

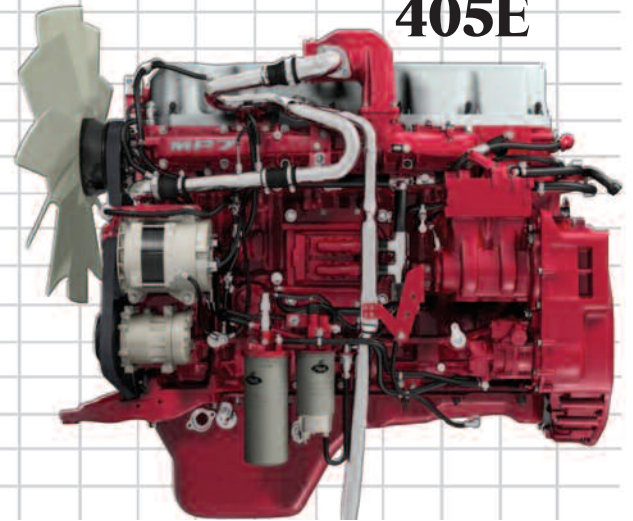
MACCK

ENGINE



MP7

405E



FEATURES

- High Torque ECONODYNE™ Diesel Engine
- Cooled Exhaust Gas Recirculation (CEGR)
- Maximum Horsepower 405 BHP [302 kW]
- Electronic Unit Pump Fuel Injection with Rate Shaping
- V-MAC IV Total Vehicle Electronics System
- Wide Operating Range 1200-1800 RPM
- Chassis Mounted Charge Air Cooled
- Variable Geometry Turbocharger
- Extended Service Intervals
- MACK PowerLeash Engine Brake

SPECIFICATIONS

HP [kW] @ Governed RPM 405 [302] @ 1800
 Peak HP (kW) @ RPM 405 [302] @ 1500-1800
 Max. Torque lb. ft. [N•m] @ RPM 1,460 [1 978] @ 1200
 Type Direct Injection Diesel
 Number of Cylinders 6, In-Line
 Bore & Stroke, in. [mm] 4.84 x 5.98 [123 x 152]
 Displacement, in.³ [L] 659 [11]
 Compression Ratio 16:1
 Firing Order 1-5-3-6-2-4
 Torque Rise 24%
 Clutch Engagement 720 lb. ft. [976 N•m] @ 800 RPM
 Idle Speeds:
 Low Adjustable; 650 RPM
 High Adjustable; 2100 RPM
 Engine Brake Retarding Power (If Applicable)
 400 HP [299 kW] @ 2100 RPM
 Weight, Dry: (Approx.) 2,270 lbs. [1 030 kg]
 (With air compressor, but no oil, water, starter, fan, alternator, or clutch)

V-MAC IV® FUNCTIONS

4th Generation Vehicle Management And Control System

V-MAC IV PRODUCTIVITY FEATURES:

- PTO (4) and Electronic Hand Throttle Control
- Engine "Smart Fan Control"
- Integrated Sleeper Low Voltage Disconnect †
- "Smart Idle" Speed Regulator
- GuardDog Routine Maintenance Monitoring †

V-MAC IV DRIVER CONVENIENCE FEATURES:

- Full Featured Cruise Control
- Cruise and Brake Engine Brake Control
- Programmable Engine Governor Type
- Idle Cooldown
- Daytime Running Light (DRL) Override †

V-MAC IV FUEL ECONOMY FEATURES:

- Vehicle Speed Limiting
- Engine "Sweet Spot Indicator"
- Fuel Economy Incentive Program
- Idle Shutdown
- Integrated Temp-A-Start †

V-MAC IV RELIABILITY FEATURES:

- Engine Protection
- Starter Protection
- Differential Lock Auto Control

V-MAC IV FLEET MANAGEMENT FEATURES:

- DataMax Comprehensive On-Board Data Logger
- InfoMax PC Fleet Management Software

V-MAC IV SAFETY AND SECURITY FEATURES:

- Speed Sensor Tamper Resistance
- Theft Deterrence
- 5th Wheel Slide Unlocked Vehicle Speed Limiting
- Air Suspension Deflated Vehicle Speed Limiting

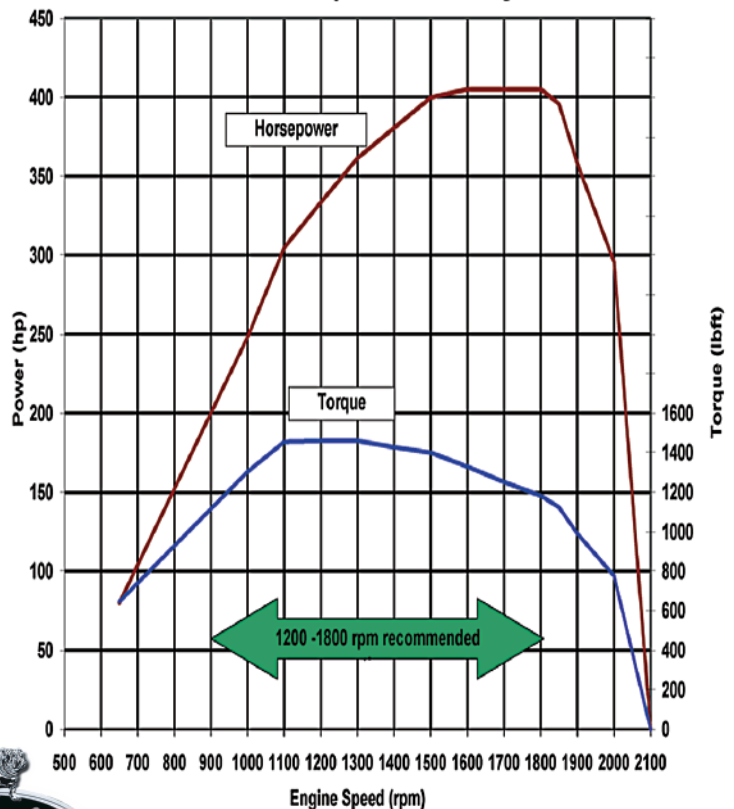
V-MAC IV SERVICEABILITY FEATURES:

- SAE J1587 and J1939 Diagnostic Port
- Electronic Fault Logging with Fault Reporter
- VCADS PC Based Service Software

† Denotes an available option.

ENGINE PERFORMANCE

Mack Econodyne MP7-405E Offerings



ENGINE SPECIFICATIONS

- Flywheel Housing Die cast Aluminum
- Cylinder Block:
 - Material Alloyed Grey Cast Iron
 - Ladder Frame Reinforcement
- Cylinder Liners:
 - Type Full Wet Design
 - Surface Finish Plateau Honed
- Cylinder Head Assembly:
 - Type Grey Cast Iron Slab Head With Intermediate Deck Single Overhead Cam
 - Configuration 4 Valves/Cyl., OHV
 - Valve Type Poppet
 - Valve/Insert Material Super Alloy (Serviceable)
- Pistons & Rings:
 - Piston Type MonoTherm™ Single Piece Steel w/Closed Cooling Gallery
 - Pin Diameter 2.125" [54 mm]
 - Rings 2 Compression, 1 Oil Control
- Crankshaft:
 - Material Forged, Carbon Steel
 - Heat Treatment Induction-Hardened Journals/Fillet
 - Main Bearing Diameter 4.5" [114 mm]
- Charge Air Cooling Chassis Mounted, Air-To-Air
- Fuel System Delphi E3 Electronic Unit Injectors w/2 Solenoid Valve Technology and Rate Shaping
- Fuel Supply Pump ZF Meritor
- Filter Spin On, Disposable
- Lubrication System:
 - Type Full Pressure, Wet Sump
 - Oil Filters 2 Spin-On Full Flow Disposable, 1 Centri-Max Centrifugal
 - Oil Cooler Stainless Steel Plate
 - Total Oil Capacity 36 qts. (Incl's. Filters)
 - Drain Plug Magnetic
- Cooling System:
 - Capacity 17 qts. [16 L]
 - Thermostats 180°F [82°C]
 - Hose Material Gates Blue Stripe
- Air Compressor:
 - Type Meritor WABCO
 - Standard Capacity 18.7 cfm [8.9L/s]
- Turbocharger Holset, Sliding Nozzle Ring Variable Geometry w/Water Cooled Actuator and Bearings and Electronic Controls
- Accessory Belt Poly-V w/Automatic Tensioner
- EGR System
 - Single EGR Valve Assembly Modulated Cast Stainless Steel
 - EGR Cooler Stainless Steel Plate and Fin, Gas to Coolant

GEARING RECOMMENDATIONS

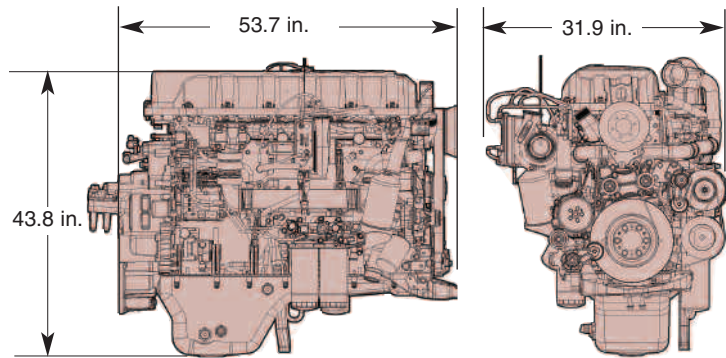
Proper gearing is necessary to achieve optimum vehicle performance and fuel economy. Vehicle specifications, including engine, transmission, axle ratio, and tire selection, should generally be selected to meet the following criteria:

Startability	Highway Applications	≥ 10%
	On-Off Highway Applications	≥ 16%
Gradeability	@ Cruise Max. MPH	≥ 0.5%
	@ Peak Torque, Top Gear	≥ 1.5%
Cruise RPM		1500 ±50 RPM*

*Cruise RPM = Engine speed in top gear @ Cruise Max. MPH setting. Limited to 65 MPH. At higher speeds gear truck to obtain above RPM @ 65 MPH.

Refer to the MACKTRAQ® electronic sales tool to obtain startability, gradeability and cruise RPM results for specific vehicle specifications. Special service applications, road surfaces, high GCW's or other factors may require different gearing considerations.

DIMENSIONS



OIL/FILTER SERVICE INTERVALS

Refer to the latest version of Mack Maintenance & Lubrication Manual TS494.

OPTIONAL EQUIPMENT**

- High Capacity Air Compressor
- 120 and 240 Volt Engine Block Heaters
- High Capacity Alternator

** Availability may be chassis model dependent.