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Sezer

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SEZER ASPİRATÖR ISITMA VE SOĞUTMA SİSTEMLERİ İMALATI
MAKİNA İNŞAAT TARIM HAYVANCILIK SANAYİ
TİCARET LİMİTED ŞİRKETİ

ISO 9001:2015

Sertifika
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Sertifika
AT UYGUNLUK BEYANI
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ISO 45001:2018

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ISO 45001:2018

Sertifika
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ISO 14001:2015

Certificate
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ISO 14001:2015

About Us

Our company was established in 1995 at the İzmir 1st Industrial Zone. In 2014, we moved to our new production facility, which spans a total area of 3,000m², including 1,500m² of covered space, where we currently operate. Sezer Aspiratör specializes in aspirator and fan systems. With a strong R&D infrastructure, our company is committed to continuous development as a core principle.

Our Vision

Our goal is to further enhance our customer-focused approach and become a global brand, leading the industry in both national and international markets.

Our Mission

To create customer-focused solutions by providing high-quality, reliable, customized, and swiftly implementable services.

www.sezeraspirator.com

Our Quality Policy

Sezer Aspiratör is committed to enhancing the quality of its products and services to meet customer expectations, ensuring delivery at the right time, without errors, and in a complete manner while achieving unconditional customer satisfaction. We guarantee consistently high-quality products that meet customer demands and comply with legal regulations.

All our operations during the production stages are subjected to a rigorous quality control process, carried out by our experienced team using both automated and manual equipment.

The quality management system is certified in accordance with ISO 9001:2015 standards.

Occupational Health and Safety

The health and safety of its employees are among Sezer Aspiratör's top priorities. By adopting a meticulous approach to occupational health and safety, necessary precautions are taken to ensure the well-being of all employees. Preventing workplace accidents and enhancing employee motivation contribute to making business processes more efficient.

The main goal of Sezer Aspiratör's occupational health and safety policies is to create a work environment where everyone is safe and to minimize potential risks.

Workstations, equipment, and working conditions are optimized to support the health and well-being of employees.

"SHRA" Model

The extremely low cabin heights allow for the efficient use of valuable space without wastage. The low cabin profiles enable installation within suspended ceilings, raised floors, or sandwich wall interiors.

The SHRA model in heat recovery units operates on the principle of using the heat from the exhausted air to warm the incoming fresh air. Therefore, they ventilate spaces without the need for an additional heat source. This feature makes them ideal ventilation units for places such as discotheques, nightclubs, restaurants, bars, and cafes.

SHRA model heat recovery units are installed within suspended ceilings using suspension elements. Therefore, they do not require a structural or metal profile base.

SHRA model heat recovery units feature a single-wall body coated with 6mm thick NFAF. Another characteristic of SHRA model heat recovery units is that they can be used with single split, multi-split, or variable refrigerant flow (VRF) systems that lack fresh air supply, effectively addressing this deficiency without any significant thermal loss. Thanks to these features, they can be used in conjunction with split air conditioners or variable refrigerant flow split air conditioners.

SHRA model heat recovery units cover a wide range of applications, from 250 m³/h to 5000 m³/h, with special main models 1, 2, 3, 4, 5, and 6.

In the construction of SHRA model heat recovery units, four symmetrically shaped modules, formed on CNC machines, are used. The inner surfaces of the modules are insulated against sound and heat with 6mm thick NFAF. The modules feature service doors on the sides for easy access to the filters. Inside the cabinet, there is an optional electronic control box that allows for the adjustment of fan speeds and the heater's capacity.
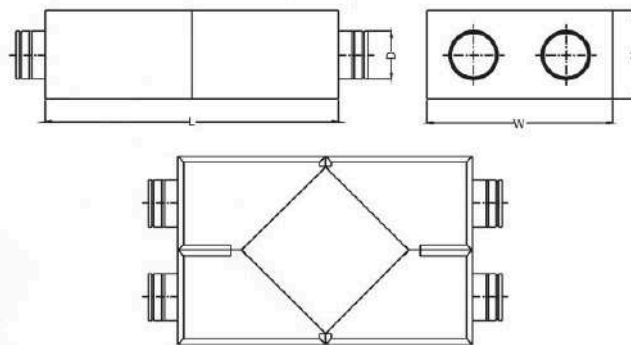
Heat Recovery Unit

The SHR model heat recovery units use plate heat recovery elements. These heat recovery elements, made of plated aluminum and operating on the principle of a cross-flow countercurrent heat exchanger, have efficiencies ranging from 40% to 70%. The efficiency ratings for each model of the A-series heat recovery units are provided separately for each model.

The series recovery element is equipped with a condensate tray on the exhaust air outlet side as standard equipment.

DIMENSIONS			
MODEL	Fan tipi	V (m³/h)⁽¹⁾	△P(Pa)⁽²⁾
SHRA-01	Plug Fan	200-500	150
SHRA-02	Plug Fan	500-1000	320
SHRA-03	Plug Fan	1000-2000	250
SHRA-04	Plug Fan	2000-3000	330
SHRA-05	Plug Fan	3000-4000	340

1 : Min. / Maks hava debileri (m³/h)　　2 : Cihaz dışı statik basınç (Pa)
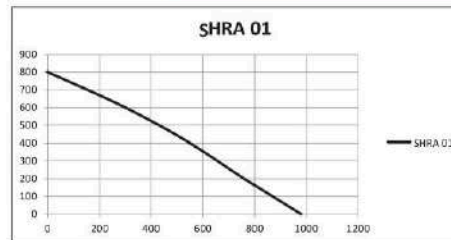
Device Dimensions

DIMENSIONS				
MODEL	H	L	W	DØ	kg
SHRA-01	300	1000	630	160	53
SHRA-02	330	1000	630	200	56,5
SHRA-03	430	1100	730	250	68,5
SHRA-04	510	1250	1130	400	117
SHRA-05	560	1720	1230	450	168,5

Capacity Table - 2

SHRA 01

VAC 230
Hz 50/60
Amp 1.1
Watt 151
rpm 3500
dB(A) 77

SHRA 02
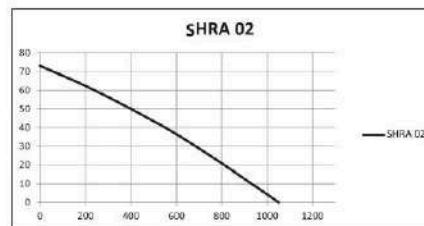
VAC 230
Hz 50/60
Amp 1.0
Watt 139
rpm 3000
dB(A) 71
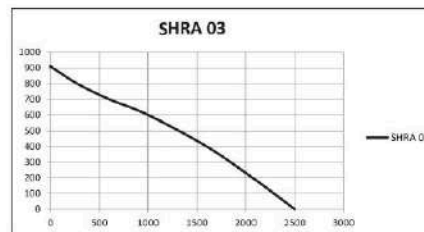
SHRA 03

VAC 230
Hz 50/60
Amp 2.2
Watt 355
rpm 2760
dB(A) 80

SHRA 04

VAC 230
Hz 50/60
Amp 2.2
Watt 355
rpm 2760
dB(A) 80

SHRA 05
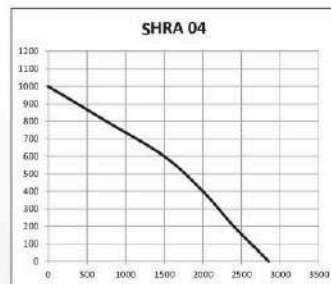
VAC 230
Hz 50/60
Amp 2,5
Watt 390
rpm 1970
dB(A) 77

Accessories

"SHRA" model heat recovery units can be fitted with electric heaters upon request. Electric heaters are single-stage or three-stage. Electric heaters are mounted on the outlet of the blower fan. There is a safety thermostat on the electric heaters.
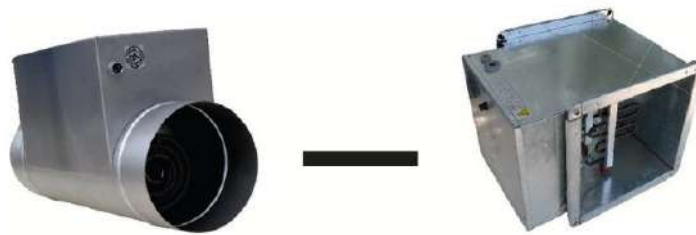
Another accessory for the "SHRA" model heat recovery units is a wall-mounted control unit (wired) or a wireless remote control unit. Using this control unit, the supply and exhaust fans can be operated at three adjustable speed levels. If the unit is equipped with an electric heater, it can also be connected to the control unit and operated at three adjustable levels.
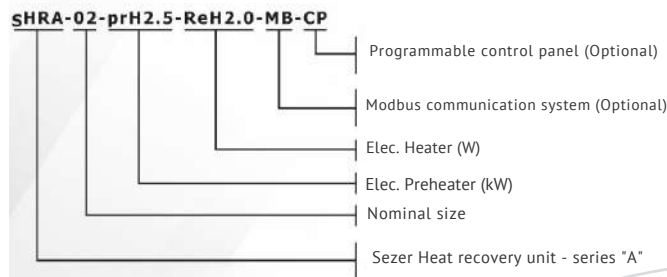
Internal control unit   External control unit
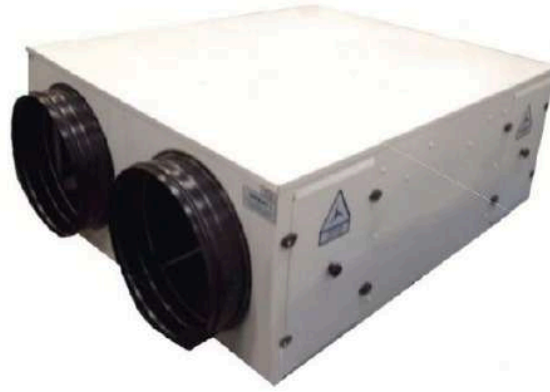
Order Notation

SHRA-02-prH2.5-ReH2.0-MB-CP

Programmable control panel (Optional)

Modbus communication system (Optional)

Elec. Heater (W)

Elec. Preheater (kW)

Nominal size

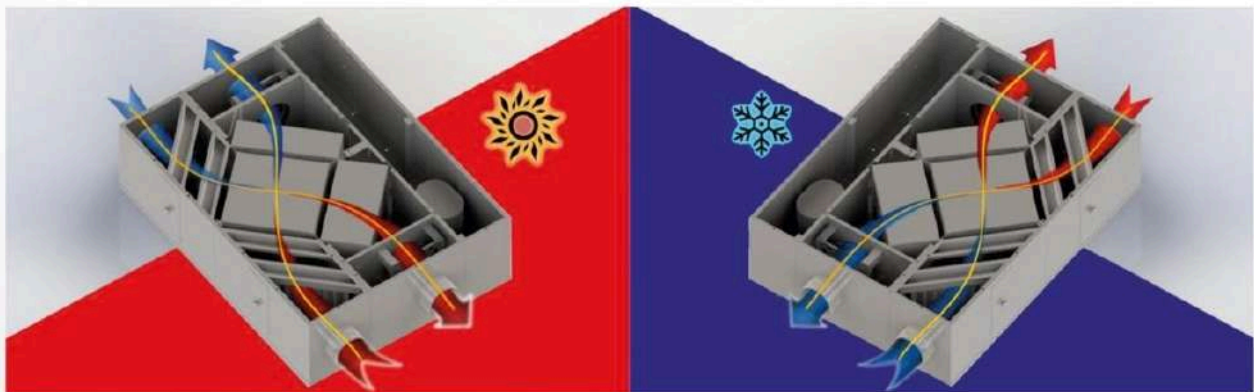Sezer Heat recovery unit - series "A"

"SHRA-HP" Model

The SHRA-HP model heat pump recovery units operate on the principle of not only recovering heat by heating or cooling the fresh air with the exhausted air but also conditioning the fresh air to comfort levels via the heat pump before delivering it to the space. Therefore, they provide heating, cooling, and ventilation for spaces without requiring any additional heat source. This feature makes them ideal heating, cooling, and ventilation units for venues such as nightclubs, restaurants, bars, and cafes.

The SHRA-HP model heat pump recovery units are mounted into suspended ceilings using suspension elements. Therefore, they do not require a metal profile base.

The SHRA-HP model heat pump recovery units cover a wide range of applications, from 750 m³/h to 4000 m³/h, with 6 main models available.

The SHRA-HP model heat pump recovery units not only recover heat but can also be used as a heating element in the winter and a cooling element in the summer. After the outdoor air passes through the heat exchanger and mixes with the indoor air, it flows through the evaporator coil, which functions as a cooling element during the summer, and through the condenser coil, which acts as a heating element during the winter, before being delivered to the indoor environment under comfort conditions.

In seasonal changes, the summer-winter mode can be manually switched with a single button or automatically based on the temperature, allowing the SHRA-HP to be used under the desired conditions.

Cabin

The SHRA-HP model heat pump recovery units are constructed using modules shaped on CNC machines. The inner surfaces of the modules are insulated against sound and heat with 6 mm thick NFAF. The modules are equipped with service panels on the sides to provide access to the filters and cooling group. Additionally, an optional electronic control box is available within the cabinet to adjust the fan speeds.

Fans and Extractors

The SHRA-HP model heat pump recovery units use plug-fan type, backward curved blade EC fans with direct coupled motors for both the fan and extractor, possessing similar technical characteristics. The fans have been tested and certified according to AMCA Standard No. 210/85 at the manufacturer's laboratories. Due to the direct coupling of the motors, there are no issues related to belt tensioning or replacement.

Heat Recovery Units

The SHRA-HP model heat pump recovery units use plate heat recovery elements. These plates are made of aluminum and operate based on the principle of a cross-flow, counterflow heat exchanger. The efficiency of these heat recovery elements ranges from 40% to 70%.

The heat recovery element includes a condensation tray as standard equipment on both the exhaust air outlet side and the supply air side to the room.

If values higher than the thermal efficiencies shown in the tables are required, please contact the factory.

Filter

The SHRA-HP model heat pump recovery units use EU2 class reusable panel filters on the outdoor air intake side and room intake sides. These filters, mounted on slides, can be replaced or removed for cleaning by opening the side covers.

Accessories

Electric heaters can be installed upon request for the SHRA-HP model heat pump recovery units. The electric heaters are available in single-stage or three-stage options. They are mounted at the discharge outlet of the fan. The electric heaters are equipped with a safety thermostat.

Capacity Table

Winter Conditions: 0°C DBT (Dry Bulb Temperature), 86% RH (Relative Humidity)   Summer conditions: 33°C AT, 60% RH.

SHRA-HP Heat Pump Heat Recovery Units	SHRA-HP 1	SHRA-HP 2	SHRA-HP 3	SHRA-HP 4	SHRA-HP 5	SHRA-HP 6
Rated Flow [m³/h]	750	1000	1500	2000	3000	4000
Compressor Power Consumption [W]	1177	1477	1939	2957	3576	4931
Cooling Capacity [W]	3077	4213	5882	7803	11298	15588
Total Cooling Capacity [W]	4077	5546	7882	10469	15298	20921
Compressor Power Consumption [W]	963	1221	1556	2333	2762	3823
Heating Capacity [W]	4189	5753	8059	10810	15895	21411
Total Heating Capacity [W]	6462	8083	12604	16871	24986	33532

Dimensions - 1
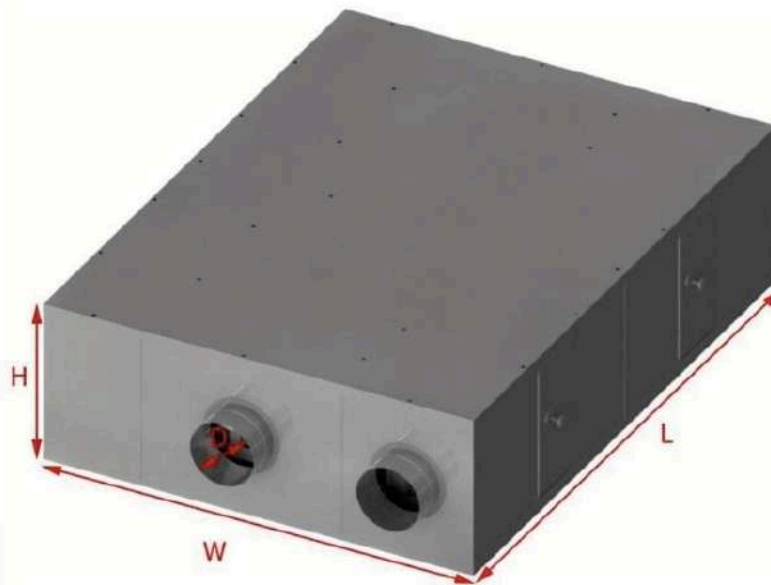
SHRA-HP Heat Pump Heat Recovery Units	SHRA-HP 1	SHRA-HP 2	SHRA-HP 3	SHRA-HP 4	SHRA-HP 5	SHRA-HP 6
Length [L] [mm]	1400	1400	1400	1400	1605	1700
Width [W] [mm]	990	1100	1400	1400	1520	1785
Height [H] [mm]	392	392	455	550	586	710
Neck Diameter [D] [mm]	160	200	250	400	450	500

Note: The right to technical changes is reserved.

Dimensions - 2

Pa

SHRA-HP 1

m^3/h

••••• Pure heat recovery application

▬▬ Maximum external static pressure

▬▬ Recommended operating range
Heat pump + heat recovery

Pa

SHRA-HP 2

m^3/h

Dimensions - 3

Pa

SHRA-HP 3

m³/h

▪▪▪▪▪ Pure heat recovery application

▬▬ Maximum external static pressure

Recommended operating range
Heat pump + heat recovery

Pa

SHRA-HP 4

m³/h

Dimensions - 4

Pa

SHRA-HP 5

```
900
800
700
600
500
400
300
200
100
0
    0    500  1000 1500 2000 2500 3000 3500 4000    m³/h
```

Pa

SHRA-HP 6

```
1200
1000
800
600
400
200
0
    0   500 1000 1500 2000 2500 3000 3500 4000 4500   m³/h
```

▪▪▪▪▪ Pure heat recovery application

▬▬ Maximum external static pressure

▬ Recommended operating range
Heat pump + heat recovery

Tavan / Ceiling

Egzost / Exhaust

Dış hava / Outside air

Asma tavan / Suspended ceiling

Üfleme havası / Supply air

Plakalı ısı geri kazanım eşanjörü / Plate type heat recovery unit

Egzost / Exhaust

Dış hava / Outside air

Fans and Aspirators

The SHRA Model heat recovery units use identical, similarly technical, dual-inlet fans with forward-curved blades and direct-coupled motors, functioning as both ventilators and exhausters. These fans have been tested and certified according to AMCA Standard No. 210/85 in the manufacturer's laboratory. Due to the direct coupling of the motors, there are no issues related to belt tensioning or replacement.

Filters

The SHRA model heat recovery units use EU2 class reusable panel filters on the outside air intake side. These filters are mounted on sliders and can be replaced by opening the side covers, and can also be removed for cleaning.

"SHR" Model

The "SHR" series residential ventilation and heat recovery units feature a single-wall construction with internal surfaces insulated with 6 mm NFAF. Due to their extremely slim appearance, they can be used without any compromise on usable space. They can be mounted inside suspended ceilings, raised floors, or within sandwich walls.

The basic working principle of the SHR series devices is the heating of the fresh air taken from outside with the exhaust air. As a result, the ventilation of enclosed spaces can be achieved with minimal heat addition. In many cases, no additional heat is required at all.

They can be mounted into the false ceiling using standard supporting profiles and threaded rods. Therefore, no special construction such as a steel cage or base is required for installation.

Cabin

Model CNC tezgahlarda üretilmiş modüllerin birleştirilmesinden meydana gelmiştir.

Fans and Exhaust Fans

In the SHRA series units, directly coupled radial fans are used as both the ventilator and exhaust fan. Both fans share the same technical characteristics. These fans have been tested according to the AMCA 1210/85 standard in the manufacturer's laboratory. The direct coupling of the electric motors to the fans eliminates any issues related to belt tensioning or replacement.

Exchangers

In residential ventilation and heat recovery units, plate heat recovery exchangers made of durable aluminum sheets are used. Through this exchanger, approximately 60% of the thermal energy from the exhaust air is recovered and utilized to heat the fresh air brought in from outside.

Filters

SHR model heat recovery units use cleanable and reusable EU2-class filters. These filters, mounted on rails, can be easily removed, washed with detergent, and reinstalled after cleaning.
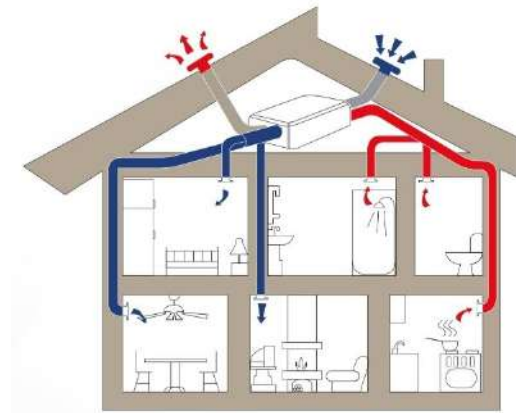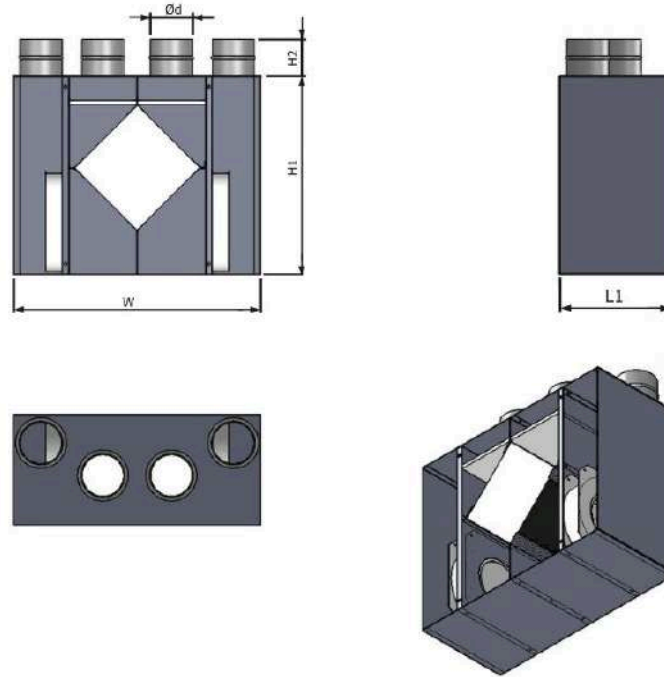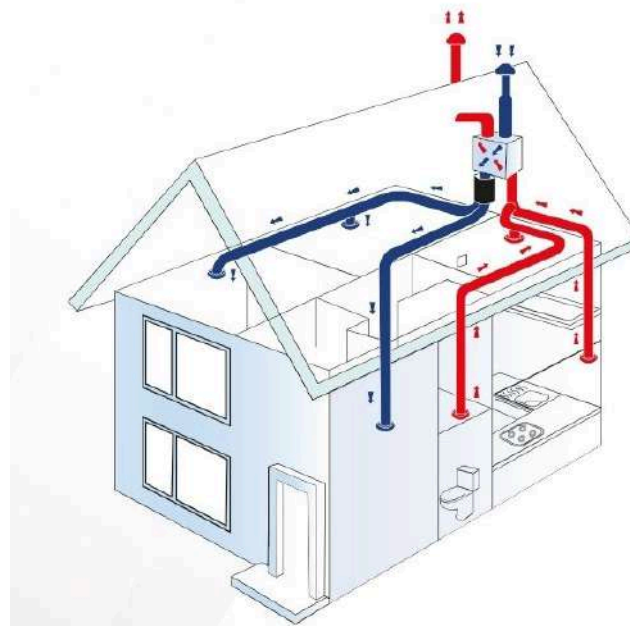

Plate heat exchangers are used in MEKSEN TYPE HEAT RECOVERY DEVICES.

DIMENSIONS					
MODEL	**W**	**H1**	**H2**	**L1**	**Ø d**
	560	450	80	250	Ø 100

"SHS" Model

Sezer "SKS" model standard type air conditioning units consist of 14 different sizes and range from 1500 m3/h to 90000 m3/h. The smallest standard model is IKS-15 and has an external cassette size of 680 mm x 680 mm excluding the profile base. The largest standard model SKS-80 has an external cassette size of 2520 mm x 2520 mm.

In "SKS" model heating-ventilation and air conditioning units, it is possible to obtain units made to order that serve different purposes by placing air intake and/or mixing cells, filters, heating and cooling coils, humidifiers and fans in different combinations. It is also possible to design and manufacture SKS model units as two-story or side-by-side units with or without heat recovery. All of the "SKS" type standard air conditioning units are produced in two different types with 22 mm and 55 mm panel thicknesses depending on customer demand.

Cabin Construction - 1

Specially drawn aluminum profiles are used in the construction of the frame of Sezer "SKS" model air conditioning units. Aluminum profiles are They are connected with corner wedges made of hard plastic. Aluminum profiles are placed between the sections and the cover. Double-walled and special panels filled with rockwool are used to fill the gaps between the aluminum profiles. Rockwool filling is a standard construction and polyurethane insulation material can also be used upon customer request.

Double-walled panels of two different thicknesses can be used depending on customer demand, provided that the aluminum frame profiles remain the same. The panel thickness in "SKS.../22" models is 22 mm and the panel thickness in "SKS.../55" models is 55 mm. The panels are mounted to the profiles using self-tapping screws, and liquid gasket is used to ensure sealing between the panel and the profile. Optionally, tight-fitting panels with frame gaskets are used.

Standard Ventilation and Air Conditioning Units

Cabinet Construction - 2

SKS model standard air conditioning units can be manufactured as single-piece units or, upon request, as multi-piece units.
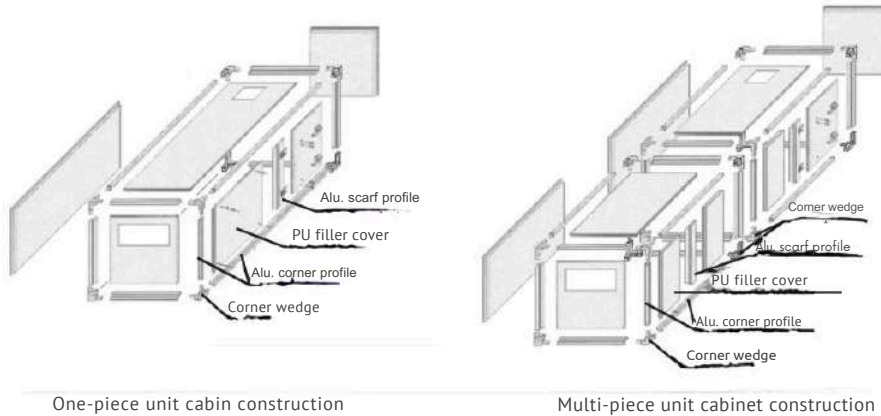
One-piece unit cabin construction

Multi-piece unit cabinet construction

"SKS.../22" and "SKS.../55" model air conditioning units have the following features according to EN DIN 1886 standards.
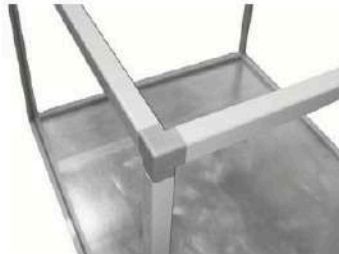
Characteristics	
Mechanical strength	D1
Leakage (-400 Pa)	L1
Leakproof (+700 Pa)	L1
Heat conduction coefficient	T2
Thermal bridge factor	TB2

Exchangers

Deflector is placed between the fan and components such as the heating-cooling coil, filter, or silencer to ensure uniform air distribution when these elements are required. Deflectors are plenum chambers containing perforated sheets that enable even air distribution. Standard deflector lengths are 300 mm and 600 mm.

300
(600)

Deflektör
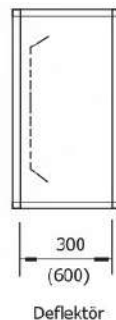
Adjustment and Off Damper

Pressure difference (Well)	50	100	200	400	600	800	1000
Air leakage (lt/s.m²)	5.5	8.5	13.0	18.0	22.0	28.0	31.0

Fans and Exhaust Fans-1

In "SKS" model air conditioning and ventilation units, single or double inlet radial fans are used. The standard fan types utilized can be summarized as follows.

01 - Forward-curved blade fans 02 - Backward-curved blade fans
03 - Backward-curved, aerofoil profile blade fans 04 - Plug fans 05 - EC fans

Forward-curved blade fans are preferred for low to medium-pressure applications, while backward-curved blade fans are used for high-pressure classes [SP > 1000 Pa]. Aerofoil blade fans are suitable for high efficiency and low noise levels.
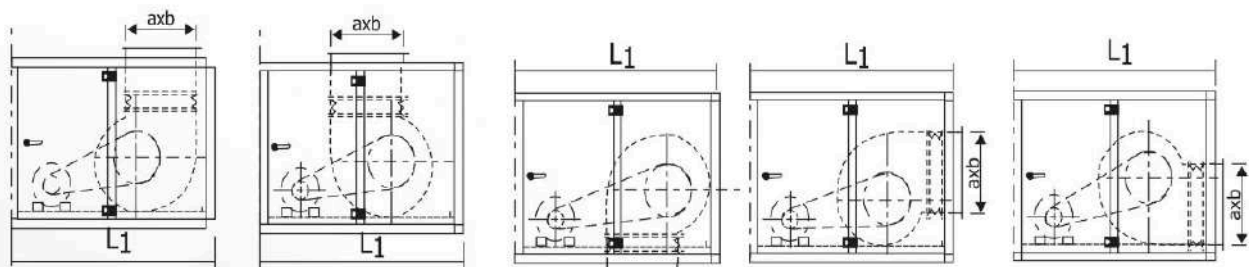
Standard Ventilation and Air Conditioning Units

Fans and Exhaust Fans-2

Depending on Fan Types, Unit Lengths and Air Handling Unit Discharge Dimensions Are Provided Below.

MODEL	W(mm)	H(mm)	L1(mm)	Fan tipi	a x b
SKS-15	680	680	1020	AT 7-7	208x232
			1020	AT 10-10	289x331
			1020	180	229x229
			1020	200	256x256
			1020	225	288x288
SKS-20	980	680	1020	AT 10-10	289x331
			1020	AT 12-12	341x395
			1020	200	256x256
			1020	225	288x288
			1020	250	322x322
SKS-25	980	980	1020	AT 12-12	341x395
			1320	AT 15-15	404x471
			1320	280	361x361
			1320	315	404x404
			1320	355	453x453
SKS-30	1280	980	1320	AT 15-15	404x471
			1320	AT 18-18	478x557
			1320	315	404x404
			1320	355	453x453
			1320	400	507x507
SKS-35	1280	1280	1320	AT 18-18	478x557
			1320	400	507x507
			1620	450	569x569
			1620	500	638x638
SKS-40	1620	1280	1620	450	569x569
			1960	500	638x638
			1960	560	715x715
SKS-45	1620	1620	1960	500	638x638
			1960	560	715x715
			2260	630	801x801
SKS-50	1920	1620	2260	560	715x715
			2260	630	801x801
			2260	710	898x898
SKS-55	1920	1920	2260	630	801x801
			2260	710	898x898
			2260	800	1007x1007
SKS-60	2220	1620	2260	630	801x801
			2260	710	898x898
			2260	800	1007x1007
SKS-65	2220	1920	2260	630	801x801
			2260	710	898x898
			2260	800	1007x1007
SKS-70	2220	2220	2260	710	898x898
			2260	800	1007x1007
			2260	900	1130x1130
SKS-75	2520	2220	2260	710	898x898
			2560	800	1007x1007
			2560	900	1130x1130
SKS-80	2520	2520	2560	800	1007x1007
			2560	900	1130x1130
			2560	1000	1267x1267

- In cabinet fans, the L1 dimension is 8 mm shorter.
- If the fan is an intermediate element, the L1 dimension is 8 mm longer.

Fresh Air Mixing and Exhaust Unit - 1

These units, which provide fresh air intake and/or the mixing of return air with fresh air, are solely equipped with a fan and serve as the first elements in the airflow direction of ventilation units. The air mixing ratios are adjusted through these units. Additionally, if desired, they can disconnect the system from outside air when the device is not operating.

In combined-type air handling units containing fans and exhausters, the exhauster on the exhaust side ensures air extraction and achieves the desired mixing ratio by bypassing the required amount of return air. Three-section combined mixing-exhaust-bypass cells, equipped with three dampers, are also available. The dimensions for each model are provided below.
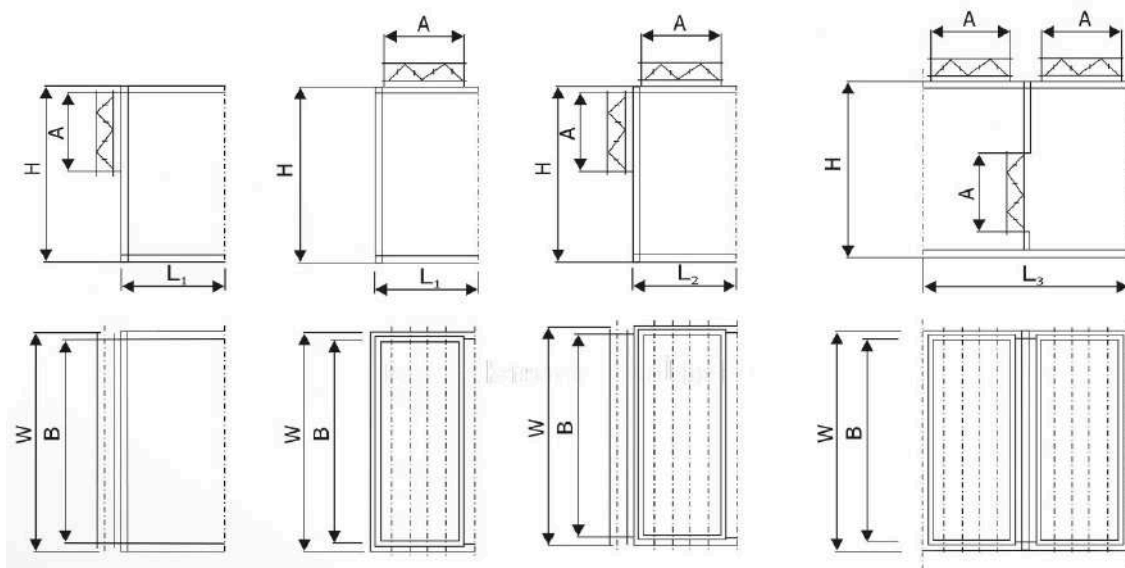
Outdoor air intake unit-1

Outdoor air intake unit-2

Outdoor air-return air mixing unit

Outdoor air intake, exhaust, by-pass and mixing unit

Fresh Air Mixing and Exhaust Unit - 2

AHU MODEL	DIMENSIONS						
	W (mm)	H (mm)	A (mm)	B (mm)	L1 (mm)	L2 (mm)	L3 (mm)
SKS-15	680	680	300	600	340	340	640
SKS-20	980	680	300	900	340	340	640
SKS-25	980	980	600	900	640	640	1240
SKS-30	1280	980	600	1200	640	640	1240
SKS-35	1280	1280	600	1280	640	640	1240
SKS-40	1620	1280	600	1540	640	640	1240
SKS-45	1620	1620	900	1540	940	940	1840
SKS-50	1920	1620	900	1840	940	940	1840
SKS-55	1920	1920	900	1840	940	940	1840
SKS-60	2220	1620	900	2140	940	940	1840
SKS-65	2220	1920	900	2140	940	940	1840
SKS-70	2220	2220	1240	2140	1210	1210	2520
SKS-75	2520	2220	1240	2440	1210	1210	2520
SKS-80	2520	2520	1240	2440	1210	1210	2520

Air Filters - 1

300

Coarse Filter
Panel Filter

450   750

Bag Filter

450   450
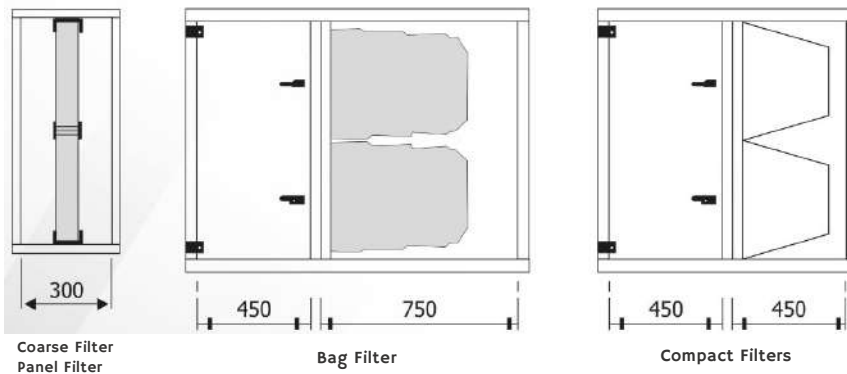
Compact Filters

Air Filters - 2

There are four main methods used to clean fresh air and return air before they are subjected to the necessary climatological processes.
They consist of the following types. The types of these filters and their classes according to EN 779, EN 1822 are as follows.

1-Coarse filters; G2, G3, G4 2- Bag filters; F5, F6, F7, F8, F9 3-Compact

The coarse filters are mounted inside the cabin by means of skids, and the replacement process is carried out by opening the side cover and sliding it out. The standard installation style of bag filters is inside special frames with clips. For this application, a plenum (empty) cell with an openable cover is placed on the filter air inlet side for service purposes. However, if space is limited, bag filters can be mounted on skids like other filters upon customer request.

Bag filters are generally placed immediately after the coarse filter [G3 or G4] and on the suction side of the fan. However, in hygienic air handling units manufactured in accordance with DIN 1946-4, the installation location of class F9 compact or bag filters is after the fan discharge port and on the positive pressure side. Compact filters are high-efficiency filters. Since they are shallow, they take up little space in the unit. Since they are rigid, they ensure that the air is distributed evenly over the entire filter surface.

The other filter type, H12, H13, H14 class HEPA filters, are generally placed outside the air handling unit and inside the clean room in clean room applications. However, in special applications, it is possible to place these filters inside the air handling unit cabinet.

Initial and maximum pressure losses of panel filters

FILTER CLASS	Initial loss	Recommended Maximum Loss
G-2	25 Pa	150 Pa
G-3	40 Pa	150 Pa
G-4	50 Pa	150 Pa

Initial and maximum pressure losses of bag filters

FILTER CLASS	Initial loss	Recommended Maximum Loss
F-5	65 Pa	150 Pa
F-6	55 Pa	250 Pa
F-7	60 Pa	250 Pa
F-8	115 Pa	250 Pa
F-9	165 Pa	350 Pa

1) Initial pressure losses are average values and correspond to a face velocity of 2.5 m/s.
2) Maximum pressure losses are at the recommended maximum value.

Standard Ventilation and Air Conditioning Units

Heating and Cooling Coils

01 - Hot water heating coils   02 - Steam heating coils
03 - Cold water cooling coils.   04 - Direct expansion coils

The cooling coils have a drip pan and drip tray due to surface condensation throughout.

Heating coil only

Heating+cooling coil

Heating sprinkler+plenum+cooling sprinkler
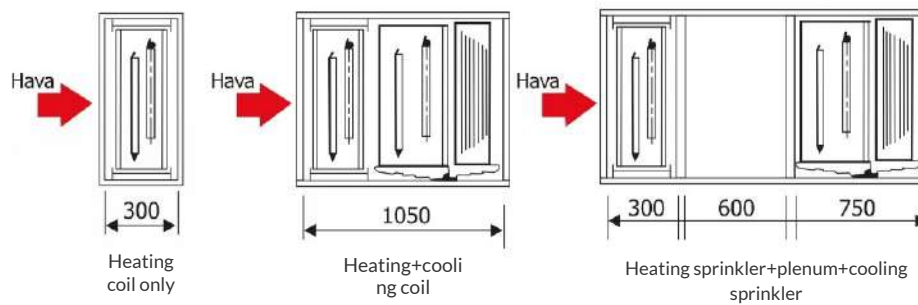
Humidifiers - 1

Three different humidifiers are used in SKS model ventilation and air conditioning units. 1- Can perform water type air washing 02 - Water humidifiers with filling panels 03 - Steam humidifiers

Single row sprayer

Double row sprayer
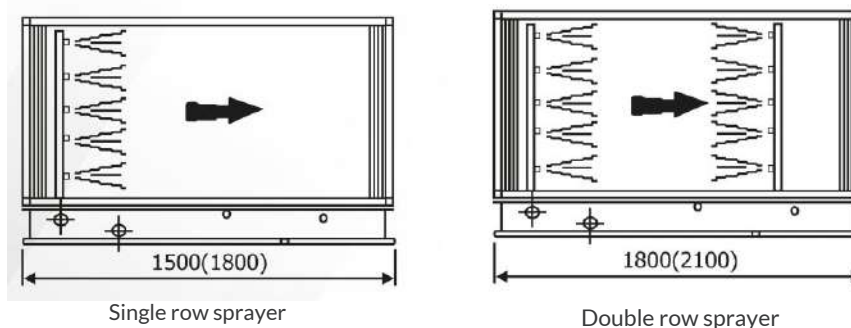
Humidifiers - 2

Pool discharge, transportation, water supply, pump suction and discharge lines are standard elements. Pump characteristics are determined by İmeksan and reported to the customer. The customer is responsible for the supply of the pump. However, if requested, the pump can be provided together.

Fill type humidifier

600
(900)
Plenumsuz

600
(900)
Plenumlu

600
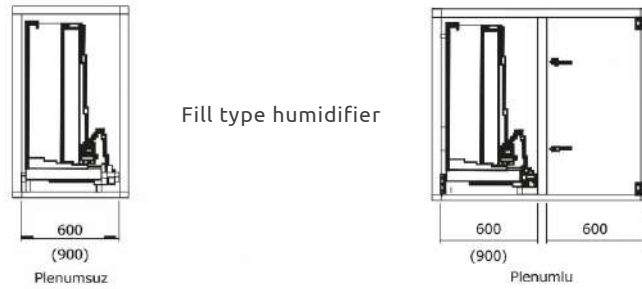
Filled panel humidifiers are systems that perform humidification by passing air over panels containing cellulose-based filling material. In these systems, a very small circulation pump is located in the air handling unit and continuously humidifies the panels. There are three different panel types operating with 70-75%, 80-85% and 90-95% efficiency. In filled panel humidifiers, the air must be passed through a G3 quality filter to extend the life of the panels. Droplet separators are used to prevent water droplets from being dragged to the fan side in air flows above 2.5 m/s.
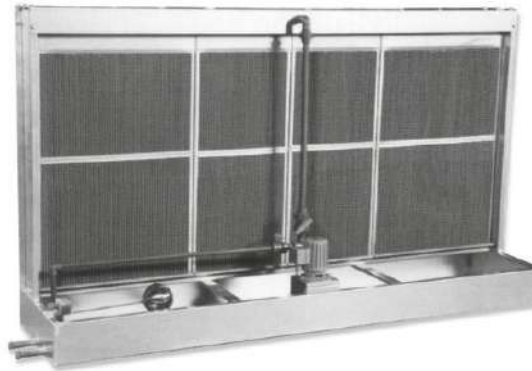
Humidifiers - 3

Another type of humidifier is steam humidifiers. If there is sufficient steam production in the environment where the air handling unit is located, humidification can be done by using this steam. For this process, a special distribution pipe is used that separates the condensate from the steam and sprays dry steam into the air handling unit. By placing a 2-way proportional motor on this system, it is possible to use the relative humidity proportionally.

If there is no steam production in the system, steam humidifiers that produce steam via electrodes can be installed in the air handling unit. However, for this process, a plenum cell of approximately 600 to 900 mm in length is required to ensure that the steam mixes homogeneously with the air. Steam humidifiers that produce their own steam have their own automatic control equipment.

Steam humidifier

600
(900)
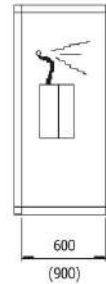
Silencers

In SKS series ventilation and air conditioning units, it is possible to place silencers on the aspirator suction side and/or the fan discharge side as standard equipment. In silencers manufactured as a modular unit, the partition thickness is 200 mm and the distance between the partitions is 100 to 120 mm. Silencers are produced in 6 different sizes.

750,900,1200,1500,1800,2100
Silencer
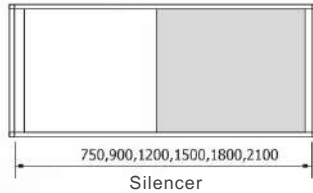
BOY (mm)	SES YUTMA KAPASİTELERİ							
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
900	6	12	21	22	23	16	11	11
1200	7	15	27	28	29	20	12	12
1500	9	19	33	34	36	25	17	17
1800	10	22	39	40	42	29	20	20
2100	11	25	45	46	48	33	23	23

Heat Recovery Units - 1

Three different models of heat recovery units are used in the "SKS" series ventilation and air conditioning units.
01-Double serpentine heat recovery units 02 - Plate heat exchanger heat recovery units
03-Rotary wheel heat recovery units

| Double serpentine | Plate heat exchanger | Swivel wheel |
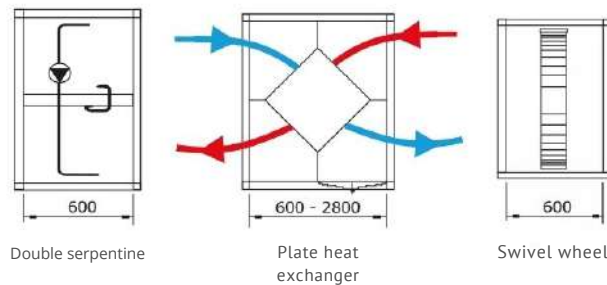
Double serpentine heat recovery units consist of two serpentines, hydronic medium and a circulation pump that provides circulation between them. The biggest advantage of this system, which has an efficiency of around 40%, is that it can be applied to units that are far from each other, made up of two separate units, air conditioning unit and independent exhaust fan.

In environments below 0°C, up to 40% ethylene glycol must be added to the fluid to eliminate the risk of freezing. In addition, an automatic defrosting system must be provided to prevent the exhaust air side coil from becoming blocked due to frost.
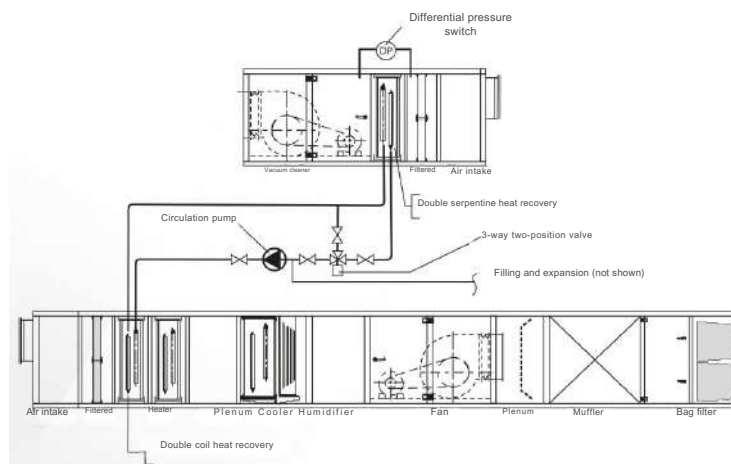
Double serpentine and automatic defrost heat recovery system. Central and aspirator in separate areas.

Heat Recovery Units - 2

The second heat recovery method is plate heat exchangers. However, multi-story air conditioning units are required to implement this system. The principle here is to provide heat transfer between the exhaust air and the outside air via the heat exchanger plates. In this system, heat recovery efficiency is around 50% to 60% in single-element applications and 70% to 80% in double-element applications.

In applications below 0°C, automatic defrost application with front and by-pass dampers should be made to prevent frost formation on the exhaust side.
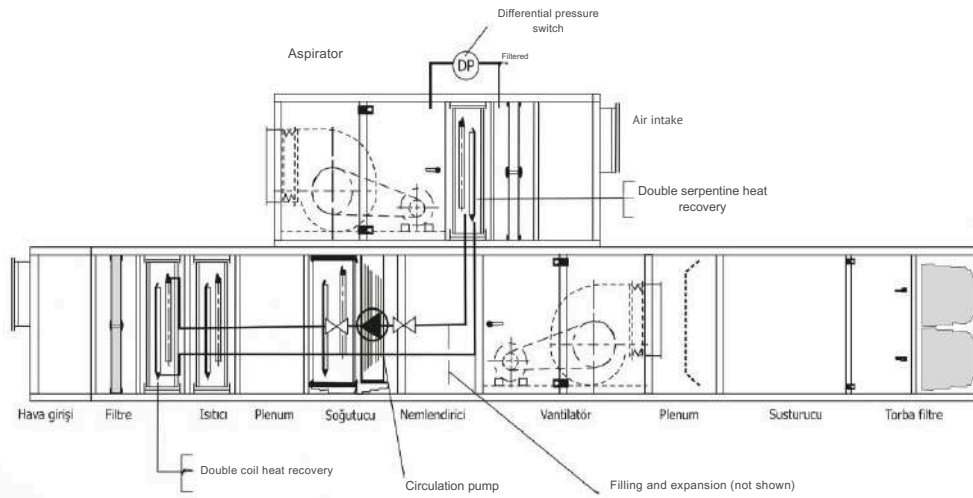
Heat recovery system with double serpentine and automatic defrost. In two-storey unit style.
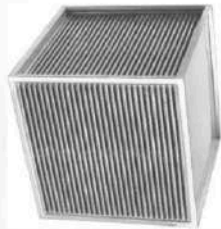
Plate heat exchangers

Standard Ventilation and Air Conditioning Units

Heat Recovery Units - 3
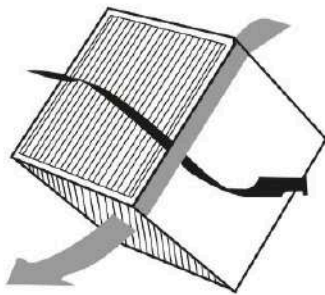
Standard single
unit

Double pass unit

Forehead and by-pass dampers

Heat exchanger
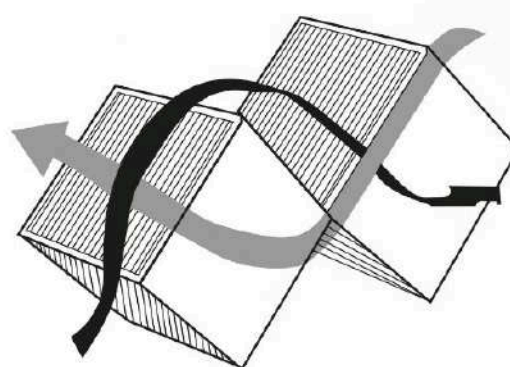
By-pass part
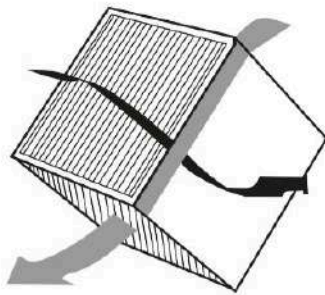
Standard tip
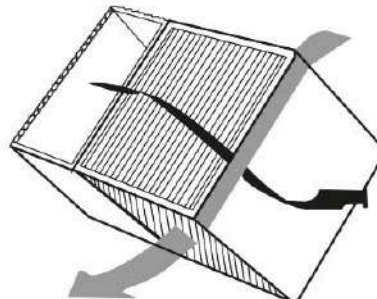
By-pass damperli
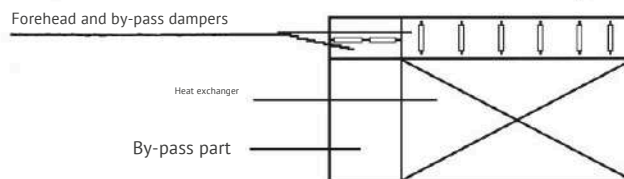
Adjustable low profile ceiling mounted units are also available as SHRA series Heat recycling units. Technical information about these units and for selection details, please refer to the "SHRU and/or SHRA" catalog with this layout. This unit on which the packaged device is operated You can find ready-made solutions here.

Heat Recovery Units - 4

Front and bypass damper with servo motor

Air inlet Filter · Plenum · Vacuum cleaner · Filtered · Muffler · Air intake

Air outlet · Isıtıcı · Plenum · Soğutucu · Nemlendirici · Fan · Plenum · Muffler · Bag filter

Plate heat recovery exchanger

Double-deck air conditioning unit with plate heat exchanger
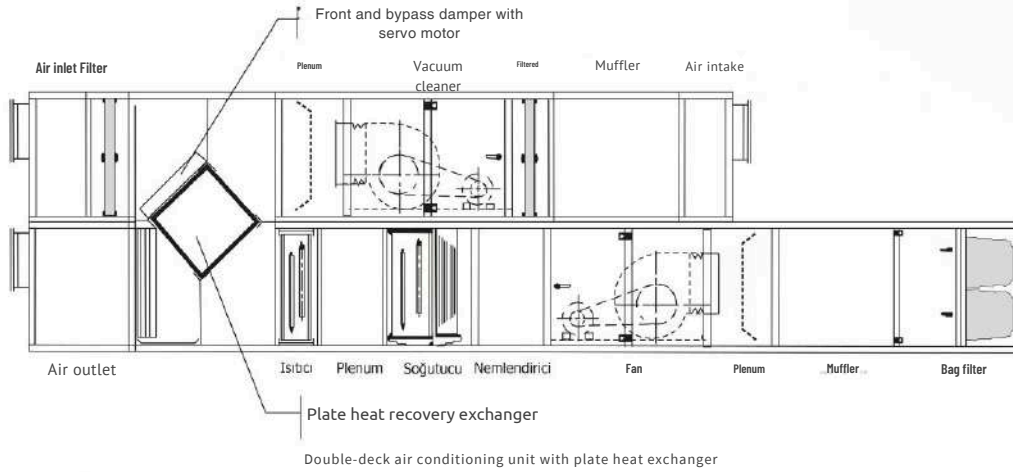
Another heat recovery method applied in "SKS" series ventilation and air handling units is rotary wheel heat recovery systems. Rotary wheels are of two types: non-hygroscopic and hygroscopic. In non-hygroscopic models,other heat recovery As in the systems, only heat transfer is provided. In hygroscopic models, moisture transfer also occurs in addition to heat transfer. is said. The defrost problem is at a minimum in these systems, whose efficiency is around 80%. Wheel in defrosting applications that rarely require. Reducing the speed (e.g. from 20 rpm to 5 rpm) is sufficient.
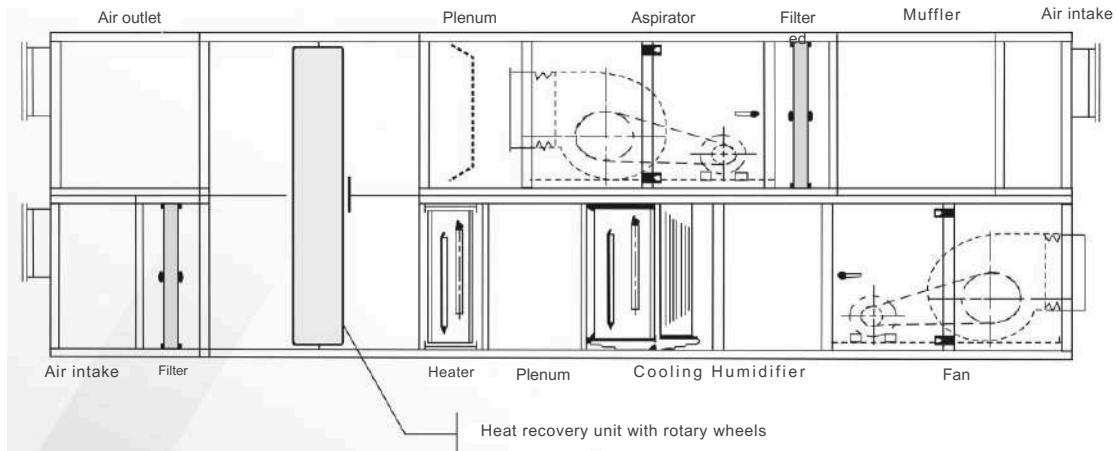
Air outlet · Plenum · Aspirator · Filtered · Muffler · Air intake

Air intake · Filter · Heater · Plenum · Cooling Humidifier · Fan

Heat recovery unit with rotary wheels

Quick Selection Table

POWER PLANT FLOW RATES

Only fan

Air washer-humidifier

Heating coil

Cooling coil

DEVICE SIZE

AIR FLOW (m³/h)

Unit Capacities
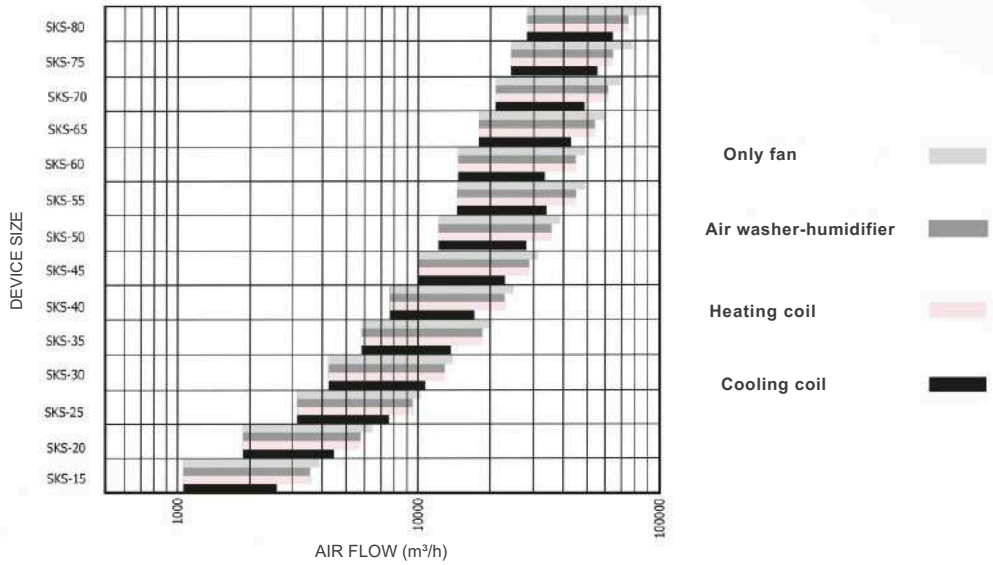
AHU modeli	W (mm)	H (mm)	F(*) m2	2	2,5	3	3,5	4	4,5	5
	Model and dimensions			Air flow rate (m³/h)						
				Alın hızı (m/s)						
SKS-15	680	680	0,3249	2339	2924	3509	4094	4679	5263	5848
SKS-20	980	680	0,4959	3570	4463	5356	6248	7141	8034	8926
SKS-25	980	980	0,7569	5450	6812	8175	9537	10899	12262	13624
SKS-30	1280	980	1,0179	7329	9161	10993	12826	14658	16490	18322
SKS-35	1280	1280	1,3689	9856	12320	14784	17248	19712	22176	24640
SKS-40	1620	1280	1,7667	12720	15900	19080	22260	25440	28621	31801
SKS-45	1620	1620	2,2801	16417	20521	24625	28729	32833	36938	41042
SKS-50	1920	1620	2,7331	19678	24598	29517	34437	39357	44276	49196
SKS-55	1920	1920	3,2761	23588	29485	35382	41279	47176	53073	58970
SKS-60	2220	1620	3,1861	22940	28675	34410	10145	45880	51615	57350
SKS-65	2220	1920	3,8191	27498	34372	41246	48121	54995	61869	68744
SKS-70	2220	2220	4,4521	32055	40069	48083	56096	64110	72124	80138
SKS-75	2560	2220	5,1695	37220	46526	55831	65136	74441	83746	93051
SKS-80	2560	2560	6,0025	43218	54023	64827	75632	84436	97241	108045

(*) F: Net air flow area (m²)
Heating, cooling, air washer:
Heating only :
Only fan:

Standard Ventilation and Air Conditioning Units

Application Examples - 1

Below are examples of applications for single-layer and double-layer units. As seen in the images, the units can be manufactured as a single piece or in multiple parts based on customer requests.
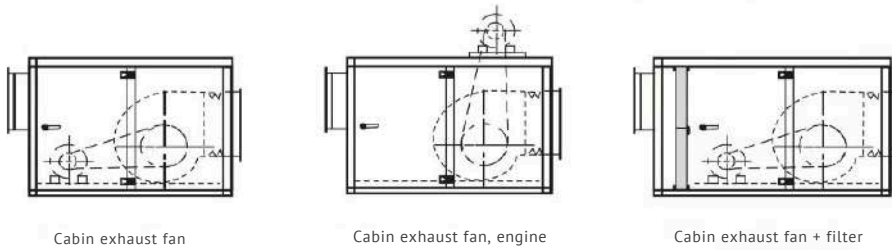
Cabin exhaust fan

Cabin exhaust fan, engine

Cabin exhaust fan + filter
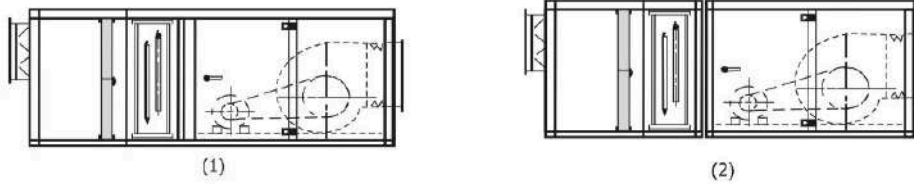
%100 Fresh Air Heating-Ventilation Unit Panel Filter + Heater + Fan (1) Single-Piece Cabinet Construction (2) Two-Piece Cabinet Construction
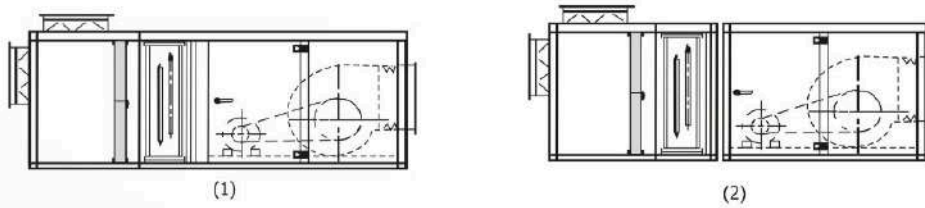
Mixed Air Heating-Ventilation Unit Mixing Chamber + Filter + Heater + Fan (1) Single-Piece Cabinet Construction (2) Two-Piece Cabinet Construction
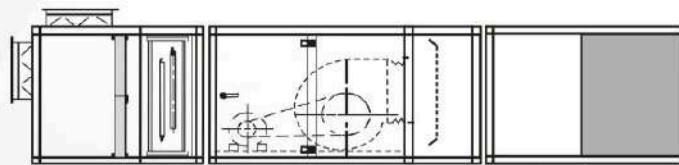
Mixed Air Heating-Ventilation Unit Mixing Chamber + Filter + Heater + Fan + Deflector + Silencer

Three-Piece Cabinet Construction

Application Examples - 2
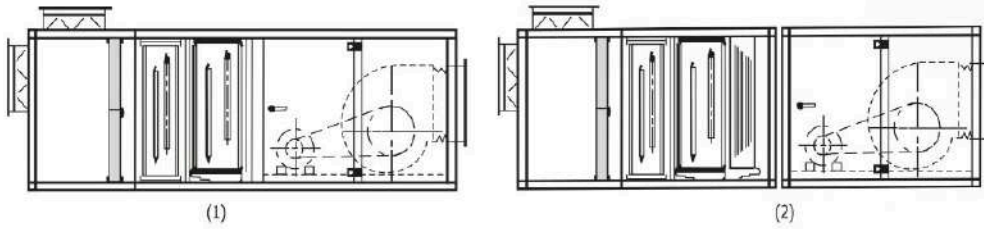
(1) Mixed-Air Air Handling Unit. Mixing Chamber + Filter + Heater + Cooler + Fan, Single-Piece Body.

(2) Same as "1", but with a Two-Piece Cabinet and a Droplet Separator at the Cooler Outlet.
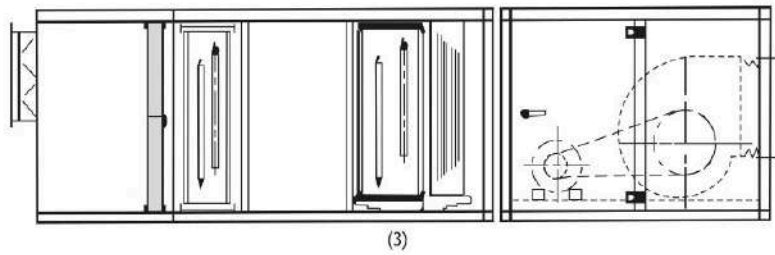
(3) Similar to "2" (100% Outdoor Air). There is an Empty Plenum between the Heater and the Cooler.
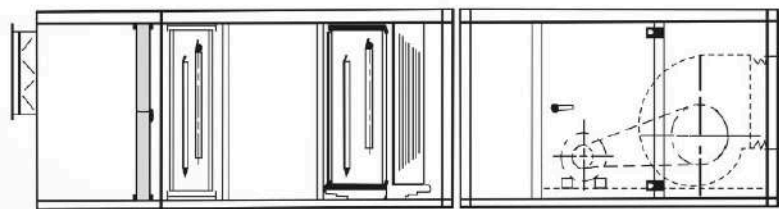
Two-part, 100% outdoor air air handling unit with added steam humidifier.
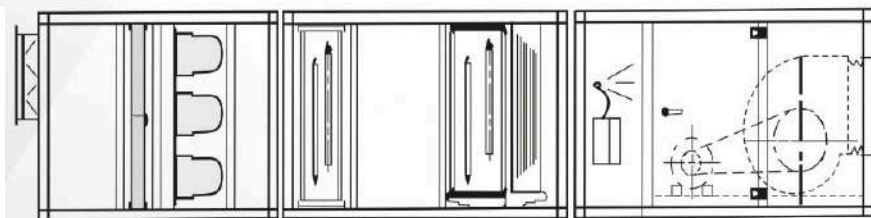
Three-part, 100% outdoor air air handling unit. Panel filter (coarse), bag filter (fine), heater, plenum chamber, cooler, drip separator, steam humidifier, fan.

Application Examples - 3
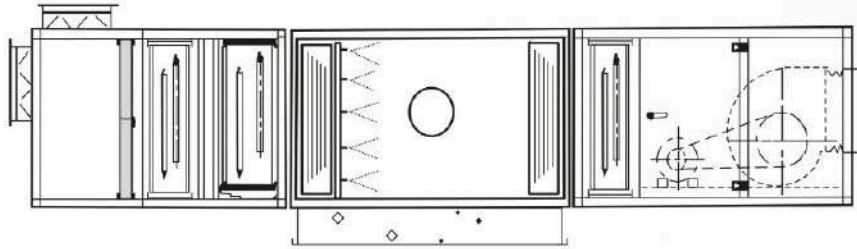
Mixed air air handling unit, air mixing chamber + filter + pre-heater + cooler + air washer humidifier + final heater + fan. Three-part cabinet construction.
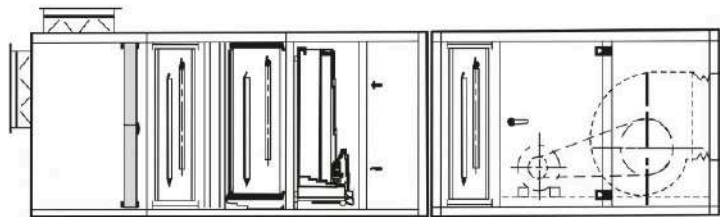
Mixed air air handling unit. Air mixing chamber + filter + pre-heater + cooler + fill panel humidifier + final heater + fan.
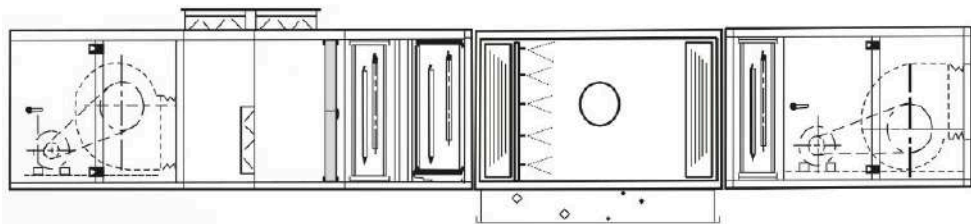
Combined type air handling unit (exhaust fan and fan in the same cabinet). Other details are the same as the above unit.
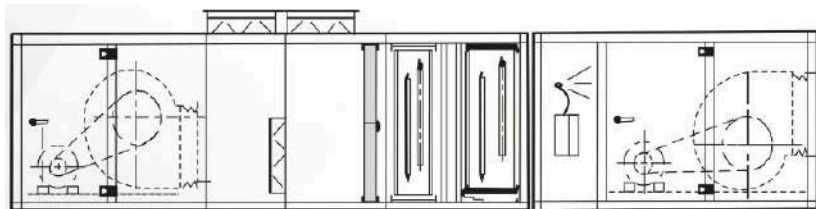
Combined type air handling unit. Exhaust fan + exhaust and mixing chamber + filter + heater + cooler + steam humidifier + fan.

Application Examples - 4

Aspirator

Çift serpantinli HEAT RECOVERY

Air intake | Filtered | Heater | Plenum | Cooler | Moisturizer | Fan

Double serpentine heat recovery

Circulation pump

Filling and expansion (not shown).
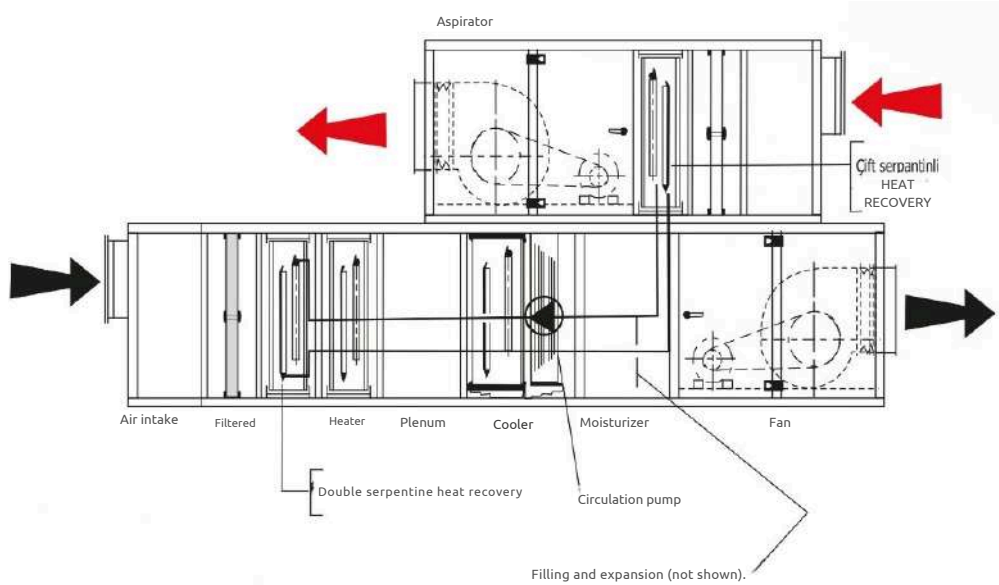
Two-story, 100% outside air, heat recovery coil air handling unit.

Double serpentine heat recovery

Filtered | Filtered | Heater | Cooling Humidifier | Fan

Circulation pump

Double serpentine HEAT recovery

Filling and expansion (not shown)
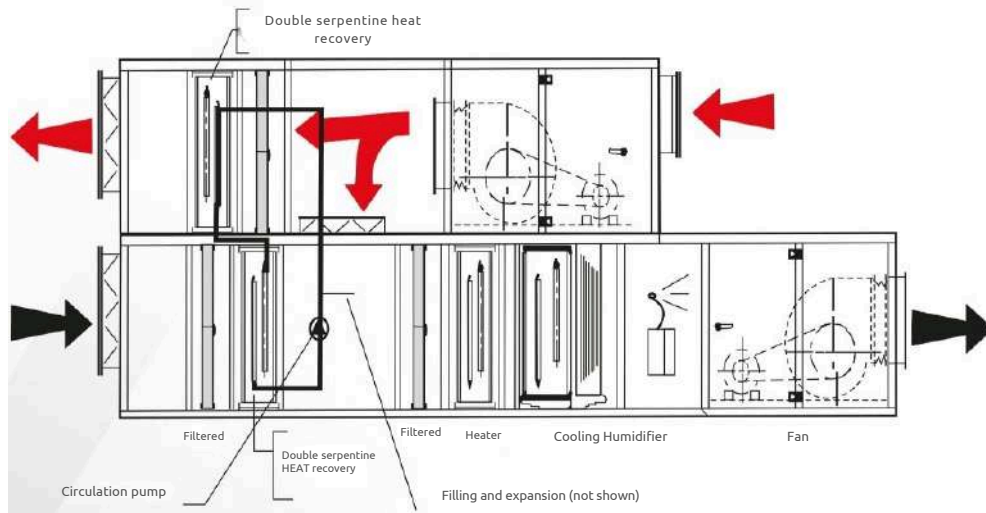
Two-story, 100% mixed air, heat recovery coil air handling unit.

Standard Ventilation and Air Conditioning Units

Application Examples - 5

Forehead and bypass damper-servomotor

Air inlet Filter • Aspirator • Filter Air inlet • Air outlet • Heater Plenum Cooler Humidifier • Fan • Plate heat recovery exchanger
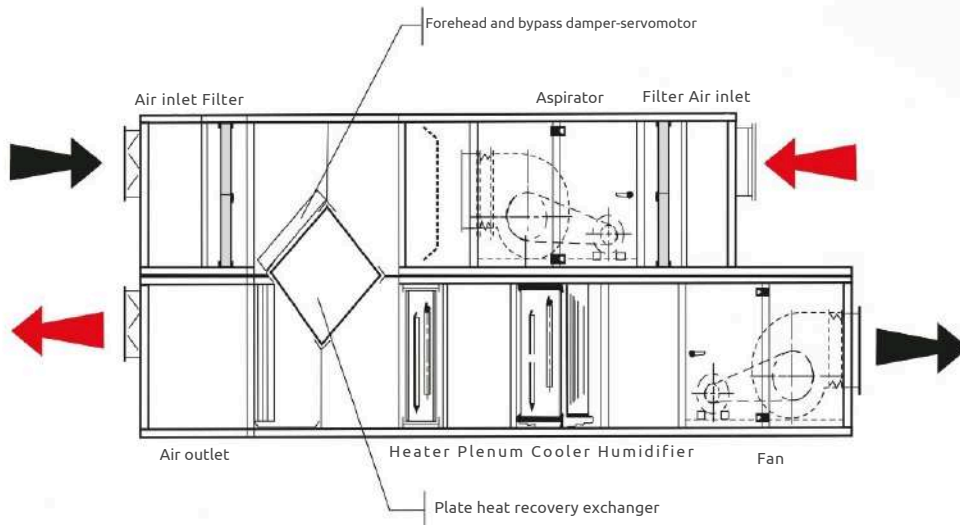
100% outside air plate heat recovery exchanger air handling unit.

Front and bypass damper with servo motor

Air inlet Filter • Aspirator • Filter Silencer • Air intake • Air outlet • Full of Isitics • Cooling Humidifier • Fan • Plate heat recovery exchanger

Mixed air, plate heat recovery exchanger air handling unit.

Application Examples - 6

Air outlet   Plenum   Aspirator   Filtered   Muffler   Air intake

Air outlet Filter   Heater Plenum Cooler Humidifier   Fan

100% fresh air, rotary wheel heat recovery air handling unit.

Air outlet   Plenum   Aspirator   Filtered   Muffler   Air intake

Air outlet Filter   Heater   Plenum Cooler Humidifier   Fan
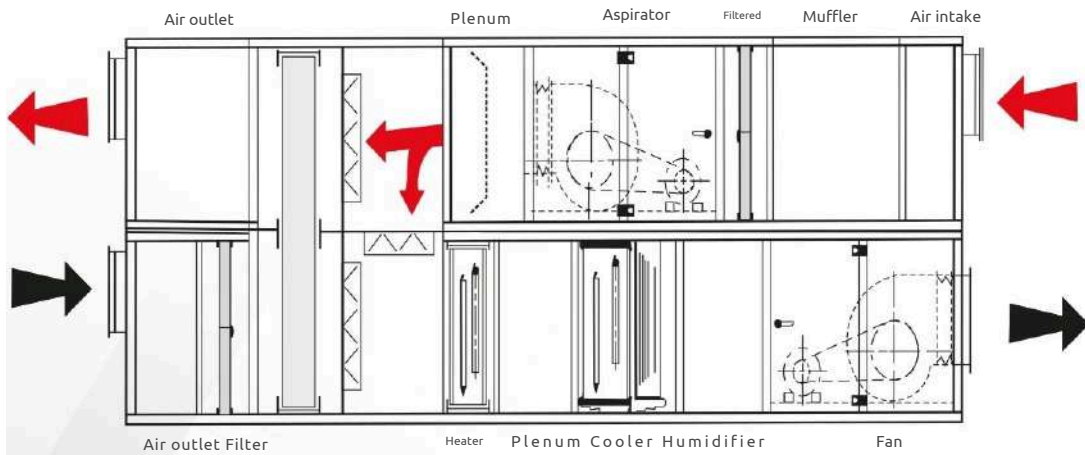
Mixing air, rotary wheel heat recovery air handling unit.

"SKS-H " Model

The SKS-H model hygienic air handling units are designed and manufactured to meet the needs of environments requiring high indoor air quality (IAQ) and particle-free conditions, such as operating rooms, delivery rooms, intensive care units, and the electronics and optics industries. These units comply with classifications ranging from Class-1 to Class-100,000 according to the US Federal Standard 209E, from M 1.5 to M 6.5 according to EN ISO 14644-1, and from Class-0 to Class-7 according to German VDI 2803/1.

The SKS-H model air handling units comply with DIN 1946-4 and EN 13053 standards. Their interiors consist of smooth surfaces without any protrusions that could cause dust accumulation. Joint areas are sealed with silicone gaskets to prevent dust build-up. With washable interior surfaces, these units provide an exceptionally hygienic structure.

The "SKS-H" type units, produced in a total of 9 models, have airflow rates ranging from 1520 m³/h to 39200 m³/h. However, custom designs and production for higher airflow rates can be carried out upon special request.

In "SKS-H" model hygienic units, plug fans are preferred due to their ease of cleaning and minimal dust accumulation on blade surfaces. However, upon request, double-inlet radial fans with forward or backward-curved blades can also be used.

In hygienic air handling units, the placement of filters differs from that in conventional units. In conventional units, single or double-stage filters are typically positioned on the suction side of the fan, before all other components. However, with special filter housings, these filters can also be installed inside the unit, immediately after the bag filters.

However, in "SKS-H" model hygienic air handling units, as required by DIN 1946-4, G3 and G4 class filters, which can be classified as coarse filters, are placed on the suction side of the fan, immediately after the air intake. F7 class precision bag filters and compact filters are installed on the discharge side of the fan, right after a cell with deflectors. Meanwhile, H13 and H14 class HEPA filters deserve mention. In cleanroom technology, these filters are positioned inside the serviced area, just before the air supply terminal element. Therefore, they are not installed within the air handling unit. However, upon special request, these filters can also be placed inside the unit immediately after the bag filters, using specially designed filter housings.

SKS-H" hygienic air handling units comply with the following requirements of DIN EN-1886

MECHANICAL STRENGTH	D1
Leakage (-400 Pa)	L1
Leakproof (+700 Pa)	L1
Heat conduction coefficient	T2
Heat bridge factor	TB2

Cabin - 1

Aluminum profile

PU long panel

Cast aluminum corner piece
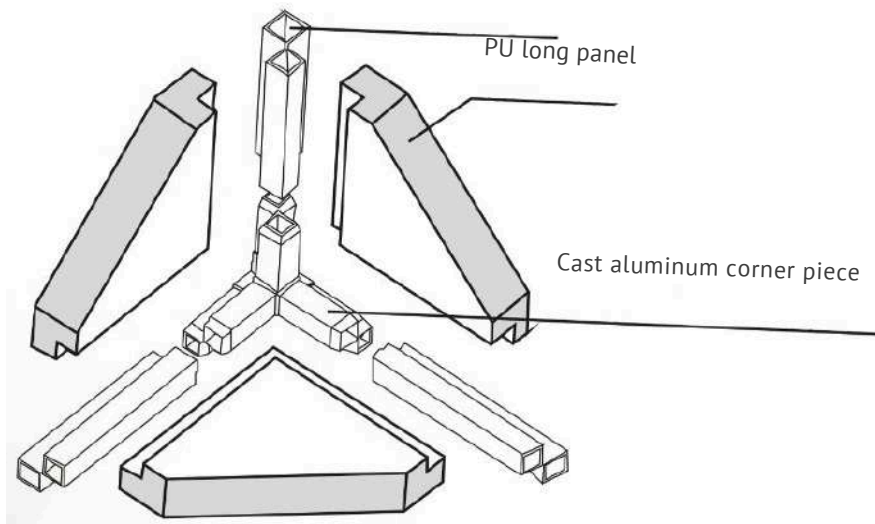
Cabin - 2

The SKS-H model air handling units feature a cabinet construction made with specially extruded aluminum profiles and double-walled panels filled with 55 mm thick rock wool insulation. The exterior surfaces of the panels are made of electrostatically powder-coated galvanized sheet metal, while the interior surfaces are optionally made of hot-dip galvanized sheet metal or AISI 316 grade stainless steel. The panels are mounted to the profiles using self-tapping screws, and liquid sealant is used between the panel and profile to ensure airtightness. Optionally, tightly fitted panels with frame seals are used.

The cabinet features hinged doors for the control and maintenance of components such as coarse filters, fine filters, fans, and exhaust fans. Inspection windows and internal lighting fixtures are used to ensure visual control of heaters, coolers, humidifiers, heat recovery units, and fans. Depending on customer requirements or the size of the unit, the air handling unit can be manufactured as a multi-part system.

PVC coated outer surface

PU long insulation

45

Silicon long

Aluminum special profile

Eksiz PU conta

316 quality stainless steel interior

45
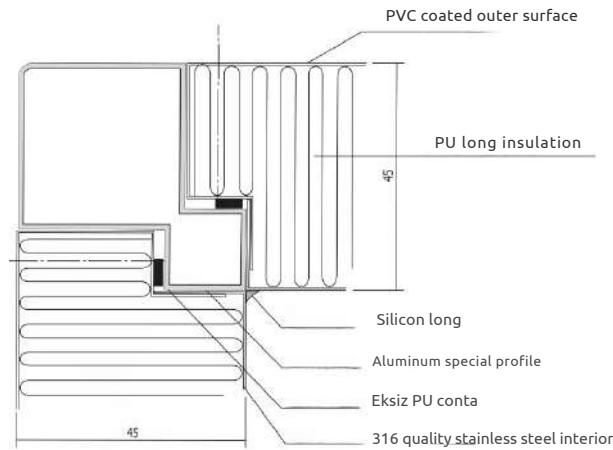
In SKS-H model air handling units, AMCA certified "plug" fans are used. Directly coupled fans are preferred due to their very low dust retention on blade surfaces. However, depending on customer requests, backward curved or forward curved, tight-bladed, double-inlet, belt-driven fans can also be used.

Cabin - 3

Radyal Fanlar

"Plug" fanlar
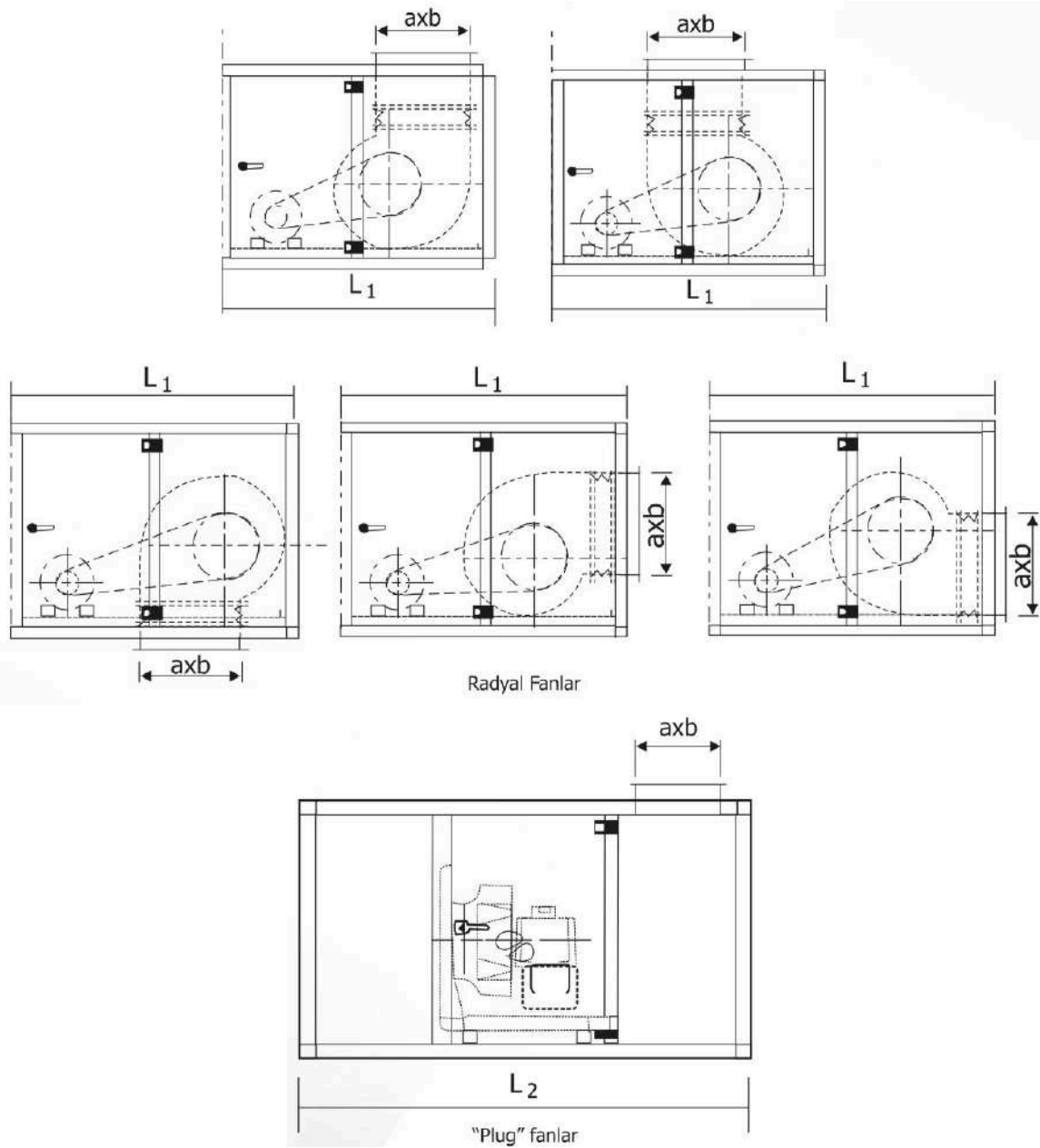
Electric Motors

In SKS-H model hygienic air handling units, IP55-protected, three-phase, squirrel-cage asynchronous electric motors are used. Generally, single-speed motors are employed, but dual-speed motors can also be provided upon request. Radial fans are driven by a belt-pulley system, and the electric motors are mounted on a special motor base equipped with a tensioning mechanism.

Radial fans can be positioned within the cabinet in various airflow configurations, as shown in the illustration, based on customer requirements. "Plug" fans are implemented as either directly coupled or belt-pulley driven, depending on the airflow-pressure characteristics. The fan cell is illuminated by a hermetically sealed fixture controlled by a rotary switch mounted outside the housing.

Frequency converters suitable for the fans and motors are also available separately upon request.

Filters - 1

Kaba Filtreler   Torba Filtre   Kompakt Filtreler
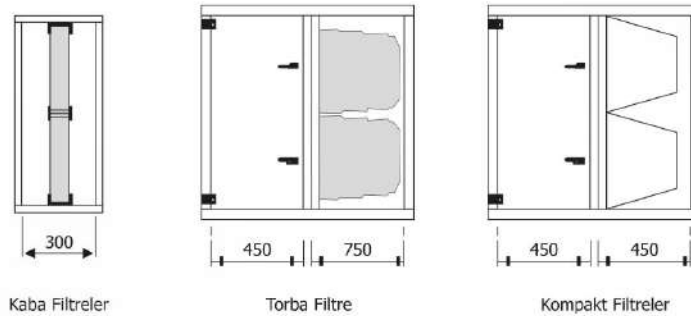
Filter placements and selections are made in compliance with DIN 1946-4 standards. According to this standard, coarse filters are placed on the air intake side of the device, while fine bag filters are installed on the discharge side of the fan, in other words, the high-pressure side. The filters used can be classified as follows:

Coarse Filters: Panel filters classified as 63-64 are installed flat or in a "V" configuration. Filters mounted on sliding rails can be replaced through a removable side cover. They are installed as coarse filters on the intake side.

Compact Filter: Compact filters are high-efficiency filters. Due to their shallow depth, they occupy less space within the unit. Their rigid structure ensures even distribution of air across the entire filter surface.

Bag Filters: Bag filters have a wide range of applications. Filters of classes F5, F6, F7, F8, and F9 can be found as bag filters. Except for F5 and F6 classes, bag filters can be placed as fine filters on the discharge side of the fan. Bag filters are mounted on special panels with clips, requiring a plenum chamber (empty chamber) in front of them for servicing.

Filters - 2

HEPA Filters: According to DIN 1946-4, HEPA filters must be placed on the discharge side of the fan and/or preferably inside the serviced area. However, in very special cases, these filters can be integrated into the unit with a special cabinet construction.

Heating and Cooling Coils

Only Heating Coil   Heating Cooling Coil   Heating Coil+plenum+Cooling Coil
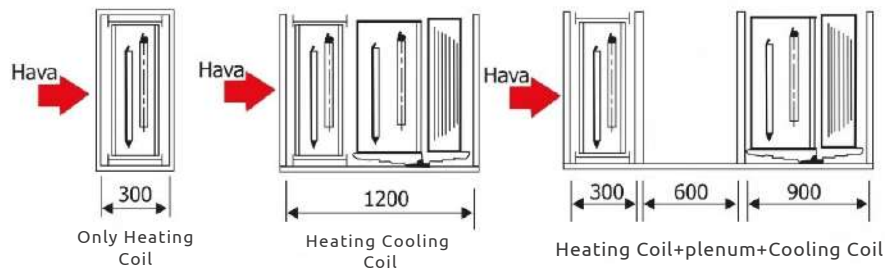
Heating and cooling coils are heat transfer elements made by expanding electrolytic copper tubes into aluminum fins. After production, the coils are subjected to a 20-bar leakage test. The frames of the coils are made of galvanized sheet metal. The coils are enclosed with a galvanized sheet frame to prevent air leakage. Mounted on slides, the coils can be easily removed by detaching the side panel.

Condensation trays and droplet eliminators are used in cooling coils regardless of air velocity. In air handling units to be used in locations without freezing risk, heating and cooling coils are placed in a single compartment. However, in areas with a freezing risk and to facilitate the easy installation of a frost thermostat, a 600 mm wide plenum section is included.

Humidifiers - 1

DIN 1946-4 prohibits the transport of water droplets by air in water-based humidifiers. Therefore, in SKS-H model hygienic air handling units, traditional air-washer type humidifiers are not used. Instead, only steam humidifiers are employed.

Steam humidifiers are divided into two types: those that generate their own steam and those that use existing steam. If sufficient steam is available in the conditioned space, the condensate is separated from the steam and sprayed into the conditioned air as dry steam for humidification. The desired relative humidity level is controlled either proportionally or through a two-position motorized valve mounted on the steam nozzle. The lengths of steam humidifiers vary between 600 mm and 1200 mm, depending on the desired efficiency and air conditions. In areas where steam is not available, steam humidifiers that generate their own steam by evaporating water through electrodes can be used.

Filters - 2
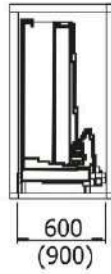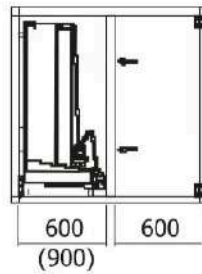
600	600	600
(900)	(900)	
Plenumsuz	Plenumlu	

Matte type moisturizer

Silencers - 1

Plate heat recovery systems provide higher heat recovery efficiency (up to 70%) compared to double coil systems. However, to implement plate heat recovery systems in air handling units, it is necessary to shift from single-story conventional units to double-story units. In plate heat recovery systems, when the outside air temperature is below 0°C, there is a risk of clogging due to frost formation on the surfaces of the exchanger on the exhaust air side. In such cases, it is recommended to use plate heat exchangers with intake and bypass dampers. In this situation, a two-position servo motor driven by a differential pressure switch is used to monitor pressure loss due to clogging. Once the signal for increased pressure loss is received, the intake damper will close and the bypass damper will open, allowing the frost to melt. Once the pressure loss returns to normal, the dampers will return to their original positions via the servo motor.
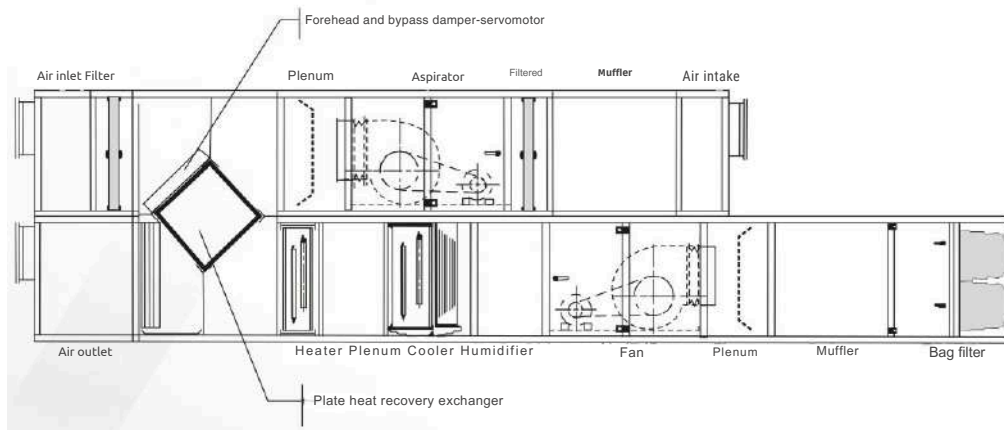
Application example of two–storey air handling unit with plate heat exchanger

Silencers - 2

Radial Fan + Silencer

In SKS-H type air handling units, silencers are placed after the fan and before the compact filter. Extractor silencers, on the other hand, are placed immediately before the extractor. Extractor silencers can be directly connected to the extractor cabinet. However, in applications with radial fans, a 600 mm long plenum with a deflector is placed between the fan and the silencer to ensure proper air distribution. When "plug" fans are used, no additional plenum is required, and the deflector can be placed inside the fan cabinet.

The internal surfaces of the attenuators (or silencers) are fabricated from stainless steel or galvanized steel sheet to maintain consistency with the other components of the enclosure (or housing). Standard attenuator lengths are available in 900 mm, 1200 mm, and 1800 mm. For detailed capacity information and selection criteria, please consult our dedicated attenuator catalog.

Heat recovery systems, which have found widespread application over the last 30 years, can also be used in IKS-H model hygienic air handling units. The heat recovery systems listed below are implemented in IKS-H models.

Silencers - 3

Diferansiyel presostat
DP

Aspirator — Filtered — Air intake

Double serpentine heat recovery

Circulation pump

3-way two-position valve

Filling and expansion (not shown)

Air intake — Filtered — Heater — Plenum Cooler — Moisturizer — Fan — Plenum — Muffler — Bag filter

Double coil heat recovery

Dual-coil heat recovery system with automatic defrost. Air handling unit and extractor in separate locations.

Differential pressure switch

Aspirator — Filtered
DP

Air intake

Double serpentine heat recovery

Air intake — Filtered — Heater Plenum Cooler — Moisturizer — Fan — Plenum — Muffler — Bag filter

Double serpentine heat recovery

Circulation pump

Filling and expansion (not shown)
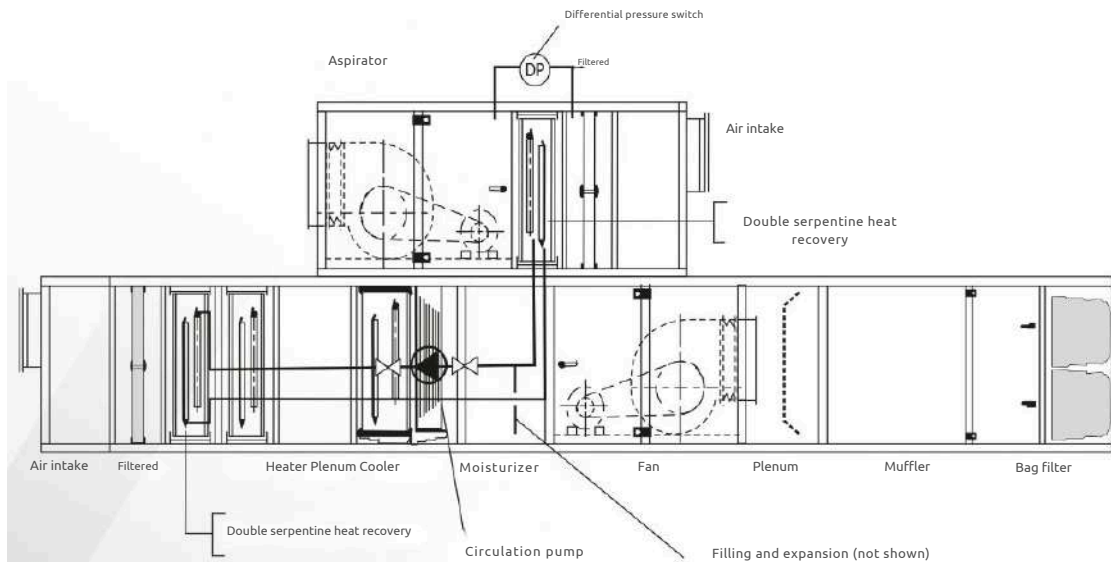
Dual-coil heat recovery system without automatic defrost, in a double-deck air handling unit configuration.

Power Plant Flow Rates

POWER PLANT FLOW RATES

heating coil

cooling coil
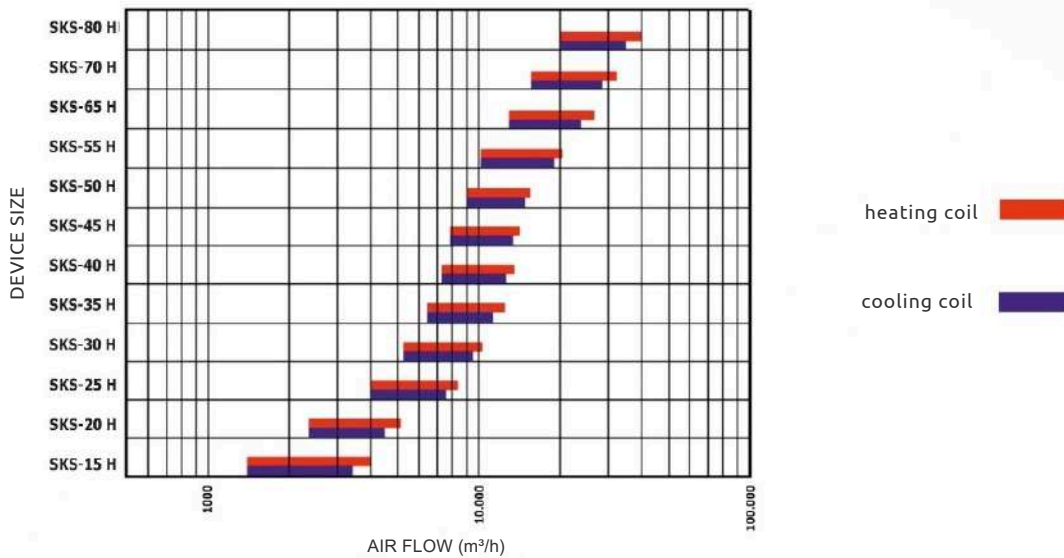
Quick Selection Table

Model and dimensions				Air Flow (m³/h)				
				Frontal velocity (m/s)				
AHU modeli	W (mm)	H (mm)	F(*) m2	2	2.5	3	3.5	4
SKS-15H	660	660	0.212	1520	1910	2290	2670	3050
SKS-20H	960	660	0.355	2560	3200	3830	4470	5110
SKS-25H	960	960	0.577	4160	5190	6230	7270	8310
SKS35H	1260	960	0.902	6500	8120	9740	11370	12990
SKS-45H	1340	1260	01.102	7940	9930	11910	13900	15880
SKS-55H	1640	1260	1.426	10270	12840	15410	17970	20540
SKS-65H	1640	1560	1.822	13120	16400	19680	22960	26240
SKS-70H	1940	1560	2.236	16100	20130	24150	28180	32200
SKS-80H	1940	1860	2.722	19600	24500	29400	34300	39200

(*) F: Net air passage area (m²)

"SKS-T" Model

The "SKS T" model thermal bridge-free air handling units are specially designed units that meet the demands of advancing air conditioning technology. They aim to minimize the risk of condensation on the internal or external surfaces of the unit, keep the heat transfer coefficient at a minimum, and reduce heat losses to the lowest possible level.

The "SKS T" model air handling units comply with the requirements of DIN EN 1886. To eliminate thermal bridging, the unit profiles consist of two separate profiles: an inner and an outer profile, which are joined using polyvinyl-based insulating tapes.

The "SKS T" model units utilize double-walled panels. The outer surfaces of the panels are made of PVC-coated DKP sheet metal, while the inner surfaces are made of galvanized sheet metal. Similarly, to eliminate thermal bridging in the panels, any contact between the inner and outer sheets is completely eliminated, and "H"-shaped special insulating tapes are used at the joint sections.

In the panels of "SKS T" model units, as in other models, polyurethane foam [50 kg/m³] that is injected and expands is used. The "SKS T" model air handling units are produced in two different panel thicknesses: 40 mm (model SKS-T40) and 60 mm (model SKS-T60). Each model is manufactured in 14 different sizes with airflow capacities ranging from 1500 m³/h to 90,000 m³/h.

"SKS T" thermal bridge-free air handling units meet the following requirements of DIN EN-1886.

Cabin

Heat bridge-free unit, 40 mm panel thickness

Heat bridge-free unit, 60 mm panel thickness

Specially extruded aluminum profiles and double-walled polyurethane-filled panels, available in thicknesses of 40 mm and 60 mm, are utilized in the cabin construction of SKS-T model air handling units. However, at the customer's request, rockwool or glasswool insulation of equivalent thickness may also be employed. The outer surfaces of the panels consist of PVC-coated DKP sheet metal, while the inner surfaces are constructed from galvanized sheet metal. The panels are affixed to the profiles.

To prevent the formation of thermal bridges, screws are never employed; rather, specialized latches are utilized. Neoprene sealing gaskets are positioned between the panel and the profile. The cabin is equipped with components including a coarse filter, fine filter, fan, and aspirator.

To effectively manage and oversee the units, observation glasses and internal lighting fixtures are employed for the visual inspection of hinged doors, heaters, coolers, humidifiers, heat recovery devices, and fans.

Note: The switchboard may be constructed in multiple sections based on customer demand or the device's dimensions.

Corner profiles and intermediate supports

Panel Detail: The inner and outer surfaces are divided by plastic. It is divided by a thermal conduction barrier.

Air Handling Units Free from Thermal Bridging

Quick Selection Table

POWER PLANT FLOW RATES

Legend:
- Only fan
- Air washer-humidifier
- Heating coil
- Cooling coil

DEVICE SIZE (vertical axis): SKS-T40/60-80, SKS-T40/60-75, SKS-T40/60-70, SKS-T40/60-65, SKS-T40/60-60, SKS-T40/60-55, SKS-T40/60-50, SKS-T40/60-45, SKS-T40/60-40, SKS-T40/60-35, SKS-T40/60-30, SKS-T40/60-25, SKS-T40/60-20, SKS-T40/60-15

AIR FLOW (m³/h): 1000, 10000, 100000
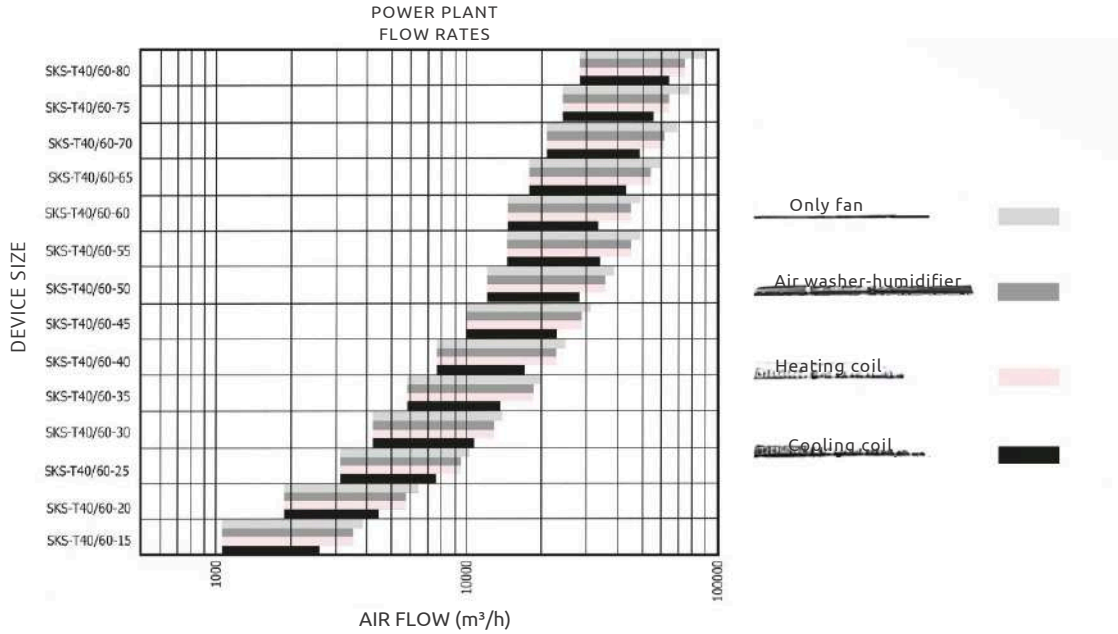
Power Plant Capacity -1

AHU modeli	W (mm)	H (mm)	F(*) m2	Air flow rate (m³/h) Frontal velocity (m/s)						
				2	2,5	3	3,5	4	4,5	5
SKS-T40/60-80	700	700	0,212	1526	1908	2290	2671	3053	3434	3816
SKS-T40/60-75	1000	700	0,355	2556	3195	3834	4473	5112	5751	6390
SKS-T40/60-70	1000	1000	0,577	4154	5193	6232	7270	8309	9347	10386
SKS-T40/60-65	1300	1000	0,799	5753	7191	8629	10067	11506	12944	14382
SKS-T40/60-60	1400	1300	1,102	7934	9918	11902	13885	15869	17852	19836
SKS-T40/60-55	1600	1300	1,426	10267	12834	15401	17968	20534	23101	25668
SKS-T40/60-50	1600	1600	1,822	13118	16398	19678	22957	26237	29516	32796
SKS-T40/60-45	2000	1600	2,236	16099	20124	24149	28174	32198	36223	40248
SKS-T40/60-40	2000	1900	2,722	19598	24498	29398	34297	39197	44096	48996
SKS-T40/60-35	2300	1600	2,740	19728	24660	29592	34524	39456	44388	49320
SKS-T40/60-30	2300	1900	3,290	23688	29610	35532	41454	47376	53298	59220
SKS-T40/60-25	2300	2200	3,840	27648	34560	41472	48384	55296	62208	69120
SKS-T40/60-20	2500	2200	4,380	31536	39420	47304	55188	63072	70956	78840
SKS-T40/60-15	2500	2500	5,010	36072	45090	54108	63126	72144	81162	90180

(*) F: Net hava geçiş alanı (m²)
Isıtma, soğutma, hava yıkayıcı :
Yalnız ısıtma :
Only fan:

Power Plant Capacity -2

01 - Filters
a-] Rough Panel Filters b-] Bag Filters
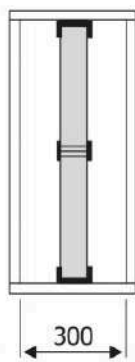
Kaba Filtre Panel Filtreler	Torba Filtre	Kompakt Filtreler
300	450 · 750	450 · 450
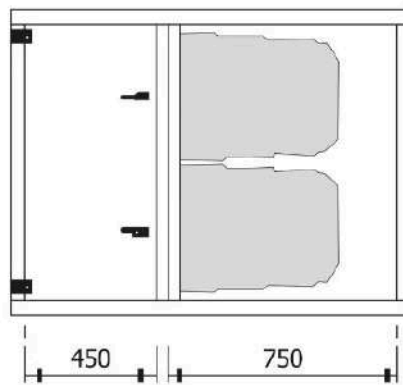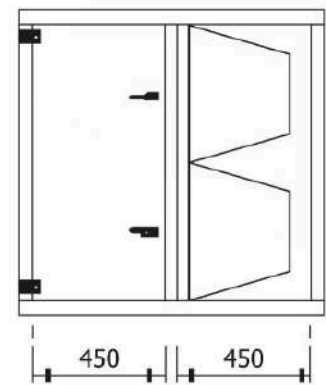
02- Heating and Cooling Coils
a-) Hot Water Heating Serpentines b-] Steam Heating Serpentines c-) Cold Water Cooling Serpentines d-] Direct Expansion Serpentines
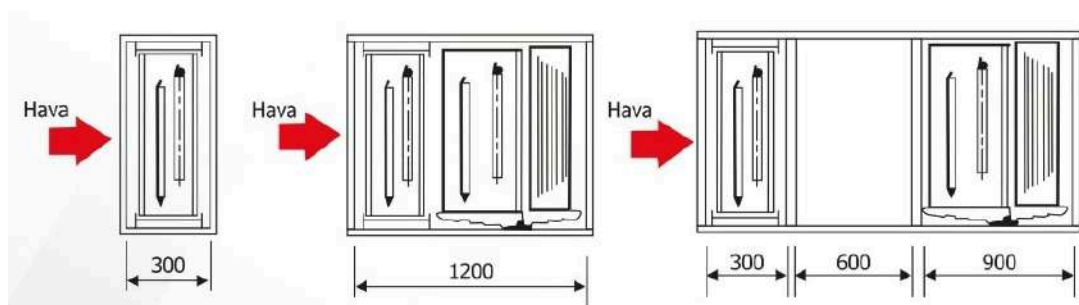
Heating only coil	heating cooling coil	Heating sprinkler+plenum+cooling sprinkler.
Hava → 300	Hava → 1200	Hava → 300 · 600 · 900

Power Plant Capacity - 3

03- Humidifier
a-] Air Washers b-) Fill Type Humidifiers c-) Steam Humidifiers

300

1500
(1800)

Air washer-humidifier

600
(900)

Plenumsuz

600
(900)   600

Plenumlu

600
(900)

Filling type humidifier

Steam humidifier
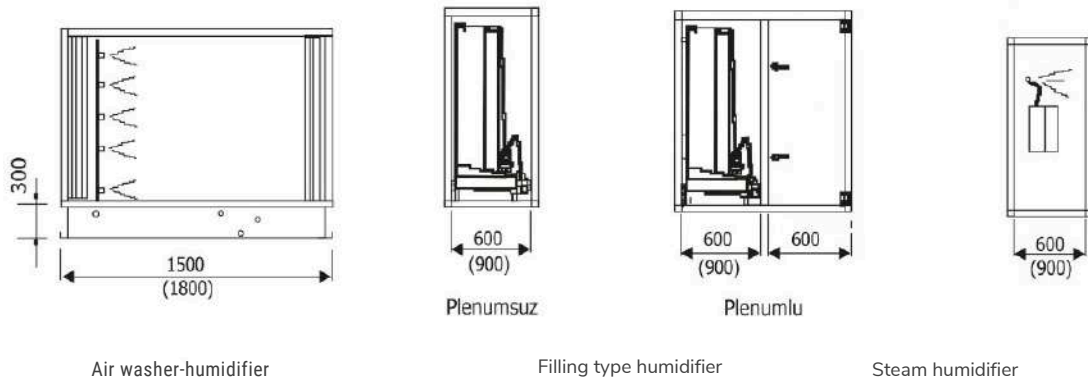
04 - Air Inlet and Mixing Cells

Dış hava

300,600
900

AIR SUCTION
CELL

Dönüş havası

Dış hava

300,600
900

AIR MIXTURE
CELL

Egzost   Dış hava

600,1200,1800

AIR EXHAUST AND
MIXTURE CELL
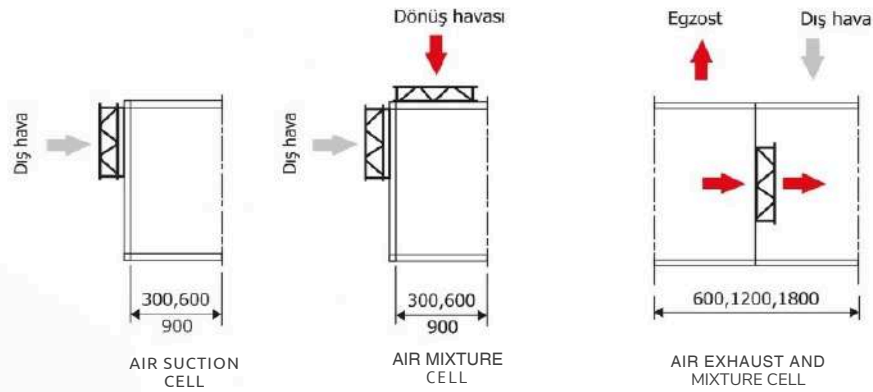
05 - Fan and Exhauster

axb

axb

L₁

L₁

L₁

axb

axb

L₁

L₁

axb

RADIAL FANS
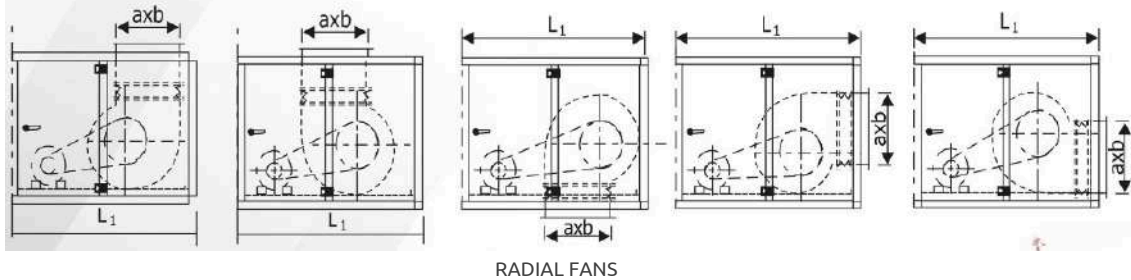
Power Plant Capacity -4

06-Isı Geri Kazanım Elemanları

a) Double-Coil Heat Recovery Units (Single and Double-Deck Air Handling Units)

b) Plate Heat Recovery Units (Double-Deck Air Handling Units)

c) Rotary Wheel Heat Recovery Units (Double-Deck Air Handling Units)
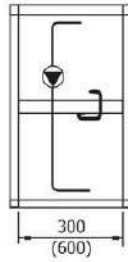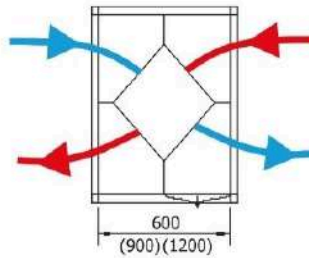
300 (600)	600 (900)(1200)	300 (600)
Double Coil	With Plate Heat Exchanger	With Rotary Wheel
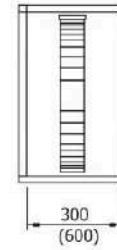
07-Deflektör ve Susturucular

300 (600)

DEFLEKTÖR

900,1200,1500,1800,2100
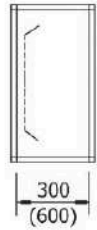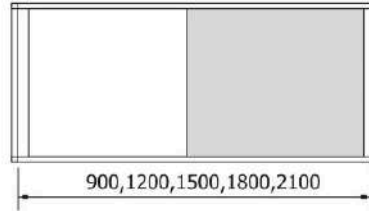
SILENCER

Here, only a few examples of application examples of "SKS T" model air handling units are given. Detailed applications and module
For their construction, please refer to the "SKS" standard model air handling units catalogue.
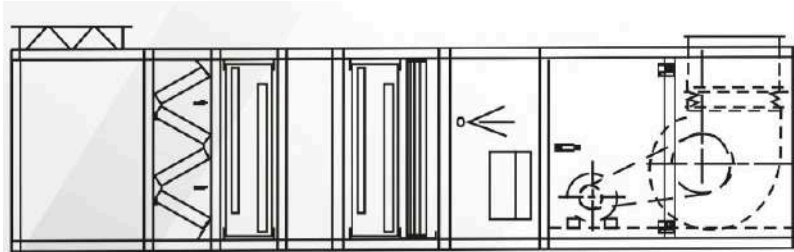
Single storey air handling unit

Air suction chamber, V-type filter, air heater, air cooler, steam humidifier, fan

Application Examples - 2

Forehead and bypass damper-servomotor

Hava girişi Filtre   Plenum   Aspiratör   Filtre Susturucu   Hava girişi

Hava çıkışı   Isıtıcı Plenum Soğutucu Nemlendirici Vantilatör   Plenum   Susturucu   Torba filtre

Plate heat recovery exchanger

Double-deck air conditioning unit with
plate heat exchanger

Hava çıkışı   Plenum   Aspiratör   Filtre   Susturucu   Hava girişi

Hava girişi   Filtre   Isıtıcı   Plenum Soğutucu Nemlendirici   Vantilatör

Heat recovery unit with rotary wheels

Double-deck, rotating wheeled air conditioning unit

Application Examples - 2

Forehead and bypass damper-servomotor

Air inlet Filter   Plenum   Aspirator   Filter Silencer   Air intake

Air outlet   Heater Plenum Cooler Humidifier Fan   Plenum   **Muffler**   Bag filter

Plate heat recovery exchanger

Double-deck air conditioning unit with plate heat exchanger

Air outlet   Plenum   Aspirator   Filtered   Muffler   Air intake

Air intake   Filtered   Heater   Plenum Cooler Humidifier   Fan

Heat recovery unit with rotary wheels
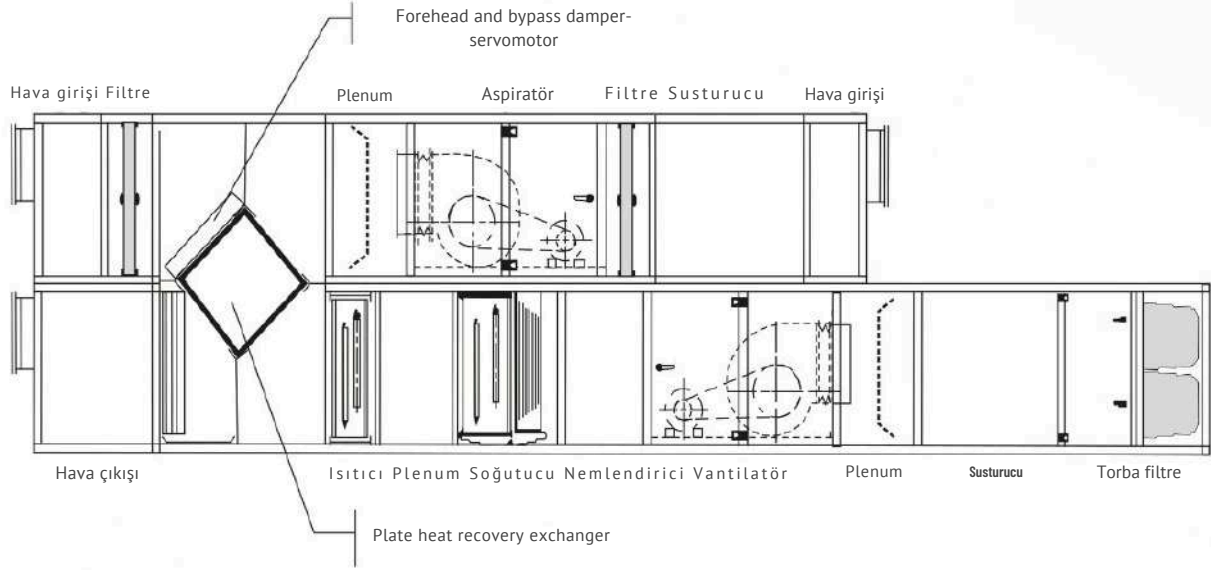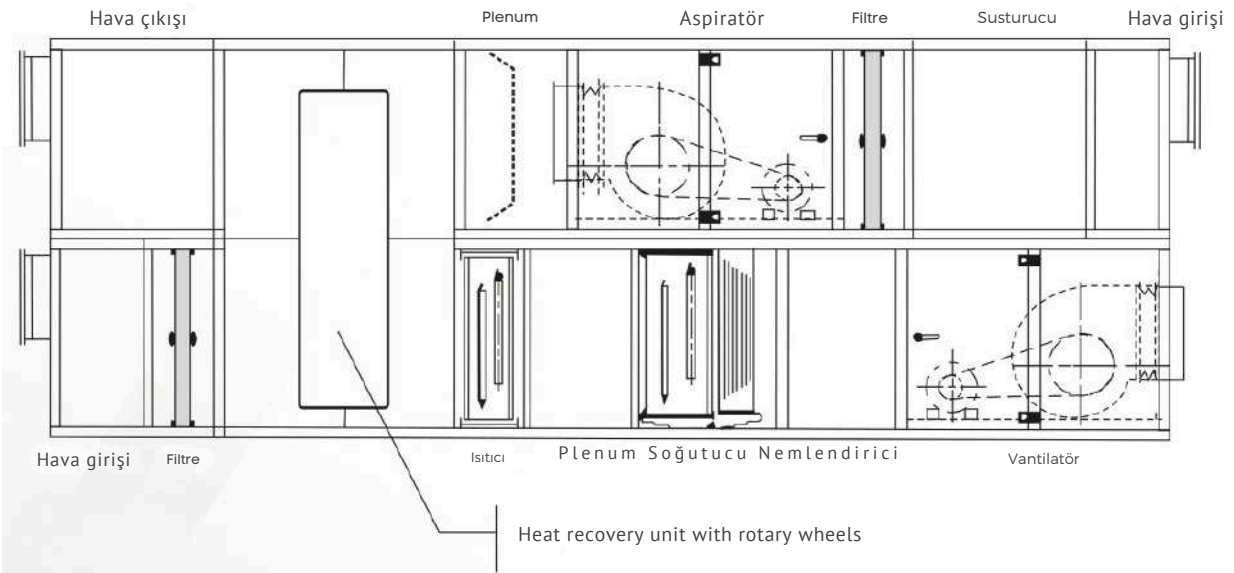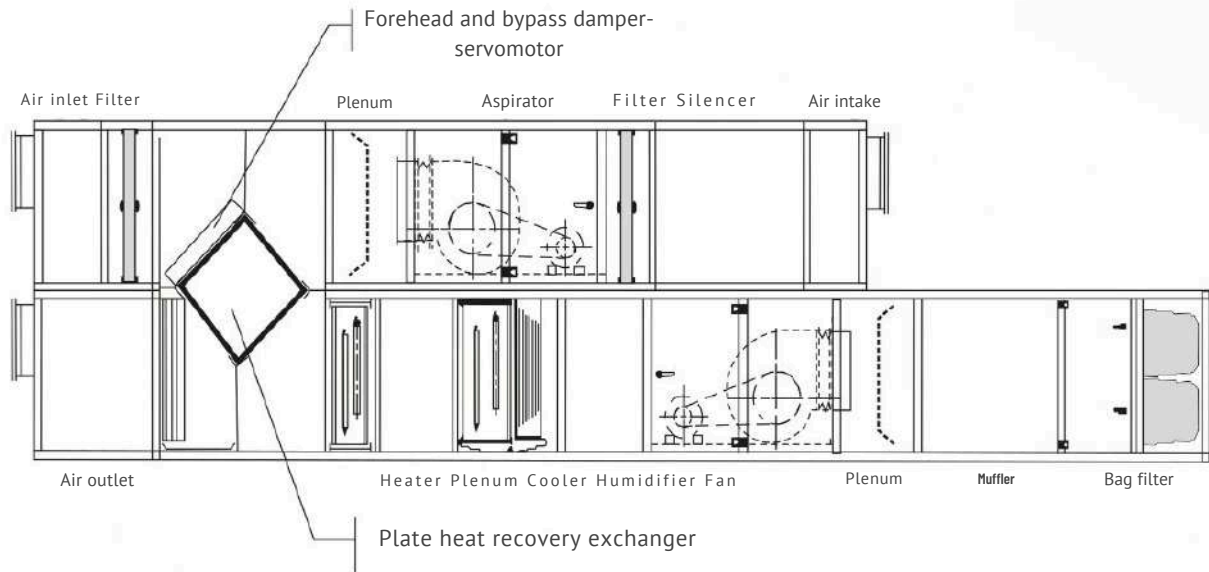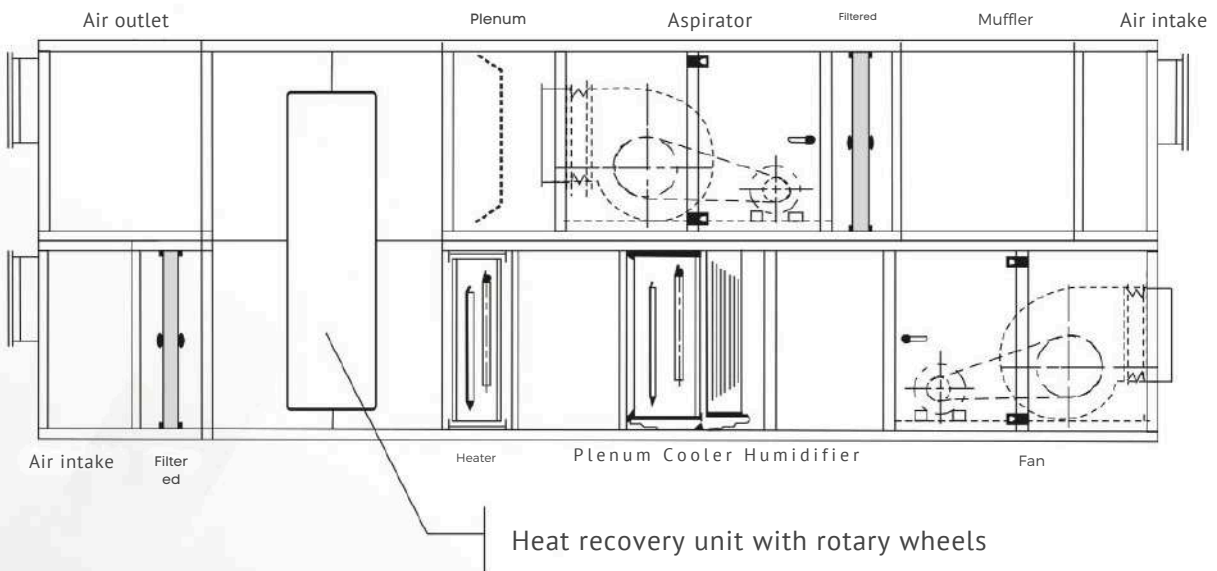
Double-deck, rotating wheeled air conditioning unit

"ANS" Model

ANS series absorption dehumidification units use "dessicant" rotary drums that operate on the absorption principle, one of the latest innovations in air conditioning and ventilation technology, and thus relative humidity rates of up to 8% are achieved, allowing greater amounts of moisture to be removed with much smaller air flow rates compared to classical cooling coil dehumidifiers.

It requires very low initial capital and operating costs compared to other systems because it requires low air flow rates, does not use the DX cooling cycle at all, or is used in a joint application style in extreme cases.

Due to the extremely low relative humidity they provide, they are ideal devices for applications such as indoor swimming pools, ice skating rinks and the pharmaceutical industry that require extremely low relative humidity.

Order Notation

ANS - 60- PC

"OO" Standard model with drum only

"PC" : DX pre-cooling and after-heating model

20
40
60
80

Process air nominal flow rate

Rotary drum dehumidifier

Process Examples - 1

ANS series dehumidifiers consist of a main body consisting of an air damper, air filter, absorption rotary drum and fan as standard, and a reaction air unit consisting of a fan, filter and electric heater mounted on this body. This application is seen in the schematic picture below.

Application - 1
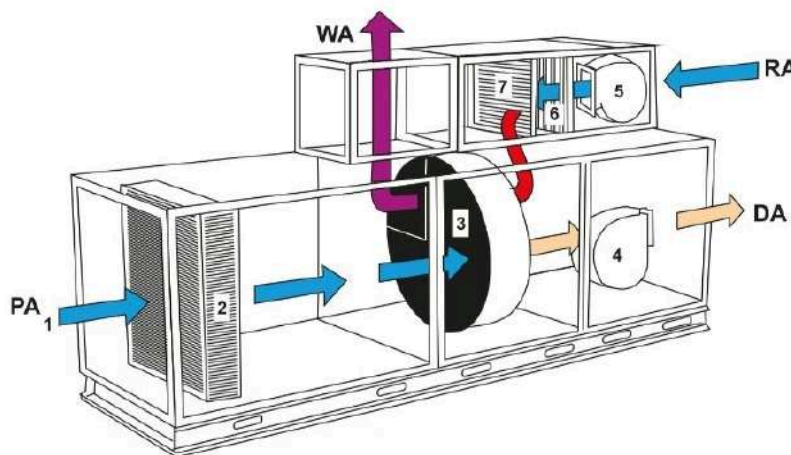
PA: Process air DA: Dehumidified air

RA: Reaction mood

WA: Nemli hava

1: Air Intake

2: Filter-1

3: Absorption drum
4: Fan-1

5: Fan-2

6: Filter-2

7: Electric Heater

In cases where lower relative humidity rates and post-process delivery air is required to be blown under ambient conditions, DX air coolers and heater coils can be added to the device. This application is shown in the schematic drawing below.

Application - 2
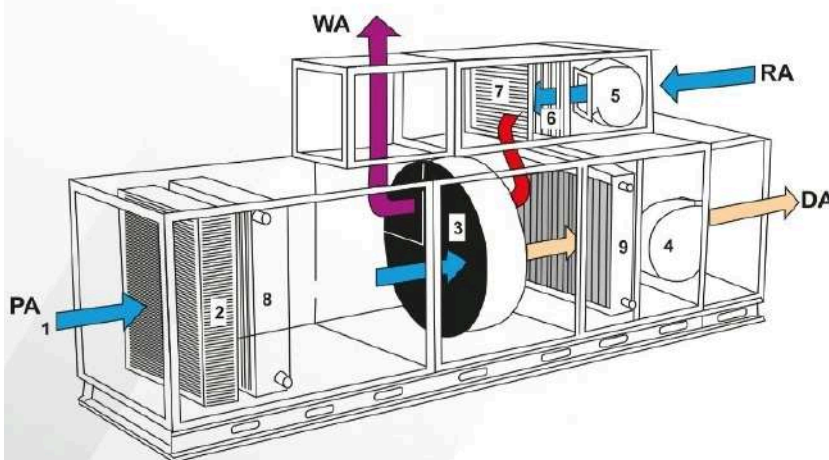
PA: Process air

DA: Dehumidified air

RA: Reaction mood

WA: Nemli hava

1: Air Intake

2: Filter-1

3: Absorption drum

4: Fan-1

5: Fan-2

6: Filter-2

7: Electric Heater

8: DX cooler

9: Air Heater

Process Examples - 1

Absorption Dehumidification Plants

Process Examples - 2

Process Examples - 3
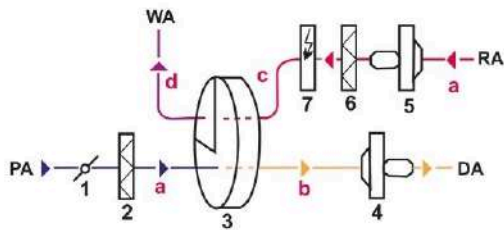
Psychrometric process diagram of Application-1

1: Two-position damper
2: Air Filter
3: Absorption drum
4: Fan
5: Reaction air mortal
6: Air Filter
7: Electric air heater a: Air inlet condition:
26.5 °C DB, 65% rH b: Dehumidified air c:
Heated dry air: 120 °C   d: Humid air

PA: Process air
DA: Dehumidified air
RA: Reaction air
WA: Humidified air

PROCESSES:
ab: Dehumidification in the absorption rotary drum
ac: Heating the air in the electric heater
cd: Transfer of moisture to the reaction air

Psychrometric process diagram of Application-2

7: Electric air heater
8: DX air cooler
9: Air Heater
a: Air inlet condition: 26 °C DB, 65% rH
b: DX cooler outlet: 12 °C DB, 95% rH
c: Absorption drum outlet: 19 °C DB, 30% rH
d: Air heater outlet: 26 °C DB, 20% rH
e: Reaction air elc. heater outlet:120 °C
f: Humid exhaust air
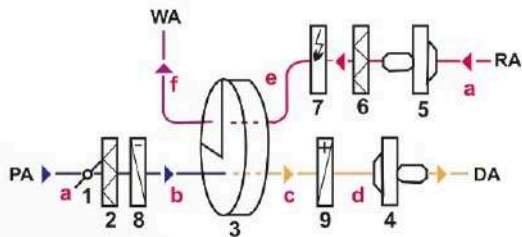
PA: Process air
DA: Dehumidified air
RA: Reaction air
WA: Humidified air
1: Two-position damper
2: Air Filter
3: Absorption drum
4: Fan
5: Reaction air fan
6: Air Filter

PROCESSES:
ac: Cooling of air in DX cooler
bc: Dehumidification in absorption
drum
cd: Heating of air
ae: Heating of reaction air to 120 °C
ef: Transfer of moisture to reaction air and exhaust

Process Examples - 4

Absorption Dehumidification Plants

Cabin

In the cabin construction of all ANS series dehumidifiers, as in SKS type air conditioning units, specially drawn aluminum profiles and double-walled 55 mm thick panels are used. Due to the high temperature of the reaction air, rock wool is used as insulation filling material in the panels. The outer surfaces of the panels are made of oven-painted galvanized sheet metal, while the inner surfaces are made of hot-dip galvanized sheet metal. The panels are connected to the profiles with special self-tapping screws, and neoprene sealing gaskets are placed between the panel and the profile.

Hinged doors are used to control and maintain elements such as filters, heating and cooling batteries, rotary drums and fans on the cabin, and observation windows are used to visually inspect the fan and adsorption drum.

Depending on customer demand or the size of the device, the device can be made in multiple pieces.

Fans

High efficiency "Plug" fans are used in ANS model dehumidifiers. Plug fans are directly coupled to electric motors with suitable power and their flow rates are adjusted with frequency converters. There are ports on the suction funnel of the fans used for flow rate measurement. The differential pressure measurement made on these ports is converted to flow rate in DDC control panels and thus the fan flow rate can be controlled in parallel with the pre-loaded program.

Electric Motors

The electric motors used in the "ANS" model dehumidifiers are three-phase, squirrel cage, asynchronous type with IP54 protection class, suitable for frequency converter applications and are supplied by the manufacturer directly coupled to the plug fan.

Frequency converters suitable for fans and motors are located in the control panel, which is an integrated part of the air conditioner, and operate in parallel with the pre-programmed automatic control scenario.

Capacity Table

Capacities are values obtained without pre-cooling. If pre-cooling and post-heating are performed, the capacities listed above are
At 26°C KT, 65%rH air inlet conditions, it increases from 7.85 gr/kg to 9.80 gr/kg. In other words, the capacity increases by 25%.

Absorption Dehumidification Plants

Filters

In "ANS" series devices, G4 class coarse filters are used as standard in process and reactive air inlets. If desired, filters can be placed at the borders and/or two or more stage filters can be applied. In this case:

Panel Filters: In standard application, panel filters in G4 class are produced in "V" format. They are placed on the slides as slides.
Filters can be replaced via the openable side cover.

Bag Filters: On request, filter class F9 quality, bag filters produced by a well-known and certified manufacturer can be used. In this case, bag filters are mounted on special panels with clips. In bag filter applications, it is recommended to apply a G4 Class filter before this filter.

In addition to the two-stage filter used in standard production, multi-stage filter applications can also be made in line with customer demand. In this case, G4 and F7 filters are placed on the suction side of the fan, and the F9 filter is placed on the blowing side.

Absorption Drum

The main unit, which is considered the heart of the ANS series dehumidifiers, is the absorption heat recovery drum. The drum, which consists of fibro glass, silica gel and acrylic surface coating, discharges the moisture it absorbs from the high place with its extremely slow rotation on the hot side and thus performs the dehumidification process.

Thanks to the extremely high silica gel (82%) it contains, it achieves high efficiency in dehumidification processes and can carry moisture up to 40% of its own weight from one side to the other.

Automatic Control Support

Programmable control panels are used in the automatic control of ANS series dehumidifiers. Control panels are one of the most advanced automatic control systems of their kind, consisting of a 16-bit microprocessor, "flash" memory, RAM, capable of giving messages in various languages including Turkish, and capable of communicating with widely used communication standards directly or through "gateways" such as Modbus, BACnet, METASYS, DLL for Windows, TCP/IP, SNMP, Lonworks, TREND, Konnex.

The "Small" or "Medium" types of control panel are the standard control equipment of the "ANS" series devices. This panel has 8 "DI", 8 "DO",
It has 5 "Al" and 4 "AO" signal inputs and outputs and is programmed for the following operations.

01- 4 level filter control (**two positions and maximum**)
02- Electric reaction air heater biner [**stage**] control
03- Absorption drum location information (**4 humidity and temperature**)
04- Control of reaction and process fans (**two-position and proportional**)
05- Dehumidification control (**two-position and proportional**)

Programmable control panel

APPLICATION-1

| MODEL | Hava debileri (m³/hr) | | Elektrikli ısıtıcı (kW) | Vantilatörler | | | | Nem alma (kg/hr) (1) (2) | Harici basınç (Pa) | Kurulu güç (kW) |
| | Proses havası | Reaktif hava | | Proses havası | | Reaktif hava | | | | |
				Model	Güç(kW)	Model	Güç(kW)			
ANS-20	2.000	670	20	plug-fan	0,75	plug-fan	0,75	18,40	200	21,50
ANS-40	4.000	1.350	40	plug-fan	1,50	plug-fan	0,75	36,80	200	42,25
ANS-60	6.000	2.000	60	plug-fan	3,00	plug-fan	0,75	55,20	200	63,75
ANS-80	8.000	2.700	80	plug-fan	4,00	plug-fan	1,10	73,60	200	85,10

1) Dehumidification capacities are valid for 26°C DB, 65%rH inlet conditions and sea level.
2) Dehumidification capacities are the values obtained without pre-cooling.

APPLICATION-2

| MODEL | Hava debileri (m³/hr) | | Elektrikli ısıtıcı W | Vantilatörler | | | | Soğutma kap. kW(3) | Komp. gücü kW(3) | Isıtma kap. kW(4) | Nem alma (kg/hr) (1) (2) | Harici basınç (Pa) | Kurulu güç (kW) |
| | Proses havası | Reaktif hava | | Proses havası | | Reaktif hava | | | | | | | |
				Model	Güç(kW)	Model	Güç(kW)						
ANS-20	2.000	670	20	plug-fan	0,75	plug-fan	0,75	19,00	3,70	5,00	22,38	200	25,20
ANS-40	4.000	1.350	40	plug-fan	1,50	plug-fan	0,75	38,00	7,30	10,00	44,75	200	49,55
ANS-60	6.000	2.000	60	plug-fan	3,00	plug-fan	0,75	57,00	11,50	15,00	67,13	200	75,25
ANS-80	8.000	2.700	80	plug-fan	4,00	plug-fan	1,10	76,00	15,20	20,00	89,5	200	100,30

Notlar:
1) Dehumidification capacities are valid for 26°C DB, 65%rH inlet conditions and sea level.
2) Dehumidification capacities are the values obtained without pre-cooling.
3) The cooling system is for +7 °C evaporation and +5 °C superheating with R-407 °C.
4) Heating System is for 90/70 °C hot water or low pressure steam. Consult factory for electric heater.
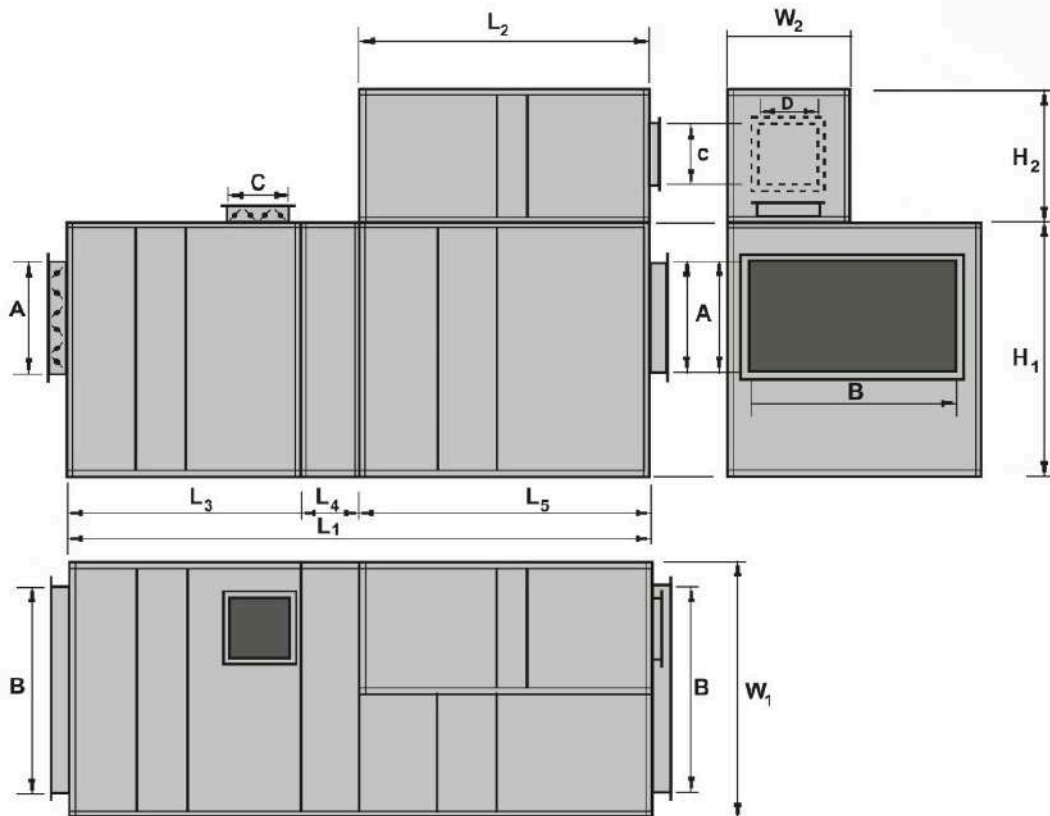
Dimensions

MODEL	Dimensions														
	A	B	C	D	E	F	L1	L2	L3	L4	L5	W1	W2	H1	H2
ANS-20	600	900	300	500	300	500	3340	1640	1340	360	1640	960	560	960	560
ANS-40	600	1200	300	500	300	500	1980	1980	1340	360	1980	1260	560	1260	560
ANS-60	600	1200	300	600	300	600	1980	1980	1340	360	1980	1260	660	1260	660
ANS-80	600	1500	300	700	300	700	1980	1980	1340	360	1980	1560	760	1560	760

All measurements are in millimeters.

The above dimensions are valid if the device is manufactured in four modules (L2, L3, L4 and L5). ANS series devices can be manufactured as monoblocks in line with customer requests.

Package Type Hygienic Air Conditioning Units

"PHS" Model

"PHS" model hygienic air conditioning units are a product of today's advancing air conditioning technology, especially in areas requiring high indoor air quality (IAQ) and a particle-free environment, such as operating rooms, delivery rooms, intensive care rooms, electronics and optics industries.

They are packaged air handling units designed and manufactured to meet the needs of spaces classified according to US Federal Standard 209E, EN ISO 14644-11e or German VDI 2803/11.

"PHS" series devices are designed to meet all climatological needs of operating rooms and similar clean rooms and to fulfill the following functions and have a wide range of selection. We can list the standard and optional operational features of the independent packaged air conditioning unit PHSs that contain all the systems as follows:

a-High efficiency filtration of air-conditioned air and return/exhaust air,

b-Control of room temperature and, if desired, relative humidity throughout the year,

c-Depending on customer demand, 100% fresh air requirement when operating rooms are in use and 50% when not in use.
meeting their needs.

d- Extremely low noise level and vibration-free operation.

e- Remote control option via touch screen by authorized healthcare professionals.

f - Over 50% heat recovery and energy saving in heating due to the high efficiency plate heat exchanger it contains.

g- "Heat pump" feature in the devices and thus additional minimum 60% energy saving.

h-Addition of electric or hot water heating system if desired.

i- Adjustment and control of ventilation/aspiration flow rates with an automatic control system in order to provide the desired positive pressure in air-conditioned spaces.

PHS series package type hygienic air conditioners are produced in two different types: monoblock "PHS-M" and split "PHS-S".

Both types of PHS series have a plate heat recovery exchanger as standard equipment. All PHS-M and PHS-S models are available with heat pump or conventional DX cooling plus electric/hot water heating.

Cabin

Hinged doors are provided to control and maintain the elements such as coarse filter, fine filter, fan and aspirator on the cabin, and observation windows are provided to visually inspect the heater/cooler, humidifier, heat recovery devices and fans.
is used.

The compressor and cooling accessories, the steam humidifier are placed in a separate cabinet and have no contact with the conditioned air. Likewise, the copper piping and electrical cables run through special hermetic routes. Depending on customer demand or the size of the device, the device can be made in multiple pieces.

PVC coated outer surface

Rockwool filling insulation

55

Silicon long

Aluminum special profile

Neoprene jonta

304 quality stainless steel inner surface(**)

55
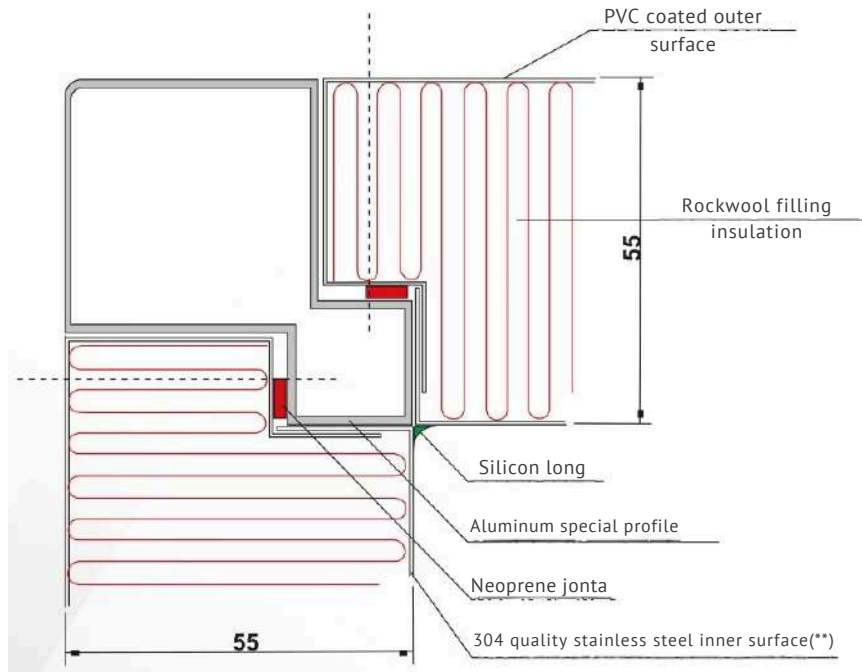
Package Type Hygienic Air Conditioning Units

Fans

High efficiency EC fans are used in PHS model air conditioners. EC fans are directly coupled to electric motors of suitable power and their flow rates are adjusted with frequency converters. There are ports on the suction funnel of the fans used for flow rate measurement.
The differential pressure measurement made at these ports is converted into flow rate in DDC control panels.

Electric Motors

The electric motors used in the "PHS" model hygienic air conditioning units are three-phase, squirrel cage, asynchronous type with IP54 protection class, suitable for frequency converter applications and are supplied by the manufacturer directly coupled to the plug fan.

Frequency converters suitable for fans and motors are located in the control panel, which is an integrated part of the air conditioning units, and operate in parallel with the pre-programmed automatic control scenario.

Filters

Filter placements and filter selections are made in accordance with DIN 1946-4. According to this standard, coarse filters are placed on the air inlet side of the device. The sensitive compact filters are placed on the discharge side of the fan, in other words, on the high pressure side.

Panel Filters: Panel filters in the G4 class are produced in the "V" format. Filters placed on the slides can be replaced using the openable side cover.

Compact Filters: As filter class F9 quality, compact filters produced by a well-known and certified manufacturer are used.
Compact filters are mounted on special panels with clips.

In addition to the two-stage filter used in standard production, a three-stage filter can also be applied in line with customer demand.
In this case, G4 and F7 filters are placed on the suction side of the fan, and the F9 filter is placed on the blowing side.

Fans

Epoxy coated copper tube aluminum fin heat exchangers are used for their hygienic compliance. Heat pump model-
Both the inner and outer coils are equipped with inlet-outlet collectors and distributors that can function as both evaporators and condensers.

All models use externally balanced thermostatic expansion valves. In "PHS" series air conditioners, cooling cycles are given in two alternatives.

Heat pump models: In these models, there is a single serpentine in the air conditioner, which performs cooling or heating according to seasonal needs. Summer-winter changeover is carried out automatically or manually by means of a solenoid-controlled 4-way changeover valve. In heat pump models, an electric heater of the desired power can be placed on the fan blowing side, if desired.

Classic models: Classic type packaged hygienic units have two heat exchangers. One of them is the DX air cooling coil.
In addition to this cooling-only serpentine, there is also an air heater serpentine. The heater element, the capacity of which is determined according to the project and/or location conditions, can be hot water or electric, depending on customer preference. In hot water serpentines, optional proportional coil motors of suitable diameter are used, while in electric heaters, thousand-stage "triac" proportional control systems are used.
It is stated.

Heat Recovery

Plate heat exchanger with front and bypass dampers

Plate heat recovery elements are used as standard equipment in the "PHS" series hygienic package type air conditioners.
Plate heat exchangers made of pure aluminum, which only recover heat on a dry-bulb basis, are preferred, and due to the hygienic usage problems, plate heat exchangers made of paper impregnated with cellulose-based bromide solutions are used. There is a sweat pan on the exhaust air side due to the possibility of condensation.

In cases where the exchanger fresh air inlet temperature is lower than -3°C, it is recommended to use plate exchangers with automatic defrost system including bypass damper.

Package Type Hygienic Air Conditioning Units

Fans

There is no humidifier in the standard models of the "PHS" series hygienic air conditioners, but there are places where the humidifier generator and spray nozzle can be mounted. Steam humidifiers can be mounted on the devices as fully automatic proportional or two-position controlled upon customer request. Humidifier capacity can be selected as in the table and in different capacities. Two connected humidity measuring devices must be mounted on the device together with the humidifier. One of the sensors will perform the limiting function for the blowing side, the other will perform the control function for the room-related humidity.

The only external connection of the humidifiers is the 1/2" diameter cold water connection. Filtered and purified water should be preferred for the life of the humidifier generator.

Proportional controlled steam humidifier

UV(C) LAMPS

UV[C] lamps are used in "PHS+plus" series package type hygienic units. A sufficient number of UV[C] lamps are mounted in the plenum cell placed between the cooling coil and the droplet eliminator. In this way, the reproduction of microorganisms on the coil surface is prevented. As a result of the clean coil, approximately 15% energy saving is achieved and clean air-conditioned air delivery is possible.

Automatic Control Equipment - 1

Programmable control panels are used in the automatic control of the "PHS" series package type hygienic air conditioners. The control panels are one of the most advanced automatic control systems of their kind, consisting of a 16-bit microprocessor, "flash" memory, RAM, capable of giving messages in various languages including Turkish, and capable of communicating directly with widely used communication standards or via "gateways" such as Modbus, BACnet, METASYS, DLL for Windows, TCP/IP, SNMP, Lonworks, TREND, Konnex.

Control panels are the standard control equipment of "PHS" series devices. This panel has 18 "D1", 18 "Do", 10 "Al" and 6 "AO" signal input and output and is programmed for the following operations.

Automatic Control Equipment - 1

01- 5 level filter control (two position and maximum)
02 - First stage heat exchanger control (two-position or proportional)
03- 2nd stage heat exchanger control-heat pump, electric heater (proportional, 2-position, 3-stage)
04 -Cooling control (two-position and proportional)
05- Humidifier control (two-position and proportional)
06- Heat recovery element control (two positions)

Remote control panels

When a wider range automatic control system requiring more input-output is required in line with customer demands, "pC03 Large" or "pCO2 Extra Large" panels are used depending on the number of input-outputs.

In addition to control panels, it is also possible to integrate remote control devices with displays into the panel in line with customer demand.
The indicator control devices used for this purpose can be moved to a desired location outside the main device, for example, to the operating room, and the necessary settings can be made from there. The system diagram can be programmed on the screen of this device and any control and/or process changes can be made thanks to the touch screen.

Capacity Table - 1

RATED CAPACITIES

MODEL	PHS-24	PHS-36	PHS-48	PHS-60	PHS-72	PHS-84	PHS-100	PHS-120
Vantilatör ve Aspiratörler								
Fan type	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Air flow rate (m³/h)	2400	3.600	4.800	6.000	7.200	8.400	10.000	12.000
Total external pressure (Pa)	800	800	800	800	800	800	800	800
Motor Power (kW)	4,00	4,00	5,50	7,50	7,50	7,50	11,00	11,00
Aspirator type	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Air flow rate (m³/h)	2400	3.600	4.800	6.000	7.200	8.400	10.000	12.000
Total external pressure (Pa)	300	300	300	300	300	300	300	300
Motor Power (kW)	0,75	1,10	2,20	2,20	3,00	4,00	4,00	7,50

Capacity Table -2

Refrigeration Compressors and Capacities

Refrigerant	R-407C	R-407C	R-407C	R-407C	R-407C	R-407C	R-407C	R-407C
Compressor type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Number of compressors	1	1	1	1	2	2	2	2
Cooling capacity (kW)(1)	23.6	34.7	47.3	53.7	69.5	82.0	94.6	107.5
Heating capacity (kW)(1)	17.5	25.0	35.0	40.0	50.0	60.0	70.0	80.0
Compressor power (kW)	7,5	11,5	13,5	18,0	2x11,5	2x13,5	2x13,5	2x18
Comp. nominal ampere	15,5	22,4	26,9	34,0	2x22,4	2x26,9	2x26,9	2x34

Heating Types and Capacities (3)(4)

Hot water heating (kW)	Determined according to project requirement and customer demand
Electric heater (kW)	Determined according to project requirement and customer demand

Heat Recovery Exchanger

Model	ARP-H	ARP-H	ARP-H	ARP-H	ARP-H	ARP-H	ARP-H	ARP-H
Sensible heat efficiency (%)	56	56	56	58	58	60	60	60
Automatic defrosting	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)

Right to technical changes reserved.

Notes:

01 +7°C evaporation, 5°C superheating and 50°C condensation

02-0 °C evaporation, 5 °C superheating, +10 outside air and 50 °C condensation

03-Heating coils are optional.

04 - The electric heater can optionally be in duct type in heat pump models.

05-If the outside temperature is below -3 °C, it is mandatory.

Order Notation

PHS-24-SK

Type of construction

SK : Classic Split

SH : Split heat pump

M1K Monobloc classic type-1

M1H Monoblock classic type-1 (condenser with plug fan)

M2K Monoblock classic type-2 (condenser with plug fan)

M2H Monoblock heat pump type-2 (condenser with axial fan)

Rated capacity Please refer to the capacity table

Device description

packet tip hijyenik central

Dimensions - 1

Monoblock Unit
Type-1

01-Fresh air intake + damper
02 - You filter G4
03-Heat recovery exchanger
04-F6-F7 filter(optional)
05-Heating and DX cooling coils and drift eliminators
06 - Fan
07-F9 compact filter
08-Steam humidifier (optional)
09 - Fresh air outlet
10 - Return air

11- Aspirator
12-By-pass damper [optional)
13 - Exhaust
14-Electrical control and automation
15-Compressor and cooling equipment
16-Condenser air inlet
17- Air cooled condenser
18 Condenser plug fani
19-Condenser exhaust

Dimensions - 2

Split Type Heat Pump

01-Fresh air intake + damper

02 - You filter G4

03-Heat recovery exchanger

04-F6-F7 filter(optional)

05- Heating and DX cooling coils and drift eliminators

06 - Fan

07-F9 compact filter

08-Steam humidifier (optional)

09 - Fresh air outlet

10 - Return air

11- Aspirator

12-By-pass damper (optional)

13-Exhaust

14 Electrical control and automation

15- Compressor and cooling equipment

HNS Model

HNS type package units are used to remove excess moisture caused by surface evaporation in indoor swimming pools and to provide
They are special air conditioning units designed to provide optimum comfort throughout the year. Relative humidity exceeding 60% is only
It not only disrupts comfort conditions, but also causes condensation to form on walls and windows,
It also damages all the installation elements in the area. HNS series units provide the highest comfort conditions in the pool.
They are packaged type air conditioning units designed to eliminate high absolute humidity when necessary.

HNS type air conditioners have a cooling group, an electric control panel and programmable automatic control equipment.
Since they are electrically powered, they do not require anything other than being brought to the neighborhood where the necessary electrical installation is located in order to operate.

The electric motors used in the "HNS" model dehumidifiers are three-phase, squirrel cage, asynchronous type with IP54 protection class.
It is a type suitable for frequency converter applications and is supplied by the manufacturer directly coupled to the plug fan.

Frequency converters suitable for fans and motors are located in the control panel, which is an integrated part of the air conditioner.
It operates in parallel with the pre-programmed automatic control scenario.

Prosses Examples
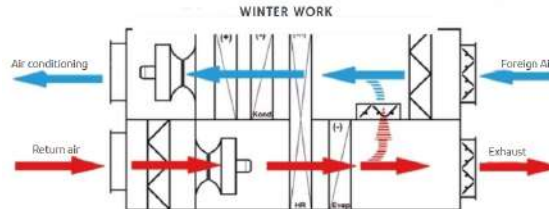
In winter operation, when the absolute humidity of the outside air is lower than the absolute humidity of the pool area, no cooling is required.

The humidity of the space is kept at the desired level by increasing and decreasing the outside air ratio without the need for a heating process. In this case, the heating heat pipe (HR) will recover a certain percentage of the heat of the exhausted air. The necessary heat addition will be provided by the heating battery.
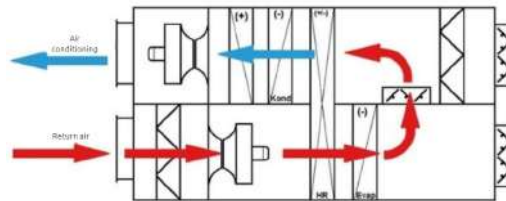
During the transition from winter to summer and/or during night operations, the indoor air is circulated and passed through the evaporator and condenser.

Absolute humidity is reduced. A similar process can also be applied during night work in the winter when there is no need for a certain amount of outside air.

In this case, the system operates with 100% indoor air, but no dehumidification is applied. Only a certain amount of heating is applied to prevent the space from cooling too much.
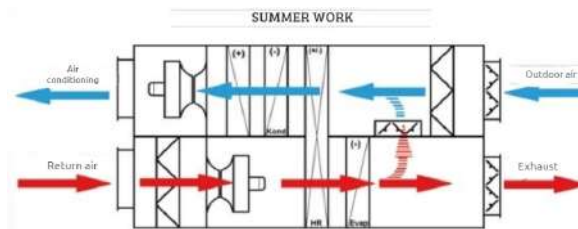
During summer operation, the recirculated air is cooled by passing through the evaporator and its absolute humidity is reduced. Then, the air heated in the condenser is delivered to the space with its relative humidity reduced to the desired level. During this process, the fresh air required for comfort is also mixed with the recirculated air.

Prosses Examples 2

PAST SEASON STUDY-2
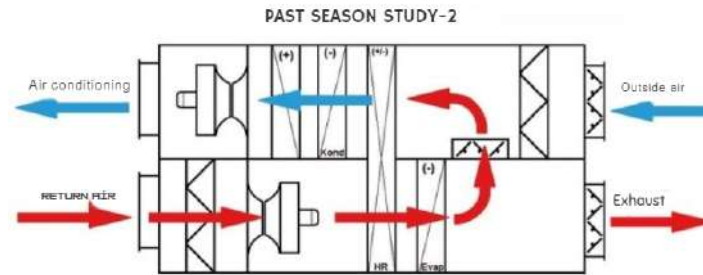
 During the transition from summer to winter [and similar winter to summer transitions], if the relative humidity and temperature of the outside air are suitable, 100% is delivered to the neighborhood. If necessary, the temperature of the space is provided by heating or cooling batteries.

In the cabin construction of all HNS series dehumidifiers, as in SKS type air handling units, specially drawn aluminum profiles and double-walled 55 mm thick panels are used. The outer surfaces of the panels are made of oven-painted galvanized sheet metal, while the inner surfaces are made of hot-dip galvanized sheet metal. The panels are connected to the profiles with special self-tapping screws, and neoprene sealing gaskets are placed between the panel and the profile.

You can check and maintain the elements such as filters, heating and cooling batteries, heat pipes and fans on the cabin.

Hinged doors are used to ensure visual control of the fans, and observation glasses are used to ensure visual control of the fans. Depending on customer demand or the size of the device, the device can be made in multiple parts.

Depending on customer demand or size. the device can be made in multiple pieces.

Automatic Control Equipment

Programmable control panels are used in the automatic control of "HNS" series dehumidifiers. Control panels are one of the most advanced automatic control systems of their kind, consisting of a 16-bit microprocessor, "flash" memory, RAM, capable of giving messages in various languages including Turkish, and capable of communicating with widely used communication standards directly or through "gateways" such as Modbus, BACnet, METASYS, DLL for Windows, TCP/IP, SNMP, Lonworks, TREND, Konnex.

Control panels have sufficient number of "DI", "DO", "AI", and "AOI" signal inputs and outputs required by the process and are programmed for the following operations.

01- Measurement and control of space temperature
02 - Measuring outside air temperature
03-Measurement of external absolute humidity
04 - Measurement and control of relative humidity
05-Automatic summer-winter changeover depending on indoor and outdoor temperature
06-Controlling the relative and absolute humidity levels of indoor and outdoor air and selecting and implementing the necessary dehumidification control process.
07- Supply and control of the desired amount of fresh air

In addition to control panels, remote control panels can also be added to the system in line with customer demands. The system flow diagram is monitored on the monitors used for this purpose, and necessary setting changes can be made by touching the symbols.

Programmable control panel used in HNS series switchboards

High efficiency EC fans are used in HNS model dehumidifiers. EC fans are directly coupled to electric motors with suitable power and their flow rates are adjusted with frequency converters. There are ports on the suction funnel of the fans used for flow rate measurement. The differential pressure measurement made on these ports is converted to flow rate in DDC control panels and thus the fan flow rate can be controlled in parallel with the pre-loaded program.

Dimensions

Device Type	Dimensions (mm)						
	L	H	W	H1	H2	CxD	AxB
HNS-025	3430	1740	980	830	830	900X300	900X300
HNS-040	3430	1740	1170	830	830	900X300	900X300
HNS-060	3690	2040	1280	980	980	900X600	900X600
HNS-080	3880	2040	1620	980	980	1200X600	1200X600
HNS-100	4070	2420	1620	1170	1170	1200X600	1200X600
HNS-120	4030	2530	1620	1170	1280	1200X750	1200X750
HNS-140	4030	2530	1770	1170	1280	1200X900	1200X900
HNS-160	4220	2530	2220	1170	1280	1540X750	1540X900
HNS-180	4220	2530	2220	1170	1280	1540X900	1540X900
HNS-200	4260	2530	2520	1170	1280	1540X1050	1540X1050
HNS-220	4260	2530	2520	1170	1280	1840X900	1840X1050
HNS-240	4410	2530	2860	1170	1280	1840X1050	1840X1050
HNS-260	4410	2530	2860	1170	1280	1840X1200	1840X1200

01 - Fan

02 - Aspirator

05 - Evaporator

06 - Condenser
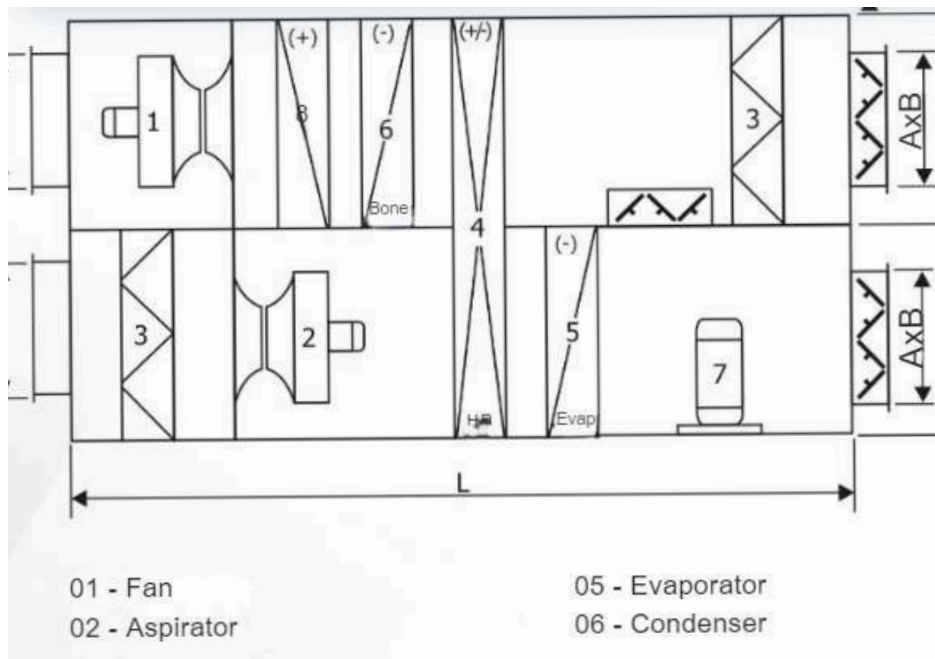
Capacity Table

	Units	MODEL						
		HNS-025	HNS-040	HNS-060	HNS-080	HNS-100	HNS-120	HNS-140
Pool surface (1)	m²	55	88	132	176	220	264	308
Not an apple (1)	kg/h	15	24	36	48	60	75	84
Fan								
Types		Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Debi	m³/h	2500	4000	6000	8000	10000	12000	14000
The Power	kW	1,5	2,2	3	5,5	5,5	7,5	7,5
External pressure	Well	750	750	600	600	500	500	500
Aspirator								
Types		Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Debi	m³/h	2500	4000	6000	8000	10000	12000	14000
The Power	kW	1,1	2,2	3	5,5	5,5	7,5	7,5
External pressure	Well	750	750	600	600	500	500	500
Cooling Cap. (2)	kW	18	32	45	68	73	85	99
Heating Cap. (3)	kW	27	51	75	86	121	142	164
Heating Cap. (4)	kW	24,4	40	58	84	94	110	128
Compressor								
Types		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
The Power	kW	5,9	9,2	13,8	18,4	20,6	27,6	27,6
Heat Recovery	kW	8	12,8	19,2	25,6	32	38,4	44,8

	Units	MODEL					
		HNS-160	HNS-180	HNS-200	HNS-220	HNS-240	HNS-260
Pool surface (1)	m²	352	396	440	484	528	572
Not an apple (1)	kg/h	96	108	120	135	150	165
Fan							
Types		Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Debi	m³/h	16000	18000	20000	22000	24000	26000
The Power	kW	7,5	10	11,2	12	13	14,5
External pressure	Well	500	500	500	500	500	500
Aspirator							
Types		Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan	Plug-fan
Debi	m³/h	16000	18000	20000	22000	24000	26000
The Power	kW	7,5	10	11,2	12	13	14,5
External pressure	Well	500	500	500	500	500	500
Cooling Cap. (2)	kW	113	140	150	157	174	210
Heating Cap. (3)	kW	201	240	261	277	310	325
Heating Cap. (4)	kW	146	180	195	202	223	272
Compressor							
Types		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
The Power	kW	36,8	40,6	45,3	49,8	54,3	58,6
Heat Recovery	kW	51,2	57,6	64	70,4	76,8	83,2

1) Calculated according to VDI 2089. For calculation according to ASHRAE, please contact the head office.

2) Space conditions are based on 30 °C DB, 60% rH and +7 °C evaporation.

3) 80/60 C hot water is based on 0 ° C outdoor weather conditions. 4) R407C is the condenser capacity based on 54 ° C condensation temperature.

Filters

In HNS series devices, G4 class panel filters are used as standard in process and reactive air inlets.

Panel filters: In standard application, panel filters in G4 class are produced in "V" format. Sliding on the slides.
The filters placed can be replaced via the openable side cover.

HNS-040-EH5,5-RC

— Touch remote control panel

— Additional electric heater, 5.5kw

— Rated flow rate

— Swimming pool air conditioning and dehumidification unit
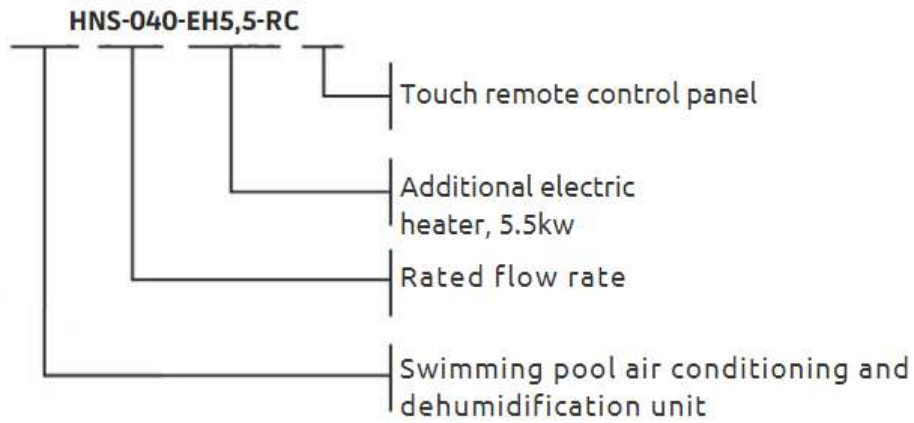
Upright Type Packaged Hygienic Air Conditioners

DHS Model

"DHS" model vertical type hygienic air handling units are especially suitable for operating rooms, delivery rooms, intensive care rooms, electronics and optical industries that require high indoor air quality (IAQ) and a particle-free environment, in accordance with US Federal Standard 209E, EN ISO
They are packaged air conditioners designed and manufactured to meet the needs of spaces classified according to 14644re or German VDI 2803/1.

"DHS" model vertical type hygienic air handling units occupy much less space than their counterparts and offer a more economical solution. DHS series devices are designed to meet all climatological needs of operating rooms and similar clean rooms and to fulfill the following functions and have a wide range of selection. We can list the standard and optional operational features of DHS, an independent packaged air conditioning unit that includes all systems, as follows:

a - High efficiency filtration of air-conditioned air,
b- Control of room temperature throughout the year; control of relative humidity if desired,
c- Depending on customer demand, 100% fresh air is required when operating rooms are in use and 50% when not in use.
fulfillment of their obligations.
d- Extremely low noise level and vibration-free operation e- Remote control via touch screen by authorized healthcare personnel f- Optional "heat pump" application on devices.
g- If heat pump is not desired, independent "DX" cooling, hot water or electric heating
h- Automatic control system of ventilation/aspiration flow rates to provide the desired positive pressure in air-conditioned spaces.
adjustment and control.

DHS series vertical package hygienic air conditioning units can be connected to a central cooling cycle or, if desired, can be applied with their own independent and "split" outdoor unit. In case of customer request, an outdoor unit compatible with the DHS unit can be provided.

Upright Type Packaged Hygienic Air Conditioners

Cabin

Specially extruded aluminum profiles and double-walled rockwool filled, 55 mm thick panels are used in the cabin construction of all DHS series upright packaged air conditioners. The outer surfaces of the panels are made of oven-painted galvanized sheet metal, and the inner surfaces are made of AISI 1316 quality stainless steel sheet metal. The panels are mounted to the profiles by means of self-tapping screws, and liquid gasket is used to ensure sealing between the panel and the profile. Optionally, tight-fitting panels with frame gaskets can be used.

Hinged doors are provided to control and maintain elements such as coarse filters, fine filters, fans and aspirators on the cabin, and observation windows are provided to visually inspect heaters/coolers, humidifiers, heat recovery devices and fans.
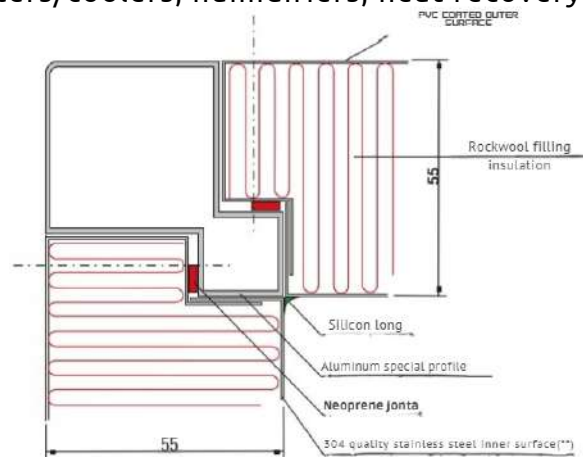
High efficiency "plug" fans are used in DHS model hygienic air conditioners. Plug fans are directly coupled to electric motors with suitable power and their flow rates are adjusted with frequency converters. There are ports on the suction funnel of the fans used for flow rate measurement. The differential pressure measurement made on these ports is converted to flow rate in DDC control panels and thus the fan flow rate is controlled in parallel wi
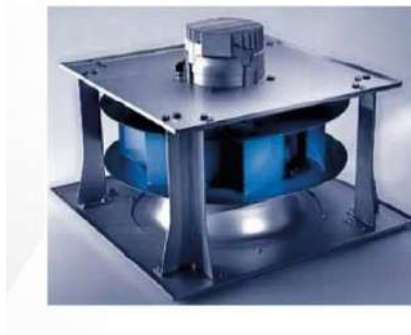
Upright Type Packaged Hygienic Air Conditioners

Electric Motors

The electric motors used in the "DHS" model hygienic air conditioners are three-phase, squirrel cage, asynchronous type with IP54 protection class, suitable for frequency converter applications and are supplied by the manufacturer directly coupled to the plug fan.
Frequency converters suitable for fans and motors are located in the control panel, which is an integrated part of the air conditioner, and operate in parallel with the pre-programmed automatic control scenario.

Filters

Filter placements and filter selections are made in accordance with DIN 1946-4. According to this standard, coarse filters are placed on the air inlet side of the device, and fine modular compact filters are placed on the discharge side of the fan, in other words, on the high pressure side.
Panel Filters: Panel filters in the G4 class are produced in the "V" format. The filters, which are placed on the slides, can be replaced using the openable side cover.
Compact Filters: As filter class F7-F9 quality, modular compact filters produced by a well-known and certified manufacturer are used. Compact filters are mounted on special panels with clips.

Humidifiers -1

The standard models of the "PHS" series hygienic air conditioners include a humidifier, but there are places where the humidifier generator and spray nozzle can be mounted. Steam humidifiers can be installed on the devices as fully automatic proportional or two-position controlled upon customer request. Humidifier capacity is as in the capacity table and can be used in different capacities.
It can be selected on the ground. Two relative humidity measuring devices must be installed on the device along with the humidifier. One of the sensors will perform the limiting function for the blowing side, the other will perform the control function of the room humidity.

The only external connection of the humidifiers is the 1/2" diameter cold water connection. Filtered and purified water should be preferred for the life of the humidifier generator.

Humidifiers

Programmable control panels are used in the automatic control of "DHS" series package type hygienic air conditioners. Control panels are one of the most advanced automatic control systems of their kind, consisting of 16-bit microprocessor, "flash" memory, RAM, capable of giving messages in various languages including Turkish, and communicating directly with widely used communication standards or via "gateways" such as Modbus, BACnet, METASYS, DLL for Windows, TCP/IP, SNMP, Lonworks, TREND, Konnex. The panels are programmed for the following operations.

01-1st stage heat exchanger control-heating or cooling coil (two-position or proportional)
02-2nd stage heat exchanger control-heat pump, electric heater (proportional, 2-position, 3-stage)]
03 Humidifier control
04-Fan and aspirator proportional flow control
05 - Freeze alarm
06- Fan failure alarm
07-Aspirator fault alarm
08 - Low room temperature alarm

In addition to control panels, it is also possible to integrate remote control devices with screens into the system in line with customer demand.
This way, the functions on the control panel can be moved to a desired location outside the device, such as the operating room, and the necessary settings can be made from there.

Capacity

MODEL	DHS-024L	DHS-024H	DHS-036L	DHS-036H	DHS-048L	DHS-048H	DHS-072L	DHS-072H	DHS-096L	DHS-096H	DHS-120L	DHS-120H
Fans and Aspirators												
Fan type	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan
Air flow rate (m³/h)	2400	2400	3600	3600	4800	4800	7200	7200	9600	9600	12000	12000
Total external pressure (Pa)	800	800	800	800	800	800	800	800	800	800	800	800
Electric motor (kW)	2.2	2.2	3.0	3.0	3.0	3.0	4.0	4.0	7.5	7.5	7.5	7.5
Aspirator type	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan	plug fan
Air flow rate (m³/h)	2400	2400	3600	3600	4800	4800	7200	7200	9600	9600	12000	12000
Total external pressure (Pa)	300	300	300	300	300	300	300	300	300	300	300	300
Electric motor (kW)	1.1	1.1	1.1	1.1	1,1	1,1	2.2	2.2	3.0	3.0	4.0	4.0
Cooling Capacities and Compressors (1)												
coolant flows	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a	R410a
Compressor type	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll	scroll
Cooling capacity (Kw)(2)	18.60	27.60	27.90	41,40	37.20	55,20	55.80	82.50	74.40	93.00	110.40	138.00
Heating capacity (Kw)(3)	17.70	26,20	26.50	39,30	35,30	52.40	53.00	78.40	70,70	88.30	104.90	131.10
Generator Type Steam Humidifier (4)												
Humidification container (kg/h)	5	9	9	18	18	30	30	45	45	60	60	2x45
Heater Option (Hot water or electric)												
Determined according to project requirements and customer demands												
Filters												
Tier 1	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4	G4
Tier 2	It is determined according to project requirements and customer demands.											
final stage	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9	F7/F9

Dimensions

Model	W	H	L(1)	L(2)	AxB	CxD
DHS-024L	960	1940	1300	1940	400x400	400x500
DHS-024H	960	1940	1300	1940	400x400	400x500
DHS-036L	960	2090	1450	2090	500x500	500x500
DHS-036H	960	2090	1450	2090	500x500	500x500
DHS-048L	960	2090	1900	2540	600x600	600x700
DHS-048H	960	2090	1900	2540	600x600	600x700
DHS-072L	960	2090	2200	2840	600x600	600x700
DHS-072H	960	2090	2200	2840	600x600	600x700
DHS-096L	1260	2090	2200	2840	800x800	600x900
DHS-096H	1260	2090	2200	2840	800x800	600x900
DHS-120L	1260	2240	2200	2840	800x800	600x900
DHS-120H	1260	2240	2200	2840	800x800	600x900

DX Cooling and/or Hot Water Heating Model
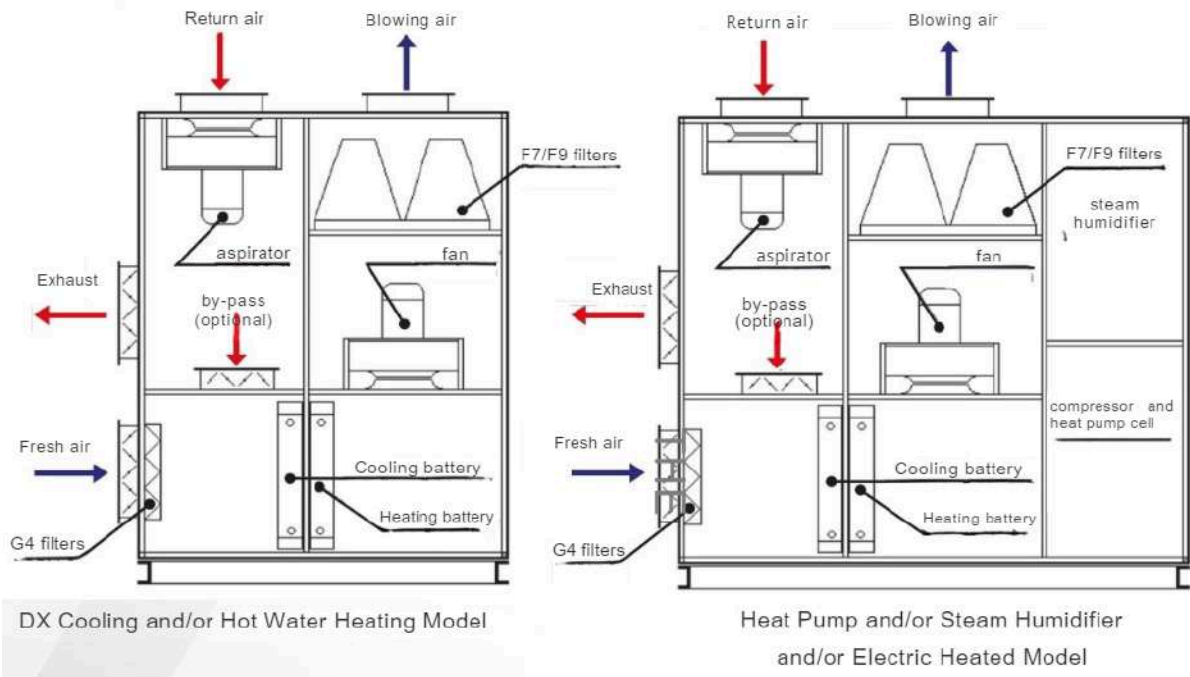
Heat Pump and/or Steam Humidifier and/or Electric Heated Model

Dimensions
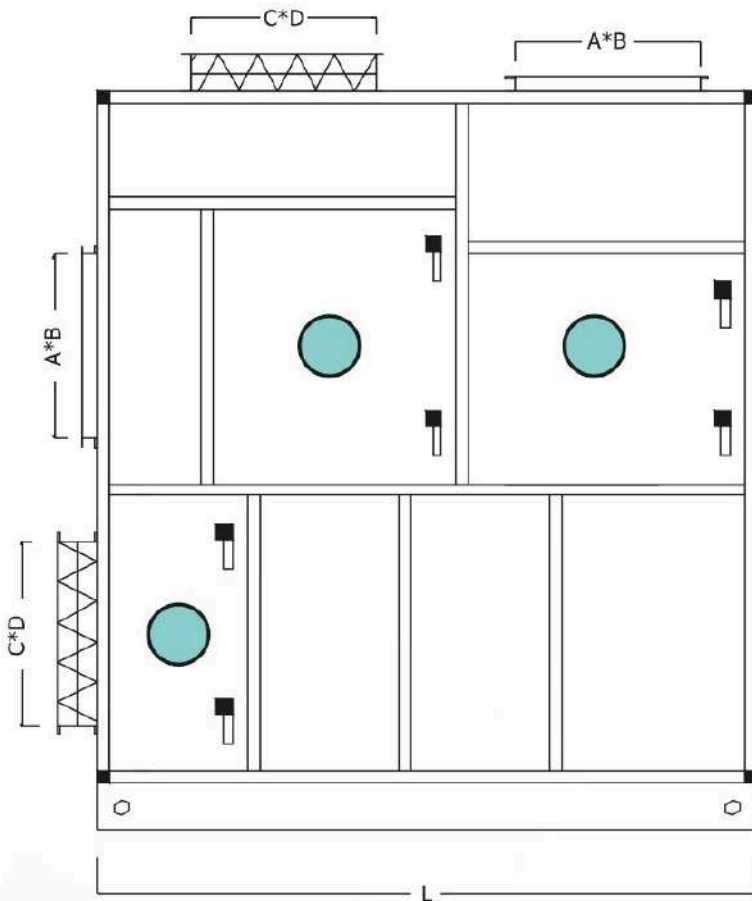
Heat Pump and/or Steam Humidifier
and/or Electric Heated Model
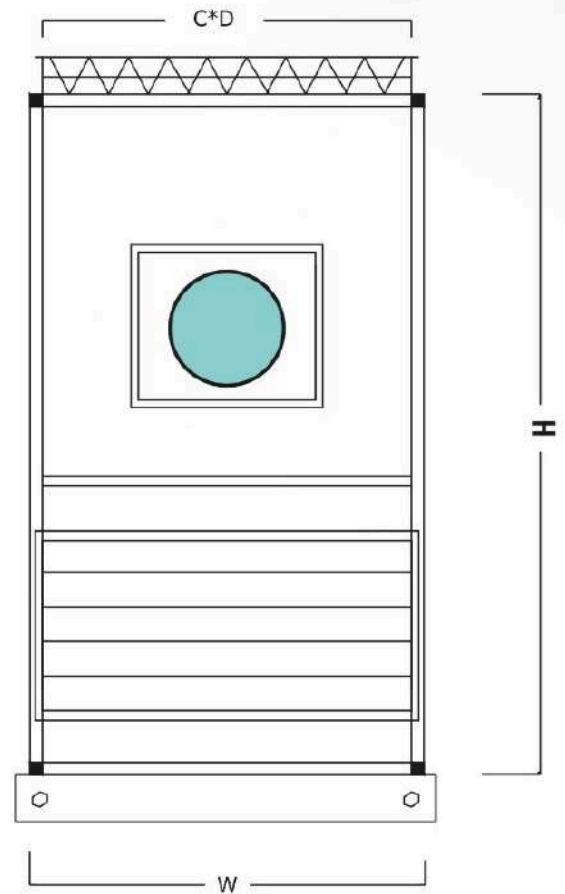
DX Cooling and/or Hot
Water Heating Model

Order Notation


```
DHS-024-L
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L: Low cooling capacity, 50% air mixing model

H: High cooling capacity 100% external air model

Rated capacity
Nominal air flow rate (Please refer to capacity table)

Device description
packet tip hijyenik central
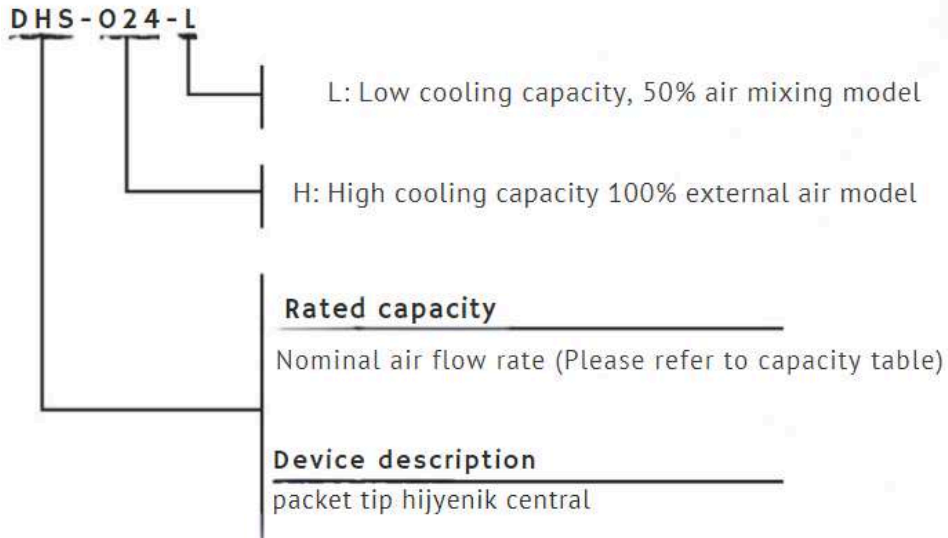
It is important:

01 - There is no steam humidifier in standard units. If requested, it must be specified with the desired humidification capacity at the time of order.
02 - There is no dehumidification function in standard units. If requested, it must be specified.
03- If there is a request other than the nominal capacity, it must be reported.
04 - Heat pump is an option. It must be reported in the order.
05- Features related to the automatic control scenario should be reported if requested.

Kitchen Exhaust Fans

- Body Material: st37 black sheet metal
- Propeller St37 Black Sheet Metal
- Engine IE2
- Protection Class: IP55
- Operating Temperature: 90°C
- Direct Coupled Motor
- High Efficiency Low Noise Fans

Areas of Use:

It is used for exhausting oily and malodorous air and exhaust fumes from the indoor environment. For example, it is widely used in restaurants, bars, cafes, dining halls, kitchens, etc. It is one of our most preferred products thanks to its high performance and energy efficiency.

Plug Fans Capacity Values

Type	Flow (m³/h)	Pressure (Pa)	En. Power (kw)	Frequency (Hz)	Voltage (V)	Revolutions (rpm)
SZR-HPF-30	2700	200	0,37	50	380	1450
SZR-HPF-35	3500	250	0,55	50	380	1450
SZR-HPF-40	5000	300	0,75	50	380	1450
SZR-HPF-45	6500	400	1,1	50	380	1450
SZR-HPF-50	9000	600	2,2	50	380	1450
SZR-HPF-55	12500	600	4	50	380	1450
SZR-HPF-60	15000	800	5,5	50	380	1450
SZR-HPF-65	18000	1200	7,5	50	380	1450
SZR-HPF-70	22000	1400	11	50	380	1450
SZR-HPF-75	26000	1600	15	50	380	1450
SZR-HPF-80	32000	1800	18,5	50	380	1450

Contact Us for Production in Different Variations for Your Needs

R (RIGHT) RIGHT DIRECTION SNAIL POSTURES

R-90   R-270   R-360

L (LEFT) LEFT DIRECTION SNAIL POSTURES

L-90   L-270   L-360

Areas of Use:

Used for suction of clean or dusty air. For example, it is used as a broadcast in barns, mines, tunnels, steam boilers, silos, etc. It is one of our most preferred products thanks to its high performance and energy efficiency.

- Body Material: st37 sheet metal
- Propeller: st37 sheet metal
- Engine IE2
- Protection Class: IP55
- Operating Temperature: 90°C
- Direct Coupled Motor
- High Efficiency Low Noise Fans

Low Pressure Fans Capacity Ratings

Type	Flow (m³/h)	Pressure (Pa)	En. Power (kw)	Frequency (Hz)	Voltage (V)	Revolutions (rpm)
SZR-AB-30	2700	200	0,37	50	380	1450
SZR-AB-35	3500	250	0,55	50	380	1450
SZR-AB-40	5000	300	1,1	50	380	1450
SZR-AB-45	7000	300	1,5	50	380	1450
SZR-AB-50	9000	400	2,2	50	380	1450
SZR-AB-55	12500	450	4	50	380	1450
SZR-AB-60	16000	500	5,5	50	380	1450
SZR-AB-65	20000	500	7,5	50	380	1450
SZR-AB-70	25000	600	11	50	380	1450
SZR-AB-75	32000	650	15	50	380	1450
SZR-AB-80	37500	700	18,5	50	380	1450

Contact Us for Production in Different Variations for Your Needs
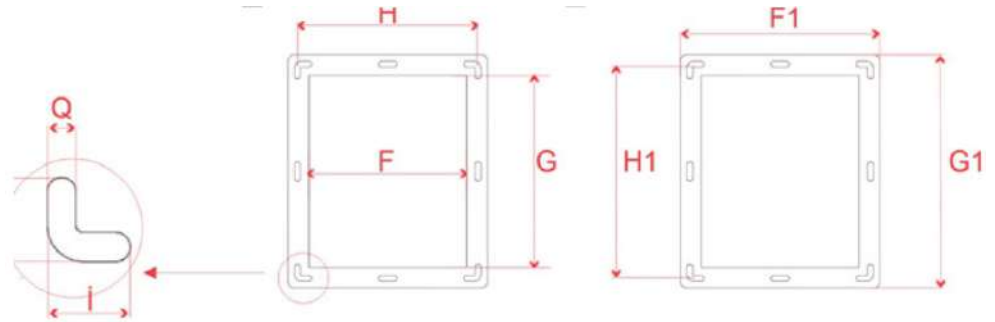
Low Pressure Fans Body Dimensions

Type	A	A1	B	B1	C	D	E
SZR-AB-30	558	522	432	488	479	Ø200	200
SZR-AB-35	607	584	484	534	548	Ø250	250
SZR-AB-40	668	637	534	587	586	Ø295	270
SZR-AB-45	712	685	584	639	601	Ø315	285
SZR-AB-50	756	734	634	684	669	Ø350	300
SZR-AB-55	806	784	684	734	740	Ø400	350
SZR-AB-60	855	834	734	783	795	Ø450	370
SZR-AB-65	1035	1000	892	927	888	Ø600	385
SZR-AB-70	1198	1053	932	973	970	Ø600	400
SZR-AB-75	1350	1148	998	1045	1030	Ø650	400
SZR-AB-80	1398	1158	1042	1092	1050	Ø700	420

Low Pressure Fans Blowing Nozzle Dimensions

Type	F	G	H	F1	G1	H1	I	i	Q
SZR-AB-30	200	200	236	266	266	236	27,5	27,5	9,5
SZR-AB-35	250	257	286	316	323	293	27,5	27,5	9,5
SZR-AB-40	270	282	306	336	348	318	27,5	27,5	9,5
SZR-AB-45	285	312	321	351	378	348	27,5	27,5	9,5
SZR-AB-50	300	331	336	366	397	367	27,5	27,5	9,5
SZR-AB-55	350	356	386	416	422	392	27,5	27,5	9,5
SZR-AB-60	370	380	406	436	446	416	27,5	27,5	9,5
SZR-AB-65	385	440	426	461	516	481	27,5	27,5	9,5
SZR-AB-70	400	461	441	476	537	502	27,5	27,5	9,5
SZR-AB-75	400	500	446	486	586	546	27,5	27,5	9,5
SZR-AB-80	420	520	466	506	606	566	27,5	27,5	9,5

Radial Fans

- Body Material: st37 sheet metal
- Propeller: st37 sheet metal
- Engine IE2
- Protection Class: IP55
- Operating Temperature: 90°C
- Direct Coupled Motor
- High Efficiency Low Noise Fans

Areas of Use:

Used for suction of clean or dusty air. For example, it is used as a broadcast in barns, mines, tunnels, steam boilers, silos, etc. It is one of our most preferred products thanks to its high performance and energy efficiency.

Medium Pressure Fans Capacity Ratings

Type	Flow (m³/h)	Pressure (Pa)	En. Power (kw)	Frequency (Hz)	Voltage (V)	Revolutions (rpm)
SZR-OB-25	2500	500	0,75	50	380	2850
SZR-OB-30	3500	800	1,11,1	50	380	2850
SZR-OB-35	5000	1000	1,5	50	380	2850
SZR-OB-37	6000	1200	2,2	50	380	2850
SZR-OB-40-3	8000	1300	3	50	380	2850
SZR-OB-40-4	10000	1350	4	50	380	2850
SZR-OB-45	12000	1400	5,5	50	380	2850
SZR-OB-50	14000	1500	7,5	50	380	2850
SZR-OB-52	17000	1600	11	50	380	2850
SZR-OB-55	20000	1700	15	50	380	2850
SZR-OB-60	24000	2000	18,5	50	380	2850
SZR-OB-62	28000	2100	22	50	380	2850
SZR-OB-65	32000	2200	30	50	380	2850

Contact Us for Production in Different Variations for Your Needs

Radial Fans
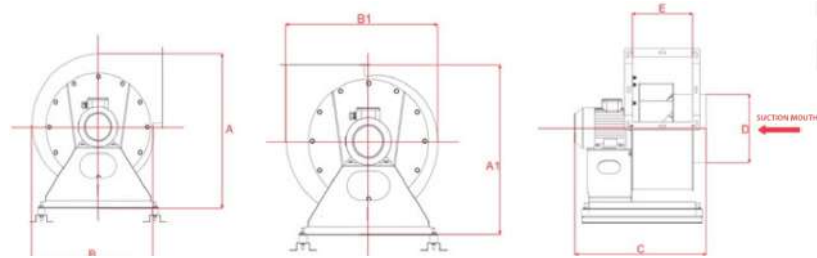
Medium Pressure Fans Body Dimensions

Type	A	A1	B	B1	C	D	E
SZR-OB-25	521	516	431	487	438	Ø135	135
SZR-OB-30	576	545	456	503	452	Ø140	140
SZR-OB-35	608	562	478	531	467	Ø145	150
SZR-OB-37	638	582	503	558	492	Ø150	150
SZR-OB-40-3	665	647	526	583	568	Ø350	200
SZR-OB-40-4	665	647	526	583	590	Ø220	200
SZR-OB-45	818	773	546	728	650	Ø250	225
SZR-OB-50	838	783	696	773	725	Ø350	300
SZR-OB-52							
SZR-OB-55							
SZR-OB-60			Contact Us For Dimensions				
SZR-OB-62							
SZR-OB-65							

Medium Pressure Fans Blowing Mouth Dimensions

Type	F	G	H	F1	G1	H1	I	i	Q
SZR-OB-25	135	135	171	201	201	171	27,5	27,5	9,5
SZR-OB-30	140	140	176	206	206	176	27,5	27,5	9,5
SZR-OB-35	150	150	186	216	216	186	27,5	27,5	9,5
SZR-OB-37	150	150	186	216	216	186	27,5	27,5	9,5
SZR-OB-40-3	200	280	236	266	346	316	27,5	27,5	9,5
SZR-OB-40-4	200	280	236	266	346	316	27,5	27,5	9,5
SZR-OB-45	225	330	361	291	396	366	27,5	27,5	9,5
SZR-OB-50	300	350	336	366	416	386	27,5	27,5	9,5
SZR-OB-52									
SZR-OB-55									
SZR-OB-60			Contact Us For Dimensions						
SZR-OB-62									
SZR-OB-65									
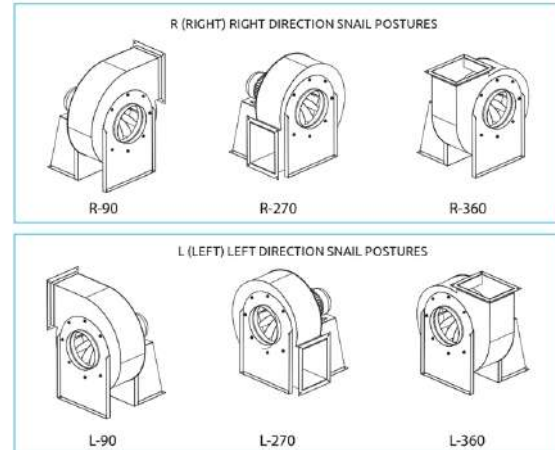
R (RIGHT) RIGHT DIRECTION SNAIL POSTURES

R-90   R-270   R-360

L (LEFT) LEFT DIRECTION SNAIL POSTURES

L-90   L-270   L-360

Areas of Use:

Used for suction of clean or dusty air. For example, it is used as a broadcast in barns, mines, tunnels, steam boilers, silos, etc. It is one of our most preferred products thanks to its high performance and energy efficiency.

- Body Material: st37 sheet metal
- Propeller: st37 sheet metal
- Engine IE2
- Protection Class: IP55
- Operating Temperature: 90°C
- Direct Coupled Motor
- High Efficiency Low Noise Fans

Medium Pressure Fans Capacity Values

Type	Flow (m³/h)	Pressure (Pa)	En. Power (kw)	Frequency (Hz)	Voltage (V)	Revolutions (rpm)
SZR-YB-30	500	2500	0,55	50	380	2850
SZR-YB-35	600	3100	0,75	50	380	2850
SZR-YB-40	650	4000	1,1	50	380	2850
SZR-YB-45	850	6000	2,2	50	380	2850
SZR-YB-50	1100	7200	3	50	380	2850
SZR-YB-55	1300	8000	4	50	380	2850
SZR-YB-60	1800	9000	5,5	50	380	2850
SZR-YB-65	2000	10000	7,5	50	380	2850
SZR-YB-70	2300	11000	11	50	380	2850
SZR-YB-75	2600	12000	15	50	380	2850

Contact Us for Production in Different Variations for Your Needs
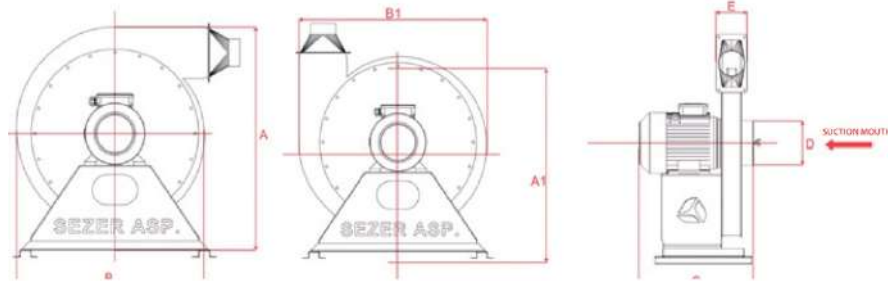
High Pressure Fans Body Dimensions

Type	A	A1	B	B1	C	D	E
SZR-YB-30	612	581	498	571	316	Ø140	70
SZR-YB-35	658	599	514	584	327	Ø145	70
SZR-YB-40	700	630	548	609	358	Ø150	70
SZR-YB-45	725	645	601	643	411	Ø155	70
SZR-YB-50	757	672	640	682	439	Ø160	70
SZR-YB-55	827	784	690	737	463	Ø165	70
SZR-YB-60	890	843	754	809	520	Ø175	70
SZR-YB-65	940	893	804	854	525	Ø190	70
SZR-YB-70							
SZR-YB-75			Contact Us For Dimensions				

High Pressure Fans Blowing Port Dimensions

Type	F	G	H	F1	G1	H1	I	i	Q
SZR-YB-30	200	200	236	266	266	236	27,5	27,5	9,5
SZR-YB-35	250	257	286	316	323	293	27,5	27,5	9,5
SZR-YB-40	270	282	306	336	348	318	27,5	27,5	9,5
SZR-YB-45	285	312	321	351	378	348	27,5	27,5	9,5
SZR-YB-50	300	331	336	366	397	367	27,5	27,5	9,5
SZR-YB-55	350	356	386	416	422	392	27,5	27,5	9,5
SZR-YB-60	370	380	406	438	446	416	27,5	27,5	9,5
SZR-YB-65	385	440	426	461	516	481	27,5	27,5	9,5
SZR-YB-70	400	461	441	476	537	502	27,5	27,5	9,5
SZR-YB-75	400	500	446	486	586	546	27,5	27,5	9,5
SZR-YB-80	420	520	466	505	606	566	27,5	27,5	9,5

R (RIGHT) RIGHT DIRECTION SNAIL POSTURES

R-90   R-270   R-360

L (LEFT) LEFT DIRECTION SNAIL POSTURES

L-90   L-270   L-360
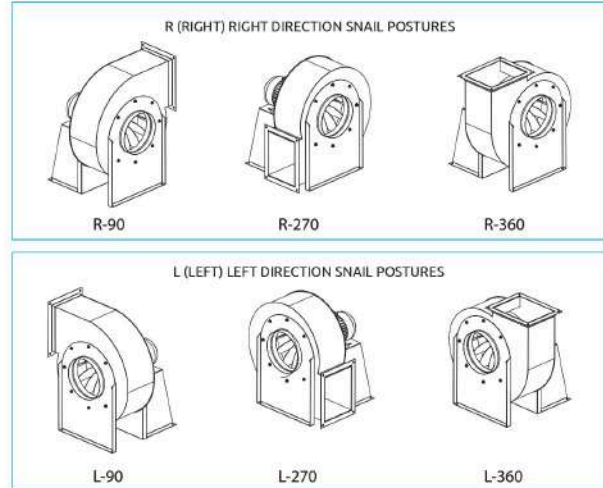
Areas of Use:

This series fans are used for suction of dust, smoke granules, fine sawdust and coarse wood shavings and similar materials except fibrous materials. It is used in carpentry shops, mechanical industry, cement factories, ceramic factories, tanneries, foundries, mills, all applications requiring the transportation of dusty air in industry.

- Belt Pulley FansBody Material: st37 sheet metal
- Propeller: st37 sheet metal
- Engine IE2
- Protection Class: IP55
- Operating Temp: 120°C
- Motor with Belt and Pulley Connection High Efficiency Low Noise Fans

Belt Pulley Fans Capacity Values

Type	Flow (m³/h)	Pressure (Pa)	En. Power (kw)	Frequency (Hz)	Voltage (V)	Revolutions (rpm)
SZR-KK-30	2000	300	0,55	50	380	1450
SZR-KK-35	3500	400	0,75	50	380	1450
SZR-KK-40	4500	430	1,1	50	380	1450
SZR-KK-45	6500	450	1,5	50	380	1450
SZR-KK-50	8000	500	2,2	50	380	1450
SZR-KK-55	12500	650	4	50	380	1450
SZR-KK-60	16000	800	5,5	50	380	1450
SZR-KK-70	25000	1100	11	50	380	1450
SZR-KK-80	40000	1500	22	50	380	1450
SZR-KK-90	50000	2000	37	50	380	1450
SZR-KK-100	70000	2500	45	50	380	1450

Contact Us for Production in Different Variations for Your Needs
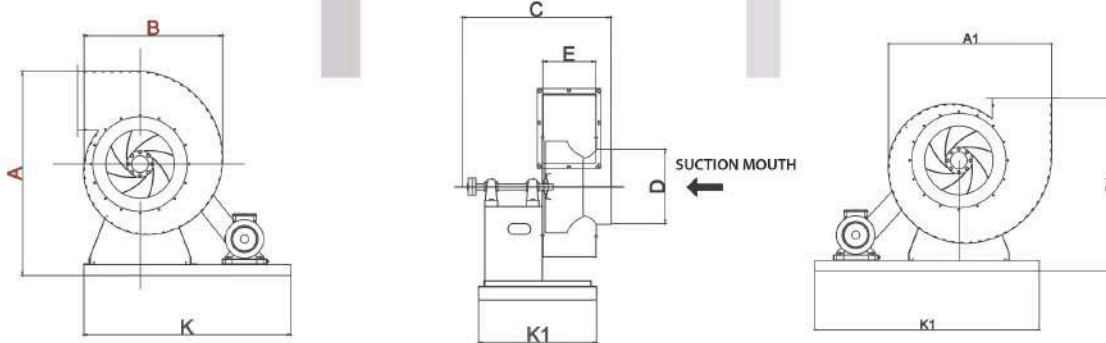
Belt Pulley Fans Body Dimensions

Model	A	A1	B	B1	C	D	E
SZR-KK-30	653	626	536	511	661	240	300
SZR-KK-35	708	667	564	551	701	250	350
SZR-KK-40	837	778	656	601	751	270	400
SZR-KK-45	933	845	701	616	766	290	450
SZR-KK-50	1030	899	775	676	826	310	500
SZR-KK-55	1150	992	864	715	865	325	560
SZR-KK-60	1288	1087	967	765	915	350	630
SZR-KK-70	1288	1090	967	805	955	395	710
SZR-KK-80	1530	1356	1165	1047	1197	439	800
SZR-KK-90	1850	1640	1340	1210	1360	492	900
SZR-KK-100	1850	1640	1340	1240	1390	548	1000

Belt Pulley Fans Blowing Port Dimensions

Model	F	G	H	F1	G1	H1	I	i	Q
SZR-KK-25	135	135	171	201	201	171	27,5	27,5	9,5
SZR-KK-30	140	140	176	206	206	176	27,5	27,5	9,5
SZR-KK-35	150	150	186	216	216	186	27,5	27,5	9,5
SZR-KK-40-3	150	150	186	216	216	186	27,5	27,5	9,5
SZR-KK-40-4	200	280	236	266	346	316	27,5	27,5	9,5
SZR-KK-45	200	280	236	266	346	316	27,5	27,5	9,5
SZR-KK-50	225	330	261	291	396	366	27,5	27,5	9,5
SZR-KK-52	300	350	336	366	416	386	27,5	27,5	9,5
SZR-KK-55									
SZR-KK-60									
SZR-KK-62									
SZR-KK-65									

Contact Us For Dimensions

Selection Report — Version Number: 20150523

No.:1	Equipment No.:
Project Name: Untitled	
Date: 2024-12-20	
Remarks:	

Input Parameters

Air Volume	4100 m3/h
Input T.P.	1000 Pa

Fan Parameters

Type	LKW280R
Air Volume	4100 m3/h
Total Pressure	1000 Pa
Static Pressure	881 Pa
Dynamic Pressure	119 Pa
Outlet Velocity	14,10 m/s
Total Efficiency	41,4 %
Fan Speed	4362 r/min
Shaft Power	2,75 kw

Motor Parameters

Motor Power/Pole	4/2
Motor Speed	2880 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	70,0 kg

Limiting Parameters

Max. Fan Speed	4400 r/min
Max. Absorbed Power	3,00 kw
Temperature(Min-Max)	-20~85 ¡æ
Max. Bearing Load	0,0 N

LKW280R

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	100	93	94	98	97	98	89	75	105
Lw(A)	74	77	85	95	97	99	90	74	102
LpA	66	69	77	87	89	91	82	66	94

Selection Report — Version Number: 20150523

No.:2	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	4700 m3/h
InputT.P.	1000 Pa

Fan Parameters

Type	LKW315R
Air Volume	4700 m3/h
Total Pressure	1000 Pa
Static Pressure	901 Pa
Dynamic Pressure	99 Pa
Outlet Velocity	12,83 m/s
Total Efficiency	44,0 %
Fan Speed	3645 r/min
Shaft Power	2,97 kw

Motor Parameters

Motor Power/Pole	4/2
Motor Speed	2880 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	72,0 kg

Limiting Parameters

Max. Fan Speed	3850 r/min
Max. Absorbed Power	3,00 kw
Temperature(Min-Max)	-20~85 jæ
Max. Bearing Load	0,0 N

LKW315R — Total Efficiency(%) / Power performance curves

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	98	92	93	96	95	95	87	76	103
Lw(A)	72	76	85	93	95	96	88	75	100
LpA	64	68	77	85	87	88	80	67	92

Dimensional drawings — dimensions: (680,0), 5,0, 34,0, 35,0, 445,0, 549,0, 430,0, 430,0, 480,0, 265,0, 50,0, 381,0, 418,0, 4,0-Ø14,0. Air flow direction.

Selection Report — Version Number: 20150523

No.:3	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	6300 m3/h
Input T.P.	1000 Pa

Fan Parameters

Type	LKW355R
Air Volume	6300 m3/h
Total Pressure	1000 Pa
Static Pressure	888 Pa
Dynamic Pressure	112 Pa
Outlet Velocity	13,63 m/s
Total Efficiency	42,5 %
Fan Speed	3341 r/min
Shaft Power	4,12 kw

Motor Parameters

Motor Power/Pole	5.5/2
Motor Speed	2900 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	101,0 kg

Limiting Parameters

Max. Fan Speed	3350 r/min
Max. Absorbed Power	5,00 kw
Temperature(Min-Max)	-20~85 jæ
Max. Bearing Load	0,0 N

LKW355R performance curves — Total Efficiency(%)

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	102	95	95	98	97	97	89	76	106
Lw(A)	75	79	87	95	97	98	90	75	102
LpA	67	71	79	87	89	90	82	67	94

Dimensional drawings with Air flow direction. Dimensions: (770,0), 6,0, 38,0, 35,0, 455,0, 563,0, 462,0, 462,0, 512,0, 281,0, 50,0, 412,0, 449,0, 4,0-Ø14,0

Selection Report   Version Number: 20150523

No.:4		Equipment No.:
Project Name: Untitled		
Date: 2024-12-20		
Remarks:		

Input Parameters

Air Volume	7700 m3/h
Input T.P.	1000 Pa

Fan Parameters

Type	LKW400R
Air Volume	7700 m3/h
Total Pressure	1000 Pa
Static Pressure	896 Pa
Dynamic Pressure	104 Pa
Outlet Velocity	13,19 m/s
Total Efficiency	43,5 %
Fan Speed	2895 r/min
Shaft Power	4,92 kw

Motor Parameters

Motor Power/Pole	7.5/2
Motor Speed	2900 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	112,0 kg

Limiting Parameters

Max. Fan Speed	2900 r/min
Max. Absorbed Power	5,00 kw
Temperature(Min-Max)	-20~85 ﾟæ
Max. Bearing Load	0,0 N

LKW400R

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	102	96	96	98	97	97	88	77	106
Lw(A)	76	79	87	95	97	98	89	76	102
LpA	68	71	79	87	89	90	81	68	94

Selection Report   Version Number: 20150523

No.:5	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters	
Air Volume	10250 m3/h
InputT.P.	1000 Pa

Fan Parameters	
Type	LKW450R
Air Volume	10250 m3/h
Total Pressure	1000 Pa
Static Pressure	884 Pa
Dynamic Pressure	116 Pa
Outlet Velocity	13,88 m/s
Total Efficiency	61,9 %
Fan Speed	2593 r/min
Shaft Power	4,60 kw

Motor Parameters	
Motor Power/Pole	5.5/2
Motor Speed	2900 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley	
Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters	
Total Weight	122,0 kg

LKW450R

Limiting Parameters	
Max. Fan Speed	2600 r/min
Max. Absorbed Power	6,00 kw
Temperature(Min-Max)	-20~85 ¡æ
Max. Bearing Load	0,0 N

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	86	92	95	96	97	95	88	79	103
Lw(A)	60	76	86	93	97	97	89	78	101
LpA	52	68	78	85	89	89	81	70	93

Selection Report — Version Number: 20150523

No.:6	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	13100 m3/h
Input T.P.	1000 Pa

Fan Parameters

Type	LKW500R
Air Volume	13100 m3/h
Total Pressure	1000 Pa
Static Pressure	881 Pa
Dynamic Pressure	119 Pa
Outlet Velocity	14,10 m/s
Total Efficiency	60,9 %
Fan Speed	2380 r/min
Shaft Power	5,98 kw

Motor Parameters

Motor Power/Pole	7.5/2
Motor Speed	2900 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	148,0 kg

Limiting Parameters

Max. Fan Speed	2400 r/min
Max. Absorbed Power	6,00 kw
Temperature(Min-Max)	-20~85 ʲæ
Max. Bearing Load	0,0 N

LKW500R — Total Efficiency(%)

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	88	94	97	98	99	97	89	80	104
Lw(A)	62	78	88	95	99	98	90	79	103
LpA	54	70	80	87	91	90	82	71	95

Selection Report — Version Number: 20150523

No.:8	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	15900 m3/h
InputT.P.	700 Pa

Fan Parameters

Type	LKW560R
Air Volume	15900 m3/h
Total Pressure	700 Pa
Static Pressure	588 Pa
Dynamic Pressure	112 Pa
Outlet Velocity	13,67 m/s
Total Efficiency	55,6 %
Fan Speed	1948 r/min
Shaft Power	5,56 kw

Motor Parameters

Motor Power/Pole	7.5/4
Motor Speed	1440 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	175,0 kg

LKW560R

Total Efficiency(%) 45 54 61 64

Limiting Parameters

Max. Fan Speed	1950 r/min
Max. Absorbed Power	6,00 kw
Temperature(Min-Max)	-20~85 jæ
Max. Bearing Load	0,0 N

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	88	94	96	98	99	97	89	80	104
Lw(A)	62	77	88	95	99	98	90	78	103
LpA	54	69	80	87	91	90	82	70	95

Air flow direction

(905,0) 9,0 53,5 50,0 380,0 380,0 914,0 407,0 63,0

688,0 688,0 751,0 612,0 652,0 6,0-Ø14,0
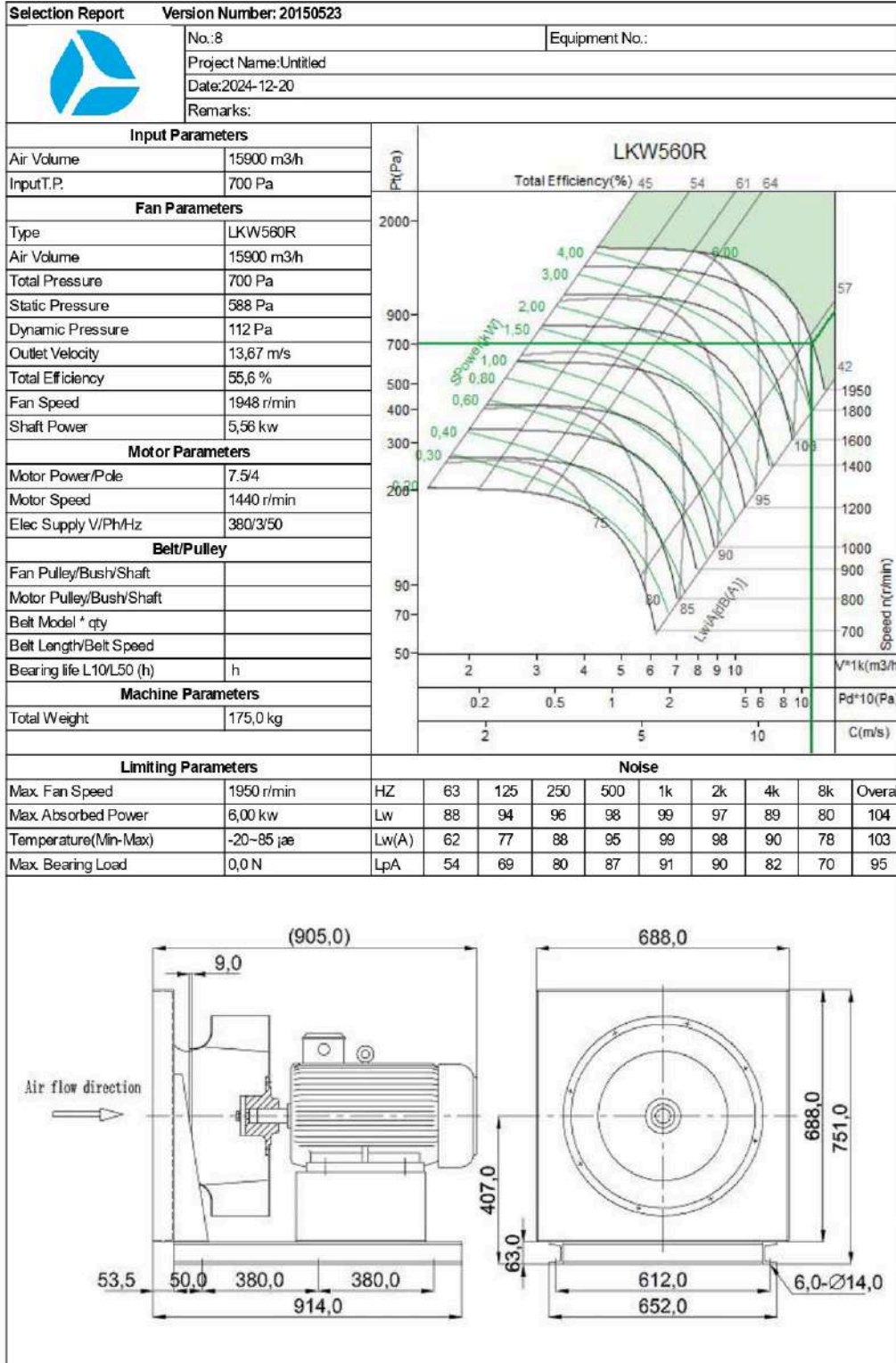
Selection Report — **Version Number: 20150523**

No.:9	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	20300 m3/h
InputT.P.	700 Pa

Fan Parameters

Type	LKW630R
Air Volume	20300 m3/h
Total Pressure	700 Pa
Static Pressure	584 Pa
Dynamic Pressure	116 Pa
Outlet Velocity	13,93 m/s
Total Efficiency	55,2 %
Fan Speed	1741 r/min
Shaft Power	7,15 kw

Motor Parameters

Motor Power/Pole	11/4
Motor Speed	1460 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	236,0 kg

Limiting Parameters

Max. Fan Speed	1750 r/min
Max. Absorbed Power	8,00 kw
Temperature(Min-Max)	-20~85 ˚
Max. Bearing Load	0,0 N

LKW630R — Total Efficiency(%)

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	90	95	98	99	100	98	90	81	106
Lw(A)	64	79	89	96	100	99	91	79	104
LpA	56	71	81	88	92	91	83	71	96

Air flow direction

(1075,0) 768,0 768,0 831,0 447,0 63,0 690,0 730,0 6,0-Ø14,0

10,0 53,5 50,0 400,0 410,0 964,0

Selection Report — Version Number: 20150523

No.:10	Equipment No.:
Project Name:Untitled	
Date:2024-12-20	
Remarks:	

Input Parameters

Air Volume	27000 m3/h
InputT.P.	700 Pa

Fan Parameters

Type	LKW710R
Air Volume	27000 m3/h
Total Pressure	700 Pa
Static Pressure	571 Pa
Dynamic Pressure	129 Pa
Outlet Velocity	14,65 m/s
Total Efficiency	54,9 %
Fan Speed	1473 r/min
Shaft Power	9,57 kw

Motor Parameters

Motor Power/Pole	15/4
Motor Speed	1460 r/min
Elec Supply V/Ph/Hz	380/3/50

Belt/Pulley

Fan Pulley/Bush/Shaft	
Motor Pulley/Bush/Shaft	
Belt Model * qty	
Belt Length/Belt Speed	
Bearing life L10/L50 (h)	h

Machine Parameters

Total Weight	296,0 kg

Limiting Parameters

Max. Fan Speed	1500 r/min
Max. Absorbed Power	12,00 kw
Temperature(Min-Max)	-20~85 ؛æ
Max. Bearing Load	0,0 N

Noise

HZ	63	125	250	500	1k	2k	4k	8k	Overall
Lw	87	90	96	97	97	99	92	83	104
Lw(A)	61	74	87	93	97	100	93	82	103
LpA	53	66	79	85	89	92	85	74	95

LKW710R — Total Efficiency(%) performance curves

Dimensional drawing — Air flow direction

YERLİ MALI BELGESİ

Belgenin Veriliş Tarihi : 28.12.2021   Belgenin Geçerlilik Tarihi : 28.12.2022   Belge No : 2021104788797

Üretici Ünvanı: SEZER ASPİRATÖR ISITMA VE SOĞUTMA SİSTEMLERİ İMALATI MAKİNA İNŞAAT TARIM HAYVANCILIK SANAYİ TİCARET LİMİTED ŞİRKETİ

İşyeri Adresi: Zafer Mah. Çiftlik Sok. No: 7 BUCA/İZMİR

Üreticinin Vergi Kimlik No: 7670630210   TC Kimlik No: MERSİS No : 0767063021000001

Telefon: 232-4598102   E-posta: muhasebe@sezeraspirator.com
Faks: Web Adresi:

Ticaret Sicil No: 1..185861   Üye Sicil No: 1720451

Ürün Adı: Hücreli Fan
Ürün Kodu (PRODCOM/GTİP): 28.25.20.70.00   /
Teknik Özellikleri(Marka Adı, Modeli, Seri Numarası, Cinsi):   HÜCRELİ FAN

Kapasite Raporunun   Tarih :08.11.2021 No : 43261 Geçerlilik Süresi :08.11.2023
Sanayi Sicil Belgesinin   Tarih : 15.04.2016 No : 688103

Yerli Katkı Oranı : % 82,33

Ürünün Teknolojik Düzeyi (düşük/orta-düşük/orta-yüksek/yüksek)(Eurostat) : orta-yüksek

Diğer bilgi ve belgeler :

İşbu belge Bilim, Sanayi ve Teknoloji Bakanlığı'nın 13/09/2014 tarih ve 29118 sayılı Resmi Gazetede yayımlanan " Yerli Malı Tebliği (SGM 2014/35) "ne istinaden ve TOBB tarafından hazırlanan " Yerli Malı Belgesinin Düzenlenmesi Uygulama Esasları " göre 28.12.2021 tarihinde düzenlenmiştir. Belgenin geçerlilik süresi veriliş tarihinden itibaren bir yıl geçerlidir.

Düzenleyen Oda/Borsa   Onaylayan
İZMİR TİCARET ODASI   TÜLAY TEKER
                                              Müdür

YERLİ MALI BELGESİ

Belgenin Veriliş Tarihi : 28.12.2021   Belgenin Geçerlilik Tarihi : 28.12.2022   Belge No : 2021104788795

Üretici Ünvanı: SEZER ASPİRATÖR ISITMA VE SOĞUTMA SİSTEMLERİ İMALATI MAKİNA İNŞAAT TARIM HAYVANCILIK SANAYİ TİCARET LİMİTED ŞİRKETİ

İşyeri Adresi: Zafer Mah. Çiftlik Sok. No: 7 BUCA/İZMİR

Üreticinin Vergi Kimlik No: 7670630210   TC Kimlik No: MERSİS No : 0767063021000001

Telefon:	232-4598102	E-posta:	muhasebe@sezeraspirator.com
Faks:		Web Adresi:	
Ticaret Sicil No:	1..185861	Üye Sicil No:	1720451

Ürün Adı: Salyangoz Fan

Ürün Kodu (PRODCOM/GTİP): 28.25.20.70.00   /

Teknik Özellikleri(Marka Adı, Modeli, Seri Numarası, Cinsi):   SALYANGOZ FAN

Kapasite Raporunun   Tarih :08.11.2021 No : 43261 Geçerlilik süresi :08.11.2023

Sanayi Sicil Belgesinin   Tarih : 15.04.2016 No : 688103

Yerli Katkı Oranı : % 100

Ürünün Teknolojik Düzeyi (düşük/orta-düşük/orta-yüksek/yüksek)(Eurostat) : orta-yüksek

Diğer bilgi ve belgeler :

İşbu belge Bilim, Sanayi ve Teknoloji Bakanlığı'nın 13/09/2014 tarih ve 29118 sayılı Resmi Gazetede yayımlanan " Yerli Malı Tebliği (SGM 2014/35) "ne istinaden ve TOBB tarafından hazırlanan " Yerli Malı Belgesinin Düzenlenmesi Uygulama Esasları " göre 28.12.2021 tarihinde düzenlenmiştir. Belgenin geçerlilik süresi veriliş tarihinden itibaren bir yıl geçerlidir.

Düzenleyen Oda/Borsa
İZMİR TİCARET ODASI

Onaylayan
TÜLAY TEKER
Müdür

YERLİ MALI BELGESİ

Belgenin Veriliş Tarihi : 28.12.2021   Belgenin Geçerlilik Tarihi : 28.12.2022   Belge No : 2021104788796

Üretici Ünvanı: SEZER ASPİRATÖR ISITMA VE SOĞUTMA SİSTEMLERİ İMALATI MAKİNA İNŞAAT TARIM HAYVANCILIK SANAYİ TİCARET LİMİTED ŞİRKETİ

İşyeri Adresi: Zafer Mah. Çiftlik Sok. No: 7 BUCA/İZMİR

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Ticaret Sicil No:	1..185861	Üye Sicil No:	1720451

Ürün Adı: Duman Tahliye Fanı
Ürün Kodu (PRODCOM/GTİP): 28.25.20.70.00   /
Teknik Özellikleri(Marka Adı, Modeli, Seri Numarası, Cinsi):   DUMAN TAHLİYE FANI

Kapasite Raporunun   Tarih :08.11.2021 No : 43261 Geçerlilik süresi :08.11.2023
Sanayi Sicil Belgesinin   Tarih : 15.04.2016 No : 688103

Yerli Katkı Oranı : % 100

Ürünün Teknolojik Düzeyi (düşük/orta-düşük/orta-yüksek/yüksek)(Eurostat) : orta-yüksek

Diğer bilgi ve belgeler :

İşbu belge Bilim, Sanayi ve Teknoloji Bakanlığı'nın 13/09/2014 tarih ve 29118 sayılı Resmi Gazetede yayımlanan " Yerli Malı Tebliği (SGM 2014/35)"ne istinaden ve TOBB tarafından hazırlanan " Yerli Malı Belgesinin Düzenlenmesi Uygulama Esasları" göre 28.12.2021 tarihinde düzenlenmiştir. Belgenin geçerlilik süresi veriliş tarihinden itibaren bir yıldır.

Düzenleyen Oda/Borsa
İZMİR TİCARET ODASI

Onaylayan
TÜLAY TEKER
Müdür

Cellular Axial Fan (Smoke Exhaust Fan)

SHA Model

Cellular axial fans are used to clean the air polluted by various factors in buildings and living spaces.

It is used to evacuate polluted air, harmful gas and smoke.
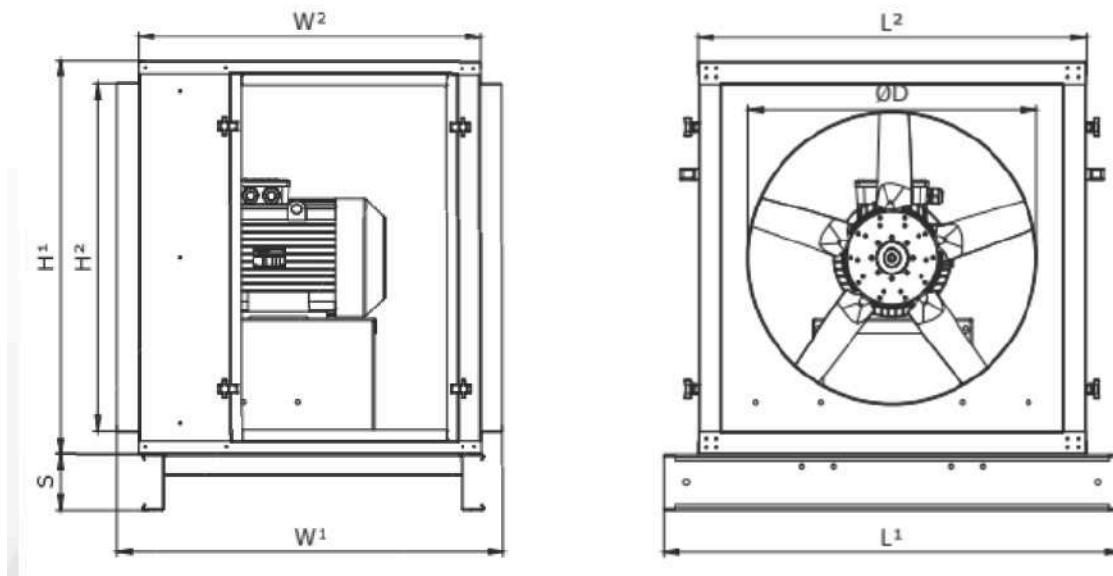
Cellular Axial Fan (Smoke Exhaust Fan)

Techniques

MODEL	SHA-H-0400-0,55/2P	SHA-H-0400-0,75/2P	SHA-H-0400-1,1/2P	SHA-H-0400-1,5/2P	SHA-H-0400-2,2/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	0,55	0,75	1,1	1,5	2,2
CURRENT (A)	1,27	1,9	2,55	3,45	4,94
SPEED (rpm)	2780	2800	2800	2835	2840
AIR FLOW (m³/h)	6000	7000	8000	9000	10500
SOUND PL (dB) 3m	63	64	64	66	68
WIRING DIAGRAM	Y	Y	Y	Y	Y

MODEL	SHA-H-0400-1,1/2P	SHA-H-0400-1,5/2P	SHA-H-0400-2,2/2P	SHA-H-0400-3/2P	-
VOLTAGE (V)	400	400	400	400	-
FREQUENCY (Hz)	50	50	50	50	-
POWER (kW)	1,1	1,5	2,2	3	-
CURRENT (A)	2,55	3,45	4,94	6,5	-
SPEED (rpm)	2800	2835	2840	2850	-
AIR FLOW (m³/h)	9500	11500	12500	14250	-
SOUND PL (dB) 3m	62	66	67	67	-
WIRING DIAGRAM	Y	Y	Y	Y	-

MODEL	SHA-H-0500-1,5/2P	SHA-H-0500-2,2/2P	SHA-H-0500-3/2P	SHA-H-0500-4/2P	SHA-H-0400-5,5/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	1,5	2,2	3	4	5,5
CURRENT (A)	3,45	4,94	6,5	8,2	11,3
SPEED (rpm)	2835	2840	2850	2850	2870
AIR FLOW (m³/h)	11000	13000	15500	17000	20000
SOUND PL (dB) 3m	63	66	69	71	73
WIRING DIAGRAM	Y	Y	Y	Y	D or Y-D

MODEL	SHA-H-0400-2,2/2P	SHA-H-0400-3/2P	SHA-H-0400-4/2P	SHA-H-0400-5,5/2P	SHA-H-0400-3/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	2,2	3	4	5,5	7,5
CURRENT (A)	4,94	6,5	8,2	11,3	15,5
SPEED (rpm)	2840	2850	2850	2870	2890
AIR FLOW (m³/h)	14000	17000	20500	23000	26500
SOUND PL (dB) 3m	65	68	71	73	75
WIRING DIAGRAM	Y	Y	Y	D or Y-D	D or Y-D

Cellular Axial Fan (Smoke Exhaust Fan)

Techniques

MODEL	SHA-H-0630-5,5/2P	SHA-H-0630-7,5/2P	SHA-H-0630-11/2P	SHA-H-0630-15/2P	SHA-H-0630-18,5/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	5,5	7,5	11	15	18,5
CURRENT (A)	11,3	15,4	22,4	28,5	35
SPEED (rpm)	2870	2890	2935	2940	2940
AIR FLOW (m³/h)	25000	30000	27500	31000	34250
SOUND PL (dB) 3m	72	76	77	83	85
WIRING DIAGRAM	D or Y-D	D or Y-D	D or Y-D	D or Y-D	D or Y-D

MODEL	SHA-H-0710-1,5/4P	SHA-H-0710-2,2/4P	SHA-H-0710-3/4P	SHA-H-0710-4/4P	SHA-H-0710-5,5/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	1,5	2,2	3	4	5,5
CURRENT (A)	3,6	5,2	6,8	8,6	11,8
SPEED (rpm)	1385	1400	1410	1425	1430
AIR FLOW (m³/h)	19000	23000	25000	28000	30000
SOUND PL (dB) 3m	65	67	69	71	71
WIRING DIAGRAM	Y	Y	Y	Y	D or Y-D

MODEL	SHA-H-0800-2,2/4P	SHA-H-0800-3/4P	SHA-H-0800-4/4P	SHA-H-0500-5,5/2P	SHA-H-0400-7,5/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	2,2	3	4	15	18,5
CURRENT (A)	5,2	6,5	22,4	28,5	35
SPEED (rpm)	1400	1410	2935	2940	2940
AIR FLOW (m³/h)	26000	30500	27500	31000	34250
SOUND PL (dB) 3m	67	69	77	83	85
WIRING DIAGRAM	y	Y	D or Y-D	D or Y-D	D or Y-D

MODEL	SHA-H-0900-4/4P	SHA-H-0900-5,5/4P	SHA-H-0900-7,5/4P	SHA-H-0400-9/4P	SHA-H-0400-9/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	4	5,5	7,5	11	15
CURRENT (A)	8,6	11,8	18,8	22,6	30,5
SPEED (rpm)	1425	1430	1430	1455	1460
AIR FLOW (m³/h)	40000	44000	47500	525000	55000
SOUND PL (dB) 3m	70	71	69	76	76
WIRING DIAGRAM	Y	D or Y-D	D or Y-D	D or Y-D	D or Y-D

MODEL	SHA-H-01000-7,5/2P	SHA-H-010000-11/4P	SHA-H-01000-15/4P	SHA-H-01000-18,5/4P	SHA-H-01000-22/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	7,5	11	11	15	18,5
CURRENT (A)	11,3	22,6	22,4	28,5	35
SPEED (rpm)	1430	1455	2935	2940	2940
AIR FLOW (m³/h)	56000	58000	27500	31000	34250
SOUND PL (dB) 3m	73	74	77	83	85
WIRING DIAGRAM	D or Y-D	D or Y-D	D or Y-D	D or Y-D	D or Y-D

MODEL	SHA-H-01120-15/4P	SHA-H-01120-18,5/4P	SHA-H-01120-22/4P	SHA-H-01120-30/4P	SHA-H-01120-37/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	15	18,5	22	30	37
CURRENT (A)	30,5	38	44	57	70
SPEED (rpm)	1460	1460	1455	1460	1465
AIR FLOW (m³/h)	75000	81000	87000	98000	108000
SOUND PL (dB) 3m	76	78	79	81	83
WIRING DIAGRAM	D or Y-D	D or Y-D	D or Y-D	D or Y-D	D or Y-D

MODEL	SHA-H-01250-18,5/4P	SHA-H-01250-22/4P	SHA-H-01250-30/4P	SHA-H-0500-37/2P	SHA-H-0400-45/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	18,5	22	30	37	45
CURRENT (A)	38	44	22,4	57	35
SPEED (rpm)	1460	1455	2935	1465	2940
AIR FLOW (m³/h)	86000	93000	106000	122000	128000
SOUND PL (dB) 3m	74	79	77	82	82
WIRING DIAGRAM	D or Y-D	D or Y-D	D or Y-D	D or Y-D	D or Y-D

Cellular Axial Fan (Smoke Exhaust Fan)

Performances

MODEL	AIRFLOW (m³/h)						
	0 PA	150 PA	300 PA	450 PA	600 PA	750 PA	900 PA
SHA-H-0400-0,55/2P	6000	5250	4000				
SHA-H-0400-0,75/2P	7000	6200	4900	2500			
SHA-H-0400-1,1/2P	8000	7300	5800				
SHA-H-0400-1,5/2P	9000	7800	6400				
SHA-H-0400-2,2/2P	10500	9300	7700				
SHA-H-0450-1,1/2P	9500	8500	6750				
SHA-H-0450-1,5/2P	11500	10200	8600	5600			
SHA-H-0450-2,2/2P	12500	11300	9600	7000			
SHA-H-0450-3/2P	14250	12700	10800				
SHA-H-0500-1,5/2P	11000	10500	8100	6100			
SHA-H-0500-2,2/2P	13000	12000	10200	8200			
SHA-H-0500-3/2P	15500	14200	12500	10600	6800		
SHA-H-0500-4/2P	17000	14900	14000	12000	8300		
SHA-H-0500-5,5/2P	20000	18200	16000	12800	10200		
SHA-H-0560-2,2/2P	14000	12600	10700	8750	5700		
SHA-H-0560-3/2P	17000	15600	14000	11800	8900		
SHA-H-0560-4/2P	20500	19000	17400	15200	12200		
SHA-H-0560-5,5/2P	23000	21400	19400	15300	14600		
SHA-H-0560-7,5/2P	26500	24000	22000	19700	17000		

MODEL	AIRFLOW (m³/h)						
	0 PA	150 PA	300 PA	450 PA	600 PA	750 PA	900 PA
SHA-H-0630-5,5/2P	25500	24000	21600	19000	15800		
SHA-H-0630-7,5/2P	30000	26000	24400	22800	21200	21200	17500
SHA-H-0630-11/2P	29400	27200	24800	22000	18400	13400	
SHA-H-0630-15/2P	31000	29400	27700	26000	24000	22000	19800
SHA-H-0630-18,5/2P	34250	32600	31000	29000	27000	24400	21700
SHA-H-0710-3/4P	19200	14800	7800				
SHA-H-0710-2,2/4P	23000	17900					
SHA-H-0710-3/4P	25000	20200					
SHA-H-0710-4/4P	28000	24600	19750				
SHA-H-0710-5,5/4P	30000	24000					
SHA-H-0800-2,2/4P	26000	20000					
SHA-H-0800-3/4P	30500	24500	13000				
SHA-H-0800-4/4P	34000	29000	23000				
SHA-H-0800-5,5/4P	38000	32300	20000				
SHA-H-0800-7,5/4P	40000	35000	30000				
SHA-H-0900-4/4P	40000	33000	24500				
SHA-H-0900-5,5/4P	44000	38000	30000				
SHA-H-0900-7,5/4P	47500	41500	32700				
SHA-H-0900-11/4P	52000	48000	42000	30000			
SHA-H-0900-15/4P	55000	50000	45500	35500			

Axial Duct Type Exproof Fan (Smoke Evacuation Pressurization Fan)

SAK Model

Sezer exproof axial duct fan bodies are manufactured from galvanized steel sheet. The flange structure is self-flanged. The blades are durable because they are aluminum. Motors are optionally used as two-way-two-speed fire-resistant. Electrical panel

It is designed according to the features of the product outside the body. The counter flange and suspension apparatus are provided with the product by the manufacturer.
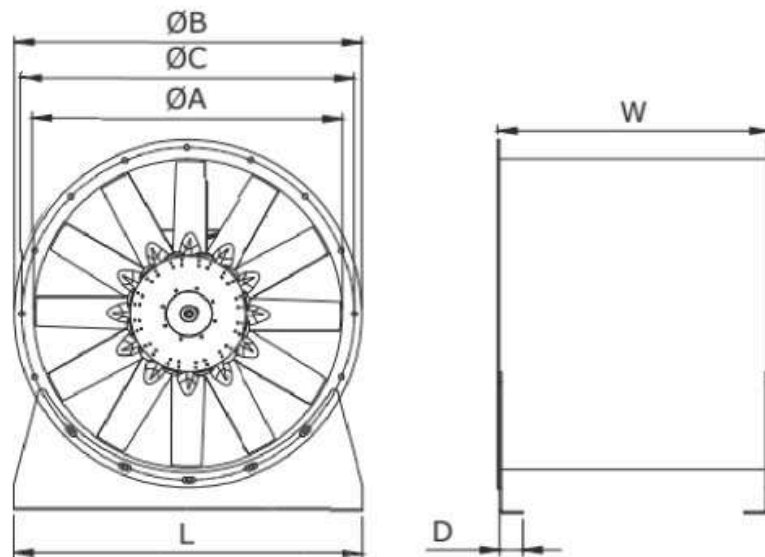
Axial Duct Type Exproof Fan (Smoke Evacuation Pressurization Fan)

Techniques

MODEL	A	B	C	W	L	D
SHA-0400	6000	5250	4000	6000	5250	4000
SHA-0450	400	480	450	500	496	50
SHA-0500	450	530	500	500	660	50
SHA-0560	500	600	560	500	600	50
SHA-0630	630	730	690	700	727	50
SHA-0710	710	810	770	700	806	50
SHA-0800	800	900	860	700	903	60
SHA-0900	900	1000	970	800	996	60
SHA-01000	1000	1100	1070	800	1096	60
SHA-01120	1120	1220	1190	900	1216	60
SHA-01250	1250	1370	1320	900	1250	60

MODEL	-0400-0,75/2P	SHA-0400-1,1/2P	SHA-0400-1,5/2P	SHA-0400-2,2/2P
VOLTAGE (V)	400	400	400	400
FREQUENCY (Hz)	50	50	50	50
POWER (kW)	0,55	1,1	1,5	2,2
CURRENT (A)	1,85	2,6	2,55	4,75
SPEED (rpm)	3000	3000	2800	3000
AIR FLOW (m³/h)	6,100	7,400	9,000	11,000

MODEL	SHA-0450-1,5/2P	SHA-0450-2,2/2P	SHA-0450-3/2P
VOLTAGE (V)	400	400	400
FREQUENCY (Hz)	50	50	50
POWER (kW)	1,5	2,2	3
CURRENT (A)	3,25	4,75	6,45
SPEED (rpm)	3000	3000	3000
AIR FLOW (m³/h)	9,500	13,250	15,000

MODEL	SHA-0500-4/2P	SHA-0500-5,5/2P
VOLTAGE (V)	400	400
FREQUENCY (Hz)	50	50
POWER (kW)	4	5,5
CURRENT (A)	7,5	9,8
SPEED (rpm)	3000	3000
AIR FLOW (m³/h)	18,000	21,500

Techniques

MODEL	SHA-H-0560-4/2P	SHA-H-0560-7,5/2P
VOLTAGE (V)	400	400
FREQUENCY (Hz)	50	50
POWER (kW)	4	7,5
CURRENT (A)	7,5	15,3
SPEED (rpm)	3000	3000
AIR FLOW (m³/h)	22.000	28.000

MODEL	SHA-H-0630-4/2P	SHA-H-0630-5,5/2P	SHA-H-0630-7,5/2P	SHA-H-0630-11/2P
VOLTAGE (V)	400	400	400	400
FREQUENCY (Hz)	50	50	50	50
POWER (kW)	4	5,5	7,5	11
CURRENT (A)	7,5	9,8	15,3	21,4
SPEED (rpm)	3000	3000	3000	3000
AIR FLOW (m³/h)	20.000	26.000	29.000	33.500

MODEL	SHA-H-0710-2,2/4P	SHA-H-0710-3/4P	SHA-H-0710-4/4P
VOLTAGE (V)	400	400	400
FREQUENCY (Hz)	50	50	50
POWER (kW)	2,2	3	4
CURRENT (A)	4,	7,7	8,5
SPEED (rpm)	1500	1500	1500
AIR FLOW (m³/h)	24.000	26.000	30.000

MODEL	SHA-H-0800-4/4P	SHA-H-0800-5,5/4P	SHA-H-0800-7,5/4P
VOLTAGE (V)	400	400	400
FREQUENCY (Hz)	50	50	50
POWER (kW)	4	5,5	7,5
CURRENT (A)	8,5	10,1	15,6
SPEED (rpm)	1500	1500	1500
AIR FLOW (m³/h)	27.500	37.500	42.000

MODEL	SHA-H-0900-5,5/4P	SHA-H-0900-7,5/4P	SHA-H-0900-11/4P	SHA-H-0900-15/4P
VOLTAGE (V)	400	400	400	400
FREQUENCY (Hz)	50	50	50	50
POWER (kW)	5,5	7,5	11	15
CURRENT (A)	10,1	13,9	20,6	28
SPEED (rpm)	1500	1500	1500	1500
AIR FLOW (m³/h)	44.000	43.000	50.000	57.500

MODEL	SHA-H-01000-7,5/4P	SHA-H-01000-11/4P	SHA-H-01000-15/4P	SHA-H-01000-22/4P	SHA-H-01000-30/4P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	7,5	11	15	22	30
CURRENT (A)	13,9	20,6	28	39,9	56,4
SPEED (rpm)	1500	1500	1500	1500	1500
AIR FLOW (m³/h)	56.000	68.000	68.000	80.000	87.500

Techniques

MODEL	SHA-01120-11/4P	SHA-01120-15/2P	SHA-01120-18,5/2P	SHA-01120-22/2P	SHA-01120-30/2P
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	11	15	18,5	22	30
CURRENT (A)	20,6	28	34,7	39,9	56,4
SPEED (rpm)	1500	1500	1500	1500	1500
AIR FLOW (m³/h)	64000	70000	82000	90000	102000

MODEL	SHA-01250-15/4P	SHA-01250-18,5/4P	SHA-01250-22/4P	SHA-01250-30/4P	SHA-01250-37/4P	SHA-01250-45/4P
VOLTAGE (V)	400	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50	50
POWER (kW)	15	18,5	22	30	37	45
CURRENT (A)	28	34,7	39,9	56,4	66	79
SPEED (rpm)	1500	1500	1500	1500	1500	1500
AIR FLOW (m³/h)	75250	86250	96500	110000	122500	130000

Performances

MODEL	AIRFLOW (m³/h)					
	0 PA	100 PA	200 PA	300 PA	400 PA	500 PA
SHA-0710-2,2/4P	24,000	22,000	17,500	10,000	-	-
SHA-0710-3/4P	26,000	23,500	21,250	17,500	14,000	-
SHA-0710-4/4P	30,000	28,000	24,000	21,000	17,500	-
SHA-0800-4/4P	27,500	26,000	24,000	21,500	17,500	16,000
SHA-0800-5,5/4P	37,500	34,250	31,500	27,500	22,500	18,500
SHA-0800-7,5/4P	42,000	38,000	36,000	32,500	27,500	25,000
SHA-0900-5,5/4P	44,000	40,500	36,000	30,500	20,000	15,000
SHA-0900-7,5/4P	43,000	41,000	38,750	35,750	32,000	26,000
SHA-0900-11/4P	50,000	47,500	48,000	42,000	38,000	30,000
SHA-0900-15/4P	57,500	55,000	51,500	48,000	42,000	36,500

Performances

MODEL	AIRFLOW (m³/h)								
	0 PA	100 PA	200 PA	300 PA	400 PA	500 PA	600 PA	700 PA	800 PA
SHA-0400-0,75/2P	6,100	5,700	5,000	4,250	3,500	2,500	2,000	1,500	1,000
SHA-0400-1,1/2P	7,400	6,800	6,100	5,500	4,500	3,000	2,500	2,000	1,500
SHA-0400-1,5/2P	9,000	8,250	7,500	7,000	6,000	3,750	3,000	2,750	2,250
SHA-0400-2,2/4P	11,000	10,300	9,600	8,500	7,500	6,250	5,500	5,000	4,250
SHA-0450-1,5/4P	9,500	9,000	8,000	7,000	6,000	5,250	4,000	3,500	3,000
SHA-0450-2,2/4P	13,250	12,500	11,750	11,000	10,000	8,000	4,000	3,000	1,500
SHA-0450-3/4P	15,000	14,250	13,500	13,500	11,500	9,500	8,500	7,250	6,500
SHA-0500-4/4P	18,000	17,000	16,000	16,000	12,250	12,000	10,750	8,000	5,000
SHA-0500-5,5/4P	21,500	19,500	18,250	18,250	14,000	14,250	12,500	9,250	8,000
SHA-0560-4/4P	22,000	20,500	19,000	18,000	16,250	15,250	13,000	10,000	8,500
SHA-0560-7,5/4P	28,000	26,000	24,000	22,250	17,000	19,500	18,000	16,500	15,250
SHA-0630-4/4P	20,000	19,000	18,000	17,000	21,000	14,750	13,250	11,500	9,000
SHA-0630-5,5/4P	26,000	24,250	23,000	21,250	16,000	17,500	15,000	7,000	4,000
SHA-0630-7,5/4P	29,000	28,000	27,000	25,000	20,000	20,500	18,000	15,000	5,000
SHA-0630-11/4P	33,500	32,000	30,500	28,500	26,000	25,000	23,000	18,000	16,250

MODEL	AIRFLOW (m³/h)								
	0 PA	100 PA	200 PA	300 PA	400 PA	500 PA	600 PA	700 PA	800 PA
SHA-1000-7,5/4P	56,000	52,000	47,500	42,500	35,250	20,000	-	-	-
SHA-01000-11/4P	68,000	65,500	62,500	59,000	55,250	50,000	42,000	36,000	30,000
SHA-01000-15/4P	68,000	65,500	62,500	59,000	64,000	50,000	42,000	35,000	30,000
SHA-01000-22/4P	80,000	75,000	71,500	68,000	72,000	58,000	53,000	-	-
SHA-01000-30/4P	87,500	82,500	80,000	75,000	48,000	65,000	56,000	45,000	-
SHA-01120-11/4P	64,000	60,000	57,000	52,000	55,000	42,500	37,000	29,000	-
SHA-01120-15/4P	70,000	65,000	60,000	57,500	67,000	52,000	48,000	43,000	27,500
SHA-01120-18,5/4P	82,000	78,500	75,000	70,000	74,000	62,000	42,000	35,500	27,000
SHA-01120-22/4P	90,000	85,000	82,000	78,000	82,000	68,000	58,000	51,000	42,000
SHA-01120-30/4P	102,000	97,500	91,500	85,000	53,000	78,000	66,250	52,000	-
SHA-01250-15/4P	75,250	70,000	65,000	60,000	66,000	43,000	39,000	29,000	-
SHA-01250-18,5/4P	86,250	82,000	77,750	72,500	74,000	57,000	46,750	42,000	-
SHA-01250-22/4P	96,500	91,750	86,750	81,250	93,500	65,000	54,000	40,000	-
SHA-01250-30/4P	110,000	107,000	103,000	99,000	93,000	87,000	69,000	60,000	45,000
SHA-01250-37/4P	122,500	117,500	78,250	106,000	98,000	86,000	66,000	-	-
SHA-01250-45/4P	130,000	125,500	117,500	110,000	102,500	92,500	85,000	75,000	65,000

Jet Fan

Sezer Jet Fan is designed to evacuate toxic gases and polluted air in many places. It is used to quickly evacuate smoke formed during a fire. Due to the design feature of the Jet Fan, it is used in ducts and vents in areas such as parking lots and shelters in our buildings.

We do not need to use the system. Jet Fan body structure can be easily dismantled, it is easy to intervene in case of failure. Jet

A silencer cabinet is used on both sides of the fan to reduce the noise level.

SJF jet fans, manufactured with axial wing structure, are used in daily ventilation as well as in case of fire as double speed.

They are manufactured with features that can operate. The engines, which have a rotation speed of 1440 rpm in daily use, reach a rotation speed of 2880 rpm in case of fire with the operation of carbon monoxide and smoke sensors and perform air evacuation. Axial jet fans, EN Manufactured in F300 (300°/120 min.) and F400 (400°/120 min.) resistance classes according to 12101-3/Smoke and Heat Control Systems standard.

In order to protect the motor and the device from foreign objects in the motor suction and discharge section of the devices, there are protection wires in the discharge section.

There are integrated flaps for optimum air direction.
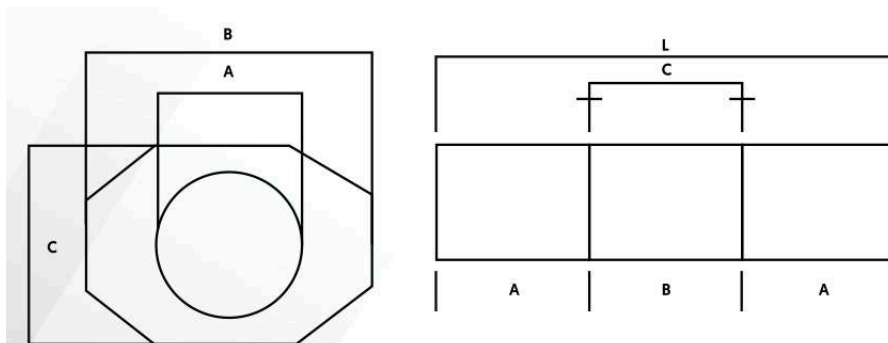
	A	B	C
315	315	506	401
355	355	556	461
400	400	606	506
455	455	621	521

	A	B	C	L
315	445	500	570	1403
355	445	500	570	1403
400	445	500	570	1403
455	445	500	570	1403

Techniques

MODEL	JET FAN 400-40	JET FAN 400-50	JET FAN 400-80	JET FAN 400-100	JET FAN TR-400
VOLTAGE (V)	400	400	400	400	400
FREQUENCY (Hz)	50	50	50	50	50
POWER (kW)	0,17/0,75	0,33/1,3	0,6/2,0	0,9/3,6	05,/2,0
CURRENT (A)	0,5/1,7	0,9/2,8	1,2/4,2	2/2,3	1,2/4,2
THRUST (N)	10/40	13/50	20/80	27/106	16/62
SPEED (rpm)	1400/2790	1425/2680	1415/2832	1440/2810	1415/2835
AIR FLOW (m³/h)	2394/4700	2700/5400	5220/10440	7560/15120	4630/9260
SOUND PRESSURE LEVEL (db)3M	64000	64000	64000	64000	64000

Performances

MODEL	0A	B	C	D	E	F	G
JET FAN 400/40	500	450	750	350	1850	298	400
JET FAN 400/50	500	450	750	350	1850	298	400
JET FAN 400/80	500	450	750	350	1850	298	400
JET FAN 400/100	500	450	750	350	1850	298	400
JET FAN TR-4	500	450	750	350	1850	298	400

Duct Type Fan for Cylindrical Ducts

SKTS Model

SKTS series duct type radial fans are ideal elements for ventilation of areas where people are densely populated. Due to their design and construction principles, they are mounted directly to the duct and do not require any machine room and do not occupy any space on the floor.

You can adjust the fan speed and thus the air flow rate by means of the manually controlled speed selector switch provided as an accessory with the SKTS series fans.
It is possible to adjust steplessly between minimum and maximum positions.

SKTS series fans can be used for ventilation and aspiration. If desired, an electric heater can be installed on the fan blowing side,
Accessories such as silencers can be installed.

Speed adjustment switch

SKTS series duct type fans use radial impellers with "A" energy class according to European Union standards. The cabin is manufactured from aluminum sheets of sufficient thickness by plastering from special molds. The cabin, which consists of two parts, allows the fan to be easily removed when necessary and ensures the cleaning of the cabin interior.

SKTS series fans and speed adjustment switches have "CE" certification.

Duct Type Fan for Cylindrical Ducts

Mounting Style

Terminal box

gn-ye: green-yellow bu: blue bk black bn: brown C: capacitor

Tightening clamp
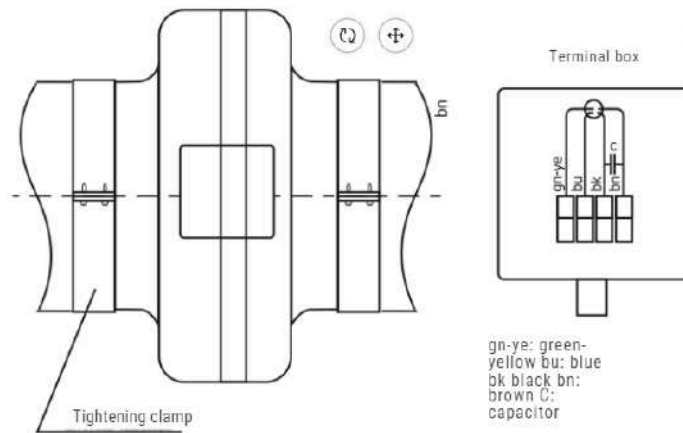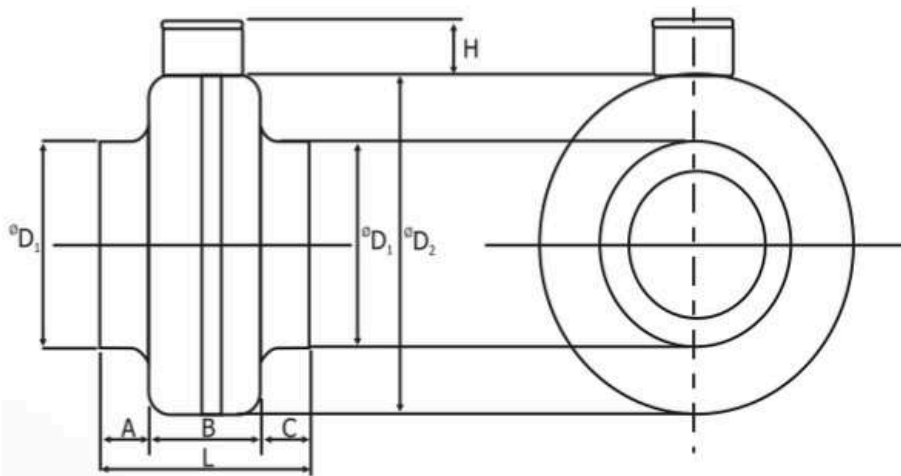
Fan Dimensions

MODEL	DIMENSIONS						
	L	H	ØD₁	ØD₂	A	B	C
SKTS-125	208	47	120	250	50	110	50
SKTS-160	209	47	155	280	45	110	45
SKTS-200	215	47	195	320	50	130	50
SKTS-250	242	47	246	350	50	110	50
SKTS-315	270	47	310	405	45	145	45

SKTS-125
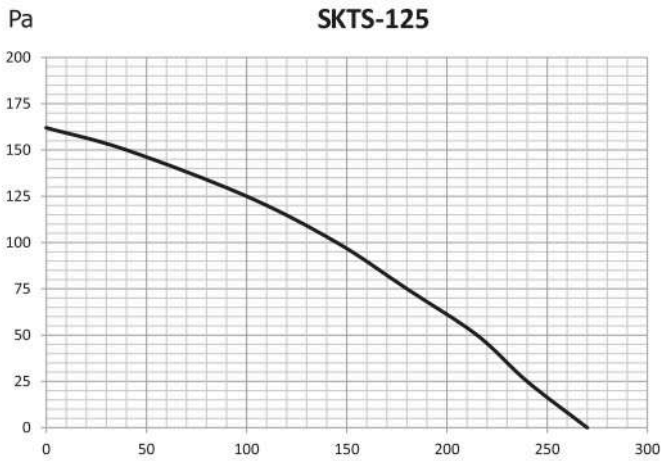
50Hz	U	I	P₁	n	L_WA
	V	A	W	d/dak	dB
①	230	0,13	26	2600	54

50Hz	U	I	P₁	n	L_WA
	V	A	W	min₁	dB
①	230	0,3	65	2550	63

SKTS-200

SKTS-250
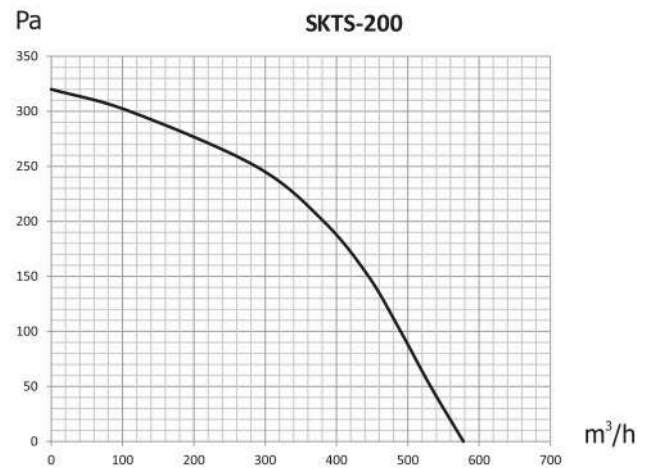
50Hz	U	I	P₁	n	L_WA
	V	A	W	min₁	dB
①	230	0,52	100	2700	72
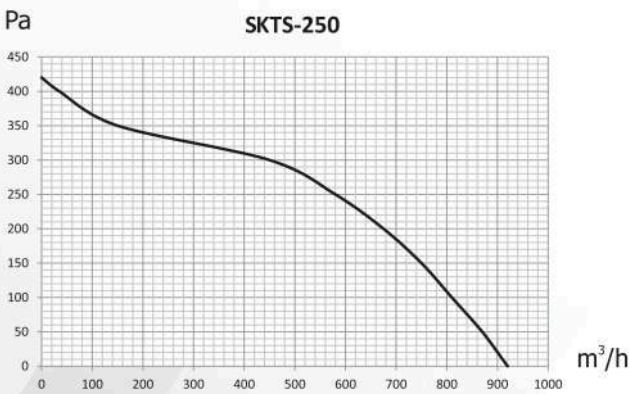
Curves

50Hz	U	I	P₁	n	L_WA
	V	A	W	min₁	dB
①	230	0,4	220	2500	75

SKTS-315

SKTS-160
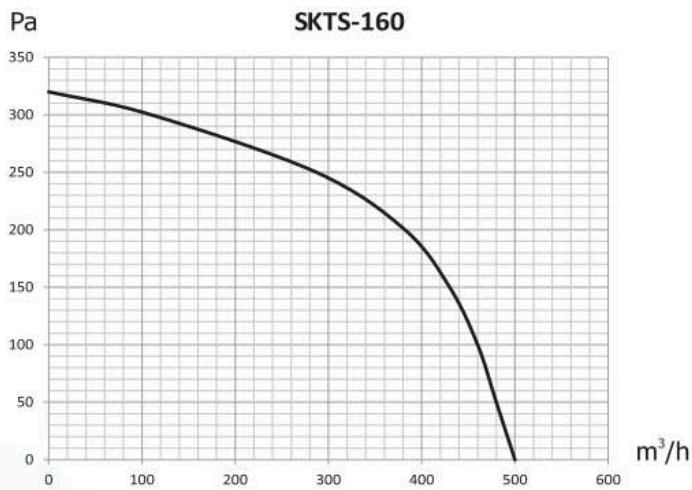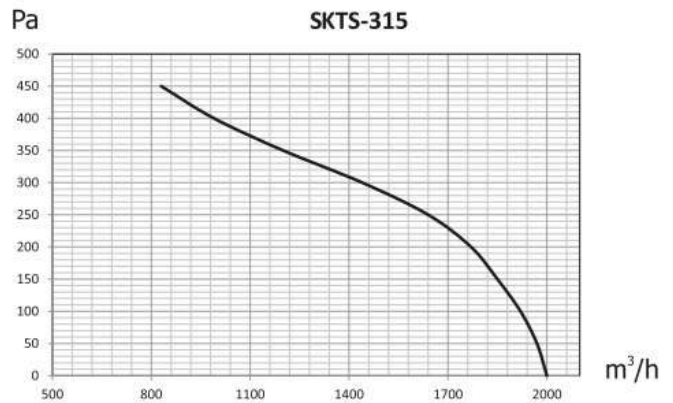
50Hz	U	I	P₁	n	L_WA
	V	A	W	min₁	dB
①	230	0,22	47	2720	60

Duct Type Fan for Rectangular Ducts

SKTD "Models"

SKTD series duct type radial fans are ideal elements for ventilation of areas where people are densely populated. Due to their design and construction principles, they are mounted directly to the duct and do not require any machine room and do not occupy any space on the floor.

You can adjust the fan speed and thus the air flow rate by means of the manually controlled speed selector switch provided as an accessory with the SKTD series fans.
It is possible to adjust steplessly between minimum and maximum positions. SKTD series fans can be used for ventilation and aspiration. If desired, accessories such as electric heaters and silencers can be installed on the fan blowing side.

Manufacturing Features

Speed adjustment switch

SKTD series duct type fans use "A" energy class radial impellers according to European Union standards. The cabin is manufactured from aluminum sheets of sufficient thickness by plastering from special molds. The cabin, which consists of two parts, allows the fan to be easily
It allows easy disassembly and cleaning of the cabin interior.
SKTD series fans and speed adjustment switches have "CE" certification.

Fan Dimensions

MODEL	DIMENSIONS					
	H_1	H_2	H	W_1	W_2	L
SKTD-50x30	295	350	370	498	550	420
SKTD-60x30	295	350	370	598	650	465
SKTD-60x35	345	400	420	598	650	465
SKTD-70x40	395	450	470	698	755	568

SKTD-50x30

	n [rpm]	P₁ [W]	I [A]
❶	1330	654	1.13
❷	1410	386	0.94

- ❶ 71 dB(A)
- ❷ 76 dB(A)

— 50 Hz   — 60 Hz

SKTD-60x35

	n [rpm]	P₁ [W]	I [A]
❶	1330	1.96	6.29/3.63
❷	1410	1.12	4.43/2.56

- ❷ 77 dB(A)
- ❶ 82 dB(A)

SKTD-60x30

	n [rpm]	P₁ [W]	I [A]
❶	1390	0.87	3.79/2.19
❷	1440	0.51	3.29/1.90

- ❷ 72 dB(A)
- ❶ 77 dB(A)

SKTD-70x40

	n [rpm]	P₁ [W]	I [A]
❶	1370	3.20	10.58/6.11
❷	1430	1.89	7.52/4.34

- ❷ 80 dB(A)
- ❶ 86 dB(A)

Roof Aspirators

'SRF' Models

SRF roof aspirators are ideal elements for exhaust ventilation of spaces. Due to their design and construction principles, they are directly
Since they are mounted on the roof, they do not require any machine room and do not occupy any space on the ground.

The fan speed and thus the airflow are controlled by means of a manually controlled speed selector switch supplied as an accessory with the series roof aspirators.
It is possible to adjust the flow rate steplessly between minimum and maximum positions.

Speed adjustment switch

SRF series duct type fans use "A" energy class self-motorized radial impellers according to European Union standards.
is manufactured from aluminum sheets of sufficient thickness by plastering from special molds.
The cabin, which consists of two parts, is required
It allows the fan to be easily removed and the cabin interior to be cleaned at times.

SRF series roof aspirators and speed adjustment switch have "CE" certification.

Roof Aspirators

Roof Fan Dimensions
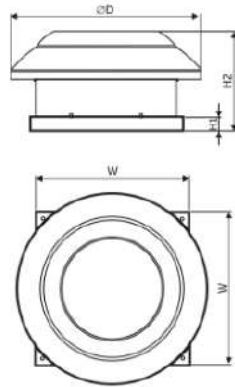
MODEL	DIMENSIONS			
	W	H₁	H₂	ØD
SRF-160	320	30	240	390
SRF-200	350	30	245	440
SRF-250	350	30	250	440
SRF-315	410	30	250	530
SRF-355	440	30	300	680
SRF-400	480	30	310	680

Curves

SRF-160

	U [V]	f [Hz]	n [min-1]	P_1 [W]	I [A]	LpA_{5s} [dB(A)]	LwA_{5s} [dB(A)]	$\dot{V}$ [m3/h]	Pfa [Pa]
1	230	50	2480	48	0.22	58	66	540	0

SRF-200

	U [V]	f [Hz]	n [min-1]	P_1 [W]	I [A]	LpA_{5s} [dB(A)]	$\dot{V}$ [m3/h]	Pfa [Pa]
1	230	50	2550	65	0.3	63	920	0

SRF-250

	n [min⁻¹]	P_1 [W]	I [A]
1	2700	100	0.52

Curves

SRF-160
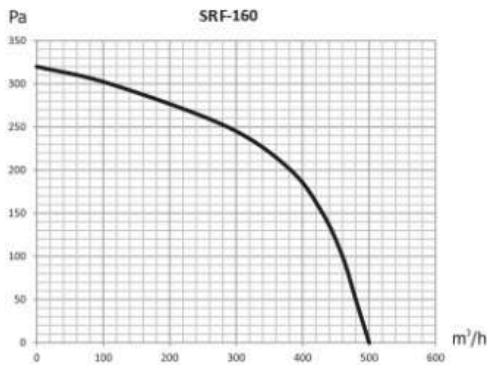
U	f	n	P_1	I	LpA_{68}	LwA_{68}	$\dot{V}$	Pfa
[V]	[Hz]	[min-1]	[W]	[A]	[dB(A)]	[dB(A)]	[m3/h]	[Pa]
1 230	50	2480	48	0.22	58	66	540	0

SRF-200

U	f	n	P_1	I	LpA_{68}	$\dot{V}$	Pfa
[V]	[Hz]	[min-1]	[W]	[A]	[dB(A)]	[m3/h]	[Pa]
1 230	50	2550	65	0.3	63	920	0
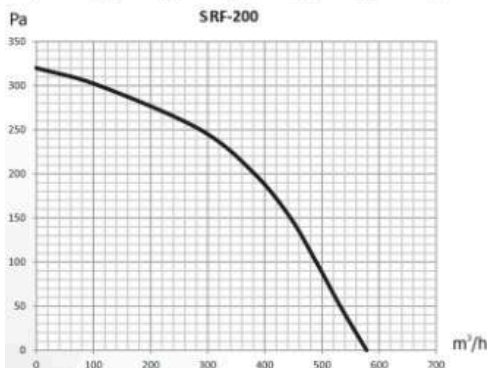
SRF-250
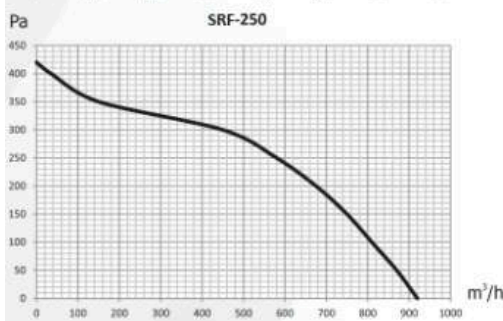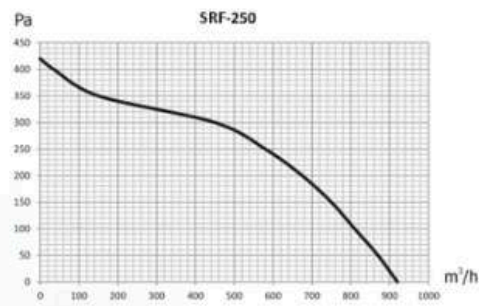
	n	P_1	I
	[min⁻¹]	[W]	[A]
1	2700	100	0.52

Water Filers

- Body Material: st37 black sheet metal
- Operating Temperature: 180°C
- Activated carbon odor trap filter
- G2 Metal grease and dust collector filter
- Water spray nozzles

Areas of Use:

Aqueous filter is a ventilation system that should be used by businesses such as restaurants and bars that do not have chemical content but emit bad and unwanted odors. Aqueous filtration is essential to prevent the spread of bad odors in places with a high density of people such as shopping malls and for a healthy air.

Water Filter Body Dimensions

Type	Flow (m³/h)	A	B	C	D	E
SZR-SF-2	2000	1200	600	600	200	550
SZR-SF-3	3000	1400	700	700	250	650
SZR-SF-4	4000	1400	700	750	350	700
SZR-SF-5	5000	1500	750	750	400	700
SZR-SF-6	6000	1600	750	800	450	750
SZR-SF-7	7000	1600	800	800	450	750
SZR-SF-8	8000	1800	900	900	500	850
SZR-SF-9	9000	2000	900	900	600	850
SZR-SF-10	10000	2000	900	1000	600	950
SZR-SF-12	12000	2000	1000	1200	650	1150
SZR-SF-15	15000	2200	1100	1250	650	1200
SZR-SF-17	17000	2400	1250	1250	700	1200
SZR-SF-20	20000	2500	1250	125	800	1200
SZR-SF-25	25000	3000	1400	1400	900	1350
SZR-SF-30	30000	3000	1500	1500	950	1450
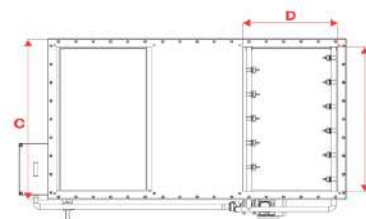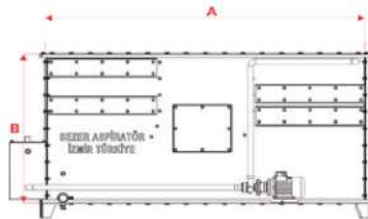
Rectangular Section Flow Regulating Dampers

VCD Model

VCD model air dampers are used to cut or adjust air flow in rectangular and square section ducts. VCD Dampers are made with reverse-direction moving wings as standard construction. The wings are made of 6033 quality special extruded aluminum.

The frame is made of galvanized sheet metal. There are two options for wing width: 100 mm and 150 mm.

The wing model is also in the form of a double-thickness aerodynamic profile. In dampers with a wing width of 100 mm, gears made of PVC are used in movement.

and those with a wing width of 150 mm are supplied with a special connection mechanism made of galvanized sheet metal. All dampers are available upon request.

servomotor base, servomotor or locking arm depending on servomotor base, servomotor or locking arm.

They are manufactured with a fixed arm. Up to 1200 mm width and height, they are manufactured in one piece, larger sizes in two or more pieces.

they are made.

K   M

VCD Model

VCD150
Wing width 150mm
mechanism of action
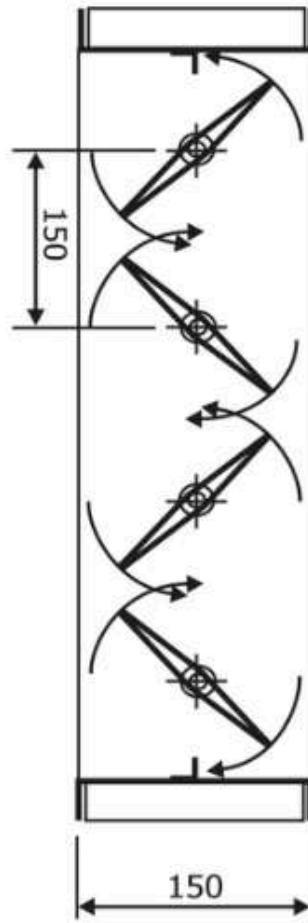
VCD150
Wing width 150mm
dimensions
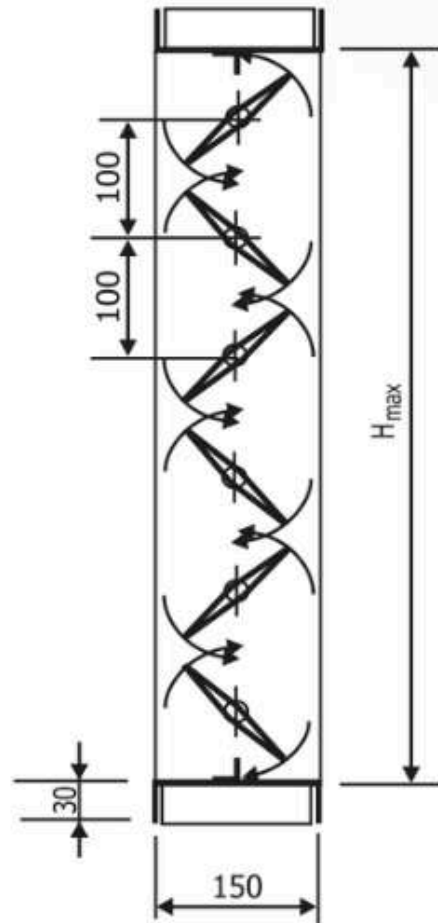
VCD100
Wing width 150mm
dimensions

Note: Servomotor can be supplied upon request. Please state the motor type.

VCD100

Wing angle

Forehead
speed

VCD150

Wing angle

Forehead
speed
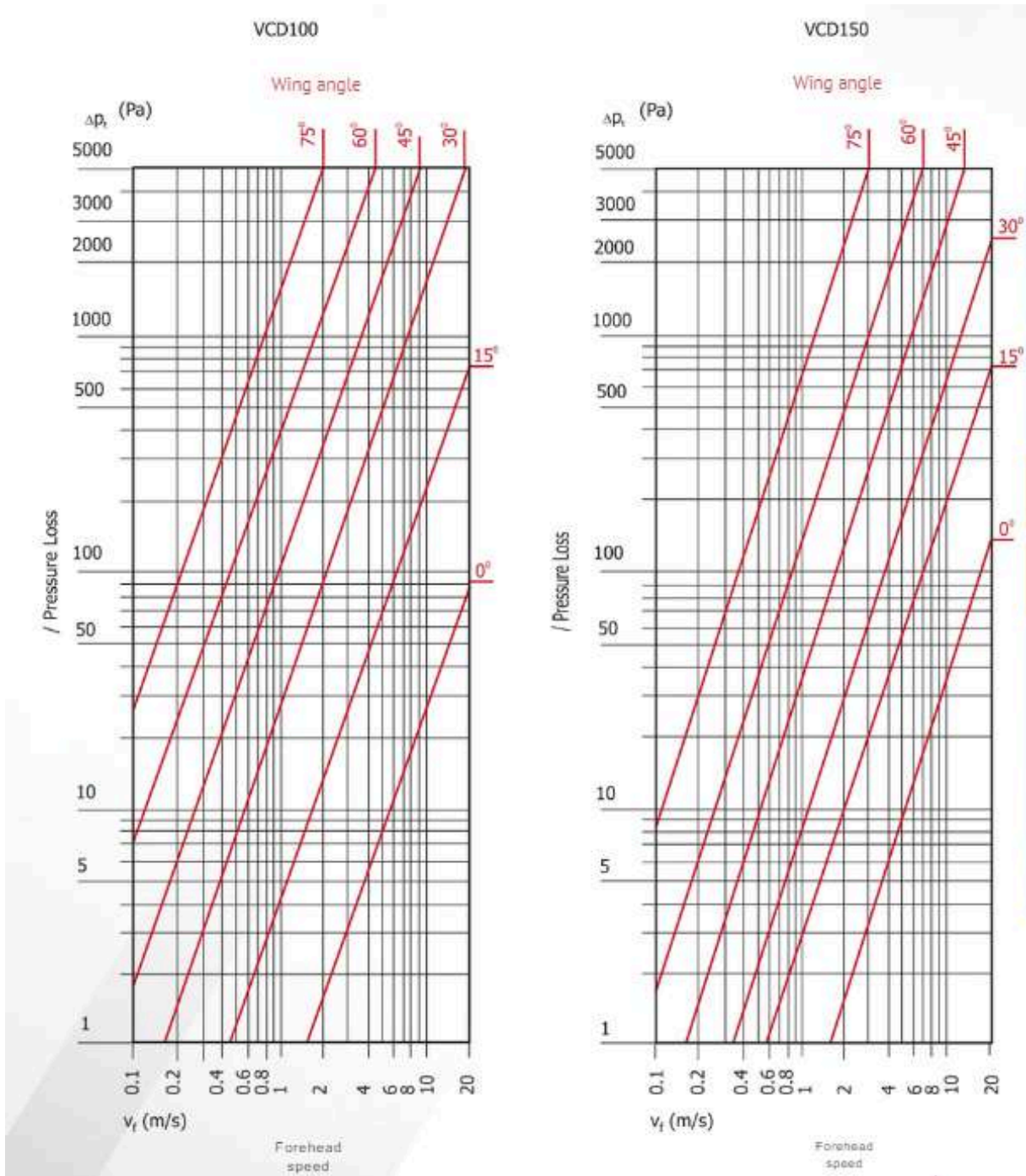
Rectangular Section Flow Regulating Dampers

Multi-Purpose Dampers

A   A

H < 1200

L > 1200mm

30   30   30

120(150)

L > 1200mm

Kesit AA
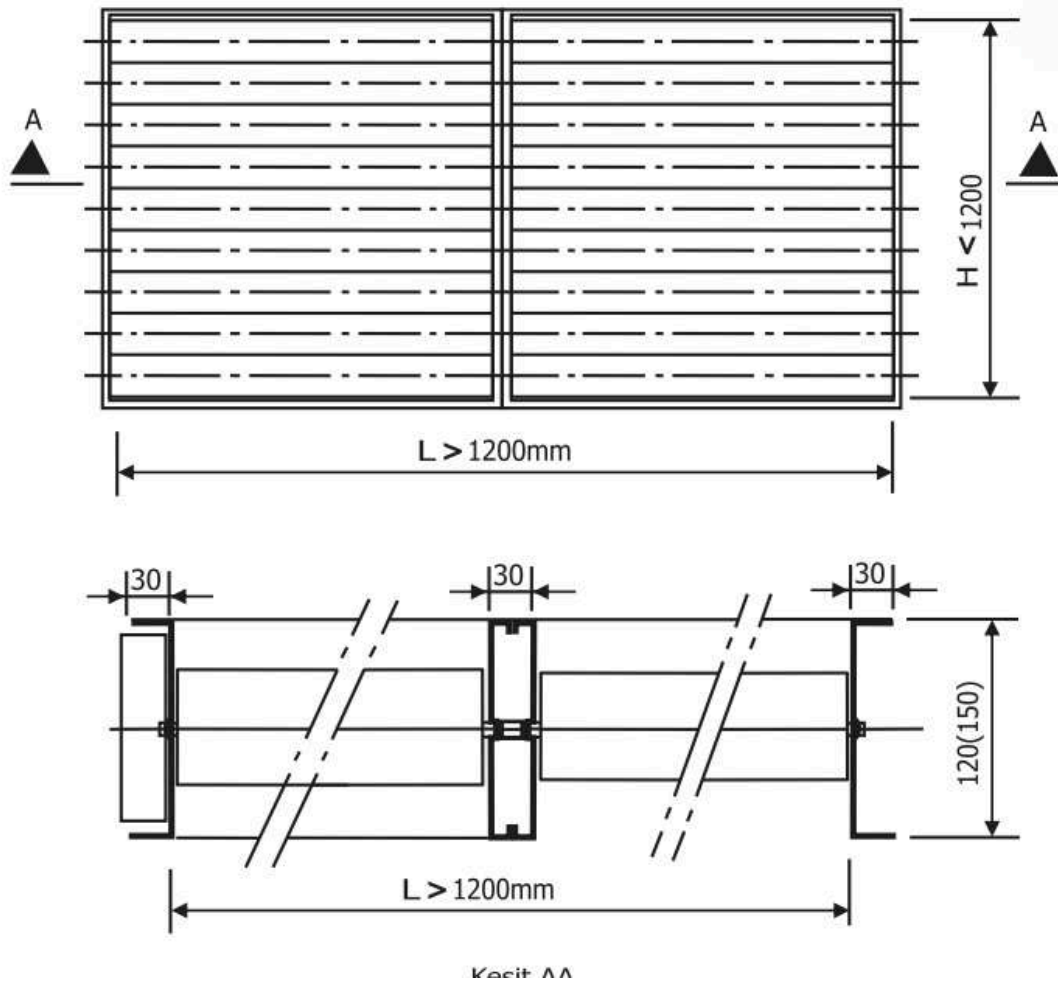
Circular Section Flow Regulating Dampers

VCY Model

VCY model air dampers are used to cut or adjust air flow in circular cross-section ducts. The wings and bodies of VCY model dampers are made of galvanized sheet metal. Standard ducts are single-thick and can be made with double-thick neoprene assembly upon customer request. However, this must be specified in the order. Movement wing mechanism-

They are made with metal or plastic handles and locking mechanism or motor mounting base. Servomotor mounting is also available upon customer request. Standard diameters are 100 mm to 450 mm, larger diameters can be specially produced.

Election Charts
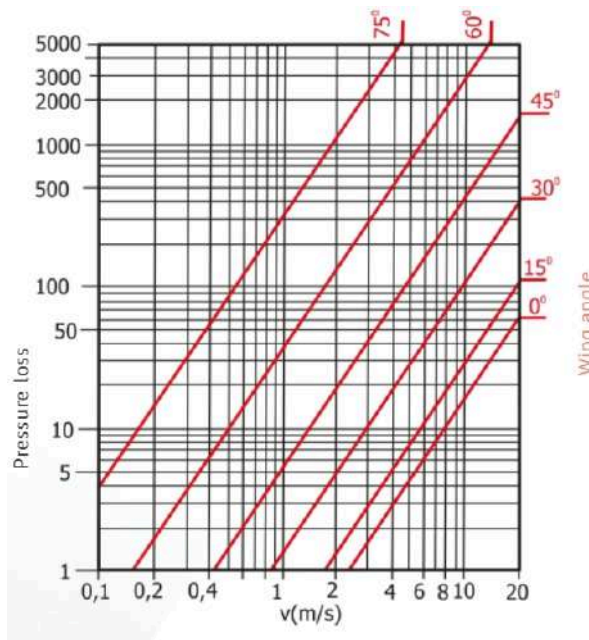
Circular Section Flow Regulating Dampers

Dimensions

M
All metal

P
All plastic
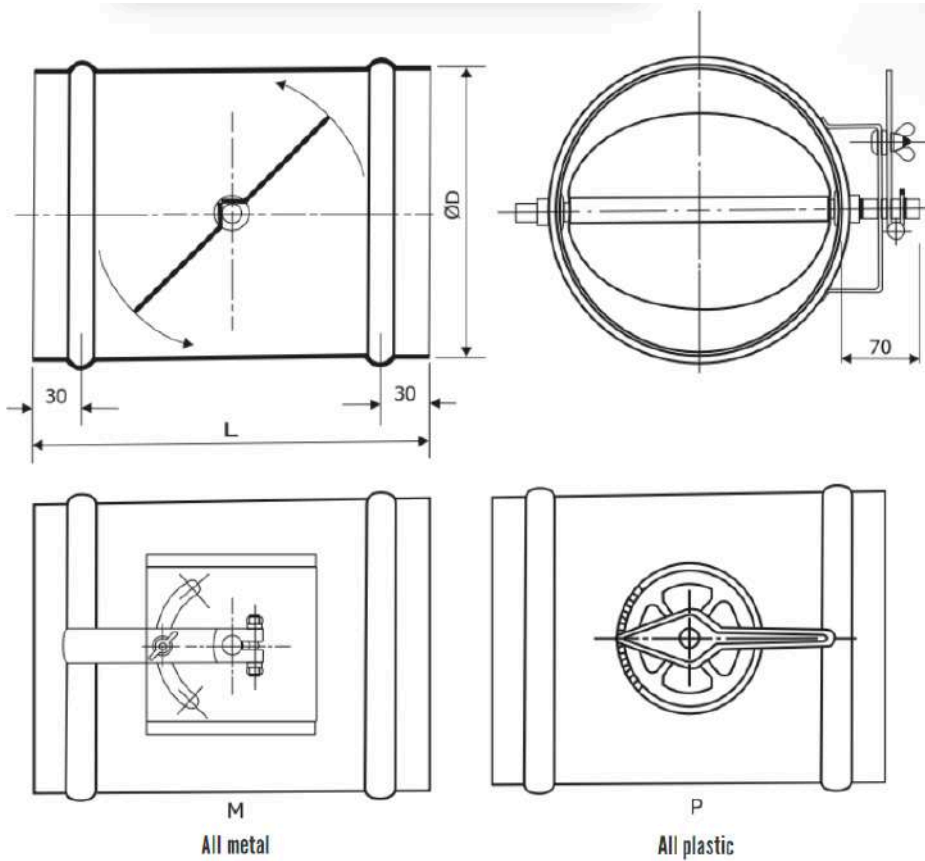
VCY......M			VCY......P		
MODEL	Dimensions		MODEL	Dimensions	
	L(mm)	ØD(mm)		L(mm)	ØD(mm)
100	150	98	100	150	98
125	175	123	125	175	123
150	200	148	150	200	148
160	210	158	160	210	158
200	250	198	200	250	198
225	275	223	225	275	223
250	300	248	250	300	248
280	300	278	280	300	278
315	350	313	315	350	313
355	400	354	355	400	354
400	400	398	400	400	398
450	400	448	450	400	448

Servomotor Connections

Single cable control

230 V~
N L1

1 2 3

LM 230

~ 24 V—
+ 24 V ---

1 2 3

M 24

Dual wire control

~ 24 V—
+ 24 V ---

1 2 3

NM 24

N L1 AC 230V

1 2 3

AM 230

Single cable control

~ AC 24V
+ DC 24V

1 2 3

+ + AM 24

Dual wire control

~ AC 24V
+ DC 24V

1 2 3

+ + AM 24

230 V~
N L1

1 2 3

NM 230

Single cable control

~ 24 V—
+ 24 V ---

1 2 3

NM 24

Dual wire control

~ 24 V—
+ 24 V ---

1 2 3

NM 24

Right/Left rotation selection switch

Electrical connection

Handle ordered button

L

30

89-106

Servomotor application

Fire Dampers

SFD Model
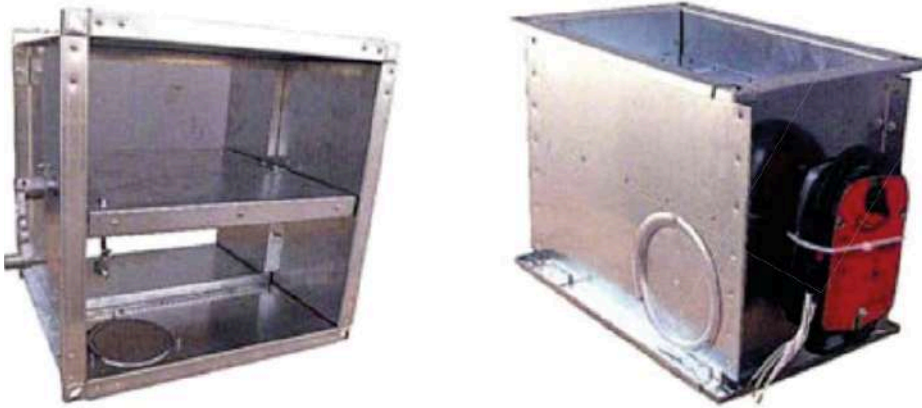
Sezer SFD model fire dampers limit the fire area in ventilation and air conditioning systems and prevent it from spreading to the surroundings. Automatic closing in case of fire is provided by a metal fuse melting at 72°C or special fire dampers. Two types of dampers are used, with or without a temperature sensing element. Galvanized sheet metal is used in the construction of the body and wings, and the body and wing are insulated with rock wool. In models with melting metal, a microswitch can be installed upon request to give a signal at the time of closing. Fire dampers can also be manufactured with servo motors upon request.
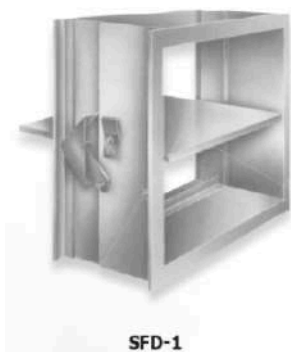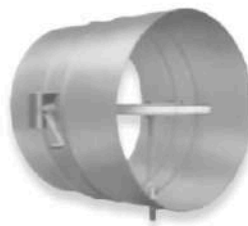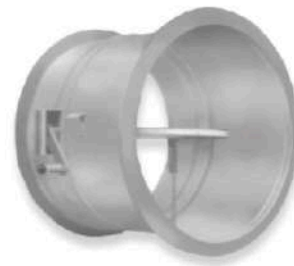
SFD-1   SFD-2   SFD-3

Fire Dampers

Dimensions
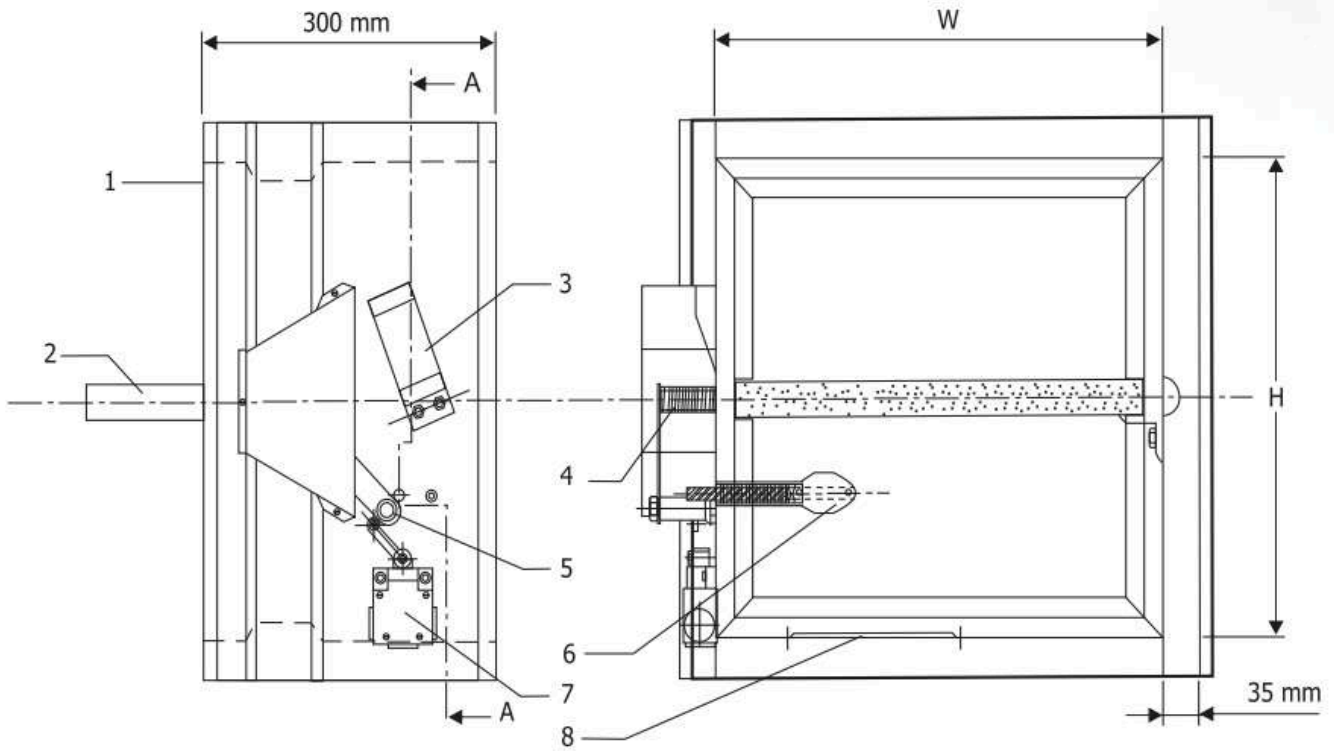
Definition of Parts

1-] Case (1.50 mm galvanized sheet) 2-] Wing (30 mm rock wool insulated) 3-] Leaf spring 4-] Spiral spring 5-] Handle
6-] Fuse 7-] Microswitch 8-] Control cover

Ø D (mm)	L (mm)	t (mm)
150	250	25
200	250	25
250	300	25
300	350	25
350	400	25
400	450	25
500	550	35
600	650	35
700	750	35
800	850	35
900	950	40
1000	1050	40

SFD-2   SFD-3
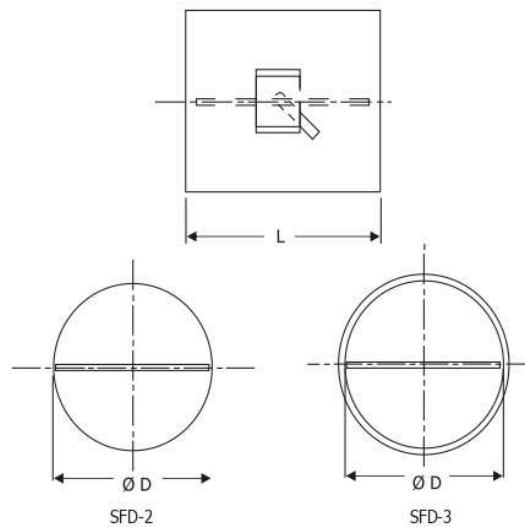
Rectangular Section Fire Dampers Effective Areas

H mm		W mm 200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
150	Aeff	0,012	0,025	0,034	0,044	0,053	0,063	0,073	0,082	0,092	0,101	0,111	0,121	0,130	0,140
	f	0,95	0,90	0,90	0,85	0,80	0,80	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75
200	Aeff	0,022	0,041	0,055	0,070	0,084	0,099	0,114	0,128	0,143	0,157	0,172	0,187	0,201	0,216
	f	1,00	0,90	0,90	0,85	0,80	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75
300	Aeff	0,040	0,068	0,093	0,118	0,142	0,167	0,191	0,216	0,241	0,265	0,290	0,314	0,339	0,364
	f	1,20	1,00	0,95	0,90	0,90	0,85	0,82	0,80	0,80	0,80	0,80	0,80	0,80	0,80
400	Aeff	0,058	0,096	0,131	0,165	0,200	0,235	0,269	0,304	0,338	0,373	0,408	0,442	0,477	0,511
	f	1,30	1,10	1,00	0,95	0,92	0,90	0,85	0,85	0,85	0,85	0,85	0,80	0,80	0,80
500	Aeff	0,075	0,124	0,169	0,213	0,258	0,302	0,347	0,392	0,436	0,481	0,525	0,570	0,615	0,659
	f	1,40	1,20	1,10	1,00	0,95	0,90	0,90	0,90	0,85	0,85	0,80	0,80	0,80	0,80
600	Aeff	0,093	0,152	0,206	0,261	0,316	0,370	0,425	0,479	0,534	0,589	0,643	0,698	0,752	0,807
	f	1,60	1,40	1,20	1,10	1,00	0,95	0,95	0,95	0,90	0,90	0,85	0,85	0,80	0,80
700	Aeff	0,111	0,180	0,244	0,309	0,373	0,438	0,503	0,567	0,632	6,96	0,761	0,826	0,890	0,955
	f	1,70	1,45	1,30	1,20	1,10	1,00	1,00	0,95	0,90	0,90	0,85	0,85	0,85	0,85
800	Aeff	1,129	0,207	0,282	0,357	0,431	0,506	0,580	0,655	0,730	0,804	0,879	0,953	1,028	1,103
	f	1,80	1,60	1,40	1,30	1,20	1,10	1,10	1,00	1,00	0,95	0,90	0,90	0,90	0,85

Aeff [m²] - Effective Alan

F - Resistance Factor

Circular Section Fire Dampers Effective Areas

Ø D (mm)	150	200	250	300	350	400
Aeff [m²]	0,012	0,024	0,040	0,059	0,083	0,11

Ø D (mm)	500	600	700	800	900	1000
Aeff [m²]	0,178	0,260	0,359	0,473	0,602	0,748

$Pt = P_1 * f$

Pt = Actual pressure loss   [Pa]

PI = Pressure loss in the diagram [Pa]

f = Pressure correction factor
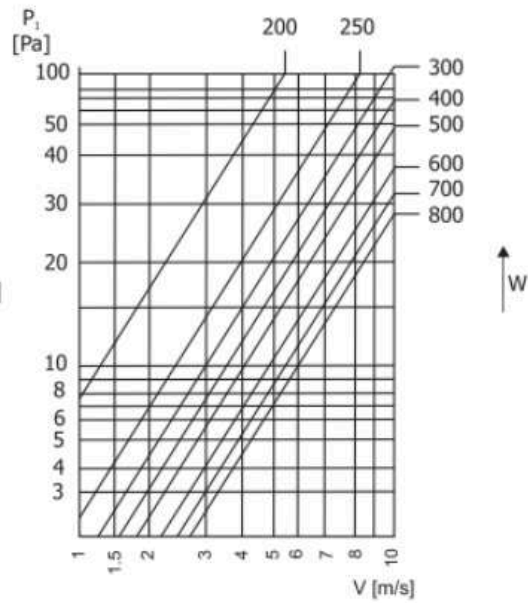
Rectangular Section Leak-Proof Flow Regulator Damper

LCD Model

LCD model air dampers are used to cut or adjust air flow on rectangular and square section wings. LCD dampers are manufactured with wings that move in the opposite direction as standard construction. However, upon customer request, they can also be manufactured with parallel movement. Wings and casing are made of 6033 quality special extruded aluminum profile. Wing width is 100 mm. There is a special rubber seal at one end of the double-thickness blades to ensure sealing. The blades are mounted on the side walls of the case with zero tolerance. In reverse-direction blade movement dampers, movement is done with PVC gears, parallel blade movement The dampers are made of PVC and the connection mechanism made of galvanized sheet metal. All dampers are optionally manufactured with servomotor base, servomotor or locking arm. 1200 mm width and they are made in one piece up to the highest height, and in two or more pieces for larger sizes.

Multi-Piece Dampers

Rectangular Section Leak-Proof Flow Regulator Damper

Dimensions

LCD100-P   LCD100-0

125

25

50

100

100

50

25

Fully closed   Parallel wing motion   Reverse wing motion

K
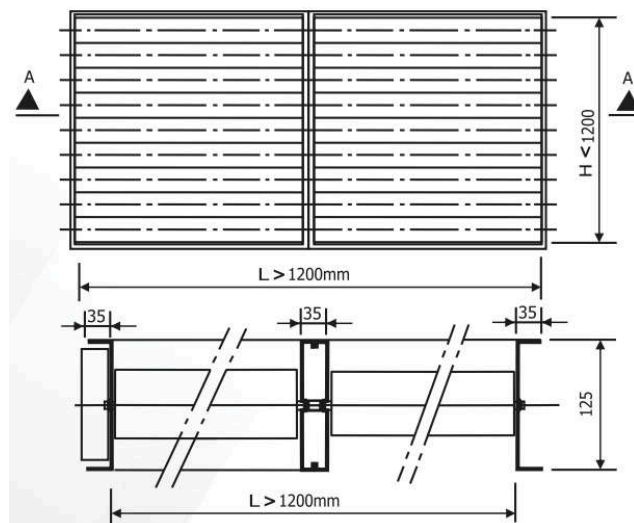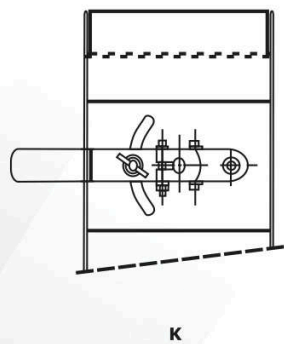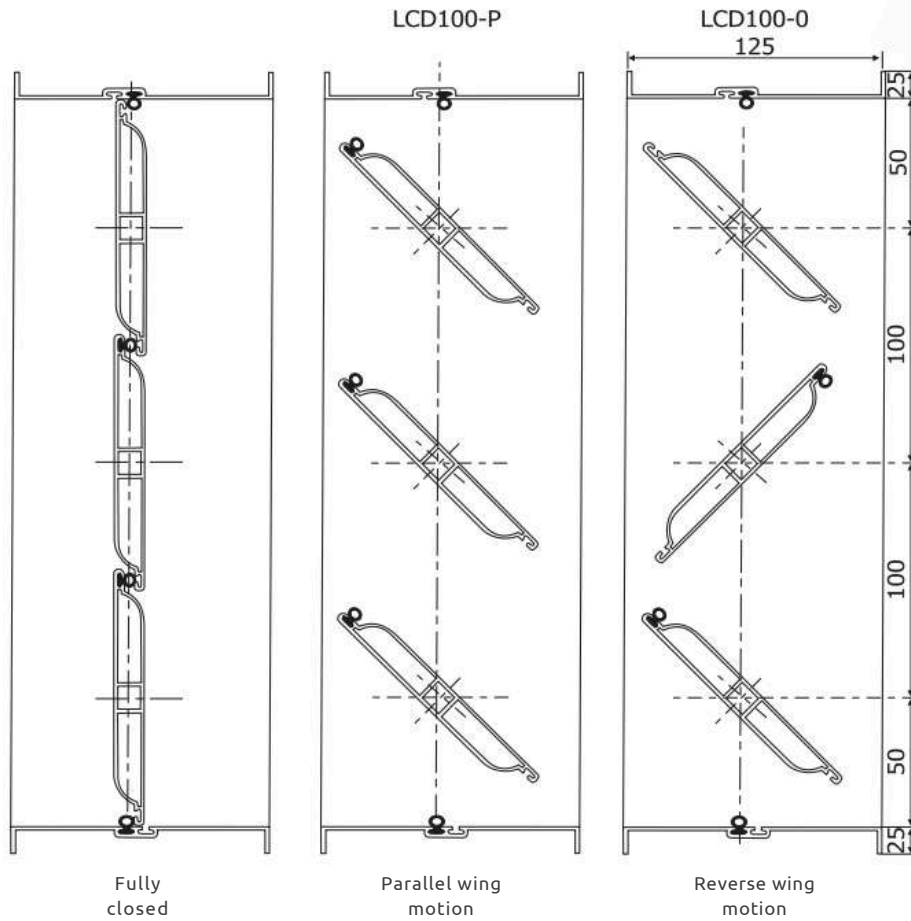
Manual lever and locking mechanism

M
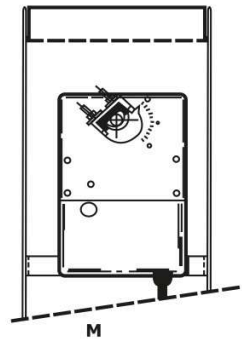
Servomotor mounting base (*)

Rectangular Section Leak-Proof Flow Regulator Damper

Dimensions

Wing angle
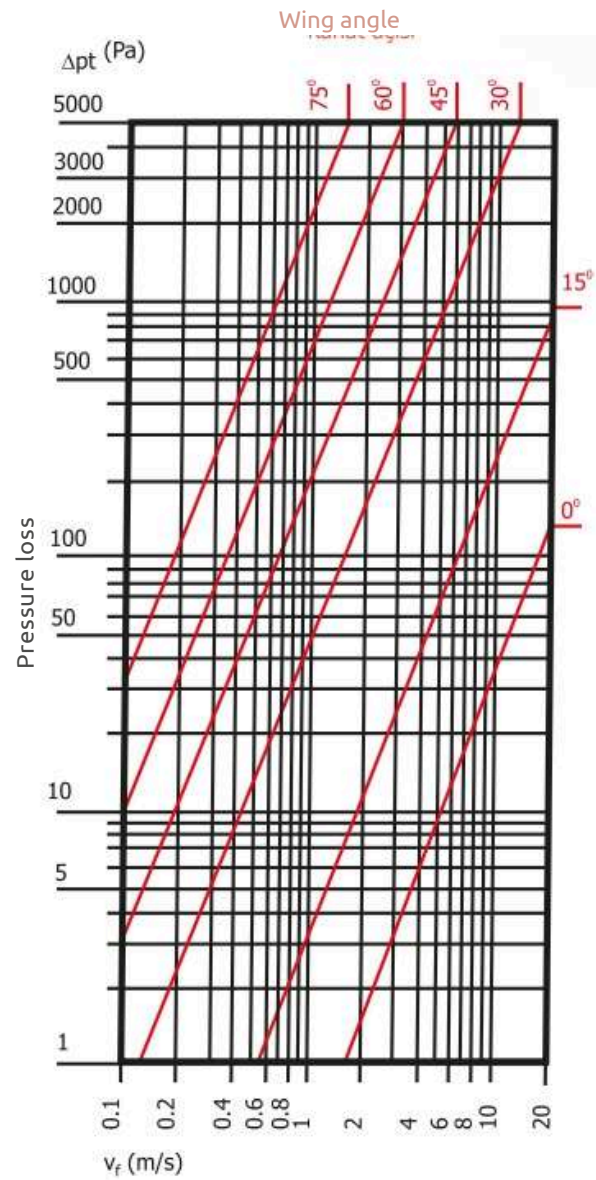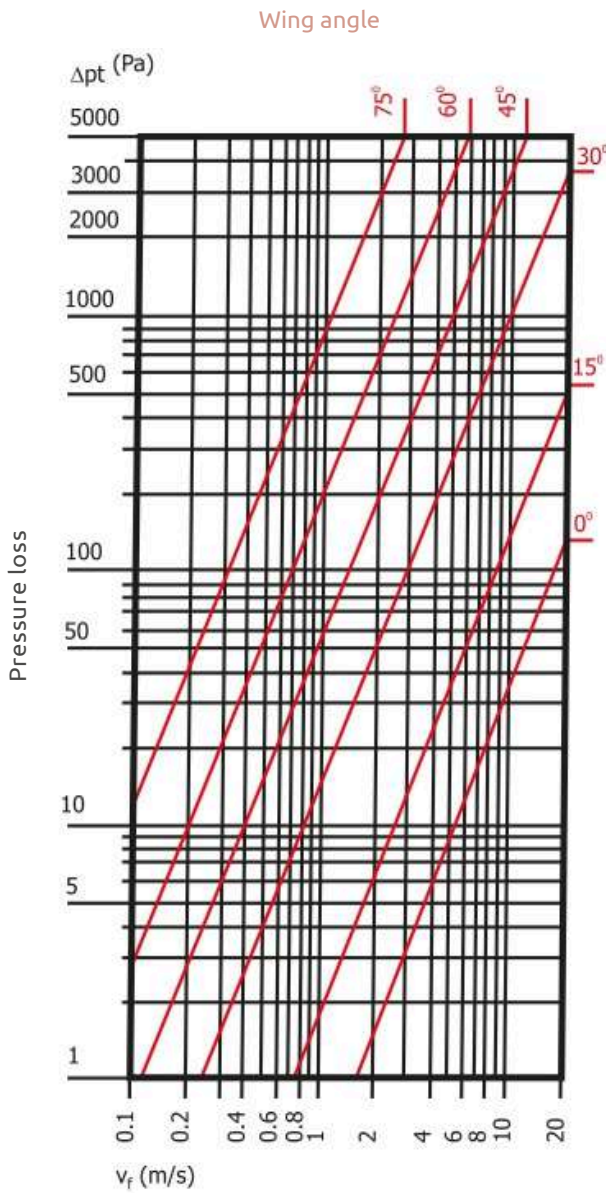
Channel Type Filters

STF Model
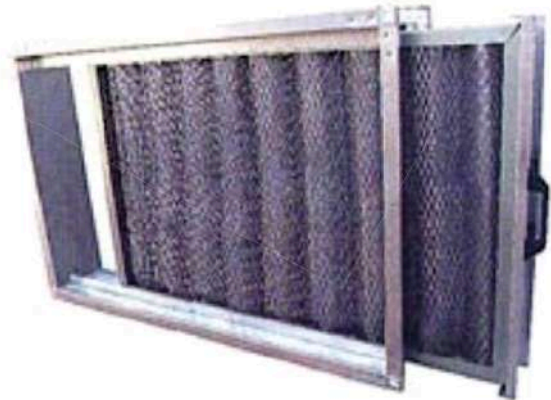
STF model channel type filters are manufactured in a manner that they can be mounted on the channel. The body construction is made of galvanized sheet metal of appropriate thickness. There are "Mez" flanges at both ends that can easily be mounted on the channel. Filters are manufactured as synthetic fiber zigzag filters or metal zigzag filters. Synthetic filters are filtered using AAF Amerglass M57-13 or equivalents, which are of G2 quality according to EN79. As metal filters, multi-layer galvanized fly wire of G2 quality according to EN79 is made in zigzag format and both sides are reinforced with diamond wire. Filter thicknesses are 48 mm as standard. All filters are placed in a galvanized frame and placed on skids for easy removal and installation.

Synthetic	592 x 592	592 x 287	500 x 500	500 x 250
Metal	592 x 592	592 x 287	500 x 500	500 x 250

Synthetic Filter Pressure loss
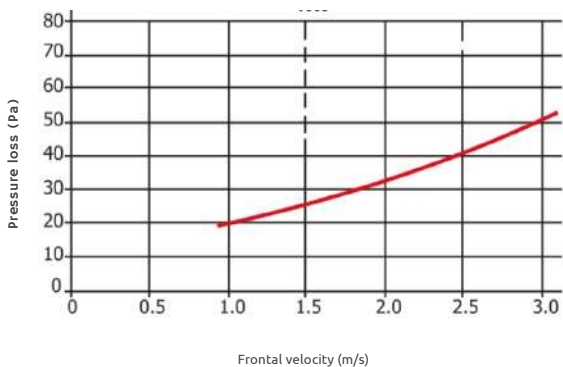
Metal Filter Pressure loss
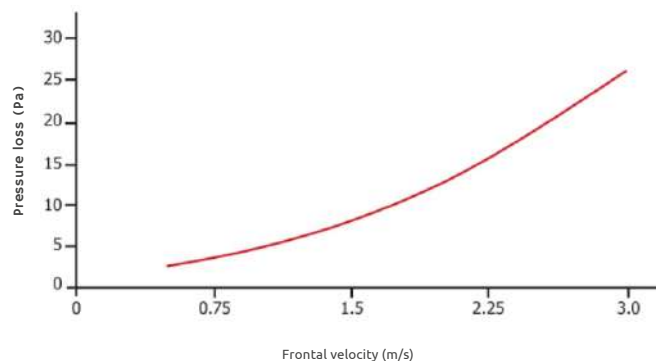
Variable Air Flow Units

VAV Model

VAV air conditioning and ventilation systems are the most sensitive and economical solutions of modern air conditioning technologies. In these systems, the room temperature is provided by proportionally controlling the amount of air supplied and exhausted instead of the temperature of the supplied air. In this way, it provides economy in both heat consumption and air flow rate and lower operating costs. VAV Units are calibrated in the factory or on site before shipment. This ensures that maximum and minimum air flow rates are precisely balanced. VAV systems are suitable for high speed and high pressure ventilation systems. As a result, less space is allocated to ventilation and air conditioning systems and a decrease in construction costs is achieved. SDH-K units are designed and manufactured to meet the requirements of VAV [Variable Air Flow] systems. SDH-K units are suitable for heating and cooling with single-channel VAV applications and additionally for CAV [Constant Air Flow] systems under variable pressure.

Examples of this are HEPA filtered applications that require constant air flow under variable pressure. SDH-Units have air velocity measuring sensor elements in accordance with ASHARE documentation. These sensors measure total pressure and static pressure and the air flow is determined electronically from their difference. The units are equipped with double-thick and single-winged leak-proof flow control dampers. The neoprene seal on the frame ensures tightness at the moment of complete closure. The boxes are insulated with 19 mm foamed rubber. Thanks to this insulation, the sound level is reduced, the heat loss of the device is minimized and surface condensation is also prevented. This box allows the coupling of electric or water heating coils, silencers and plenum cells with one to four outlets to the VAV unit. SDH-K units are produced in two main types. These models are the SDH-KS supply model and the SDH-KE exhaust or return air model.

Capacity

Nominal flow rates of SDH-K units are calibrated at the factory and these flow rates are adjusted to 12 m/s air inlet speed and flow rate from the main controller.

It corresponds to the incoming 10 VDC control signal. It is not recommended to use these units at entry speeds above 12 m/s.

Minimum air flow rate is related to the sensitivity of the pitot tube and electronic measuring unit. The precise measurement capabilities of these measuring devices can go down to 2.3 Pa differential pressure. This corresponds to an air entry speed of approximately 2 m/s. Likewise, minimum speed applications below this speed are also recommended. The minimum volume flow rate is factory calibrated and corresponds to the 2 VDC control signal input. Therefore, in places where BMS or DDC control systems are used, it is possible to adjust the input control signal to different flow rates by limiting it to different values between 2 and 10 VDC. Upon request, devices can be calibrated at the factory for flow rates other than those given below, provided that they remain between the following values. In this case, the 10 VDC setting will equal the customer's Vmax demand, the customer's Vmin demand will also evolve to 2 VDC.

Nominal Capacity (m³/H]

DEVICE TYPE	Air Inlet Velocity (m/sec)					
	2	4	6	8	10	12
SDH-K 100	53	106	160	213	266	319
SDH-K 125	84	168	253	337	421	505
SDH-K 160	139	279	418	558	697	836
SDH-K 200	219	439	658	878	1097	1317
SDH-K 250	345	690	1035	1380	1725	2070
SDH-K 315	550	1100	1650	2200	2750	3303
SDH-K 355	700	1400	2100	2800	3500	4200
SDH-K 400	891	1783	2674	3565	4456	5350
SDH-K 500	1393	2786	4179	5572	6965	8360
SDH-K 560	1748	3495	5243	6990	8738	10486

SDH-K model variable air flow terminal units are equipped with microprocessor and servomotor control units produced for VAV applications.

These units control the air flow rate regardless of the pressure in the duct.

In SDH-K model VAV devices, the difference between the total pressure and static pressure of the air in the inlet is measured with pitot tubes in accordance with ASHARE terminology and this measurement value is transmitted to the electronic control center. In the total pressure station, the differential pressure difference between the averages of the measured values of a minimum of 12 total pressure measuring points depending on the device diameter is dynamically sent to the processor unit.

The processor compares this value with the signals from the BMS or DDC main control system and decides whether to increase or decrease the air flow rate.

Fully automatic working condition

Connect via safety transformer

- $\perp$ ~ AC 24 V
- $-$ $+$ DC 24 V
- W : DC 2...10 V (DC 0...10 V) — Reference signal from controller or DDC
- U_5 : DC 2...10 V (DC 0...10 V) — Measuring voltage "U" for flow indicator or slave controllers
- PP — Communication input for PP-ZEV adjuster

1 2 3 5

$\perp$ ~ w/z U/PP   NMV-D2
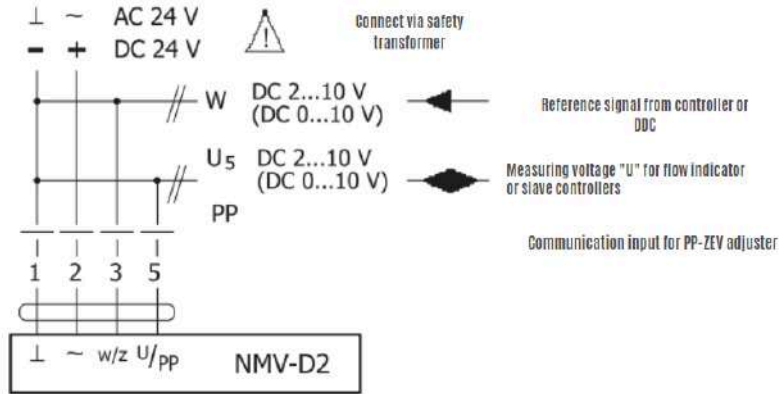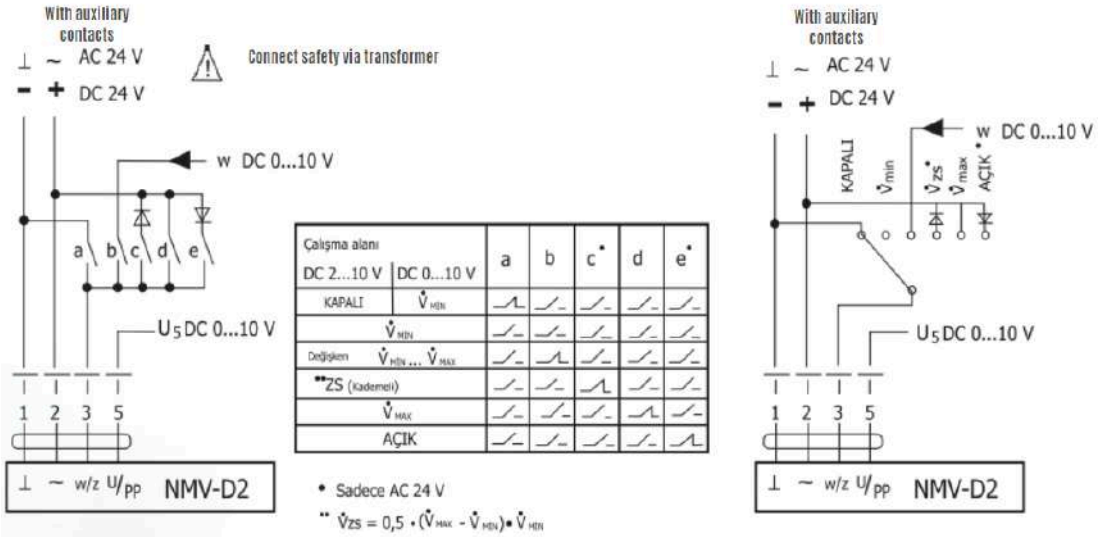
Automatic-manual working status

With auxiliary contacts

- $\perp$ ~ AC 24 V
- $-$ $+$ DC 24 V

Connect safety via transformer

w DC 0...10 V

U_5 DC 0...10 V

1 2 3 5

$\perp$ ~ w/z U/PP   NMV-D2

Çalışma alanı DC 2...10 V	DC 0...10 V	a	b	c•	d	e•
KAPALI	$\dot{V}_{MIN}$					
	$\dot{V}_{MIN}$					
Değişken	$\dot{V}_{MIN}$ ... $\dot{V}_{MAX}$					
**ZS (Kademeli)						
	$\dot{V}_{MAX}$					
	AÇIK					

• Sadece AC 24 V

** $\dot{V}_{ZS} = 0,5 \cdot (\dot{V}_{MAK} - \dot{V}_{MIN}) \cdot \dot{V}_{MIN}$

With auxiliary contacts

- $\perp$ ~ AC 24 V
- $-$ $+$ DC 24 V

KAPALI $\dot{V}_{min}$ $\dot{V}_{ZS}$• $\dot{V}_{max}$• AÇIK• w DC 0...10 V

U_5 DC 0...10 V

1 2 3 5

$\perp$ ~ w/z U/PP   NMV-D2

Variable Air Flow Units

Silencers

One of the accessories of SDH-K variable air flow terminal units is silencers. The silencers, the types and dimensions of which are given below, can be factory-mounted on the device or shipped separately for ease of transportation.

Dimensions
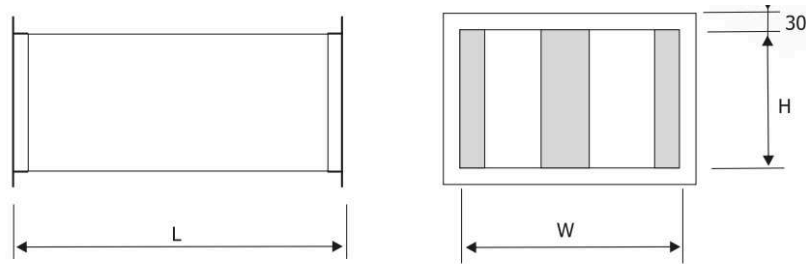
MODEL	L	W	H
SA 100	900	325	225
SA 125	900	325	225
SA 160	900	360	260
SA 200	900	400	300
SA 250	900	450	350
SA 315	900	515	415
SA 355	900	555	455
SA 400	900	650	500
SA 500	900	750	600
SA 560	900	750	600

Capacity

MODEL	63 Hz	125	250	500	1000	2000	4000
SA 100	2	2	2	5	13	12	8
SA 125	2	2	2	5	13	12	8
SA 160	2	2	2	5	13	12	8
SA 200	1	2	2	5	12	11	8
SA 250	1	1	2	4	10	9	7
SA 315	1	1	2	4	10	7	6
SA 355	1	1	1	3	9	6	5
SA 400	1	1	1	3	8	6	5

Variable Air Flow Units

Dimensions

HEADUNIT
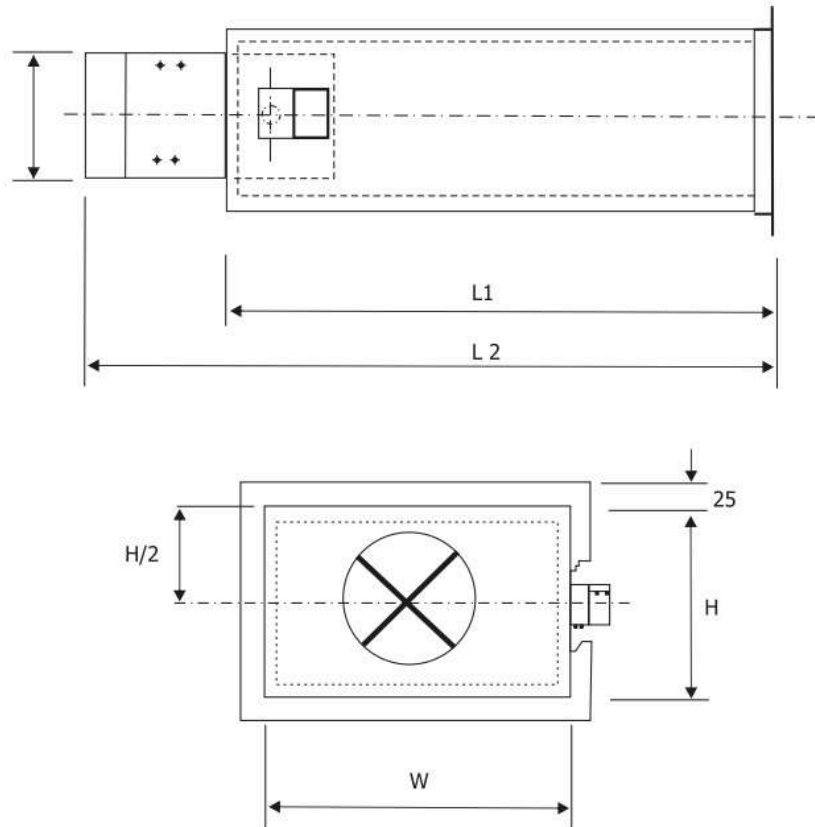
MODEL	D	H	W	L1	L2 (S)	L2 (E)	m
	mm	mm	mm	mm	mm	mm	kg
SDH-K 100	100	225	325	550	710	600	8,4
SDH-K 125	125	225	325	550	710	600	9
SDH-K 160	155	260	360	550	710	600	9,5
SDH-K 200	195	300	400	550	750	600	10,6
SDH-K 250	245	350	450	550	800	600	11,5
SDH-K 315	310	415	515	750	855	800	18,8
SDH-K 355	350	455	555	750	905	800	24,6
SDH-K 400	395	500	650	750	940	800	30,7
SDH-K 500	495	600	750	900	1000	900	---
SDH-K 560	555	660	810	900	1000	900	---

Variable Air Flow Units

Dimensions

PLENUM
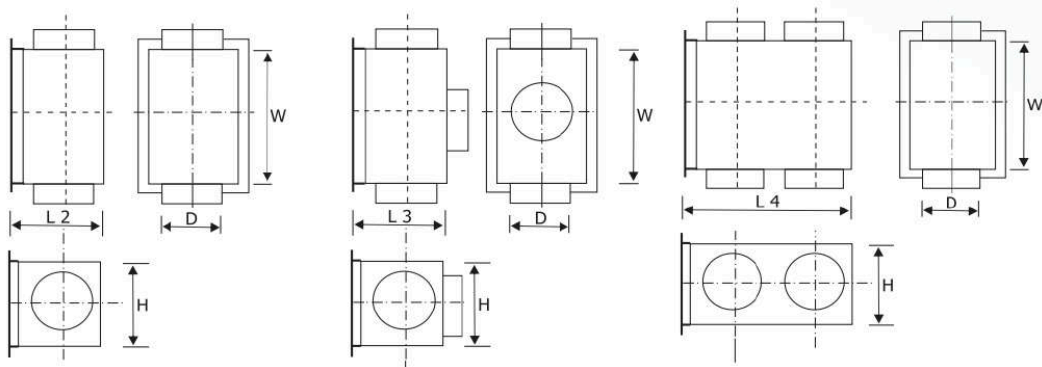
MODEL	D	H	W	L1	L2 (S)	L2 (E)
	mm	mm	mm	mm	mm	mm
SDH-K 100	100	225	325	200	200	370
SDH-K 125	125	225	325	225	225	420
SDH-K 160	155	260	360	260	260	490
SDH-K 200	195	300	400	300	300	570
SDH-K 250	245	350	450	350	350	670
SDH-K 315	310	415	515	415	415	800
SDH-K 355	350	455	555	455	455	880
SDH-K 400	395	500	650	500	500	970

Variable Air Flow Units

Sound Levels

p = 150 Pa

SDH-K 100 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
53	33	29	26	17	< 15	< 15	< 15	< 15	< 15
106	38	31	27	19	15	< 15	< 15	< 15	< 15
160	40	38	20	20	16	18	15	< 15	17
213	43	42	34	27	21	23	19	16	22
266	50	51	41	30	28	26	22	19	28
319	53	51	43	32	32	31	28	21	31

SDH-K 125 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
84	34	30	26	20	16	< 15	< 15	< 15	< 15
168	39	34	29	22	18	15	< 15	< 15	16
253	43	40	32	23	19	17	15	< 15	19
337	45	44	36	28	22	20	18	16	23
421	49	47	39	32	30	28	22	19	27
605	54	50	41	35	31	29	15	21	31

SDH-K 160 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
139	41	37	30	22	< 15	< 15	< 15	15	16
279	49	41	35	28	17	15	< 15	16	21
418	55	47	41	34	23	17	16	18	27
558	57	51	44	36	27	19	17	19	30
697	59	51	44	38	29	24	20	20	31
836	62	56	49	41	30	26	24	22	33

SDH-K 200 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
219	40	34	30	16	< 15	< 15	< 15	< 15	14
439	42	35	33	23	16	< 15	16	< 15	17
658	43	36	35	24	18	16	21	16	20
878	48	38	37	27	22	22	22	18	23
1097	51	42	38	29	25	24	25	19	25
1317	56	51	47	46	37	37	31	22	28

SDH-K 250 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
345	33	33	25	< 15	< 15	< 15	< 15	< 15	< 15
690	39	39	29	16	< 15	< 15	< 15	< 15	< 15
1035	43	42	34	19	16	15	< 15	< 15	20
1380	45	46	36	27	20	23	18	16	25
1725	47	48	41	34	25	26	22	20	28
2070	54	54	48	41	33	32	31	28	34

SDH-K 315 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
550	37	37	33	21	18	16	15	< 15	18
1101	44	43	38	25	23	21	17	15	23
1651	48	46	44	28	24	22	19	16	27
2202	51	50	47	30	27	23	20	17	30
2752	52	51	48	32	29	26	22	19	32
3303	59	57	56	43	40	38	29	22	35

SDH-K 355 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
701	37	37	33	21	18	16	< 15	< 15	18
1401	45	43	38	25	23	21	17	15	23
2102	49	47	45	28	24	22	19	16	28
2803	52	51	48	31	27	23	21	18	31
3503	54	53	50	34	30	27	23	20	33
4204	59	58	56	45	41	40	30	22	35

SDH-K 400 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
891	38	38	33	21	18	16	15	< 15	18
1783	46	44	39	26	24	22	18	16	24
2674	50	48	46	28	25	23	19	17	29
3565	54	53	49	33	28	24	22	19	33
4456	52	56	53	36	32	28	24	22	36
5350	68	65	56	42	37	36	31	28	42

p = 250 Pa

SDH-K 100 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
53	35	31	27	19	17	15	< 15	< 15	< 15
106	41	33	29	21	18	16	15	< 15	16
160	43	40	33	22	19	20	17	15	20
213	45	43	36	28	22	25	20	16	23
266	53	52	43	33	31	28	23	20	30
319	56	53	50	39	39	34	23	21	35

SDH-K 125 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
84	36	31	27	22	18	15	< 15	< 15	15
168	40	35	29	23	19	16	15	< 15	17
263	45	42	32	25	20	19	16	< 15	20
337	46	45	38	33	23	24	19	17	25
421	50	49	40	36	31	29	23	22	29
505	57	54	47	42	39	30	27	23	34

SDH-K 160 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
139	42	40	32	25	15	< 15	< 15	15	19
279	50	44	41	31	18	16	15	17	25
418	56	48	45	36	24	18	17	19	30
558	59	53	47	38	28	20	18	21	33
697	61	54	48	43	31	26	22	22	34
836	69	59	49	43	33	28	24	21	16

SDH-K 200 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
219	42	37	34	20	15	< 15	< 15	15	18
439	43	36	34	24	17	15	15	16	19
658	44	38	37	26	18	20	23	20	22
878	50	40	40	30	28	25	24	21	26
1097	53	49	44	33	29	28	27	22	30
1317	55	51	46	34	30	31	29	24	32

SDH-K 250 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
345	37	35	32	16	< 15	< 15	< 15	< 15	< 15
690	43	42	35	20	16	16	15	< 15	20
1035	47	46	38	25	18	19	15	15	24
1380	49	48	43	38	24	25	23	18	28
1725	50	51	46	36	28	28	26	22	31
2070	55	52	49	38	30	29	28	24	33

SDH-K 315 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
550	40	39	35	24	20	17	16	< 15	20
1101	43	45	42	27	25	22	18	17	26
1651	50	49	46	32	27	25	22	18	30
2202	52	53	49	34	29	27	24	19	33
2752	55	54	41	36	32	30	26	21	35
3303	57	55	43	38	35	33	29	23	37

SDH-K 355 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
701	40	39	35	25	20	18	17	< 15	20
1401	48	46	42	29	26	23	19	17	26
2102	51	50	47	31	27	25	22	19	30
2803	54	54	50	35	30	27	24	20	34
3503	57	56	53	37	33	30	26	22	36
4204	60	57	55	40	35	33	28	24	18

SDH-K 400 m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
8913	41	40	36	27	21	19	18	16	21
1783	49	47	42	31	22	25	21	18	27
2674	53	51	49	31	28	26	22	20	32
3565	57	56	52	36	32	27	24	21	36
4456	59	58	55	38	34	30	26	23	38
5350	60	59	56	39	36	30	30	24	39

Variable Air Flow Units

Sound Levels

p = 500 Pa

SDH-K 100

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
53	38	33	29	22	21	18	15	< 15	17
106	44	35	33	25	22	19	17	15	20
160	46	42	35	26	23	22	18	16	22
213	48	45	38	30	25	27	21	18	25
266	55	54	44	35	33	32	24	21	32
319	58	57	47	37	36	36	26	24	34

SDH-K 125

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
84	38	33	28	23	20	17	15	< 15	17
168	43	37	31	25	22	17	16	< 15	19
263	47	44	35	27	23	18	18	16	23
337	48	47	40	34	25	20	21	20	27
421	52	51	43	39	34	32	26	24	32
505	55	53	47	45	39	35	28	25	34

SDH-K 160

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
139	44	42	34	25	19	16	15	18	21
279	51	47	42	34	21	18	16	21	27
418	57	49	47	38	26	19	18	22	31
558	61	53	48	40	29	22	20	22	34
697	62	55	50	42	32	27	22	23	35
836	64	57	51	44	35	30	24	24	37

SDH-K 200

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
219	43	39	35	22	16	< 15	< 15	< 15	19
439	45	39	37	27	20	16	21	19	22
658	50	47	42	32	27	21	26	21	28
878	53	49	44	36	31	26	30	22	30
1097	56	51	51	34	33	29	28	23	34
1317	58	53	53	36	35	31	30	24	36

SDH-K 250

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
345	41	39	35	19	< 15	< 15	< 15	< 15	18
690	46	44	40	25	19	20	20	18	24
1035	49	48	44	30	23	24	24	21	28
1380	51	51	46	34	27	28	27	24	31
1725	54	53	50	39	32	32	30	28	34
2070	55	53	52	40	33	33	30	29	36

SDH-K 315

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
550	44	43	39	39	23	21	20	16	24
1101	52	47	47	32	29	25	25	19	30
1651	55	53	50	35	31	27	26	21	34
2202	57	57	54	39	34	30	28	23	38
2752	59	60	57	43	38	34	31	25	41
3303	61	61	60	45	41	35	33	26	43

SDH-K 355

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
701	45	45	39	30	24	22	22	18	25
1401	52	49	46	34	31	27	25	21	31
2102	56	54	51	35	31	28	26	23	34
2803	58	57	55	38	34	31	28	25	38
3503	60	60	58	43	38	35	32	26	41
4204	62	62	60	46	41	37	35	27	43

SDH-K 400

m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
8913	46	47	40	31	26	23	24	20	26
1783	53	52	46	37	33	30	26	24	32
2674	57	55	53	35	32	30	27	25	36
3565	59	58	56	38	35	33	29	27	39
4456	61	61	59	43	39	36	33	28	42
5350	62	62	60	44	40	37	34	28	43

Variable Air Flow Units

Heating Coil Capacities

SDH-K 100	m³/h	53	106	160	213	266	319
	Watt	590	920	1190	1360	1570	1720
	Pa	0,2	0,8	1,8	3,2	5	7,2
SDH-K 125	m³/h	84	168	253	337	421	505
	Watt	790	1240	1560	1920	2065	2190
	Pa	0,3	1,2	2,7	4,8	7,5	10,8
SDH-K 160	m³/h	139	279	418	558	697	836
	Watt	1300	1860	2160	2580	2740	2920
	Pa	0,3	1,2	2,7	4,8	7,5	10,8
SDH-K 200	m³/h	219	439	658	878	1097	1317
	Watt	1410	2125	2590	2940	3190	3400
	Pa	0,32	1,3	3	5,3	8,3	12
SDH-K 250	m³/h	345	690	1035	1380	1725	2070
	Watt	1830	2530	2940	3360	3690	3950
	Pa	0,6	2,4	5,4	9,6	15	21,6
SDH-K 315	m³/h	550	1101	1651	2202	2752	3303
	Watt	2270	2910	3410	3910	4210	4440
	Pa	0,8	3,2	7,2	12,8	20	28,8
SDH-K 355	m³/h	701	1401	2102	2803	3503	4204
	Watt	2570	3800	4110	4360	4950	4220
	Pa	1,2	4,8	10,8	19,2	30	43,2
SDH-K 400	m³/h	891	1783	2674	3565	4456	5350
	Watt	2520	3960	4240	4860	5025	5440
	Pa	1,1	4,4	9,9	17,6	27,5	39,6

The above capacities are for AT_1 =Tsu inlet -Toda=40°C temperature difference.
For different capacities use the following formul: $Q_2=Q_1(40/AT_2)$

Heating Coils

IDH-K model variable air flow terminal units can be equipped with hot water heating coils if desired. The heating coils are installed with flange connections immediately to the outlet of the IDH-K, or before a silencer and/or plenum cell if these elements are used.

01-Heating coils are manufactured with copper pipes and aluminum fins in PN 16 quality.
02-The standard application is a single row heating coil and its dimensions and capacity tables are given below.
03-Two-row heating coil can be made upon request. Please consult the company for this application.

Variable Air Flow Units

Hot Water Coil Dimensions
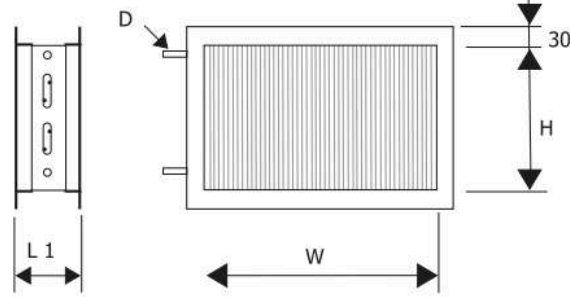
MODEL	W	H	L	D
WH - 100	325	225	90	$^1/_2$"
WH - 125	325	225	90	$^1/_2$"
WH - 160	360	260	90	$^1/_2$"
WH - 200	400	300	90	$^1/_2$"
WH - 250	450	350	90	$^1/_2$"
WH - 315	515	415	90	$^1/_2$"
WH - 355	555	455	90	$^1/_2$"
WH - 400	650	500	90	$^1/_2$"

Hot Water Coil Dimensions
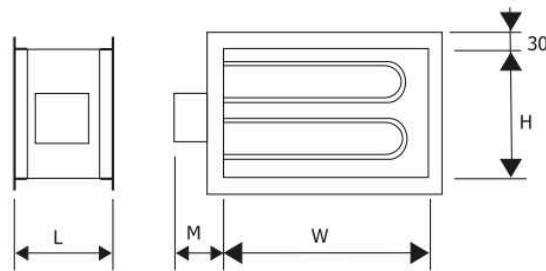
MODEL	W	H	L	Q (Kw)
WH - 100	325	225	200	1 X 2 kW
WH - 125	325	225	200	1 X 2 kW
WH - 160	360	260	200	1 X 3 kW
WH - 200	400	300	200	2 X 2 kW
WH - 250	450	350	200	2 X 3 kW
WH - 315	515	415	200	2 X 3 kW
WH - 355	555	455	200	2 X 3 kW
WH - 400	650	500	200	3 X 3 kW

Square Section VAV Terminal Units

IDH-D Model

VAV air conditioning and ventilation systems are the most sensitive and economical solutions of modern air conditioning technologies. In these systems, the temperature of the space is provided by proportionally controlling the amount of blown and exhausted air instead of controlling the temperature of the blown air.

In this way, it provides economy in both heat consumption and air flow, thus achieving lower operating costs. VAV Units are calibrated in the factory before being put into operation.

This ensures that maximum and minimum air flow rates are precisely balanced. VAV systems are suitable for high speed and high pressure duct systems.

As a result, less space is allocated for ventilation and air conditioning systems and a reduction in construction costs is achieved.

SDH-D units are designed and manufactured to meet the need for rectangular section VAV (Variable Air Flow) units due to space limitations.

It has a higher air flow capacity than the round inlet SDH-K units.

SDH-D units are suitable for heating and cooling with single duct VAV applications and also for CAV (Constant Air Flow) systems under changing conditions.

An example of this is HEPA filter applications that require constant air flow under variable pressure.

SDH-D units have air velocity measuring sensor elements that comply with ASHRAE documentation.

These sensors measure total pressure and static pressure and the air flow is determined electronically from their difference. The units are equipped with double-thickness and multi-wing leak-proof flow control dampers.

SDH-D units are produced in two main types. These models SDH-DI have an insulated body, while SDH-DO is uninsulated.

Dimensions

Sezer IDH-D model rectangular section VAV terminal units have a wide range of models and meet all kinds of technical demands.
Requests other than the dimensions specified below can be produced as special production.

Width	Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	●											
250	●	●										
300	●	●	●									
350	●	●	●	●								
400	●	●	●	●	●							
450	●	●	●	●	●	●						
500	●	●	●	●	●	●	●					
550		●	●	●	●	●	●					
600			●	●	●	●	●	●				
650			●	●	●	●	●	●				
700			●	●	●	●	●	●	●			
800				●	●	●	●	●	●	●		
900					●	●	●	●	●	●	●	
1000					●	●	●	●	●	●	●	●

The nominal flow rates of SDH-D units are calibrated at the factory and are based on an air inlet velocity of 10 m/s and the air coming from the main control device.
Corresponds to a 10 VDC control signal. It is not recommended to use these units at input speeds above 10 m/s.
The minimum air flow rate is related to the sensitivity of the pitot tube and the electronic measuring unit. The sensitive measuring capabilities of these measuring devices can go down to 2.3 Pa differential pressure. This corresponds to an air inlet velocity of approximately 2 m/s. Similarly, minimum speed applications below this velocity are not recommended.

The minimum air flow is calibrated in the factory and corresponds to a 2 VDC control signal input. Therefore, in places where BMS or DDC control systems are used, it is possible to set different flow rates by limiting the input control signal to different values between 2 and 10 VDC. Upon request, the devices can be calibrated in the factory other than the flow rates given above, provided that they remain between the above values. In this case, the 10 VDC setting can be calibrated equal to the customer's Vma. demand. In this case, 10 VDC corresponds to the maximum flow rate and 2 VDC corresponds to the minimum flow rate.

Capacity Tables

V=2 m/s

Width	Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	288											
250	360	450										
300	432	540	648									
350	504	630	756	882								
400	576	720	864	1008	1152							
450	648	810	972	1134	1296	1458						
500	720	900	1080	1260	1440	1620	1800					
550		990	1188	1386	1584	1782	1980					
600			1296	1512	1728	1944	2160	2592				
650			1404	1638	1872	2106	2340	2808				
700			1512	1764	2016	2268	2520	3024	3528			
800				2016	2304	2592	2880	3456	4032	4608		
900					2592	2916	3240	3888	4536	5184	5832	
1000					2880	3240	3600	4320	5040	5760	6480	7200

V=4 m/s

Width	Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	576											
250	720	900										
300	864	1080	1296									
350	1008	1260	1512	1764								
400	1152	1440	1728	2016	2304							
450	1296	1620	1944	2268	2592	2916						
500	1440	1800	2160	2520	2880	3240	3600					
550		1980	2376	2772	3168	3564	3960					
600			2592	3024	3456	3888	4320	5184				
650			2808	3276	3744	4212	4680	5616				
700			3024	3528	4032	4536	5040	6048	7056			
800				4032	4608	5184	5760	6912	8064	9216		
900					5184	5832	6480	7776	9072	10368	11664	
1000					5760	6480	7200	8640	10080	11520	12960	14400

Capacity Tables

V=6 m/s

Width	\\ Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	864											
250	1080	1350										
300	1296	1620	1944									
350	1512	1890	2268	2646								
400	1728	2160	2592	3024	4374							
450	1944	2430	2916	3402	3888	4374						
500	2160	2700	3240	3780	4320	4860	7776					
550		2970	3564	4158	4752	5346	5940					
600			3888	4536	5184	5832	6480	7776				
650			4212	4914	5616	6318	7560	8424				
700			4536	5292	6048	6804	7560	9072	10584			
800				6048	6912	7776	8640	10368	12096	13824		
900					776	8748	9720	11664	13608	15552	17496	
1000					8640	9720	10800	12960	15120	17280	19440	21600

V=8 m/s

Width	\\ Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	1152											
250	1440	1800										
300	1728	2160	2592									
350	2016	2520	3024	3528								
400	2304	2880	3456	4032	4508							
450	2592	3240	3888	4536	5184	5832						
500	2880	3600	4320	5040	5760	6480	7200					
550		3960	4752	5544	6336	6968	7920					
600			5184	6048	6904	7776	8640	10368				
650			5616	6552	7488	8424	9360	11232				
700			6048	7056	8064	9072	10080	12096	14112			
800				8064	9216	10368	11520	13824	16128	18432		
900					10368	11664	12960	15552	18144	20736	23328	
1000					11520	12960	14400	17280	20160	23040	25920	28800

Capacity Tables

V=10 m/s

Width	Height											
	200	250	300	350	400	450	500	600	700	800	900	1000
200	1440											
250	1800	2250										
300	2160	2700	3240									
350	2520	3150	3780	4410								
400	2880	3600	4320	5040	5760							
450	3240	4050	4860	5670	6480	7290						
500	3600	4500	5400	6300	7200	8100	9000					
550		4950	5940	6930	7920	8710	9900					
600			6480	7560	8630	9720	10800	12960				
650			7020	8190	9360	10530	11700	14040				
700			7560	8820	10080	11340	12600	15120	17640			
800				10080	11520	12960	14400	17280	20160	23040		
900					12960	14580	16200	19440	22680	25920	29160	
1000					14400	16200	18000	21600	25200	28800	32400	36000

Voice Levels

Model/Alan	Air inlet speed	Blowing side (dB)				Reflected to the environment (dB)			
		125Pa	250Pa	500Pa	750Pa	125Pa	250Pa	500Pa	750Pa
500x400 0,20m2	2 m/s	22	26	31	34			21	24
	4	32	37	41	44	22	27	32	35
	6	38	43	48	50	28	33	38	41
	8	42	47	52	55	32	37	43	46
	10	45	50	55	58	35	41	46	50

Model/Alan	Air inlet speed	Blowing side (dB)				Reflected to the environment (dB)			
		125Pa	250Pa	500Pa	750Pa	125Pa	250Pa	500Pa	750Pa
500x400 0,20m2	2 m/s	22	26	31	34				
	4	32	37	41	44		23	28	31
	6	38	43	48	50	24	29	34	37
	8	42	47	52	55	28	33	39	42
	10	45	50	55	58	31	37	42	46

Below 20dB

Correction values according to the cross-sectional area

m2	0,03	0,04	0,05	0,06	0,07	0,08	0,10	0,12	0,14	0,16	0,18	0,02	0,20	0,25	0,30	0,40	0,50	0,60	0,80	1.00
dB	-8	-8	-7	-6	-5	-5	-4	-3	-2	-1	-1	0	1	2	3	4	5	6	7	8

Square Section VAV Terminal Units

Automatic Control - 1

SDH-D model variable air flow terminal units are equipped with microprocessor servomotors produced for VAV applications.

These units control the air flow rate regardless of the pressure in the duct.

In SDH-D model VAV devices, the difference between the total pressure and static pressure of the air at the inlet is measured with pitot tubes in accordance with ASHRAE terminology and this measurement value is transmitted to the electronic control center.

Likewise, there are at least 12 total pressure measuring points in the total pressure station.

Similarly, there are minimum 12 measuring points in the static pressure measuring station. The differential pressure difference between the averages of the values measured at these points is dynamically sent to the processor unit.

The processor compares this value with the signals from the BMS or DDC main control system and decides whether to increase or decrease the air flow rate.
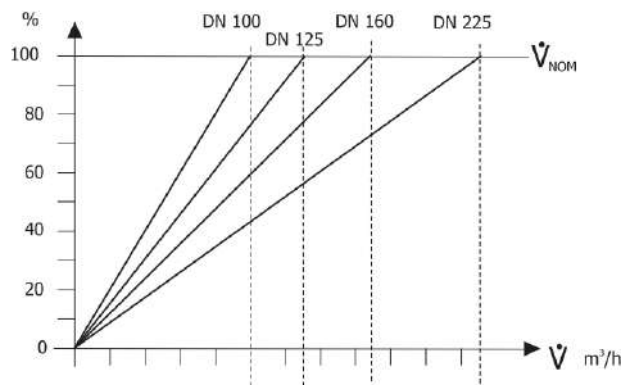
The nominal air flow rates of all SDH-D units are calibrated at the factory as shown in the figure above.

This flow rate corresponds to the maximum flow rate of the device.

Additionally, units can be calibrated for maximum and minimum flow rates according to project conditions.

This calibration process is carried out with the help of computers in special laboratories.

Control elements operate with 0-10 VDC or 2-10 VDC proportional control signals.

In case of operation with 0-10 VDC, 10 VDC control signal corresponds to maximum capacity and 0 VDC corresponds to fully closed position.

In 2-10 VDC operating mode, 2 VDC corresponds to the minimum flow rate. 0 VDC is the closed position.

As seen in the figure below, it is also possible to operate SDH-Units automatically and manually.

This is done by means of a multiple relay or rotary switch.

Automatic Control - 2

ZEV

$\dot{V}_{min}$ (% V_{max})

V_{max} (%)

80

100

0

2 4 6 8 10

0 2 4 6 8 10

[V] Working range 2...10 V

[V] Working range 2...10 V

$\dot{V}_{min}$ % $\dot{V}_{max}$ ZEV

⊥ ~ AC 24 V
− + DC 24 V

⚠ Connect via safety transformer

W   DC 2...10 V (DC 0...10 V)   ◄ Reference signal from controller or DDC

U_5 DC 2...10 V (DC 0...10 V)   ◆ Measuring voltage "U" for flow indicator or slave controllers

PP

1 2 3 5

⊥ ~ w/z U/PP

Communication input for PP-ZEV adjuster

Fully automatic working condition

Dimensions

W: Width (See Order Example)
H: Height (See Order Example)

F: Flange height up to W=400mm F=25mm, W=400mm, F=35mm.
Insulation: 25mm glass wool covered with galvanized sheet metal

IDH-Y Model

VAV air conditioning and ventilation systems are the most sensitive and economical solutions of modern air conditioning technologies. In these systems, the temperature of the space is provided by proportionally controlling the amount of blown and exhausted air instead of controlling the temperature of the blown air.

In this way, it provides economy in both heat consumption and air flow, thus achieving lower operating costs. VAV units are calibrated at the factory before being put into operation to determine their nominal flow rates. Maximum (Vmax) and minimum (Vmin) flow rates are fixed at the factory with computerized calibration devices to ensure precise balancing of air flow rates in the desired operating mode.

VAV systems are suitable for high speed and high pressure duct systems. As a result, less space is allocated for ventilation and air conditioning systems and a reduction in construction costs is achieved.

SDH-Y Units are designed to provide the most economical solutions in applications where accessories such as plenum cell heating coil, silencer etc. are not required. SDH-Y units are designed to provide heating and cooling with single channel VAV applications and additionally CAV (Constant Air Flow) systems under changing conditions.

They are also suitable devices for.

An example of this is HEPA filtered applications that require constant air flow under changing pressure. SDH-Y Units have air velocity measuring sensor elements that comply with ASHRAE documentation. These sensors measure total pressure and static pressure and the air flow is determined electronically from the difference between them. The units are equipped with double-thick and single-wing leak-proof flow control dampers. Thanks to the neoprene seal around it, it ensures leak-tightness at the time of full closure. SDH-Y Units are produced in two main types.

SDH-Y has an insulated body, while SDH-YO is uninsulated. Insulated models are double-walled and insulated with 25 mm glass wool.

Round Section VAV Terminal Units

Dimensions
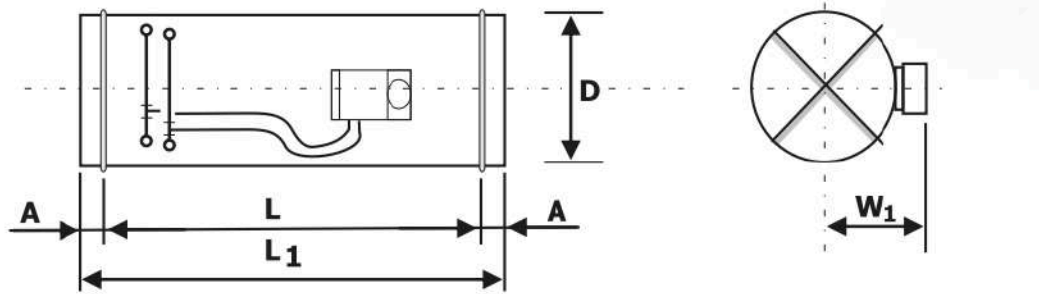
Non-isolated
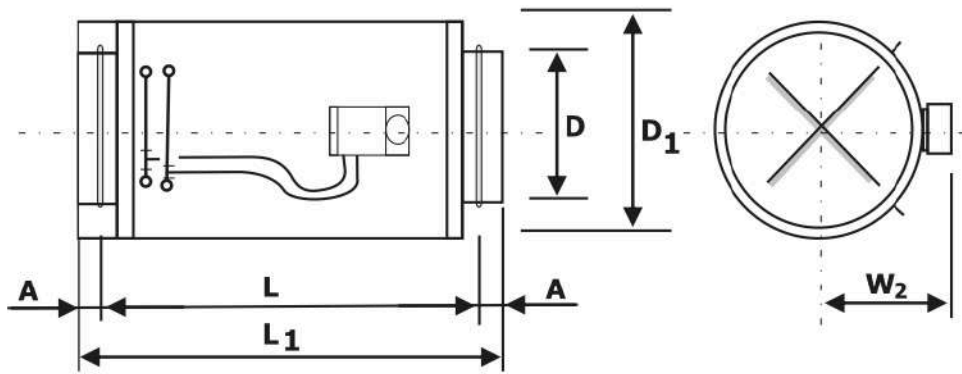
Isolated

MODEL	D	D_1	L	L_1	A	W_1	W_2
SDH-Y 100	100	150	480	400	40	170	220
SDH-Y 125	120	170	480	400	40	195	245
SDH-Y 160	155	205	530	450	40	230	280
SDH-Y 200	195	245	580	500	40	270	320
SDH-Y 250	245	295	580	500	40	320	370
SDH-Y 315	310	360	630	550	40	385	435
SDH-Y 355	350	400	630	550	40	425	475
SDH-Y 400	395	445	680	600	40	470	520
SDH-Y 450	445	495	730	650	40	520	570
SDH-Y 500	495	545	780	700	40	570	620

Automatic Control

SDH-Y model variable air flow terminal units are equipped with compact control units produced for VAV applications. These units control the air flow rate independently of the pressure in the duct. In SDH-Y model VAV devices, the difference between the total pressure and static pressure of the air in the inlet is measured with pitot tubes in accordance with ASHRAE terminology and this measurement value is transmitted to the electronic control center. Similarly, there are a minimum of 12 total pressure measuring points in the total pressure station.

Similarly, there are minimum 12 measuring points in the static pressure measuring station. The differential pressure difference between the averages of the values measured at these points is dynamically sent to the processor unit. The processor compares this value with the signals from the BMS or DDC main control system and decides whether to increase or decrease the air flow rate.
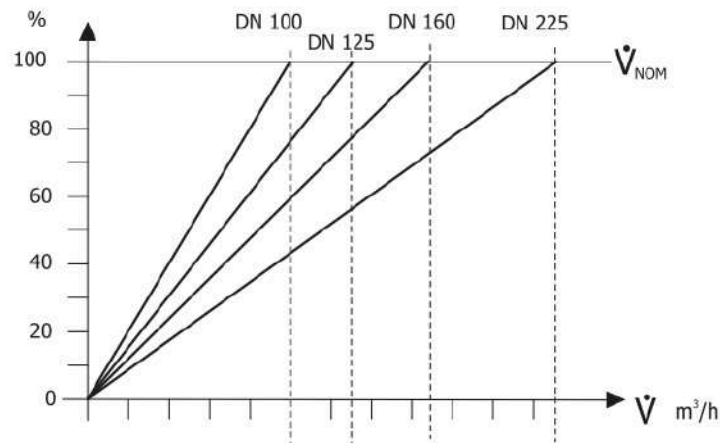
All SDH-Y units are factory calibrated for nominal air flow rates as shown in the figure above. This flow rate corresponds to the maximum flow rate of the device. Additionally, units can be calibrated for maximum and minimum flow rates according to project conditions. This calibration process is done with the help of a computer in a special laboratory.

The control elements operate with 0-10 VDC or 2-10 VDC proportional control signals. In the case of operation with 0-10 VDC, 10 VDC control signal corresponds to maximum capacity, and 0 VDC corresponds to minimum capacity. In the 2-10 VDC control signal, 2 VDC is the minimum capacity. 0 VDC corresponds to the fully closed position.
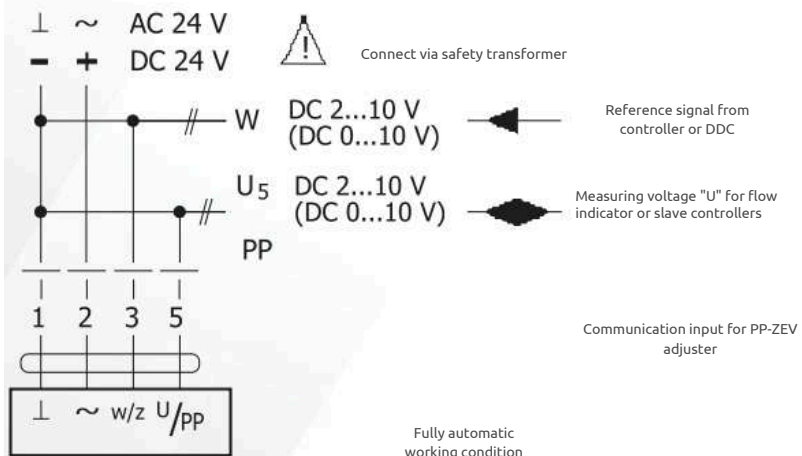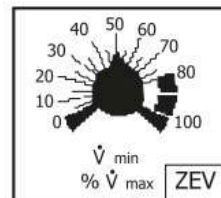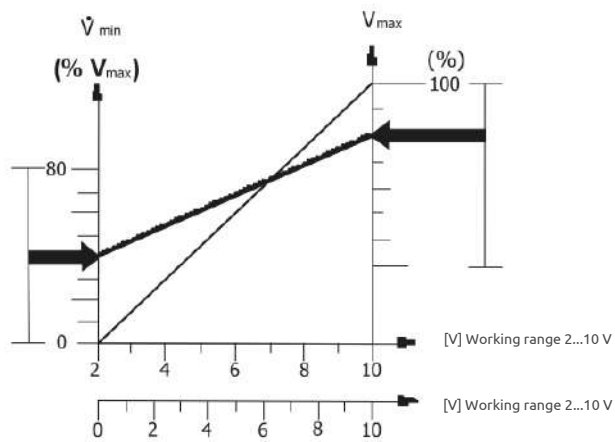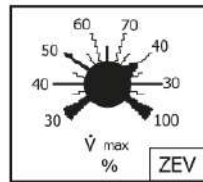
As seen in the figure below, it is also possible to operate SDH-Y units automatically or manually. This is done by means of a multiple relay or rotary switch.
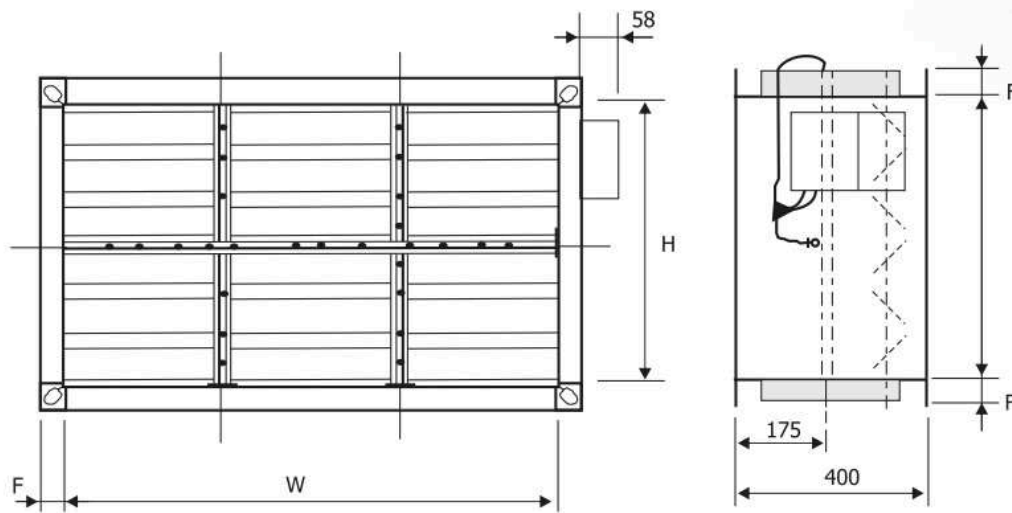
Automatic Control

$\dot{V}_{max}$ % ZEV

$\dot{V}_{min}$ (% V_{max})

V_{max} (%)

[V] Working range 2...10 V

[V] Working range 2...10 V

$\dot{V}_{min}$ % $\dot{V}_{max}$ ZEV

⊥	~	AC 24 V
–	+	DC 24 V

⚠ Connect via safety transformer

W — DC 2...10 V (DC 0...10 V) — Reference signal from controller or DDC

U5 — DC 2...10 V (DC 0...10 V) — Measuring voltage "U" for flow indicator or slave controllers

PP

1 2 3 5

Communication input for PP-ZEV adjuster

⊥ ~ w/z U/PP

Fully automatic working condition

Voice Levels

P = 150 Pa

Model	m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
SDH-Y 100	53	33	29	26	17	< 15	< 15	< 15	< 15	< 15
	106	38	31	27	19	15	< 15	< 15	< 15	< 15
	160	40	38	20	20	16	18	15	< 15	17
	213	43	42	34	27	21	23	19	16	22
	266	50	51	41	30	28	26	22	19	28
	319	53	51	43	32	32	31	28	21	31
SDH-Y 125	84	34	30	26	20	16	< 15	< 15	< 15	< 15
	168	39	34	29	22	18	15	< 15	< 15	16
	253	43	40	32	23	19	17	15	< 15	19
	337	45	44	36	28	22	20	18	16	23
	421	49	47	39	32	30	28	22	19	27
	605	54	50	41	35	31	29	15	21	31
SDH-Y 160	139	41	37	30	22	< 15	< 15	< 15	15	16
	279	49	41	35	28	17	15	< 15	16	21
	418	55	47	41	34	23	17	16	18	27
	558	57	51	44	36	27	19	17	19	30
	697	59	51	44	38	29	24	20	20	31
	836	62	56	49	41	30	26	24	22	33
SDH-Y 200	219	40	34	30	16	< 15	< 15	< 15	< 15	14
	439	42	35	33	23	16	< 15	16	< 15	17
	658	46	36	35	24	18	16	21	16	20
	878	48	38	37	27	22	22	22	18	23
	1097	51	42	38	29	25	24	25	19	25
	1317	56	51	47	46	37	37	31	22	28
SDH-Y 250	345	33	33	25	< 15	< 15	< 15	< 15	< 15	< 15
	690	39	39	29	16	< 15	< 15	< 15	< 15	< 15
	1035	43	42	34	19	16	15	< 15	< 15	20
	1380	45	46	36	27	20	23	18	16	25
	1725	47	48	41	34	25	26	22	20	28
	2070	54	54	48	41	33	32	31	28	34
SDH-Y 315	550	37	37	33	21	18	16	15	< 15	18
	1101	44	43	38	25	23	21	17	15	23
	1651	48	46	44	28	24	22	19	16	27
	2202	50	47	40	32	27	23	20	17	30
	2752	52	51	48	32	29	26	22	19	32
	3303	59	57	56	43	40	38	29	22	35
SDH-Y 355	701	37	37	33	21	18	16	15	< 15	18
	1401	45	43	38	25	23	21	17	15	23
	2102	49	47	45	28	24	22	19	16	28
	2803	52	51	48	31	27	23	21	18	31
	3503	54	53	50	34	30	27	23	20	33
	4204	59	58	56	45	41	40	30	22	35
SDH-Y 400	891	38	38	33	21	18	16	15	< 15	18
	1783	46	44	39	26	24	22	18	16	24
	2674	50	48	46	28	25	23	19	17	29
	3565	54	53	49	33	28	24	22	19	33
	4456	52	56	53	36	32	28	24	22	36
	5350	68	65	56	42	37	36	31	28	42

P = 250 Pa

Model	m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
SDH-Y 100	53	35	31	27	19	17	15	< 15	< 15	< 15
	106	41	33	29	21	18	16	15	< 15	16
	160	43	40	33	22	19	20	17	15	20
	213	45	43	36	28	22	25	20	16	23
	266	53	52	43	33	31	28	23	20	30
	319	56	53	50	39	39	34	23	21	35
SDH-Y 125	84	36	31	27	22	18	15	< 15	< 15	< 15
	168	40	35	29	23	19	16	15	< 15	17
	263	45	42	32	25	20	19	16	< 15	20
	337	46	45	38	33	23	24	19	17	25
	421	50	49	40	36	31	29	23	22	29
	505	57	54	47	42	39	30	27	23	34
SDH-Y 160	139	42	40	32	25	15	< 15	< 15	15	19
	279	50	44	41	31	18	16	15	17	25
	418	56	48	45	36	24	18	17	19	30
	558	59	53	47	38	28	20	18	21	33
	697	61	54	48	43	31	26	22	22	34
	836	69	59	49	43	33	28	24	21	16
SDH-Y 200	219	42	37	34	20	15	< 15	< 15	15	18
	439	43	36	34	24	17	15	15	16	19
	658	44	38	37	26	18	20	23	20	22
	878	50	40	40	30	28	25	24	21	26
	1097	53	49	44	33	29	28	27	22	30
	1317	55	51	46	34	30	31	29	24	32
SDH-Y 250	345	37	35	32	16	< 15	< 15	< 15	< 15	< 15
	690	43	42	35	20	16	16	15	< 15	20
	1035	47	46	38	25	18	19	15	15	24
	1380	49	48	43	38	24	25	23	18	28
	1725	50	51	46	36	28	28	26	22	31
	2070	55	52	49	38	30	29	28	24	33
SDH-Y 315	550	40	39	35	24	20	17	16	< 15	20
	1101	43	45	42	27	25	22	18	17	26
	1651	50	49	46	32	27	25	22	18	30
	2202	52	53	49	34	29	27	24	19	33
	2752	55	54	41	36	32	30	26	21	35
	3303	57	55	43	38	35	33	29	23	37
SDH-Y 355	701	40	39	35	25	20	18	17	< 15	20
	1401	48	46	42	29	26	23	19	17	26
	2102	51	50	47	31	27	25	22	19	30
	2803	54	54	50	35	30	27	24	20	34
	3503	57	56	53	37	33	30	26	22	36
	4204	60	57	55	40	35	33	28	24	18
SDH-Y 400	8913	41	40	36	27	21	19	18	16	21
	1783	49	47	42	31	22	25	21	18	27
	2674	53	51	49	31	28	26	22	20	32
	3565	57	56	52	36	32	27	24	21	36
	4456	59	58	55	38	34	30	26	23	38
	5350	60	59	56	39	36	30	30	24	39

P = 500 Pa

Model	m³/h	63	125	250	500	1K	2K	4K	8K	dB(A)
SDH-Y 100	53	38	33	29	22	21	18	15	< 15	17
	106	44	35	33	25	22	19	17	15	20
	160	46	42	35	26	23	22	18	16	22
	213	48	45	38	30	25	27	21	18	25
	266	55	54	44	35	33	32	24	21	32
	319	58	57	47	37	36	36	26	24	34
SDH-Y 125	84	38	33	28	23	20	17	15	< 15	17
	168	43	37	31	25	22	17	16	< 15	19
	263	47	44	35	27	23	18	18	16	23
	337	48	47	40	34	25	20	21	20	27
	421	52	51	43	39	34	32	26	24	32
	505	55	53	47	45	39	35	28	25	34
SDH-Y 160	139	44	42	34	25	19	16	15	18	21
	279	51	47	42	34	21	18	16	21	27
	418	57	49	47	38	26	19	18	22	31
	558	61	53	48	40	29	22	20	22	34
	697	62	55	50	42	32	27	22	23	35
	836	64	57	51	44	35	30	24	24	37
SDH-Y 200	219	43	39	35	22	16	< 15	< 15	< 15	19
	439	45	39	37	27	20	16	21	19	22
	658	50	47	42	32	27	21	26	21	28
	878	53	49	44	36	31	26	30	22	30
	1097	56	51	51	34	33	29	28	23	34
	1317	58	53	53	36	35	31	30	24	36
SDH-Y 250	345	41	39	35	19	< 15	< 15	< 15	< 15	18
	690	46	44	40	25	19	20	20	18	24
	1035	49	48	44	30	23	24	24	21	28
	1380	51	51	46	34	27	28	27	24	31
	1725	54	53	50	39	32	32	30	28	34
	2070	55	53	52	40	33	33	30	29	36
SDH-Y 315	550	44	43	39	39	23	21	20	16	24
	1101	52	47	47	32	29	25	25	19	30
	1651	55	53	50	35	31	27	26	21	34
	2202	57	57	54	39	34	30	28	23	38
	2752	59	60	57	43	38	34	31	25	41
	3303	61	61	60	45	41	35	33	26	43
SDH-Y 355	701	45	45	39	30	24	22	22	18	25
	1401	52	49	46	34	31	27	25	21	31
	2102	56	54	51	35	31	28	26	23	34
	2803	58	57	55	38	34	31	28	25	38
	3503	60	60	58	43	38	35	32	26	41
	4204	62	62	60	46	41	37	35	27	43
SDH-Y 400	8913	46	47	40	31	26	23	24	20	26
	1783	53	52	46	37	33	30	26	24	32
	2674	57	55	53	35	32	30	27	25	36
	3565	59	58	56	38	35	33	29	27	39
	4456	61	61	59	43	39	36	33	28	42
	5350	62	62	60	44	40	37	34	28	43

CAV - Mechanical Constant Flow Regulator

VRS Moldel

VRS model constant air flow regulators mechanically keep the air flow constant at the desired value by means of a spring and without using any external energy. If the pressure in the duct increases for any reason, the spring-controlled flap lifts and prevents the increase in air flow by increasing the pressure loss against the air speed that tends to increase (please see the picture below).

01 - Self-adjustment minimizes the regulation work required before commissioning on site.
02 - It has a wide working range of 02 - 10 meters/second air speed and 50 to 1000 pascals.
03 - It has 10% flow control sensitivity.
04 - It is possible to install a circular section silencer on the air outlet side of VRS.
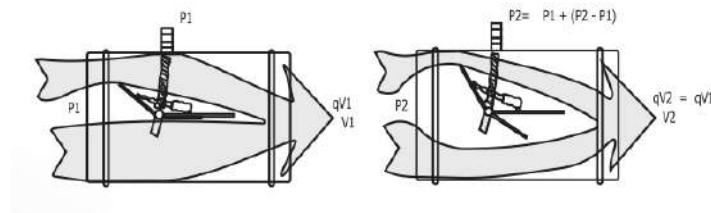
The body of VRS model fixed flow regulators is made of galvanized sheet metal. The regulation fins inside the body are made of aluminum sheet metal.
There is a plastic protective cover on the adjustment mechanism.

CAV - Mechanical Constant Flow Regulator

Dimensions
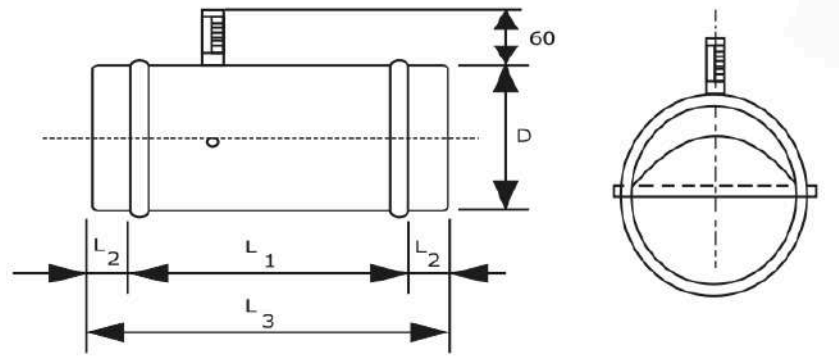
MODEL	D	L1	L2	L3
VRS 100	95	160	40	240
VRS 125	120	160	40	240
VRS 160	155	160	40	240
VRS 200	195	180	50	280
VRS 250	245	180	50	280
VRS 315	310	260	60	380
VRS 355	350	260	60	380
VRS 400	395	310	70	450

Quick Selection Table
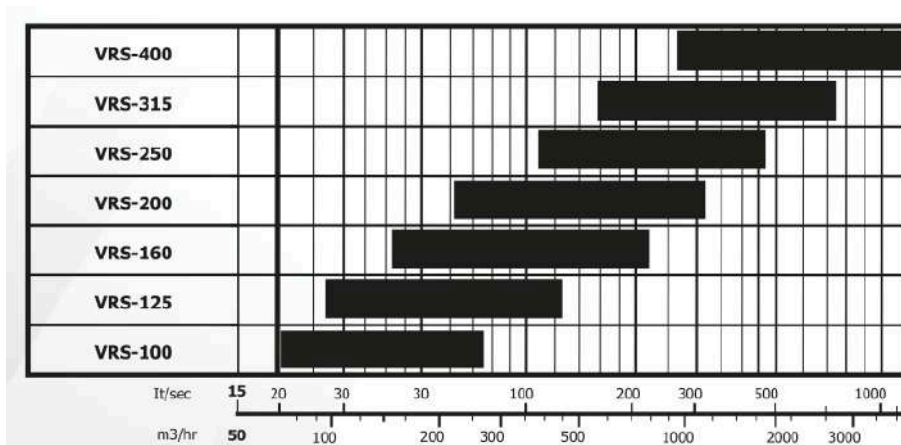
CAV - Mechanical Constant Flow Regulator

Selection Diagrams

MODEL	V_{min}	V_{max}	V_{min}	V_{max}	V_{min}	V_{max}	$P1_{min}$	$P1_{max}$
	m³/h	m³/h	It/s	It/s	m/s	m/s	Pa	Pa
VRS-100	54	270	15	75	2,0	10,0	50	1000
VRS-125	84	420	23	117	2,0	10,0	50	1000
VRS-160	156	780	43	217	2,0	10,0	50	1000
VRS-200	217	1085	60	301	2,0	10,0	50	1000
VRS-250	342	1710	95	475	2,0	10,0	50	1000
VRS-315	546	2730	152	758	2,0	10,0	50	1000
VRS-400	886	4430	246	1230	2,0	10,0	50	1000
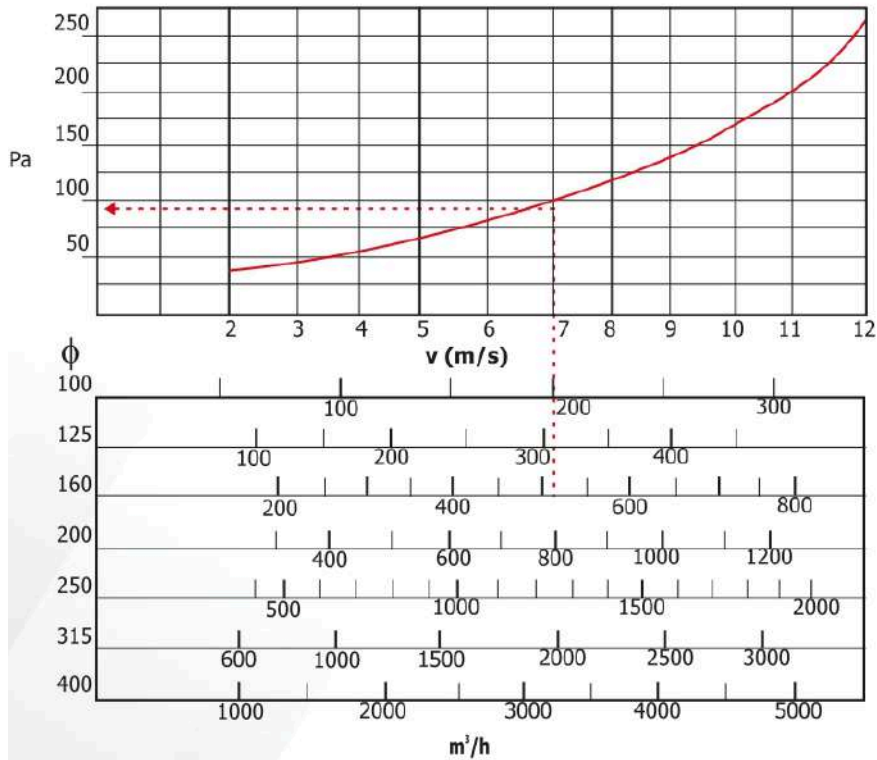
CAV - Mechanical Constant Flow Regulator

Voice Levels

The table below gives octave-band sound levels for the CAV regulator at different sizes, velocities and flow rates. Four measurement conditions are shown (from highest to lowest levels). Octave bands in Hz (63, 125, 250, 500, 1k, 2k, 4k, 8k) and overall A-weighted level Lp(A) in dB.

Condition 1 (highest levels)

ÖLÇÜ	v(m/s)	V(m³/h)	V(Lt/s)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100	2.2	83	23	48	51	53	53	53	60	50	48	55
	4.5	125	35	59	59	59	58	58	57	53	50	59
	7.1	200	55	70	69	65	63	61	59	56	52	63
	8.8	250	70	72	71	69	68	64	61	58	55	65
125	2.2	100	28	51	53	55	58	55	54	52	49	58
	4.5	200	55	61	59	61	59	58	58	54	51	59
	7.1	316	88	71	69	68	64	62	60	57	53	64
	8.1	400	111	74	73	69	67	64	63	59	58	68
160	2.2	180	50	54	56	57	58	57	55	53	49	58
	4.4	316	88	65	63	62	61	59	57	56	52	51
	7.2	620	172	73	71	69	67	64	61	58	54	58
	9.8	710	197	76	75	72	69	67	64	58	58	69
200	2.2	250	69	67	60	59	59	57	53	53	49	59
	4.4	500	139	65	65	64	63	61	59	58	53	62
	7.1	800	222	74	73	69	67	64	62	57	56	68
	10.2	1150	319	78	76	74	71	69	65	62	59	79
260	2.3	400	111	60	61	62	63	59	60	54	50	61
	4.6	800	222	67	67	66	64	62	62	57	54	64
	7.1	1250	347	76	74	71	69	68	67	59	55	67
	10.2	1800	500	79	77	75	72	69	67	63	60	71
315	2.1	500	139	62	63	62	65	61	59	56	50	62
	4.8	1200	333	69	68	67	69	66	63	59	54	64
	7.1	2000	555	77	74	72	73	70	67	64	56	68
	10	2800	777	80	76	76	74	71	67	64	60	72
400	2.2	1000	278	65	65	63	62	61	60	55	51	62
	4.4	2000	555	71	70	69	65	64	62	61	55	65
	7.2	3250	902	79	76	74	71	68	64	65	57	69
	10.2	4500	1250	82	79	77	74	71	69	61	61	73

Condition 2

ÖLÇÜ	v(m/s)	V(m³/h)	V(Lt/s)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100	2.2	83	23		44	48	47	47	46	44	41	48
	4.5	125	35		54	52	51	50	48	46	44	51
	7.1	200	55		62	59	58	56	52	49	46	56
	8.8	250	70		55	51	59	57	55	51	48	58
125	2.2	100	28		48	48	49	49	48	45	42	50
	4.5	200	55		55	54	53	53	50	47	46	53
	7.1	316	88		64	62	58	56	53	50	48	57
	8.1	400	111		66	64	60	58	54	53	50	60
160	2.2	180	50		50	51	54	49	48	46	42	51
	4.4	316	88		55	55	56	53	51	48	46	54
	7.2	620	172		66	62	60	57	55	51	48	59
	9.8	710	197		69	68	64	61	60	56	52	62
200	2.2	250	69		63	63	62	61	52	46	43	53
	4.4	500	139		58	57	56	54	52	49	48	55
	7.1	800	222		66	62	60	57	55	51	48	59
	10.2	1150	319		69	68	64	61	60	56	52	63
260	2.3	400	111		55	55	54	53	52	47	43	54
	4.6	800	222		61	59	58	56	56	51	47	57
	7.1	1250	347		67	65	62	59	55	52	49	61
	10.2	1800	500		71	68	66	62	59	56	53	64
315	2.1	500	139		56	56	57	53	53	47	43	55
	4.8	1200	333		61	59	58	58	54	51	47	57
	7.1	2000	555		68	66	62	57	56	53	49	61
	10	2800	777		72	67	66	63	61	57	54	65
400	2.2	1000	278		59	58	57	55	55	48	44	57
	4.4	2000	555		63	60	60	57	57	52	48	59
	7.2	3250	902		70	67	64	61	59	54	50	63
	10.2	4500	1250		72	69	67	64	62	58	56	65

Condition 3

ÖLÇÜ	v(m/s)	V(m³/h)	V(Lt/s)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100				39	38	38	38	35	32	30	27	30
				50	49	45	44	40	44	34	31	43
				55	53	50	48	46	43	40	37	47
125				41	40	39	38	35	33	31	28	37
				52	53	47	44	42	39	35	32	43
				58	55	52	49	48	47	41	38	49
160				42	41	39	38	36	37	31	28	39
				53	48	51	45	45	40	38	32	44
				59	54	58	51	49	48	47	39	50
200				44	42	42	40	38	36	32	29	39
				54	53	49	48	44	41	37	33	45
				59	58	54	51	48	46	42	39	51
260				47	46	44	41	39	39	30	30	41
				56	54	50	47	44	42	38	34	48
				60	59	58	53	50	47	44	40	52
315				48	47	45	44	39	37	33	30	41
				57	54	51	48	44	42	38	34	47
				62	59	57	54	50	48	44	40	52
400				50	48	47	44	42	38	34	31	43
				58	56	53	49	47	43	35	35	48
				63	61	58	56	52	49	45	41	54

Condition 4 (lowest levels)

| ÖLÇÜ	v(m/s)	V(m³/h)	V(Lt/s)	63	125	250	500	1k	2k	4k	8k	Lp(A)
100				36	36	36	33	32	29	27	21	33
				49	45	44	43	38	39	32	26	41
125				39	38	37	35	32	30	28	22	34
				51	49	46	42	40	37	33	27	41
160				40	40	39	37	36	35	28	22	38
				53	52	47	43	40	39	34	26	42
200				42	42	40	37	35	34	29	23	37
				53	53	47	44	41	39	35	27	43
260				45	44	43	38	38	37	30	23	39
				53	53	48	46	41	41	36	28	44
315				46	45	43	41	36	35	31	23	39
				56	53	49	43	43	40	36	28	45
400				48	46	45	41	39	38	32	24	40
				57	55	51	47	45	41	35	28	48

SDK Model

SDK model flow measurement units are devices that can measure air velocities and flow rates in channels with great precision. They make these measurements by means of two pilot tubes placed inside the device.

They measure air speeds above 2 m/s with ± 5% accuracy. The measurements can be read with portable hand tools or connected to fixed digital displays to provide continuous flow monitoring.

SDK type units can be connected to building automation systems and DDC control systems via pneumatic-electronic relays. In this way, continuous monitoring and control of the flow can be ensured.
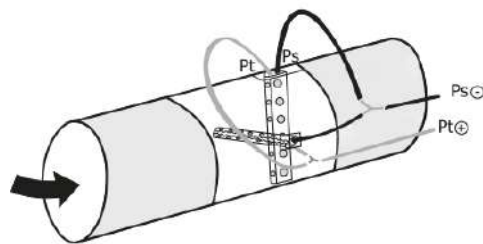

SDK model flow and velocity measuring devices are shipped as standard without measuring and display instruments such as manometers and indicators.
Devices such as inclined tube manometer, digital speedometer, portable flow and pressure gauge can be provided upon request at an additional cost.
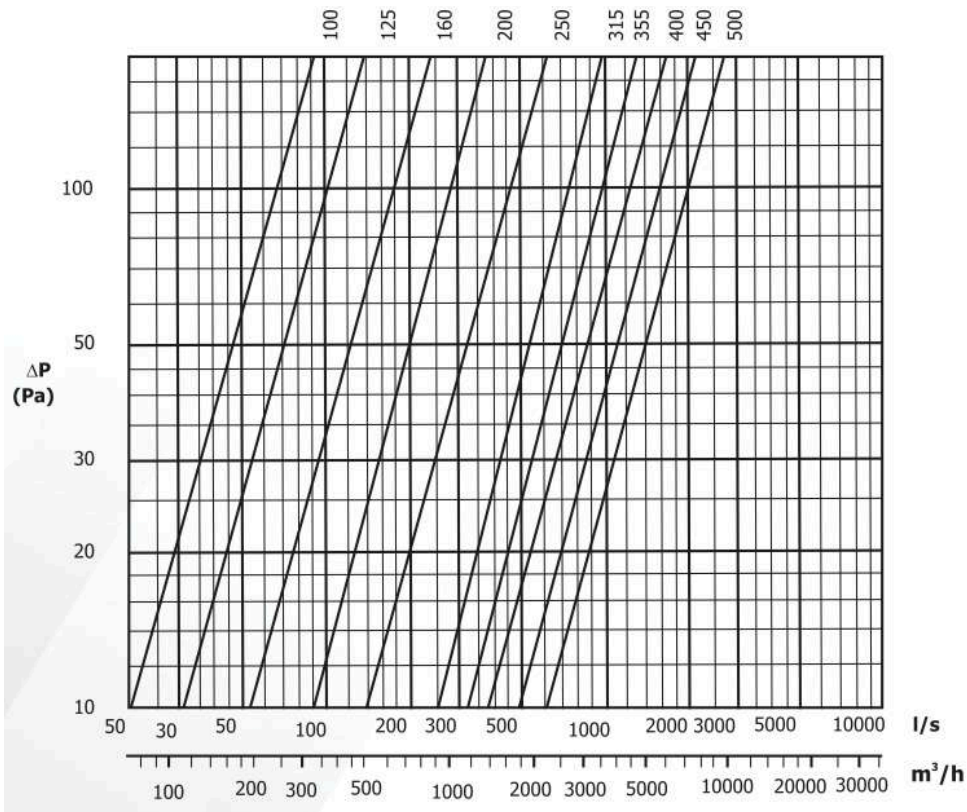
Dimensions

MODEL	A	D	L
SDK 100	34	100	220
SDK 125	34	125	220
SDK 160	34	155	220
SDK 200	34	195	220
SDK 250	34	245	220
SDK 315	34	310	220
SDK 355	34	350	220
SDK 400	34	395	220
SDK 450	34	445	220
SDK 500	34	495	220
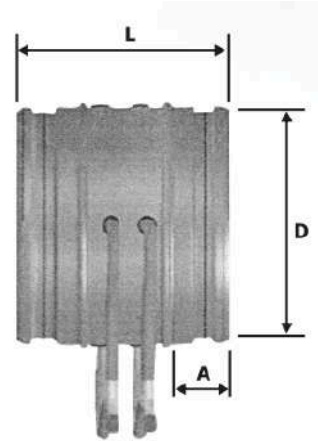
Pressure Losses

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