

Diesel Engines

This course provides a strong introduction to the operation and maintenance of the Caterpillar Model 16C M32 diesel engine. Students leave the classroom with an in-depth knowledge of basic four-cycle engine operation, engine construction, operating guidelines, pre-start checks, engine operating procedures, and troubleshooting.

I. Overview of Four-Cycle Engines

II. Basic Four-Cycle Engine Operation

- Intake Stroke
- Compression Stroke
- Power Stroke
- Exhaust Stroke

III. Engine Construction

- Engine Housing
- Oil Pan
- Cylinder Head
- Pistons
- Connecting Rods
- Cylinder Liner
- Crankshaft
- Vibration Damper
- Flywheels
- Bearings
- Lubrication Systems
- Fuel System
- Cooling System
- Governor

IV. Operating Procedures

- Engine Operating Guidelines
- Pre-Start Checks
- Engine Operating Procedures
- Troubleshooting

V. Maintenance

- Maintenance System
- Safety Instructions
- Periodic Maintenance Schedule – Heavy Fuel
- Engine Maintenance
- Cylinder Head Maintenance
- Cylinder Liner Maintenance
- Crankcase Relief Valve Inspection/Checking
- Piston and Connecting Rod Maintenance
- Bearing Maintenance
- Crankshaft Web Deflection Check
- Bearing Shells and Bearing Bushes
- Camshaft Maintenance
- Compressed Air System Maintenance
- Fuel System Maintenance
- Turbocharger, Charge Air Cooler, and Exhaust Manifold
- Lubricating Oil System Maintenance
- Engine Auxiliary Equipment Maintenance