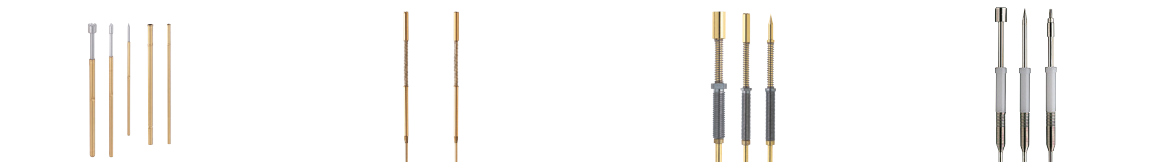


# Contact Probes

## Contact Probes



Product Name	Contact Probe Assembly Service	Double Tipped Probes	Contact Probes, Receptacles - Minimum Mounting Pitch 0.5mm ~ 4.5mm Series
Page	1865	1866	1867~1875



Turn Probes	Contact Probe Assemblies - Standard	Screw Mounting	Resin Sleeve
1876	1877	1877	1877



Spring Built-In	Thread Wire Connection	Switch Probes	Terminals for Probes	Terminals for Probes
1878	1878	1879	1879	1879



Heat-Shrink Tubes	Circuit Board Guide Pins	Circuit Board Pusher Pins	Circuit Board Rough Guides
1879	1880	1880	1880

# Contact Probes

## Overview

### Overview

Contact Probes can be used in connection tests of all electronic circuits.

### How to Use

Press-fit appropriate receptacles in the mating holes drilled in a bakelite or other plastic plate. If the mating holes are loose, use appropriate adhesives (Loctite, etc.) to fill the gap. After press fitting, wire the receptacles. If wires need to be soldered, do not solder past the stopper in the receptacle. After wiring, insert Contact Probes. Pressing plungers too hard may cause damage to the tip or internal components of Contact Probes and result in performance degradation.

It is recommended to make several tests under operating environment before actual use.

### Major Types and Typical Uses

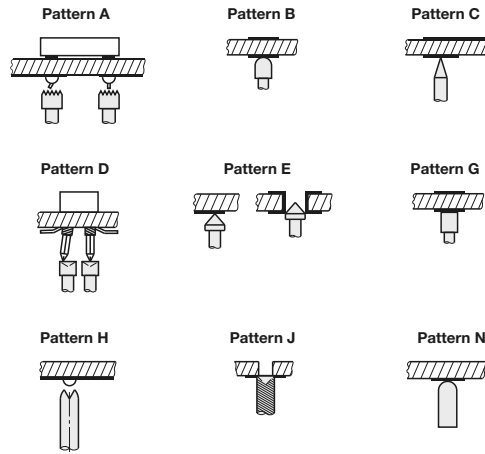
Type	Typical Uses
Contact Probes	Suitable for extensive use in testing printed circuit boards, mounted circuit boards, semiconductors/in-circuit, harnesses, etc.
Double Tipped Probes	Suitable for narrow pitch mounting since receptacle is not needed.
Turn Probes	The plunger rotates with stroke movements to destroy flux and oxide film. Proven successful in open/short circuit tests of printed circuit boards.
Integrated Probes	Contact Probe constructed in end-to-end one continuous piece. Permits stable electrical conduction regardless of the stroke length.

### Selection Table

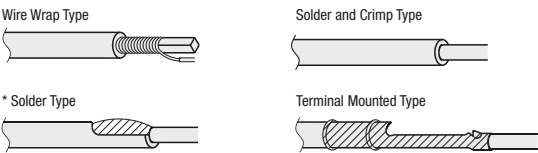
Printed in Black: Products available on our website

Type	Mounting Pitch (min.)	Full Stroke	Spring Pressure (2/3 Stroke)	Part Number	Page
Double Tipped Probes	0.3	1.3	6	RNP20	-
		0.8	15	RNP30	-
		1.0	15	RNP38	-
	0.5	0.98	25	RNP38N	-
		1.0	25	RNP50	-
		0.98	30	RNP57	-
	0.8	1.0	30	RNP64	-
		0.98	25	RNP60ST	-
		0.5	30	RNP85	-
	1.0	0.98	35	RNP85	-
		0.5	30	RNP80ST	-
		0.5	30	NP26	NR26
Contact Probe	0.50	2.0	22	NP31	NR31/NR31S
			23	NP31HD	NR38/NR38S
			35	NP38	NR20K
			50	NP20	NR58
			50	NP58	NR30K/NR30SH-B
			45	NP30	NR72K
	1.27	2.5	46	NP30HD	NR76
			50	NP72	NR68/NR68S
			100	NP72HD	NR76
			50	NP68SF	NR68/NR68S
			90	NP68	NR88
			50	NP88	NR45S
	1.40	4.3	100	NP88HD	NR45S
			50	NP45SF	NR45/NR45T
			100	NP45S3	NR120/NR120T
			50	NP45	NR604
			150	NP45HD	NR60
			50	NP120	NR84
	1.50	2.5	100	NP120HD	NR90
			100	TP604	NR89
			110	NP604	NR89
			160	NP604HD	NR90
			50	NP60SF	NR84
			100	NP60S	NR90
	2.54	6.4	150	NP60/NP60H	NR84
			170	NP60HD	NR90
			50	NP84SF	NR89
			126	NP84	NR89
			200	NP84HD	NR89
			50	NP90SF	NR89
	3.00	6.3	150	NP90	NR89
			250	NP90HD	NR89
			100	NP89SF	NR89
			275	NP89S	NR89
			450	NP89	NR89
			450	NP89	NR89
Receptacles Receptacle-less	1.90	7.0	170	NP16	-
	1.27	4.5	50	TNP72	NR72
	1.90	5.5	140	TNP10	NR10
Turn Probe	2.54	6.4	165	TNP60	NR60
	0.80	3.4	80	GNP6	-
	1.00		80	GNP8	-
	1.50		95	GNP12	-
Integrated Probe	3.00	4.5	105	FNP10	-
	5.00		100	FNP13	-
	5.00		100	FNP22SF	-
	3.00	7.0	150	FNP22	-
	4.00		180	FNP222	-
	4.00		200	FNP35	-
	5.00	17.0	220	FNP40SF	-
	7.00		300	FNP40	-
	7.00		455	MNP50	-
	7.00	7.6	455	MNP50	-

### Contact Probe Tip Shapes and Patterns



### Receptacle End Shapes



\*Solder Types (C Type and NR68S) are slightly bulged on the soldered ends due to the manufacturing method. That will present no problem as long as the probe is pushed in firmly, but the O.D. adjustments are allowed as needed.

### General Environmental Conditions

- Operating Temperature: 10 ~ 40°C, Humidity: 30% or Less
- Operating Atmosphere: Free of dust, corrosive gases and oil components etc., where the contact probe may not be contaminated.

### Stroke Conditions

- Apply load in the axial direction only. Do not apply lateral load.
- Stroking over the specified stroke (2/3 of full stroke) will significantly decrease the lifetime of the Contact Probe.
- Stroking over 60 times per min (constant velocity) may decrease the lifetime of the Contact Probe.

### Current Application Conditions

- Apply current only after contact is made at a specified position in a static state.
- Applying current while stroking, with irregular strokes, or in open state where the contact subject is not contacted will severely decrease the lifetime of Contact Probes.
- May not meet allowable current shown in the catalog due to contact probe's deterioration. Consider actual applications carefully in the designing stage.

### Voltage Application Conditions

- Apply current only after contact is made at a specified position in a static state.
- Do not energize probes in open (not in contact) state. Discharge before contacting will result in damage to Contact Probes.
- When applying high voltage to a contact probe, be sure to satisfy Current Application Conditions and Voltage Application Conditions, and be careful of instantaneous large current including discharge.

### Allowable Current

- Allowable current provided in the catalog is the maximum continuous current for 1 min under the conditions as shown above (Normal environment, stroke, current and voltage applied).

### Resistance

- Resistance value provided in the catalog is the representative value as shown above (Normal environment, stroke, current and voltage applied), when 10mA current flows where pure silver contacts are used for the measurement.
- Large current may cause deterioration of contact and inner parts, resulting in resistance value increase.
- Stroke cycle repetition may cause deterioration of contacts and inner parts, resulting in resistance increase.

### Replacement Cycle (Reference)

- Replacement cycle provided in the catalog is the representative value as shown above (Normal environment, stroke, current and voltage applied), when 10mA current flows.
- Replacement cycle can vary depending on operating environment and conditions including resistance increase and spring pressure decrease. Replace Contact Probes considering actual applications.

### Spring Pressure


- Spring pressure decreases if temperature of contact probe is 80°C or more.
- Spring pressure may decrease due to heat generation of a contact probe at larger current.

### Mounting Hole for Press-Fitting Dimension (Reference)

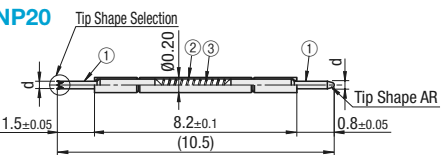
- The values provided are for reference. Appropriate dimensions vary depending on material and thickness of resin plate. Please take the dimensions of receptacle press fit part as a guide for your design.

Double Tipped Probes (For IC Test Socket)

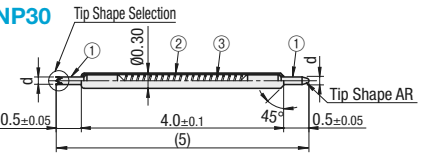
■Features: Since there is continuity at both ends of the probe, ICs themselves can be tested before being assembled onto PC boards.



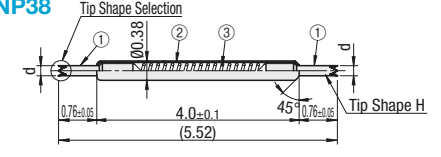
**RNP20**



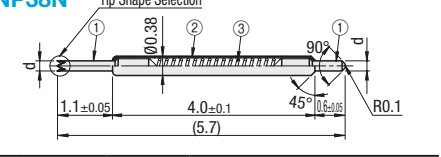
**RNP30**



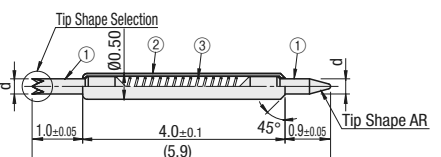
**RNP38**



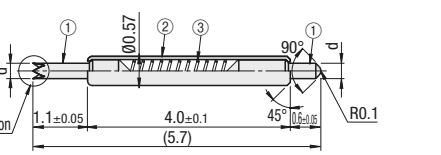
**RNP38N**



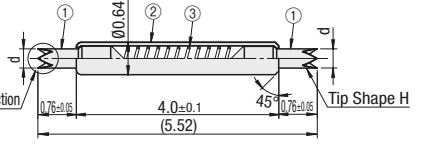
**RNP50**



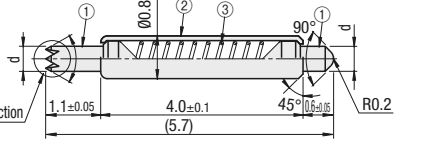
**RNP57**



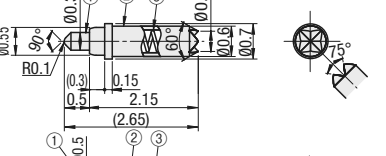
**RNP64**



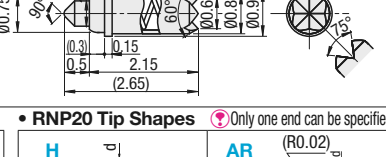
**RNP85**



**RNP60ST**  
(High Frequency Compatible)  
⊗Tip Shapes cannot be specified.



**RNP80ST**  
(High Frequency Compatible)  
⊗Tip Shapes cannot be specified.




No.	Part	Material	Surface Treatment
①	Plunger	EN CW101C Equiv.	Gold Plating on Nickel Undercoat
②	Barrel	Brass*	Gold Plating on Nickel Undercoat*
③	Spring	Spring Steel (JIS-SWP)	Gold Plating

\*RNP30 and 38 are treated with gold plating on phosphor bronze. RNP38N is treated with gold clad plating and RNP57 is treated with gold plating on German silver, nickel undercoat. RNP60ST and 80ST are treated with gold plating on EN CW101C Equiv. nickel undercoat. Tip of RNP20 is ISO-TC90 Equiv., the material of barrel is gold clad.


• RNP30, RNP38, RNP50, RNP64 Tip Shapes

Only one end can be specified.


**H**




**F**



**AR**




**AH**




• RNP20 Tip Shapes

Only one end can be specified.

**H**




**AR**




• RNP38N, RNP57, RNP85 Tip Shapes

Only one end can be specified.


**H**




**N**



**C**



**AH**



Part Number		Mounting Pitch (min)	Full Stroke	Spring Pressure		Allowable Current	Resistance	Replacement Cycle (Reference)	d	d1	d2	Unit Price 1 ~ 69 pcs.	Volume Discount Rate	
Type	No.			Initial	2/3 Stroke								70~99	100~500
RNP	20	0.3mm	1.3mm	2gf	6gf	0.5A	300mΩ	60,000 times	0.12	-	-			
	30		0.8mm	3gf	15gf			100,000 times	0.15	0.1	0.1			
	38	0.5mm	1.0mm	5gf	15gf		60mΩ	200,000 times	0.2	0.15	0.15			
	38N		0.98mm	5gf	25gf			100,000 times	0.22	-	0.15			
	50	0.8mm	1.0mm	3gf	25gf	1A	50mΩ	200,000 times	0.3	0.2	0.2			
	57		0.98mm	13gf	30gf			300,000 times	0.3	-	0.2			
	64		1.0mm	20gf	30gf			200,000 times	0.38	0.3	0.25			
	85		0.98mm	22gf	35gf			100,000 times	0.50	-	0.3			
	60ST	0.6mm	0.5mm	10gf	25gf									
	80ST	1.0mm	0.5mm	11gf	30gf									

For orders larger than indicated quantity, please request a quotation.



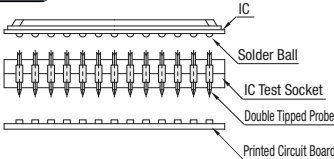
Part Number - Tip Shape

RNP20 - AR

RNP85 - N

RNP60ST

**ex** Used for inspecting boards and IC inspection sockets.



■Reference Barrel Hole Dia.

Part Number	Barrel O.D.	Reference Barrel Hole Dia.
RNP20	0.20	0.22
RNP30	0.30	0.32
RNP38	0.38	0.40
RNP38N	0.38	0.40
RNP50	0.50	0.52
RNP57	0.57	0.59
RNP64	0.64	0.66
RNP85	0.85	0.87
RNP60ST	0.6	0.65
RNP80ST	0.8	0.85

# Contact Probes, Receptacles

Minimum Mounting Pitch 0.5mm / 0.6mm / 0.8mm / 0.9mm / 1.0mm Series

■ **Features:** Receptacle's stopper portion is machined slightly smaller in I.D. to avoid probes from being pressed in too far.

■ **Contact Probes - Minimum Mounting Pitch 0.5mm**

■ **Receptacles - Minimum Mounting Pitch 0.5mm**

RoHS

**NP26**

Tip Shape Selection

4.5±0.1\* (2.0±0.1)

10.0±0.1

0.028

0.040

0.1

12.9

0.028

0.1

Stopper

■ **Contact Probes**

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Gold Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

■ **Receptacles**

Material	Surface Treatment
Phosphor Bronze	Gold Plating on Nickel Undercoat

\* The tip length of certain tip shape is 2.0.  
⚠ Pull out prevention measure applied on Probes.

## ■ Contact Probes

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Gold Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

## ■ Receptacles

Material	Surface Treatment
Phosphor Bronze	Gold Plating on Nickel Undercoat

## • NP26 Tip Shapes

■ **Contact Probes - Minimum Mounting Pitch 0.6mm**

■ **Receptacles - Minimum Mounting Pitch 0.6mm**

RoHS

**NP31**

Tip Shape Selection

4.5±0.1\* (2.0±0.1)

10.0±0.1

0.021

0.031

0.040

0.1

12.7

0.033

0.1

Stopper

■ **Contact Probes**

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

■ **Receptacles**

Material	Surface Treatment
Phosphor Bronze	Gold Plating on Nickel Undercoat

\* The tip length of certain tip shape is 2.0.  
⚠ Pull out prevention measure applied on Probes.

## • NP31, NP31HD Tip Shapes

⚠ Tip Shapes D, G and J are not available for NP31HD.

■ **Contact Probes - Minimum Mounting Pitch 0.8mm**

■ **Receptacles - Minimum Mounting Pitch 0.8mm**

RoHS

**NP38**

Tip Shape Selection

4.5±0.1\* (2.0±0.1)

10.0±0.2

0.029

0.038

0.050

0.1

12.8

0.04

0.1

Stopper

■ **Contact Probes**

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

■ **Receptacles**

Material	Surface Treatment
Brass	Gold Plating on Nickel Undercoat

\* The tip length of certain tip shape is 2.0.  
⚠ Pull out prevention measure applied on Probes.

## • NP38 Tip Shapes

■ **Contact Probes - Minimum Mounting Pitch 0.9mm**

■ **Receptacles - Minimum Mounting Pitch 0.9mm**

RoHS

**NP20**

Tip Shape Selection

4.0±0.1\* (3.0±0.1)

15.0±0.1

0.048

0.065

0.1

19.6

0.051

0.1

Stopper

■ **Contact Probes**

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

■ **Receptacles**

Material	Surface Treatment
Brass	Gold Plating on Nickel Undercoat

\* The tip length of certain tip shape is 3.0.

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Phosphor Bronze	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

⚠ The receptacle has a stopper that prevents the probe from being pulled out.

## ■ Receptacles

Material	Surface Treatment
Brass	Gold Plating on Nickel Undercoat

⚠ The end shape of receptacle can be selected from Receptacle End Shapes below.

## • NP20 Tip Shapes \* For Tip Shape C, J and N, the material of plunger is EN CW101C Equiv.

## • Receptacle End Shapes

■ **Contact Probes - Minimum Mounting Pitch 1.0mm**

■ **Receptacles - Minimum Mounting Pitch 1.0mm**

RoHS

**NP58**

Tip Shape Selection

4.5±0.1\* (2.0±0.1)

14.0±0.1

0.058

0.080

0.1

18.6

0.063

0.1

Stopper

■ **Contact Probes**

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

■ **Receptacles**

Material	Surface Treatment
Brass	Gold Plating on Nickel Undercoat

\* The tip length of certain tip shape is 2.0.

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel JIS-S45W	Gold Plating

⚠ The receptacle has a stopper that prevents the probe from being pulled out.

## ■ Receptacles

Material	Surface Treatment
Brass	Gold Plating on Nickel Undercoat

## • NP58 Tip Shapes

■ Contact Probes							■ Receptacles				
Part Number	Mounting Pitch (mm)	Full Stroke	Spring Pressure Initial	2/3 Stroke	Allowable Current	Resistance	Part Number	Matching Contact Probe	Mounting Hole for Press-Fitting Dimension (Reference)	Unit Price (1 - 69 pcs)	Volume Discount Rate
NP26	0.5mm	2.0mm	3gf	16gf	0.5A	250mΩ	NR26	NP26	0.34~0.35mm		
NP31	0.6mm	2.0mm	2gf	22gf	1A	180mΩ	NR31	NP31	0.42~0.43mm		
NP31HD	0.6mm	2.0mm	6gf	23gf			NR31HD	NP31HD			
NP38	0.8mm	2.0mm	15gf	35gf	1A	180mΩ	NR38	NP38	0.53~0.54mm		
NP20	0.9mm	2.0mm	20gf	50gf	1A	100mΩ	NR20K	NP20	0.63~0.64mm		
NP58	1.00mm	2.0mm	25gf	50gf	1A	100mΩ	NR58	NP58	0.78~0.79mm		

⚠ Full Stroke in ( ) is applicable to Tip Shape C, J, and N.

⚠ For orders larger than indicated quantity, please request a quotation.

⚠ For orders larger than indicated quantity, please request a quotation.

■ Receptacles with Lead Wire		Part Number	Lead Wire Color Selection	Lead Wire Length (mm)	Lead Wire	Lead	Maximum Operating Voltage	Receptacles Used	Lead Wire Length 400mm Unit Price (1 - 69 pcs)	Volume Discount Rate	Lead Wire Length 1000mm Unit Price (1 - 69 pcs)	Volume Discount Rate
		NRB26										
		NRB31	W (White)	400	0.03	0.05x7 pcs.	250V	NR26	560	550	540	
		NRB38	R (Red)	1000	0.04	0.08x7 pcs.		NR31	420	410	400	
		NRKB20	BL (Blue)		0.04	0.08x7 pcs.		NR38	350	340	330	
		NRB58			0.04	0.08x7 pcs.		NR20K-B	300	290	280	
								NR58	280	270	260	

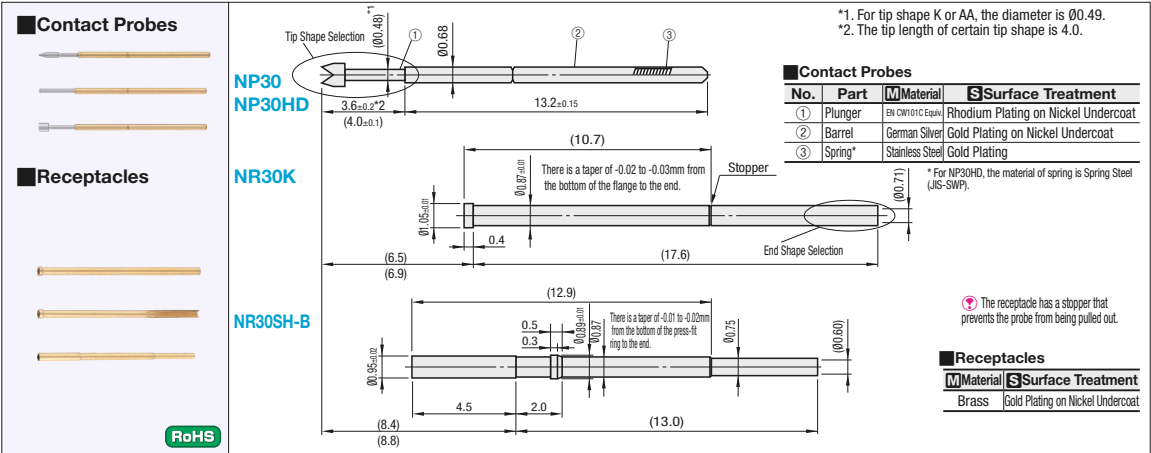
⚠ For orders larger than indicated quantity, please request a quotation.

Ordering Example  
Part Number - Tip Shape - Lead Wire Color - Lead Wire Length  
NP26 - A - A -  
NP38 - B - R - 1000  
NR20K - B - R - 400

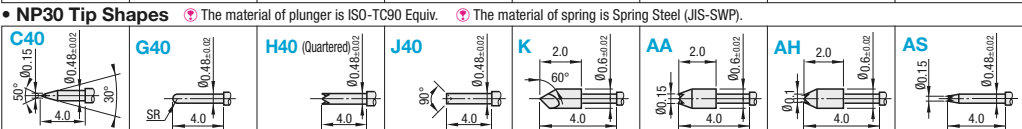
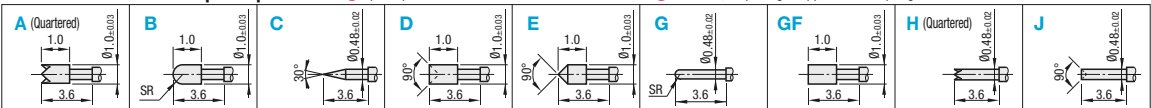
# Contact Probes, Receptacles

## Minimum Mounting Pitch 1.27mm Series

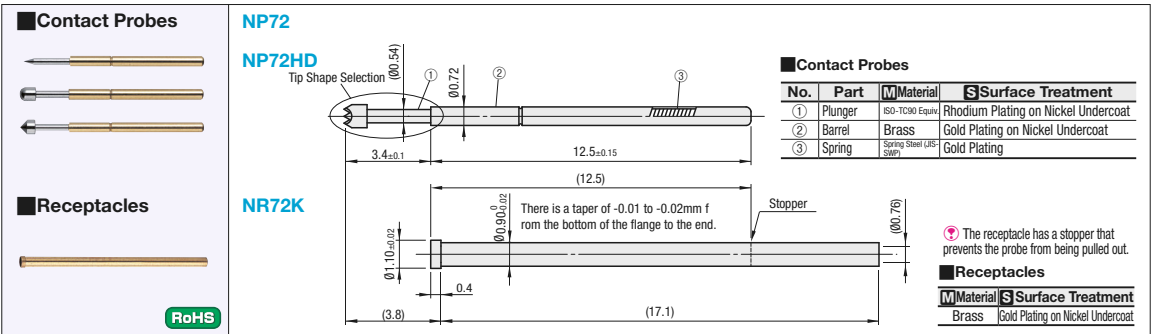
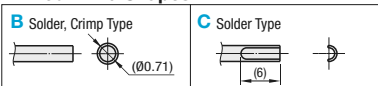
■ **Features:** Receptacle's stopper portion is machined slightly smaller in I.D. to avoid probes from being pressed in too far.



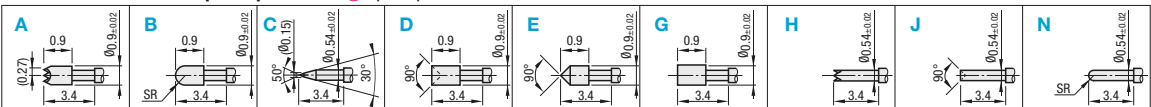
■ **NP30 and NP30HD Tip Shapes** ⚠ Tip Shapes E and J are not available for NP30HD. ⚠ For NP30, no plating is applied to the spring.



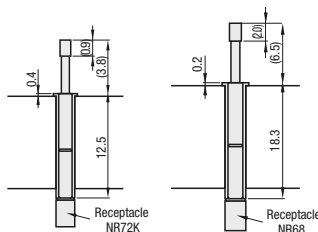
■ **NR30K End Shapes**



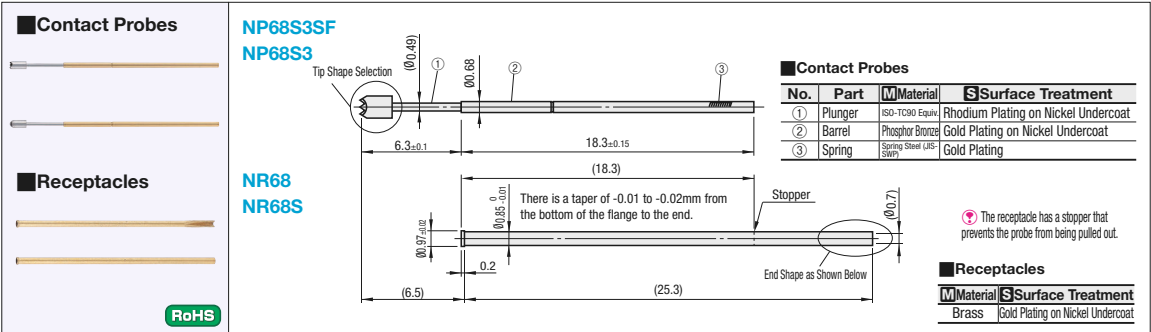
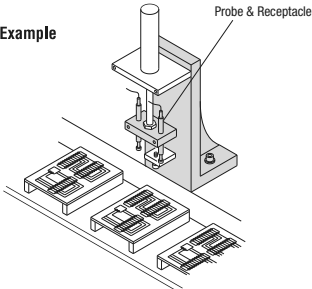
■ **NP72 and NP72HD Tip Shapes** ⚠ Tip Shapes E and J are not available for NP72HD.



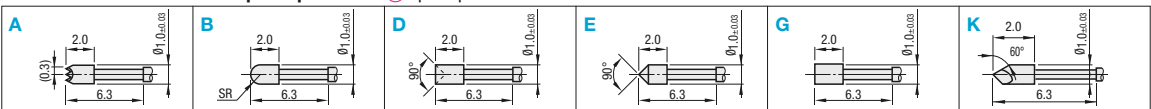
Example ■ Example of Inserting Contact Probe to Receptacle



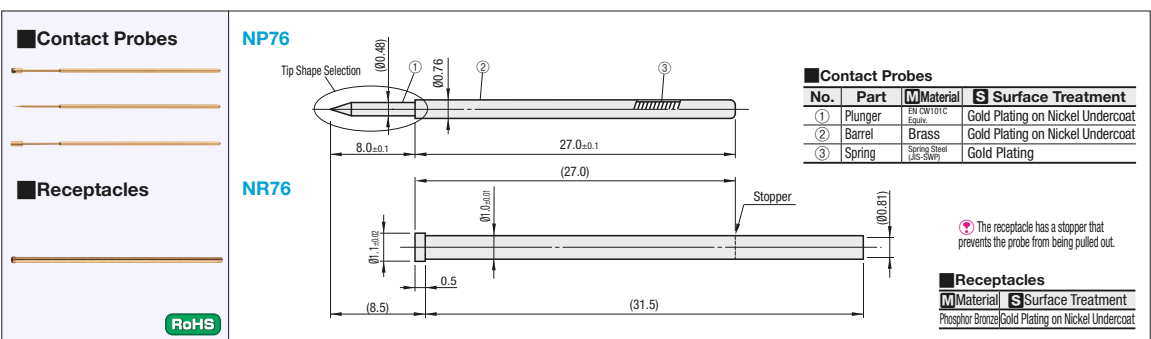
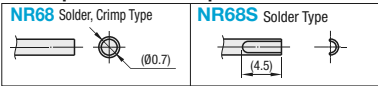
Example Probe & Receptacle



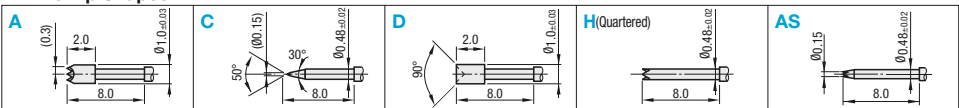
■ **NP68S3SF and NP68S3 Tip Shapes** ⚠ Tip Shape K is not available for NP68S3.



■ **Receptacles End Shapes**



■ **NP76 Tip Shapes**



■ **Contact Probes**

Part Number	Mounting Pitch (min.)	Full Stroke	Spring Pressure Initial	Spring Pressure 2/3 Stroke	Allowable Current	Resistance	Replacement Cycle (Reference)	Unit Price 1 ~ 69 pcs	Volume Discount Rate 70 ~ 99	Volume Discount Rate 100 ~ 500
NP30	1.27mm	2.5mm (2.0mm)	5gf (40gf)	45gf (80gf)	1A	100mΩ	50,000 times			
NP30HD			15gf	46gf						
NP72	1.27mm	2.5mm	30gf	50gf	1A	80mΩ	25,000 times			
NP72HD			15gf	100gf						
NP68S3SF	1.27mm	4.3mm	25gf	50gf	2A	80mΩ	30,000 times			
NP68S3			30gf	90gf						
NP76	1.27mm	6.0mm	60gf	150gf	1.3A	80mΩ	300,000 times			

⚠ Full Stroke in ( ) is applicable to Tip Shape C40, E40, G40, H40, J40, K, AA, AH and AS. ⚠ For orders larger than indicated quantity, please request a quotation.

■ **Receptacles** ⚠ For NR30K, NR68 and NR68S, please select the end shape.

Part Number	Matching Contact Probe	Mounting Hole for Press-Fitting Dimension (Reference)	Unit Price 1 ~ 69 pcs	Volume Discount Rate 70 ~ 99	Volume Discount Rate 100 ~ 500
NR30K	NP30	0.85 ~ 0.86mm			
NR30SH-B	NP30HD	0.87 ~ 0.88mm			
NR72K	NP72	0.88 ~ 0.89mm			
	NP72HD				
NR68	NP68S3SF	0.83 ~ 0.84mm			
NR68S	NP68S3				
NR76	NP76	0.97 ~ 0.98mm			

⚠ For orders larger than indicated quantity, please request a quotation.

Part Number	Lead Wire Color Selection	Lead Wire Length (mm)	Lead Wire	Lead	Maximum Operating Voltage	Receptacles Used	Lead Wire Length 400mm Unit Price 1 ~ 69 pcs	Lead Wire Length 1000mm Unit Price 1 ~ 69 pcs	Volume Discount Rate 70 ~ 99	Volume Discount Rate 100 ~ 500
NRKB30			00.4	00.08x7 pcs.		NR30K-B				
NRSHB30			00.4	00.08x7 pcs.		NR30SH-B				
NRKB72			00.63	00.12x7 pcs.		NR72K				
NRB68			00.63	00.12x7 pcs.		NR68				
NRB76			00.63	00.12x7 pcs.		NR76				

Ordering Example Part Number - Tip [End] Shape - Lead Wire Color - Lead Wire Length

NP30 - A - R - 1000  
NP68S3SF - B - W - 1000  
NR30K - B - R - 1000  
NR72K - B - W - 1000  
NRSHB30 - B - R - 1000  
NR68S - B - W - 1000

⚠ For orders larger than indicated quantity, please request a quotation.







# Contact Probes, Receptacles

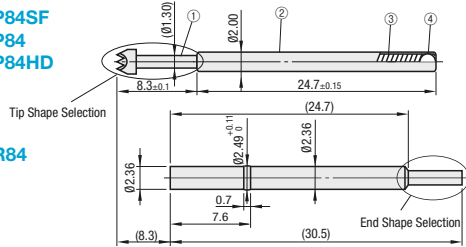
## Minimum Mounting Pitch 3.0mm / 3.5mm / 4.5mm Series

■ **Features:** Receptacle's stopper portion is machined slightly smaller in I.D. to avoid probes from being pressed in too far.

### Contact Probes - Minimum Mounting Pitch 3.0mm



NP84SF  
NP84  
NP84HD



### Contact Probes

No.	Part	Material	Surface Treatment
①	Plunger	EN CW101C Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass	Gold Plating on Nickel Undercoat
③	Spring	Stainless Steel	-
④	Ball	Stainless Steel	-

④ Inside of Probe Barrel is greased.

④ The receptacle has a stopper that prevents the probe from being pulled out.

### Receptacles

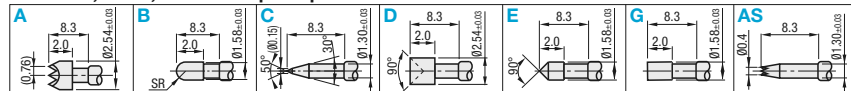
No.	Material	Surface Treatment
⑤	German Silver	Gold Plating on Nickel Undercoat
⑥	Brass	Gold Plating on Nickel Undercoat

### Receptacles - Minimum Mounting Pitch 3.0mm

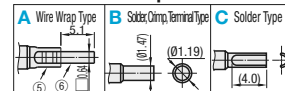


NR84

### NP84SF, NP84, NP84HD Tip Shapes



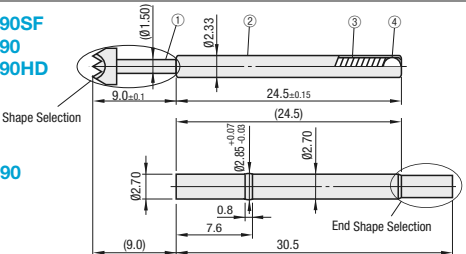
### NR84 End Shapes



### Contact Probes - Minimum Mounting Pitch 3.5mm



NP90SF  
NP90  
NP90HD



### Contact Probes

No.	Part	Material	Surface Treatment
①	Plunger	EN CW101C Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel (JIS-SWP)	Gold Plating
④	Ball	JIS-SUJ (Bearing Steel)	Gold Plating

④ Inside of Probe Barrel is greased.

④ The receptacle has a stopper that prevents the probe from being pulled out.

### Receptacles

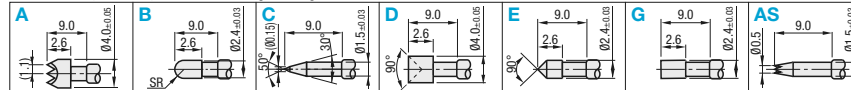
Material	Surface Treatment
German Silver	Gold Plating on Nickel Undercoat

### Receptacles - Minimum Mounting Pitch 3.5mm

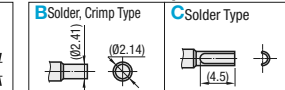


NR90

### NP90SF, NP90, NP90HD Tip Shapes



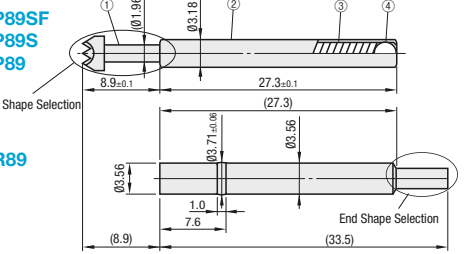
### NR90 End Shapes



### Contact Probes - Minimum Mounting Pitch 4.5mm



NP89SF  
NP89S  
NP89



### Contact Probes

No.	Part	Material	Surface Treatment
①	Plunger	EN CW101C Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass	Gold Plating on Nickel Undercoat
③	Spring	Stainless Steel	Gold Plating
④	Ball	JIS-SUJ (Bearing Steel)	Gold Plating

④ Inside of Probe Barrel is greased.

④ The receptacle has a stopper that prevents the probe from being pulled out.

### Receptacles

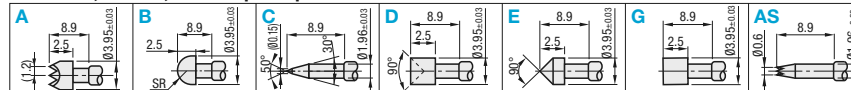
Material	Surface Treatment
German Silver	Gold Plating on Nickel Undercoat

### Receptacles - Minimum Mounting Pitch 4.5mm

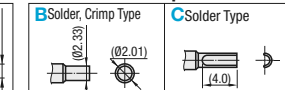


NR89

### NR89SF, NP89S, NP89 Tip Shapes



### NR89 End Shapes



### Contact Probes

Part Number	Mounting Pitch (mm)	Full Stroke	Spring Pressure Initial	Spring Pressure 2/3 Stroke	Allowable Current	Resistance	Replacement Cycle (Reference)	Unit Price (1-69 pc)	Volume Discount Rate (70-99)	Volume Discount Rate (100-500)
NP84SF	3.0mm	6.3mm	10gf	50gf	1.5A	80mΩ	300,000 times			
NP84			45gf	120gf						
NP84HD			77gf	200gf						
NP90SF	3.5mm (4.5mm)	6.4mm	10gf	50gf	1.5A	80mΩ	300,000 times			
NP90			40gf	150gf						
NP90HD			146gf	250gf						
NP89SF	4.5mm	6.4mm	30gf	100gf	1.5A	80mΩ	300,000 times			
NP89S			84gf	275gf						
NP89			170gf	450gf						

④ Mounting Pitch in ( ) is applicable to Tip Shape A and D.

④ For orders larger than indicated quantity, please request a quotation.

### Receptacles

Part Number	Matching Contact Probe	Mounting Hole for Press-Fitting Dimension (Reference)	Unit Price (1-69 pc)	Volume Discount Rate (70-99)	Volume Discount Rate (100-500)
NR84	NP84SF NP84 NP84HD	2.41~2.46mm			
NR90	NP90SF NP90 NP90HD	2.77~2.82mm			
NR89	NP89SF NP89S NP89	3.58~3.63mm			

④ For NR84, NR89 and NR90, please select the end shape.

### Receptacles with Lead Wire



Part Number	Lead Wire Color Selection	Lead Wire Length (mm)	Lead Wire	Lead	Receptacles Used
NR84	W (White)	400	01.0	00.08x40 pcs.	NR84-C
NR90	R (Red)	1000	01.0	00.08x40 pcs.	NR90-C
NR89	BL (Blue)		01.0	00.08x40 pcs.	NR89-C

④ For orders larger than indicated quantity, please request a quotation.

Part Number	Tip (End) Shape	Lead Wire Color	Lead Wire Length
NP84	G		
NR90	B		
NR84		W	1000
NR90		BL	400

# Turn Probes

■ **Features:** The plunger rotates while stroking, breaking flux and oxide film. Mainly used for PCB open-shot testing. Receptacle stopper is machined smaller in I.D. to prevent fall-off of Probe.

### Turn Probes



### Turn Probes

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Rhodium Plating on Nickel Undercoat
②	Barrel	Brass*	Gold Plating on Nickel Undercoat
③	Spring	Spring Steel (JIS-SWP)	Gold Plating on Nickel Undercoat
④	Ball*	Brass	Gold Plating on Nickel Undercoat

\* For TNP60, the material of barrel is German silver. \* Ball is not included in TNP72.

④ Inside of Probe Barrel is greased.

### Receptacles for Turn Probes



### Turn Probe Tip Shape (C, K) Dimensions

Part Number	d	d1	(L)	(L1)
TNP72	0.53	0.53	1.0	-
TNP10	0.73	1.0	1.4	2.5
TNP60	1.0	2.0	1.9	2.0

TNP72

NR72

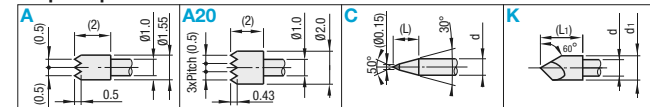
TNP10

NR10

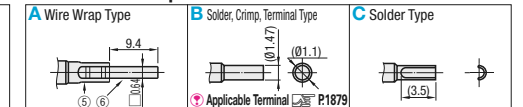
TNP60

NR60

### Tip Shapes



### NR60 End Shapes



### Turn Probes

Part Number	Mounting Pitch (mm)	Full Stroke	Spring Pressure Initial	Spring Pressure 2/3 Stroke	Allowable Current	Resistance	Replacement Cycle (Reference)	Unit Price (1-69 pc)	Volume Discount Rate (70-99)	Volume Discount Rate (100-500)
TNP72	1.27mm	4.5mm	10gf	50gf	1.5A	250mΩ	300,000 times			
TNP10	1.9mm	5.5mm	20gf	140gf		200mΩ	300,000 times			
TNP60	2.54mm	6.4mm	50gf	165gf		200mΩ	100,000 times			

④ For orders larger than indicated quantity, please request a quotation.

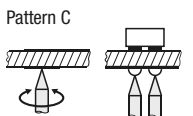
### Receptacles for Turn Probes

Part Number	Applicable Turn Probes	Mounting Hole for Press-Fitting Dimension (Reference)	Unit Price (1-69 pc)	Volume Discount Rate (70-99)	Volume Discount Rate (100-500)
NR72	TNP72	0.93~0.94mm			
NR10	TNP10	1.39~1.41mm			
NR60	TNP60	1.77~1.79mm			

④ For NR60, please select the end shape.

④ For orders larger than indicated quantity, please request a quotation.

Part Number	Tip (End) Shape
TNP72	C
TNP60	A
NR60	C





# Contact Probes Assemblies

Standard, Screw Mounting, Resin Sleeve, Spring Built-In, Thread Wire Connection

■ **Integrated Probe Assembly Features:** One-piece Contact Probe is constructed by one continuous pin from the tip to the end. Less contact points and good conductivity enable stable electrical continuity, regardless of the stroke length.

**Standard**

**GNP6**  
**GNP8**  
**GNP12**

Tip Shape Selection

14.0 0.1 8.9 1.6 (3.5)

(28.0)

RoHS

Applicable Terminal P1879

⚡ The matching end also strokes according to the stroke of the contact component.

Part Number	d	d1	d2	d3	d4
GNP6	0.6	0.65	0.5	(0.45)	0.3
GNP8	0.8	0.8	0.6	(0.55)	0.4
GNP12	1.2	1.25	1.05	(0.95)	0.8

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Gold Plating on Nickel Undercoat
②	Spring	Spring Steel (JIS-SWSP)	Gold Plating
③	Sleeve	Brass*	Gold Plating on Nickel Undercoat
④	Collar	Brass	Nickel Plating

\*The material of GNP6 is Phosphor Bronze.

• GNP6, GNP8, GNP12 Tip Shapes

**A**

**B**

**C**

**G**

**H**

■ **Features:** Screw Mounting Type allows height adjustments.

**Screw Mounting**

**FNP10**  
**FNP10N** (with Nut)  
**FNP10HDN** (with Nut)

Tip Shape Selection

14.0 0.5 9.0 1.70 0.100

(28.0)

RoHS

Applicable Terminal P1879

⚡ The matching end also strokes according to the stroke of the contact component.

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Gold Plating on Nickel Undercoat
②	Spring	Spring Steel (JIS-SWSP)	Gold Plating
③	Sleeve	ISO-TC90 Equiv.	Nickel Plating
④	Collar	Brass	Gold Plating on Nickel Undercoat

Part	Material	B	(e)	T
Nut (FNP10N)	EN 1.4301 Equiv.	4	4.6	1.6
Nut (FNP13N)	EN 1.4301 Equiv.	5	5.8	2

• FNP10, FNP10N, FNP10HDN Tip Shapes

**A15**

**D15**

**E15**

**A18**

**D18**

**E18**

• FNP13, FNP13N, FNP13HDN Tip Shapes

**A**

**D**

**E**

■ **Features:** Resin Sleeve Type has resin sleeves, and can be used to avoid electrical continuity of fixtures.

**Resin Sleeve**

**FNP22SF**  
**FNP22**

Tip Shape Selection

16.0 2.0 14.0 0.10

(31.0)

RoHS

Applicable Terminal P1879

⚡ The matching end also strokes according to the stroke of the contact component.

\* For TH shape, this dimension is 34.0.

**FNP40SF**  
**FNP40**

Tip Shape Selection

21.0 2.0 13.0 0.146

(32.0)

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Nickel Plating
②	Sleeve	Polycetal	-
③	Spring	Stainless Steel	-

• FNP22SF, FNP22 Tip Shapes

**A**

**C**

**H (Quartered)**

**TH**

⚡ For Shape A, the material of head and shaft is brass and ISO-TC90 Equiv. respectively.

⚡ For Shape TH, the material of holder is BS and that of needle is JIS-SWRH.

• FNP40SF and FNP40 Tip Shapes

**A**

**C**

**H (Quartered)**

**TH**

⚡ For Shape A, the material of head and shaft is ISO-TC90 Equiv. and JIS-SWRH respectively.

⚡ For Tip Shape C, the material of plunger is JIS-SWRH.

⚡ For Shape TH, the material of holder is BS and that of needle is JIS-SWRH.

■ **Features:** Spring Built-In Type houses a spring, which causes no external interference and keeps out dust.

**Spring Built-In**

**FNPS22**

Tip Shape Selection

16.0 1.0 22.0 0.10

(43.0)

RoHS

Applicable Terminal P1879

⚡ The matching end also strokes according to the stroke of the contact component.

No.	Part	Material	Surface Treatment
①	Head	Brass	Electroless Nickel Plating
②	Plunger	JIS-SWRH	Nickel Plating
③	Bearing	Brass	Electroless Nickel Plating
④	Collar	Stainless Steel (JIS-SWSP)	-
⑤	Spring	Spring Steel (JIS-SWSP)	Gold Plating
⑥	Sleeve	German Silver	Electroless Nickel Plating

**FNPS35**

Tip Shape Selection

16.0 1.0 22.0 0.146

(43.0)

RoHS

Applicable Terminal P1879

⚡ The matching end also strokes according to the stroke of the contact component.

No.	Part	Material	Surface Treatment
①	Head	Brass	Electroless Nickel Plating
②	Plunger	ISO-TC90 Equiv.	Electroless Nickel Plating
③	Bearing	Brass	Electroless Nickel Plating
④	Collar	Brass	Electroless Nickel Plating
⑤	Spring	Stainless Steel	-
⑥	Sleeve	Brass	Electroless Nickel Plating

• FNPS22 Tip Shapes

**A**

**B**

**C**

**H**

**TH**

⚡ For Shape TH, the material of holder is BS and that of needle is JIS-SWRH.

• FNPS35

**A**

**B**

**C**

**H**

■ **Features:** No soldering is required as round crimp terminals and round lead wires are tucked in the threads and secured with nuts.

**Thread Wire Connection**

**MNP50**

Tip Shape Selection

7.0 15.0 1.5 1.6 (8.4)

(23.5)

RoHS

⚡ Avoid tightening the nut exceeding the torque value of 0.98 N / m.

⚡ The matching end also strokes according to the stroke of the contact component.

Accessory: Nut (2 pcs.)

No.	Part	Material	Surface Treatment
①	Plunger	ISO-TC90 Equiv.	Gold Plating on Nickel Undercoat
②	Spring	Spring Steel (JIS-SWSP)	Gold Plating
③	Sleeve	Brass	Gold Plating on Nickel Undercoat
④	Collar	Brass	Nickel Plating
⑤	Nut	Stainless Steel	-

• MNP50 Tip Shapes

**A**

**B**

**C**

**G**

**G8**

**J**

Part Number	Mounting Pitch (min.)	Full Stroke	Spring Pressure Initial	2/3 Stroke	Allowable Current	Resistance	Replacement Cycle (Reference)	Mounting Hole for Press-Fitting Dimension (Reference)	Unit Price (1 - 69 pcs (s))	Volume Discount Rate 70 - 99	100 - 500
GNP6	0.8mm	3.4mm	26gf	80gf	0.5A	50mΩ	100,000 times	0.48 - 0.5mm			
GNP8	1.0mm	3.4mm	23gf	80gf	1A		300,000 times	0.58 - 0.6mm			
GNP12	1.5mm	4.0mm	32gf	95gf	3A			1.03 - 1.05mm			
FNP10	3.0mm	4.5mm	60gf	105gf	3A	80mΩ	300,000 times	M2×0.25			
FNP10N (with Nut)	6.0mm		56gf	175gf							
FNP10HDN (with Nut)			60gf	100gf	3A	80mΩ	300,000 times	M2.5×0.35			
FNP13	5.0mm	4.0mm	58gf	175gf							
FNP13N (with Nut)	7.0mm		150gf	100gf							
FNP13HDN (with Nut)			150gf	220gf	3A	80mΩ	300,000 times	1.98 - 2.00mm			
FNP22SF	3.0mm	7.0mm	0gf	150gf							
FNP22			0gf	220gf							
FNP40SF	5.0mm	17.0mm*	0gf	300gf				3.48 - 3.50mm			
FNP40	3.0mm	8.0mm	51gf	180gf	3A	80mΩ	300,000 times	1.98 - 2.00mm			
FNPS25	4.0mm	8.0mm	66gf	200gf	5A	35mΩ	300,000 times	3.17 - 3.19mm			
FNPS35	7.0mm < 9.0mm >	7.6mm	228gf	455gf				4.18 - 4.2mm			
MNP50											

⚡ Mounting pitches in ( ) are applicable to the contact probes with nut.

⚡ MNP50 mounting pitches in < > are applicable to G8 tip shape. \* Tip shape A is 14.0mm, and TH is 9.5mm.



Ordering Example

Part Number	Tip Shape
GNP12	G
FNP10N	E15
FNP13	A
MNP50	G8



Example

