

# MTS 337 Power Steering Test System

## High accuracy simulation testing



### Benefits

- ▶ **More accurate real time simulation**  
Rigid, modular frame construction
- ▶ **Ease of control**  
Mechanical features reduce cross-coupling
- ▶ **Enhanced control**  
User adjustable precession/recession and jounce/rebound angles
- ▶ **Improved test accuracy**  
Optimal load cell placement
- ▶ **Reduced laboratory floor space requirements**  
Compact design

MTS' Model 337 Power Steering Test System helps users conduct durability and performance tests on passenger car and light truck steering systems. The five-channel system fills the gap between sophisticated multi-channel systems and simple three-channel systems. The system enables test engineers to employ traditional block cycle testing or Remote Parameter Control™ (RPC®)

simulation methods to test all aspects of steering gear performance and durability under real world service conditions.

The MTS 337 is a robust mechanical system based on a rigid frame. Users can apply lateral, vertical and steering loads to individual specimens or entire steering assemblies at frequencies of up to 40 Hz. Design features reduce system cross coupling and maximize test accuracy.

Designed to provide testing flexibility, the Model 337 Power Steering Test System accommodates a wide range of steering rack lengths and both front and rear steer arms. The system's steering gear centerline, steering arms, and steer mounts are easily

adjustable enabling test engineers to test a wide variety of passenger car and light truck steering systems.

### Optional Accessories

MTS offers optional accessories to help users simulate a wide variety of real world service conditions including:

- ▶ Hot oil power steering fluid supply for testing power steering racks separate from full assemblies
- ▶ Power steering pump drive assembly for testing complete power steering assemblies
- ▶ Environmental chamber
- ▶ Environmental temperature conditioner
- ▶ Mud slurry spray subsystem

### Intuitive Command and Control

The MTS 337 employs a state-of-the-art FlexTest™ digital servocontroller. This versatile, controller allows users to easily set up traditional block cycle programming, define customized tests, and perform data acquisition and analysis. For conducting real time durability simulations, the FlexTest controller seamlessly integrates with MTS (RPC®) software.



## Specifications

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### Vertical Actuators

Stroke:	±5.0 inches (±125 mm)
Force:	7400 lbf (33 kN)
G level:	35 g's
Velocity:	190 in/sec (4.8 m/s)
Servo valve:	90 gpm 3 stage

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### Lateral Actuators

Stroke:	±5.0 inches (±125 mm)
Force:	5500 lbf (25 kN)
Velocity:	40 in/min (1.0 m/s)
Servo valve:	15 gpm

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### Steering Motor

Rotation:	±3 turns (±1080 degrees)
Torque:	2000 in-lbf (225 N-m) Hydraulic
Velocity:	120 RPM (12.5 rad/sec)

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### Steering Arm Length

4.5-7.5 inches (114-190 mm)	(adjustable upper and lower)
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### Total Rack Length

43.3-71.0 inches (1100-1800 mm)

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### Recession

2 inches (50 mm)

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### Precession

6 inches (150 mm)

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### Jounce/Rebound

±5 inches (±125 mm)  
*(from design position)*

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### Steering Input Adjustment

5 degree of freedom

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### Maximum Frequency

40 Hz

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### Environmental Chamber

Temp: -40 to +250°F (-40° to 120°C)  
Water, salt, mud

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### Hot Oil Supply

Temp: 120-300°F (48-148°C)  
Pressure: 100-3000 psi (0.6-20.7 Mpa)  
Flow: 0.5-6 gpm (1.9-22.7 lpm)

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### Special Facility Requirements

Footprint: 17 ft (5.2 m) Wide x 10 ft (3.1 m) Deep  
Foundation Mass: 70 tons (60,000 Kg) (Reaction Mass)  
Oil Flow (max typical): 90 gpm (340 lpm)  
Electrical Requirements: 20 Amps @ 110 Volts  
*(Base system service without options)*

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