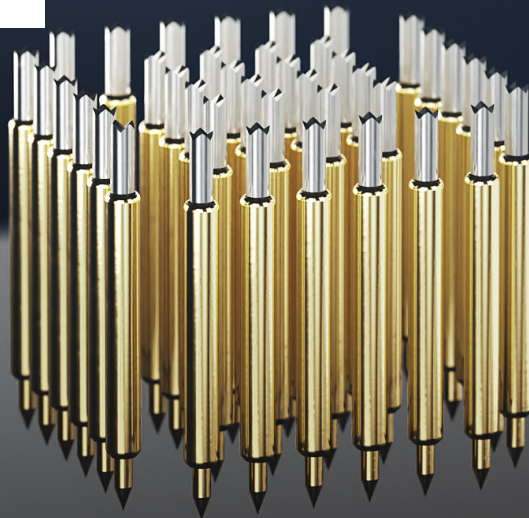


FINE PITCH TESTING

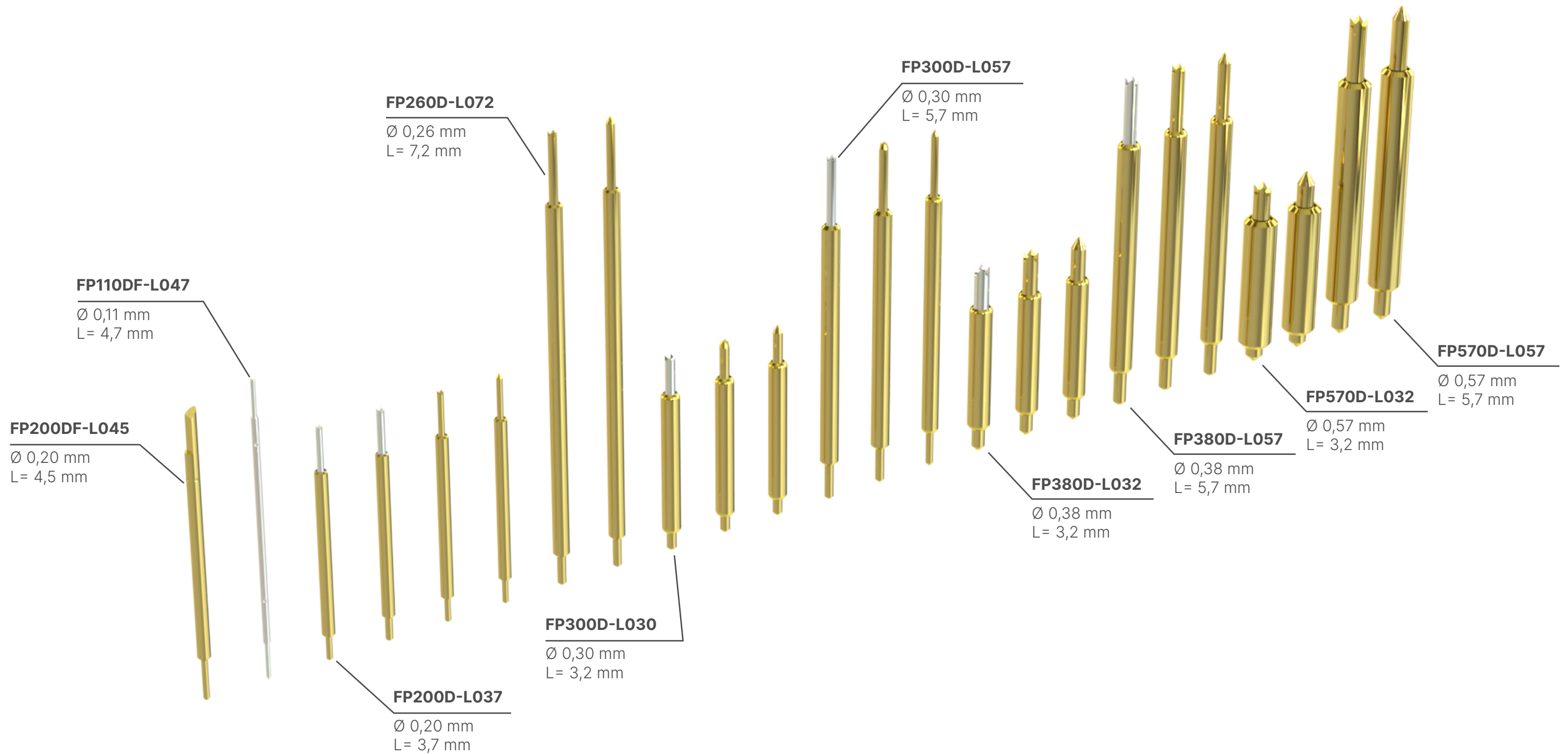
Chasing the edge of
what is possible



FEINMETALL
Contact Technologies



FINE PITCH PROBES AT A GLANCE



Mounting of fine pitch probes

Fine pitch probes are extremely thin contact probes for the use in centers of 0,12 mm to 1,0 mm. In most cases fine pitch probes are not mounted in separate receptacles, but they are mounted in sandwich design blocks connecting a DUT with a PCB. Typical applications are contacting PCBs with very small structures and building up test sockets.

In these centers direct soldering of probes as well as using receptacles with larger diameters is not possible any more. Therefore, most fine pitch probes are used in floating movement that connect a DUT to a printed circuit board.

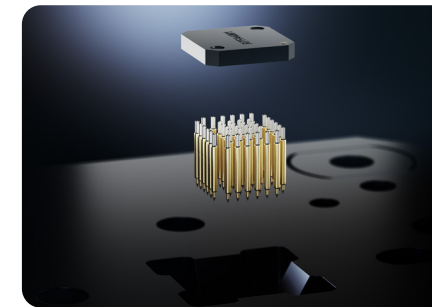
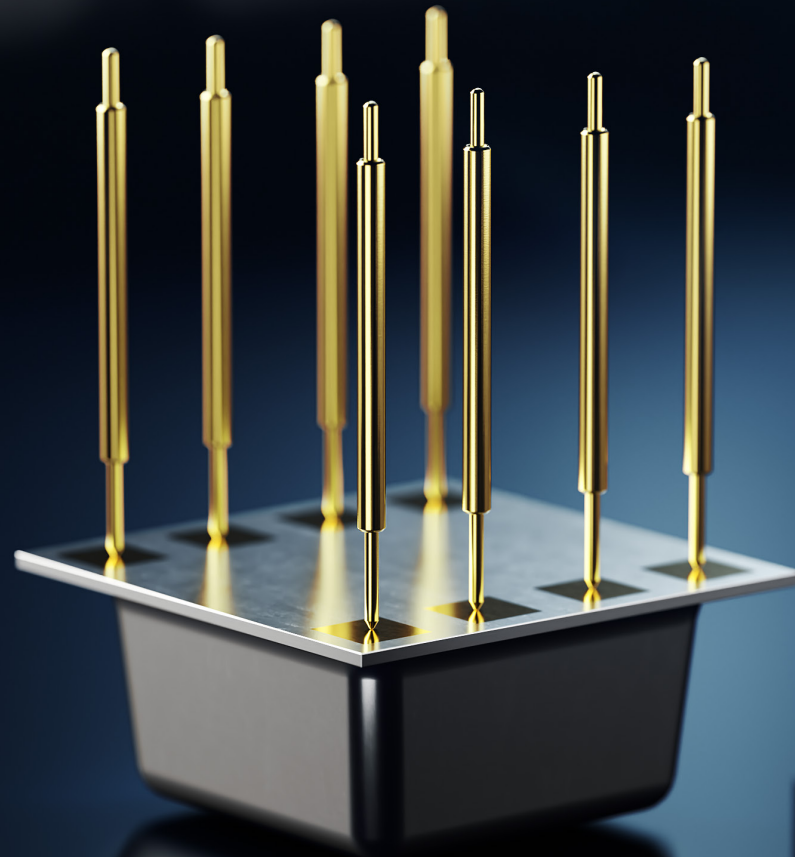
HIGH QUALITY SOLUTIONS DOWN TO A PITCH OF 120µM

FINE PITCH TESTING

Fine pitch testing in general

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 find application in areas such as 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. FEINMETALL offers highly precise engineered fine pitch probes that ensure a high lifetime, excellent quality and repeatability with the goal to advance the customers yield. We are able to offer fine pitch probes down to a pitch of 120µm to provide the solution of your needs.



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 broad range of options of these probes with excellent quality standards to secure your best testing results.



PCB testing

Testing micro PCBs is vital 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 are essential to 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.

FP110DF0329P007U006L047

Double plunger probe
one side fixed

Centers (mm/mil)	0.15 / 6
Current	0.25 A
R typ	<50 mOhm
Self Inductance	1.70 nH
Frequency at -1dB	<10 GHz
Temperature	-45°C...+120°C

Mechanical Specifications	
Preload (cN)	1.7
Spring Force (cN)	6
Nominal travel (mm)	0.4
Maximum travel (mm)	0.5

Materials and Plating	
Plungers	Palladium alloy, unplated
Barrel	Nickel, gold plated
Spring	Spring steel, gold plated

Drill hole recommendation (mm)	
FP110DF-L047	0.12 - 0.14

FP110DF-L047

Ø 0,11 mm
L= 4,7 mm
P1 = Ø0,07mm
P2 = Ø0,07mm



Order number: 1040994

FP260D0301B014G025L072

Double plunger probe

Centers (mm/mil)	0.35 / 14
Current	1.5 A
R typ	<100 mOhm
Self Inductance	2.07 nH
Frequency at -1dB	7.2 GHz
Temperature	-45°C...+120°C

Mechanical Specifications	
Preload (cN)	7
Spring Force (cN)	25
Nominal travel (mm)	0.8
Maximum travel (mm)	1.0

Materials and Plating	
Plungers	BeCu, gold plated
Barrel	Nickel, gold plated
Spring	Stainless steel, gold plated

Drill hole recommendation (mm)	
FP260D-L072	0.27 - 0.30

FP260D-L072

Ø 0.26 mm
L= 7.2 mm
P1 = Ø0.14mm
P2 = Ø0.14mm



Order number: 1023003

FP200D2901P012U014L037

Double plunger probe

Centers (mm/mil)	0.30 / 12
Current	0.7 A
R typ	<100 mOhm
Self Inductance	1.33 nH
Frequency at -1dB	35 GHz
Temperature	-45°C...+120°C

Mechanical Specifications	
Preload (cN)	9
Spring Force (cN)	14
Nominal travel (mm)	0.25
Maximum travel (mm)	0.35

Materials and Plating	
Plungers	Palladium alloy, unplated; BeCu, gold plated
Barrel	Nickel, gold plated
Spring	Stainless steel, gold plated

Drill hole recommendation (mm)	
FP200D-L037	0.21 - 0.23

FP200D-L037

Ø 0,20 mm
L= 3,7 mm
P1 = Ø0,10mm
P2 = Ø0,10mm



Order number: 1030191

FP280D0301B013G025L057

Double plunger probe

Centers (mm/mil)	0.38 / 15
Current	1.5 A
R typ	<75 mOhm
Self Inductance	1.90 nH
Frequency at -1dB	<7.3 GHz
Temperature	-45°C...+120°C

Mechanical Specifications	
Preload (cN)	6
Spring Force (cN)	25
Nominal travel (mm)	0.5
Maximum travel (mm)	0.8

Materials and Plating	
Plungers	BeCu, gold plated
Barrel	Bronze, gold plated
Spring	Spring steel, gold plated

Drill hole recommendation (mm)	
FP280D-L057	0.29 - 0.31

FP280D-L057

Ø 0,28 mm
L= 5,7 mm
P1 = Ø0,13mm
P2 = Ø0,13mm



Order number: 1031135

FP300D2901B016G019L032

Double plunger probe

Centers (mm/mil)	0.40 / 16
Current	1.4 A
R typ	<100 mOhm
Self Inductance	1.61 nH
Frequency at -1dB	13.6 GHz
Temperature	-45°C...+150°C

Mechanical Specifications	
Preload (cN)	3
Spring Force (cN)	25
Nominal travel (mm)	0.65
Maximum travel (mm)	0.80

Materials and Plating	
Plungers	Palladium alloy, unplated; BeCu, gold plated
Barrel	Nickel, gold plated
Spring	Stainless steel, gold plated

Drill hole recommendation (mm)	
FP300D-L032	0.31 - 0.33

FP300D-L032

Ø 0,30 mm
L= 3,2 mm
P1 = Ø0,16mm
P2 = Ø0,16mm

Order number: 1023004



FP480S18B034G050L158

Single plunger probe

Centers (mm/mil)	0.58 / 23
Current	1.0 A
R typ	<65 mOhm
Temperature	-45°C...+100°C

Mechanical Specifications	
Preload (cN)	15
Spring Force (cN)	50
Nominal travel (mm)	2.0
Maximum travel (mm)	2.3

Materials and Plating	
Plungers	BeCu, gold plated
Barrel	Bronze, gold plated
Spring	Spring steel, silver plated

Drill hole recommendation (mm)	
FP480S-L158	0.49 - 0.51

FP480S-L158

Ø 0.48 mm
L= 15.8 mm
P1 = Ø0.34mm

Order number: 1001400



FP380D2901P022U025L030

Double plunger probe

Centers (mm/mil)	0.48 / 19
Current	1.1 A
R typ	<100 mOhm
Self Inductance	0.81 nH
Frequency at -1dB	20 GHz
Temperature	-45°C...+120°C

Mechanical Specifications	
Preload (cN)	6
Spring Force (cN)	25
Nominal travel (mm)	0.4
Maximum travel (mm)	0.55

Materials and Plating	
Plungers	Palladium alloy, unplated; BeCu, gold plated
Barrel	Nickel, gold plated
Spring	Spring steel, gold plated

Drill hole recommendation (mm)	
FP380D-L030	0.39 - 0.41

FP380D-L030

Ø 0.38 mm
L= 3.0 mm
P1 = Ø0.22mm
P2 = Ø0.22mm

Order number: 1023006



FP570D2901B030G030L057

Double plunger probe

Centers (mm/mil)	0.70 / 28
Current	3.8 A
R typ	<5 mOhm
Self Inductance	1.14 nH
Frequency at -1dB	13.9 GHz
Temperature	-45°C...+200°C

Mechanical Specifications	
Preload (cN)	8
Spring Force (cN)	25
Nominal travel (mm)	0.4
Maximum travel (mm)	0.6

Materials and Plating	
Plungers	BeCu, gold plated
Barrel	Bronze, gold plated
Spring	Stainless steel, gold plated

Drill hole recommendation (mm)	
FP580D-L032	0.59 - 0.62

FP580D-L032

Ø 0,58 mm
L= 3,2 mm
P1 = Ø0.30mm
P2 = Ø0.30mm

Order number: 1128176



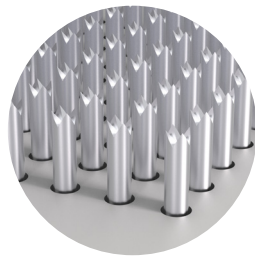
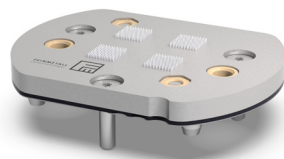
FEINPROBE PROBE® CARDS

FeinProbe® - The contact probe solution

FEINMETALL offers a variety of contacting solutions. For the semiconductor industry, our solutions reach from probe cards for frontend testing to contact probes for the backend final test. FeinProbe® is FEINMETALL WLCSP test solutions using contact probes as contact elements for the probe card. With FeinProbe® we combine our longstanding experience in manufacturing high end probe cards and contact probes. FEINMETALL offers comprehensive advice and project-specific contacting solutions to address the diverse needs of our customer. Our commitment is to maximize yield and providing low-wear contacting solutions, making us your go-to choice for wafer probe card excellence.

Advantages

- Short cycle manufacturing
- Compatible with various connectors
- Very easy end-user maintenance
- Supports up to 80 GHz for 5G and more
- Vast array of contact probes available



USED IN FEINPROBE®
PROBE CARDS

Specifications at a glance

Min. pitch of the DUT	Down to 150 µm
Capable temperature range	From -40°C to 150°C
Current carrying capability at RT	Up to 2800 mA
Contact force at rec. OD	From 4.5 cN to 18 cN
Bandwidth analog @ -1dB limit	30 GHz (80 GHz on request)



FEINMETALL

Contact Technologies



PASSION
FOR FINEST
TECHNOLOGY.

> FEINMETALL.COM

CONTACT

E-MOBILITY & BATTERY CONTACTING
battery@feinmetall.com

ELECTRONIC TESTING
electronic@feinmetall.com

FINE PITCH TESTING
finepitch@feinmetall.com

INTERFACE SOLUTIONS
interface@feinmetall.com

SEMICONDUCTOR TESTING PRODUCTS
semiconductor@feinmetall.com

WIRE HARNESS TESTING
wireharness@feinmetall.com