Success Story

7-axis robot ensures high-quality standard

İncircioğlu welds fans automatically with Cloos

CLOOS

Weld your way.

Haiger/Istanbul – The high quality fans by İncircioğlu Ltd. Şti. are employed in many different industrial applications. Recently, İncircioğlu invested in a new robot welding system by the German welding technology specialist Carl Cloos Schweisstechnik GmbH. The new automated system improved the production processes and welding quality considerably.

The Turkish family-owned company İncircioğlu is specialised in the development and production of industrial high efficiency radial, axial and portable fans and various types of filter units. The main production site of 9,000 square meters is located in Muratlı/Tekirdağ, where 50 people are employed. In addition, 25 employees work in the head office of İncircioğlu in Istanbul. Although their main target market is located in Turkey, İncircioğlu generates more than 20 percent of their revenue internationally.

Picture 1: More than 100 different fan types are welded with the new robot system.

The new welding system by Cloos consists of two stations with a 7-axis robot of type QRC-E 410, which is fixed on a high robot base. Here, steel as well as stainless steel fans are welded automatically. The fans are available in many different sizes, while the sheet thickness varies from 2 to 15 mm. "We decided to invest in the Cloos robot system, as they are widely known for their premium high-quality welding technologies", says Assistant General Manager Erdal A. İncircioğlu.

7-axis robot facilitates workpiece accessibility

The wide range of the 7-axis robot facilitates and accelerates the welding process of the complex workpieces. The workpiece positioner QR-WP-TV with vertical rotation has a faceplate mounted at 90°. The workpiece which is fixed onto this faceplate can be rotated into the optimum process position by a horizontal turning axis. This is how positions which are difficult to access are reached.

Picture 2: The wide range of the 7-axis robot simplifies and accelerates the welding process.

To compensate for tolerances in the tacked assemblies and when positioning in the jig, the robot is fitted with two sensors: The tactile sensor determines the start or end of the weld. The arc sensor responds dynamically to tolerances on the workpiece during the welding, which ensures an optimum welding quality.

Due to the two station design, the system can be loaded either way. This is how employees can take the welded workpieces out on one side and reload the devices, while the welding process takes place on the other station. This results in an enormous time saving in the complete process cycle.

Employees benefit from new technology

"The welding experts of CLOOS Turkey have prepared our employees ideally for the new technology", emphasises İncircioğlu. Due to the robot system, the welders can concentrate more intensively on process monitoring. Furthermore, as the robots are doing the physically heavy work, the general risk caused by arc radiation and welding fumes is lower.

Previously, all fan types were welded manually. Since the robot welding system by Cloos has been put into operation, all small and medium-sized fans are welded automatically. At the moment, the biggest fan types are still welded manually. To achieve further productivity improvements, another robot welding system is planned to be installed soon.

Picture 3: As the system operates automatically, the welder can concentrate more intensively on process monitoring.

Picture 4: Sultan Saka from CLOOS Turkey and the İncircioğlu employees Fikret Eren, Muhammet Kalender, Erdal A. İncircioğlu, Hakan Bayrak.

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