



**Closed Expansion Tanks
User Guide**





EKIN PRODUCTS. LUMIPRA CONTACT.

Your authorized Ekin partner in the DACH region.

Lumipra GmbH

Speditionstraße 15A
40221 Düsseldorf, Germany

Phone: +49 211 93079616

Email: info@lumipra.com

Website: <https://lumipra.com/>

Products, technical advice, procurement and spare parts.



Distributor / Kontakt: Lumipra GmbH

Speditionstraße 15A · 40221 Düsseldorf · +49 211 93079616

info@lumipra.com · <https://lumipra.com/>



The first condition of innovation is to question.

And the first condition of sustainable innovation is to question constantly.

The journey of innovation has started with a question for us too: "How can we develop value-added technologies in Turkey?". First turning point in this long journey was the birth of MIT (Made in Türkiye) brand. MIT made us the first plate heat exchanger producer of Turkey and it's founding vision was not to become a local alternative, it was to build a high-quality brand that can compete on a global level.

While we are working towards this goal in the past 17 years, our products and processes deemed worthy for documentation by many national and international quality assessment institutions such as ISO, TSE, CE, GOST and many more. This was the natural outcome of our constant questioning of the status-quo and our desire to outperform ourselves.

New Generation Engineering

With our engineering approach that focuses on the process, not the problem, we do not just specialize in a product, we consider the entire ecosystem of that product. Ergo, we produce all the other components of a system in addition to plate heat exchangers and we focus on the constant development of engineering staff required to provide an end-to-end application.

We provide a "solution" rather than a product with our business development, presales, sales and after sales services provided by our expert engineers.

In our 17th year, we continue to grow as a solution partner for projects that need high technology in more than 60 countries with our internationally approved high-quality plate heat exchangers; components such as accumulation tanks, boilers, industrial pumps and installation materials that completes these exchangers to form a system; and complementary services provided by our expert engineer staff.



HEAT TRANSFER PRODUCTS

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

PRESSURE VESSELS

- Water Heater Tanks
- Water Storage Tanks
- Buffer Tanks
- Expansion Tanks
- Stainless Steel Tanks
- Balance Tanks / Dirt Separators / Air Separators / Air Tubes
- Steam Separators
- Pressured Air Tanks
- Neutralization Units

INDUSTRIAL AND FOOD GRADE SYSTEMS

- Heat Stations
- Industrial Process Systems
- Dosing Systems
- Substations
- Thermoregulators
- Pasteurizers
- CIP and Hygienic Process Systems
- Hygienic Storage and Process Tanks
- Homogenizers
- Turn-key Projects

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
- Turbo Blowers

FLOW CONTROL UNITS

- Butterfly Valves
- Ball Valves
- Globe Valves
- Knife Gate Valves
- Actuators
- Check Valves and Strainers
- Thermoplastic Valves

ENERGY SYSTEMS

- Boilers
- Steam Generators
- Solar Collectors
- Chillers
- Cooling Towers

PRODUCT RANGE



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MIT Footless & Flat Tank Series

10 Bar Technical Features of Footless Closed Expansion Tanks



10 Bar Technical Features of Footless Closed Expansion Tanks



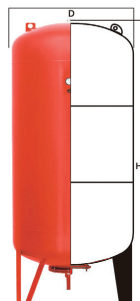
Model	Capacity	Pre-Gas Pressure	Connection	Dimensions (mm)	
				Dia	Height
MIT 10 K	8 lt	2	1"	220	320
MIT 10 K	12 lt	2	1"	220	380
MIT 10 K	19 lt	2	1"	280	430
MIT 10 K	24 lt	2	1"	280	470
MIT 10 K	24 lt	2	1"	360	325
MIT 10 K	35 lt	2	1"	380	470
MIT 10 K	50 lt	4	1"	380	560

Model	Capacity	Pre-Gas Pressure	Connection	Dimensions (mm)	
				Dia	Height
MIT 10 Y	24 lt	2	1"	280	470
MIT 10 Y	50 lt	4	1"	380	620
MIT 10 Y	60 lt	4	1"	380	670
MIT 10 Y	80 lt	4	1"	430	720
MIT 10 Y	100 lt	4	1"	460	800

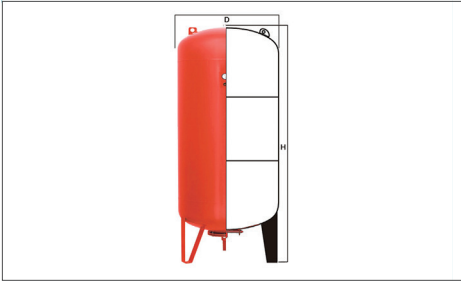
MIT 10 BAR VERTICAL TANK SERIES

Technical Features of Vertical Closed Expansion Tanks

Model	Capacity	Pre-Gas Pressure	Connection	Dimensions (mm)	
				Dia	Height
MIT 10	50 lt	4	1"	380	750
MIT 10	60 lt	4	1"	380	810
MIT 10	80 lt	4	1"	430	960
MIT 10	100 lt	4	1"	460	990
MIT 10	150 lt	4	1"	500	1100
MIT 10	200 lt	4	1 1/4"	590	1120
MIT 10	300 lt	4	1 1/4"	640	1230
MIT 10	500 lt	4	1 1/4"	750	1550
MIT 10	750 lt	4	2"	750	1950
MIT 10	750 lt	4	2"	800	1850
MIT 10	900 lt	4	2"	800	1950
MIT 10	1000 lt	4	2"	800	2180
MIT 10	1500 lt	4	2"	960	2380
MIT 10	2000 lt	4	2"	1100	2520
MIT 10	3000 lt	4	2 1/2"	1200	2800
MIT 10	4000 lt	4	3"	1450	3100
MIT 10	5000 lt	4	3"	1450	3720
MIT 10	10000 lt	4	DN 100	1600	5750

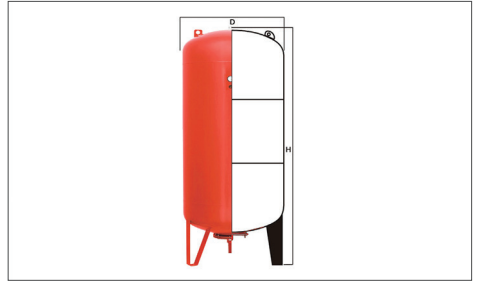


MIT 16 Bar Vertical Tanks Series



Model	Capacity	Pre-Gas Pressure	Connection	Dimensions (mm)	
				Dia	Height
MIT 16	50 lt	4	1"	380	750
MIT 16	60 lt	4	1"	380	810
MIT 16	80 lt	4	1"	430	960
MIT 16	100 lt	4	1"	460	990
MIT 16	150 lt	4	1"	500	1100
MIT 16	200 lt	4	1 1/4"	590	1120
MIT 16	300 lt	4	1 1/4"	640	1230
MIT 16	500 lt	4	1 1/4"	750	1550
MIT 16	750 lt	4	2"	750	1850
MIT 16	900 lt	4	2"	800	1950
MIT 16	1000 lt	4	2"	800	2180
MIT 16	1500 lt	4	2"	800	2380
MIT 16	2000 lt	4	2"	960	2520
MIT 16	3000 lt	4	2 1/2"	1100	2800
MIT 16	4000 lt	4	3"	1200	3100
MIT 16	5000 lt	4	3"	1450	3720
MIT 16	10000 lt	4	DN 100	1450	5750

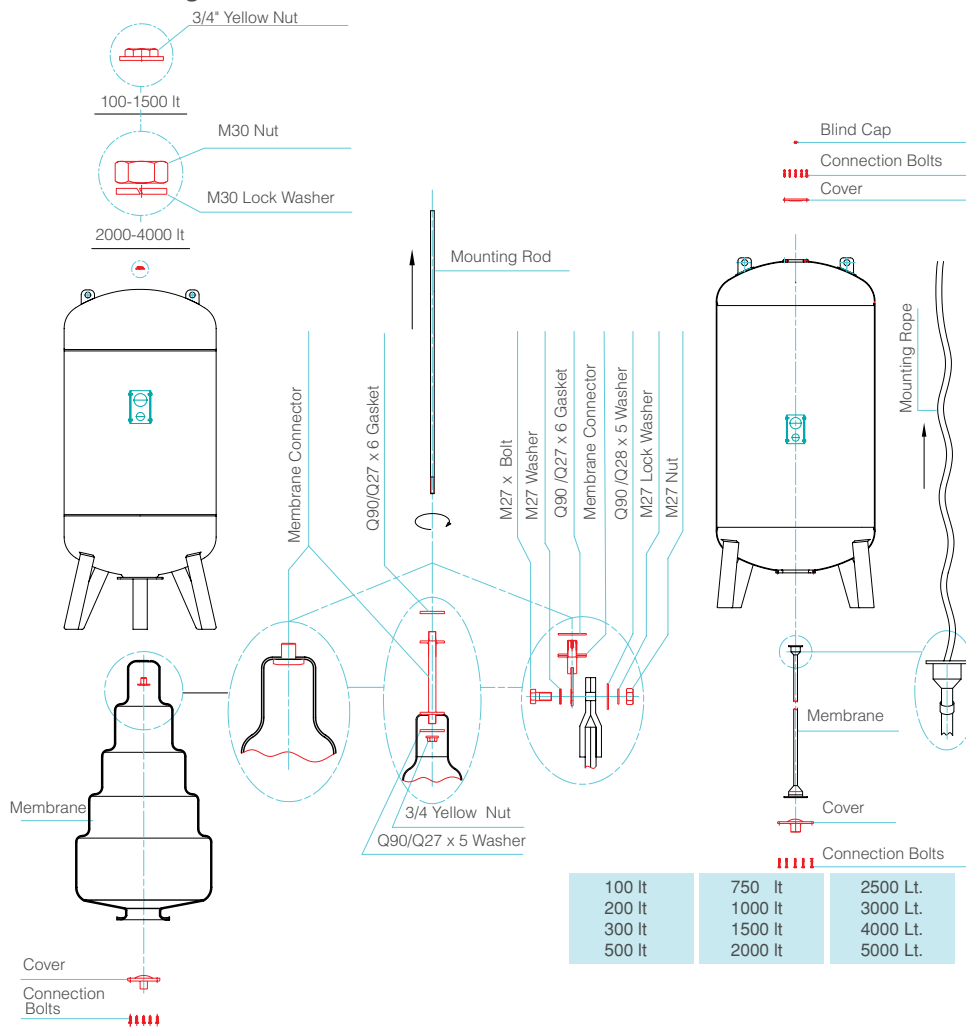
MIT 25 Bar Vertical Tank Series



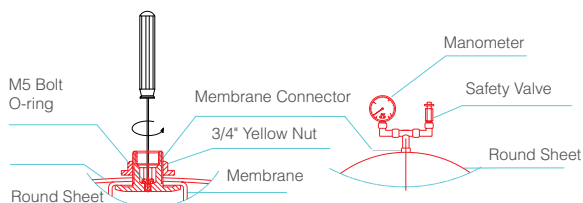
Model	Capacity	Pre-Gas Pressure	Connection	Dimensions (mm)	
				Dia	Height
MIT 25	50 lt	4	1"	380	750
MIT 25	60 lt	4	1"	380	810
MIT 25	80 lt	4	1"	450	910
MIT 25	100 lt	4	1"	450	990
MIT 25	150 lt	4	1"	500	1100
MIT 25	200 lt	4	1 1/4"	600	1120
MIT 25	300 lt	4	1 1/4"	640	1230
MIT 25	500 lt	4	1 1/4"	750	1550
MIT 25	750 lt	4	2"	800	1850
MIT 25	900 lt	4	2"	800	1850
MIT 25	1000 lt	4	2"	800	2180
MIT 25	1500 lt	4	2"	960	2380
MIT 25	2000 lt	4	2"	1100	2520
MIT 25	3000 lt	4	2 1/2"	1200	2800
MIT 25	4000 lt	4	3"	1450	3100
MIT 25	5000 lt	4	3"	1450	3720
MIT 25	10000 lt	4	DN 100	1600	5750

Installation

Installation Diagram



Safety Valve and Manometer Installation On Tanks



Membrane Replacement

1. Drain water and air from inside the tank.
2. Remove the cap on water inlet/outlet by removing the bolts.
3. Remove the nut on the outer side of the membrane connection hanger (100 lt-1500 lt 3/4 in / 2000 lt-4000 lt M30) on the upper part of the tank that allows the membrane to be suspended in the tank. (There are no hangers in closed expansion between 8 lt and 60 lt. Proceed to item 10.) (There is no suspension in 5000 lt closed expansion. But the membrane is hanged in the upper throat, so remove the top cover bolts and save for later.
4. Remove the membrane from the water inlet-outlet port.
5. Remove the membrane connection hanger.
6. Mount the membrane connection hanger to the top of the new membrane; In 100 lt-200 lt-500 lt tanks, insert it through the membrane and into the hole at the top. For 300 lt, 750 lt, 1000 lt, 1500 lt tanks, insert the end of the hanger part from the outside to the end of the membrane. From the inside, first insert the washer (090 / 027x5) through the membrane, then screw the R 3/4, yellow nut into the end of the bracket through the membrane and tighten. Make sure the yellow nut is tightened by turning the end of the membrane upside down while performing the tightening process. In 2000 lt and 4000 lt tanks, assemble and tighten with M27 Bolt, 090 Washer, M27 Spring Washer, Nut, 090 washer on the side of the membrane in the upper part of the membrane and on the side with the mounting picture on the side.
7. Attach 090/027 x 6 rubber seal to the other end of the hanger.
8. The inside of the membrane connection hanger is made of gear. Screw the end of the rod into the end of the hanger, with a length (1/2 in / 2000 lt. - 4000 lt at 100 lt -1500 lt - M10) and a length of more than the length of the tank. Do this by connecting a suitable piece (such as a hoisting rope) to the upper throat at 5000 lt closed expansions.
9. Pull the mounting rod through the tank to remove it from the hole in the top and pull it together with the membrane until the end of the hanger is removed from the hole. For 5000 lt closed expansion, pull the installation rope until the membrane upper throat is removed.
10. Screw and tighten the nut through the mounting rod (100 lt -1500 lt with 3/4 lt yellow fixing nut / 2000 lt -4000 lt with M30 spring washer + M30 nut) to the membrane connection hanger. For 5000 lt closed expansions, insert the upper throat, attach the cap and tighten the fixing bolts.
11. Place the membrane throat into the water inlet-outlet port, replace the cover, screw the connecting bolts against each other, evenly balanced and tighten.
12. Install the front gas pressure on the tank from the front gas cylinder to the installation.
13. Check the pressure relief valve, the water inlet-outlet port connection (top cover connection at 5000 lt closed expansion) and the needle with soap foam test.



The front gas pressure must be checked once a month with the appropriate manometer. $\pm 10\%$ deviation is common. For higher deviations, bring to the appropriate pre-gas pressure.

MIT Membrane Series

Technical Features of Membranes

- Membranes used in our expansion tanks are made of EPDM and BUTYL rubber.
- From 8 lt to 4000 lt EPDM Membranes are used in our expansion tanks.
- BUTIL Membrane is also used in expansion tanks of 5000 lt and above.
- EPDM Membrane is resistant to + 10 / + 110 °C.
- BUTIL Membrane is resistant to + 10 / + 130 °C.
- Our membranes used in our expansion tanks can ben used with all kinds of drinking water.



Dimension & Capacity	Rubber Material	Flange (mm)	Height (mm)
MIT 8-12 lt	EPDM	80-110	195
MIT 18-24 lt	EPDM	80-110	248
MIT 35-60 lt	EPDM	80-110	315
MIT 80-100 lt	EPDM	80-110	700
MIT 150 lt	EPDM	80-110	750
MIT 200 lt	EPDM	150-210	800
MIT 300 lt	EPDM	150-210	1000
MIT 500 lt	EPDM	150-210	1400
MIT 750 lt	EPDM	150-210	1600
MIT 1000 lt	EPDM	200-250	2000
MIT 1500 lt	EPDM	200-250	2000
MIT 2000 lt	EPDM	200-250	2000
MIT 8-12 lt	BUTYL	80-110	195
MIT 18-24 lt	BUTYL	80-110	248
MIT 35-60 lt	BUTYL	80-110	315
MIT 80-100 lt	BUTYL	80-110	700
MIT 150 lt	BUTYL	80-110	750
MIT 200 lt	BUTYL	150-210	800
MIT 300 lt	BUTYL	150-210	1000
MIT 500 lt	BUTYL	150-210	1400
MIT 750 lt	BUTYL	150-210	1600
MIT 1000 lt	BUTYL	200-250	2000
MIT 1500 lt	BUTYL	200-250	2000
MIT 2000 lt	BUTYL	200-250	2000
MIT 3000 t	BUTYL	150-210	2515
MIT 4000 lt	BUTYL	250-300	2680
MIT 5000 lt	BUTYL	150-210, 250-300	3440
MIT 10000 lt	BUTYL	150-210, 250-300	5655

Application Fields

THE USE OF MIT MEMBRANE CLOSED EXPANSION TANKS WITH SUBMERSIBLE PUMPS

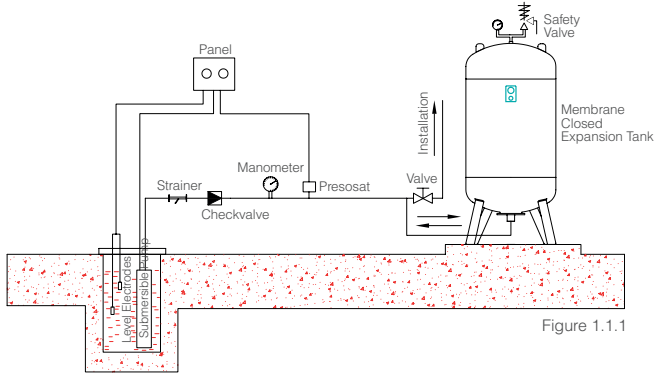


Figure 1.1.1

THE USE OF MIT MEMBRANE CLOSED EXPANSION TANKS WITH TUBE WITH VERTICAL CENTRIFUGAL PUMPS

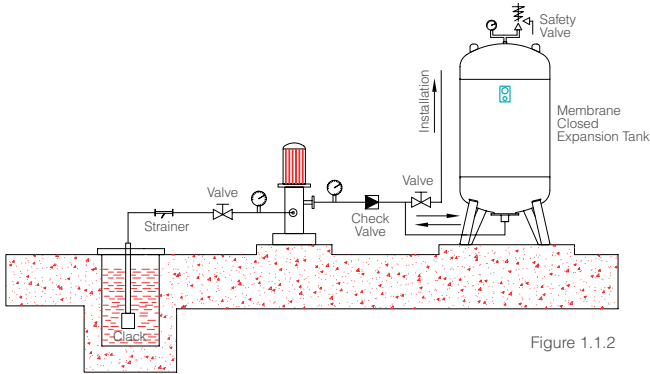


Figure 1.1.2

THE USE OF MIT MEMBRANE CLOSED EXPANSION TANKS IN THE HEATING SYSTEMS

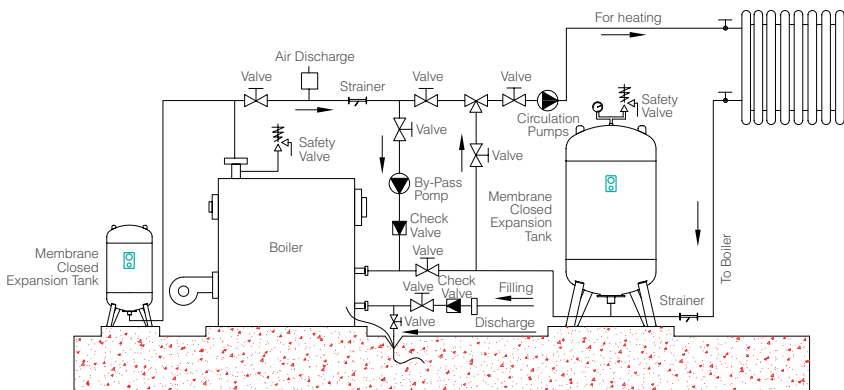


Figure 1.1.3

Significant Warnings

- Check your precharge pressure every 3 months! In case of insufficient precharge pressure, fill dry air using compressor.
- The tank must be empty during air filling. Be sure to drain the water contained in the membrane!
- The device should be stored indoors in such a way as to be protected from environmental effects such as direct sunlight, icing and precipitation.
- For detailed information on tank dimensions, usage details and installation, refer to the User's Manual.
- An automatic type safety valve with an opening value of at least 20% below the working pressure value specified on the label should be used.
- The operating temperature of the device should not exceed the temperature value specified on the label.
- Do not repair or modify the device without the manufacturer's approval.
- Device maintenance and controls should be carried out periodically by authorized persons.

your system.

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Pre-Gas Pressure Adjustment Value According to Systems

In Booster Systems

$$p_o = 0,9 \times p_{min}$$

In Heating Systems

$$p_o = p_s + 0,2 \text{ bar}$$

In Cooling Systems

$$p_o = p_s$$

p_o : Precharge Pressure

p_s : Static Water Pressure

p_{min} : Start-up Pressure



EKİN ENDÜSTRİYEL

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 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.
 - Blockages 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 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 : _____

NOTE: User mistakes are not covered by warranty.

Please keep this certificate!

Professional System Solution Center

From our MIT professional system solution center, you can get help with problems with your pumps, heat exchangers and your system. Our solution center consisting of our expert engineers will be happy to help you.

- 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 each us



LUMIPRA CONTACT

+49 211 93079616

info@lumipra.com

Contact: +49 211 93079616

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.



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Speditionstraße 15A · 40221 Düsseldorf · +49 211 93079616

info@lumipra.com · <https://lumipra.com/>

+90 216



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