



HYBRID TRANSMISSION MG (MOTOR/GENERATOR) CUTAWAY

A2

Product number
AE411082M

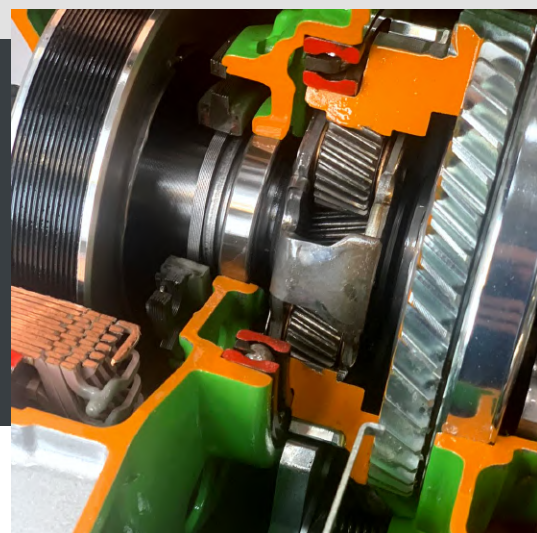
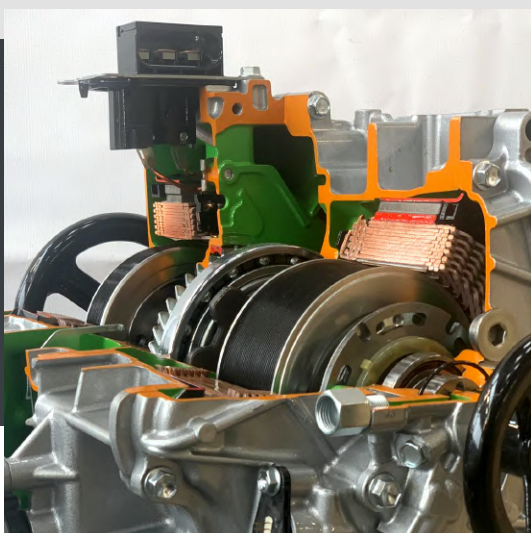


Advanced tool designed for in-depth technical education on hybrid vehicle transmissions. This hands-on trainer provides a fully operational cutaway model of the Toyota Prius Motor Generator 1 (MG1), which functions as both a power management unit and an integral part of the hybrid powertrain system. Mounted on a mobile stand, the trainer offers a clear visual understanding of hybrid power distribution, control systems, and regenerative charging principles, making it essential for vocational automotive education.



Features

- Demonstrates the operation of MG1 as the control element for the power split planetary gear set, showcasing both motor and generator functions.
- Planetary gear set visualizes the continuously variable transmission (CVT) mechanism within a hybrid system, highlighting the absence of a traditional gearbox.
- Equipped with a handwheel for manual manipulation, enabling students to observe transmission operations and gear interactions.
- Mounted on a sturdy stand with wheels for ease of movement and classroom integration.
- Features authentic Toyota Prius MG1 and MG2 units, offering a OEM experience with hybrid vehicle technology.





Value for Students

- Understand hybrid powertrain systems, focusing on the operation of Motor Generator 1 (MG1) and its role in managing power split between the engine and electric motors.
- Understand how MG1 controls the continuously variable transmission (CVT) function through a planetary gear set, simulating real-world hybrid vehicle dynamics.
- Learn to diagnose and test hybrid transmission operations, including the role of MG1 in recharging the high-voltage battery and starting the internal combustion engine.
- Engage in real-time analysis of energy conversion processes, where MG1 and MG2 switch between motor and generator modes, highlighting the integration of electric motors within the hybrid system.
- Study detailed components such as power management systems (PMS), battery interactions, and regenerative braking, which sends electrical charge back to the battery during deceleration.



Value for Instructors

- Offer students an authentic learning environment with a fully functional transmission model designed for hands-on learning and system analysis.
- Easily demonstrate the operation of hybrid systems, focusing on MG1's control over the hybrid CVT and the coordination between the engine and electric motors.
- Simplify complex hybrid principles, including power splitting, energy recovery, and motor/generator switching, for better student comprehension.
- Integrate practical learning through manual operation with a handwheel, allowing students to visualize the gear engagement and power flow between engine and motor generators.
- Utilize a robust, mobile design for seamless incorporation into classroom settings, promoting interactive group learning and flexibility.



Specifications

- Dimensions: 600 x 700 x 650 mm (23.62 in x 27.56 in x 25.59 in)
- Weight: 100 kg (220 lb)
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