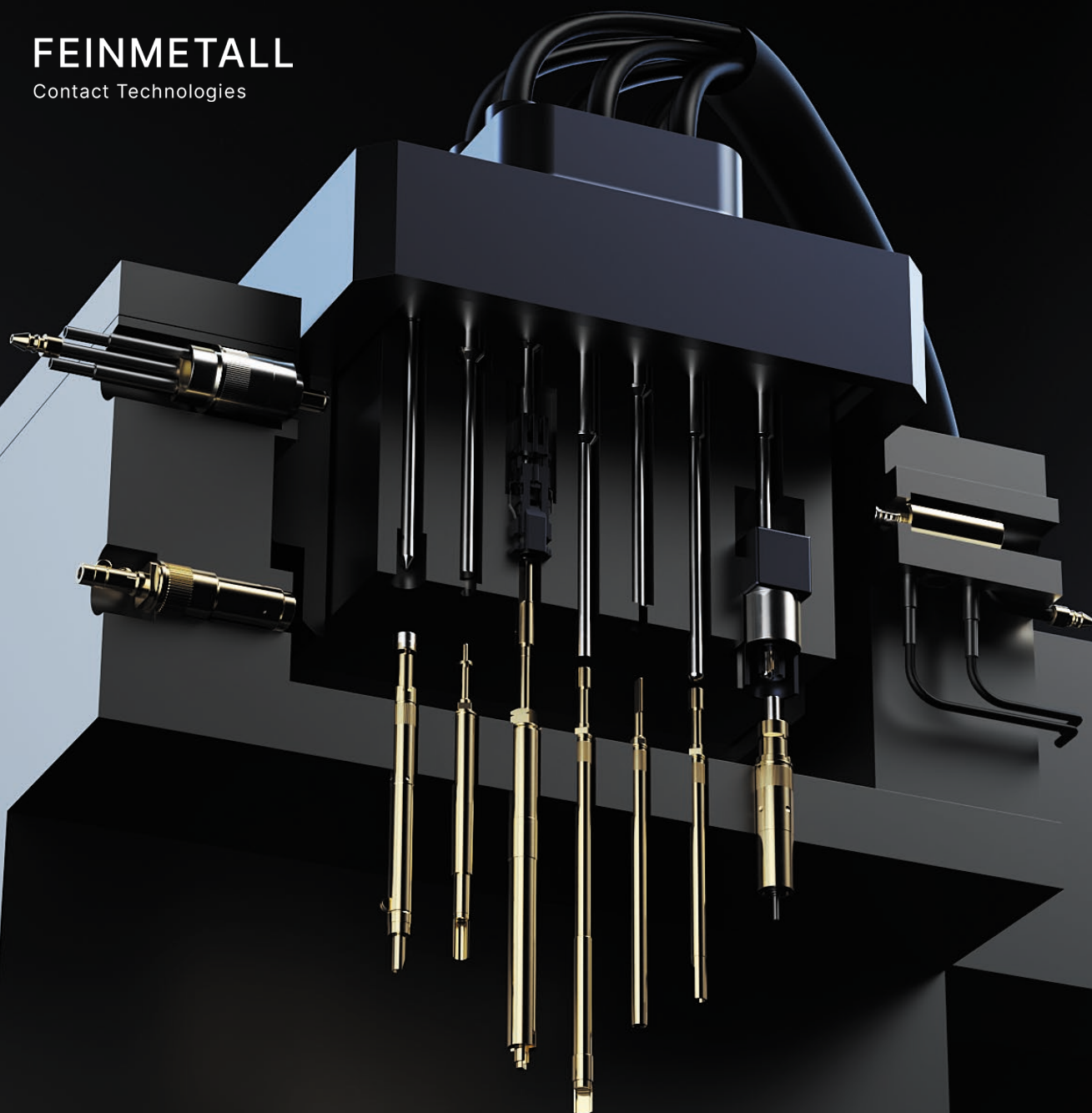




FEINMETALL

Contact Technologies



WIRE HARNESS TESTING

Widest product variety combined
with unique solutions

> FEINMETALL.COM



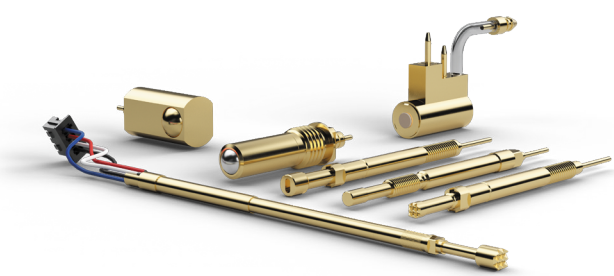
LARGEST PORTFOLIO
WORLDWIDE FOR TESTING
OF WIRE HARNESSSES AND
CONNECTORS

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CATEGORIES OF WIRE HARNESS SOLUTIONS AT A GLANCE

Basic Contact Probes



Threaded Probes



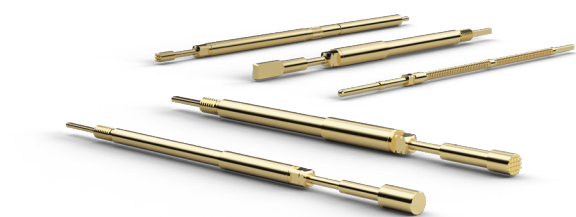
Step Probes



Twist Proof Probes



Push Back Probes



Kelvin Probes



Radio Frequency Probes



Tools



PRESENCE TEST

PRESENCE TEST

PRESENCE TEST WITH SWITCH PROBES

Types of Switch Probes

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 test applications different Switch Probe types are used.

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.

Standard Switch Probes (NO / NC)

Standard Switch Probes are available as plug-in and threaded versions. The switch function can work as an opener or as a closer. Standard Switch Probes are available in various diameters and lengths.



Switch Probes with Off-On-Off function

The special Switch Probes with an Off-On-Off function allow realizing more precise position tests of components or connector elements with little effort. While common Switch Probes only have one switch point after a specific travel, the special Switch Probes have two integrated switch points at a certain distance.



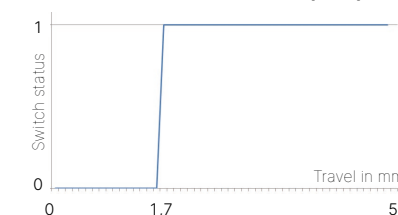
Position sensor system (PSS)

The position sensor system has been developed to enable an exact measurement of the travel of the plunger additionally to contacting the test item. The system has a modular design and consists of a contact probe, a receptacle and a sensor element with an integrated potentiometer.

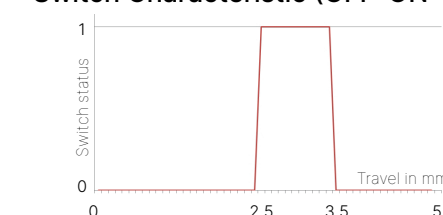


Switch characteristic

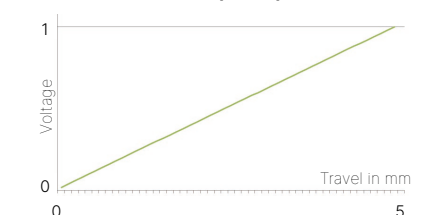
Switch Characteristic (NO)



Switch Characteristic (OFF-ON-OFF)



Measurement (PSS)



PRESENCE TEST

PRESENCE TEST

PRESENCE TEST WITH SWITCH PROBES

Switch Probes for backward assembly or potential-free

Switch Probes for backward assembly have been designed for applications with a difficult frontal access of the probes. Potential-free Switch Probes have a galvanically isolated switch circuit. This allows building short-circuit-proof fixtures or modules with separate electrical circuits.

Pneumatic Switch Probes

The pneumatic switch probe has been developed for a mechanical and lateral detecting of a DUT at limited space. The pneumatic movement of the plunger and the integrated switch function enables testing of the correct position of a DUT. Additionally, the switch function works according to an Off-On-Off principle and allows a more precise presence test.

Switch Probes with ball head

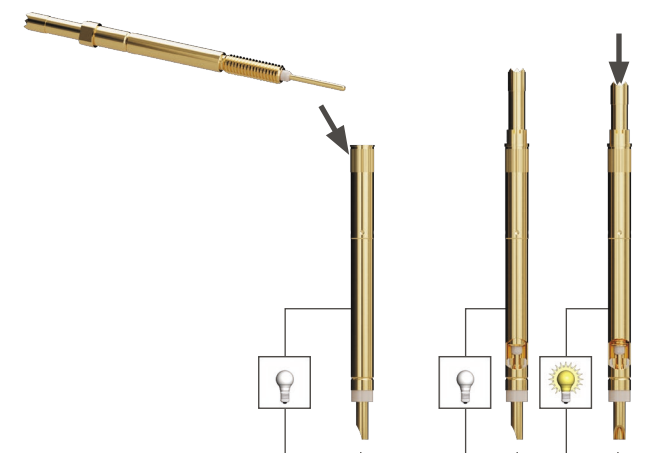
Switch Probes with a ball head have a rolling ball as contact element which makes them tolerant against lateral forces and avoids scratches at the contact surface. The most common application is the lateral presence test of connector housings in test modules.

Combi receptacles - a solderless replacement of Switch Probes

Combi receptacles allow a quick and solderless replacement of Switch Probes or Kelvin Probes (plug-in and threaded versions) without disassembly of the module or fixture. Secure connections of both signal circuits (inner and outer conductor) are realized by contact elements within the receptacle.

Advantages of the combi receptacle

- Solderless replacement of Switch Probes and Kelvin Probes
- Prevention of incorrect wirings in case of maintenance
- Saving of time and expenses for maintenance
- Height adaptability of Switch Probes with the probe thread and pressure marks in the receptacle



POSITION TEST

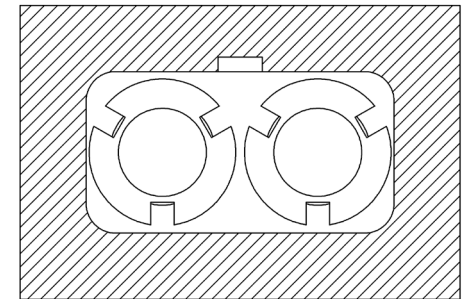
POSITION TEST

POSITION TEST WITH STEP PROBES

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.

Innovative slotted step probes

For Step Probes with oversized plates (plate diameter larger than probe diameter or wrench size), FEINMETALL has developed a 3-point-tool that allows mounting the probes even at very small centers. But also in other applications with limited space this tool can be a good alternative to the standard tool.



Overview step probes

More than 300 variants available for the common connector pitches of 50/75/94/100/157 mil.



F730SP

Center 50mil
L= 28.9mm+pin



F175SP

Center 75mil
L= 35.1mm+pin



F731SP

Center 94mil
L= 25.9mm+pin



F732SP

Center 100mil
L= 32.9mm+pin



F756SP

Center 100mil
L= 40.1mm+pin



F733SP

Center 157mil
L= 26.3mm+pin

CONTINUITY TEST

CONTINUITY TEST

CONTINUITY TEST WITH THREADED AND TWIST PROOF PROBES

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.

Overview Threaded and Twist Proof Probes

More than 400 available variants for the common connector pitches of 50/75/94/100/157 mil.



F730

Center 50mil
L= 28.9mm



F175

Center 75mil
L= 35.9mm



F731

Center 94mil
L= 27.9mm



F722

Center 100mil
L= 11.0mm



F732

Center 100mil
L= 35.7mm



F727

Center 100mil
L= 67.5mm



F756

Center 100mil
L= 41.6mm



F752

Center 100mil
L= 36.0mm



F733

Center 157mil
L= 28.3mm

PUSH BACK TEST



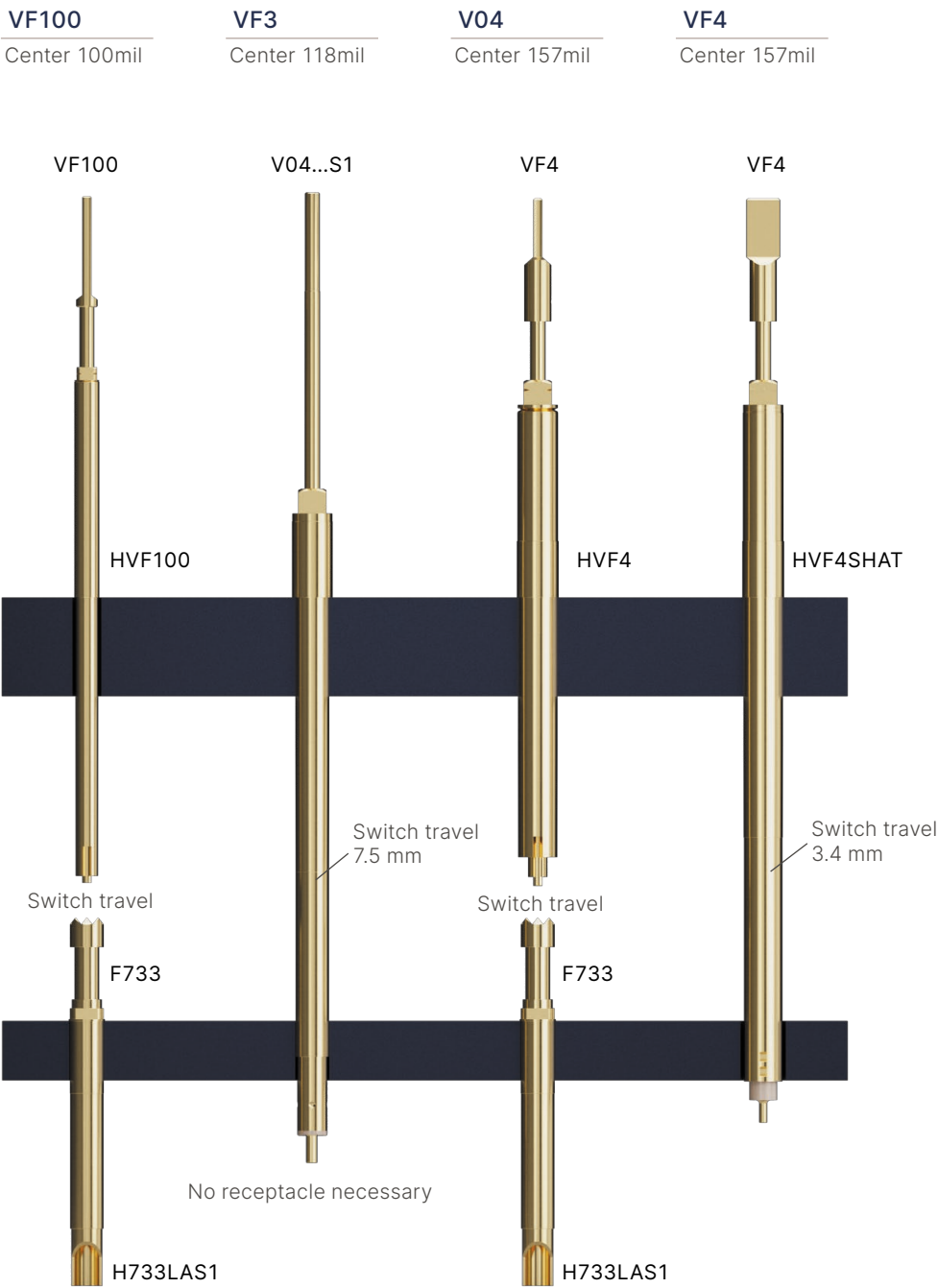
PUSH BACK TEST

WITH VERY HIGH SPRING FORCES

Ensuring secure terminal mounting with Push Back Probes

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.

Mounting possibilities for Push Back Probes



CONNECTOR TEST

CONNECTOR TEST

SOLUTIONS FOR CONNECTOR TEST

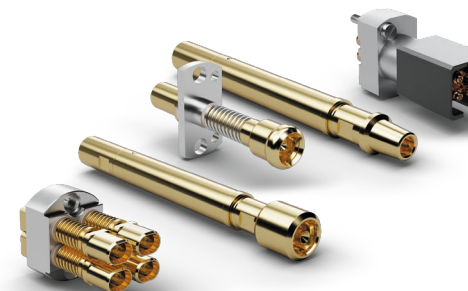
Adapting connectors to emerging technologies

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 a lot of 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).



Coaxial probes

Coaxially designed contact probes with an inner and an outer conductor can be used for two main application fields. It is possible to measure low resistances with the Kelvin method (4-wire measurement) by feeding the current in the outer conductor and measuring the voltage at the inner conductor. The second use is the continuity or high voltage test of standard connectors such as FAKRA, HFM or Mate-AX.



Radio frequency probes

Automotive connectors are used in a huge variety of electronic hardware in the automotive industry to transmit data-signals. Examples are Control Units, infotainment- and assistant systems, antennas and cable-assemblies. To verify the function of these components Feinmetall offers unique and innovative RF-probes for contacting the connectors.



High voltage probes

FEINMETALL high-voltage contacts were developed for contacting e-mobility plugs and sockets in the automotive sector. The probes are used for contacting pin, socket & shield contacts under high voltage conditions up to 5000V DC and combine several test possibilities in one probe.

Technical design and application

- High voltage test
- Parallel contact for kelvin measurement
- Presence test of the finger protection cap
- Airtight for leak test

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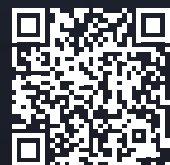
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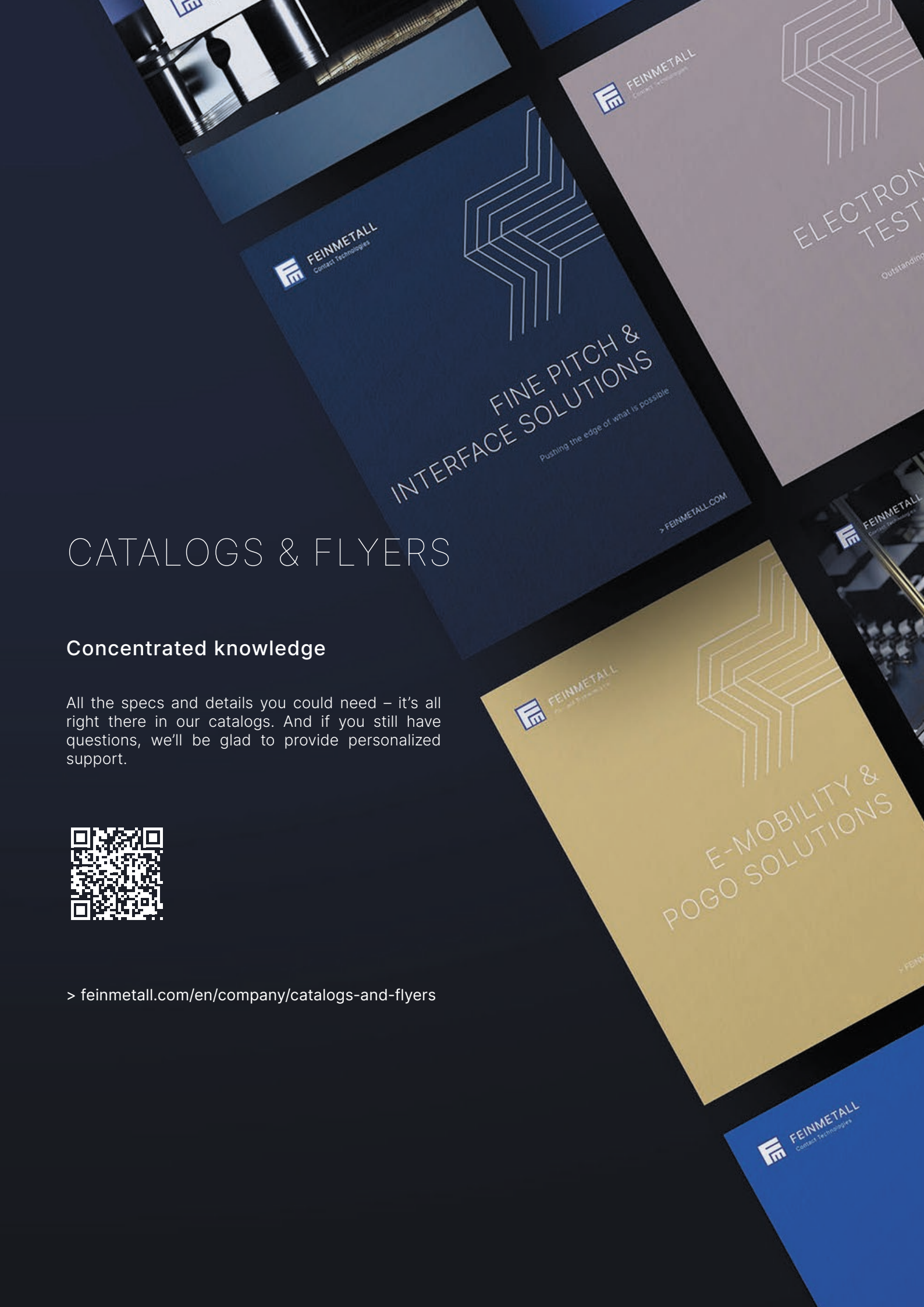
CATALOGS & FLYERS

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