



Model 320 ePost™ Tire-coupled Road Simulators

Highly efficient and reliable electric 4-posters for a full range of test applications

Benefits

- » Highly accurate and repeatable performance
- » Full range of passenger car and truck test applications:
 - Durability
 - Noise, Vibration, and Harshness (NVH)
 - Buzz, Squeak, and Rattle (BSR)
 - Inline Production Quality
- » Reliable, energy-efficient operation
- » Compact, portable designs
- » Low audible noise
- » Clean, streamlined and safe – minimal facility impact
- » Low maintenance requirements

To meet growing industry demands for cleaner, quieter and more economical test systems, MTS offers Model 320 ePost™ Tire-coupled Road Simulators, a family of highly efficient and reliable electric 4-posters engineered to deliver a complete range of full-vehicle testing capabilities.

Deployed by OEMs around the world, ePost systems employ four electric actuators to replicate road profiles and obstacles, providing test engineers with a highly efficient means for subjecting full-vehicles to real-world conditions in controlled laboratory environments. ePost systems combine proprietary MTS linear electric actuators, versatile FlexTest® controllers and industry-proven MTS application software to satisfy a full range of passenger car and truck test applications, including Durability; Noise, Vibration and Harshness (NVH); Buzz, Squeak and Rattle (BSR); and Inline Production Quality.

ePost systems employ innovative hybrid linear electric/ pneumatic actuators to achieve significantly reduced operating and maintenance costs relative to hydraulic simulators. Electric ePost systems also enable a cleaner and more eco-friendly testing environment, and are quiet enough for effective Buzz, Squeak and Rattle (BSR) and Noise, Vibration & Harshness (NVH) testing. The systems can also be integrated within an environmental chamber for testing at temperatures ranging from -40°F to 160°F.

Model 320 ePost systems are currently available in five variants to efficiently fulfill customers' unique testing circumstances: two First Road models optimized for inline production quality (BSR); and three durability-optimized models, featuring new proprietary MTS-designed ironcore actuators.

be certain.

Accurate & Reliable Electric Actuation

Model 320 ePost systems feature a patented hybrid actuator design that integrates linear electric motors, which deliver dynamic force and motion, with pneumatic cylinders that provide static support.

The evolving ePost family currently employs two types of linear electric actuators.

Aircore linear electric actuators feature an ironlessforcer that glides through a fixed, u-channel magnet assembly. Although limited in peak power, these

air-cooled actuators exhibit a high peak-to-continuous-force ratio, making them well-suited for dynamic applications where smoothness of motion is required but payloads are relatively light. Deployed on the first ePost systems, aircore actuators are currently integrated into ePost models 320e.025 FR and 320e.035 FR for conducting inline production quality testing and BSR and NVH.

Ironcore linear electric actuators feature an iron-backed rare-earth magnet assembly that glides through a fixed steel

assembly. These liquid-cooled actuators exhibit relatively high peak forces and are well-suited for rigorous durability applications. Additionally, MTS engineers have developed an optimized ironcore actuator, effectively resolving the “cogging” phenomena endemic to the technology and greatly expanding its application range. Proprietary MTS ironcore actuators are currently integrated into ePost models 320e.025, 320e.035 and 320e.050 for conducting a full range of test applications, including durability.

Compact, Streamlined System Design

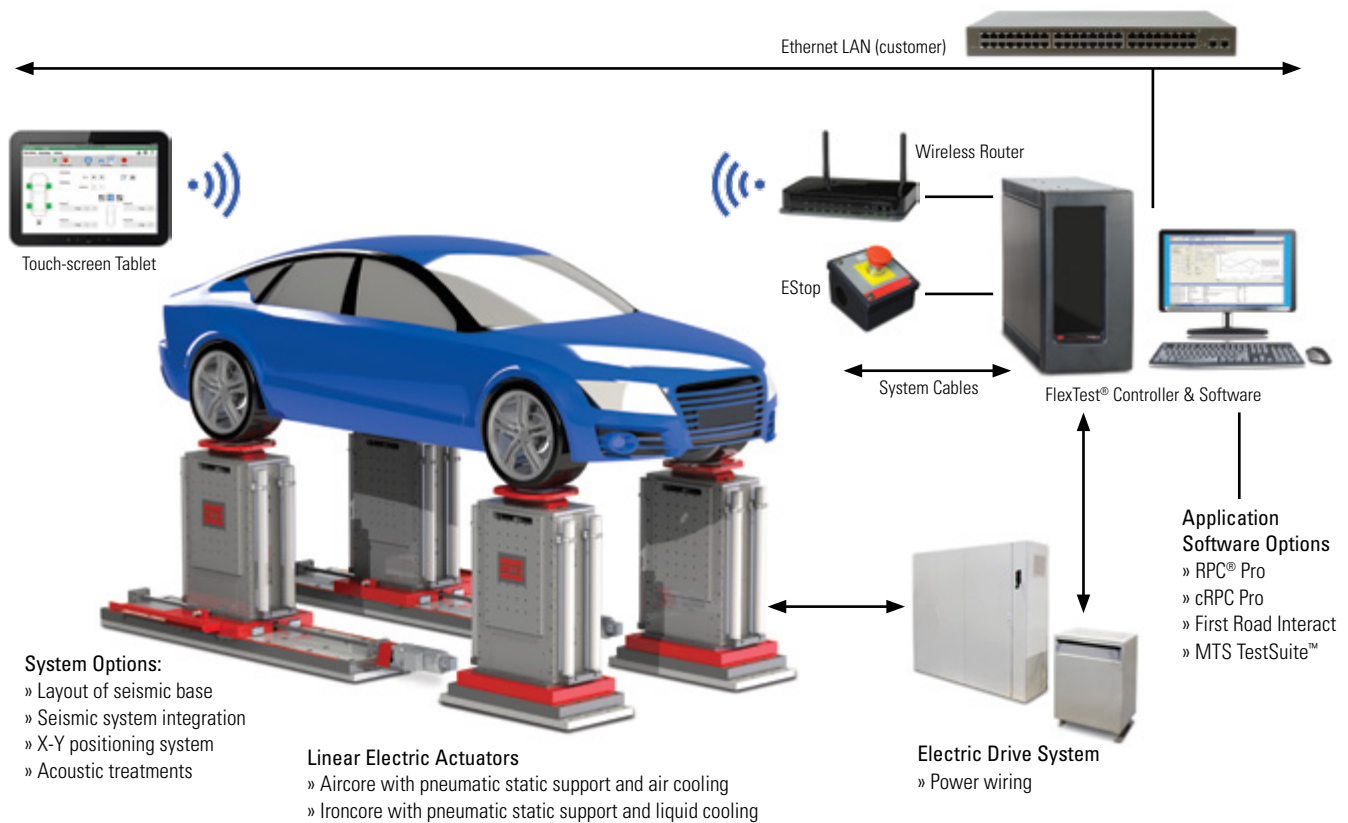
Model 320 ePost Road Simulators are powered by an electric drive system, rather than a hydraulic power unit (HPU), which delivers current

on-demand for significantly higher operating efficiency. Additionally, the elimination of hydraulic distribution requirements (pumps, fluid, hoses,

accumulators) allows for a cleaner, safer more streamlined test environment and reduced maintenance needs.



System Configuration

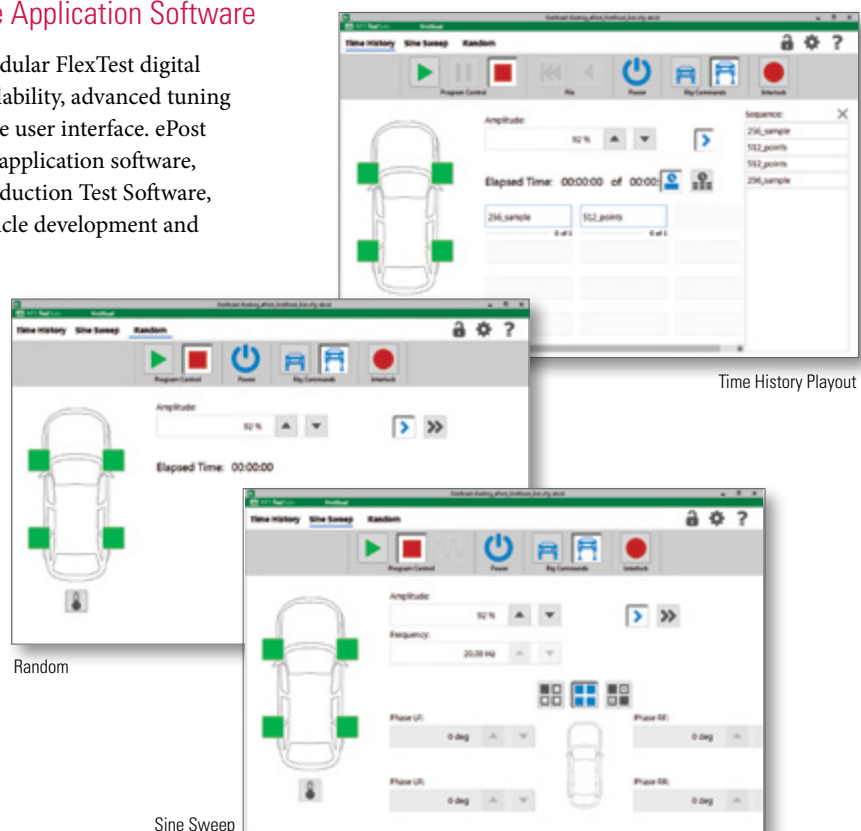


Versatile MTS Controls & Easy-to-use Application Software

Model 320 ePost Road Simulators feature modular FlexTest digital controllers, which are renowned for their scalability, advanced tuning and compensation tools and intuitive software user interface. ePost simulators can run a broad selection of MTS application software, including easy-to-use First Road Interact Production Test Software, which is designed to support end-of-line vehicle development and production quality testing.

First Road Interact Software benefits:

- » Intuitive, easy-to-use interface
- » Flexible program inputs with 3 predefined user selectable test interfaces
 - Sine Sweep
 - Random
 - Time History Playback
- » Includes portable touch-screen tablet for test control within and around test vehicle



Model 320 ePost Models and Specifications

MTS ePost Specification ₁	Units	Aircore Models		Ironcore Models		
		320e.025 FR	320e.035 FR	320e.025	320e.035	320e.050
Peak Dynamic Force (<i>peak dynamic force electric only with cooling</i>)	kN lbf	17.8 4000	26.7 6000	20 4500	26.7 6000	42 9400
Continuous Dynamic Force (<i>electric motor only with cooling</i>)	kN lbf	4 900	6 1350	7.8 1750	10 2250	16 3600
Continuous Static Force (<i>pneumatic only</i>)	kN lbf	10.1 2270	10.1 2270	10 2250	10 2250	10 2250
Peak Combined Force (<i>peak dynamic force and continuous pneumatic force</i>)	kN lbf	27.9 6270	36.8 8270	30 6750	36.7 8250	52 11700
Continuous Combined Force (<i>continuous dynamic force and continuous static force</i>)	kN lbf	14.1 3170	16.1 3620	17.8 4000	20 4500	26 5875
Velocity	m/sec in/sec	4 157	4 157	4 157	4 157	4 157
Stroke	mm in	200 7.8	200 7.8	250 10	250 10	250 10
Actuator Height with Standard Wheelpan	cm in	106 41.75	106 41.75	120.65 47.5	120.65 47.5	120.65 47.5
Maximum Acceleration ₂	g	18.2	23	23.7	25.8	30
Digital Encoder Accuracy	μ	1	1	.005	.005	.005
Noise Level – Typical	dbA	<55	<55	<55	<55	<55
Emergency Stop Method	MTS SoftStop or HardStop Shutdown			Controlled Stop 0 & 1		
Wheelbase Adjust	Electromagnetic Clamping (60 TONS) Electromechanical Positioning			Software Controlled and Fully Automated; Maintenance Free; Air Operated Unlock		
Bearing Material	Air Bearings - Maintenance Free			Severe Duty Rated Long Life Rolling		
Facility Requirements ₃	V A A ₄	220 200 100	220 300 200	480 400 @ 460V —	480 400 @ 460V —	480 400 @ 460V —
Air Supply ₅	PSI BAR CFM	100 7 150	100 7 225	100 7 60	100 7 60	100 7 60
Recommended Reaction Mass	t	100	125	100	125	200

1. Specifications subject to change

2. 40 kg unsprung mass used for specifications

3. MTS can supply transformers for voltages other than 220V III-Phase

4. Amperage with high voltage supply (380-440V) and transformer

5. Air supply system must be adequately sized for continuous operation providing above specified flow at a pressure consistently above 5.2 bar (75 psi).

Note: Higher pneumatic and combined force available on request.



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