



Mobile Systems Integration

Avoid Tier 4 Requirements by Using a Hybrid Drive

Environmental awareness, increased safety, and improved efficiency are currently the leading concerns among mobile equipment manufacturers in every industry. Engine electrification in automotive transportation is increasing, but industrial, construction, and agricultural vehicles pose their own specific design and development challenges. **However, electrification offers the potential to significantly reduce emissions and noise levels, cut fuel consumption and lower maintenance costs, in addition to a host of other benefits.**

Additionally, full electrification isn't the only option. **Hybrid electric vehicles reduce the cost of ownership and shelter the user from fossil fuel price hikes.** Hybrids perform even better, potentially producing increased power from smaller internal combustion engines. Hybrids can also supply electricity to other equipment and reduce noise and pollution.



From left to right: Hydraulic Pump, PMAC Generator/Motor, Diesel Engine. Courtesy of InMotion

Tier 4 emission standards, phased-in from 2008 through 2015, require substantial reductions of NOx (for engines above 56 kW or 50 Hp) and particulate matter (above 19 kW or 25 Hp), as well as more stringent hydrocarbon limits. Meeting these emissions standards has significantly increased the cost of diesel engines and the space they occupy on a machine. **In particular, let's discuss the large market of 18 kW, or 24.9 Hp, diesel engines currently exempt from aftermarket treatments (Tier 4 Exempt).**

Cost-Effective Hybrid Diesel Engine Designs

Cross Company has partnered with [InMotion](#) to provide a premium flywheel mounted generator with motoring and starting capability for a cost effective hybrid vehicle design. By utilizing this type of engine and generator/motor design, you can produce the same power as a larger Tier 4 engine at a reduced cost, saving you – the OEM – money.

Continue reading to learn how to increase the power output without being Tier 4, and please reach out to a Cross expert to discuss possible solutions for you.

[Continue Reading](#)



Happy Holidays from Cross Company

We will be closed December 24, 25 and January 1



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