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IN THE NEW NORMAL TO NEW GOALS

NEW ERA REQUIRES NEW BUSINESS MODELS



Dear Readers,

When the second issue of our magazine is published, it will have been death anniversary after we lost my dear partner Orhan Obalı on October 3.

Sistem Teknik, which Orhan Obalı and I established together in 1979, became two separate sister organizations in 2009 specializing in Steel and Aluminum furnaces.

Sistem Teknik Industrial Furnaces Limited., which manufactures furnaces in the aluminum sector for which Orhan has been responsible. It is my biggest consolation that this company continues to work with the same success even in the absence of Orhan.

I remember him with longing and respect, and wish him a lot of mercy.

Unfortunately, in this 3-month period after the first issue of our magazine, the Covid-19 epidemic still continues. Travel restrictions continue to affect our business and installations.

Health is the most important thing. We hope that there is not any problem and loss caused by

Covid-19 in your environment and businesses.

The measures and restrictions imposed by the pandemic also necessitate new solutions and new business models. One of the most important of these is to find solution to assembly and to commission restrictions in the customer's factory.

As a company that exports more than 60% of its production, my dream is to be like IKEA in the field of industrial furnaces. In other words, the customer should buy the modules that have been tested, then can install and commission them with very good documentation.

As part of this dream, we set up the furnaces which we produce one-on-one in our factory and do all kinds of tests, passing the parts of our customers through our furnaces and making online acceptances without the need for our customers to come.

In addition, our goal is to establish our remote effective online supervision systems using image processing techniques such as AR and VR.

In the meantime, we are glad to see that the wheels are starting to spin again in many sectors. We hope and expect a rapid economic recovery in the last quarter of 2020.

In this extra ordinary situation, I agree resources should be used effectively, but changing brings many opportunities. Those who see opportunities and make the necessary investments on time emerge stronger from such chaos environments.

As Sistem Teknik Industrial Furnaces Group, we want you to know that we are always by your side with our strong technical staff, analysis and simulation capabilities in both new furnace and modernization of your existing furnaces.

As we are about to enter the last quarter of 2020, we wish your business to be very good, to compensate for the losses in the second quarter, and most importantly, to have full health and peace.

With our love and respect,

Mehmet OZDESLIK

**On behalf of Sistem Teknik
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“WE AIM TO BECOME A WORLD BRAND”

Sarvion is going on a new journey to create a world brand. Masters' PRO₂ oxygen probes, which are named because of their master users, are counting days to widen its market. We have asked about this exciting project and Sarvion General Coordinator Beste Özdeşlik has explained.

Sarvion is an engineering company, which is specialized on industrial furnaces... General Coordinator Beste Özdeşlik is an example of how effective and successful women are even in heavy industry. We have met with her and she has answered our questions sincerely. She seems proud and says “It was our dream to create a worldwide brand for atmosphere control equipment by using our experience and know-how in furnace industry”. Lets hear more from her.

What are Masters' PRO₂ oxygen probes used for?

Masters' PRO₂ oxygen probes provides you monitoring and controlling the oxygen content, carbon potential and dew point of the atmosphere in furnaces with maximum 1100 °C operation temperature. Especially for processes with high carbon content such as carburization, precise and right measurement and long lifetime is very important for an oxygen probe. This probe is specially designed in order to meet with these requirements.

How did you decide local oxygen probe production?

Still today there are many things that we import even we are able to develop and produce with high quality in Turkey. It was our dream to create a worldwide brand for atmosphere control equipment by using our experience and know-how in furnace industry. We provide oxygen probes from suppliers for many years. All these probes were being imported



Beste ÖZDEŞLİK
Sarvion General Coordinator

and there was no production in Turkey. Because of our role as a manufacturer and a retrofitting company, we stand in the shoes of end user, as well as we listen to our customers comments and requirements. In order to provide high quality, serviceable and affordable oxygen probes to our customers and ourselves, we started a R&D project in the beginning of 2019. In the end of literature review, analysis and improved design phases our first prototype was ready. We optimized our design by testing several times. Our prototype was tested in an important Automotive supplier company's heat treatment workshop, verified and put into use. We are very happy to see that our customers both in Turkey and Europe would benefit from this investment.

Same quality and service for all languages

Can you tell us the story behind Masters' PRO₂?

In order to be a world brand, first of all we needed a name that we would adopt and believe in. Master is a noun which has a meaning of being experienced and perfectly skilled on something. It has almost the same meaning in many languages and can be easily pronounced. We want to point out our customers here, it will be their oxygen probe and our customers are the masters. We want that our products would be the choice of the professionals.

Can you talk about your brand and production planning process?

We would like to take right and powerful steps to achieve our goals. That is why we have worked hard to do our best and we have worked with consultants for financial and operational planning. We know how hard to become a serial production

company, especially for a project-based engineering company like us. We learnt a lot from professionals, and we treated our time at home with online trainings in the beginning of pandemic. It was a pleasure to work on creating a new brand. We believe that our meticulous efforts would end up with success. I can say proudly, despite the negative effects of pandemic we completed the preparations, we released our first model of Masters' PRO₂ in 2020 and started serial production. We continue developing new models for the future.

Starting with Europe, we will reach to globe.

Why Masters' PRO₂ would be preferred?

While designing the oxygen probe we worked on developing a more ergo-

nomical, durable and accurate product than the others in the market. We have never thought about producing the cheapest oxygen probe. Our focus was to meet the customer requirements with the highest quality. Our product placement is in a higher quality with its material and design in comparison within its counterparts.

What is the aim of Masters' PRO₂ oxygen probes?

Our aim is to be the first choice of the industrial furnace users initially in Turkey, afterwards in international market. We aim to provide not only the oxygen probe but also a full package to our customers with its air cabinet and control system we offer. We aim to develop IoT ready, smart product which can communicate with process and production data.



Sarvion General Coordinator Beste Özdeşlik; one of our country's successful business women. We had a sincere interview with Identity, who said that their goal to open up to the world. We want to thank her once again.



ADVANTAGES OF Masters' PRO₂

Beste Özdeşlik, General Coordinator of Sarvion, has mentioned the advantages of Masters' PRO₂ as follows:

→ **Return on Investment:**

We can provide a better quality for a better price. In order to increase the oxygen probe lifetime, we have selected the case material according to high mechanical strength and low carbon absorption features.

→ **Quality Assurance:**

Each probe has special certification of their quality tests, which are done in test furnaces in our facility. Each Masters' PRO₂ has one-year guarantee.

→ **Serviceability:**

In case of a malfunctioning problem, good service infrastructure of Sarvion makes thing easy to support our customers. Rather than changing the probe, Sarvion is able to repair and calibrate the probe in its facility, on the other hand essential spares are ready in the stock.

→ **Accessibility:**

Sarvion Office with its workshop is located in Kocaeli, very close to Sabiha Gökçen airport. It is a big advantage for Russia, and Middle East. In coming year Sarvion also plans to establish our Office and warehouse in Germany. So it will be easier for our European customers to reach us.

KANCA INC. COP. IS GROWING WITH ITS INVESTMENTS IN MANUFACTURING TECHNOLOGY

Kanca I.C. is one of the sector's leading companies thanks to its achievements in hand tools and automotive industry. Adapting a modern system which responds to customers' needs quickly as company's vision is the main factor in such growth of this well-established company.

Always serving with a desire of improving itself, Kanca I.C. is inspired by the young generation within the framework of the corporate strategy, and sheds light on the industry thanks to its experienced and expert staff. They take the justified pride of offering an uninterrupted and fast service to its customers at a point where technology is united with design. Berk Özgür, Heat Treatment Manager of Kanca I.C., has explained to Furnace News about the history, present and future goals of the company. He has given information about the long-lasting cooperation with Sistem Teknik. Have a good read...



Berk ÖZGÜR
Heat Treatment Manager of
Kanca I.C.

First of all, we would like to introduce you briefly to our readers.

I am 32 and started my career in Ankara. I have worked in various departments in Kanca I.C. for the last 5 years. I am currently in charge of the heat treatment facility and lean manufacturing system coordination. I enjoy learning new things, reading about the subjects that I am curious about, making research about anything, thus getting to the best result. I am a young metallurgical and materials engineer who is open to improvement.

Sustainable development and quality manufacturing.

You are a leading company in hand tools and automotive industry. Which factors did playrole in this growth? Could you briefly explain us the company policy?

We, as a company, have always adapted an innovative, modern, and responsive approach. Our experienced and expert staff, who has worked together for many years, has

also helped us come to these days. We firstly invest in the skilled workforce in order to support our growth. Education is an indispensable part of our business life. The old and the new, the experienced and the inexperienced... We try to keep this balance in our staff so that we can both support the growth and hand down the experience and the corporate culture to the next generations.

This is followed by the investment in the equipment. In a world where technology develops every day and pushes the limits of the material and design, it is out of question for us not to keep up the pace. Therefore, we are developing and investing in our machinery and equipment in parallel with our growth. Satisfying customers' higher-quality and value-added expectations while increasing the capacity is the most important element which we take into consideration for our investment research. Having an outdated project in which we invest millions of dollars only after a few years would impact our long-term growth plans negatively. For this reason, we never think just the capacity

increase. Furthermore, we opened warehouses in Germany 14 years ago and in the USA 2 years ago in line with our strategy of serving our customers faster. Thus, we aim to grow our market share by offering service to our customers in their hometowns.

Which products and services of Sistem Teknik do you use?

We have a long-standing partnership with Sistem Teknik. Heating system revisions, temperature measurement automation revisions, furnace automation controls, overhaul and process revisions are only a few of our past, completed projects... Sistem Teknik I.C. and Kanca I.C. are two companies which know each other well and have closed many deals together. They both contributed a great deal to the industry directly or indirectly thanks to their projects. We, as the younger generations in charge, are trying to improve this successful history with the highest efficiency. We have recently commissioned an electric heated trolley tempering furnace completely designed by the employees of Sistem Teknik.

Berk Özgür, Heat Treatment Manager of Kanca I.C., explains why they chose to work with Sistem Teknik:

The main reason behind our preference for Sistem Teknik is our ability to cooperate for manufacturing products that respond the customers' needs in terms of quality and cost. Ensuring that the machineries we commission manufacture products in line with our quality standards and with a quality that can be maintained is our primary condition in our cooperation as Kanca I.C. One of the most important criteria for electric heating is the furnace's energy consumption. Sistem Teknik guarantees the lowest amount not only in the general energy consumption but also in the energy loss. Additionally, their providing fast and timely service instilled by the automotive supplier chain was another reason for our choice. We accomplished our idea of creating a domestic and quality production line in collaboration with Sistem Teknik. They also have a solution oriented after-sales team which finds poka-yoke solutions. They played an active role during test phases such as installation and commissioning.

Sistem Teknik I.C. is a company that prioritizes customer satisfaction by conducting its job in continuous communication with its customers during the design and manufacturing phases. I am sure that Sistem Teknik I.C. team feels rightfully proud of the machinery they manufactured. This furnace now performs the heat treatment of automotive parts from the world's and Europe's leading companies. It works 24/7 with an uninterrupted productivity and performs a smooth manufacturing even with "strict quality tolerance limits of the automotive industry". It also shows a great energy consumption level in today's world where costs per unit are calculated only with cents.

Sistem Teknik achieves a high producibility standard.

What would you like to say about the process quality and traceability of Sistem Teknik's furnace with regards to your needs and automotive industry's requirements?

Automotive industry must work with processes created with "zero-defect" policy. We are providing service in an industry which has the second most strict quality tolerance limits after the aerospace industry. Meeting all the requirements of IATF 16949 and CQI quality standards and ensuring a sustainable performance with these requirements entails a great experience. Controlling heat treatment parameters against strict tolerance limits one by one and ensuring their sustainability is one of our basic requirements. Sistem Teknik achieves a high producibility

standard for its furnace category considering both its heating homogeneity and all other specifications when compared to its competitors. This allows for the furnace to be able to manufacture with strict quality tolerance limits. We are a high-volume manufacturing company. Our goal is to achieve zero unplanned stop for all the furnaces we use. Furnaces might cause major quality issues even with instantaneous deviations in the mechanical



"Sistem Teknik I.C. is a company that prioritizes customer satisfaction by conducting its job in continuous communication with its customers during the design and manufacturing phases. We have recently commissioned an electric heated trolley tempering furnace completely designed by the employees of Sistem Teknik."



structure and process control parameters.

Sistem Teknik I.C.'s furnace continues to perform heat treatment to a satisfactory level almost non-stop for a year.

Finally, could you please tell us about your targets for the next year, hoping to leave behind the impacts of this difficult period caused by Covid-19?

The pandemic will get us to reach creative and much more livable days once its destructiveness is taken under control. This process taught us digitalization should be one of the top items in the list for investment prioritization. We should evolve and develop with data-driven, smart, agile, and more competitive processes in all of our processes including but not limited to manufacturing, control and management. Within this scope, we realize our new investments along with our current equipment in line with "smart manufacturing management" principles.

ALP AVIATION I.C., NATIONAL PRIDE OF AEROSPACE INDUSTRY IN TURKEY

ALP Aviation with its high-tech engineering and production infrastructure is among the major companies engaged in the manufacturing and export sector of Turkey's aviation industry.

Alp Aviation continues its projects successfully, meets with national facility to Turkey's needs.

It makes significant contributions to the defense industry of Turkey with export-oriented projects.

ALP Aviation was established in 1998 in Eskişehir, existing 50.000 m² closed area in Eskişehir Organized Industrial Zone, more than 1300 qualified personnel, nearly 200 new generation multi-axis machine tools, CMM quality control equipment, more than 70 It has special processes, coating and non-destructive inspection lines, test and laboratory capabilities, some of which are found in very few facilities in the world. In addition, it has extensive production experience in all processes required for precision machining of metals, especially titanium, nickel, super alloys, and conversion to finished products, with many and most of them subcontractors with SME status.

Alp Aviation is a private enterprise company that mainly manufactures flight critical / rotary components and subsystems under the high technology, quality, design, engineering and production standards of the aviation and space industry. With its effective operations, vertically integrated structure, lean manufacturing processes, strong quality, engineering and test center infrastructure, it competes successfully at the global level and cooperates with the world leaders of the industry in leading programs.

A Cooperation with Sistem Teknik for 21 years

Duygu Erten, Special Processes Director, explains the intersection story of ALP Aviation with Sistem Teknik as follows: "We learned about Sistem Teknik with the furnaces that were delivered to TUSAS. As we leave



the 21st year of our cooperation behind today, I would like to state that we are happy that this cooperation continues successfully. First of all, our relationship, which started with aluminum heat treatment furnaces, continued with metal-metal bonding furnaces, and finally with the rotary heat treatment furnace for our gear plant. "ALP Aviation uses all kinds of heat treatment furnaces of Sistem Teknik for different metals, special bonding process furnaces made under vacuum, special atmosphere rotary hardening furnaces and temper furnaces. ALP Aviation has 2 quenching furnaces (one is water, one is water with polymer) and 1 aging furnace. These furnaces are used for the hardening, aging and annealing processes of aluminum alloys. In the same furnaces, precipitation

hardening of stainless steels is also carried out. Helicopter gearbox parts are hardened in the rotary furnace. The quenching processes of the parts coming out of here are carried out outside, in the quenching press. The most important factor for the successful company to choose Sistem Teknik is that it offers more suitable products that can meet international standards, taking into account domestic production, price structure and delivery conditions. The success of Sistem Teknik in the supplying of fast and solution-providing service / spare parts has also been effective in standing out from its competitors in the sector.

AMONG THE COMPANIES OF ISO 500 AND TIM 500

ALP Aviation continues its develop-

ment in line with the industrialization policies and targets of our country and especially of the Defense Industry Presidency. With high-technology based engineering and manufacturing infrastructure, it is among the major companies which are engaged in the sectors of manufacturing and export of the aviation industry in Turkey. According to the statement made by the Defense and Aerospace Industry Exporters Association (SSI), ALP Aviation has been ranking 5th in Turkey in 2020 Aerospace and Defense sector exporting activities; it has also been ranking 3rd among the defense and aviation industry companies which export to the USA. Our achievements are as follows; Turkey's Top 500 Industrial Enterprises - 2019 ISO: - sales by production: 256th - gross value added: 117th - export: 94; 1000 Exporters - 2019 TIM - 103rd and 7th in the sector. ALP Aviation continues its projects successfully by prioritizing efficiency and competition conditions. It is in the effort to respond to Turkey's needs with national capabilities. On the other hand, thanks to export-oriented projects undertaken in the field of civil and military aviation, it significantly contributes to Turkey Defence Industry sector. In order to share its gains with the Turkish industry, ALP Aviation has a comprehensive subcontractor program specifically targeting SMEs. ALP Aviation develops subcontractor programs in the fields of parts, subsystem and fixture design and production, engineering and prototype studies, special pro-

cesses and manufacturing support services, and also supports the development of aviation clusters. Especially Eskişehir at first place, it works with many subcontractors which have SME status in different cities of Turkey.

Turkish Utility Helicopter Project

ALP Aviation put the Helicopter Business Center Facility into operation in October 2017. T70 Black Hawk Helicopters are produced within the scope of the Turkish Utility Helicopter Project (TUHP). This project is carried out by Turkish Aviation and Space Industry I.C carried out under the main contractor. All the gears in these helicopters, all gearboxes including the main transmission module, flight critical and dynamic components, their assembly groups, flight control mechanism and landing gear are the center where high technology production, assembly, testing, engineering and support services are carried out under one roof. In addition to ALP Aviation's existing infrastructure, with an investment of about 90 million USD for this purpose, a modern and high-tech facility that has been

brought into Turkey. In addition to supporting the Turkish Utility Helicopter Program at the new facility, these products are also exported to the US Sikorsky company within the scope of the agreements. These capabilities acquired within the scope of TUHP are also used effectively in original aviation projects and other national and international commercial programs. While 400 new personnel are employed in this new facility of 11.000 m²; Within the scope of TUHP alone, a business volume of at least 500 million USD will be created over the years. ALP Aviation, benefiting from SME and sub-industry facilities to the maximum extent, currently realizes 96% of its high value-added technological product exports worth 160 million USD annually directly to OEMs with the effect of its new investments.

Reliable business partner of the world aviation and space industry

ALP Aviation offers customers such as Lockheed Martin (Sikorsky, LM Aero), Raytheon Technologies (Pratt & Whitney, Pratt & Whitney Canada, Collins Aerospace), Honeywell, Boe-



ALP Aviation is in the effort to respond to Turkey's needs with national capabilities. Also, it makes a major contribution to Turkey's defense industry thanks to export-oriented projects undertaken in the field of civil and military aviation.





Due to the position reached in the F-35 Program, ALP Aviation will continue its production within the scope of the F-35 Program until the end of 2022 with the additional orders it has received before March 2020.

ing, Turkish Aviation and Space Industry, TEI and Aselsan, helicopter gears, main transmission module and all gearboxes, flight critical and dynamic components, Helicopter Tail Propeller Drive Shaft System (TRDS), Dynamic and Static Engine and APU System components, Landing Gear, Aircraft Structural Parts and Assemblies, Hydraulic and Fuel Pipe Systems with its unique capabilities and subcontractors. It also significantly contributes to motor programs such as Black Hawk, Seahawk, S76, S92, CH53, CH47, F35, F22, Boeing 737, Boeing 747, Boeing 767, Boeing 777, Boeing 787, Airbus 320, Airbus 330, Airbus 340, Airbus 380, Airbus A400M, F135, F100, P&W GTF Engines, PW150, PW305, PW530, PW535, PW545, PW600.

National source for Black Hawk Helicopter's spare parts

Since ALP Aviation's work share within the scope of TUHP includes many critical parts and subsystems of Black Hawk helicopter, it has become possible to meet the spare parts and after-sales support needs

of all users (Land Forces Command, Air Forces Command, Gendarmerie General Command, General Staff Special Forces Command, General Directorate of Security, General Directorate of Forestry) with national facilities.

F-35 joint strike aircraft project

In the F-35 Joint Strike Fighter project, Pratt & Whitney F135 engine 2., 3., 4. and 5th Stage Titanium IBR (Integrally Bladed Rotors) production, ALP Aviation is the main global source. With this capability, ALP Aviation has had the opportunity to both use and develop the new generation and environmentalist "Flank Milling" technology, which enables the production of discs and fins with higher efficiency requirements in today's engines as a single piece. The IBR technology, which only a few organizations have around the world, has been completely created in ALP Aviation. In this process, as a result of the TEY-DEP Project developed with Sabancı University, IBR production was realized with the Point Milling method and this know-how was used in the de-

velopment of the whole engineering process of 4th and 5th grade IBRs by Alp engineers and obtaining patents on the subject. ALP Aviation manufactures Engine Critical Rotating parts such as Fan and Compressor Propellers and Fan Rear body of the F-135 engine with its modern facility and business center dedicated to the manufacture of engine parts. For Collins Aerospace company, it manufactures Diffuser product groups in the engine and APU systems of Boeing 787 and Airbus 380 aircraft, fuel and lubrication systems of engines of Pratt & Whitney Canada company and critical product groups of Pratt & Whitney F-135 and F-100 engines. ALP Aviation is also the main source for the new generation Gear-Turbo Fan engine family of Pratt & Whitney company for similar product groups. ALP Aviation manufactures parts and assembly groups of main and nose landing gears produced by Collins Aerospace company for F-35 and F-22 programs. In the first F-35 JSF flight, there were 46 landing gear parts produced by ALP Aviation. Systems such as Collar, Torque Arm and Drag Brace Assemblies, which are the main components of the landing gear systems and manufactured from 300M and Aermet100 materials, are included in the ALP Aviation production programs. As of the point reached in the F-35 Program, ALP Aviation will continue its production under the F-35 Program until the end of 2022 with the additional orders it has received before March 2020.

National projects

ALP Aviation, Turkey's National Aerospace and Defense Industry is committed to support these projects. In this direction, the design, development and production responsibility of the Accessory Gear Box of the Turboshaft engine, which was originally developed by TUSAS Engine Industry, was undertaken by ALP Aviation. ALP Aviation will take part in our National Combat Aircraft and other unique programs with all its capabilities.

A system and automation company

The quality system of ALP Aviation is in compliance with global aviation industry requirements, it has international aviation certifications AS EN 9100 and UTC-ASQR-01 and is certified by the international NADCAP organization for all special processing lines. ALP Aviation is the only non-US organization to which the US Department of Defense has given permission to manufacture flight critical parts for Sikorsky helicopters. For customers such as Sikorsky, P&W, LM Aero, Collins Aerospace, Flight Safety Parts Quality Compliance and EH&S System and CAS Compliance are among the certifications. ALP Aviation also holds the ISO 27001 Information Security Management System certificate.

ALP Aviation follows the philosophy of lean production process and plant layout in aviation management reflects fully the principles of lean manufacturing. "ALP Aviation ACE-Lean Manufacturing Practices" was selected as the winner on June 2, 2014 within the scope of the 2014 Efficiency Project Awards process conducted by the General Directorate of Productivity of the Ministry of Science, Industry and Technology.

After Sales Services

Founded in 2013 as a subsidiary of ALP Aviation located in Eskişehir, Alpteknik Aviation I.C carries out its activities in after-sales services in Ankara. Alpteknik, as a Lockheed Martin company, has been appointed as the sole authorized distributor in Turkey for Sikorsky Aircraft, Sikorsky hard and replacement parts for rotary wing aircraft, with accessories and apparatus revision thereof and repair requirements. It is the Sales Consultant in Central Asia and Turkey as for Sikorsky S-76, S-92, S-61 and M28 of commercial aircraft. Alpteknik Aviation, located in Turkey and Central Asia, serves as a spare parts supplier also to commercial operators of new and used Sikorsky

platform. Alpteknik Aviation provides effective service to its customers through its headquarters in Ankara and branches in Istanbul, Eskişehir and Izmir Free Trade Zone. With the service provided by Alpteknik, spare parts needs of helicopters in the inventories of the Turkish Armed Forces, Gendarmerie General Command and General Directorate of Security can be met in a time and cost effective manner.

Alpteknik Aviation Istanbul Branch (ALPJET), which started its activities in 2017, is authorized by the Ministry of Transport and Infrastructure for Commercial Air Transport, Continuous Airworthiness Organization, SHY-145 Authorized Maintenance Center.

In addition to these authorities, Alpteknik Aviation has been authorized by the world's best-selling helicopter R-44 manufacturer, Robinson Helicopter Company, in the care of an single maintenance organization and Sales Representative in Turkey. It is also the authorized institution that carries out the maintenance of Sikorsky

S76 and Airbus EC130B4 model aircraft within the scope of SHY-145 Certificate. In addition to the main maintenance center in Istanbul, it offers cost effective solutions to the operators with "on-site maintenance" performed in the authorized line Maintenance Centers in Ankara and Izmir. Alpjat having the license which has been obtained from the European Aviation Association (EASA) for commercial air transportation (TCO) to the European Union Countries, still operates Robinson R44, Airbus EC-130 B4 helicopter.

R&D Center

Within the scope of the Law No. 5746 on the Support of Research and Development Activities, ALP Aviation has been awarded the "R&D Center" certificate as a result of applications made to Republic of Turkey Science, Industry and Technology Ministry. As of 14 November 2013, it became an R&D center. This paved the way for IT to play important roles in national and international programs as the International Engineering Center.



It is the only service provider and sales agent in Turkey; It is also the authorized institution that carries out the maintenance of Sikorsky S76 and Airbus EC130B4 model aircraft within the scope of SHY-145 Certificate.



STRATEGIC SOLUTIONS FOR INDUSTRIAL PROCESS HEATING AND DRYING APPLICATIONS

Sistem Teknik Engineering Services continues its achievements by providing successful solutions for industrial process heating and drying applications.



Since 1992, Sistem Teknik Engineering Services has been supplying tailor made combustion systems as a distributor of Honeywell Maxon. Enriching its designs with Honeywell Maxon burners and equipment especially focusing on low to medium temperatures and drying applications. Sistem Teknik provides customer specific complete combustion systems, air/gas proportional control valves, safety valves in accordance

with up-to-date high safety standards, premix combustion equipment, custom made heat exchangers and technical service support that is 24/7 available for emergency situations.

With its extensive experience, know-how, technical expertise and customer focused professional approach, Sistem Teknik serves a wide range of industries including; air heating applications, automotive, textile, food industry,

grain drying, gypsum board production, incinerators, cogeneration and energy sectors.

Address for reliable solutions

Maxon burners, standing out with their high turn-down ratio and low emissions, provide a highly accurate air/gas ratio with their simple, reliable and precise flow and mass control. Sistem Teknik offers the most accurate solutions and continuous service support to its custom-

Main Products:

- Complete burner systems • Pipe trains • Control panel • Burner duct and combustion chamber

Burners

- Line burners
- Nozzle burners
- Premix burners
- Radiant burners
- Oil-fired burners
- Dual fuel Oxygen burners
- Low NOx burners

Air/Gas Proportional Control Valves

Simple and reliable solutions are available for fuel and combustion air rate and flow control.

- Mechanical control valves
- Electronic flow control valves
- Mass flowmeters
- Electronic mass flow control valves

Safety Shut-off

Safety valves which are suitable to high safety standards

- Gas valves
- Oil valves

Premix Combustion Equipment

- Mixers
- Air/gas proportional mixing pipes
- Venturi tubes

ers by adding its own engineering knowledge and years of cumulated experience to Maxon's wide range of products. Sistem Teknik aims to prevent system malfunctions before they occur and to improve overall process performance by supporting its business partners with strong, continuous and 24/7 available technical service. Moreover, Sistem

Teknik undertakes combustion efficiency measurements and system improvement revisions as well. One of the most prominent features of the company is its technical training services. As per request, practical on test station trainings are organized, both in their own test facilities in Gebze and also in their customer's factories.

Central Europe's best partner

Last year, at the EMEA Region Conference, organized by Honeywell Process Solutions (HPS) in the Netherlands, Sistem Teknik Engineering Services was awarded as being the best partner of the Central Europe region of 2019.



STRATEGIC COOPERATION BETWEEN YANMAZ INVESTMENT HOLDING I.C (ÇİNKOSAN) AND SISTEM TEKNİK INDUSTRIAL FURNACES I.C.

A significant cooperation has been signed between Yanmaz Investment Holding I.C (ÇİNKOSAN) and Sistem Teknik Industrial Furnaces I.C. With this cooperation, R&D studies will continue at full speed.

A significant cooperation has been signed between Yanmaz Investment Holding I.C (ÇİNKOSAN) and Sistem Teknik Industrial Furnaces I.C. Çinkosan, which started to provide metal coating services with manual systems under the leadership of Eyüp Yanmaz in 1980, is one of the important companies in the sector. According to the latest explanation, as being one of the leading companies in metal coating sector with experienced staff, accumulation of knowledge, investments in technology, Yanmaz Investment Holding I.C. (Çinkosan) will start to serve the sector with the Thermal Diffusion Zinc Coating method.

"We are proud and happy"

The cooperation with Sistem Teknik is a valuable formation for our country. Gökhan Lale, Board Member of Sistem Teknik, has expressed his feelings as follows: " We are pleased to share with you happiness and pride of starting a very important and strategic cooperation with Yanmaz Investment Holding I.C (Çinkosan). As a result of the cooperation, we will continue our R&D activities with all our all power to become a model company also in the coating sector with our expert and experienced staff.



INSULATION REVISION FOR ORAU ORHAN AUTOMOTIVE HAS BEEN COMPLETED SUCCESSFULLY

As Turkey's leading manufacturer of heat treatment furnace with 40 years-experience, we produce solutions which are suitable for the process of our customers, we constantly improve existing processes and furnaces; and we are forming them.

As Sistem Teknik, we position it as our most important principle to keep customer satisfaction at the highest level in all our works and to manage customer feedback effectively

The determining factor in service; quality

What is important in service quality are the perception of the customer, the result of the work done and the gains. Therefore, we can say that the determining factor in service quality is the level of performance perceived by the customer or the customer gain. With the pandemic process we are experiencing all over the world, many companies have turned to maintenance in their facilities and revisions in their existing furnaces for various purposes in order to prepare for the times when production will increase rapidly. In order to renovate, increase capacity, modernize or provide energy efficiency, our customers are working on their existing furnaces and request support from us.

Insulation revision has resulted successfully

In this context, we would like to share with you a revision example we made this year as Sistem Teknik After Sales Services Department: ORAU Orhan Automotive, with 10 thousand employees, operates in 4 continents, 15 countries in production areas and engineering offices. With more than 20 years of expertise and experience in the automotive industry, it designs and manufactures gear mechanisms, flexible control wires and plastic parts, as an impor-



tant and leading company in its region, for global markets. The electric heated protective gas atmosphere brazing furnace manufactured by Sistem Teknik, which is located in the Bursa factory, has been operating continuously since the day it was commissioned, and the brazing of

important automotive parts is carried out under a protective atmosphere.

Furnace insulation in industrial furnaces

We can say that it is the invisible hero of energy and process efficiency



for furnace insulation in industrial furnaces. There may be wear and fatigue due to time in insulation. If this situation is not properly treated, energy will be lost from the surface. Accordingly, the increase in energy consumption and process costs causes many negative effects such as regional temperature differences in the furnace.

High energy efficiency has been achieved

In addition to energy and process efficiency, the insulation revision requested by our customer for production without stopping for a long time has provided the company with many benefits. The furnace insulation has been changed so that it can continue to operate at full capacity and high energy efficiency for many years, as it has been before. In order to minimize the production loss of our customer, preparations have been made in advance, our

team has started the dismantling work on the date determined according to the stop time, and then the necessary revision works have been completed in accordance with the plan on the promised date. As

part of the revision, the back, middle and front insulation of the furnace has been completely renewed. The revision has been successfully completed with good planning and minimum downtime.



As a result of the work carried out to ORAU Orhan Automotive, unplanned downtime in the near future has been prevented and energy efficiency has been increased by achieving a significant improvement in the operating costs of the furnace.



WOULD YOU LIKE TO RENT YOUR HEAT TREATMENT FURNACE?

Being a pioneer in its field and leading the sector since the day it was founded, Sistem Teknik is justifiably proud of breaking a new ground and realizing the "Furnace Rental" project.

As an industry leader since the established date ; Sistem Teknik proud to announce and realize "Rental Heat Treatment Furnace" Project.

Sistem Teknik starts the furnace rental system by taking side with the companies that normally cut their investment budgets during pandemic.

With this special rental system, companies can use rental options from 36 months to 60 months.

No big investment cost, no maintenance cost, no installation cost !

Payments are made monthly in the rental system. In this way, companies are freed from a huge financial burden. In addition, with fixed expenses, the company does not face surprise costs for their production and finance.

Furnaces are produced and delivered with the latest technology as mechanical equipment and software. The installation of the furnace is done by Sistem Teknik's specialized staff, also necessary training is given to customer after installation for proper and smooth use. In addition, all periodic maintenance of the furnace during the lease is made free of charge by the Sistem Teknik After Sales Services team.

Free support with remote connection !

The control and SCADA systems of the rented furnaces are suitable for remote access. In case of possible

problems, Sistem Teknik automation engineers access the system remotely and direct the customer.

First stage is vacuum heat treatment furnaces !

The first stage of the rental system includes vacuum heat treatment furnaces. The first stage furnace will have 600x900x600 mm useful dimensions with 10 bar cooling pressure.

For more information about furnace rental processes, you can contact Sistem Teknik sales team.

Telephone: 0262 658 2914
Mail: sales.steel@sistemteknik.com



KEEP UNDER CONTROL

The Visualization and Control of Industrial Heat Treatment Process

Eagleye Runtime Scada Designer
makes you Better&Faster

- Vacuum Furnaces
- Nitriding Furnaces (Kn&Kc&Ko)
- Autoclaves
- Atmosphere Furnaces
- Fire Testing Furnaces
- ... much more

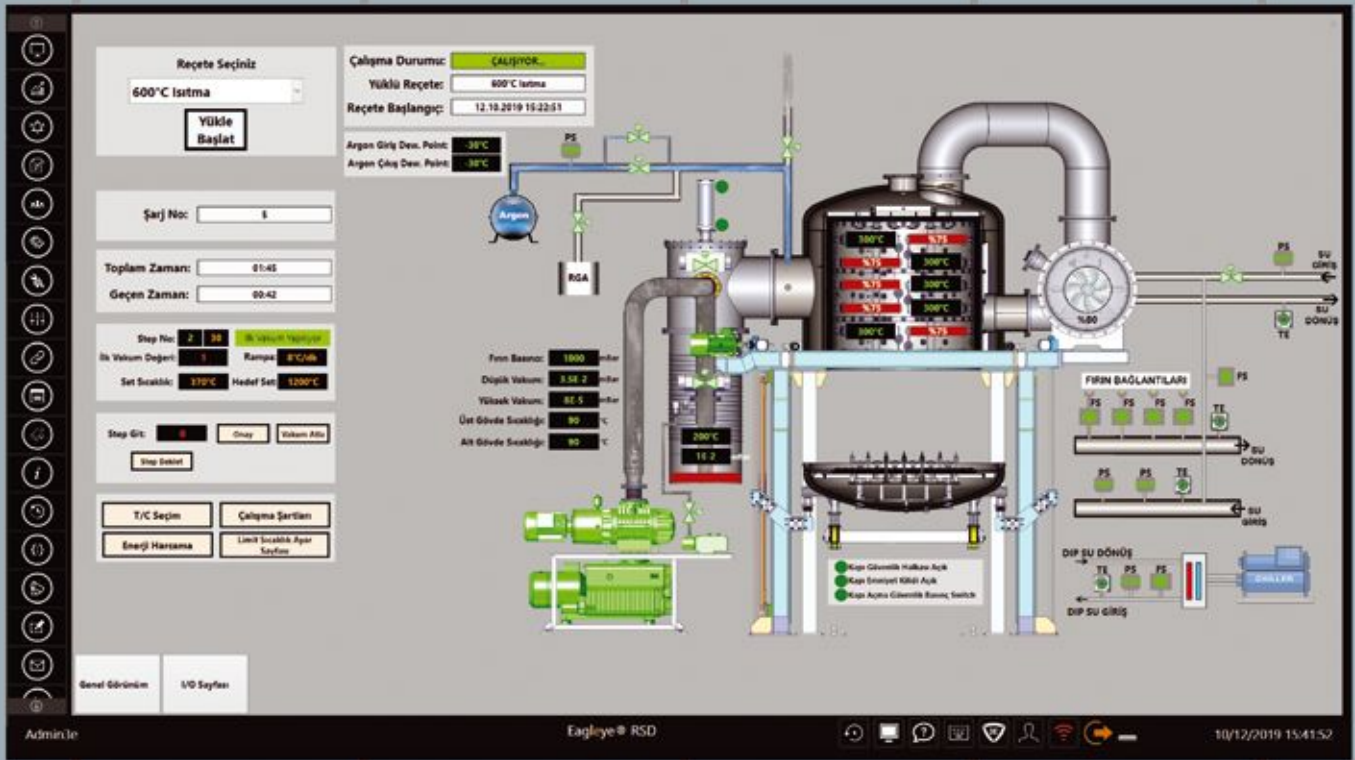
SPECIAL TOOLS
(GCODE, PIPE
BENDING ETC.)

UNLIMITED
SCREEN
DESIGNER

EVENT & TIME
SCRIPT

ALARM
MANAGEMENT

USER
MANAGEMENT



SMS & E-MAIL
NOTIFICATIONS

WEB
SERVER

REPORT
DESIGNER

RECIPE
MANAGEMENT

SUMULATION
MODE

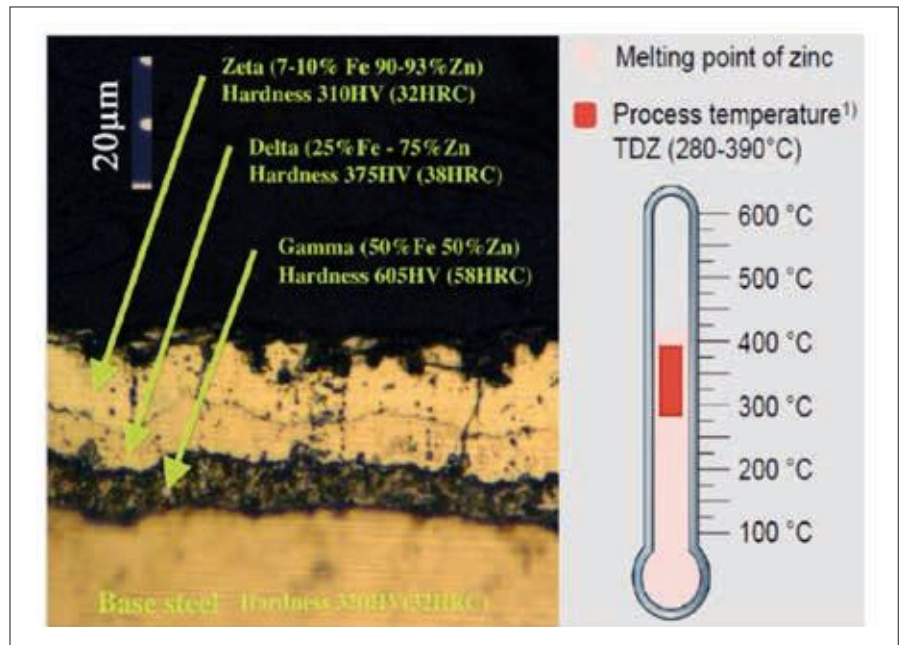
ZINC THERMAL DIFFUSION COATING FURNACE

Sistem Teknik closely follows the needs and innovations in the industrial furnace industry all over the world and by concentrating on the coating technologies in its R&D center, the field works continue at full speed.

The zinc thermal diffusion is a thermal diffusion coating process, where metal objects are heated with a zinc-powder mixture of zinc dust and additives in a container. The effort to stop or retard metallic corrosion has been ongoing since the refinement of ore into metal. No matter what industry, application, or metallurgical make-up, the corrosion costs of deteriorating metal is significant. Many coating methods have been used to prevent corrosion and increase corrosion resistance from past to present. However, most of these treatments are coatings that lack of the durability and longevity.

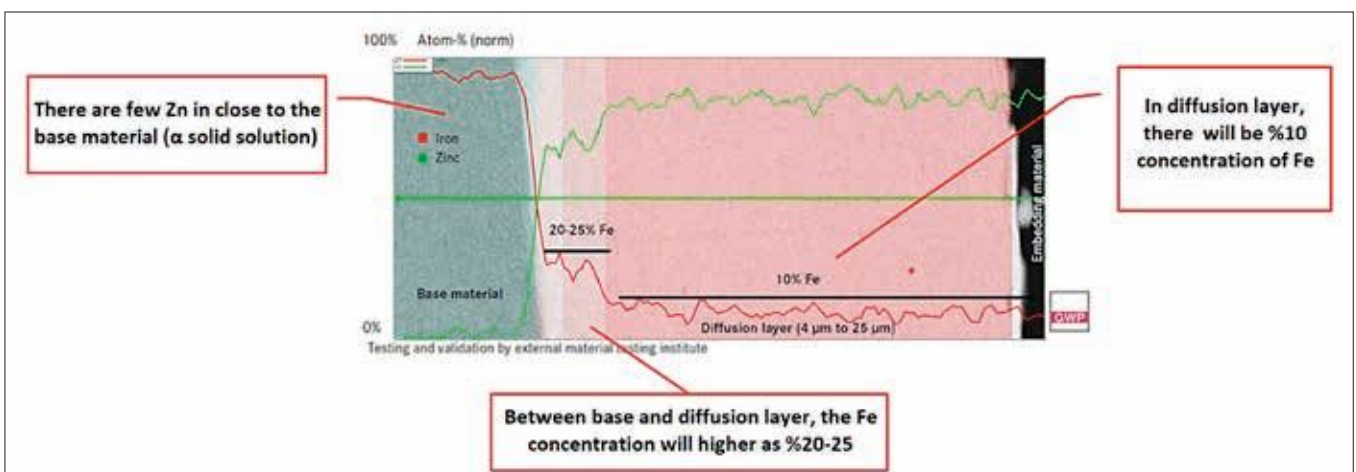
Advantage of Thermal Diffusion Coating Method

- Uniform diffusion coating on all surfaces
- Low process temperature
- Hard and wear-resistant layer
- Good bonding between paints or polymers and substrate
- No hydrogen embrittlement.
- Thin coating in micron sizes
- Environment friendly
- The thermal diffusion process increases the elasticity and / or ductility of the base material and thus significantly minimizes the risk of micro-cracking.



→ Thanks to the dry furnace process used in zinc thermal diffusion, there is no risk of hydrogen embrittlement. While a conventional zinc process is merely applied as a layer on the base material, zinc thermal diffusion bonds to the base material where it forms a resilient, zinc-alloy metallurgical bond. Thermal diffusion zinc coating has a super corrosion resistant gamma layer, a compact delta layer and a zeta layer, each layer forming a zinc iron alloy that is harder and more corro-

sion resistant than the previous one. The hot-dip galvanized coating has 75% Zn 10% Fe in the gamma phase and the thermal diffusion coating has 50% Zn 50% Fe in the gamma phase. The gamma phase in HDG coating has a hardness of 250 HV and the thermal diffusion coating has a hardness of 605 HV. As a result of salt bath corrosion tests performed on thermal diffusion zinc coating method and other conventional coating methods, occurred less corrosion loss in metal materials





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WITH 40 YEARS OF EXPERIENCE

TO THE DEVELOPMENT OF THE FASTENERS
INDUSTRYWE CONTINUE TO GROW BY
CONTRIBUTING AND INVESTING.



45 tons of production
per year

135 TL turnover
per year

12,000 m² plant completed in Istanbul in 2020, 16,000 m² plant continuing in
Istanbul and 18,000 m² plant have already started in Izmir.

investments in a total plant area of 46,000 m²

YANMAZ YATIRIM HOLDİNG A.Ş.

Koşuyolu Mah. Katip Salih Sk. No: 30-32/1 Kadıköy / İSTANBUL

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coated with thermal diffusion zinc coating method. 'While mass loss occurs in materials coated with conventional coating method, corrosion products accumulate on the surface of materials coated with thermal diffusion coating method, in other words, mass increases. Here we can see that the material shows long-term resistance to corrosion.'

It is a very applicable method for smooth coating of complex components with hard-to-reach areas and gaps. 'It is a very applicable method for uniform coating of complex components with difficult to access areas and cavities.' It is a highly preferred type of coating in the materials used in the following sectors.

Compared to other methods, the thermal diffusion coating method has the ideal process temperature range. The process temperature of the thermal diffusion coating method and coating method Sherardizing are very close values. The biggest difference of these two coating methods is their coating composition. While both coatings contain Zn and Fe,



Salt Test Results at the end of 1500 h

▲ It is a very viable method for smooth coating of complex components with hard to reach areas and gaps

thermal diffusion coating also contains Al and additives. As Sistem Teknik Industrial Furnaces, we offer thermal diffusion coating furnaces that provide much better quality and efficient coating method than other methods. Our company always follows the requirements and innovations in the industrial furnace sector in the world. Considering the requirements

and innovations in the coating industry, our R&D center has continued literature and field research me-

APPLICATION FOR SECTORS

Automotive: Sleeve, lock apparatus, shock absorber, connectors, fasteners for exhaust systems etc.

Wind Energy: Tension bolts, screws, safety pin etc.

Mining: High strength axle steel, chains, hooks and fasteners etc.

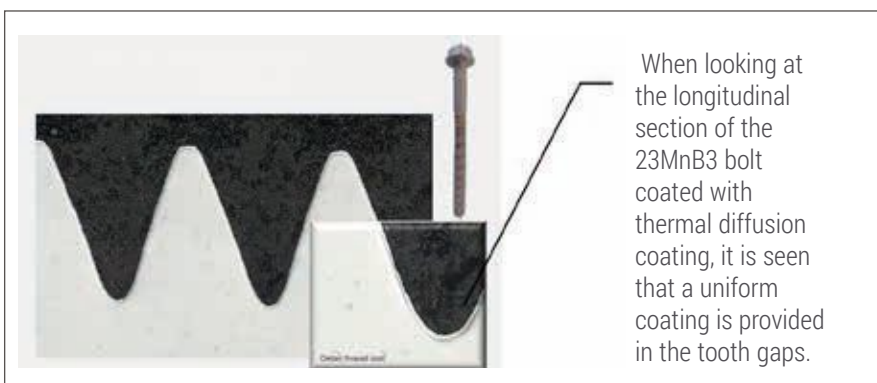
Transport Sector

Off-Shore Petroleum and Gas Industry

Structural Engineering

Railway Infrastructure

▲ It is a highly preferred type of coating in the materials used in the sectors mentioned above.



When looking at the longitudinal section of the 23MnB3 bolt coated with thermal diffusion coating, it is seen that a uniform coating is provided in the tooth gaps.



ticulously. The material capacity to be coated in thermal diffusion furnaces varies depending on their useful dimensions. In the system at 350-400 ° C operating temperature, the desired coating thickness can be adjusted by controlling the process time and furnace temperature. The material to be coated and the coating material are placed in a container and sent into the furnace with the help of a transport system. For the zinc to penetrate the surface of the material to be coated in the furnace homogeneously, the container is heated by rotating. When the coating process is finished, the cooling process is performed on the container, and then the process is completed by going to the material discharge station.



'While mass loss occurs in materials coated with conventional coating method, corrosion products accumulate on the surface of materials coated with thermal diffusion coating method, in other words, mass increases. Here we can see that the material shows long-term resistance to corrosion.'

Coating	Thickness Range	Corrosion Resistance	Thickness Uniformity	Hydrogen Embrittlement	Top Coat Adhesion	Heat Resistance	Hard
Hot Dip	0.001-0.002	Moderate	Poor	Yes	Very Poor	Low	No
Mechanical	0.0001-0.003	Moderate	Poor	No	Poor	Low	No
Electro-Plating	0.0001-0.0005	Moderate to Good for Alloys	Very Poor	Yes	Good	Low	No
Thermal Diffusion	0.0005-0.006	Excellent	Excellent	No	Excellent	Yes to (1200F)	Yes (38-42 HRC)



▲ A view from the facility we set up in Detroit.

Lifting Equipments | Railway Applications | Energy | Machine Safety

Cranes are very important means for industrial production and they are being used for lifting all kind of goods. Chain hoists, overhead cranes, mobile cranes and process cranes are considered as types of lifting equipments. In addition, STS, RTG and RMG cranes are used in Ports and Harbors. We, as Protek Teknik LTD, can supply the following products for your Crane applications.



All kind of joysticks including analog, digital and BUS communication types, operator control stations and consoles, resistors, foot pedals and portable control stations.



Rotary limit switches, position (cross) limit switches, pendant control stations, slip rings and other electronic components.



Motion control equipments like encoders, tachogenerators, resolvers, counters and over speed switches for emergency brake applications.



All kind of light alarming devices, horns, sirens and combinations.



Power electronic components in all rates such as IGBT, GTO, Thyristor, Diode etc.



Multifunctional and PCB type relays for railway applications.



ICAR is one of the leading manufacturers of low and medium voltage electrical capacitors and systems. It provide you with its services with 74 years of experience in power factor correction (PFC) and compensation applications in energy systems.



Another important part of energy systems is ventilation. ETRI / ECOFIT offers a wide range of fan technologies with different supply voltages to meet your energy management requirements. There are many equipments that require suitable ventilation for cooling in applications such as generators, electrical and electronic enclosures, converters, transformers, wind turbines.



Other essential component of machine and human safety is the mechanical safety switch. With our COMEPI brand, made in Italy, we can help you with limit switches with different latch structures, door lock systems (including RFID), magnetic switches, button groups and foot pedals solutions.



In heavy industry, such as Concrete plants and thermal plants, machine safety has increased importance. In such industries, machines can work along extended lines. For these lines, German origin DUK manufacturer produces conveyor safety switches, pull cord switches and belt safety switches... etc. Such products are supported upon request with EX-proof ATEX certificate that is suitable for the industry.



Its product portfolio includes flow controllers, infrared, opto and ultrasonic sensors, capacitive proximity switches, light barriers and inductive proximity switches. EGE also provides sensors for highly sensitive applications, e. g. hazardous areas. EGE has been a pioneer in the field of flow controller and an innovator and decisive participant in the development of today's 392 globally utilized thermal flow controllers. The in-house EMC and test laboratories ensure that all inspections and tests required for permits and conformity certificates are carried out quickly and reliably.



In the market segments of industrial electronics, data and communication technology and building services engineering, the sophisticated assortment and product policy ensures a smooth data flow from the PCB via connectors, cables and patch panels up to the ambient infrastructure.



HEAVY INDUSTRY
Iron and Steel Factories
Aluminum Factories
Cement Plants
Casting Plants
Shipyards



LOGISTICS
Ports and Harbors
Rail systems
Electric Vehicles
On Vehicle Equipment
Automotive Supply Industry



ENERGY
Renewable energy
Conventional Power Plants
Oil/Komp; Gas
Power Distribution and Transmission
Mining



INDUSTRIAL AUTOMATION
Robot Technologies
Industrial Drives and Motors
Process Automation
Heating and Cooling System Automation
Machinery Safety and Industry 4.0



MANUFACTURING
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SmartMONITOR is the clever alternative to monitor machines and equipment and easily collect relevant data to help optimise manufacturing processes. Intelligent wireless networking of signal towers creates a simple, low-cost and retrofittable alternative to conventional, complex machine data collection systems. This allows you to combat unplanned downtimes and to track down latent capacity reserves.

Features;

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Your benefits;

- Identifies and documents faults and unproductive time more quickly
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Typical applications;

- Discover hidden optimisation potential
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- As a control station for manufacturing companies
- Production reporting



Base mounting Tube mounting Bracket mounting



Aluminium profile mounting/Wall mounting



Base mounting



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power regulation option, many monitored functions and network load optimization in QTM mode operation with Thyro-Power_Manager software. It is suitable for PLC or automation systems so that it can work alone or can be included in any process control; It provides Profibus-DP, CANOpen, DeviceNet and ModBus RTU bus communication support.



SERATHERM AND ISOLITE CERAMIC FIBER BLANKETS

Raw materials with high purity are used in all of our own brand Seratherm and Isolite brand products of which we are distributor. Our products do not contain any binder material harmful to health. It provides sound insulation as well as heat insulation. The products in the form of blankets have different thicknesses, lengths and densities. Depending on the application types, continuous operation upper temperature data may vary.



Seratherm Ceramic Fiber Blanket

Isolite Ceramic Fiber Blanket

ISOLITE LBK BRICK SERIES

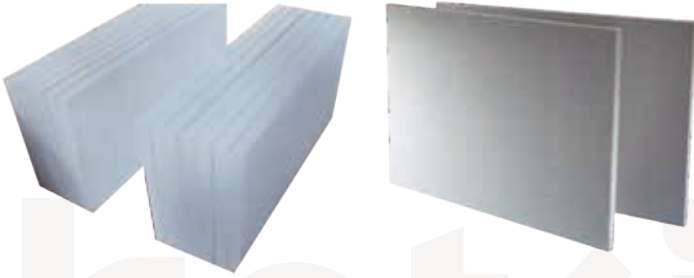
These bricks, known as Light Insulation Bricks, are homogeneous and porous because their density is lower than other bricks. In this way, it keeps the heat less than other bricks and minimizes the risk of cracking and breaking. This type of brick, whose workability is easier than other bricks, can be used between 1260C -1800C.



HIGH HEAT INSULATION REQUIRES EXPERTNESS

- Isoleika Microporos Products • Heat Resistant Nonflammeable Fabric Products
- Heat Resistant Wicks and Seals • Monolite M1 and N17 Plates

Calcium Silicate Plates



Seratherm Ceramic Fiber Products



Isolite Ceramic Fiber Blankets



Isolite LBK Series Bricks



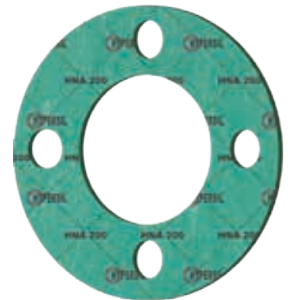
Thyro Serier Energy Control Devices



Non-touch Infrared Heat Measurement Devices



Cylinder Plate and Gaskets



HIGH QUALITY IN SERVICE AND PRODUCTS, MORE SPECIAL AND JUST FOR YOUR NEEDS

OSK 200-2: This belt producing with chain and design for carrying products and working conditions. Especially working smoothly under heavy products or prevent any extensions while working under high temperature. This belt can produce with widely range of wire diameter, chain size, oven type regarding process.



OSK 400: Generally this belt using in. Heat treatment ovens and woven right and left alternatively. This belt produce to use in high temperatures and heavy conditions. It is ideal belt for brazing, annealing, hardning and other heat treatment processes. This belt can be design related with working conditions.

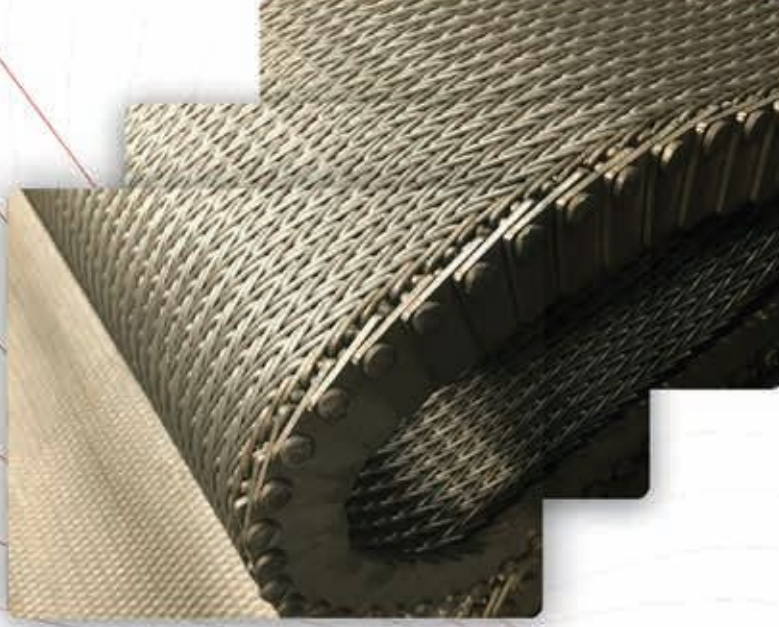
OSK 500: This belt producing with one way spirals and designed to conduct easily air temperature circulation through opening area. In addition belt have rods inside spirals to make extra durable. It has also reinforced at the edges to prevent any deformation while belt working.





Wire Belt

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Special design wire belt for your needs and just for you
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You can contact our experienced team for your technical questions
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SOFTWARE BY 3E INDUSTRIAL CREATES A DIFFERENCE

3E Industrial Engineering has been continuing its R&D activities since its establishment. Company creates difference with softwares which are developed for the sector specifically. One of these software is "Eagleye RSD®".

Founded in 2005 to provide quality service in the industrial automation and software industry, 3E Industrial Engineering is an international solution partner of many companies today. The company, which has accomplished many successful projects in nearly 30 countries, continues its work without interruption. Company managers say that, "In addition to producing solutions that are constantly evolving and making a difference in machine and factory automation projects, we serve as a solution partner of manufacturers with special software which we have prepared for the industry, especially in the heat treatment sector. In addition, we carry out joint project studies with the leading companies of the sector. As a result of the importance we attach to R&D, we are on your side with our products produced and developed in our center located in TÜBİTAK Marmara Technocity."

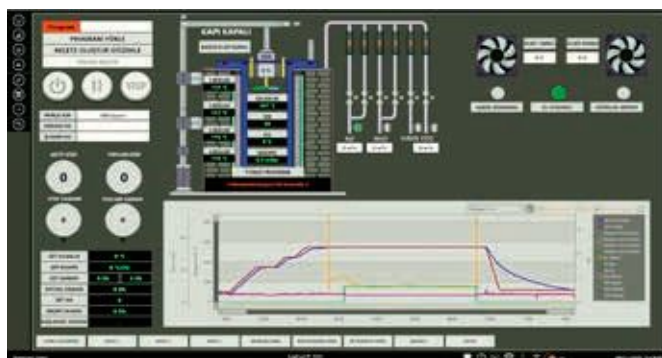
Unique with its user-friendly interface

As a latest innovation, 3E Industrial Engineering; has developed Eagleye RSD® software with its 20 years of experience in furnace automation. This software is currently used to control many different types of furnaces. Emphasizing that they have made SCADA software very easy



with the modules they have developed specifically for the sector, the company managers continue their explanations as follows: "We have integrated many furnaces such as vacuum furnaces, fire test furnaces, car-based furnaces, belt furnaces, batch type furnaces into our software so far. As a result of the work

we started at the beginning of this year, we added Nitration software to our library 4 months ago. In the last 4 months, we have successfully commissioned our system in 4 different facilities. We continue to serve as a different concept with its speed, ease of use, user-friendly interfaces and many more advantages.





WE CREATE SPECIAL SOLUTIONS FOR YOUR PROCESS REQUIREMENTS

- Vacuum Furnaces
- Microwave Furnaces
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- Walking Beam Furnaces
- Roller Conveyor Furnaces
- Transformer Drying Furnaces



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www.sistemteknik.com

Vacuum pump is a very important device used in every sector. Using the right vacuum pump system in your factory or production facility saves a lot of additional costs.

As toRRvaC, our business approach is first to identify the problems and needs, to find the vacuum pump and system suitable for our customers, and then to integrate the system into your production facility. The critical point here is to determine the right vacuum pump system for your needs.

ToRRvac is an authorized sales and service points all over Turkey of Agilent, PVR Vacuum Design, brands such as Ulvac.

Having a high level of expertise in maintenance, repair and service services, toRRvaC serves its customers with a "full service concept". Some of the services we provide:

- Vacuum pump maintenance, repair and installation
- Vacuum system design
- Equipment supply
- Leak detection with helium detector
- Creating process prescriptions and system control by performing gas analysis
- Maintenance, repair and calibration of helium detectors

We also provide services to world-wide known brands such as Edwards, Leybold, Ulvac, Pfeiffer, Busch, Inficon.

The vacuum pumps and helium detectors that are used in the production facilities of Sistem Teknik, Tüpraş, THY, Tubitak, Roketsan, Algida, Arçelik, Schneider, Best Transformatör, Valeo, Vastaş Vana which are ones of the biggest firms in Turkey, are under assurance of ToRRvac.



ULVAC QULEE GAZ ANALİZÖRÜ

Since its establishment in 1952, ULVAC (ULTimate in VACuum) has been committed to the advancement of vacuum processing technology. ULVAC is an international company that designs, manufactures and markets equipment and materials for industrial applications of vacuum techniques and technology. ULVAC products include dry type vacuum pumps, mechanical booster pumps, diffusion pumps, high vacuum valves, gas analyzers, leak detectors and surface profile measurement systems.

Gas Analyzers usage purposes

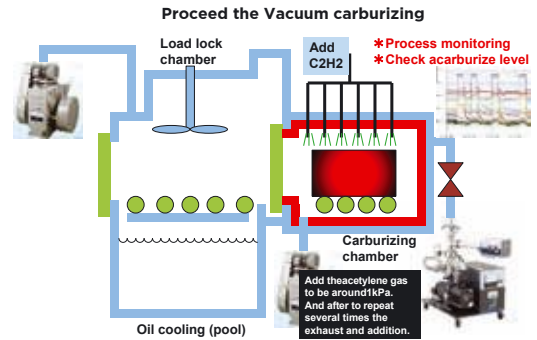
It is used to determine flammable gas as a percentage in fire, hazardous industries.

Qulee Basic Gas Monitor

"Qulee" (pronounced "KLEE") is ULVAC's latest model for residual gas analysis. Feedback from plant engineers on various production lines has been greatly enhanced by incorporating it into the new product design. The most suitable result has been achieved for the system control of vacuum evaporators and various types of vacuum furnaces.

Vacuum Carburizing Furnace Qulee Advantages

- The system provides leakage control.
- Guarantees the stability and repeatability of the system performance.
- Manages the oxygen concentration during carburizing.
- It secures the surface brightness of the products.
- Detects the effective carburization time and optimizes the time.
- It prevents metal deterioration due to the long heating period.
- Detects the end of the carburization on process.
- It minimizes process gas consumption. (C_2H_2)
- Detects foreign gases remaining in the system.
- It determines the amount of H_2O and Hydrocarbons formed in the system.





Vacuum Tank

Ø3200mm, L4300mm / Double Walled Tank
Max Permissible Temperature: 150°C
Allowable Working Pressure: 5/-1 bar
Volume: 27m³

PRESSURE EQUIPMENTS (VACUUM TANK)

KBS, which is at the forefront of the world ranking with its products, produce especially vacuum tanks and manufacture of single and double wall pressure equipment, according to client requests.

Kartal Bombe Industry; Asme U, U2 and S quality certificates and stamped projects as well as it can design and manufacture according to EN 13445, AD-2000 Merkblatt and other international standards.

KBS (Kartal Bombe Sanayi)

Kartal Bombe Sanayi (KBS), founded in 1945, The heavy industry that grows today with the fourth generation of the Kartal Family's establishment. **KBS**, a global organization, is one of the leading companies in its sector that has grown with its own developed capital.

For most respected and reliable industrial companies in the world known as a metal forming supplier with annual processing capacity of 60 thousand tons of metal Turkey's first, it is the world's leading brand of expertise.

formins expert...

MISSION

To realize the metal forming process that are needed especially by the Turkish industry with our knowledge and experience of nearly a century.

VISION

Always producing, with growing investment adds value to Turkey and become a global actor.

TARGET






To be a global player in every field we operate and to contribute to the development of Turkish industry as a leading company.

**DOUBLE
WALL
VACUUM
TANK**



from formins expert to all over World...

ASME U • AME U2 • ASME S • GOST R • ISO 3834-2
AD-2000 W0 • AD-2000 HPO • PED 2014/68EU
ISO 9001 • ISO 14001 • ISO 45001

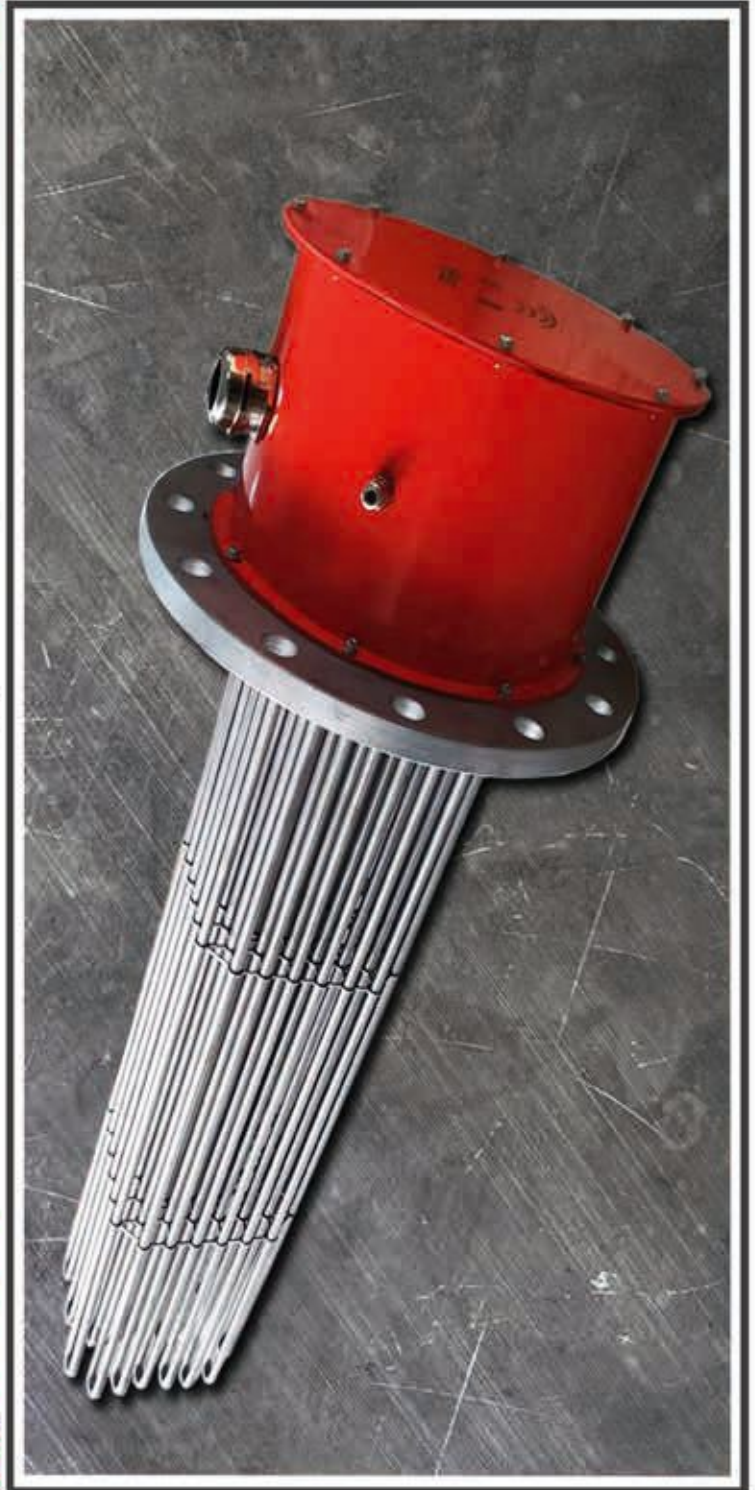
Dished Head 
Profile, Pipe, Cylinder Bending 
Heat treatment 
Tank accessories 
Pressure vessel Equipments 



Number One Producer Of Industrial Heating Elements In Turkey

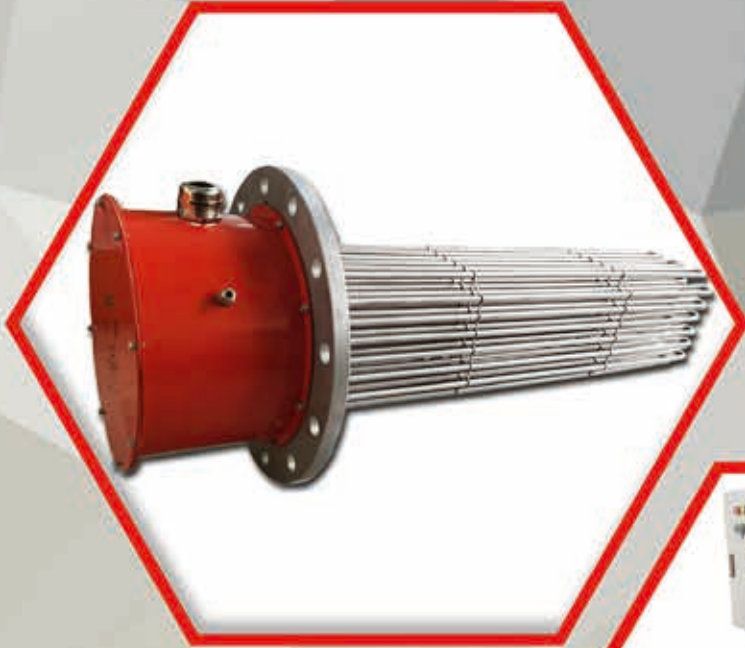
FLANGED TUBULAR HEATERS

- From DN40 up to DN500 flanged
- Oil heater, Fuel tank heater, Corrosion liquid heater.
- Calculating w/cm² in accordance with application.
- Tubular heater sheath can be AISI 304, 316, 321, Alloy 800/825 in accordance with the application atmosphere.
- We can also produce heater for hazardous areas with Atex certified as Explosion Proof.



BAYKAL REZİSTANS

Number One Producer Of Industrial Heating Elements In Turkey



ELECTRICAL HEATING ELEMENTS FOR INDUSTRIAL APPLICATIONS

- Tubular heating elements for high temperature applications
- Cartridge heaters for industrial furnaces
- Open coil heaters for every kind heat treatment furnaces
- Ceramic supported open wire heaters

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WE REMEMBER WITH LONGING

We remember Orhan Obalı who made great contributions to the development of industrial furnace technology in our country, on the first anniversary of his death with longing.



ORHAN OBALI

Orhan Obalı, one of the founders of Sistem Teknik, together with his friend Mehmet Özdeşlik from METU, continued his adventure by producing industrial measuring instruments in an apartment for forty years with the same excitement. He worked tirelessly for his company to grow and produce better technologies. He devoted his entire life to System Technical progress which is Turkey's largest industrial furnace manufacturer today. Orhan Obalı was not only a successful businessman, an engineer who always sought excellence and a doyen for the aluminum industry of our country; He was also someone who could leave a mark on every person he met. He touched hundreds of lives, especially the people he worked with, with his friendliness, helpfulness and fatherly demeanor; He always considered it his duty to care about others, to strive heartily even for people he did not know. Undoubtedly,

behind his passion for his job was his responsibility to his employees, society and country. He pioneered the establishment of plants from the USA to Russia, from Argentina to Belgium by continuously improving the aluminum heat treatment and melting furnaces. In this way, he made the name of his country and company known all over the world. In addition, it has localized a valuable technology by producing composite autoclaves, which were previously obliged to import and form the backbone of our aviation and defense industry. Even though Orhan Obalı passed away untimely, he left behind a hardworking team that he loved like his family and never lost his enthusiasm despite everything. As the last year has shown, the Sistem Teknik family will continue to work with heart and soul, and export technology to the whole world, to keep the memory of their Orhan Brother alive.

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MASTERS' PRO₂

Oxygen Probes



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MASTERS' PRO₂

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