



PERTECNCA'S

ELECTRIC BIKE REPAIR TRAINING BROCHURE

- ✓ Practical training
- ✓ Post training assistance

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ELECTRIC BIKE REPAIR TRAINING

The Electrical Bike Repair Training Program is designed to equip participants with the necessary skills to diagnose, repair, and maintain electric bicycles. With the growing popularity of eco-friendly transportation, this course provides hands-on training on the latest technologies used in electric bikes, covering everything from battery management to motor troubleshooting. This program is ideal for aspiring technicians, bike enthusiasts, and anyone looking to enter the rapidly expanding field of electric vehicle maintenance.

What you'll learn?

- Fundamentals of electric bike systems and components.
- Techniques for diagnosing electrical faults and motor issues.
- Battery technology, management, and replacement procedures.
- Wiring harness troubleshooting and repair.
- Understanding and repairing electronic controllers and sensors.
- Maintenance of electric bike drivetrain and braking systems.
- Software diagnostics and firmware updates.
- Best practices for safety inspections and performance testing.

Course summary:

The Electrical Bike Repair Training Program provides a comprehensive understanding of electric bike systems, focusing on both theoretical knowledge and practical skills. Participants will learn to service and repair a wide range of electrical components, ensuring they can maintain the reliability and efficiency of electric bikes. This course prepares students for careers in the growing electric vehicle industry, offering valuable insights into the future of transportation.

Key Takeaways:

- Proficiency in diagnosing and repairing electric bike systems.
- In-depth knowledge of battery technologies and management.
- Hands-on experience with motor and electronic controller repairs.
- Preparedness for a career as an electric bike technician or specialist.

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Course syllabus:

Module 1: Introduction to Electric Bikes

- Overview of electric bike technology and components.
- Basic electrical principles relevant to electric bikes.
- Safety precautions for working with high-voltage systems.
- Practical session: Familiarization with electric bike components.

Module 2: Electric Motor Fundamentals

- Types of electric motors used in electric bikes (hub motors, mid-drive motors).
- Motor operation and common issues.
- Techniques for diagnosing and repairing motor problems.
- Practical session: Motor disassembly and inspection.

Module 3: Battery Technology and Management

- Overview of battery types used in electric bikes (Li-ion, NiMH).
- Charging protocols and battery health management.
- Replacing and upgrading electric bike batteries.
- Practical session: Battery testing and replacement.

Module 4: Electronic Controllers and Sensors

- Understanding the role of electronic controllers in electric bikes.
- Common sensor types and their functions (throttle, brake sensors).
- Diagnosing and repairing controller and sensor issues.
- Practical session: Servicing electronic controllers and sensors.

Module 5: Wiring Harness and Electrical Systems

- Overview of electric bike wiring systems.
- Techniques for troubleshooting electrical faults.
- Repairing and replacing wiring harnesses.
- Practical session: Electrical system diagnostics and repair.

Module 6: Drivetrain and Transmission Systems

- Maintaining and repairing electric bike drivetrain components.
- Differences between chain, belt, and shaft drive systems in electric bikes.
- Practical session: Drivetrain servicing and adjustments.

Module 7: Braking Systems and Regenerative Braking

- Understanding braking systems in electric bikes (mechanical, hydraulic).
- Servicing and adjusting brakes for optimal performance.
- Overview of regenerative braking systems and maintenance.
- Practical session: Brake servicing and inspection.

Module 8: Software Diagnostics and Updates

- Introduction to diagnostic tools and software for electric bikes.
- Performing firmware updates and system diagnostics.
- Troubleshooting software-related issues in electric bikes.
- Practical session: Diagnostic software application and updates.

Module 9: Customization and Performance Enhancement

- Customizing electric bikes for improved performance and aesthetics.
- Upgrading motor and battery systems for better efficiency.
- Practical session: Customization and tuning of electric bikes.

Module 10: Safety Inspections and Road Testing

- Conducting comprehensive safety inspections on electric bikes.
- Identifying and addressing potential safety hazards.
- Performing road tests to ensure repair quality and performance.
- Practical session: Full safety inspection and road testing.

Module 11: Evaluation and Certification

- Comprehensive assessment of theoretical and practical knowledge.
- Written exams covering electric bike repair and maintenance.
- Practical exams involving diagnostic and repair tasks.
- Certification awarded upon successful course completion.
- Career guidance and industry opportunities.

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Practical training:

- **Battery Management:** Handling, charging, and replacing electric bike batteries.
- **Motor Troubleshooting:** Diagnosing and repairing issues with electric motors.
- **Electronic Controllers:** Servicing and updating electric bike controllers and sensors.
- **Wiring Repair:** Troubleshooting and repairing electrical wiring harnesses.
- **Drivetrain Maintenance:** Maintaining chain, belt, and shaft drives in electric bikes.
- **Braking Systems:** Servicing and adjusting braking systems on electric bikes.
- **Safety Inspections:** Conducting comprehensive safety checks and road tests.
- **Software Updates:** Performing diagnostics and firmware updates.

Career scope:

Upon completing the Electric bike repair training course, graduates can explore career opportunities in various sectors, including:

- Electric Bike Technician
- Electric Vehicle Maintenance Specialist
- Service Advisor for Electric Bikes
- Workshop Manager for EVs
- Electric Bike Repair Shop Owner
- EV Systems Consultant
- Battery Technology Specialist
- Electric Bike Sales and Service Consultant
- Fleet Maintenance Technician for Electric Bikes
- Independent EV Service Provider



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