

# TECHNOLOGY NEWS

## An Uncommon Tool

The Next Generation of Load Break Tools

One of the most common operational practices made by utilities around the world is the opening of energized circuits. Although often ignored, these circuits, switches and fuses help keep the power on while protecting the system. The crucial operation of opening them under load is performed more or less routinely by linemen thanks to the portable load break tool. The fact that almost all overhead equipment come equipped with load break hooks is a testament to their acceptance within the utility industry.



How well a portable load break tool is designed will determine its performance in the field. In addition to safely containing the arc and associated gases that are generated when breaking a load, a tool should feel comfortable in a lineman's hands and inspire confidence. Maneuverability, safety and ease of use are all highly important design criteria.

Utility Solutions committed considerable engineering resources when developing the next generation of load break tools. Engineering parameters were received from a number of key utility personnel as well as from in-field sales personnel from all across the country. The result . . . the LOAD-RANGER® XLT Load Break Tool; the lightest and most technologically advanced load break tool in the industry.

Utilities reported that a tools' maneuverability was very important to lineman. "Most tools function great in the lab", says Gene Wood, co-founder of Utility Solutions, "but creating a tool that adapts to the real world is another story. Imagine you are in a bucket truck among a heavily wooded area and cannot reach an optimum angle on a switch or cutout. Knowing your load break tool can handle extreme angles and still give you a positive lock will allow you to safely open that circuit." A lot of engineering went into the dozens of parts that make up the pull ring locking mechanism of the LOAD-RANGER® XLT.



(25kV through 38kV) is only 4.9 lbs. Creating such a rugged and user friendly tool at this weight was a tremendous success for the engineering team at Utility Solutions.

Maneuverability is also greatly determined by weight. Typical load break tools range from 5.5 to 8 pounds, that could feel like 80 ft-lbs of force at the end of an 8 foot fiberglass stick! Reducing weight even by a small amount results in greater control for a lineman. The LOAD-RANGER® XLT-1 (7.2kV through 25kV) weighs only 4.2 lbs while the XLT-2



"No-Pinch" Reset Button

Ease of use was another important factor in tool design. One issue in particular turned out to be the reset button. After the tool is opened, breaking the load on a circuit, it must be reset before it can perform another operation. And since switches and/or cutouts are often ganged together, lineman will need to do this operation several times. Conventional tools require lineman to remove their gloves and trigger an awkward reset mechanism. Adding to the frustration, this operation is

**LOAD BREAK TOOLS**



Before Opening



After Opening

likely to pinch you if you are not careful. It's important to note that a lineman's gloves are NOT your typical slip-on variety. Insulating rubber gloves, although extremely important, are bulky and usually include wearing an under layer which further reduces dexterity. Much like an astronaut, a lineman in his gloves is not able to fiddle with the small stuff. The reset issue was tackled by the engineers at Utility Solutions by making an ergonomic button that is side mounted and can easily be triggered, even in gloves. Linemen have reported that the button is right where it should be and is easily triggered in gloves.

“Safety is probably the most important subject in our industry”, said Mike Nolte, president of Utility Solutions. “For the manufacturer, the utility company, and especially the lineman, focusing on safety is not an option. . . it is a matter of life and death.” Uncompromising standards were used when designing the LOAD-RANGER® XLT. One feature that separates this tool from others available is the metal-to-metal clearance achieved at the tool fully opened position. When the tool reaches its triggered opening point the load is broken even though the tool is still attached to a cutout or other switching device. Creating a safe distance between conductors is very important. The LOAD-RANGER® XLT-1 has roughly 8.2” of clearance between metal components when fully extended while the competition is only 7.1”. The XLT-2 model has over

2” more clearance than other tools (approximately 12.2” between metal components). This small distance could make a huge difference to a lineman.

Rounding out their XLT line Utility Solutions offers pad mount models, economical non-counter models, hard and soft cases, a one year warranty and a service department that has an unparalleled reputation. The LOAD-RANGER® XLT truly is the lightest, most user-friendly portable load break tool available.

You can find more information about load break tools at [www.utilitysolutionsinc.com](http://www.utilitysolutionsinc.com) or by calling (828)323-8914.



*Utility Solutions is a designer and manufacturer of hot line tools and products for the electrical power industry. Founded in 1990 by engineers with broad electrical distribution experience, Utility Solutions has accumulated an impressive list of innovative and patented products that directly relate to a lineman's job.*