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Cleaning the Probe Pin

Required Tools: Small head screwdriver, brushes, horse hair and nylon bristles, fine diameter <. 003" 0.076mm brass or copper bristles, fiberglass. The type of brush used will depend on the type of cleaning required.

Regularly brushing with horsehair / nylon brush will slow the build-up of thick layers of transfer debris.

We recommend **progressive cleaning** trials, gradual to more aggressive, to restore to acceptable condition.

Regular maintenance, brush-cleaning cycles should be employed as part of a preventive maintenance program. The scope of any preventive maintenance program is application specific.

Gentle:
Using compressed air or vacuum and horsehair or nylon brushing of the tips of the pins and socket cavity. This removes loose foreign material with slight abrasive nature from coarse horsehair bristle or nylon fibers.

Blue-tack stickum, pressed directly to tips of the pins. A sticky, tacky material used to remove contamination.

Brushing the socket in an upside down position with a horsehair brush dipped in alcohol or jewelry cleaner.
Alcohol will clean the surface of a contact with some abrasion from the horsehair fibers. Jewelry cleaner with an active component of citric acid will attack oxides on the surface.

We recommend the socket to be cleaned upside down so contaminants are not flushed into the electrical path, down the ID of the barrel and onto the PCB pads. Only clean the tips of the pins. Rinse as required.

The above methods tend to disturb or remove oxides but leave the conductive Tin (Sn) on the contact areas. These surfaces, while conductive, are prone to renewed oxide insulating layer growth.

- **Cleaning with Hand Brushes:** Use the horsehair or nylon brush first when cleaning probe pin tips. Use the brushes to remove debris from the tips of the pins.
  Brush 50-60 even strokes in one direction, then brush 50-60 strokes at 90Deg, 180Deg, and 270Deg from the original direction.

Next level of aggressive:
Brushing with more aggressive fiberglass, fine brass bristles brush or copper wire brush <.003" Wire.
Abrasive cloth, polishing paper Mipox, water soluble polishing paste.

WIRE and fiber glass BRUSH NOTE!
Only the tips of the brush do the work. Extra force and longer time will not aid in cleaning effort. Aggressive brushing can damage the pins by bending the pins or removing the plating. Clean for very short intervals 5-10 seconds and very light pressure.

All of the above abrade the surface of the plated pins potentially leading to more frequent cleaning. Smoothing of the surface with a horsehair brush can dress/smooth the surface after cleaning with a more aggressive brush.

- Care must be taken with the brass brush not to damage the plating on the probe pins.
  ***WARNING:** Probe pins are delicate. If used improperly, even nylon or soft brass brushes can damage the probe pins. Use only enough force to dress the surface of the contact areas removing the transferred Tin / Sn Oxide. Use soft brush strokes, only engaging the tips of the brush fill.

Chemical cleaning:
Use of various chemicals to remove the Sn from the surface of the pin tip contact points can be employed: The objective is to remove the Insulating Oxide layer (SnO_2) and the underlying Tin (Sn) transferred to the contact areas of the gold plated contact.

Rinsing:
With any liquid cleaning, rinsing is extremely critical. After liquid cleaning the pins must be rinsed and dried thoroughly. Rinsing and drying methods include DI water and alcohol rinse / blowing with compressed air/ heating with a heat lamp.
Clean and replace brushes as necessary. Do not use brushes for other activities. Do not cross contaminate the brushes.