

Rapperstorfer Automation, 4641 Steinhaus bei Wels, Austria

# Jet engine, design snow gun or rotor straightening machine?

The advert on page 141 raises questions, which are quite justified since this innovative Austrian machine factory seems capable of many things. In fact, it's about Mia, a rotary straightening machine to match the new mesh welding system for the Rapperstorfer Korbwand®. Mia is the first sub-system to form part of an ingenious interplay of machines and robots designed and constructed by Hubert Rapperstorfer and his team in Steinhaus bei Wels, Austria. Their company, Rapperstorfer Automation, aims at nothing less than to revolutionise the sector. As all revolutions have need of a name, Hubert Rapperstorfer has also come up with one. He has called his innovative components by the names of his family members. First comes the company's youngest child, Mia, a 1.30 m tall rotor-type straightener. The machine will be the subject of this article, the first in a series of six introducing these innovations from Austria.

Mia starts producing straightened steel bars by processing raw materials, such as reinforcing steel wire coils. It is a hard task, which the small machine undertakes effortlessly. "Mia can do everything that large rotary straightening machines can do. The appearances are deceptive as we spent a long time working out how to make it as small as possible," explains Hubert Rapperstorfer proudly.

Mia's diminutive size makes it flexible, readily accessible in operation and helps saving space with the system. It possesses six rotors in order to cope with the demands of high production output. Of these six tools rotating around their own axis, only one single one is ever in operation. The remainder is in a standby position. For optimum travel routing, angled straightening rollers have been installed that take care of the wire feed and straightening operation in one work process, thereby contributing to the machine's great overall efficiency. The dimensioning of the rotors also plays a part in saving time. They are set up for wire diameters of 6, 8, 10, 12, 14 and 16 millimetres and render obsolete any time-consuming, manual changeovers between wires of differing diameters. The changeover time has been reduced to a few seconds, during which the straightening tools revolve on their own axis to move to the right position.

The positioning of the drive is ingenious as well. It has been set up inside the rotatable tool holding device. This is of great advantage especially for the torque transmission units. They were able to be installed in the simplest, most space-saving way possible, yet they still ensure highly efficient force transmission. At the same time, the drive's axial sliding position on the machine frame in conjunction with a torque clutch facili-



*Hubert Rapperstorfer with an example of a cage for a Korbwand*

tates a user-definable coupling of the drive with individual straightening tools. This again means that only one drive motor is necessary for straightening wires of differing diameters. And also makes a contribution to the system's streamlined, space-saving set-up.

As regards reliability in positioning the straightening tools, an interconnected parking brake plus a centring guide bracket ensure that any misalignment between the coupling elements is prevented. Their clutches can engage absolutely perfectly by this means.



*Mia rotary straightening machine with wires leaving the outlet side*

All these benefits confirm Mia as an efficient, economical wire straightening machine of great value that features precise control behaviour, low power consumption and restrained noise levels. No additional drives or feed devices are needed

- even for feeding the wire in. The result is a remarkable straightness with the wires, which are treated very carefully in the process. Mia is gentle, thrifty and yet still a rotary straightening machine of very high performance, whose role is of particularly great importance in the robot interplay around Hubert Rapperstorfer's Korbwand®.

Mia also exists as an individual system without the other elements.

What happens afterwards to Mia's products and what Sophie, the "better half", is all about will be the subject of the next issue. ■

FURTHER INFORMATION

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