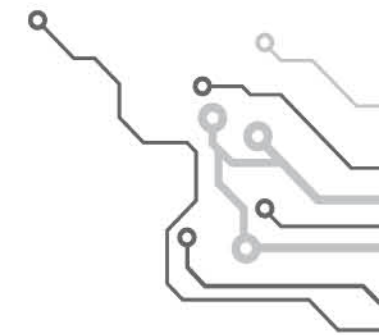




*Testing Support &
High-Fine Pitch Test Technology*



HEAD OFFICE

77, Mijuk 1-gil, Pungse-myeon, Dongnam-gu, Cheonan-si,
Chungcheongnam-do, Republic of Korea
TEL 82-41-551-9650 FAX 82-41-551-9651

PLATING PLANT

405-7, Dujeong-dong, Seobuk-gu, Cheonan, Chungnam, Republic of Korea
TEL 82-41-522-2225 FAX 82-41-522-3332

INCHEON PLANT

53, Gajaeul-ro 6beon-gil, Seo-gu, Incheon, Republic of Korea
TEL 82-32-515-9650 FAX 82-32-515-9651

NTS VINA Co., LTD.

Binh Xuyen Industrial Park-Binh Xuyen district-Vinh Phuc Province, Vietnam
TEL 84-0211-2222-288 FAX 84-0211-2222-388

www.nts-tech.co.kr

E-mail : probe@nts-tech.co.kr

Next Test Solution

Total Test Solution

» 2000~2004

“Differentiated Technology” “Necessary Technology” and “Our Technology”

The beginning of NTS started with confidence in technology.

A perfect product begins with the perfect parts in it, and the definition of “perfection” begins with perfect “tests.”

In 2000, when the word test technology was still a relatively new concept, NTS began with the confidence in technology.

- Nov. 2000 Foundation of SEIKEN KOREA (Suwon)
- Jan. 2001 Signing of technological transfer from SEIKEN JAPAN
- Jul. 2001 Acquiring of Advanced Technology Certification (Ministry of Finance and Economy)
- Dec. 2001 Supplying of semi-conductor chip test socket to Samsung
- Oct. 2003 Establishment of wafer testing probe card equipment
- Feb. 2004 Establishment of Plant 2 (Suwon)
- Mar. 2004 Development of TAB test probe card
- Jul. 2004 Establishment of Plant 3 (Gwangju, Gyeonggi-do)
- Nov. 2004 Establishment of NTS R&D Center

Next Test Solution

» 2005~2010

“The World’s Best Company” “Contribute to Social Development” “Practicing Talent Management”

The business philosophy of NTS contains the corporate philosophy of “value of man is technology.” The technology of NTS is created from its people, and it is based on the perfection of products built for a better life for mankind. The company that advances forward for the happiness of mankind based on the happiness of people, NTS. NTS continues to realize that dream with international IT global groups.

- Dec. 2005 Establishment of NTS Head office and integration of plants (Cheonan)
- May. 2006 Operation of Singapore agent
- Dec. 2006 Company name changed (SEIKEN KOREA -> NTS)
- May. 2007 Acquisition of ISO 9001 and 14001
- May. 2007 Operation of Shanghai China agent
- Jul. 2007 Establishment of Vietnam office (NTS VINA Co., Ltd.)
- Jan. 2010 Signing of socket NDA with “Q” Company, US

The Beginning of a Perfect Product

» 2011~Present

“Exploring New Markets” “Realization of 100% Perfect Products”
Currently NTS focuses on identifying the needs of customers, and it continues to identify the market trend throughout the company.

NTS establishes perfection in all semiconductor products in Korea and overseas, and it also prepares for new market changes. “The beginning for the perfect product”
Today, NTS continues to create new technologies and value for the future of mankind.

- Dec. 2011 Establishment of Bupyeong Plant (socket production)
- Aug. 2012 Camera socket and pin biz with “S” Company
- Sep. 2013 LCD socket and pin biz with “A” Company
- Apr. 2014 Fingerprint reader socket and pin biz with “C” Company
- Mar. 2015 Auto socket biz with “L” Company
- Jan. 2016 Auto socket biz with “P” Company
- Jun. 2016 New Plant built in Gajwa, Incheon
- Jul. 2016 Beginning of socket and pogo pin sales at Vietnam office

Beginning of the perfect product NTS

It is not seen
but it is the driving force for building the best product

Cameras, for presenting beautiful memories
Mobile phones, for fluid communication among men
Computers, the key component in business, education and industry

The technology of NTS undertakes the role
of being the foundation for building
the perfect product from unseen locations
throughout the industry

The beginning of the perfect product!!
NTS contributes in the advancement of mankind from unseen locations.



Semiconductor



Display



IT



Industrial
Machines

The future of a smarter world NTS is creating it with you

Greetings from NTS,

Since the beginning of business in 2000, the passion for business was "success".

After 17 years where the company marched forward without looking back, NTS has become the best partner recognized by global companies for its technologies.

What are the challenges and research for technology accumulated over countless nights from the endeavoring from? NTS believes its customers are not the global companies but the consumers who actually use products.

Regarding the countless products used by the customers

"the people working for the seen from the unseen"

NTS will continue to follow its path towards the future from places unseen to most.

NTS will become more "SMART."

Within in the world that is rapidly becoming "SMART" everyday, customers become even smarter.

NTS will become more "SPECIAL."

Being content is not maintaining the present but is falling behind.

NTS will continue to march forward with continuous research for customer's needs.

NTS will work with more "SMILE"

The energy by smile while working will be delivered to customers.

The future with value for all,

That is the NEXT future for NTS.

NTS CEO *Kim Ho Jin*



NEXT

Patent & R&D Center

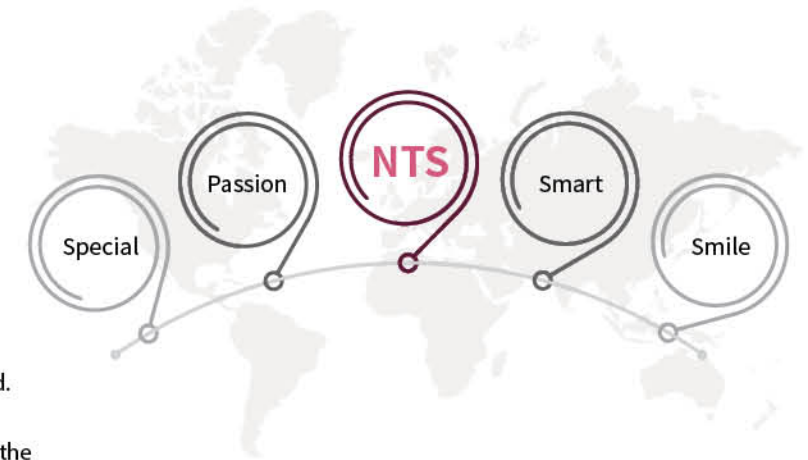


Leadership

NTS aims at value shared by all.
The value of comfort and safety for future mankind,
people who work for things seen from unseen.
The leadership of NTS is value for not only NTS
but all companies and people.

NTS with special technology for the future.
NTS becoming smarter for the comfort and
safety of customers.
NTS satisfies itself for the happiness of customer.
NTS, the devoting its passion for the future of mankind.

The powerful leadership of NTS aiming to become the
No. 1 company.

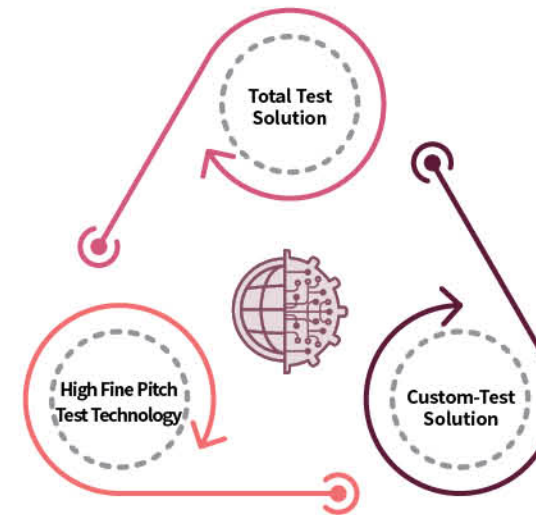


Technology

The test technology of NTS is not for the customers
of NTS but for the consumers who actually use the
products.

Integrated solution to resolve the needs of customers
by recognizing the differences through advanced
technology, NTS aims at providing tailored tests satisfying
each customer's needs.

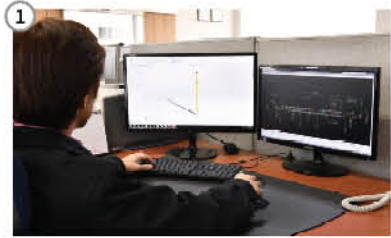
The advanced technology of NTS goes beyond the
boundaries of simple product testing and aims at the
perfect product.



TEST

Overall Process Map

Probe Pin



Product Design



Material Inspection



CNC



Initial/Intermediate/Final Inspection



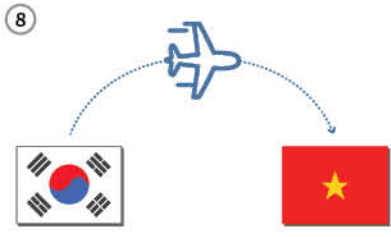
Pre-plating Inspection



Plating



Final Inspection on Plating Thickness



Parts Delivery (Korea → Vietnam)



Import Inspection (Vietnam)



Assembly (Vietnam)



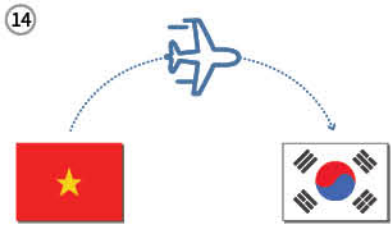
Resistance/Spring force Inspection (Vietnam)



X-ray Inspection (Vietnam)



Shipment Inspection



PIN Delivery (Vietnam → Korea)



LIFE TEST



Resistance/Spring force Inspection



X-ray Inspection

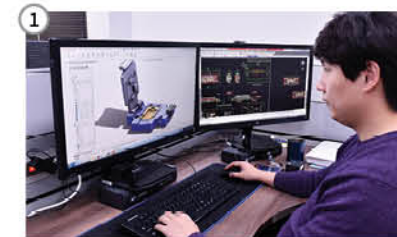


Shipment Inspection



Packaging & Shipment

Test Socket



Product Design



MCT



3-Dimensional Inspection



Marking



Assembly



Assembly Inspection



Shipment Inspection



Packaging & Shipment

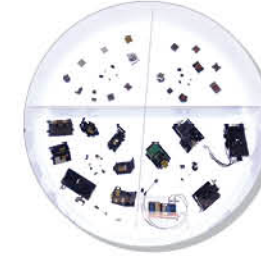
SOLUTION

Infrastructure



Leading Technology

- Best Quality in-house R&D establishment
- Facilities unifying manufacturing/assembly/quality management
- Unrivaled technology with no competition (pipeless bat bin product line-up)



NTS Probe Pin & Socket

- Design simulation technology
- Exclusive knowledge of pin technology
- A perfect understanding of the market
- Customer tailored test foundation establishment
- Capable precise facilities to measure and unique know-how

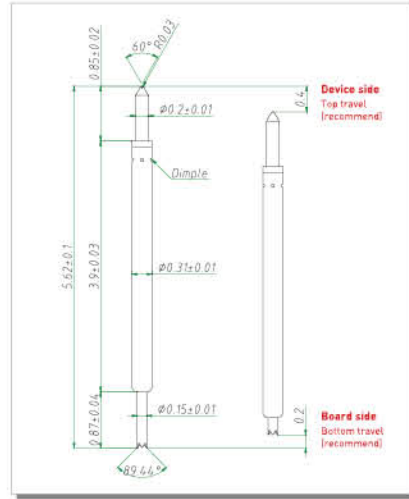
Competitiveness of NTS Plating

- Outstanding resistance technology against corrosion
- Outstanding resistance technology against wear
- Exclusive plating technology
- Latest plating equipment

Professional Manpower



Single pin



SB-52SF-5.62-B020-G3-25-K1

Mechanical Specifications

Pitch : 0.40mm
Signal path length : 5.02mm
Overall length : 5.62mm

Materials and Plating

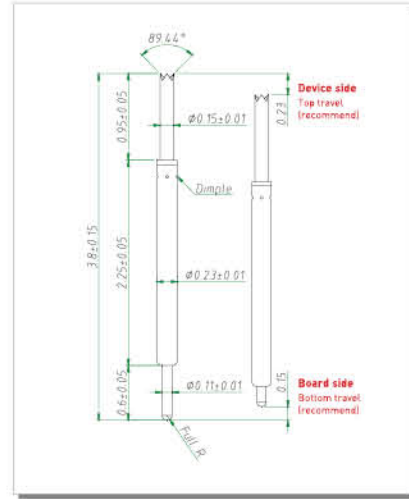
Top Plunger : Hardened beryllium copper Gold plated
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

25.0g at 0.60mm Recommended travel
0.80mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.05



SE-15SF-3.8-B015-G3-15-K1

Mechanical Specifications

Pitch : 0.30mm
Signal path length : 3.42mm
Overall length : 3.80mm

Materials and Plating

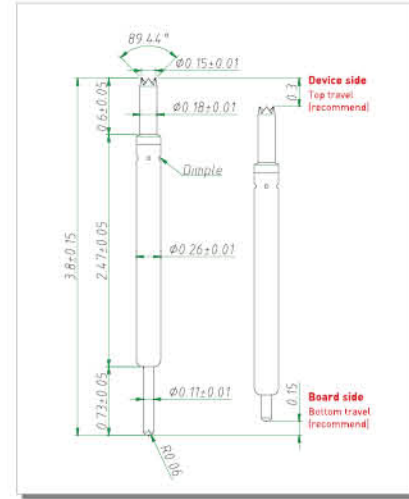
Top Plunger : Hardened beryllium copper Gold plated
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

15.0g at 0.38mm Recommended travel
0.47mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.05



SG-15SF-3.8-W015-G3-16-K1

Mechanical Specifications

Pitch : 0.35mm
Signal path length : 3.35mm
Overall length : 3.80mm

Materials and Plating

Top Plunger : WG Alloy
Bottom Plunger : Hardened Steel Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Stainless Steel Gold plated

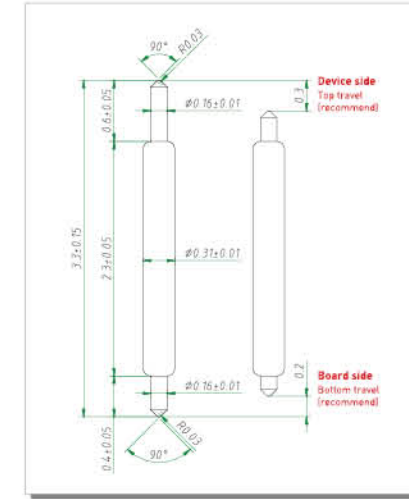
Spring Force ±20%

16.0g at 0.45mm Recommended travel
0.55mm Full travel

Operating Temperature -55°C-150°C

Pointing Accuracy ±0.05

Double pin



SB-22RT-3.3-W016-G3-31-K1

Mechanical Specifications

Pitch : 0.40mm
Signal path length : 2.80mm
Overall length : 3.30mm

Materials and Plating

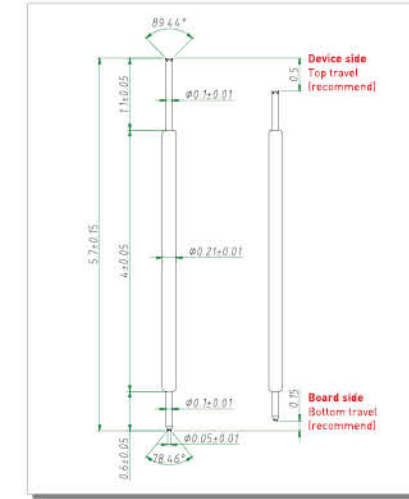
Top Plunger : WG Alloy
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

31.0g at 0.50mm Recommended travel
0.70mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.08



SE-55RT-5.7-S010-G3-13-K1

Mechanical Specifications

Pitch : 0.30mm
Signal path length : 5.05mm
Overall length : 5.70mm

Materials and Plating

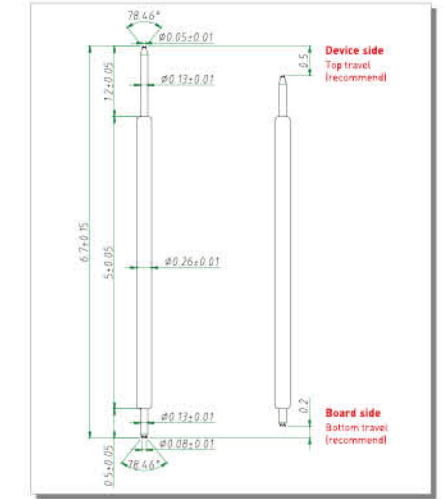
Top Plunger : Hardened Steel Gold plated
Bottom Plunger : Hardened Beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

13.0g at 0.65mm Recommended travel
0.95mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.05



SG-55RT-6.7-S005-G3-28-K1

Mechanical Specifications

Pitch : 0.35mm
Signal path length : 6.00mm
Overall length : 6.70mm

Materials and Plating

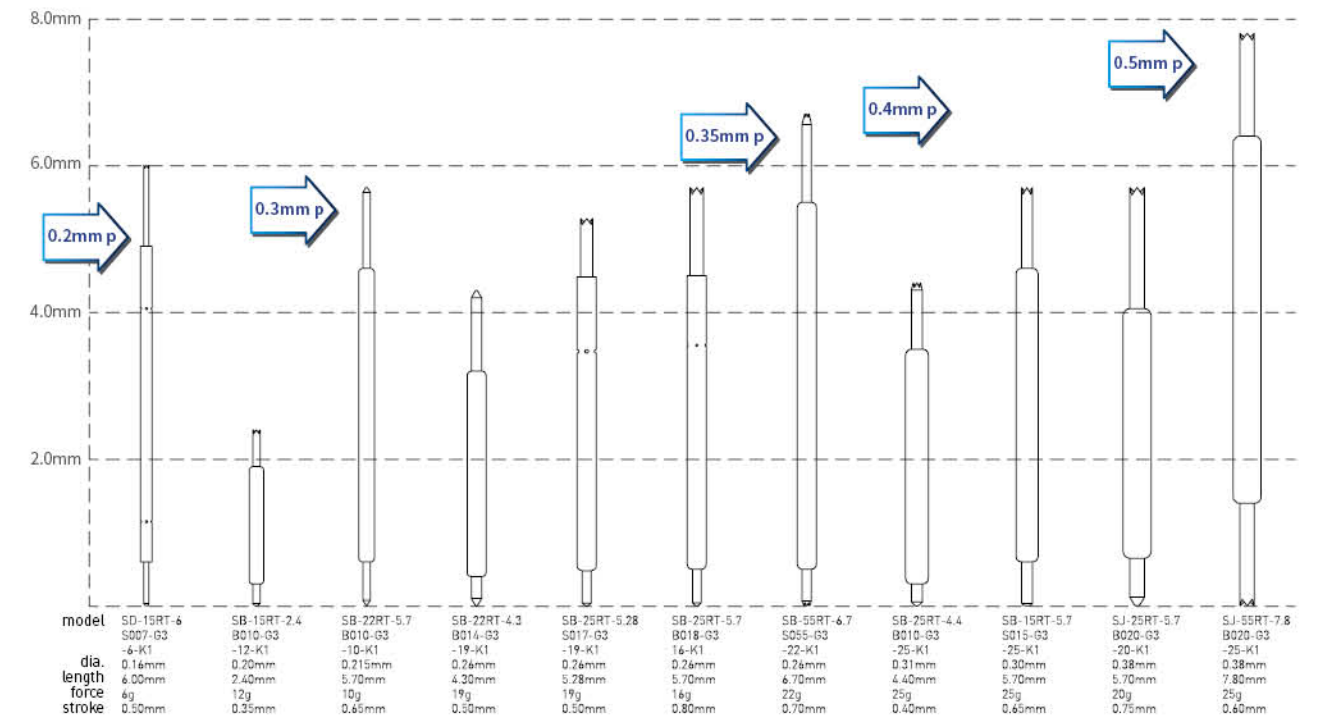
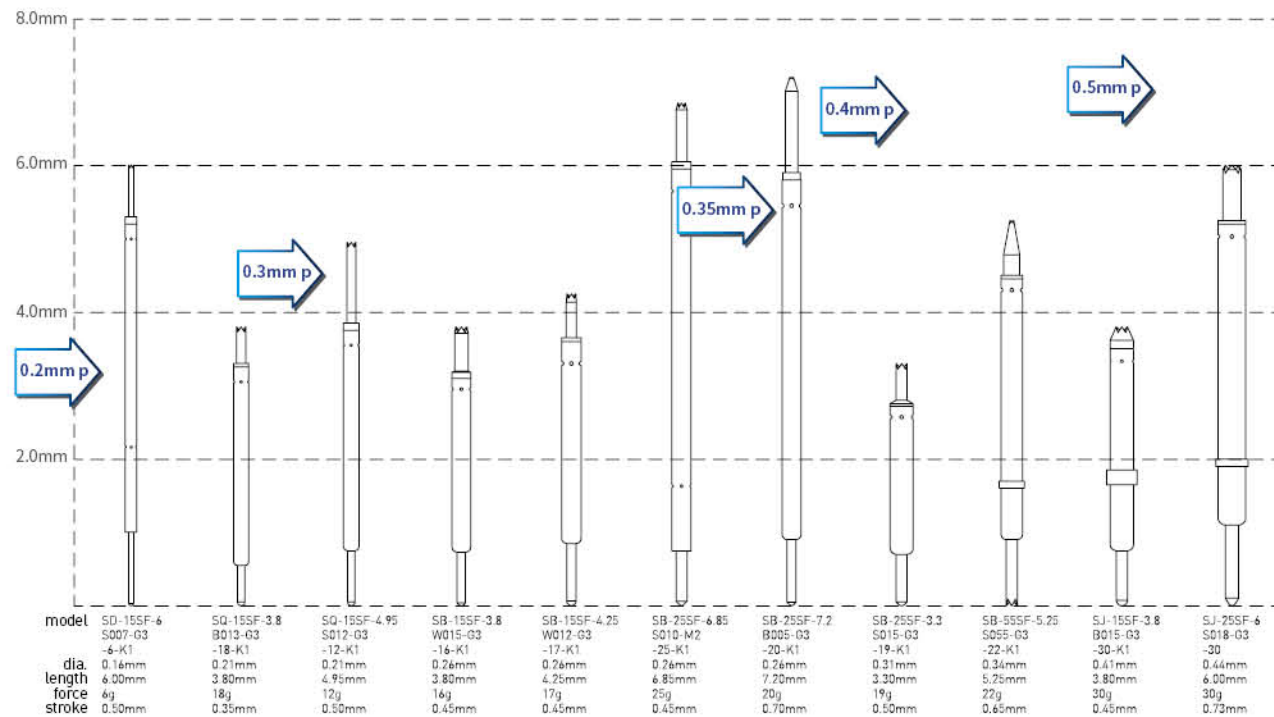
Top Plunger : Hardened Steel Gold plated
Bottom Plunger : Hardened Beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

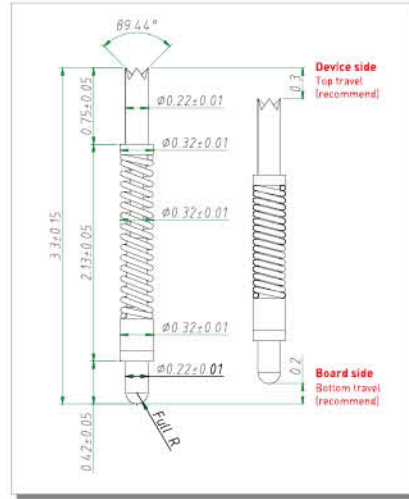
28.0g at 0.70mm Recommended travel
1.00mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.05



Bat pin



SXB-155F-3.3-B022-G3-27-K1

Mechanical Specifications

Pitch : 0.40mm
Signal path length : 2.80mm
Overall length : 3.30mm

Materials and Plating

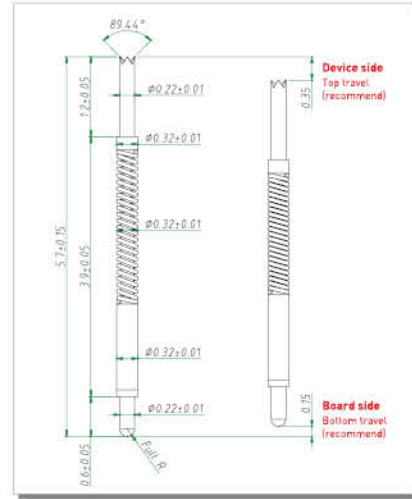
Top Plunger : Hardened beryllium copper Gold plated
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Music wire Gold plated

Spring Force ±20%

27.0g at 0.50mm Recommended travel
0.65mm Full travel

Operating Temperature -40°C-120°C

Pointing Accuracy ±0.05



SXB-155F-5.7-B022-G3-22-K1

Mechanical Specifications

Pitch : 0.40mm
Signal path length : 5.20mm
Overall length : 5.70mm

Materials and Plating

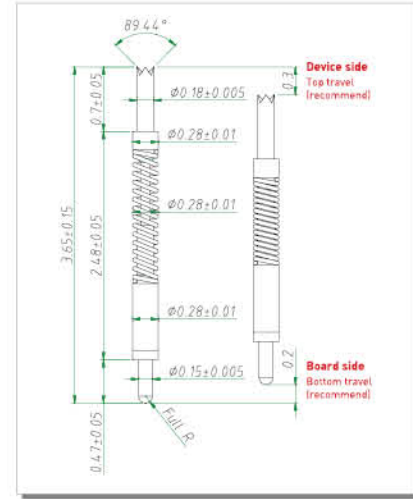
Top Plunger : Hardened beryllium copper Gold plated
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Stainless Steel Gold plated

Spring Force ±20%

22.0g at 0.50mm Recommended travel
0.75mm Full travel

Operating Temperature -55°C-150°C

Pointing Accuracy ±0.05



SXG-155F-3.65-W018-G3-15-K1

Mechanical Specifications

Pitch : 0.35mm
Signal path length : 3.15mm
Overall length : 3.65mm

Materials and Plating

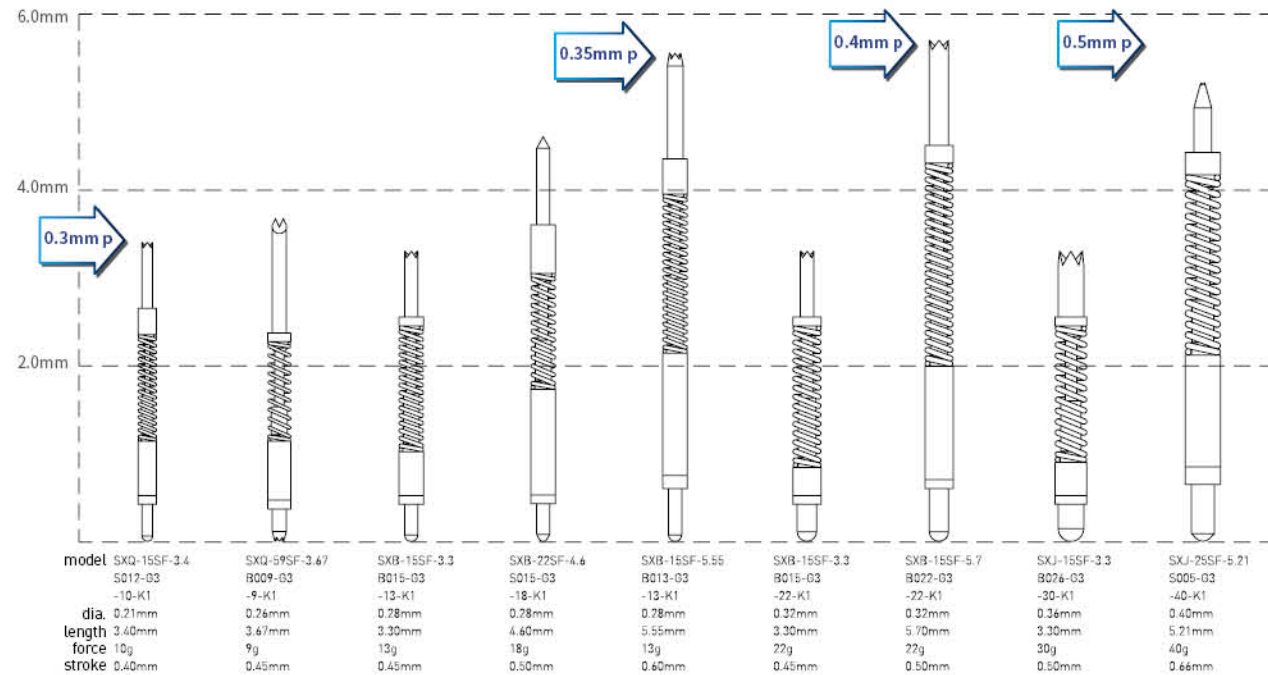
Top Plunger : WG Alloy
Bottom Plunger : Hardened beryllium copper Gold plated
Barrel : Phosphor Bronze Gold plated
Spring : Stainless Steel Gold plated

Spring Force ±20%

15.0g at 0.50mm Recommended travel
0.65mm Full travel

Operating Temperature -55°C-150°C

Pointing Accuracy ±0.05



IT Test Socket

Camera module test socket



CSV-Xiaomi D5-Vertical-P1-N17-588



CSN-Xiaomi D5-Face Front-P1-N17-420



Auto_K61 UP_DOWN

Sensor module test socket



CSN-ALPS-WHITE Module-JIG-P2-N17-94

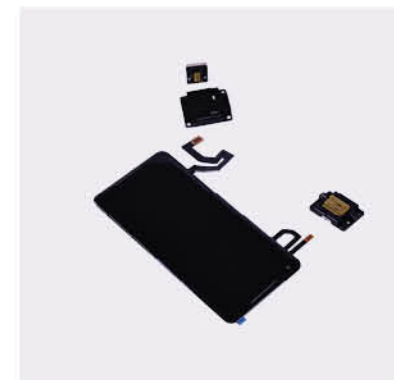


CSVT-CV3-BTP-Dome Click-P2-N17-639



CSN-Lucy-BTP-G600L-DOME CLICK-P1(210g)

Display module test socket



CN-B1-MAIN(7.2)-P1-N17-1006
CN-B1-MAIN(7.2)-P2-N17-10137



CSIN-6.46-PO R2-CELL JIG-P1-N17-708



Auto-NSP01-P+_v02_54PIN

Semiconductor Test Socket

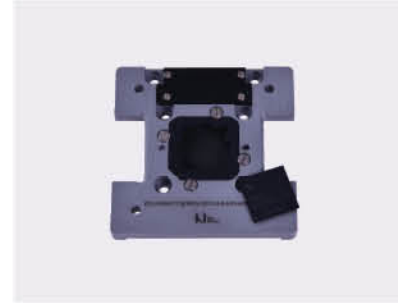
BGA Package



CN-GAUSS-P3-N17-216



366 TOP Spectrum SOCKET-P1



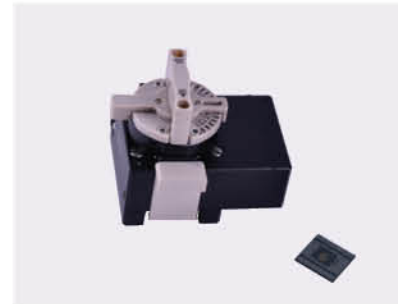
CN-VFBGA771(KIBO)-13x13.4-0.4-P1-N17-359



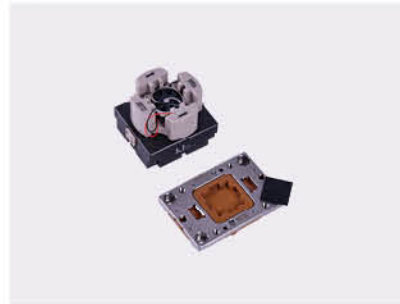
CSR-Q300-LP4X366-ROOM Sealing-P1-N17-481



CN-556LPDDR4-12.4X12.4-0.4-P1-N17-487



CSR-M410-350B SCRAMBLE-RHS Variable-P1-N17-1025



CN-905FCBGA-COVER-P1



CN-1069BGA-0.4-P1-N17-483



CN-556LPDDR4-12.4X12.4-0.4-P1-N17-487

QFN Package



CN-QFN6-3.7X3.5-1.05-P1-N17-614



CN-529LGA-0.4-P1-N17-491



CS-DFN8-2.0X2.0-0.5-P1

MLF Package



MLF-68-8X8-0.4-P6



MLF-68-8X8-0.4-P6



MAF45-5.82x3.05-0.645-P1

QFP Package



BCR-QFP128-14x20-0.5-P1-N17-944



BC-SOP20-12.9X10.44-1.27-P1-N17-949



BCRH-ETQFP128-14X14-0.4-P1

