

IS IT **TIME** TO **RETIRE** THE **SPLIT BOLT**?



*A New
Generation
of Electrical
Connectors
Offers Better
and Safer
Alternatives.*

By Paul Brandt



Some multi-tap connectors have the additional advantage of a transparent cover that helps installation and permits immediate visual inspection, so adjustments can be made without removing layers of tape as required by the split bolt.

Ask a veteran contractor what they used in the good old days, and he will probably say split bolts were all they had for most mechanical electrical connections. Over the last 20 years, however, many innovations for electrical connectors have been introduced. They have been designed to be

safe, easy for any contractor to install and readily accessible for inspection. These new connectors include insulation piercing, pre-insulated multi-tap and splicer-reducers, as well as direct burial connectors.

For the expansion of a professional football stadium, 50 insulation piercing connectors were selected because, according to the project manager, "They save time and money. They're just a very efficient way of splicing without worrying about stripping the insulation or taping. You can use them wherever it's convenient." In fact, these connectors helped cut work time in half, which meant big cost savings.

IT ONLY TAKES A MINUTE

Installing an insulation piercing connector takes about one minute. Simply lie in the main and tap, then tighten the connector. Hardened copper points penetrate the insulation and contact the conductors. Contrast this with the extensive time required for a split bolt that requires using several tools and involves many steps: stripping insulation, wire brushing the conductor, applying oxide inhibitor, assembling, tightening and taping over the connection with insulation tape. A cost analysis shows total material and labor for a split bolt can easily run more than twice that of an insulation piercing connector.

As an additional safety feature, insulation piercing connections

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For this emergency requiring direct burial, a UL approved, utility proven, rubber encased and watertight splicer-reducer connector is the perfect choice.

can be made "hot" as long as there is no load on the tap.

FURTHER CONTRIBUTIONS

Also contributing to the success of the stadium project were 200 of a new class of set-screw insulated multi-tap connectors. Using them along with the insulating piercing connectors meant, "we eliminated one-third of the splicing devices we'd normally use," the project manager pointed out. He notes that on-site inventory requirements were substantially reduced, saying the multi-tap connector "is quick and easy. Its compact design and dual entry ports provide flexibility for future changes. With no taping, you just make the tap, crank it down and walk away."

Some multi-tap connectors have the additional advantage of a transparent cover that helps installation and permits immediate visual inspection, so adjustments can be made without removing layers of tape as required by the split bolt. Some of these connectors also offer cap-less conductor access that enhances safety, eliminates the chance of lost caps and prevents access to unused ports eliminating the possibility of contamination.

OTHER SUCCESS STORIES

In another application — the upgrading of a microchip factory — the multi-tap capability of these connectors was pivotal in winning a six-figure contract. The contractor said he chose insulated multi-taps for the efficient arrangement of the splices required of the 16 350 MCM conductors in a limited space. Compared to a split bolt that can accommodate only one or two taps, multi-tap connectors have the capacity to accommodate up



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Another new generation set-screw connector is the splicer-reducer with an integral, transparent, insulating cover that allows easy visual inspection of the splice.

to seven taps while taking up relatively little space.

In the expansion of a major airline's terminal, the labor, cost- and time-saving features were key in the decision to use multi-tap connectors over split bolts. The application engineer described the project this way, "The connectors are being used when installing utilities in the tunnels that lead to the terminal. The tunnels are used for auto, pedestrian and service access to the terminal. Some of the tunnels are as long as a half mile, with lighting, heaters and exhaust fans throughout." The project involved tapping into the main line running throughout the tunnel for lighting and HVAC. The construction company spokesperson estimated they completed the job in less than half the time it would have taken with split bolts. The spokesperson said they especially liked that the pre-insulated feature of these multi-tap connectors eliminated the need for taping.

A NEW GENERATION SET-SCREW CONNECTOR

For a major addition to the Las Vegas Convention Center, a contractor used another type of new generation set-screw connector, a splicer-reducer with an integral, transparent, insulating cover that allows easy visual inspection of the splice. It was ideal for use in the confined space of 99 electrical boxes mounted on the ceiling in which a 60 AMP 2/0 drop cable was to be installed. The connector's design allowed the drop cable, box cover and strain relief assembly to be pre-assembled on the ground then quickly lifted into place. Final installation was accomplished by tightening the set-screws on the connectors and sliding the insulating covers over the connectors then closing the box cover. The quick and easy installation saved hours compared

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A cost analysis shows total material and labor for a split bolt can easily run more than twice that of an insulation piercing connector.

to a labor-intensive split bolt application 50 feet above the showroom floor.

What should be used if someone is using a backhoe and

buried cables are accidentally cut? For this emergency requiring direct burial, a UL approved, utility proven, rubber encased and watertight splicer-reducer

connector is the perfect choice. This type of connector is the fastest and safest solution, requiring no taping, epoxy compounds or heat shrink. It offers maximum range-taking capabilities and has the same quality and versatility demanded by the utility industry.

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TIME- AND COST-SAVING TREND

There is a trend toward offering the electrical contractor self-insulated products designed to eliminate time-consuming split-bolt installations and their safety and inspection problems. Lower labor costs will, of course, make the electrical contractor more competitive, as well as reduce the cost of the complete project. The easy installation and inspection of the new breed of electrical connectors also will result in considerably fewer contractor or inspector callbacks. In the future, time and labor saving connectors that are safer and easier to inspect will continue to be at the forefront of connector development.

When selecting insulated taps, splices and terminations, make sure that the product is approved by a recognized testing laboratory. NEC article 110.14 "Electrical Connections" does not specifically state that terminations, taps and splices need to be "listed," but a UL Listing or CSA approval virtually guarantees inspector acceptance.

For more information, visit ILSCO's Web site at www.ilSCO.com.

Editor's Note: Paul Brandt is the director of Channel Marketing at ILSCO.

