

High-performance MTS Electric Motors & Drives

Leveraging motorsports innovation to boost vehicle power & efficiency

- » Ideal for energy recovery and traction applications
- » Extremely power-dense
- » Compact and lightweight
- » State-of-the-art controls
- » Expert MTS application engineering & testing

MTS Systems Corporation has developed a family of permanent magnet electric motors and drives that is particularly well-suited for applications requiring extremely low weight and inertia, yet high performance and efficiency. Born of innovative technology developed for race car drive train testing and energy recovery, these motors are now being deployed for uses as diverse as engine dynos, oil well drilling and wind tunnel testing.

MTS first ventured into permanent magnet motor design through its development of powerful Formula 1 transmission test rigs used to simulate rotation and torque variation of engine firing impulses; MTS leadership in this area continues unmatched to this day.

The next evolution of MTS permanent magnet motor technology took the form of highly compact motor/generators used for advanced energy recovery applications. These included electro-dynamic braking, also known as kinetic energy recovery or KERS, and electric turbo-compounding, which recovers and recycles exhaust gas heat energy from internal combustion

piston engines. Most recently, MTS has supplied high power density, low weight electric motors for use as permanent drives in all-electric racing cars.

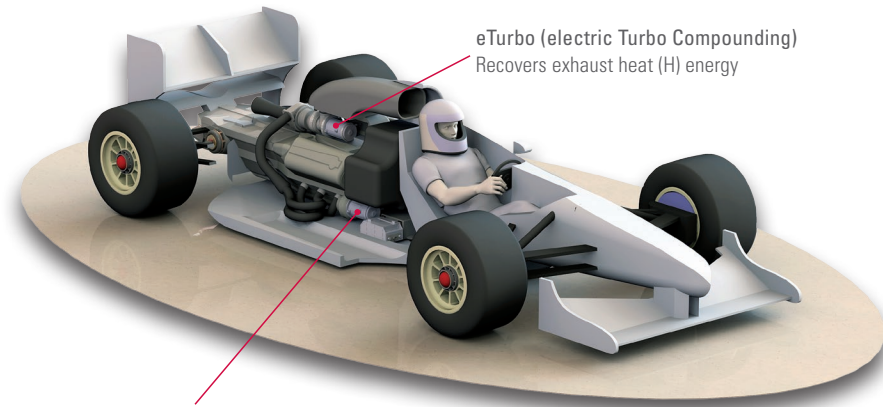
Currently, MTS offers electric motors capable of delivering from 1 to 250 kW, running at speeds up to 140,000 rpm. With power densities of 12 kW/kg (50 kW/L) and higher, these motors are ideal for a full spectrum of applications, including e-turbo, e-boost, kinetic energy recovery, and traction drive applications.

MTS approaches electric motors and drives the same as its world-class test and simulation solutions. Expert consultants apply state-of-the-art simulation methods to analyze applications in detail to propose the appropriate motor, controls and software solution. Dedicated in-house design, manufacturing and testing capabilities enable rapid motor development and validation to specified requirements. In addition, MTS is collaborating with a well-established European Tier 1 supplier to establish high-volume motor production capabilities.

be certain.

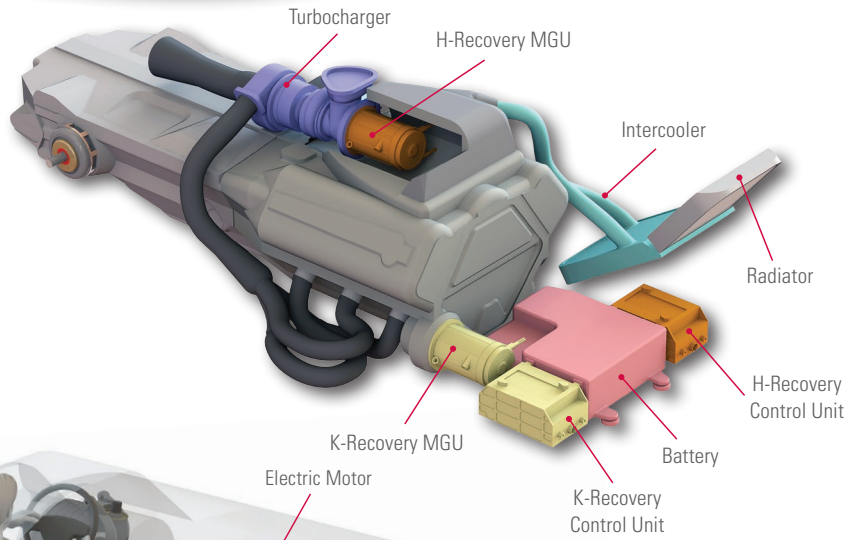
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Energy Recovery Applications

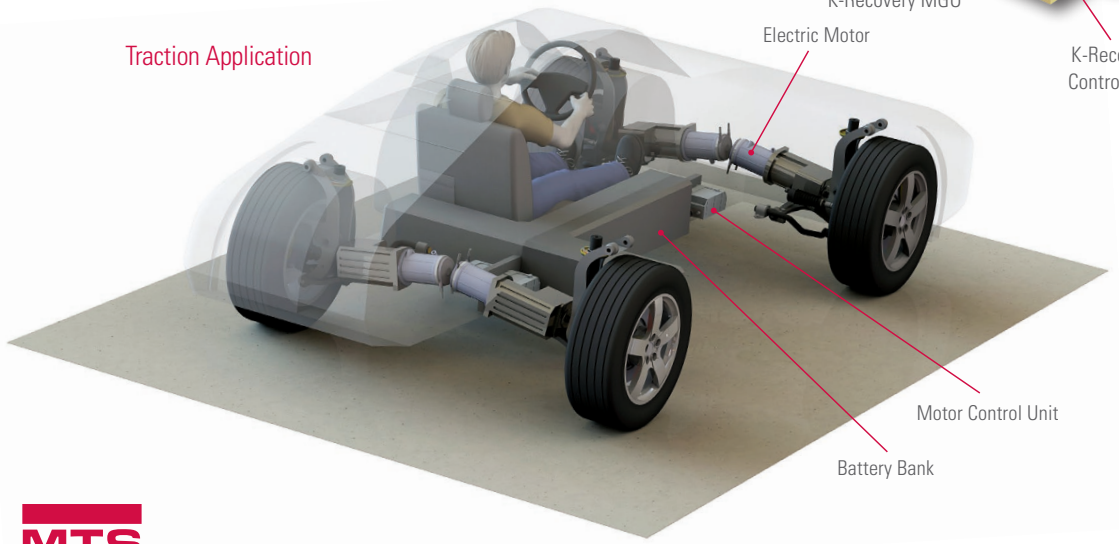


eTurbo (electric Turbo Compounding)
Recovers exhaust heat (H) energy

KERS (Kinetic Energy Recovery
or Electro-dynamic Braking)
Recovers braking kinetic (K) energy



Traction Application



Electric Motor

Motor Control Unit

Battery Bank



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