



# MACHINE ELECTRIFICATION THROUGH LINEAR ACTUATORS

*Simple Solutions.  
Seamless Integration.*

# THE NEXT PHASE IN INDUSTRIAL & MOBILE POWER

## Migrating Hydraulic Systems to Electrical Components

The next generation of intelligent heavy equipment will only continue the need for high-efficiency, low maintenance motion control systems. While we are not yet at the point of complete electrification for OEMs, the time for thoughtful machine analysis and to seize opportunities for electronic component integration is now.

Hydraulic components are still a necessary aspect of machine power. The power density they provide is critical to reaching high force loads in a small space. While there are complexities that accompany hydraulic systems, like extensive hosing and contamination risks, it is not currently possible to achieve the same kind of power without utilizing hydraulics to some degree.

Migrating to electronic components wherever possible can give OEMs a simpler, more precise, compact option that decreases installation and energy costs. With the popularity of green energy in certain cities, reducing fuel and oil use is gradually becoming a common requirement

There are a few proven ways that manufacturers can start changing out their hydraulic components. The simplest, most proven method is to utilize linear actuators, rather than hydraulic cylinders. Electronic sensors constantly read position and communicate force based on the current being used. The control system monitors this current and stops the function before any damage is done.



Take, for example, the concrete screed machine pictured here. Aside from the real time feedback on position, speed, and other safety-related information, with an integrated linear actuator controlling each wheel height, an operator is able to achieve a level of smooth precision in a relatively harsh environment where cylinders were previously viewed as the sole option.

Another option is to change out standard hydraulic motors in favor of electric motors or drives with lithium-ion batteries. In certain applications, these options can decrease the likelihood of maintenance issues, reduce emissions, and greatly reduce noise levels.

These are just a few options to start moving toward a fully electrified machine. For many OEMs, hydraulics are still necessary for the brunt of machine power. But by taking a few steps toward electronic power and machine control, you can prepare your machines for the next innovations in heavy equipment electrification. After a thorough analysis of your machine's application and environment, our experienced, forward-thinking engineering team can develop a plan to help move your machine into the age of smart equipment.



# INDUSTRIAL

## ABOUT GS GLOBAL RESOURCES

GS Global Resources is the foremost machine performance resource. We are trusted by the world's most recognizable OEMs who demand a competitive advantage from every solution. Our integrated application solutions perform for the life of the machine, and for the lives of the people who touch it.

From system and component design to production and market support, GS Global Resources helps OEMs interpret, adapt, and adopt technology.

Our leading engineering minds in hydraulic, electronic, mechanical and software applications simplify the complex. We use innovative & reliable technologies to speed solutions to market. Whether reacting to market forces or changing markets altogether, GS Global Resources is essential to achieving total machine performance.

## CONTACT

Please visit [GSGlobalResources.com](http://GSGlobalResources.com) or contact us directly for more information. Our dedicated team of long-term, invested employees look forward to working with you.

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