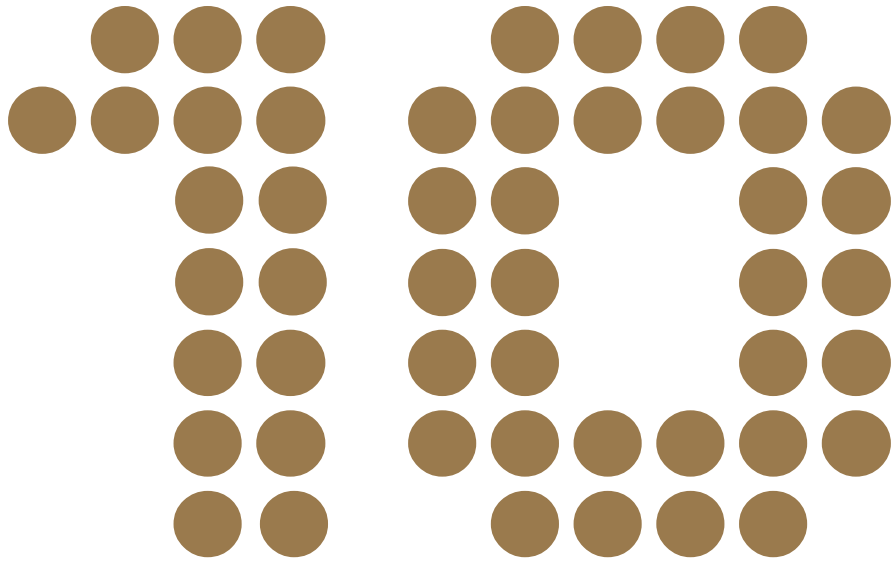
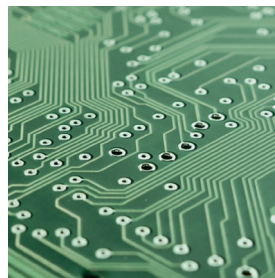
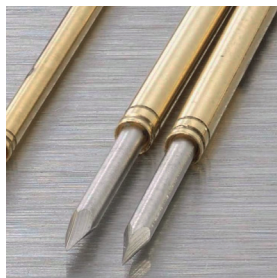


# PROGRESSIVE SERIES

FOR DIFFICULT CONTACTING CONDITIONS



# YEARS



**FEINMETALL**  
Contact Technologies



# PROGRESSIVE SERIES

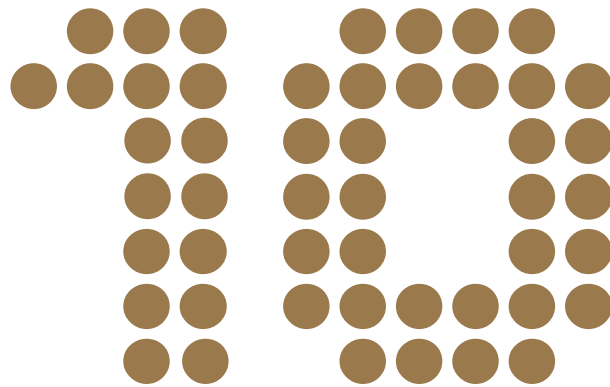
## Our approved solution - what do our customers say?

FEINMETALL offers a huge variety of different spring contact probes designed to meet a wide range of challenges.

However, there are significant problems when contacting lead-free solder pads, heavily contaminated or oxidized boards or OSP coated boards. The contaminants are difficult to penetrate and adhere to the contact probes. As a result, the electrical connection to the test object is affected or not established at all. In addition, the lifetime of the spring contact probes is reduced.

FEINMETALL already identified this problem more than 10 years ago and consequently developed the PROGRESSIVE SERIES. Therefore we help our customers to master these difficult test conditions.

## PROGRESSIVE SERIES



# YEARS

„By using the **PROGRESSIVE SERIES**, we've significantly increased our **first-pass yield**.“  
*Large OEM supplier*

„Before we became aware of the **PROGRESSIVE SERIES** from Feinmetall GmbH, we had major problems with the contacting of **dirty printed circuit boards**.“  
*Circuit board manufacturer*

„Due to the longer lifetime of the **PROGRESSIVE SERIES**, we were able to sustainably **reduce testing costs**.“  
*Engineer field test*

# PROGRESSIVE SERIES

## ICT and functional test - the challenges

The contacting of PCBs demands high standards of testing equipment and consequently also of the quality and design of suitable contact probes. A maximum first-pass yield and a long lifetime of the contact probes is your goal. We support you accordingly!

### Test items with difficult contacting conditions

- Lead-free solder and surfaces
- Pads or vias with heavy contamination or oxidation
- OSP-coated printed circuit boards
- SMD and THT circuit boards (tinned and untinned)

### Dirt and contamination

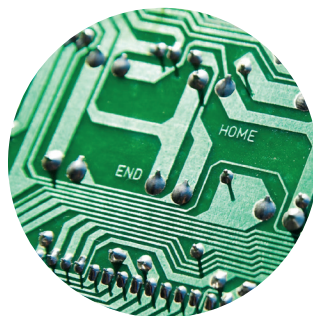
Contamination has different causes. In addition to dust and deposits, grease stains, fingerprints, oils and lubricating films, they are also caused by insufficiently netted paints and plastics. The most problematic contact problems are residues of fluxes, soldering pastes or adhesives as well as oxidation.



**lead-free**

### Lead-free soldering

The most serious disadvantage of lead-free soldering is the 10-30 Kelvin higher melting point. In addition, the material is highly aggressive towards metallic materials, so that tools or test equipment are decomposed faster and more strongly by direct contact with lead-free solder. Flux residues are also particularly viscous and adhere very strongly to contact probes.



### OSP – Organic Surface Protection

OSP is a transparent organic dissolution which is applied to the copper like clear lacquer. Although OSP is only 0.2 to 0.6 µm thin, it is significantly harder than conventional surface finishes. In addition, the OSP coating leads to contamination on the plunger tip and decomposes the gold coating.



### Empty or filled vias

Protective finishes or other fillings are a problem for reliable contacting of vias. Standard tips cannot cut through protective lacquers or sit on non-conductive material and thus prevent an electrical contact.

For these applications a change of the contact probes to **PROGRESSIVE SERIES** has proven itself for our customers!

# PROGRESSIVE SERIES

## The most important probes of the PROGRESSIVE SERIES

### F050

Probe 50 mil  
PROGRESSIVE SERIES

Center (mm/mil)	1,27 / 50
Current	3,0 A
R typical	20 mOhm
Temperature	-20°C...+80°C

### F075

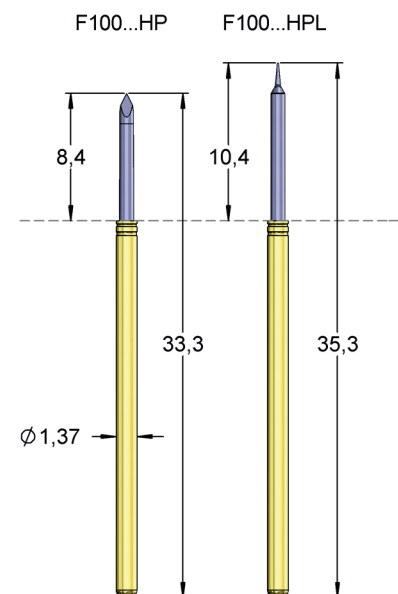
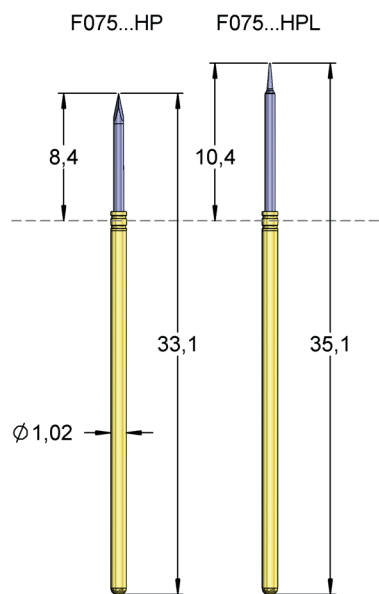
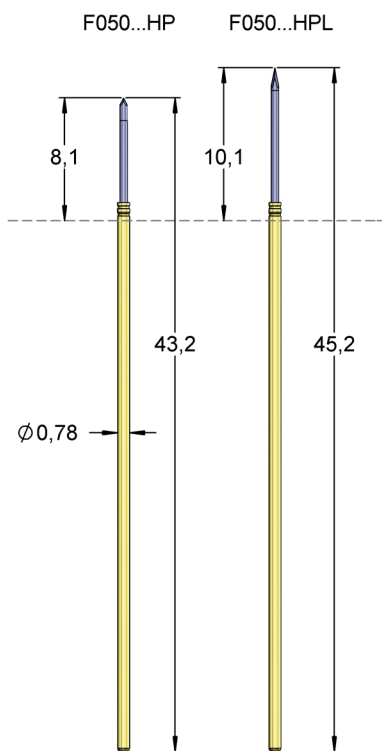
Probe 75 mil  
PROGRESSIVE SERIES

Center (mm/mil)	1,90 / 75
Current	4,0 A
R typical	40 mOhm
Temperature	-20°C...+80°C

### F100

Probe 100 mil  
PROGRESSIVE SERIES

Center (mm/mil)	2,54 / 100
Current	5,0 A
R typical	40 mOhm
Temperature	-20°C...+80°C



#### Spring forces (cN ±20%)

Version	Preload	Nominal
HP	80	130
HP	125	200

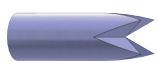
#### Spring forces (cN ±20%)

Version	Preload	Nominal
HP (L)	120	200
HP (L)	130	250

#### Spring forces (cN ±20%)

Version	Preload	Nominal
HP	70	100
HP (L)	75	130
HP	100	150
HP (L)	130	200
HP (L)	200	300

## PROGRESSIVE SERIES tip styles



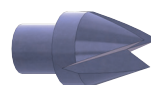
**Tip style 21**  
especially suitable  
for pads with  
soldering tin



**Tip style 32**  
especially suitable  
for pads with  
soldering tin



**Tip style 33**  
especially suitable  
for pads with  
solder and  
open vias



**Tip style 35**  
especially suitable  
for pads with  
soldering tin



**Tip style 43**  
especially suitable  
for open or filled  
vias



**Tip style 62**  
especially suitable  
for pads with  
solder and  
open vias

You can find further tip styles and variants also for other centers on our homepage [www.feinmetall.de](http://www.feinmetall.de)

# PROGRESSIVE SERIES

## Difficult conditions, smart solution

With the PROGRESSIVE SERIES, FEINMETALL has solved the contacting problems during the in-circuit and functional test under the most difficult conditions.

This was achieved by the three unique factors of the PROGRESSIVE SERIES. The selection of the optimum coating, tip type and spring force depends on the customer's specific test requirements. A detailed overview can be found in our PCB test catalogue or on our homepage [www.feinmetall.com](http://www.feinmetall.com). We are also pleased to advise you personally!

### 1. Aggressiveness of the probe tip

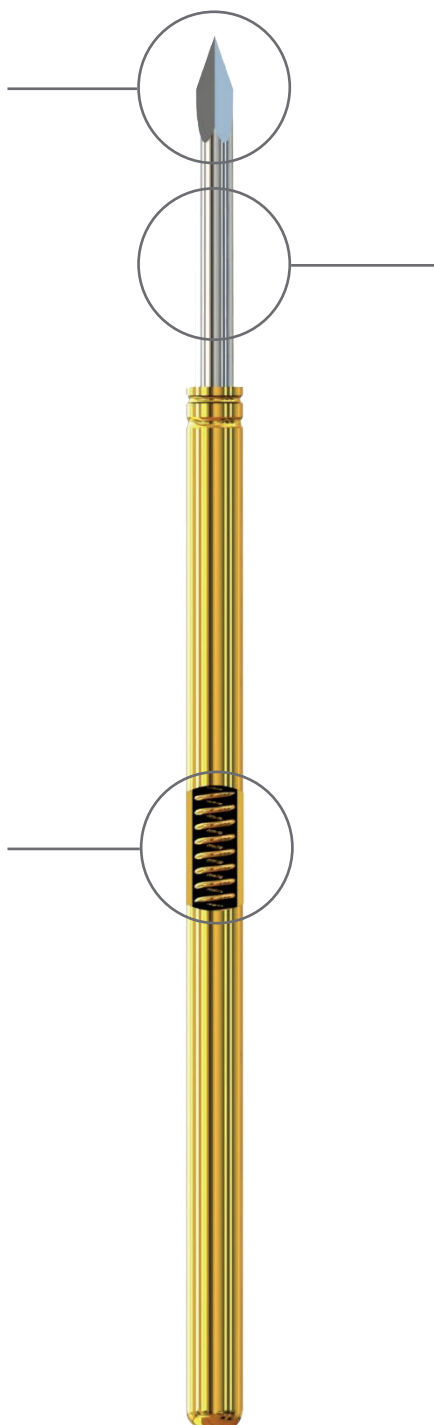
#### Optimum penetration of contaminations and oxide layers

In order to reliably penetrate heavy contaminations and viscous layers, a contact probe must have a highly aggressive tip. So, the choice of tip style is essential. FEINMETALL offers a variety of different aggressive tip styles for applications with difficult contacting conditions.

### 3. Higher preload

#### Optimized force characteristic during contacting

Due to an increased preload of the spring, a higher spring force is realized immediately when contacting the test item. The nominal spring force at nominal travel remains unchanged. The pressure load on the test item does not change, but contaminations are penetrated more effectively.

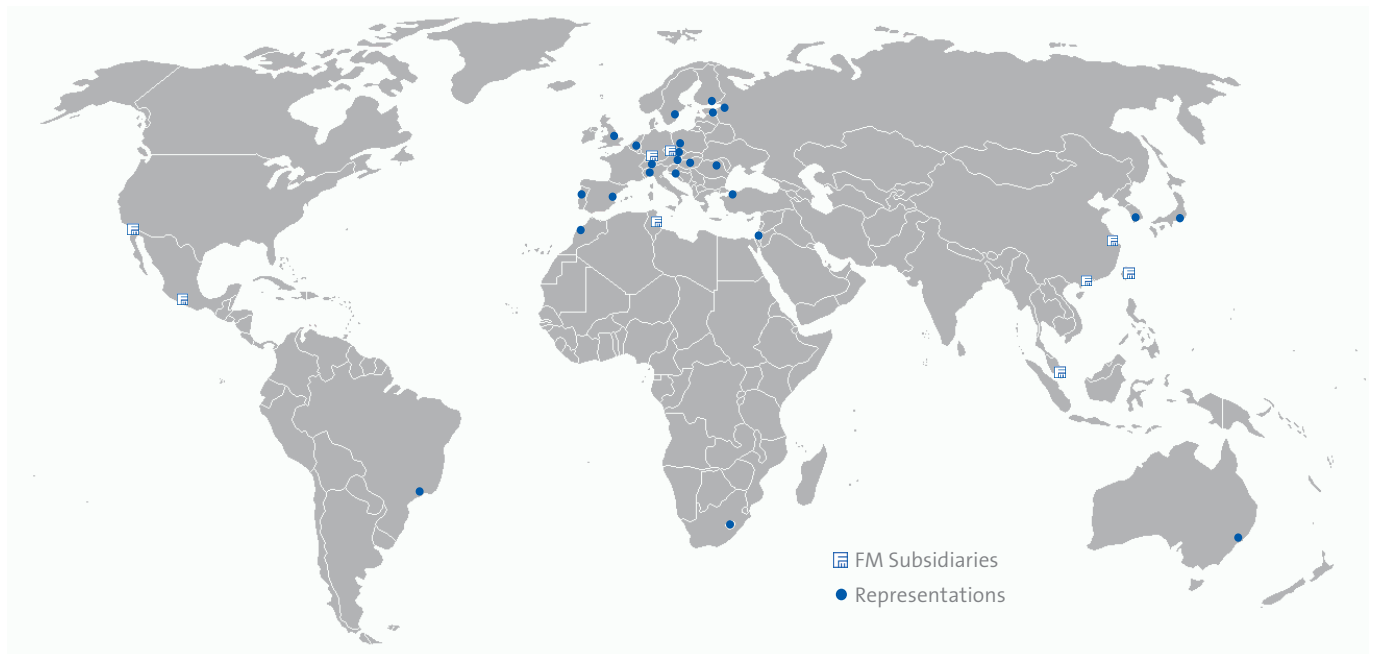



### 2. Functional coating


#### Reduced contamination of the contact probes

The unique, special PROGRESSIVE coating of the tips has a considerably lower contamination sensitivity compared to conventional gold plating. At the same time, the hardness is 3 times higher. This results in a significantly longer lifetime of the probes even with heavily contaminated contact surfaces.

# WORLDWIDE PRESENT FOR YOU





 FEINMETALL GMBH | HERRENBERG, GERMANY  
(+49) 7032 2001-0 | [info@feinmetall.com](mailto:info@feinmetall.com)

 FEINMETALL DE MEXICO | MEXICO  
(+52) 55 2591 0629 | [info.mexico@feinmetall.com](mailto:info.mexico@feinmetall.com)


 FEINMETALL SHANGHAI | CHINA  
(+86) 21 2898 6848 | [info@cn.feinmetall.com](mailto:info@cn.feinmetall.com)

FEINMETALL-OCT | HSINCHU COUNTY, TAIWAN  
(+886) 3 560 15 66 | [info@tw.feinmetall.com](mailto:info@tw.feinmetall.com)

 FEINMETALL CZ | CZECH REPUBLIC  
(+42) 0491 470-511 | [info@cz.feinmetall.com](mailto:info@cz.feinmetall.com)

 FEINMETALL USA LLC | SAN JOSE, USA  
(+1) 408 432 7500 | [info.us@feinmetall.com](mailto:info.us@feinmetall.com)

 FEINMETALL SINGAPORE PTE LTD | SINGAPORE  
(+65) 6316 4544 | [info@sg.feinmetall.com](mailto:info@sg.feinmetall.com)

 FEINMETALL TUNESIE | TUNISIA  
(+216) 23 281532 | [info@tn.feinmetall.com](mailto:info@tn.feinmetall.com)

You have test demands with specific requirements and you need a tailor-made solution?

In our catalogues you find contact probes for:

- Board test
- Wire harness test
- Limited space
- High current and coaxial applications



MARKETING086



**FEINMETALL**  
Contact Technologies

[www.feinmetall.com](http://www.feinmetall.com)

