PERTECNCA'S

ENGINE REPAIR & MAINTENANCE TRAINING BROCHURE

- ☑ Practical training
- ☑ Post training assistance

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ENGINE REPAIR & MAINTENANCE TRAINING

The Engine Repair and Maintenance Training Program is designed to provide participants with comprehensive knowledge and practical skills in repairing and maintaining various types of engines, including gasoline, diesel, and hybrid engines. This course is ideal for aspiring mechanics, automotive technicians, and anyone interested in mastering the art of engine repair and upkeep. Participants will gain hands-on experience in engine disassembly, inspection, troubleshooting, and reassembly.

What you'll learn?

- Fundamentals of engine construction and operation.
- Techniques for disassembling and inspecting engine components.
- Methods for diagnosing engine wear and damage.
- Repairing and replacing faulty engine parts.
- Engine reassembly and testing procedures.
- Maintenance best practices to prolong engine life.
- Safety protocols during engine repair and maintenance.
- Understanding and applying manufacturer service manuals.

Course summary:

This intensive training program focuses on the essential skills needed to effectively repair and maintain engines. Through a combination of theoretical knowledge and hands-on training, participants will become proficient in diagnosing engine issues, performing repairs, and conducting routine maintenance. The course covers traditional combustion engines as well as modern hybrid systems, preparing participants to handle a variety of engine types.

Key Takeaways:

- Expertise in engine disassembly and component inspection.
- Ability to diagnose and repair common engine problems.
- Understanding of maintenance practices to extend engine longevity.
- Hands-on experience with real-world engine repair and maintenance tasks.
- Preparedness for careers as engine repair technicians or automotive mechanics.

Course syllabus:

Module 1: Introduction to Engine Repair and Maintenance

- Overview of engine types: gasoline, diesel, and hybrid.
- Basic principles of engine operation and their repair implications.
- Introduction to engine repair tools and equipment.
- Safety considerations during engine repair and maintenance.

Module 2: Engine Disassembly and Component Inspection

- Techniques for safely disassembling engines.
- Detailed inspection of engine components: pistons, cylinders, valves, etc.
- Identifying wear, damage, and potential failure points.
- Practical session: disassembling and inspecting different engine types.

Module 3: Diagnosing Engine Problems

- Methods for diagnosing common engine issues: overheating, knocking, and oil leaks.
- Using diagnostic tools and techniques for accurate problem identification.
- Case studies on real-world engine problems and their solutions.
- Practical session: diagnosing engine issues in various vehicles.

Module 4: Repairing Engine Components

- Techniques for repairing or replacing worn or damaged engine parts.
- Use of specialized tools for engine repair tasks.
- Practical session: repairing pistons, cylinders, valves, and other key components.
- Project: repairing engines with common wear and tear issues.

Module 5: Engine Reassembly and Testing

- Step-by-step process for reassembling an engine after repair.
- Ensuring proper alignment and function of all engine components.
- Testing the reassembled engine for performance and reliability.
- Practical session: reassembling and testing various types of engines.

Module 6: Routine Engine Maintenance

- Importance of regular engine maintenance in prolonging engine life.
- Techniques for performing routine maintenance tasks: oil changes, filter replacements, and more.
- Practical session: conducting maintenance on different engine types.
- Case studies on the impact of maintenance on engine longevity.

Module 7: Advanced Repair Techniques

- Repair challenges in modern engines: turbocharged, direct injection, and hybrid systems.
- Advanced techniques for repairing complex engine systems.
- Use of oscilloscopes and other advanced diagnostic tools in repairs.
- Practical session: advanced repair work on modern engines.

Module 8: Manufacturer Guidelines and Service Manuals

- Understanding and applying manufacturer service manuals during repairs.
- Importance of following OEM specifications and procedures.
- Practical session: using service manuals to guide engine repairs.
- Case studies on successful repairs guided by manufacturer documentation.

Module 9: Practical Fieldwork and Real-World Projects

- Hands-on project: performing repairs on a range of vehicles and machinery.
- Fieldwork: participation in engine repair projects in automotive repair shops.
- Real-world scenarios: handling repair challenges in live environments.
- Collaboration with industry professionals on field repair projects.

Module 10: Evaluation and Certification

- Comprehensive assessment of theoretical knowledge and practical skills.
- Written exams covering engine diagnostics principles and procedures.
- Practical exams on real-world diagnostic tasks.
- Certification upon successful completion of the course.
- Opportunities for advanced training and specialization.

Practical training:

- Engine Disassembly: Hands-on practice with disassembling different types of engines.
- Component Inspection: Techniques for inspecting and assessing engine parts for wear or damage.
- Troubleshooting: Identifying and diagnosing common engine issues.
- Repair Techniques: Practical sessions on repairing or replacing engine components.
- Engine Reassembly: Step-by-step guidance on reassembling engines and ensuring proper function.
- Maintenance Practices: Practical training on routine engine maintenance tasks.
- Safety Protocols: Implementing safety measures during repair and maintenance work.
- Field Projects: Real-world engine repair projects in automotive workshops.

Career scope:

Upon completing the Engine Repair and Maintenance Training course, graduates can explore career opportunities in various sectors, including:

- Engine Repair Technician
- Automotive Mechanic
- Diesel Mechanic
- Marine Engine Mechanic
- Heavy Equipment Mechanic
- Fleet Maintenance Specialist
- Engine Rebuilding Technician
- Motorcycle Mechanic
- Automotive Service Advisor
- Workshop Manager