**Q: Can test probes be used on closer centers than what's listed in the catalog?**
A: Yes, the center-to-center designation is based on an industry standard of commonly found center spacing on PCB's. Our 050 Series test probes and sockets can be mounted on .049", 075 on .068" and our 100 on .083" if required. Fixture designs may have to be modified because the web thickness between adjacent sockets is reduced.

**Q: Why do black residues develop on the plunger shank over time?**
A: The black residues are any combinations of flux, plating wear particles, lubricant, and or contaminants from the environment. Unless these contaminants are extremely heavy or washed down into the probe tube through improper cleaning, the black residues do not adversely affect the electrical resistance of the probe. As a fixture is cycled, air is continuously drawn across and into the probes. Contaminants in the air and from the UUT collect on the probes' surfaces and by combining these with the plating wear particles formed during sideloading from fixture cycling, create a black residue. By maintaining filters in wave soldering and reflow ovens and by using filters on the vacuum release port and covering the fixtures when not in use, contaminants will be reduced. Maintaining fixture alignment, selecting the proper point style for the intended contact, and performing proper probe and fixture maintenance will reduce Sideloading.

**Q: I need a probe with a higher temperature limit than the 250°F (120°C) that's listed in the catalog.**
A: The 250°F (120°C) temperature limit is for lubricated probes. The temperature limit is increased to 400°F (204°C) by selecting an unlubricated probe that is assembled with a stainless steel spring. Note that stainless steel springs are typically limited to the lower spring forces. Refer to QA's catalog and/or website (www.qatech.com) for availability.

**Q: Why are steel plungers (tips) recommended over beryllium copper (BeCu) for testing PCB's with no-clean flux systems?**
A: No-clean fluxes can be hard and very abrasive. Steel tips, due to their increased hardness (54-56 HRC) over BeCu (38-42 HRC), will remain sharper longer and resist abrasion better than BeCu. Note that not all point styles are available with the steel (-S) option.

**Q: What is a Factron probe tube?**
A: The Factron probe has an oversized probe tube OD. This probe tube was developed as a direct replacement to Factron probes. The OD of the probe tube is .0542" (1.377mm) versus the standard .0538" (1.367mm). This option can also be used in standard sockets that have been worn due to many probe replacements or in new sockets where high probe retention is required. The Factron probe tube is available in our 100-25 and 40 Series.

**Q: Do the probe extraction tools (PE75 and PE100) remove all probes in 100 and 075 series?**
A: No, the PE75 and PE100 are designed to remove headed probes only. These tools are ideal in cases where a large number of headed probes must be removed quickly without damaging the probe. For headless probes and probes on closer centers, tweezers or miniature precision long nose pliers are recommended. Care must be taken when removing probes that are to be reused as pliers and tweezers can damage the plating and or bend the plunger.

**Q: Probes in the 100-40, 075-40 & 050-T40 Series are available with a –D option, what does this mean?**
A: The –D stands for decreased stroke. When a –D option is selected in these series, the total stroke is reduced from .400" (10.16mm) to .250" (6.35mm). This is accomplished by using the springs from our 100-40, 075-40 & 050-T40 Series with our 100-40, 075-40 & 050-T40 Series plungers and probe tubes. This option is used when longer reach probes with higher spring forces are required.

**Q: Why is there a difference between Working Stroke and Full Stroke as listed in the catalog on some probe series while on others, they are the same?**
A: The Full Stroke is the maximum designed travel of the plunger and is the distance from full extension to full compression (bottomed out). The working stroke is the recommended design stroke and takes into account spring fatigue life. In general the working stroke is 2/3 of the full stroke. By compressing the plunger beyond the working stroke, spring life (cycle life) will be reduced. Some spring designs allow full stoke of the plunger while still providing a 1,000,000-cycle fatigue life. The fatigue life and rated stroke for each spring are listed in the catalog.

**Q: How long will my test probe last/how many cycles can I expect from my probe?**
A: The fatigue life listed in our catalog is dependent on the mechanical life cycle of the spring. In probe design where the spring is highly stressed, the fatigue life is reduced accordingly. All of our probes are routinely cycled in a controlled environment to the fatigue life indicated (Benchmark tests reports available). When running probes in a production environment there are many factors that will reduce the life cycle expectations of a probe such as: contaminants on the UUT (Unit Under Test) and in the environment, sideloading during actuation, damage to the probe's tip, plating, etc. These factors make it virtually impossible to determine how long a probe will last in a specific test environment. The best method to determine probe life is to monitor probes in the test environment and to develop a maintenance program for your specific application.

**Q: Can my termination wire be soldered to the wire wrap post (tail) on the socket?**
A: Yes, the tail is a gold and nickel plated phosphor bronze part and is easily soldered to. When feeding solder onto the tail care must be taken not to flow additional solder into the socket/tail junction. This junction is also a soldered connection and flowing additional solder into this joint will cause solder to wick into the bottom of the socket either causing a probe to be soldered into the tube or prevent a probe from being able to be fully installed in the socket.

**Q: Can the probe tube be soldered directly to the termination?**
A: Yes, although not recommended, the probe tube can be directly soldered to the termination. Probe tubes are typically made from nickel silver and this material is easily soldered to. Precautions must be taken to prevent the solder from flowing into the probe tube ID. Solder on the probe tube ID could cause the plunger to stick or prevent the plunger from compressing fully (not obtaining full plunger travel). This application is common when installing probes directly into PCB's or similar. When heating the probe tube, care must be taken not to overheat the assembly as music wire springs are only suitable for temperatures up to 250°F (120°C) while stainless steel springs are rated at 400°F (204°C).

**Q: If the socket tube is heated to the point where the solder in the joint flows, will the tailpin (round or square) move?**
A: No, the pin is press-fit into the tube, so even without solder holding the pin, it takes a minimum of about 10 pounds (of axial force) to move the square pin and about 1 pound to move the round pin. After the socket cools, the solder will solidify and the integrity of the joint will remain unchanged.

**Q: What is the difference between the 050-PRP25 and 050-PTP25 Series?**
A: The main difference between the 050-PRP25 and 050-PTP25 Series is that the 050-PRP25 Series has a longer overall length 1.700" (43.18mm) versus 1.362" (34.59mm) for the 050-PTP25 Series. The increased length allows a longer spring to be installed in the probe tube. As a result, the maximum spring force for the 050-PRP25 Series is 10.1 ounces (286 grams) versus 8.0 ounces (227 grams) for the 050-PTP25 Series. The 050-PRP25 Series are recommended for no-clean test environments.

**Q: What material is recommended for mounting the sockets into?**
A: In general, any nonconductive material is suitable with the most popular socket mounting plate made from an epoxy fiberglass G10 or FR4. This is the same material used in the manufacturing of printed circuit boards. Other suitable materials include but are not limited to Acrylic, polycarbonate, PVC, and Delrin. The socket retention forces will vary between materials and must be considered in fixture design.

**Q: Is it possible to get an IT FLUSH tool with a longer guide pin?**
A: Yes, if you require a longer guide pin for installing sockets at a FLUSH set height you will need to order the IT tool at a set height of 0.000. This tool will still set the sockets at a flush set height but will offer added stability to the tool.

**Q: What is the maximum voltage that test probes and sockets can carry?**
A: There is no maximum recommended voltage limits for test probes and sockets. However, the spacing between the probes and the dielectric properties of the probe plate must be taken into consideration. Avoid probe plate materials that have hygroscopic tendencies. Finally, the voltage must not be present while the probes are actuating against the DUT as arcing will occur.

**Q: -B option (curved probe tube - Pylon replacement), when and where is this used?**
A: The –B option for QA test probes is designed for use with the old style Pylon brand sockets that do not incorporate a probe retention indent in the socket body. Because the Pylon socket was basically made up of a straight tube, the –B (bend) in the probe is the retention method to hold the probe in the socket. As a general rule, we do not recommend that the –B option be used with QA sockets as our sockets incorporate probe retention indents in the socket tube. For older sockets where the probe retention indent has been damaged, or if the probes are loose or are being pulled out during test, using the –B option is a suitable solution until a permanent repair to the socket can be made.