Seat Belts Anchorages Test Unit

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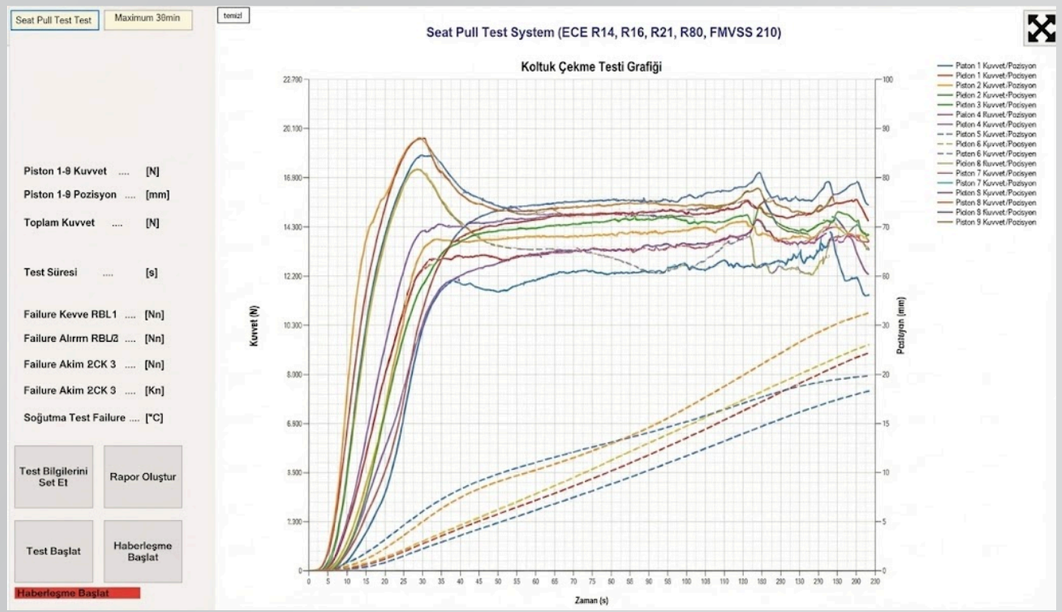
Advanced Seat & Seat Belt Tension Test System

Multi-Regulation Compliance for ECE R14, R16, R21, R80, FMVSS 210 Standards

- **FMVSS 210 - Seat Belt Assembly Anchorages (USA):**
  Establishes stringent requirements for seat belt anchorages to ensure their proper location for effective occupant restraint and structural integrity during high-load crash simulations.
- **ECE R14 - Seat Belt Anchorages (EU):**
  Specifically designed to perform static strength tests on belt anchorages, ensuring the vehicle structure can withstand extreme loads.
- **ECE R16 - Seat Belt Assembly:**
  Validation of the complete seat belt system, including webbing, buckles, and retractors under high-tension requirements.
- **ECE R80 - Strength of Seats (M2 & M3):**
  Testing the strength of seats and their anchorages for large passenger vehicles to ensure passenger protection during impacts.
- **ECE R21 - Interior Fittings:**
  Verification of interior components to ensure they do not detach or cause injury during high-force scenarios.



- **9-Channel 3x3 Matrix Actuator System:** Features 9 independently controllable servo-actuators in a matrix layout for complex, multi-point synchronized pulling scenarios.
- **Synchronized Load Profiles:** Capability to define individual pull rates and force targets for each actuator, ensuring a perfectly distributed load according to regulation geometry.
- **Industrial PC-Based Architecture:** Driven by a powerful industrial PC for high-speed data acquisition and real-time closed-loop control.
- **C# Visual Studio Based GUI:** Custom-developed software (seen on dashboard) providing real-time monitoring of force-displacement curves for all 9 channels.
- **Professional One-Click Reporting:** Instant generation of detailed Excel and PDF reports including peak force data and graphical analysis for homologation audits.