Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

هـوای نـاب بـاران

طـراح و تولیـدکننـده سیستم هـای تهویـه مطبـوع

BREATHE WITH US

Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

Contents

01

CEO Message

Air pollution, increasing the average global temperature, human use of electrical and mechanical appliances, increasing energy cost and necessity to optimize energy consumption, the needs of pharmaceutical, medical and food industries and also requirement of modern architecture necessitates human beings to use Air Conditioning systems in confined spaces. Nowadays, due to advances of pharmaceutical and medical industries and also increasing construction of hospitals, shopping centers, sport complexes, conference halls and residential apartments, it seems important to pay attention to this necessity more than ever.

In order to meet this fundamental necessity, Havaye Nabe Baran Company has introduced itself as a leader in design and manufacture of high tech Air Conditioning systems in line with the latest technology in the world by employing the skilled and experienced team in administrative and production sectors, using the advanced machinery and high quality raw materials in production line and relying on strong human capital and former experience of cooperation with international trading partners.

With perseverance, trust in God and increasing efforts on this difficult path ahead, we hope that Havaye Nabe Baran family can play his role in energy efficiency and approaching independence and prosperity of Iran's HVAC industry as much as possible.

HNB GROUP

Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

02

About Us

Havaye Nabe Baran Company (HNB Group) was established relying on many years of successful experience in manufacturing Air Conditioning systems and aims to add dynamics and mobility in this industry and provide updated engineering services, designing, manufacturing and implementation in line with the latest technology in the world.

By applying coherent working methods and regarding the former experiences in cooperation with international trading partners, the company has succeeded in obtaining valid international certifications such as CE, GMP, IMS, ISO 9001, ISO 10002, TS 29001, ISO 14001, ISO 45001 and it has the honor of cooperating with the most known pharmaceutical, food, hospital, medical and military references and administrative, commercial and residential complexes during its activity.

By employing the specialized and experienced technical team and using advanced machinery in the production line, Havaye Nabe Baran Company has took an effective step towards improving the quality of its products such as Hygienic and Standard types of Air Handling Unit, Dehumidifier, Chiller, Condensing Unit, VRF Unit, Data Center and Server Room ventilation system, Fan Coil Unit, etc. and it can undertake all the steps of HVAC project including engineering design and calculations, production, installation, commissioning and maintenance.

Havaye Nabe Baran Company's priorities are quality, expertise, commitment, honesty and customer satisfaction and all the personnel in different organizational levels are committed and adhere to these principles.

WHY HNB?

- Production in line with the latest technology in the world
- The products are made by newest (2021) European machinery.
- All the products are designed & manufactured according to international certificates as EN 1886, DIN 1946-4, EUROVENT, VDI 6022-1 & EN 13053.
- Cooperation with prominent foreign companies in HVAC industry
- High experienced managers and technical team
- Skilled labor in production and after sales services
- High proficiency and experience in the highest level of cleanliness in pharmaceutical, hospital and food industry
- A-Z services in air conditioning, including initial design, calculations, manufacturing, testing, installation and commissioning
- Expanded capacity and flexibility to better respond to customer demand
- Offering the highest quality at the competitive price level
- Ability to prepare qualification documents (DQ, IQ, OQ) on pharmaceutical HVAC system
- We love what we do. This is clear in the solutions we produce.

HNB FACTORY

03

Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

The products are made based on the latest technology & 2021 European machinery:

HNB FACTORY:

Due to the activity of Havaye Nabe Baran Company as Boreas Turkish Company's office in Iran and in order to manufacturing top quality products according to the latest world standards, the factory was established in Payam Special Economic Zone located in Mehrshahr, Karaj city to facilitating the supply of raw materials and components from reputable international brands and also providing the possibility of extensive activities for export to neighboring countries and regional markets.

"Our products can be exported to international markets and they are competitive with the most prominent regional brands."

Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

Havaye Nabe Baran

هواسازهایزنیک، چیلر،کندانسینگ یونیت ، فن کویل، VRF

TRUST THE TECHNOLOGY

04

Certificates

CERTROME CERTIFICATION SERVICES

Certificate No: CE-IR1074

CERTIFICATE OF CONFORMITY

Manufacturer	Name	HAVAYE NABE BARAN Co.(HNB GROUP)
	Address	No.10, 8th St., Phase 2, Payam Special Economic Zone, Mehrshahr, Karaj, Iran
Relevant product(s) as described to the Technical Construction File No: TF9127988	Product(s) Name	Air Conditioning Unit
	Model	-
Applicable Directive(s)		-
Applicable Standard(s)		VDI 6022:2018

This is to certify that, upon the relevant request of the above company Certrome has received, archived and proceed to the fullness examination of the Technical Construction File of the above mentioned product(s).
The Technical Construction File has been archived at Certrome records with file no: TF9127988

Following the fullness examination of the Technical Construction File we confirm that it is adequate in respect with the basic health and safety prerequisites.

The manufacturer is obliged to issue a Declaration of Conformity according to the basic requirements of relative standards and places the CE marking with his own responsibility as follows:

CE

All modifications to the Technical File should be first submitted to Certrome to ensure further validity of this attestation.

Date of Issue: 8 Jun 2021
Certificate valid up to: 7 Jun 2024

Certrome
Certification Services

The authenticity of this certificate can be confirmed online or by e-mail to the Head Office via: info@certrome.com

Certrome Certification

CERTROME CERTIFICATION SERVICES

All the products are designed & manufactured according to international certificates as EN 1886, DIN 1946-4, EUROVENT, VDI 6022-1 & EN 13053.

EIQM
CERTIFICATION SERVICES

CERTIFICATE

THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

ISO 10002:2018

Customer satisfaction - Guidelines for complaints handling in organizations

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918451
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2023

THIS CERTIFICATE REMAINS VALID SUBJECT TO SATISFACTORY SURVEILLANCE AUDITS.

Authorized Signatory
EIQM Ltd. Certification Services
info@eiqmcert.com

verified

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The validity of this certificate can be verified at **www.eiqmcert.com**

EIQM
CERTIFICATION SERVICES

CERTIFICATE

THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

ISO 9001:2015

Quality management system

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918447
IRQAO REGISTRATION NO.: 14137048
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2023

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This certificate is also indexed on the **www.eiqmcert.com**

EIQM
CERTIFICATION SERVICES

CERTIFICATE

Verification of Compliance

Applicant Name: HAVAYE NABE BARAN CO. (HNB GROUP)
Applicant Address: No.10, 8th St., Phase 2, Payam Special Economic Zone, Mehrshahr, Karaj, Iran
Product Name: Air conditioning systems
Related Directives: 2014/30/EU Electromagnetic compatibility
Related Standards: BS EN 14511-4:2018 - TC , BS ISO 15042: 2017 - TC

Note: This Verification of Compliance has been issued on a voluntary basis. The Technical File satisfactorily covers the essential requirements of the above listed Directive(s).
This Document is only valid for the equipment and configuration described and in conjunction with the Technical File detailed above. Whereas the Manufacturer is responsible of the certification of the product(s) and not exempted to perform all the necessary activities before placing the product(S) on the market. The Manufacturer is also responsible of the intimal production control to ensure the product(s) are in compliance with the essential requirements of the above mentioned Directive(s).

CERTIFICATE REGISTRATION NO.: QM5918453
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2025

authorized signatory
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THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

ISO 45001:2018

Occupational health and safety management system

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918449
IRQAO REGISTRATION NO.: 14137051
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2023

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THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

ISO 14001:2015

Environmental management system

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918448
IRQAO REGISTRATION NO.: 14137050
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2023

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CERTIFICATE

THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

IMS

ISO 9001:2015 , ISO 14001:2015 , ISO 45001:2018

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918450
IRQAO REGISTRATION NO.: 14137048 - 14137050 - 14137051
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
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CERTIFICATION SERVICES

CERTIFICATE

THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

GMP

Good manufacturing practice

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5918452
ORIGINAL CERTIFICATION DATE: MARCH 24, 2020
CURRENT CERTIFICATION DATE: MARCH 24, 2020
CERTIFICATE EXPIRY DATE: MARCH 24, 2023

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CERTIFICATION SERVICES

CERTIFICATE

THE MANAGEMENT SYSTEM OF

HAVAYE NABE BARAN CO. (HNB GROUP)

NO.10, 8TH ST., PHASE 2, PAYAM SPECIAL ECONOMIC ZONE, MEHRSHAHR, KARAJ, IRAN

has been assessed and certified as meeting the requirements of

ISO 29001:2020

Petroleum, petrochemical and natural gas industries - specific quality management systems

FOR THE FOLLOWING ACTIVITIES

Design and manufacture of air conditioning systems including Hygienic Air Handling Unit, Chiller, Fan Coil Unit, Condensing Unit, Exhaust Fan, VRF, Fan and Filter

CERTIFICATE REGISTRATION NO.: QM5919030
ORIGINAL CERTIFICATION DATE: AUGUST 20, 2020
CURRENT CERTIFICATION DATE: AUGUST 20, 2020
CERTIFICATE EXPIRY DATE: AUGUST 20, 2023

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05

HYGIENIC AIR HANDLING UNIT

NAB SERIES

HYGIENIC AIR HANDLING UNIT NAB SERIES

NOMENCLATURE:

NAB-250	CW	H	D
01	02	03	04

01: Nominal air flow rate (cfm) / 10

02: Cooling coil:

- CW: chilled water coil
- CX: DX coil
- None

03: Heating coil:

- H: Hot water coil
- E: Electrical coil
- S: Steam coil
- None

04: Dehumidifier (or none)

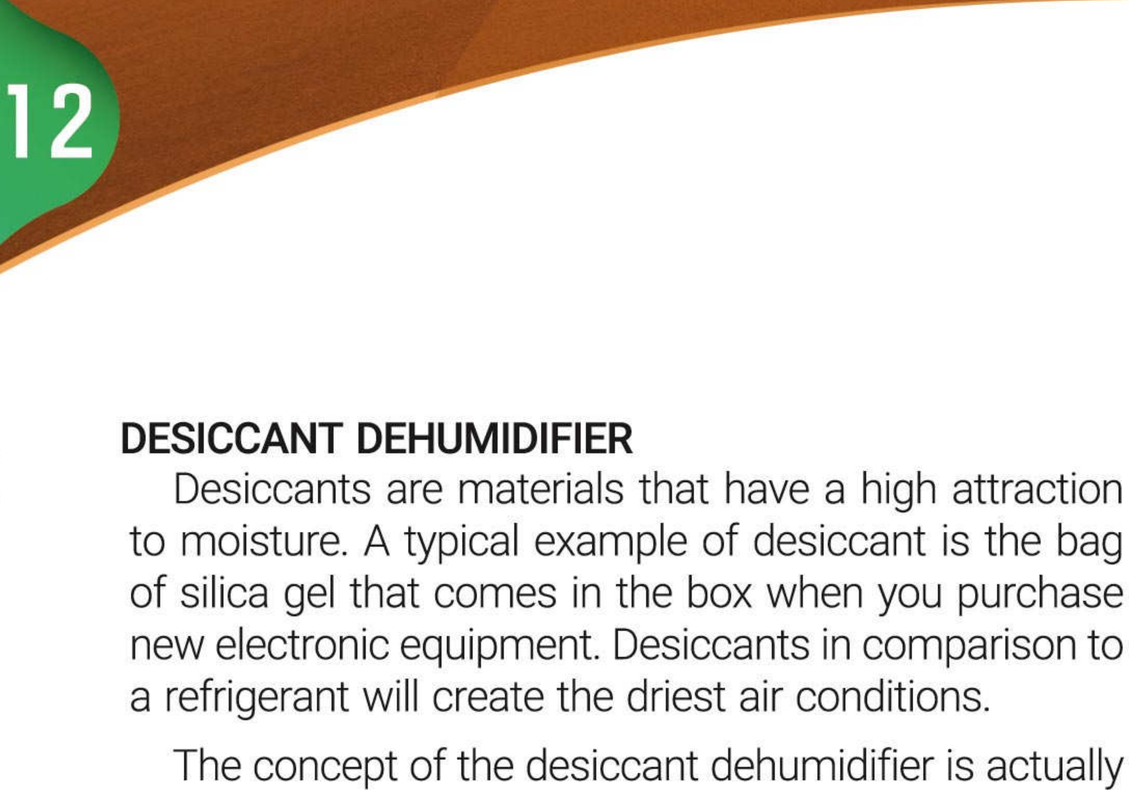
- Airflow range from 1,000 - 60,000 CFM and pressure range from 0.1 - 6 in.WG
- Production in three orientation types of horizontal, vertical and semi vertical body in forehead, top and down flow types.
- Production as Single Zone and Multi Zone types
- Designing and manufacturing hygienic Air Handling Units according to DIN 1946-4 and VDI6022 standards
- The structure is made of extruded Aluminum Thermal Break profile with polyamide corners specially designed for our products for ensuring thermal bridging performance complying with Eurovent standard for mechanical characteristics as per EN1886 and also providing better insulation and energy saving.
- AHU casing is fully air-tightened by the specially designed Thermal Break profile and also injecting PU gaskets by CNC injection machine around the doors to avoid air leakage.
- Double skin construction with insulation made of Polyuerthane, Rockwool with 25–50 mm thickness according to customers inquiry.
- Outer skin made of electrostatic powder painted galvanized steel with 80 µm powder painting thickness (D1 grade of body mechanical strength and T1 grade of body thermal insulating in Eurovent certification).
- Feasibility of considering inner skin made of SS304L or galvanized steel.
- Chassis made of galvanized sheet, punched and blended by TRUMPF branded CNC machinery; Chassis structure in the form of bolts and nuts (according to EN13053 standard).
- Centrifugal fans as forward curved, backward curved and plug fan with static and dynamic balance and the least amount of noise and vibration
- Electromotors with high protection and thermal insulation class and also possibility of ordering explosion-proof motors.
- Feasibility of considering droplet eliminator after cooling coil.
- In all the products as Air Handling Unit, Chiller, Condensing Unit, Fan Coil, etc., coil tubes are expanded and fixed in fins and the air barrier between the fins inside wall and copper tube is totally removed in order to create more heat transfer between the tubes and fins and also having higher strength in coil. Also, to clean the oil and chips, the coils are immersed in a tub containing grease traps.
- Coil fins are sinusoidal corrugated and can be ordered with anti-corrosion coating layer, which creates the highest thermal efficiency.
- Dampers made of aluminum with airfoils of Opposed Blade type special for hygienic units in fully sealed condition and possibility of connecting to damper actuator.
- Enable to consider different humidification systems.
- Enable to consider Aluminum, pleated, bag, compact, carbon active and hepa filter sections within the unit.
- F9 grade of filter frame leakage in Eurovent certification.
- Considering the accessories as sight glass, lightening, UV lamp section, etc. according to customer's inquiry.
- Considering the control instruments (automation), power panel and speed control system (frequency invertor) and other instruments with the most known international brands.
- AHUs are designed by the last technology of AHU selection software according to VDI-6022 and Eurovent standards.

06 DESICCANT DEHUMIDIFIER

DESICCANT DEHUMIDIFIER

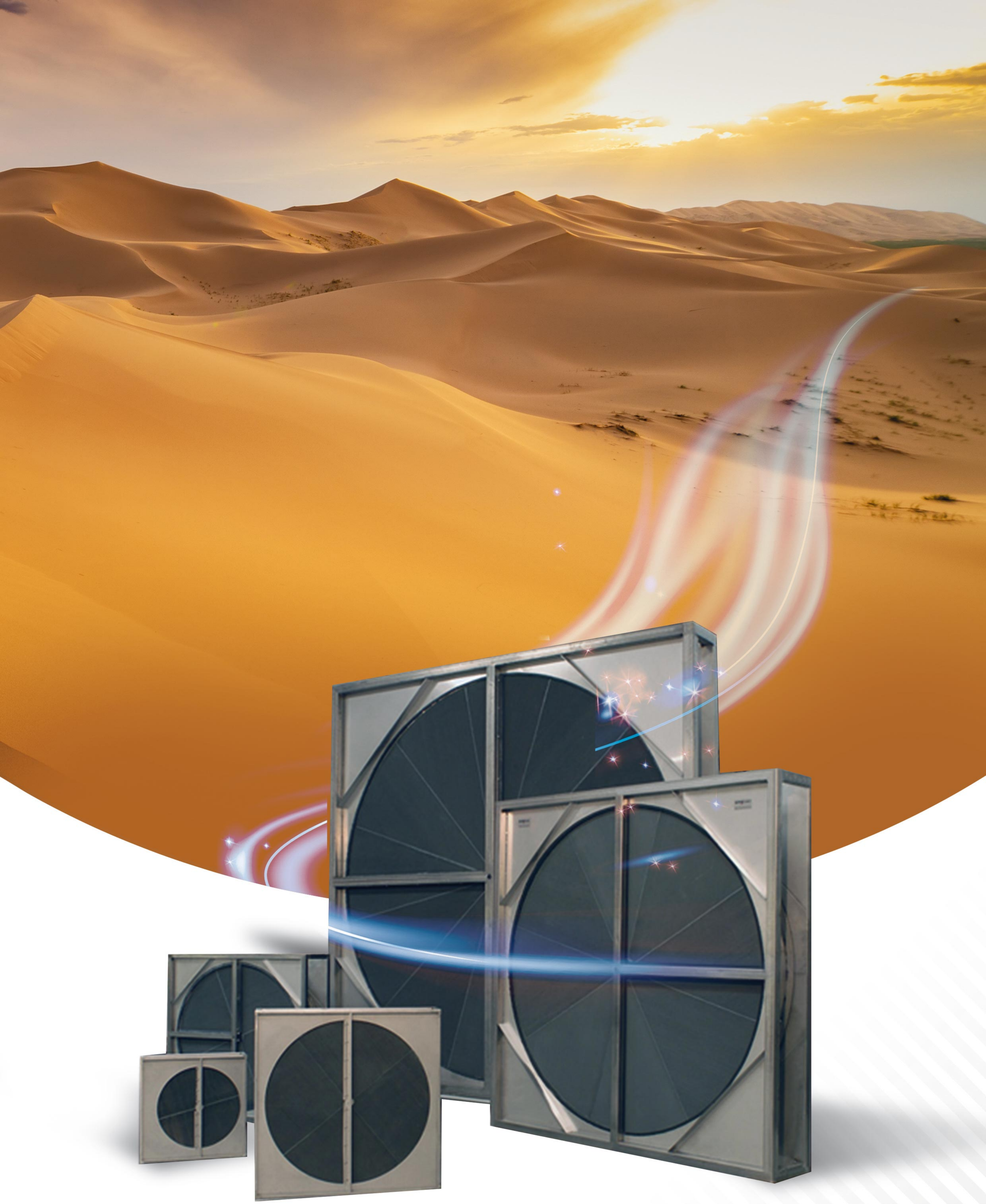
Desiccants are materials that have a high attraction to moisture. A typical example of desiccant is the bag of silica gel that comes in the box when you purchase new electronic equipment. Desiccants in comparison to a refrigerant will create the driest air conditions.

The concept of the desiccant dehumidifier is actually very simple compared to a refrigerant dehumidifier. Best way to explain is by looking at the corresponding picture:



The desiccant in housed in the round rotating wheel. The desiccant is divided into sections (like a pie). The wet air passes through a section of the wheel and the moisture in the air is deposited onto the desiccant. Now the wheel will rotate and the wet section of the desiccant will be heated in order to remove the moisture out of that slice. The process repeats itself over and over.

Section of a dehumidifier rotor. The high number of channels means that moisture is adsorbed with extra efficiency.



STANDARD AIR HANDLING UNIT
BARAN SERIES

NOMENCLATURE:

BARAN-250	CW	H	D
01	02	03	04

01: Nominal air flow rate (cfm) / 10

02: Cooling coil:

- CW: chilled water coil
- CX: DX coil
- None

03: Heating coil:

- H: Hot water coil
- E: Electrical coil
- S: Steam coil
- None

04: Dehumidifier (or none)

07

STANDARD AIR HANDLING UNIT
BARAN SERIES

FEATURES

- Available in 15 standard models with air flow rates from 1000 to 60000 CFM
- Single and multi-zone design
- Available in three different configuration type (vertical, horizontal and L-type)
- Available in Unitary and Sectional models
- Double skin construction with insulation made of Polyurethane, Rockwool with 25-50 mm thickness according to customer's inquiry
- Outer skin made of electrostatic powder painted galvanized steel with 80 µm powder painting thickness.
- Feasibility of considering inner skin made of SS304L or galvanized steel.
- Centrifugal fans with forward curved, backward curved or airfoil blades
- Opposed blade low leakage dampers (ability to be equipped with motorized damper)
- DX or chilled water type cooling coils
- Ability to have droplet eliminator after cooling coil
- Steam, hot water or electrical type heating coils
- Coil fins are sinusoidal corrugated and can be ordered with anti-corrosion coating layer, which creates the highest thermal efficiency.
- Dampers made of aluminum with airfoils of Opposed Blade type special for hygienic units in fully sealed condition and possibility of connecting to damper actuator.
- Ability to be equipped with supply humidifier upon request (steam grid, water spray or electrical)
- Primary, fine and HEPA&ULPA in full range of efficiencies.
- High technology low leakage filter frames and easy filter change
- Available in different coil casing and drain pan material
- Mixing boxes
- Ability to be equipped with various automation and control instruments
- Energy Recovery Section (run around, desiccant rotor and plate heat recovery types)
- Ability to be equipped with Sound Attenuator/ silencer
- Ability to be equipped with sight glass and lightening in different sections
- Flexibility in sections for shipment
- Design & Selection via updated Ahu Software Coded According to Eurovent standard

AIR WASHER UNIT
ABSHAR SERIES

NOMENCLATURE:

ABSHAR-250 AW4 H
01 02 03

01: Nominal air flow rate (cfm) / 10

02: Air washer classification No.:

- AW4: Class 4
- AW6: Class 6
- AW8: Class 8

03: Heating coil (or none)

08

AIR WASHER UNIT
ABSHAR SERIES

FEATURES

- Available in 15 standard models with air flow rates from 1000 to 60000 CFM
- Centrifugal fans with forward curved, backward curved or airfoil blades
- Opposed blade low leakage dampers (ability to be equipped with motorized damper)
- Equipped to humidifier
- Equipped to electro pump system of water
- Equipped to floater to control the water level
- Steam, hot water or electrical type heating coils
- Primary aluminum filter installed at the first section with easy filter change
- Available in different coil casing and drain pan material
- Mixing boxes
- Ability to be equipped with various automation and control instruments
- Flexibility in sections for shipment

AIR COOLED CHILLER
KASRA SERIES

NOMENCLATURE:

KASRA- 080 S 04 X
01 02 03 04

01: Nominal cooling capacity (TR)

02: Compressor type

- S: scroll
- C: screw
- R: reciprocating

03: Compressor quantity

04: Refrigerant gas:

- X: R-134a
- D: R-22
- C: R-407c

AIR COOLED CHILLER
KASRA SERIES

FEATURES

- Production in capacity range of 5-400 TR in one unit (production in below 10 TR as mini chiller)
- Enable to modulate chillers to each other up to 5 units
- Most know European brands of compressor (Bitzer, Danfoss, Coopeland, etc.) with high efficiency and special to tropical weather condition
- Enable to use Economizer system in screw type compressor according to customer's inquiry
- Enable to consider three refrigerants of R134a, R407C and R22 in the units
- Enable to use two evaporator types of Plate and Shell&Tube according to customer's inquiry
- High efficiency evaporators according to the last updated international standards
- Structure made of galvanized sheet with 2 mm thickness. All the cutting, punching and blending of metal components are done by TRUMPF branded advanced CNC machinery according to confirmed drawings.
- Body is made of 1.25 mm thickness of galvanized steel which is electrostatic powder painted with 80 µm thickness.
- Chassis and profile painting by Polyurethane liquid with 120 µm thickness.
- Up to 50 TR capacity, chassis made of galvanized sheet connected by bolts and nuts. In higher capacities in order to have more strength, chassis is made of standard girder and channel beam.
- Installing the Receiver with pump-down capability.
- Electrical components of high quality brands as Siemens, Danfoss, Schneider, LS, Hyundai, Finder, Atonix, Technology
- Valves of refrigeration line of West European high quality brands as Castel, GMC, ALCO
- Equipped to controllers of high/low pressure, oil pressure and oil level to protect the compressor
- Fans of axial type with maximum airflow and minimum noise
- Equipped to PLC based controller as CAREL, DANFOSS, etc.

WATER COOLED CHILLER
KARIZ SERIES

NOMENCLATURE:

KARIZ- 080 S 04 X
01 02 03 04

01: Nominal cooling capacity (TR)

02: Compressor type

- S: scroll
- C: screw
- R: reciprocating

03: Compressor quantity

04: Refrigerant gas:

- X: R-134a
- D: R-22
- C: R-407c

WATER COOLED CHILLER
KARIZ SERIES

FEATURES

- Production in capacity range of 5-700 TR in one unit
- Enable to modulate chillers to each other up to 5 units
- Most know European brands of compressor (Bitzer, Danfoss, Coopeland, etc.) with high efficiency and special to tropical weather condition
- Enable to consider three refrigerants of R134a, R407C and R22 in the units
- Enable to use two evaporator types of Plate and Shell&Tube according to customer's inquiry
- High efficiency evaporators according to the last updated international standards
- Enable to use two condenser types of Plate and Shell&Tube according to customer's inquiry
- Tubes of CLF type (highest cooling efficiency) in Shell&Tube condenser
- Chassis painting by Polyurethane liquid with 120 µm thickness
- Up to 50 TR nominal capacity, chassis made of galvanized sheet connected by bolts and nuts. In higher capacities in order to have more strength, chassis is made of standard girder and channel beam.
- Electrical components of high quality brands as Siemens, Danfoss, Schneider, LS, Hyundai, Finder, Atonix, Technology
- Valves of refrigeration line of West European high quality brands as Castel, GMC, ALCO
- Equipped to controllers of high/low pressure, oil pressure and oil level to protect the compressor
- Equipped to PLC based controller as CAREL, DANFOSS, etc.

AIR COOLED CONDENSING UNIT
DUMAN SERIES

NOMENCLATURE:

DUMAN- 080 S 04 X
01 02 03 04

01: Nominal cooling capacity (TR)

02: Compressor type

- S: scroll
- C: screw
- R: reciprocating

03: Compressor quantity

04: Refrigerant gas:

- X: R-134a
- D: R-22
- C: R-407c

11

AIR COOLED CONDENSING UNIT

DUMAN SERIES

FEATURES

- Production in capacity range of 5-400 TR in one unit
- Enable to modulate chillers to each other up to 5 units
- Most know European brands of compressor (Bitzer, Danfoss, Coopeland, etc.) with high efficiency and special to tropical weather condition
- Each compressor works in a separate circuit in all the units
- Enable to use Economizer system in screw type compressor according to customer's inquiry
- Enable to consider three refrigerants of R134a, R407C and R22 in the units
- Structure made of galvanized sheet with 2 mm thickness. All the cutting, punching and blending of metal components are done by TRUMPF branded advanced CNC machinery according to confirmed drawings.
- Body is made of 1.25 mm thickness of galvanized steel which is electrostatic powder painted with 80 µm thickness.
- Chassis and profile painting by Polyurethane liquid with 120 µm thickness.
- Up to 50 TR capacity, chassis made of galvanized sheet connected by bolts and nuts. In higher capacities in order to have more strength, chassis is made of standard girder and channel beam.
- Installing the Receiver with pump-down capability.
- Electrical components of high quality brands as Siemens, Danfoss, Schneider, LS, Hyundai, Finder, Atonix, Technology
- Valves of refrigeration line of West European high quality brands as Castel, GMC, ALCO
- Equipped to controllers of high/low pressure, oil pressure and oil level to protect the compressor
- Fans of axial type with maximum airflow and minimum noise
- Equipped to PLC based controller as CAREL, DANFOSS, etc.

Clean air is the life base

Havaye Nabe Baran

Designer and Manufacturer of **Air Conditioning Systems**

LET'S CLEAN THE AIR

CEILING 12
Fan Coil

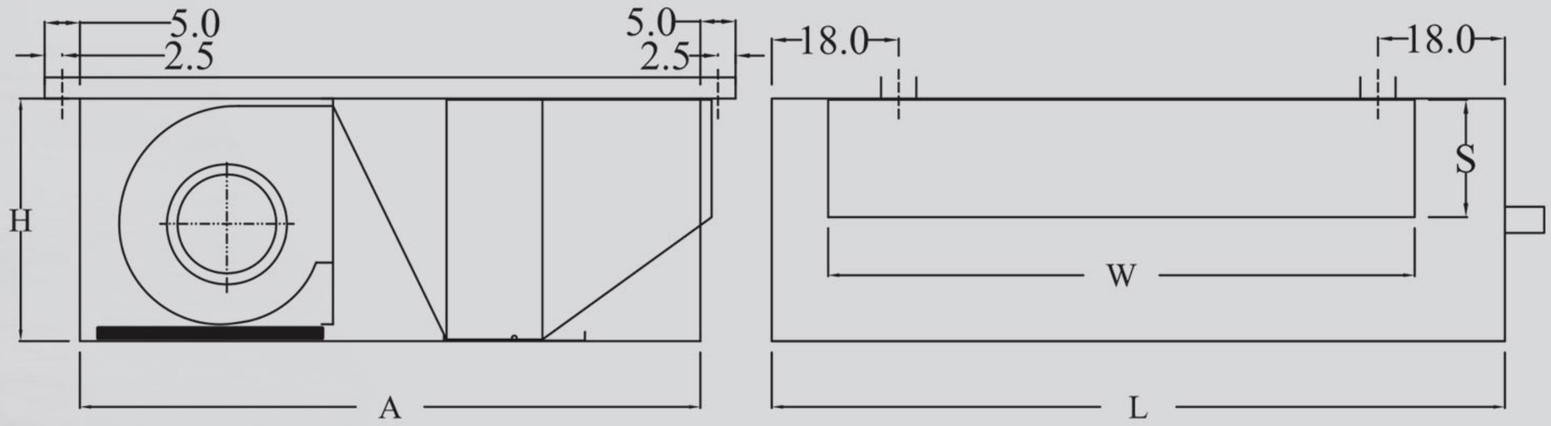
FEATURES

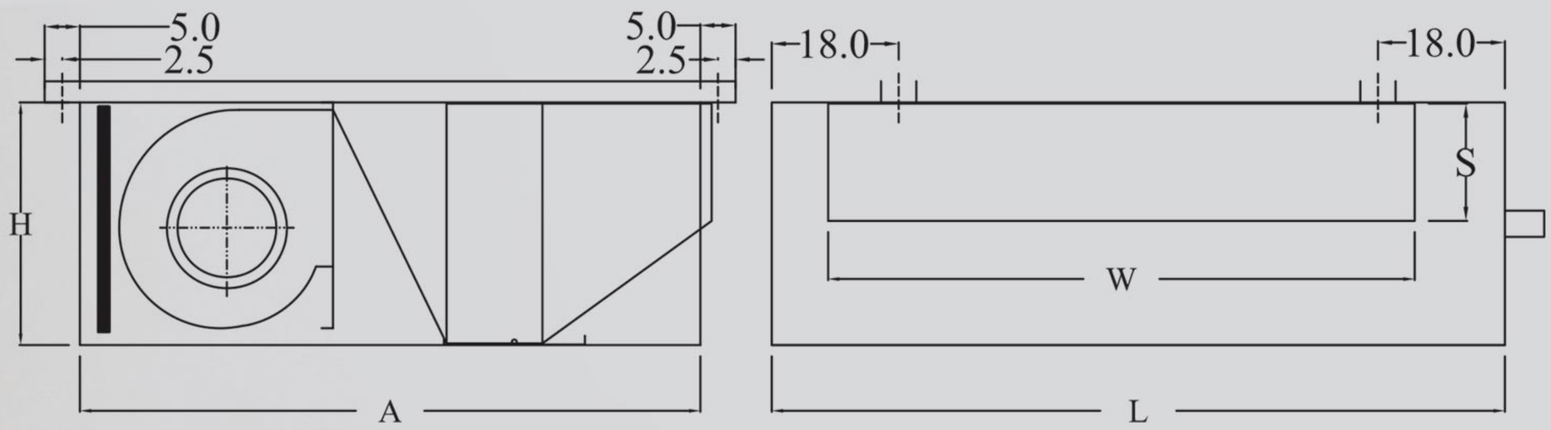
- Airflow range from 300 - 1000 CFM
- Double and quadruple tubes Fan Coils according to customer's inquiry
- Electrofan of forward type with minimum noise level
- Electrofan of ABS blades and also possibility to order metal blade
- Possibility to change the motor speed cap to increase/decrease the airflow
- Three-rows coils as standard type
- Body made of galvanized sheet
- Distillation pan with more length, No need to additional pan during installation
- Quick and easy installation
- Equipped to aluminum filter
- Equipped to deaeration valve for easy operation
- Insulation of Elastomeric foam (fine closed cell structure)

TARA SERIES

MODEL NO	Length (cm)	Depth (cm)	Height(cm)	CONN. (")	DRAIN SIZE (mm)
TARA-300	104	61	24	3/4	14
TARA-400	139	61	24	3/4	14
TARA-600	139	61	24	3/4	14
TARA-800	174	61	24	3/4	14

DUCTED
Fan Coil





FEATURES

- Airflow range from 800 - 2,000 CFM
- External pressure drop range from 10 - 170 Pa
- Double and quadruple tubes ducted Fan Coils according to customer's inquiry
- Electrofan of forward type with minimum noise level
- Electrofan of metal blade
- Possibility to set the fan speed in three levels
- Four-rows coils, tube size of 5/8 inch as standard type
- Body made of electrostatic powder painted galvanized sheet
- Distillation pan to remove the probable condensate
- Quick and easy installation
- Equipped to aluminum filter
- Equipped to deaeration valve for easy operation
- Insulation of Elastomeric foam (fine closed cell structure)

MORVA SERIES

MODEL NO	A (cm)	H (cm)	L (cm)	W (cm)	S (cm)	MPT (")	DRAIN SIZE (")
MORVA-800	95	30.5	100.5	70	18	1	5/8
MORVA-1000	95	30.5	100.5	82	18	1	5/8
MORVA-1200	95	30.5	115	97	18	1	5/8
MORVA-1400	95	30.5	125	107	18	1 1/4	5/8
MORVA-1600	110	43	115.5	84	26	1 1/4	5/8
MORVA-1800	110	43	115.5	94	26	1 1/4	5/8
MORVA-2000	110	43	125	104	26	1 1/4	5/8

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EXHAUST FAN

BURAN SERIES

EXHAUST FAN
BURAN SERIES

NOMENCLATURE:

BURAN - C 300 W
01 02 03

01: Fan type
- C: centrifugal
- A: axial
- P: plug

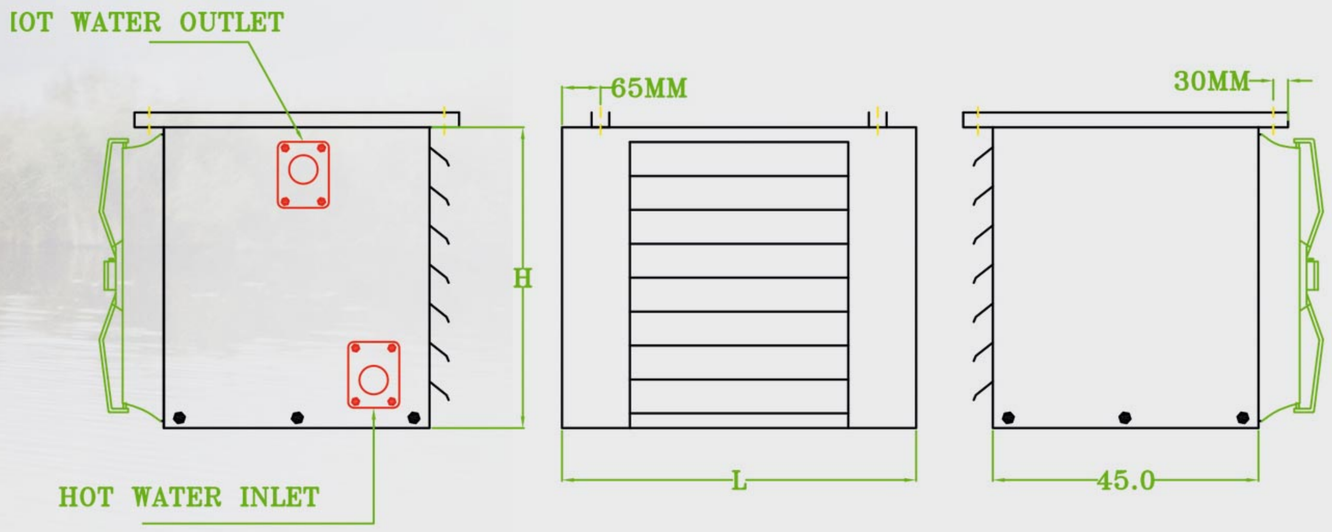
02: Nominal air flow rate (cfm) / 10

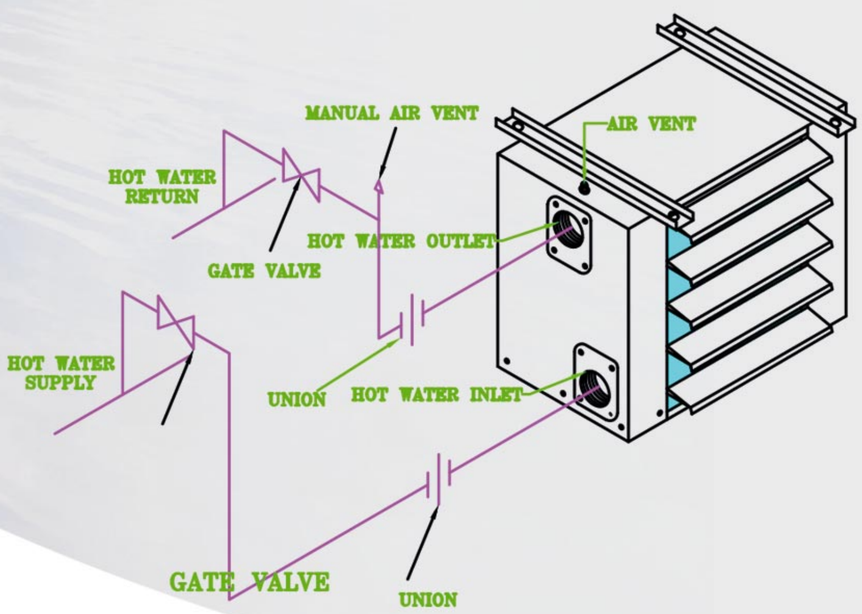
03: W: Equipped to cabinet (or none)

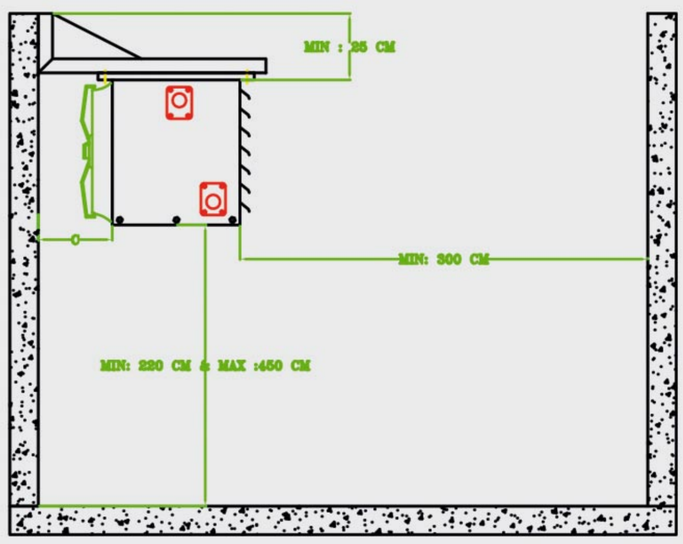
FEATURES

- Production in a variety of airflow capacities according to required pressure drop suitable for air blowing and suction
- Different types as roof-mounted, wall-mounted and utility exhaust fans
- Making suitable fans to adapt to humid sites, environments with air polluted by fine particles, kitchens, restaurants and industrial factories
- Enable to consider spark-proof fans and explosion-proof motors according to ATEX standard
- Motors having good temperature and protection level compatible with installed location
- Forward and backward curved impellers according to fan application
- Power transmission as direct driven or belt-pulley
- Enable to produce outlet vent in different angles and optional air inlet side for utility fans
- Enable to consider fan body made of stainless steel, ST-37 steel, galvanized steel, etc depending on the application
- Static and mechanical balance of impellers
- Impeller diameter up to 125 cm
- High efficiency
- Appropriate design in order to have low vibration and noise level
- Enable to consider soundproof, damper, vibration absorber, etc for different types of fans
- Enable to set fan speed according to airflow and pressure drop

HOT WATER UNIT HEATER







NIKA SERIES

MODEL NO	HEATING CAPACITY (KBH)	AIR FLOW RATE (cfm)	H (mm)	L (mm)	C (mm)	HOT WATER CONN. (")
NIKA-25	16.2	285	420	520	250	1
NIKA-50	31.1	520	455	560	250	1 1/4
NIKA-75	46.5	790	530	620	300	1 1/4
NIKA-100	59.8	1035	530	670	300	1 1/4
NIKA-125	76.4	1430	570	670	300	1 1/4
NIKA-150	94.5	1585	570	750	350	1 1/4
NIKA-200	131.3	2230	605	850	400	1 1/2
NIKA-250	147.6	2430	605	900	400	1 1/2
NIKA-300	177.1	3330	720	950	420	1 1/2
NIKA-400	228.4	4310	720	1040	420	1 1/2

Note:
Entering air dry bulb temp. of 60 F
Entering & leaving water temp. 160 & 180 F respectively
KBH: 1000 BTU/hr

FEATURES

- For heating the places such as sports halls, production sites, factories, warehouses, exhibition halls and non-residential places.
- Production in 10 models covering wide range of capacities from 250 to 4300 cfm.
- Production in two types of hot water coil and steam coil with Mannesmann tube
- Fans of axial type with maximum airflow and minimum noise
- High thermal efficiency
- Suitable dampers to route the air
- Body made of galvanized sheet
- Testing coils at 13 bars of pressure
- Equipped to deaeration valve

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COOLING TOWER
ARKA SERIES

COOLING TOWER ARKA SERIES

NOMENCLATURE:

ARKA - C 80
01 02

01: type:

- C: cubic type
- R: round type

02: Nominal cooling capacity (TR)

FEATURES

- Enable of production in cubic and round types
- Capacity range from 10-700 ton
- Production as open-circuit for industrial and non-industrial application
- Appropriate design in order to have minimum vibration and noise level
- Smaller dimensions in comparison to similar products
- Water distribution by anti-fouling nozzles
- Body made of fiberglass resistant to sun UV rays or galvanized steel
- Anti-bacterial and anti-fouling louver made of PVC with high durability and maximum cooling and evaporation efficiency
- Enable of installing control panel equipped to inverter in order to control fan speed according to water temperature to optimize energy consumption
- Access door with enough dimension to enter the unit
- Selecting the suitable fan on software according to project conditions
- Using axial fans with maximum efficiency and minimum noise level of impellers equipped to IP55 motors in fiberglass cooling towers
- Using centrifugal forward fans with IP54 motors in galvanized cooling towers
- Enable of using coal tar epoxy painting of body for galvanized cooling towers according to customer's inquiry
- Using nut and bolts in galvanized cooling towers (no welding)
- Equipped to honeycomb droplet eliminator

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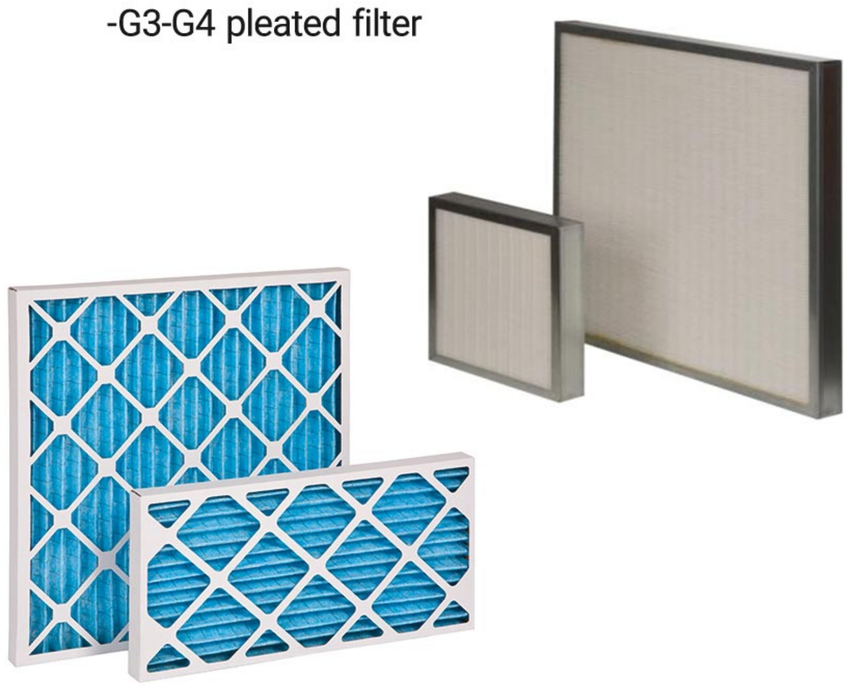
FILTRATION

Air filters are known for cleaning the allergens, particles and other impurities Out of the air, so they can be used in sensitive areas as clean room, surgery room, etc. There are a great number of air filters on the market, but there are some usual types in standard dimensions Which are installed within the Air Handling Units or they can be installed in terminal boxes, which are explained in this section:

PRE FILTERS

-G2 aluminum filter
-G3-G4 pleated filter



FINE FILTERS

-Bag filters (M5-F9 filters)
-V-type compact filters (F7-F9 filters)

HEPA FILTERS

-H10-H14 HEPA filters

HIGH EFFICIENCY LEAK-PROOF HEPA FILTERS (V-MODULE):

-Service life, less maintenance
-Low pressure drop, less energy consumption
-Guaranteed leak-free
-Compact and strong construction
-Metal Frame, minimum risk of damage

Also relevant differential pressure gauges are used for indicating the filter pollution or filter saturation and other relevant instrument are available same as differential pressure transmitter and switch.

REFERENCES

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2. Dr. Abidi Pharmaceutical (2 phases)
3. Iran Darou Pharmaceutical (2 phases)
4. Zar Macaron
5. Domino Dairy
6. Shahid Ghazi Pharmaceutical (2 phases)
7. Damavand Mineral Water
8. Daana Pharmaceutical (7 phases)
9. Jovain Industrial and Agricultural Co.
10. Barij Essence Pharmaceutical
11. Rajashimi chemical industries
15. Afzali Hospital (Kerman University of Medical Sciences)
13. 202 Food Industries co.
14. Avatiss Holding
15. Nita Communication & Information Technologists
16. Alvan Sabet Company
17. Pharma Chemie Pharmaceutical
18. Barij Essence Pharmaceutical
19. Fardavarazma Iranian co.
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21. Parsam Rubber Pharmed (Pars Ampule Co.)
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23. Mad Medical Industries Group
24. Kazeroon agro-industrial Co.
25. Jaber Ebne Hayyan Pharmaceutical
26. Osveh Pharmaceutical
27. Atharan Jarrah Shargh Medical Company
28. Sobhan Darou Pharmaceutical
29. Talia Pharmed Pharmaceutical
30. Fara Darou Pharmaceutical
31. Mehr Darou Pharmaceutical
35. Ta'avon Complex
33. Kankash Ertebatat Asia
34. Sepahan Electronic Sina
35. Mehr Surgery Center
36. Rozhin Tolid
37. Daru Darman Pars

شرکت داروسازی دانا

شرکت داروسازی باریج اسانس
Barij Essence PHARMACEUTICAL CO.

Zar Group

عبیدی تاسیس ۱۳۲۵
abidi SINCE 1946

SHIFA
SHIFAPHARMED Industrial Group Co
Biotech Production Facility

فن آوران ارتباطات و اطلاعات نیتا
NITA Communication & Information Technologists

سپاهان SEPAHAN

داروسازی جابر ابن حیان (شرکت سهامی عام)

سبحان دارو

شرکت ایران دارو

شرکت درسادارو (سهامی خاص)

شرکت فارما شیمی

دانشگاه علوم پزشکی کرمان

شرکت داروسازی شهید قاضی (سهامی عام)
Shahid Ghazi pharmaceutical

دومینو لبنیات و بستنی

محصولات غذایی 202

AVATISS pharmed

شرکت داروسازی اسوه

گروه پزشکی توسعه
Tose-eh Medical Group

PARS AMPOULE

شرکت گسترش صنایع جوین ثبت ۲۰۹

Kazeroon Agro - Industrial Co.

KANDOOH TELECOM
INNOVATIVE SOLUTIONS

شرکت فردآور آزما ایرانیان

After Sales Services 17

Considering the importance of respecting the customers, Havaye Nabe Baran Company has hired the best experts and specialists in customer service call center offering the required services to customers within the shortest time as follows:

- Consultation on parts design and material in order to adjust the customer's requirements
- Factory Acceptance Test (FAT) according to FAT protocol to ensure the compatibility of product with the ordered specifications and correct operation
- Supervision on design and installation of total HVAC parts of the project
- Installation including preparing the installation location, foundation drawing, etc.
- Commissioning including start-up the unit, gas charging, etc.
- Site Acceptance Test (SAT) according to SAT protocol to ensure the correct operation of the unit at the customer's site.
- Qualification documents (Design Qualification, Installation Qualification, Operation Qualification) along with related measuring and test
- Supplying spare parts on products
- Guarantee of all the products in standard working condition
- Operation and maintenance training to operators and personnel who are handling the unit

Havaye Nabe Baran

Designer and Manufacturer of Air Conditioning Systems

YOU DESERVE THE BEST

UNIT CONVERTOR

US and SI Units (Sea Level)

Length (L)

1 mm = 0.001 m = 0.1 cm
1 cm = 0.01 m = 10 mm = 0.3970 in.
1 m = 3.280 84 ft = 39.370 in.
1 km = 0.621 371 mi
1 mi = 1609.3 m (US statute)

1 ft = 12 in.
1 in. = 2.54 cm = 0.0254 m
1 ft = 0.3048 m
1 mi = 1.609 344 km
1 yd = 0.9144 m

Area (A)

1 mm^2 = 1.0×10^{-6} m^2
1 cm^2 = 1.0×10^{-4} m^2 = 0.1550 $in.^2$
1 m^2 = 10.7639 ft^2

1 ft^2 = 144 $in.^2$
1 $in.^2$ = 6.4516 cm^2 = 6.4516×10^{-4} m^2
1 ft^2 = 0.092 903 m^2

Mass (m)

1 kg = 2.204 623 lbm
1 tonne = 1000 kg
1 grain = $6.479\,89 \times 10^{-5}$ kg

1 lbm = 0.453 592 kg
1 slug = 14.5939 kg
1 ton = 2000 lbm

Density (ρ)

1 kg/m^3 = 0.06242797 lbm/ft^3
1 g/cm^3 = 1000 kg/m^3
1 g/cm^3 = 1 kg/L

1 lbm/ft^3 = 16.018 46 kg/m^3

Power ($\dot{Q}$, $\dot{W}$)

1 W = 1 J/s = 1 N-m/s
= 0.737 562 lbf-ft/s
1 kW = 3412.14 Btu/h
1 hp (metric) = 0.735 499 kW

1 ton of refrigeration = 3.516 85 kW

1 lbf-ft/s = 1.355 818 W
= 4.626 24 Btu/h
1 Btu/s = 1.055 056 kW
1 hp (UK) = 0.7457 kW
= 550 lbf-ft/s
= 2544.43 Btu/h

1 ton of refrigeration = 12 000 Btu/h

Pressure (P)

1 Pa = 1 N/m^2 = 1 kg/m-s^2
1 bar = 1.0×10^5 Pa = 100 kPa
1 atm = 101.325 kPa
= 1.013 25 bar
= 760 mm Hg [0°C]
= 10.332 56 m H_2O [4°C]

1 mm Hg [0°C] = 0.133 322 kPa

1 lbf/$in.^2$ = 6.894 757 kPa

1 atm = 14.695 94 $lbf/in.^2$
= 29.921 in. Hg [32°F]
= 33.8995 ft H_2O [4°C]

1 m H_2O [4°C] = 9.806 38 kPa

Velcoity (V)

1 m/s = 3.6 km/h
= 3.280 84 ft/s
= 2.236 94 mi/h
1 km/h = 0.277 78 m/s
= 0.911 34 ft/s
= 0.621 37 mi/h

1 ft/s = 0.681 818 mi/h
= 0.3048 m/s
= 1.097 28 km/h
1 mi/h = 1.466 67 ft/s
= 0.447 04 m/s
= 1.609 344 km/h

Volume (V)

1 m^3 = 35.3147 ft^3
1 L = 1 dm^3 = 0.001 m^3
1 Gal (US) = 3.785 412 L
= $3.785\,412 \times 10^{-3}$ m^3

1 ft^3 = $2.831\,685 \times 10^{-2}$ m^3
1 $in.^3$ = 1.6387×10^{-5} m^3
1 Gal (UK) = 4.546 090 L
1 Gal (US) = 231.00 $in.^3$

Energy (E, U)

1 J = 1 N-m = 1 kg-m^2/s^2
1 J = 0.737 562 lbf-ft
1 cal (Int.) = 4.186 81 J

1 lbf-ft = 1.355 818 J
= $1.285\,07 \times 10^{-3}$ Btu
1 Btu (Int.) = 1.055 056 kJ

Temperature (T)

1 K = 1°C = 1.8 R = 1.8 F
TC = TK − 273.15
= (TF − 32)/1.8
TK = TR/1.8

1 R = (5/9) K
TF = TR − 459.67
= 1.8 TC + 32
TR = 1.8 TK

Note:

Havaye Nabe Baran

دفتر مرکزی: تهران، شهران، میدان دوم، خیابان یکم، مجتمع سامان، طبقه اول، واحد ۶
کارخانه: کرج، مهرشهر، منطقه ویژه اقتصادی پیام، فاز ۲، خیابان هشتم

Office: Unit 6, First Floor , Saman Building , 1st Ave, 2nd Sq, Shahran , TEHRAN-IRAN
Factory: No.10, 8th St., Phase 2, Payam Special Economic Zone, Mehrshahr, Karaj, Iran

دفتر مرکزی: ۱۶ - ۰۲۱۴۴۳۶۵۰۱۵ ۷ - ۰۲۱۴۴۳۳۶۸۰۶
کارخانه: ۳ - ۰۲۶۳۴۰۰۸۵۵۰
Factory: +982634008550 - 3
Office: +982144365015 - 16 02144336806 - 7

www.havayenab.com info@havayenab.com