

# HSK<sup>®</sup>

## HYGIENE LINE

### AIR HANDLING UNIT

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**“Powered by Self Quality”**



ISO 9001:2008 / ISO 14001:2004



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### General Features

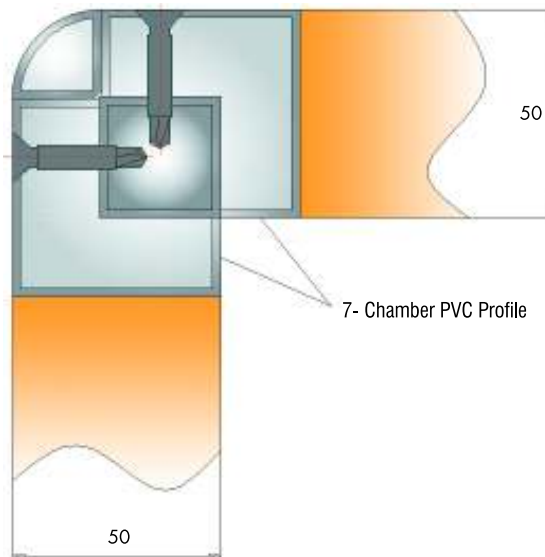
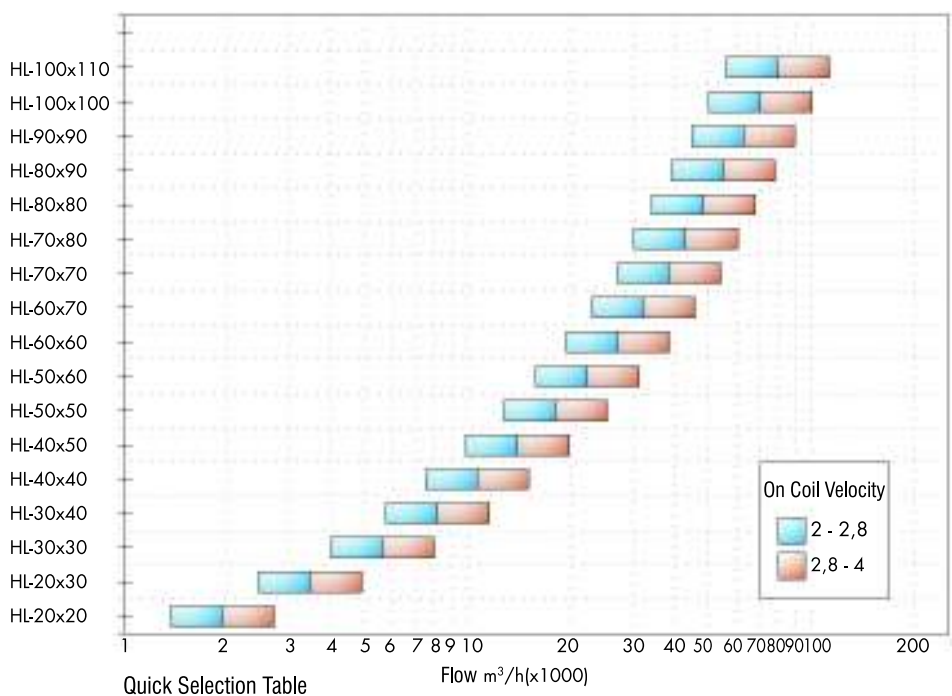
HSK is an Air Handling Unit manufacturer company since 1981. It has achieved a long list of references consisting of leading companies in HVAC industry due to the CNC production technologies and ISO 9001-2008, ISO 14001-2005, OHSAS 18001-2007 Integrated management system directed by HSK. Hygiene Line Air Handling Unit was developed based on the experiences and the quality concept of HSK as a new member of HSK product family. Hygiene Line was developed by the Research & Development department of HSK in order to ensure the fresh and clean air for the air conditioning inside the clean rooms and hospital buildings. The basic logic during the design of Hygiene Line air handling unit was to create a structure what prevents the accumulation of dust and dirt inside the units also to be easily cleaned and can be checked by inspector.



Since the frames forming the framework are hidden between the panels and PVC profiles, the surfaces create smooth lines without any intricate. Thereby dust and dirt accumulation is prevented.

Observer glass and the internal lights are provided as standards to ensure that the user can see and control the inside of the machine. The illumination armatures are located between the internal and external walls of the associated panels by using very special design of HSK Research & Development engineers. Thus, the armatures are prevented from creating turbulence, pressure drop and having dirt and dust accumulation. It complies with filter leakage class "F9" and body sealing class "B" in accordance with EN 1886. Due to its design it eliminates thermal bridge, which prevents any contacts between the internal and external walls, no condensation occurs on its surfaces.

- Flow rate ranging from 100 m<sup>3</sup>/h to 100.000 m<sup>3</sup>/h
- Modular construction
- Manufactured with environment-friendly recycling materials
- Complies with the hygiene related parts of standards VDI 6022-1, VDI 6022-3, DIN 1946-4, EN 13053
- Sealed with closed cell antibacterial sealing gaskets



## Construction

- Framework consisting of profiles hot dip galvanized and then finished with baked powder paint.
- Robust panel and frame construction, class "2A" according to EN 1886
- Panels thermally insulated with 50 mm rock wool
- PVC profiles with 7 chamber air pockets consists heat brake while connecting internal and external surfaces of the panels
- Designed without thermal bridge that prevents the occurrence of humidity in the body
- Sealed with closed cell gaskets.
- Illumination armatures set-in panels, which do not extend in the section and can be cleaned easily. Also armatures can be changed from outside of the units.

## Corrosion Resistance

- Baked paint on galvanized steel sheet or stainless steel inner wall for all panels
- Hidden framework consisting of profiles hot dip galvanized and then finished with baked powder paint.
- Heater and cooler heat exchangers with stainless steel frame and epoxy coated aluminium fins to provide protection against corrosion effects of disinfectants.
- Copper header used for preventing corrosion caused by humidity on the surfaces of cooler headers
- Stainless steel drain pan with 2 directions sloped design to keep the pan always dry
- Low pressure drop, drip eliminator with stainless steel frame, resistant to the temperatures up to 130°C, made of polypropylene.
- Air damper made of anodized aluminium profiles with hidden gears, airfoil blades and appropriate for automatic control applications



## Sealing Components

- Preventing microbiological growth
- Neoprene based, resistant against disinfectants
- Chemically and physically cleanable

## Fans

- Cleanable free running impeller fans (without fan scroll) are used. Such fans are appropriate for speed control using the frequency converter. Elimination of vibration with vibration isolators and flexible apparatus connections

## Filters

Since the pressure drop of a filter will be low while it is clean and it will be high while it is dirty, it is not appropriate to use both of them while the filters are selected. Therefore, the average of pressure drop while it is clean and dirty is taken as basis.

In order to prevent filter leakage, spring clip filter case is used.

- This case does not allow microbiological growth
- The filter is sealed using closed cell gaskets
- Manometer is provided in order to monitor pressure changes at filter section
- Filters can easily be maintained due to the spring clips at filter case and wide filter ports.

## Coils

- Easy access through the wide opening between the heater and cooler coils and the service door.
- Can be withdrawal by sliding on the track, when it is required
- Completely cleaning due to the fin pitches wider than 2.1 mm
- Heater and cooler coils with stainless steel frames and cover and epoxy coated aluminium fins to provide protection against corrosion effects of disinfectants
- Copper header used for preventing corrosion caused by humidity on the surfaces of cooler header
- Stainless steel drain pan with 2 directions sloped design to keep the pan always dry
- Low pressure drop, drip eliminator with stainless steel frame, resistant to the temperatures up to 130°C, made of polypropylene maintained by sliding on track through the service door.



## “Airware” Air Handling Unit Selection Software

Airware selection software of HSK allows the selection of HygieneLine air handling units and execution of all kinds of applications of these units. With Airware air handling selection software developed by HSK engineers, any air handling unit with required features can be selected very fast, easy and safely.

### Performance Test Room

Airflow measurement test room was built in accordance with ANSI/AMCA 210-85 standards in order to measure the airflows of the produced air handling units. The performance room allows monitoring the performance of the products through the witnesses tests in accordance with the Research & Development activities and the requirements received from the customers. The results of such tests are reported by using the “Lab view” laboratory software.

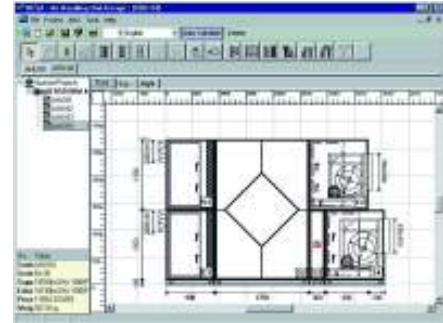
### Production Processes

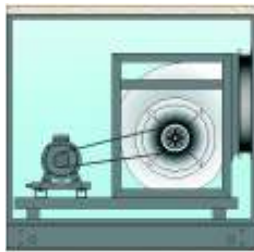
The required Air handling units are selected by using the HSK AIRWARE software and the requirements received from the customers are evaluated by the Engineering Department and the Production Department in terms of applicability and efficiency. After that the units are projected.

The raw materials and semi – products that will be used in production of HSK products are checked in accordance with the Entry Quality Control Process and then accepted in the factory. Each accepted material in the storage is labelled with a Material Definition Label and with this method incorrect usage of semi-products is prevented.

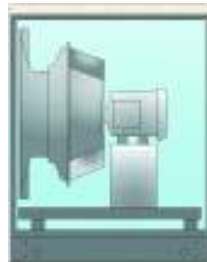
Each HSK product produced by using completely computer aided, accurate and fast CNC machinery which are controlled and tested in accordance with the relevant Quality Plan of the product during every production and assembly stages. HSK has an air conditioner test and calibration laboratory established in accordance with the requirements of AMCA standards. Thereby, performance of the products can be monitored continuously and compliance with the related standards is guaranteed. The products and the semi-products are used by a special definition codes during the production processes.

The products produced in the factory, tested and examined in the laboratory are loaded on the transportation vehicles by using modern vehicles and equipments. Our customers can get in contact with our Technical Service Department located at our factory for any failures or further requirements about our products assembled and operated in jobsite.





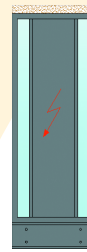
AS/VA  
Aspirator / Ventilator Section



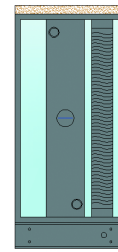
PF  
Plug Fan Sections



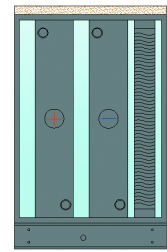
IB  
Heating Coil Section



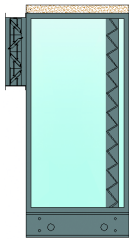
EI  
Electric Heater Section



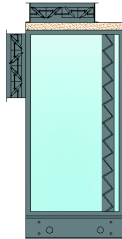
SB  
Cooling Coil Section



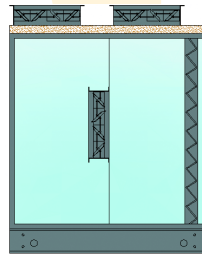
IS  
Heating & Cooling Coil Section



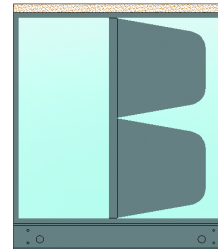
D1  
Single Damper Section



D2  
Double Damper Section



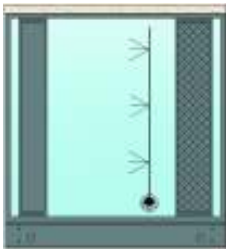
D3  
Mixing Section



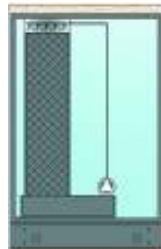
TF  
Bag Filter



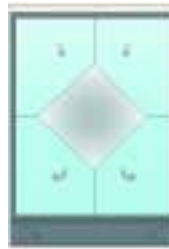
S1 / S2 / S3  
Silencer Sections



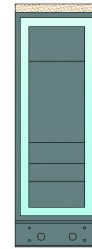
YN  
Adiabatic Spray  
Humidifier Section



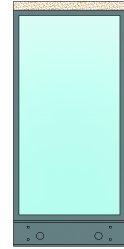
PN  
Adiabatic Vaporization  
Humidifier Section



PR  
Plates Type Heat  
Recovery Section

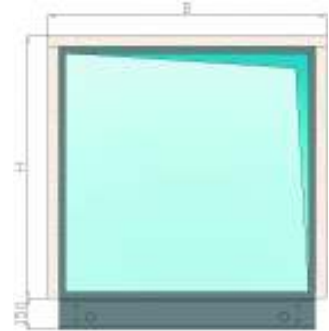


RR  
Rotating Heat  
Recovery Section



BH  
Empty Section

- Foot height is 150 mm
- H and B are measurements external measurements
- H-80 and B-100 should be calculated for internal measurements.



Air Flow Cross Section

MODEL	Cross Section m <sup>2</sup>	DIMENSIONS (L)																		
		H	B	AS/VA	PF	IB	EI	SB	IS	D1	D2	D3	TF	S1	S2	YN	PN	PR	RR	BH
HL20X20	0,2315	684	704	870	870	290	580	870	1120	580	580	1160	1450	870	1160	1450	870	1160	870	290
HL20X30	0,3899	684	1006	870	870	290	580	870	1120	580	580	1160	1450	870	1160	1450	870	1160	870	290
HL30X30	0,5849	986	1006	1160	1160	290	580	870	1120	580	580	1160	1450	870	1160	1450	870	1160	870	290
HL30X40	0,8185	986	1308	1450	1450	290	580	870	1120	580	580	1160	1450	870	1160	1450	870	1160	870	290
HL40X40	1,1137	1288	1308	1740	1740	290	580	870	1120	580	580	1450	1450	870	1160	1450	870	1740	870	290
HL40X50	1,4474	1288	1610	1740	1740	290	580	870	1120	580	580	1450	1450	870	1160	1740	870	1740	870	290
HL50X50	1,8467	1590	1610	1740	1740	290	580	870	1120	580	580	1740	1450	870	1160	1740	870	2030	870	290
HL50X60	2,2513	1590	1912	2030	2030	580	580	870	1120	870	870	1740	1450	870	1160	1740	870	2030	870	290
HL60X60	2,7381	1892	1912	2030	2030	580	580	870	1120	870	870	1740	1450	870	1160	1740	870	2030	870	290
HL60X70	3,2130	1892	2214	2320	2320	580	580	870	1120	870	870	1740	1450	870	1160	2030	870	2030	870	290
HL70X70	3,7623	2194	2214	2320	2320	580	580	870	1120	870	870	2030	1450	870	1160	2030	870	2320	870	290
HL70X80	4,3606	2194	2516	2320	2320	580	580	870	1120	870	870	2030	1450	870	1160	2030	870	2320	870	290
HL80X80	5,0315	2496	2516	2320	2320	580	580	870	1120	870	870	2320	1450	870	1160	2030	870	2610	870	290
HL80X90	5,7219	2496	2818	2320	2320	580	580	870	1120	870	870	2320	1450	870	1160	2320	870	2610	870	290
HL90X90	6,4200	2798	2818	2320	2320	580	580	870	1120	870	870	2320	1450	870	1160	2320	870	2610	870	290
HL90X100	7,2024	2798	3120	2320	2320	580	580	870	1120	1160	1160	2320	1450	870	1160	2320	870	2610	870	290
HL100X100	8,0496	3100	3120	2320	2320	580	580	870	1120	1160	1160	2320	1450	870	1160	2320	870	2610	870	290
HL100X110	8,9242	3100	3422	2320	2320	580	580	870	1120	1160	1160	2320	1450	870	1160	2320	870	2610	870	290

MODEL	WEIGHTS (kg)																		
	SECTION	20x20	20x30	30x30	30x40	40x40	40x50	50x50	50x60	60x60	60x70	70x70	70x80	80x80	80x90	90x90	90x100	100x100	100x110
AS	145	205	245	345	470	520	555	740	825	885	1010	1155	1250	1390	1550	1630	2100	2125	
VA	145	205	245	345	470	520	555	740	825	885	1010	1155	1250	1390	1550	1630	2100	2125	
PF	145	205	245	345	470	520	555	740	825	885	1010	1155	1250	1390	1550	1630	2100	2125	
IB	80	90	105	120	135	150	160	175	190	205	220	240	250	265	280	295	305	320	
EI	85	95	110	125	140	155	165	185	195	215	230	250	260	275	290	305	320	335	
SB	125	165	185	215	235	265	285	315	335	360	395	390	410	440	455	485	500	530	
IS	160	160	215	245	270	300	325	360	390	420	455	445	465	495	515	545	570	600	
D1	95	115	115	145	160	185	205	235	250	275	310	335	360	385	415	435	470	500	
D2	98	120	130	150	165	190	210	240	255	330	360	385	410	440	470	500	525	560	
D3	150	180	205	235	300	335	375	415	445	600	630	670	715	765	810	1010	1065	1120	
TF	155	185	210	240	260	290	325	355	380	415	435	465	495	530	570	600	630	665	
S1	190	230	265	305	350	395	440	490	535	595	655	710	765	825	885	945	1010	1075	
S2	215	260	300	350	400	450	505	560	615	680	755	820	885	955	1020	1095	1170	1245	
YN	175	210	235	270	295	330	360	400	420	460	480	510	540	570	600	635	665	700	
PR	195	195	290	335	530	585	735	805	905	985	1175	1060	1280	1350	1455	1530	1640	1715	
RR	200	235	265	310	410	470	553	625	655	725	860	945	1115	1215	1245	1350	1375	1405	
BH	55	70	80	90	100	110	120	135	140	155	165	180	185	200	210	220	230	240	



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