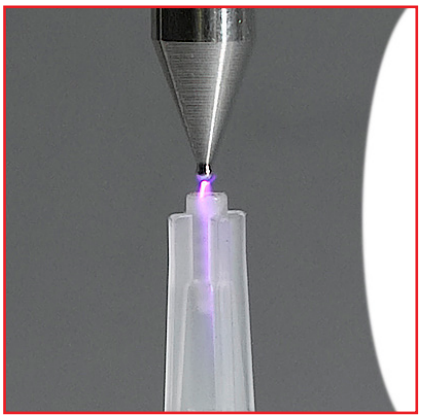
Syringes – Tantec Corona Treatment Promotes Safer Needle Assembly

Single-use needles make up a significant percentage of the disposable medical device market. Billions are produced annually, for use in a wide variety of devices.
The OSHA-driven Needlestick Safety and Prevention Act requires needle manufacturers to provide safer alternatives to existing needle designs, resulting in hundreds of new designs annually. In an attempt to comply with this act while remaining competitive in the marketplace, manufacturers are exploring the uses of adhesives to facilitate needle assembly.



Disposable Needles
A wide variety of medical devices incorporate a needle or cannula, including: insulin syringes; hypodermic and angiographic needles; blood lancets; pre-packaged medical syringes; introducer catheters; intravenous sets; venous-winged and port-access infusion sets; and blood collection sets.

Traditional Methods of Needle Assembly
Needle assembly is a unique challenge. The joint that connects a stainless-steel cannula to a plastic hub must be well sealed to prevent fluids, such as blood or medicine, from leaking. Only a high-strength joining method will ensure that the cannula's small and cylindrical joint will not move or release from the hub during use. Historically, manufacturers have used a variety of methods to assemble disposable needles, such as molding, welding, interlocking, or sealing. However, these methods have many limitations, such as being very time-consuming and expensive. For example, insert moulding requires extreme precision to ensure no leak paths are present when fixing the cannula to the plastic hub. To maintain the aesthetic appearance of the needle assembly during welding, great precision is required to hide or eliminate weld flashes. Similarly, mechanically interlocking the cannula to the hubs has limitations due to expense and resource requirements, while joint sealing poses even greater challenges.

Tantec NeedleTEC
Tantec's Corona treatment for plastic needle hubs, NeedleTEC, is the answer to the previously mentioned problems related to bonding and leakage. Treating the needle hub's surface increases surface wettability and adhesion properties through electrical discharge. Due to the Corona treatment's ability to achieve extremely high tensile strength, it has become one of the most common methods used to treat hub surfaces. For example, untreated hubs present tensile strengths between 18-25N, whereas Corona-treated hubs achieve tensile strengths up to 75N.

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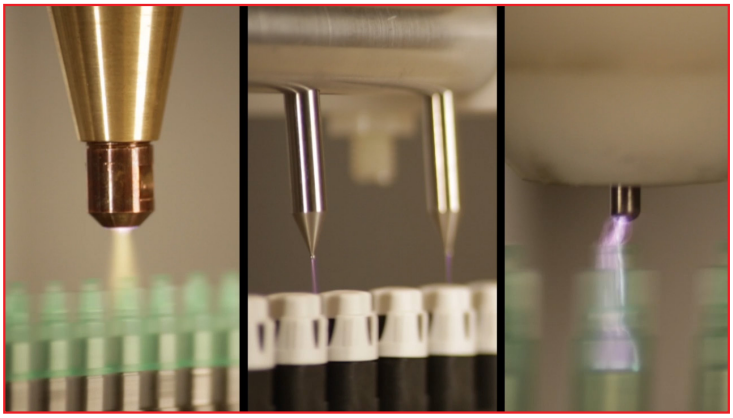
Tantec's NeedleTEC station is an integrated Corona system designed to cope with the high speeds of high performance needle assembly lines. NeedleTEC's ability to treat difficult-to-reach hub recesses makes this an easy-to-use system and a safe treatment solution for needle hubs. The station's integrated electrode system handles all common holding jigs utilized on assembling lines, including both stainless steel and plastic jigs. To provide 100% control over the entire process, a unique computerized Electrode Surveillance System (optional) ensures that every needle hub has been exposed to the Corona treatment.



The NeedleTEC station is a compact, self-contained tabletop Corona System that includes a microprocessor-controlled generator, transformer, electrode assembly and ozone filter. The NeedleTEC station is installed in front of the adhesive applicator station on assembly lines, and treats all standard needle hubs as well as customized hubs.

Advantages of NeedleTEC Corona treatment:

- Fully integrates with new or existing needle assembly lines
- Suitable for index or continuous production processes
- Surveillance system for 100% process control
- Extremely high tensile strength up to 75N
- Promotes safer use of needle products
- Prevents leakage
- Flexible

! Did you know NeedleTEC is typically integrated into existing production process, and typically treat between 500 and 800 needles per minute.

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