

**Product Name :**  
Hybrid Cut-Away Engine, Prius, Manual Operation

**Product Code :**  
TechnicalLab0410

**Description :**

Hybrid Cut-Away Engine, Prius, Manual Operation

When we examine a Toyota Hybrid System (THS), we know the power is coming from the gas engine and the electric motor. The hard part for us is communicating how to visualize what's happening inside. It's easy to explain the process, but being able to show other people how the THS recovers energy lost as heat in the brakes and uses it to supplement the power of its fuel-burning engine. This is made easy with the Toyota Hybrid Cut-Away Trainer because it provides:

- Educationally functioning parallel-type hybrid system running a 1.5L gas engine and Nickel-Hydrogen motor powered by manual hand-crank.
- Electric motors can be operated separately or simultaneously, according to teaching requirements.
- The cut-away model engine has been carefully sectioned for training purposes and professionally painted with different colors to better differentiate the various parts.

There are over 2 dozen cutaway components.

**SPECIFICATIONS:**

- Driveshaft with bushes

- Nr 2 camshaft with timing shifter (VVT)
- 4 cylinders
- 4 valves per cylinder
- Connecting rod, piston, cooling engine air space, water pump
- Displacement: 1500 cc
- Timing belt
- Multipoints electronic injection with throttle
- Oil filter
- Exhaust collector with Lambda probe
- Flywheel
- Electric engine
- Epicyclical mixer
- DOHC overhead camshaft
- Generator
- Transmission belt
- Gears
- Roller chain
- Differential group

#### TECHNICAL FEATURES:

Model: 1NZ-FXE

Type: Water Cooled Series, 4 Cylinders

Valve: DOHC 16 Valves

Gross Displacement: 1496 cc

#### MOTORS:

3CM AC Synchronous Motor. Permanent Magnet Synchronous Motor.

#### MAX OUTPUT:

Engine: 77PS / 5,000 rpm

Motor: 68PS / 1,200 1,540 rpm

#### MAX TORQUE:

Engine: 11.7 kg-m / 4,200 rpm

Motor: 40.8 kg-m / 0 1,200 rpm

#### HYBRID ELECTRIC VEHICLE TECHNOLOGY TEXTBOOK

Hybrid Electric Vehicle Technology provides foundational information about vehicles that use more than one propulsion technology to power a drive system. This textbook (279 pages) is filled with technical illustrations (197) and concise descriptions of the different configurations and vehicle platforms, the operation of various systems and the technology involved, and the maintenance of hybrid electric vehicles.

#### Content Highlights:

- Introduction to HEV Technology
- Hybrid Engines
- Power Inverter Systems
- Electric Propulsion Sensing Systems
- Nickel-Metal Hydride Technology
- Hybrid Vehicle Braking Systems
- Textbook CD-ROM Includes: Quick Quizzes, Media Clips, Illustrated Glossary, Review Questions, and Flash Cards.

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**Website:** [www.naugraexport.com](http://www.naugraexport.com), **Email:** [sales@naugraexport.com](mailto:sales@naugraexport.com)

**Address:** 6148/6, Guru Nanak Marg, Ambala Cantt, Haryana, India, **Phone:** +91-0171-2643080, 2601773