



FEINMETALL

Contact Technologies



# PRODUCT PORTFOLIO

Specialized in precision



# POWERFUL SOLUTIONS

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# TECHNOLOGY OVERVIEW

## Our wide selection of Contact Probes and Probe Cards

Part of our commitment to providing comprehensive solutions includes being there for you from delivery to commissioning and all the way to training.

Basic Contact Probes



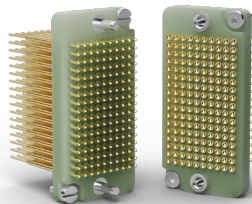
Basic Threaded Probes



Fine Pitch Probes



Interface Solutions



Kelvin Probes



Radio Frequency Probes



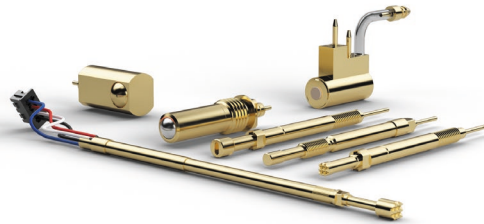
High Current Probes



Pogo Connectors



Switch Probes



Step Probes



Twist Proof Probes



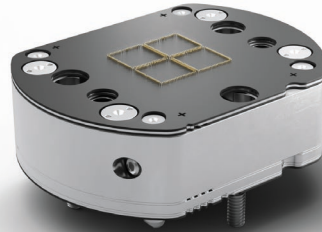
Push Back Probes



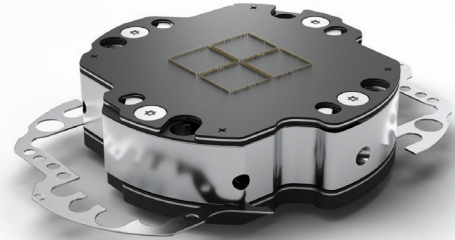
Tools/Equipment



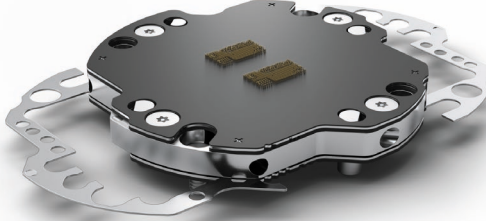
ViProbe®



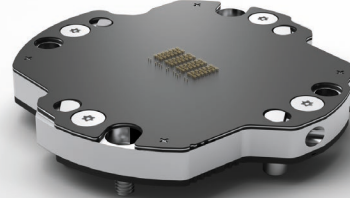
ViProbe®II



LiProbe®



FeinProbe®

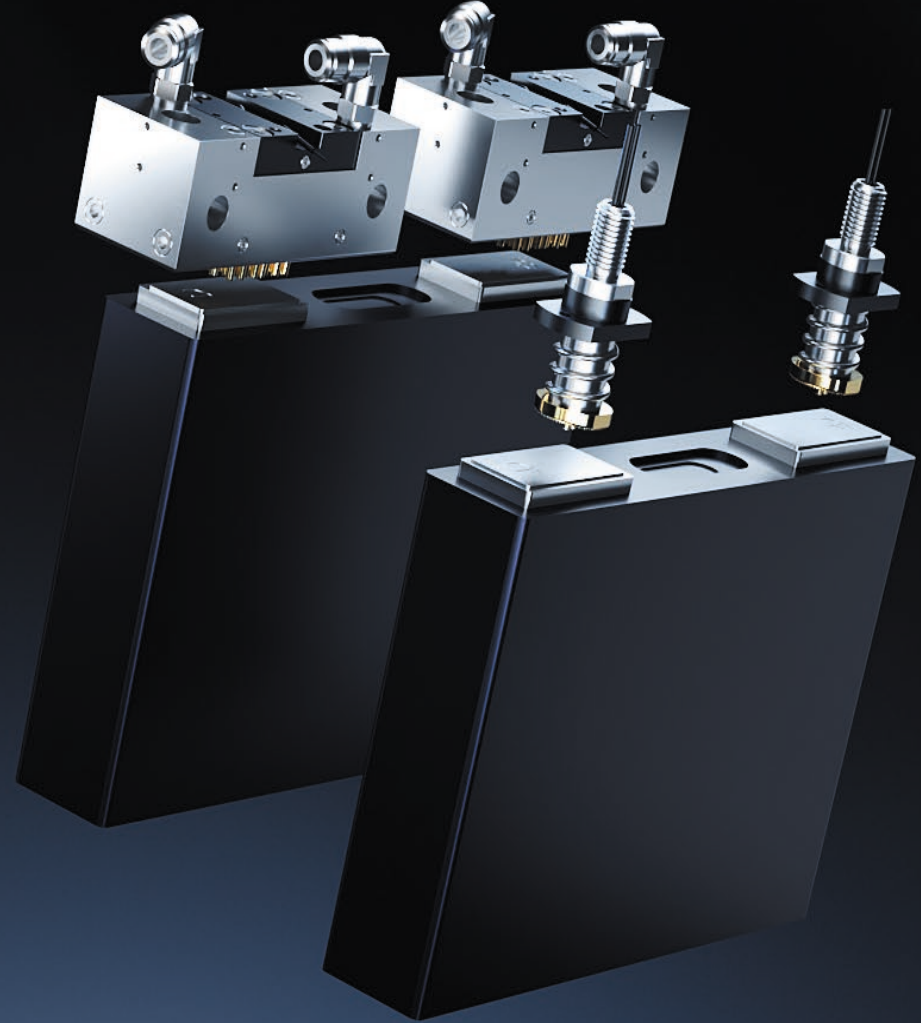


# BUSINESS UNITS

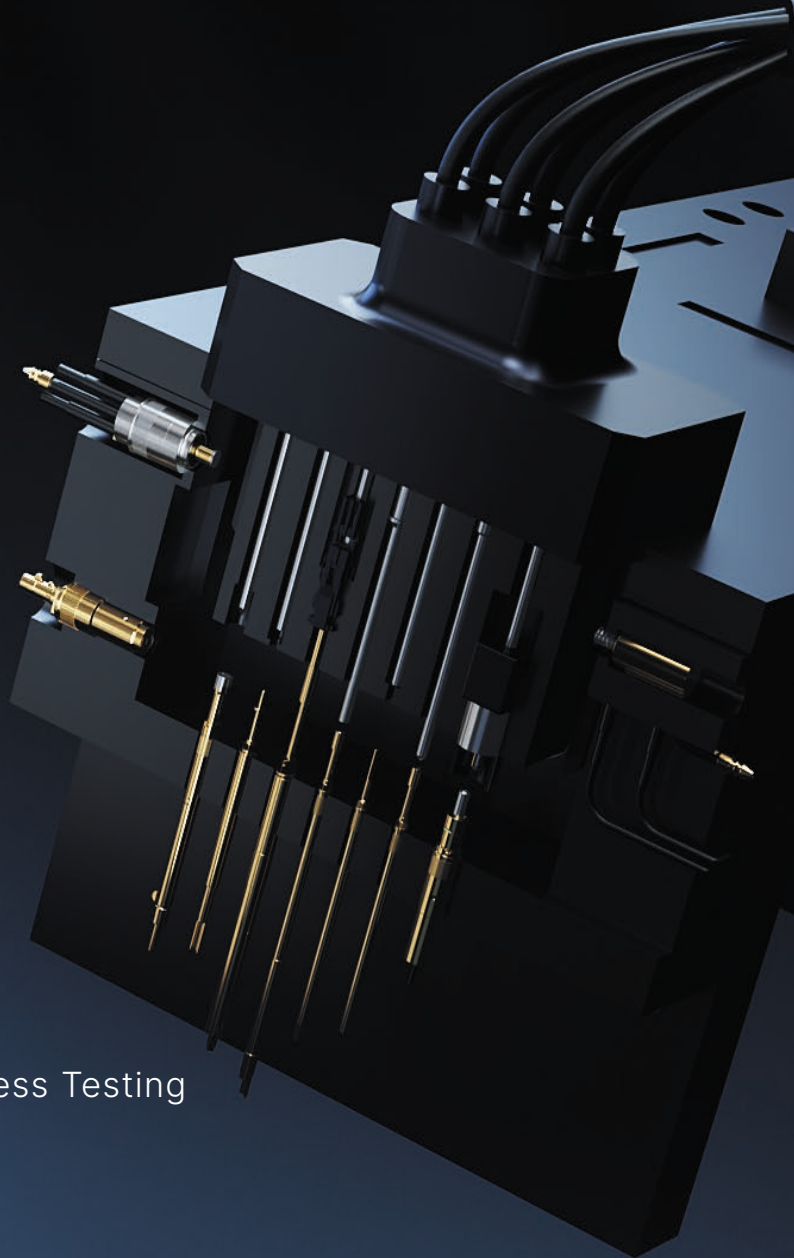


Semiconductor Testing

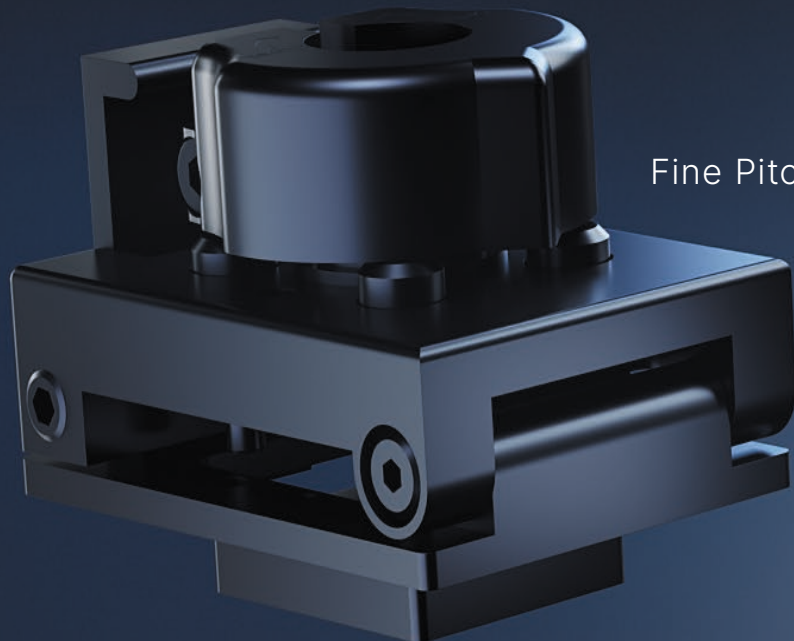
Semiconductor Testing



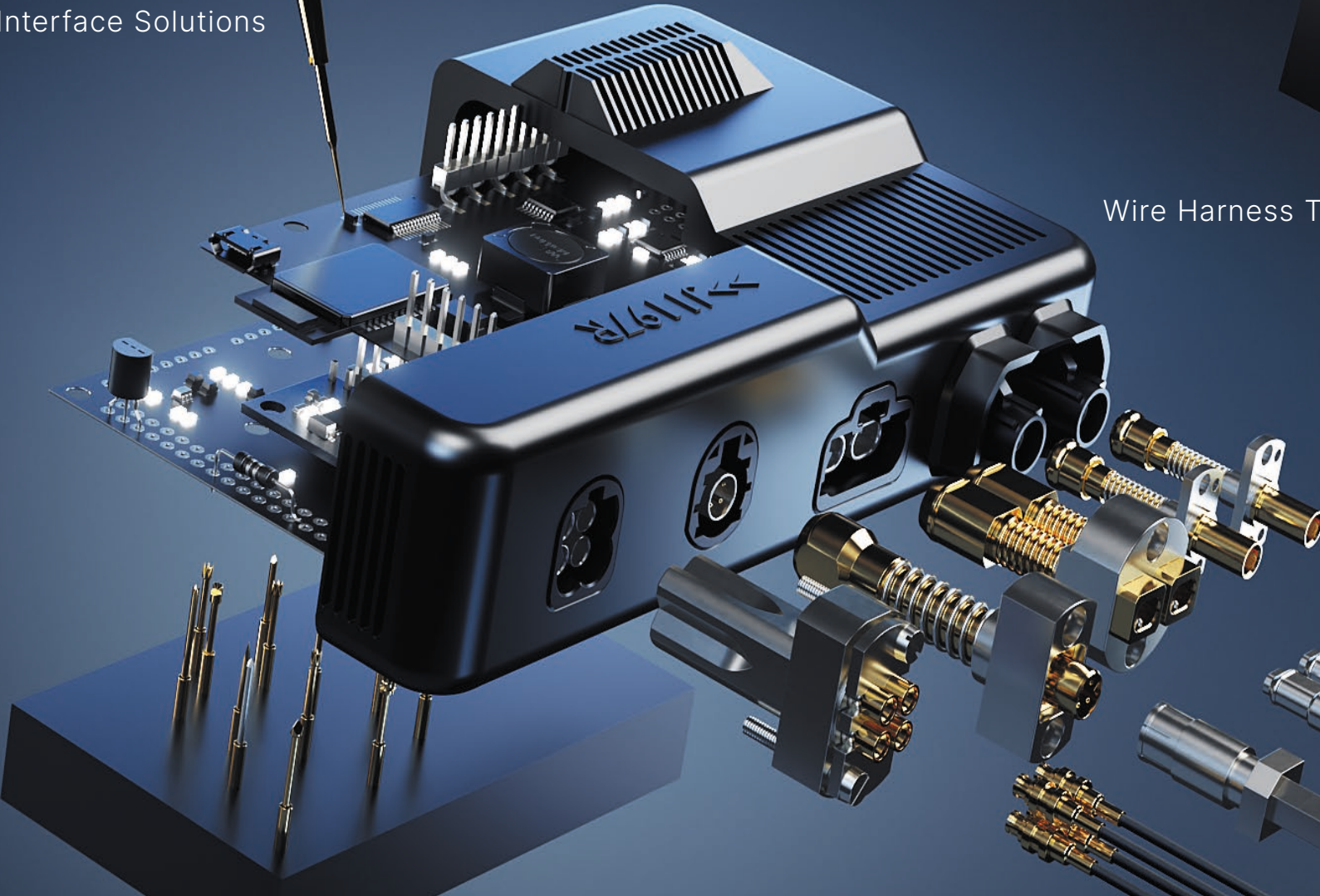
E-Mobility & Pogo Solutions



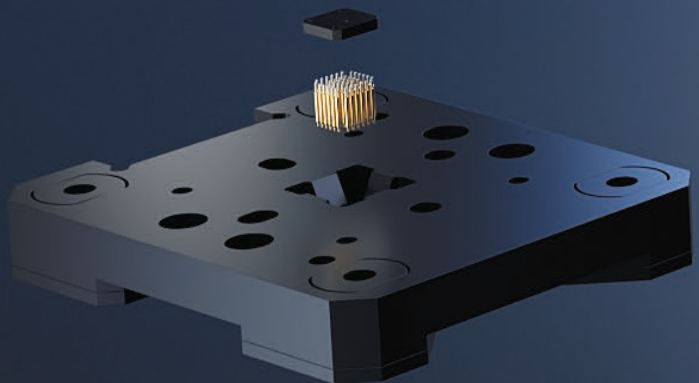
Wire Harness Testing



Fine Pitch & Interface Solutions

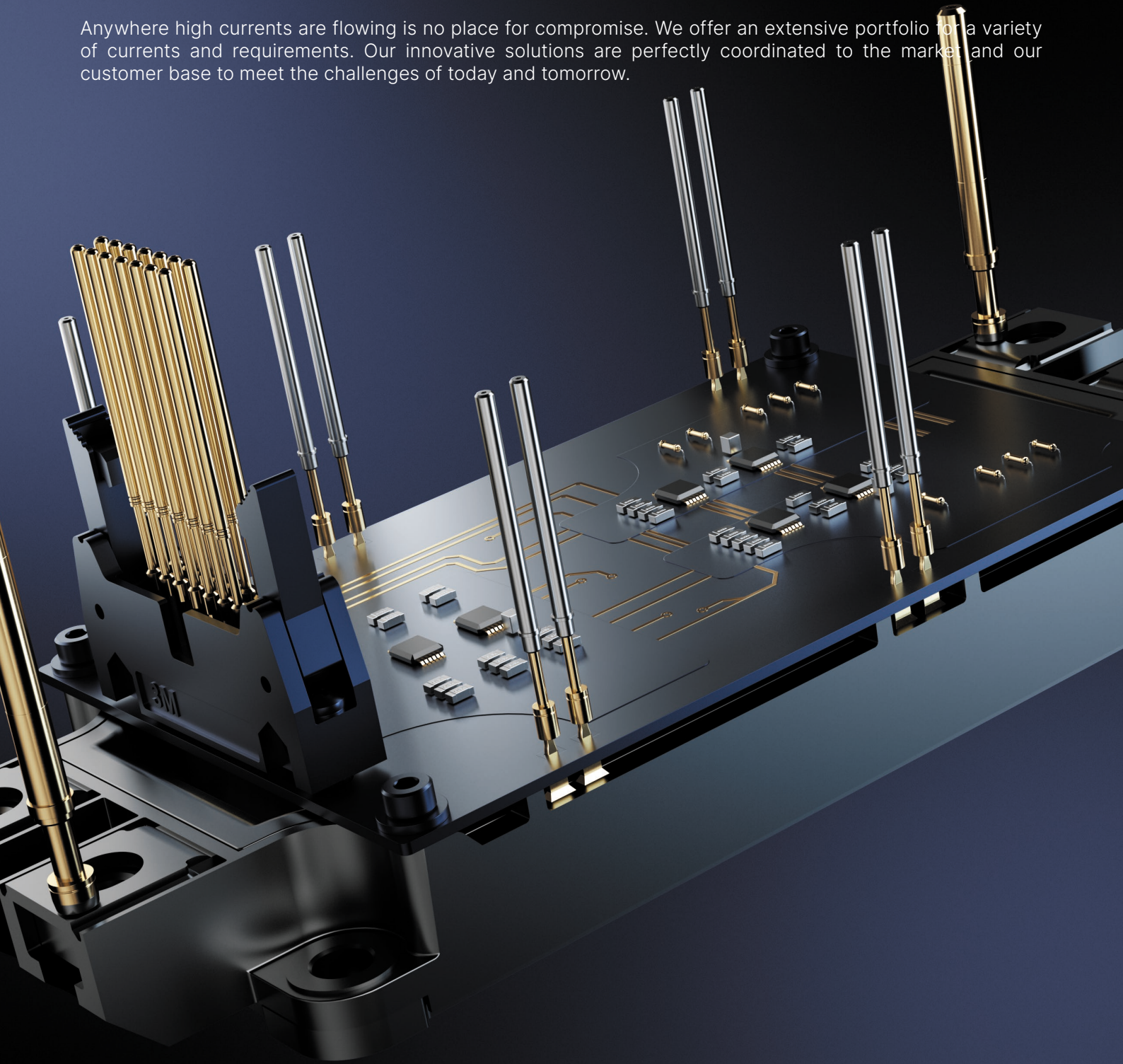


Electronic Testing



# E-MOBILITY & POGO SOLUTIONS

Anywhere high currents are flowing is no place for compromise. We offer an extensive portfolio for a variety of currents and requirements. Our innovative solutions are perfectly coordinated to the market and our customer base to meet the challenges of today and tomorrow.



## E-MOBILITY & POGO SOLUTIONS

# APPLICATIONS

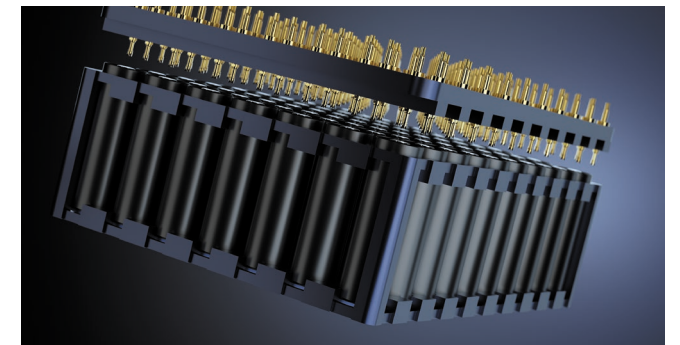
### Battery Testing

Testing is a crucial process in the development and production of battery cells to ensure that the battery cells meet the required performance, safety and quality standards. Among other things, voltage, current and resistance tests are carried out for this purpose. In addition, charging and discharging cycles as well as the heat development of the battery cells must be monitored.



### Battery Formation

The purpose of the forming process is to stabilize and optimize the chemical and electrical properties of the battery cell. During this process, the battery cell is charged and discharged several times. A constant and low-resistance contact is crucial for the quality of the cell.



### High Current Test

High current contacting refers to the technology and methods used to make electrical connections that can carry particularly high currents. High-current contacting is used in many industries, including the automotive industry, electric vehicles, renewable energy (such as wind turbines), heavy industry, electric welding, high-performance electronics and other applications where high electrical currents flow.



### Pogo Connectors

Pogo Connectors are the hidden champions in the world of contacting. They are particularly suitable as charging contacts and as interfaces for data transmission. But pogo connectors are also used in many end products where low-wear electrical contacts are required. Wherever quick-release electrical connections are needed, pogo connectors can be a clever solution. From charging rechargeable batteries to applications in medical technology, all the way to use in the furniture and lighting industry.



# FINE PITCH & INTERFACE SOLUTIONS

When it comes to the contacting of test points in very small dimensions, fine pitch probes are needed. Fine pitch probes are essential parts in the electronics industry, ensuring accurate and reliable testing and measurement of electronic components and circuits.

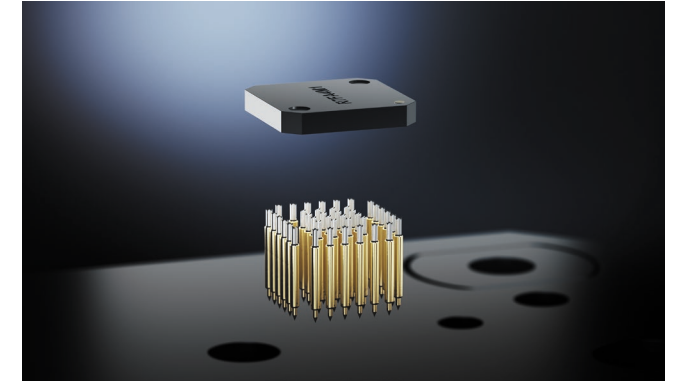
These probes mainly used in applications like semiconductor final testing, WLCSP solutions, MEMS sensor tests or the testing of micro PCBs. Due to the small pitches in these applications, a deep expertise and precision in production is required, to guarantee the best possible contacting. We are able to offer fine pitch probes down to a pitch of 120µm to provide the solution of your needs.

## FINE PITCH & INTERFACE SOLUTIONS

### APPLICATIONS

#### Semiconductor Final Testing

Through rigorous final testing, manufacturers can guarantee that only high quality and fully functional semiconductors reach the market, ensuring the reliability of electronic devices for end-users. To realize these tests, Fine Pitch Probes are necessary. FEINMETALL Fine Pitch Probes are able to contact different package types of these chips such as BGA, QFN, LGA, QFP etc. with a high quality and repeatability. In our diverse portfolio you will find a suitable probe for all of your applications.



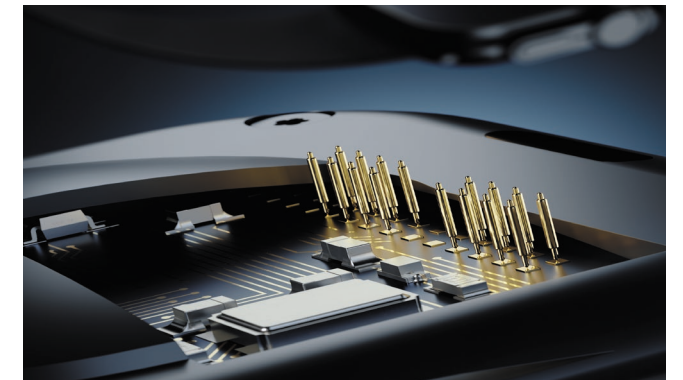
#### MEMS Sensor Testing

Testing MEMS sensors means checking if they work well and are accurate. Fine Pitch Probes allow engineers to access specific points on the sensor, enabling full testing and analysis. The high level of precision provided by FEINMETALL Fine Pitch Probes is essential for evaluating the performance parameters of MEMS sensors. We provide a wide range of options of these probes with excellent quality standards to secure your best testing results.



#### Micro PCB Testing

Testing micro PCBs is essential for ensuring the functionality of compact electronic devices like smartphones and wearables. PCB Testing means making safe electrical connections with these tiny boards. These processes guarantee the reliability and functionality of modern electronic gadgets. FEINMETALL Fine Pitch Probes are designed by our engineers, to provide you the best possible solution with a long lifetime.



# WIRE HARNESS TESTING

Whether gas or electric, a well-functioning Wire Harness is an indispensable part of uncompromising vehicle safety. Our contacting solutions enable reliable Function Testing of Wire Harness and Plug Connectors to guarantee error-free installation.

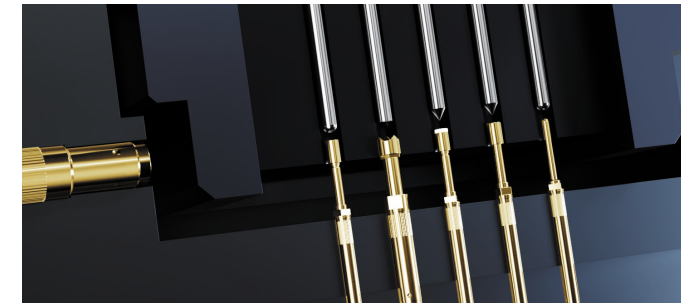


## WIRE HARNESS TESTING

### APPLICATIONS

#### Presence Testing

The Presence Test is necessary to check if all needed parts were mounted on the wire harness. For example, the clips to fix the harness on the chassis or secondary locks, which are locking the connector. For these tests FEINMETALL offers a wide range of ball Switch Probes, NO or NC Switch Probes, pneumatic Switch Probes or Off-On-Off Switch Probes, depending on the requirement.



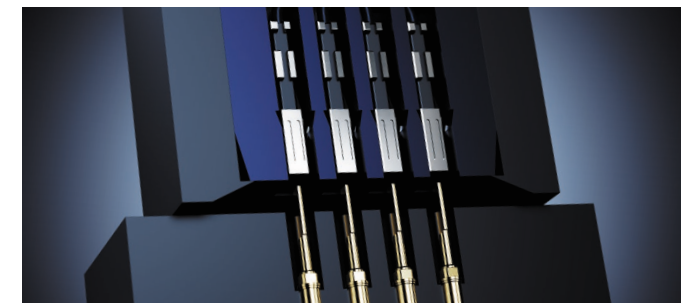
#### Position Testing

For the Position Test Step Probes are used. They allow the testing of the correct terminal position inside of the connector housing. If a terminal is not mounted correctly, the plate of the step probe blocks at the housing. As a result, the probe does not create an electrical contact.



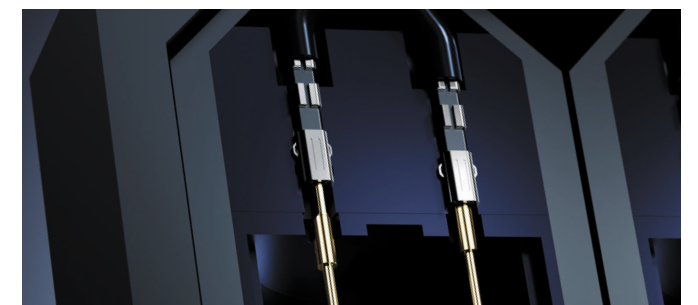
#### Continuity Testing

For a standard Continuity Test mainly Threaded and Twist Proof Probes are used to ensure a secure seat in the receptacle even if vibrations or unintentional side forces occur. In addition, their function is to check three basic errors: open wires, shorts between wires or miswires.



#### Push Back Testing

Push Back Probes have a very high spring force to test if the connector terminals are mounted correctly. If so, they will withstand the pressure and compress the probe. Through this, a switch function will get activated and the correct mounting is confirmed. Push Back Probes combine mechanical and electrical tests within one probe.



#### Connector Testing

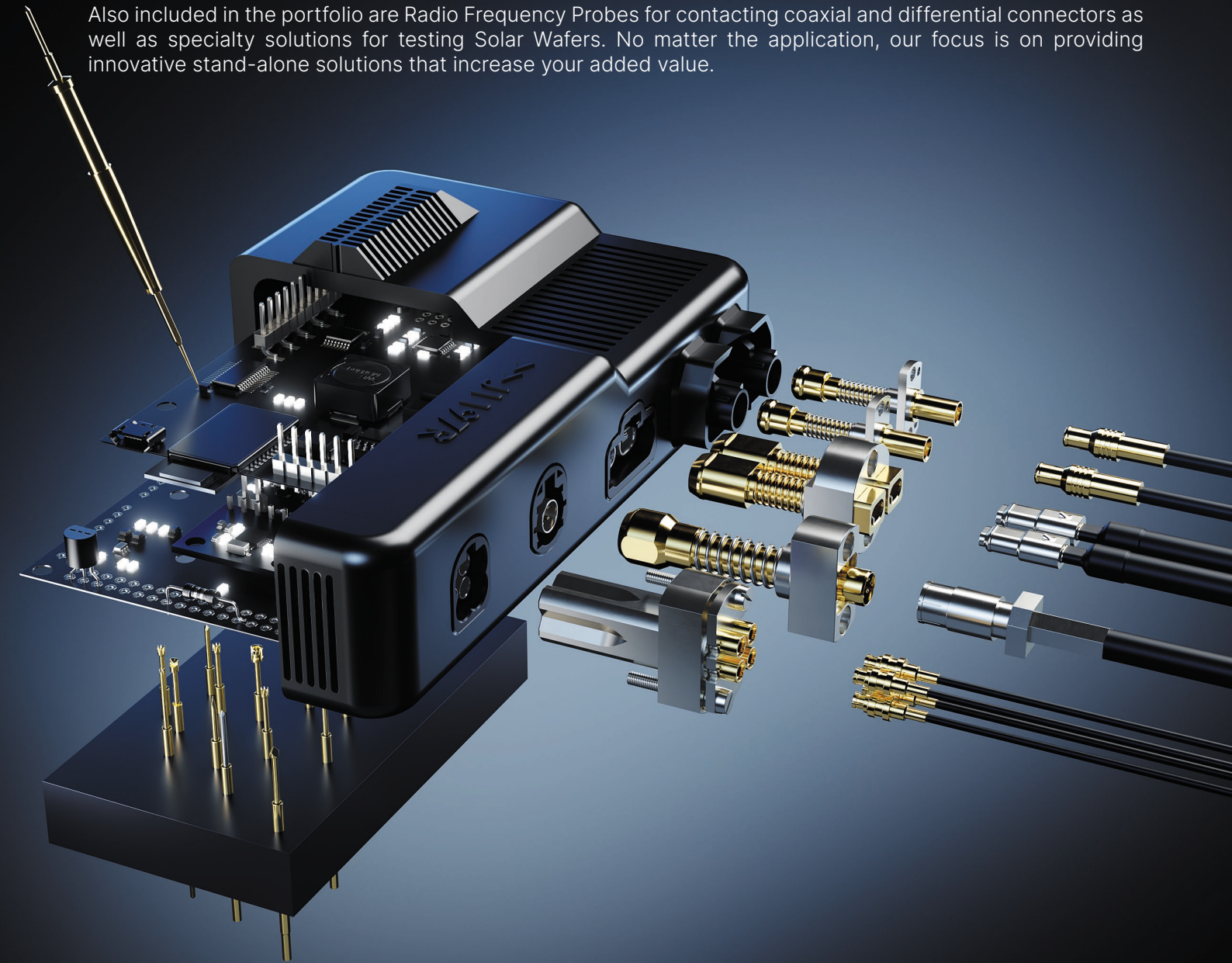
The connector market is changing rapidly as it is adapting to the technology progress in new sectors such as autonomous driving or electric vehicles. Because of the wide range of possible applications there are different connectors available. For standard and customized connectors FEINMETALL has various solutions available to cover the specific test requirements (for example high voltage, radio frequency, high current, kelvin test).



# ELECTRONIC TESTING

FEINMETALL provides the perfect solutions for all the electronics industry's testing needs. Our portfolio encompasses a variety of contacting solutions for circuit board testing as well as the necessary interfaces.

Also included in the portfolio are Radio Frequency Probes for contacting coaxial and differential connectors as well as specialty solutions for testing Solar Wafers. No matter the application, our focus is on providing innovative stand-alone solutions that increase your added value.

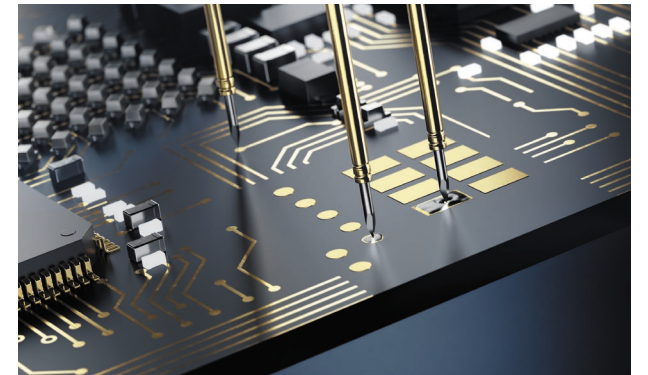


## ELECTRONIC TESTING

# APPLICATIONS

### Circuit Board Testing

We offer all commercially available probes for PCB testing. This includes contact probes for In-circuit test (ICT), functional testing (FCT), and probes for special environmental conditions such as high-temperature areas or limited installation conditions. With our Progressive Series or our Bead Probes, we also offer an innovative solution for demanding test conditions.



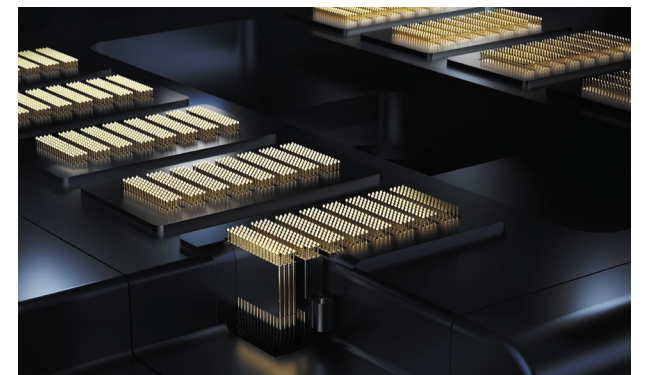
### Solar Wafer Testing

We offer special probes with an extended service life and particularly low resistances for contacting busbars on Solar Wafers. This enables optimized and high-performance manufacturing of solar cells and photovoltaic systems.



### Interface Solutions

FEINMETALL offers all interface solutions required for secure test signal transmission, including interface blocks, interface probes for standardized test systems, and rigid pins as mating contacts at interfaces.



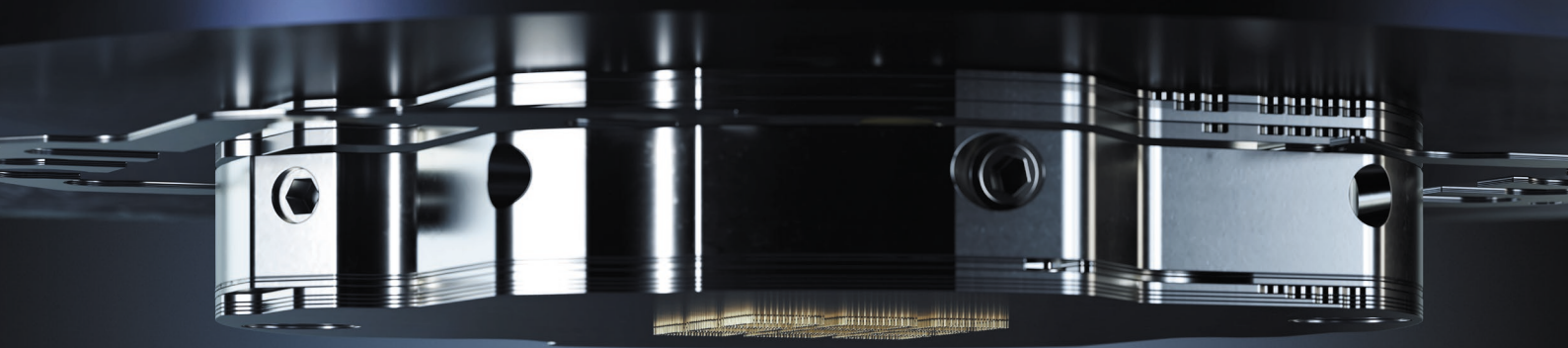
### RF Probes

High Frequency Probes are specially designed for precise contacting of coaxial and differential connectors during functional testing of DUTs (Devices under Test). Thanks to their high-quality materials and precise construction, they ensure excellent signal transmission even at high frequencies. The most common areas of application are in the automotive industry, consumer electronics, and industrial connectors.



# SEMICONDUCTOR TESTING

We're at the forefront of Probe Card innovation for reliable contacting of Wafers in the Semiconductor industry. Plus, we offer custom solutions for all Wafer Testing applications.



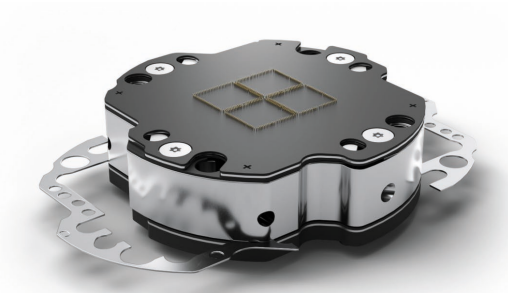
## SEMICONDUCTOR TESTING

# APPLICATIONS & PRODUCTS

### Wafer Testing

Thanks to our Vertical Buckling Beam technology, stable contact on all pad materials can be guaranteed.

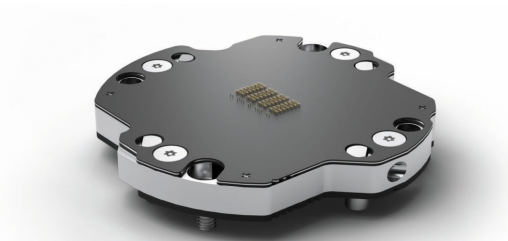
We offer a wide range of beam types to deliver the right force and contact behavior for each application, ensuring perfect contact quality across all use cases.



### WLCSP

Testing on bumps requires specially designed contact elements to ensure reliable electrical performance and minimal damage.

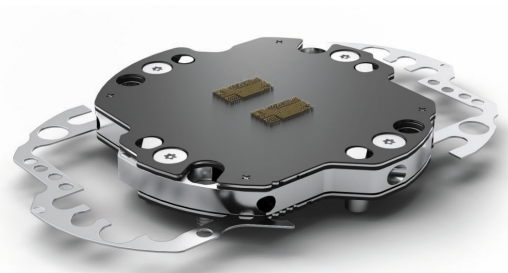
With our comprehensive portfolio of Spring Contact Probes, we ensure exceptional contact quality on bumps.



### Radio Frequency Testing

Our high-performance probe cards enable precise high-frequency testing for applications such as 5G and other advanced RF technologies, while supporting a wide frequency range.

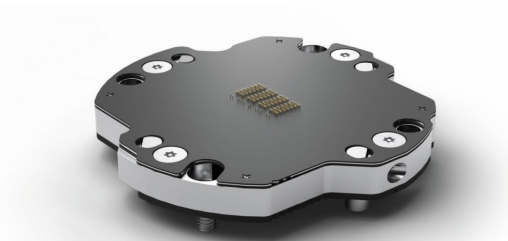
Reliable measurements are possible even at frequencies of up to 100 GHz.



### High Current Testing

Our robust and stable contact solutions enable reliable high-current testing across a wide range of applications.

We support demanding SiC and GaN devices in particular, with safety as a key focus and tailored solutions for diverse test requirements.



# WELCOME TO OUR DIGITAL WORLD

## Find us online & stay connected

Step into FEINMETALL's digital world and explore our products, technologies and industry expertise across our website, social media channels and newsletter. Stay connected with the latest innovations, insights and updates from FEINMETALL – all in one digital space.

 Website: Discover FEINMETALL

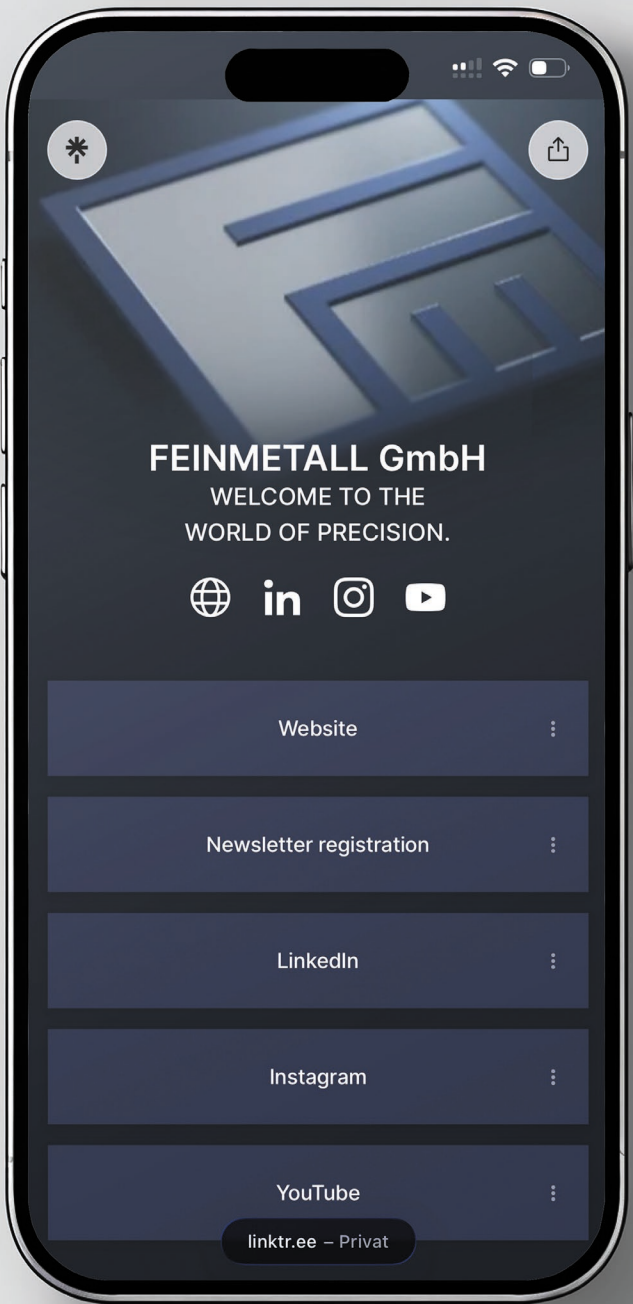
 Newsletter: Stay informed

 LinkedIn: Business & News

 Instagram: Insights & Impressions

 YouTube: Watch & Experience

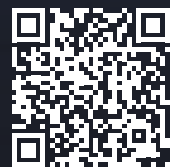
## Checkt it out now:



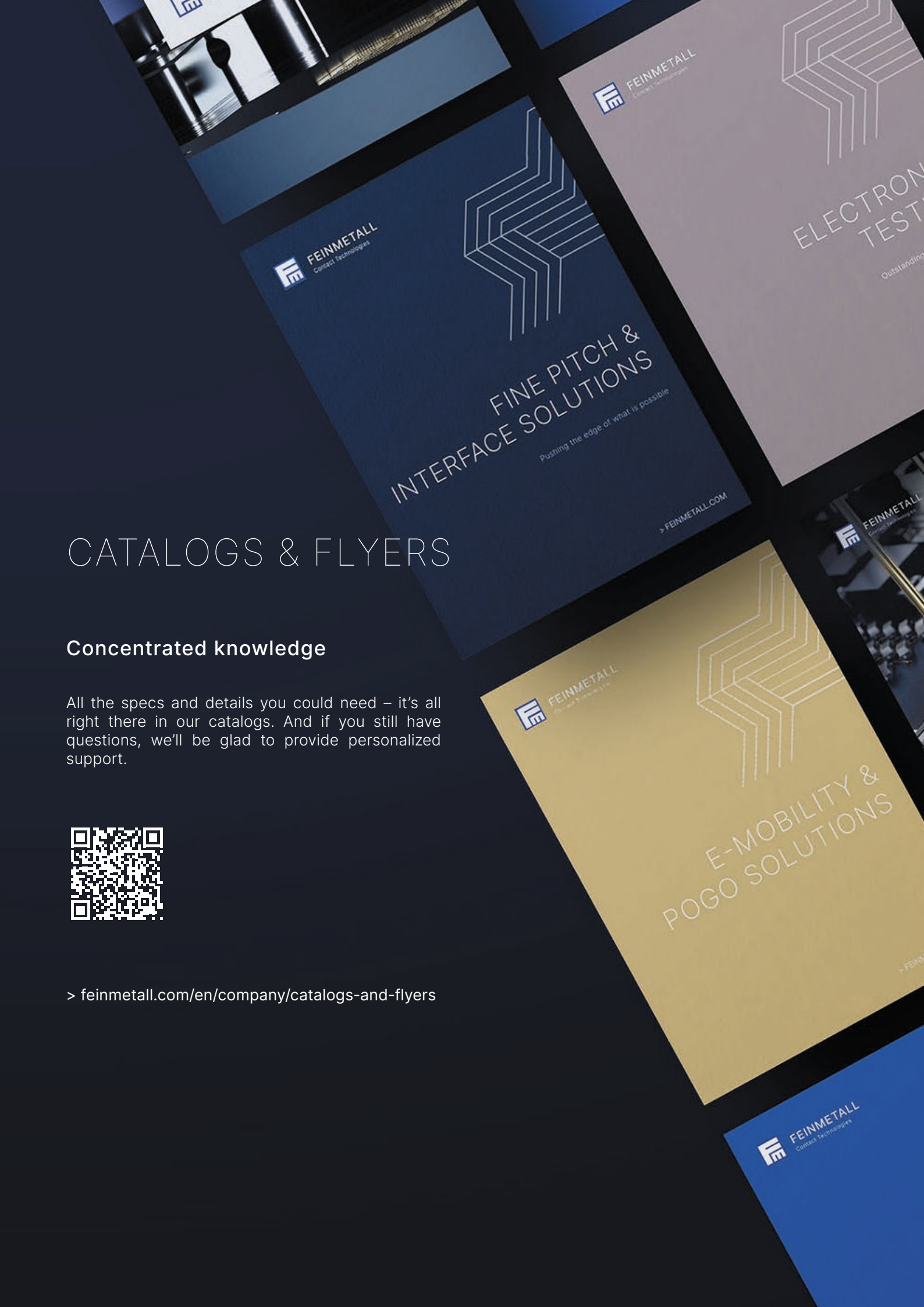
## CATALOGS & FLYERS

### Concentrated knowledge

All the specs and details you could need – it's all right there in our catalogs. And if you still have questions, we'll be glad to provide personalized support.



> [feinmetall.com/en/company/catalogs-and-flyers](https://feinmetall.com/en/company/catalogs-and-flyers)



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