PTR

A Phoenix Mecano Company

Test Probes

Our performance for **your success**

Areas of operation

- PCB terminal blocks and multi-connector systems
- DIN rail terminal blocks
- Test probes for PCB and cable test

Field of activities

PTR is responding to the globalisation of markets with an expanded distribution network. In over 50 countries worldwide, qualified personnel ensure that our products and services are always available to customers.

Introduction

A Phoenix Mecano Company

PTR has always produced quality. Since 1979, the name of PTR has stood for excellence and innovation in the field of terminal and testing technology. Thanks to our steadily expanding product portfolio, over the years we have acquired a significant share of the worldwide market for electromechanical components. Our merger with the Swiss firm of Phoenix Mecano in 1989 strengthened our worldwide presence.

For our customers, the excellent functionality, efficiency, precision and reliability of our products are the most important advantages. In addition, we set international standards by using German engineering, high-quality materials, flexible production processes and intelligent logistics. As a member of the Phoenix Mecano group, which operates worldwide, and through our other distribution partners, PTR test probes are always available in many countries.

Our customers use PTR test probes for a wide range of applications, including telecommunications, medical technology, aerospace technology and the automotive industry.

A company which offers first-class products and services cannot leave anything to chance, so the use of modern quality management systems is very important. This is why PTR implemented certification according to EN ISO 9001, and also according to TS 16949 in the automotive sector.

We believe that a successful enterprise must also demonstrate social responsibility. Consequently environmental responsibility is one of the cornerstones of our corporate philosophy, and we document this with certification according to EN ISO 14001. Of course, we also comply with all relevant EU directives, for example EU-RoHS (2002/95/EC) and REACH (1907/2006/EC) in their current versions.

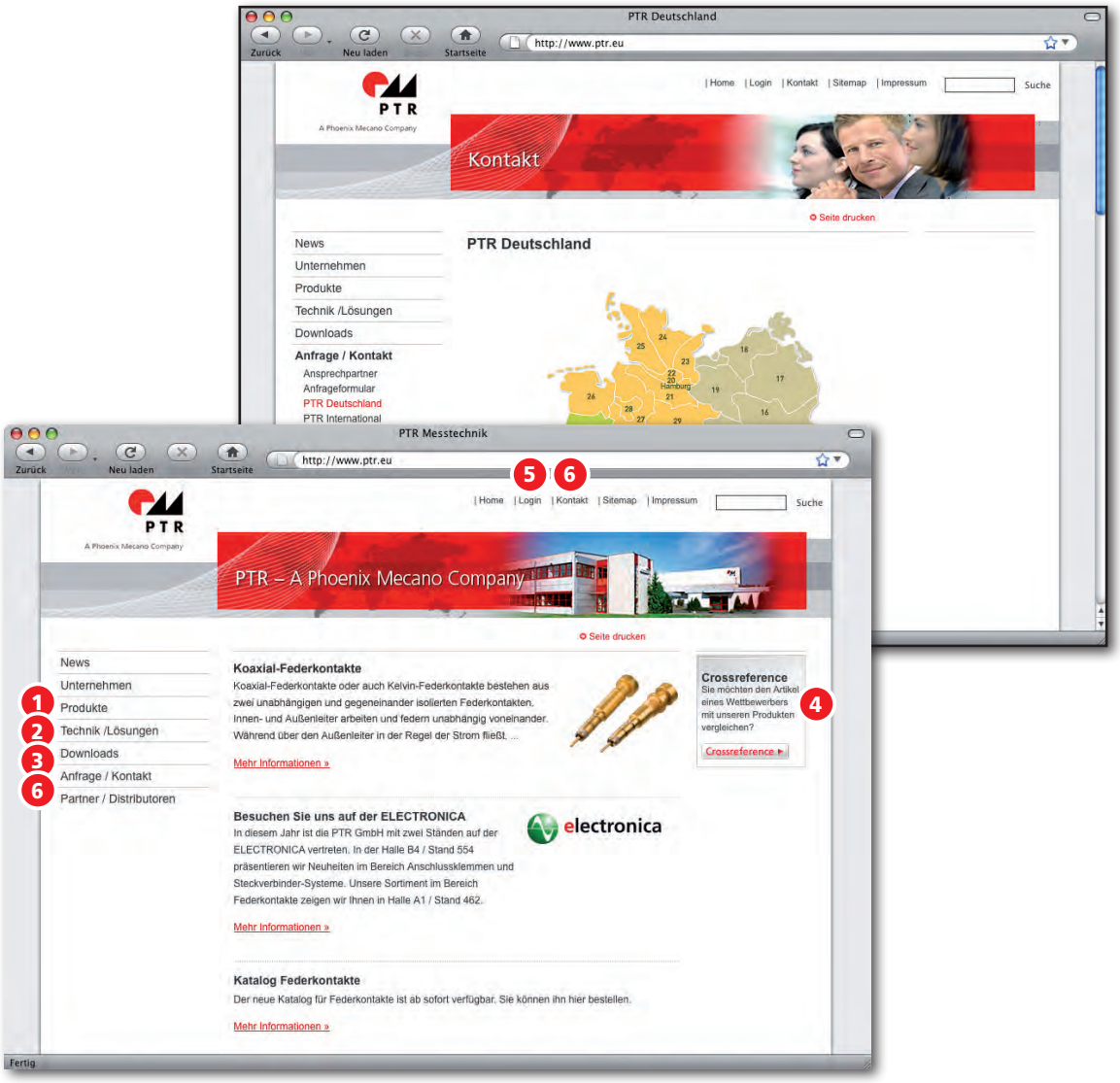
PTR offers its customers a wide range of value-added products and services in the test probe sector. In addition to the standard range, we provide customised solutions including connectors and interfaces which are completely assembled with test probes and can be supplied on request in blister belts or with laser marking. We are happy to work closely with our customers and to create individual products for them.

All the information in this catalogue was compiled to the best of our knowledge and was correct at the time of printing. For the latest information, please visit our website at www.ptr.eu.

Content

Content

www.ptr.eu



1 Products
- Product search with individual search criteria
- Product data sheets with technical drawings
- PDF output
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- Terminal blocks
- DIN rail terminal blocks
- Test probes

2 Technology/Solutions
- Background knowledge and more detailed information on our products

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Phoenix Mecano AG

The Group Phoenix Mecano is a global player in the enclosures and industrial components segments, has a streamlined operating structure and is a leader in many markets. Geared towards the professional and cost-effective manufacture of niche products, it helps to ensure the smooth operation of processes and connections in the machine industry and industrial electronics. Its products are used in the mechanical engineering, measurement and control technology, alternative energy, medical technology, aerospace technology and home and hospital care sectors, amongst others.

Phoenix Mecano Group

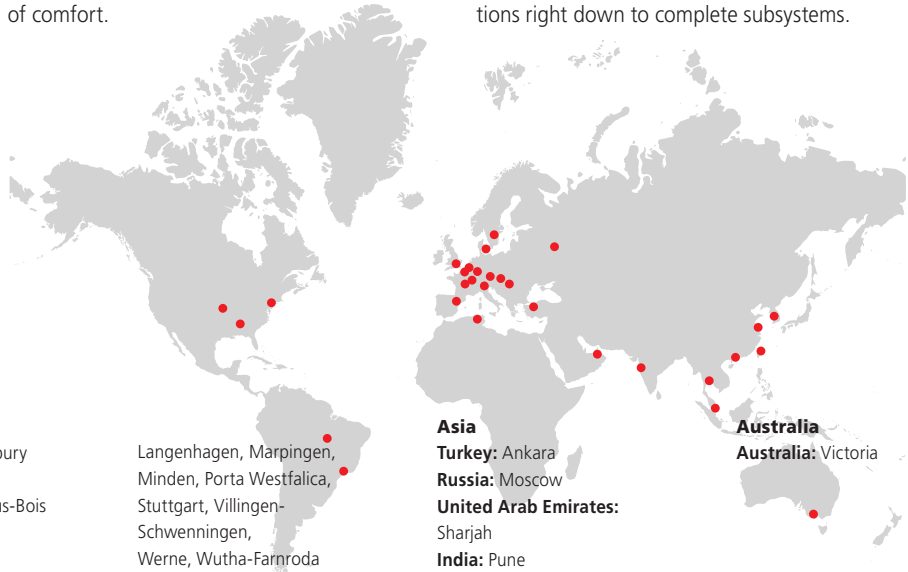
- Gross sales approx. 500 million EUR
- Approx. 5,500 employees

The numbers relate to 2010.
You can find current figures on our Website:
www.phoenix-mecano.com

Enclosures
Standardised and customised enclosures made of aluminium, plastic and glass-fibre reinforced polyester and stainless steel, machine control panels and suspension systems protect sensitive electrical equipment and electronics in mechanical engineering and measurement and control technology applications. High-quality sandwich keyboards offer a reliable human/machine interface, even under extreme conditions.

Mechanical Components
Aluminium profiles, pipe connection systems, linear drives and conveyor components enable sophisticated systems for use in machine and equipment construction. Reliable, high-performance linear actuators and drive units for use in the home and care sector offer users a high level of comfort.

ELCOM/EMS
Intelligent concepts provide solutions for increasingly complex tasks associated with coding switches, inductive components and plug connectors, backplanes, transformers and power supply systems, circuit board equipment and the development of customised electronic applications right down to complete subsystems.



Phoenix Mecano Group locations around the world

North | South America
USA:
Springfield, Ohio
Shannon, Mississippi
Frederick, Maryland
Brazil:
Manaus, São Paulo

Europe | Africa
Great Britain: Aylesbury
Spain: Zaragoza
France: Fontenay-sous-Bois
Benelux:
Deinze, Belgium
Doetinchem, Netherlands
Scandinavia:
Odense, Denmark
Ingelstad, Sweden
Germany:
Baiersdorf, Bermatingen, Bünde, Burscheid, Eberswalde, Grävenwiesbach, Kirchlengern, Langenhagen, Marpingen, Minden, Porta Westfalica, Stuttgart, Villingen-Schwenningen, Werne, Wutha-Farnroda
Switzerland: Stein am Rhein
Tunisia:
Ben Arous, Borj-Cedria, Djebel El Quest-Zaghouan
Italy: Inzago
Austria: Vienna
Hungary: Kecskemét
Romania: Sibiu

Asia
Turkey: Ankara
Russia: Moscow
United Arab Emirates:
Sharjah
India: Pune
Thailand: Bangkok
Singapore: Singapore
People's Republic of China:
Shenzhen, Shanghai
Taiwan: Taipei
South Korea: Seoul

Australia
Australia: Victoria

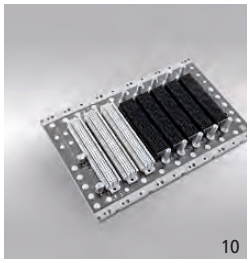
Strong together – Products manufactured by the corporate group

BOPLA

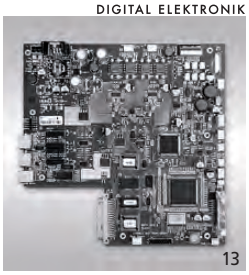
DEWERT

DATATEL

HARTMANN ELEKTRONIK



PHOENIX MECANO DIGITAL ELEKTRONIK



KUNDISCH

OKIN

GÖTZ-UDO HARTMANN

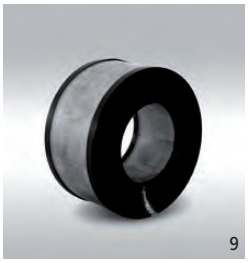
WIENER

PTR

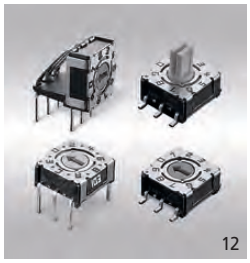
ROSE

RK ROSE+KRIEGER

LOHSE



HARTMANN



1) High-quality aluminium-profile technology used in a wide variety of applications

2) Membrane keyboard with improved surface feel and also with 2D lighting. Used in commercial vehicle service keyboards, tool operation systems and the catering industry

3) Explosion-proof push-button station for applications in chemical and petrochemical environments

4) Single drive including control system with variable-voltage switching power supply for worldwide use

5) Ultra-compact double drive for adjustment of seating and reclining furniture

6) Linear units and electric cylinders cover the many and varied demands associated with automation: control, adjustment, positioning or uniform operation

7) Toroidal transformer for solar inverter. Precision windings for maximum efficiency and unbeatable quality

8) High-performance filter choke for solar inverter applications, featuring high gain and frequency stability

9) Production of toroidal tape-wound, air gap and split-tape cores made of high-permeability silicon-iron alloys

10) VPX-backplane for serial high-speed transmission at up to 5 Gbit / s (PCI Express / SATA / USB 3.0 / Rapid IO / USB 3.0 / 10 Gbit Ethernet)

11) Universal plug-in card for control, measurement and supervision of power supplies via USB and Ethernet

12) Ultra-small rotary coding switches are used in a variety of ever-smaller electrical engineering applications

13) This assembly is representative of a whole range of controller boards for high-precision analysis technology in the fields of pharmaceuticals, biotechnology, life science, chemicals and environmental analysis. These functional units are used for the control and monitoring of the system sensors and microdosing units

14) Spring contacts in plastic frames for use in interface technology and as battery-charging contacts

Useful information on test probes

Test probes
Test probes are used for the electrical testing of PCBs, components and wiring fields. When employed in special test modules, the probes can be used to test connector-cable systems. The test probes can also be used in control engineering units or as a charging contact.

Purpose/Design/Materials
See illustration 1 for details of the typical design of the different function principles of PTR test probes.

Barrels
Barrels are made of bronze, brass or nickel silver. They are manufactured by either deep-drawing or milling tubing or solid rods. A gold plating ensures excellent contacting characteristics. A barrier layer provides very good protection against corrosion.

Plungers
Plungers are manufactured of hardened fine-grained steel for use in heavy-duty operating time situations. The emphasis is on tips with extra penetration, for example pointed tips. Aged copper-beryllium (CuBe) is the material used for the plungers when especially high demands are made of electrical conductivity for long-term constancy. With regard to environmental aspects, these are taken care of by the 100% wet-processing of the beryllium and by the coating on the plungers. Test probes with CuBe plungers are suitable for measurement tasks in the case of potential difference and for high-voltage applications. The brass plunger design with equally good conductivity is suitable for low-wear applications, e.g. charging contacts with very short travel and non-aggressive tip styles.

Alternatively, the plungers are fitted with different improvement coatings which, in addition to the electrical conducting and contact characteristics, are intended to satisfy specific requirements in respect of abrasion resistance and corrosion protection.

Hard gold
Hard gold has a passive surface, so it is an ideal electrical contact partner with very good chemical resistance. The special gold alloy, with a micro hardness of up to 400 HV, is much harder than pure gold, but there are limits with regard to wear behaviour. The abrasion behaviour can be influenced positively if the conditions of use are optimised, for example by the avoidance of radial movements.

Rhodium
Rhodium is one of the platinum metals. A very high level of wear resistance is achieved because of the very high degree of hardness of up to 1000 HV. However, because of the stored oxygen, a higher level of layer brittleness must be expected. This problem can be reduced by means of a special layer build-up and reduced layer thicknesses. However, rhodium plating is unsuitable when heavy impact loads are involved. If the brittle and very thin rhodium layer is damaged, this may have a negative effect on the initially good electrical contact characteristics.

Nickel
A distinction must be made between galvanically deposited nickel and chemical nickel (deposited without the use of electricity).

Galvanic nickel
Galvanic nickel is used as an intermediate layer underneath the respective surface layer. The aim is to prevent material transfer between the base material and the surface layer, and also corrosion.

For barrels and receptacles, a high level of ductility for good formability with very good adhesion of the layers is achieved by means of suitable settings for the galvanic deposition bath.

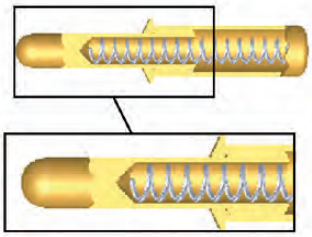
Chemical nickel (electroless nickel plating)
Chemical nickel is distinguished by even layer deposition with excellent contour accuracy, which is especially advantageous for the function of pointed tips and sharp-edged tip styles. This nickel-plating has a micro hardness of approx. 600 HV, which can, as an option, be increased to 1000 HV and more by means of subsequent heat treatment. This is accompanied by very good wear resistance. Maximum corrosion resistance is achieved by the intercalation of phosphorus. However, the resulting inactive surface does not result in such good contacts as those of gold or rhodium.

Springs
For the most part, springs are manufactured of spring steel wire of the maximum strength category with a special surface finish. The working temperature range for these springs between -30°C and +120°C also determines the operating temperature range for the complete spring contact probes. High-strength stainless steel wire is used with higher temperatures up to +250°C and when increased demands are made of corrosion protection. However, with this wire, it is not possible to achieve such high strength or spring force values as with spring steel wire.

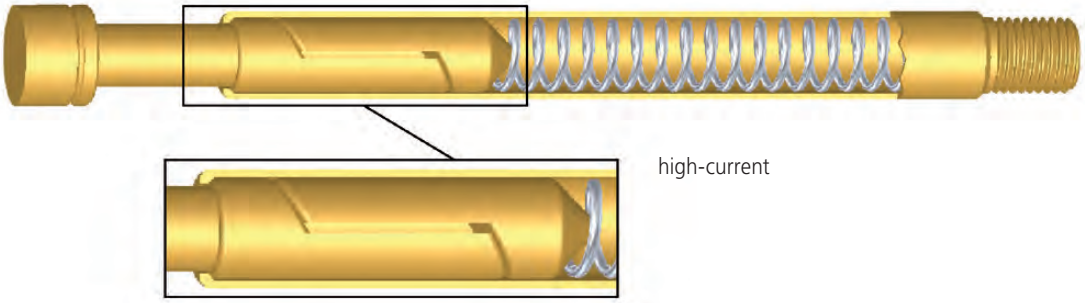
Normally, gold is used as a surface plating because it reduces wear and improves the contact characteristics. The coating is applied in such a way that the structural characteristics of the high-strength spring material are affected as little as possible. In special cases, the springs are silver-coated (improved conductivity) or stainless steel springs are not given an additional coating.

The rated spring force of the spring contact probes refers to the working travel, which, as a rule, is 4/5ths of the maximum permitted plunger stroke travel.

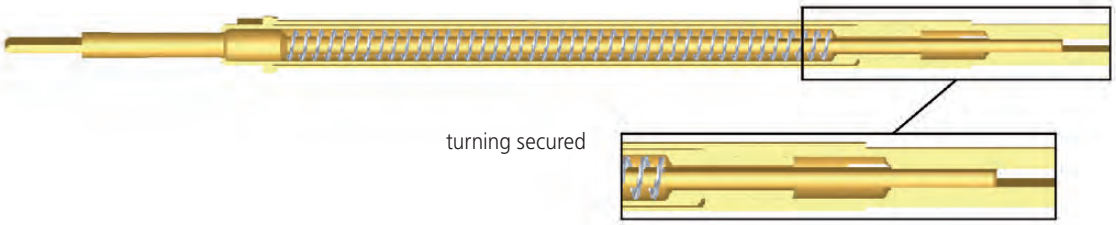
Test probes design



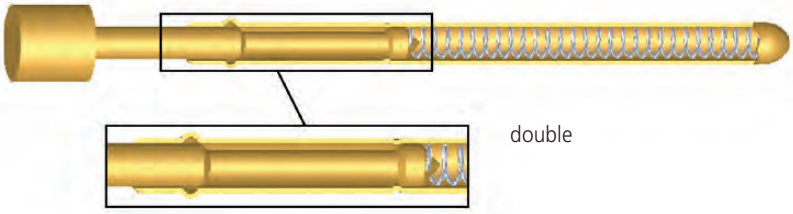
hollow plunger



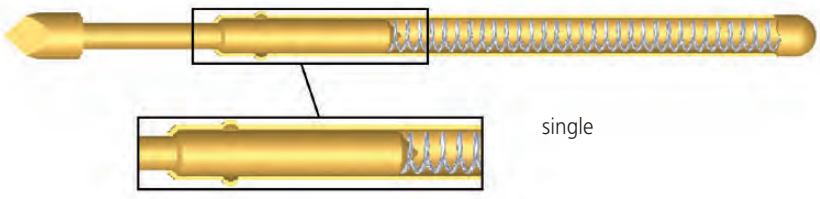
high-current



turning secured



double



single

Illu. 1: Test probes and plunger guide

Useful information on test probes

Receptacles

Receptacles are fitted firmly in the relevant probe location boards in order to permit the replacement of the spring contacts without wiring work when the limit to the operating life (-> which see) is reached. Various receptacle types are available for the wiring in the adapter (illustration 1). Bronze, nickel silver or brass are used as the base material. Gold plating ensures good electrical properties, with nickel underneath for corrosion protection.

Assembly holes

In order to achieve an optimal fit of the receptacles in the probe location board, the assembly holes must be drilled very carefully. The drill diameters listed in the data sheets for the individual series are the values based on our experience. These guideline values are dependent on the following conditions:

- use of hard metal drills
- rpm of the drill tool 26,000 … 35,000 rpm
- advance 0.6 … 0.8 m/min
- material as described in the data sheet
- probe location board thickness 10.0 mm
- drilling under vacuum swarf removal device

Deviations from these influencing variables may result in other drill diameters. Trial drillings are recommended in every case.

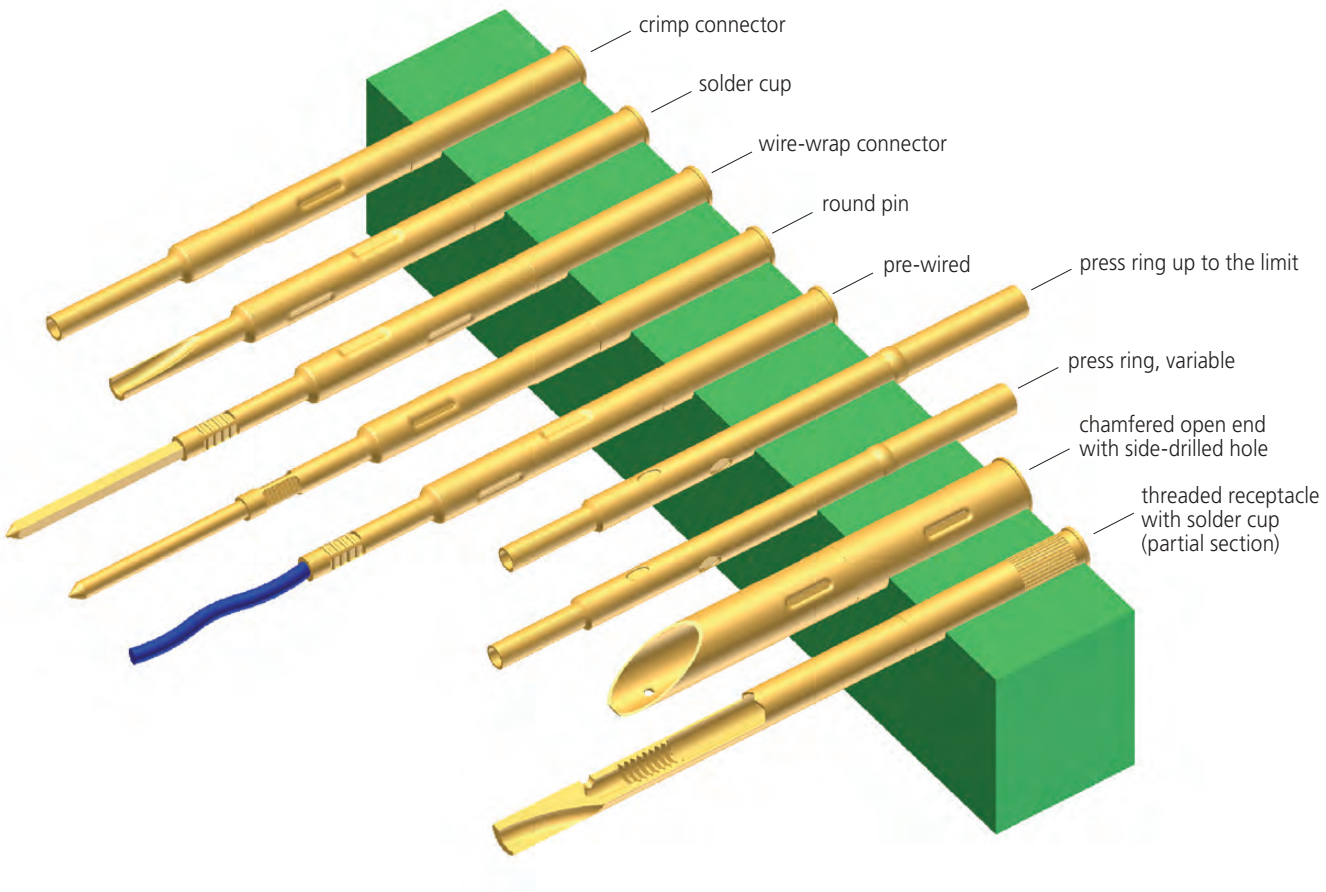
Quality and operating life

When in use, test probes are subjected to high demands in respect of function and operating life. From development to dispatch, the manufacture of PTR test probes takes place in accordance with optimised procedures. A quality assurance system according to EN 29001/DIN ISO 9001 guarantees process security. Tests are carried out by means of load change tests in order to optimise materials and the constructional design of test probes. Functional capability and operating life are subjected to continuous monitoring in our reliability testing facilities.

As a rule, the maximum operating life of a test probe depends on the following factors:

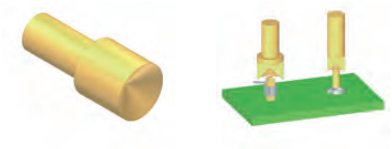
- as low a spring force as possible in relation to the spring diameter and stroke travel
- correct axial load, avoidance of shear forces
- maintenance of the recommended working travel
- precise and gentle insertion of the test probe into the receptacle
- avoidance of harmful external influences e.g. soiling, high moisture content of aggressive media, high temperature load
- contacting only in current-free or zero-potential state
- as low a current load as possible

Of course, the level of actual durability also depends on the requirements of each user, e.g. limit values for continuity resistances, degree of soiling, or operating characteristics.

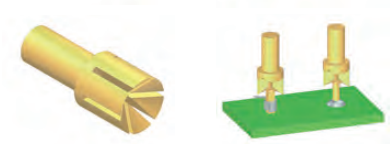


Illu. 1: Types of Receptacles

Tip styles



Form A
90° Concave
For connector pins, wire-wrap pins and straight / curved terminals. To be used under clean conditions because contamination can cause failures.



Form A6
90° Concave, self-cleaning
For connector pins, wire-wrap pins and straight / curved terminals. The head has special grooves that protect the contact area from contamination.

Form B
30° pointed tip
For strip conductors, throughplating, soldering points and test pads.

Form BST
Steel Needle
A sharp steel needle with a long implement life for reliable penetration of flux and dirt on uncleaned printed boards or component groups and for SMD contacts.

Form BST3
Tri-Needle
Three-needle form of very aggressive character for reliable penetration of flux and dirt on uncleaned printed circuit boards.

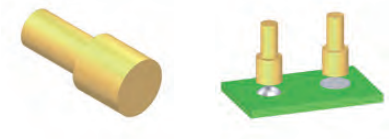
Form C
Serrated
A universal head for straight or curved component leads, wire-wrap posts and connector pins.

Form CS
Serrated with overlapping plastic insulation
Presence test of component legs. The overlapping plastic insulation avoids electrical contact when connector pins are missing.

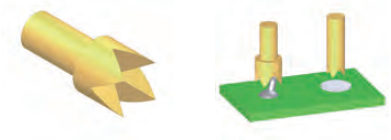
Form D
Round Head
Used to test circuits or gold pads. Do not leave marks on the test area. Also used for testing sockets in connectors.

Form E
90° Convex
Plated-through holes, pads and lands or sockets in connectors.

Form EB
Press Fitted Steel Needle
Very aggressive and robust steel needle. Especially designed for testing contaminated areas.



Form F
Flat head
Especially for gold pads and convex areas, cleaned contact points. Avoids marks on the contact area.

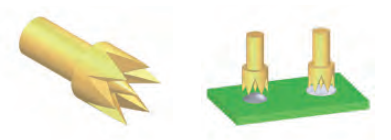


Form G
Four-point crown
For component leads, soldering points and test pads, when there is no strong contamination.

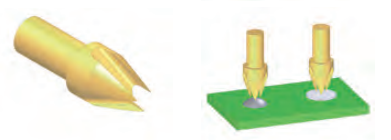
Form H
Pyramid
Plated-through holes and pads. The sharp edges cut through oxides and contaminants.

Form K
Star
See tip style "H", but with higher contact penetration. Used also for rotating test probes. It cuts through oxides and contaminants.

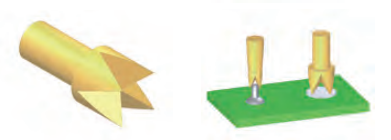
Form M
Tulip with overlapping middle edge
The combination of crown and central tip ensures contact reliability at almost all test points. Overlapping middle edge is fixing the head.



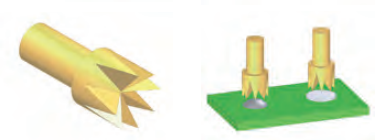
Form M1
Tulip
The combination of crown and central tip ensures contact reliability at almost all test points.



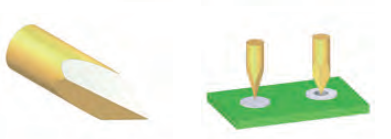
Form N
Three point crown - self-cleaning
Designed to test contaminated printed circuit boards. The special cut of the tip allows contaminates to fall out easily.



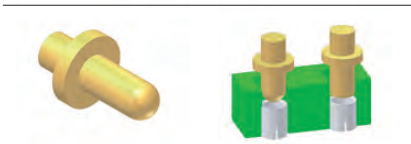
Form Q
Four-point crown - self-cleaning
Designed to test contaminated printed circuit boards. The special cut of the tip allows contaminates to fall out easily.



Form Q8
Eight-point crow, self-cleaning
Designed to test strong contaminated component legs. High centering efficiency.



Form V
Chisel
Tip with extra penetration of open and closed throughplating, and for level contact surfaces. Penetrates flux and dirt.



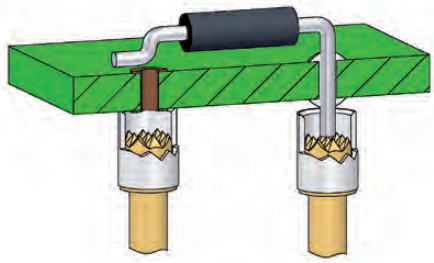
Form D1xxx
Round head
Designed for position test of sockets in connectors.

Form Y
Spade
For application with test probes in connector systems.

Component check

Component check in the in-circuit test

Series 1025 with tip style C2S is designed for the component check in the in-circuit test. The tip of the spring contact is fitted with a plastic insulator; this prevents electrical contact if the component is not present or is incorrectly positioned.



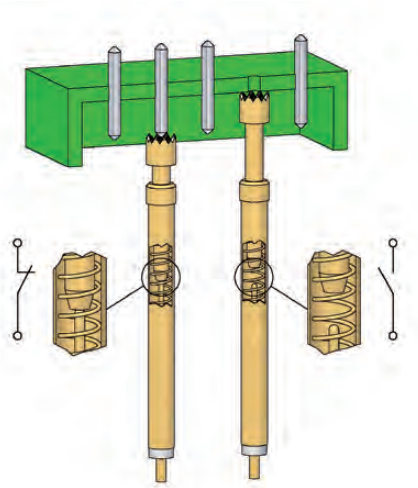
Component check with switching test probe

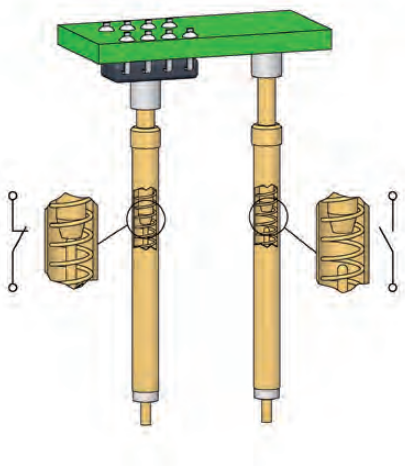
As a rule, PTR switching test probes operate on the "closer principle". Switching test probes can be seen as "axial micro-switches" which, according to a defined switching travel, create an electrically conducting connection between the inner conductor and the outer probe of the switching test probe.

In addition to a large number of metal tips, PTR also offers versions with insulated tips. These can be supplied as a full-plastic tip and, for improved wear resistance, as a metal tip insulated against the plunger. PTR also offers a so-called "neutral switching test probe" in the version with a plastic tip and hard-wearing protective metal ring.

Application/features:

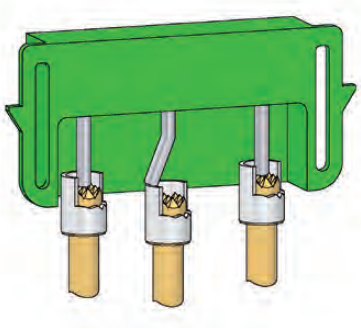
- check on presence of components or connectors, principally for the cable test, e.g. to check secondary locking
- potential-free contacting by means of the above-mentioned insulating tip versions
- the extension height on special screwed versions is variably height-adjustable by 5.0 mm.





Checking for bent pins

In order to recognise bent plug pins, special tips are fitted with insulating caps which prevent electrical contact with the tip and generate an error message.
The dimensions and shape of the insulation cap and tip plunger are designed to match the geometry of the relevant connector.

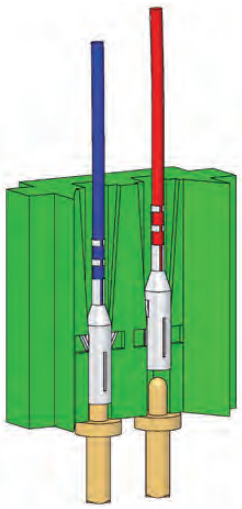


Position test/push-back check

Test probes for the position test check the correct position of contacting elements in connectors (passive push-back test).

In contrast to this, during the active push-back test a high defined force is applied to the contacting elements by means of a push-back test probe. This provides a mechanical check on the locking of the contacting elements in the connector and, in the case of an error, evaluates an electrical interruption.

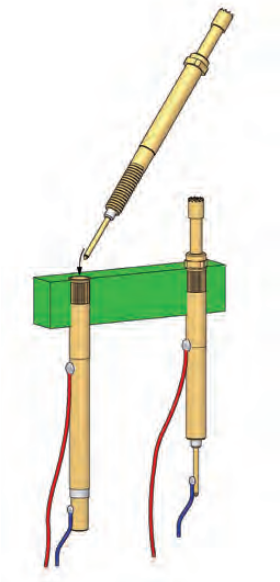
The tips are matched to the relevant connector geometry. PTR offers a wide range of different shapes and dimensions.



Switching test probes with easy-replacement system

The PTR easy-replacement system for switching test probes makes it possible to replace the test probe without releasing the wiring. In this case, the wiring takes place directly on the insulated connection piece of the easy-replacement threaded receptacle which remains in the test module during replacement of the test probe.

The test probe and receptacle are fitted with a matching sprung plug-in system which creates secure, electrical contacting. At the same time, this makes possible faster replacement of the test probe, which contributes to a reduction in servicing times.



Lateral play

Test point accuracy

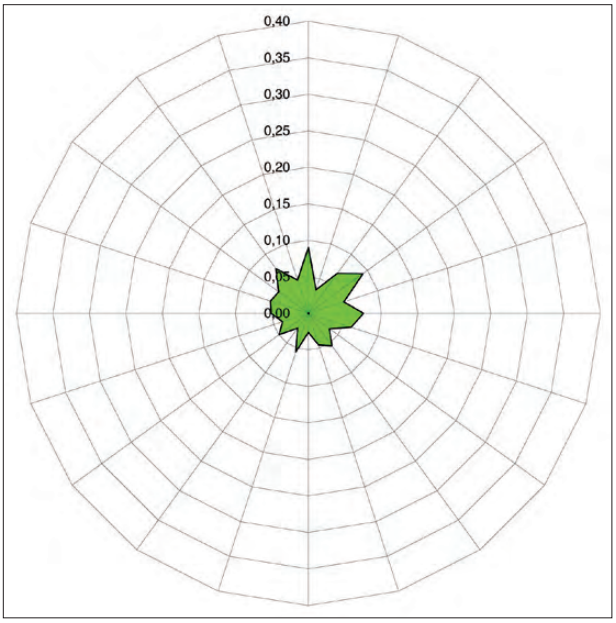
The test point accuracy which can be achieved is determined by the tolerances in the adapter (play, displacement of the receptacle drill holes), the deviations of the test points and the lateral play of a fitted spring contact probe. This occurs as a result of the play between the plunger and receptacle required for the plunger movement and also of manufacturing tolerances. The amount of lateral play at the plunger tip is also dependent on the length of the plunger in relation to the effective plunger guide length.

Shear forces which deflect the spring contact probe during use also affect the amount of lateral play.

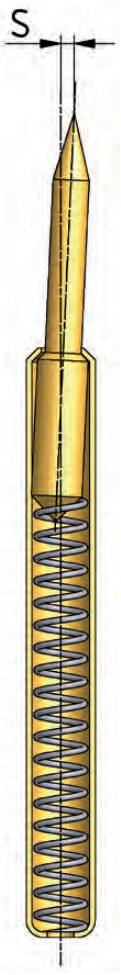
Optimal pinpointing is achieved by a combination of spring contact probes with the shortest possible travel, double plunger guides and minimal adapter tolerance, or even the use of plate guides. Depending on the test probe series which is being used, the test point accuracy – which is dependent on the amount of lateral play – can be reduced to less than 0.8 mm and down to 0.1 mm.

Cable test

Specially for the cable test, PTR offers a wide range of switching test probes, test probes with thread and push-back test probes with a large number of different tip styles and dimensions.



Test point accuracy (mm)



Innovative products

PTR offers a wide range of test probes. Switching test probes and Screwing test probes with threads for the cable test, test probes for PCB test (ICT and FT), battery contacts and interface pins, high-current test probes for run-in or burn-in tests, pneumatic test probes for functional tests. For every application we will find the suitable solution, that's what we are strong for.

Switching test probes

Pneumatic test probes

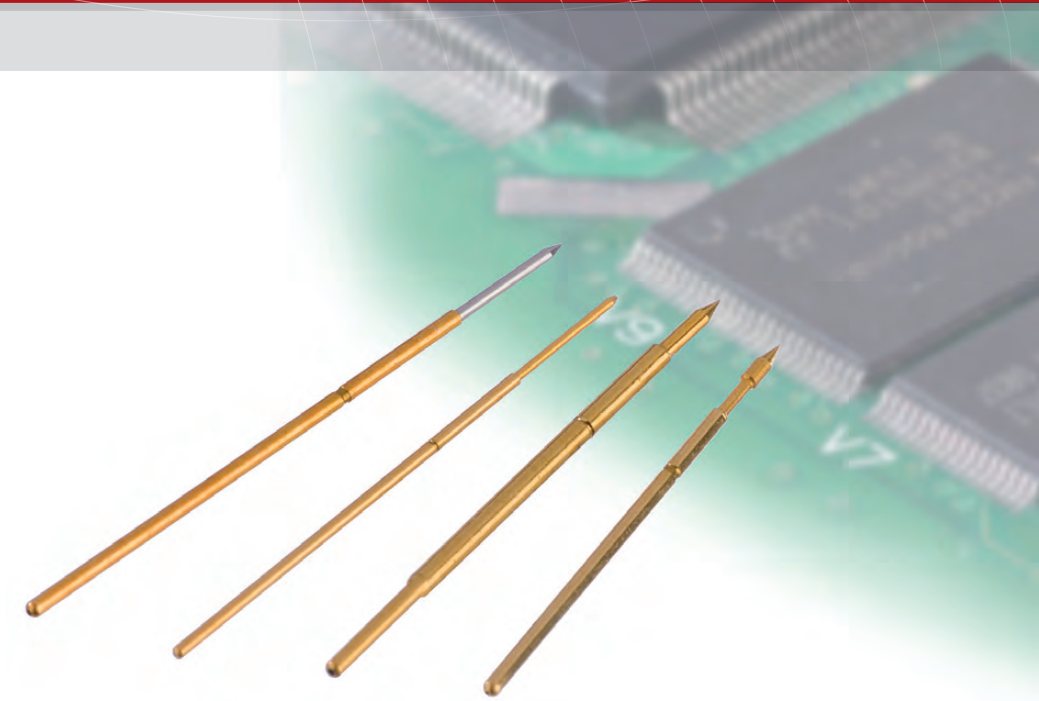
Coaxial test probes

Battery test probes

Series	Center
1001	30 mil/0.76 mm
1002	40 mil/1.02 mm
1003	40 mil/1.02 mm
1005	40 mil/1.02 mm
1006	40 mil/1.02 mm

Test probes for centers of 30 mil (0.76 mm) and greater

Test probes with centers of 30 mil (0.76 mm) and greater have been designed for applications with very small centers. In some cases, the diameters are extremely small, and the receptacles for these test probes are supplied with pre-assembled wires (AWG 30/AWG 32). The length and colour of the connection wires can be selected as required. When these test probes are used in the test adapters, a guide plate is normally inserted in order to prevent misalignment and damage to the test probe plunger and to optimise the point of contact accuracy.



Series 1001

- Test probe for 30 mil spacing
- Short travel
- Low contact pressure
- Receptacle pre-wired

Mechanical Data	
Center	0.76 mm/30 mil
Full travel	2.00 mm
Working travel	1.35 mm
Pre-loaded spring force	0.13 N
Spring force at working travel	0.30 N

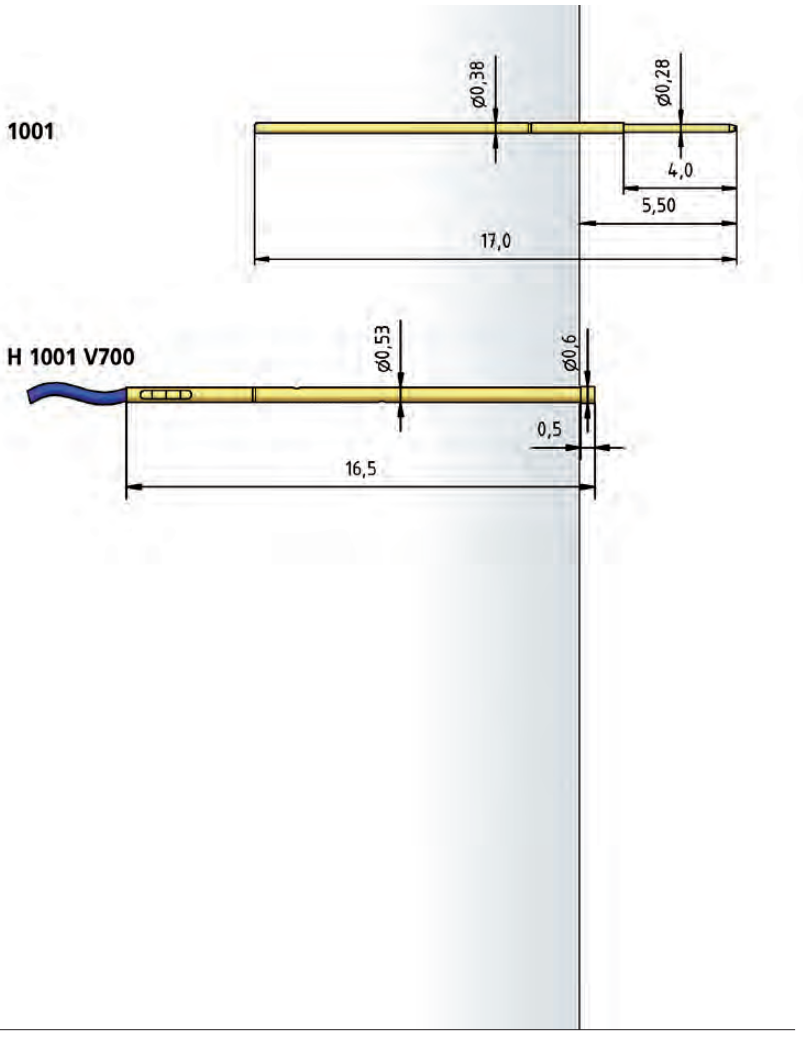
Electrical Data	
Max. current rating	0.5 A
Typical continuity resistance	≤ 150 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated
Wire AWG 32	Copper, silver-plated, isolated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.53 mm

Tip style · Diameter · Plating

G3
0.28 Au



How to order:

1001	-	G3	-	0.3 N	-	Au	-	0.28
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1002

- Test probe for 40 mil spacing
- Short travel
- Low contact pressure
- Receptacle pre-wired

Mechanical Data

Center	1.02 mm/40 mil
Full travel	2.00 mm
Working travel	1.35 mm
Pre-loaded spring force	0.25 N
Spring force at working travel	0.40 N

Electrical Data

Max. current rating	1.0 A
Typical continuity resistance	≤ 100 mOhm

Materials

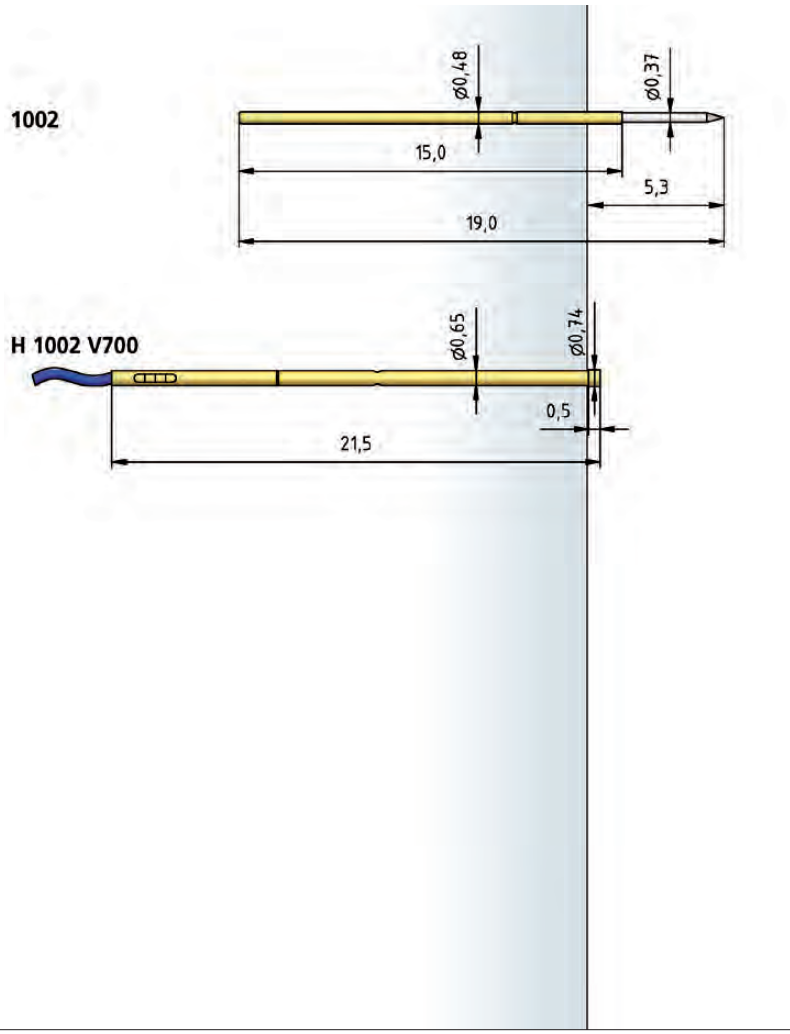
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, rhodium-plated
Receptacle	Bronze, gold-plated
Wire AWG 32	Copper, silver-plated, isolated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.63 mm

Tip style · Diameter · Plating

B
0.37 Rh



How to order:

1002	-	B	-	0.4 N	-	Rh	-	0.37
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1003

- Test probe for 40 mil spacing
- Short travel
- Low contact pressure
- Receptacle pre-wired

Mechanical Data

Center	1.02 mm/40 mil
Full travel	1.30 mm
Working travel	1.00 mm
Pre-loaded spring force	0.40 N
Spring force at Working travel	0.75 N

Electrical Data

Max. current rating	1.0 A
Typical continuity resistance	≤ 100 mOhm

Materials

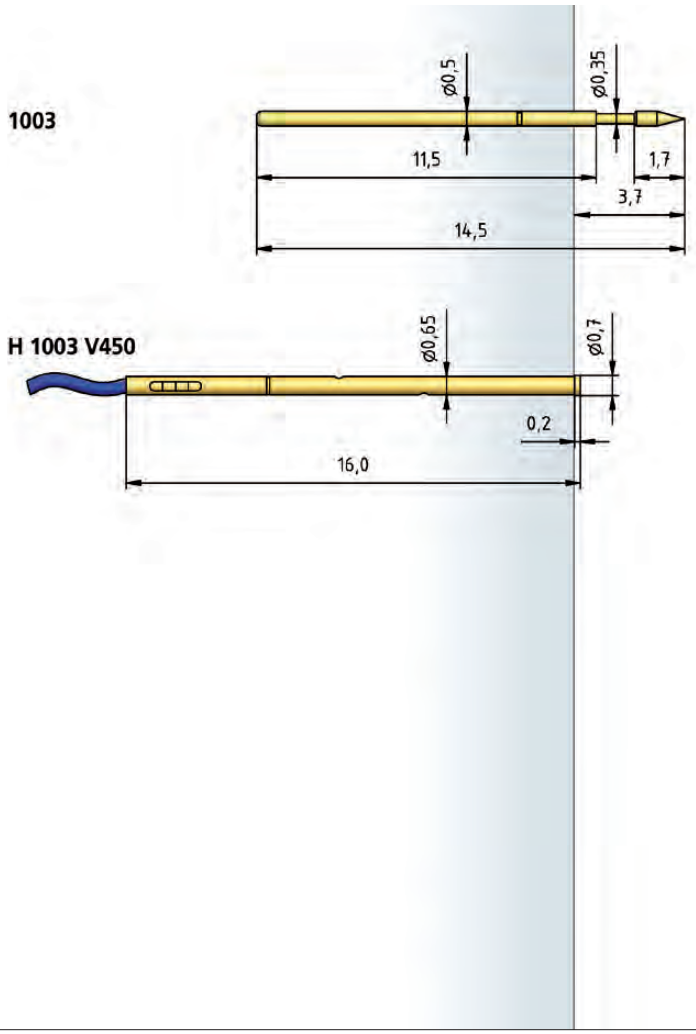
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated
Wire AWG 32	Copper, silver-plated, isolated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.63 mm

Tip style · Diameter · Plating

B
0.50 Au



How to order:

1003	-	B	-	0.75 N	-	Au	-	0.5
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1005

- Test probe for 40 mil spacing
- Short travel
- Low contact pressure
- Receptacle pre-wired

Mechanical Data	
Center	1.02 mm/40 mil
Full travel	3.80 mm
Working travel	3.00 mm
Pre-loaded spring force	0.20 N
Spring force at working travel	0.80 N

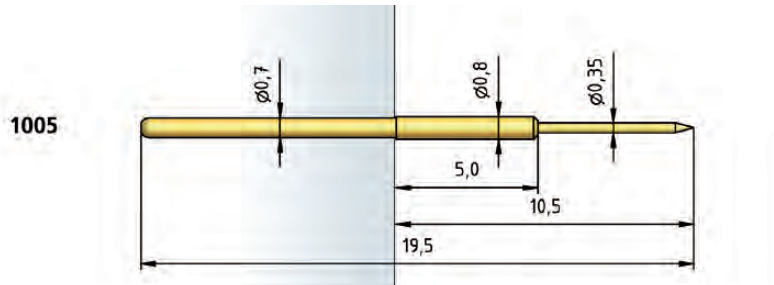
Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.70 mm

Tip style · Diameter · Plating

B
0.35C Au



How to order:

1005 - B - 0.8 N - Au - 0.35 C
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 1006

- Test probe for 40 mil spacing
- Short travel
- Low contact pressure

Tip style · Diameter · Plating

B	D	G	G3
0.53C Au	0.53C Au	0.53C Au	0.28C Au

Mechanical Data

Center	1.02 mm/40 mil
Full travel	2.29 mm
Working travel	1.27 mm
Pre-loaded spring force	0.17/0.15 N
Spring force at working travel	0.37/0.45 N

Electrical Data

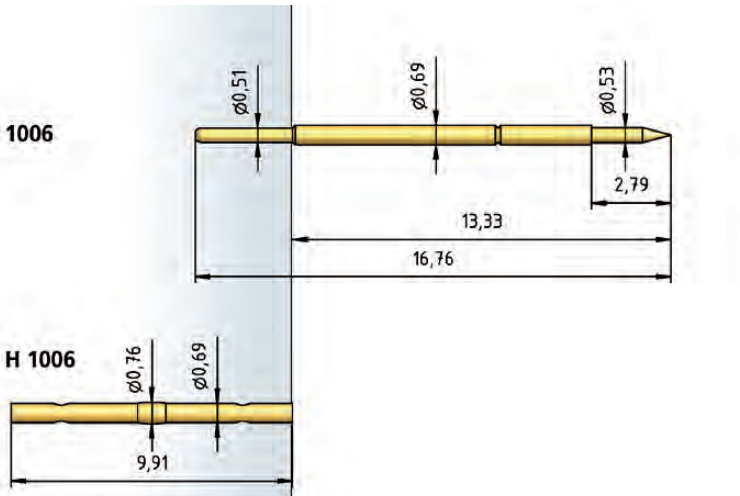
Max. current rating	3.0 A
Typical continuity resistance	≤ 55 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Bronze/Stainless steel, gold-plated
Plunger	CuBe, gold-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.69 - 0.70 mm
HGW 2372 (Glass filled material)	0.72 - 0.73 mm



How to order:

1006 - B - 0.45 N - Au - 0.51C
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Series	Center
1007	50 mil/1.27 mm
1007.50	50 mil/1.27 mm
1007.60	50 mil/1.27 mm
1007.70	50 mil/1.27 mm
1010	75 mil/1.91 mm
1010.50	75 mil/1.91 mm
1011	75 mil/1.91 mm
1015	100 mil/2.54 mm
1015.50	100 mil/2.54 mm
1016	100 mil/2.54 mm
1018	100 mil/2.54 mm
1018.06	100 mil/2.54 mm

Standard test probes for centers up to 100 mil

The test probe series up to 100 mil consist of models with different sizes, travel and extension heights. This wide range of products allows multi-purpose use such as the testing of assembled components (in-circuit test or function test) or in other applications – wherever a flexible electrical connection is required.

Series 1007

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Mechanical Data	
Center	1.27 mm/50 mil
Full travel	2.80 mm
Working travel	2.40 mm
Pre-loaded spring force	0.25/0.25/0.40 N
Spring force at working travel	0.70/1.00/1.70 N

Electrical Data	
Max. current rating	1.0 A
Typical continuity resistance	≤ 30 mOhm

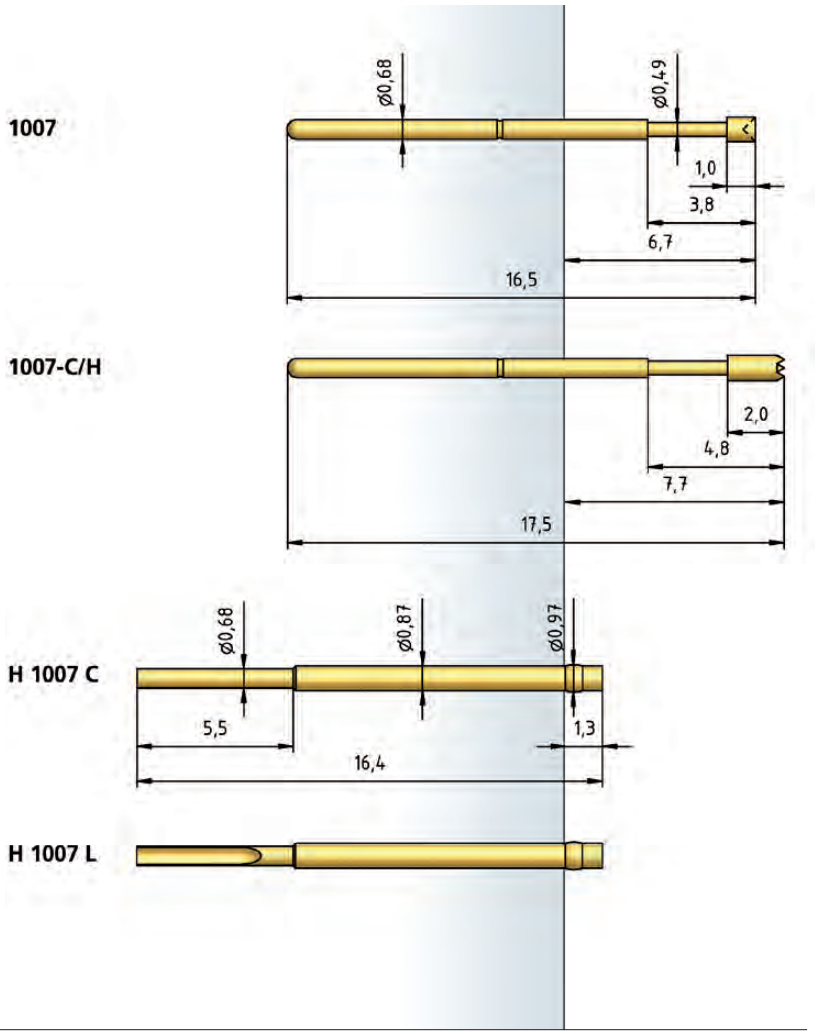
Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.86 mm
With pressed-in ring	0.93 mm
HGW 2372 (Glass filled material)	0.88 mm
With pressed-in ring	0.94 mm

Tip style · Diameter · Plating

A	B	C	D	D
0.90 Au	0.49C Au	0.90C Au	0.49 Au	0.85C Au

H
0.90 Au
1.50 Au



How to order:

1007	-	A	-	0.7 N	-	Au	-	0.9 C
1		2		3		4		5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 1007.50

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Mechanical Data	
Center	1.27 mm/50 mil
Full travel	2.00 mm
Working travel	1.35 mm
Pre-loaded spring force	0.35 N
Spring force at working travel	0.75 N

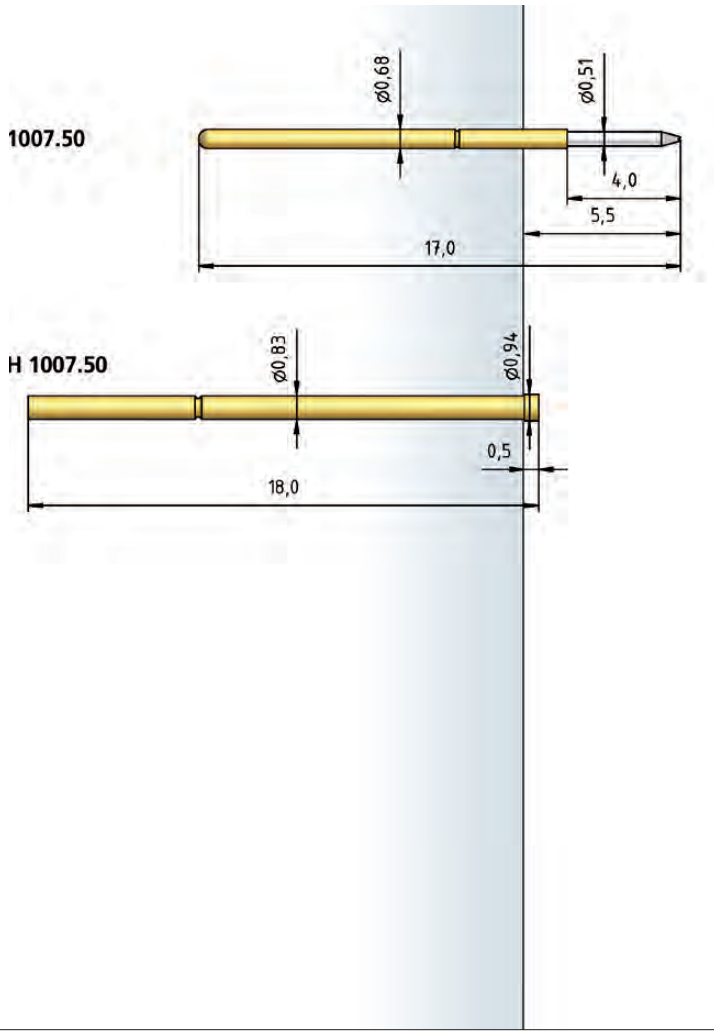
Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	≤ 75 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, rhodium-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.84 mm
HGW 2372 (Glass filled material)	0.86 mm

Tip style · Diameter · Plating

G3
0.51 Rh



How to order:

1007.50	-	G3	-	0.75 N	-	Rh	-	0.51
1 2		3		4		5		6

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 1007.60

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Tip style · Diameter · Plating

B	E	G3	K
0.50C Rh	0.80C Rh	0.50C Rh	0.90C Rh

Mechanical Data

Center	1.27 mm/50 mil
Full travel	2.54 mm
Pre-loaded spring force	0.20/0.30 N
Spring force at working travel	0.80/1.50 N

Electrical Data

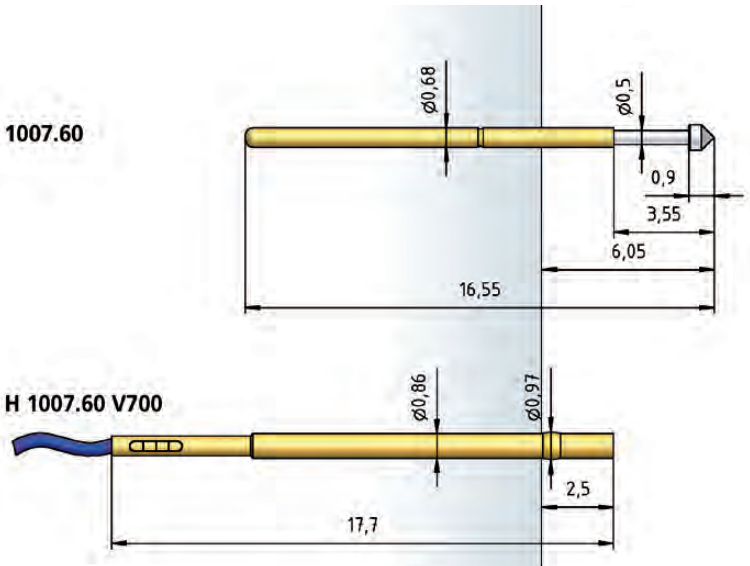
Max. current rating	3.0 A
Typical continuity resistance	≤ 50 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, rhodium-plated
Receptacle	Bronze, gold-plated
Wire AWG 32	Copper, silver-plated, isolated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.87 mm
With pressed-in ring	0.95 mm
HGW 2372 (Glass filled material)	0.87 mm
With pressed-in ring	0.95 mm



How to order:

1007.60 - K - 0.8 N - Rh - 0.9 C
1 2 3 4 5 6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip material (only for CuBe)

Series 1007.70

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Tip style · Diameter · Plating

B	C	D
0.53C Au	0.89C Au	0.89C Au

Mechanical Data

Center	1.27 mm/50 mil
Full travel	1.27 mm
Pre-loaded spring force	0.29/0.40/0.50 N
Spring force at working travel	0.80/0.90/1.40 N

Electrical Data

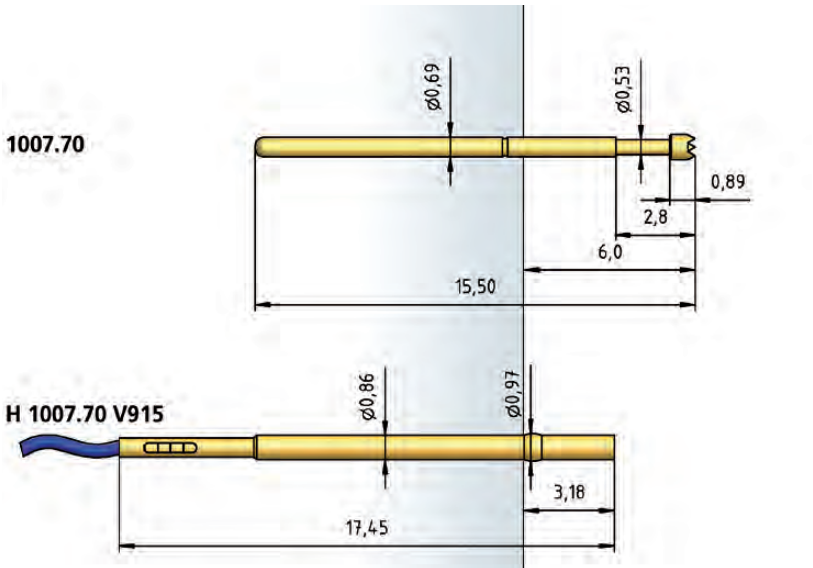
Max. current rating	3.0 A
Typical continuity resistance	≤ 25 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Bronze/Stainless steel, gold-plated
Plunger	CuBe, gold-plated
Receptacle	Bronze, gold-plated
Wire AWG 32	Copper, silver-plated, isolated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.87 mm
With pressed-in ring	0.95 mm
HGW 2372 (Glass filled material)	0.87 mm
With pressed-in ring	0.95 mm



How to order:

1007.70 - C - 0.8 N - Au - 0.89 C
1 2 3 4 5 6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip material (only for CuBe)

Series 1010

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Mechanical Data

Center	1.91 mm/75 mil
Full travel	3.00 mm
Working travel	2.40 mm
Pre-loaded spring force	0.20 N
Spring force at working travel	0.80 N

Electrical Data

Max. current rating	2.0 A
Typical continuity resistance	≤ 20 mOhm

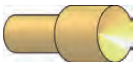
Materials

Barrel	Bronze, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.30 mm
With pressed-in ring	1.46 mm
HGW 2372 (Glass filled material)	1.32 mm
With pressed-in ring	1.47 mm

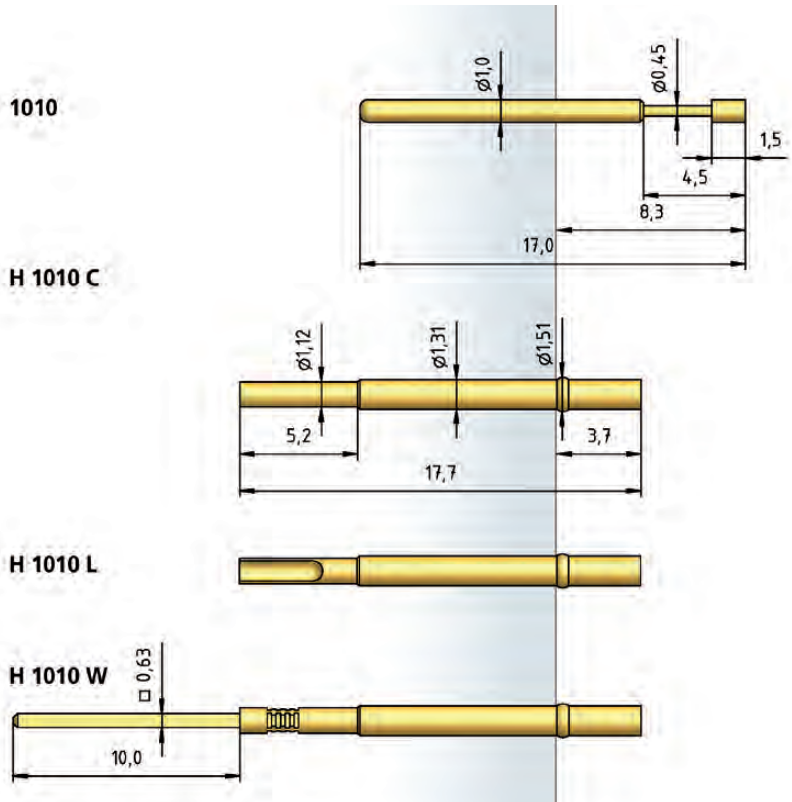
Tip style · Diameter · Plating



A	B	B1	C	D
1.50 Au	0.45 Au/Ni	0.70 Au	1.50 Au	0.50 Au

D	D2	D2	DF	F
0.65 Au 1.00 Au	0.40 Au	0.60 Au	1.00 Au	1.00 Au 1.50 Ni

G	H
1.50 Rh	1.50 Ni



How to order:

1010	-	A	-	0.8 N	-	Au	-	1.5
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1010.50

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Mechanical Data

Center	1.91 mm/75 mil
Full travel	2.54 mm
Pre-loaded spring force	0.18/0.32 N
Spring force at working travel	0.80/1.25 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 50 mOhm

Materials

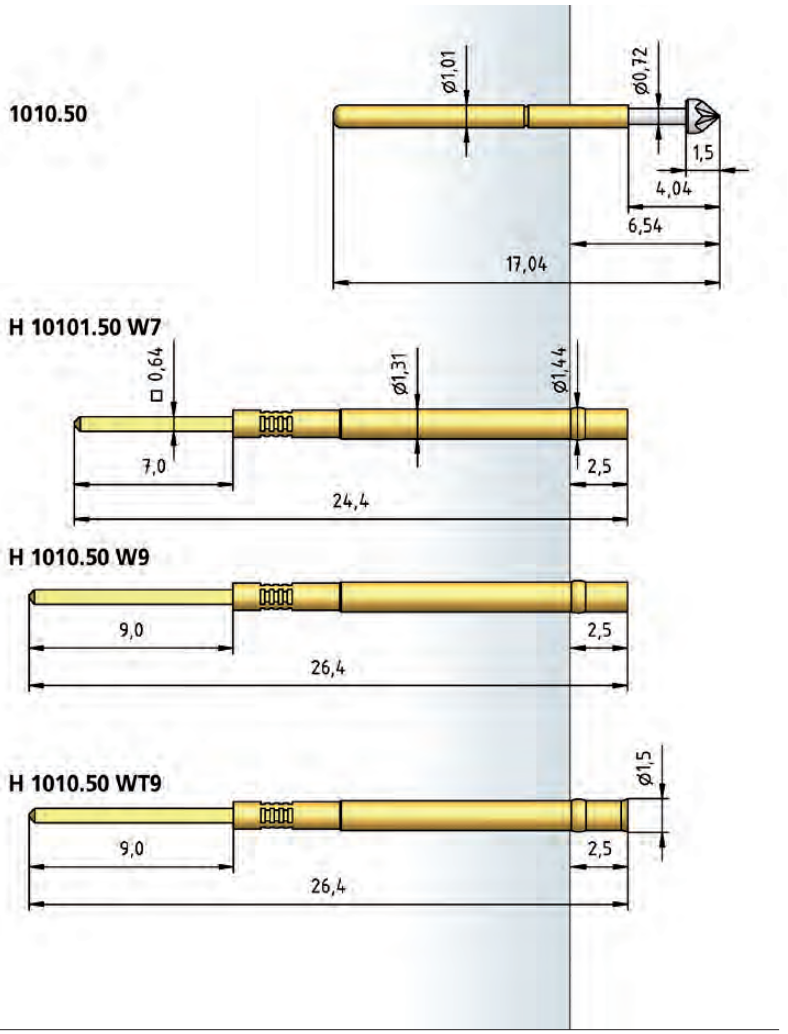
Barrel	Bronze, gold-plated
Spring	Stainless steel, unplated
Plunger	CuBe, rhodium-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.30 mm
With pressed-in ring	1.40 mm
HGW 2372 (Glass filled material)	1.31 mm
With pressed-in ring	1.41 mm

Tip style · Diameter · Plating

A	B	G3	K
0.72C Rh	0.72C Rh	0.72C Rh	1.30C Rh 1.50C Rh



How to order:

1010.50 - K - 1.25 N - Rh - 1.5 C
1 2 3 4 5 6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip material (only for CuBe)

Series 1011

- Universal applications
- Compact design
- Short travel
- Contacting of assembled PCBs

Mechanical Data	
Center	1.91 mm/75 mil
Full travel	4.20 mm
Pre-loaded spring force	0.30/0.30 N
Spring force at working travel	1.10/1.50 N

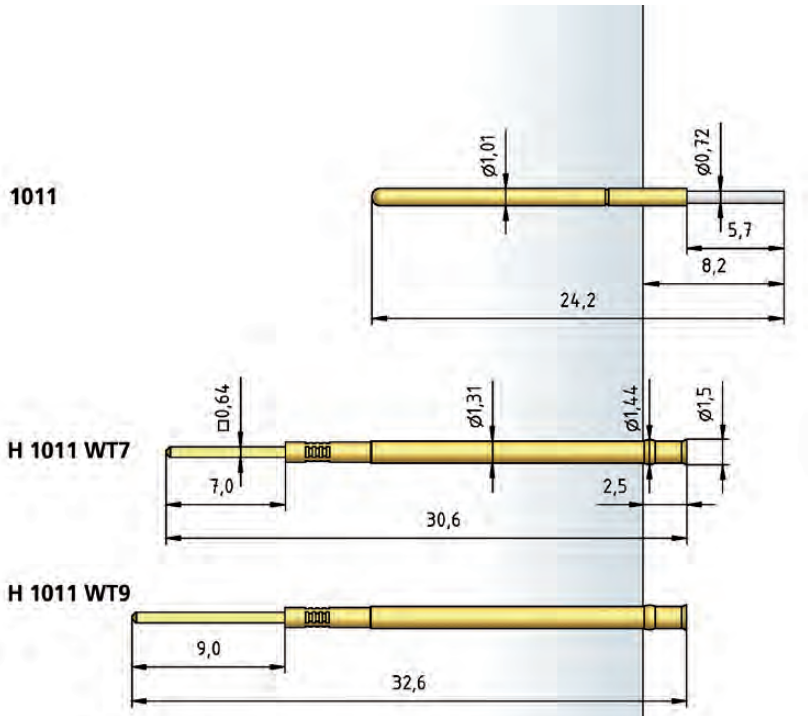
Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	≤ 50 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Stainless steel, coated
Plunger	CuBe, rhodium-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	1.30 mm
With pressed-in ring	1.40 mm
HGW 2372 (Glass filled material)	1.31 mm
With pressed-in ring	1.41 mm

Tip style · Diameter · Plating

A
0.72C Rh



How to order:

1011	-	A	-	1.1 N	-	Rh	-	0.72	C
1		2		3		4		5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 1015

- Universal applications
- Contacting of assembled PCBs
- Wide variety of types

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.40 mm
Working travel	3.50 mm
Pre-loaded spring force	0.25/0.40/0.40/ 0.30/0.70/0.60 N
Spring force at working travel	0.70/1.00/1.50/ 1.70/2.50/3.00 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

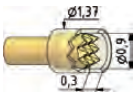
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.67 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.69 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating

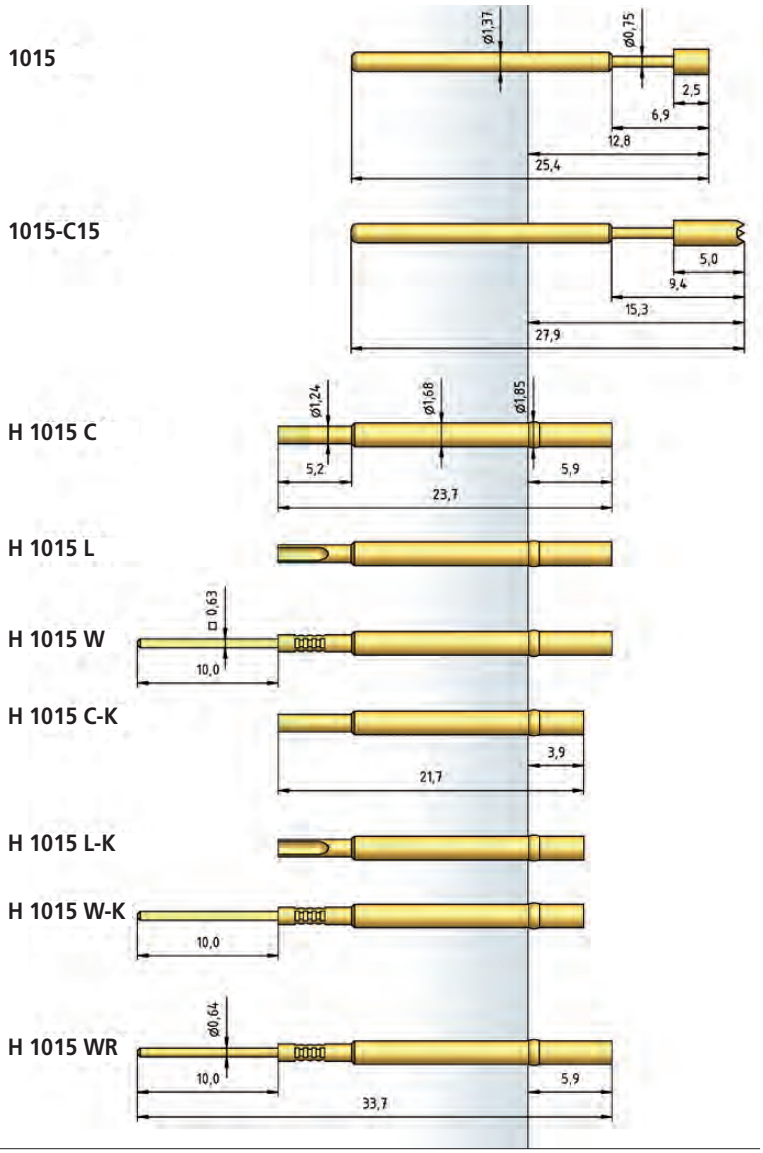
A	B	BS	C	C15
1.80 Au/Ni	0.75 Au/Rh/Ni	0.38 Au/Ni	1.00 Au 1.30 Au 1.80 Au/Ni	1.80 Au



C1S	C2S	D	D	E
0.90/1.37 Au/HTK	1.20/1.80 Au/HTK	0.50 Ni 0.65 Au/Ni 0.75 Au/Rh	1.25 Au/Ni	1.80 Au/Ni

F	F	G	H	K
0.75 Rh	1.50C Au 1.80 Rh	1.30 Rh 1.80 Au/Ni	1.30 Rh 1.80 Au 3.00 Rh	1.80 Au/Ni

Q
0.75 Au



How to order:

1015	-	A	-	1.5 N	-	Au	-	1.8
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1015.50

- Universal applications
- Contacting of assembled PCBs

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.20 mm
Pre-loaded spring force	0.35/0.50/0.70 N
Spring force at working travel	1.00/1.50/2.50 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 50 mOhm

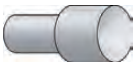
Materials

Barrel	Bronze, gold-plated
Spring	Stainless steel, unplated
Plunger	CuBe, rhodium-plated
Receptacle	Bronze, gold-plated

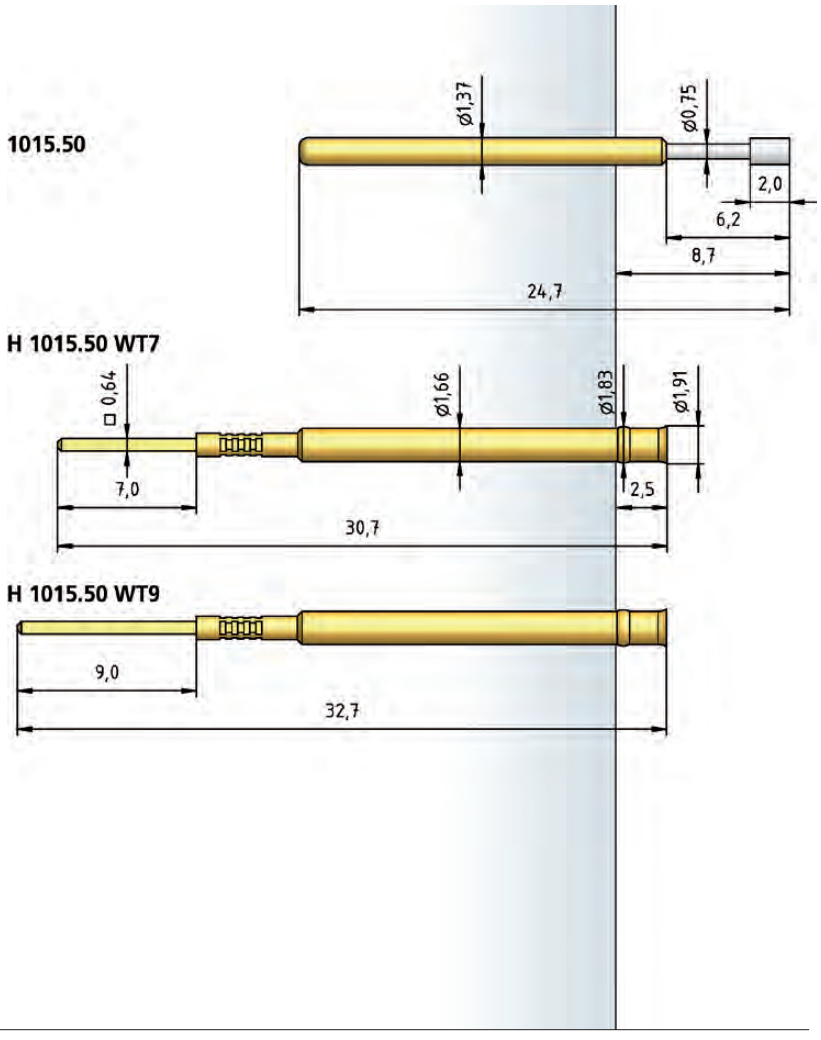
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.66 mm
With pressed-in ring	1.81 mm
HGW 2372 (Glass filled material)	1.67 mm
With pressed-in ring	1.82 mm

Tip style · Diameter · Plating



A
1.35C Rh



How to order:

1015.50 - A - 1.5 N - Rh - 1.35C
1 2 3 4 5 6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1016

- Universal applications
- Contacting of assembled PCBs

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.40 mm
Working travel	3.50 mm
Pre-loaded spring force	0.40/0.70/0.90 N
Spring force at working travel	1.50/2.25/3.00 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

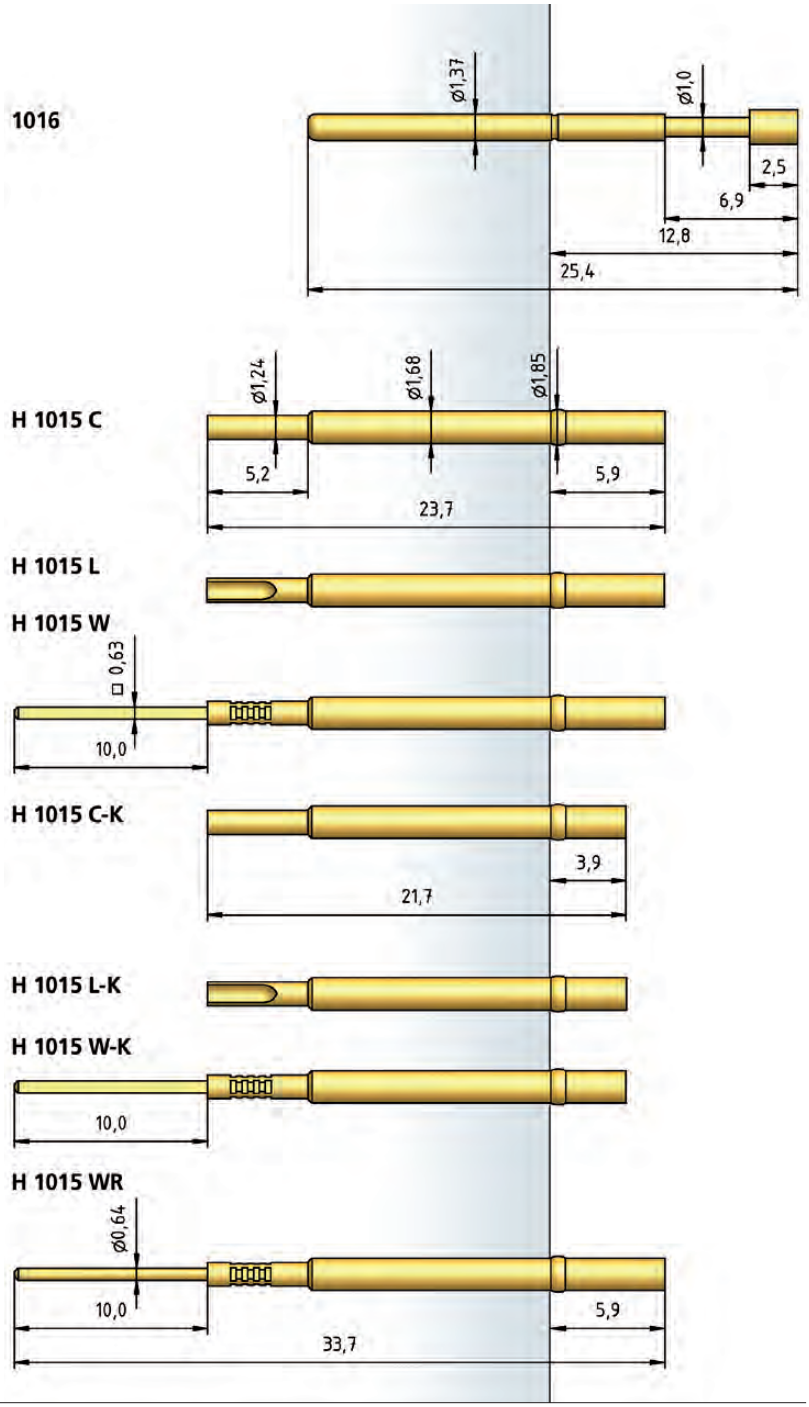
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.67 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.69 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating

A	B	C	D	E
1.80 Au	1.00 Au	1.80 Ni	1.00 Au	1.80 Au/Rh

F	H	K	Q
1.80 Au	1.80 Rh	1.80 Rh	1.80 Ni/Rh



How to order:

1016	-	C	-	1.5 N	-	Au	-	1.8
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1018

- Universal applications
- Contacting of assembled PCBs

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.40 mm
Working travel	3.50 mm
Pre-loaded spring force	0.40/0.70/0.90 N
Spring force at working travel	1.50/2.25/3.00 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

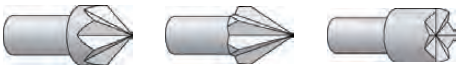
Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

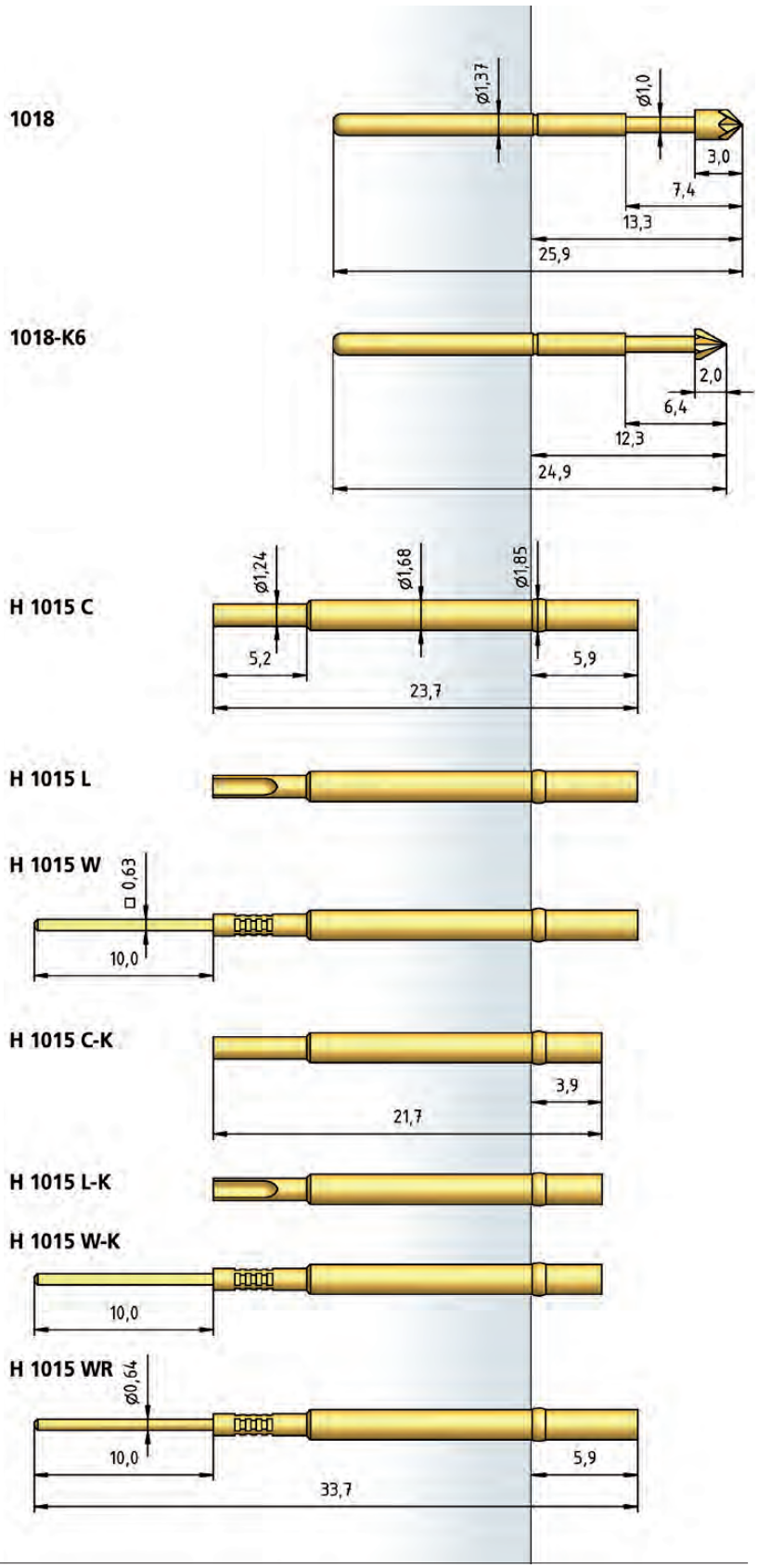
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.67 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.69 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating



K	K6	TA
1.20 Ni	1.90 Ni	1.20 Rh
1.35 Ni		1.90 Rh
1.90 Ni		
2.50 Rh		
3.50 Ni		



How to order:

1018	-	K	-	1.5 N	-	Ni	-	1.9
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1018.06

- Universal applications
- Contacting of assembled PCBs

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.10 mm
Working travel	2.70 mm
Pre-loaded spring force	0.40/0.60 N
Spring force at working travel	1.00/1.80 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

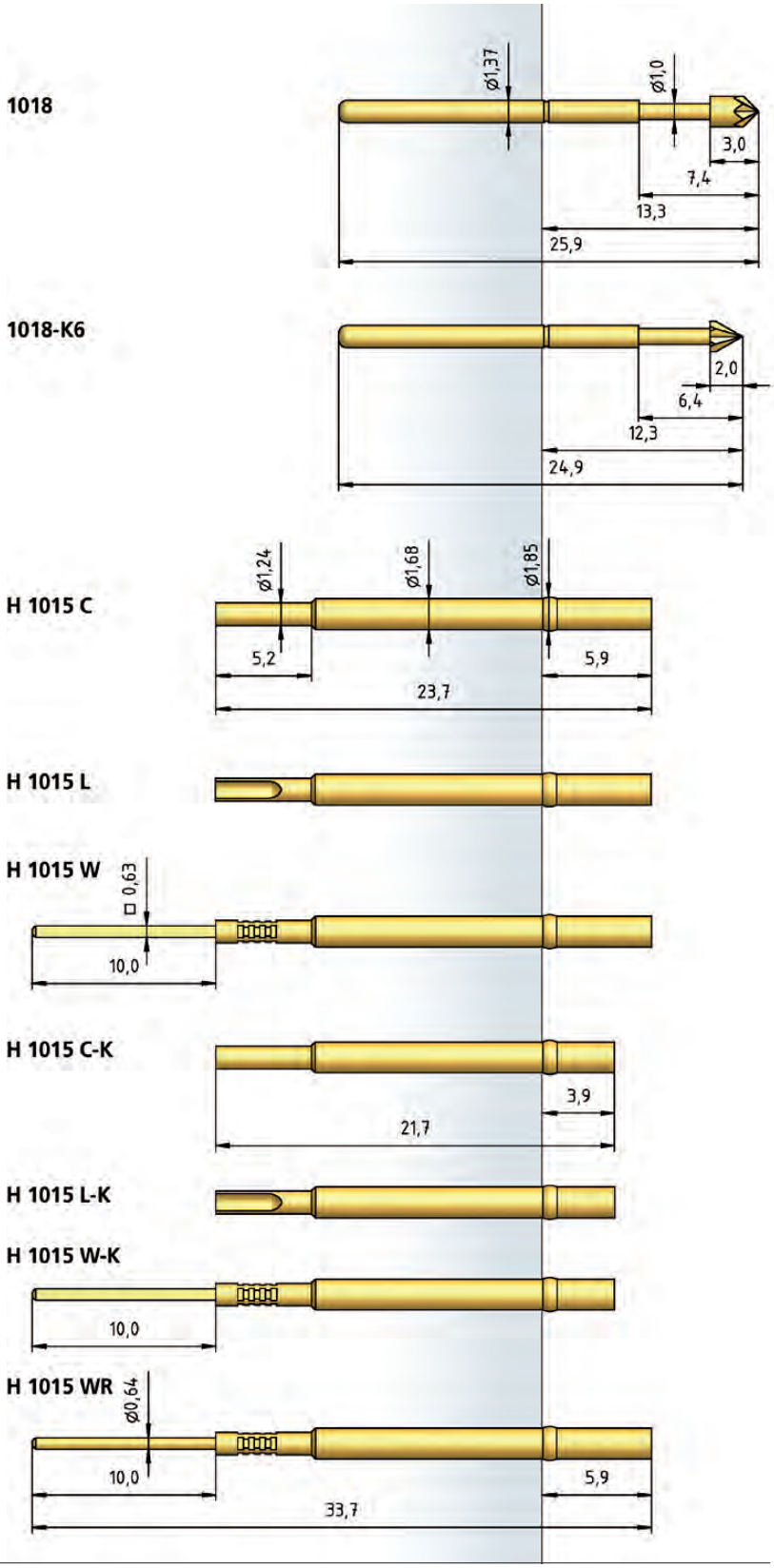
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.67 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.69 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating

G6	H6
1.54 Au	1.90C Au



How to order:

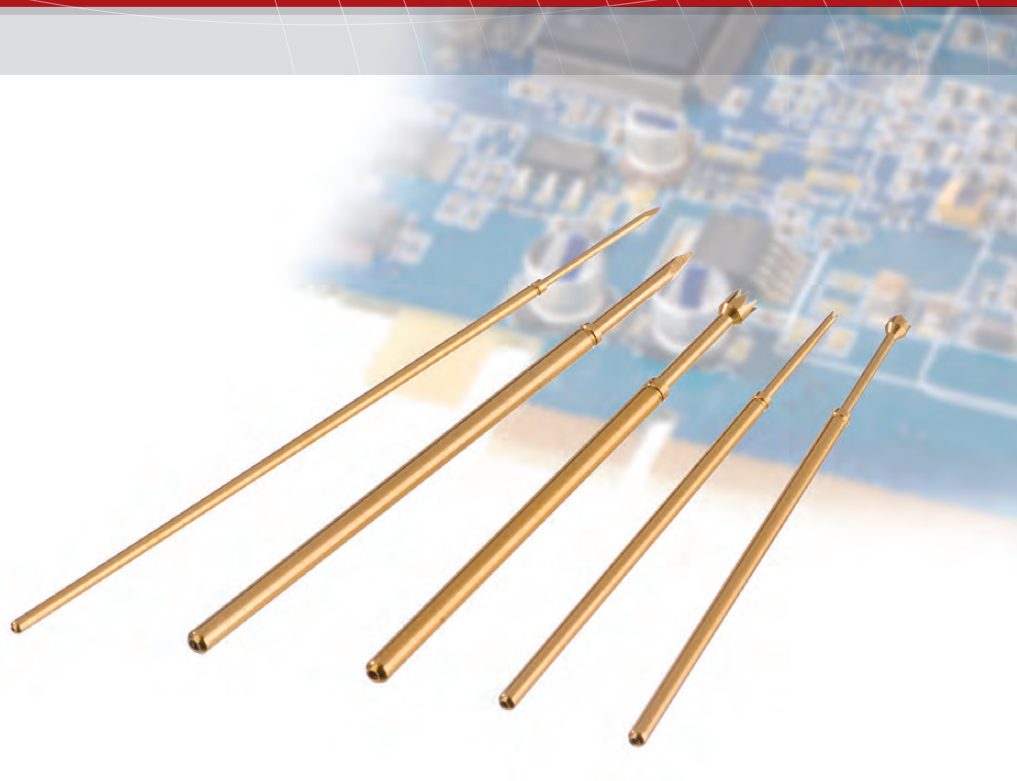
1018.06 - H - 1.0 N - Au - 1.9C

1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series	Center
1008/E	50 mil/1.27 mm
1008/E.50	50 mil/1.27 mm
1012/E	75 mil/1.91 mm
1013/Z	75 mil/1.91 mm
1025/E	100 mil/2.54 mm
1034/E	100 mil/2.54 mm
1034	100 mil/2.54 mm
1036	100 mil/2.54 mm
2021• 1021	100 mil/2.54 mm
2024• 1024	100 mil/2.54 mm
2028• 1028	100 mil/2.54 mm
2029	100 mil/2.54 mm

ICT test probes (E-series)



The range of ICT test probes comprises all standard series of products which have established themselves on the market as international standards. These are test probes for centers from 50 mil to 100 mil with a large selection of different tip styles and contact pressures for almost all test requirements. In addition, test probe units with a longer test probe travel are available for 2-level adaptations. Receptacles with a press ring can be supplied for this series. This press ring can be used as a stop to achieve a constant extension height in the adapter, but it also allows variable heights if the press ring is pressed into a defined setting in the take-up drill hole. The ICT receptacles are available for various types of connections. In addition to these standards, PTR also offers metric types for the ICT/FT. In this case, the receptacles are normally pressed into the take-up drill hole as far as the stop. Here, too, test probe barrels with different collar heights allow variable extension heights in the adapter.

Series 1008/E

- International standard for 50 mil applications
- Contacting of assembled PCBs

Mechanical Data

Center	1.27 mm/50 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.30/0.40/0.50/0.60 N
Spring force at working travel	1.00/1.50/2.00/2.80 N

Electrical Data

Max. current rating	2.0 - 3.0 A
Typical continuity resistance	≤ 20 mOhm

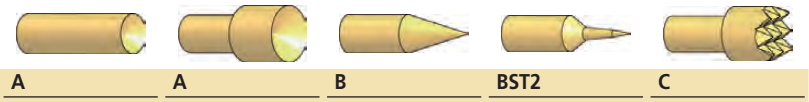
Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated

Recommended diameter of drill

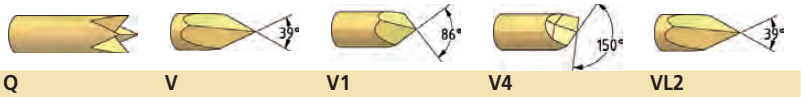
HP 2361.1 (Trolitax)	0.95 - 0.96 mm
With pressed-in ring	1.02 mm
HGW 2372 (Glass filled material)	0.96 - 0.97 mm
With pressed-in ring	1.03 mm

Tip style · Diameter · Plating

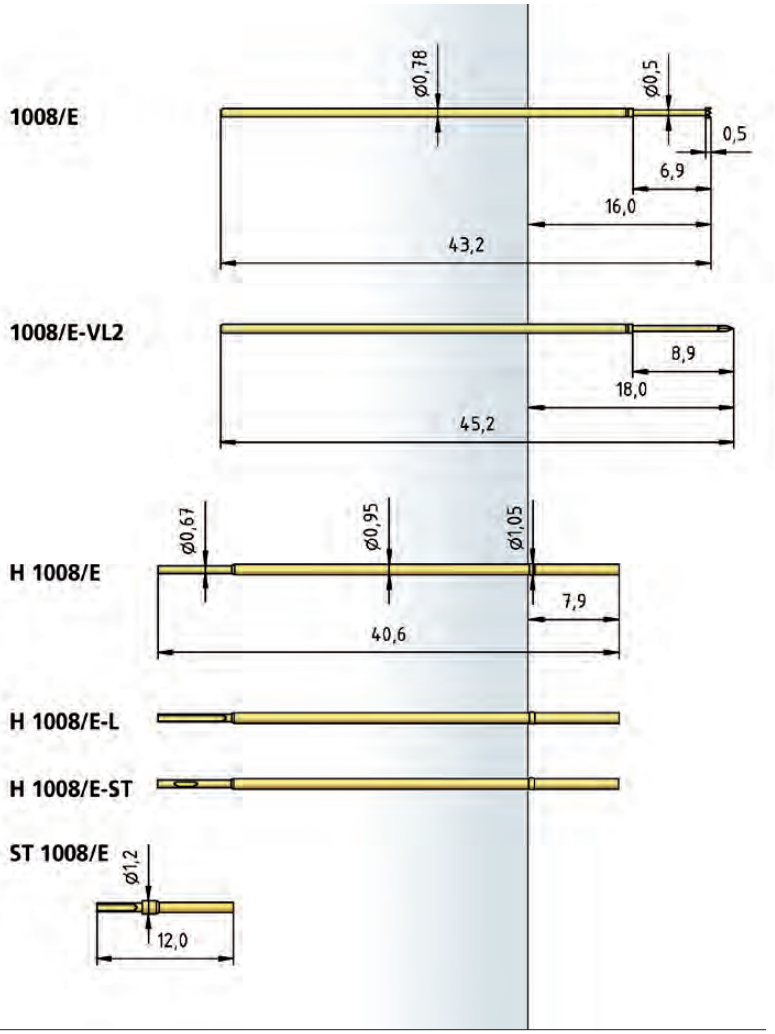


A	A	B	BST2	C
0.50C Au	0.90 Au	0.50 Au	0.50 Au	0.90C Au

D	F	H	H1	LG
0.50C Au	0.60C Au	0.50 Au 0.90C Au	0.50 Au	0.40 Au



Q	V	V1	V4	VL2
0.50 Au	0.50 Au	0.50 Au	0.50 Au	0.50 Au



How to order:

1008/E - C - 1.5 N - Au - 0.9 C
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Series 1008/E.50

- International standard for 50 mil applications
- Contacting of assembled PCBs
- Spring travel 10.0 mm

Mechanical Data	
Center	1.27 mm/50 mil
Full travel	10.00 mm
Working travel	8.00 mm
Pre-loaded spring force	0.25/0.30 N
Spring force at working travel	1.00/1.50 N

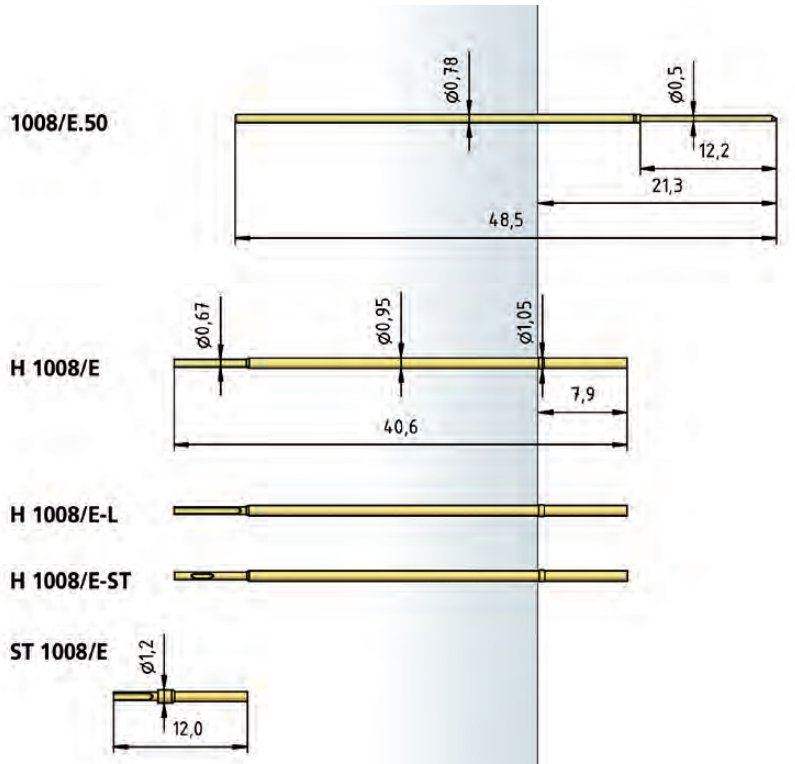
Electrical Data	
Max. current rating	2.0 - 3.0 A
Typical continuity resistance	≤ 20 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.95 - 0.96 mm
With pressed-in ring	1.02 mm
HGW 2372 (Glass filled material)	0.96 - 0.97 mm
With pressed-in ring	1.03 mm

Tip style · Diameter · Plating

H
0.50 Au



How to order:

1008/E.50 - H - 1.5 N - Au - 0.5
1 2 3 4 5 6

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 1012/E

- International standard for 75 mil applications
- Contacting of assembled PCBs
- Large selection of head styles

Mechanical Data

Center	1.91 mm/75 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.20/0.30/0.40/ 0.50/0.70 N
Spring force at working travel	0.60/1.00/1.50/ 2.00/2.80 N

Electrical Data

Max. current rating	3.0 - 4.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated

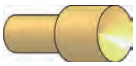
Receptacles see pages 45

How to order:

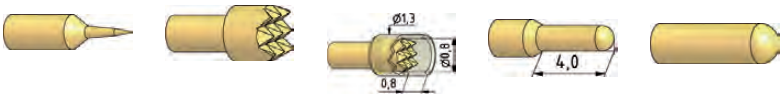
1012/E - C - 1.5 N - Au - 1.0 C
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Tip style · Diameter · Plating



A	A6	B	BD	BST1
1.20C Au	1.20 Au	0.64 Au	0.61C Au	0.64 Au

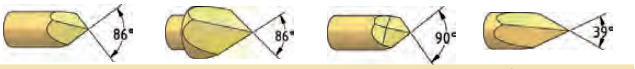


BST2	C	CS1	D	D
0.64 Au	1.00 Au 1.20 Au	0.80/1.30C Au/HTK	0.50C Au	0.64C Au

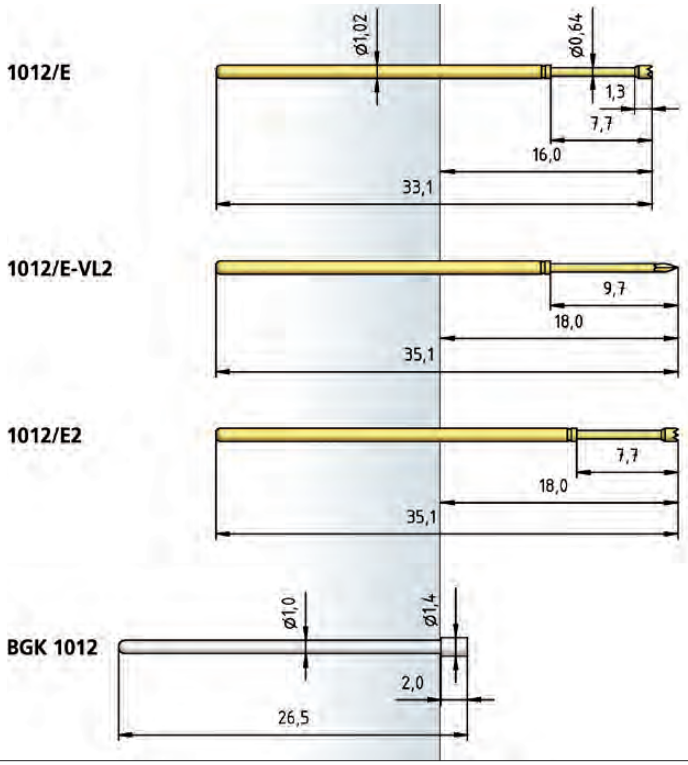
D3	F	G	H	H
0.50C Au	0.90C Au	1.15 Au	0.64 Au	1.00 Au 1.20 Au

H1	K	M1	M6	N
0.64 Au	1.20 Au	1.20 Au	1.30 Au	0.50 Au

Q	Q	Q	Q8	V
0.50 Au	0.64 Au	0.80 Au 1.00 Au 1.15 Au	1.20 Au	0.64 Au



V1	V1	V5	VL2
0.64 Au	0.80 Au	0.64 Au	0.64 Au



Series 1013/Z

- International standard for 75 mil applications
- Contacting of assembled PCBs
- Spring travel 12.0 mm

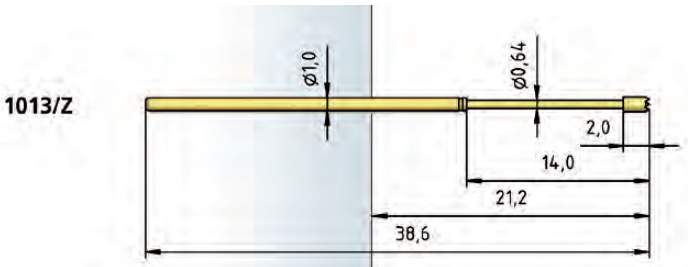
Mechanical Data	
Center	1.91 mm/75 mil
Full travel	12.00 mm
Working travel	9.60 mm
Pre-loaded spring force	0.40/0.35 N
Spring force at working travel	1.20/1.60 N

Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Tip style · Diameter · Plating

				
C	**H**	**Q**	**Q**	**V**
1.15 Au	1.15 Au	0.64 Au	1.15 Au	0.64 Au



Receptacles see pages 45

How to order:

1013/Z	-	C	-	1.6 N	-	Au	-	1.15
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Receptacles 1012

Recommended diameter of drill	
HP 2361.1 (Trolitax)	1.30 mm
With pressed-in ring	1.36 mm
HGW 2372 (Glass filled material)	1.32 mm
With pressed-in ring	1.37 mm

H 1012 C

H 1012 L

H 1012 W

H 1012 WR

H 1012 W18

H 1012 C-K

H 1012 L-K

H 1012 W-K

H 1012/2 C

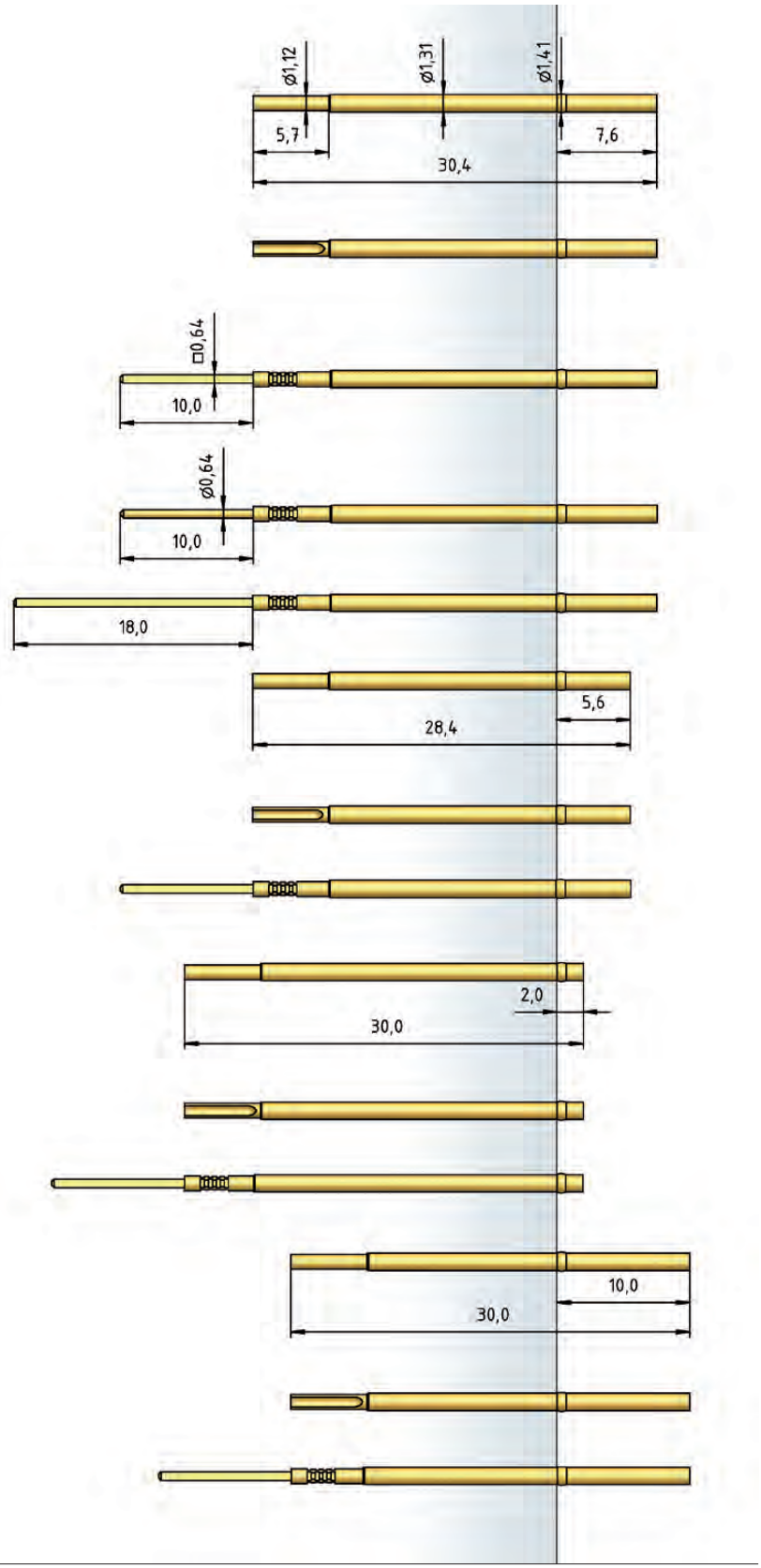
H 1012/2 L

H 1012/2 W

H 1012/10 C

H 1012/10 L

H 1012/10 W



Series 1025/E

- International standard for 100 mil applications
- Contacting of assembled PCBs
- Large selection of head styles

Mechanical Data

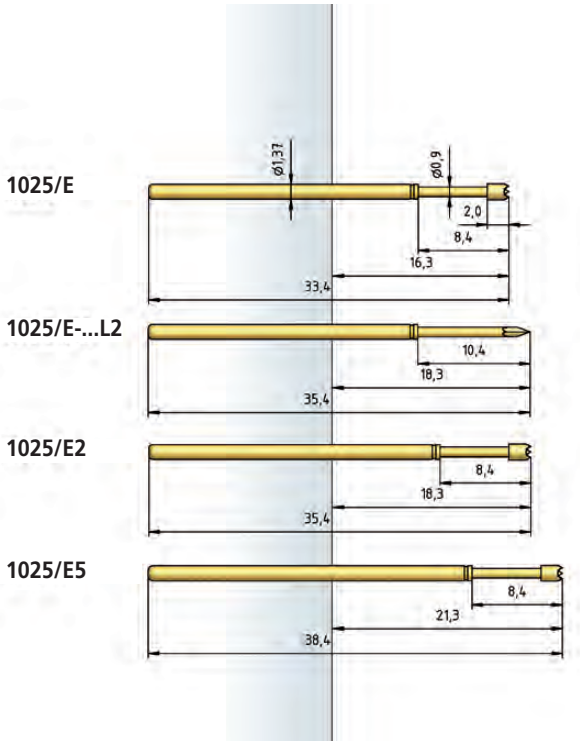
Center	2.54 mm/100 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.20/0.25/0.40/ 0.60/0.50/0.80/1.40 N
Spring force at working travel	0.60/1.00/1.50/ 2.00/2.25/3.00/4.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

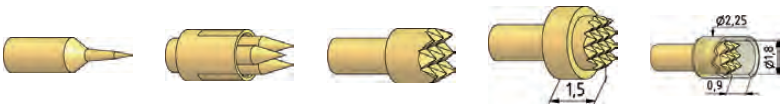
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Bronze, gold-plated



Receptacles see pages 50

Tip style · Diameter · Plating

A	A6	B	BD	BST1
1.50C Au 2.00C Au	1.50C Au 1.80C Au	0.90 Au	0.90 Au	0.62 Au/Ni



BST2	BST3	C	C1	CS1
0.90 Au	1.60C Au	1.30 Au 1.50C Au 2.00C Au 2.50C Au 3.00C Au	2.30/3.10C Au	1.80/2.25C Au/HTK

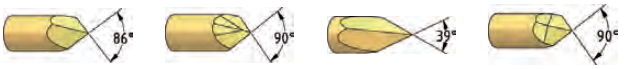
CS3	CS8	D1	D	D
1.75/2.40C Au/HTK	1.80/2.80C Au/HTK	0.50 Au 0.64C Au	0.90C Au	1.30 Au 1.50 Au

E	F	F	G	H
1.50 Au	0.90 Au	1.50 Au	1.06 Au 1.30 Au 1.50 Au	0.90 Au

H	H1	HL2	K	M
1.50 Au 1.70 Au 2.50 Au	0.90 Au	0.90C Au	1.70 Au	1.30 Au

M1	M6	N	Q	Q
1.30 Au 1.40C Au 1.50 Au	1.30 Au 1.50 Au	0.50 Au	0.50 Au 0.80 Au	1.06 Au 1.30 Au 1.50 Au

Q5	Q8	QL2	V	V
1.06 Au	1.50 Au	1.50 Au	0.90 Au/Ni	1.30 Au



V1	V3	VL2	V5
0.90 Au	0.90 Au	0.90 Au	0.90 Au

How to order:

1025/E - C - 1.5 N - Au - 1.5 C
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Series 1034/E

- International standard for 100 mil applications
- Contacting of assembled PCBs
- Large selection of head styles
- Spring travel 10.0 mm

Mechanical Data

Center	2.54 mm/100 mil
Full travel	10.00 mm
Working travel	8.00 mm
Pre-loaded spring force	0.40/0.40/0.50 N
Spring force at working travel	1.50/2.25/3.00 N

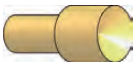
Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe, gold-plated
Receptacle	Bronze, gold-plated

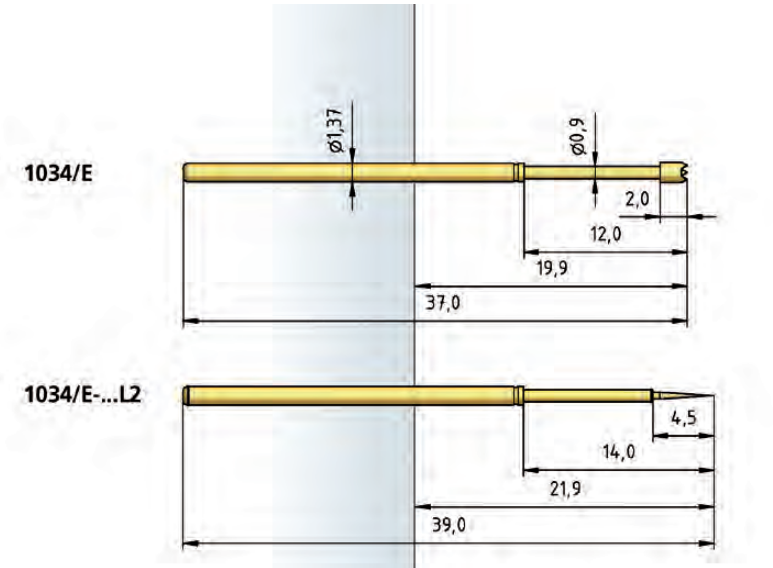
Tip style · Diameter · Plating



A	B	BSTL2	C	G
1.30 Au	0.90 Au	0.50 Au	1.30 Au 1.50 Au	1.30 Au

H	M1	Q	Q	V
1.50 Au 2.50 Au	1.30 Au	0.50 Au	1.30 Au 1.50 Au	0.90 Au

V1
0.90 Au



Receptacles see pages 50

How to order:

1034/E - C - 1.5 N - Au - 1.5

1 2 3 4 5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1034

- International standard for 100 mil applications
- Contacting of assembled PCBs
- Large selection of head styles
- Spring travel 10.0 mm

Mechanical Data

Center	2.54 mm/100 mil
Full travel	10.00 mm
Working travel	8.00 mm
Pre-loaded spring force	0.60/0.70 N
Spring force at working travel	1.50/2.25 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 25 mOhm

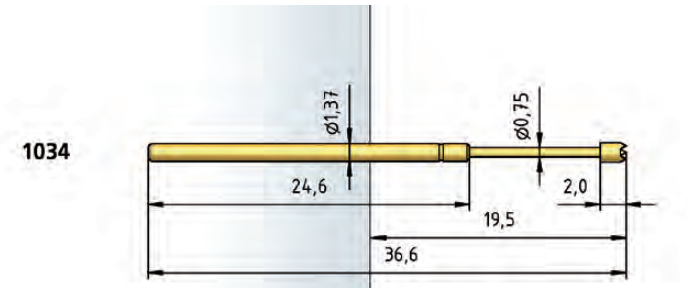
Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Tip style · Diameter · Plating

B	BST	C	G	H
0.75 Au/Ni	0.62 Ni	1.50 Au	1.50 Au	1.50 Au

M1	Q	Q	V
1.40 Au	1.00 Au/Rh	1.30 Au 1.50 Au	0.75 Ni



Receptacles see pages 50

How to order:

1034 - C - 2.25 N - Au - 1.5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1036

- International standard for 100 mil applications
- Contacting of assembled PCBs
- Large selection of head styles
- Spring travel 12.0 mm

Mechanical Data

Center	2.54 mm/100 mil
Full travel	12.00 mm
Working travel	10.00 mm
Pre-loaded spring force	0.30/0.40 N
Spring force at working travel	1.50/2.25 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 25 mOhm

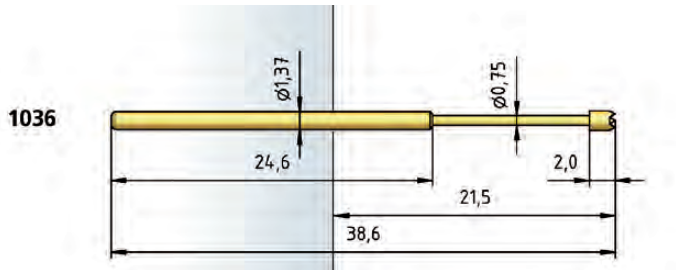
Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Tip style · Diameter · Plating

				
B	**BST**	**C**	**G**	**H**
0.75 Au/Ni	0.62 Ni	1.50 Au	1.50 Au	1.50 Au

			
M1	**Q**	**Q**	**V**
1.40 Au	1.00 Au/Rh	1.30 Au 1.50 Au	0.75 Ni



Receptacles see pages 50

How to order:

1036	-	C	-	2.25 N	-	Au	-	1.5
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Receptacles 1025

Recommended diameter of drill	
HP 2361.1 (Trolitax)	1.65 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.67 mm
With pressed-in ring	1.76 mm

H 1025 C

H 1025 L

H 1025 W

H 1025 WR

H 1025 W18

H 1025 C-K

H 1025 L-K

H 1025 W-K

H 1025/2 C

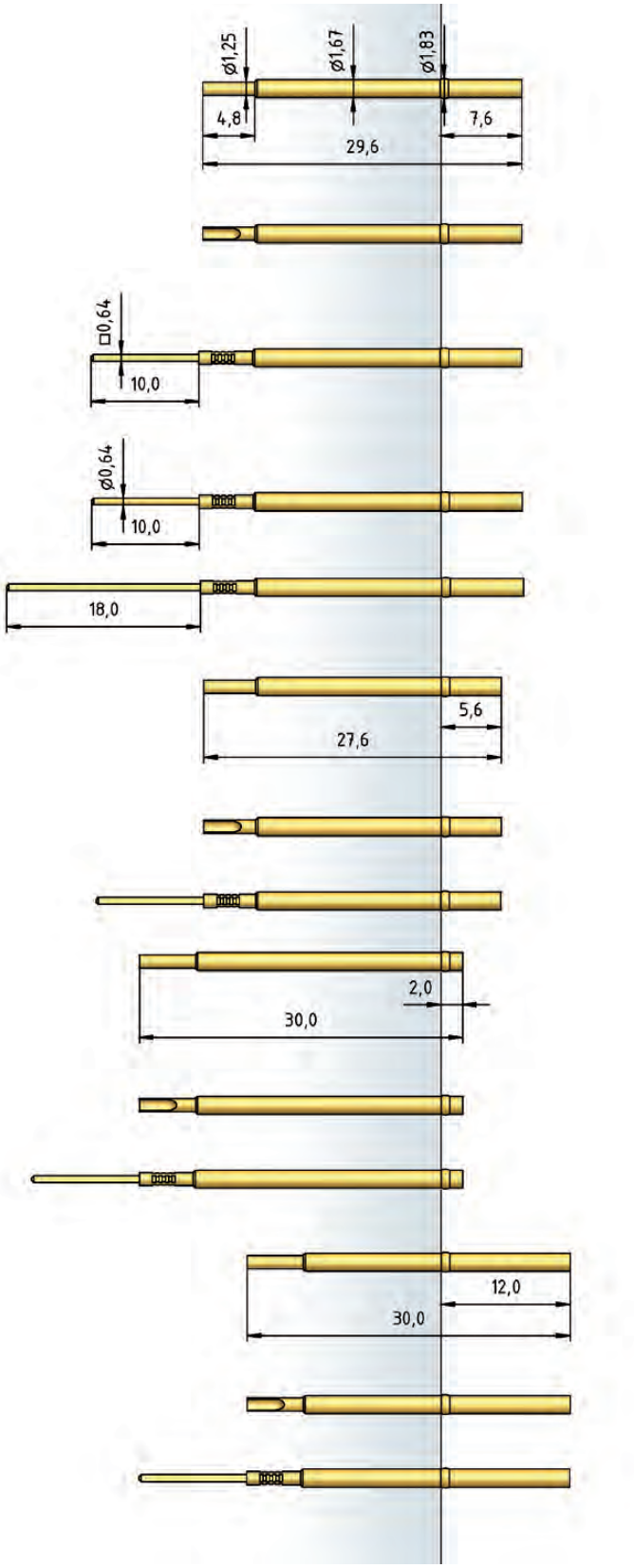
H 1025/2 L

H 1025/2 W

H 1025/12 C

H 1025/12 L

H 1025/12 W



Series 2021/1021

- Metric design
- Contacting of assembled PCBs
- Large selection of head styles
- Variable extension heights from various collar dimensions

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.30/0.40/0.50/ 0.70/1.00/1.00 N
Spring force at working travel	0.70/1.00/1.50/ 2.25/3.00/5.00 N
2021/5: 1.00 N not available	

Electrical Data

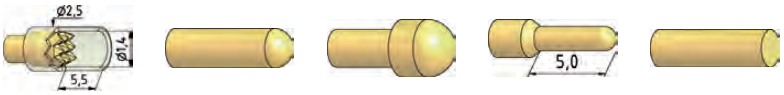
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 25 mOhm

Materials

Barrel	Bronze/ Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/Plastic
Receptacle	Bronze, gold-plated

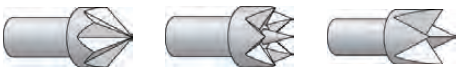
Tip style · Diameter · Plating

A	B	BST	C	C1S
2.00 Au/Ni/Rh	0.65 Ni 0.80 Au/Ni/Rh 1.00 Au/Ni	0.80 Au	1.30 Au/Ni/Rh 1.50 Au 1.80 Au/Ni/Rh 2.00 Au/Ni 2.30 Rh 2.50 Ni 3.00 Rh	1.20/2.00 Au/HTK

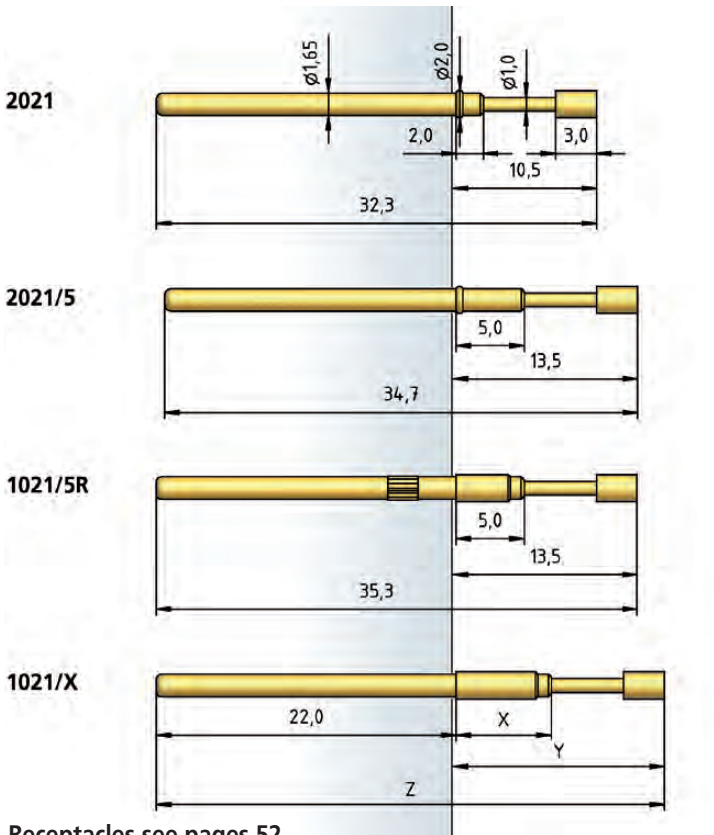


C5S	D	D	D1	F
1.40/2.50 Au/HTK	0.65 Au/Ni 0.80 Au 1.00 Au	1.30 Au/Ni 1.40 Au 1.80 Ni 2.00 Au	0.65 Au/Ni	0.80 Au 1.00 Au/Ni

F	F1	F4	G	H
1.50 Au 1.80 Au 2.00 Au/Ni	0.65 Ni	0.80 Au	1.30 Ni 1.80 Au/Rh 2.00 Au	1.80 Rh 2.00 Rh



M	K	Q
1.80 Rh	1.15 Ni 1.75 Rh 2.00 Rh	1.00 Ni 1.30 Au/Ni



Collar height X/mm	Extension height Y/mm	Overall length Z/mm
2.0	10.5	32.3
5.0	13.5	35.3
7.0	15.5	37.3
8.0	16.5	38.3
9.0	17.5	39.3
10.0	18.5	40.3

How to order:

2021/ 5 - F - 1.5 N - Au - 2.0

1 2 3 4 5 6

1. Series 2. Collar height 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Receptacles see pages 52
Distance ring see pages 52

Series 2024/1024

- Metric design
- Contacting of assembled PCBs
- Large selection of head styles
- Variable extension heights from various collar dimensions

Mechanical Data

Center	2.54 mm/100 mil
Full travel	10.00 mm
Working travel	8.00 mm
Pre-loaded spring force	0.40/0.50/1.00 N
Spring force at working travel	1.50/2.50/3.00 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

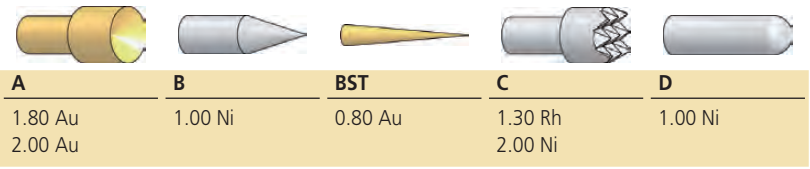
Materials

Barrel	Bronze/ Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Recommended diameter of drill

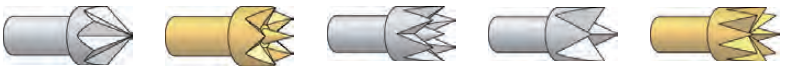
HP 2361.1 (Trolitax)	1.99 mm
HGW 2372 (Glass filled material)	2.00 mm

Tip style · Diameter · Plating



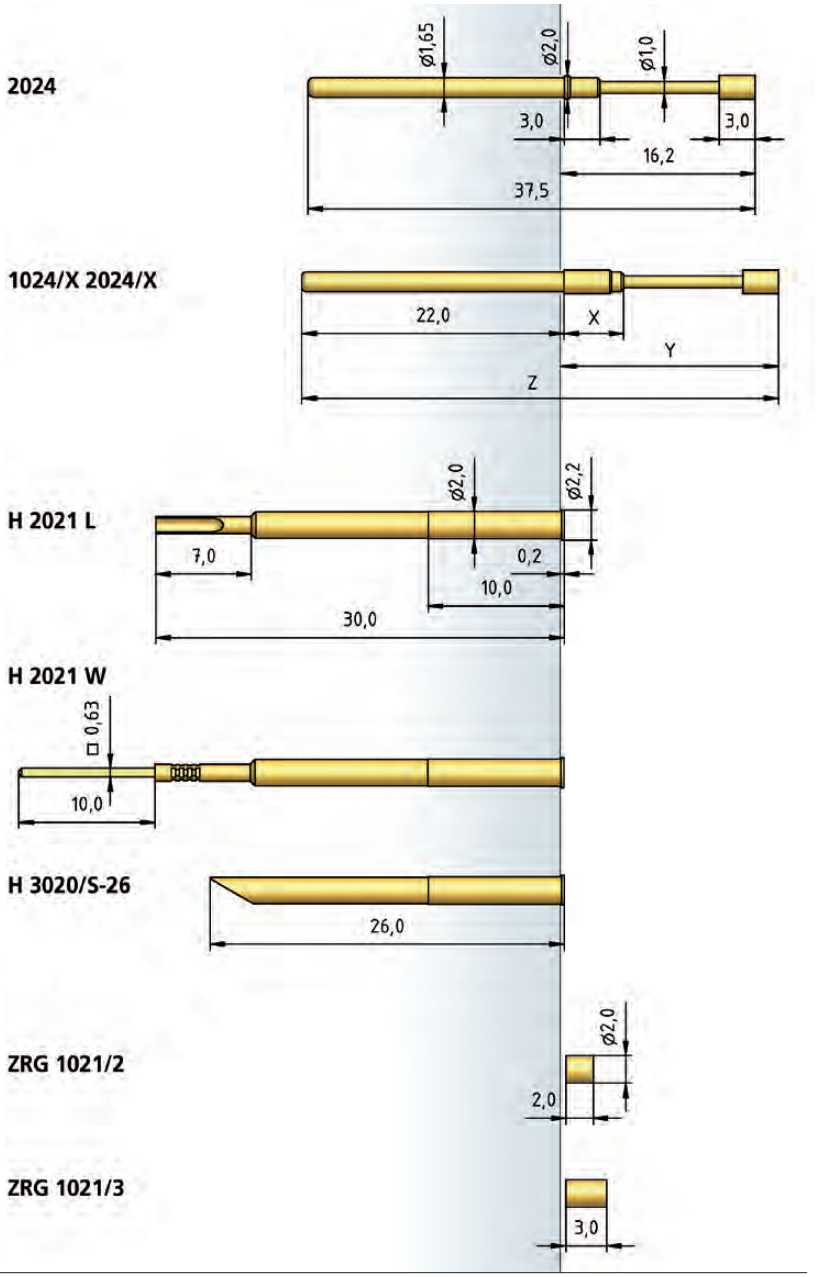
A	B	BST	C	D
1.80 Au 2.00 Au	1.00 Ni	0.80 Au	1.30 Rh 2.00 Ni	1.00 Ni

D	F	G	G	H
1.30 Ni	2.00 Au	1.00 Ni	1.30 Ni 2.00 Ni	1.30 Rh



K	M	M1	Q	Q8
2.00 Ni	1.50 Au	2.00 Rh	1.30 Ni	1.80 Au

V	V
1.00 Ni	1.30 Au



Series	Collar height X/mm	Extension height Y/mm	Overall length Z/mm
2024	5.0	18.2	39.5
1024	7.0	20.2	42.0
2024	8.0	21.2	42.5
1024	10.0	23.2	45.0

How to order:

2024	-	G	-	1.5 N	-	Ni	-	1.3
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 2028/1028

- Metric design
- Contacting of assembled PCBs
- Large selection of head styles

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.30/0.40/0.50/ 0.75/1.00/1.00 N
Spring force at working travel	0.70/1.00/1.50/ 2.25/3.00/5.00 N
2028/5: 1.00 N not available	

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 25 mOhm

Materials

Barrel	Bronze/ Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/Plastic
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.99 mm
HGW 2372 (Glass filled material)	2.00 mm

How to order:

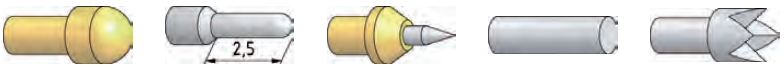
2028 - A - 1.5 N - Au - 1.5

1 2 3 4 5

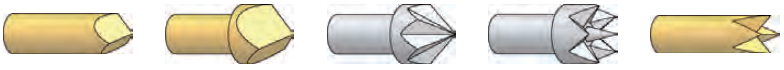
1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Tip style · Diameter · Plating

A	B	BST	C	CSM
1.50 Au 1.80 Ni	1.30 Rh	0.80 Au	1.40 Au 1.80 Rh 2.50 Rh 3.50 Rh	1.00/2.00 Au/ HTK

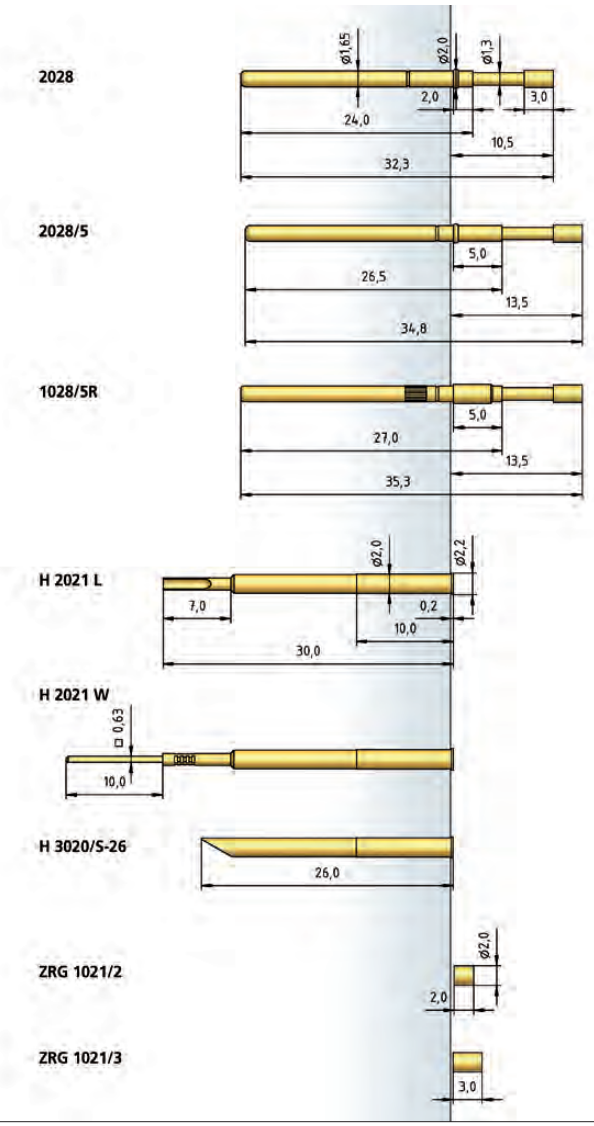


D	D1	EB	F	G
1.40 Au	0.65 Ni 0.80 Ni	1.80 Au	1.30 Ni	1.30 Ni 1.50 Rh



H	H	K	M6	Q
1.30 Au	1.40 Au 1.80 Au	1.30 Au 1.75 Ni	2.00 Rh	1.30 Au

Q	Q5	Q8	V
1.80 Au 2.00 Au	1.30 Ni	2.30 Ni	1.30 Ni



Series 2029

- Metric design
- Contacting of assembled PCBs
- Large selection of head styles

Mechanical Data

Center	2.54 mm/100 mil
Full travel	8.00 mm
Working travel	6.40 mm
Pre-loaded spring force	0.35/0.70/0.80 N
Spring force at working travel	1.50/2.25/3.00 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

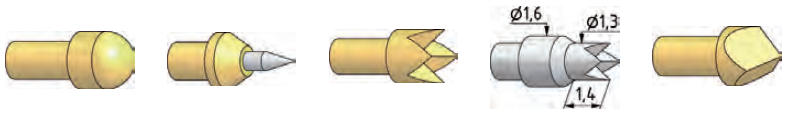
Barrel	Bronze, gold-plated
Spring	Spring steel, silver-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.99 mm
HGW 2372 (Glass filled material)	2.00 mm

Tip style · Diameter · Plating

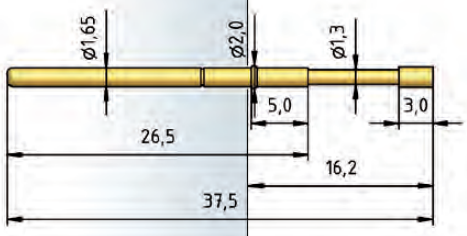
A	B	BST	C	C
1.50 Ni	1.30 Rh	0.80 Au	1.30 Ni 1.50 Au/Rh	1.30/1.60 Rh/Ni



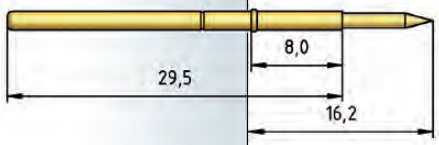
D	EB	G	G	H
1.50 Au	1.80 Au	1.30 Au/Ni/Rh 1.50 Ni	1.30 /1.60 Ni/Rh	1.30 Au 1.50 Ni 1.80 Au

K	M1	Q	Q5	V
1.50 Au	1.80 Au	1.50 Ni	1.30 Au/Ni	1.30 Ni

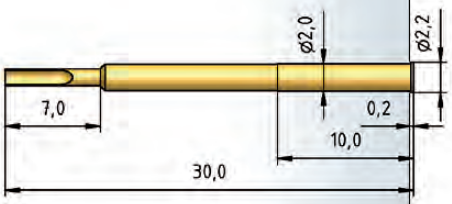
2029/5



2029/8
only for tip style
B; BST; Q; V

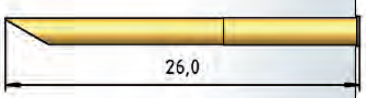


H 2021 L

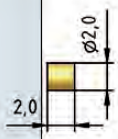


H 2021 W

H 3020/S-26



ZRG 1021/2



ZRG 1021/3

How to order:

2029/ 5 - C - 1.5 N - Rh - 1.5
1 2 3 4 5 6

1. Series 2. Collar height 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series	Center
1008/D	50 mil/1.27 mm
1012/D	75 mil/1.91 mm
1025/D	100 mil/2.54 mm

Rotating test probes

Rotating test probes offer an alternative for the testing of assembled components under unclean conditions. When the plunger is pressed downwards, its special spiral design causes a rotation, limited to approx. 90°. This principle allows perfect contacting even when the contact surfaces are dirty or oxidised. In combination with the rotating motion, the tip styles – which are normally aggressive – also allow the use of probes with lower contact pressures.

Series 1008/D

- Use in cases of bad soiling, oxydation or flux residues
- Penetration of these platings by rotating movement

Mechanical Data	
Center	1.27 mm/50 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.40 N
Spring force at working travel	1.50 N

Electrical Data	
Max. current rating	2.0 - 3.0 A
Typical continuity resistance	≤ 20 mOhm

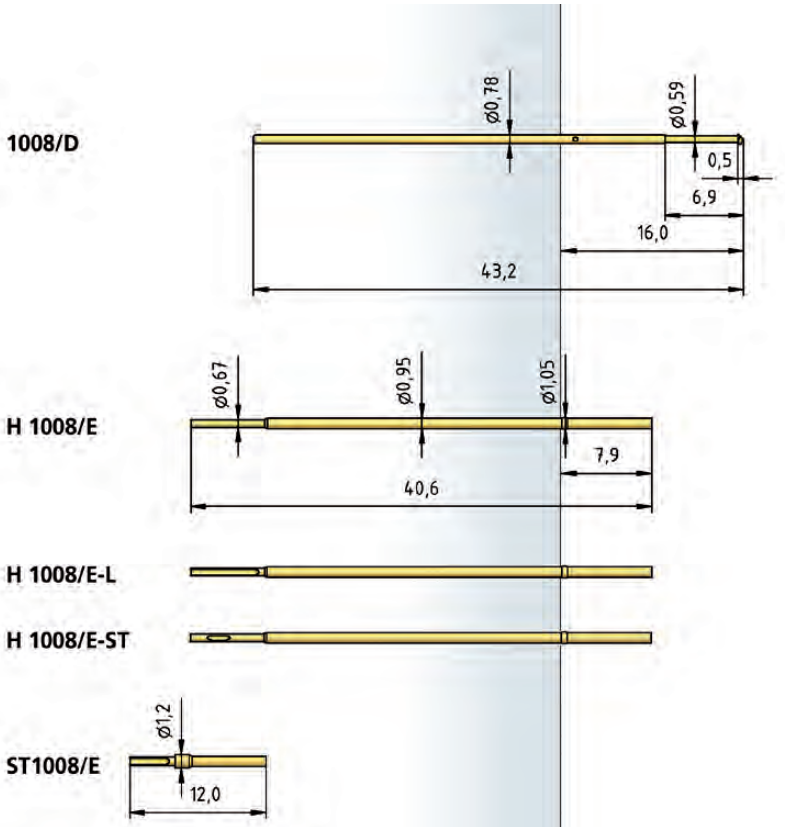
Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	0.95 - 0.96 mm
With pressed-in ring	1.02 mm
HGW 2372 (Glass filled material)	0.96 - 0.97 mm
With pressed-in ring	1.03 mm

Tip style · Diameter · Plating

HD

0.90 Au



How to order:

1008/D	-	HD	-	1.5 N	-	Au	-	0.9
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1012/D

- Use in cases of bad soiling, oxydation or flux residues
- Penetration of these platings by rotating movement

Mechanical Data

Center	1.91 mm/75 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.50 N
Spring force at working travel	2.00 N

Electrical Data

Max. current rating	3.0 - 4.0 A
Typical continuity resistance	≤ 20 mOhm

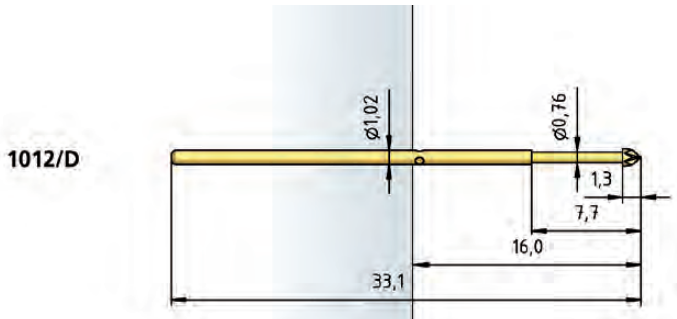
Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated

Tip style · Diameter · Plating

KD

1.20 Au



Receptacles see page 45

How to order:

1012/D - KD - 2.0 N - Au - 1.2

1 2 3 4 5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1025/D

- Use in cases of bad soiling, oxydation or flux residues
- Penetration of these platings by rotating movement

Mechanical Data

Center	2.54 mm/100 mil
Full travel	6.40 mm
Working travel	4.30 mm
Pre-loaded spring force	0.60 N
Spring force at working travel	2.00 N

Electrical Data

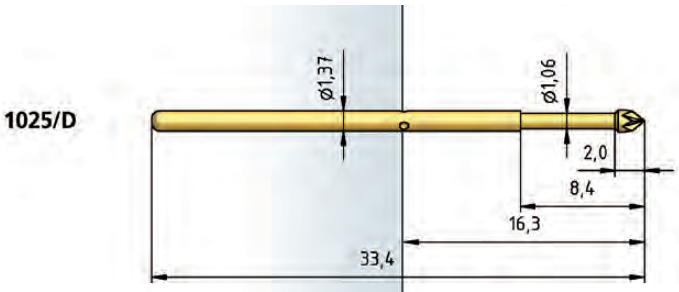
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Bronze, gold-plated

Tip style · Diameter · Plating

KD
1.50 Au



Receptacles see page 50

How to order:

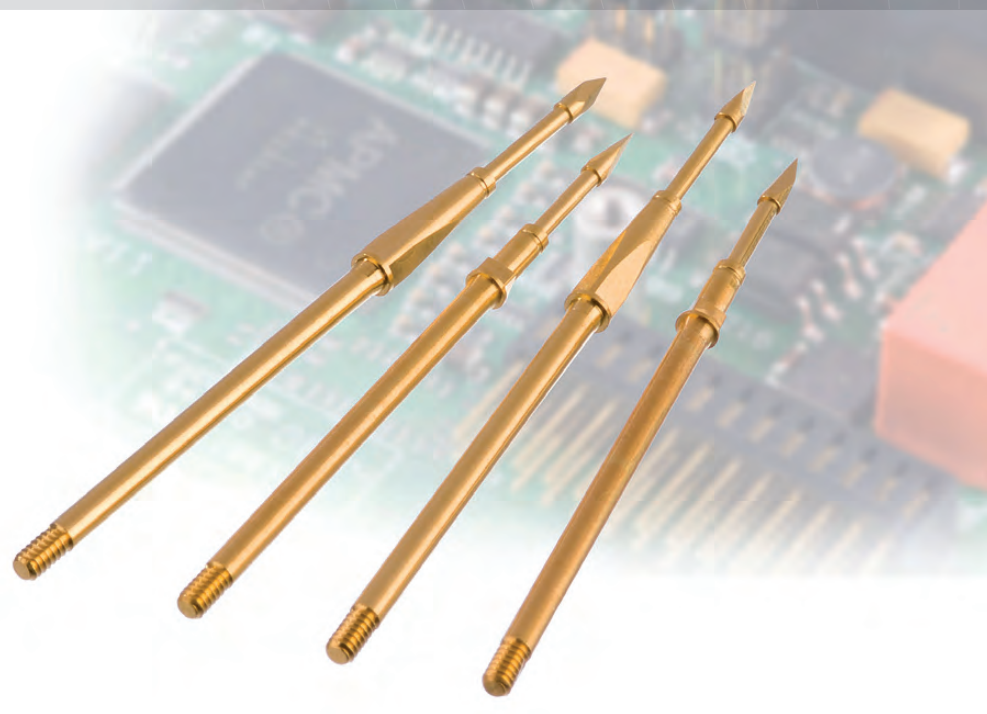
1025/D	-	KD	-	2.0 N	-	Au	-	1.5
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series	Center
5248/G	100 mil/2.54 mm
5257/G	100 mil/2.54 mm

Flying probes

The flying probe testers are designed as a thread variant and are suitable for use in Acculogic (Scorpion) and Digitaltest test systems. A special locking system ensures very high test point accuracy.



Series 5248/G

- Use in acculogic flying probe testers (Scorpion) and digital test
- High test point accuracy
- Treaded type

Mechanical Data • 5248/G	
Center	2.54 mm/100 mil
Full travel	8.00 mm
Working travel	6.40 mm
Pre-loaded spring force	0.50 N
Spring force at working travel	1.75 N

Mechanical Data • 5248/G-V	
Center	2.54 mm/100 mil
Full travel	6.50 mm
Working travel	5.00 mm
Pre-loaded spring force	0.50 N
Spring force at working travel	1.50 N

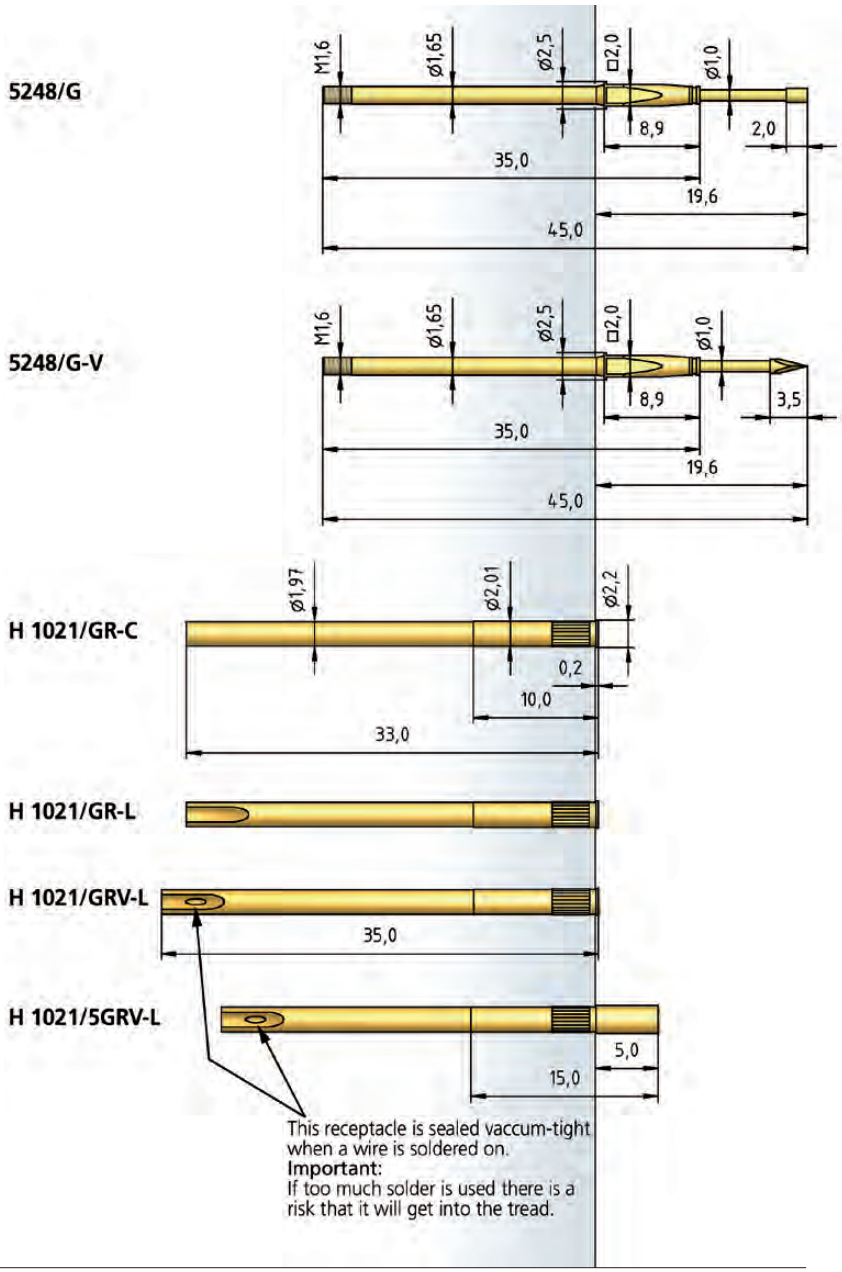
Electrical Data	
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 20 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm

Tip style · Diameter · Plating

A	BST1	V
1.30 Au	1.00 Au	1.30 Au



How to order:

5248/ G - A - 1.75 N - Au - 1.3

1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 5257/G

- Use in acculogic flying probe testers (Scorpion) and digital test
- High test point accuracy
- Treaded type

Tip style · Diameter · Plating

A	BST1	V
1.40 Au	1.00 Au	1.30 Au

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.60 N
Spring force at working travel	1.75 N

Electrical Data

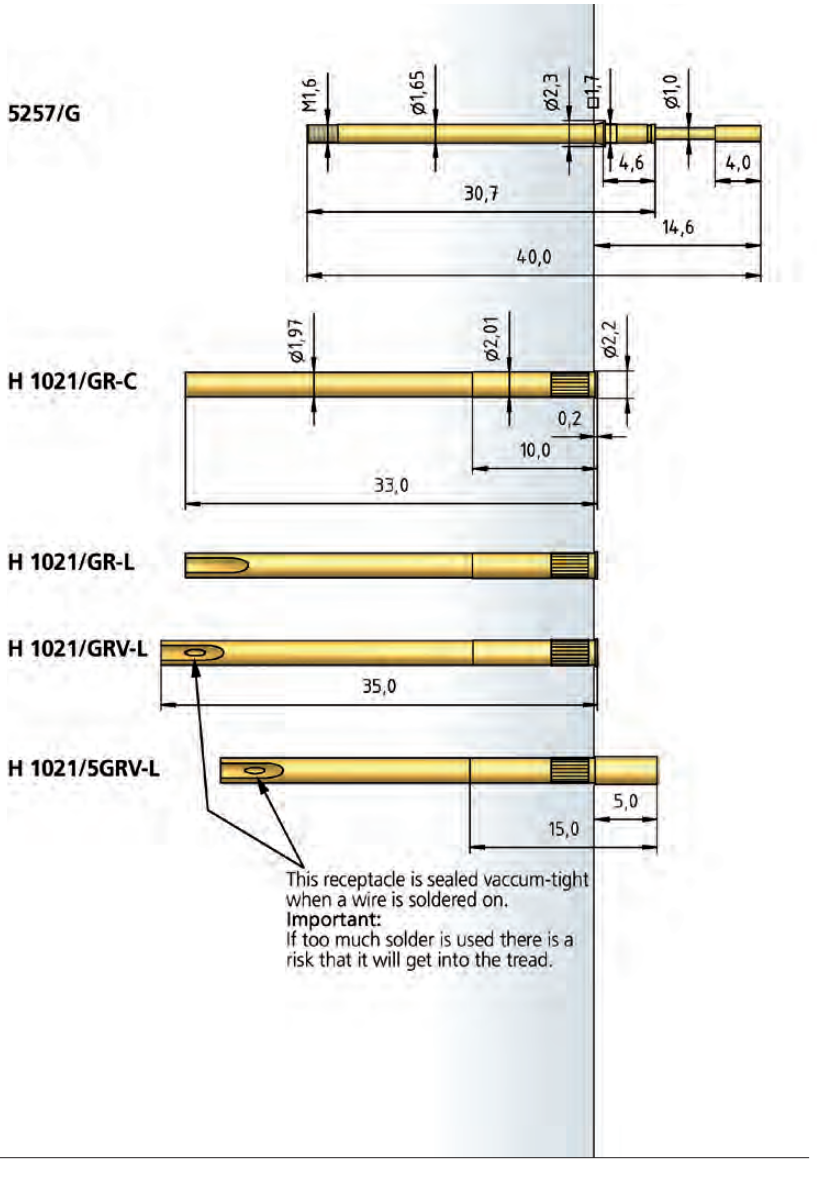
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm



How to order:

5257/ G - A - 1.75 N - Au - 1.4
1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series	Center
1030	125 mil/3.18 mm
1040	160 mil/4.00 mm
1041 / 1041W	177 mil/4.50 mm
1042	177 mil/4.50 mm
1050	160 mil/4.00 mm
1060	160 mil/4.00 mm
1051 / 1061	160 mil/4.00 mm
1054	138 mil/3.50 mm
1055	177 mil/4.50 mm

Test probes for centers >100 mil

The range of universal test probes for centers >100 mil comprises types for centers up to a maximum of 4.75 mm. They can be used for ICT/FTs (in-circuit test or function test) of components, burn-in / run-in tests, and for applications up to the testing of connectors on cable harnesses for the automotive industry. The use of suitable probes allows temperature ranges from -50°C to 150°C to be achieved.

Series 1030

- Stable design
- Height-adjustable installation by using receptacle with press ring
- Contacting of assembled PCBs
- Universal applications

Mechanical Data	
Center	3.18 mm/125 mil
Full travel	6.30 mm
Working travel	5.00 mm
Pre-loaded spring force	0.40/0.60/0.70 N
Spring force at working travel	1.50/2.25/3.00 N

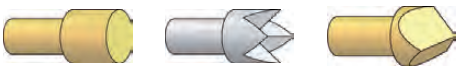
Electrical Data	
Max. current rating	4.0 A
Typical continuity resistance	≤ 30 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

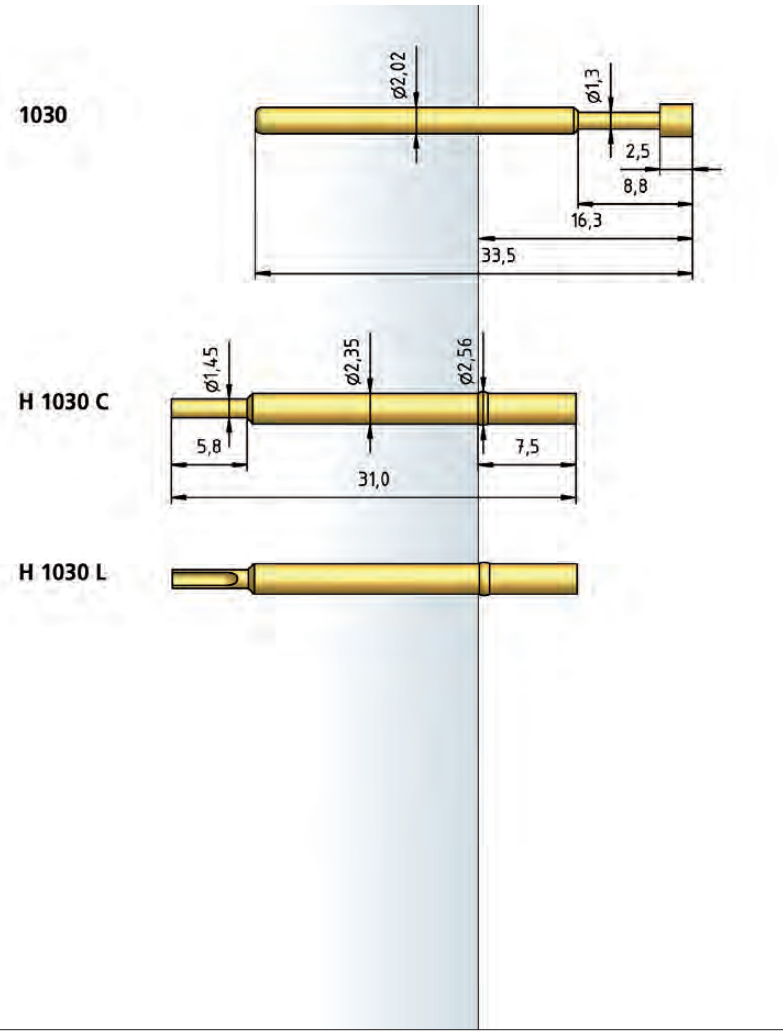
Recommended diameter of drill	
HP 2361.1 (Trolitax)	2.32 mm
With pressed-in ring	2.54 mm
HGW 2372 (Glass filled material)	2.34 mm
With pressed-in ring	2.56 mm

Tip style · Diameter · Plating

A	B	C	D	E
1.30 Rh 2.50 Au	1.30 Au	2.50 Au/Ni	1.30 Au 1.60 Au/Ni 2.50 Au	2.50 Au



F	G	H
2.50 Au/Ni 4.00 Au	2.50 Rh	2.50 Au



How to order:

1030	-	A	-	1.5 N	-	Au	-	2.5
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1040

- Stable design
- Height-adjustable installation by using receptacle with press ring
- Contacting of assembled PCBs
- Universal applications

Mechanical Data	
Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.50/0.70/0.80/1.50 N
Spring force at working travel	1.50/2.25/3.00/5.00 N

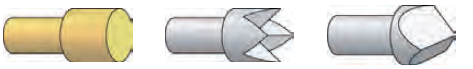
Electrical Data	
Max. current rating	5.0 A
Typical continuity resistance	≤ 30 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

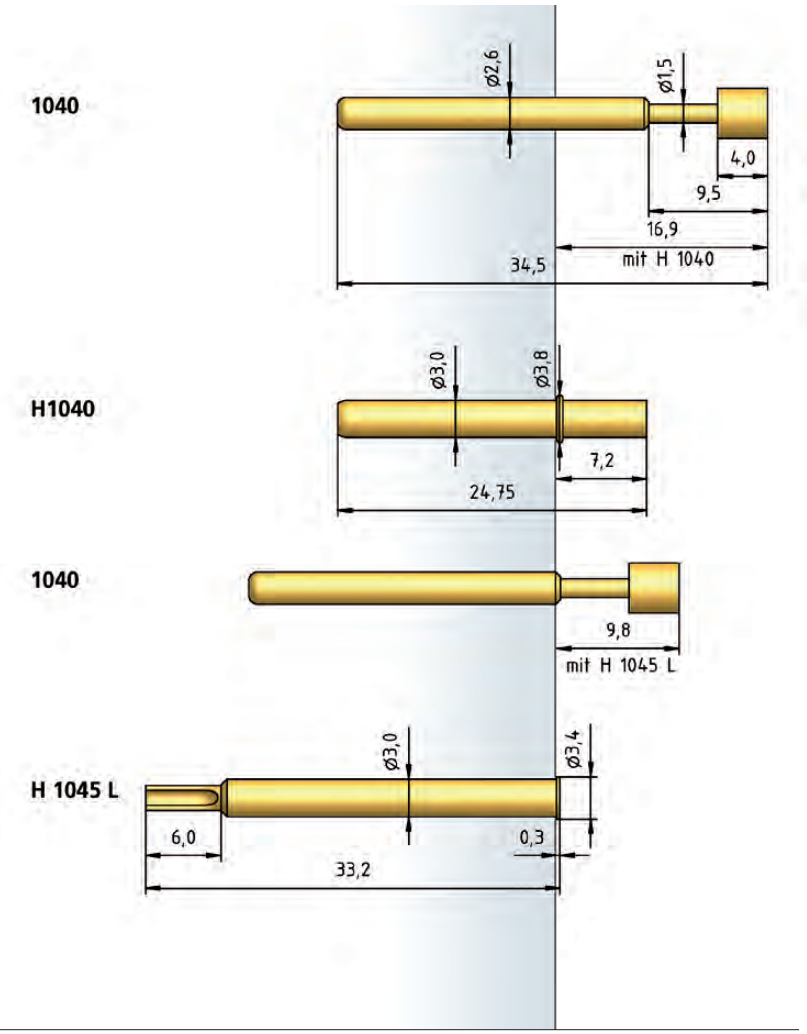
Recommended diameter of drill	
HP 2361.1 (Trolitax)	2.99 mm
HGW 2372 (Glass filled material)	3.00 mm

Tip style · Diameter · Plating

A	B	C	D	E
4.00 Au/Ni	1.50 Au/Ni	4.00 Au/Ni	2.40 Au/Ni	4.00 Au/Ni



F	G	H
4.00 Au/Ni	4.00 Ni	4.00 Ni



How to order:

1040	-	F	-	1.5 N	-	Au	-	4.0
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1041 • 1041/W

- Stable design
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	4.50 mm/177 mil
Full travel	5.50 mm
Working travel	4.80 mm
Pre-loaded spring force	0.25/0.75/0.60 N
Spring force at working travel	1.50/3.00/5.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Brass, gold-plated

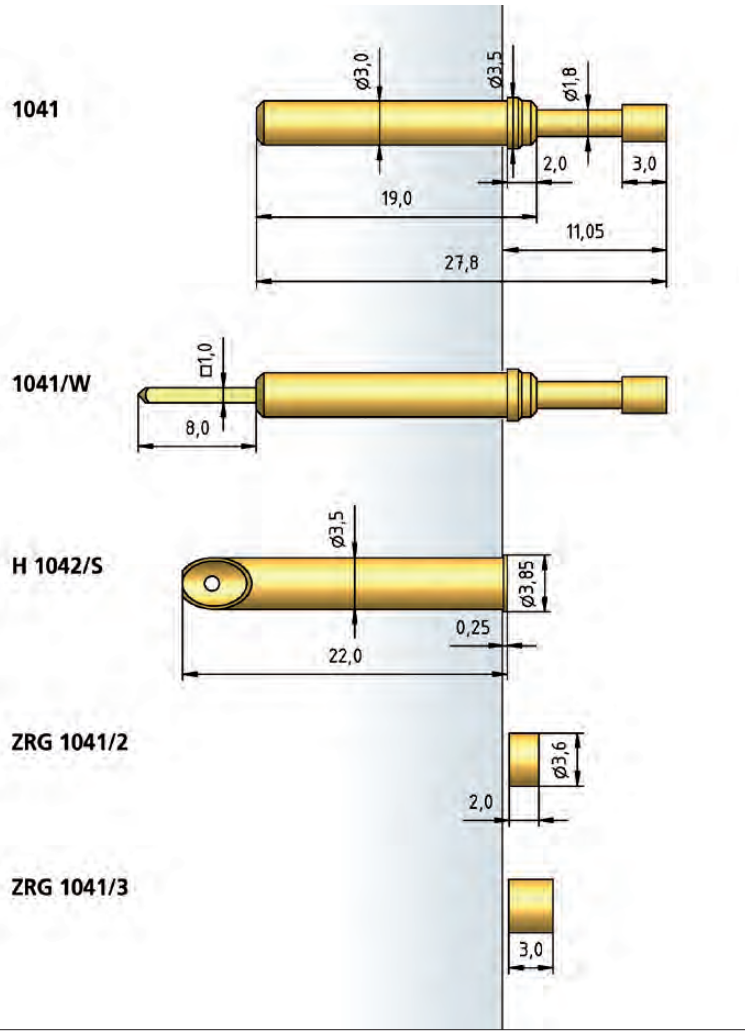
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.50 mm
HGW 2372 (Glass filled material)	3.52 mm

Tip style · Diameter · Plating

A	B	BA	C	D
2.50 Ni 4.00 Au	1.80 Rh/Ni	1.80 Au/Ni	2.30 Au/Ni/Rh 3.00 Au/Ni 4.00 Au/Ni/Rh	2.30 Au

G
2.30 Rh 4.00 Au



How to order:

1041/ W - C - 1.5 N - Au - 4.0/ MH5.5

1 2 3 4 5 6 7

1. Series 2. Wire-wrap connector 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Max. travel

Series 1042

- Stable design
- Test probe with continuous plunger
- Contacting of assembled PCBs
- Universal applications
- For use also with higher currents

Tip style · Diameter · Plating

C	C	F	G	H
1.85 Ni	4.00 Au/Ni	4.00 Ni	1.85 Ni	4.00 Rh

Mechanical Data

Center	4.50 mm/177 mil
Full travel	7.00 mm
Working travel	5.60 mm
Pre-loaded spring force	0.40/0.50/0.60/ 1.00/3.50/3.00 N
Spring force at working travel	1.50/2.25/3.00/ 4.50/6.00/12.50 N

Electrical Data

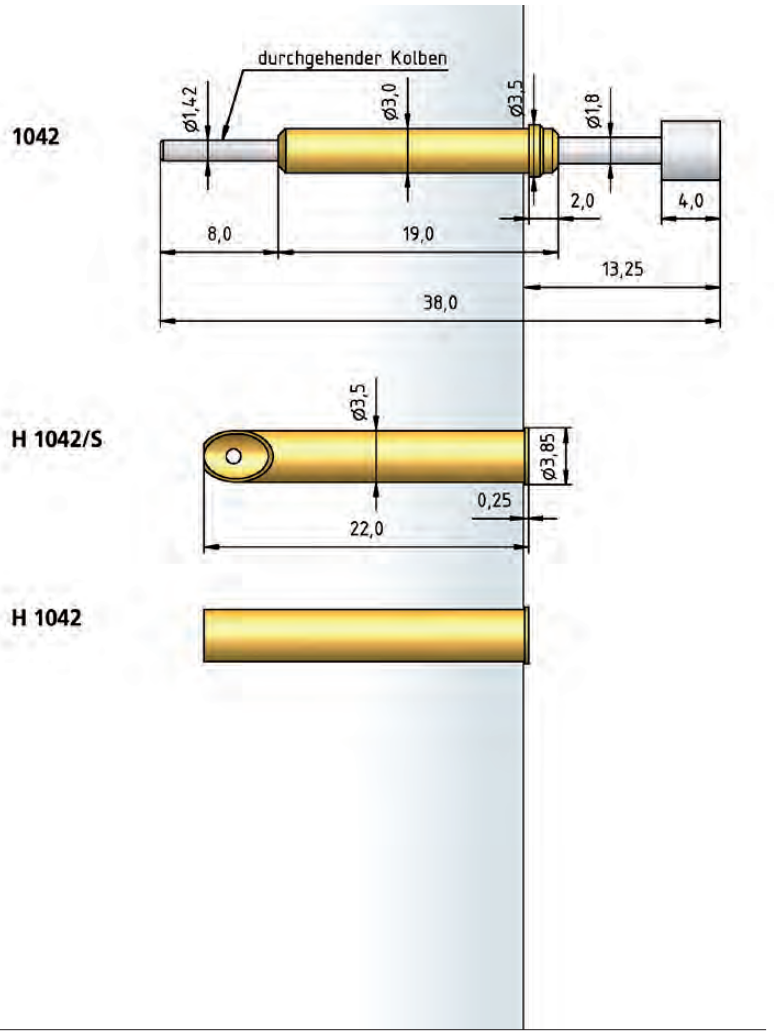
Connector - receptacle	
Max. current rating	5.0 A
Typical continuity resistance	≤ 30 mOhm
Connector - plunger	
Max. current rating	8.0 A
Typical continuity resistance	≤15 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe, gold-plated
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.50 mm
HGW 2372 (Glass filled material)	3.52 mm



How to order:

1042	-	C	-	1.5 N	-	Au	-	4.0
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1050

- Stable design
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.20/0.20/0.40/ 1.00/1.00 N
Spring force at working travel	0.40/0.80/1.50/ 3.00/5.00 N

Electrical Data

Max. current rating	5.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

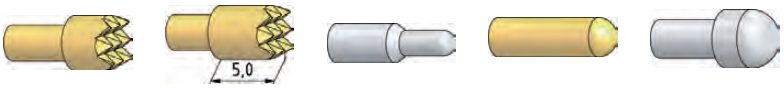
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Nickel silver, unplated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating

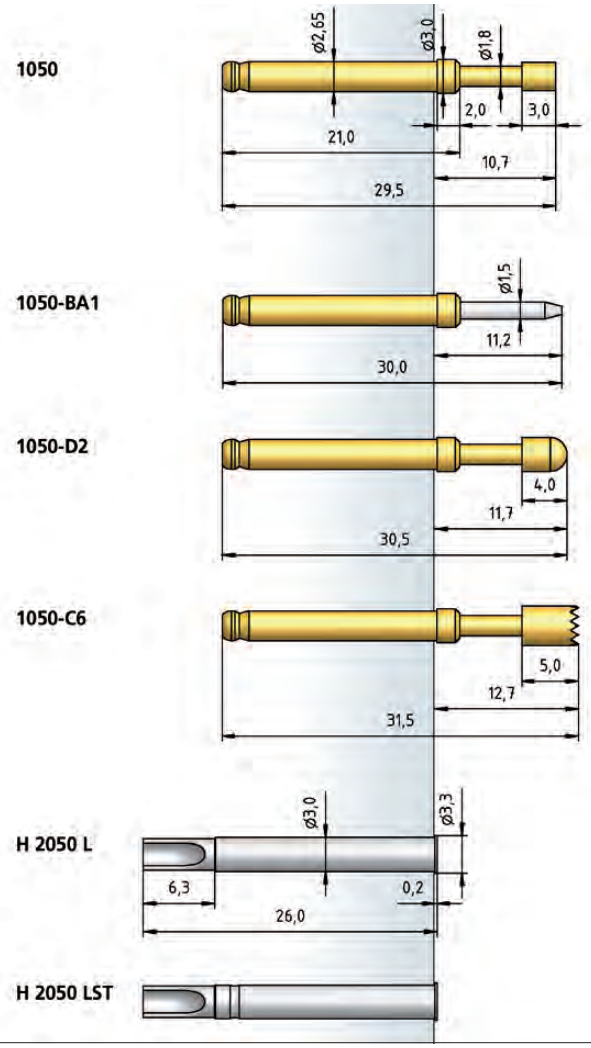
A	A6	B	BA	BA1
2.50 Ni 4.00 Au	2.50C Au	1.80 Rh/Ni	1.80 Au/Ni	1.50 Ni



C	C6	D	D	D
2.30 Au/Ni/Rh 2.50 Au/Ni/Rh 3.00 Au/Ni/Rh 4.00 Au/Ni/Rh	3.50 Au/Ni	1.00 Rh	1.80 Au	2.30 Au/Ni 2.50 Au/Ni

D2	D3	F	F	F3
3.00 Au/Ni	0.80 Rh 1.40 Au	1.80 Au/Ni	2.30 Au/Rh 2.50 Rh 3.00 Au 4.00 Rh	1.00 Rh 1.40 Au

G	H	K	KF
2.30 Rh 2.50 Rh/Ni 4.00 Au/Rh/Ni	2.50 Ni 2.60 Ni 3.00 Ni/Rh	1.80 Rh 3.00 Ni	2.60 Ni 4.00 Ni



Distance ring see page 71

How to order:

1050	-	A	-	1.5 N	-	Au	-	4.0
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1060

- Stable design
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.20/0.40/0.50/ 0.80/0.70 N
Spring force at working travel	0.60/1.50/2.25/ 3.00/5.00 N

Electrical Data

Max. current rating	5.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

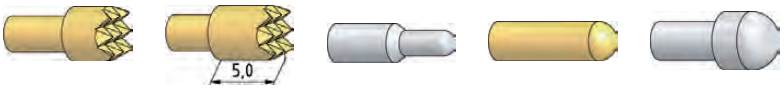
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Nickel silver, unplated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating

A	A6	B	BA	BA1
2.50 Ni 4.00 Au	2.50C Au	1.80 Rh/Ni	1.80 Au/Ni	1.50 Ni

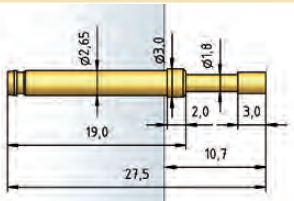


C	C6	D	D	D
2.30 Au/Ni/Rh 2.50 Au/Ni/Rh 3.00 Au/Ni/Rh 4.00 Au/Ni/Rh	3.50 Au/Ni	1.00 Rh	1.80 Au	2.30 Au/Ni 2.50 Au/Ni

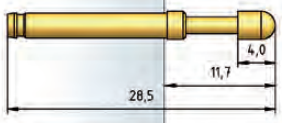
D2	D3	F	F	F3
3.00 Au/Ni	0.80 Rh 1.40 Au	1.80 Au/Ni	2.30 Au/Rh 2.50 Rh 3.00 Au 4.00 Rh	1.00 Rh 1.40 Au

G	H	K	KF
2.30 Rh 2.50 Rh/Ni 4.00 Au/Rh/Ni	2.50 Ni 2.60 Ni 3.00 Ni/Rh 4.20 Rh	1.80 Rh 3.00 Ni	2.60 Ni 4.00 Ni

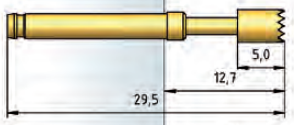
1060



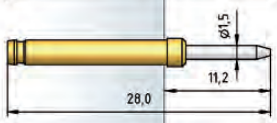
1060-D2



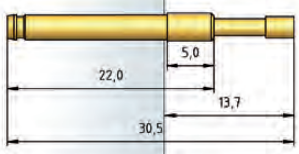
1060-C6



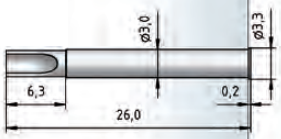
1060-BA1



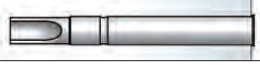
1060/5



H 2050 L



H 2060 LST



Distance ring see page 71

How to order:

1060	-	A	-	1.5 N	-	Au	-	4.0
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1051 • 1061

- Stable design
- Increased extension height
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	4.00 mm/160 mil
Full travel	7.00 mm
Working travel	5.60 mm
Pre-loaded spring force	0.15/0.25/0.40/0.60 N
Spring force at working travel	0.70/0.80/1.50/3.00 N

Electrical Data

Max. current rating	5.0 A
Typical continuity resistance	≤ 35 mOhm

Materials

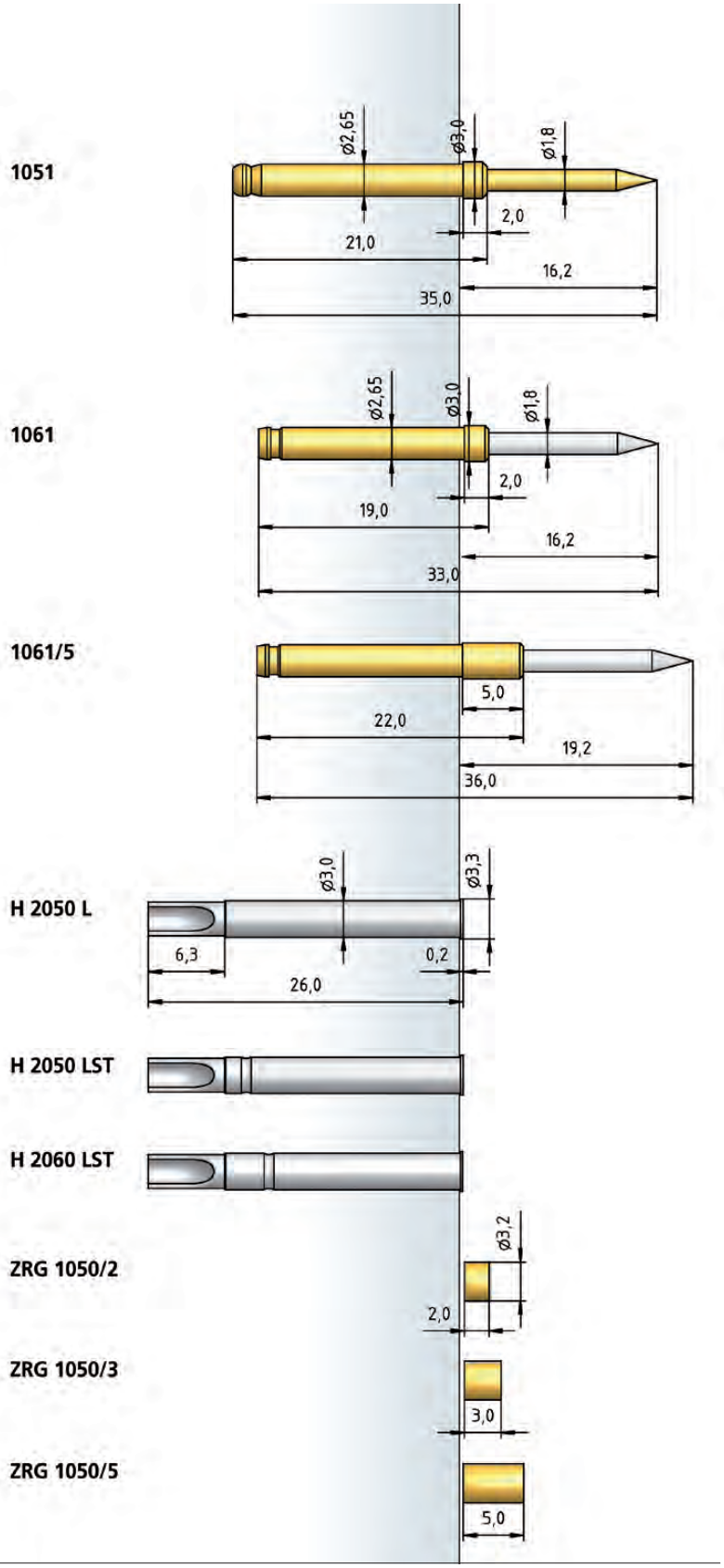
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Nickel silver, unplated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating

B	BA
1.80 Ni	1.80 Rh



How to order:

1051	-	B	-	1.5 N	-	Ni	-	1.8
1		2		3		4		5

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter

Series 1054

- Stable design
- Height-adjustable installation by using receptacle with press ring
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	3.50 mm/138 mil
Full travel	6.40 mm
Working travel	5.10 mm
Pre-loaded spring force	0.40/0.40/0.50/1.00 N
Spring force at working travel	1.00/1.50/2.50/3.00 N

Electrical Data

Max. current rating	5.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Nickel silver, gold-plated

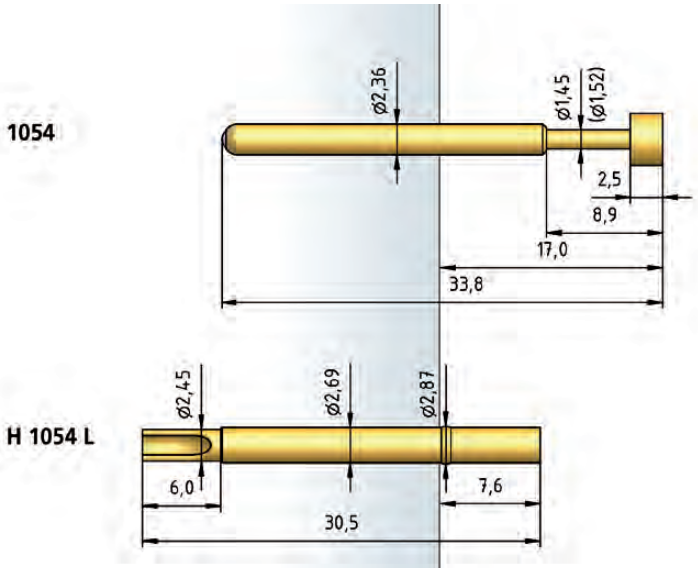
Recommended diameter of drill

HP 2361.1 (Trolitax)	2.71 mm
With pressed-in ring	2.89 mm
HGW 2372 (Glass filled material)	2.67 mm
With pressed-in ring	2.85 mm

Tip style · Diameter · Plating

A	B	C	D	D
3.96 Au	1.52 Rh	3.96 Au	1.45C Au	2.36 Au 3.96 Au

E	F	G
2.36 Au/Rh 3.96 Au	1.45 Au	1.45 Ni



How to order:

1	2	3	4	5	6
1054	- C	- 2.5 N	- Au	- 3.96	C

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 1055

- Stable design
- Height-adjustable installation by using receptacle with press ring
- Contacting of assembled PCBs
- Universal applications

Mechanical Data

Center	4.50 mm/177 mil
Full travel	6.40 mm
Working travel	5.10 mm
Pre-loaded spring force	0.60/1.00 N
Spring force at working travel	2.25/4.75 N

Electrical Data

Max. current rating	8.0 A
Typical continuity resistance	≤ 20 mOhm

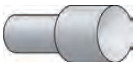
Materials

Barrel	Nickel silver, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel /CuBe, gold-plated or rhodium-plated
Receptacle	Bronze, gold-plated

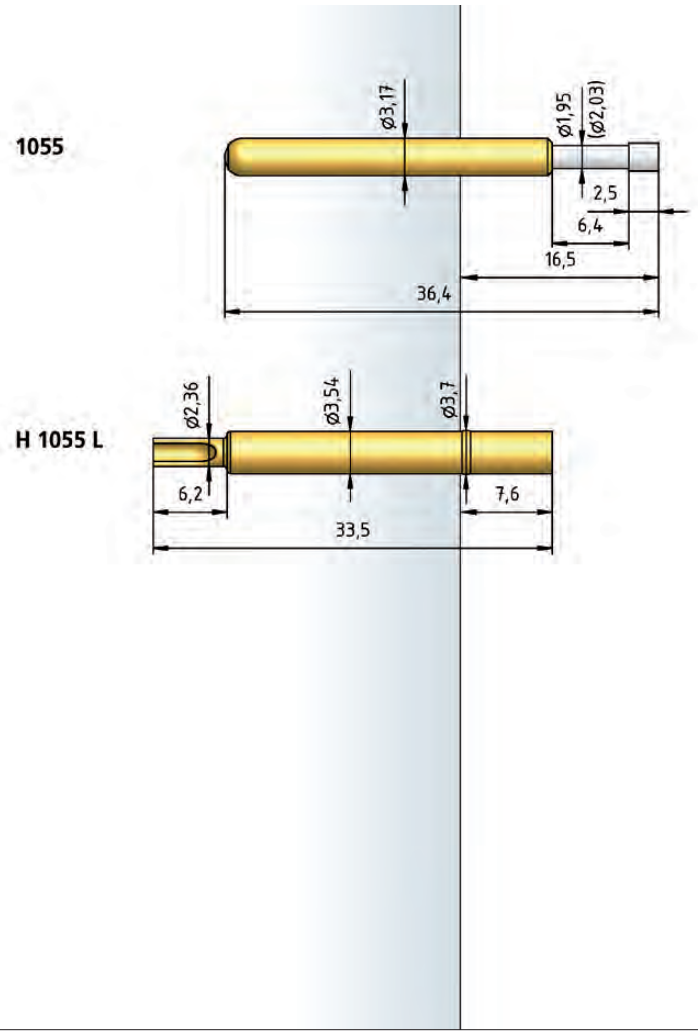
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.54 mm
With pressed-in ring	3.60 mm

Tip style · Diameter · Plating

 A	 B	 C	 D2	 D2
2.36 Rh	2.03 Rh	3.96 Rh	2.03C Rh	2.03C Au

 G2
1.30 Rh



How to order:

1055	-	A	-	2.25 N	-	Rh	-	2.36	C
1		2		3		4		5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Series	Center
1007/G	50 mil/1.27 mm
1010/G	75 mil/1.91 mm
1015/G	100 mil/2.54 mm
1015/G Position test	100 mil/2.54 mm
1015/G-D7 Position test	100 mil/2.54 mm
1021/G	100 mil/2.54 mm
1021/G Position test	100 mil/2.54 mm
1028/G	100 mil/2.54 mm
1042/G	177 mil/4.50 mm
1060/G	160 mil/4.00 mm
1060/G Position test	160 mil/4.00 mm
1061/G	160 mil/4.00 mm
5110/G	160 mil/4.00 mm

Test probes with thread

Test probes with thread are mainly used in the automotive supply industry to test cable harnesses. The thread on the test probe and receptacle prevents the test probe from gradually twisting out of the receptacle, something which is aided by the spontaneous opening of the test module. Different sizes with centers from 1.27 to 4.0 mm with different tip styles and contact pressures provide a basis for almost all connectors which need testing. A constantly increasing range of test probes for position tests completes this range of products. A large selection of screwing tools and torque screwdrivers makes it easy to use these test probes with thread. Changing test conditions and connectors make it necessary to have new types on a regular basis, and this is why we also offer test probes to meet customers' individual requirements. Our lathe centre reacts quickly to your needs.

Series 1007/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	1.27 mm/50 mil
Full travel	5.00 mm
Working travel	4.00 mm
Pre-loaded spring force	0.20 N
Spring force at working travel	1.10 N

Electrical Data

Max. current rating	3.0 A
Typical continuity resistance	≤ 50 mOhm

Materials

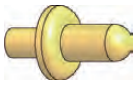
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	0.99 mm
HGW 2372 (Glass filled material)	1.00 mm

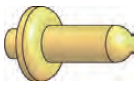
Tip style · Diameter · Plating

B	C	D	F
0.40C Au	0.90C Au	0.64C Au	0.64C Au



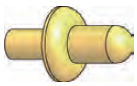
D7001
0.60C Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D7001	0.60	1.00	1.80	29.70	11.30



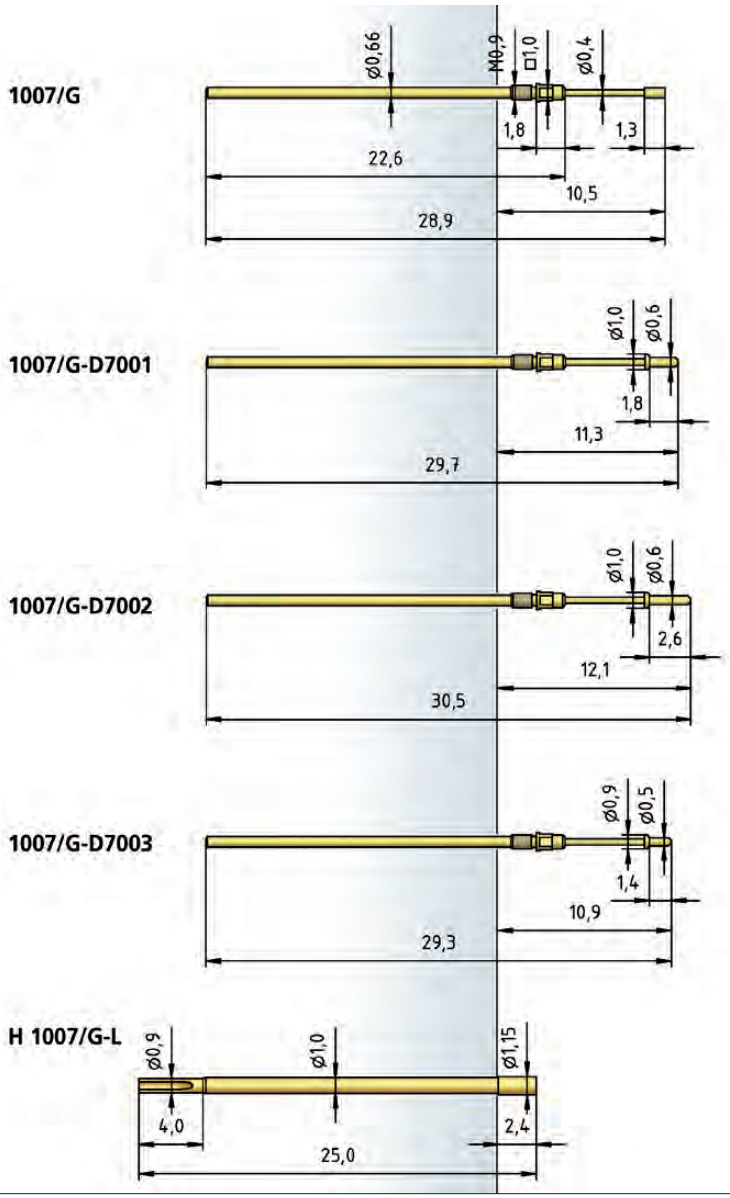
D7002
0.60C Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D7002	0.60	1.00	2.60	30.50	12.10



D7003
0.50C Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D7003	0.50	0.90	1.40	29.30	10.90



How to order:

1007/ G - B - 1.1 N - Au - 0.4 C
1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1010/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	1.91 mm/75 mil
Full travel	3.00 mm
Working travel	2.40 mm
Pre-loaded spring force	0.20 N
Spring force at working travel	0.80 N

Electrical Data

Max. current rating	3.0 - 4.0 A
Typical continuity resistance	≤ 20 mOhm

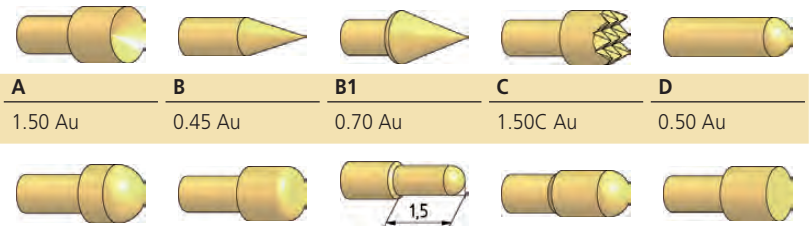
Materials

Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Brass, gold-plated

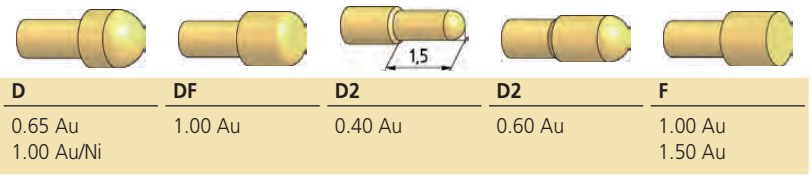
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.25 mm
HGW 2372 (Glass filled material)	1.26 mm

Tip style · Diameter · Plating

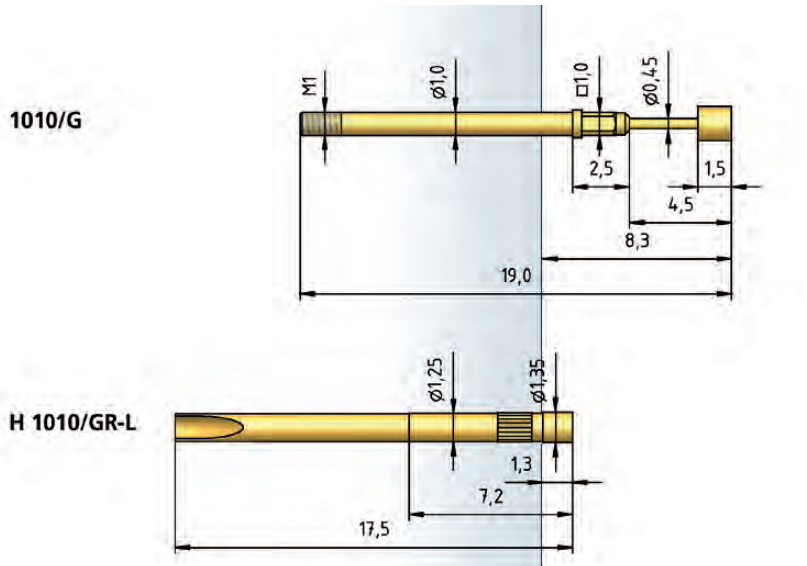


A	B	B1	C	D
1.50 Au	0.45 Au	0.70 Au	1.50C Au	0.50 Au



D	DF	D2	D2	F
0.65 Au 1.00 Au/Ni	1.00 Au	0.40 Au	0.60 Au	1.00 Au 1.50 Au

G	H
1.50 Rh	1.50C Ni



How to order:

1010/ G - D - 0.8 N - Au - 1.0 C
1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1015/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	2.54 mm/100 mil
Full travel	4.40 mm
Working travel	3.50 mm
Pre-loaded spring force	0.25/0.40/0.40/ 0.30/0.70/0.60 N
Spring force at working travel	0.70/1.00/1.50/ 1.70/2.50/3.00 N

Electrical Data

Max. current rating	3.0 - 5.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Brass, gold-plated

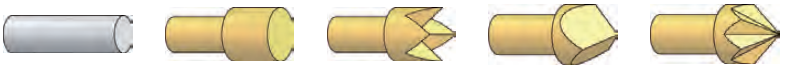
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.68 - 1.70 mm
HGW 2372 (Glass filled material)	1.68 - 1.70 mm

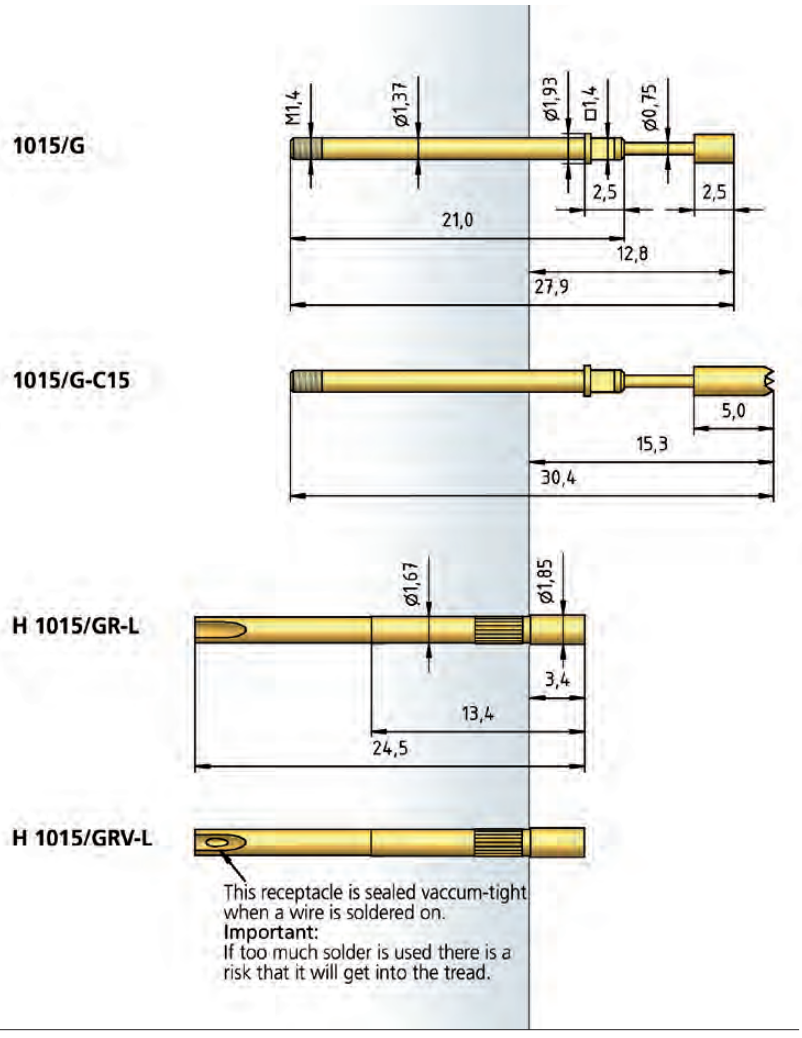
Tip style · Diameter · Plating

A	B	BS	C	C1S
1.80 Au/Ni	0.75 Au/Rh/Ni	0.38 Au/Ni	1.00 Au 1.30 Au 1.80 Au/Ni	0.90/1.37 Au/HTK

C2S	C15	D	D	E
1.20/1.80 Au/HTK	1.80 Au	0.50 Ni 0.65 Au/Ni 0.75 Au/Rh	1.25 Au/Ni	1.80 Au/Ni



F	F	G	H	K
0.75 Rh	1.50C Au 1.80 Rh	1.30 Rh 1.80 Au/Ni	1.30 Rh 1.80 Au	1.80 Au/Ni



How to order:

1015/ G - A - 1.5 N - Au - 1.8 C

1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1015/G

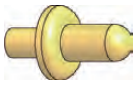
- Test probe for cable harness testing
- Test probe geometry for position test
- Screwable - treaded design
- Screwing tools available

Mechanical Data	
Center	2.54 mm/100 mil
Full travel	4.40 mm
Working travel	3.50 mm
Pre-loaded spring force	0.25/0.40/0.40/ 0.30/0.70/0.60 N
Spring force at working travel	0.70/1.00/1.50/ 1.70/2.50/3.00 N

Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

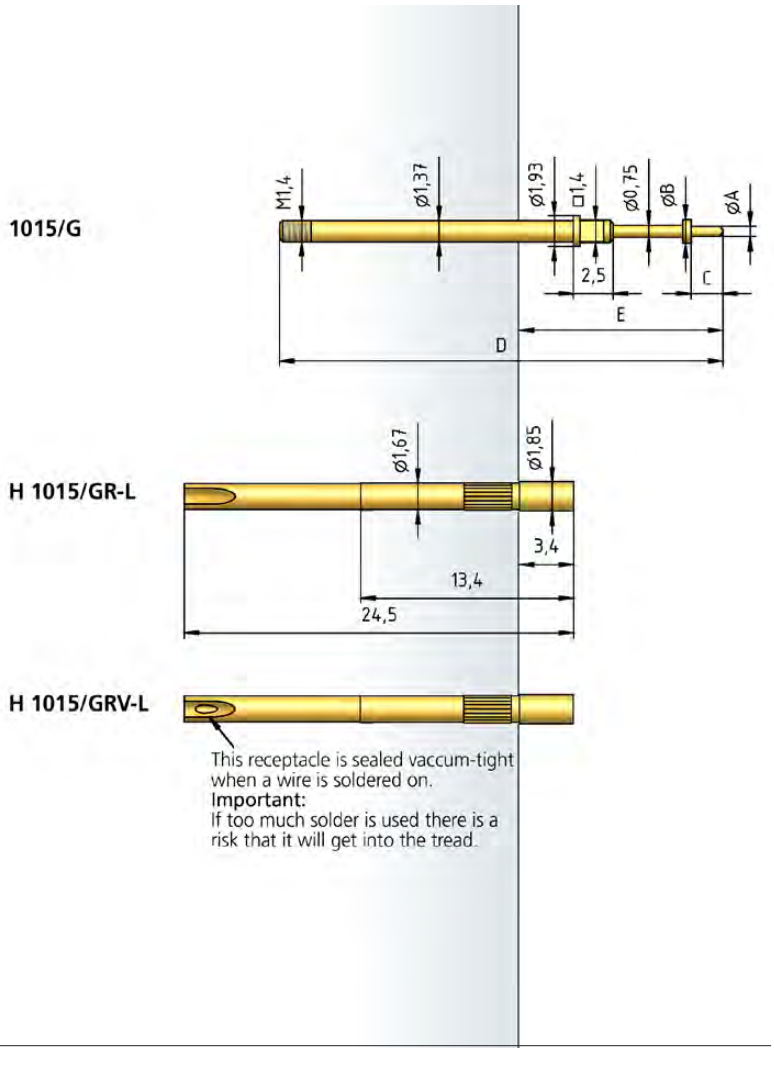
Recommended diameter of drill	
H1015/GR	
HP 2361.1 (Trolitax)	1.68 - 1.70 mm
HGW 2372 (Glass filled material)	1.68 - 1.70 mm



Dxxxx

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D1001	0.65	1.50 mm	4.00 mm	29.90 mm	14.80 mm
D1002	0.65	1.50 mm	2.80 mm	28.70 mm	13.60 mm
D1003	0.65	1.50 mm	3.30 mm	29.20 mm	14.10 mm
D1004	0.65	1.50 mm	3.40 mm	29.30 mm	14.20 mm
D1005	0.70	1.50 mm	4.00 mm	29.90 mm	14.80 mm
D1006	0.65	1.40 mm	5.50 mm	31.40 mm	16.30 mm
D0615	0.65	1.50 mm	1.50 mm	27.40 mm	12.30 mm
D0620	0.65	1.50 mm	2.00 mm	27.90 mm	12.80 mm
D0625	0.65	1.50 mm	2.50 mm	28.40 mm	13.30 mm
D0630	0.65	1.50 mm	3.00 mm	28.90 mm	13.80 mm
D0635	0.65	1.50 mm	3.50 mm	29.40 mm	14.30 mm
D0645	0.65	1.50 mm	4.50 mm	30.40 mm	15.30 mm
D0650	0.65	1.50 mm	5.00 mm	30.90 mm	15.80 mm



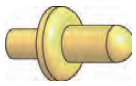
How to order:

1015/	G	-	D1001	-	1.5 N	-	Au	-	0.65x4.0	1.5
1	2		3		4		5		6 7	8

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip length 8. Plate diameter

Series 1015/G-D7

- Test probe for cable harness testing
- Test probe geometry for position test
- Screwable - treaded design
- Screwing tools available



D72/77

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D72	0.64	1.50 mm	3.40 mm	27.90 mm	12.80 mm
D72	0.75	1.50 mm	3.40 mm	27.90 mm	12.80 mm
D77	0.65	1.50 mm	4.00 mm	28.40 mm	13.30 mm

Mechanical Data

Center	2.54 mm/100 mil
Full travel (D72)	3.00 mm
Full travel (D77)	2.75 mm
Working travel	2.00 mm
Pre-loaded spring force	0.25/0.40/0.40/ 0.40/0.70/0.60 N
Spring force at working travel	0.50/0.75/1.00/ 1.10/1.70/2.00 N

Electrical Data

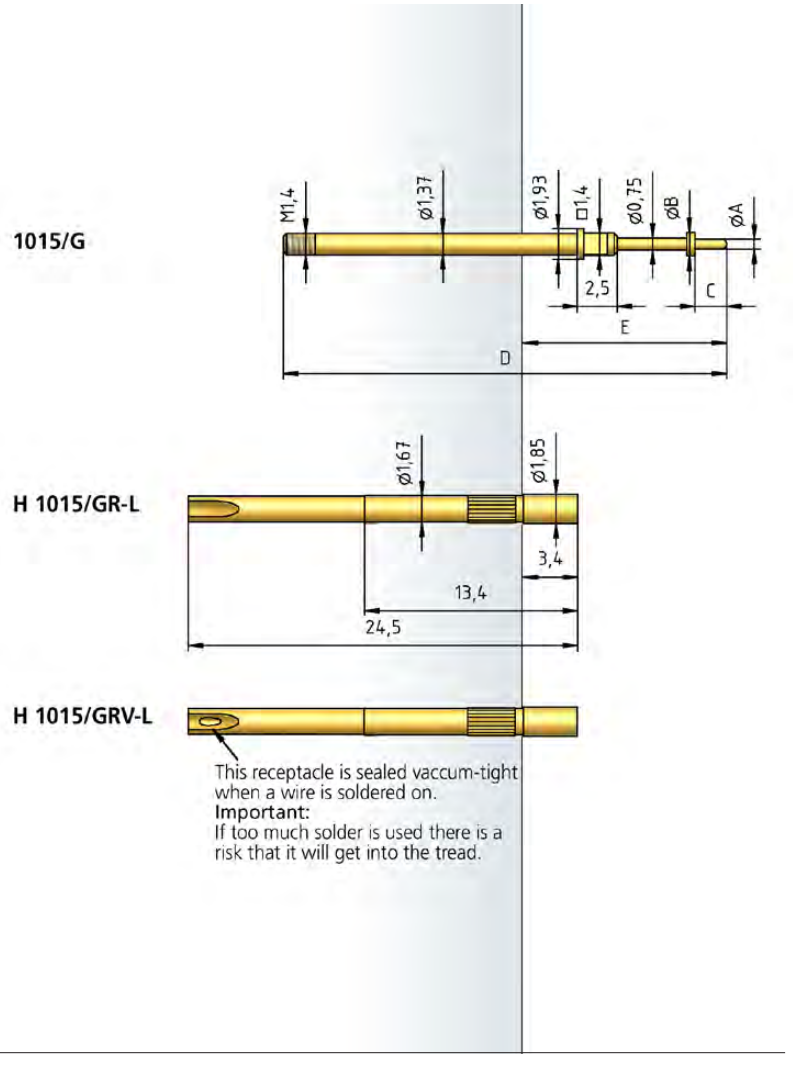
Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

H1015/GR	
HP 2361.1 (Trolitax)	1.68 - 1.70 mm
HGW 2372 (Glass filled material)	1.68 - 1.70 mm



How to order:

1015/ G - D7 - 1.0 N - Au - 0.65x4.0 1.5

1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip length 8. Plate diameter

Series 1021/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.30/0.40/0.50/ 0.70/1.00/1.00 N
Spring force at working travel	0.70/1.00/1.50/ 2.25/3.00/5.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 25 mOhm

Materials

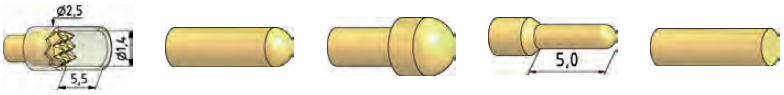
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/Plastic
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm

Tip style · Diameter · Plating

A	B	BST	C	C1S
2.00 Au/Ni/RhAu	0.65 Ni 0.80 Au/Ni/Rh 1.00 Au/NiAu	0.80 Au	1.30 Au/Ni/Rh 1.50 Au 1.80 Au/Ni/Rh 2.00 Au/Ni 2.30 Rh 2.50 Ni 3.00 Rh	1.20/2.00 Au/HTK

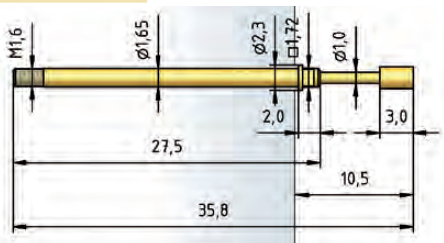


C5S	D	D	D1	F
1.40/2.50 Au/HTK	0.65 Au/Ni 0.80 Au 1.00 Au	1.30 Au/Ni 1.40 Au 1.80 Ni 2.00 Au	0.65 Au/Ni	0.80 Au 1.00 Au/Ni

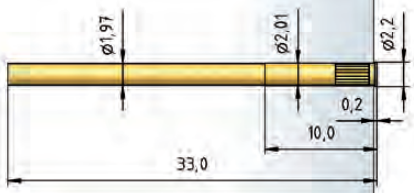
F	F1	F4	G	H
1.50 Au 1.80 Au 2.00 Au/Ni	0.65 Ni	0.80 Au	1.30 Ni 1.80 Au/Rh 2.00 Au	1.80 Rh 2.00 Rh

K	M	Q
1.15 Ni 1.75 Rh 2.00 Rh	1.80 Rh	1.00 Ni 1.30 Au/Ni

1021/G

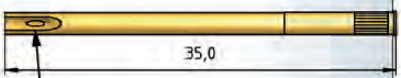


H 1021/GR-C

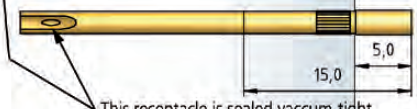


H 1021/GR-C

H 1021/GRV-L



H 1021/5GRV-L



This receptacle is sealed vaccum-tight when a wire is soldered on.
Important:
If too much solder is used there is a risk that it will get into the tread.

How to order:

1021/	G	-	F	-	1.5 N	-	Au	-	2.0
1	2		3		4		5		6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 1021/G

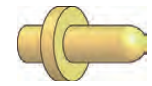
- Test probe for cable harness testing
- Test probe geometry for position test
- Screwable - treaded design
- Screwing tools available

Mechanical Data	
Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.30/0.40/0.50/ 0.70/1.00/1.00 N
Spring force at working travel	0.70/1.00/1.50/ 2.25/3.00/5.00 N

Electrical Data	
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 25 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Brass, gold-plated

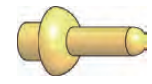
Recommended diameter of drill	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm



Dxxxx

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D0615	0.65	1.80 mm	1.50 mm	34.80 mm	9.50 mm
D0620	0.65	1.80 mm	2.00 mm	35.30 mm	10.00 mm
D0630	0.65	1.80 mm	3.00 mm	36.30 mm	11.00 mm
D0635	0.65	1.80 mm	3.50 mm	36.80 mm	11.50 mm
D0640	0.65	1.80 mm	4.00 mm	37.30 mm	12.00 mm
D0645	0.65	1.80 mm	4.50 mm	37.80 mm	12.50 mm
D0650	0.65	1.80 mm	5.00 mm	38.30 mm	13.00 mm
D0815	0.80	1.80 mm	1.50 mm	34.80 mm	9.50 mm
D0820	0.80	1.80 mm	2.00 mm	35.30 mm	10.00 mm
D0825	0.80	1.80 mm	2.50 mm	35.80 mm	10.50 mm
D0830	0.80	1.80 mm	3.00 mm	36.30 mm	11.00 mm
D0835	0.80	1.80 mm	3.50 mm	36.80 mm	11.50 mm
D0840	0.80	1.80 mm	4.00 mm	37.30 mm	12.00 mm
D0845	0.80	1.80 mm	4.50 mm	37.80 mm	12.50 mm
D0850	0.80	1.80 mm	5.00 mm	38.30 mm	13.00 mm
D1005	0.80	2.50 mm	2.80 mm	36.10 mm	10.80 mm
D1006	0.80	3.50 mm	3.20 mm	36.50 mm	11.20 mm
D1007	1.00	2.50 mm	2.60 mm	35.90 mm	10.60 mm
D1010	0.80	2.50 mm	4.60 mm	37.90 mm	12.60 mm
D1011	0.80	1.95 mm	2.80 mm	36.10 mm	10.80 mm
D1012	0.65	3.00 mm	3.40 mm	36.70 mm	11.40 mm
D1013	0.65	1.80 mm	2.50 mm	35.80 mm	10.50 mm
D1014	0.80	2.50 mm	4.00 mm	37.30 mm	12.00 mm
D1015	0.80	2.30 mm	3.20 mm	36.50 mm	11.20 mm
D1018	0.65	1.50 mm	5.00 mm	38.30 mm	13.00 mm
D1019	1.00	1.80 mm	2.00 mm	35.30 mm	10.00 mm
D1020	0.65	1.80 mm	3.60 mm	36.90 mm	11.60 mm
D1024	0.65	1.50 mm	4.30 mm	37.60 mm	12.30 mm
D1906	0.80	3.50 mm	3.20 mm	36.50 mm	11.20 mm
D1907	1.00	2.50 mm	2.60 mm	35.90 mm	10.60 mm
D1910	0.80	2.50 mm	4.60 mm	37.90 mm	12.60 mm
D1914	0.80	2.50 mm	4.00 mm	37.30 mm	12.00 mm
D1915	0.80	2.30 mm	3.20 mm	36.50 mm	11.20 mm

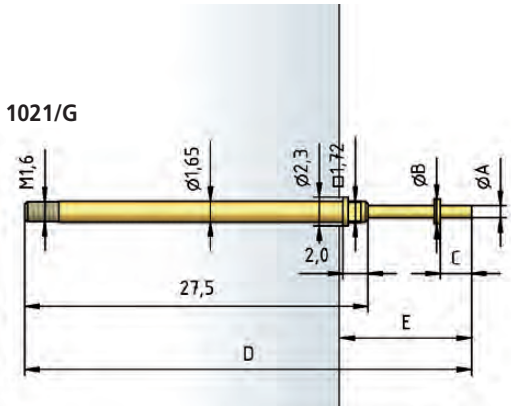


Dxxxx

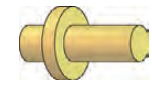
0.65 Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D7017	0.65	1.50 mm	2.70 mm	36.00 mm	10.70 mm

1021/G



Receptacles see page 80



Fxxxx

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
F0015	1.00	1.80 mm	1.50 mm	34.80 mm	9.50 mm
F0020	1.00	1.80 mm	2.00 mm	35.30 mm	10.00 mm
F0025	1.00	1.80 mm	2.50 mm	35.80 mm	10.50 mm
F0030	1.00	1.80 mm	3.00 mm	36.30 mm	11.00 mm
F0035	1.00	1.80 mm	3.50 mm	36.80 mm	11.50 mm
F0040	1.00	1.80 mm	4.00 mm	37.30 mm	12.00 mm
F0045	1.00	1.80 mm	4.50 mm	37.80 mm	12.50 mm
F0050	1.00	1.80 mm	5.00 mm	38.30 mm	13.00 mm
F1001	1.30	2.50 mm	3.00 mm	36.30 mm	11.00 mm
F1008	1.00	2.30 mm	3.30 mm	36.60 mm	11.30 mm
F1009	1.00	2.50 mm	3.50 mm	36.80 mm	11.50 mm
F1016	1.50	3.00 mm	2.50 mm	35.80 mm	10.50 mm
F1021	0.70	1.80 mm	2.00 mm	35.30 mm	10.00 mm
F1033	0.70	1.80 mm	1.50 mm	34.80 mm	9.50 mm
F1901	1.30	2.50 mm	3.00 mm	36.30 mm	11.00 mm
F1908	1.00	2.30 mm	3.30 mm	36.60 mm	11.30 mm
F1916	1.50	3.00 mm	2.50 mm	35.80 mm	10.50 mm

How to order:

1021/	G	-	D1013	-	1.5 N	-	Au	-	0.65x	2.5/	1.8
1	2		3		4		5		6	7	8

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip length 8. Plate diameter

Series 1028/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.30/0.40/0.60/ 0.80/1.10/1.30 N
Spring force at working travel	0.70/1.00/1.50/ 2.25/3.00/5.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 25 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

H1021/GR	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm

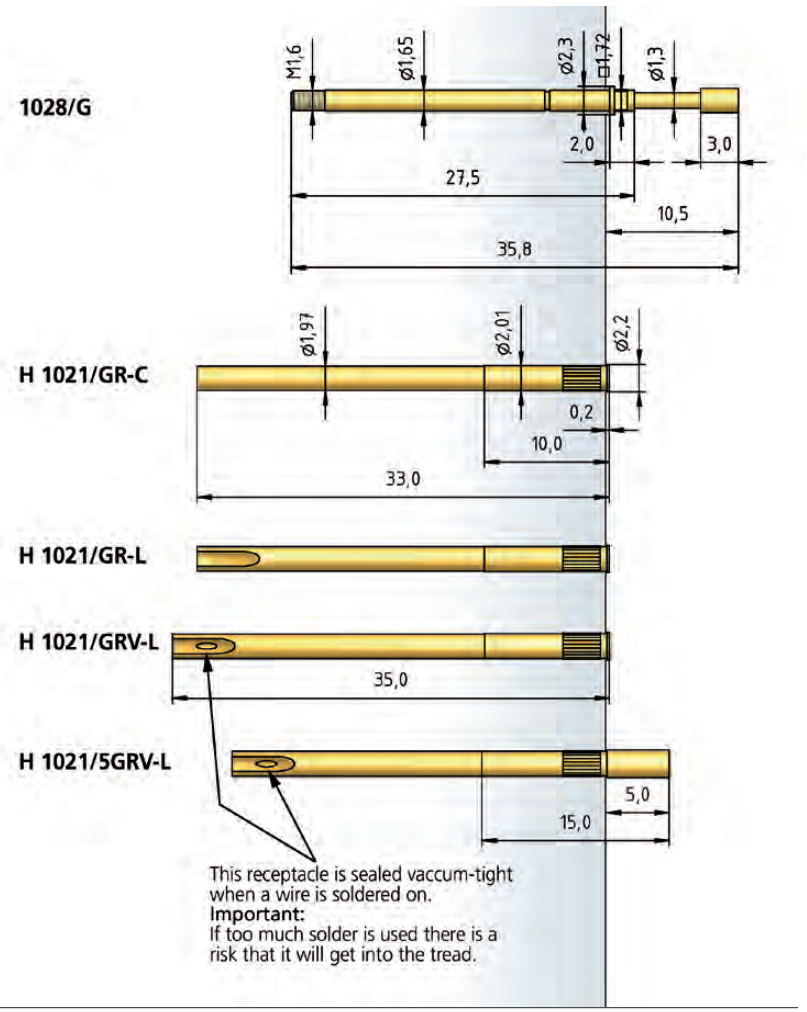
Tip style · Diameter · Plating

A	B	BST	C	CSM
1.50 Au 1.80 Ni	1.30 Rh	0.80 Au	1.40 Au 1.80 Rh 2.50 Rh 3.50 Rh	1.00/2.00 Au/ HTK

D	D1	EB	F	G
1.40 Au	0.65 Ni 0.80 Ni	1.80 Au	1.30 Ni	1.30 Ni 1.50 Rh

H	H	K	M6	Q
1.30 Au	1.40 Au 1.80 Au	1.30 Au 1.75 Ni	2.00 Rh	1.30 Au

Q5	Q8	V	Q
1.80 Au 2.00 Au	1.30 Ni	2.30 Ni	1.30 Ni



How to order:

1028/ G - A - 1.5 N - Ni - 1.8

1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 1042/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	4.50 mm/177 mil
Full travel	7.00 mm
Working travel	5.60 mm
Pre-loaded spring force	0.40/0.80/0.80 N
Spring force at working travel	1.50/3.00/5.00 N

Electrical Data

Connector - receptacle	
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm
Connector - plunger	
Max. current rating	12.0 - 15.0 A
Typical continuity resistance	≤ 10 mOhm

Materials

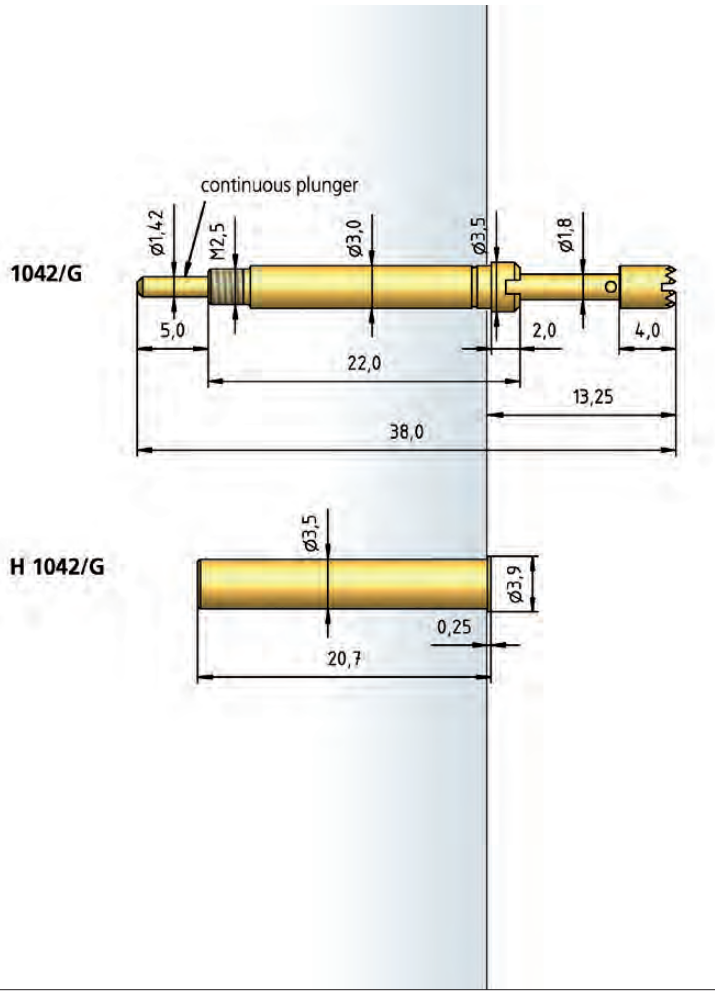
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.50 mm
HGW 2372 (Glass filled material)	3.52 mm

Tip style · Diameter · Plating

C
3.00C Au
4.00C Au



How to order:

1042/ G - C - 1.5 N - Au - 4.0 C

1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1060/G

- Test probe for cable harness testing
- Screwable - treaded design
- Screwing tools available

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.20/0.20/0.40/ 0.50/0.80/0.70 N
Spring force at working travel	0.40/0.60/1.50/ 2.25/3.00/5.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

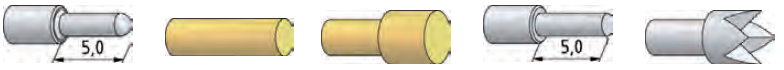
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

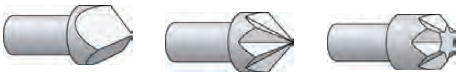
Tip style · Diameter · Plating

A	B	BA	BA1	C
2.50 Ni 4.00 Au	1.80 Rh/Ni	1.80 Au/Ni	1.50 Ni	2.30 Au/Ni/Rh 2.50 Au/Ni/Rh 3.00 Au/Ni/Rh 4.00 Au/Ni/Rh

C6	D	D	D	D2
3.50 Au/Ni	1.00 Rh	1.80 Au	2.30 Au/Ni 2.50 Au/Ni	3.00 Au/Ni

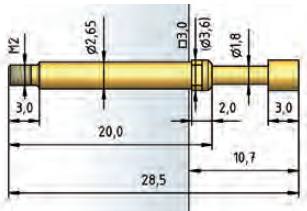


D3	F	F	F3	G
0.80 Rh 1.40 Au	1.80 Au/Ni	2.30 Au/Rh 2.50 Rh 3.00 Au 4.00 Rh	1.00 Rh 1.40 Au	2.30 Rh 2.50 Rh/Ni 4.00 Au/Rh/Ni

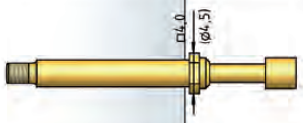


H	K	KF
2.50 Ni 2.60 Ni 3.00 Ni/Rh 4.20 Rh	1.80 Rh 3.00 Ni	2.60 Ni 4.00 Ni

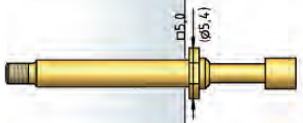
1060/G



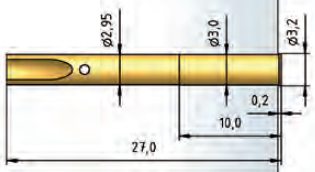
1060/G4



1060/G5

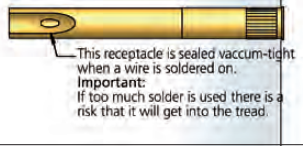


H 1060/G-L



H 1060/GR-L

H 1060/GRV-L



How to order:

1060/ G - A - 1.5 N - Au - 4.0

1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 1060/G

- Test probe for cable harness testing
- Test probe geometry for position test
- Screwable - treaded design
- Screwing tools available

Mechanical Data

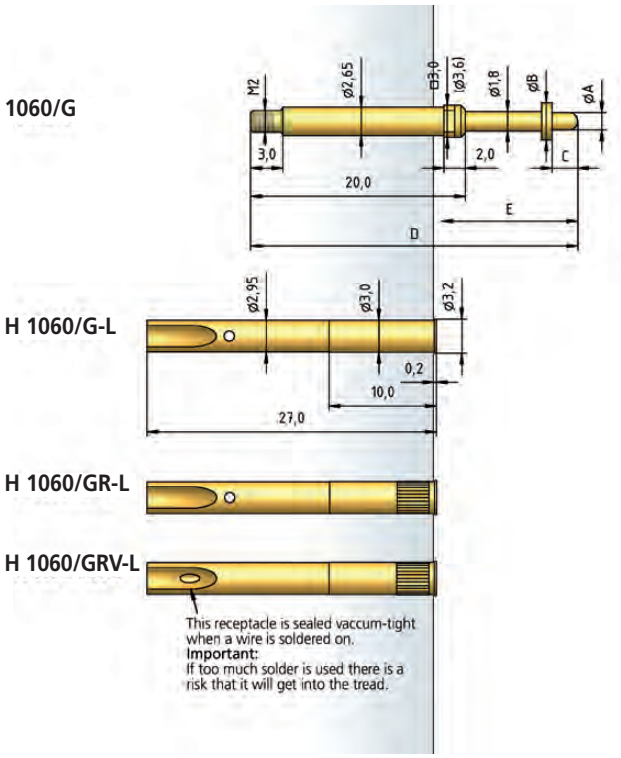
Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.20/0.20/0.40/ 0.50/0.80/0.70 N
Spring force at working travel	0.40/0.60/1.50/ 2.25/3.00/5.00 N

Electrical Data

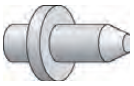
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated



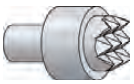
Tip style · Diameter · Plating



BAx

1.80 Ni

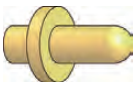
Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
BA2	1.80	4.00 mm	3.00 mm	29.00 mm	11.20 mm
BA3	1.80	4.00 mm	2.50 mm	29.00 mm	11.20 mm
BA5	1.80	4.00 mm	2.50 mm	28.50 mm	10.70 mm
BA7	1.80	4.00 mm	2.10 mm	29.00 mm	11.20 mm
BA71	1.80	4.00 mm	2.10 mm	29.00 mm	11.20 mm



C42

4.00 Ni

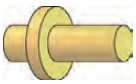
Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
C42	4.00	5.00 mm	1.00 mm	28.50 mm	10.70 mm



Dxxxx

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
D1001	1.40	3.50 mm	2.40 mm	28.90 mm	11.10 mm
D1002	1.40	3.50 mm	4.00 mm	30.50 mm	12.70 mm
D1003	1.40	3.50 mm	3.30 mm	29.80 mm	12.00 mm
D1004	1.00	3.50 mm	4.00 mm	30.50 mm	12.70 mm
D1013	1.00	3.50 mm	2.80 mm	29.30 mm	11.50 mm
D1904	1.00	3.50 mm	4.00 mm	30.50 mm	12.70 mm



Fxxxx

Au

Tip style	Tip diameter mm A	Plate diameter mm B	Tip length mm C	Overall length mm D	Extension height mm E
F11	1.30	4.70 mm	7.00 mm	33.50 mm	15.70 mm
F12	1.30	4.70 mm	5.00 mm	33.50 mm	15.70 mm
F13	1.30	4.70 mm	2.00 mm	30.50 mm	12.70 mm
F14	2.60	4.00 mm	1.80 mm	29.00 mm	11.20 mm
F33	2.00	4.00 mm	2.50 mm	36.00 mm	18.70 mm
F40	1.50	4.00 mm	2.65 mm	28.50 mm	10.70 mm
F41	4.00	4.70 mm	2.00 mm	28.50 mm	10.70 mm
F1007	1.30	4.70 mm	5.30 mm	31.80 mm	14.00 mm
F1008	1.40	3.50 mm	2.00 mm	28.50 mm	10.70 mm
F1009	4.00	5.00 mm	2.00 mm	28.50 mm	10.70 mm
F1010	1.40	3.50 mm	1.70 mm	28.20 mm	10.40 mm
F1011	2.30	3.50 mm	2.00 mm	28.50 mm	10.70 mm
F1012	1.40	3.50 mm	3.00 mm	29.50 mm	11.70 mm
F1015	2.30	3.50 mm	1.80 mm	28.30 mm	10.50 mm
F1016	1.30	4.70 mm	3.60 mm	30.10 mm	12.30 mm
F1017	1.30	4.70 mm	2.70 mm	29.20 mm	11.40 mm
F1018	1.80	4.50 mm	1.50 mm	28.00 mm	10.20 mm
F1907	1.30	4.70 mm	5.30 mm	31.80 mm	14.00 mm
F1909	4.00	5.00 mm	2.00 mm	28.50 mm	10.70 mm
F1916	1.30	4.70 mm	3.60 mm	30.10 mm	12.30 mm
F1917	1.30	4.70 mm	2.70 mm	29.20 mm	11.40 mm
F1918	1.80	4.50 mm	1.50 mm	28.00 mm	10.20 mm

How to order:

1060/	G	-	D1013	-	1.5 N	-	Au	-	1.00x	2.8	3.5
1	2		3		4		5		6	7	8

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip length 8. Plate diameter

Series 1061/G

- Test probe for cable harness testing
- Increased extension height
- Screwable - treaded design
- Screwing tools available

Tip style · Diameter · Plating

B	BA
1.80 Ni	1.80 Rh

Mechanical Data

Center	4.00 mm/160 mil
Full travel	7.00 mm
Working travel	5.60 mm
Pre-loaded spring force	0.40/0.60 N
Spring force at working travel	1.50/3.00 N

Electrical Data

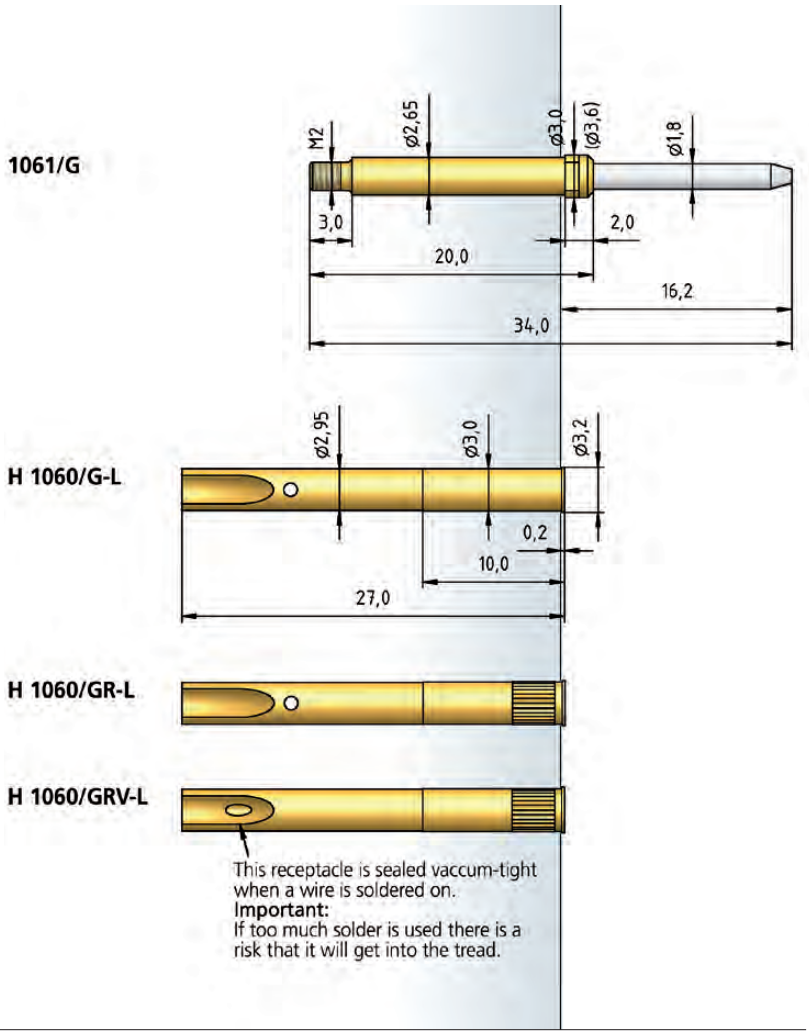
Max. current rating	5.0 A
Typical continuity resistance	≤ 35 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm



How to order:

1061/ G - B - 1.5 N - Ni - 1.8

1 2 3 4 5 6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series 5110/G

- Test probe for cable harness testing
- Compact design
- Screwable - treaded design
- Screwing tools available

Mechanical Data	
Center	4.00 mm/160 mil
Full travel	3.50 mm
Working travel	2.80 mm
Pre-loaded spring force	0.25/0.30/0.45/ 0.50/1.00 N
Spring force at working travel	0.80/1.20/1.50/ 2.50/3.50 N

Electrical Data	
Max. current rating	10.0 A
Typical continuity resistance	≤ 10 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	CuBe, gold-plated
Receptacle	Brass, gold-plated

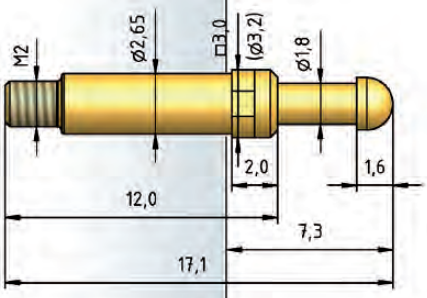
Recommended diameter of drill	
HP 2361.1 (Trolitax)	2.64 mm
HGW 2372 (Glass filled material)	2.65 mm

Tip style · Diameter · Plating

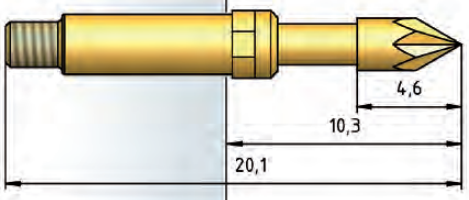
C	D	D1	E	F
2.30C Au 3.50C Au	2.30C Au	2.30C Au	2.30C Au	2.30C Au

K2
2.30C Au

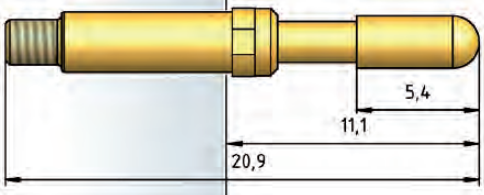
5110/G



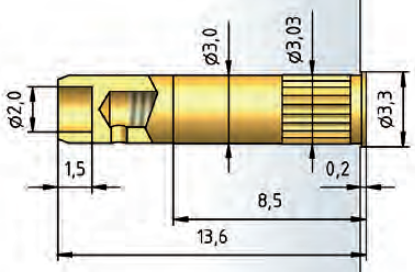
5110/G-K2



5110/G-D1



H 5110/GR



How to order:

5110/G - D - 1.5 N - Au - 2.3 C
1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series	Center
1021/GV	100 mil/2.54 mm
2053	100 mil/2.54 mm
1053	197 mil/5.00 mm
1053/G	160 mil/4.00 mm

Non-rotating test probes

Non-rotating test probes are always used for the precisely-positioned contact-creation of a connector barrel. This is normally the case in the testing of flat connectors, as used for example in fuse holders. Contacting then takes place with rectangular so-called spade-shaped tip styles. Two construction principles are mainly used in order to fix the test probe in position. The purpose of these principles is to create a compulsory guide for the plunger in the test probe barrel. In the simple design, the plunger is guided in the barrel by means of a bolt-groove system. The test probe must be inserted into the receptacle in exactly the right position. If maintenance is needed, the newly-placed test probe must be repositioned.

It is easier to carry out the procedure with a plunger whose end is flattened and has a guide slot at the end of the receptacle. With this principle, the receptacle is placed in position only once. For every new assembly, the test probe is then always returned to the same position via the guide slot of the receptacle.

Series 1021/GV

- Non-rotating feature ensured by the square section on the plunger and the slot in the receptacle
- Forced guidance of the test probe ensures that the receptacle must only aligned once

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm (4.30 mm only with Y4, 4.15 mm with Y14)
Working travel	4.00 mm
Pre-loaded spring force	0.30/1.00 N
Spring force at working travel	1.50/3.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 25 mOhm

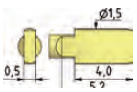
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe
Receptacle	Brass, gold-plated

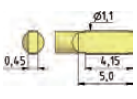
Recommended diameter of drill

H1021/GVR	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm

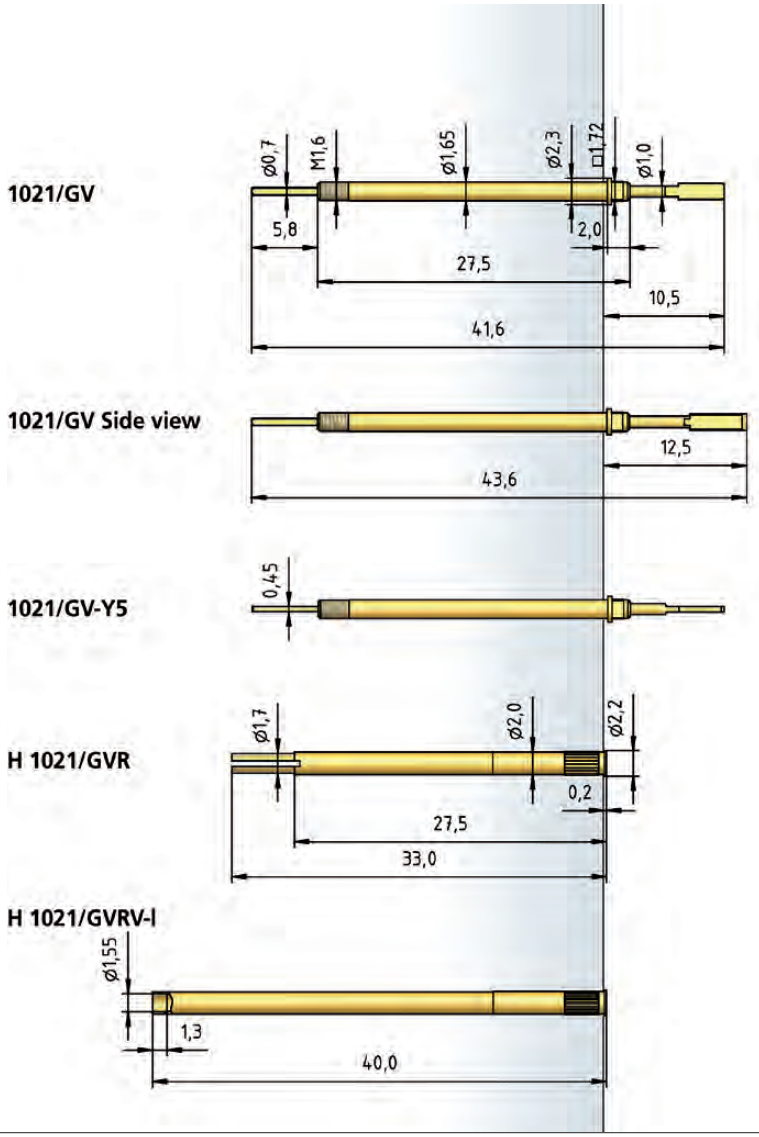
Tip style · Diameter · Plating



Y4	Y	Y	Y1	Y5
1.50 x 0.50 Au	0.75 x 0.50C Au	0.97/1.00 x 0.63C Au	0.97/1.00 x 0.63C Au	1.50 x 0.80C Au



Y14	Y14	Y14	Y14
1.10 x 0.45C Au	2.00 x 0.60C Au	2.00 x 0.80C Au	1.50 x 1.00C Au



How to order:

1021/ GV - Y4 - 1.5 N - Au - 1.5x 0.5 C

1 2 3 4 5 6 7 8

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip thickness 8. Tip material (only for CuBe)

Series 2053

- Non-rotating feature ensures forced guidance between plunger and barrel
- Knurled section on the barrel guarantees secure fit of the test probe

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.00 mm
Working travel	4.00 mm
Pre-loaded spring force	0.45/0.60/1.00 N
Spring force at working travel	1.50/3.00/5.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

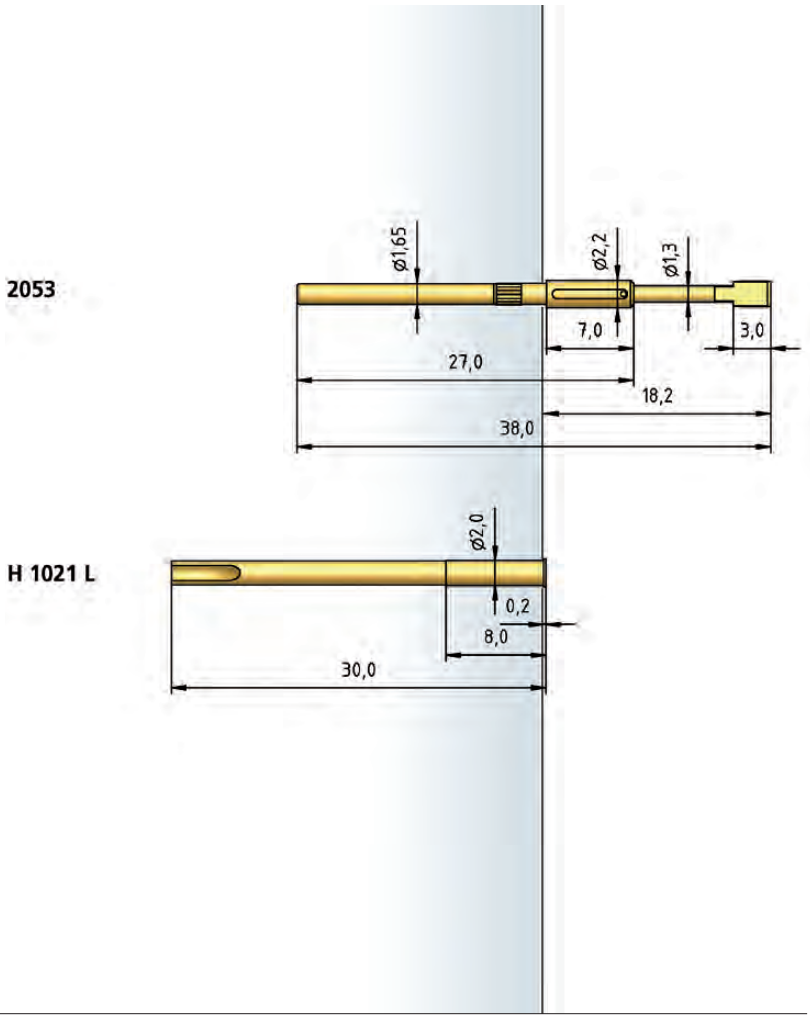
HP 2361.1 (Trolitax)	1.98 - 2.00 mm
HGW 2372 (Glass filled material)	1.98 - 2.00 mm

Tip style · Diameter · Plating

Y1	Y21	Y1F	Y1F	Y1F
2.00 x 0.58 Au	2.00 x 0.50 Au	1.10 x 0.58 x 2.80 Au	1.50 x 0.50 x 2.00 Au	1.50 x 0.58 x 2.00 Au

Y1F	Y1F1	Y2F	Y3F	Y6
1.50 x 0.58 x 2.80 Au	1.50 x 0.58 x 2.80 x 2.00 Au	1.50 x 0.50 x 2.00 Rh	1.50 x 0.50 x 2.50 Au	3.00 x 1.55 Au

Y11	Y12	Y21R
2.00 x 0.58 Au	1.80 x 0.80 Au	2.00 x 0.50 Au



How to order:

2053 - Y1 - 1.5 N - Au - 2.0x0.58

1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip thickness

Series 1053

- Non-rotating feature ensures forced guidance between plunger and barrel
- Knurled section on the barrel guarantees secure fit of the test probe

Mechanical Data

Center	5.00 mm/197 mil
Full travel	5.00 mm
Working travel	4.00 mm
Pre-loaded spring force	0.50/0.80/1.25 N
Spring force at working travel	1.50/3.00/5.00 N

Electrical Data

Max. current rating	8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel/Stainless steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.00 mm

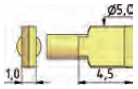
How to order:

1053 - Y - 1.5 N - Ni - 5.0x1.0 C
1 2 3 4 5 6 7

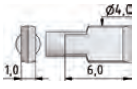
1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip thickness 7. Tip material (only for CuBe)

Tip style · Diameter · Plating

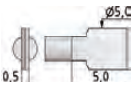
CY
6.00 x 3.00C Au



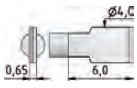
Y
5.00 x 1.00 Au/Ni



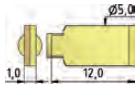
Y4
4.00 x 1.00 Ni



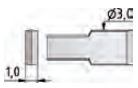
Y3
5.00 x 0.50 Ni



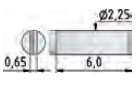
Y5
4.00 x 0.65 Ni



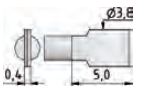
Y8
5.00 x 1.00C Au



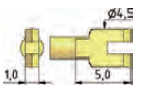
Y10
3.00 x 0.80 Ni



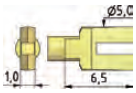
Y11
2.25 x 0.65 Ni



Y14
3.80 x 0.40 Ni

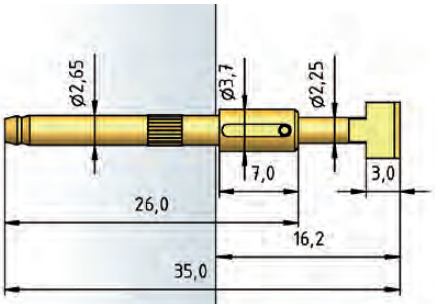


Y15
4.50 x 1.00C Au

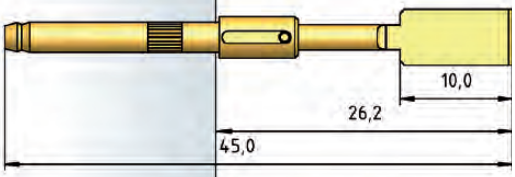


Y16
5.00 x 1.00C Au

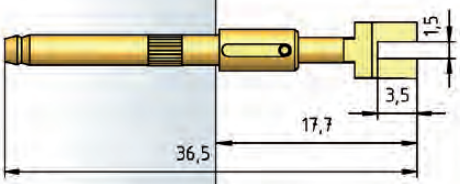
1053-Y-Y4-Y15-CY



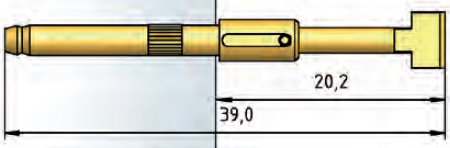
1053-Y8



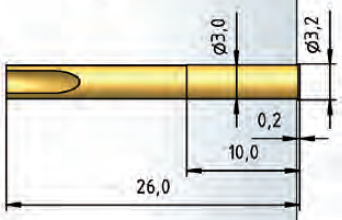
1053-Y16



1053-Y3-Y5-Y10-Y11-Y14

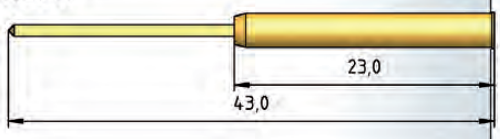


H 1050 L



H 1050 L ST

H 1050 W



Series 1053/G

- Non-rotating feature ensured by the square section on the plunger and the slot in the receptacle
- Forced guidance of the test probe ensures that the receptacle must only aligned once

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel (with switching element)	2.50 mm
Pre-loaded spring force	0.30/0.40/0.50/ 0.80/0.80/1.00 N
Spring force at working travel	0.50/1.50/2.00/ 3.00/4.00/5.00 N
With switching element	2.50/3.00/4.00/ 5.00/6.00 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm

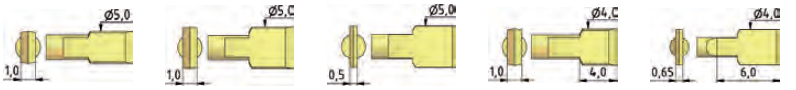
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

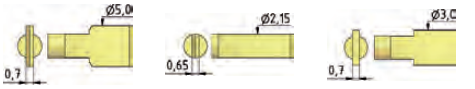
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.03 mm

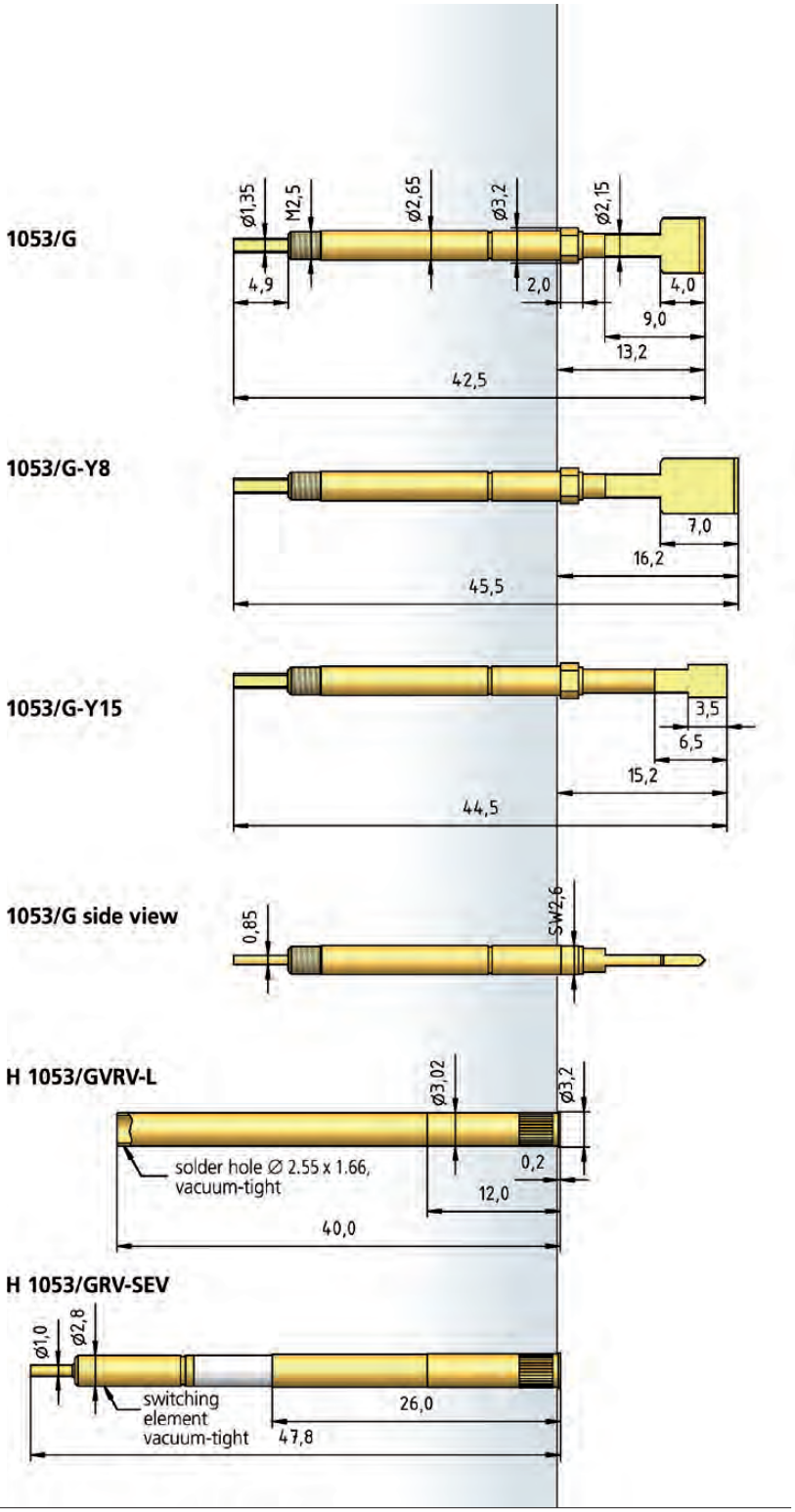
Tip style · Diameter · Plating



Y	Y	Y3	Y4	Y5
3.00 x 1.00C Au	5.00 x 1.00C Au	5.00 x 0.50C Au	4.00 x 1.00C Au	4.00 x 0.65C Au



Y8	Y11	Y15
5.00 x 0.70C Au	2.15 x 0.65C Au	3.00 x 0.70C Au



How to order:

1053/	G	-	Y4	-	1.5 N	-	Au	-	4.0x0.65C
1	2		3		4		5		6 7 8

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip thickness 8. Tip material (only for CuBe)

Series	Center	Switching Travel
3010/2(G) • 3010/10(G)	1.60 mil/4.00 mm	SH 1.70 mm
3010/2(G) • 3010/10(G)	1.60 mil/4.00 mm	SH 4.00 mm
3010/2F	1.60 mil/4.00 mm	SH 1.70 mm
3010/2V	1.60 mil/4.00 mm	SH 1.70 mm
3020 • 3020/2G	1.00 mil/2.54 mm	SH 2.60 mm
3020 • 3020/2G	1.00 mil/2.54 mm	SH 4.00 mm
3030	1.00 mil/2.54 mm	SH 4.00 mm
3035	75 mil/1.91 mm	SH 2.60 mm
3010/2GW(5)	1.60 mil/4.00 mm	SH 1.70 mm
3010/2GW(5)	1.60 mil/4.00 mm	SH 4.00 mm
3011/2GS	1.60 mil/4.00 mm	SH 1.70 mm

Series	Center	Switching Travel
3011/2GS	1.60 mil/4.00 mm	SH 4.00 mm
3012/2GS	1.60 mil/4.00 mm	SH 1.70 mm
3012/2GS	1.60 mil/4.00 mm	SH 4.00 mm
3012/2GS-FS1	1.60 mil/4.00 mm	SH 1.70 mm
3012/2GS-FS1	1.60 mil/4.00 mm	SH 4.00 mm
3014/2G	1.60 mil/4.00 mm	SH 1.70 mm
3020/2GW5	1.00 mil/2.54 mm	SH 2.60 mm
3020/2GW5	1.00 mil/2.54 mm	SH 4.00 mm
3023/2GS	1.00 mil/2.54 mm	SH 1.50 mm
3024/2G	1.00 mil/2.54 mm	SH 2.60 mm
3030/GW3	1.00 mil/2.54 mm	SH 4.00 mm
3015/G	300 mil/7.5 mm	SH 0.50 mm

Switching test probes

Switching test probes are available in various designs, from simple plug-in types to threaded types to easy-replacement systems. Depending on the series used, centers from 4.0 mm to 1.27 mm can be achieved. In each case, electrical connection is via a connection on the pin of the switching test probe and one on the receptacle. If maintenance or replacement assembly is required, always release the connection on the pin and rewire. It is better to make use of the types which have an easy-replacement system. Wiring takes place completely once only on the receptacle, which has an insulated socket in its end, and this ensures electrical separation. The switching test probe is fitted with a connector pin which, when it is being screwed into the receptacle, is guided directly into this socket. If maintenance is required, it is only necessary to replace the contact – no rewiring is needed.

Series 3014 and 3024, which have an overall length of only 24.5 mm, are especially compact. As an alternative, both series are available with the easy-replacement system.

Series 3015, with its ball-shaped design and a working travel of only 0.8 mm, is especially suitable for applications in which horizontal contacting is necessary.

Series 3010/2(G) • 3010/10(G)

- Switching test probe for the cable harness test
- Plug-in and threaded type
- Switching travel 1.7 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	1.25/1.75/2.30/2.80/ 4.00/7.00/7.50/9.00/ 9.50/10.00/10.50/ 13.00/13.50 N
Spring force at switching travel	0.20/0.45/0.75/1.00/ 1.60/3.60/3.60/4.40/ 4.80/5.40/5.20/8.00/ 7.60 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3010-16/22/S-23	
HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm
H3010/GS-26	
HP 2361.1 (Trolitax)	3.28 mm
HGW 2372 (Glass filled material)	3.29 mm

Connector pin Ø / X/mm	Connector pin length / Y/mm
0.5	6.0
1.0	2.5
1.0	4.0

How to order:

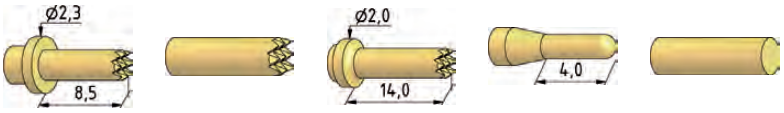
3010/2 G - A - 2.3 N - Au - 2.3/1.0x4.0

1 2 3 4 5 6 7 8 9

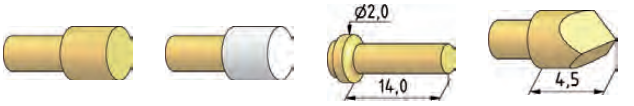
1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter 8. Connector pin diameter 9. Connector pin length

Tip style · Diameter · Plating

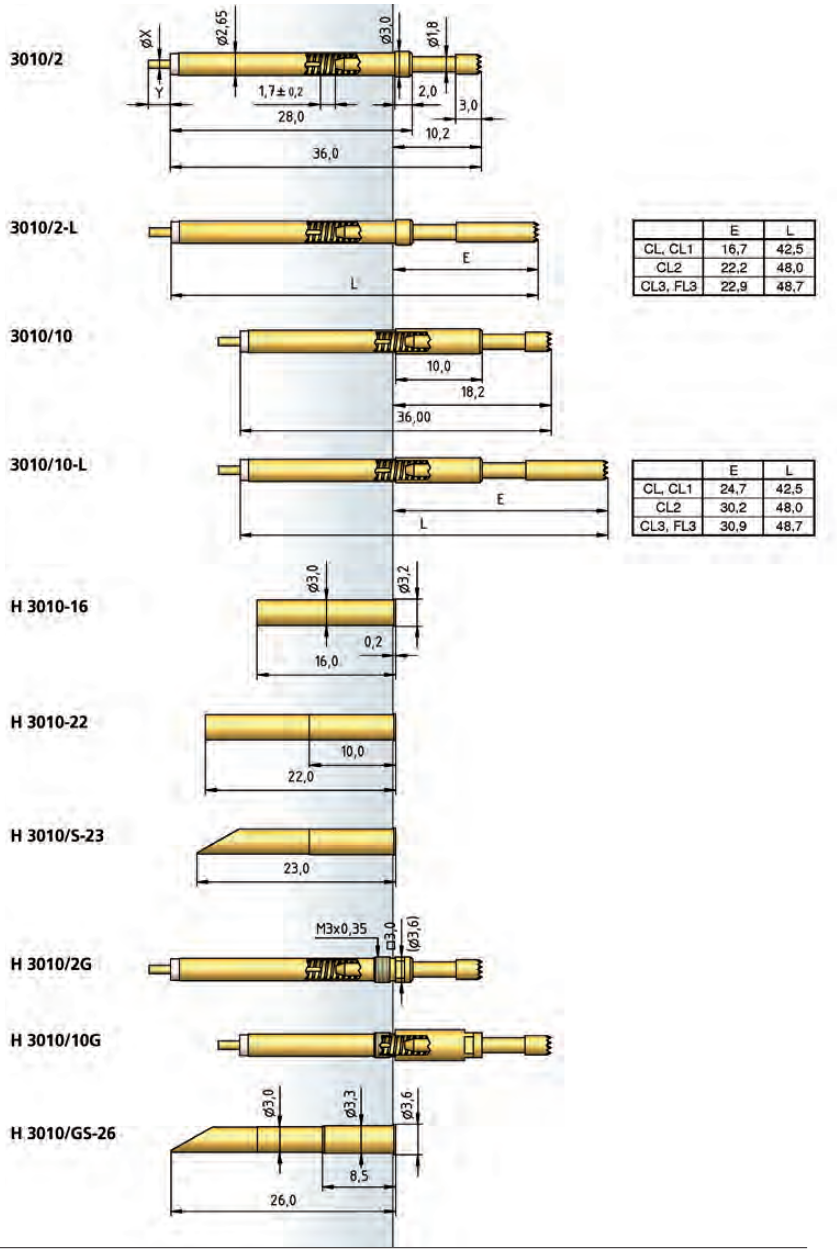
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



	E	L
CL, CL1	16,7	42,5
CL2	22,2	48,0
CL3, FL3	22,9	48,7

	E	L
CL, CL1	24,7	42,5
CL2	30,2	48,0
CL3, FL3	30,9	48,7

Series 3010/2(G) • 3010/10(G)

- Switching test probe for the cable harness test
- Plug-in and threaded type
- Switching travel 4.0 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N
Spring force at switching travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3010-16/22/S-23	
HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm
H3010/GS-26	
HP 2361.1 (Trolitax)	3.28 mm
HGW 2372 (Glass filled material)	3.29 mm

Connector pin Ø / X/mm	Connector pin length / Y/mm
0.5	6.0
1.0	2.5
1.0	4.0

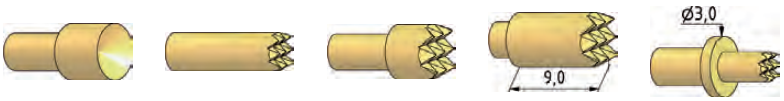
How to order:

3010/2 G - A - 2.3 N - Au - 2.3/ 1.0x4.0/SH4.0

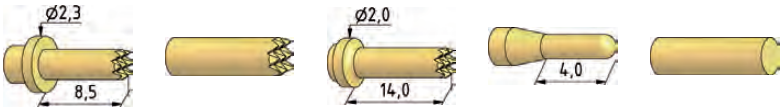
1 2 3 4 5 6 7 8 9 10

1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter 8. Connector pin diameter 9. Connector pin length 10. Switching travel

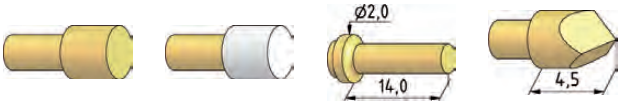
Tip style · Diameter · Plating



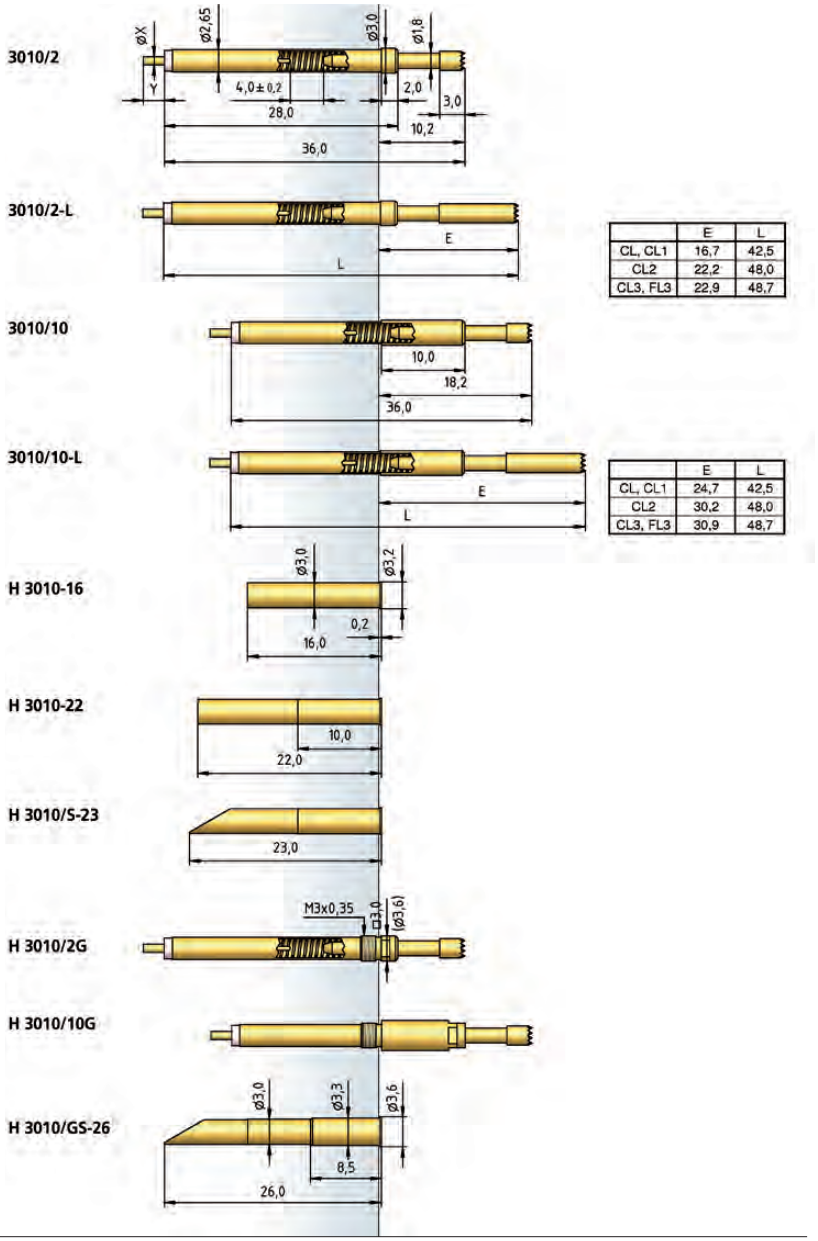
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



	E	L
CL, CL1	16,7	42,5
CL2	22,2	48,0
CL3, FL3	22,9	48,7

	E	L
CL, CL1	24,7	42,5
CL2	30,2	48,0
CL3, FL3	30,9	48,7

Series 3010/2F

- Switching test probe for the cable harness test
- Plug-in system
- „Opener“ type
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.40 N
Spring force at working travel	2.30 N
Spring force at switching travel	1.00 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

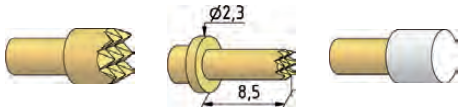
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

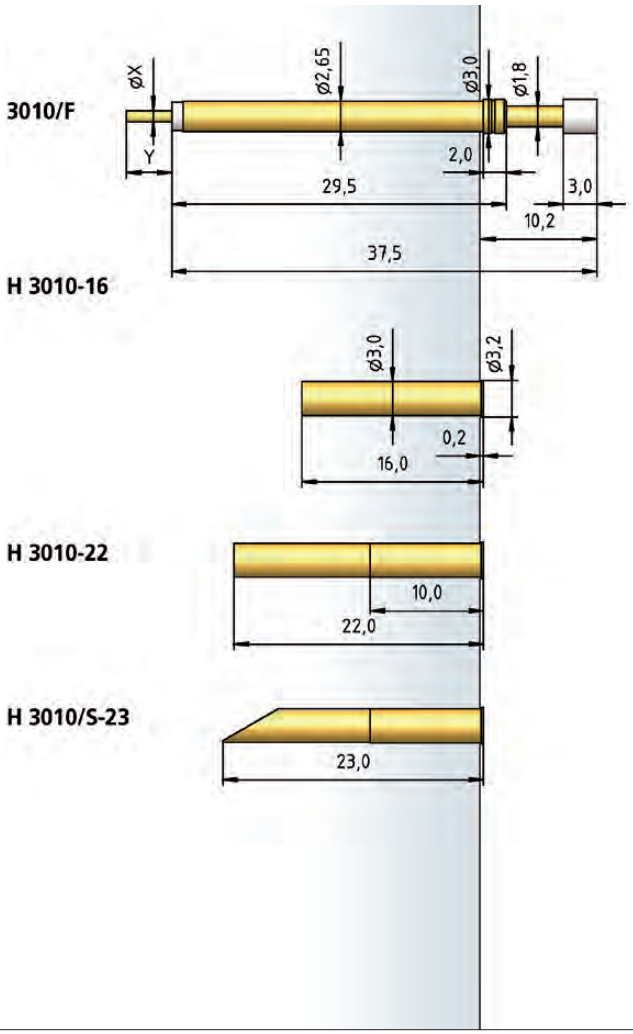
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating



C	CL1	F1
2.30 Au	1.00 Au	3.00 HTK 4.00 HTK 5.00 HTK



How to order:

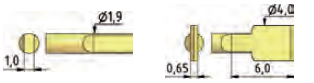
3010/2 F - F - 2.3 N - Au - 2.3/1.0x4.0
1 2 3 4 5 6 7 8 9

1. Series 2. Collar height 3. Typ Opener 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter 8. Connector pin diameter 9. Connector pin length

Series 3010/2V

- Switching test probe for the cable harness test
- Plug-in system
- Non-roatinge variant
- Soldering temperature max. 300°C

Tip style · Diameter · Plating



Y	Y5
1.90 x 1.00 Au	4.00 x 0.65 Au

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.30/1.80/ 1.70/2.70/5.00 N
Spring force at working travel	1.25/2.30/7.00/ 9.00/10.00/13.00 N
Spring force at switching travel	0.18/0.70/3.60/ 4.40/5.40/8.00 N

Electrical Data

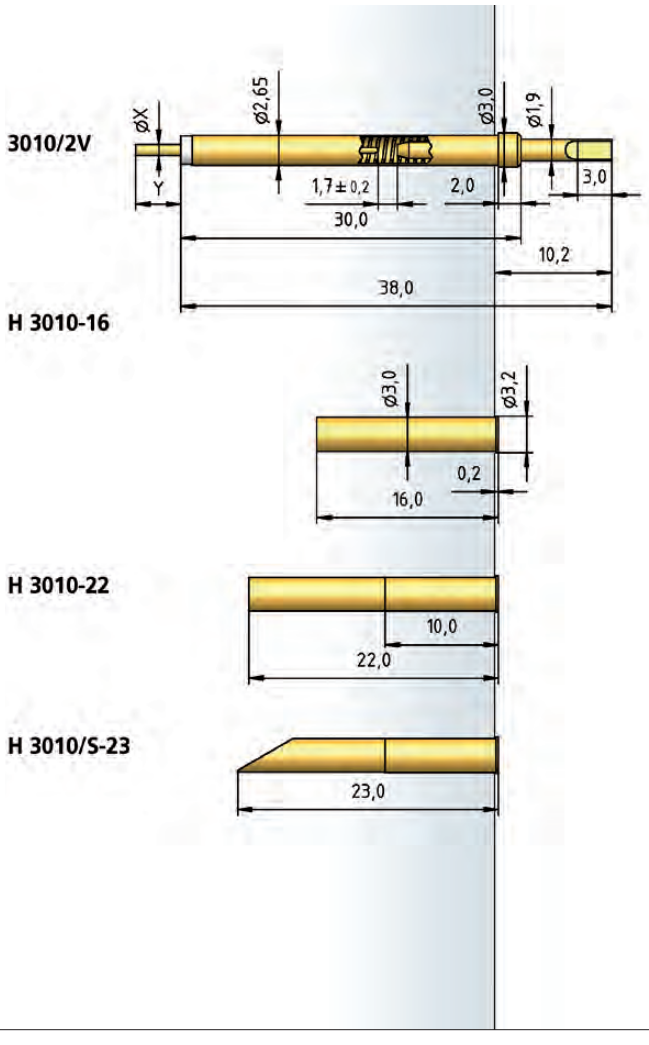
Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3010-16/22/S-23	
HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm



How to order:

3010/2 V - Y - 2.3 N - Au - 1.9x1.0/1.0x4.0

1 2 3 4 5 6 7 8 9 10

1. Series 2. Collar height 3. non-roating design 4. Tip style
5. Spring force 6. Tip plating 7. Tip diameter 8. Tip thickness
9. Connector pin diameter 10. Connector pin length

Series 3020 • 3020/2G

- Switching test probe for the cable harness test
- Plug-in and threaded type
- Monitoring of components or periphery
- Switching travel 2.6 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	0.15/0.40/0.50/1.70 N
Spring force at working travel	0.80/1.50/3.00/6.50 N
Spring force at switching travel	0.25/0.80/1.80/4.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

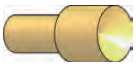
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

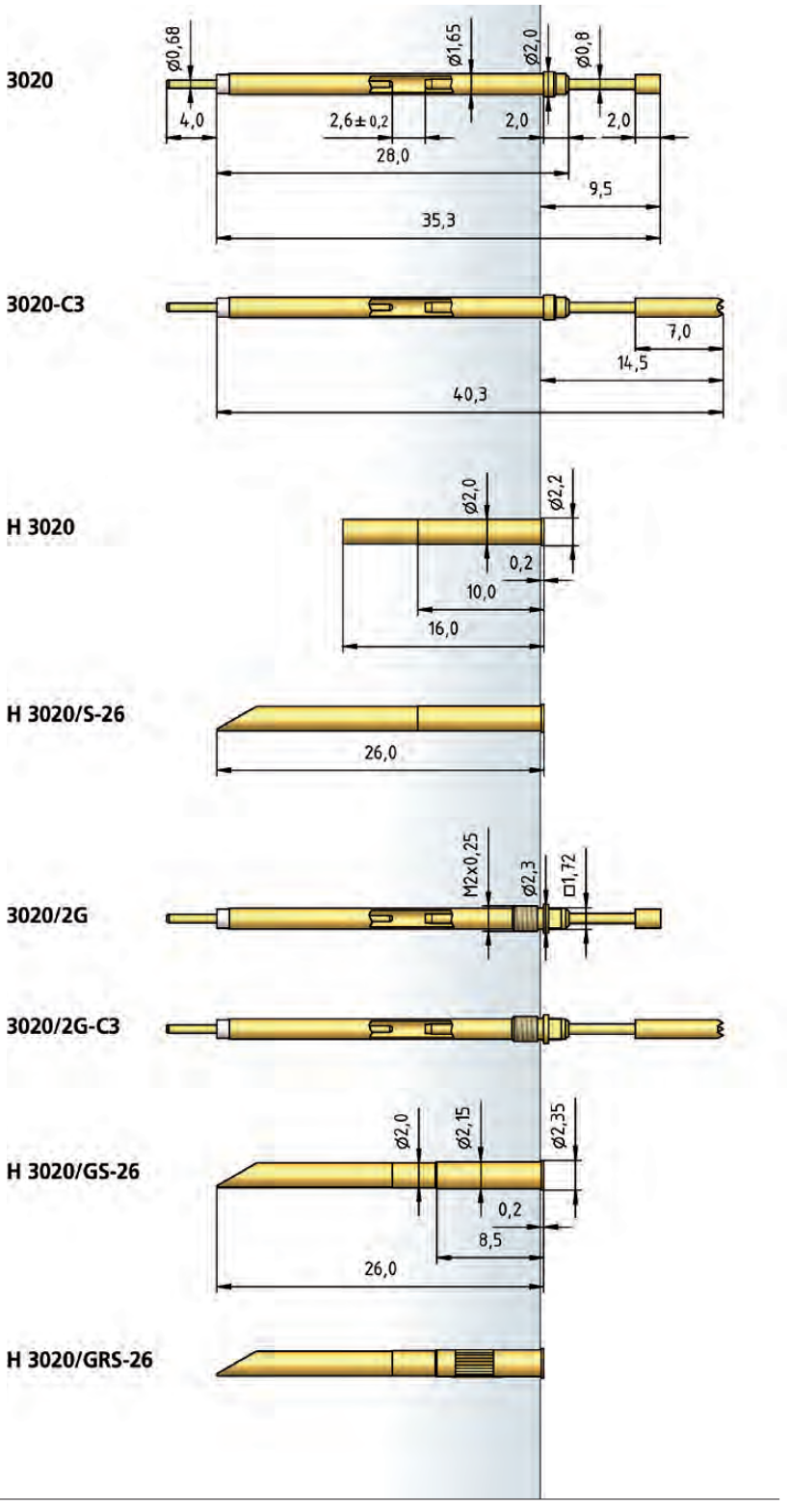
H3020(/S-26)	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.01 mm
H3020/GS-26	
HP 2361.1 (Trolitax)	2.15 mm
HGW 2372 (Glass filled material)	2.16 mm

Tip style · Diameter · Plating



A	C	C3	F	F
1.50 Au	1.30 Au 1.50 Au 3.00 Au	1.50 Au	0.80 Au	1.00 Au 1.30 Au 1.50 Au

F1
1.50 HTK



How to order:

3020/2 G - F - 1.5 N - Au - 1.5

1 2 3 4 5 6 7

1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter

Series 3020 • 3020/2G

- Switching test probe for the cable harness test
- Plug-in and threaded type
- Monitoring of components or periphery
- Switching travel 4.0 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.15/0.40/0.50/1.70 N
Spring force at working travel	0.30/1.00/2.50/6.00 N
Spring force at switching travel	0.30/1.00/2.50/6.00 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

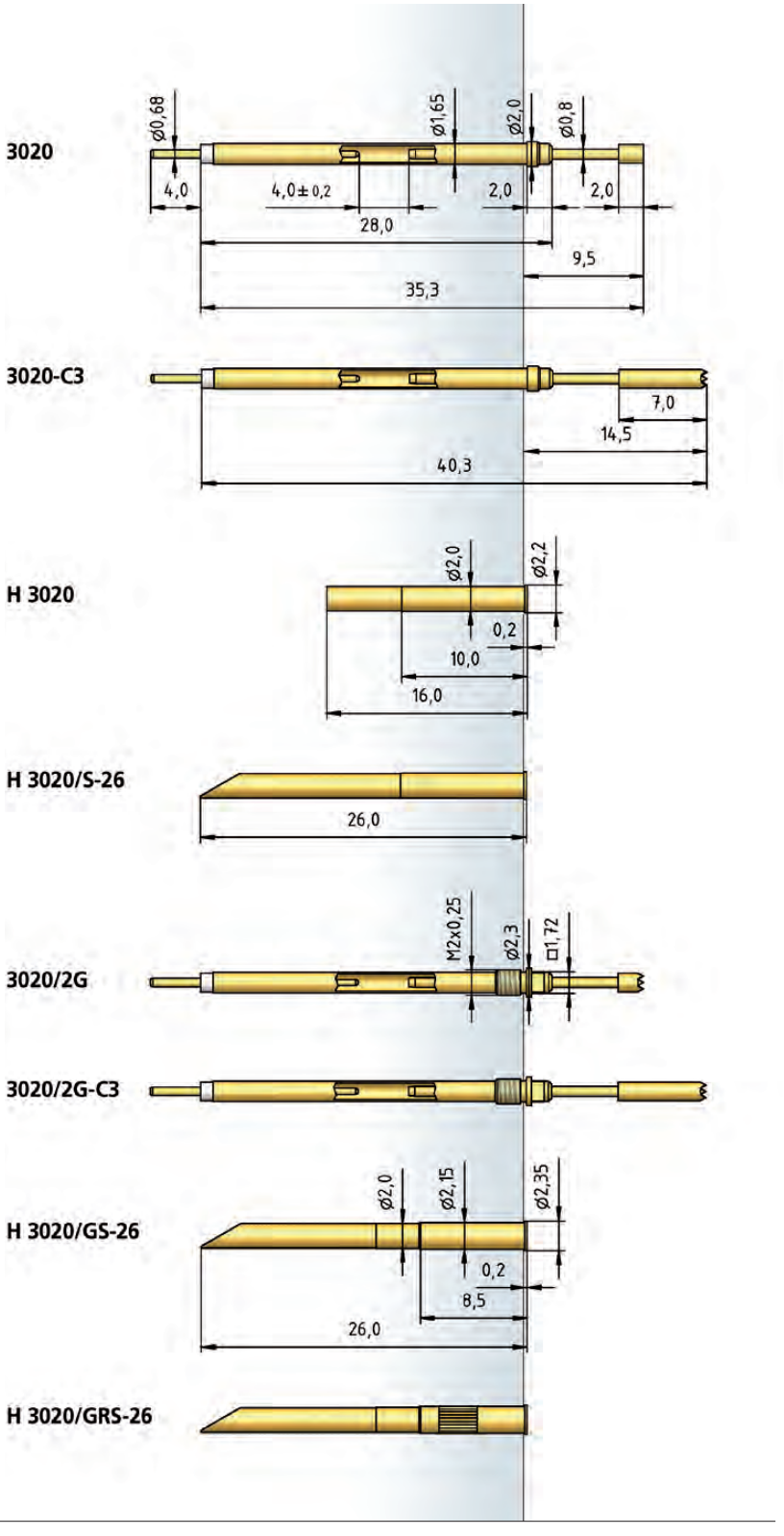
Recommended diameter of drill

H3020(/S-26)	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.01 mm
H3020/GS-26	
HP 2361.1 (Trolitax)	2.15 mm
HGW 2372 (Glass filled material)	2.16 mm

Tip style · Diameter · Plating

A	C	C3	F	F
1.50 Au	1.30 Au 1.50 Au 3.00 Au	1.50 Au	0.80 Au	1.00 Au 1.30 Au 1.50 Au

F1
1.50 HTK



How to order:

3020/2G - F - 1.5 N - Au - 1.5/SH4.0

1 2 3 4 5 6 7 8

1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter 8. Switching travel

Series 3030

- Switching test probe for the cable harness test
- Plug-in system
- Receptacle diameter only 1.83 mm (press ring)
- Soldering temperature max. 300°C
- Switching test probe with standard travel for small centers

Mechanical Data

Center	2.54 mm/100 mil
Full travel	6.30 mm
Working travel	5.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.30 N
Spring force at working travel	2.00 N
Spring force at switching travel	1.00 N

Electrical Data

Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Bronze, gold-plated

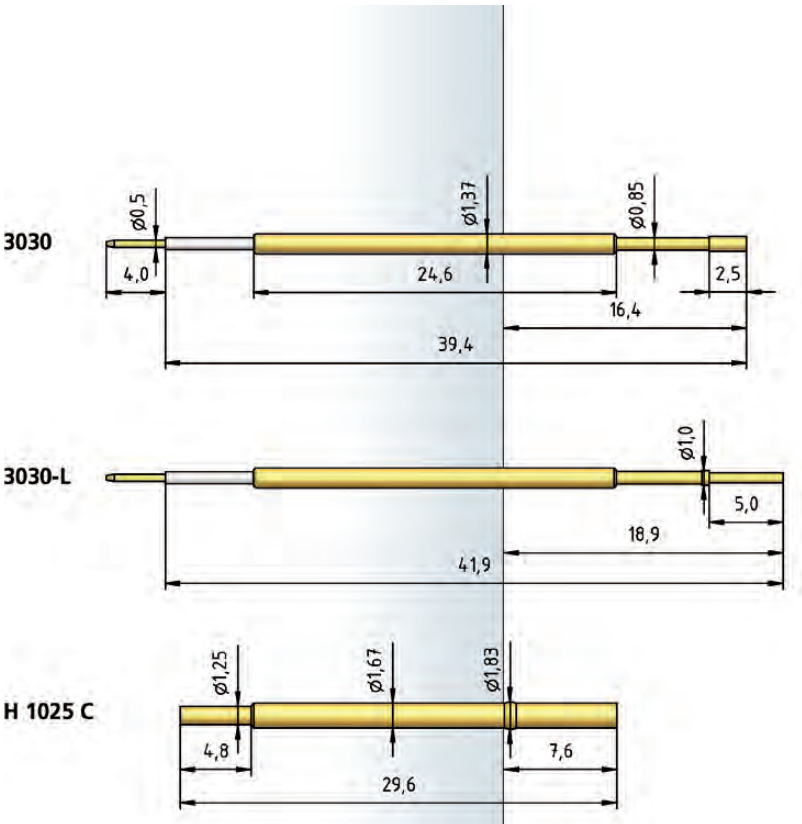
Recommended diameter of drill

HP 2361.1 (Trolitax)	1.65 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.67 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating

C	D	D1	DL	F
1.00 Au 1.30 Au	0.65 Au	0.65 Au	0.65 Au	1.00 Au

FL
0.70 Au



How to order:

3030 - C - 2.0 N - Au - 1.0/0.5x4.0
1 2 3 4 5 6 7

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Connector pin diameter 7. Connector pin length

Series 3035

- Switching test probe for the cable harness test
- Plug-in system
- Receptacle diameter only 1.41 mm (press ring)
- Soldering temperature max. 300°C
- Switching test probe with standard travel for small centers

Mechanical Data

Center	1.91 mm/75 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	0.30 N
Spring force at working travel	2.00 N
Spring force at switching travel	1.10 N

Electrical Data

Max. current rating	1.0 A
Typical continuity resistance	≤ 20 mOhm
Typical insulating voltage	1000 V

Materials

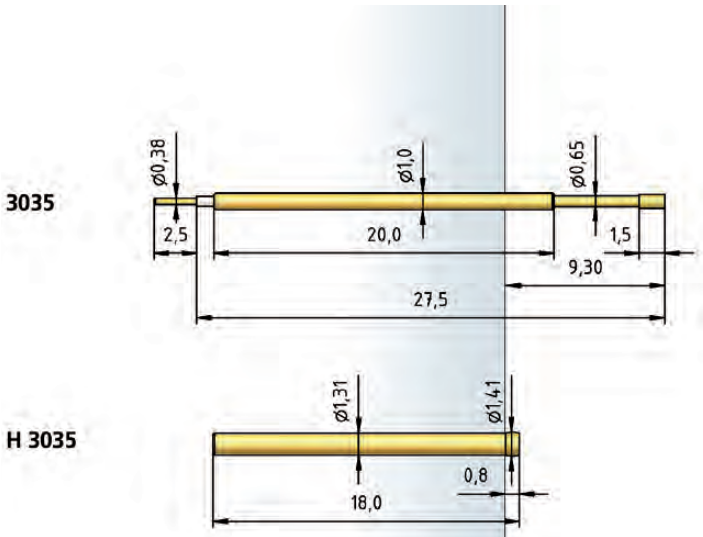
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Bronze, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	1.30 mm
With pressed-in ring	1.36 mm
HGW 2372 (Glass filled material)	1.32 mm
With pressed-in ring	1.37 mm

Tip style · Diameter · Plating

C	F
0.80C Au	0.80C Au



How to order:

3035 - F - 2.0 N - Au - 0.8C

1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Series 3010/2GW(5)

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Switching travel 1.7 mm
- Soldering temperature max. 300°C
- Variable extension height (optional)

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	1.25/1.75/2.30/2.80/ 4.00/7.00/7.50/9.00/ 9.50/10.00/10.50/ 13.00/13.50 N
Spring force at switching travel	0.20/0.45/0.75/1.00/ 1.60/3.60/3.60/4.40/ 4.80/5.40/5.20/8.00/ 7.60 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3010/GW, H3010/GW5	
HP 2361.1 (Trolitax)	3.28 mm
HGW 2372 (Glass filled material)	3.29 mm
H3010/GWR5	
HP 2361.1 (Trolitax)	3.31 mm
HGW 2372 (Glass filled material)	3.32 mm

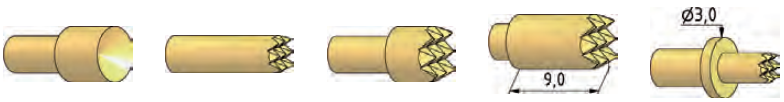
How to order:

3010/2GW 5 - C - 1.3 N - Au - 2.3

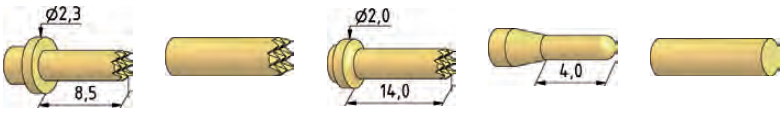
1 2 3 4 5 6 7 8 9

1. Series 2. Collar height 3. Treaded design 4. Interchangeable without soldering 5. Adjustment area of the extension height 6. Tip style 7. Spring force 8. Tip plating 9. Tip diameter

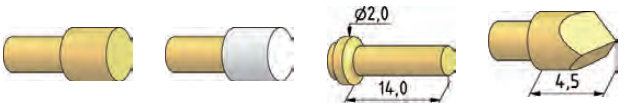
Tip style · Diameter · Plating



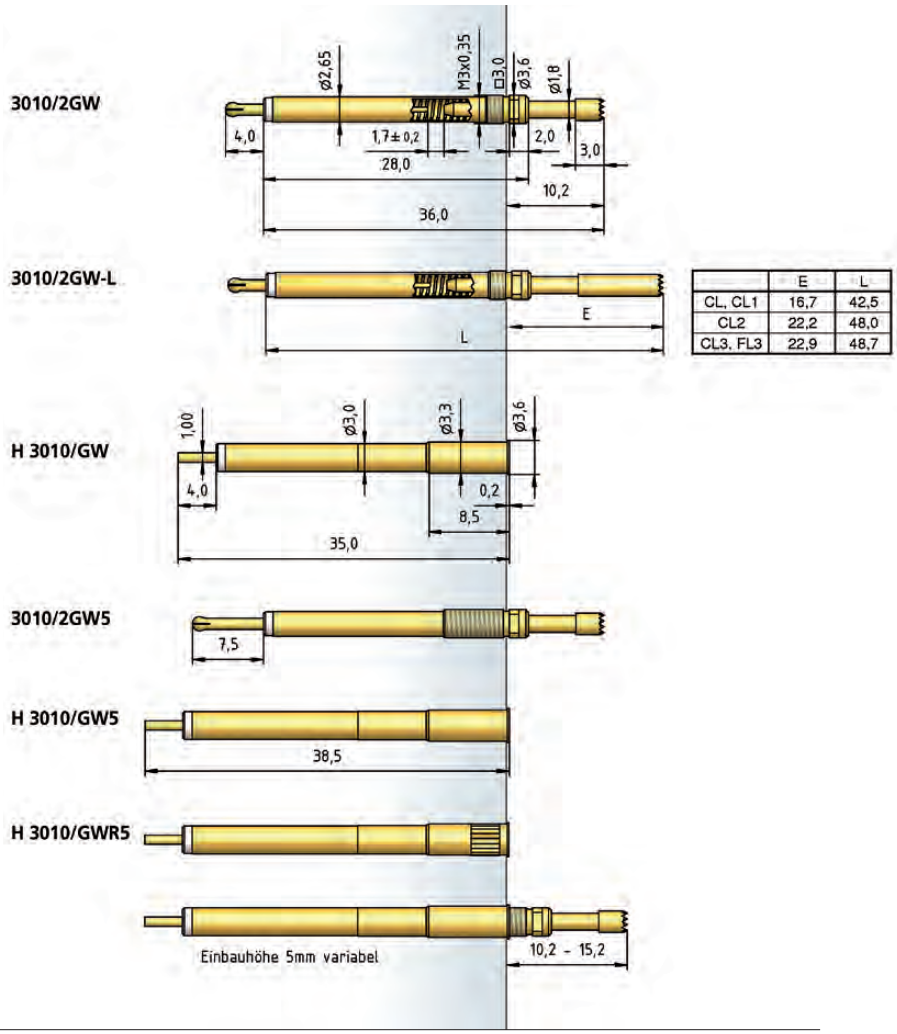
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



	E	L
CL, CL1	16,7	42,5
CL2	22,2	48,0
CL3, FL3	22,9	48,7

Series 3010/2GW(5)

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Switching travel 4.0 mm
- Soldering temperature max. 300°C
- Variable extension height (optional)

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N
Spring force at switching travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

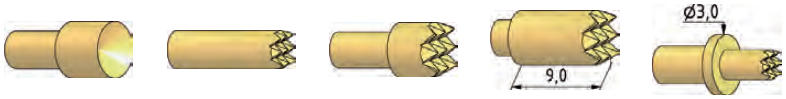
H3010/GW, H3010/GW5	
HP 2361.1 (Trolitax)	3.28 mm
HGW 2372 (Glass filled material)	3.29 mm
H3010/GWR5	
HP 2361.1 (Trolitax)	3.31 mm
HGW 2372 (Glass filled material)	3.32 mm

How to order:

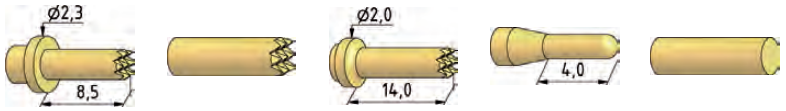
3010/2GW 5 - C - 1.3 N - Au - 2.3/SH4.0
1 2 3 4 5 6 7 8 9 10

1. Series 2. Collar height 3. Treaded design 4. Interchangeable without soldering 5. Adjustment area of the extension height 6. Tip style 7. Spring force 8. Tip plating 9. Tip diameter 10. Switching travel

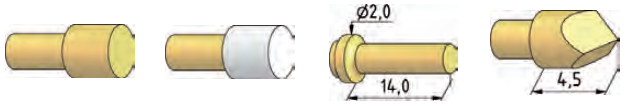
Tip style · Diameter · Plating



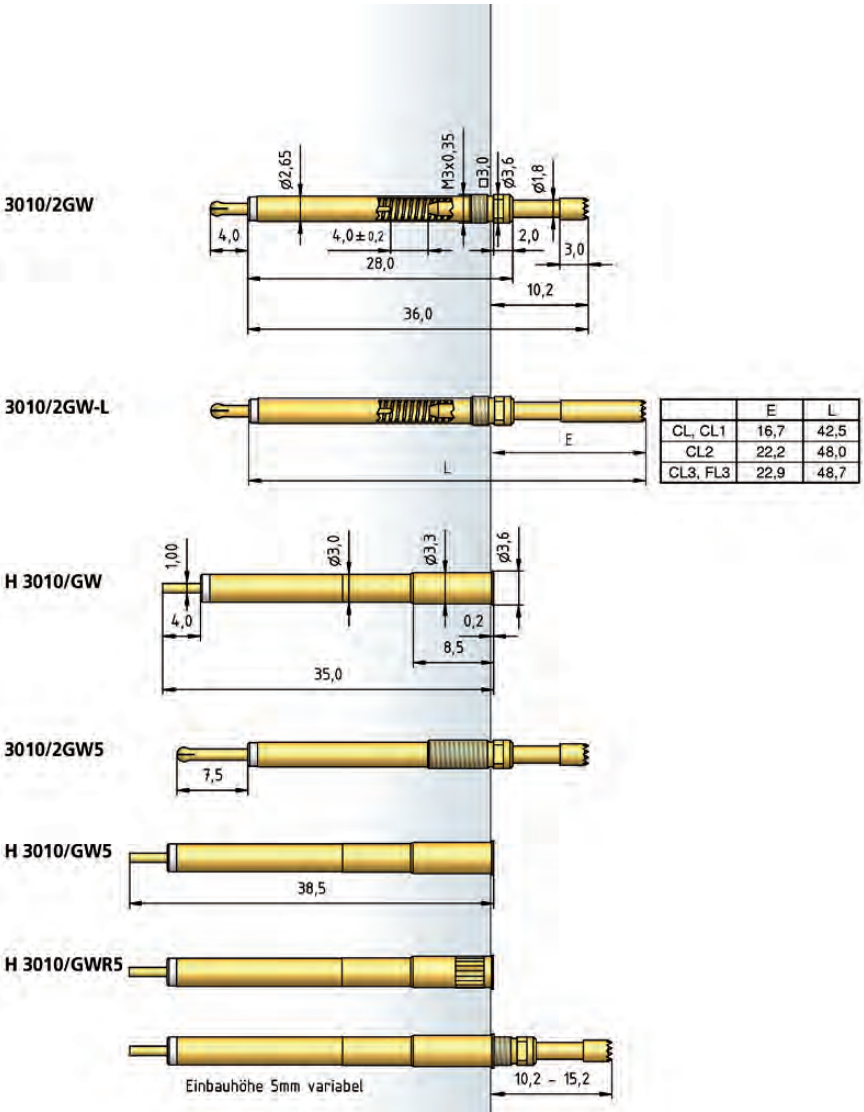
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



	E	L
CL, CL1	16,7	42,5
CL2	22,2	48,0
CL3, FL3	22,9	48,7

Series 3011/2GS

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Switching travel 1.7 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.75/1.25/1.80/2.30/ 3.50/6.50/7.00/8.50/ 9.00/9.50/10.00/12.50/ 13.00 N
Spring force at switching travel	0.20/0.45/0.75/1.00/ 1.60/3.60/3.60/4.40/ 4.80/5.40/5.20/8.00/ 7.60 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

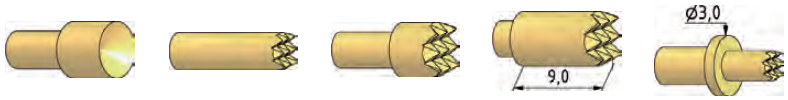
How to order:

3011/2GS - C - 1.8 N - Au - 2.3

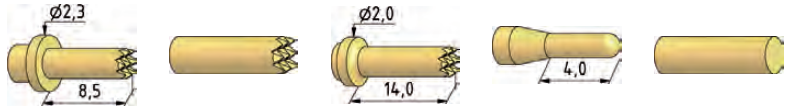
1 2 3 4 5 6 7 8

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter

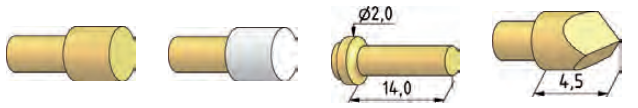
Tip style · Diameter · Plating



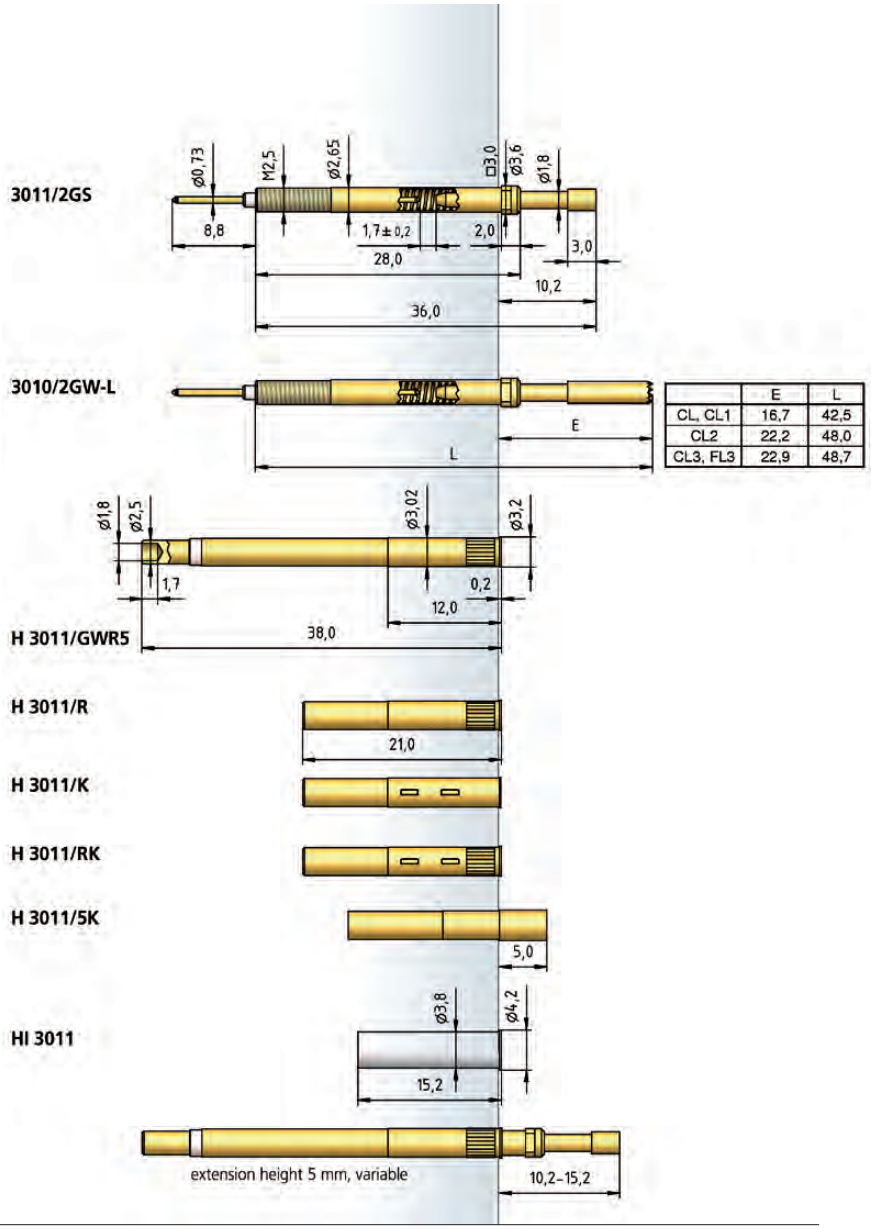
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



	E	L
CL, CL1	16,7	42,5
CL2	22,2	48,0
CL3, FL3	22,9	48,7

Series 3011/2GS

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Switching travel 4.0 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N
Spring force at switching travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

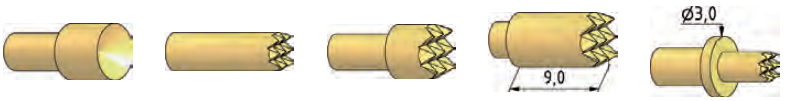
How to order:

3011/ 2 G S - C - 1.8 N - Au - 2.3 /SH4.0

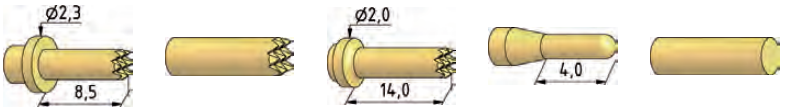
1 2 3 4 5 6 7 8 9

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter 9. Switching travel

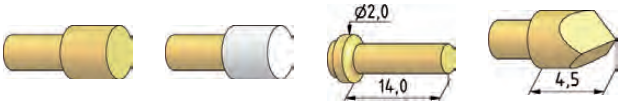
Tip style · Diameter · Plating



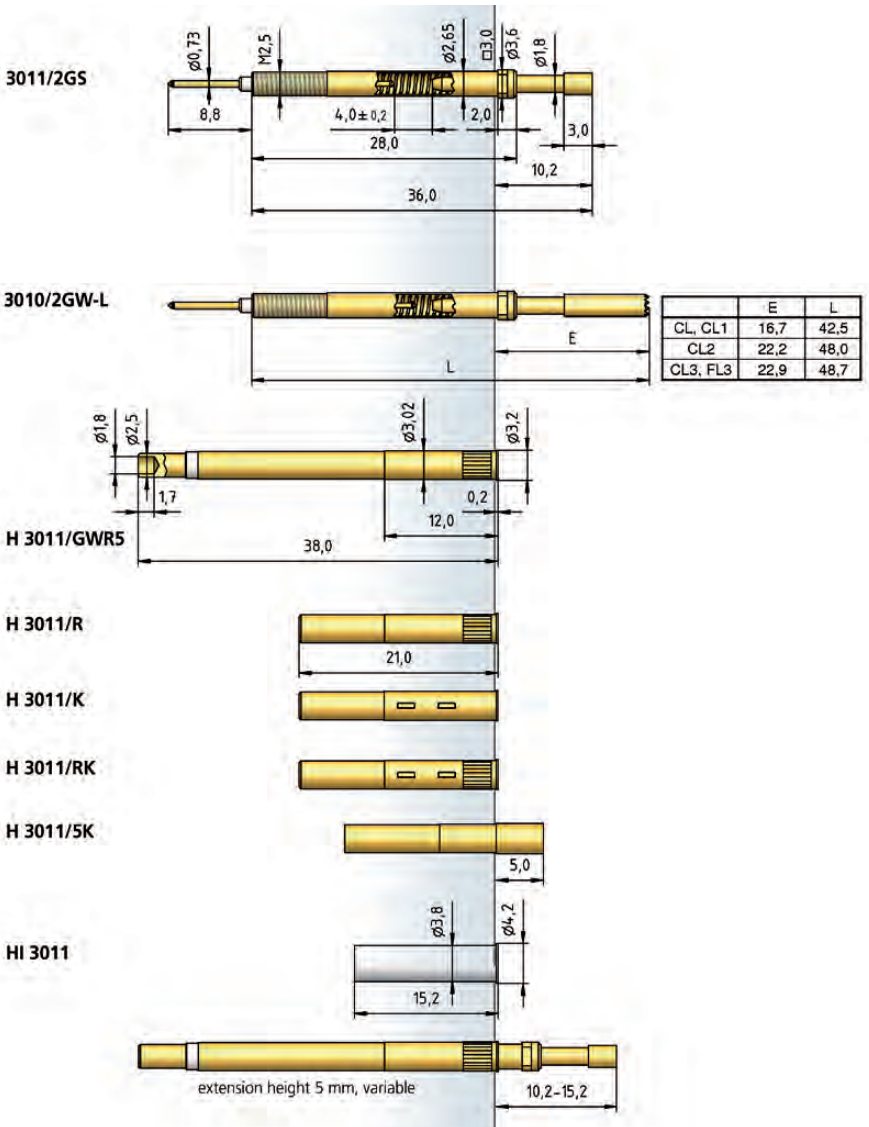
A	C	C	CL	C1
2.30 Au	1.80 Au	2.30 Au 3.00 Au 4.00 Au	2.30 Au	1.00 Au



CL1	CL2	CL3	D6	F
1.00 Au	1.80 Au	1.00 Au	1.00 Au	1.80 Au



F	F1	FL3	H2
2.00 Au 2.30 Au	2.30 HTK 3.00 HTK 4.00 HTK 5.00 HTK	1.00 Au	2.60 Au



Series 3012/2GS

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Version for large tip diameter
- Switching travel 1.7 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	4.20 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.75/1.25/1.80/2.30/ 3.50/6.50/7.00/8.50/ 9.00/9.50/10.00/12.50/ 13.00 N
Spring force at switching travel	0.20/0.45/0.75/1.00/ 1.60/3.60/3.60/4.40/ 4.80/5.40/5.20/8.00/ 7.60 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

How to order:

3012/2GS - F - 1.8N - Au - 3.0C

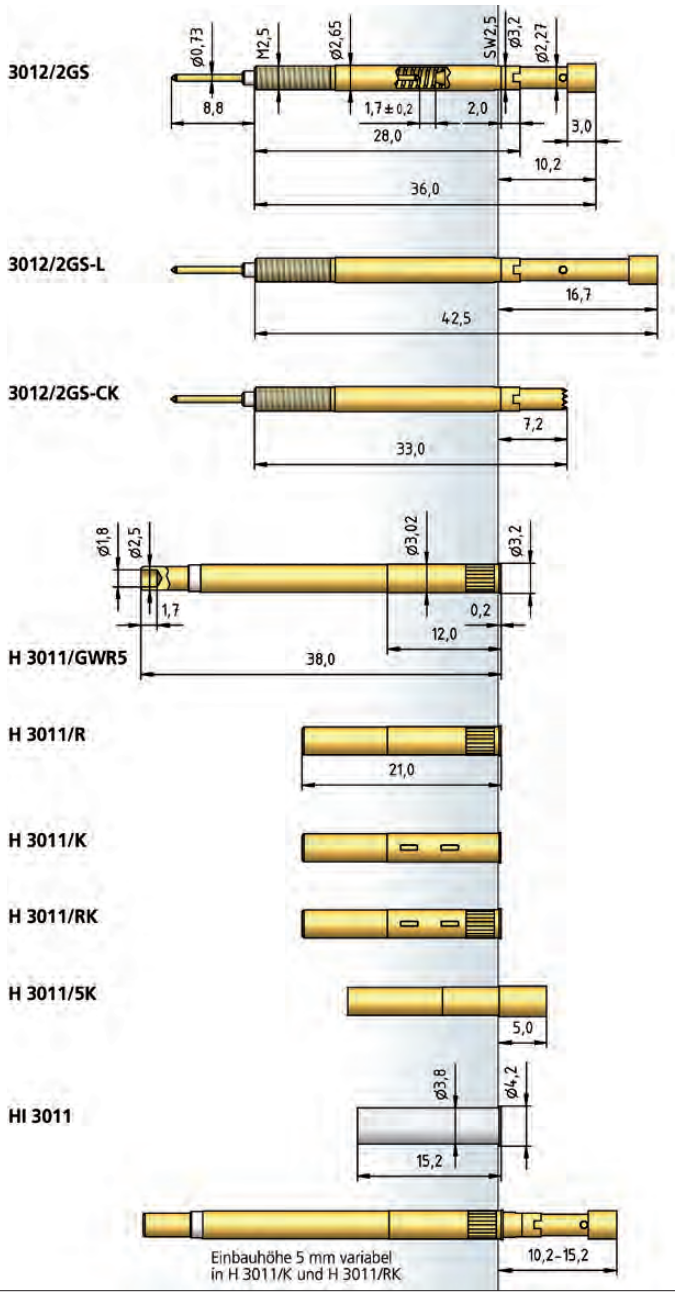
1 2 3 4 5 6 7 8 9

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter 9. Tip material (only for CuBe)

Tip style · Diameter · Plating

C	CK	CL	C5	F
3.00C Au 4.00C Au	2.27C Au	2.30C Au 3.00C Au	1.00 Au	3.00C Au 3.50C Au 4.00C Au 4.50C Au 5.00C Au 5.50C Au 5.90C Au

FL	F1	F1L
3.00C Au 3.50C Au 4.00C Au 4.50C Au	2.30C HTK 3.00C HTK 3.50C HTK 4.00C HTK 4.50C HTK 5.00C HTK 5.50C HTK 5.90C HTK	3.00C HTK 3.50C HTK



Series 3012/2GS

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Version for large tip diameter
- Switching travel 4.0 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	4.20 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N
Spring force at switching travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel/CuBe, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

How to order:

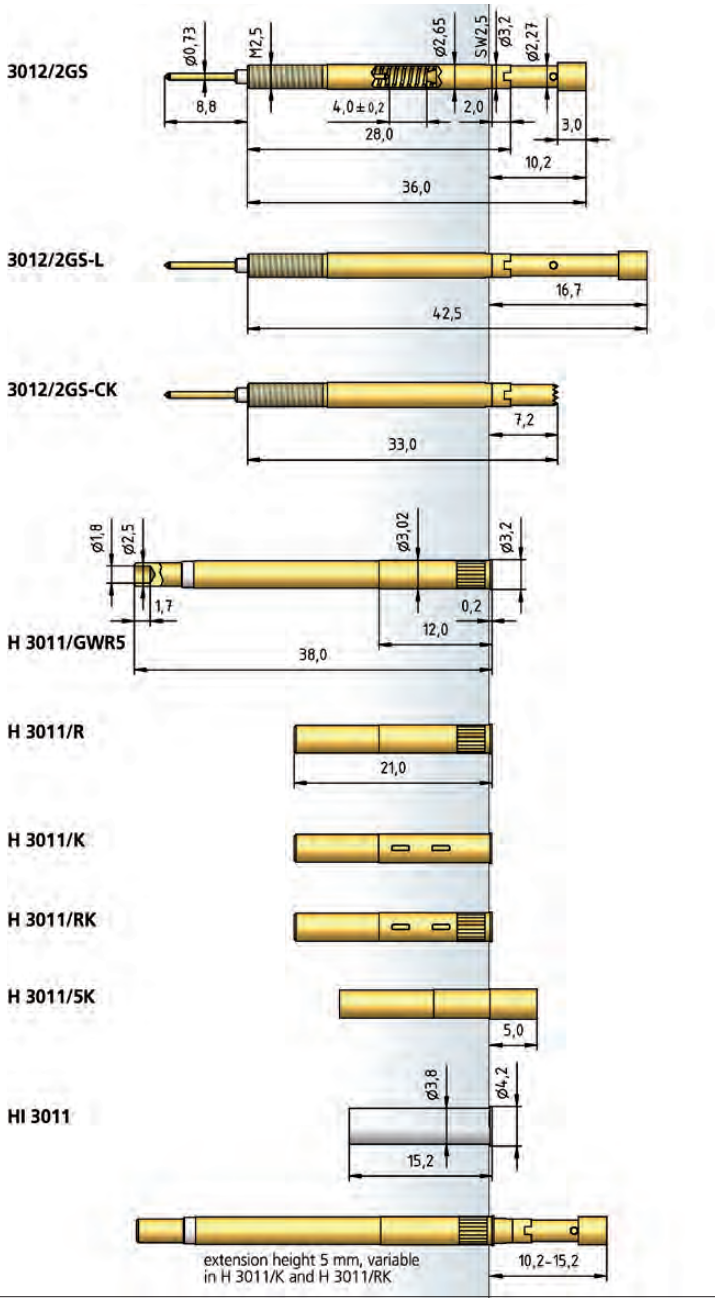
3012/2GS - F - 1.8N - Au - 3.0C/SH4.0
1 2 3 4 5 6 7 8 9 10

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter 9. Tip material (only for CuBe) 10. Switching travel

Tip style · Diameter · Plating

C	CK	CL	C5	F
3.00C Au 4.00C Au	2.27C Au	2.30C Au 3.00C Au	1.00 Au	3.00C Au 3.50C Au 4.00C Au 4.50C Au 5.00C Au 5.50C Au 5.90C Au

FL	F1	F1L
3.00C Au 3.50C Au 4.00C Au 4.50C Au	2.30C HTK 3.00C HTK 3.50C HTK 4.00C HTK 4.50C HTK 5.00C HTK 5.50C HTK 5.90C HTK	3.00C HTK 3.50C HTK



Series 3012/2GS-FS1 • FLS1

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Version for large tip diameter
- Tips insulated
- Switching travel 1.7 mm
- Soldering temperature max. 300°C
- Variable extension height

Tip style · Diameter · Plating

FS1	FLS1
3.00C 3.50C	3.00C
4.00C 4.50C	3.50C
5.00C 5.50C	4.50C
5.90C	5.00C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	4.50 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.75/1.25/1.80/2.30/ 3.50/6.50/7.00/8.50/ 9.00/9.50/10.00/12.50/ 13.00 N
Spring force at switching travel	0.20/0.45/0.75/1.00/ 1.60/3.60/3.60/4.40/ 4.80/5.40/5.20/8.00/ 7.60 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated
Tip	CuBe, passivated
Receptacle	Brass, gold-plated

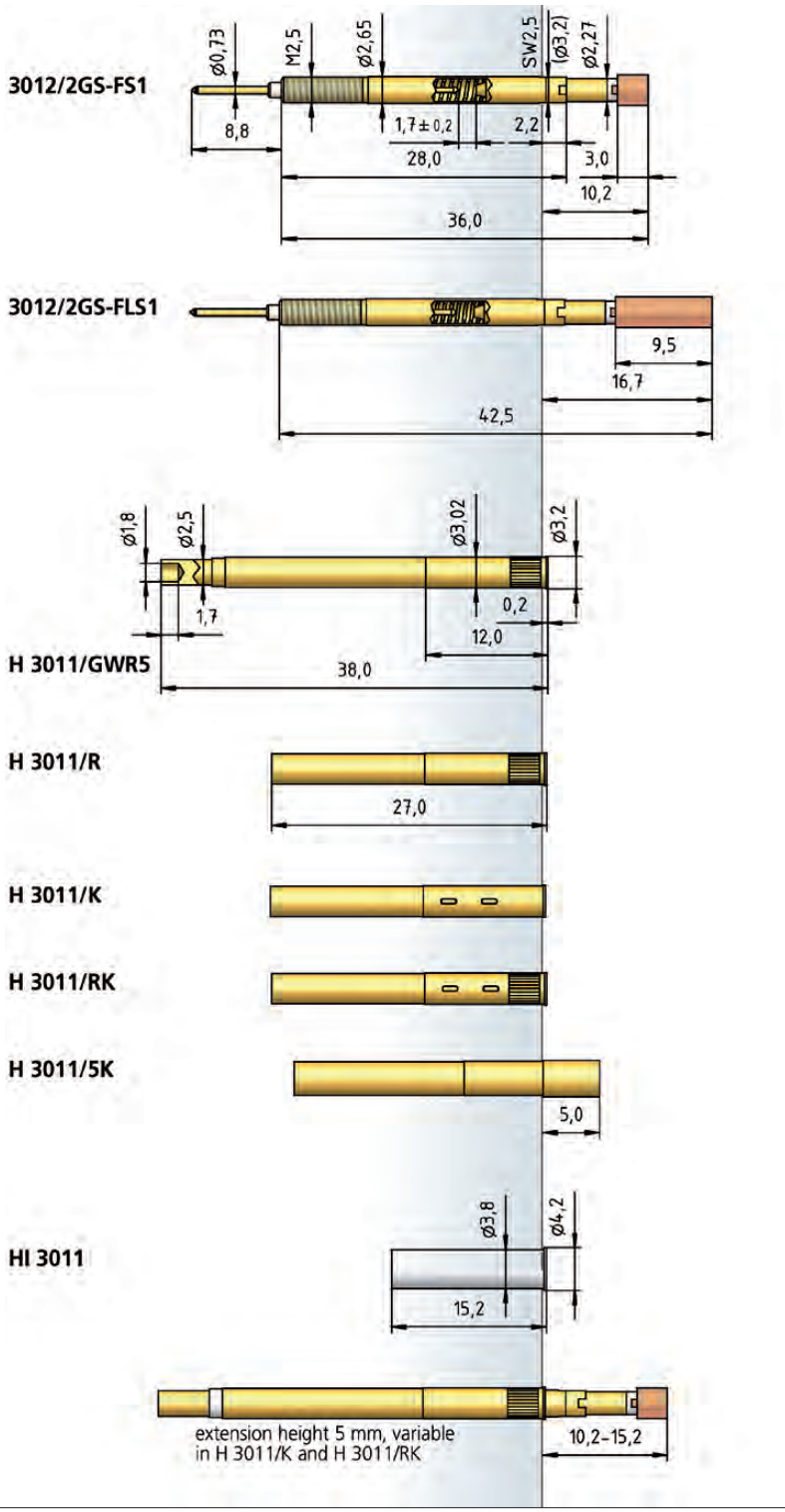
Recommended diameter of drill

H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

How to order:

3012/	2	G	S	-	FS1	-	3.0 N	-	CB	-	3.0 C
	1	2	3	4	5		6		7		8 9

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter 9. Tip material (only for CuBe)



Series 3012/2GS-FS1 • FLS1

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Version for large tip diameter
- Tips insulated
- Switching travel 4.0 mm
- Soldering temperature max. 300°C
- Variable extension height

Tip style · Diameter · Plating

FS1	FLS1
3.00C 3.50C	3.00C
4.00C 4.50C	3.50C
5.00C 5.50C	4.50C
5.90C	5.00C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	4.50 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.12/0.25/0.30/0.40/ 0.60/1.80/1.40/1.70/ 2.00/2.70/2.00/5.00/ 4.00 N
Spring force at working travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N
Spring force at switching travel	0.25/0.75/1.30/1.80/ 3.00/6.00/6.50/8.00/ 8.50/9.00/9.50/12.00/ 12.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	5.0 A
Typical continuity resistance	≤ 15 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated
Tip	CuBe, passivated
Receptacle	Brass, gold-plated

Recommended diameter of drill

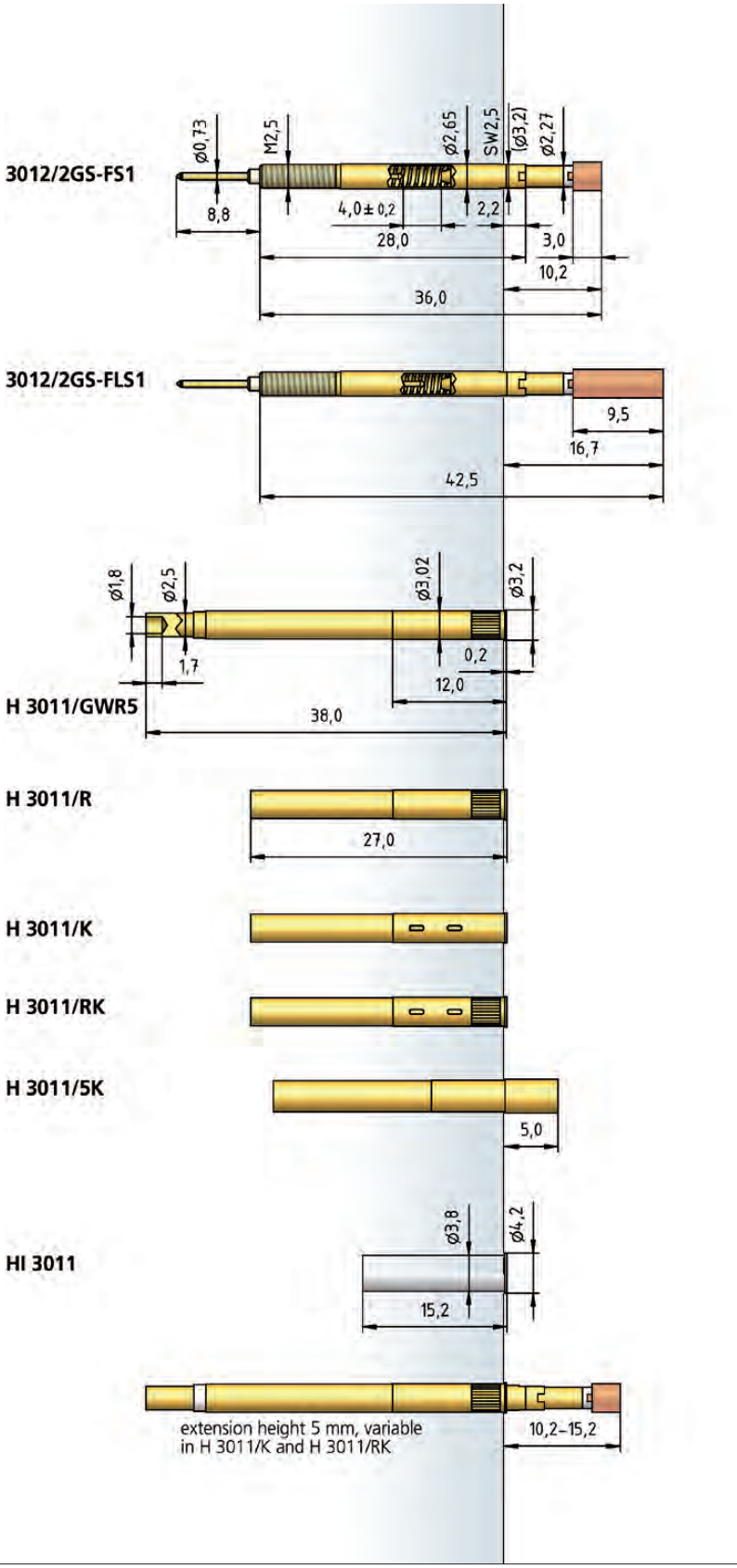
H3011/GWR5, H3011/R, H3011/RK	
HP 2361.1 (Trolitax)	3.02 mm
HGW 2372 (Glass filled material)	3.04 mm
H3011/K	
HP 2361.1 (Trolitax)	3.01 mm
HGW 2372 (Glass filled material)	3.02 mm

How to order:

3012/ 2 G S - FS1 - 3.0 N - CB - 3.0 C /SH4.0

1 2 3 4 5 6 7 8 9 10

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter 9. Tip material (only for CuBe) 10. Switching travel



Series 3014/2G

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Short design (24.5 mm)
- Soldering temperature max. 300°C

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.70 mm
Pre-loaded spring force	0.50 N
Spring force at working travel	1.50 N
Spring force at switching travel	0.90 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 40 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

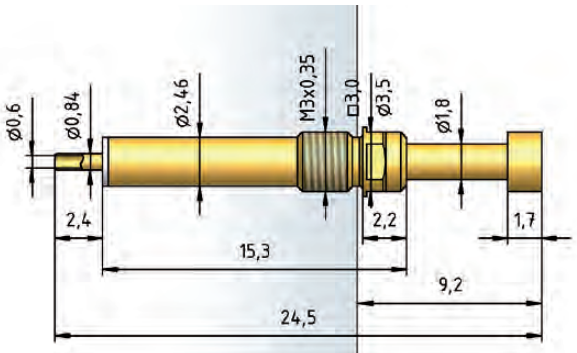
HP 2361.1 (Trolitax)	3.50 mm
HGW 2372 (Glass filled material)	3.51 mm

Tip style · Diameter · Plating

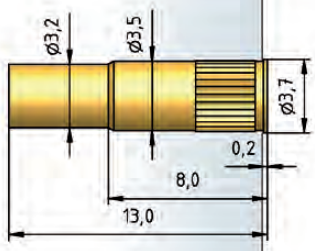
A	C	C	F	F
3.00C Au	1.00C Au	2.00C Au 3.00C Au	1.00C Au	2.00C Au 3.00C Au

F1
2.00C HTK 3.00C HTK

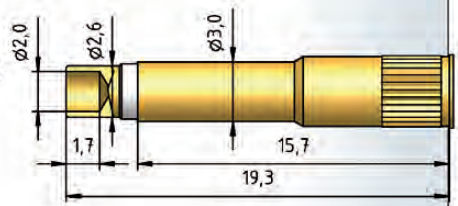
3014/2G



H 3014/GR



H 3014/GWR



How to order:

3014/2G - A - 1.5N - Au - 3.0C
1 2 3 4 5 6 7 8

1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating Au or cap HTK 7. Tip diameter 8. Tip material (only for CuBe)

Series 3020/2GW5

- Switching test probe for the cable harness test
- Threaded type
- Switching travel 2.6 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	0.15/0.40/0.50/1.70 N
Spring force at working travel	0.80/1.50/3.00/6.50 N
Spring force at switching travel	0.25/0.80/1.80/4.50 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

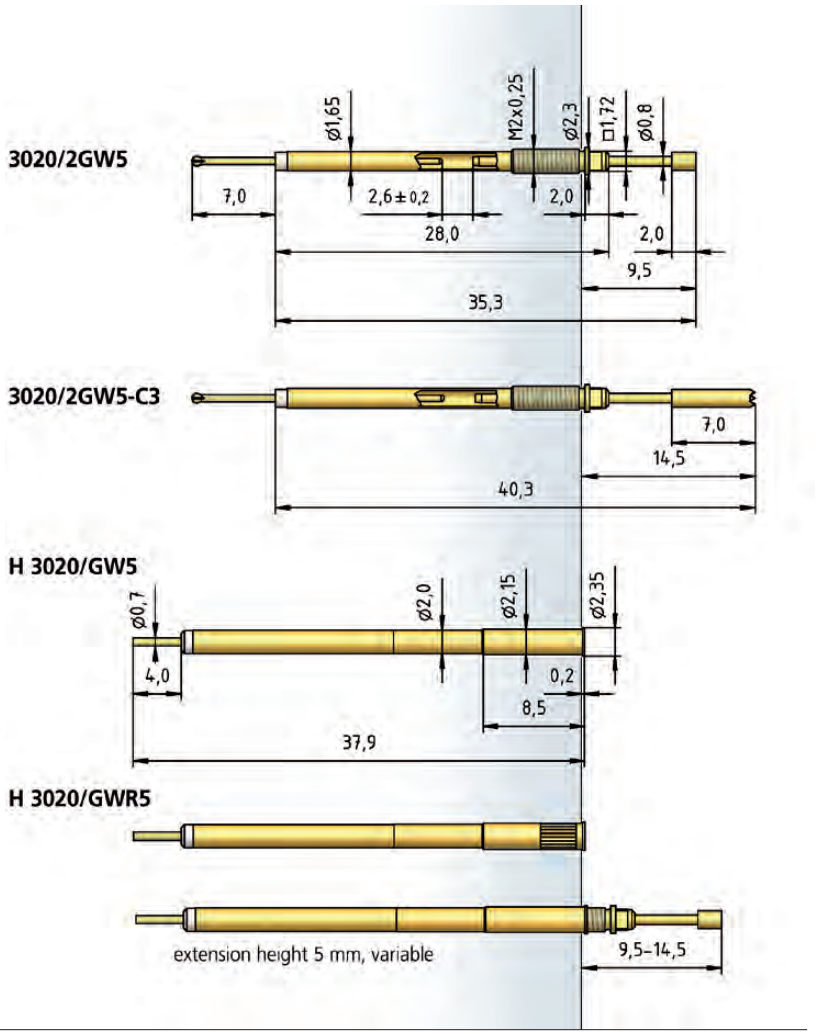
Recommended diameter of drill

HP 2361.1 (Trolitax)	2.15 mm
HGW 2372 (Glass filled material)	2.16 mm

Tip style · Diameter · Plating

A	C	C3	F	F
1.50 Au	1.30 Au 1.50 Au 3.00 Au	1.50 Au	0.80 Au	1.00 Au 1.30 Au 1.50 Au

F1
1.50 HTK



How to order:

3020/ 2 G W 5 - F - 1.5 N - Au - 1.5

1 2 3 4 5 6 7 8 9

1. Series 2. Collar height 3. Treaded design 4. Interchangeable without soldering 5. Adjustment area of the extension height 6. Tip style 7. Spring force 8. Tip plating Au or cap HTK 9. Tip diameter

Series 3020/2GW5

- Switching test probe for the cable harness test
- Threaded type
- Switching travel 4.0 mm
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.15/0.40/0.50/1.70 N
Spring force at working travel	0.30/1.00/2.50/6.00 N
Spring force at switching travel	0.30/1.00/2.50/6.00 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

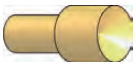
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

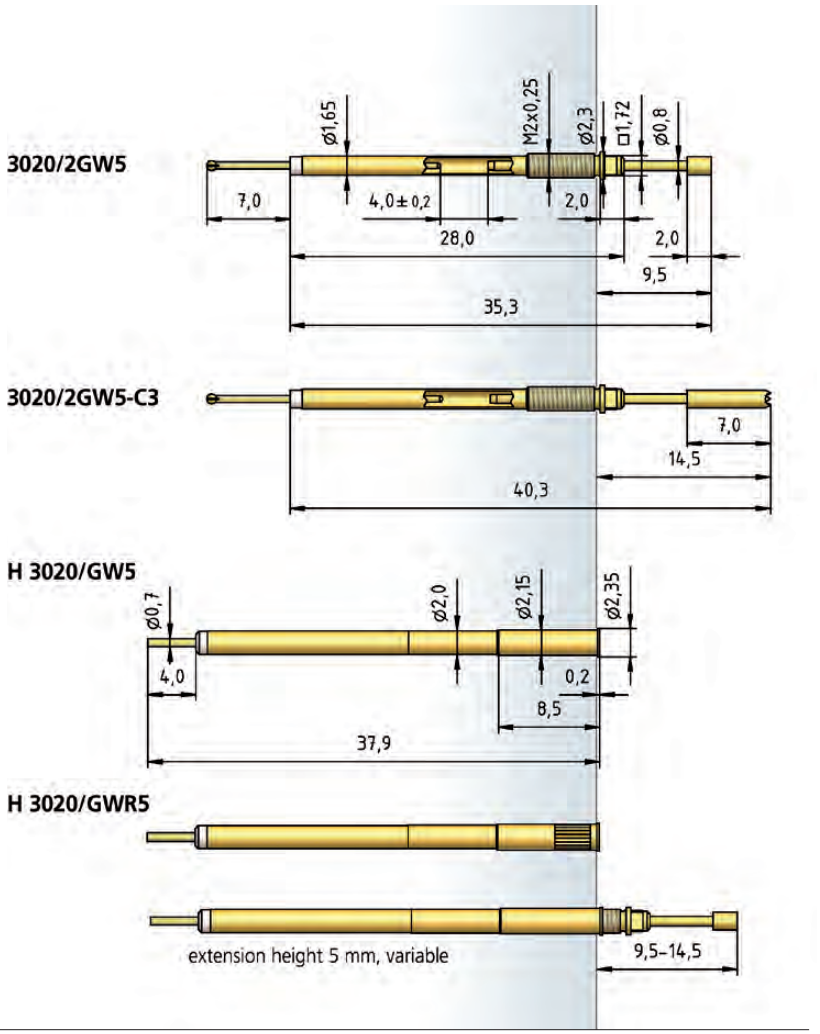
HP 2361.1 (Trolitax)	2.15 mm
HGW 2372 (Glass filled material)	2.16 mm

Tip style · Diameter · Plating



A	C	C3	F	F
1.50 Au	1.30 Au 1.50 Au 3.00 Au	1.50 Au	0.80 Au	1.00 Au 1.30 Au 1.50 Au

F1
1.50 HTK



How to order:

3020/	2GW	5	-	F	-	1.5 N	-	Au	-	1.5/SH4.0
1	2	3 4	5		6		7		8	9 10

1. Series 2. Collar height 3. Treaded design 4. Interchangeable without soldering 5. Adjustment area of the extension height 6. Tip style 7. Spring force 8. Tip plating 9. Tip diameter 10. Switching travel

Series 3023/2GS

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	1.50 mm
Pre-loaded spring force	0.12/0.30/0.40/ 0.80/0.80/0.80 N
Spring force at working travel	0.85/1.35/2.00/ 3.00/3.50/6.50 N
Spring force at switching travel	0.20/0.50/0.80/ 1.45/1.60/3.10 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated, or gold-plated with insulator
Receptacle	Brass, gold-plated

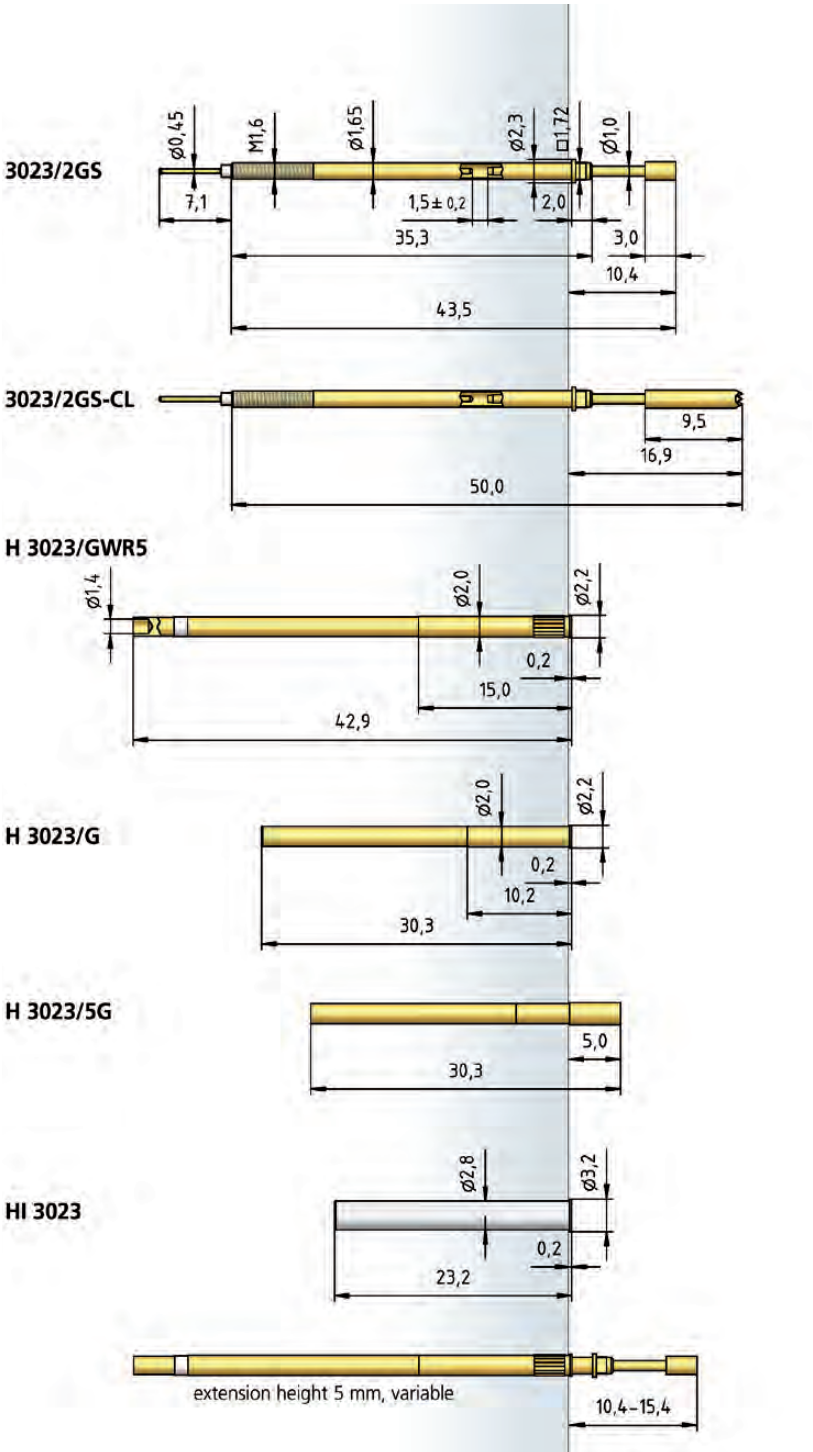
Recommended diameter of drill

HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.01 mm

Tip style · Diameter · Plating

A	C	CL	D	DL
1.80 Au	1.30 Au 1.50 Au 1.80 Au 2.00 Au 2.30 Au	1.00 Au 1.40 Au 1.80 Au	1.00 Au	1.00 Au

D1	F	F	F1	FL
0.64 Au	0.70 Au 1.00 Au	1.80 Au	1.80 HTK 2.30 HTK	1.00 Au



How to order:

3023/2 G S - F - 3.5 N - Au - 1.8

1 2 3 4 5 6 7 8

1. Series 2. Collar height 3. Treaded design 4. Plug-in connector 5. Tip style 6. Spring force 7. Tip plating 8. Tip diameter

Series 3024/2G

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Short design (24.5 mm)
- Soldering temperature max. 300°C
- FS1 insulated metal cap

Tip style · Diameter · Plating

C	D	F	F1	FS1
1.80C Au	1.00C Au	1.00C Au	1.80 HTK	2.00C Ni/S

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	0.30/0.50/0.50 N
Spring force at working travel	1.35/2.00/2.50 N
Spring force at switching travel	1.00/1.50/1.80 N

Electrical Data

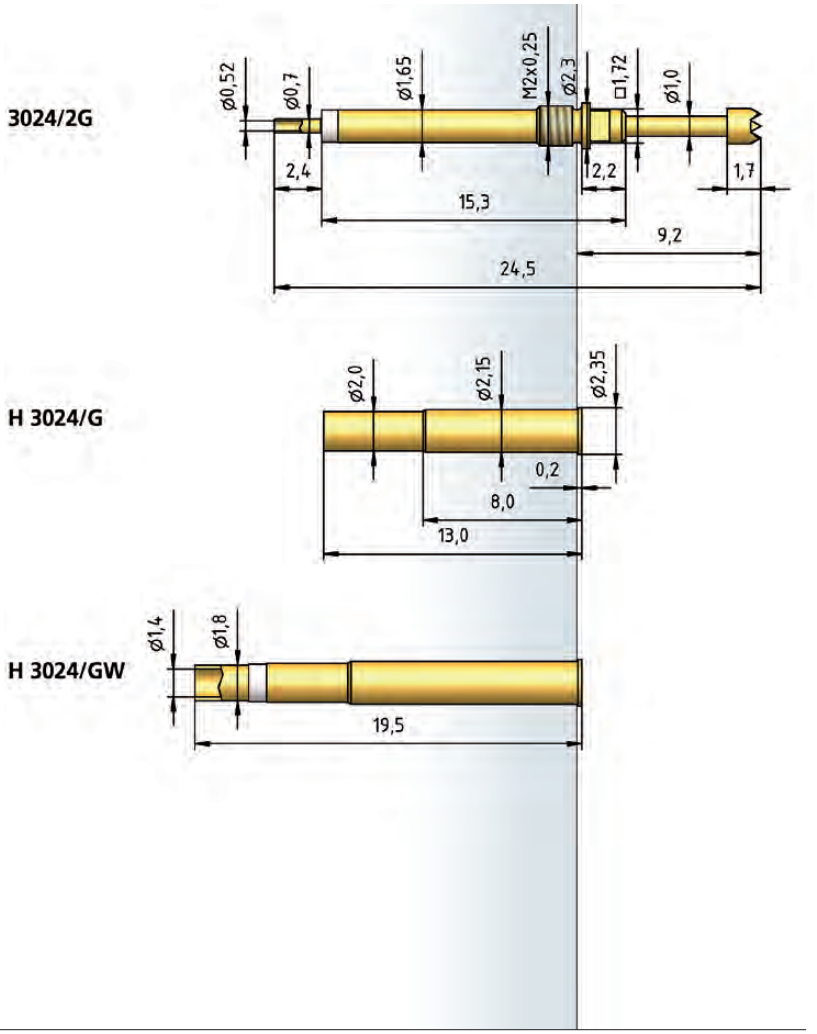
Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated or with insulator
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	2.15 mm
HGW 2372 (Glass filled material)	2.16 mm



How to order:

3024/2G - C - 2.0N - Au - 1.8C

1 2 3 4 5 6 7 8

1. Series 2. Collar height 3. Treaded design 4. Tip style 5. Spring force 6. Tip plating 7. Tip diameter 8. Tip material (only for CuBe)

Series 3030/GW3

- Switching test probe for the cable harness test
- Threaded type
- Easy-replacement system
- Replacement without soldering
- Receptacle diameter only2.0 mm

Mechanical Data

Center	2.54 mm/100 mil
Full travel	6.30 mm
Working travel	5.00 mm
Switching travel	4.00 mm
Pre-loaded spring force	0.30 N
Spring force at working travel	2.00 N
Spring force at switching travel	1.00 N

Electrical Data

Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

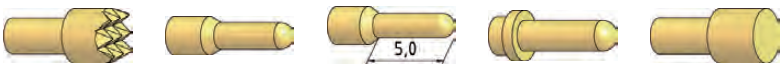
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

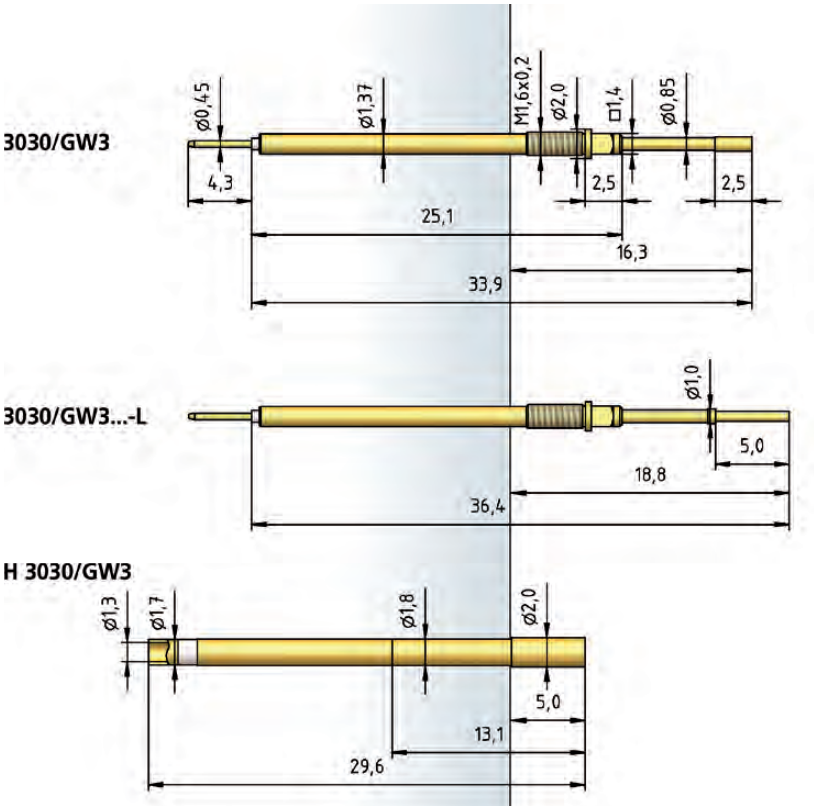
HP 2361.1 (Trolitax)	1.65 mm
With pressed-in ring	1.75 mm
HGW 2372 (Glass filled material)	1.67 mm
With pressed-in ring	1.76 mm

Tip style · Diameter · Plating



C	D	D1	DL	F
1.00 Au 1.30 Au	0.65 Au	0.65 Au	0.65 Au	1.00 Au

FL
0.70 Au



How to order:

3030 GW 3 - F - 2.0 N - Au - 1.0

1 2 3 4 5 6 7 8

1. Series 2. Treaded design 3. Interchangeable without soldering
4. Adjustment area of the extension height 5. Tip style 6. Spring force
7. Tip plating 8. Tip diameter

Series 3015/G

- Ball-head switching test probe for presence detection with side activation
- Treaded type
- Precision ball plunger guide

Mechanical Data

Center	7.50 mm/300 mil
Full travel	1.00 mm
Working travel	0.80 mm
Switching travel	0.50 mm
Pre-loaded spring force	0.20 N
Spring force at working travel	0.70 N
Spring force at switching travel	0.60 N

Electrical Data

Max. current rating	1.0 A
Typical continuity resistance	≤ 25 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

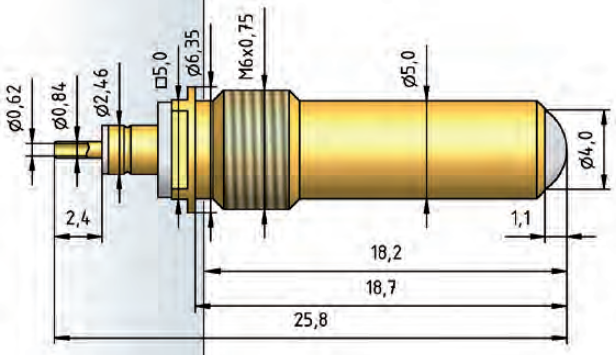
Recommended diameter of drill

HP 2361.1 (Trolitax)	6.75 - 6.80 mm

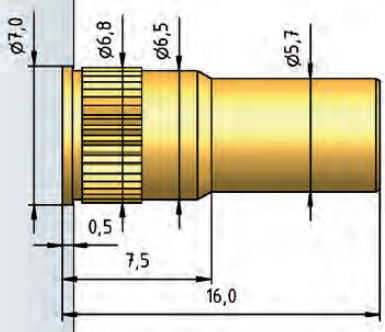
Tip style · Diameter · Plating

D
4.00 Ni

3015/G



H 3015/GR



How to order:

3015/ G	-	D	-	0.7 N	-	Ni	-	4.0
1 2		3		4		5		6

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter

Series	Center
5087	160 mil/4.00 mm
5104	160 mil/4.00 mm
5265	118 mil/3.00 mm
5203	100 mil/2.54 mm
3028.01	100 mil/2.54 mm

Push-back test probes

Push-back test probes are used for the contacting of connectors when a “catch test” is necessary. In this case, a defined force is applied to the stop parts in order to check correct seating inside the connector or to check that the connector is locked in position. All types are designed as switching test probes. Stop parts which are not locked in position are pushed out by the pressure from the connector, and the push-back test probe does not switch or give a signal.

Push-back test probes are available for centers of 4.0 mm and 2.54 mm and with contact pressures of up to 25 N. Series 5104, 5265 and 3028 are especially effective for these uses. Their modular design gives them a wide range of applications. Of course, solder-free replacement of the test probes is an integral part of the easy-replacement system.

Series 5087

- Push-back for the cable harness test
- Suitable when standard tip styles are used

Mechanical Data

Center	4.00 mm/160 mil
Full travel	10.00 mm
Working travel	9.50 mm
Switching travel	7.50 mm
Pre-loaded spring force	1.50/2.00/4.00 N
Spring force at working travel	6.00/9.00/15.00 N
Spring force at switching travel	4.30/6.80/12.00 N

Mechanical Data • „L“

Center	4.00 mm/160 mil
Full travel	6.00 mm
Working travel	5.00 mm
Switching travel	3.00 mm
Pre-loaded spring force	3.00/6.00/10.50 N
Spring force at working travel	9.00/15.00/20.00 N
Spring force at switching travel	6.60/10.80/16.20 N

Electrical Data

Barrel - tip	
Max. current rating	20.0 A
Typical continuity resistance	≤ 3 mOhm
Connector pin - tip	
Max. current rating	1.0 A
Typical continuity resistance	≤ 25 mOhm
Typischer Isolationsspannung	1000V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe

Recommended diameter of drill

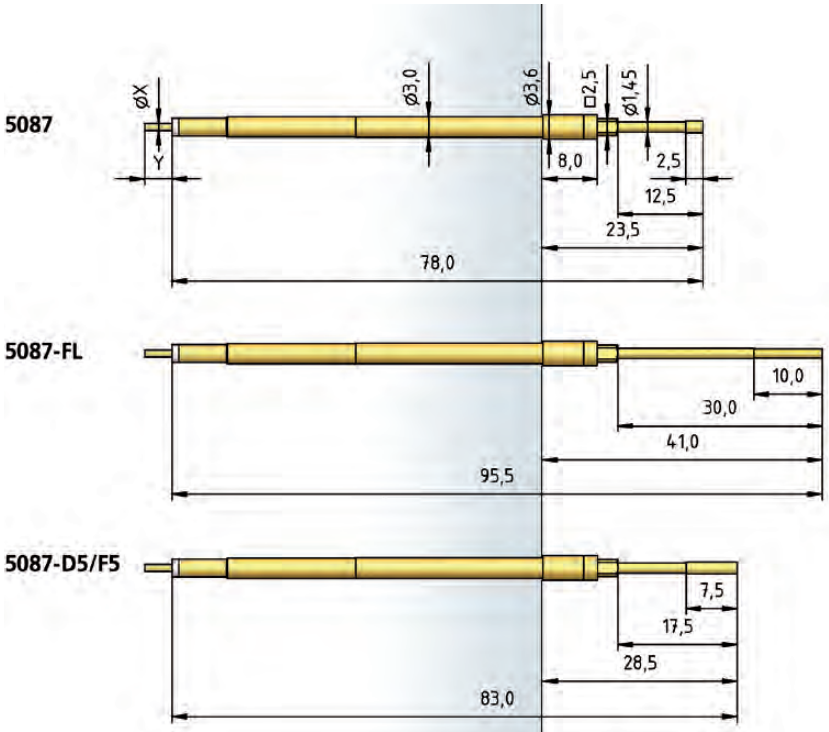
HP 2361.1 (Trolitax)	3.00 mm
(Tolerances dependent on carrier material, test drilling is recommended)	

Connector pin Ø / X/mm	Connector pin length / Y/mm
0.5	6.0
1.0	2.5
1.0	4.0

Tip style · Diameter · Plating

C	D	D5	F	F5
2.30C Au 2.80C Au 3.00C Au 4.00C Au	1.45C Au	1.80C Au 2.30C Au 3.00C Au	1.00C Au 1.10C Au 1.40C Au	1.80C Au 2.30C Au

F	FL
1.80C Au	1.30C Au 1.80C Au



How to order:

5087 - F - 15.0 N - Au - 1.8 C/1.0x4.0

1 2 3 4 5 6 7 8

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Connector pin diameter 7. Connector pin length 8. Tip material (only for CuBe)

Series 5104

- Push-back for the cable harness test
- Especially suitable for spade-shaped tip style
- Non-roating
- Receptacle with switch function

Mechanical Data

Center	4.00 mm/160 mil
Full travel	7.00 mm
Working travel	5.00 mm
Switching travel	3.50 mm
Pre-loaded spring force	0.50/1.50/4.00/3.00/ 5.00/4.00/9.00 N
Spring force at working travel	1.50/6.75/12.00/15.75/ 20.75/25.75/30.75 N
Spring force at switching travel	0.70/4.65/9.10/11.40/ 15.50/18.70/23.70 N
Without switching element	0.75/6.00/11.25/15.00/ 20.00/25.00/30.00 N

Electrical Data

Barrel - tip	
Max. current rating	20.0 A
Typical continuity resistance	≤3 mOhm
Connector pin - tip	
Max. current rating	1.0 A
Typical continuity resistance	≤30 mOhm
Typical insulating voltage	1000 V

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel, gold-plated
Receptacle	Brass, gold-plated

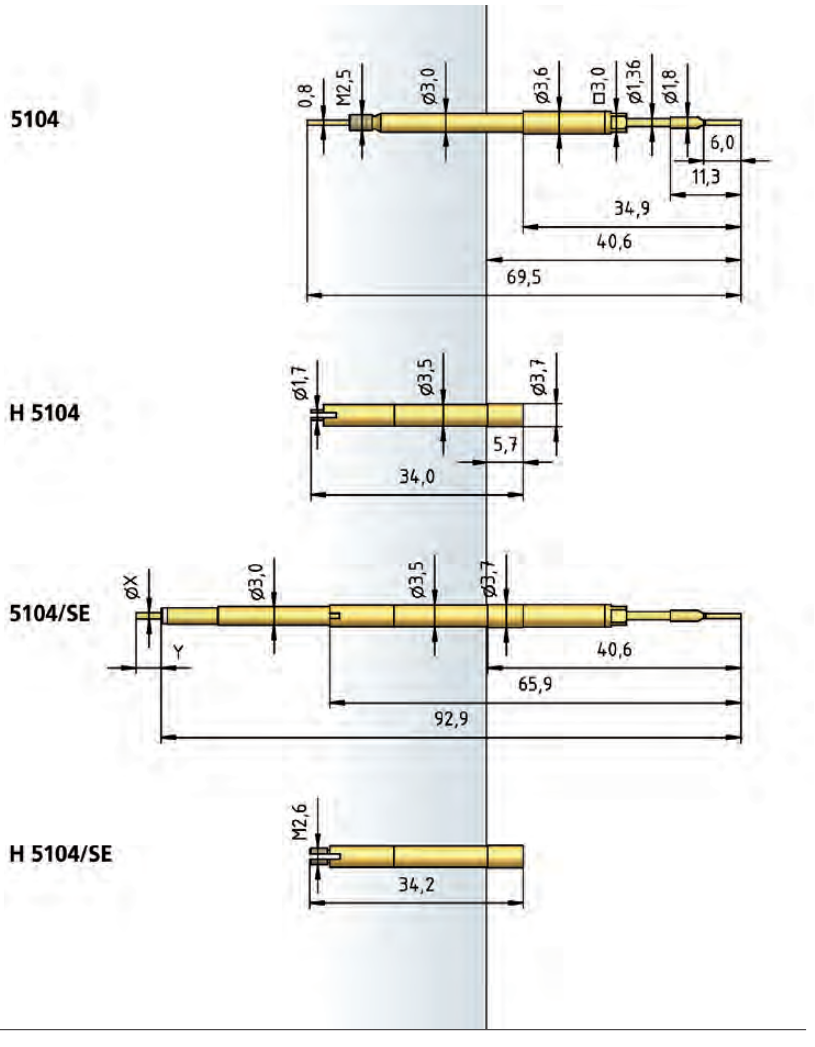
Recommended diameter of drill

HP 2361.1 (Trolitax)	3.50 mm
(Tolerances dependent on carrier material, test drilling is recommended)	

Connector pin Ø / X/mm	Connector pin length / Y/mm
0.5	6.0
0.7	7.0
1.0	2.5
1.0	4.0

Tip style · Diameter · Plating

A	C	D	F	F
2.50 Au 3.00 Au 4.00 Au	2.40 Au 3.00 Au 4.00 Au 4.80 Au	1.75 Au 1.80 Au 2.00 Au 2.30 Au 3.00 Au 3.70 Au	1.80 Au 2.00 Au 3.00 Au 4.00 Au	1.40 Au
Y	**Y**	**Y**	**Y**	**Y**
2.00 x 0.80 Au	2.20 x 1.30 Au	2.20 x 1.60 Au	2.25 x 1.40 Au	2.25 x 1.80 Au
Y	**Y**	**Y**	**Y1**	**Y1**
2.50 x 0.60 Au	2.50 x 0.80 Au	3.20 x 0.50 Au	3.00 x 0.80 Au	3.00 x 1.60 Au
Y2	**Y4**	**Y21**	**Y95**	**Y95**
2.50 x 0.80 Au	2.90 x 0.74 Au	2.50 x 0.80 Au	3.00 x 1.80 Au	5.50 x 1.80 Au



How to order:

5104 - Y - 15.75 N - Au - 2.2x 1.6 /1.0x4.0

1 2 3 4 5 6 7 8

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip thickness 7. Connector pin diameter 8. Connector pin length

Series 5265

- Push-back for the cable harness test
- Especially suitable for spade-shaped tip style
- Non-roating
- Receptacle with switch function

Mechanical Data

Center	3.00 mm/118 mil
Full travel	5.50 mm
Working travel	5.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	3.00 N
Spring force at working travel	16.0 N
Spring force at switching travel	9.20 N
Without switching element	15.0 N

Electrical Data

Barrel - tip	
Max. current rating	8.0 A
Typical continuity resistance	≤ 30 mOhm
Connector pin - tip	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

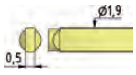
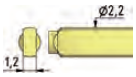
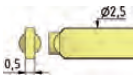
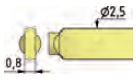
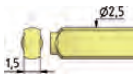
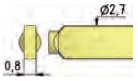
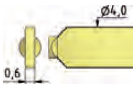
Materials

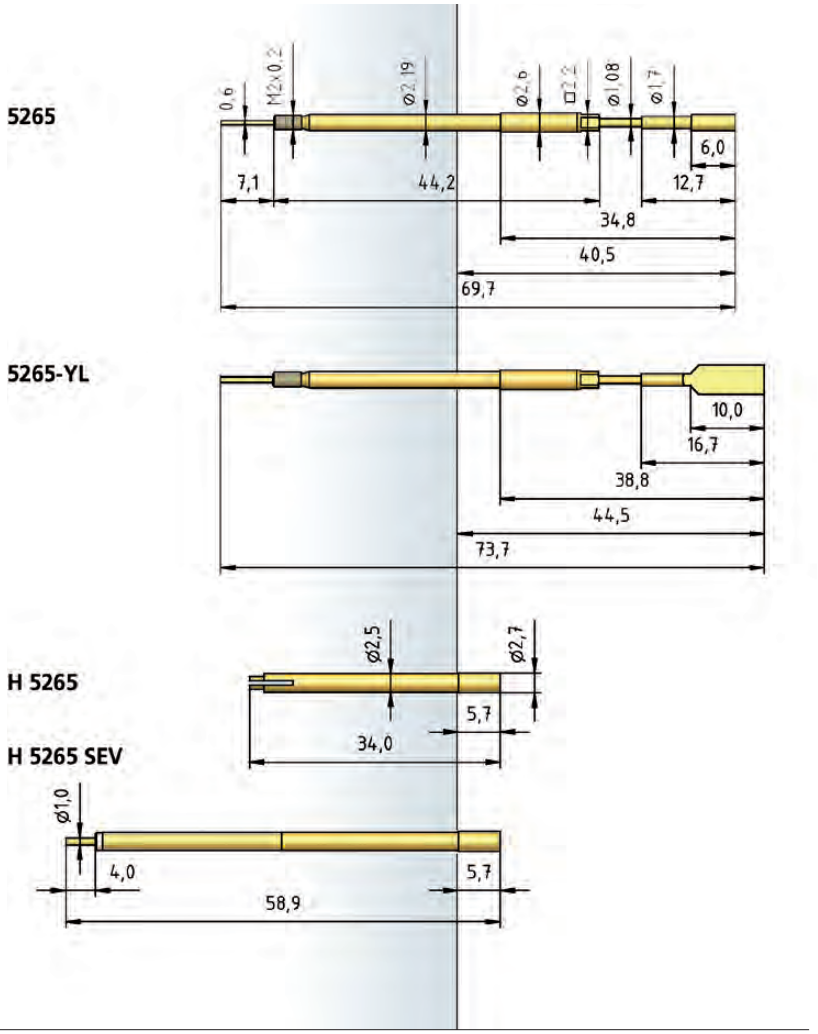
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass , gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	2.49 - 2.51 mm
(Tolerances dependent on carrier material, test drilling is recommended)	

Tip style · Diameter · Plating

				
C	**F**	**Y**	**Y**	**Y**
2.00 Au 2.70 Au 3.00 Au	1.80 Au	1.90 x 0.50 Au	1.90 x 0.80 Au	2.20 x 1.20 Au
				
Y	**Y**	**Y**	**Y**	**Y**
2.50 x 0.50 Au	2.50 x 0.80 Au	2.50 x 1.50 Au	2.70 x 0.80 Au	4.00 x 0.60 Au



How to order:

5265	-	Y	-	15.0 N	-	Au	-	1.9x0.8
1		2		3		4	5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip thickness

Series 5203

- Push-back for the cable harness test
- Especially suitable for spade-shaped tip style
- Non-roating
- Receptacle with switch function

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.50 mm
Working travel	5.00 mm
Switching travel	2.50 mm
Pre-loaded spring force	1.20/1.20 N
Spring force at working travel	10.00/15.00 N
Spring force at switching travel	5.60/8.10 N

Electrical Data

Max. current rating	5.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

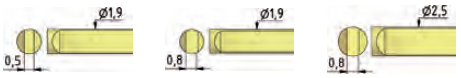
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

Recommended diameter of drill

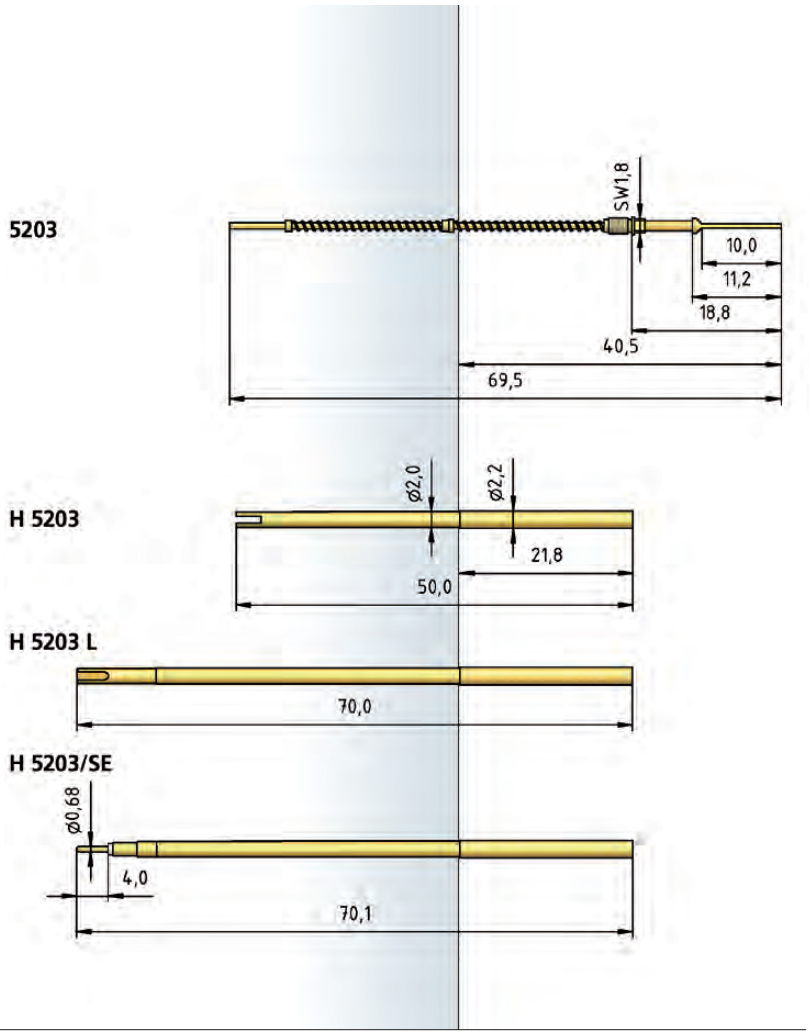
HP 2361.1 (Trolitax)	2.20 mm
(Tolerances dependent on carrier material, test drilling is recommended)	

Tip style · Diameter · Plating

A	D	F	Y	Y
1.90C Au 2.20C Au	1.20C Au 2.50C Au	1.50C Au 1.80C Au	1.90 x 0.30 Au	1.90 x 0.36C Au



Y	Y	Y
1.90 x 0.50 Au	1.90 x 0.80C Au	2.50 x 0.80C Au



How to order:

5203	-	Y	-	10.0 N	-	Au	-	1.9x0.3	C
1		2		3		4		5 6	7

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip thickness 7. Tip material (only for CuBe)

Series 3028.01

- Push-back for the cable harness test
- Especially suitable for spade-shaped tip style
- Non-roating
- Receptacle can be extended with switching element (optional)
- Soldering temperature max. 300°C

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.00 mm
Working travel	4.00 mm
Switching travel	2.60 mm
Pre-loaded spring force	1.00/2.20/4.00 N
Spring force at working travel	5.00/10.00/15.00 N
Spring force at switching travel	3.10/6.80/10.70 N

Electrical Data

Receptacle - plunger	
Max. current rating	3.0 A
Typical continuity resistance	≤ 20 mOhm
Pin - plunger	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm
Typical insulating voltage	1000 V

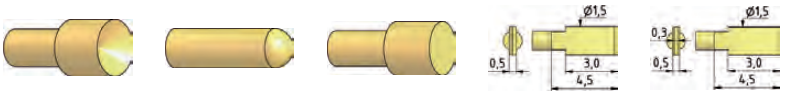
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

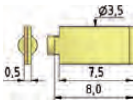
Recommended diameter of drill

HP 2361.1 (Trolitax)	2.10 mm
HGW 2372 (Glass filled material)	2.11 mm

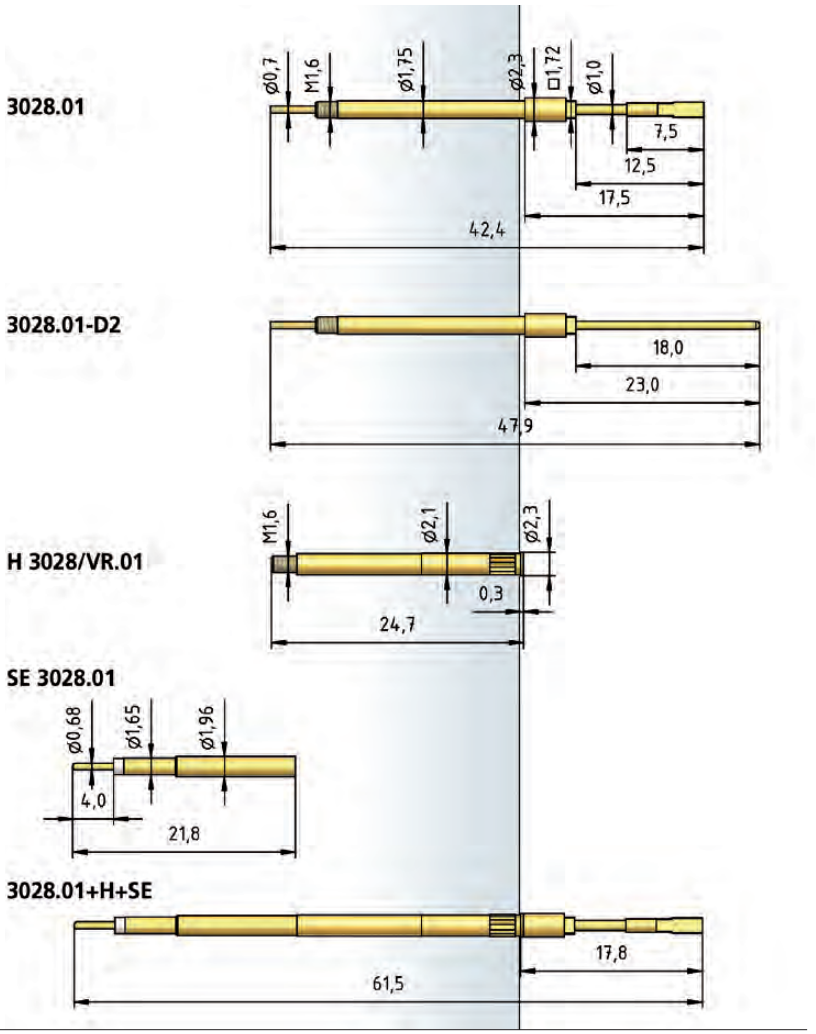
Tip style · Diameter · Plating



A	D2	F	Y	Y3
1.50 Au 2.00 Au	0.80 Au	1.30 Au	1.50 x 0.50 Au	1.50 x 0.50 Au



Y8
3.50 x 0.50 Au



How to order:

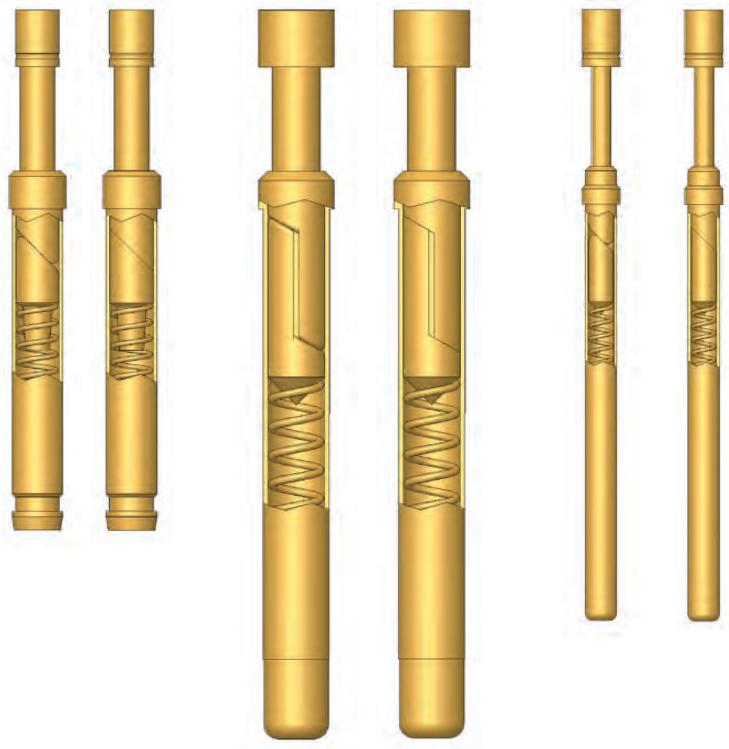
3028.01 - Y - 15.0 N - Au - 1.5x 0.5
1 2 3 4 5 6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip thickness

Series	Center
1021 • 1021/G	100 mil/2.54 mm
1060 • 1060/G	160 mil/4.00 mm
1075 • 1075/G	197 mil/5.00 mm

High-current test probes

High-current test probes are used when higher currents are involved. Thanks to their compact design, these series are available for centers of 2.54 mm to 5.0 mm with a large number of different tip styles. Alternatively, all series are available in a threaded type which ensures an excellent fit in the receptacle. Based on PTR's standard sizes, the high-current types are fitted with a split plunger. During contacting, both parts of the plunger are pressed against each other and, as a result, against the barrel wall. The resulting increased contact with the barrel wall and the overall greater contact surface mean that the test probe can be subjected to higher currents, depending on the series, of 16 A to 50 A.



Series 1021 • 1021/G

- For use in burn-in and run-in test
- Transmission of high currents
- Low contact resistance

Mechanical Data

Center	2.54 mm/100 mil
Full travel	5.30 mm
Working travel	4.00 mm
Pre-loaded spring force	0.70 N
Spring force at working travel	3.00 N

Electrical Data

Max. current rating	16.0 A
Typical continuity resistance	≤ 10 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated/ Silver cap
Receptacle	Brass, gold-plated

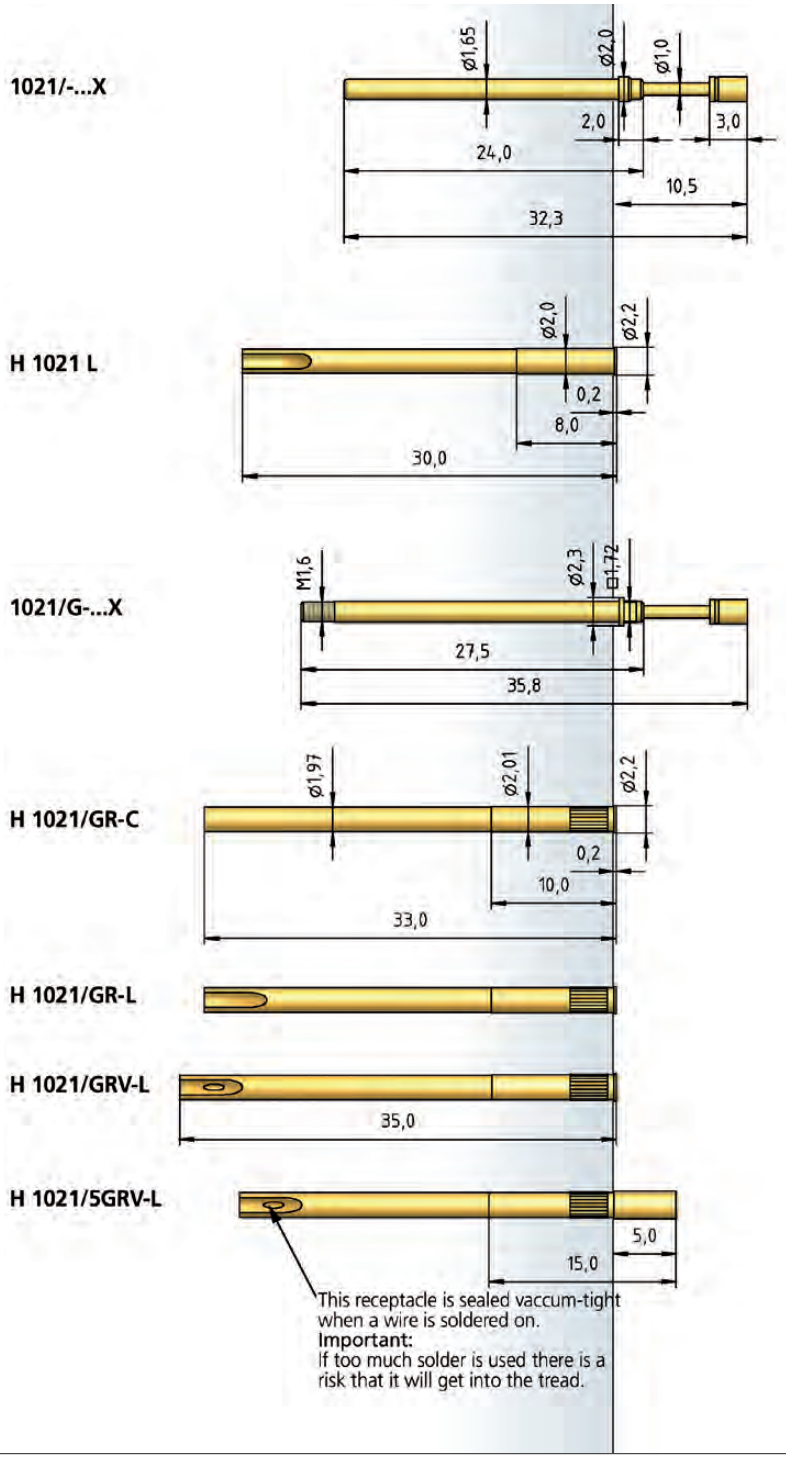
Recommended diameter of drill

H1021 L	
HP 2361.1 (Trolitax)	1.98 - 2.00 mm
HGW 2372 (Glass filled material)	1.98 - 2.01 mm
H1021/GR-L	
HP 2361.1 (Trolitax)	2.00 mm
HGW 2372 (Glass filled material)	2.03 mm

Tip style · Diameter · Plating

AX	A6X	BX	CX	DX
2.00C Au	2.00C Au	1.00C Au	1.30C Au 1.80C Au 2.00C Au 3.00C Au	0.80C Au 1.00C Au

D3X	EX	FX	HX	KX
2.00C Ag	1.80C Au	1.00C Au	1.10C Au 1.40C Au 1.70C Au	1.25C Au 1.75C Au



How to order:

1021/G - CX - 3.0 N - Au - 2.0 C
1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1060 • 1060/G

- For use in burn-in and run-in test
- Transmission of high currents
- Low contact resistance

Mechanical Data

Center	4.00 mm/160 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	0.80 N
Spring force at working travel	3.00 N

Electrical Data

Max. current rating	24.0 A
Typical continuity resistance	≤ 10 mOhm

Materials

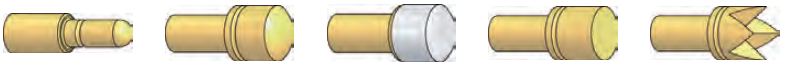
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated/ Silver cap
Receptacle	Brass, gold-plated

Recommended diameter of drill

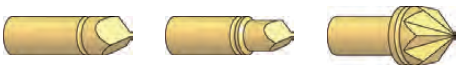
H1050 L, H1060/G-L	
HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.00 mm
H1060/GRV-L	
HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating

AX	A6X	BAX	CX	DX
3.00C Au	3.00C Au	1.80C Au	2.30C Au 3.00C Au 4.00C Au	2.30C Au 3.00C Au

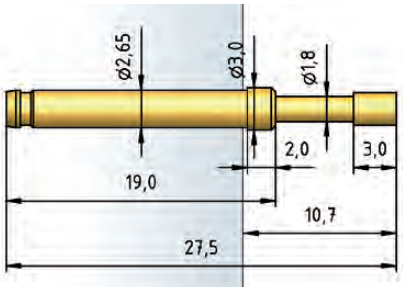


DX	DX1	D3X	FX	GX
1.00C Au 1.40C Au	3.00C Au	3.00C Ag	2.30C Au 4.00C Au 6.00C Au	2.50C Au

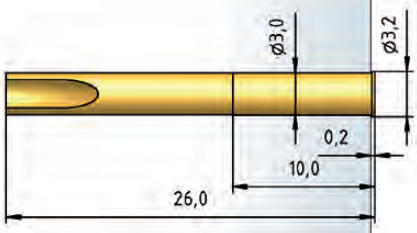


HX	H1X	KX
1.80C Au	1.30C Au	3.00C Au

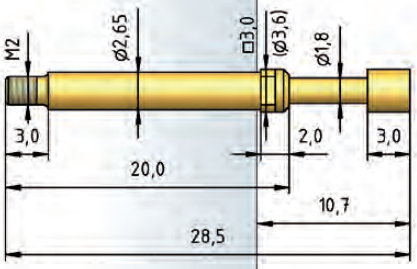
1060...X



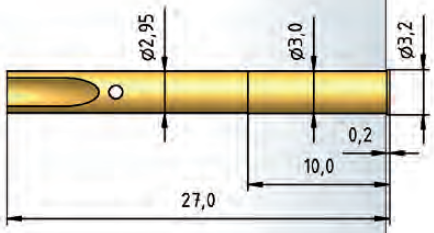
H 1050 L



1060/G-...X



H 1060/G-L



H 1060/GVR-L

This receptacle is sealed vaccum-tight when a wire is soldered on.
Important:
If too much solder is used there is a risk that it will get into the tread.

How to order:

1060/G - FX - 3.0 N - Au - 4.0 C
1 2 3 4 5 6 7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. Tip material (only for CuBe)

Series 1075 • 1075/G

- For use in burn-in and run-in test
- Transmission of high currents
- Low contact resistance

Mechanical Data

Center	5.00 mm/197 mil
Full travel	5.50 mm
Working travel	4.40 mm
Pre-loaded spring force	1.50/1.50 N
Spring force at working travel	3.00/5.00 N

Electrical Data

Max. current rating	50.0 A
Typical continuity resistance	≤ 5 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Stainless steel, silver-plated
Plunger	CuBe, gold-plated/ Silver cap
Receptacle	Brass, gold-plated

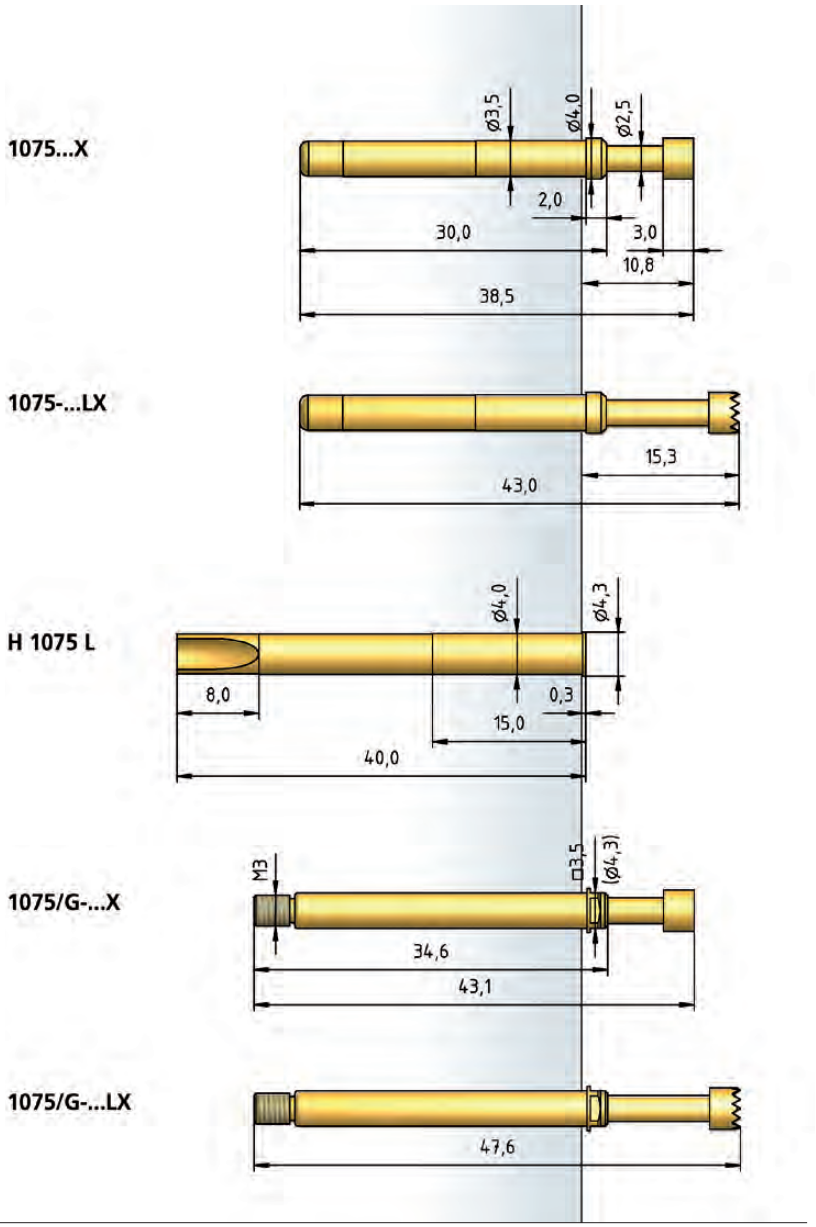
Recommended diameter of drill

With Receptacle	
HP 2361.1 (Trolitax)	3.98 - 3.99 mm
HGW 2372 (Glass filled material)	3.49 - 3.50 mm

Tip style · Diameter · Plating

AX	A6X	CLX	CX	DNX
4.00C Au	3.00C Au	4.00C Au	3.00C Au 4.00C Au	4.00C Ag

FX	KX
4.00C Au	3.00C Au



How to order:

1075/	G	-	FX	-	3.0 N	-	Au	-	4.0	C
1	2		3		4		5		6	7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip material (only for CuBe)

Series	Center
4004/G	160 mil/4.00 mm
4004	160 mil/4.00 mm
4005	138 mil/3.50 mm
4006	118 mil/3.00 mm
4034	160 mil/4.00 mm

Pneumatic test probes

Pneumatic test probes are operated with compressed air. The plunger presses against the test piece at an operating pressure of 6 bar applied to the test probe via a pneumatic hose. Depending on the size, the maximum contact pressure is up to 1.5 N. Normally pneumatic test probes are used for function test tasks, and always when measuring points must be triggered individually. A wide range of accessories with distributors, reducers, connection cable glands etc. is available for setting up an extremely large number of contacting processes. The pneumatic test probes function automatically, so use without test adapters is also possible. In addition to standard types, there are models with an easy-replacement system and models which function as an opener. With the easy-to-use easy-replacement system, it is only necessary to replace the pneumatic cylinder together with the contacting unit – there is no need to release either the wiring or the pneumatic hose. The opener is an especially sophisticated type. Because of the special design in the barrel, at first it is closed. It is only when a component to be contacted is not present and the switch travel is exceeded that the test probe opens and does not pass on a signal.

Series 4004/G

- Contacting of individual test points
- Contacting without adapter possible
- For use in function test
- Replacement without soldering

Tip style · Diameter · Plating

BST1	C	G	V
1.50 Rh	2.50 Rh	1.30 Rh	1.00 Rh

Mechanical Data

Center	4.00 mm/160 mil
Full travel	10.00 mm
Working travel	6.00 mm
Operating pressure	6 bar
Operating medium	Compressed air (filtered, oil-free)
Spring force at working travel	0.60 N

Electrical Data

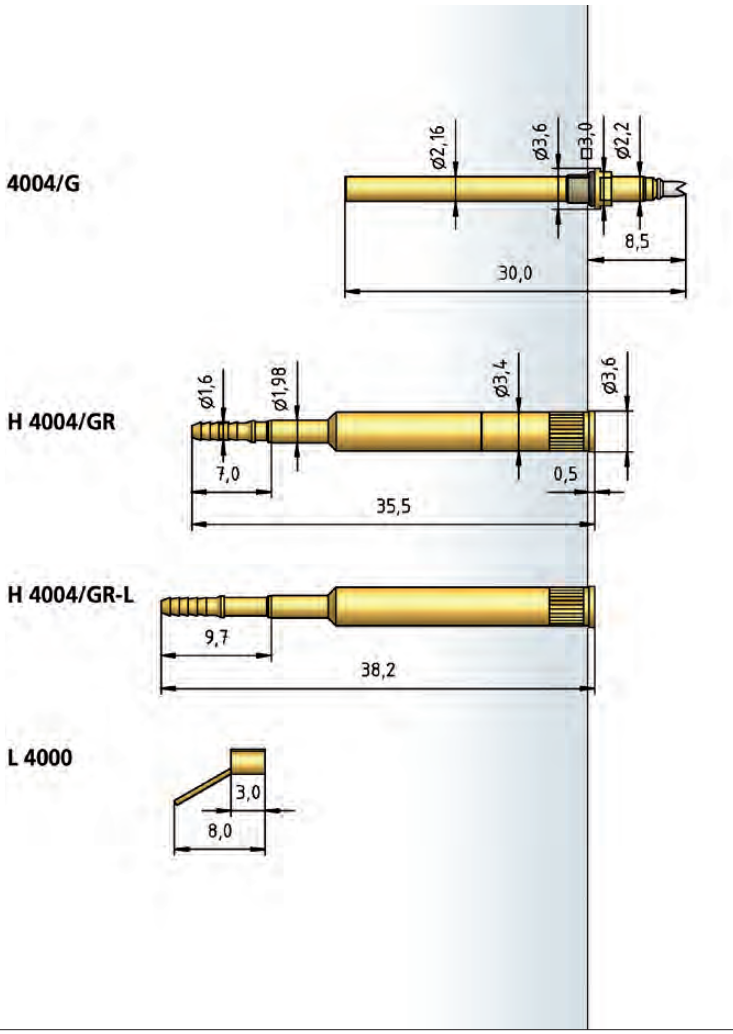
Max. current rating	2.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.40 mm
HGW 2372 (Glass filled material)	3.41 mm



How to order:

4004/	G	-	BST1	-	0.6 N	-	Rh	-	1.5	-	L
1	2		3		4		5		6		7

1. Series 2. Treaded design 3. Tip style 4. Spring force 5. Tip plating 6. Tip diameter 7. For connection of L 4000

Series 4004

- Contacting of individual test points
- Contacting without adapter possible
- For use in function test

Tip style · Diameter · Plating

A	BST1	G
3.00 Rh	2.00 Rh	1.30 Rh

Mechanical Data

Center	4.00 mm/160 mil
Full travel	10.00 mm
Working travel	6.00 mm
Operating pressure	6 bar
Operating medium	Compressed air (filtered, oil-free)
Spring force at working travel	1.50 N

Electrical Data

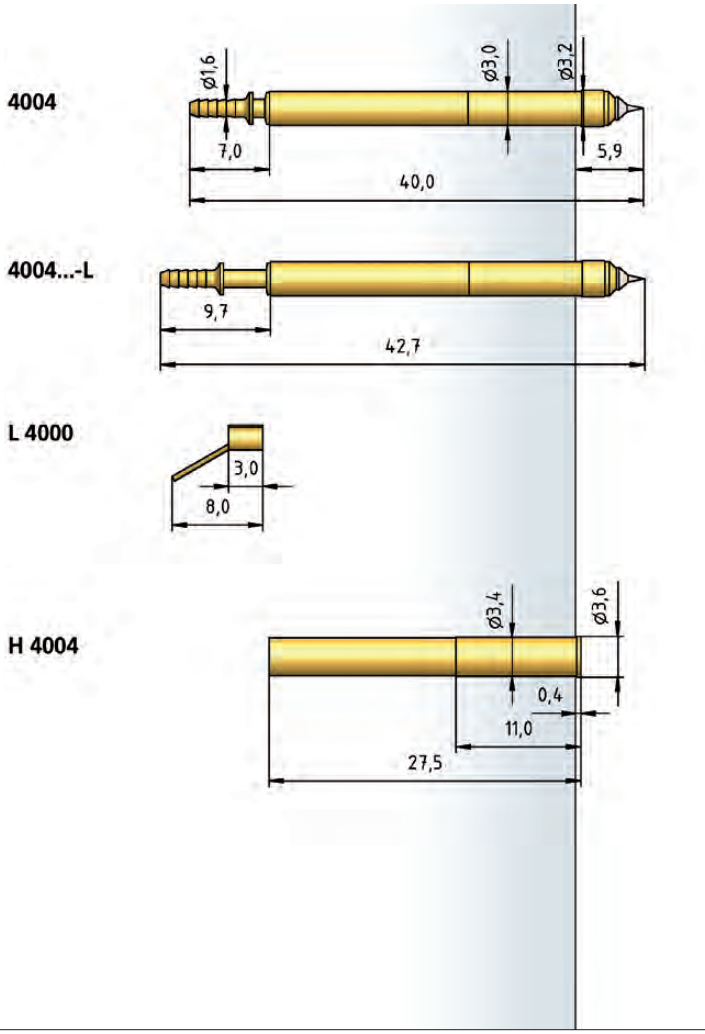
Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.40 mm
HGW 2372 (Glass filled material)	3.41 mm



How to order:

4004	-	BST1	-	1.5 N	-	Rh	-	2.0	-	L
1		2		3		4		5		6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. For connection of L 4000

Series 4005

- Contacting of individual test points
- Contacting without adapter possible
- For use in function test

Mechanical Data

Center	3.50 mm/138 mil
Full travel	10.00 mm
Working travel	6.00 mm
Operating pressure	6 bar
Operating medium	Compressed air (filtered, oil-free)
Spring force at working travel	0.80 N

Electrical Data

Max. current rating	2.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

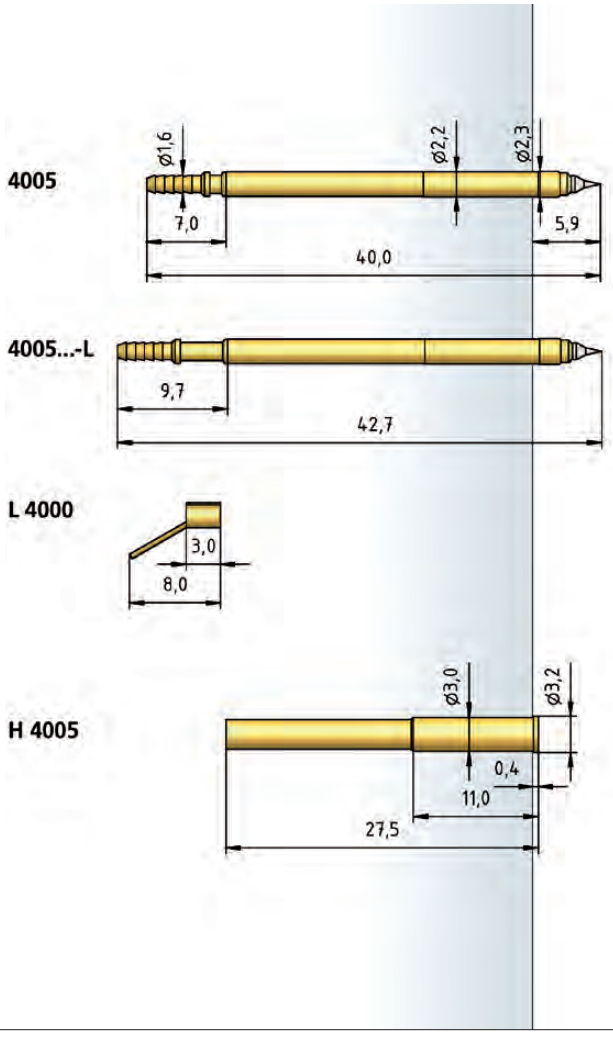
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.00 mm
HGW 2372 (Glass filled material)	3.01 mm

Tip style · Diameter · Plating

BST1	C	G
1.50 Rh	2.50 Rh	1.30 Rh



How to order:

4005	-	BST1	-	0.8 N	-	Rh	-	2.0	-	L
1		2		3		4		5		6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. For connection of L 4000

Series 4006

- Contacting of individual test points
- Contacting without adapter possible
- For use in function test

Tip style · Diameter · Plating

BST1	C	G	V
1.50 Rh	2.50 Rh	1.30 Rh	1.00 Rh

Mechanical Data

Center	3.00 mm* without Receptacle = 2.54 mm/120 mil
Full travel	10.00 mm
Working travel	6.00 mm
Operating pressure	6 bar
Operating medium	Compressed air (filtered, oil-free)
Spring force at working travel	0.60 N

Electrical Data

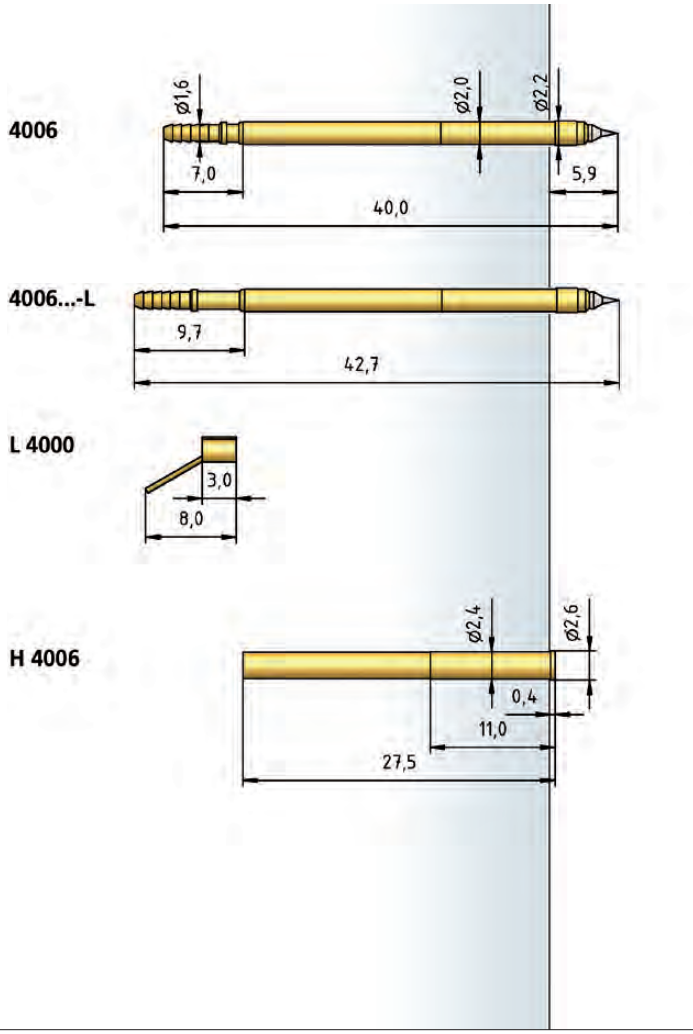
Max. current rating	2.0 A
Typical continuity resistance	≤ 30 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	2.40 mm
HGW 2372 (Glass filled material)	2.41 mm



How to order:

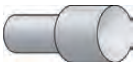
4006	-	BST1	-	0.6 N	-	Rh	-	2.0	-	L
1		2		3		4		5		6

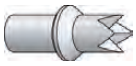
1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. For connection of L 4000

Series 4034

- Switching test probe „Opener“ type
- Contacting of individual test points
- Contacting without adapter possible
- For use in function test

Tip style · Diameter · Plating





A	BST1	G
3.00 Rh	2.00 Rh	1.30 Rh

Mechanical Data

Center	4.00 mm/160 mil
Full travel	10.00 mm
Working travel	5.00 mm
Switching travel	6.00 mm
Operating pressure	6 bar
Operating medium	Compressed air (filtered, oil-free)
Spring force at working travel	1.60 N
Spring force at switching travel	1.50 N

Electrical Data

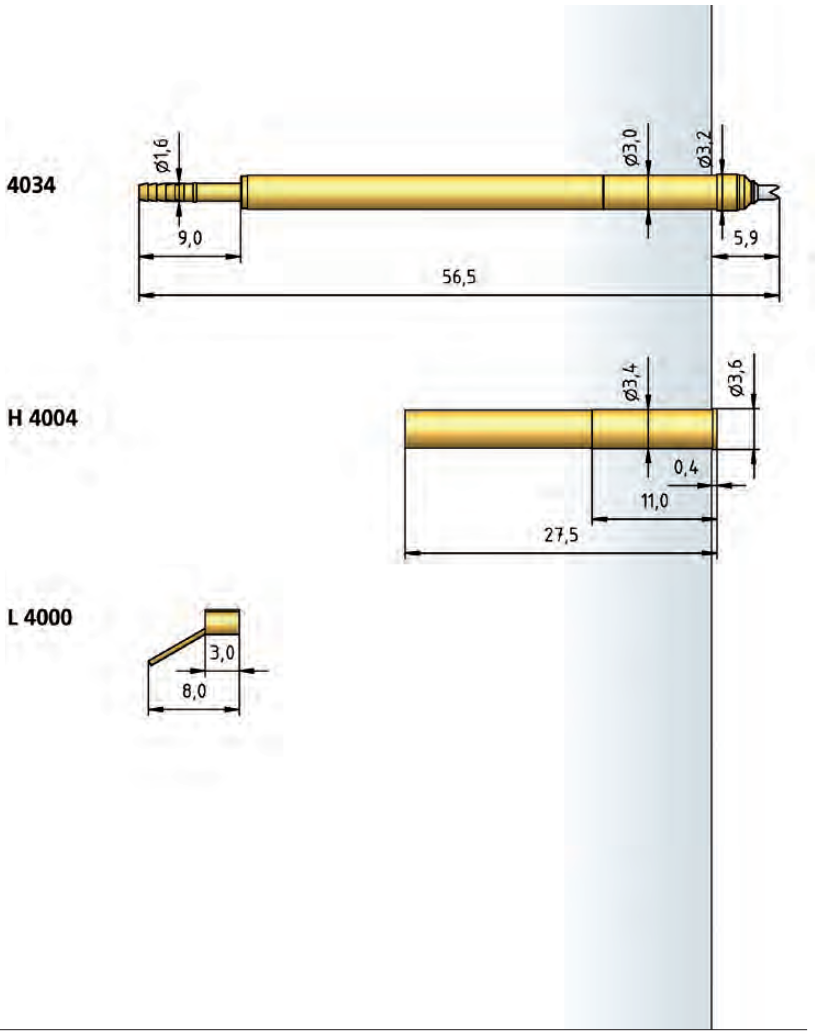
Huelse-Tip	
Max. current rating	3.0 A
Typical continuity resistance	≤ 30 mOhm
Schlauchanschluss-Tip	
Max. current rating	1.0 A
Typical continuity resistance	≤ 50 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Steel
Receptacle	Brass, gold-plated

Recommended diameter of drill

HP 2361.1 (Trolitax)	3.40 mm
HGW 2372 (Glass filled material)	3.41 mm

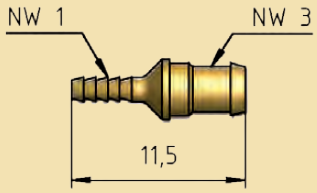
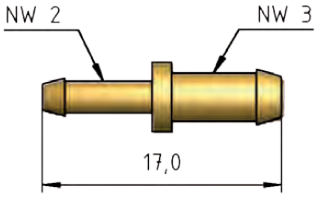
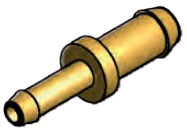
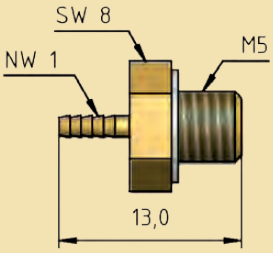
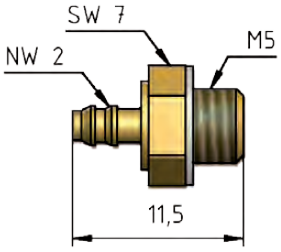
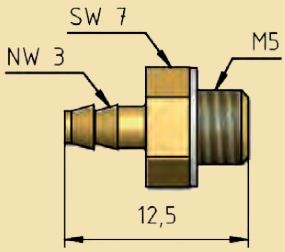


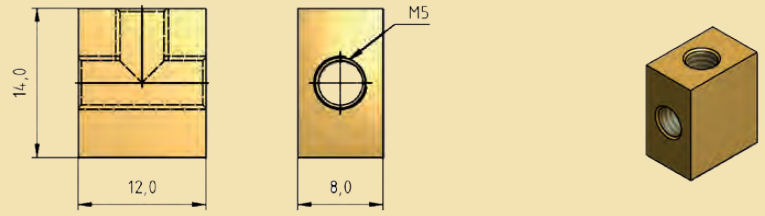
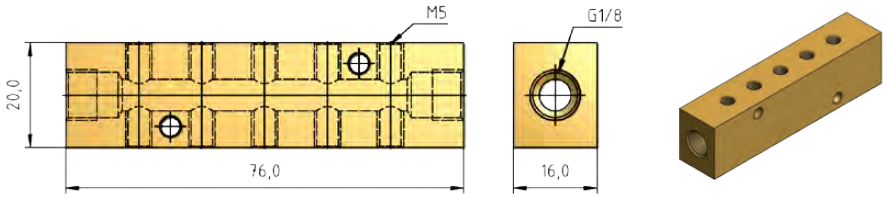
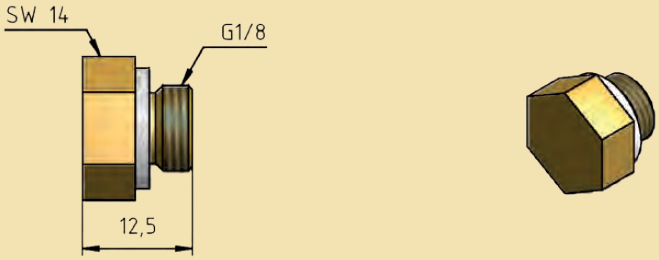
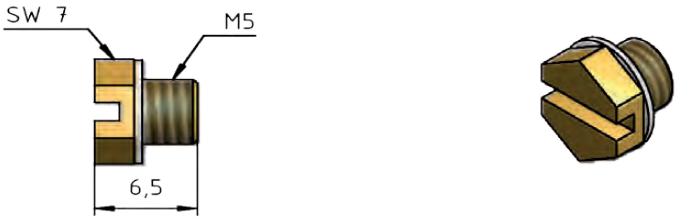
How to order:

4034	-	G	-	1.6 N	-	Rh	-	1.3	-	L
1		2		3		4		5		6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. For connection of L 4000

Accessories Pneumatic Test Probe

Name and Order-No.	Dimensions
Reducer **RS 3/1**	 
Reducer **RS 3/2**	 
Threated sleeve (incl. 1 seal) **AV M5/1**	 
Threated sleeve (incl. 1 seal) **AV M5/2**	 
Threated sleeve (incl. 1 seal) **AV M5/3**	 

Name and Order-No.	Dimensions
T-Piece **TS 3xM5**	
Tenfolder distributor **V 10xM5**	
Dummy plug for distributor (incl. 1 seal) **BSV 1/8**	
Dummy plug for distributor (incl. 1 seal) **BSV M5**	
Compressed air hose for NW 1 **DS 1**	
Compressed air hose for NW 3 **DS 3**	

Series	Center
5082	256 mil/6.50 mm
5099	118 mil/3.00 mm
5099.04	118 mil/3.00 mm
5110	160 mil/4.00 mm
1064	100 mil/2.54 mm
5303	100 mil/2.54 mm
5305	100 mil/2.54 mm
5322	100 mil/2.54 mm

Battery probes

Battery probes – also known as interface pins – are used everywhere it is necessary to charge rechargeable batteries, mobile equipment such as scanners, card readers, communication devices, etc. In many cases, they are also used to connect two PCBs. In addition to many standard products, PTR specialises in customer-specific solutions. As a result of the company's considerable experience in the manufacturing of injection moulding tools for the connection terminal sector, PTR offers complete solutions including plastic carriers, tape-and-reel, and "pick & place" pads. We develop professional solutions together with our customers, and then implement them precisely.

Series 5082

- Sturdy design
- For use in tough conditions
- Spring forces up to 8.0 N

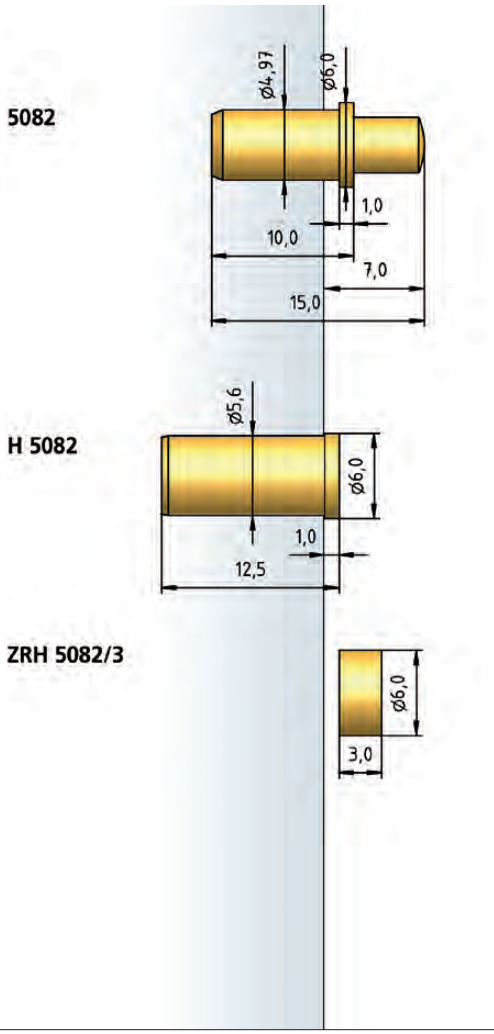
Tip style · Diameter · Plating				
				
B1D	**C**	**D**	**E1D**	**G**
4.00 Ni	4.00 Au	4.00M Au	4.00 Au	4.00 Au

Mechanical Data	
Center	6.50 mm/256 mil
Full travel	4.00 mm
Working travel	3.20 mm
Pre-loaded spring force	0.20/0.40/1.00/0.80/ 1.60 N
Spring force at working travel	0.60/1.50/3.00/4.00/ 8.00 N

Electrical Data	
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 30 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	Steel/Brass
Receptacle	Brass, gold-plated

Recommended diameter of drill	
With Receptacle	5.59 - 5.60 mm
Without Receptacle	4.97 mm



How to order:

5082	-	D	-	3.0 N	-	Au	-	4.0 M	
1		2		3		4		5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for Brass)

Series 5099

- Short, compact size
- Board-to-board contacting
- For use in charging units

Tip style · Diameter · Plating

D	D	G	V
1.00C Au	1.30C Au	1.30C Au	1.30C Au

Mechanical Data

Center	3.00 mm/120 mil
Full travel	1.20 mm
Working travel	1.00 mm
Pre-loaded spring force	0.30/0.50/0.30 N
Spring force at working travel	0.60/1.00/2.00 N

Electrical Data

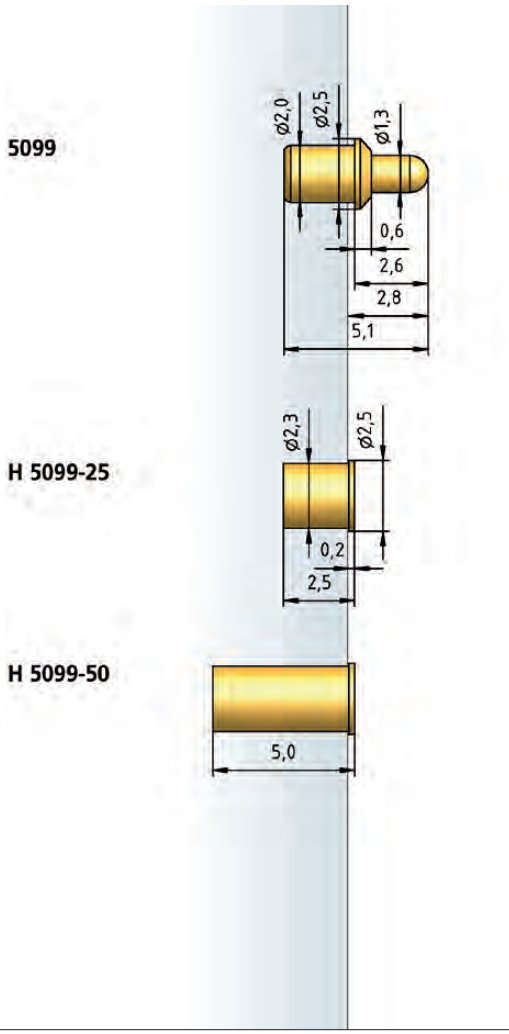
Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 10 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

Recommended diameter of drill

With Receptacle	
HP 2361.1 (Trolitax)	2.29 mm
HGW 2372 (Glass filled material)	2.30 mm
Without Receptacle	
HP 2361.1 (Trolitax)	1.99 mm
HGW 2372 (Glass filled material)	2.00 mm



How to order:

5099	-	D	-	2.0 N	-	Au	-	1.3 C
1		2		3		4		5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 5099.04

- Short, compact size
- Board-to-board contacting
- For use in charging units

Mechanical Data

Center	3.00 mm/120 mil
Full travel	4.00 mm
Working travel	3.30 mm
Pre-loaded spring force	0.15/0.25 N
Spring force at working travel	0.50/2.00 N

Electrical Data

Max. current rating	5.0 - 8.0 A
Typical continuity resistance	≤ 20 mOhm

Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

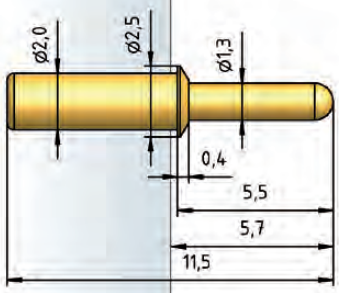
Recommended diameter of drill

With Receptacle	
HP 2361.1 (Trolitax)	2.29 mm
HGW 2372 (Glass filled material)	2.30 mm
Without Receptacle	
HP 2361.1 (Trolitax)	1.99 mm
HGW 2372 (Glass filled material)	2.00 mm

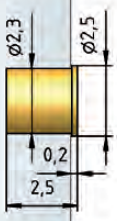
Tip style · Diameter · Plating

D4
1.30C Au

5099.04



H 5099-25



H 5099-50

How to order:

5099.04	-	D4	-	2.0 N	-	Au	-	1.3C
1 2		3		4		5		6 7

1. Series 2. Variant 3. Tip style 4. Spring force 5. Tip plating
6. Tip diameter 7. Tip material (only for CuBe)

Series 5110

- Short, compact size
- Board-to-board contacting
- For use in charging units

Mechanical Data

Center	4.00 mm/160 mil
Full travel	3.50 mm
Working travel	2.80 mm
Pre-loaded spring force	0.25/0.30/0.45/0.50/ 1.00 N
Spring force at working travel	0.80/1.20/1.50/2.50/ 3.50 N

Electrical Data

Max. current rating	10.0 A
Typical continuity resistance	≤ 10 mOhm

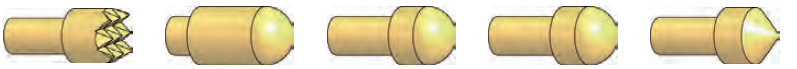
Materials

Barrel	Brass, gold-plated
Spring	Stainless steel, gold-plated
Plunger	CuBe
Receptacle	Brass, gold-plated

Recommended diameter of drill

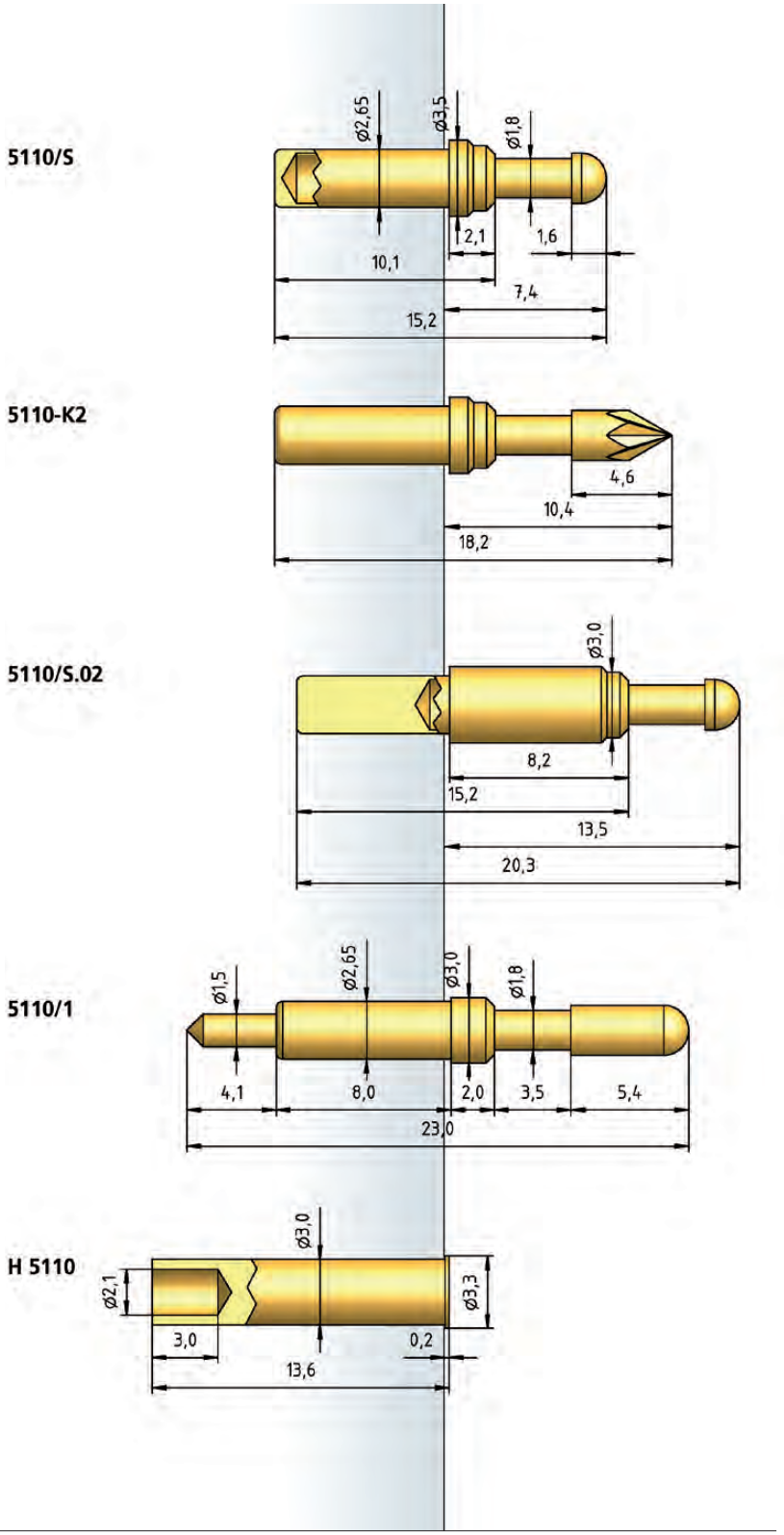
HP 2361.1 (Trolitax)	2.64 mm
HGW 2372 (Glass filled material)	2.65 mm

Tip style · Diameter · Plating



C	D1	D	D	E
2.30C Au 3.50C Au	2.30C Au	2.30C Au	2.03C Au	2.30C Au

F	K2
2.30C Au	2.30C Au



How to order:

5110	-	D	-	1.5 N	-	Au	-	2.3 C	
1		2		3		4		5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 1064

- Short, compact size
- Board-to-board contacting
- For use in charging units

Mechanical Data	
Center	2.54 mm/100 mil
Full travel	1.27 mm
Working travel	bis 1.27 mm
Pre-loaded spring force	0.20/0.35/0.35 N
Spring force at working travel	0.60/1.25/1.85 N

Electrical Data	
Max. current rating	5.0 A
Typical continuity resistance	≤ 185 mOhm

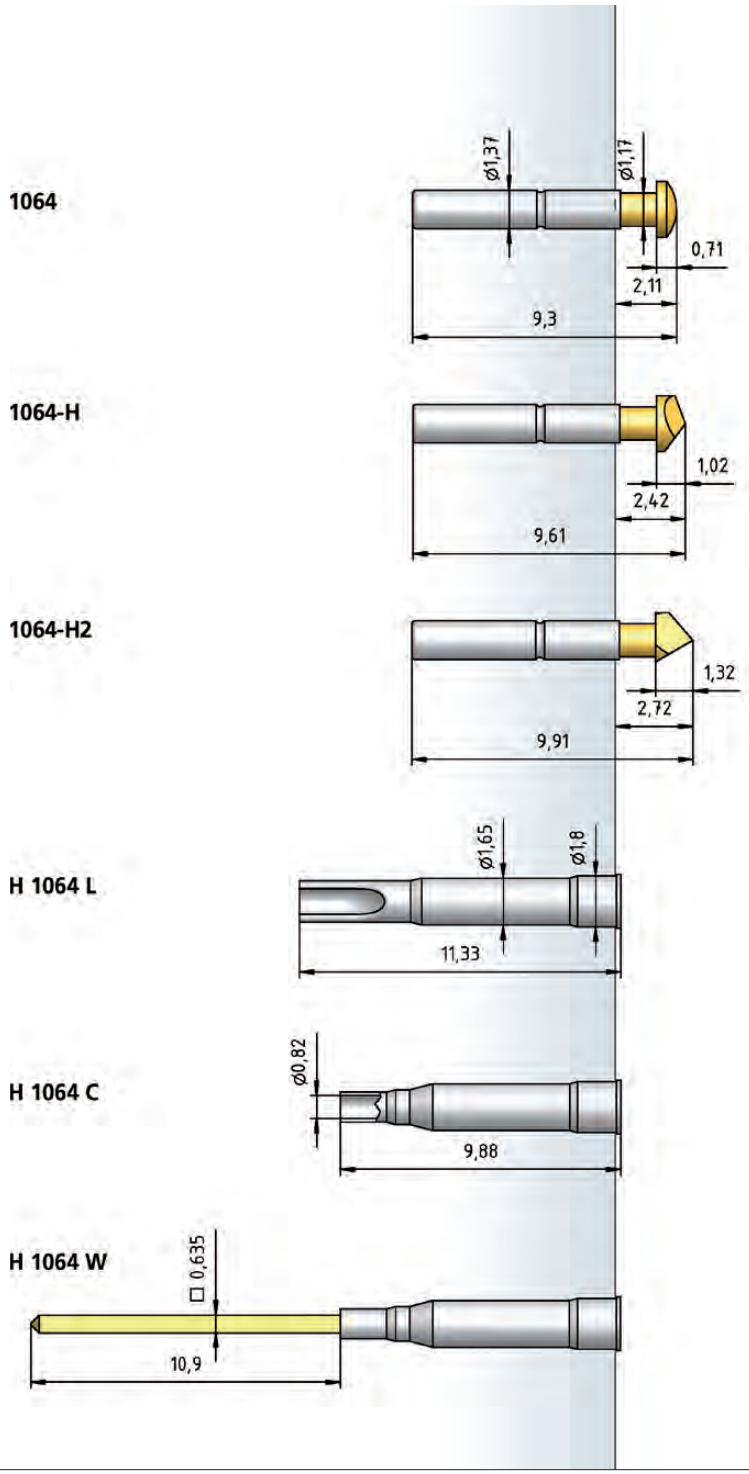
Materials	
Barrel	Nickel silver, uncoated
Spring	Spring steel/Stainless steel, silver-plated
Plunger	CuBe
Receptacle	Nickel silver, uncoated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	1.70 - 1.75 mm
HGW 2372 (Glass filled material)	1.70 - 1.75 mm

Tip style · Diameter · Plating

A	D	D	H	H
1.96C Au	1.96C Au	1.17C Au	1.96C Au	3.30C Au

H	H1	H1	H2
3.96C Au	1.57C Au	2.49C Au	1.96C Au



How to order:

1064	-	D	-	0.6 N	-	Au	-	1.96 C	
1		2		3		4		5	6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for CuBe)

Series 5303

- Short, compact size
- Board-to-board contacting
- For use in charging units

Mechanical Data

Center	2.54 mm/100 mil
Full travel	1.40 mm
Working travel	0.70 mm
Pre-loaded spring force	0.25 N
Spring force at working travel	0.85 N

Electrical Data

Max. current rating	2.0 - 3.0 A
Typical continuity resistance	≤ 20 mOhm

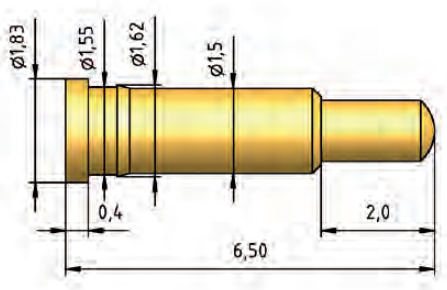
Materials

Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Brass

Tip style · Diameter · Plating

D
1.07M Au

5303



How to order:

5303 - D - 0.85 N - Au - 1.07 M
1 2 3 4 5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter 6. Tip material (only for Brass)

Series 5305

- Short, compact size
- Board-to-board contacting
- For use in charging units

Mechanical Data

Center	2.54 mm/100 mil
Full travel	1.00 mm
Spring force at max. full travel	1.00 mm
Pre-loaded spring force	0.40 N
Spring force at working travel	1.00 N

Electrical Data

Max. current rating	1.5 A
Typical continuity resistance	≤ 10 mOhm

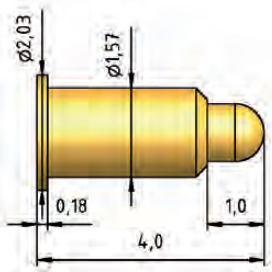
Materials

Barrel	Brass, gold-plated
Spring	Stainless steel
Plunger	Brass, gold-plated

Tip style · Diameter · Plating

D
1.02M Au

5305



How to order:

5305	-	D	-	1.0 N	-	Au	-	1.02M
1		2		3		4		5 6

1. Series 2. Tip style 3. Spring force 4. Tip plating 5. Tip diameter
6. Tip material (only for Brass)

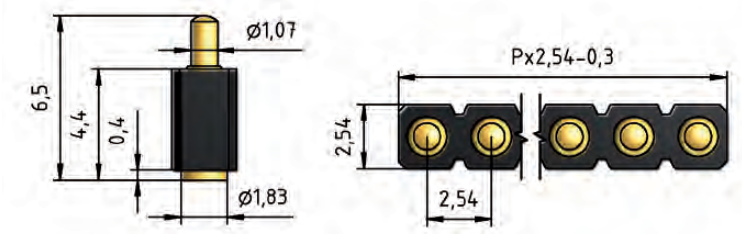
Series 5322

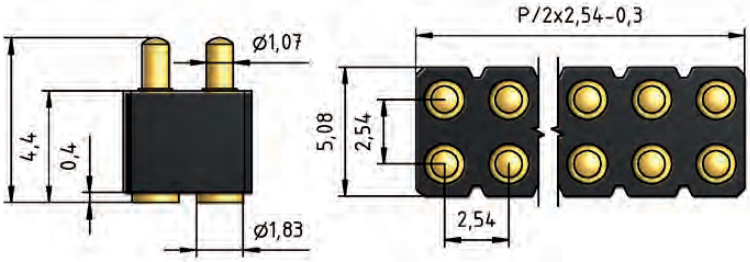
- Short, compact size
- Board-to-board contacting
- For use in charging units

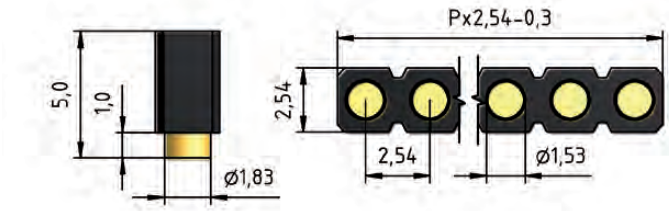
Mechanical Data	
Center	2.54 mm/100 mil
Full travel	1.40 mm
Working travel	0.70 mm
Pre-loaded spring force	0.25 N
Spring force at working travel	0.85 N

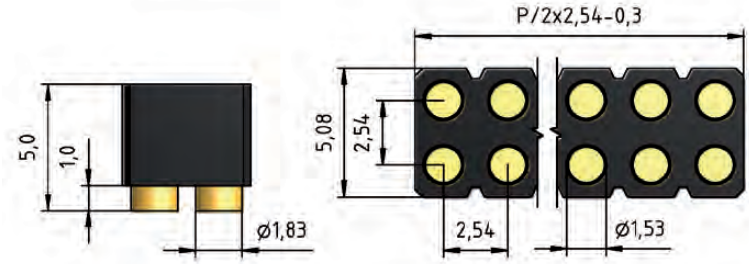
Electrical Data	
Max. current rating	3.5 A
Typical continuity resistance	≤ 20 mOhm

Materials	
Barrel	Brass, gold-plated
Spring	Spring steel, gold-plated
Plunger	Brass, gold-plated
PAD contact	Brass, gold-plated
Test probe block	HT-Plastic UL 94V-0









How to order:

FKB5322 /1 - 2 - 65 - R44

1 2 3 4 5

1. Series 2. Number of rows 3. Poles 4. Test probe length 5. Tape on reel

Series	Center
5207 • 5207/G	256 mil/6.50 mm

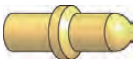
Coaxial test probes

Coaxial test probes – also known as Kelvin test probes – consist of two independent test probes which are insulated from each other. The inner conductor and outer probe operate and "give" independently of each other. Normally, the current flows via the outer probe, and the voltage drops are measured via the inner conductor.
In addition to a standard type which can be plugged in, we also offer a threaded type which can be screwed in using a conventional tool (socket head wrench).

Series 5207 • 5207/G

- Four-pole measurement
- Compact design
- Screwable type
- Inner and outer conductor are sprung independently of each other

Tip style · Diameter · Plating



D	T
1.00 x 1.50 Au	1.00 x 0.50 Au

Mechanical Data • 5207 • 5207/G • Innenkontakt	
Center	6.50 mm/256 mil
Full travel	3.50 mm
Working travel	3.00 mm
Pre-loaded spring force	0.80 N
Spring force at working travel	1.50 N

Mechanical Data • 5207 • 5207/G • Ringkontakt	
Center	6.50 mm/256 mil
Full travel	2.50 mm
Working travel	2.00 mm
Pre-loaded spring force	3.00 N
Spring force at working travel	5.00 N

Electrical Data • 5207 • 5207/G • Innenkontakt	
Max. current rating	1.0 A
Typical continuity resistance	<=10 mOhm
Typical insulating voltage	800 V

Electrical Data • 5207 • 5207/G • Ringkontakt	
Max. current rating	6.0 A
Typical continuity resistance	<=10 mOhm
Typical insulating voltage	800 V

Materials	
Barrel	CuBe, gold-plated
Spring	Spring steel, silver-plated
Plunger (inner)	Steel, gold-plated
Plunger (ring)	CuBe, gold-plated
Receptacle	Brass, gold-plated
Connector	Brass, tin-plated

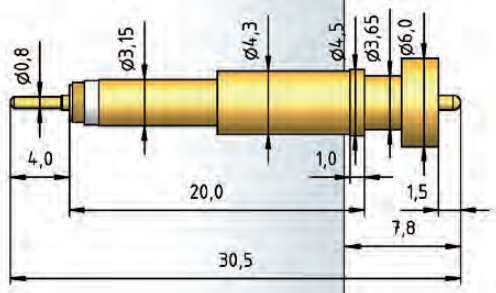
Recommended diameter of drill	
H5207	
HP 2361.1 (Trolitax)	4.69 mm
HGW 2372	4.70 mm
H5207/G	
HP 2361.1 (Trolitax)	5.49 mm
HGW 2372	5.50 mm

How to order:

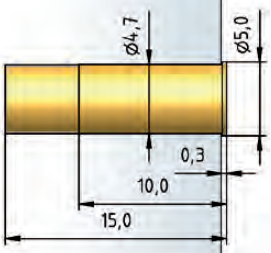
5207	-	D	-	6.5 N	-	Au	1.0x	1.5/	6.0	C
1		2		3		4	5	6	7	8

1. Series 2. Tip style 3. Contact pressure 4. Tip plating 5. Internal contact diameter 6. Tip height 7. Ring contact diameter 8. Ring contact material (only for CuBe)

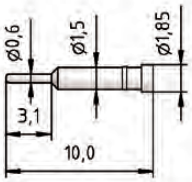
5207



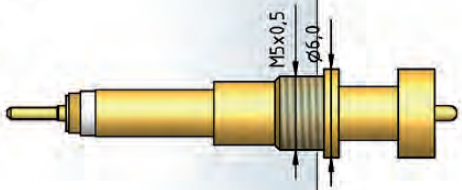
H 5207



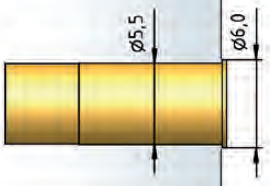
A 5207



5207/G

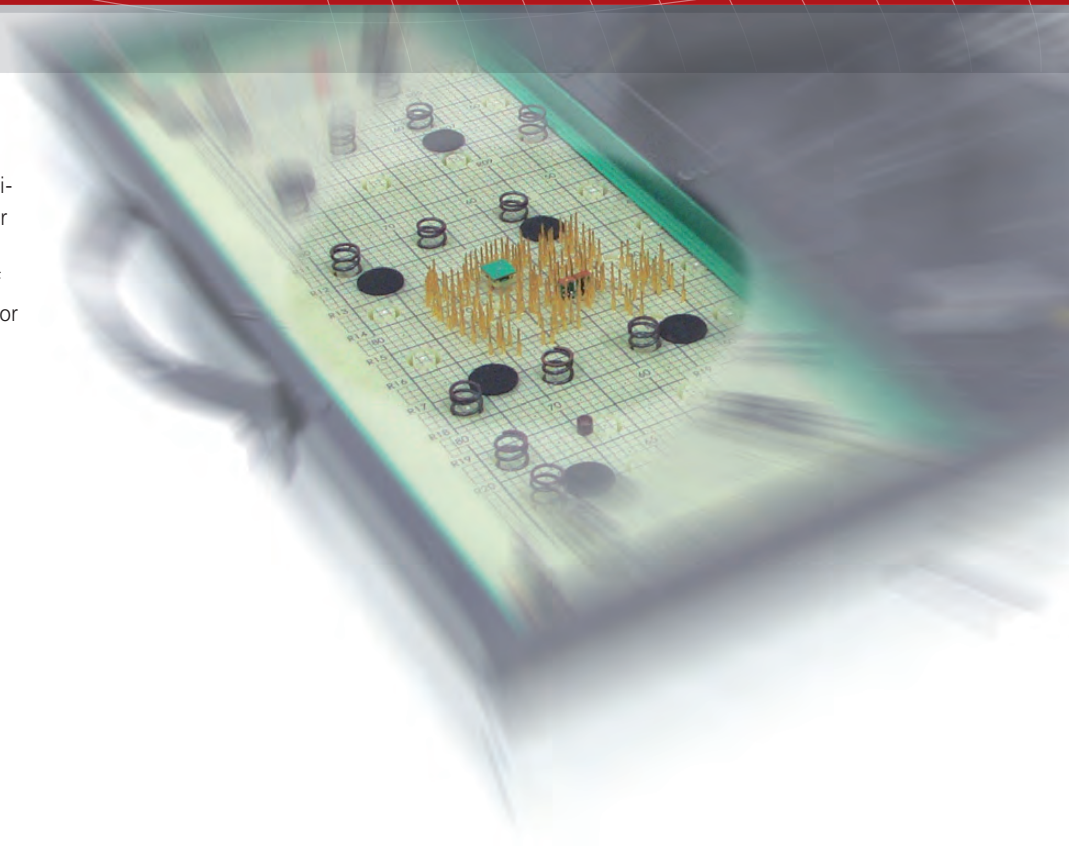


H 5207/G



Series	Center
IF contacts + 1016	100 mil/2.54 mm

Interface pins



Interface pins and interface test probes for various adapter interfaces are available for adapter development. As a specialist in turned parts, PTR also offers special types for the making of individual interfaces or also counter-contacts for battery applications.

IF-Kontakte + Series 1016

- Universal field of application
- Contacting of assembled PCBs
- Interface pin

Mechanical Data • 1016 B1	
Center	2.54 mm/100 mil
Full travel	3.10 mm
Pre-loaded spring force	0.55 N
Spring force at working travel	1.25 N

Mechanical Data • 1016 H2	
Center	2.54 mm/100 mil
Full travel	4.20 mm
Pre-loaded spring force	0.40 N
Spring force at working travel	1.00 N

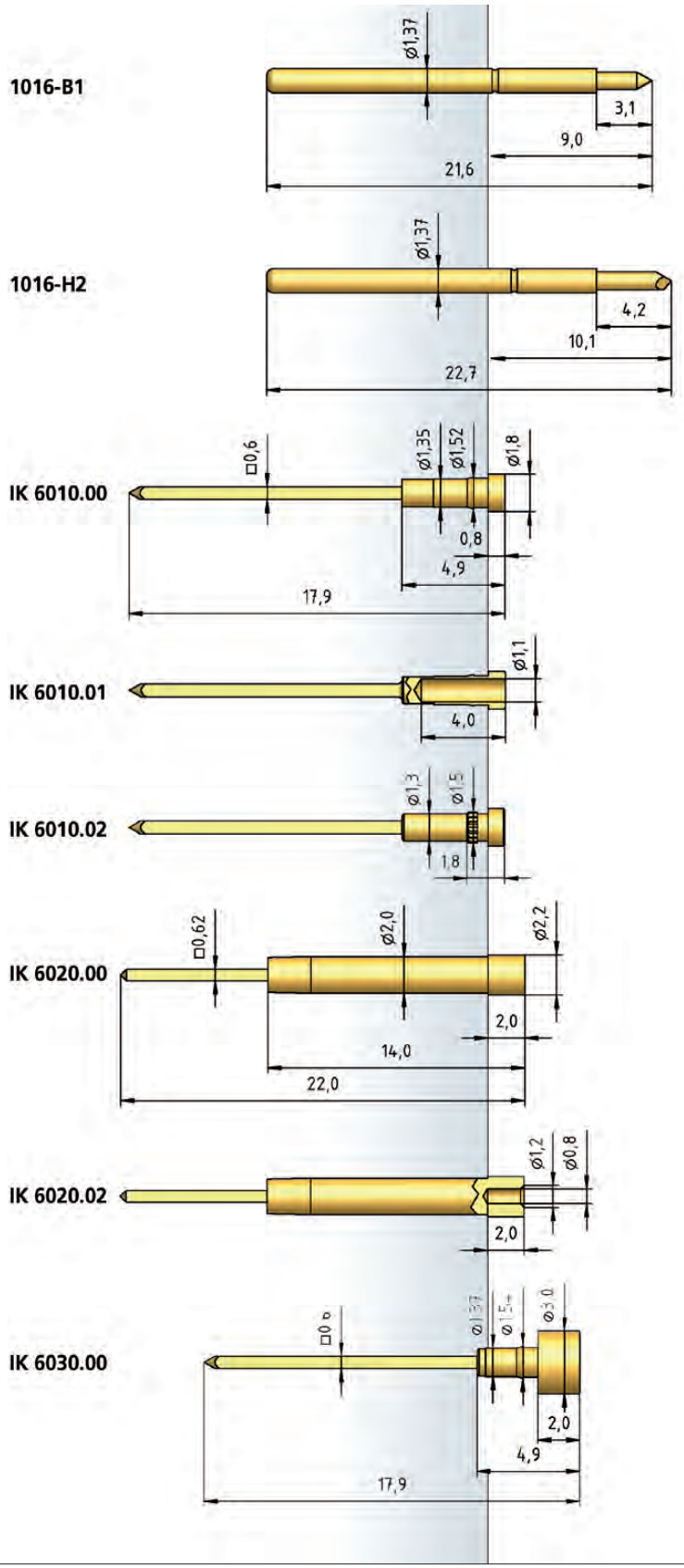
Electrical Data	
Max. current rating	3.0 A
Typical continuity resistance	<= 30 mOhm

Materials	
Barrel	Bronze, gold-plated
Spring	Spring steel, gold-plated
Plunger	CuBe, gold-plated
Receptacle	Bronze, gold-plated
IK	Brass, gold-plated

Recommended diameter of drill	
HP 2361.1 (Trolitax)	1.67 mm
With pressed-in ring	1.75 mm
HGW 2372	1.69 mm
With pressed-in ring	1.76 mm

Tastkopfform · Durchmesser · Oberfläche

B1	H2
1.00C Au	1.00 Au



How to order:

1016	-	B1	-	1.25 N	-	Au	-	1.0C
1		2		3		4		5 6

1. Series 2. Tip style 3. Contact pressure 4. Tip plating 5. Tip diameter 6. Tip material (only for CuBe)

Tools and accessories

A wide range of accessories is available for the professional use of PTR test probes. These include receptacle insertion tools for the ICT test probe range and test probes for use in test modules for cable tests. In addition, we offer screwing tools for our series of test probes with thread, also available as torque screwdrivers. A spring force measuring device, especially suitable for use with the push-back probes needed for the cable test, completes this range. This device makes it possible to carry out the necessary monitoring of contact pressures and their constancy.

Insertion and extraction tools for test probes

Test Probe Type	Smallest spacing mm	Tipstyle diameter mm	Insertion tool	Extraction tool
1015	2.54	< 0.9	WFEA 1015	flat-nose-pliers
1015	2.54	0.9 ... 2.0*	WFEA 1015	WFEA 1015
1021, 2021	2.54	< 1.2	WFEA 1021	flat-nose-pliers
1021, 2021	2.54	1.2 ... 2.0*	WFEA 1021	WFEA 1021
1028, 2028, 2053	2.54	< 1.5	WFEA 1028	flat-nose-pliers
1028, 2028, 2053	2.54	1.5 ... 2.0*	WFEA 1028	WFEA 1028
1029, 2029	2.54	< 1.5	WFEA 1028	flat-nose-pliers
1029, 2029	2.54	1.5 ... 2.0*	WFEA 1028	WFEA 1028
1050, 1060	4.0	< 2.0	WFEA 1050	flat-nose-pliers
1050, 1060	4.0	2.0 ... 3.0*	WFEA 1050	WFEA 1050
3010/..	4.0	< 2.0	WFEA 1050	flat-nose-pliers
3010/..	4.0	2.0 ... 3.0*	WFEA 1050	WFEA 1050
3020/2	2.54	< 1.2	WFEA 1021	flat-nose-pliers
3020/2	2.54	1.2 ... 2.0*	WFEA 1021	WFEA 1021
3030	2.54	< 1.0	WFEA 3030	flat-nose-pliers
3030	2.54	1.0 ... 2.3*	WFEA 3030	WFEA 3030

* When to use bigger headdiameters please order for special tools!
When ordering please mention the test probe type!

Sleeve insertion tools Metal handle design

Receptacle	Sleeve insertion	
	complete	insertion
H 1007	WHE 1200/07	WHE 1200/007
H 1008, H1008/E	WHE 1200/08	WHE 1200/008
H 1010	WHE 1200/12	WHE 1200/012
H 1012	WHE 1200/12	WHE 1200/012
H 1015, H 1015/G..	WHE 1200/15	WHE 1200/015
H 1021	WHE 1200/21	WHE 1200/021
H 1021/GV..	WHE 1200/21-V	WHE 1200/021-V
H 1025	WHE 1200/15	WHE 1200/015
H 1030	WHE 1200/30	WHE 1200/030
H 1050	WHE 1200/50	WHE 1200/050
H 1053/GRV, H1053/GVRV	WHE 1200/53-V	WHE 1200/053-V
H 1070	WHE 1200/75	WHE 1200/075
H 1075, H 1075/G-L	WHE 1200/75	WHE 1200/075
H 2021	WHE 1200/21	WHE 1200/021
H 2050	WHE 1200/50	WHE 1200/050
H 3014	WHE 1200/3014	WHE 1200/03014
H 3023	WHE 1200/3023	WHE 1200/03023
H 3024	WHE 1200/3024	WHE 1200/03024
H 3028/VR.01	WHE 1200/3028-1	WHE 1200/03028-1
H 5104..	WHE 1200/5104	WHE 1200/05104

Sleeve extraction tools Metal handle design

Receptacle	Sleeve insertion	
	complete	insertion
H 1008	WHA 1200/08	WHA 1200/008
H 1012	WHA 1200/12	WHA 1200/012
H 1025	WHA 1200/25	WHA 1200/025

Sleeve insertion tools Plastic handle design

Receptacle	Sleeve insertion tool complete	Marking on tool shank
H 1015	WHE 137	1 ring
H 1021	WHE 165	2 rings
H 1021/G	WHE 165	2 rings
H 1042	WHE 300	4 rings
H 1050	WHE 265	3 rings
H 1060/G	WHE 265	3 rings
H 2021	WHE 165	2 rings
H 2050	WHE 265	3 rings
H 3010, H 3010-22, H 3010/S-23, H 3010/S-28	WHE 265	3 rings
H 3010/GS, H 3010/GW, H 3010/GW5, H 3010/GWR5	WHE 265	3 rings
H 3011	WHE 265	3 rings
H 3020, H 3020/S-26	WHE 165	2 rings
H 3020/GS-26, H 3020/GRS-26, H 3020/GW5, H 3020/GWR5	WHE 165	2 rings
H 3023/G, H 3023/5G, H 3023/GWR5	WHE 165	2 rings

Screwing tools/Screw-in torques for threaded test probes

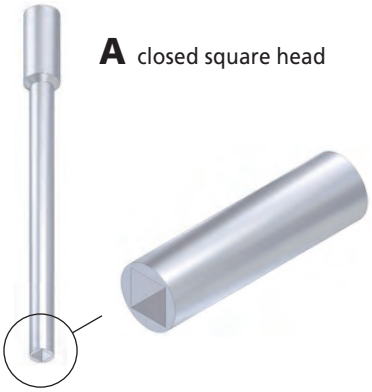
Important! If excessive torque is applied, this may destroy the threaded test probe (broken thread, buckling of barrel and/or receptacle, damage to the barrel square-end or screw slot), or it may destroy the screwing tool (cracking/splitting of the square end, damage to the square-end surfaces etc. –> loss of grip)

Series	Smallest center	Greatest head diameter	Tool type	Screwing tools	Recommended screwing-in torque	Maximum screwing-in torque
1007/G	1.27	1.0	A	WFS 1007/G-1.27-1.0	0.5 ... 1 Ncm	max. 2 Ncm
1010/G	1.5	1.0	A	WFS 1010/G-1.5-1.0	1 Ncm	max. 1.5 Ncm
1010/G	2.3	1.5	B	WFS 1010/G-2.3-1.5-Z	1 Ncm	max. 1.5 Ncm
1015/G	2.54	1.5	A	WFS 1015/G-2.54-1.5	2 Ncm	max. 3 Ncm
	2.54	1.8	A	WFS 1015/G-2.54-1.8	2 Ncm	max. 3 Ncm
1021/G, 1021/GV	2.54	1.8	A	WFS 1021/G-2.54-1.8	3 Ncm	max. 5 Ncm
	2.54	2.0	A	WFS 1021/G-2.54-2.0	3 Ncm	max. 5 Ncm
	3.0	2.5	B	WFS 1021/G-C2S-3.0-2.5-Z	3 Ncm	max. 5 Ncm
	3.5	3.0	B	WFS 1021/G-3.5-3.0-Z	2 Ncm	max. 3 Ncm
1042/G	all	all	D	Screwdriver for slotted screws 1.8x0.5	4 Ncm	max. 15 Ncm
1053/G	5.0	4.0	B	WFS 1053/G-5.0-4.0-Z	4 Ncm	max. 7 Ncm
	6.0	5.0	B	WFS 1053/G-6.0-5.0-Z	4 Ncm	max. 7 Ncm
1060/G	4.0	3.0	A	WFS 1060/G-4.0-3.0	4 Ncm	max. 15 Ncm
	5.0	4.0	B	WFS 1060/G-5.0-4.0-Z	4 Ncm	max. 15 Ncm
	6.0	5.0	B	WFS 1060/G-6.0-5.0-Z	4 Ncm	max. 15 Ncm
1060/G4	5.0	4.0	A	WFS 1060/G4-5.0-4.0	4 Ncm	max. 15 Ncm
1060/G5	6.0	5.0	A	WFS 1060/G5-6.0-5.0	4 Ncm	max. 7 Ncm
1070/G	5.0	4.0	A	WFS 1070/G-5.0-4.0	5 Ncm	max. 15 Ncm
1075/G	5.0	4.0	A	WFS 1070/G-5.0-4.0	5 Ncm	max. 15 Ncm
3010/2G 3010/2G5 3010/2GW 3010/2GW5 3010/10G	see 1060/G					
3011/2GS	see 1060/G					
3012/2GS (Plungers with pins)	all	all	D	Screwdriver for slotted screws 1.8x0.5	4 Ncm	max. 7 Ncm
3012/2GS (Plungers without pins)	4.0	2.6	A	WFS 3012-4.0-2.6	4 Ncm	max. 7 Ncm
3014/2G	see 1060/G					
3015/G	7.0	5.0	A	WFS 3015/G-7.0	5 Ncm	max. 15 Ncm
3020/2G, 3020/2GW5	see 1021/G					
3023/2GS	see 1021/G					
3024/2G	see 1021/G					
3028.01	see 1021/G					
3030/G3	see 1015/G					
4004/G	see 1060/G					
5104	see 1060/G					
5110/G	see 1060/G					
5203	2.54	2.0	A	WFS 5203-2.54-2.0	3 Ncm	max. 5 Ncm
	3.5	2.7	B	WFS 5203-3.5-2.7-Z	3 Ncm	max. 5 Ncm
5207/G	all	all	E	Hexagon socket key 2 mm	4 Ncm	max. 15 Ncm
5257/G	see 1021/G					
5265	3.0	2.3	A	WFS 5265-3.0-2.3	3 Ncm	max. 5 Ncm
	3.0	2.5	B	WFS 5265-3.0-2.5-Z	3 Ncm	max. 5 Ncm
	3.5	3.0	B	WFS 5265-3.5-3.0-Z	3 Ncm	max. 5 Ncm
	4.5	4.0	B	WFS 5265-4.5-4.0-Z	3 Ncm	max. 5 Ncm

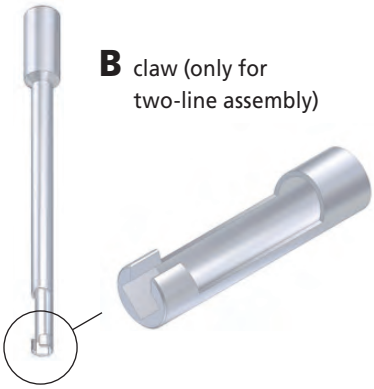
A – closed square-head | **B** – claw (only for two-line assembly) | **D** – screwdriver for slotted screws | **E** – hexagon socket key
Other tools on request! When ordering tools, please specify the test probe to be assembled!

Screwing tools
Screw-in test probes

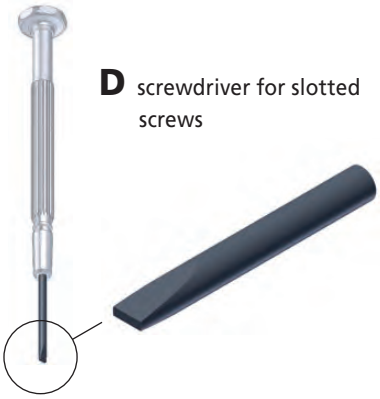
Tool type



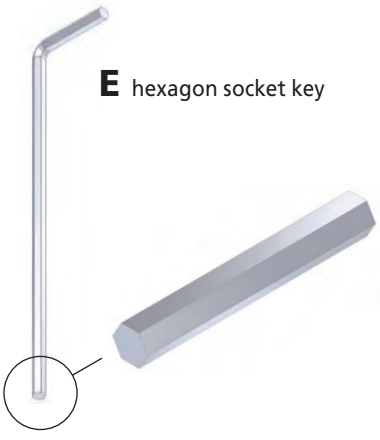
A closed square head



B claw (only for two-line assembly)

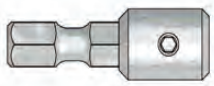


D screwdriver for slotted screws



E hexagon socket key

Torque screwdriver



Adapter

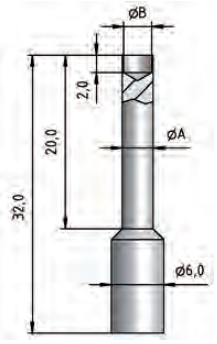
Type	Colour code	Sector
DMS 1	gold	1 Ncm
DMS 2	green	2 Ncm
DMS 3	blue	3 Ncm
DMS 4	red	4 Ncm

Digital force gauge FKT 50

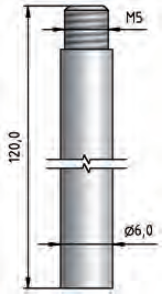
Specifications

Dislpay:	5-digits LCD display with light
Dislpay direction:	Positive or Reserve direction, select by the push button on the front panel
Function:	Tension & Compression (Push & Pull)
Peak hold:	Will freeze the display value of the peak load (Max. load)
Zero:	Zero button can be operated both for “normal force” or Peak hold” operation
Unit select:	g / N / oz
Measure Capacity:	5 kg / 49,3 N / 176,40 oz
min. Dislpay:	3 g / 0,03 N / 0,10 oz
Accuracy:	+/-0,4% bei 25 °C
Overload Capacity:	7,5 kg
Power Consumption:	Approx. 28 mA
Power Supply:	6 x 1,5 V AA (not included)
Dimension:	215 x 90 x 45 mm
Weight:	650 g with batteries

Dimension



Test point



Connecting bar

ØA mm	ØB mm	Center mm
2.1	1.6	2.54
2.6	2.1	2.54
3.6	3.1	4.0
4.6	4.1	5.0
5.6	5.1	6.0

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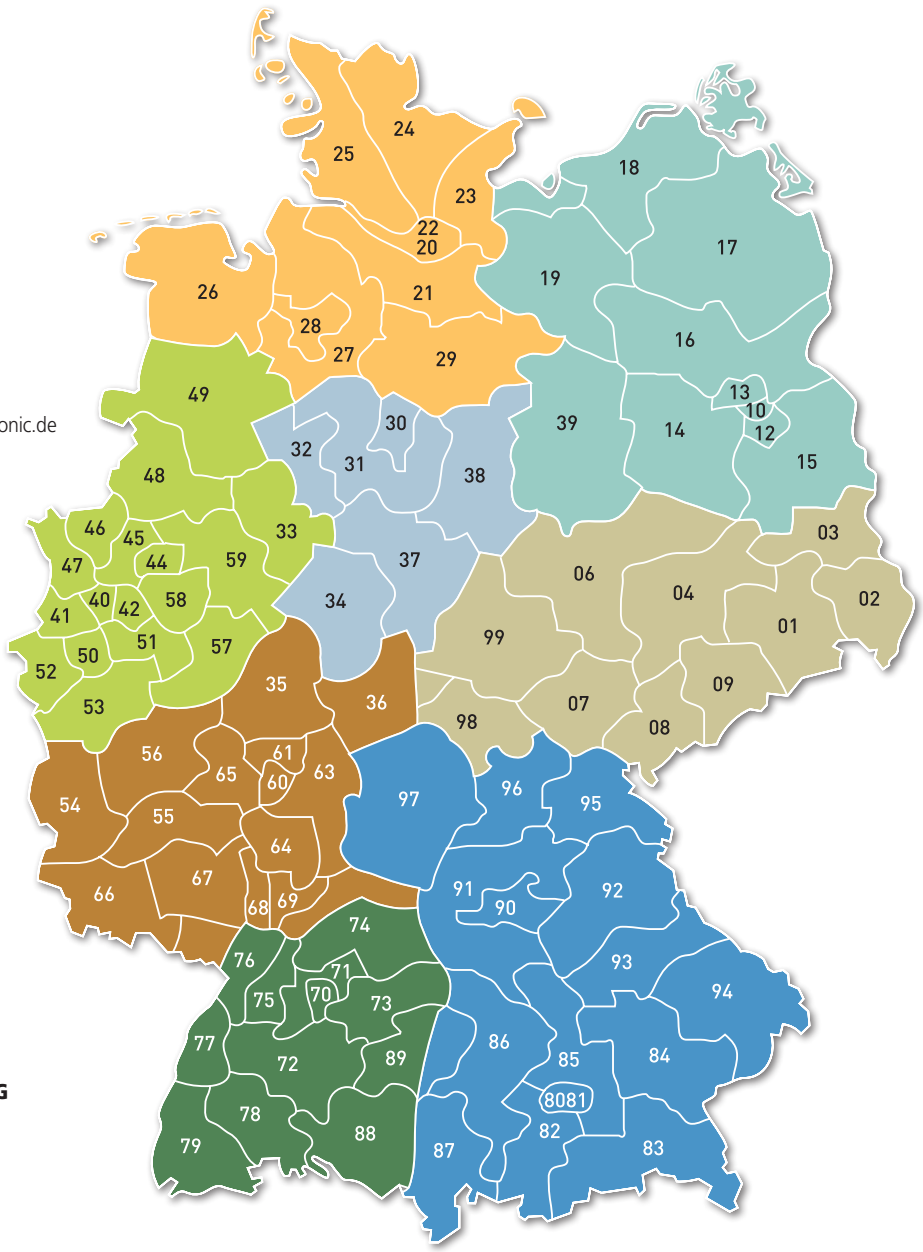

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