



HAVATARAZ SEPAHAN  
VENTILATION COMPANY

HAVATARAZ SEPAHAN  
VENTILATION COMPANY

MANUFACTURER AND DESIGNER OF AIR  
CONDITIONERS, CHILLER, HEATER AND  
INDUSTRIAL FILTRATION



**HAVATARAZ**  
SEPAHAN

Ventilation & Air  
Conditioning & Heating

[www.havataraz.com](http://www.havataraz.com)



HAVATARAZ SEPAHAN  
VENTILATION COMPANY

**HAVATARAZ**  
SEPAHAN  
Ventilation & Air  
Conditioning & Heating

FACTORY:  
NO.35, STREET NO.8, EAST INDUSTRIAL ZONE, NAEIN, ESFAHAN

CENTRAL OFFICE:  
UNIT 9, FLOOR 2, ALMAS SHAHR BUILDING, SHARIF VAGHEFI ST., BOZORGMEHR ST., ESFAHAN

[havataraz@gmail.com](mailto:havataraz@gmail.com)  **FACTORY:** (+98) 31 46 41 26 28 

**CENTRAL OFFICE:** (+98) 31 31 32 04 69

[www.havataraz.com](http://www.havataraz.com)  **+98 913 404 4885** 







# HAVATARAZ SEPAHAN Ventilation & Air Conditioning & Heating

## About Us

**Havataraz Sepahan Company** as one of the well-known manufacturers of the air conditioners in year 2001 has started its activity in the field of industrial factories Ventilation and refrigeration relying on rich experience and industrial knowledge. During this period, this company using Up-to-date knowledge of the world in the field of ventilation and also support of its supporters has been cooperated successfully and effectively with some big projects like hospitals, clean rooms, Food industries, commercial centers and malls, big hypermarkets, textile industries, mushroom industries, gyms, etc. in the field of ventilation .

This company owes its development to customers who were initially customers and then changed to valuable friends by trusting to Havataraz Company. One of the significant specifications of this company is powerful consultations presented to customers to select and buy the best air conditioning system to ventilate the intended space. Havataraz Company using software such as 3dcad and carrier and ansys and solid works and also planning one specialized software by the Havataraz team called HT CAD, plan and analyze the all ventilation projects and presented the final result to the customer.







#### Devices technical details:

1-Body made of Hot galvanized sheet with adjustable thicknesses in the manufacturing with the maximum life span  
2-Structure made of aluminum profile in sizes 3,4,5 and 7cm to plan and manufacture up to the highest requested CFM

3-Corners and joints made of polyamide with reinforced fibers or aluminum for corrosion or heat-sensitive points

4-Electric motors totally from valid foreign brands such as siemens or abb and valid domestic foreign brands like jemco or MotoGene

5-Device fan: double inlet-centrifugal-bet drive of the type Centrifugal for/backward fan , plan Nocotra of Italy that is completely installed.

6-Pulley fan: of the conical type (TAPER BUSH and ability to install and repair made of gray cast iron as balanced with corrosion- resistant pain coating and repair facility

7-Bearing: as self-alignment with marks ASHAI or KOYO or FYH of Japan designed for at least 2000 hours of function without any need to service and with the Pipe leading out of the device for Grease work outside the device

8-Shaft: made of SOLID CK45 steel , Double-polished with corrosion-resistant resin coating

9-Belt: of the type electrostatic and v shaped and of the type minimum B made in Korea of Japan

10- Sealing: air sealing and sealing of all pieces is done by the special Rubber bands

11-Device air sealing: totally by the light polyethylene tape and also Turkish Sealing paste with very high ability to adhere the aluminum profile and galvanized sheet

12-Device is equipped to two coils with copper pipe made by Ghaem Copper company and Fine aluminum made by Hezar Aluminium company of Kerman of the type FIN PLATE with copper pipes size 5/8 with thickness of at least 0.7mm and fin aluminum with minimum thickness of 140 micron of the type V-WAFFEL LOUVERED ENHANCED FIN that is fix in pipes. All coil frames are galvanized in order to prevent corrosion of coils during the air conditioner performance. All coils are washed in the Degreasing solution after manufacturing levels are completed and then tested in the 450psi pressure.

## 01 AIR HANDLING UNITS

#### Structural details

##### of the Havataraz company air conditioners:

Air conditioners made by Havataraz Company are produced with aluminum structure and steel body. This makes the devices strong so that they can be trusted in the worst transfer condition and the more important point is that any deformation in the structure is prevented when installment in the project place.

In the R&D unit, devices are planned for the highest performance level and we can approve that our devices have the lowest level of heat and cold exchange compared to devices planned by our competitors. Havataraz devices are all designed by 3d cad software and studied by the ht process software. To manufacture body of air conditioners, cnc machines are used to manufacture panels with the highest trust and the best sensitivity and accuracy level based on size.

Havataraz air conditioning devices are planned and produced in 23 different models with capacity of 1200-155000 m3/hr to transfer to transfer the related air and to achieve to the humidity and temperature level and purity of quality of external air expected by the customer.

Comparable and flexible structure of the device helps the buyer to have the best and the last solution for its projects.

## HAVATARAZ SEPAHAN Ventilation & Air Conditioning & Heating

Producing Ceiling  
Fan coils,  
Gold design

Airwasher from  
**2000CFM -  
75000CFM**

Hygienic  
air conditione  
**Air++**

Humidifiers  
for mushroom  
farms

Usual  
air conditioner  
from  
**2000CFM -  
75000CFM**

Types of coil with  
Hydrophilic  
Blue Coating

Exhausts of  
Hospital and  
industrial fans

Central  
air conditioning  
stations  
Textile factories

EconoPACK  
with the  
capacity of  
**50000CFM**

Types of  
Compression chiller  
up to capacity  
of 500 tone  
refrigeration

Multi Zone  
air conditioners

Air Cooled  
Package systems





## 03 AIRWASHER

One of the highly used devices manufactured in Havataraz company is air washer. This device that is in the Evaporative systems classification sprays water in the air and so temperature decreases and humidity increases. hot water coil in this device is connected to central engine house and heats the air passing over the coil. This device is more used in industrial factories, commercial centers and gyms.

### Technical details of devices:

- 1-Body with totally Anodized aluminum structure manufactured as Double-walled with epdm Insulation and mineral wool.
- 2-Forward/backward fans with aeration capacity according to nicotra design of Italy, shaft made of ck45 or stainless steel as double-polished.
- 3-spiral drainage connection
- 4-Bearings, brand asahi-fyh of Japan and equipped to Grease hose for function at least 5000 hours
- 5-fan output having flexible connection to Output flange

- 6-air washer structure of Havataraz company is modular with montage or capacity in the place of project
- 7- all Fittings are of brand pro-lam of Italy
- 8- all pieces are connected each other by galvanized bolt and nut
- 9-Riser are made of polyethylene or galvanized and screwed inside collectors
- 10- drainage pump is from brand spico or centrifuge from brand Pmpiran
- 11- Device is equipped to 2 coils totally with copper pipes manufactured by Ghaem copper company and Fin aluminum manufactured by Hezar aluminum company of Kerman of the type FIN PLATE with copper pipes size 5.8 with thickness of 0.7mm and aluminum fins with thickness of at least 140 micron of the type V-WAFFEL LOUVERED ENHANCED FIN that are fixed in pipes. All coils frames are galvanized to prevent coil corrosion during performance of air handling unit. All coils are washed in defatting solution and tested in 450psi.
- 12-Electromotor from motogen or electrogen brand
- 13-Airwasher nozzle system produced with Havataraz brand
- 14-Dampers, Luwa design of Switzerland, 2 numbers
- 15-Filtration room based on customer order
- 16-Automatic Electrical panel with PLC capacity and connecting to BMS
- 17-Invertor installment to control fans and engines rotation
- 18-Electrical panel from valid western European brands.

## 02 HYGIENIC UNITS

Hygienic Air handling units manufactured by Havataraz company is one of the best quality air handling units to ventilate the clean rooms air. Havataraz company by observing the vdi6022 standards in manufacturing these air handling units has been succeeded to install this product in clean air-sensitive sections like clean room saloons, Pharmacies and medical equipment , surgery rooms and Sensitive military and electronic equipment production Saloons.

### Structural details of these devices :

- 1-Using aluminum profile with curved corner and polyamide corners with resistant tensile fibers, design pro-lam of Italy
- 2-Internal wall of devices are totally stainless steel 304
- 3-External wall is made of corrosion resistant galvanized sheet with electrostatic color coating with 90 micron thickness
- 4-Thermal insulation of the body: the body of the device includes a floor, wall and ceiling in the form of double glazing with EPDM insulation with an initial thickness of 3 cm, placed inside the panels (the amount of air leakage from the body is based on the EN1886 standard)
- 5-Device fan is of the type plug fan manufactured by Nicotra, Italy and bearing certificate installed completely. this fan is designed based on the maximum pressure drop of filters
  - Fan is connected to motor as direct couple
  - All equipment are steel
  - Fan has static and dynamic iso1940 balance with tolerance G6.3
  - Fan and electromotor are existed from air handling unit as rail and integrated.
  - To entering the cable , special gland and flexible is used

6-Electromotor is brand zimens and fan to motor connection mode is direct drive on fan with 25% higher power. electromotor of device fan is 380v/3PH/50HZ with thermal class F and protection class IP55.

7-Vibration absorber: fan is installed by spring having hot galvanized coating selected by suitable Amplitude and intensity of vibrations and suspension natural frequency design is at least 2 times more than maximum fan rotation. This decreased vibrations transferred into chassis.

8-Damper: composed on 3 parts of Outer part, fin and wheel proportional to standard EUROVENT . fins and the outer part are made of anodize aluminum. Air handling unit has Progressive automatic damper

9-Using special filtration from famous brands like havak of turkey or domestic brands that is defined and installed on the device based on sensitivity amount and with regard to the cleaning class of clean room and Particle measurement parameters in the validation test

10- Filters include metal pre-filter, filter G4, Bag filters, classes F7 and F9 and HEPA filter, class H13.

Initial and main filters of air passing inside the device those are required to capture dust intermediate to big particles and since that filter surface can be cleaned, these filters can be used for long time. Net surface of Havataraz Company filters is that pressure losses in the high speeds can be minimized and maximum efficiency is created. Bag filters that are used to trap smaller dust particles are installed after pre-filters and the maximum air flow in these filters depends on bag capacity and the horizontal distance between bags. These filters are selected based on the required air amount and cross section of the air handling level. Hepa filter with efficiency amount of 99/9999% that can prevent passing of the 3µm dust particles All of these filters used in air handling unit correspond to standard DIN779.

11. coils are totally made of copper pipe manufactured by Ghaem copper company and fin aluminum manufactured by Aluminum Hezar of Kerman company of the type FIN PLATE with copper pipes size 5.8 or 3.8 with minimum thickness of 0.7mm and GOLD FIN/BLUE FIN aluminum fins with minimum thickness of 140 micron of the type V-WAFFEL LOUVERED ENHANCED FIN that are fixed in pipes. Coils are framed by aluminum and this prevents corrosion of coils during the performance of air handling unit. All coils are washed in defatting solution and tested in the pressure of 450psi after production levels are completed





**05**  
**HEATER**  
**COOLER**

Cooler heater device is produced in Havataraz Company in two horizontal /vertical designs and with lower cost compared to econopack devices so that it's highly used in gyms, mosques, and amphitheater saloons. This device is manufactured completely similar to modern air handling units so that high efficiency for heating and cooling productivity is achieved by production process optimization. Cooling in this device is executed through using Cellulose Pad grade 5090 with thick ness of 10cm with design V .

Furnace of this device is made of stainless steel with thickness of 2MM with Three-stage thermal pass steel thermal passes. All welding are done by CO2 and with welding and inspection standards. Device structure is made of anodized aluminum totally cut as standards and connected by polyamide or PRP-LAM aluminum. Water pump of device is from brand ABARA of the type centrifuge located next to the device. This device is produced from capacity 4500cfm to 30000cfm and thermal capacity of 80000kcal/hr to 300000kcal/hr. forward/backward fans with air handling capacity according to design nicotra of Italy, shaft made of ck45 or steel stainless as double-polished.



MODEL NO.	Air delivery CFM	Heating cap kcal/hr *1000	Return Damper	Motor kw	Dimensions			Weght kg
					W	L	H	
HTHC45	4500	40	410*1050	1.1	1130	1792	1380	350
HTH600	6000	60	510*1050	1.5	1130	2300	1380	400
HTH900	9000	80	610*1320	3	1400	2730	1500	560
HTH120	12000	100	710*1520	4	1600	2730	1650	700
HTH150	15000	125	810*1840	4	1920	3320	1800	800
HTH180	18000	150	910*1840	5.5	1920	3680	1820	1000
HTH240	24000	200	910*2220	7.5	2300	3680	2320	1300
HTH300	30000	300	910*2220	11	2300	3680	2320	1470

**04**  
**ECONOPACK**



One of the highly used and cheapest industrial and gym spaces cooling systems is ECONOPACK device. Econopacks of Havataraz company bear cooling system with air washer nozzles produced by this company and heating system of the type hot air furnace. This device in addition to supply the intended temperature condition inside saloons can filter the input air using the aluminum filters and kafi plate and bag filter. In result of using this system, it's not more necessary to use central engine house and high costs of repair and maintenance of engine house. Econopack air washer air handling system manufactured by Havataraz Company is a economic package for big contractors and architectures to achieve ideal temperature condition in winter and summer by decreasing cost and increasing efficiency. This device is manufactured with 2500cfm to 55000cf and thermal capacity of 80000kcal/hr to 40000 kcal/hr. Econopack manufactured by Havataraz company is used in mosques, Amphitheater saloons, gyms, hotels and conference saloons and big supermarkets.

**Components of this device:**

- 1-Body with totally anodized aluminum structure that is manufactured as double-walled with epdem insulation and mineral wool.
- 2-Forward/backward fans with Aeration capacity according to nicotra design of Italy, shaft made of ck45 or stainless steel as double-polished.
- 3-Spiral Drain connection
- 4-Bearings, brand asahi-fyh of Japan and equipped to Grease hose for function at least 5000 hours
- 5-fan output having flexible connection to Output flange

- 6-econopack or air washer structure of Havataraz company is modular with montage or capacity in the place of project
- 7- all Fittings are of brand pro-lam of Italy
- 8-all pieces are fit together by galvanized bolt and nut
- 9-Riser are made of polyethylene or galvanized and screwed inside collectors
- 10- drainage pump is from brand spico or centrifuge from brand Pmpiran
- 11- Hot water furnace made of stainless steel code 304 produced by three thermal passes and passes pipes are made of steel
- 12- Energy consumption control system in the output of hot water furnace
- 13- Torch, Pars Mashal brand or Iran Radiator
- 14- Electromotor from motogen or electrogen brand
- 15- Airwasher nozzle system produced with Havataraz brand
- 16- Dampers, Luwa design of Switzerland, 2 numbers
- 17- Filtration room based on customer order
- 18- Automatic Electrical panel with PLC capacity and connecting to BMS
- 19- Invertor installment to control fans and engines rotation
- 20- Electrical panel from valid western European brands
- 21- Double stage thermostat to control Havataraz econopack with capacity to control the saloon temperature
- 22- All welding are done by Co2 welding and with welding standards color and welding inspection.
- 23- Presenting all fat tests in the Havataraz factory by observing standards to deliver the device to customer
- 24- Cfm measurement and presenting guidelines and maintaining device and device health control and inspection program to customers of this company



## 07 COOL AIR CHILLER



Cool air chillers of Havataraz Company are manufactured in 3 models of scroll compressors and reciprocating compressors and screw compressors. It can be mentioned that Chillers with capacity of 3-120 tone refrigeration can be planned and produced with scroll compressors and chillers from capacity of 3-280 tone refrigeration can be considered as reciprocating compressors and 50-1280 tone refrigeration as screw compressor and act to manufacture them. To design chillers, some parameters such as mean sea level, dry air temperature condition, air humidity amount and generally device installment place climate are very important that all of these parameters are considered in the modern software of Havataraz Company and the chiller requested by the customer is designed and produced. Using Chiller dates back to 200 years ago and a scientist called Michael Faraday succeeded to discover and use Absorption chiller and the first refrigeration machine produced in England that this provided big change in the refrigeration and ventilation industry. Chiller performance depends on cycle pressure and temperature and type of the gas that complete this cycle. First, gas is condensed by compressor and then gas is directed to condenser by increased pressure created in compressor. Temperature and pressure of gas decreases in condenser and transforms from gas to liquid by phase change. In this stage, gas after passing from pieces such as Manual valve, electric valve, filter dryer and glass site enters expansion valve and injected as powder inside the copper pipes of Evaporator and decreases water temperature inside the Evaporator to 7 degree centigrade in result of being evaporated. All chillers manufactured by Havataraz Company are made of HOT DIP GALVANIZED totally connected by galvanized bolt and nut. Compressors used in these chillers are totally from famous brands available in Iran market including America Copeland, Bitzer of Germany, Danfoss of French, Hanbel of Taiwan and RefComp of Italy.

Used Gas that are proposed to customers of this company with regard to the installment conditions and capacity are of different types such as R22, R407C, R134A that are totally charged with the intended oil inside the compressors. Condenser are totally are of the type FIN PLATE with aluminum fin and copper pipe produced with the intended density from 8FPI to 14FPI and placed inside chillers as two designs of FLAT or V TYPE. All coils have GOLD FIN/BLUE FIN coating and inner groove copper pipe with 3/8 size is used.

### Benefits of these condensers:

- Easy repair and maintenance
- Possibility to integrate the Chiller device
- Ability to install in open space and omitting cooler
- Ability to control optimal performance of chiller in all weather conditions

Used Axial fans are totally from valid brands like EBM, Ziehl-Abegg or EuroVent and this process is done through Single speed or speed control by inverter.

safety conditions are observed in Electrical panes of these chillers totally and are made of HOT DIP GALVANIZED sheet with electrostatic color coating with thickness of 50 micron.

All pieces inside the electrical panel are totally from valid brands such as SCHNEIDER or SIEMENS with CAREL control system. evaporators used in chillers manufactured by Havataraz company are of the type tube and shell with copper pipes of the type inner groove or 5-pointed aluminum starts. Expansion valve used to manufacture the cold air Compression chiller may be of the type pressure, Thermostatic and electrical. expansion valve in installed before evaporator and after condenser and transforms the hot refrigerant liquid to cold gas by creating pressure drop or in other words, expansion valve in the refrigeration cycle has duty to decrease the pressure in the liquid path and in result to decrease the water temperature. In fact, it transforms the refrigerant from hot liquid to the cold gas. Of the most important functions of the Expansion valve in the Compression chillers is their role to determine the refrigerant flow entered into the evaporator and water cooling amount by the chiller. The second important role of Expansion valve is to determine the superheat amount. Superheat refers to the increased vapor temperature amount after reaching the Saturation state. We always need to 5-6 degrees of superheat in chillers to prevent the water entering the evaporator not to enter the compressor as liquid. Additionally, in case the superheat is higher than the mentioned amount, compressor electromagnetic coils may be burned. For this reason, expansion valve is used to control the superheat amount. Modern generation of chiller in the air conditioning industry is using compressors to manufacture the screw chiller that

Zent device or winter -Midsummer device is a completely economical and efficient device to use in environments with intermediate area with administrative, business or residential use

- Zent cooling system manufactured by Havataraz company is through cellulose pad grade 5090 with thickness of 10cm and 1m2 is considered for each 3000CFM.
- Device heating is supplied by a hot water coil with variable capacities and requested by customer. The used copper pipe size is 3/8 to 5/8 and aluminum fins with density of 8FPI-10FPI are used with regard to thermal capacity of the intended mode.
- Zent coil are tested all in 350PSI pressure.
- Zents manufactured by Havataraz company have production capacity in air handling system capacity from 1500 cfm to 26000cfm totally planned and produced by observing air conditioning standards and based on net calculations
- All parts of the device have EPDM or Elastomeric insulation
- Thermal capacity from 50000mbh to 800000mbh by considering hot water with standard condition
- Body made of hot dip galvanized sheet with thickness of 1.5mm
- Aeration Fan of the type forward with the maximum variable amount, design NICOTRA of Italy and shafts made of stainless steel or CK45
- having chassis made of fabric U-Channel covered by epoxy color after cutting and Bending
- return air damper and fresh air totally of the type OBD with aluminum blades
- having aluminum filters and plate to Filter the air entering the saloon
- engine from MOTOGENE or ELECTROGENE brand and power transmitted by belt and pulley

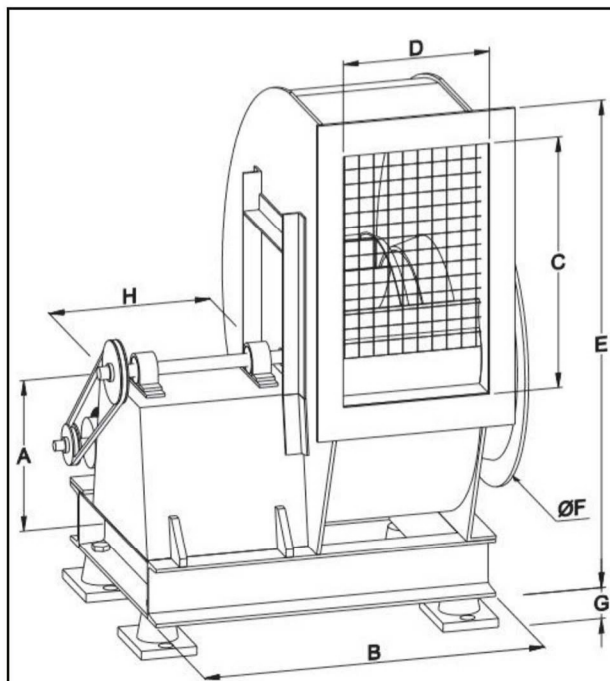
## 06 ZENT



### Specification size

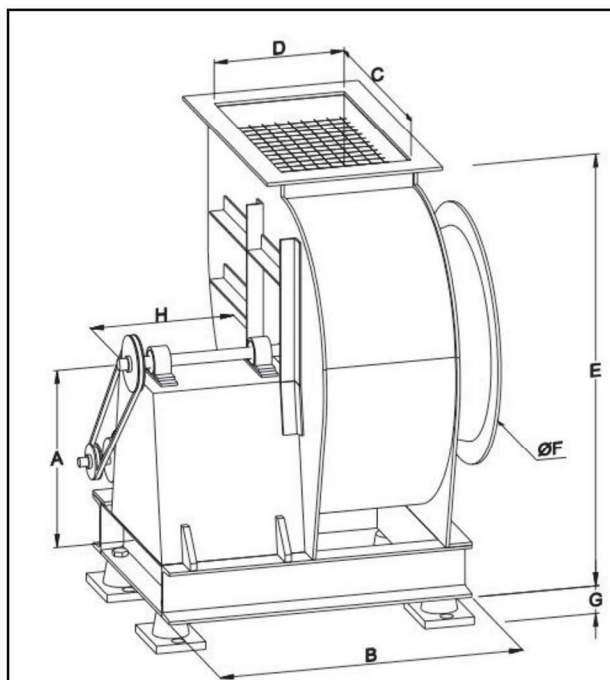
Model	Capacity		Fan	Qutlet Dimension	Electoro-Motor			T.s Pressure	Dimension			Connection		Approx weight	
	Air flow	Heating	φ	a.b	Hp	Rpm	No	Ht	lenght	width	Hieght	coil	Floater	Shipping	operating
	cfm	Btu/hr	In.	cm				mm-H <sub>2</sub> O		cm		Inches		kg	
HTZ 150	1500	50000	12	31×38.5	1 <sup>1</sup> / <sub>2</sub>	1400 & 900	singel	19	90	70	190	1	3 <sup>3</sup> / <sub>8</sub>	180	290
HTZ 200	2000	70000			3 <sup>3</sup> / <sub>4</sub>			21						182	292
HTZ 270	2700	75000			3 <sup>3</sup> / <sub>4</sub>			23						185	295
HTZ 320	3200	85000	15	36×39	3 <sup>3</sup> / <sub>4</sub>	1400	Three	19	100	85	210	1	3 <sup>3</sup> / <sub>8</sub>	220	320
HTZ 450	4500	140000			1 1 <sup>1</sup> / <sub>2</sub>			23						225	325
HTZ 600	6000	160000			3			20						230	330
HTZ 700	7000	190000	20	48×60	3			20	172	120	225	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	460	660
HTZ 800	8000	230000			3			25						465	665
HTZ 900	9000	280000			4			27						470	670
HTZ 1000	10000	320000	22	62.5×68	5 1 <sup>1</sup> / <sub>2</sub>			30	172	120	270	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	545	785
HTZ 1200	12000	360000			5 1 <sup>1</sup> / <sub>2</sub>			31						550	790
HTZ 1400	14000	400000			5 1 <sup>1</sup> / <sub>2</sub>			35						555	795
HTZ 1600	16000	440000	25	62×73	7 1 <sup>1</sup> / <sub>2</sub>			35	300	150	215	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	645	960
HTZ 1750	17500	470000			7 1 <sup>1</sup> / <sub>2</sub>			40						655	970
HTZ 1900	19000	500000			10			42						660	975
HTZ 200	20000	570000	28	64×87	10			40	330	150	215	1 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	790	1200
HTZ 2150	21500	600000			15			45						792	1202
HTZ 2300	23000	700000			15			50						796	1205
HTZ 2400	24000	730000	30	65×93	15			50	360	150	231	1 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	900	1400
HTZ 2500	25000	750000			15			55						905	1405
HTZ 2600	26000	800000			20			60						915	1415





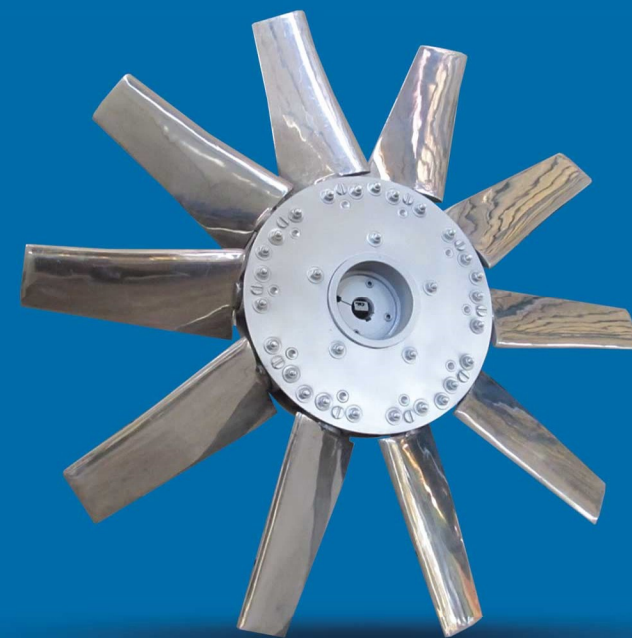
Fan Size	A	B	C	D	E	F	G	H
180	6.5	13.6	9.1	4.5	18.2	9.3	2	9.5
200	7.1	14.2	10.1	5.2	19.7	10.0	2	9.5
250	8.7	15.5	12.7	6.5	23.4	11.8	2	9.5
280	9.4	18.4	14.2	7.2	25.6	13.8	2	12.0
315	10.2	19.4	15.9	8.1	27.8	15.4	2	12.1
355	11.8	23.6	17.8	9.1	31.6	16.5	2	15.2
400	13.0	24.6	20.0	10.1	35.3	17.3	3	15.2
450	15.0	27.5	22.4	11.3	39.6	18.9	3	17.3
500	16.9	28.5	25.2	12.4	43.8	20.9	3	17.3
560	17.7	30.3	28.1	14.2	47.0	23.6	3	17.5
630	19.7	35.0	31.5	15.7	52.0	26.0	3	21.3
710	22.0	37.4	35.4	18.1	58.1	28.7	3	21.5
800	25.6	39.8	39.6	20.0	65.4	31.9	3	21.9
900	29.5	47.8	44.5	22.4	73.7	39.4	3	27.9

All dimensions are in inches.



Fan Size	A	B	C	D	E	F	G	H
180	7.1	13.6	9.1	4.5	16.1	9.3	2	9.5
200	7.9	14.2	10.1	5.2	17.5	10.0	2	9.5
250	9.8	15.5	12.7	6.5	20.7	11.8	2	9.5
280	11.0	18.4	14.2	7.2	22.2	13.8	2	12.0
315	12.4	19.4	15.9	8.1	23.4	15.4	2	12.1
355	14.0	23.6	17.8	9.1	24.6	16.5	2	15.2
400	15.7	24.6	20.0	10.1	31.5	17.3	3	15.2
450	17.7	27.5	22.4	11.3	35.2	18.9	3	17.3
500	19.7	28.5	25.2	12.4	37.8	20.9	3	17.3
560	22.0	30.3	28.1	14.2	42.3	23.6	3	17.5
630	23.6	35.0	31.5	15.7	44.7	26.0	3	21.3
710	26.8	37.4	35.4	18.1	50.4	28.7	3	21.5
800	29.5	39.8	39.6	22.1	56.3	31.9	3	21.9
900	33.5	47.8	44.5	24.4	63.0	39.4	3	27.9

All dimensions are in inches.



## 08 VENTILATOR

Havataraz Company has started its activity relying on specialized software in the field of manufacturing different types of Axial and Centrifugal ventilator. This company with regard to the developed and high quality production of these products have covered many industries such as hospitals, malls, subway tunnels, parking lots and big textile factories.

Technical details of these devices include:

### Industrial ventilator -axial fans

Axial fans manufactured in the Havataraz Sepahan Company are totally made of aluminum and its blades are of the type variable angle. These fans can replace the very high air volume and are manufactured in different diameters (based on the LUWA design of Switzerland) up to the 1600 mm diameters.

### Backward centrifugal fan

Backward centrifugal fans have higher manufacture technology compared to the forward ones and Havataraz Sepahan Company claims to have activity in this field and proud to manufacture this type of fan with high quality.

Fan details

- usable for high static pressures
- very lower noise than the forward fans
- higher efficiency
- speed of these fans are about two times more than the for Constant airflow
- body steel with thickness higher than 6mm for heavy fans
- ability to transfer the power through pulley and belt or direct coil
- having view gate
- spiral design based on modern software
- resistant steel chassis
- having vibration absorber
- fan with ISO1940 dynamic and static balance
- SKF bearings
- Optimal design for steel and parts that fan is affected by heat
- Optimal Engine design and selection to prevent the overload



**HAVATARAZ**  
SEPAHAN  
Ventilation & Air  
Conditioning & Heating



