



Smart Products
Smart Factory
Smart Processes



CREATING THE FUTURE

Innovations 2017.



HEDRICH 4.0: Intelligent networking for

OPTIMUM PROCESSES

Modern information technologies and IT infrastructures allow realizing an innovative enhancement of production processes. This enables our customers to increase productivity and efficiency for more cost-effective production thus offering decisive advantages in global competition. "Smart Factory" means to us that not only individual process or production steps are no longer optimized separately but entire value chains. To this end, modern IT technologies are used to combine an intelligent networking of individual machines, installations and testing systems to one jointly communicating machine network.

HEDRICH 4.0 is our concept to create the digitized future. Already today, we count on digital technologies to control systems and monitor them in real time, design processes transparently and more efficiently, optimize project documentations and manage data according to the

specific requirements. Networked systems and resource-saving equipment concepts complete the digital orientation.

HEDRICH 4.0 is based on three pillars ensuring to you an efficient production that is well prepared for the future as well as increasing productivity and quality.

- Smart Products
- Smart Factory
- Smart Processes

Smart Products

- Autonomous equipment control
- Mobile process control
- Uniform M2M communication
- Digital documentations
- Uniform programming

Smart Factory

- Digital process control
- Automated processes for orders etc.
- Configured process standards
- Demand-oriented production
- Digital documentations

Smart Processes

- Smart service concept with remote maintenance and diagnoses
- Smart sheet organization management
- Mobile data logging
- Optimization of servicelife
- Remote access for remote control of machines

Impressively

NETWORKED

NEW
FROM HEDRICH

The COPRA App Center



The COPRA App Center (**C**ockpit for **P**roductivity increasing and **R**esource saving **A**pplications) is the digital platform for all HEDRICH applications.

Our apps allow the mobile monitoring of your HEDRICH equipment any time and any place: by tablet, smartphone or PC. They optimize production processes and make them transparent, ensure early detection of quality changes and makes service and maintenance work predictable and traceable. And this in "real time".

→ **Your benefit:**
Mobile controlling ensures highest transparency and process safety!



→ PMC-APP: PRODUCTIVITY MOBILE CONTROLLING

This app monitors the productivity of your equipment or machine based on specifically determined KPIs to ensure absolute process transparency.

- PMC cockpit with individual real-time performance parameters
- 24/7 mobile process control and evaluation for early detection of quality changes
- Comparison of processes and type-dependent consumption volumes
- Live alert function to send error messages to mobile terminals
- Easy integration into existing control systems

→ DWP-APP: DIGITAL WORKFLOW⁺

This app allows the digital representation of business processes.

- Digital acquisition and documentation of product and equipment related production data
- Digital representation and evaluation of current production status with reference to product and machine.
- Production planning based on actually realized times with reference to part and product
- Independent of interfaces and data formats of other suppliers

→ PDM-APP: PREDICTIVE MAINTENANCE

This app allows early error and wear detection and optimizes maintenance and service work.

- Early detection of faults on machines and systems
- Enhanced productivity by maintenance planned in advance
- More precise analyses by permanent capture and documentation of messages for many years
- Automatic transmission of information to responsible persons
- Push messages in case of deviations of status data

ADVANTAGES OF THE APP

- Responsive structure
- Mobile monitoring of your equipment by tablet, smartphone, etc.
- Optimization of production planning and cycles
- Early detection and indication of quality changes
- Traceability of production processes
- Improved communication between different production ranges
- Easy integration into existing control systems
- Individual extension and adaptation options to your requirements

Impressively EXACT



Residual Moisture and Gas Content Measurement for Unfilled Cast Resins

The automatic residual moisture and gas content measurement for unfilled cast resins by HEDRICH is the world's first in the field of cast resins. As the technology for measuring the residual moisture had already proven effective for transformer oils, it has now also been developed to become an exact measuring method for unfilled cast resins.

Therefore it is, for the very first time, also possible for duromers to determine both residual moisture and residual gas content automatically. The system

measures and identifies it on its own. Especially for the production of rotor blades for wind power systems and other composite components, or when manufacturing high-voltage bushings for the electrical industry, this innovation provides decisive advantages. Because of this system, visual inspections are no longer necessary.

→ **Your benefit:**
Exact, automatic measurement!

ADVANTAGES OF THE RESIDUAL MOISTURE AND GAS CONTENT MEASUREMENT FOR UNFILLED CAST RESINS

- World innovation for unfilled cast resins: First automatic system to measure residual moisture and gas content
- Permanent assurance of cast resin quality
- Recordable quality assurance of the final products
- Visual inspection for bubbles no longer necessary
- Suitable for all unfilled components
- Independent from the operator
- Upgradable on all HEDRICH equipment



Impressively MOBILE



Mobile Low-Frequency Drying Equipment



Mobile low-frequency drying equipment by HIGHVOLT and HEDRICH constitute a complete novelty. Their compact design allows them to be flexibly used almost everywhere in the world, granting to save significant time and costs. In addition, the mobile equipment provides all advantages of the proven stationary systems. Already existing equipment can be upgraded with most modern LFH technology directly in situ.

As with the stationary version, heat treatment and vacuum drying happen in parallel. Short process times included. The entire process runs at low vacuum levels, ensuring a considerably enhanced drying quality and reduced depolymerization of the insulation material compared with conventional processes.

→ **Your benefit:**
More flexibility!

ADVANTAGES OF THE MOBILE LOW-FREQUENCY DRYING EQUIPMENT

- Mobile and flexible on site, useable irrespective of the equipment's location
- Special low-frequency converter technology for heating-up under vacuum
- Existing equipment can be upgraded with most modern low-frequency heating (LFH) technology
- Increase of quality by careful drying process
- Optimized drying level compared with mere oil purification
- Considerably shorter drying times
- Significant saving of costs and time
- Technology cooperation with HIGHVOLT

Impressively COMPACT



New Generation: Vapour Phase Compact Equipment



The Vapour Phase Compact equipment is a newly developed generation, applying the drying technology by means of kerosene. This process has established in the production of power transformers and is also used for manufacturing other high-voltage components.

The packed arrangement of the equipment and the use of standard modules leads to shorter assembly and start-up times on site, reducing the investment costs. Further on, it comprises an efficient, outside-arranged fall-film evaporator as well as is optimized energetically.

→ **Your benefit:**
Costs saving by compact design!

ADVANTAGES OF THE VAPOUR PHASE COMPACT EQUIPMENT

- Globally most energy-efficient equipment
- Fully automatic system
- Outside-arranged fall-film evaporator
- Lower investment by optimized and compact module construction
- Setup and testing of the equipment in the manufacturer's factory possible yet before delivery to the customer
- Short assembly and start-up times on site

Impressively SERVICE-MINDED

Our Service

HEDRICH stands for competency and innovational power in vacuum equipment engineering. More than 50 years of experience in all ranges of the impregnation and insulation technology say so much about our expert knowledge that we are happy to share with you and thus grant you to reliably manufacture top-quality products.

Beyond the start-up of your equipment is it that we provide support to our customers, offering numerous services,

such as e.g. remote maintenance throughout the whole service life of your equipment. In addition, regular maintenances guarantee maximum productivity and reliability of your production.

→ **Your benefit:**
Reliability and productivity!

ADVANTAGES OF THE HEDRICH SERVICE CONCEPT

- Worldwide service network with more than 40 service specialists
- Expert training programs to provide basic knowledge in equipment and vacuum technology as well as repair and maintenance
- Regular maintenance – remote maintenance as well – to minimize equipment downtimes
- Customized, individually adapted service packages to ensure maximum reliability, availability of the equipment and thus productivity
- Optimum performance by modernization and retrofitting
- Recorded support throughout the whole service life of the equipment



Every day, our incentive is our passion for innovations and first-class quality. We bank on the know-how, creativity and experience of our engineers, who,

in cooperation with our customers, conceive key products – just real TOP Expert Solutions characterized by functionality, precision and worth.

➤ More information



HEDRICH

Comprehensive brochure

For detailed information on all further HEDRICH TOP Expert Solutions, go and see our present comprehensive brochure.



HEDRICH

Service features

Our present service brochure tells you more about our individual service packages and other services offered by us.

➔ Call for it now at: hedrich@hedrich.com



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