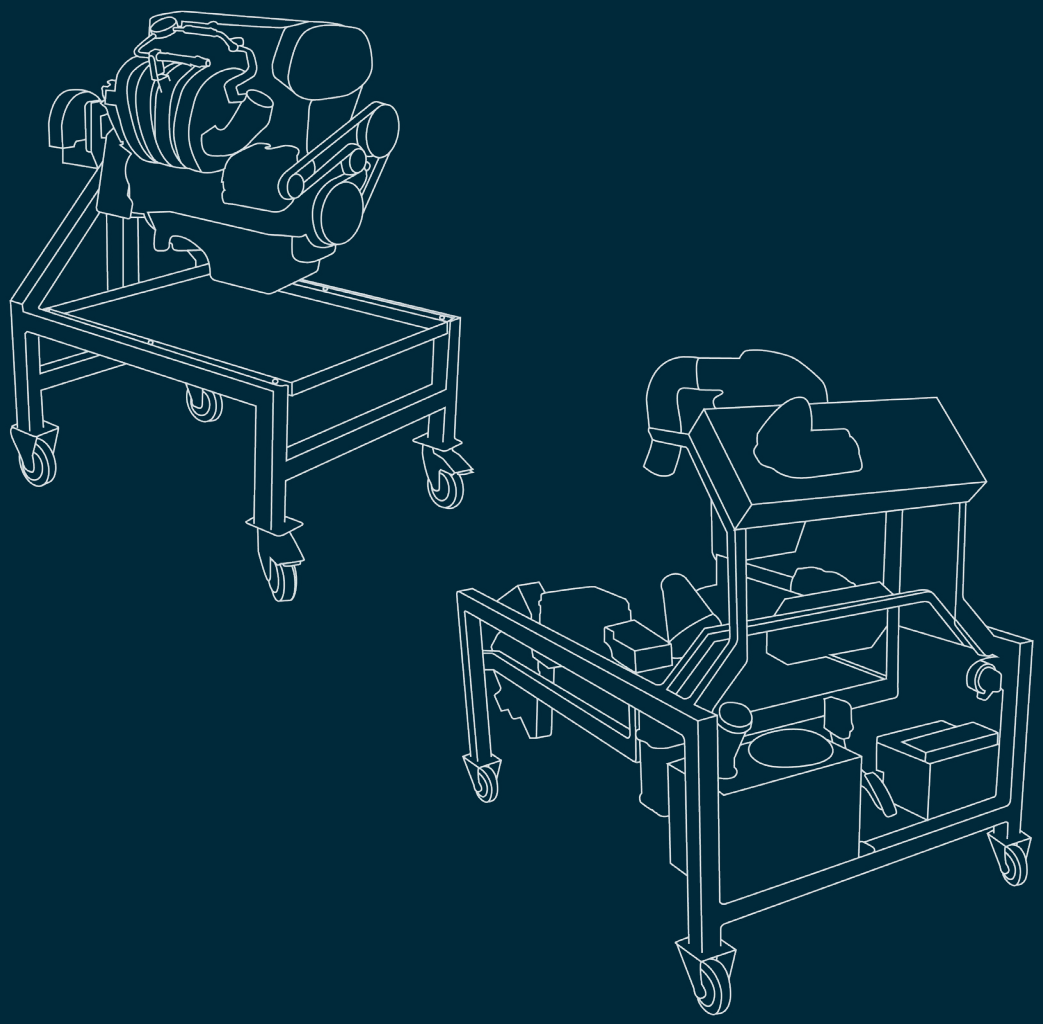
EM-145S-GM05_053331

Starting station, engine & swivel stand - GM



Rev. 2025/05

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CONSULAB

The Ecotec 1.8L engine on a swivel stand is designed for student instruction and practice covering engine mechanical inspection, disassembly, measurement and reassembly. The engine is securely mounted to a heavy duty rotating device to allow full 360 degree rotation. A steel mounting plate is used for engine mounting that allows full access for rear main seal and flywheel service. Each engine comes equipped with a transmission flywheel (manual or automatic). The engine starting station contains all components and systems necessary for the starting and running of the Ecotec 1.8L engine. All necessary engine systems connections are provided to allow live running of each swivel engine stand for verification of proper student assignment completion.

FEATURES AND STANDARD EQUIPMENT

Each **swivel engine stand** (EM-145A-GM05_053328) comes equipped with:

- Heavy Duty worm/ring gear rotating mechanism that allows slip free positioning of engine throughout 360 degrees of rotation
- 31″ x 24″ 14 gauge stainless steel drip pan
- Full access to all internal and external engine components
- Leak proof quick-connect fittings for fuel injection supply and return lines
- OEM Starter and alternator
- OEM Port fuel injectors and throttle body assembly w/attached components
- OEM Engine Management Sensors including: MAP, ECT, TPS, O2S, CKP, CMP and MAT. No need to transfer components from one unit to another
- OEM Sequential Port Fuel injection
- Engine has Camshaft Variable Valve Timing
- OEM COP (Coil On Plug) Ignition system
- Heavy duty 2″ x 2″ x 1/8 ″ square steel frame built specifically for each engine application
- 5″ Phenol heavy duty casters (2-fixed and 2-swivel w/locks)
- Powder coated acrylic enamel finish
- Custom machined 5/8″ steel engine mounting plate designed to allow full access to flywheel, crankshaft and rear main seal service procedures
- Equipped with a transmission flywheel (manual or automatic) for vibration free operation and starter system longevity

The **starting station** (EM-145B-GM05_053329) comes equipped with:

- Vehicle VIN number matching all included components (allows easy replacement of needed components from local suppliers)
- All OEM color matching wiring harnesses and electrical connectors necessary to operate the swivel stand engine
- Quick connect fuel lines for easy disassembly/assembly (Leak proof safety-type quick connect fittings for supply and return fuel lines)
- Fuel tank (22L - 5.8 gals) with OEM fuel cap suitable for EVAP testing
- Fuel tank has OEM fuel pump, sending unit and mounting design
- OEM functional EVAP system with test port
- OEM Catalytic converter
- OEM Radiator and hoses
- OEM Instrument cluster with gauges and indicators.
- OEM Anti-Theft system
- OEM COP (Coil-On-Plug) ignition system
- OBDII DLC (data link connecter) for scan tool hookup
- 12V battery
- Comes with only one OEM ignition key

The swivel engine and engine stand are also available separately in multiple quantities.

consulab.com
info@consulab.com

400-6330 Zéphirin-Paquet St.
Québec QC G2C 0M3
Canada

Toll-free: +1 (800) 567-0791
U.S.A.: +1 (810) 222-4525
Canada: +1 (418) 688-9067
Fax: +1 (418) 843-3444

WHAT TO EXPECT WITH CONSULAB RECYCLED ENGINES

Each ConsuLab engine rebuild station is built using recycled components from a real vehicle. This means that the amount of wear and tear on the engine will vary from one unit to another.

Note: The engines are inspected, cleaned, and run up to operating temperature to ensure proper function. We do not dismantle the engines, so each engine may have different internal wear characteristics.

Criteria	Details
Maximum permissible vehicle mileage	250 000 km (155 000 miles) for gasoline engines 300 000 km (185 000 miles) for diesel engines
Leakage	Each engine is tested to ensure no leaks of coolant or oil (any leaks found will be repaired).
New parts	New oil filter, air filter and accessory drive belt New drain plugs are installed, the threads in the oil pan are inspected.
Check engine light	No powertrain DTCs for any of the swivel engines (all sensors, inputs and outputs functional).
Engine block	External engine block and other metallic components have been cleaned and painted.
Seized bolts	All externally accessible bolts that the student would touch during teardown have been checked to ensure they are not seized.
Tests	We run up each engine to full operating temperature and ensure the thermostat functions.
Noises	No excessive bearing noises from any accessories (any noisy components are changed, example: alternator, belt tensioner). No internal engine noises (knocking) are permitted.
Exhaust	No puffing of black, blue or white smoke permitted. Where an OEM multi-layer metal exhaust manifold gasket is used, we provide the used gasket, as this has proven to be the best choice versus new gaskets which are often single time use. The exhaust manifold to cylinder head mating surface has been cleaned.
Corrosion	Corrosion is accepted on OEM specific nut and bolt heads so long as it does not interfere with using tools to remove/install the nut/bolt.
Gaskets	Only gaskets that present a leak are replaced. The head gasket will be the OEM one from the vehicle that recently left service on the road.

This means that when your students dismantle the engine, it may be the first time it has been opened since it left the factory.

OPTIONAL EQUIPMENT

- Vinyl Dust Cover (24357)
- Additional OEM ignition key (53150)

EDUCATIONAL EQUIPMENT

- Accessibility of engine components is enhanced by not having the requirement of a whole vehicle in the shop
- Ability to verify proper engine systems operation before and after engine repair assignments are completed
- Provides immediate feedback to students for confirmation of their workmanship and instruction completion
- Provides a single starting station that can be utilized with multiple swivel engine stands
- All rotating components are covered with safety shields or guards to prevent injuries
- Continuity of subject matter is provided by having students working on identical engines
- Multiple NATEF, Red Seal and Alberta tasks in the Engine Repair. Electrical/Electronics and Engine Performance areas can be instructed and practiced on these products
- Possibility to run the engine without starting it to demonstrate the mechanical pressure
- Easy access to the two crankcase seals

APPLICATION

- Starting Station : 2012-2015 Chevrolet Sonic
- Swivel Engine : GM Ecotec 1.8L LUW

TECHNICAL INFORMATION

- **Dimensions**
  - Starting station : 56 x 36 x 54 inch (142.24 x 91.44 x 137.16 cm) / 60 x 40 x 56 inch (152.4 x 101.6 x 142.24 cm) with packaging
  - Swivel Engine : 42 x 28.25 x 47.75 inch (106.68 x 71.12 x 119.38 cm) / 60 x 70 x 78 inch (152.4 x 177.8 x 198.12 cm) with packaging
- **Weight**
  - Combine : 1210 lb (548.85 kg) with packaging
  - Swivel engine alone : 920 lb (417.31 kg) with packaging

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