and an integrated aluminium condensate tray. The design provides for easy access to the exchanger, which can be removed for maintenance purposes or to change the mounting side (left/right). The water coil and stub pipes are made from copper; the heat exchanger fins are made from aluminium. The exchanger tubes have a standard metric size of M18x1mm which allows the use of standard hydraulic fittings. In addition, the tubes can be terminated with a twist-on fitting for 1/2" female thread. The connection pipe diameters are sized according to the size of the cooler-heater to minimise pressure drops in the system. The unit has spigot connections with EPDM rubber seals. It can be mounted on feet or suspended from the ceiling on special slings.

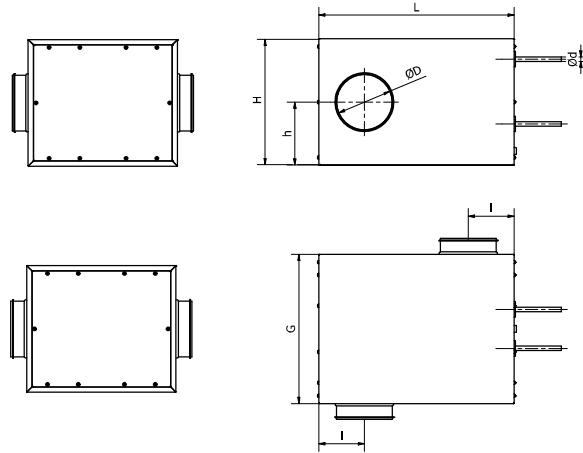
The CHDW cooler-heater can be combined with a domestic heat recovery system. Mounted on the supply duct and retrofitted with a 3-way valve and actuator, it can be controlled by PremAIR, SlimAIR and MinistAIR series heat recovery units equipped with appropriate operating algorithms and season detection as standard. The unit is also available with a 46mm ISO Coarse 70% (G4) air filter and can be mounted on the intake duct upstream the heat recovery unit. Manufactured from galvanised sheet metal as standard, on request it can be painted in RAL9005 matt to blend in well with Alnor heat recovery units and EPP ducts.

Product code example

Product code: **CHDW-G-200-325**

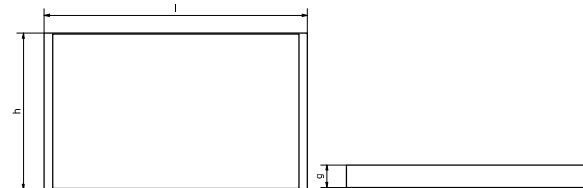


Dimensions



Type	ØD [mm]	H [mm]	L [mm]	G (mm)	h [mm]	i [mm]	Ød [mm]
CHDW-160	160	364	560	429	182	131	M18x1
CHDW-200	200	414	660	429	207	150	M18x1
CHDW-G-200	200	364	560	429	182	150	M18x1
CHDW-G-250	250	414	660	429	207	175	M18x1

Filter size



Type	l[mm]	h[mm]	g[mm]
CHDW-G-200-FILT-C70	504	300	46
CHDW-G-250-FILT-C70	605	350	46

Technical specifications

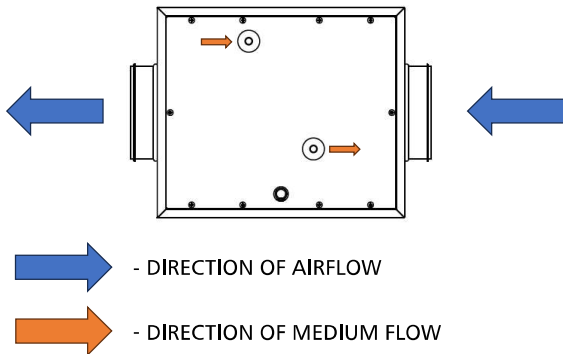
Type	Function	Filter	Maximum cooling power [kW]	Maximum heating power [kW]
CHDW-160	SECONDARY	X	1.851	4.761
CHDW-200	SECONDARY	X	3.173	8.162
CHDW-G-200	Preliminary (GGWC)	✓	1.851	4.761
CHDW-G-250	Preliminary (GGWC)	✓	3.173	8.162

Duct cooler-heater CHDW

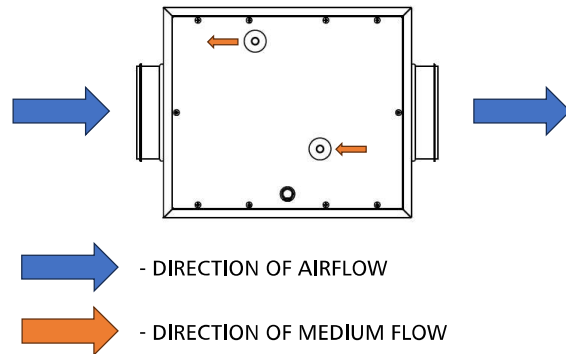
Exchanger operating positions:

The cooler-heater was fitted with a six-row glycol cooler block terminating in 1/2" copper tubes. To ensure optimum operation of the exchanger, the refrigerant feed should be connected in countercurrent with the flowing air, as shown below.

right-hand version



left-hand version



Operating parameters

- the maximum air temperature flowing through the heater: 60°C (instantaneous),
- ambient air temperature: +5 °C to +40 °C,
- maximum ambient air humidity: 90%,
- maximum operating pressure of the medium: 1.0 MPa (10bar),
- maximum temperature of the medium: 80°C,
- exchanger type: six-row

Operating parameters for cooling

Type	Air flow rate m ³ /h	Total power: kW	Inlet air temper- ature °C	Relative humidity inlet %	Outlet air tem- perature °C	Outlet rela- tive humidity %	Medium inlet temperature °C	Medium outlet temperature °C
CHDW-160, CHDW-G-200	50	0,264	25	50	12	95	6	12
	100	0,529	25	50	12	95	6	12
	150	0,793	25	50	12	95	6	12
	200	1,058	25	50	12	95	6	12
	250	1,322	25	50	12	95	6	12
	300	1,586	25	50	12	95	6	12
	350	1,851	25	50	12	95	6	12

Cooling medium flow rate 0,261 m³/h. Cooling medium flow velocity 0,3 m/s. Cooling medium flow resistance 6,111 kPa

Duct cooler-heat

CHDW

Type	Air flow rate m ³ /h	Total power: kW	Inlet air temper- ature °C	Relative humidity inlet %	Outlet air tem- perature °C	Outlet rela- tive humidity %	Medium inlet temperature °C	Medium outlet temperature °C
CHDW-160, CHDW-G-200	50	0.264	25	50	12	95	6	12
	100	0.529	25	50	12	95	6	12
	150	0.793	25	50	12	95	6	12
	200	1.058	25	50	12	95	6	12
	250	1.322	25	50	12	95	6	12
	300	1.586	25	50	12	95	6	12
	350	1.851	25	50	12	95	6	12
	400	2.115	25	50	12	95	6	12
	450	2.38	25	50	12	95	6	12
	500	2.644	25	50	12	95	6	12
	550	2.909	25	50	12	95	6	12
	600	3.173	25	50	12	95	6	12

Cooling medium flow rate 0.437 m³/h. Cooling medium flow velocity 0.403 m/s. Cooling medium flow resistance 10,579 kPa

Operating parameters for heating

Type	Air flow rate m ³ /h	Total power: kW	Inlet air temper- ature °C	Relative humidity inlet %	Outlet air tem- perature °C	Outlet rela- tive humidity %	Medium inlet temperature °C	Medium outlet temperature °C
CHDW-160, CHDW-G-200	50	0.68	10	80	50	8	60	40
	100	1.36	10	80	50	8	60	40
	150	2.04	10	80	50	8	60	40
	200	2.721	10	80	50	8	60	40
	250	3.401	10	80	50	8	60	40
	300	4.081	10	80	50	8	60	40
	350	4.761	10	80	50	8	60	40

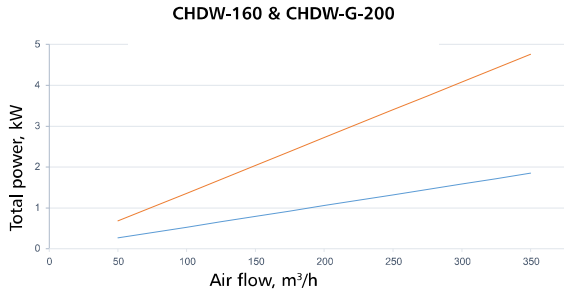
Heating medium flow rate 0,188 m³/h. Heating medium flow velocity 0,217 m/s. Heating medium flow resistance 1,675 kPa

Type	Air flow rate m ³ /h	Total power: kW	Inlet air temper- ature °C	Relative humidity inlet %	Outlet air tem- perature °C	Outlet rela- tive humidity %	Medium inlet temperature °C	Medium outlet temperature °C
CHDW-200, CHDW-G-250	50	0,68	10	80	50	8	60	40
	100	1,36	10	80	50	8	60	40
	150	2,04	10	80	50	8	60	40
	200	2,721	10	80	50	8	60	40
	250	3,401	10	80	50	8	60	40
	300	4,081	10	80	50	8	60	40
	350	4,761	10	80	50	8	60	40
	400	5,441	10	80	50	8	60	40
	450	6,121	10	80	50	8	60	40
	500	6,801	10	80	50	8	60	40
	550	7,482	10	80	50	8	60	40
	600	8,162	10	80	50	8	60	40

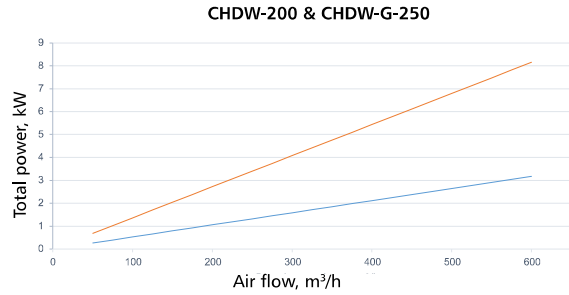
Heating medium flow rate 0,309 m³/h. Heating medium flow velocity 0,285 m/s. Heating medium flow resistance 3,313 kPa.

Duct cooler-heater CHDW

Graphs showing heating and cooling power

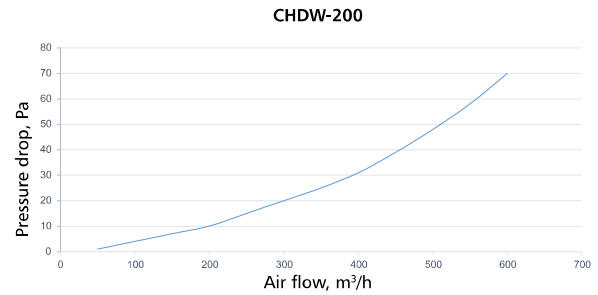
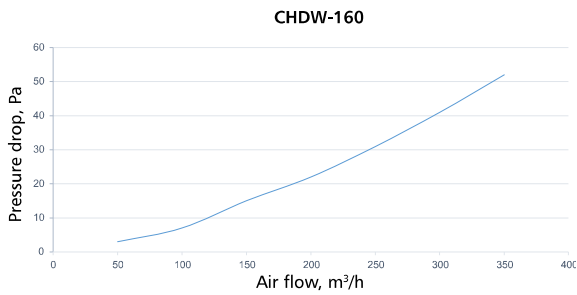
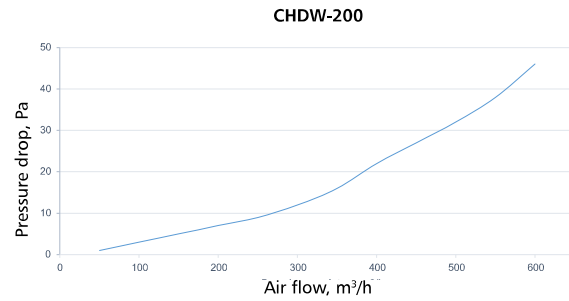
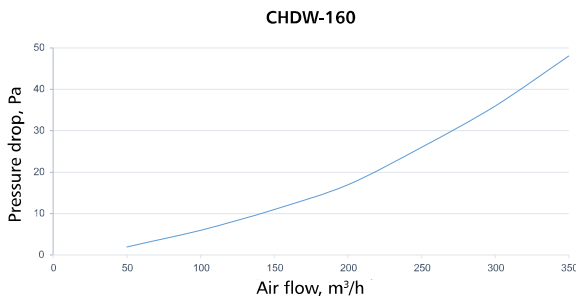


Total cooling power (—)
 Total heating power (—)



Total cooling power (—)
 Total heating power (—)

Pressure drop charts

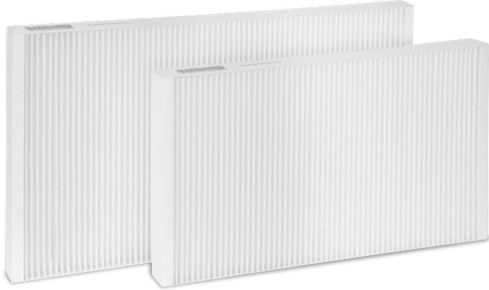


Duct cooler-heate

CHDW

Filters

Filters CHDW-G-...-FILT-C70



ISO coarse 70% filters according to ISO 16890 (former G4) standard with pleated design, resulting in greater filtration area and low pressure drops.

Code	Filter class	Dimension [mm]
CHDW-G-200-FILT-C70	ISO Coarse 70%	504x300x46
CHDW-G-250-FILT-C70	ISO Coarse 70%	605x350x46

Available combinations



+



+



3-way valves for cooling:

CHDW-200, CHDW-G-250
CHDW-160, CHDW-G-200

valve R3015-1P6-B1 (DN15, kvs 1.6 m³/h, dp 8 kPa)
valve R3015-1-B1 (DN15, kvs 1 m³/h, dp 7 kPa)

actuator TR24-SR
actuator TR24-SR

3-way valves for heating

CHDW-160, CHDW-G-200
CHDW-200, CHDW-G-250

valve R3015-P63-B1 (DN15, kvs 0.63 m³/h, dp 9 kPa)
valve R3015-1-B1 (DN15, kvs 1 m³/h, dp 10 kPa)

actuator TR24-SR
actuator TR24-SR



+



+



6-way valves for cooling and heating:

CHDW-160, CHDW-G-200
CHDW-200, CHDW-G-250

valve R3015-1P3-P63-B2 (DN15, kvs 1.3/0.63 m³/h, dp 11/9 kPa)
valve R3015-1-1-B2 (DN15, kvs 1 / 1 m³/h, dp 7 / 10 kPa)

actuator LR24A-SR
actuator LR24A-SR