



# Bar end heating

A guide to the benefits of induction heating



# Automated, high-output solutions for bar end and partial heating

**EFD Induction's CBB and CHV systems for bar end and partial heating deliver high productivity, in-line integration, automatic process control and improved operator comfort.**

Bar end and partial heating prior to forging are tough applications. The key challenge is to achieve high throughput, while at the same time ensuring consistent results and operator safety. Only induction heating can meet these criteria. This is because induction heating is a quick, automated method that induces pre-set temperatures in precisely defined areas.

In fact, with induction it takes less than 1 second to reach 1,000°C uniform surface temperature on small components—something impossible with alternative heating methods. The speed and accuracy of induction minimizes scaling, which in turn reduces wear and tear for the forging equipment. Just as important, process parameters such as temperatures and penetration depths can be controlled and automatically reproduced with only negligible deviations.

EFD Induction's bar end and partial heating systems are usually supplied as complete turnkey solutions. These solutions typically include a power supply, custom-built induction coils and loading and unloading systems. Chain conveyors, elevators, chain loaders, hoppers, vibratory feeder bowls and robot arms are the available loading/unloading options.

Induction's speed and automation possibilities make it easy to integrate our bar end and partial heating systems into existing or planned forging lines. And since induction is a no-contact heating method,

ambient temperature increases, dust and noise are kept to a minimum—factors that further enhance operator productivity.



*An EFD Induction CHV vertical heater. Capable of handling any type of profile, including preformed components, the CHV supports manual and robot loading.*

# The systems behind the benefits

EFD Induction bar end and partial heating systems are divided into two groups: CBB horizontal heaters, and CHV vertical heaters. All the systems are powered by EFD Induction Sinac converters that feature automatic load matching, microprocessor-based controls and integrated capacitors.

## **CBB horizontal heaters**

Our CBB horizontal systems are widely used for bar end and partial heating, and are particularly well suited for forging bolts and agricultural tools. But the systems' versatility also let them heat shaped parts and special profiles.

Each CBB features multiple coils, meaning several parts are heated simultaneously in dedicated heating stations. And to help ensure operator comfort and productivity, all heated parts are ejected in one location. CBB systems have a maximum cycle time of 3.6 seconds per piece, and are suitable for



*A heated workpiece being ejected from a CBB horizontal heater. The CBB ejects parts in a single location—a major benefit for operators.*

sections ranging from 5 to 150mm, and for profile lengths from 50 up to 2,000mm.

## **CHV vertical heaters**

Our CHV vertical heaters are extremely versatile. They can heat any type of profile, including handle bars, billets and preformed components to a maximum length of 1,500mm. And since the CHV supports manual and robot loading, it can switch between short and long series production runs. CHV systems are available with different numbers of heat stations (the minimum is four).

Wheel-mounted options are also available. This mobility means you can move the CHV between different presses. CHV systems feature a long-life concrete lining. The vertical design of the system exploits gravity to automatically remove scaling, resulting in optimum life spans and efficiency for the lining, coils and overall system.



*Designing unique, customized bar end solutions (such as the one shown above) is an EFD Induction strength. Our technical capabilities let us meet virtually any customer-specific requirements.*

# Get more from your equipment

When you choose a solution from EFD Induction you choose security and peace-of-mind. As one of the world's largest induction heating companies we offer

a full range of maintenance, logistics, training and spares services. Make the most of your heating system—with a little help from the people who built it.



*EFD Induction bar end and partial heaters are field-proven systems used by many manufacturers around the world. Each system is backed by the resources and service capabilities of EFD Induction.*

EFD Induction has to date installed thousands of heating solutions for a vast range of industrial applications—bringing the benefits of induction technology to many of the world's leading manufacturing and service companies. EFD Induction has manufacturing plants, workshops and service centers in the Americas, Europe and Asia. Corporate headquarters are in Skien, Norway.

**Learn more about EFD Induction and our solutions that are boosting productivity for companies around the world. Visit: [www.efd-induction.com](http://www.efd-induction.com)**