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## RUBY AODD PRODUCT CATALOGUE

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#### Sustainable Innovation, Quality Standardization and Dynamism

Ekin has entered Turkey's sector of the imported plate heat exchanger, with their customer-foCused vision and dynamic. Ekin has expanded into new and upcoming investments. One of the main steps was gaining the identity of being a producer. Ekin has started the production of plate heat exchangers with the brand of "MIT". We have grown in the philosophy of quality, through initially adapting to ISO Quality Management.

MIT plate heat exchangers have now become a solution to engineering problems in the world market and have grown through an expansion of franchises.

#### **Engineering Approaches, Integrated Solutions**

Ekin has expanded into the production of components, sales, and after-sales service by employing expert engineers. The factors that guided Ekin to success are their exceptional customer service to the needs and wants of consumers, modern facilities, and becoming partners to projects that involve high-end technology.

Ekin is an expert company which has a wide product range which includes plate heat exchangers, accumulation tanks, water heater tanks, installation, and its service group and submit competitive advantages to mechanical installation sector in Turkey and all around the world.



### APPLICATION FIELDS



#### HEAT TRANSFER PRODUCTS

 Gasketed Plate Heat Exchangers
 Brazed Heat Exchangers • Shell&Tube Heat Exchangers • Air Fan Oil Cooler • Economizers • Coils and Radiators



#### PRESSURE VESSELS

- Water Heater Tanks
  Water Storage Tanks
  Buffer Tanks • Expansion Tanks • Stainless Steel Process
- Tanks Balance Tanks / Dirt Separators / Air Separators
- Pressured Air Tanks
  Neutralization Tanks
  Air Tubes
- Steel IBC Tanks with ADR



#### **COMPLETE SYSTEMS UNITS**



#### FOOD GRADE SYSTEMS

- Pasteurizers with plate heat exchangers
  Hygienic Pasteurizers with Shell & Tube Heat Exchangers
- Cheese and whey Systems
  UHT Sterilization Systems
- CIP Systems Hygienic Storage and Process Tanks
  Homogenizers Standartization Systems Evaporators
- Turn-key Projects



#### FLUID TRANSFER PRODUCTS

 Lobe Pumps
 Hygienic Centrifuge Pumps
 Turbo / Roots / Centrifuge Blowers • Drum Pumps • Acid Pumps Dosing Pumps • Monopumps • Air operated Double Diaphragm Pumps (AODD)



#### VALVES

- Thermoplastic Valves
- Plastomatic Valves



#### ENERGY SYSTEMS

Solar Collectors

Water Heater Tanks for Solar

# Content

Ruby Air Operated Diaphragm Pumps





#### RUBY AIR OPERATED DIAPHRAGM PUMPS







#### RUBY AIR OPERATED DIAPHRAGM PUMPS



New pump line with a brand new designing that offers reinforced pumping potentials. The updated designing provides the possibility to use also other materials at the hydraulic parts without decreasing the efficiency in pressure. Plus, it offers even bigger performance provided with economy.

Pump Model	Body	Center Block	Diaphragms	Valve Seats	Balls	O-Ring	Twin Manifold
Ruby 015	P: PP	P: PP	N: NBR Conductive	N: NBR	N: NBR	N=NBR	D: Twin
Ruby 020	V: PVDF+CF	A: Aluminium	E: EPDM Conductive	E: EPDM	E: EPDM	F=FKM	Manifold
Ruby 025	A: Aluminium	AN: Alu/Nickel	T: TFM+(EPDM Conductive)	T: PTFE	T: PTFE	T=PTFE	
Ruby 040	S: AISI 316	Plated	Z: TFM-A+(EPDM Conductive)	A: Aluminium	S: AISI 316	E=EPDM	
Ruby 050	PC: PP+CF	PC: PP+CF	ST: PTFE+SANTOPRENE (Backup)	V: PVDF			
Ruby 051	SL: AISI 316		HY: PTFE + HYTREL (Backup)	S: AISI 316			
Ruby 080	Electropolished			P: PP			
Ruby 081							



#### MAIN FEATURES



#### Available in PP, PVDF, ALUMINIUM and AISI 316 STAINLESS STEEL

• Use in potentially explosive atmospheres (conductive series)



- High efficciency degree
- Economical air consumption, ecological designing
- Pressure / capacity high efficciency
- Oil free operation
- Very low level of icebarriers, up to zero in high wear outs
- New air valve designing, fully controled air passage, with the potential to use additional ice barrier protectives.

- Easy disassembling and re-assembling
- Easy trasportation
- New generation diaphragms with embodied inner / outer piston
- New generation PTFE diaphragms of embodied type for long-life operation (compound)
- Potential to be submersible
- Possibility to be used in dirty environments due to their closed designing
- Easy entrance orientation changing (manifold reverse)
- Automatic suction



#### HOW IT WORKS

The Ruby diaphragm pump is an air-operated, positive displacement, self-priming pump. These drawings show flow pattern through the pump upon it's initial stroke. It is assumed the pump has no fluid in it, prior to it's nitial stroke.



FIGURE 1 The air valve directs pressurized air to the back side of diaphragm A. The compressed air is applied directly to the liquid column separated by elastomeric diaphragms. The diaphragm acts as a separation membrane between the compressed air and liquid, balancing the load and removing mechanical stress from the diaphragm. The compressed air moves the diaphragm away from the center block of the pump. The opposite diaphragm is pulled in by the sha connected to the pressurized diaphragm. Diaphragm B is on it's suction stroke; air behind the diaphragm has been forced out to the atmosphere through the exhaust port of the pump. The movement of diaphragm B toward the center block of the pump creates a vaccuum within chamber B. Atmospheric pressure forces fluid into the inlet manifold forcing the inlet valve ball off its seat. Liquid is free to move past the inlet valve ball and fill the liquid chamber (see shaded area).





FIGURE 2 When the pressurized diaphragm, diaphragm Α, reaches the limit of it's discharge stroke, the air valve redirects ressurized air to the back side of diaphragm B. The pressurized air forces diaphragm B away from the center block while pulling diaphragm A to the enter block. Diaphragm B is now on its discharge stroke. Diaphragm B forces the inlet valve ball onto its seat due to the hydraulic forces developed in the liquid chamber and manifold of the pump. These same hydraulic forces li the discharge valve ball off it's seat, while the opposite discharge valve ball is forced onto it's seat, forcing fluid to flow through the pump discharge. The movement of diaphragm A toward the center block of the pump creates a vaccuum within liquid chamber A. Atmospheric pressure forces fluid into the inlet manifold of the pump. The inlet valve ball is forced off it's seat allowing the fluid being pumped to fill the liquid chamber.

**FIGURE 3** At completion of the stroke, the air valve again redirects air to the back side of diaphragm A, which starts diaphragm B on its exhaust stroke. As the pump reaches it's original starting point, each diaphragm has gone through one exhaust and one discharge stroke. This constitutes one complete pumping cycle. The pump may take several cycles to completely prime depending on the conditions of the application.



#### INSTALLATION



#### **ATEX Certificate**

ALPHADYNAMIC PUMPS has stored the documentation certifying ATEX compliance according to Directive 94/9/CE for it's ranges of Ruby air operated diaphragm pumps with the SGS Baseefa Limited certification body. They are manufactured in a CONDUCT, class II 2 GD c IIB T4 version.

The equipment user is responsible for classifying it's area of use. On the other hand, the manufacturer shall identify and affix the certification class of the manufactured equipment.





#### ADVANCE UNIFIED DIAPHRAGMS FEATURING

- Easy installation and maintenance
- Excellent service life
- Inventory cost reduction
- Improved performance
- Greater displacement per cycle
- No center hole, elimination of potential leak paths.
- There is no need for the main axis to be insured
- They can be screwed and unscrewed without the use of tools



#### ADVANCE UNIFIED DIAPHRAGM OFFERS



Backing ribs sustain and guide the diaphragm's flexibility for extended life and reduced cavitation on suction stroke. Oversized integrated plate supports nearly 50% of the diaphragm through the entire dynamic motion.



#### MINIPUMP ADB005

#### Construction materials: PP-PP+CF

Technical Data		
ATEX certification	I 3/3G D IIB T 135 °C/ II /2GD c IIB T4 135 °C	
Construction materials	PP, PP+CF	
Intake/delivery connections (standard)	G1/4"	
Air connection	1/8"	
Max. self-priming capacity	3 m	
Max. flow rate	5 l/min	
Max. head	70 m	
Max. air supply pressure	7 bar	
Diameter	0,5 mm	
Max. operating temp.	60 °C	
Weight	0,5 kg	









#### MINIPUMP ADB017

#### Construction materials: PP, PP+CF, ECTFE





Technical Data			
ATEX certification	I 3/3G D IIB T 135 °C/ 2/2GD c IIB T 135 °C		
Construction materials	PP, ECTFE, PP+CF		
Intake/delivery connections (standard)	G 3/8"		
Air connection	3/8"		
Max. self-priming capacity	3 m		
Max. flow rate	17 l/min		
Max. head	70 m		
Max. air supply pressure	7 bar		
Diameter	0,5 mm		
Max. operating temp.	60 °C, ECTFE 90 °C		
Weight	1 kg, ECTFE 1,5 kg		







#### RUBY 012 PUMP

#### Construction materials: PP-PVDF-PP+CF

Technical Data		
ATEX certification	II 2 GD c IIB T4	
Construction materials	PP, PVDF, PP+CF	
Diaphragms	SANT+PTFE, HYTREL+PTFE	
Intake/delivery connections	G 1/2"	
Air connection	1/4"	
Max. self-priming capacity	4 m	
Max. flow rate	30 l/min.	
Max. head	70 m	
Max. air supply pressure	7 bar	
Max solid size (diameter)	2 mm	
Max. operating temp.	PP 60 °C, PVDF 95 °C, P,P+CF 60 °C	
Weight PP , PP+CF	1,6 kg	
Weight PVDF	1,9 kg	







Dimensions





#### Construction materials: PP - ALU - PVDF - AISI 316 - PP+CF









Technical Data			
ATEX certification	II 2 GDcIIB T4		
Construction materials	PP, PVDF, Aluminium, AISI 316, PP+CF		
Diaphragms	PTFE with Conductive EPDM (compound) PTFE-A Full Capacity with conductive EPDM (compound) NBR Conductive EPDM Conductive		
Intake/delivery connections	G 1/2"		
Air connection	1/2"		
*Max. self-priming capacity	4 m		
*Max. flow rate	72 l/min.		
Max. head	70 m		
Max. air supply pressure	7 bar		
Diameter	3,0 mm		
Max. operating temp.	PP 60 °C, PVDF 95 °C, Alu 95 °C, AISI 316 95 °C		
Weight PP	4 kg		
Weight PVDF	5,5 kg		
Weight Aluminium	6 kg		
Weight AISI 316	9 kg		

\*The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20 °C, and can be changed according to the construction material.



#### **Dimensions Not Metallic Pump**





Construction materials: PP - ALU - PVDF - AISI 316 - PP+CF

















#### Construction materials: PP - ALU - PVDF - PP+CF







Technical Data		
ATEX certification	2 GDcIIB T4 135 °C	
Construction materials	PP, PVDF, Aluminium, PP+CF	
Diaphragms	Conductive NBR, Conductive EPDM, PTFE with conductive EPDM (Compound)	
Intake/delivery connections (standard)	G 3/4"	
Air connection	1/2"	
*Max. self-priming capacity	4 m	
*Max. flow rate	117 l/min.	
Max. head	80 m	
Max. air supply pressure	8 bar	
Diameter	3 mm	
Max. operating temp.	PP 60 °C, PVDF 95 °C, Alu 95 °C	
Weight PP	4 kg	
Weight PVDF	5,5 kg	
Weight Aluminium	6 kg	

\*The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20 °C, and can be changed according to the construction material.



# Dimensions Not Metallic Pump



Construction materials: PP - ALU - PVDF - PP+CF















#### Construction materials: PP - ALU - PVDF - AISI 316 - PP+CF









Technical Data		
ATEX certification	2 GDcIIB T4	
Construction materials	PP, PVDF, Aluminium, AISI 316, PP+CF	
Diaphragms	PTFE with Conductive EPDM (compound) PTFE-A Full Capacity with conductive EPDM (compound) NBR Conductive EPDM Conductive	
Intake/delivery connections	G1"	
Air connection	1/2''	
*Max. self-priming capacity	4 m	
*Max. flow rate	175 l/min.	
Max. head	70 m	
Max. air supply pressure	7 bar	
Diameter	3,5 mm	
Max. operating temp.	PP 60 °C, PVDF 95 °C, Alu 95 °C, AISI 316 95 °C	
Weight PP	6 kg	
Weight PVDF	7 kg	
Weight Aluminium	7,5 kg	
Weight AISI 316	14 kg	

\*The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20 °C, and can be changed according to the construction material.



# Dimensions Not Metallic Pump



Construction materials: PP - ALU - PVDF - AISI 316 - PP+CF

















#### Construction materials: ALU - AISI 316





	Technical Data
ATEX certification	II 2 GD c IIB T4
Body materials	Aluminium, AISI316
Central block	Aluminium
Diaphragms	PTFE with Conductive EPDM (compound) PTFE-A Full Capacity with conductive EPDM (compound) NBR Conductive EPDM Conductive
Intake/delivery connections	G 1"
Air connection	1/2"
*Max. self-priming capacity	4 m
*Max. flow rate	175 l/min.
Max. head	70 m
Max. air supply pressure	7 bar
Diameter	3,5 mm
Max. operating temp.	130 °C
Weight Aluminium	10 kg
Weight AISI 316	17 kg







#### Construction materials: ALU - AISI 316













#### Construction materials: PP - ALU - PVDF - AISI 316 - PP+CF









Technical Data		
Atex Certification	II 2 GD c IIB T4	
Construction materials	PP, PVDF, Aluminium, AISI 316, PP+CF	
Diaphragms	PTFE with Conductive EPDM (compound) PTFE-A Full Capacity with conductive EPDM (compound) NBR Conductive EPDM Conductive	
Intake/delivery connections	G 1 1/2"	
Air connection	1/2"	
* Max self-priming capacity	5 m	
* Max. flow rate	360 l/min.	
Max. solid size (diameter)	70 m	
Max head	7 bar	
Max air supply	5 mm	
Max operating Temperature	PP: 60 °C, PVDF: 95 °C, Alu: 95 °C, AlSI316: 95 °C	
Weight PP	14 kg	
Weight PVDF	22 kg	
Weight Alu	14 kg	
Weight AISI316	30 kg	

\*The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20 °C, and can be changed according to the construction material.



#### **Dimensions Not Metallic Pump**







**Ruby 040 - PTFE Fitted** Air Pressure Supply Air Consumption NL/min 2200 2000 Air Consumption NL/min in Head (m) 1204 1000 4 bar 800 3 ber 600 20 400 200 180 200 220 260 280 300 140 160 240 120 Capacity L/min









Construction materials: PP – ALU – PVDF – AISI 316 - PP+CF



#### Construction materials: ALU - AISI 316





Technical Data		
Atex certification	II 2 GD c IIB T4	
Body material	Aluminium, AISI 316	
Central bloCk	Aluminium	
Diaphragms	PTFE with Conductive EPDM (compound) PTFE-A Full Capacity with conductive EPDM (compound) NBR Conductive EPDM Conductive	
Intake / delivery connections	G 1 1/2"	
Air connection	1/2"	
* Max self-priming capacity	4,5 m	
* Max. flow rate	320 l/min.	
Max head	70 m	
Max air supply	7 bar	
Max. solid size (diameter)	5 mm	
Max operating Temperature	130 °C	
Weight Aluminium	17 kg	
Weight AISI 316	33 kg	

\*The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20 °C, and can be changed according to the construction material.



#### **Dimensions Aluminium Pump**





#### Construction materials: ALU - AISI 316













#### Construction materials: ALU - AISI 316



Technical Data			
ATEX certification	II 2 GD c IIB T4 135 °C		
Construction materials	Aluminium, AISI316		
Diaphragms	Conductive NBR , Conductive EPDM, PTFE with conductive EPDM (Compound)		
Intake/delivery connections (standard)	2" BSP G - Flange on Request		
Air connection	3/4"		
*Max. self-priming capacity	5 m		
*Max. flow rate	696 I/min.		
Max. head	70 m		
Max. air supply pressure	7 bar		
Diameter	8 mm		
Max. operating temp.	95 °C		
Weight Aluminium	50 kg		
Weight AISI 316	70 kg		









#### Construction materials: ALU - AISI 316











#### RUBY 150 PUMP

#### Construction materials: Aluminium



Technical Data		
ATEX certification	II 2 GD c IIB T4 135 °C	
Construction materials	Aluminium	
Diaphragms	Conductive NBR, Conductive EPDM, PTFE with conductive EPDM (Compound)	
Intake/delivery connections	2" BSP G- Flange on Request	
Air connection	3/4"	
*Max. self-priming capacity	5 m	
*Max. flow rate	696 I/min.	
Max. head	80 m	
Max. air supply pressure	8 bar	
Diameter	8 mm	
Max. operating temp.	95 °C	
Weight	35 kg	







#### RUBY 051 PUMP

#### Construction materials: PP - PVDF - PP+CF

Techi	nical Data
ATEX certification	II 2 GD c IIB T4
Construction materials	PŖ PVDŖ PP+CF
Diaphragms	NBR, EPDM, PTFE, SANTOPRENE, HYTREL
Intake/delivery connections	G 2"
Air connection	1/2"
Max. self-priming capacity	5 m
Max. flow rate	650 l/min.
Max. head	70 m
Max. air supply pressure	7 bar
Max solid size (diameter)	8 mm
Max. operating temp.	PP 60 °C, PVDF 95 °C, PP+CF 60 °C
Weight PP	38 kg
Weight PVDF	45 kg













#### Construction materials: ALU - AISI 316



Тес	hnical Data
ATEX certification	II 2 GD c IIB T4 135 °C
Construction materials	Aluminium, AISI316
Diaphragms	Conductive NBR , Conductive EPDM , PTFE with conductive EPDM (Compound)
Intake/delivery connections (standard)	Flange on Request
Air connection	3/4"
*Max. self-priming capacity	5 m
*Max. flow rate	696 I/min.
Max. head	70 m
Max. air supply pressure	7 bar
Diameter	8 mm
Max. operating temp.	95 °C
Weight Aluminium	50 kg
Weight AISI 316	70 kg







#### Construction materials: ALU - AISI 316













#### RUBY 81 PUMP

#### Construction materials: PP - PVDF - PP+CF



Тес	chnical Data
ATEX certification	II 2 GD c IIB T4
Construction materials	PP – PVDF – PP+CF
Diaphragms	NBR, EPDM, PTFE, SANTOPRENE, HYTREL
Intake/delivery connections	G 3"
Air connection	1/2"
Max. self-priming capacity	5 m
Max. flow rate	900 I/min.
Max. head	70 m
Max. air supply pressure	7 bar
Max solid size (diameter)	10 mm
Max. operating temp.	PP 60 °C, PVDF 95 °C, P,P+CF 60 °C
Weight PP	50 kg
Weight PVDF	67 kg









#### EKİN ACADEMY



Ekin is aware that the progress in its sector is possible through continuous development and learning.

Ekin Academy, established with this awareness, aims to provide high-quality and sustainable development with its modern education methods, to provide successful employees and to provide value to the society through social responsibility projects.

Training and development programs that will make a direct contribution to the results of our employees' work processes and which will make a difference in their personal development are prepared by Ekin Academy.

For our business partners and customers, our training modules prepared by our expert staff provide training support for pre-sales and post-sales issues such as commissioning, operation, maintenance and repair of our products.

In cooperation with universities within the scope of corporate social responsibility projects, we are experiencing the happiness of adding value to the society by allowing the engineer candidate, who aims to take place in the fields where Ekin is active, to meet with the sector and to experience the theoretical knowledge acquired in the fields of application.

#### **In-Company Trainings**

Ekin Academy conducts technical, leadership, strategy development, sales and training and development programs for different tasks in the fields of heat transfer, pressure vessels, package systems, food systems and liquid transfer.





#### **Out-of-Company Trainings**

We are realizing conferences and training activities to our business partners, professional groups and institutions where we carry out social responsibility projects in various locations of Turkey.



#### SALES TEAM

At Ekin, we produce a proactive solution by our engineering staff who are specialized in their field. Our team, which works with the aim of unconditional customer satisfaction, works selflessly in order to gain customer loyalty by raising the bar of success in products, services and processes.

We are happy to share our accumulated knowledge with our valued customers. Ekin will continue to be the best solution partner for you in all applications with all kinds of heating and cooling applications.





#### **Customer Satisfaction**

Customer rights are protected in all circumstances.



#### **Privacy Policy**

Aware of the importance of protecting personal information, personal information is not shared with third parties.



#### Information Security

The requirements of ISO 27001 information security management system are fulfilled at Ekin.



#### **Ethical Values**

In all our business relations, our principle of mutual benefit by adhering to laws and ethics is our principle.



#### CERTIFICATIONS



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#### 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, buttermilk 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 (216) 444 35 46 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.

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Our products are produced with Turkish engineering technology in **135 countries** in the world today...



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