

DHR HEAT RECOVERY UNITS



DYNFLOW DHR Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR units provide air-conditioning for residential, commercial and industrial applications by using counter flow Plate-type heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance.

Features and Benefits

- 10 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum PLATE-TYPE heat exchangers with high conductivity and performance.
- High Indoor air quality with polyurethane filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.



Electronic Controller

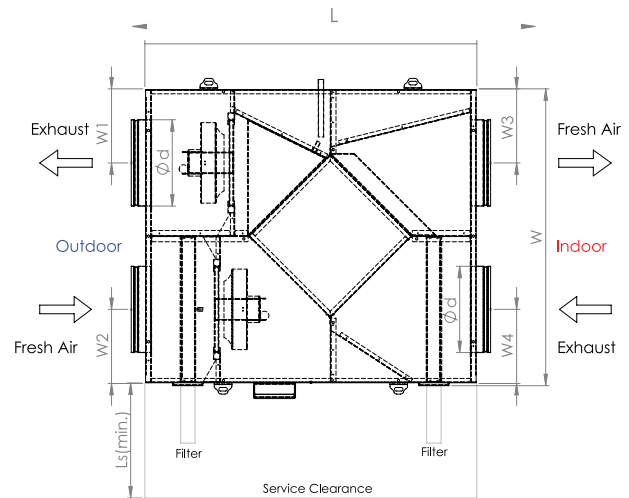
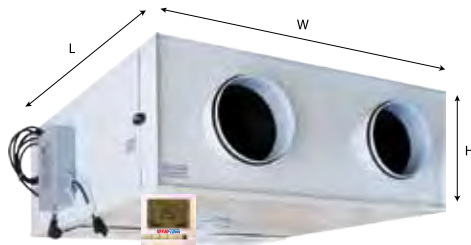
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 04	DHR 07	DHR 09	DHR 11	DHR 16
Air Flow 0 Pa*	m ³ /h	493	770	925	1238	1620
Air Flow 150 Pa*	m ³ /h	295	595	790	1045	1360
Heat Recovery Efficiency ***	%	Efficiency up to 70%, depending on working conditions.				
Electrical Data	230 Volt / 50 Hz / 1 PH					
	W	2x52	2x102	2x155	2x210	2x225
Specific Fan Power SFP**	SFP	1.27	1.23	1.37	1.43	1.5
Air Filter	Polyurethane Filters for Fresh and Exhaust Air					

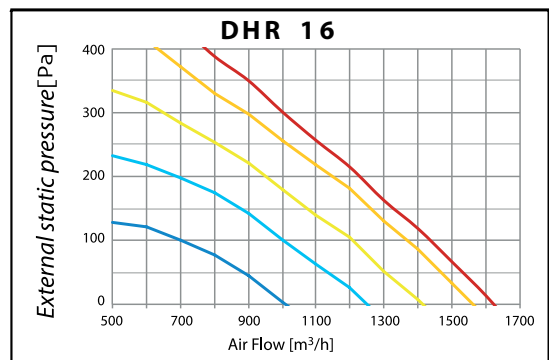
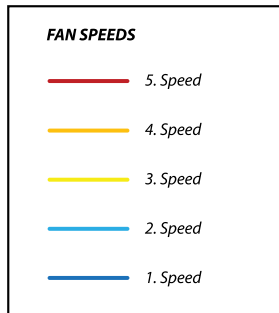
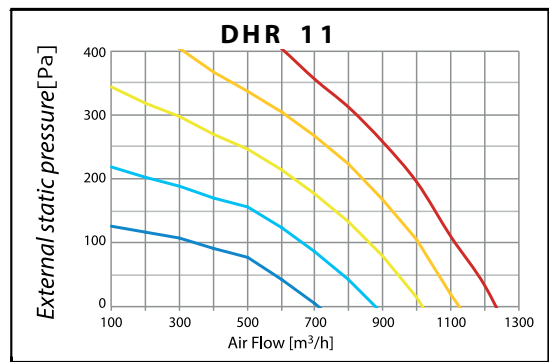
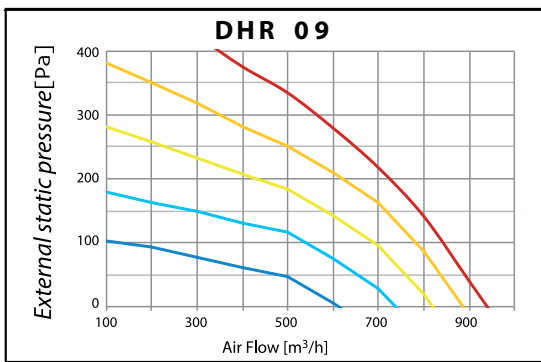
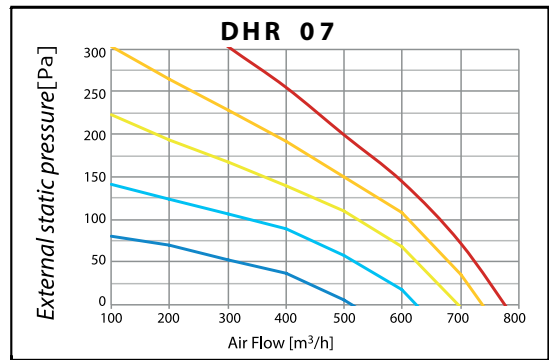
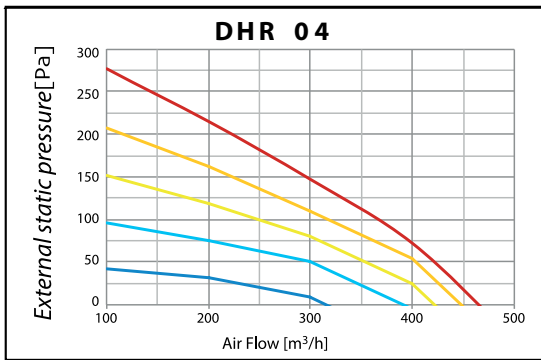
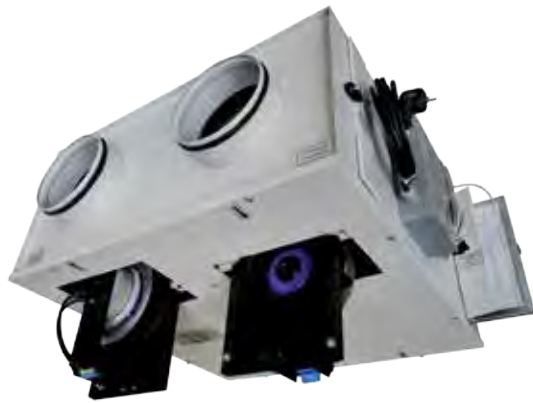
* External static pressure

**According to EN 13779 at 150 Pa operating point

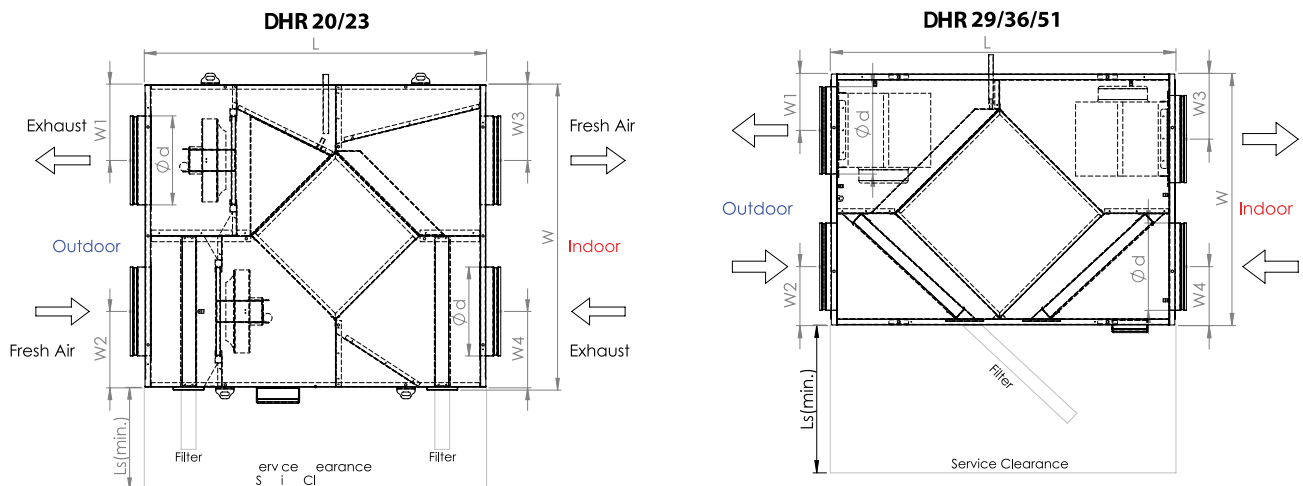
***According to EN 308 at 150 Pa operating point



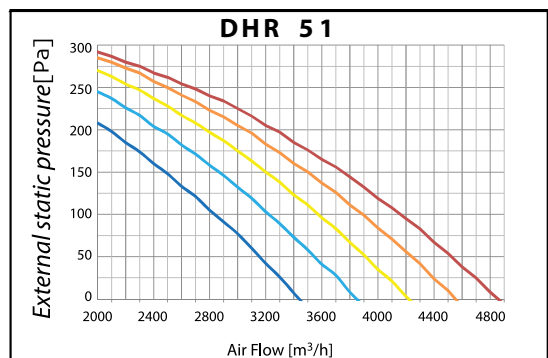
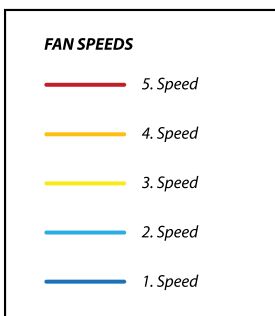
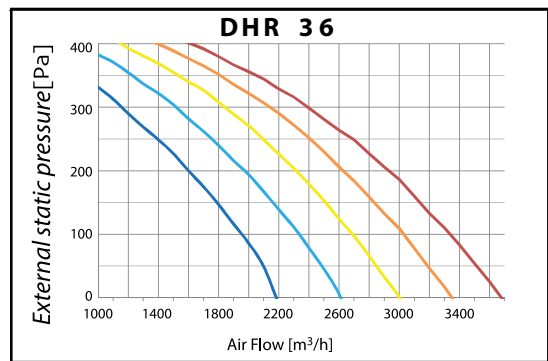
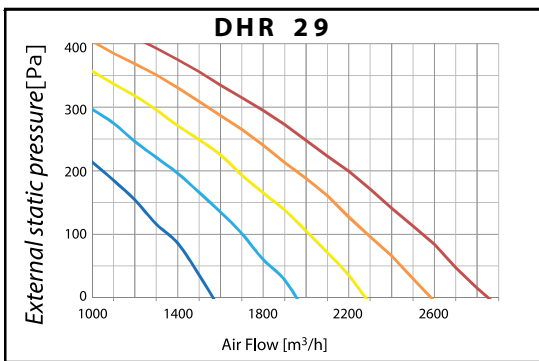
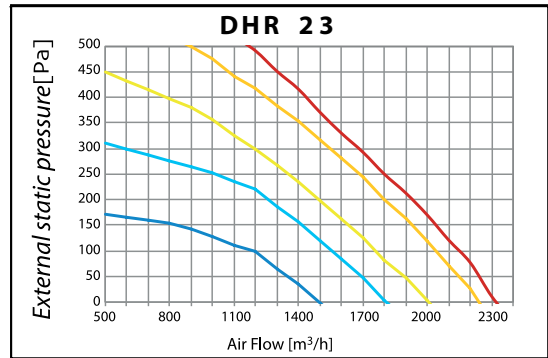
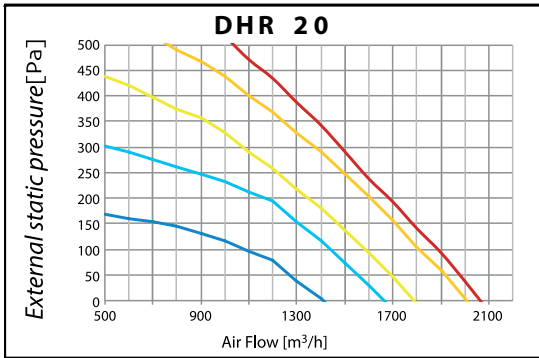
DYNFLOW MODEL		DHR 04	DHR 07	DHR 09	DHR 11	DHR 16
Length (mm)	L	800	900	900	940	1155
Width (mm)	W	735	860	860	1010	1030
Height (mm)	H	290	330	330	445	430
Duct Connection (mm)	Ød	160	200	200	250	300
Weight (kg)	(Kg)	28	35	37	59	67
Service Clearance (mm)	L _s	400	450	450	500	550



DYNFLOW MODEL		DHR 20	DHR 23	DHR 29	DHR 36	DHR 51
Air Flow 0 Pa*	m ³ /h	2025	2322	2852	3678	4605
Air Flow 150 Pa*	m ³ /h	1790	2310	2370	3137	3531
Heat Recovery Efficiency ***	%	Efficiency up to 70%, depending on working conditions.				
Electrical Data	230 Volt / 50 Hz / 1 PH					
	W	2x515	2x515	2X550	2X550	2X550
Specific Fan Power SFP**	SFP	2.07	1.81	1.67	1.35	1.52
Air Filter	Polyurethane Filters for Fresh and Exhaust Air					
<p>* External static pressure</p> <p>**According to EN 13779 at 150 Pa operating point</p> <p>***According to EN 308 at 150 Pa operating point</p>						



DYNFLOW MODEL		DHR 20	DHR 23	DHR 29	DHR 36	DHR 51
Length (mm)	L	1155	1405	1400	1455	1650
Width (mm)	W	1030	1115	1025	1100	1160
Height (mm)	H	430	430	420	595	690
Duct Connection (mm)	Ød	300	355	355	400	450
Weight (kg)	(Kg)	70	99	101	125	164
Service Clearance (mm)	L _s	550	550	450	450	500



DHR CF HIGH EFFICENCY HEAT RECOVERY UNITS



DYNFLOW DHR CF High Efficiency Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR CF units provide air-conditioning for residential, commercial and industrial applications by using counter flow Plate-type heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance.

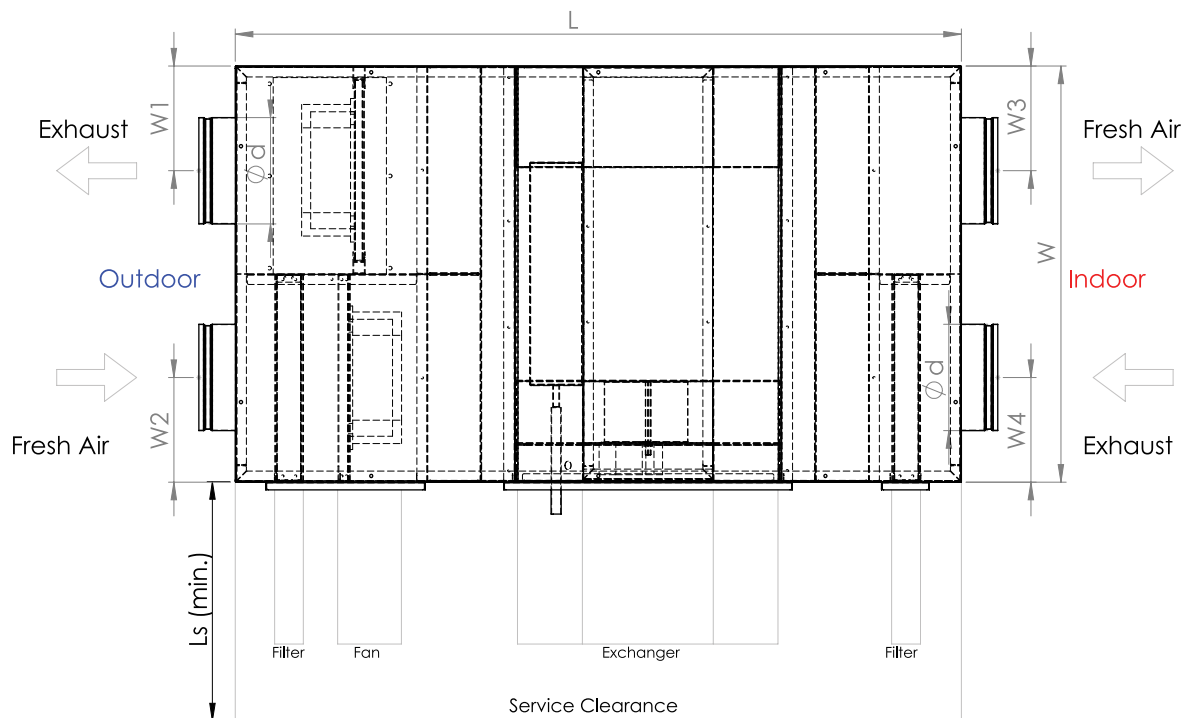
Features and Benefits

- 6 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum Counter flow PLATE-TYPE heat exchangers with high conductivity and performance.
- High Indoor air quality with G4 Synthetic filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

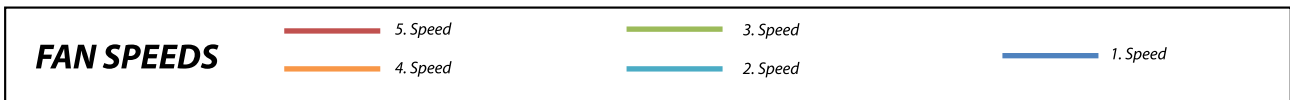
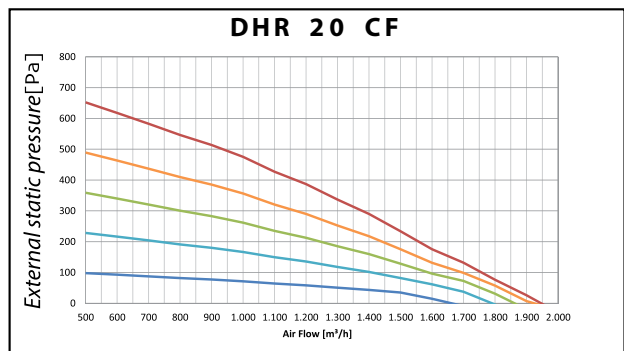
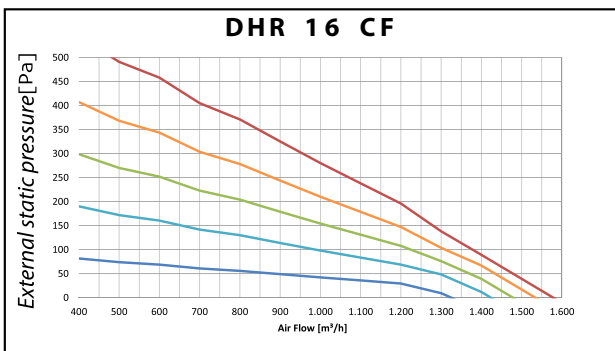
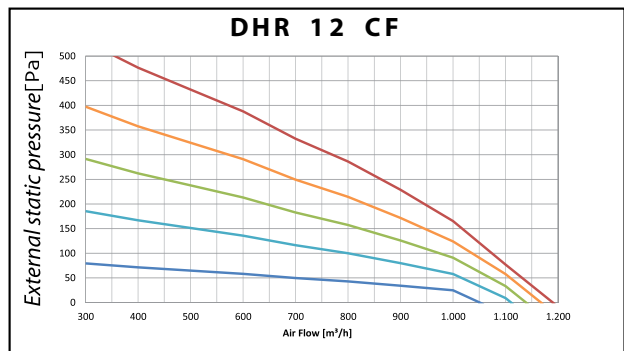
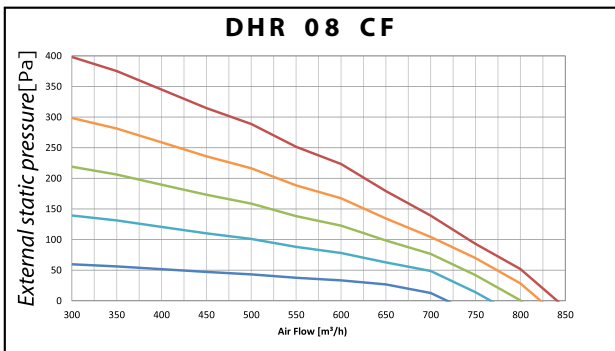
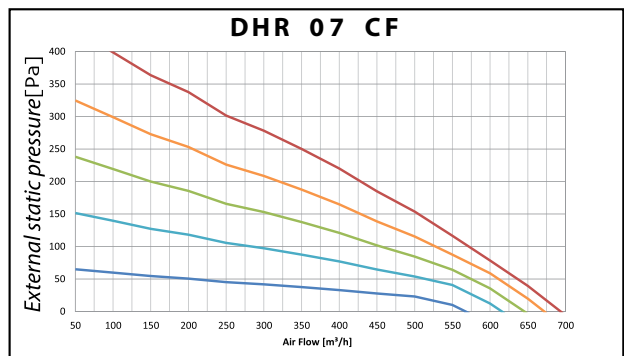
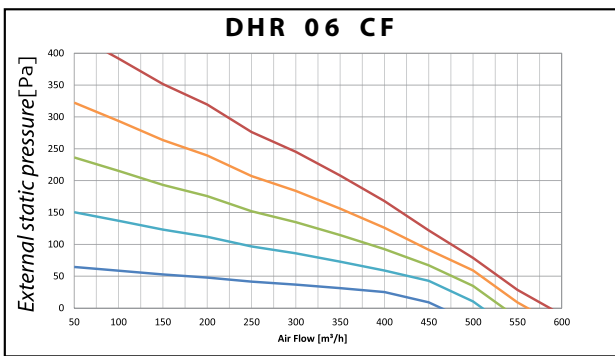


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 06 CF	DHR 07 CF	DHR 08 CF	DHR 12 CF	DHR 16 CF	DHR 20 CF
Air Flow 0 Pa*	m ³ /h	590	695	825	1190	1580	1950
Air Flow 150 Pa*	m ³ /h	415	510	670	1020	1290	1665
Heat Recovery Efficiency ***	%	82.6	83.8	82.1	83.5	82.2	80.4
Electrical Data	230 Volt / 50 Hz / 1 PH						
	W	2X102	2X102	2X155	2X210	2X225	2X515
Specific Fan Power SFP**	SFP	1.73	1.46	1.54	1.43	1.63	2.23
Air Filter	G4 Synthetic Filters for Fresh and Exhaust Air						
<p>* External static pressure</p> <p>** According to EN 13779 at 150 Pa operating point</p> <p>*** According to EN 308 at 150 Pa operating point</p>							



DYNFLOW MODEL		DHR 06 CF	DHR 07 CF	DHR 08 CF	DHR 12 CF	DHR 16 CF	DHR 20 CF
Length (mm)	L	1475	1475	1475	1545	1755	1755
Width (mm)	W	800	800	800	1265	1265	1265
Height (mm)	H	385	385	385	425	425	425
Duct Connection (mm)	Ød	200	200	200	250	300	300
Weight (kg)		50	59	61	105	120	120
Service Clearance (mm)	L _s	450	650	650	650	650	650



DHR SX HEAT RECOVERY UNITS WITH CELLULOSIC EXCHANGER



DYNFLOW DHR SX Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR SX units provide air-conditioning for residential, commercial and industrial applications by using Cellulosic heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance. The efficiency is considerably high hence there is latent heat transfer besides the sensible heat transfer.

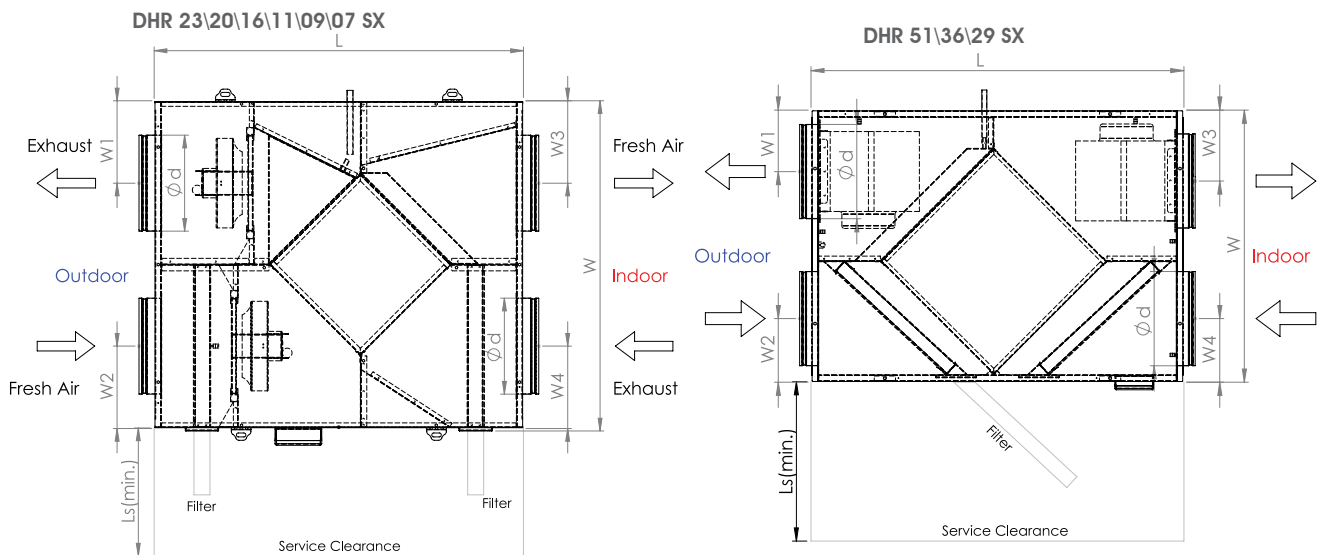
Features and Benefits

- 9 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Cellulosic type heat exchangers with high conductivity and performance.
- High Indoor air quality with polyurethane filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

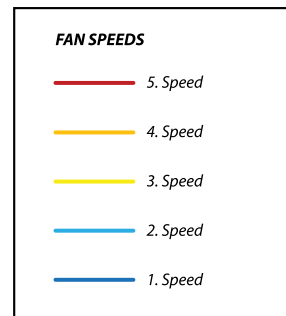
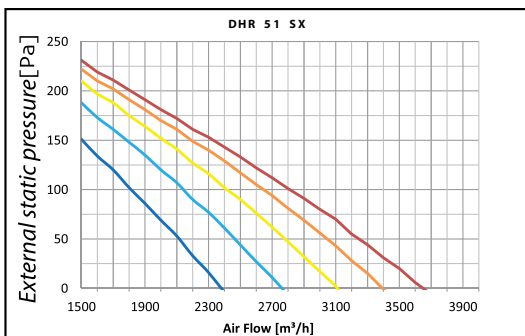
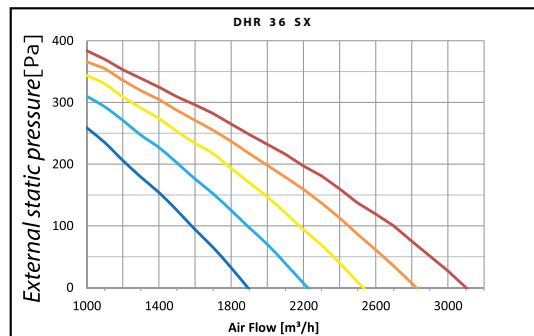
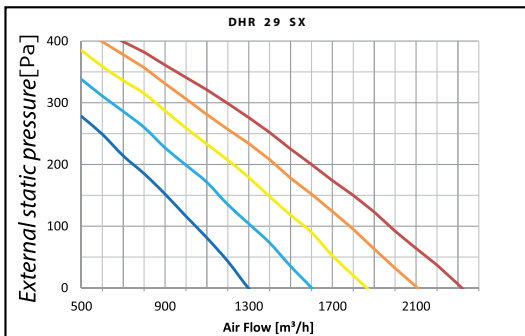
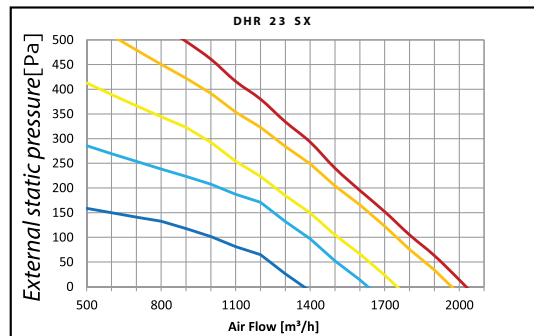
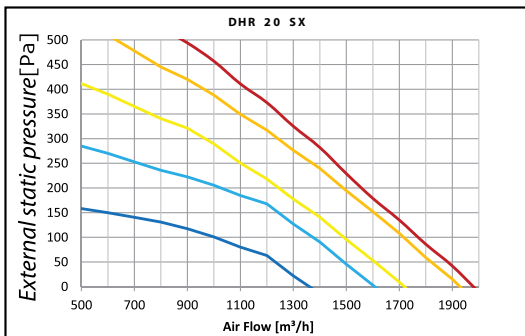
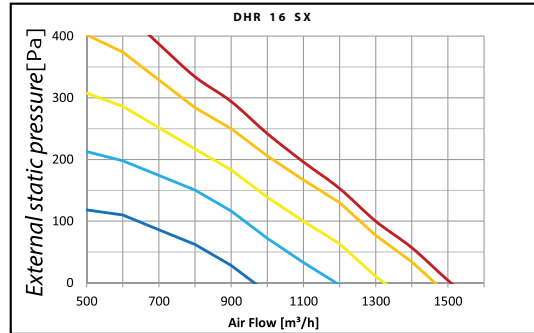
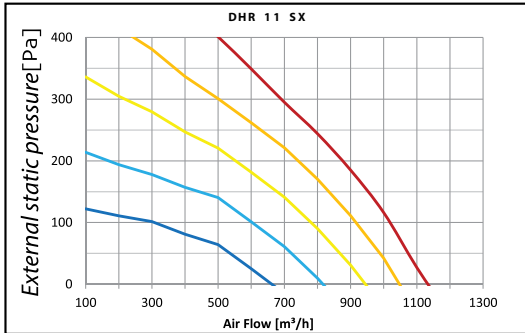
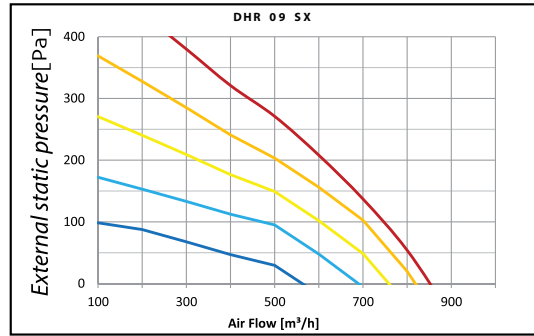
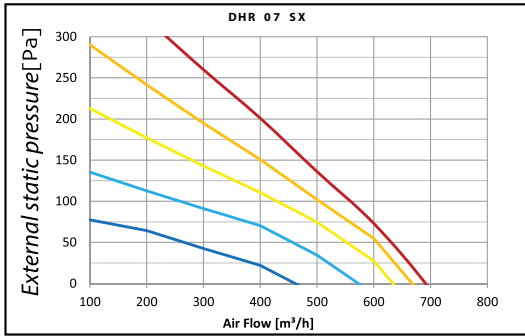


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 07 SX	DHR 09 SX	DHR 11 SX	DHR 16 SX	DHR 20 SX	DHR 23 SX	DHR 29 SX	DHR 36 SX	DHR 51 SX
Air Flow 0 Pa*	m ³ /h	690	850	1133	1508	1979	2027	2318	3100	3616
Air Flow 150 Pa*	m ³ /h	478	682	951	1206	1666	1704	1800	2443	2500
Heat Recovery Efficiency ***	%	Up to 3 times more energy recovery than the aluminum exchangers.								
Electrical Data	230 Volt / 50 Hz / 1 PH									
	W	2x102	2x155	2x210	2x225	2x515	2x515	2x550	2x550	2x550
Specific Fan Power SFP**	SFP	2.08	1.548	1.596	1.764	2.225	2.178	2.205	1.615	1.702
Air Filter	Polyurethane filters for fresh and Exhaust Air									
<p>* External static pressure</p> <p>**According to EN 13779 at 150 Pa operating point</p> <p>***According to EN 308 at 150 Pa operating point</p>										



DYNFLOW MODEL		DHR 07 SX	DHR 09 SX	DHR 11 SX	DHR 16 SX	DHR 20 SX	DHR 23 SX	DHR 29 SX	DHR 36 SX	DHR 51 SX
Length (mm)	L	900	900	940	1155	1155	1405	1400	1455	1650
Width (mm)	W	860	860	1010	1030	1030	1115	1025	1100	1160
Height (mm)	H	330	330	445	430	430	430	420	595	690
Duct Connection (mm)	Ød	200	200	250	300	300	355	355	400	450
Weight (kg)		32	34.5	56	64	67	95.5	97.5	120	158
Service Clearance (mm)	L _s	450	450	500	550	550	550	450	450	500



DHR PE RESIDENTIAL TYPE HEAT RECOVERY UNITS



DYNFLOW DHR PE Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR PE units provide air-conditioning for residential, commercial and industrial applications by using Counter Flow Plate-Type heat exchangers. The heat is effectively transferred from warm to cold air by the high efficiency PE-type exchangers with high conductivity, efficiency and performance.

Features and Benefits

- 2 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- PE-type heat exchangers with high conductivity and performance.
- High Indoor air quality with G4 Synthetic filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

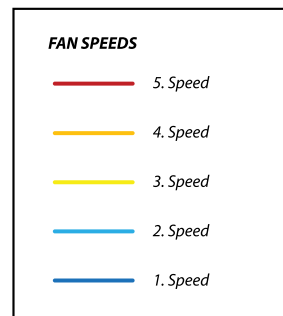
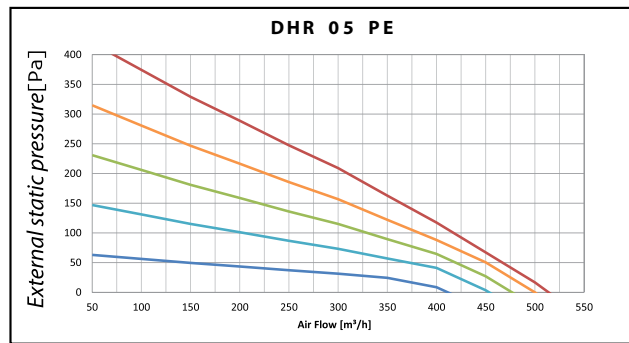
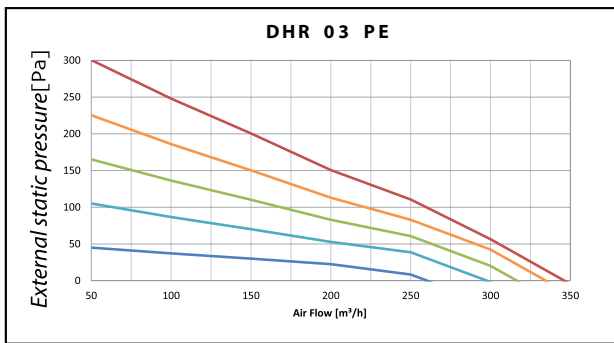


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 03 PE	DHR 05 PE
Air Flow 0 Pa*	m ³ /h	348	514
Air Flow 150 Pa*	m ³ /h	204	364
Heat Recovery Efficiency ***	%	87.9	82.7
Electrical Data		230 Volt / 50 Hz / 1 PH	
	W	2x52	2x102
Specific Fan Power SFP**	SFP	1.77	1.95
Air Filter	G4 Synthetic Filters for Fresh and Exhaust Air		
* External static pressure ** According to EN 13779 at 150 Pa operating point *** According to EN 308 at 150 Pa operating point			



DYNFLOW MODEL		DHR 03 PE	DHR 05 PE
Depth (mm)	D	555	650
Width (mm)	W	760	800
Height (mm)	H	906	1080
Duct Connection (mm)	Ød	125	160
Weight (kg)		57	90
Service Clearance (mm)	L _s	600	700



DHR DX HEAT PUMP HEAT RECOVERY UNITS



DYNFLOW DHR DX heat recovery ventilation units with heat pump designed for energy saving and improving indoor air quality. DHR DX units provide heat recovery and well-conditioned fresh air by air plate-type exchanger and heat pump. 30°C fresh air in the summer time and 12°C fresh air in the winter time can be obtained by usual heat recovery units, but these results are not comfortable. 20°C fresh air in the summer time and 25°C fresh air in the winter can be obtained with high efficiency heat pump.

Features and Benefits

- 8 Standard models.
- Conditioned fresh air of 20°C temperature in summer and 25°C in winter.
- Compact design which is housing fresh air fan, exhaust air fan, plate heat exchanger, evaporator, condenser and compressor.
- High Indoor air quality with G4 Synthetic filters.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum Plate-type heat exchangers with high conductivity and performance.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.
- 400 Volt – 3 Phase – 50Hz.



Electronic Controller
"Supplied with the unit as standard"

DHR 15 DX Heat Pump Heat Recovery and DHR 20 Heat Recovery comparison table for istanbul

DHR 15 DX Heat Pump Heat Recovery and DHR 20 Heat Recovery Comparison Table*												
					DHR 20							
	Outdoor		Indoor		Fresh Air		Exhaust		Fresh Air		Exhaust	
	Temp °C	RH%	Temp °C	RH%	Temp °C	RH%	Temp °C	RH%	Temp °C	RH%	Temp °C	RH%
Summer	33	47.6	25	50	29.5	58.2	28.5	40.7	21.1	83.8	45.7	15.9
Winter	-3	80	22	50	9	33	11.7	89	23.6	13	5.2	99

*This table is prepared for Nominal conditions.

Summer
Sensible cooling load
Q = 5.71 KW

DHR 15 DX Cooling Capacity
Q = 5.81 KW

Winter
Heating Load
Q = 13.7 KW

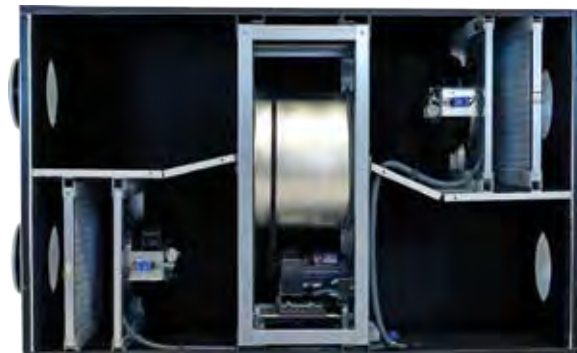
DHR 15 DX Heating Capacity
Q = 14.6 KW

DYNFLOW MODEL		DHR 05 DX	DHR 07 DX	DHR 10 DX	DHR 15 DX	DHR 20 DX	DHR 21 DX	DHR 30 DX	DHR 40 DX	
Air Flow	m ³ /h	500	750	1000	1500	2000	2000	3000	4000	
External Static Pressure	Pa	154	188	223	277	179	252	182	300	
Electrical Data		230 Volt / 50 Hz / 1 PH						400 Volt / 50 Hz / 3 PH		
Fan Absorbed Power	w	2x102	2x155	2x225	2x515	2x515	2x550	2x550	2x2500	
Cooling	Compressor Absorbed Power*	w	1050	1050	1400	2250	2800	2800	3410	4640
	Total Absorbed Power*	w	1254	1360	1850	3270	3820	3820	4430	7040
	Total Cooling Capacity*	w	3488	3751	4615	7460	9552	9552	13430	18460
		Btu/h	1190	12800	15750	26070	32600	32600	45883	63000
Heating	Compressor Absorbed Power*	w	686	541	805	1362	1456	1456	2740	3370
	Total Absorbed Power*	w	890	841	1425	2382	2476	2476	3760	5570
	Total Cooling Capacity*	w	5660	6760	8660	13910	17930	17930	24350	32240
		Btu/h	19300	23050	29550	47450	61180	61180	83080	110000



DYNFLOW MODEL		DHR 05 DX	DHR 07 DX	DHR 10 DX	DHR 15 DX	DHR 20 DX	DHR 21 DX	DHR 30 DX	DHR 40 DX
Length (mm)	L	1140	1315	1355	1615	1810	1910	2000	2000
Width (mm)	W	910	960	1080	1330	1375	1525	1650	1650
Height (mm)	H	390	440	440	470	610	610	735	735
Duct Connection (mm)	Ød	200	200	250	300	355	355	400	450
Weight (kg)		89	103	118	165	201	240	310	310

DHR ER ENERGY RECOVERY UNITS



DYNFLOW DHR ER Energy Recovery Units are designed to have high efficiency by using rotary type heat exchangers. The efficiency of DHR ER units is about 80% and this value is higher than the efficiency of DHR with Aluminum Plate type exchangers by 25%. The supply air side is equipped with additional heater. Supply air temperature will be close to the room temperature without further conditioning. Rotary type heat exchangers transfer humidity as well as heat. Humidity will be transferred from fresh air to the supply air at winter and vice versa in the summer. It helps to keep the humidity level within the comfort levels.

Features and Benefits

- 8 Standard models, CE marked in compliance with applicable directives.
- High Indoor air quality with polyurethane filters.
- The compact design provides easy installation and maintenance.
- Proper ventilation with 5 speeds controller.
- High efficiency direct driven AC backward curved fan with low noise level.
- Rotary-type heat exchangers with high efficiency.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

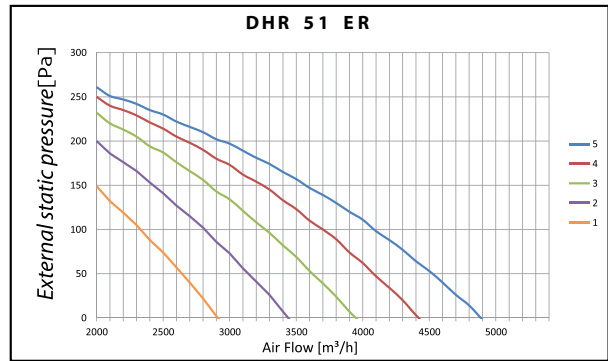
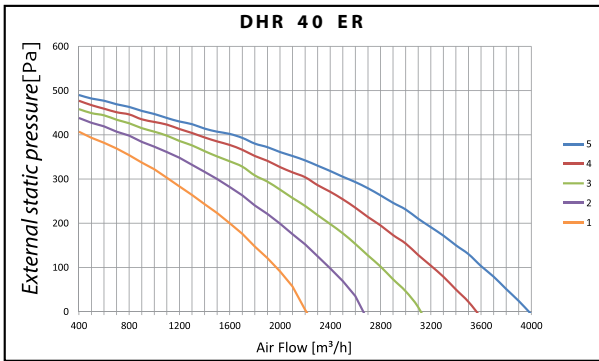
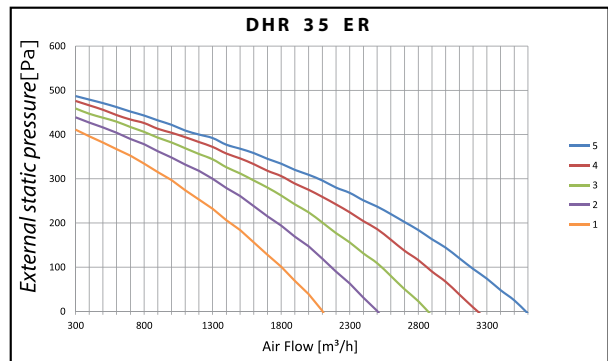
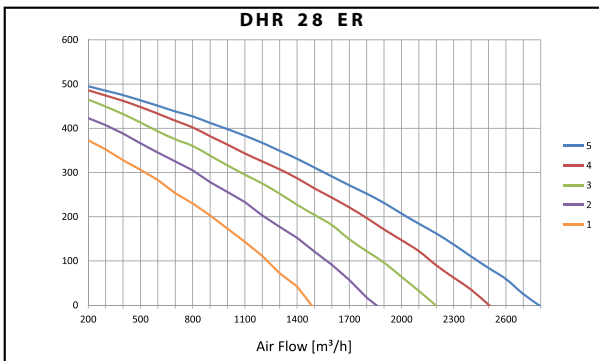
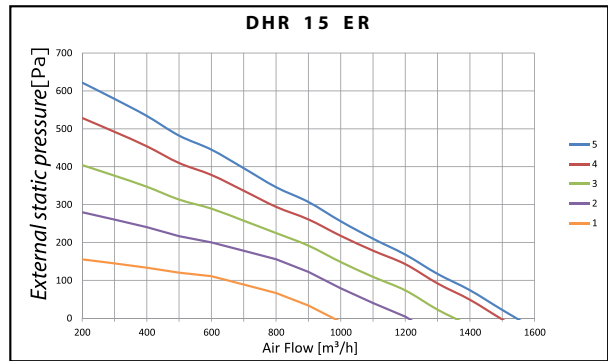
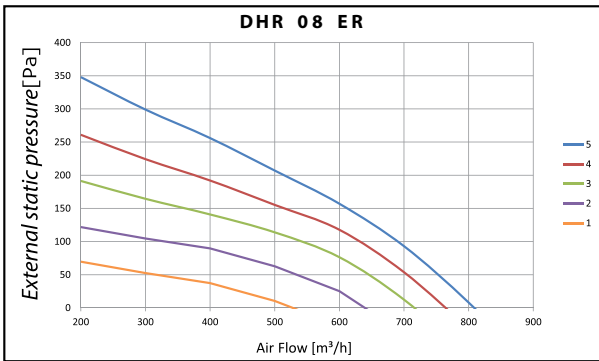
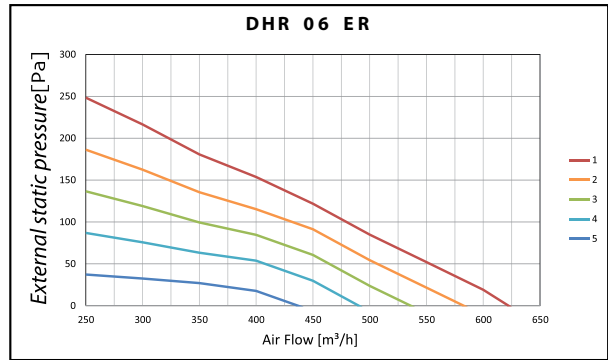
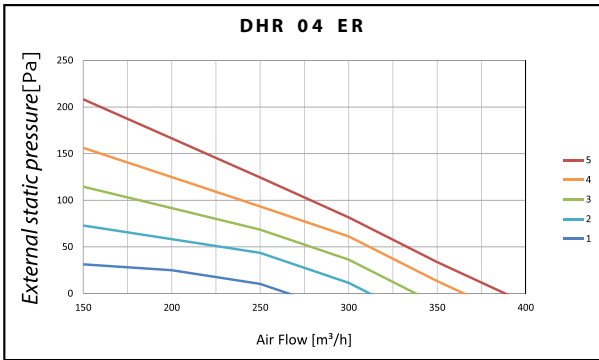


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 04 ER	DHR 06 ER	DHR 08 ER	DHR 15 ER	DHR 28 ER	DHR 35 ER	DHR 40 ER	DHR 51 ER
Air Flow 0 Pa*	m ³ /h	390	625	851	1425	2804	3607	3823	4833
Air Flow 150 Pa*	m ³ /h	219	401	645	1153	2221	2990	3237	3534
Heat Recovery Efficiency ***	%	Efficiency up to 95%, depending on working conditions.							
Electrical Data	230 Volt / 50 Hz / 1 PH								
	W	2x52	2x102	2x102	2x225	2x550	2x550	2x550	2x550
Specific Fan Power SFP**	SFP	1.7	1.58	1.06	1.31	1.76	1.33	1.16	1.37
Air Filter	Polyurethane Filters for Fresh and Exhaust Air								
<p>* External static pressure</p> <p>** According to EN 13779 at 150 Pa operating point</p> <p>*** According to EN 308 at 150 Pa operating point</p>									



DYNFLOW MODEL		DHR 04 ER	DHR 06 ER	DHR 08 ER	DHR 15 ER	DHR 28 ER	DHR 35 ER	DHR 40 ER	DHR 51 ER
Length (mm)	L	1158	1158	1150	1150	1315	1470	1590	1740
Width (mm)	W	716	716	710	710	980	1080	1170	1170
Height (mm)	H	339	438	620	620	730	850	1030	1030
Duct Connection (mm)	Ød	160	200	200	300	300	300	300	400
							250	250	300
Weight (kg)		65	73	90	95	138	180	230	155
Service Clearance (mm)	L _s	400	400	750	750	850	950	1100	1100



DHR SC HEAT RECOVERY UNITS WITH MEDIUM EFFICIENCY



DYNFLOW DHR SC Medium Efficiency Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR SC units provide air-conditioning for residential, commercial and industrial applications by using counter flow Plate-type heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with medium conductivity, efficiency and performance.

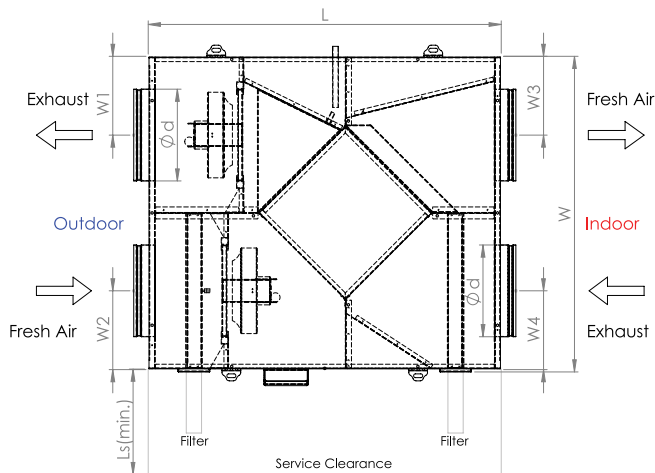
Features and Benefits

- 9 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum PLATE-TYPE heat exchangers with medium conductivity and performance.
- Good Indoor air quality with G3 filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

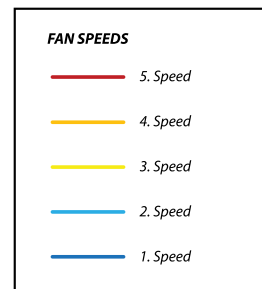
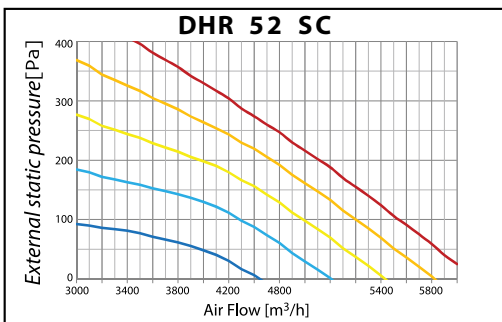
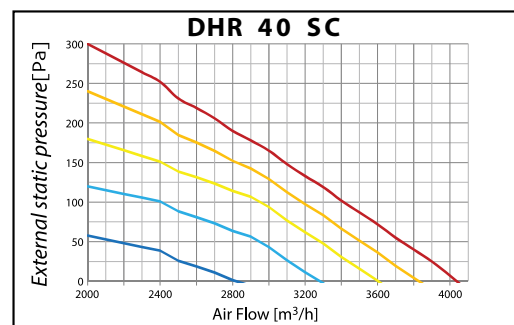
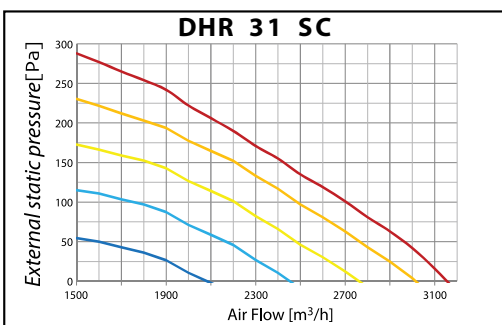
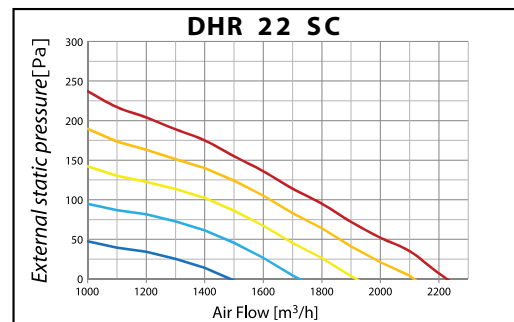
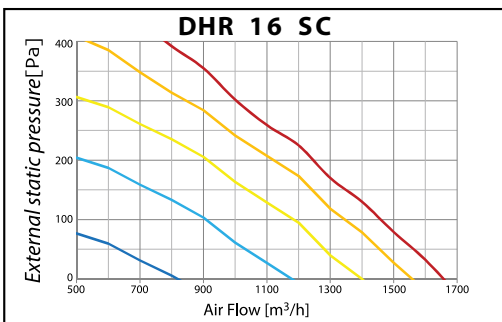
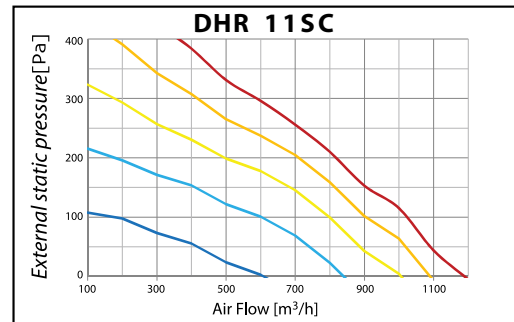
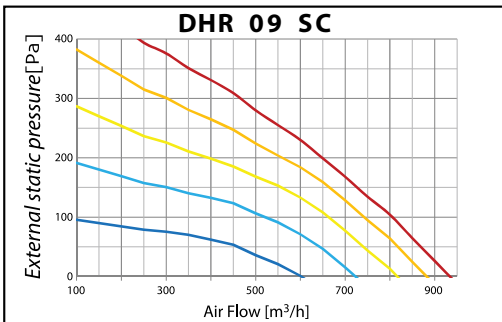
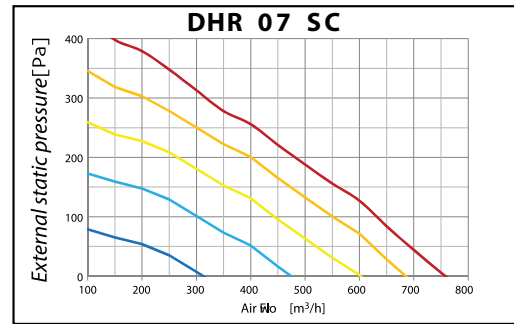
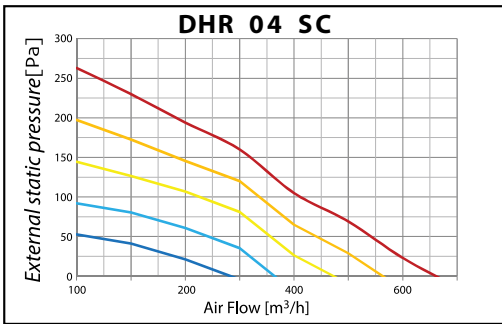


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 04 SC	DHR 07 SC	DHR 09 SC	DHR 11 SC	DHR 16 SC	DHR 22 SC	DHR 31 SC	DHR 40 SC	DHR 52 SC
Air Flow 0 Pa *	m ³ /h	431	758	934	1190	1656	2228	3114	4390	6167
Air Flow 150 Pa *	m ³ /h	259	565	727	908	1350	1526	2529	3581	5233
Heat Recovery Efficiency**	%	54.0	56.4	56.0	56.2	53.1	54.2	55.0	56.7	54.7
Electrical Data	230 Volt / 50 Hz / 1 PH									
	W	2x52	2x135	2x155	2x200	2x300	2x270	2x460	2x680	2x1300
Specific Fan Power SFP***	SFP	161	172	141	159	160	127	131	137	179
Air Filter	G3 Synthetic filters for fresh and Exhaust Air									
<p>*External static pressure **According to EN 308 ***According to EN 13779 at 150 Pa operating point</p>										



DYNFLOW MODEL		DHR 04 SC	DHR 07 SC	DHR 09 SC	DHR 11 SC	DHR 16 SC	DHR 22 SC	DHR 31 SC	DHR 40 SC	DHR 52 SC
Length [mm]	L	900	1100	1150	1200	1385	1520	1710	1910	1990
Width [mm]	W	750	850	850	1000	1150	1370	1530	1680	1880
Height [mm]	H	276	321	376	436	476	666	807	887	985
Duct Connection [mm]	ød	Ø200	Ø250	Ø315	Ø355	Ø400	Ø450	Ø560	Ø630	Ø630
Service clearance [mm]	Ls	400	450	480	530	600	700	800	850	900



DHR EC HEAT RECOVERY UNITS



DYNFLOW
ECFAN

DYNFLOW DHR EC Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR EC units provide air-conditioning for residential, commercial and industrial applications by using counter flow Plate-type heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance.

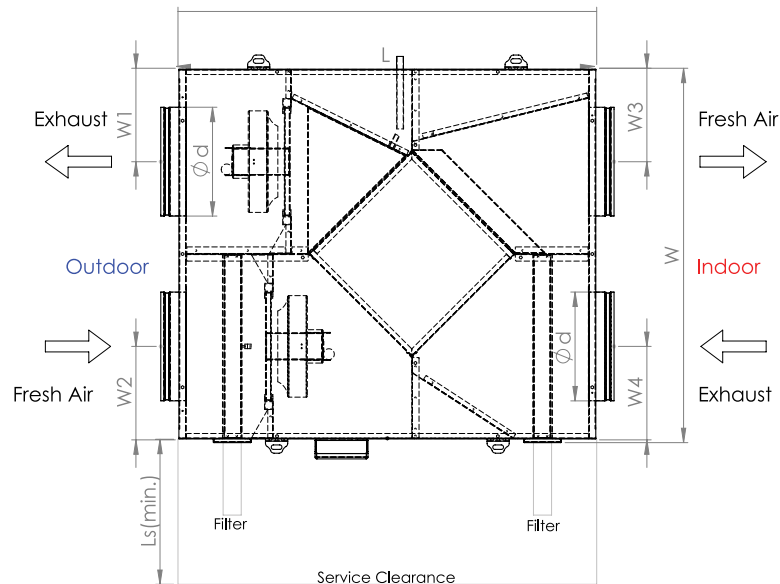
Features and Benefits

- 7 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven EC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum PLATE-TYPE heat exchangers with high conductivity and performance.
- High Indoor air quality with polyurethane filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

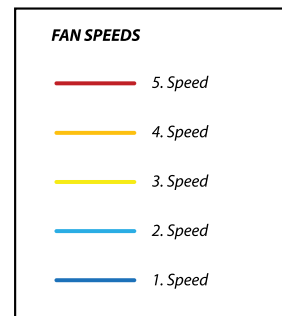
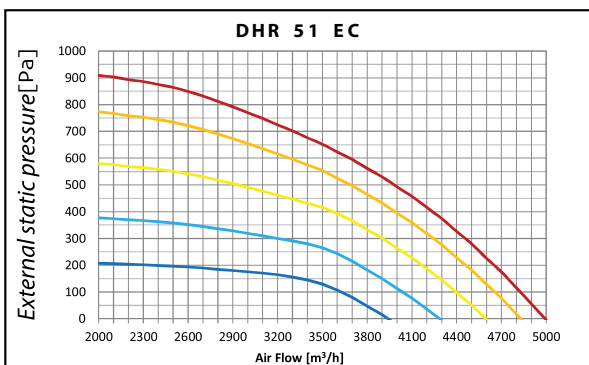
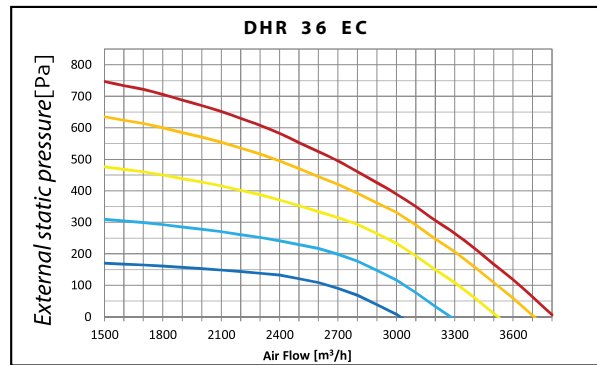
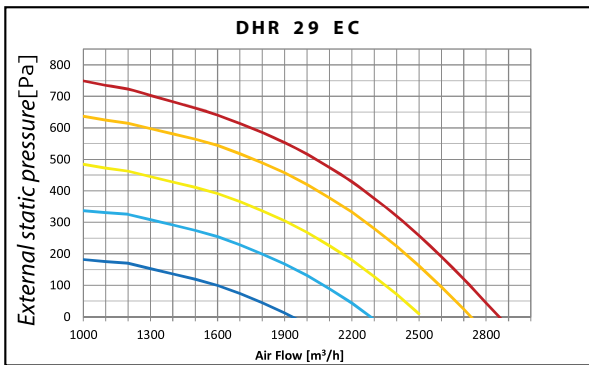
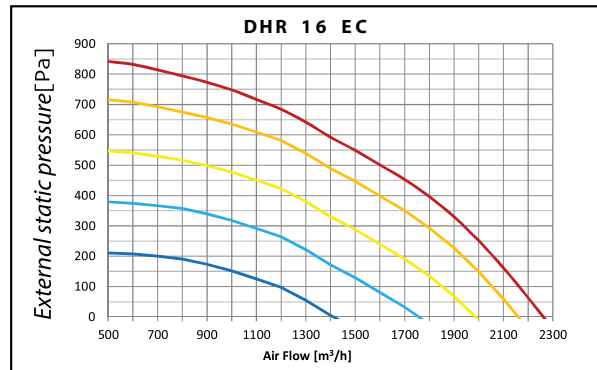
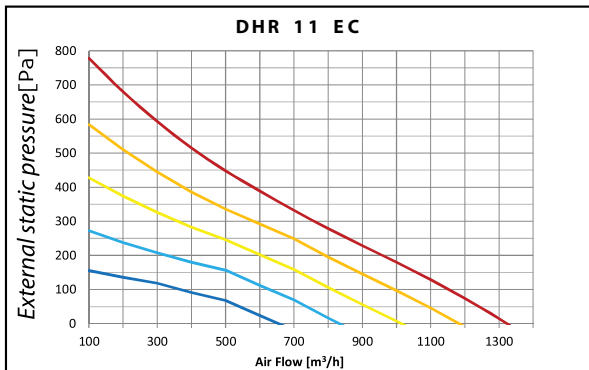
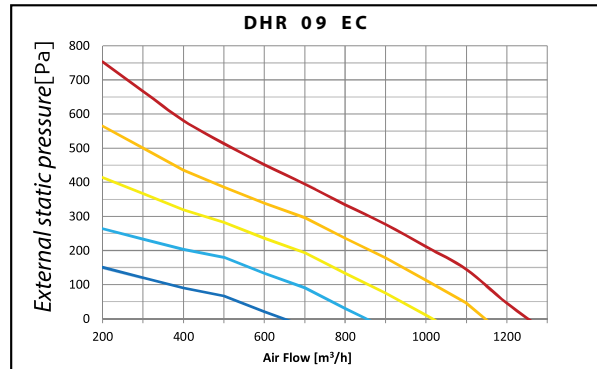
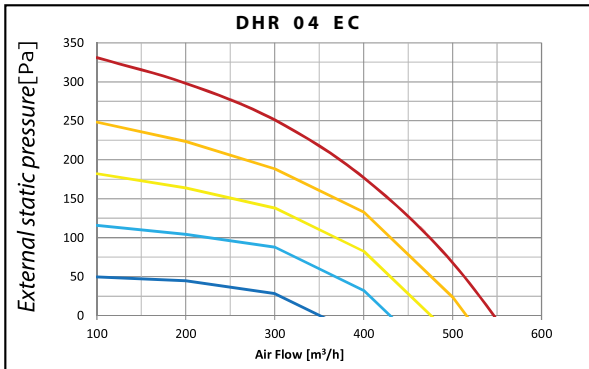


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 04 EC	DHR 09 EC	DHR 11 EC	DHR 16 EC	DHR 29 EC	DHR 36 EC	DHR 51 EC
Air Flow 0 Pa*	m ³ /h	547	1252	1468	2261	2858	3810	4993
Air Flow 150 Pa*	m ³ /h	428	1091	1058	2112	2657	3534	4742
Heat Recovery Efficiency ***	%	Efficiency up to 70%, depending on working conditions.						
Electrical Data		230 Volt / 50 Hz / 1 PH						
	W	2x55	2x170	2x170	2x525	2x610	2x780	2x1300
Specific Fan Power SFP**	SFP	1004	1102	1196	1684	1508	1412	1752
Air Filter	Polyurethane Filters for Fresh and Exhaust Air							
<p>* External static pressure</p> <p>** According to EN 13779 at 150 Pa operating point</p> <p>*** According to EN 308 at 150 Pa operating point</p>								



DYNFLOW MODEL		DHR 04 EC	DHR 09 EC	DHR 11 EC	DHR 16 EC	DHR 29 EC	DHR 36 EC	DHR 51 EC
Length (mm)	L	800	900	940	1155	1405	1450	1655
Width (mm)	W	735	860	1010	1030	1115	1110	1265
Height (mm)	H	290	330	445	430	430	595	700
Duct Connection (mm)	Ød	160	200	250	300	355	400	450
Weight (kg)		29	36	56.5	67	102	137	155
Service Clearance (mm)	L _s	400	450	500	550	550	600	600



DHR CF EC HIGH EFFICIENCY HEAT RECOVERY UNITS

DYNFLOW
ECFAN



DYNFLOW DHR CF High Efficiency Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR CF units provide air-conditioning for residential, commercial and industrial applications by using counter flow Plate-type heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance.

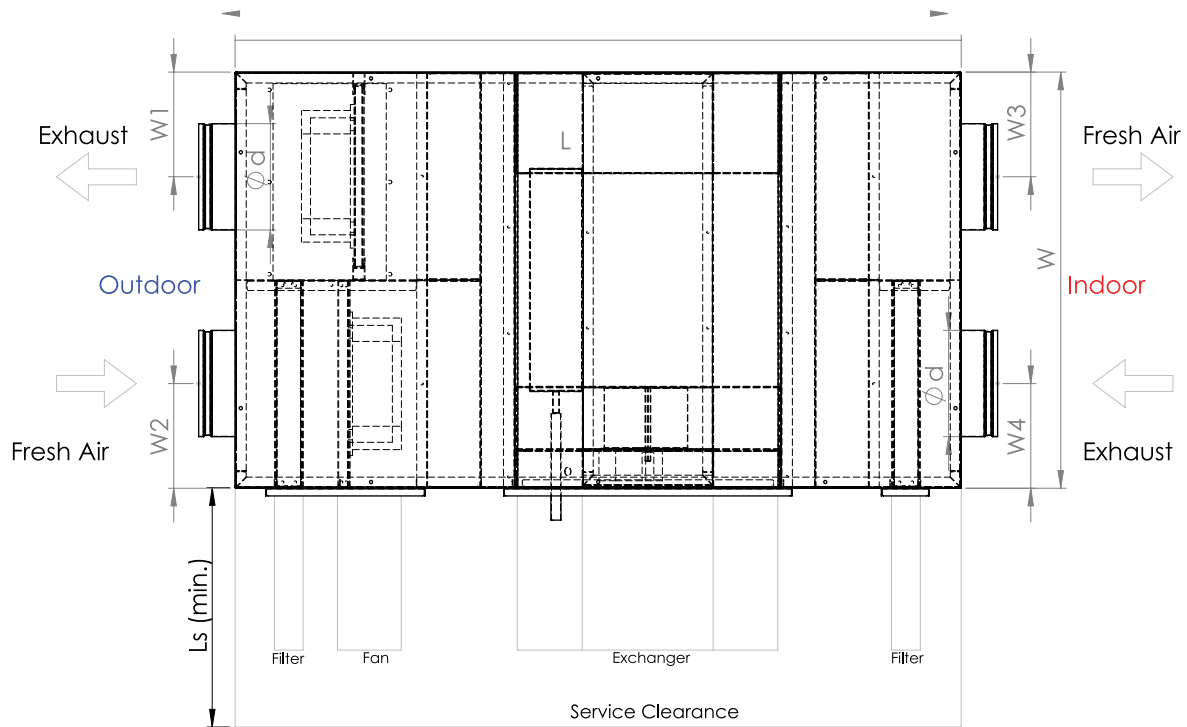
Features and Benefits

- 5 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven AC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Aluminum Counter flow PLATE-TYPE heat exchangers with high conductivity and performance.
- High Indoor air quality with G4 Synthetic filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

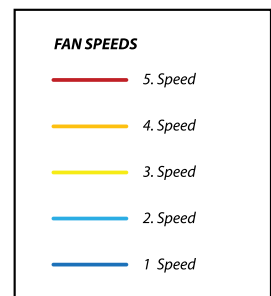
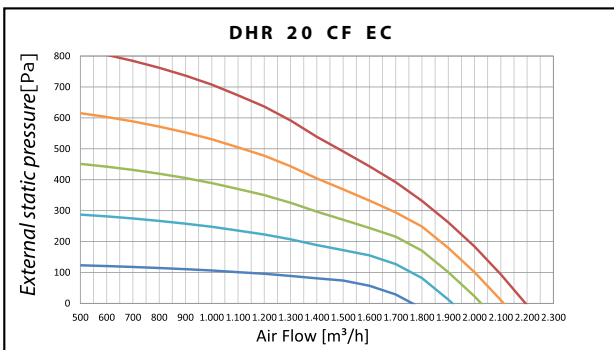
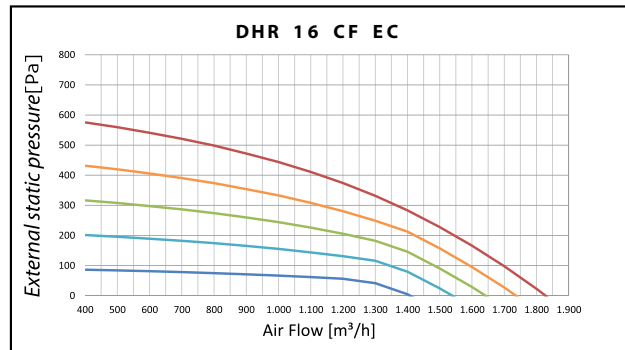
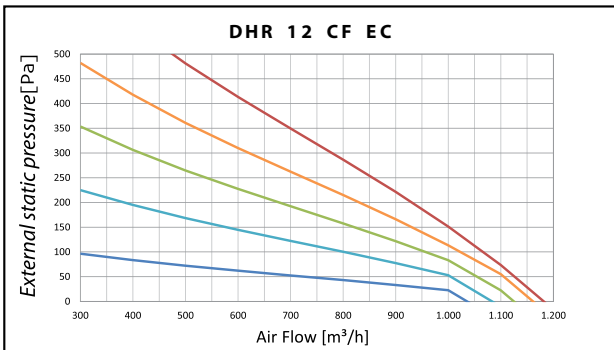
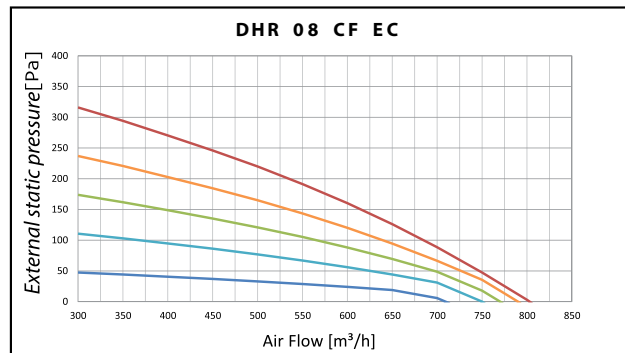
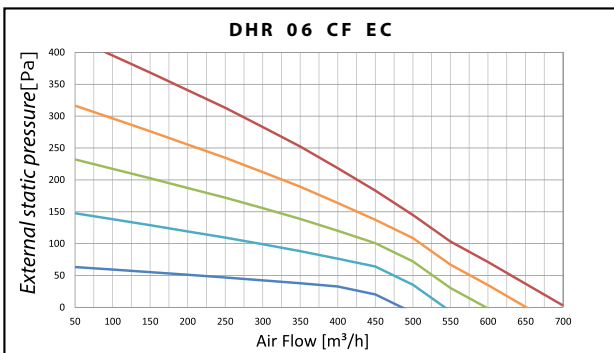


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 06 CF EC	DHR 08 CF EC	DHR 12 CF EC	DHR 16 CF EC	DHR 20 CF EC
Air Flow 0 Pa*	m ³ /h	651	803	1140	1828	2193
Air Flow 150 Pa*	m ³ /h	493	614	1000	1623	2037
Heat Recovery Efficiency ***	%	82.1	82.4	83.2	82.6	80.1
Electrical Data		230 Volt / 50 Hz / 1 PH				
	W	2x155	2x155	2x170	2x610	2x525
Specific Fan Power SFP**	SFP	1.45	1.24	1.21	1.21	2.23
Air Filter	G4 Synthetic Filters for Fresh and Exhaust Air					
* External static pressure						
**According to EN 13779 at 150 Pa operating point						
***According to EN 308 at 150 Pa operating point						



DYNFLOW MODEL		DHR 06 CF EC	DHR 08 CF EC	DHR 12 CF EC	DHR 16 CF EC	DHR 20 CF EC
Length (mm)	L	1475	1475	1545	1755	1755
Width (mm)	W	800	800	1265	1265	1265
Height (mm)	H	385	385	425	425	425
Duct Connection (mm)	Ød	200	200	250	300	300
Weight (kg)		50	61	105	120	120
Service Clearance (mm)	L _s	450	650	650	650	650



DHR SX EC HEAT RECOVERY UNITS WITH CELLULOSIC EXCHANGER

DYNFLOW
ECFAN



DYNFLOW DHR SX EC Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR SX EC units provide air-conditioning for residential, commercial and industrial applications by using Cellulosic heat exchangers. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance. The efficiency is considerably high hence there is latent heat transfer besides the sensible heat transfer.

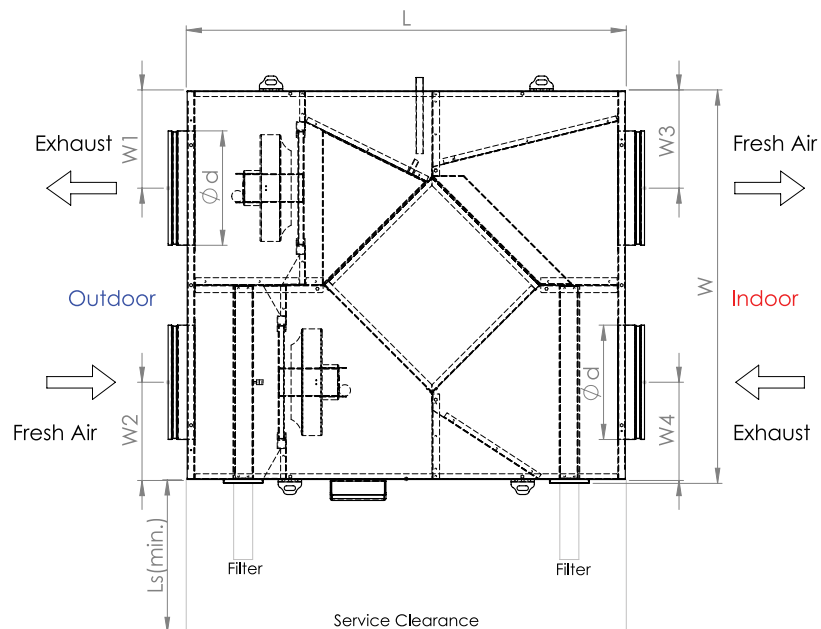
Features and Benefits

- 6 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven EC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- Cellulosic type heat exchangers with high conductivity and performance.
- High Indoor air quality with polyurethane filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz.

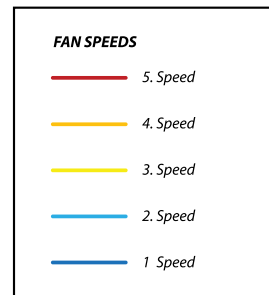
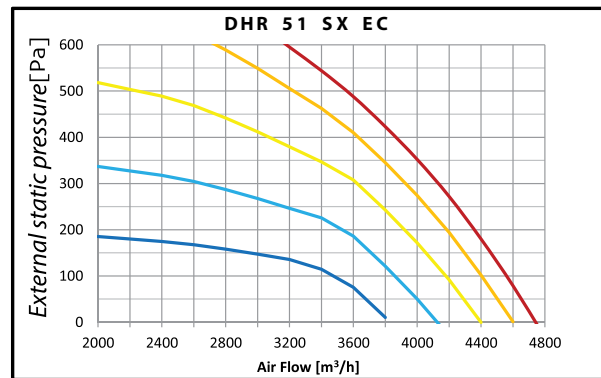
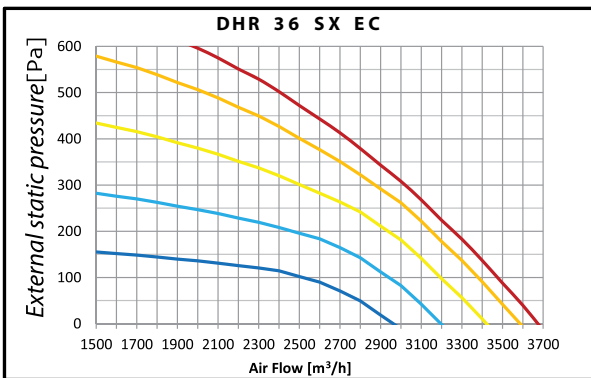
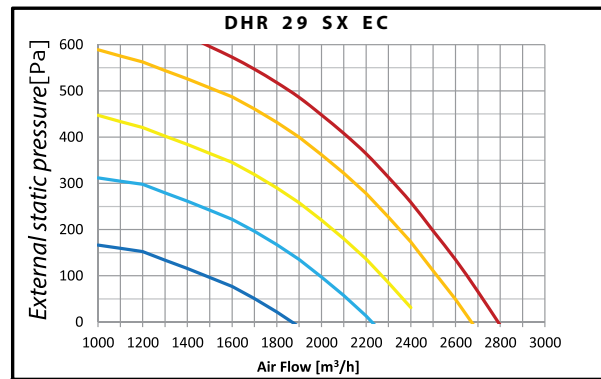
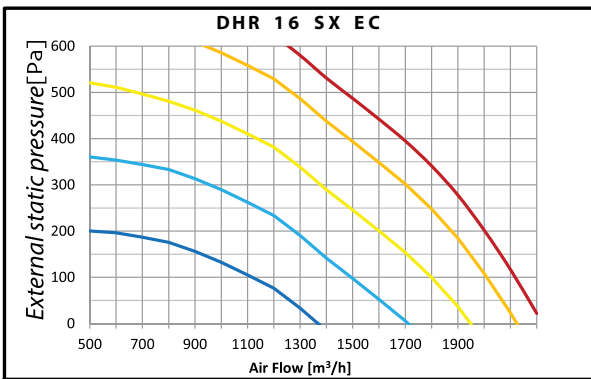
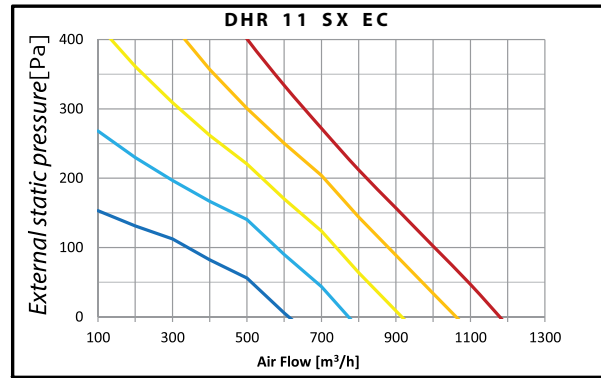
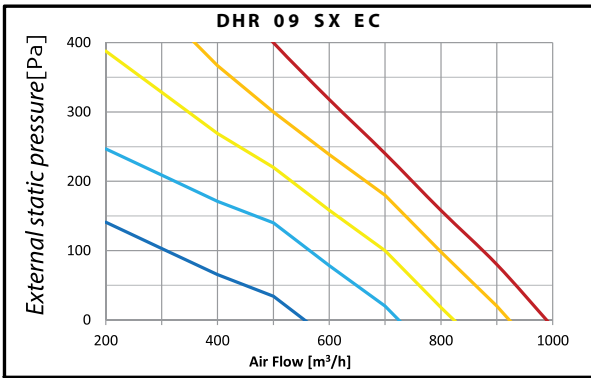


Electronic Controller
"Supplied with the unit as standard"

DYNFLOW MODEL		DHR 09 SX EC	DHR 11 SX EC	DHR 16 SX EC	DHR 29 SX EC	DHR 36 SX EC	DHR 51 SX EC
Air Flow 0 Pa*	m ³ /h	988	1178	2117	2790	3674	4745
Air Flow 150 Pa*	m ³ /h	810	912	2061	2575	3371	4463
Heat Recovery Efficiency ***	%	Up to 3 times more energy recovery than the aluminum exchangers.					
Electrical Data	230 Volt / 50 Hz / 1 PH						
	W	2x170	2x170	2x525	2x610	2x780	2x1300
Specific Fan Power SFP**	SFP	1.5	1.302	1.748	1.59	1.532	1.982
Air Filter	Polyurethane Filters for Fresh and Exhaust Air						
<p>* External static pressure</p> <p>**According to EN 13779 at 150 Pa operating point</p> <p>***According to EN 308 at 150 Pa operating point</p>							



DYNFLOW MODEL		DHR 09 SX EC	DHR 11 SX EC	DHR 16 SX EC	DHR 29 SX EC	DHR 36 SX EC	DHR 51 SX EC
Length (mm)	L	900	940	1155	1405	1450	1655
Width (mm)	W	860	1010	1030	1115	1110	1265
Height (mm)	H	330	445	430	430	595	700
Duct Connection (mm)	Ød	200	250	300	355	400	450
Weight (kg)		36	56.5	67	102	137	155
Service Clearance (mm)	L _s	450	500	550	550	600	600



DHR PE EC RESIDENTIAL TYPE HEAT RECOVERY UNITS



DYNFLOW
ECFAN



DYNFLOW DHR PE EC Heat Recovery Ventilation Unit are designed for energy saving and improving indoor air quality. DHR PE EC units provide air-conditioning for residential, commercial and industrial applications by using Counter Flow Plate-Type heat exchangers. The heat is effectively transferred from warm to cold air by the high efficiency PE-type exchangers with high conductivity, efficiency and performance.

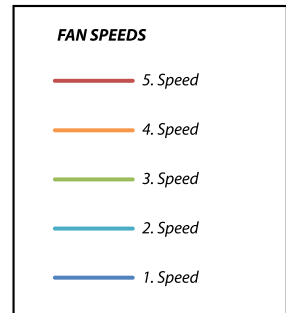
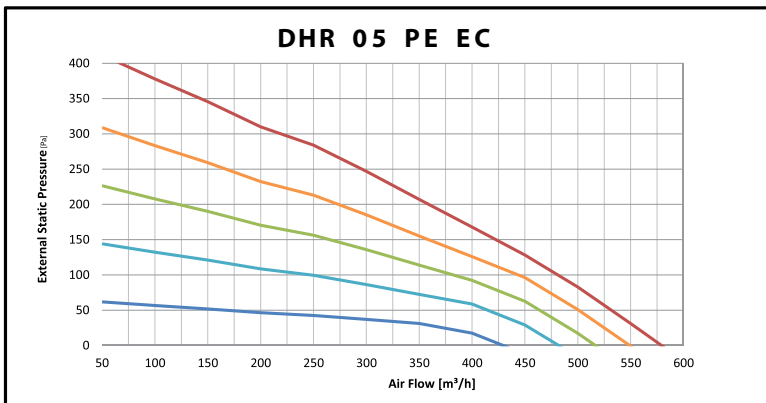
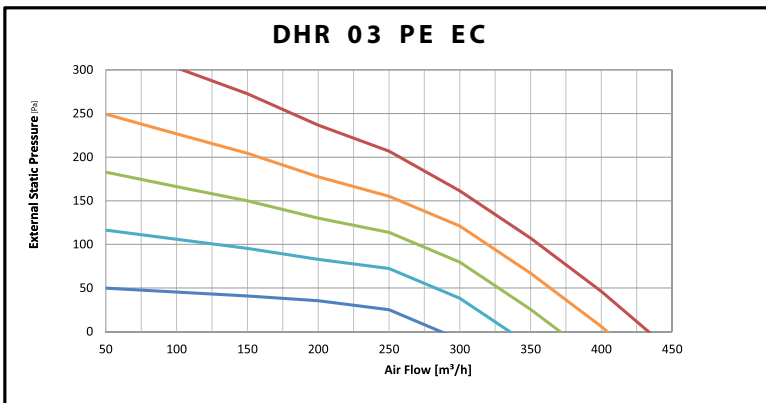
Features and Benefits

- 2 Standard models, CE marked and GOST-R certified in compliance with applicable directives.
- High efficiency direct driven EC backward curved fan with low noise level.
- Proper ventilation with 5 speeds controller.
- The compact design provides easy installation and maintenance.
- PE-type heat exchangers with high conductivity and performance.
- High Indoor air quality with G3 Synthetic filters.
- Excellent sound and heat isolation with fully insulated casing.
- 230 Volt – 1 Phase – 50Hz

DYNFLOW MODEL		DHR 03 PE EC	DHR 05 PE EC
Air Flow 0 Pa*	m ³ /h	433	579
Air Flow 150 Pa*	m ³ /h	320	445
Heat Recovery Efficiency ***	%	87.9	83.7
Electrical Data	230 Volt / 50 Hz / 1~ PH		
	W	2x55	2x105
Specific Fan Power SFP**	SFP	1324	1574
Air Filter	G3 Synthetic Filters for Fresh and Exhaust Air		
<p>* External static pressure **According to EN 13779 at 150 Pa operating point ***According to EN 308 at 150 Pa operating point</p>			

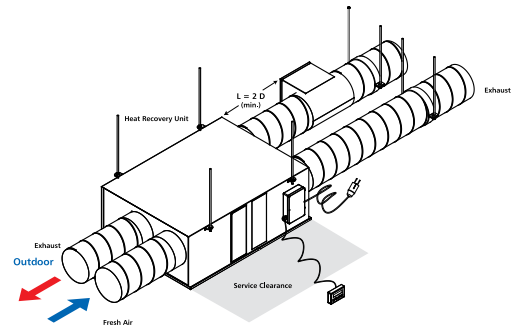


DYNFLOW MODEL		DHR 03 PE EC	DHR 05 PE EC
Length (mm)	L	555	650
Width (mm)	W	760	800
Height (mm)	H	906	1080
Duct Connection (mm)	Ød	125	160
Weight (kg)		57	90
Service Clearance (mm)	L _s	600	700



OUTDOOR CONNECTION KIT (OCK)

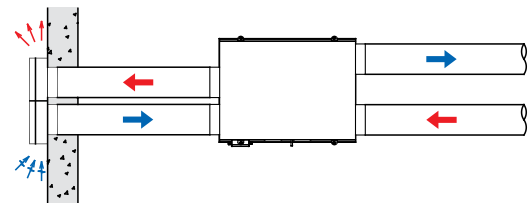
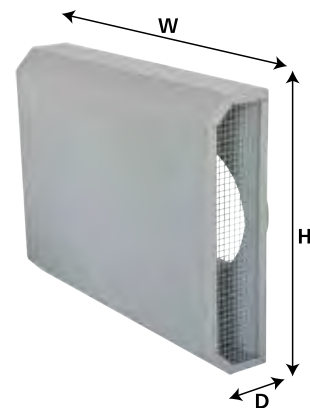
Outdoor connection kit is used to have the fresh air from the outside and exhaust the return air at the same time by not causing the short circuit. The connection dimensions are suitable with the heat recovery unit inlets and outlets. It can easily be mounted. It provides an aesthetic appear at exterior view.



DUCT TYPE ELECTRICAL HEATER (DCE)

DYNFLOW electrical heaters have TSEK certification, CE marked and GOST-R certification. The technical specifications of products meet the essential requirements in the directives 2004/108/ EC EMC and are tested according to the standards EN 55014-1, EN 61000-3-2/3-3 for EMC. Electrical heaters are produced in mono phase or three phases upon request in standard circular duct dimensions. The heaters have two overheating protections. DYNFLOW electrical heaters are used with heat recovery units frequently. The electrical heaters can be used for two different purposes.

- It can be used when the outdoor temperature is low as preheater to prevent freezing inside the heat exchanger.
 - It can be used as post heater to bring the fresh air temperature to the comfort conditions.
- The standard electrical heaters capacity and their specifications are at the following table.



DHR / DHR EC / DHR SX / DHR SX EC

Electrical Heater	DCE 04	DCE 07	DCE 09	DCE 11	DCE 16	DCE 20	DCE 23	DCE 29	DCE 36	DCE 51
Capacity	1 (0.5 + 0.5)KW	2(1 + 1) KW	3 (1.5 + 1.5) KW	3 (1.5 + 1.5) KW	4 (2 + 2) KW	5 (2.5 + 2.5) KW	6 (3 + 3) KW	7 (3.5+3.5) KW	10(5+5) KW	12(6+6) KW
Electrical Data	230 V/1 PH				400 V/3 PH					

DHR CF / DHR CF EC

Electrical Heater	DCE 06 CF	DCE 07 CF	DCE 08 CF	DCE 12 CF	DCE 16 CF	DCE 20 CF
Capacity	1 (0.5 + 0.5) KW	1 (0.5 + 0.5) KW	1 (0.5 + 0.5) KW	1.5 (0.75+0.75)KW	2 (1 + 1) KW	2.5(1.25 +1.25) KW
Electrical Data	230 V/1 PH					

DHR PE / DHR PE EC

Electrical Heater	DCE 03 PE	DCE 05 PE
Capacity	0.5 (0.25+0.25) KW	0.6 (0.3+0.3) KW
Electrical Data	230 V/1 PH	

DHR PE RESIDENTIAL TYPE HEAT RECOVERY UNITS

Electrical Heater	DCE 03	DCE 05
Capacity	0.5 (0.25 + 0.25) kw	0.6 (0.3 + 0.3) kw
Electrical Data	230 V / 1 ~ PH	230 V / 1 ~ PH

DHR PE EC RESIDENTIAL TYPE HEAT RECOVERY UNITS

Electrical Heater	DCE 01	DCE 03	DCE 05
Capacity	0.3 (0.15 + 0.15) kw	0.5 (0.25 + 0.25) kw	0.6 (0.3 + 0.3) kw
Electrical Data	230 V / 1 ~ PH	230 V / 1 ~ PH	230 V / 1 ~ PH

DUCT TYPE WATER COIL (HWC-CWC)

DYNFLOW duct water coils are produced as hot water coil (HWC) or cold water coil (CWC) at standard capacities. High efficient heat transfer can be acquired with high performance heat exchangers. The design, provides fast and easy installation and maintenance.

Hot Water Coil		HWC 04	HWC 07	HWC 09	HWC 11	HWC 16	HWC 20	HWC 23	HWC 29	HWC 36	HWC 51
Heating Capacity (90/70°C)	kW	2.2	3.7	5.3	5.7	7.5	10.8	12.9	14.4	21.2	28.9
Pressure Drop	Pa	9	21	20	22	22	22	22	25	25	25

Cold Water Coil		CWC 04	CWC 07	CWC 09	CWC 11	CWC 16	CWC 20	CWC 23	CWC 29	CWC 36	CWC 51
Cooling Capacity (7/12°C)	kW	1.5	1.9	3.1	3.2	4.1	6.4	7.5	8.6	11.2	17.3
Pressure Drop	Pa	23	38	36	40	40	41	45	45	45	44

BY-PASS CONNECTION KIT (BCK)

DYNFLOW heat recovery units are used to transfer the heat from the exhaust air to supply air. In the transition seasons, it is much more suitable to supply the fresh air directly to indoor by not entering to the heat exchanger.

By-pass connection kit allows controlling the outdoor air automatically and supplying the outdoor air directly to indoor when it is necessary. Heat recovery units with BCK have the following heights and weights.



DHR STANDARD HEAT RECOVERY UNITS

By-Pass Kit Model		BCK 04	BCK 07	BCK 09	BCK 11	BCK 16	BCK 20	BCK 23	BCK 29	BCK 36	BCK 51
Height*	mm	355	400	400	540	522	542	530	520	700	925
Weight*	kg	36	41.5	45	75	75	85	118	125	145	190

*Total values for the units with BCK

By-Pass Kit Model		BCK 04	BCK 09	BCK 11	BCK 16	BCK 29	BCK 36	BCK 51
Height*	mm	355	400	540	520	530	700	925
Weight*	kg	37	46	67	85	120	142	190

*Total values for the units with BCK

DHR SX CELLULOSIC HEAT RECOVERY UNITS

By-Pass Kit Model		BCK 07	BCK 09	BCK 11	BCK 16	BCK 20	BCK 23	BCK 29	BCK 36	BCK 51
Height*	mm	400	400	540	520	542	530	520	700	925
Weight*	kg	39	42.5	72.5	72	82	113.5	120.5	140.5	184

*Total values for the units with BCK

DHR SX CELLULOSIC HEAT RECOVERY UNITS

By-Pass Kit Model		BCK 09	BCK 11	BCK 16	BCK 29	BCK 36	BCK 51
Height*	mm	400	540	520	520	700	925
Weight*	kg	43.5	64.5	82	115.5	137.5	184

*Total values for the units with BCK

CIRCULAR DUCT SILENCER (SLT)

DYNFLOW duct type silencers are used for silent and comfortable conditions by reducing the the sound level in the ventilation systems. The standard silencers which are desigend to be used with heat recovery units are indicated in the following table.

Silencer		Ø 160	Ø 200	Ø 250	Ø 300	Ø 355	Ø 400	Ø 450
Length	mm	600	600	600	1200	1200	1400	1400
Sound Attenuation @ 250 Hz	dB	15	15	13	14	14	16	16

- Standard models are insulated with 50mm rock wool.
- Silencers can be produced for different dimensions and specifications



DHR STANDARD HEAT RECOVERY UNITS

Silencer		SLT 04	SLT 07	SLT 09	SLT 11	SLT 16	SLT 29	SLT 36	SLT 51
Length	mm	600	600	600	600	900	1.200	1.200	1.200
Sound Attenuation @250 Hz	dB	15	15	15	13	12	14	13	13

DHR WITH EC FAN HEAT RECOVERY UNITS

Silencer		SLT 04	SLT 07	SLT 09	SLT 11	SLT 16	SLT 29	SLT 36	SLT 51
Length	mm	600	600	600	600	900	1.200	1.200	1.200
Sound Attenuation @250 Hz	dB	15	15	15	13	12	14	13	13

DHR SX CELLULOSIC HEAT RECOVERY UNITS

Silencer		SLT 07	SLT 09	SLT 11	SLT 16	SLT 29	SLT 36	SLT 51
Length	mm	600	600	600	900	1.200	1.200	1.200
Sound Attenuation @250 Hz	dB	15	15	13	12	14	13	13

DHR SX EC CELLULOSIC HEAT RECOVERY UNITS

Silencer		SLT 07	SLT 09	SLT 11	SLT 16	SLT 20	SLT 23	SLT 29	SLT 36	SLT 51
Length	mm	600	600	600	900	1.200	1.200	1.200	1.200	1.200
Sound Attenuation @250 Hz	dB	15	15	13	12	14	14	14	13	13

DHR CFCF EC HIGH EFFICIENCY HEAT RECOVERY UNITS

Silencer		SLT 06	SLT 07	SLT 08	SLT 12	SLT 16	SLT 20
Length	mm	600	600	600	600	900	1.200
Sound Attenuation @250 Hz	dB	15	15	15	13	12	14

DHR PE RESIDENTIAL TYPE HEAT RECOVERY UNITS

Silencer		SLT 03	SLT 05
Length	mm	600	600
Sound Attenuation @250 Hz	dB	15	15

DHR PE EC RESIDENTIAL TYPE HEAT RECOVERY UNITS

Silencer		SLT 01	SLT 03	SLT 05
Length	mm	600	600	600
Sound Attenuation @250 Hz	dB	16	15	15

DHR DX HEAT PUMP RECOVERY UNITS

Silencer		SLT 05	SLT 07	SLT 10	SLT 15	SLT 20	SLT 21	SLT 30	SLT 40
Length	mm	600	600	600	900	1.200	1.200	1.400	1.400
Sound Attenuation @250 Hz	dB	15	15	13	12	14	14	16	16

HYDROLIC VALVE KIT (HVK)

When duct type water coil is used with heat recovery unit, the room temperature could be controlled by using 2 ways or 3 ways valves ready to fit the coil.



WEATHERPROOF COVER (VWC)

Weatherproof protection roof is used to protect the heat recovery unit from the outdoor conditions.



DUCT CONNECTION KIT (DCK)

DYNFLOW heat recovery units have circular duct inlets and outlets if the duct system is rectangular, the adaptors from circular to rectangular duct could be supplied optionally.



DUCT TYPE BAG FILTER (DFK)

DYNFLOW DFK series, bag Filter units, casing manufactured according to EN779 standard, with galvanised steel frame are made up class F7 synthetic micro fibers. These bag filters can endure on operating temperature 90°C max and have an efficiency of 85%



SEC-STANDARD ELECTRONIC CONTROLLER

SEC is supplied with DYNFLOW heat recovery units as standard and it has the following features.

- **Unit On/Off Control**

- **Adjusting Fresh Air Speed and Exhaust Air Speed Separately(5 Stages)**

It is possible to supply and exhaust the air depending on the request. Also positive or negative pressure can be obtained in the ventilation room.

- **Control of Electrical Heater Manually or Automatically**

DYNFLOW electrical heaters can be controlled with SEC. Thus, there is no need another controller. It is possible to turn the heater On or Off and adjust stages manually. Also it can be controlled automatically depending on the set temperature. If heat recovery unit or its supply air fan is turned off, fresh air fan keeps working for 30 seconds to cool the heater. And SEC doesn't allow the electrical heaters to run if fresh air fan of heat recovery unit isn't working.

- **Control of Hot / Cold Water Coil Valve Manually or Automatically**

The 2-way valve or 3-way valve of hot water coil can be controlled As On/Off by SEC. It is possible to open or close the valve of water coil manually. Also it can be controlled automatically depending on the set temperature by SEC.

- **Warning for Clogged Filter (Optional)**

SEC gives warning when the filters are dirty.

Frost Protection for Heat Exchanger (Optional)

When the freezing temperature is detected, fresh air fan switches to minimum stage and exhaust air fan switches to maximum stage automatically.

- **By-pass Damper Control (Optional)**

Please look at the accessories page for more information about by-pass damper.

- **Control of Air Quality (Optional) and Carbon Dioxide (Optional) Sensors**

It is possible to increase indoor air quality by using air quality or carbon dioxide sensors. The fan speed is adjusted automatically regarding to the carbon dioxide sensors or air quality sensor that could be connected to the unit.

- **FEC-FUNCTIONAL ELECTRONIC CONTROLLER**

FEC is requested as optional. Besides having all features of SEC, it has the following additional features.

- **Timer Function**

It is possible to set the requested running hours of the heat recovery unit. Thus, heat recovery unit runs on the requested working days, Saturday and Sunday.

- **PIR Detector (Optional)**

Heat recovery unit can run depending on the signal from the PIR detector that is connected to the unit By using FEC.

- **Control with Modbus**

FEC can communicate with a BMS through modbus Network. This allows the BMS to monitor the heat recovery unit and control all parameters of the unit

TESTS

DYNFLOW heat recovery units are tested and controlled in function and safety after the production, The technical specifications of products meets the essential requirements in the directives 2004/108/EC EMC and are tested accoresing to the standards En 55014 - 1 EN 61000 - 3-2/3-3 or EMC. Technical specifications meet the essential requirements in the standard EN 60204 - 1

- Leakage Current Test (TS 2000 EN 60335-1)
- High Voltage Test (TS 2000 EN 60335 - 1)
- Insulation Test (TS 10316 EN 20204 - 1)
- Earth Bond Test (TS 2000 EN 60335 - 1)



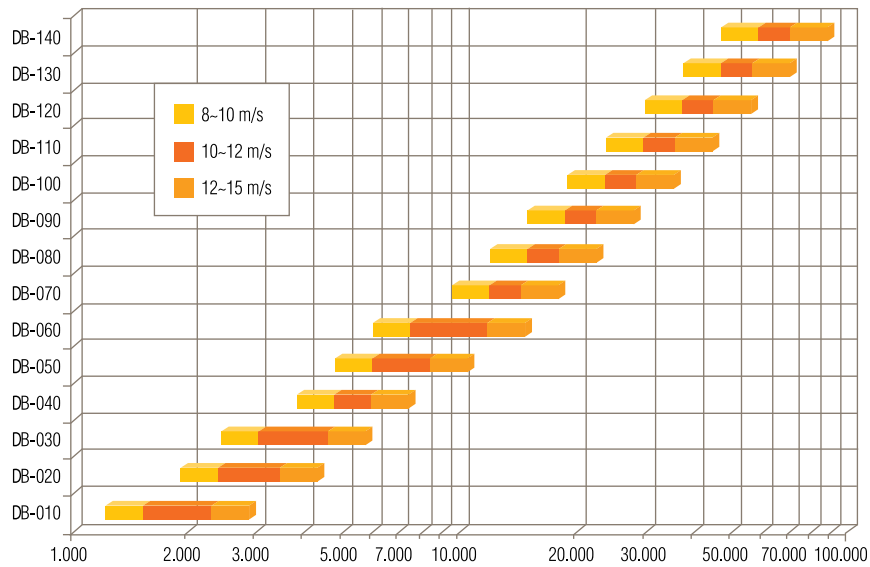
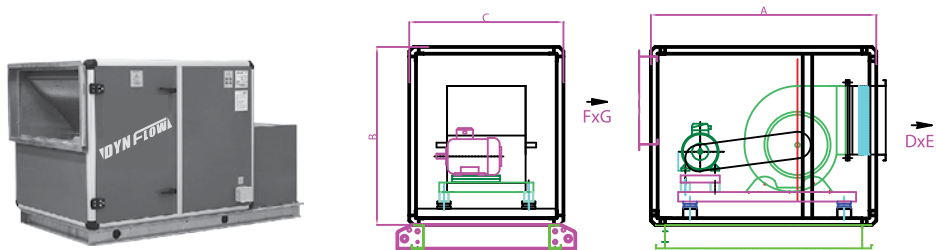
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ASPIRATORS WITH CASING

- Modular casing with high strength panels and aluminum profiles.
- Weather proof design, powder coated panels (optional).
- Galvanised steel panels as standard.
- Polyurethane insulation as standard.
- Forward or backward curved centrifugal fans or plug fans.
- Special design for kitchen applications which is motor outside The air stream.
- Several class filtering up on request.
- Belt and pulley mechanism which can be adjustable easily.



	DB 10	DB 20	DB 30	DB 40	DB 50	DB 60	DB 70	DB 80	DB 90	DB 100	DB 110	DB 120	DB 130	DB 140
A (mm)	800	900	950	1000	1150	1300	1350	1500	1650	1750	1900	2000	2300	2500
B (mm)	600	700	750	850	1000	1100	1150	1300	1400	1470	1620	1780	2020	2120
C (mm)	470	600	650	750	900	1050	1150	1250	1500	1600	1800	2000	2250	2500
D (mm)	232	298	331	395	471	557	569	638	715	801	898	1007	1130	1267
E (mm)	208	262	289	341	404	478	596	638	715	801	898	1007	1130	1267
F (mm)	390	520	570	670	820	970	1070	1170	1420	1520	1720	1920	2170	2420
G (mm)	270	270	370	370	470	470	520	670	670	770	770	870	970	1170

DS AHU TYPE HEAT RECOVERY UNITS

DYNFLOW AHU Type Heat Recovery Ventilation Units (DS) are designed for saving energy and also improving indoor air quality. DS units provide the facilities of air-conditioning applications (residential, commercial and industrial areas) by using plate type exchangers, recovering heat from air to air. The heat is effectively transferred from warm to cold air by the exchangers with high conductivity, efficiency and performance



Features and Benefits

- *CE marked in compliance with applicable directives.*
- *Galvanized powder coated outer surface.*
- *Single or double skinned structure of the cassette.*
- *Acoustic and thermal insulation, insulated inner surface.*
- *High efficiency, low pressure loss with plate type heat exchanger.*
- *Aluminum plate, Cellulosic type or Rotary type heat exchangers with high conductivity and performance.*
- *Indoor air quality with washable polyurethane filters.*

Electrical Motors

Three phase motors (380V-50Hz) are used as standard, Mono phase motors can be used, if it is requested. Motors are classified as IP54 and IP55 protection class. Optionally, they are supplied with double speed motors.

Drive Control System

V type belt and pulley mechanism supplied and they are compatible with DIN 2211 and TS 148 standards.



Heat Exchangers

Heating and cooling exchanger consist of the aluminum lamely parts on copper pipe. Collectors are built through anti-corrosive painted steel pipe. Exchangers are mounted on drays on a free movement basis in device. On the collectors there is nipple for taking aspiration purged. Optionally it can be produced as galvanized steel pipe or steel wing (panel).

Filters

Filters are compatible with EN standards.

*G3, G4 synthetic fiber

*F5, F7, F9 bag filters

*H13, H14 Hepa filters are supplied up on request.

Filters are easily removable for service and replacement purposes.