Forging

Induction heating system for billets (Walking beam)
Typ EBH

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Induction heating system for billets (Walking beam) Type EBH

The induction heating system EBH is used for the heating of steel billets (ferromagnetic and austenitic qualities) and non-ferrous metals.

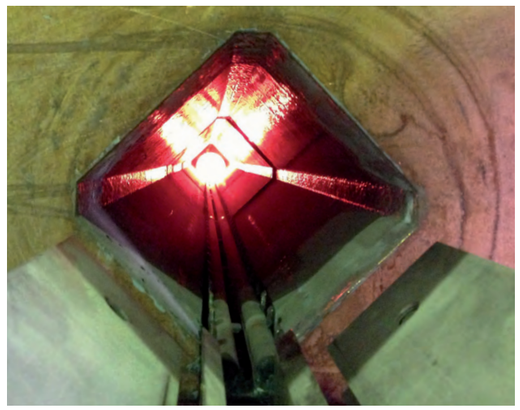
The walking beam conveyor transports the billets at intervals on water-cooled rails in small steps, i.e. almost continuously through the induction coils, in which the billets are heated to forging temperature. Conveying speed and heating capacity are infinitely-variably set to the respective production conditions.

Advantages at a glance

- Control of each zone
- Fully adjustable temperature curves
- Shorter heating lengths due to ABP's proprietary modular design
- IGBT technology
- Low energy consumption
- Creep mode: 10–20 % of nominal throughput
- Performance factor of cos-φ > 0,95
- Turnkey solution incl. feeding and extraction

Coil design

- Robust coil construction
- Full concrete body
- High efficiency coil copper profiles
- Low energy consumption

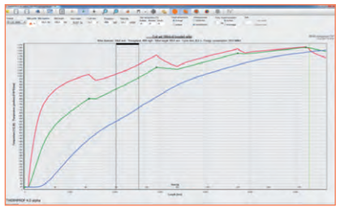


THERMPROF® Simulation-Software

The THERMPROF® thermal profile calculator is used to optimize heating profiles.

Various possibilities for optimization:

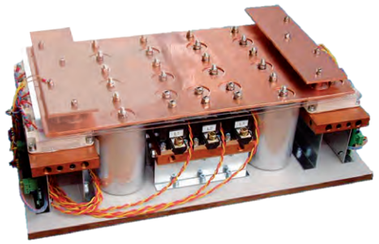
- Reduction in scale
- Optimizing energy consumption
- Optimizing axial temperature uniformity



Temperature curves THERMPROF®

IGBT-Technology

- Modular design – extendable
- High availability
- Plug & Play module
- High efficiency
- Power-factor cos-φ > 0,95

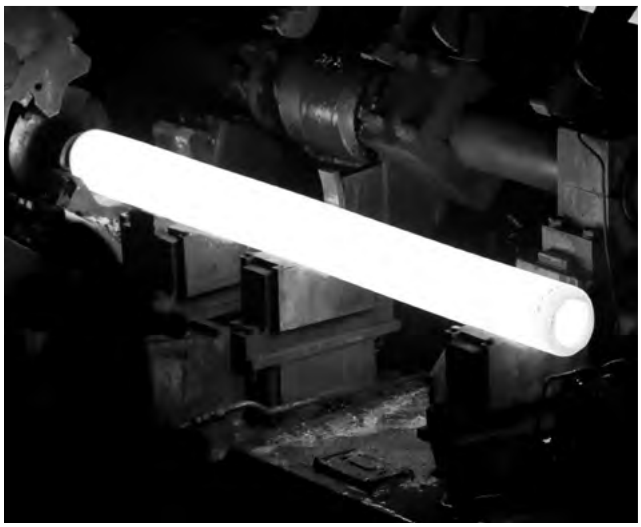


IGBT-Technology

Prodapt FX² - heating processor

- Creep mode: 10–20 % of nominal throughput
- Control of each zone
- Quick cold start capabilities
- Fully adjustable temperature curves

PRODAPT® heating processor



Forging

Induction heating Typ EBS

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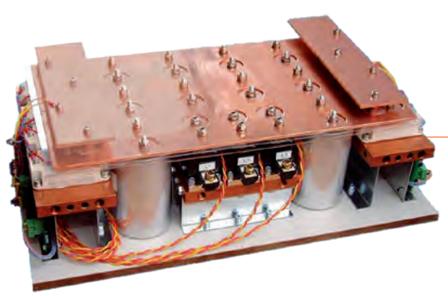
Induction Heating System Type EBS

Coil design

- Robust coil construction
- Full concrete body
- Cooled or non-cooled slide rails
- High efficiency coil copper profiles
- Low energy consumption

IGBT technology

- Expandable modular design
- No deionized water for the cooling circuit required
- Improved availability through short service times during a breakdown
- Easy assembly and maintenance
- Increased energy efficiency
- Performance factor of cos-φ > 0,95



Easy maintenance

- Only one Industrial PC with Windows 7
- Easy system backup
- Copy & Paste of heating recipes (via USB or network)

Prodapt FX² - heating processor

- Creep mode: 10–20 % of nominal throughput
- Control of each zone
- Quick cold start capabilities
- Fully adjustable temperature curves

Zone Control

Zone control technology

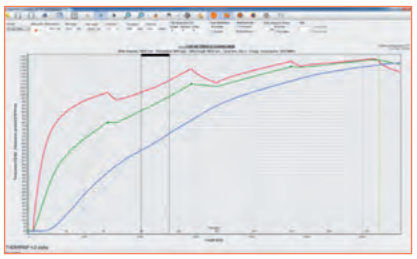
- Uniform temperature profile, even with 20% of the nominal throughput
- Temperature adjustments to suit various grades of steel
- Optimal axial and radial temperature distribution
- No overheating whenever the throughput is altered
- Shorter heating lengths due to ABP's proprietary modular design

THERMPROF® Simulation Software

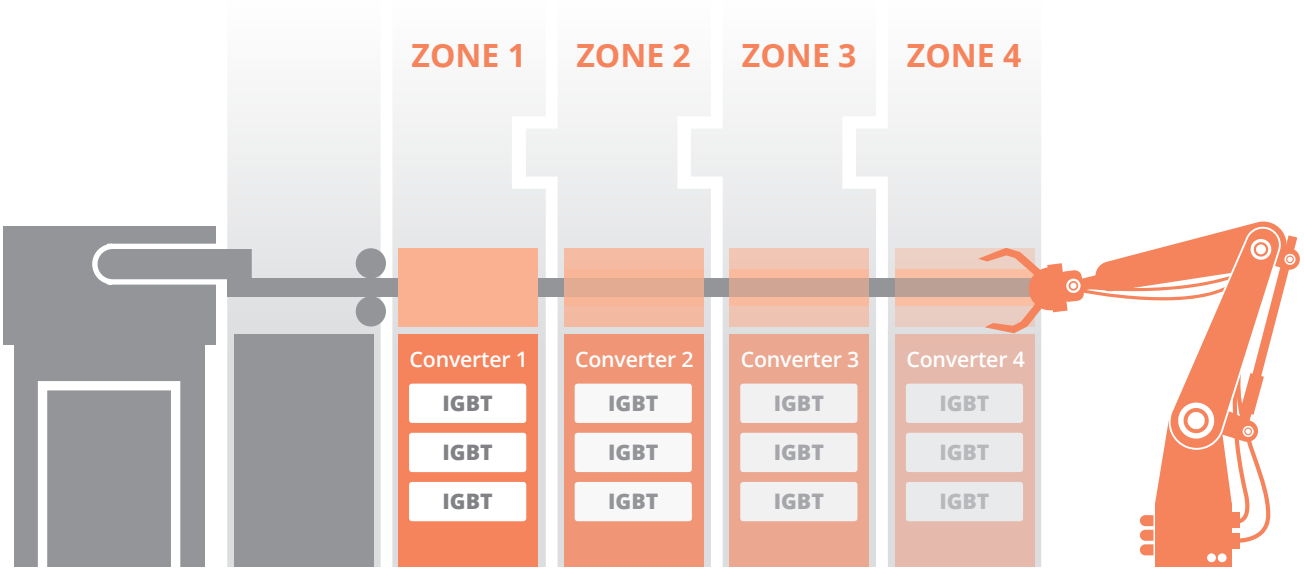
The THERMPROF® thermal profile calculator is used to optimize heating profiles.

Various possibilities for optimization:

- Reduction in scale
- Optimizing energy consumption
- Optimizing axial temperature uniformity
- Reduction of billet adhesion



ZONECONTROL
Induction Heating Technology



Type EBS

Advantages at a glance

- Control of each zone
- Fully adjustable temperature curves
- Shorter heating lengths due to ABP's proprietary modular design
- IGBT technology
- Low energy consumption
- Creep mode: 10–20 % of nominal throughput
- Performance factor of cos-φ > 0,95
- Turnkey solution incl. feeding and extraction

ZONECONTROL
Induction Heating Technology

Forging

Induction heating system for bars Type ESS

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Induction heating system for bars Type ESS

The induction heating system ESS is used for the heating of steel bars (ferromagnetic and austenitic qualities) and non-ferrous metals. The bars are conveyed with driven rolls through the induction coils, in which the bars are heated to forging temperature. Conveying speed and heating capacity are infinitely-variably set to the respective production conditions.

Advantages at a glance

- Control of each zone
- Fully adjustable temperature curves
- Shorter heating lengths due to ABP's proprietary modular design
- IGBT technology
- Low energy consumption
- Creep mode: 10–20 % of nominal throughput
- Performance factor of cos-φ > 0,95
- Turnkey solution incl. feeding and extraction

Coil design

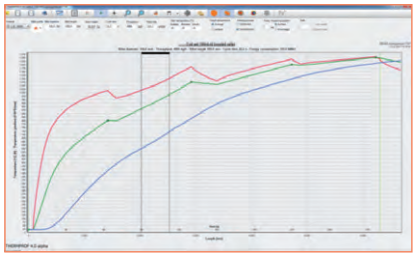
- Robust coil construction
- Full concrete body
- High efficiency coil copper profiles
- Low energy consumption

THERMPROF® Simulation-Software

The THERMPROF® thermal profile calculator is used to optimize heating profiles.

Various possibilities for optimization:

- Reduction in scale
- Optimizing energy consumption
- Optimizing axial temperature uniformity



Temperature curves THERMPROF®

IGBT-Technology

- Modular design – extendable
- High availability
- Plug & Play module
- High efficiency
- Power-factor cos-φ > 0,95

Prodapt FX² - heating processor

- Creep mode: 10–20 % of nominal throughput
- Control of each zone
- Quick cold start capabilities
- Fully adjustable temperature curves

PRODAPT® heating processor

Forging

Compact Converter EVA/IGBT-Technology

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Compact Converter EVA

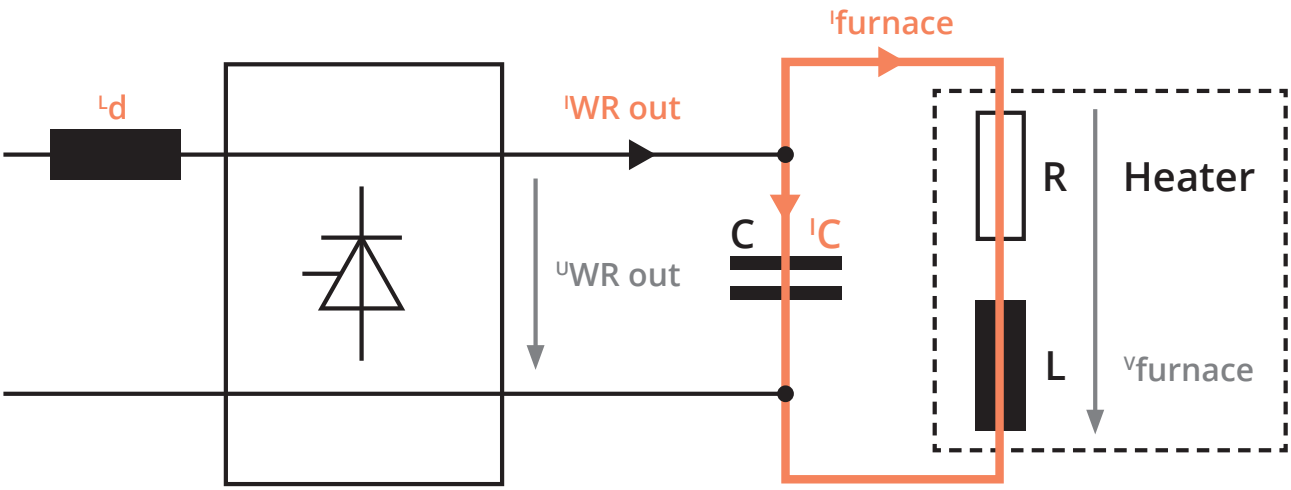
Technical data

Power:	250 kW/module
Frequency:	1–6 kHz
Power factor:	> 0,95
Semiconductor:	IGBT

ABP Converter Design

Parallel Inverter

- High current only in the swing circuit
- Coupling choke smoothes peaks

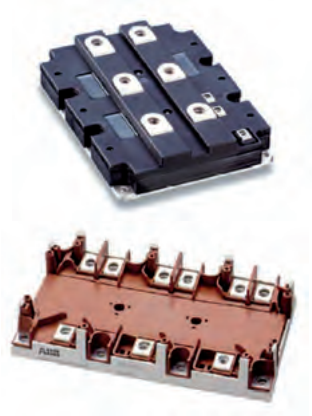


Insulated Gate Bipolar Transistors

IGBTs = Bipolar Transistors with isolated Gate

Advantages:

- High reliability
- Low complexity of circuits
- Flexible applications
- Low switching and conduction losses
- Low control power (FET-control principle)
- Isolated water-cooling



MATDAT-FX

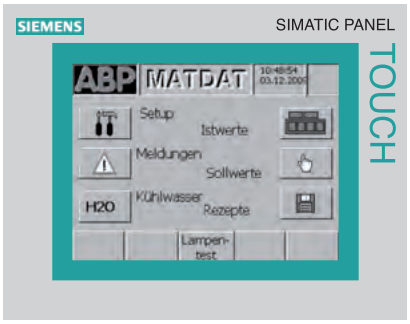
System controller MATDAT-FX

Target values

- Feeding rate, voltage and temperature limit
- Temperature, frequency und power are physically logical consequences of these parameters

Recipes

- Proven settings can be stored as recipes
- Storage of process data is possible via recipe management system
- Recipes can be named, for example production number
- Recipe management system is equipped from the factory with user management

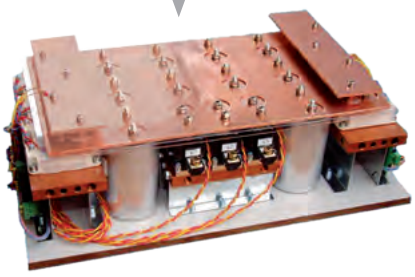


Visualization

- Actual values
- Target values
- Recipes
- Error messages
- Cooling-water visualization (optional)

PLC

Converter



IGBT-Technology

Our experience

ABP can rely on many years of experience using IGBT technology (Insulated Gate Bipolar Transistor).

Reasons why IGBT technology is state of the art:

- The power factor (ratio of active and reactive power) is always greater than 0.95.
- Purified water is not necessary and avoids the need for expensive water treatment systems. The higher allowable cooling water temperature reduces the overall cooling water system costs.

IGBT technology

- Expandable modular design
- No deionized water for the cooling circuit required.
- Improved availability through short service times during a breakdown
- Easy assembly and maintenance
- Increased energy efficiency
- Performance factor of cos-φ > 0,95

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