



Toyota 4A-GZE Supercharge Engine Stand

Category: Automotive · Model reference: MZM-8034



SPECIFICATIONS

DESCRIPTION

This trainer provides the instructor with a complete working engine featuring a supercharged engine management system for group or whole-class demonstration. It is mounted on a moveable, heavy-duty, steel frame. The system comprises all the elements that control the forced-induction air-fuel ratio, supercharging boost pressure, ignition timing, and exhaust emissions, together with the ECU and all the sensors and actuators associated with the 4A-GZE engine control system.

The system enables live engine operation, operational demonstrations, and diagnostic testing using standard OBD/DLC diagnostic tools. This resource is supplied with manuals containing practical tasks and activities. The trainer can also be used in conjunction with optional cloud-based software, which offers online interactive theory presentations, investigations, and assessments that support the practical activities carried out using this resource.

Trainer enables demonstrations of the following:

- The position and mounting of all engine components, supercharger, and intercooler piping.
- Engine management system fundamentals for forced induction / supercharged engines.
- The electronic control unit (ECU) operation and system control signals.
- Sensor components operation (MAP/MAF, TPS, CAS/Distributor, Knock Sensor, Water Temp Sensor).
- Actuator components operation (Injectors, Ignition Coils/Pack, Supercharger Electro-Magnetic Clutch, Bypass Valve, ISCV).
- Pressurized fuel supply and return systems.
- Electronic fuel injection (EFI) and forced induction air handling.
- Supercharger engagement, boost delivery, and bypass control under live operation.
- Exhaust emission control components (O2 Sensor, EGR/PCSV).
- Live diagnostic scan tool connection, real-time data stream monitoring, and reading diagnostic trouble codes (DTC) via OBD/DLC.

TRAINER SYSTEM INCLUDES:

Engine Unit: Toyota 4A-GZE 1.6L 16-Valve DOHC Supercharged Engine (Complete Overhauled & Operational Condition)

Supercharger System: Original Roots-type Supercharger with Electro-Magnetic Clutch & Intercooler Setup

Throttle & Control Assembly: Mechanical/Cable Accelerator Pedal & Linkage

Ignition & Key Switch: Original Ignition Switch Panel with Starter Control

Diagnostic Interface:

OBD / Diagnostic Link Connector (DLC) Socket for OBD Scanner / Diagnostic Tool connection
Structure & Mobility: Heavy-Duty Steel Stand with Powder-Coated Finish & Lockable Swivel Castors

Safety Features:

- Protective Stainless Steel / Mesh Guards for All Rotating Parts (Pulleys, Belt Drive, Supercharger Clutch)
- Thermal Heat Shields for Exhaust Manifold & Hot Components
- Emergency Stop Switch & Battery Cut-Off Switch

ITEMS INCLUDED:

- 1x Toyota 4A-GZE Supercharged Engine Demonstration Trainer Unit
 - 1x Practical Activity & Demonstration Manual (Includes Wiring Diagrams, ECU Pinout Reference, and Operation Guide)
 - 1x Instructor Guide & Service Maintenance Manual
- OTHER ITEMS REQUIRED (SUPPLIED BY USER):**
- Unleaded Gasoline Fuel (RON95 / RON97)
 - 12V Automotive Heavy-Duty Battery
 - Compatible OBD Diagnostic Scanner / Toyota DLC Scan Tool
 - Exhaust Extraction Hose System (For Indoor Operations)



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