



Laser hybrid welding with gantry robots

Trumpf produces its own machine uprights with particularly rigid Güdel gantry axes

Langenthal, December 19th 2014.

At its Pasching site in Austria, Trumpf, a leading manufacturer of production engineering and medical technology, is setting up a new production complex for laser hybrid welding. Machine frames with large surface areas are produced in the machine. Güdel is providing the roboMover gantry system with dimensions of 7 x 10 x 5.6 meters.

Laser hybrid welding is a combined welding process offering the advantages of good gap bridging, simple weld prepara-

tion and concentrated heat input, deep welding penetration and high speed. The laser beam heats the surface of the workpiece in question to vaporization temperature. Thanks to the deep penetration of the vapor column, it is possible to achieve the desired welding results in the form of deep and narrow weld penetration.

The special aspect of the gantry travel path concerns the special, high rigidity of the axes. This is the only way that the laser beam can be accurately controlled. There are no vibrations in the system that might

result in the laser beam being deflected. Also, the rapid change of position during the machining process and the associated vibrations have no effect on the overall system or the laser process. To achieve this, Güdel has implemented the required natural frequency of the gantry system of at least 15 Hz.

The floor axes and vertical axes work in master/slave mode. In this unidirectional operating principle, there is no mechanical connection of the drive units by a transmission shaft in which the first



drive (master) controls the second (slave). High-precision planetary gearboxes from Güdel are used in all axes. The planetary gearboxes are characterized by high rigidity and power density, and ensure there is additional reliability in the application results. Güdel's roboMover gantry system permits effective strokes of 4.6 x 6.1 and 1.85 meters.

Both the integrator Yaskawa and the end-user Trumpf were highly satisfied with the execution and installation by Güdel. The highly demanding technical requirements

that had been committed to were met in full measure. In particular, the plant managers at Trumpf praised the rapid setup installation during the inauguration ceremony. In particular, Güdel's professional approach to setting up and aligning the axes proved to be a winning formula, as well as the fact that everything worked correctly right from the first.

Following this success, Yaskawa is also planning to offer this solution to other customers. Potential applications have been identified in process applications for

large workpieces in particular. In this case, Güdel systems are not restricted to welding applications. The gantry travel path is independent from the application and can also be used for milling, polishing or even gluing, to name only a few examples.

Güdel Group AG

The Güdel Group is a manufacturer of high-precision machine components and provider of sophisticated automation solutions. Its spectrum of products ranges from linear guideways, racks, pinions and drives right through to linear axes and gantry robots. Güdel assembles its products into systems with a high degree of control intelligence and complete plant installations, which can be used in the automotive, tire, metal, rail, intra-logistics, pharmaceutical, renewable energy, wood, and aerospace industries. Güdel's technology is characterized by its innovation, quality and modularity. The Güdel Group has a workforce of approximately 1,100 employees worldwide in over 30 locations. The Group has been owned by the same family since its foundation more than 60 years ago. The Güdel Group has its headquarters in Switzerland.

Contact

pr@ch.gudel.com

Güdel Group AG
Industrie Nord
CH-4900 Langenthal
Phone +41 62 916 91 91
Fax +41 62 916 91 50
Info@ch.gudel.com
www.gudel.com