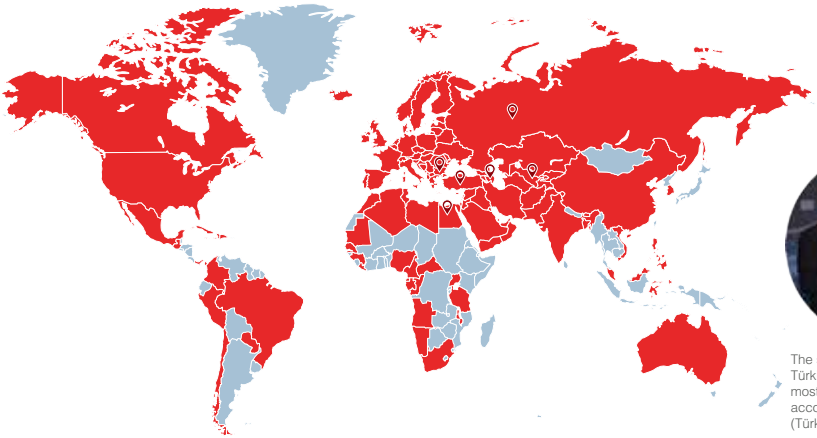
EKİN ENDÜSTRİYEL

Blower
User Manual

Your Satisfaction Is Our Priority; Globalization Is Our Goal!



The second-rated company in Türkiye has exported to the most different countries in 2021, according to ISIB (Türkiye HVAC-R).

The first condition of innovation is to question. Sustainable innovation is to never stop questioning.

For us, the journey of innovation started with a question: “Why not produce value-added technology in Türkiye?”. The first turning point in this long journey was the birth of the MIT (Made In Türkiye) brand. The founding vision of MIT, which enabled us to become Türkiye’s first domestic manufacturer in the field of “Plate Heat Exchanger”, was not to be a domestic “alternative”, but to create a quality brand that could compete in the global market.
By working for this goal, we have been entitled to receive many international quality certificates such as ISO, TSE, CE, GOST... for our products and processes over many years. For us, questioning the current situation was a natural result of our desire to exceed ourselves.

New Generation Engineering

With our engineering approach that focuses on the process, not the problem, we do not only specialise in one product, but also consider the entire ecosystem of that product. Therefore, we provide an end-to-end application by producing all other components that will form a system as well as the plate heat exchanger. For this, we focus on the continuous development of the necessary engineer staff. With our business development, pre-sales, sales and after-sales services provided by our expert engineers, we produce not only products but also “solutions”.
At the point we have reached; we offer complementary services with our internationally approved plate heat exchangers, components such as accumulation tanks, boilers, industrial pumps and installation materials that turn these heat exchangers into a system. With our team of more than 100 expert engineers, we continue to develop as a solution partner for projects requiring high technology in more than 60 countries.

PRODUCT RANGE

HEAT TRANSFER PRODUCTS

- Gasketed Plate Heat Exchangers
- Brazed Heat Exchangers
- Shell & Tube Heat Exchangers
- Evaporators and Condensers
- DC Fan Driven Oil Coolers
- Heating Coils
- Serpentines / Radiators / Economizers

PRESSURE VESSELS

- Water Heater Tanks
- Water Storage Tanks
- Buffer Tanks
- Expansion Tanks /Automatic Pump Controlled Expansion Systems
- Stainless Steel Tanks
- Hydraulic Balance Tanks / Air Separators / Sediment Separators
- Magnetic Sediment Separators / Magnetic Filters / Bag Filters
- Air Tubes
- Steam Separators
- Pressured Air Tanks
- Neutralization Units

INDUSTRIAL AND FOOD GRADE SYSTEMS

- Heat Stations
- Industrial Process Systems
- Dosing Systems
- Thermoregulators
- Pasteurizers
- CIP and Hygienic Process Systems
- Hygienic Storage and Process Tanks
- Custom-Made Stainless Steel Tanks
- Reactors
- Homogenizers

FLUID TRANSFER PRODUCTS

- Lobe Pumps
- Hygienic Centrifugal Pumps
- Twin Screw Pumps
- Gear Pumps
- Magnetic Drive Pumps / Thermoplastic Pumps
- Dosing Pumps
- Air Operated Double Diaphragm Pumps (AODD)
- Drum Pumps
- Monopumps
- Peristaltic (Hose) Pumps
- Centrifugal Blowers
- Roots Blowers

FLOW CONTROL UNITS

- Butterfly Valves
- Ball Valves
- Globe Valves
- Knife Gate Valves
- Actuators
- Check Valves and Strainers
- Pneumatic Piston Valves

ENERGY SYSTEMS

- Domestic and Industrial Boilers
- Steam Generators
- Chillers
- Cooling Towers

EKİN

MIT mitrojen DORIS magneto AIROO TRUEVALVE myra GP GEARYMAX inoxen INNSUN

Contents

Important Notices

To ensure the service life of blower, please read this instruction manual carefully before operation, and let your technicist keep it. The product will be out of warranty unless the device is installed, operated and maintained as specified in the instruction manual.

Pressure and Vacuum

The pressure range of MIT side channel blower is from 70 mBar to 570 mBar, vacuum range is from -70 mBar to -450 mBar. Blower will reach to the maximum pressure / vacuum when the inlet or outlet is totally closed. However, we suggest not running the blower with either of them closed and install a pressure relief valve to protect the blower from being overloaded.

Airflow

The airflow range of MIT side channel blower is from 47 m^3/h to 2050 m^3/h, And the blower can only get the maximum flow rate when the inlet and outlet are totally opened.

RelatIonship Among Power - Pressure - AIrflow

When the working pressure of the side channel blower is rising, the flow rate will reduce accordingly. While, the working power will rise when the working pressure rising. Vice versa. When choosing a MIT side channel blower, you can mark the working pressure on the x-axis of the performance curve firstly, and mark the working airflow on the y-axis also. Then you will find an intersection which is the working point. And the model that above but most near by the working point is the exact one you need.

The pressure and the airflow must be the working value when choosing a model in above method.

The performance curves of MIT side channel blowers are tested under the atmospheric pressure with the air temperature of 15 °C after considering ±10% difference. The curves will still be effective when the air temperature is not higher than 25 °C.

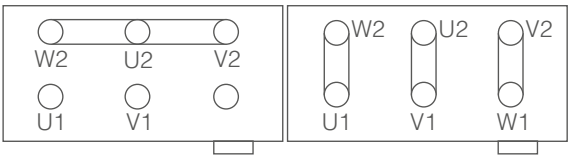
The airflow and pressure that written on the label of MIT blowers are the maximum values.

Electric Connection

Please connect the electricity by following the guidance below, and the operator should be professional who owns electrician certificate.

Wire Connections of Three Phase Blowers

The default setting of three phase blower is in three phase 380V (Y connection / Δ connection), so if your power supply is the same, then please wire U1, V1, W1 with the electricity directly. While, if your power supply is different with the default setting, then please change the connection according to the wiring diagram that printed on the back of the terminal box lid.

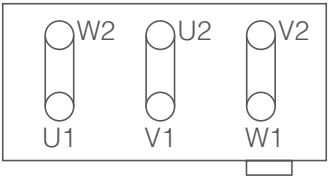


Y Connection Δ Connection

Wire Connections of Single Phase Blowers

The default setting of the single phase blower is as the sketch below. When stand opposite to the capacitance, the two terminals that in your right side and most close to you are the correct connection terminals (W1, V1).

Please wire the W1, V1 with single phase power supply.



Don't operate the blower inversely, or the blower may malfunction.

We suggest using a soft starter or a frequency converter to start the high-power blower, instead of using Y-Δ connection.

Before charged the blower with electricity, please make sure that the service voltage of the blower is consistent with the power supply, the connection terminals are fixed and without any cutting-out. If possible, please connect with the ground electrode also in case of electric leakage.

The load current will change with the working pressure of the blower, so please using the blower under the rated pressure and rated current. Meanwhile, you can also install a corresponding protection switch when wiring to protect the blower from being damaged by over current.

Temperature

Generally, the blower inlet air temperature should be under 50 °C. If it is above 70 °C, then the blower need to be special customized. If you use MIT blowers in below applications: vacuum adsorption / vacuum lifting/ vacuum conveying / industrial vacuum cleaner / vacuum feeding / air knives drying / water treatment / electroplate stirring etc. or other similar applications.
Then the blowers will be in high temperature, especially the surface, it can reach to 90 -100 °C after running 10 ~ 40 minutes. That is normal case. Meanwhile, if running blowers with inlet or outlet totally closed, the temperature will be higher than 80 °C within 10 minutes. So please don't run the blower with either of them closed, and be caution of the high temperature. In above applications, please pay attention to the surface temperature and the running current of the motor. Only when the temperature is lower than 70 °C and the running current is within the setting range can the blower keep running. Or please stop and check it accordingly.

MIT blower may produce high temperature during operating, please keep hands off the out cover in case of being scalded.

Do not using MIT blowers in narrow, closed, and unventilated space.

In case that blower rise high temperature in those applications. We suggest you install cooling equipment system.

The normal ambient temperature of MIT blower is -10 °C ~ 50 °C. If out of the range, please take some measures accordingly.

Accessories

Air Filter

- Normally, we suggest you use air filter for each blower. Especially in some dust surrounded environments.
- We recommend different filters according to your surrounding environments. MIT provide MF filters in 100um for the general industries; and the FLS series filtering barrels in 1000um for some tough environment which contains dust or has a higher requirement of the clear air.
- MIT filters cannot be used in industrial cleaners/powder feeding system directly. Cause these kinds of applications need special customized filtering system.
- Please pay attention that the solids, dust particle, fiber, and water should be separated before the air entering into the blower. If you install a filtering system in the middle of pipe, then please adopting large filtering equipment, and clean it up regularly to reduce pressure loss.
- MIT MF series filters can be washed by water directly, but FLS series filters can only be cleaned by brush, and do replace the filter element regularly.
- Normally, we suggest you replace the filter element every six month. But if there are too much dust in your working place, then please replace it more frequently.

Pressure Relief Valve

- Relief valve is an unloading valve. When the working pressure exceed the setting pressure, the relief valves will open automatically and release spare pressure to protect blowers.
- Relief valves can be used in both compressing and vacuum industries, if vacuum used, please using T connect to install relief valve at the inlet pipe. If compressing used, please using T connector to install relief valve at outlet pipe. And there is a pressure regulating screw on the valve, when tight the screw, the protecting pressure will be risen, in contrast, when loose the screw, the protecting pressure will be reduced.
- Please check the relief valve regularly and test if it under working. If you found that the required pressure is not enough after installing the relief valve, then you may need to change a bigger power blower.

Silencer

- MIT built-in silencer (internal inlet / outlet pipe) has reduced the noise into a lower level, if you have a higher requirement of on-site noise, please install a SUS series external muffler to reduce about 5 db noise.
- SUS series external muffler installed at the end of inlet or outlet pipe. For vacuum application, please install the muffler at the end of the outlet. For compressing application, please install the muffler at the end of the inlet.
- While, if you are still not satisfied with the noise after install our SUS series muffler, then we suggest you make an acoustic enclosure for the blower.
- Specifically, using a box to cover the blower, and put sponge in each side of the box. But please pay attention to the air cooling of the side channel blower when using the acoustic enclosure.

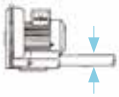
Pipe Connections and Normal Operation

- MIT blower may produce high temperature during its operation, so it is necessary to choose a durable pipe which can bear high temperature and high pressure. Meanwhile, the pipe must be leakageproof and with no foreign object inside it.
- Closed operation is not allowed. And when use reducer coupling, please make sure that the reducer pipe is smaller than 2/3 of the original pipe, and please install a pressure relief valve.
- If the blower is installed outside the house, please build a shed to protect the blower from getting wet, and please also be cautious of foreign object going into the inlet/outlet of the blower, which will blocking the blower.
- Please try to install the blower in no vibration place. In case of vibration place, please use hose and rubber flange to connect blower and the pipe, avoiding external vibration and damage to the blower.
- Please clean up the blower's external and internal, periodically the cooling fan, because the cooling function will reduce if there are lots of dust on the fan, then the blower will get overheating which may damage the blower.
- The bearings, seals, muffler are quick-wear parts, which need to be replaced when close to the life span. The impeller, housing, metal mesh are not quick-wear parts, but it will need to be replaced accordingly if the operating environment required.

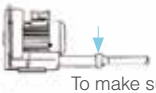
- If the blower is not running smoothly or having abnormal noise, please turn off the power and check it.

If the blower required to be maintained within the warranty, please contact Ekin Endüstriyel. +90 216 **444 35 46** (EKİN)

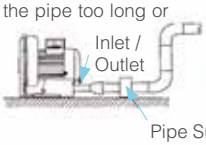
Using pipes of the same diameter as the inlet and outlet diameters of the blower.



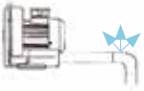
If using smaller pipe on the inlet / outlet, do not use long distance, in case the air flow and pressure be effected.



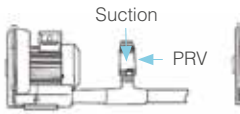
To use bigger pipe when the pipe too long or with several bent pipes.

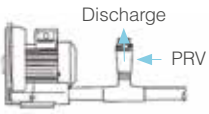


To make sure there is no leakage on the pipe.

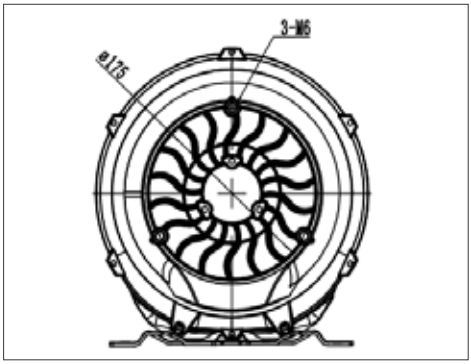


Please install pipeline support where necessary in case of weight concentration.





This is the pressure adjust screw. (turn upper is low pressure, turn lower is high pressure)



- The wedges sent are connecting wedges; they are not foot wedges, so there are three of them. They are inserted into the holes shown in the image.

Please adjust the PRV before installation accordingly, pay attention on the PRV installation direction.

Blower Models and Performance Table

Model	Electric Motor (kW)	Outline Line	Weight (kg)	Stage	Max. Vacuum (mBar)	Δp mBar / Max. Pressure (mBar)	0	50	100	150	200	250	300	350	400	450	500	550
							Flow Rate (m^3/h)											
B1TT-102	0,25	1"	7	Single	-100	100	55	25										
B2TT-104	0,4	1 1/4"	11	Single	-120	130	80	50	28									
B2CC-207	0,7	1 1/4"	14	Double	-210	240	88	68	54	41	30							
B3TT-105	0,55	1 1/4"	12	Single	-120	130	100	77	50									
B3TT-107	0,7	1 1/4"	13	Single	-150	170	100	77	50	20								
B4TT-107	0,7	1 1/2"	14	Single	-120	120	145	111	80									
B4TT-108	0,85	1 1/2"	15	Single	-160	160	145	111	80	55								
B4TT-113	1,3	1 1/2"	16	Single	-170	200	145	111	80	55	30							
B4CC-216	1,6	1 1/2"	24	Double	-280	280	150	135	120	105	93	78						
B4CC-222	2,2	1 1/2"	27	Double	-330	440	150	135	120	105	93	78	64	50	35			
B5TT-116	1,6	2"	21	Single	-200	190	210	178	145	110								
B5TT-122	2,2	2"	25	Single	-220	270	210	178	145	110	87	58						
B5CC-230	3	2"	39	Double	-340	410	230	205	182	167	148	130	115	100	88			
B5CC-240	4	2"	43	Double	-390	490	230	205	182	167	148	130	115	100	88	60		
B6TT-122	2,2	2"	27	Single	-230	250	270	240	200	160	118							
B6TT-130	3	2"	32	Single	-270	310	270	240	200	160	118	78						
B7TT-122	2,2	2"	29	Single	-210	200	318	278	238	200								
B7TT-130	3	2"	34	Single	-270	290	318	278	238	200	170	140						
B7TT-140	4	2"	42	Single	-290	330	318	278	238	200	170	140	110	75				
B7TC-130	3	2"	43	Single	-220	220	420	355	295	244	200							
B7TC-140	4	2"	43	Single	-260	310	420	355	295	244	200	160	120					
B7CC-222	2,2	2"	42	Double	-220	210	320	300	282	264	250							
B7CC-230	3	2"	47	Double	-280	260	320	300	282	264	250	235						
B7CC-243	4,3	2"	53	Double	-360	380	320	300	282	264	250	235	218	202				
B7CC-255	5,5	2"	70	Double	-440	500	320	300	282	264	250	235	218	202	184	174	158	
B7CC-275	7,5	2"	77	Double	-440	570	320	300	282	264	250	235	218	202	184	174	158	140
B8TT-155	5,5	2 1/2"	65	Single	-300	320	530	465	420	380	348	305	275					
B8TT-175	7,5	2 1/2"	68	Single	-320	380	530	465	420	380	348	305	275	240	180			
B8TC-175	7,5	2 1/2"	74	Single	-270	260	700	615	550	490	448	390						
B8CC-275	7,5	2 1/2"	87	Double	-400	400	520	480	455	440	410	390	370	350	330			
B8CC-2110	11	2 1/2"	127	Double	-280	370	900	800	720	650	580	515	440	350				
B9TT-1250	12,5	4"	132	Single	-280	270	1050	980	900	830	770	695	695					
B9TT-1850	18,5	4"	140	Single	-340	460	1050	980	900	830	770	695	630	520	480			
B9CC-2225	25	4"	235	Double	-310	280	2050	1850	1800	1750	1500	1420						

General Terms Of Use and Important Warnings

- Our products are guaranteed for 2 years against material and manufacturing defects. The warranty period starts with the delivery of the product to the user. Consumables and parts worn out in normal use (Gasket, shaft seal, stator, rotor, diaphragm, membrane, resistor, springs, electrical circuit elements, etc.) are not covered by the warranty. Warranty conditions are void if the product is used outside of the specified operating conditions.
- Failures caused by the product's installation, commissioning and use contrary to the items in the user's manual are not covered by the warranty. Ekin Industrial sends the user manuals with the product. It also publishes it on its website. In cases where the user manual does not reach the Buyer, the product should not be commissioned and must be requested in writing from Ekin Industrial. Otherwise, it is accepted that you are aware of the installation, maintenance and usage conditions, that you have this competence and that you have taken responsibility for all problems that may arise, and Ekin Industrial is not responsible for any problems that may arise.
- Periodic maintenance and repairs should be done using original parts supplied by Ekin Industrial or authorized services. Otherwise, the Warranty Terms are void.
- When procuring the product, the type of the product, the type of fluid used, pressure, temperature, density, etc. All information must be given completely and accurately. Otherwise, our company is not responsible for the problems that may occur.
- Problems, blockages and contaminations caused by the quality of the fluid used in our products or the installation are not covered by the warranty. Damages that may occur as a result of corrosion, cavitation, vibration, water hammer and freezing are not covered by the warranty.
- The reason for the damages that may occur due to the absence or malfunction of the armatures in the system or the non-use of the safety armatures (safety valve, thermostat, pressure sensor, temperature sensor, etc.) cannot be determined later and is not covered by the insurance. Our company is not responsible for material and moral accidents and losses that may occur.
- Any products and accessories that we trade or use in our products that are not our own production are not under the guarantee of Ekin Industrial. The warranty of these products and the responsibility of the damages that may occur are under the commitment of the manufacturers of the products.
- Our company is not responsible for process, production or real estate losses that may arise from our products. Claims for compensation will not be accepted unless the damage caused by us is the result of willful or gross negligence. The compensation amount for the damages that may occur, the delay penalty or any penalty that may arise for any reason cannot exceed the invoice amount.
- After receiving the products, the buyer; For obvious defects, the period of direct or indirect control, inspection and notification is 2 business days, for hidden defects, the period of direct or indirect control, inspection and notification is 8 business days. Products that are not notified in writing by the buyer within this period are deemed to have been accepted..
- Except for assembly and usage errors, we have the right and obligation to improve in the event of a manufacturer's defect and the product's lack of guaranteed features. We also have the right to choose to replace the product with a new one. However, the buyer has no right to demand a new one. In case of no improvement, repair or new delivery, the buyer may request the termination of the contract or a refund of the product price.
- The system designer and user are responsible for the selection of the appropriate product, its suitability for specific applications, its safe and trouble-free installation, operation and maintenance. Otherwise, we are not responsible for any damage or work accidents that may occur.
- Our company is only responsible for making the products to be delivered carefully ready for shipment. Since our company does not provide engineering services, product selection should be made after the application details, suitability of the material to the system and product features are technically evaluated by the buyer. Improper selection, installation or misuse of products may result in property damage or injury. Our company does not accept responsibility for product selection.
- If the buyer is a merchant or public law legal entity, all legal disputes will be resolved by the court over which we have jurisdiction. Anadolu Adliyesi / Turkey is exclusively authorized and competent authority in all disputes arising from joint legal relations. In case of dispute, Istanbul Anatolian courthouse courts and enforcement offices are authorized.

EKİN ENDÜSTRİYEL

CERTIFICATE OF WARRANTY

2 YEARS WARRANTY

The Document's Confirmation Date and Number:
The usage of this document has been authorized by T. C. Sanayi Bakanlığı İl Müdürlüğü in accordance with the Law No: 4077
on the Protection of Consumers and the Communiqué on the Implementation of the Guarantee Certificate put into effect based on this Law.

WARRANTY CONDITIONS

1. Warranty period starts from the delivery date of the goods.
2. In case of malfunction of the products within the warranty period, the time spent in the repair is added to the warranty period. The repair period of the goods is maximum 30 working days. This period starts from the date of notification to the service station of the defect goods. In the absence of service station, this period starts from the date of notification to the seller, dealer, agent, representative, importer or manufacturer of the goods.
3. In case of malfunction of the goods within the warranty period due to material, workmanship or assembly or assembly defects, the goods will be repaired at no cost and no additional cost will be asked from buyer under the name of changed part price or any other name.
4. Defects caused by the use of the product contrary to the items in the user manual are out of the warranty.
5. For the problems that may arise regarding the Warranty Certificate can be applied to the Sanayi ve Ticaret Bakanlığı Tüketicinin ve Rekabetin Korunması Genel Müdürlüğü.
6. The manufacturer may request that the product be sent to its own production facility at its own discretion. The shipping cost to be spent by the customer belongs to the manufacturer if it is evaluated within the scope of warranty as a result of the examination made on the product. If the defect is not evaluated under the warranty, all costs incurred will be invoiced to the customer.
7. The manufacturer is not responsible for any damages and losses that may occur in the cargo or warehouse during the shipment of the product.
8. The manufacturer accepts no liability for the damage cause by the following reasons;
   - Failure to comply with temperature, pressure or other conditions specified in the technical specifications.
   - Incorrect applications and normal abrasion conditions.
   - Damages that may occur from sudden opening and closing of the fluid valves.
   - Damages cause by the usage of non-original spare parts.
   - Damages that may occur during shipping.
   - Damages that may arise from corrosion.
   - Blockages cause by the fluid passed through inside the product.
   - Damages that may arise from condensate discharge in products which are used in steam applications.
   - Damages that may occur by the blockages cause by the solid materials which can block the products.
   - Damages that may occur as a result of incorrect interventions by the un-authorized services.
   - Damages that may be caused by the lack of fixtures or not working properly.
   - Accidents and problems that may occur in the system if the safety fixtures (safety valve, thermostat, pressure sensors, temperature sensors etc.) are not used are not considered under warranty. The manufacturer is not responsible for any of the pecuniary and non-pecuniary damages that may occur.
9. Manufacturer is not responsible for secondary damages, loss of production and accidents whether it is under warranty or not.
10. All of the above items have been specified in our offer and order confirmations and you have been informed that they supersedes the contract. Commissioning of the product means acceptance of the contract.

For the product that was sold to ..... LTD. ŞTİ. /A. Ş / Legal Entity on ...../...../20... with stated model, brand and serial number, all kinds of manufacturing and material defects are covered by the warranty of our company for 2 (two) years.

SELLER **DEALER** **END USER**

Brand : _____
Product Type : _____
Product Code : _____
Serial No : _____
Product No : _____

NOTE: User mistakes are not covered by warranty.
www.ekinendustriyel.com

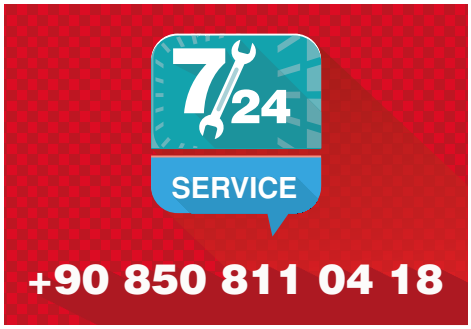
Please keep this certificate!

Professional System Solution Center

You can get answers to the problems you experience with your pumps, heat exchangers and system from our MIT professional system solution center. You can also benefit from our 7/24 uninterrupted service with our solution center consisting of our expert engineers.

- Domestic hot water installations.
- Central and district heating systems.
- Milk, yogurt, heating, cooling and pasteurization systems.
- Industrial cooling and heating systems.
- Oil cooling systems.
- Energy recovery systems.
- Pool heating systems.
- Steam installations.

It is vital for your system to be designed and implemented correctly in the first installation in order to be able to operate at the desired capacity, smoothness and long life. For this reason, you can get first-hand the technical support you need during the installation phase of your system and the problems that may arise in the business; You can reach us **24 hours +90 (216) 232 24 12 in 7 days**.



We would like to reiterate that we will be happy to share our knowledge accumulated over many years with our valued customers in order for your system to work correctly and performance.

Ekin will continue to be the best solution partner for you in all applications with all kinds of heating and cooling applications.

Producer; reserves the right to change the product features, technical dimensions and information and installation diagrams specified in this catalog without notice. No specified information can be copied and used without the permission of the manufacturer. In no way can the manufacturer be held responsible by giving examples of technical information and diagrams. In case of need, we request you to request a special technical drawing for your project for exact dimensions.

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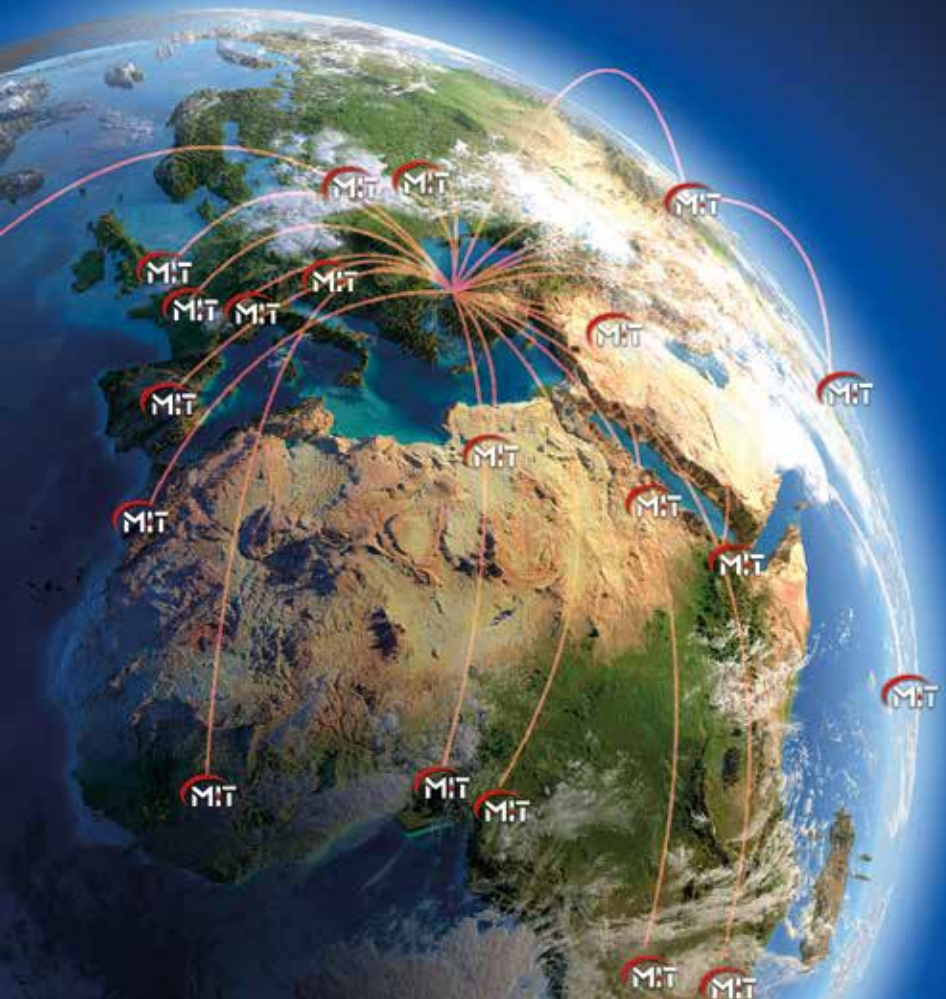

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