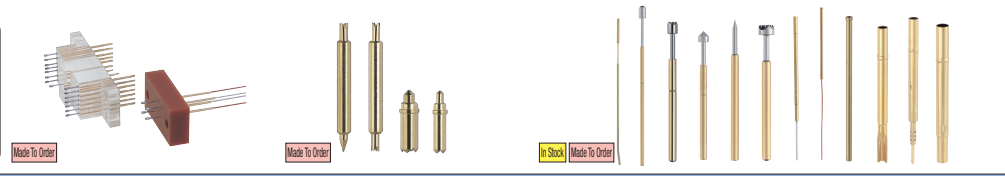


Contact Probes

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

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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

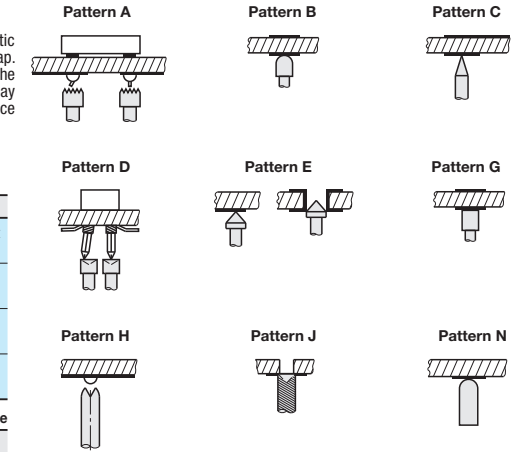
Type	Typical Uses
Contact Probes	Suitable for extensive use in testing printed circuit boards, mounted circuit boards, semiconductors/in-circuit, harnesses, etc.
Double Tipped Probes	Suitable for narrow pitch mounting since receptacle is not needed.
Turn Probes	The plunger rotates with stroke movements 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

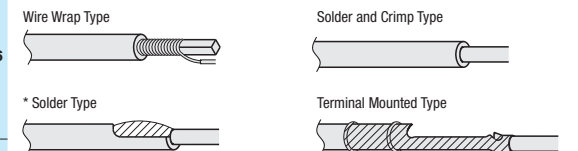
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Type	Mounting Pitch (min.)	Full Stroke	Spring Pressure (2/3 Stroke)	Part Number		Page
				Probe	Receptacles	
Double Tipped Probes	0.3	1.3	6	RNP20	-	P.1866
				RNP30	-	
				RNP38	-	
	0.5	1.0	15	RNP38N	-	
				RNP50	-	
				RNP57	-	
	0.8	0.98	25	RNP64	-	
				RNP60ST	-	
				RNP85	-	
	1.0	0.98	30	RNP85	-	
				RNP80ST	-	
				NP26	NR26	
Contact Probe	0.50	2.0	16	NP31	NR31/NR31S	P.1867
				NP31HD	NR38/NR38S	
				NP38	NR20K	
	0.60	2.0	22	NP58	NR58	P.1868
				NP30	NR30K/NR30SH-B	
				NP72	NR72K	
	0.80	2.5	50	NP68SF	NR68/NR68S	P.1870
				NP68S3	NR76	
				NP76	NR76	
	0.90	4.3	90	NP68SF	NR68/NR68S	P.1871
				NP68	NR88	
				NP88	NR88	
1.00	2.5	100	NP45S3SF	NR45S	P.1872	
			NP45S3	NR45		
			NP45	NR45/NR45T		
Turn Probe	1.40	4.3	50	NP120	NR120/NR120T	P.1873
				NP120HD	-	
				TP604	NR604	
	1.50	3.0	50	NP604	NR604	P.1874
				NP604HD	NR60	
				NP60SF	NR60	
	2.00	6.4	100	NP60S	NR60	P.1875
				NP60/NP60H	NR84	
				NP84SF	NR84	
	2.54	6.4	170	NP84	NR84	P.1876
				NP84HD	NR90	
				NP90SF	NR90	
3.00	6.4	250	NP90	NR90	P.1877	
			NP90HD	NR89		
			NP89SF	NR89		
3.50	6.4	275	NP89S	NR89	P.1878	
			NP89SF	-		
			NP89	-		
4.50	7.0	450	NP16	-	P.1876	
			TNP72	NR72		
			TNP10	NR60		
Integrated Probe	1.27	4.5	50	GNP6	-	P.1877
				GNP8	-	
				GNP12	-	
	1.90	5.5	140	FNP10	-	
				FNP13	-	
				FNP13	-	
	2.54	6.4	165	FNP22SF	-	
				FNP22	-	
				FNP22	-	
	3.00	7.0	100	FNP22	-	
				FNP22	-	
				FNP22	-	
4.00	8.0	180	FNP22	-		
			FNP22	-		
			FNP22	-		
5.00	17.0	220	FNP22	-		
			FNP22	-		
			FNP22	-		
7.00	7.6	455	FNP22	-		
			FNP22	-		
			FNP22	-		

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.