

ABP equips AYD with innovative induction technology and everything it requires for fully digital production

Modern melting and casting furnaces, myABP digitalization package and on-site service for the automotive market leader in Konya; Turkey.

The cooperation between AYD Automotive Industry and ABP Induction is a true success story with good prospects for the future: The Turkish family-owned company, a global leader in the automotive sector for the production of steering and suspension parts, will in future rely on ABP Induction's innovative induction furnace technology for the production of brake discs. The factory in Konya, Turkey, was equipped with modern medium-frequency induction furnaces of the IFM 6 type, furthermore with an OCC-type casting furnace with the OPTIPOUR® control system developed by ABP. AYD additionally relies on the potential offered by ABP Induction's Industry 4.0 innovations: The myABP digitalization package for foundries is part of the new production. It consists of the myABP portal, connection to ABP Intelligence and to the remote service module ABP digital Expert on Demand, as well as access to the virtual academy for employee training independent of their location.

AYD supplies its customers with premium quality and a product range for passenger cars, light commercial vehicles and vehicles designed to transport heavy loads, making the company a global leader in the automotive sector. The company is known for its design and innovation technologies, especially with respect to the development of complete solutions for safety-critical parts in vehicles. In this regard, AYD sees itself as a one-stop provider for complete solutions, offering its customers everything from a single source.

This attitude was also decisive for ABP, as this overall package of innovative induction furnace technology for melting and casting, the option of complete digitalization of the plant for Industry 4.0 applications and the local service center convinced AYD. Thus, the industry leader in the automotive sector gets all components relevant for production from a single source – from ABP Induction.

It took about one year from the conclusion of the contract on November 2, 2021 to full commissioning. The complete equipment, including the melting and casting furnace systems, was delivered to Turkey and directly assembled in June and July 2022. Cold commissioning was undertaken in late September 2022, followed by hot commissioning one month later, including a test run for the melting furnace. Hot commissioning and test run for the casting furnace will follow afterwards.

ABP Induction has delivered two medium-frequency induction furnaces of type IFM 6 (8.4 t) and 4,800 kW / 250 Hz TWIN-POWER® supply. In addition, there is the casting furnace OCC 50.2 with a useful capacity of 5,000 kg and inductor power of 300 kW. The automatic CIP positioning module and the OPTIPOUR® control system are the technical highlights. AYD is now able to use a high-speed molding plant at full capacity. With the OPTIPOUR® meniscus control system, the filling level is measured using an intelligent camera; this prevents overpouring and underfilling of the mold, reduces slag inclusions and saves iron.

The environmentally friendly operation of the ABP induction furnaces of type IFM is based on different modules. The converter power can be freely distributed to both furnaces using the TWIN-POWER® principle. This enables scenarios like melting with one furnace and simultaneous sintering or holding with the other one. The principle involves an increased degree of utilization of the converter, lower maintenance costs and lower investment costs compared to separate energy supplies.

The potential for adaptation to the possibilities of Industry 4.0 are excellent with the melting processor PRODAPT® Enterprise and the ABP customer portal myABP, allowing for intelligent solutions for the progressive digitalization and networking of the processes at AYD. The melting processor PRODAPT® Enterprise controls the energy supply for the melting and holding process, for cold start and sintering according to the demands. Operational data and conditions are captured and displayed in the myABP portal and prepared for targeted data exchange with the plant management system. In addition, the technical furnace parameters are captured via the digital converter control. When starting up a batch with partial filling of ferromagnetic melting material, small portions of this material are automatically refilled. This leads to measurable energy savings and increases in production as compared to non-controlled batching. Surveys show that induction furnaces produce less than half of the CO₂ emissions to melt one ton of cast iron compared to cupolas. Thanks to the ABP equipment, not only AYD will benefit from this, but also the environment. The melting furnaces thus offer the well-known stable and high efficiencies and in addition have all the safety features to enable reliable and safe production. This includes the modules known from the ABP Safety Packages, which are standard for all new ABP plants. The "ABP Basic Safety Package" is a vital form of basic protection for existing plants. The package consists of the GD 05 ground fault monitor, the diagnostic function for GD 05, an extended GD 05 ground fault monitor for Twin-Power® systems, the LCM leakage current measurement, the hedgehog coil and the test bath earth.

After this project, ABP plans other development projects on site: AYD Automotive Industry is a very innovative, progressive company with whom new ideas for innovative products and solutions can be developed, including in partnership and cooperation with AYD suppliers for the production lines.

About ABP Induction Systems GmbH

ABP is a leading manufacturer of induction furnaces and for the sector of inductive melting and heating systems for the metals and metalworking industries. With planning, production, installation and aftermarket services for foundries, forging and steel plants, ABP is an expert in the melting, casting, holding and heating of iron, steel and nonferrous metals. With over 400 employees, the ABP Induction Systems Group has companies in the USA, Mexico, Sweden, Germany, South Africa, Russia, India, Thailand and China. It is present in most of the industrialized countries in the world with service and sales partners.

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