

GETTING A HANDLE ON IMPROVED TELEMANIPULATOR OPERATION

By Amos Avery and Steve Williams

In 1945, at the dawn of the Atomic Age, three scientists from the Massachusetts Institute of Technology founded Central Research Laboratories (CRL) pioneering a safer method for handling hazardous material produced by this emerging industry. It was during this time CRL introduced the remote-handling technology known as the “telem manipulator”.

In the ensuing decades, the design and

operation of telem manipulators underwent a series of technical enhancements and improvements. Surprisingly, though, one critical component of the telem manipulator has been relatively immune to change – the handle that the operator grips and manipulates to complete the precise movements of the telem manipulator.

The Challenge

In recent years, increased scrutiny has been placed on how ergonomically friendly a piece of equipment should be, not only should it

be functional and safe but also comfortable for the operator. It was also noted that some telem manipulator operators would attempt to modify the handle themselves, which would both reduce the effectiveness of the telem manipulator and make them less safe for the operator to use. Armed with this knowledge, CRL saw the need for change and seized the opportunity.

The challenge, then, was to acknowledge these trouble areas in current telem manipulator handle designs and come up with an alternative that improves the experience for the operator, while also optimizing the unit’s construction.

The Solution

Realizing a redesign of the telem manipulator handle was overdue and in demand, CRL contracted SRI•Ergonomics at The Ohio State University in Columbus, OH, to access the handle design and operation for ergonomic improvements in eight areas: grip type, handle shape, handle diameter, handle length, handle surface, handle material, handle edges and function. In concert with the expert analysis, CRL conducted onsite user focus sessions at multiple facilities globally to ensure the redesign encompassed as many concerns as possible.

Using this information, CRL developed the VERSA® VR8 Handle System, which features:

- A longer handle that eliminates digging into the palm
- Easy-to-hold shape that is slender at the top and wide at the bottom
- A smaller, more sculpted hilt
- Pronounced heel that prevents slippage
- Enhanced finger grips and knob for more control in two-handed applications
- Larger, oblong activation buttons with rounded edges
- Swiveling finger loops for consistent grip pressure
- Multiple adjustment points to accommodate different hand sizes
- Switches attached with connectors that require no hard-wiring
- Standardized tool and screw sizes and types
- Quick-release clamp for tool-free changeouts

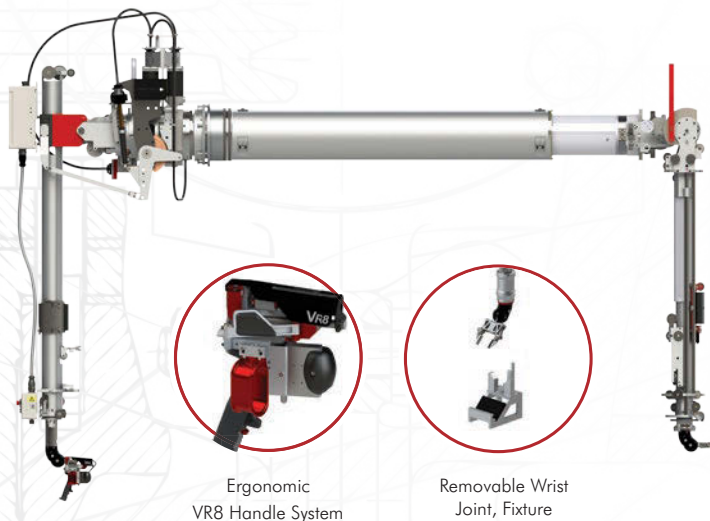
Conclusion

With a legacy of 70 years of innovative experience, CRL set about to answer the industry’s need for a more ergonomic telem manipulator handle. The result is the VERSA® VR8 Handle System, which stands ready to be a next-generation solution for telem manipulator operation.

Go to www.destaco.com/versa to read the full report.

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