

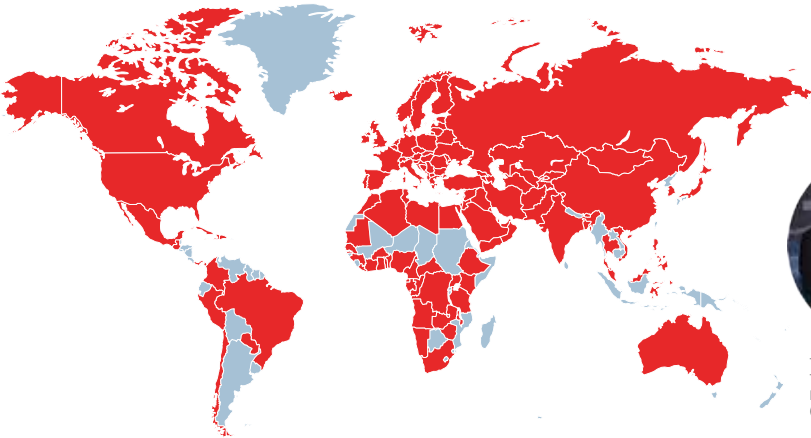


Steam Generator  
User Manual

mitröjen



Your Satisfaction Is Our Priority;  
Globalization Is Our Goal!



The 2nd Company from Türkiye Exporting to the Highest Number of Countries (SIB 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.



## HEAT TRANSFER PRODUCTS

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

PRODUCT RANGE



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## Warnings

The steam generator should be located in well-ventilated, frost-free indoor areas. The generator is designed for steam generation only. System operating temperature and pressure must comply with the label values. The steam generator may only be used in gas-fired systems specified in this booklet. The feed water properties to be used in steam generators must comply with the specified criteria. The use of soft, clean and non-corrosive water is very important in terms of economic operation and service life. There should not be any open flammable gas or liquid in the place where the steam generators are located. It is recommended to put an emergency stop switch outside the boiler room to cut the main energy.

The first controls and commissioning are carried out by EKİN ENDÜSTRİYEL officials. The manufacturer company is not responsible for the malfunctions arising from the revisions made without its knowledge and the Steam Generator warranty becomes void in case of revision or any intervention. If it is decided to change the fuel, please contact the manufacturer. In case of leakage in the installation, the use of the device must be terminated and the fault must be corrected immediately.

Before starting the cleaning and maintenance, the gas must be turned off, the electricity to the panel must be cut off and the electricity and gas installation must never be interfered with. Gas and burner connections must be made by the authorized service of the burner. Burner, water and gas connections are not covered by EKİN ENDÜSTRİYEL's responsibility and warranty.

If you smell gas or there is a gas leak;

- Calm down,
- Extinguish the burning fires,
- Close the valves of all gas appliances,
- Matches, lighters etc. do not burn, do not smoke,
- Do not play with the electric buttons,
- Report the situation by calling the emergency numbers,
- To avoid the risk of electric shock, do not open the electrical panel.

The device must be checked once a year. These controls should only be made by EKİN ENDÜSTRİYEL officials. Maintenance is not covered by the warranty.



In order for your steam generator to be commissioned, it is necessary to complete the on-site assembly and connection procedures, and to submit your gas opening certificate and the pictures of the installation and connections you have made on-site.

The boiler owner must employ a licensed or certified boiler operator for safe and efficient use. The Steam Boiler Operator Vocational Qualification Certificate is officially issued by the Vocational Qualifications Authority (MYK). Any accident or malfunction resulting from working conditions other than those described in this manual shall be the responsibility of the customer. All local legal requirements must be fulfilled by the boiler owner before and during the operation of the boiler.

For safe operation, compliance with TS 2025-2021 standard is required (This standard covers the general rules for the operation, inspection, and maintenance of steam boilers).

## Warranty and Service

### Warranty Period

The steam generator and all its parts are guaranteed against manufacturing defects for 2 (two) years starting from the invoice date.

### Estimated Repair Time

It is 20 (twenty) working days from the written notification of the defect.

### Warranty Conditions

All parts of the steam generator are under the guarantee of our company for 2 years. In case of malfunction of the device within the warranty period, the time spent in repair is added to the warranty period. Defects arising from the use of the device contrary to the points in the user manual are not covered by the warranty. For problems that may arise regarding the warranty certificate, T. C. an application can be made to the ministry of industry and trade, general directorate of protection of consumer and competition. Defects that occur as a result of coating the heat transfer sections of the steam generator with lime and/or similar substances or due to corrosion and all other water-related faults are not covered by the warranty.

## Terms Out Of The Warranty

- Failure to comply with the instructions in the use and maintenance manual of the steam generator.
- Usage errors.
- Incorrect capacity selection and placement.
- Faulty or incomplete electricity, water, fuel and steam installations not using water in desired standards.
- Disruption of daily, weekly and monthly maintenance.
- Involvement of commissioning, repair or modification of the device by someone other than authorized service personnel.
- Use of non-original consumables and spare parts.
- Damages and malfunctions that may occur due to external factors (hitting, impact, dropping, etc.) after the product is received, as well as the accessories and consumables used are not covered by the warranty.
- Failures that may occur on the product due to the failure of the consumer to perform the periodic maintenance and controls on time will not be covered by the warranty.
- If the panel on the device is canceled, the device will be out of warranty.
- Any structural change to the device will take the device out of warranty, and it can put you in danger as the interventions will affect the generator strength calculations.

## Safety and Control

Safety measures have been taken in case the steam used exceeds the maximum operating temperature and pressure. These are;

**Safety Pressurestat;** There are 1 working and 2 safety pressurestats on the system. The pressurestat starts or stops the system according to the pressure it receives from the steam. In case of any malfunction in the working process, the safety processes come into play and stop the system.

**Safety Valve;** The safety valve is set 1 bar above the safety pressure switch by the manufacturer. In the event that the safety pressure switch cannot fulfill its duty, the system will continue to operate and the steam pressure in the generator will continue to increase. When the operating value reaches the set value, the safety valve activates, evacuating the excess steam and balancing the pressure.

**Flow Switch;** The task of the device on the steam generator is to detect that there is no water supply to the system due to any malfunction that may occur in the feed water pump, and the system is stopped.

**Steam Thermostat;** There is a device that continuously measures the steam temperature during operation. Steam has a corresponding temperature value along with the pressure thermodynamically. When the current steam temperature reaches the limit temperature set on the electrical control panel, the system automatically shuts itself off.

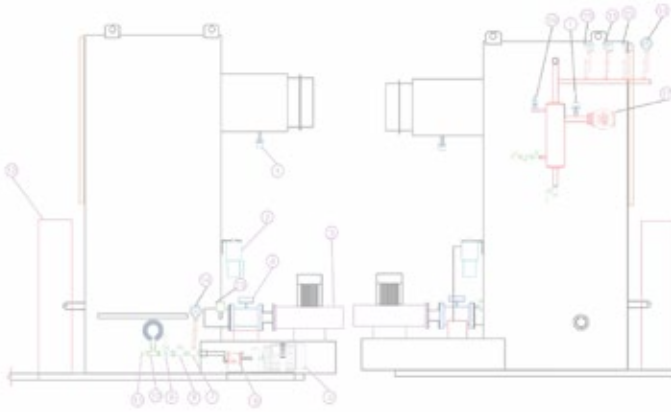
**Chimney Thermostat;** When the flue gas temperature exceeds the set limit temperature, the system is automatically stopped.

## Shipping and Installation

- When receiving your device; Check that it is the product you ordered and receive it.
- The product is a very heavy product in terms of tonnage. Extremely careful when transporting to the place where it will be installed, while installing and choosing the place. It should not be allowed to move or sway during use due to its weight.
- You can lower the product to the assembly place by means of a vehicle (crane or forklift, etc.) suitable for its tonnage. Absolutely no manpower can be used in transporting, unloading and loading.
- There may be an accumulation of waste gas in the environment as a result of recoil due to gas leaks that may occur during use or clogging of the chimney, or the environment may be without oxygen due to the combustion of oxygen in the environment. For this reason, there should be lower and upper ventilation vents in the environment where the steam generator is located and it must be ventilated continuously.
- The steam generator should be placed on a platform at a height of 10-20 cm from the floor in order not to be damaged by possible puddles that may occur on the floor.
- The seat base must be a flat non-combustible material (wooden and plastic type cannot be placed on the product base) and be able to bear its weight.
- The area where the generator will be placed must be large enough to be easily and safely accessible from all four sides during its operation and maintenance. First assembly, controls and commissioning should be done by EKİN ENDÜSRİYEL officials.
- Care should be taken to keep the cables away from hot surfaces while assembling.

## First Start-Up and Terms Before Consideration

- Any dirt, dust, etc. that may occur on the surface of the generator should be cleaned.
- There should be no flammable, explosive and petroleum-derived products near the generator.
- All equipment and fixtures on the generator should be checked.
- It should be checked from the level indicator that there is sufficient water in the condensate tank and it should be noted that the inlet and outlet valves of the condensate tank are open.
- Gas connections should be checked and it should be noted that the valves are open.
- Pump and motor connections should be checked, and they should rotate in the direction of the Arrow sign on the pump and motor.
- The oil of the pump must be checked, it should never be operated without oil.
- The cover of the electric panel should never be opened and the electrical systems inside should not be touched.



Problem	Part Name	Quantity
1	Thermocouple	2
2	Diesel Fuel Filter	1
3	Fan	1
4	Servo-Motor	1
5	Motor (Pump)	1
6	Speck Pump	1
7	Te	1
8	Swing Check Valve	1
9	Valve	3
10	Te	1
11	Valve	1
12	Electric Panel	1
13	Air Procestate	1
14	Manometer	1
15	Pressure Procestate	3
16	Safety Valve	1
17	Steam Valve	1

## Operating The Steam Generator

### Things To Do Before Operation

#### Make The Hardness Analysis Of The Water To Be Used.

Before starting to operate the steam generator, the hardness analysis of the water to be used must be made. The better the quality of water you use, the longer the life of your steam generator will be.

#### Check For Fuel In The Fuel Line.

For liquid fuel devices, check whether there is fuel in the fuel tank to which your fuel line coming to the burner is connected.

For gas-fired appliances, check the gas pressure at the burner inlet.



#### Check For Water In Condensate Tank.

Check whether there is water in the condensate tank from the condensate tank water level indicator. Check the manometer which mentioned section 1

#### Check That The Valves In The Feeding System Are Open.

The valves must be open before the steam generator starts operating. First of all, the fuel valve must be turned on. Valves on the installation that supplies water to the condensate tank must be opened. It should be checked that the condensate tank valves feeding the feed water pumps are open.

#### Check if there is any leakage (oil, water) in the Feeder Pump Valves.

Check that there is no oil or water leakage that may arise from the pump on the base where the feed water pump (speck) is located.

#### Check The Oil Level From The Feed Water Pump Dipstick.

Before the steam generator starts to work, the oil level should be checked from the oil dipstick of the Speck Pump. If there is any decrease in the oil level or if water is mixed into the oil, the o-ring kits of the pump may be damaged and the pump must be send to repaired. Otherwise, if the pump continues to run, it will suffer much more damage.

Check the pump oil regularly every month, change it every 3 months.



## Operating The Steam Generator

- Turn off the main steam valve (check page 1, steam valve which mentioned steam valve)
- Open the condensate group by-pass valve.
- Turn on the main switch and power the system.
- Turn the pump switch on the electrical control panel to the initial start (manual) position.
- Observe the pump works. The pump will start filling the serpentine.
- Check the pressure from the manometer on the pump when making the first filling process. (Check page 11, manometer which mentioned on section 17)
- After the serpentine is filled, turn the pump switch on the electrical panel to the (automatic) position.
- The burner will turn on. Check the operation of the burner.
- Check the steam pressure from the manometer on the separator. (Check page 11, manometer which mentioned at section 2)
- Check the main steam temperature.
- Open the main steam valve slowly, give steam to the system and close the by-pass valve. (Check page 11, the main steam valve which mentioned at section 5)

**Note:** It is expected that the sound will decrease when the steam passing sound is heard by opening the valve very little. When the sound decreases, the valve is opened a quarter turn and the sound is expected to decrease. Continuing in this way, the valve opens fully. Full opening of the valve without water hammer may take 2-3 minutes depending on your installation length.

## Stopping The Steam Generator

- Set pump switch (manual) on the electrical control panel.
- After the pressure value on the steam manometer is "0";
  - Close the main steam valve.
  - Open the condensate group by-pass valve.
  - Close the burner valve from the electric control panel.
  - Turn off main switch from electric control panel.

## Steam Generator Daily - Monthly - Annual Maintenance

### Daily Maintenance

- Check the condensate tank water level.
- Check the water softener.
- Check for leaks in lines and valves.

### Monthly Maintenance

- Do the boiler cleaning.
- Clean the condensate tank from the drain valve located at the bottom of the condensate tank.
- Check the amount of resin and salt in the water softener.
- Check the Speck pump oil level.
- Check that all valves can be opened and closed.
- Check all fixtures on the generator.
- Remove and clean the dirt traps.
- Check the belt-pulley mechanism that provides the pump motor connection.

### Annual Maintenance

- Contact the manufacturer and have your steam generator serviced annually.

## 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.



# CERTIFICATE OF 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 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 caused 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 caused by the usage of non-original spare parts.
  - Damages that may occur during shipping.
  - Damages that may arise from corrosion.
  - Blockages caused 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 caused 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 supersede 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 : \_\_\_\_\_

Please keep this certificate!

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

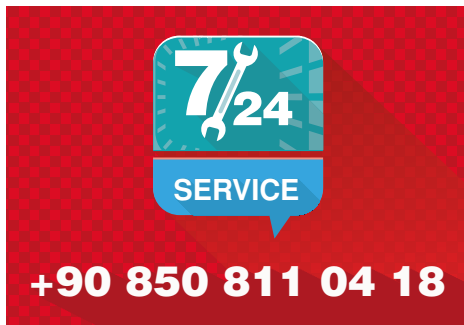
## Professional System Solution Center

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.**



**7/24**  
**SERVICE**  
**+90 850 811 04 18**

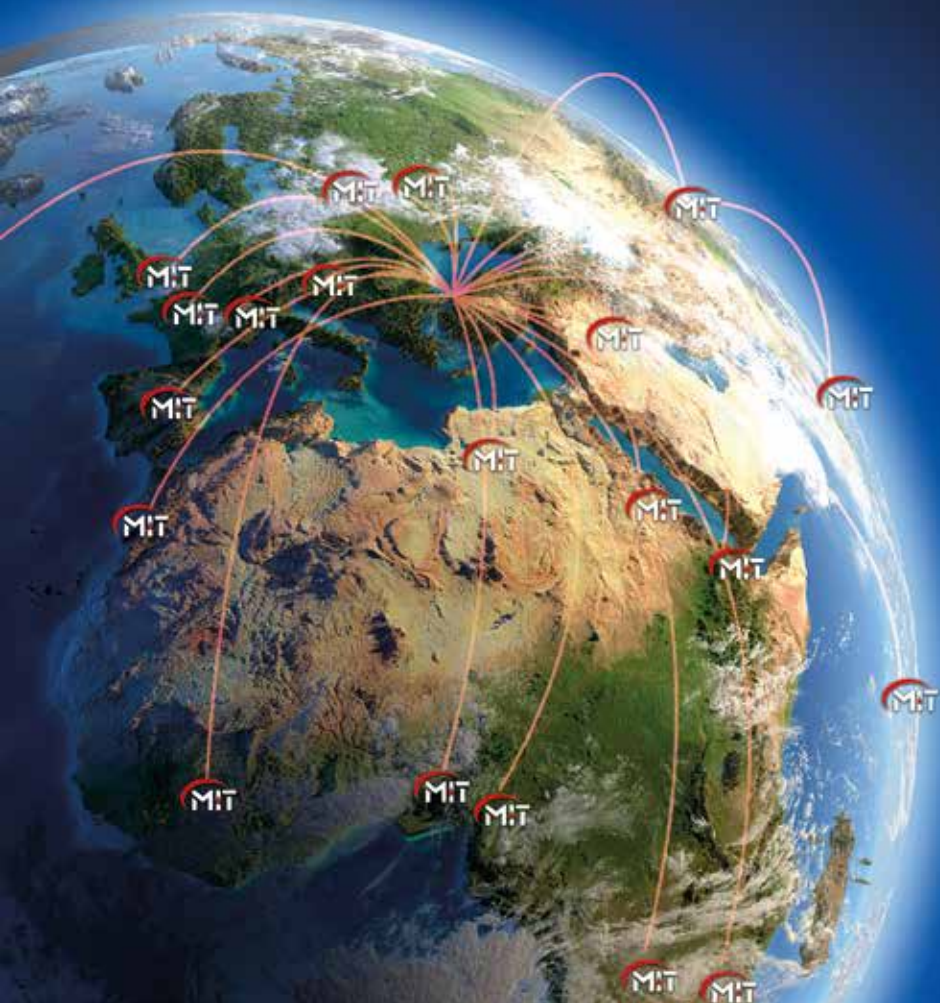
We would like to reiterate that we will be happy to share our knowledge accumulated over many years with our valued customers in order for your system to work correctly and performance.

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.



Today; **135 points** in the world.



 **EKIN ENDÜSTRİYEL**  
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