

Innovative Connector Design

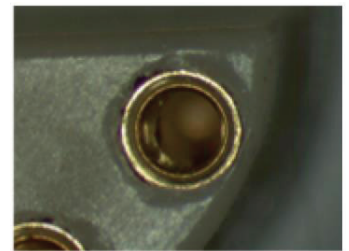


Customer Challenge

Imagine depending on a life-sustaining medical device; and now imagine having difficulty connecting that device to a critical backup power supply because of an inferior connector design. Patients of a Winchester Interconnect™ customer were experiencing this exact problem; they encountered difficulty connecting their device to a backup power source because of the connector design on their system.

Challenge Review

Winchester's engineers found that the connector used to connect the system to the power source was not keyed properly. Keying is used to orient the connector to ensure that the connector contacts properly mate. In addition, the connector was designed so the contacts mated prior to the connector housing, which made it difficult to align the contacts properly. This also caused stubbing that damaged the connector wall and sockets. Further, the connector used a threaded nut attachment which required a high level of dexterity to mate. Given the typical poor health of the patients using this system, including diminished feeling in their hands and poor eyesight, threading on the connector proved challenging.



Insulator wear indicating stubbing of contact during mating sequence

Winchester Solution

Winchester's engineers designed a keyed connector that contains a mechanical component that only allows the connector to mate when the contacts are correctly oriented. In addition, Winchester's engineers designed a unique floating contact solution where the contacts were slightly recessed in the housing, which eliminated the risk of stubbing. Also, additional features in the connector body better aligned the connector before the contacts mated, which alleviated mating stress on the floating contact design. The mating style was changed from a fine threaded coupling nut to a quarter-turn bayonet style that would enable the patient to connect and lock the two connectors easily but still ensure a secure, positive lock. Also, large tactile features were added to specify for the patient if the bayonet position on the connector was open or closed, which helps provide confidence that the connection was secure. Winchester also designed the connector body with a soft grip outer shell that allowed the patient to have a better grip on the connector.

Customer Improvement

Winchester designed an innovative connector for a medical device:

- An innovative connector design with better alignment features to eliminate connection failure
- Ergonomic quarter-turn connector design
- Connector body with a soft grip outer shell
- Patients now able to connect / disconnect units with ease

Contact our Winchester Interconnect Experts for your custom solution!

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