



KRAFT
POWERCON

Smart power for **electroplating processes**

POWER SYSTEM EXPERTISE • TECHNOLOGY SOLUTIONS • GLOBAL REACH • LOCAL SERVICING



We design, manufacture and deliver reliable industrial power supply solutions that enable businesses around the world to become more efficient, profitable and sustainable.

Our specialist expertise and deep application knowledge is based on close to 90 years of experience in manufacturing, R&D and innovation.

Our customers receive localized service through our global presence and network of authorized partners, backed by our global supply chain.

Optimizing power supply for general metal finishing

Design innovation and complexity are placing increasing demands on electroplaters to deliver higher quality products faster, and on a more agile basis — especially in fast changing industries, such as automotive, or the highly demanding aerospace industry.

At the same time, everyone is looking to decrease energy costs, reduce use of raw materials and cut carbon dioxide emissions, both for their own operation and across their supply chain.

YOUR POWER SUPPLY IS KEY TO THE QUALITY, EFFICIENCY AND AVAILABILITY OF YOUR ELECTROPLATING PROCESSES.

Here are just some of the ways that choosing the right rectifier solution can help you enhance quality and make finishing processes more efficient.

- Optimized voltage and current control = greater economy and improved quality
- Even current density throughout the bath = superior and consistent finish
- Precision settings = highly controllable process
- Low ripple and innovative rectifier design for faster plating, greater efficiency
- and enhanced finishing = less wasted effort, materials and energy
- Dual output options = space savings, reduced costs, and more value

**OPTIMIZE VISIBLE
RESULTS**

**WHILE CONTROLLING
HIDDEN COSTS**



Quality

Reliability

Performance

Inefficient production

Reworking and wasted materials

Downtime and delays

Energy consumption

Excessive maintenance



Efficiency

Continuous improvements in process automation, faster throughput, high reliability and adaptive production.



Output performance and quality

Predictable and repeatable results, reduced scrap, controlled plating thickness.



Reduced costs

Decreased energy consumption, less reworking and wasted materials. Less unplanned downtime and maintenance, streamlined inventory and better use of manufacturing space.



Differentiation

Through supported innovation, flexibility, added value and competitive pricing.

Reduce TCO while improving electroplating performance

KraffPowercon rectifiers are engineered to help you to achieve the best possible output results for your customers, and your bottom line.

For example, because current ripple affects the quality and speed of plating, our IGBT* technology FlexKraft rectifiers run at around 1%. You can match the rectifier size to the output needed, too — no more wasted energy running oversized units.

And with our modular design, you only need one critical spare power module for an entire range of rectifiers, regardless of size or manufacturing year — perfect for keeping your spares inventory costs and space to a minimum.

WE ARE THE DC POWER SUPPLY SPECIALISTS WHO UNDERSTAND THE 'WHY' AS WELL AS THE 'HOW' OF METAL PLATING.

Our experienced electrical engineers will work with you to design and implement the most economical and efficient way to power your production: reducing your total cost of operation while meeting your output quality and uptime targets.

*Insulated-gate bipolar transistor

Customer challenge solved



“Working with KraftPowercon, we learnt how to control the current instead of simply steering the voltage. This resulted in up to 90% less rework, saving both labour and material cost. We could reduce processing time for nickel plating by up to 40%, and for decorative chrome by up to 5%. And upgrading to FlexKraft meant we saved 36% on energy consumption!”

— GENERAL METAL FINISHING CLIENT,
automotive parts



Before



After

CUSTOMER RESULTS

36%

Reduce energy consumption by up to 36%

90%

Up to 90% process efficiency gains

1%

Reduce ripple to as low as 1% for optimum plating quality (and minimal waste)

KraftPowercon solves electroplating challenges for a wide range of applications



Anodizing

Uniform coating and colouring. Process efficiency and cost control.



Decorative chrome plating

Space-saving solutions. Preventing defects, irregularities, and variation.



Precious metals plating

Reducing excessive use of materials. Less need for re-working.



Hard chrome plating

Good material anchoring. Fewer defects and better shine — consistently and in less time.



Zinc and zinc-nickel plating

Reducing costs and optimising process. Improving energy efficiency. Scalability.



Surface coating for electrolyzers

High performance coating for efficiency, robustness and durability of electrolyzers.

FlexKraft™

the modular switch-mode rectifier supplying premium power in electro-chemical processes. We have been pioneering IGBT rectifiers since 1983, and have kept improving ever since.



INNOVATIVE POWER CONVERSION

- Modular design for scalability and easy maintenance, also facilitating redundancy when highest reliability is a must have.
- Low ripple and current/ voltage control for consistent, even and precise plating.
- Dual mode design for high process flexibility, reducing cost and footprint.
- Energy efficiency.
- Air-cooled and water-cooled to suit every operating environment.
- Polarity reversal option.



CoolKraft™

the versatile heat exchanger for optimized cooling of water-cooled FlexKraft rectifiers operated in harsh environments. Reliable and effective cooling in tough conditions; easy to install and maintain.

CUSTOMER RESULTS

66%

Reduction in rejection and rework

50%

Reduction in scrap

18%

Average decrease in process time

34%

Reduction in energy consumption

CLIENT ROI: ANODIZING

FlexKraft™ pays for itself in just 7 months

One of our clients wanted to achieve 'right first time' quality to help improve anodizing efficiency and ensure on-time supply for their customers. Here's what they achieved by upgrading to FlexKraft.

Rejections, reworks and scrap decreased by over 50%

- **66%** reduction in rejection
- **66%** reduction in rework
- **50%** reduction in scrap

Energy consumption (kWh) reduced by 34%

- By switching from thyristor rectifier rated 816KW to FlexKraft rectifier rated 616KW, both operating at **320KW**

Process time reduced by an average of 18%

- Hard anodizing time cut by **28%**
- Sulphuric acid anodizing time cut by **15%**
- Chromic acid anodizing time cut by **10%**
- This created capacity for business expansion

Maintenance costs reduced by 86%

- Reduced from 72 hours (maintenance and repair) per year to only 10 (maintenance) per year
- Plus savings in spares inventory costs (around \$9,000)
- Plus the unquantified savings of eliminating production losses

QUALITY IS ALWAYS ASSURED

KraftPowercon modular rectifiers are manufactured and tested at our facilities in Sweden.

Our quality assurance starts with our supply chain of reputable, high-end partners, with components tested even before they come to us. We then test every single module at the end of production, and test for a third time once the stack is assembled.

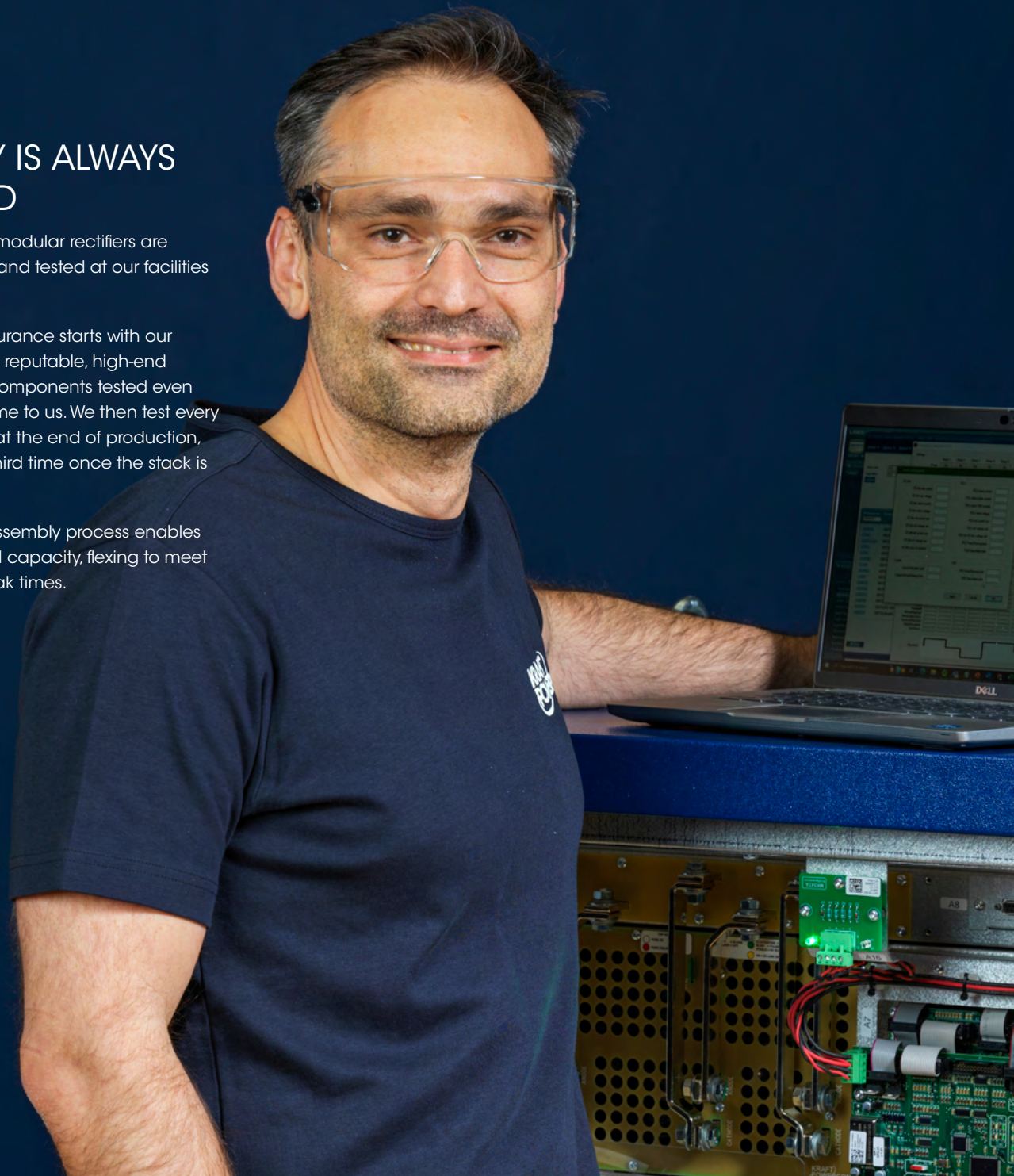
Our modular assembly process enables us to easily add capacity, flexing to meet demand at peak times.

CUSTOMER CHALLENGE SOLVED

An electroplating company wanted to manage their energy use and reduce costs. When upgrading to a KraftPowercon FlexKraft rectifier, they trusted us enough to make the change.

“We achieved the full deposition required in half the time! The lower current density areas had more chrome than previously, and the high current density areas had less overplate. We have gone from manual control, poor efficiency and fluctuating quality to automated control and excellent efficiency, resulting in vast energy savings and a greatly improved quality.”

— Plant manager,
chrome plating



The advantages of partnering with KraftPowercon

Whether we are talking about surface treatment for chrome plating, zinc processes or coating the electrodes for electrolysis, we stand for excellent results.

We deliver flexible industrial power supply solutions that bring lifecycle costs down and enhance your operational availability.

- Ninety years of innovation and experience
- Technical power supply solutions that are reliable and economical
- Optimizing quality and repeatability by applying our industry knowledge and expertise

GLOBAL NETWORK,
LOCAL SERVICE

Call on KraftPowercon experts whenever you need a second opinion on optimizing plating performance and efficiency — we understand your processes and the challenges you face.

We're in constant collaboration with leading manufacturers and chemical suppliers, delivering new solutions and innovations to meet the most demanding of requirements.

And our global network ensures you get a swift response and great service from our local sales and service partners.

You can rely on us for a can-do attitude and a genuine commitment to your success.

We won't let you down

is our brand promise.

MAKE
KRAFTPOWERCON
YOUR PARTNER
FOR POWER
SUPPLY SOLUTIONS,
APPLICATION
EXPERTISE AND
OUTSTANDING
SERVICE.

Our PowerCare Services

- Engineering — optimized power design
- On-site commissioning
- On-site training for maintenance personnel
- Remote technical support
- Stock of critical spare parts on site





KraftPowercon offers solutions, products, services — and drives innovation — within industrial power conversion. We create value for our customers by ensuring efficient, green, and reliable processes that meet the demand of today and tomorrow.

Headquartered in Sweden, KraftPowercon was founded in 1935 and now has production facilities in Sweden, China and India. We provide global sales, service and support.