

COURSE GUIDE

2024



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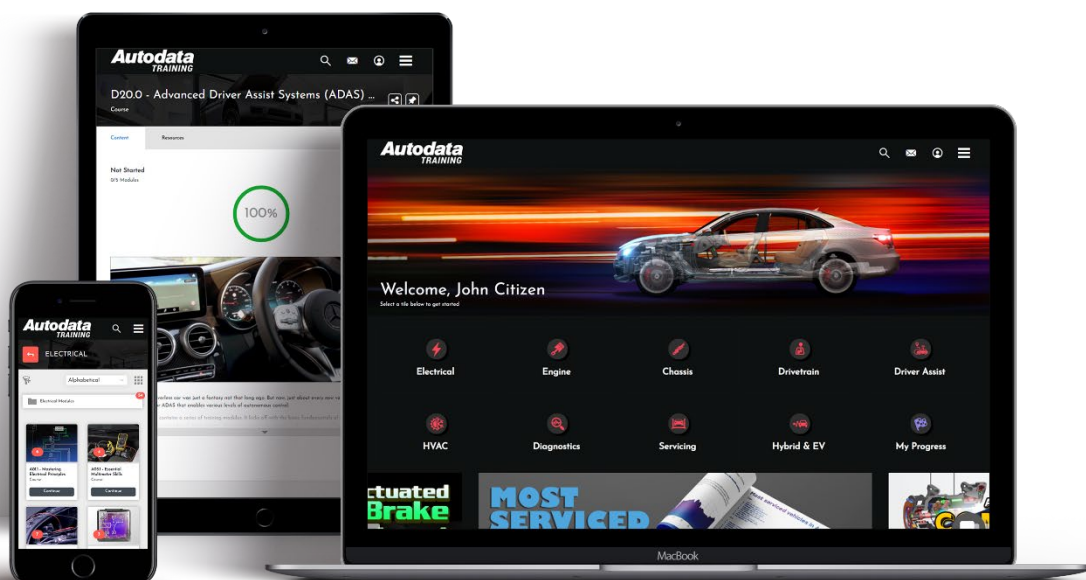
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USING THIS GUIDE



Course is included in an Autodata **Diagnostic & Repair** subscription.



Course is included in an Autodata **Service & Maintenance** subscription.

*Note: All courses are included in an **Autodata Training** subscription.*

A01.1 - Mastering Electrical Principles



- CC50 Electron Theory, Conductivity & Ohm's Law
- CC51 Understanding Electrical Principles – Water Analogy
- CC55 Practical Uses For Ohms Law
- CC60 5 Elements That Every Circuit Must Have
- CC61 Understanding Circuit Protection
- CH50 Series & Parallel Circuits

A03.1 - Essential Multimeter Skills



- MM00 Fundamental Multimeter Functions
- MM05 Measuring Amps, Volts & Resistance
- MM10 Understanding Duty Cycle & Pulse Width Modulation
- MM20 Testing Diodes & Continuity

A08.2 - Diagnosing Circuit Faults



- CK50 Open & Short Circuits
- CV50 Terminal Tension & Back Probing
- CW50 Wiring Repairs Best Practices
- CW55 Locating Harness Faults
- CW70 What is Voltage Drop?
- CW71 Single Circuit Voltage Drop Checks
- CW73 Using Voltage Drop as a Diagnostic Tool

A20.1 - Automotive Relays Explained



- CM50 Automotive Relays
- JE50 Relay Circuits
- CM70 Monitored Relay Circuits

A25.1 - Vehicle Lighting Technology



- AL00 Introduction to Automotive Lighting
- AL05 Incandescent and Halogen Lighting Technology
- AL10 High Intensity Discharge Lighting Technology
- AL15 LED Lighting Technology
- AL20 Laser Lighting Technology

A30.1 - Understanding Sensors



- C050 Electronic Components
- CP50 Piezo Resistive Sensors Explained
- CP60 Piezo Electric Sensors Explained
- CP70 Capacitive Sensing
- CP80 Ultrasonic Sensor Technology

A40.1 - Mastering Control Modules



- CJ50 Circuit Operation & Voltage Dividers
- JC75 Pullup & Pulldown Circuits
- JC85 Control Module Logic & Programming
- ET00 J2534 Pass-Thru Communication

A50.1 - Electrical Waveforms Explained



- JL50 Oscilloscope Essentials
- CR00 Current Limiting Technology
- CR50 Pulse Width Modulation Explained
- JL60 Interpreting Position Sensor Waveforms
- JL70 Interpreting Pressure Sensor Waveforms

A60.1 - Testing & Charging Batteries



- CW00 Batteries - Lead Flooded
- CW15 Lithium Battery Technology
- CW30 Battery Test, Maintenance & Recharge
- CW42 Locating Parasitic Drain
- ES15 Smart Battery Charger Technology

A64.2 - Understanding Charging Systems



- CW60 Alternators Explained
- CW62 Alternators - Current Rectification
- CW64 Alternators - Voltage Regulation
- CW66 Best Practice Alternator Testing Guide

A67.1 - Smart Charging Technology



- CW80 Charging Systems ECM Controlled
- CW90 ECM Controlled Charging Diagnosis

A70.1 - Mastering Starter Systems



- FT50 Starter Motors Explained
- EM00 Direct Current Motors
- KB48 Starter Circuit Voltage Drop Testing
- FX23 Start Stop Battery Technology
- FX25 Start Stop Operation

A80.1 - Modern Vehicle Networks



- EC50 Low Speed BUS
- EH50 CAN High Speed BUS
- FB00 Understanding FlexRay
- ES50 MOST BUS
- EM50 LIN BUS

C01.1 - Tyre & Rim Essentials



- FX00 Tyre Technology
- FX05 Tread & Rim Technology
- FX15 Run Flat Tyres
- FX50 Tyre Pressure Monitoring

C02.1 - Best Practice Tyre Fitment



- FX70 Best Practice Standard Wheel Balancing
- FX65 Best Practice Standard Tyre Strip & Fit
- FX67 Best Practice Low Profile/Run Flat Tyre Strip & Fit

C10.2 - Introducing Suspension Components



- FR05 Suspension Components - Springs
- FR10 Suspension Components - Shocks
- FR15 Suspension Components - Linkages
- FR17 Suspension Components - Anti Roll
- FR19 Suspension Components - Bushes
- FR00 Suspension System Principles

C11.0 - Understanding Suspension Systems



- FR50 Macpherson Strut - System Components & Operation
- FR52 Macpherson Strut - Inspection Procedures
- FR55 Torsion Bar - System Components & Operation
- FR57 Torsion Bar - Inspection Procedures
- FR60 Double Wishbone - System Components & Operation
- FR62 Double Wishbone - Inspection Procedures

C12.1 - Advanced Suspension Technology



- FR20 Air Suspension Overview
- FR12 Active Shocks

C20.1 - Complete Steering Systems



- FP00 Manual Steering Principles
- FP05 Hydraulic Power Steering
- FP40 Electro-Hydraulic Power Steering
- FQ50 Electric Power Steering

C30.0 - Mastering Wheel Alignments



- FQ70 Understanding Steering Angles

C40.1 - Braking System Essentials



- BK00 Automotive Braking Principles
- BF00 Understanding Brake Fluid
- BK12 Brake Master Cylinder Operation
- BK23 Disc Brake Systems
- BK40 Drum Brake Systems - Components & Operation

C42.1 - Advanced Braking Systems



- BK15 Hydraulic Pressure Control & Safety Valves
- BK20 Brake Boosters – Vacuum Suspended

C50.1 - ABS Operation & Testing



- FC50 Anti-Lock Brakes
- MH25 Wheel Speed Sensor Operation & Testing
- MH50 Wheel Speed Sensor Circuit Fault
- MK50 ABS Pump Motor Circuit Diagnosis

C55.1 - Park Brake Technology



- FM75 Calliper Type Electric Park Brakes
- FM50 Cable Actuated Electric Park Brakes
- FM60 Cable Actuated Electric Park Brake Adjustment

D10.1 - Passive Assist Technology



- FW50 Collision Avoidance Camera Type
- FW25 Lane Departure Passive Type
- FV50 Blind Spot & Cross Traffic Alert

D20.1 - Advanced Driver Assist Systems (ADAS) Essentials



- FA00 Introducing Advanced Driver Assist Systems
- FA05 Understanding the Operating Principles of ADAS
- FA10 Ultrasonic ADAS Sensors Explained
- FA15 Radar Technology In-Depth
- FA20 Understanding ADAS Camera Systems
- FA25 Automotive LiDAR Explained
- FA30 Principles of Automated Vehicle Localisation
- FA35 The Autonomous Vehicle Brain - ADAS & Artificial Intelligence

D40.0 - ADAS Calibration Guide



- FW10 ADAS Front Camera Calibration
- FW15 ADAS Rear Camera & All-Round Vision Calibration
- FW30 ADAS Front Radar Calibration

D55.1 - Understanding Stability Control



- FH50 Traction Control
- FJ50 Stability Control
- FY60 Launch Control Systems
- FJ60 Hill Descent

D70.2 - Safety & Comfort Systems



- YA00 Windshield Wiper Systems
- YA20 Rain Sensor Technology
- FT70 Heads Up Display Systems
- FX50 Tyre Pressure Monitoring
- YA60 Wireless Phone Charging
- MR60 Immobiliser Systems
- FY50 Radar Cruise Control
- FL10 Keyless Entry
- MR50 Keyless Entry System Diagnosis

D85.1 - SRS Airbag Essentials



- FJ80 SRS Airbag Safety
- FJ90 SRS Airbag Operation
- MN50 SRS Pretensioners

T00.1 - Complete Clutch Essentials



- CS00 Clutch System Principles
- CS02 Multiplate Clutch Systems
- CS10 Dual Mass Flywheel Principles
- CS40 Conventional Clutch Diagnostics

T10.1 - Manual Transmissions Explained



- MT00 Manual Transmission Operation
- MT10 Understanding Manual Transaxles

T20.0 - Dual Clutch Transmission Essentials



- NS00 Introducing DCT

T40.1 - Mastering Automatic Transmissions



- VD80 Automatic Transmission Fluids
- AT00 Torque Converter Operation
- AT10 Planetary Gear Sets
- AT15 Automatic Transmission Operation
- AT20 Automatic Transmission Hydraulics
- AT25 Electronic Transmission Control

T60.0 - CVT Fundamentals



- CT00 Continuously Variable Transmission Overview

T80.0 - Introducing Transfer Cases



- TC00 Transfer Case Overview

T90.1 - Understanding Final Drives



FD00 Understanding Final Drives

FD30 Limited Slip Differentials

FD05 Driveshaft, Universal & Constant Velocity Joint Operation

G00.1 - Mastering Onboard Diagnostics



| | |
|------|--|
| SB00 | Strategy Based Diagnostics |
| OB00 | On-Board Diagnostics - Generation 1 |
| OB05 | On-Board Diagnostics - Key Elements |
| OB10 | On-Board Diagnostics - Key Elements 2 |
| JC80 | Control Module Power & Ground Circuit Checks |
| JB50 | Understanding Diagnostic Trouble Codes |
| AC50 | Understanding Drive Cycles |
| AC65 | Drive Cycle Diagnosis |

G05.2 - Engine Misfire Diagnostics



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|------|--|
| AD50 | Engine Misfire Monitoring |
| AD60 | Undetermined Misfire Diagnostics |
| DS50 | Automotive Thermal Imaging & Diagnostics |
| KE10 | Knock Sensor - Voltage High |

G10.1 - NVH Principles & Diagnostics



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|------|---------------------------------|
| CI30 | Understanding NVH - Noise |
| CI32 | Understanding NVH - Vibration |
| CI34 | Understanding NVH - Harshness |
| CI36 | Understanding NVH - Diagnostics |

G15.1 - Starter Relay Diagnostics



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| KB50 | Starter Relay Circuit Malfunction Diagnostics |
| KB60 | Starter Relay Circuit Voltage Low Diagnostics |
| KB65 | Starter Relay Circuit Voltage High Diagnostics |

G20.1 - Oil Pressure Sensor Diagnostics



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|------|--|
| KT50 | Oil Pressure Sensor Circuit – Voltage Low Diagnosis |
| KT60 | Oil Pressure Sensor Circuit – Voltage High Diagnosis |
| KT70 | Oil Pressure Sensor Signal Performance |

G25.1 - Crankshaft Sensor Diagnostics



- KN50 Crankshaft Position Sensor Signal Performance
- KN55 Crankshaft Position Sensor Signal Voltage Low
- KN60 Crankshaft Position Sensor Signal Voltage High
- KN65 Crankshaft Position Sensor Intermittent Signal

G30.1 - Camshaft Sensor Diagnostics



- K050 Cam Position Actuator Valve - Negative Control
- K055 Cam Position Actuator Valve - Positive Control
- CP05 Camshaft Position Sensor Voltage Low
- CP10 Camshaft Position Sensor Voltage High

G35.1 - MAF Sensor Diagnostics



- KQ50 Mass Air Flow Sensor Signal Performance
- KQ60 Mass Air Flow Sensor Short to Ground
- KQ70 Mass Air Flow Sensor Signal Voltage High

G40.2 - MAP & BARO Sensor Diagnostics



- KP60 MAP Sensor Pull-up Type Voltage Low
- KP65 MAP Sensor Pull-up Type Voltage High
- KP70 MAP Sensor Pull-down Type Voltage Low
- KP75 MAP Sensor Pull-down Type Voltage High
- KP50 MAP Sensor Signal Performance
- BS25 Barometric Sensor Signal Faults
- BS20 Barometric Sensor – Shorts to Voltage & Ground

G45.1 - IAT Sensor Diagnostics



- KS50 IAT Sensor Circuit Voltage Low
- KS60 IAT Sensor Circuit Voltage High
- KS70 IAT Sensor Signal Performance

G50.1 – Fuel System Diagnostics



- KD50 Fuel Injector Circuit Low
- KD60 Fuel Injector Circuit High
- KC00 Fuel Trim – System Too Rich
- KC05 Fuel Trim – System Too Lean
- KC15 Evaporative Systems Open Circuit
- KC20 Evaporative Systems Short to Ground
- KC25 Evaporative Systems Short to Voltage

G55.1 - FRP Sensor Diagnostics



- KC70 FRP Sensor Voltage High - Pull Up Type
- KC75 FRP Sensor Voltage High - Pull Down Type
- KC80 FRP Sensor Voltage Low - Pull Up Type
- KC85 FRP Sensor Voltage Low - Pull Down Type

G57.1 - Diesel Pressure Regulator Diagnostics



- VK80 Diesel Pressure Regulator Performance
- VK85 Diesel Pressure Regulator Voltage Low
- VK90 Diesel Pressure Regulator Voltage High

G60.1 - Turbocharger Diagnostics



- KR50 Turbocharger Wastegate Type - Underboost
- KR55 Turbocharger Wastegate Type - Overboost
- KR60 Turbocharger VGT Type - Underboost
- KR65 Turbocharger VGT Type - Overboost

G65.1 - Oxygen Sensor Diagnostics



- KE50 Narrow Band Oxygen Sensor Poor Performance
- KE60 Narrow Band Oxygen Sensor Heater Circuit
- KF50 Wide Band Oxygen Sensor Pump Circuit Low

G70.1 - EGR Diagnostics



- KH75 EGR Flow Diagnostics
- KH85 EGR Position Signal Voltage Low
- KH86 EGR Position Signal Voltage High
- KH87 EGR Signal Performance

G75.1 - DPF Pressure Sensor Diagnostics



- VK55 DPF Pressure Sensor Voltage High Pull Up Type
- VK60 DPF Pressure Sensor Voltage High - Pull Down Type
- VK65 DPF Pressure Sensor Voltage Low - Pull Up Type
- VK70 DPF Pressure Sensor Voltage Low - Pull Down Type

G80.1 - Vehicle Network Diagnostics



- LE50 CAN HS - Short Circuit Diagnosis
- LE60 CAN HS - Short to Ground or Voltage Diagnosis
- LE70 CAN HS - Open Circuit Diagnosis
- EM55 LIN BUS Diagnostics
- ES60 MOST BUS Diagnosis
- LC50 Low Speed BUS Diagnostics

G85.1 - Accelerator Pedal Position Diagnostics



- KM50 Accelerator Pedal Position Sensor Diagnosis
- KM55 Accelerator Pedal Position Signal Not Plausible
- KM60 Accelerator Pedal Position Signal Voltage Low
- KM65 Accelerator Pedal Position Signal Voltage High

G90.1 - Electronic Stability Program Diagnostics



- MC50 Steering Angle Sensor - Voltage High Diagnosis
- FK50 Yaw Sensor - Communication Fault
- FK60 ESP Bus Diagnostics

G95.2 - SRS Diagnostics



- ML50 SRS Airbag Open Circuit Diagnosis
- ML55 SRS Airbag Short to Ground Diagnosis
- ML60 SRS Airbag Short to Voltage Diagnosis
- MN60 SRS Pretensioner Diagnosis

S00.1 - Vehicle Servicing & Safety Checks



- TC50 High Voltage Awareness
- UC50 Best Practice Vehicle Servicing
- UC65 Best Practice Vehicle Safety Checks

S05.2 - Cooling System Servicing



- KB22 Understanding Engine Coolants
- KB40 Engine Coolant Testing
- KB38 Best Practice Coolant Drain & Flush
- VE40 Drive Belt Diagnosis
- KB70 Engine Coolant Temperature Sensor Diagnostics

S10.2 - Engine Oil Essentials



- KT40 Oil Filtration Principles
- VE00 Engine Oil Viscosity & Performance Classification
- VE05 Engine Oil - Bases, Additives & Composition
- VE10 Engine Oil - Synthetic vs. Mineral
- VE15 Engine Oil Selection

S50.1 - Transmission Servicing



- NS50 VW-Audi DSG Service
- NG50 6 Speed Hydramatic Service RWD
- NM50 Mercedes Benz 722.9 Transmission Service
- NT50 ZF 4HP 16 Transmission Service Check

E00.1 - Engine Mechanical Essentials



- BD00 4 Stroke Engine Principles
- BD60 Relative Compression Testing
- HB50 Gasoline Engine Mechanical Checks
- BD50 Best Practice Head & Gasket Leak Testing
- HR20 Understanding Valve Timing
- HR50 VVT Cam Phasing Type
- HR55 VVT Cam Changing Type
- JP50 Valve Adjustment - Shim Type
- JP75 Valve Adjustment - Rocker Type

E05.1 - Cooling System Principles



- KB20 Cooling System Principles
- VE35 Drive Belt Systems
- KB35 Cooling System Diagnosis
- KB25 Cooling Fans - Relay Controlled
- KB28 Thermostats - ECM Controlled
- KB30 Investigating Stray Current Corrosion

E10.1 - Forced Induction Fundamentals



- KR10 Forced Induction - System Principles
- KR11 Turbocharger Components - Bearings
- KR12 Twin Scroll Turbocharging - System Principles
- KR15 Twin Charge Systems
- KY50 Understanding Turbo Surge & Flutter
- TE90 48 Volt Electric Turbocharger Technology

E15.2 - Engine Management Essentials



- H060 Port Fuel Injection Delivery System
- H050 Gasoline Injection Fuel Control
- HP50 Introducing Gasoline Direct Injection (GDI)
- HG50 Understanding Fuel Trims
- HG00 Understanding Gasoline Scan Tool Data
- AE50 Throttle Actuator Control Systems
- AF00 Cylinder Deactivation OHV Type
- HS00 Intake Runner Control Systems
- KQ90 Intake Runner Control - Solenoid Type Diagnosis

E20.1 - Understanding Engine Sensors



- HN50 Gasoline Injection Sensors
- HD50 Narrow Band Oxygen Sensors
- HE50 Wide Band Oxygen Sensors
- MA10 Mass Air Flow Sensor - Hot Film Type
- CR10 Mass Air Flow Sensor 8 Wire Type
- JC50 2 Wire Sensors & Circuits
- JC75 Pullup & Pulldown Circuits
- HU50 Accelerator Pedal Position Sensor
- KL50 Throttle Position Sensors

E25.1 - Mastering Ignition Systems



- HC10 Kettering Type Ignition System
- HC15 Spark Plugs
- HC40 Spark Timing & Dwell Control
- KE30 Spark Plug & Lead Diagnosis
- HC50 Magneto & CDI
- HC20 Electronic Switching Ignition Systems
- HC30 COP & Wasted Spark
- KE15 Ignition Coil Pack Diagnosis

E30.1 - Gasoline Fuel Delivery Essentials



- KC55 Fuel Delivery System Mechanical Checks
- KC60 Fuel Delivery System Electrical Checks
- KD30 Oscilloscope Injector Diagnosis
- KC65 Fuel Pump Control Module Checks
- KC50 Fuel Pressure Regulator Performance
- AF25 Introducing Ethanol Fuel
- AF26 E85 & Flex Fuel Vehicles

E35.1 - Emission Control Fundamentals



- DA50 Vehicle Emission Principles
- DC50 Exhaust Gas Recirculation
- DE50 Vented Evaporative Systems
- KE00 Gasoline Exhaust Emission Diagnostics
- DH50 2 Way Catalytic Converter
- DJ50 3 Way Catalytic Converter
- DR50 Catalytic Converter Efficiency
- KH50 Catalyst Efficiency Diagnostics

E40.2 - Understanding Diesel Systems



- GE35 Diesel Unit Injection
- GE30 Hydraulic Electric Unit Injection (HEUI)
- GB50 Diesel Fuel Delivery - Low Pressure Supply
- GB60 Diesel Fuel Delivery - High Pressure Supply
- GM00 Two Stroke Diesel Engine Principles
- GM50 Diesel Engine Mechanical Checks
- GP00 Glow Plug Operation
- GP10 Indirect Glow Plug System - Testing Procedures
- GP15 Direct Glow Plug System - Testing Procedures

E45.1 - Common Rail Diesel Explained

DR

- GE50 Introducing Common Rail Diesel (CRD)
- GH50 CRD Fuel Delivery
- GF50 CRD Electronic Controls
- GK50 CRD Injector Coding
- GL50 CRD Intake & Exhaust Systems
- VD50 CRD Injector Leak Back Testing

E50.1 - Diesel Emissions Technology

DR

- DA50 Vehicle Emission Principles
- DC50 Exhaust Gas Recirculation
- DN50 NOx Type Catalytic Converter
- GN50 DPF Diesel Particulate Filter
- GN85 DPF Regeneration
- VK50 DPF Flow Diagnostics
- VM00 Selective Catalyst Reduction

H01.2 - HVAC Systems Essentials



- UG15 Introducing Air Conditioning
- UG25 Air Conditioning High Side Components
- UG40 Air Conditioning Low Side Components
- UG80 Air Conditioning Servicing
- UG16 Introducing R1234yf

H10.1 - HVAC System Operation



- UG55 HVAC System - Sensor Inputs
- UG60 HVAC System - Controls
- UG65 HVAC Systems - Outputs

H30.1 - HVAC Mechanical Diagnostics



- XJ50 Air Conditioning System Pressure Diagnosis
- XL50 Air Conditioning Compressor Clutch Diagnosis

H60.1 - HVAC Electrical Diagnostics



- XK50 Air Conditioning Thermistor Diagnosis
- XK68 Sunload Sensor - Voltage Low
- XK70 Sunload Sensor - Voltage High

V00.1 - Introducing Hybrid & Electric Vehicles



- HV00 Fundamentals of Vehicle Electrification
- HV05 Safe Working Practices & Procedures for Electrified Vehicles
- HV10 48-Volt Mild Hybrid Technology
- HV15 Full Hybrid Systems Explained
- HV20 Understanding Plug-In Hybrids
- HV25 Battery Electric Vehicles

V10.1 - Full Hybrid Powertrain Systems



- PS00 Hybrid Powertrain – Components and Function
- PS25 Hybrid Powertrain – System Modes
- PS50 Hybrid Powertrain – Mechanical Diagnosis
- PS75 Hybrid Powertrain – Electrical Diagnosis

V30.0 - HEV Electrical Systems, Batteries & Charging



- TD00 Motor Position Sensing - Resolvers
- TD01 Motor Position Sensing - Encoders

V60.0 - HEV Mechanical Systems



- EM00 Direct Current Motors
- EM20 AC & Induction Motors
- EM25 Synchronous Permanent Magnet AC Motors

V90.0 - HEV Braking & Cooling Systems



- EA10 Regenerative Braking Systems Explained

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