



CustomerStory



Hering AG

Hering with Chocolate

tigSpeed – save up to 50% with the TIG wire feeder from EWM

Separated by thick, black curtains, the welding booths line up one next to the other along the large production hall. Tubes of all lengths, thicknesses and diameters outnumber everything else on the workbenches. From thin-walled stainless steel tubes with diameters of just a few millimetres to large tubes that could easily swallow a man whole. In black steel and in stainless steel. Hering AG is a German company based in Gunzenhausen in Bavaria's Middle Franconia region. They turn these pipes into

customised heat exchangers for an enormous range of applications, from large power stations, through equipment for the chemical industry, to equipment for the food industry. All of them are one-offs – except occasionally when a customer orders two of the same heat exchanger. „There is probably not a single bar of chocolate in Germany whose raw material didn't pass through our heat exchangers," says Christian Rasch, CEO of Hering AG.

Production depends on welding

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At the heart of a heat exchanger is the tube bundle that carries the fluid. It is embedded into a large outer tube, or shell, that contains the coolant. The large surface area between the fluids facilitates the transfer of heat.

Welding is by far the most widely used joining technique in production. Orbital weld seams are used to join the tube bundles to the tube plates. The shells have a wide se-

A heat exchanger from Hering AG with a variety of tube-flange connections.



lection of connection nozzles and flanges welded to them. The requirements on the weld seams are onerous, with fault-free weld seams being essential to ensure that the different fluids in the heat exchanger cannot mix with one another. It is extremely important that distortion is kept to an absolute minimum to provide the accuracy of fit between the tube bundle and the shell. In use, these heat exchangers can experience temperature differences of several hundred Kelvin, which leads to extreme thermal loads on the components. Nonetheless, the weld seams must retain their integrity in the face of these extremes.

Previously, the welding procedures of choice were MMA and MIG/MAG welding. TIG welding had played a fairly insignificant role at Hering.

tigSpeed: superb seam quality at top speed

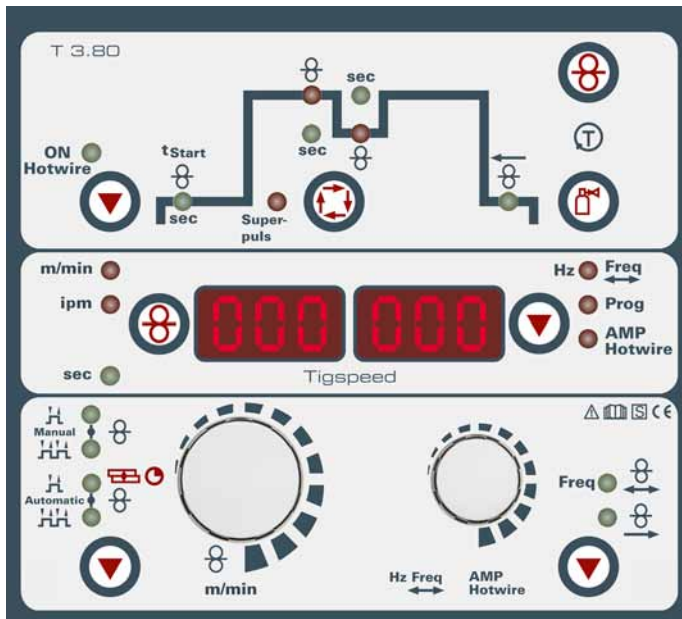
Robert Bernhard works for Slatina Schweißtechnik, a sales partner for EWM, a welding machine manufacturer based in Mündersbach, Germany. He has been supporting manufacturing at Hering AG for many years and is always on hand to offer advice and assistance to the Head of Production, Manfred Lepp. On one of his visits, Bernhard suggested that Mr Lepp might wish to consider an alternative technique for welding the many tube-flange connections: TIG welding with tigSpeed.

EWM tigSpeed is a TIG wire feed welding machine that is perfectly suited to welding tube-flange connections. tigSpeed mimics manual TIG welding by introducing forward and backward movement in addition to a continuous wire feed. As a result, the welding consumable is repeatedly drawn out of the weld pool and passes over drop by drop.

In the case of hot wire welding, the welding consumable is preheated. This further increases the deposition rate, which allows the consumable to flow better, thereby producing a very uniform weld seam.

The advantages are obvious: thanks to the automatic wire feeding, the welder can concentrate totally on the welding process. Their second hand remains free and can support the guide hand. "It's a great help, particularly with long seams," explains Valmir Xhaferi, a welder at Hering AG. "A flange can be welded onto the tube in a single step – and there are no contact points caused because I don't need to change welding rods."

A positioner makes the tube turn continuously. This means that the operating point remains in the same place in the flat position. For the outer seam, this is on top of the tube, and for the inner seam, it is on the upwards-facing side of the inside of the tube. Combined with the high deposition rates of the hot wire technique, this constant working position means that high welding speeds can be achieved while at the same time ensuring outstanding seam quality.



A controller with one-knob operation makes handling really straightforward, and the digital display guarantees reproducible parameter settings.

Easy handling – quiet working

It only took the welders at Hering AG half an hour to get fully up to speed with tigSpeed. Controlled using one-knob operation, handling is really straightforward, and a digital display guarantees reproducible parameter settings.

Thanks to its ergonomic construction, the welding torch is particularly easy in the hand and also allows welders to work for long periods without tiring.

Because all functional controls are integrated into the torch neck, there are no cables to worry about. What's more, the wire feed has a variable setting range from 15° to 42°, making the torch particularly adaptable to a huge range of applications.

During welding, the arc crackles quietly while the wire feeder emits a discreet hum. „The biggest benefit is how quiet the machine is,“ notes Valmir Xhaferi, „much quieter than the machines from other manufacturers that I know.“

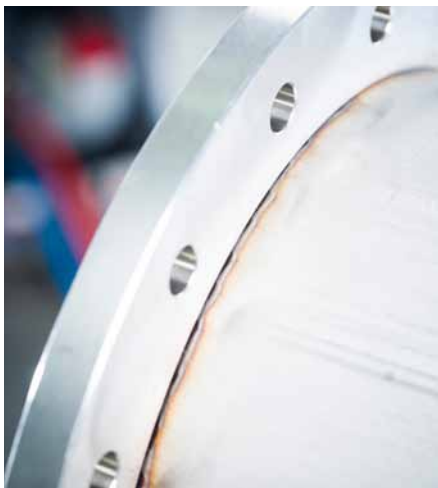
When Robert Bernhard wanted to collect the tigSpeed again a week later, the welders were already arguing about who would get to work with the machine. It didn't take long before Hering AG decided to get a tigSpeed to call its own. And they have added another one every year. An increasing number of tube-flange connections that were previously welded using MMA are now being

welded with the tigSpeed – delivering savings of up to 50% thanks to the reduction in non-productive time alone. „Imagine how high the savings must be at companies that don't have the set-up time that we do,“ speculates CEO Christian Rasch. Currently, each of the three welding procedures – MMA, MIG/MAG, and TIG – is used for about a third of the welding tasks. This means that many seams that were welded using MMA in the past are now TIG welded using tigSpeed.

The TIG welding torch: controls for all functions are integrated into the grip, which means there are no cables to worry about. Thanks to the wire feed's variable setting range, the torch is particularly adaptable to a huge range of applications.



The tube-flange connection before welding.



The high-quality seam is applied in a single step and requires absolutely no finishing work

Christian Rasch is clear about the quality, „Our customers say there are many heat exchangers on the market. But none as fine as ours. And they are not talking

about fine design or construction, but rather the weld seams. They are always the first thing that our customers look at.“

Totally satisfied with the introduction of tigSpeed at Hering AG:

Head of Production, Manfred Lepp, Hering AG; welder Valmir Xhaferi, Hering AG; Robert Bernhard, Slatina Schweißtechnik; Dieter Raab, Slatina Schweißtechnik.



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