

TURRET TEST SYSTEMS

High performance 6-Degrees-of-Freedom Electric Motion Systems for tank turrets

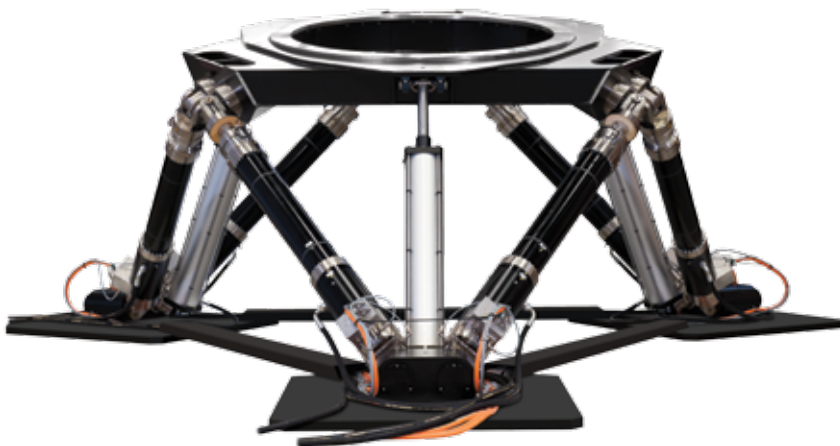


A leading supplier of integrated control actuation systems, Moog had both systems capability and expertise in designing and building core products. With global manufacturing and a worldwide support infrastructure, Moog has become a trusted partner of the world's leading armies and weapons platform manufactures.

As a result, we have supplied thousands of motion platforms to the marketplace, offering reliable system solutions that are highly supportable and add significant value for our customers.

The Moog Turret Test System is based on a high performance 6 Degrees-of-Freedom (DOF) electric motion system that uses powerful test software to simulate test tracks and test performance of the turret stabilizer. On the top platform of the Turret Tester, the user can install an actual turret or a remote weapon station. It can handle a wide range of payloads up to 24,000 kg (53,000 lb) and meet specific requirements for excursions, velocities or accelerations. The Moog Replication software module has been developed to accurately simulate the vehicle movements as recorded on the test track.

Moog is an industry expert in vehicle platform integration and design. Our expertise in vetronics, mechanics, design and integration make us an ideal partner in the design and manufacture of new vehicle platform as well as vehicle upgrade and retrofits.



ADVANTAGES

- Develop and test in a laboratory instead of a remote test track
- Speed up your development process
- Accurate playback of the target file (RMS error typically <10%)
- 100% motion repeatability
- User friendly features contribute to reduce the training time to 2-3 days
- Proven Moog software modules

TEST APPLICATIONS

- Development of control and stabilization systems
- System integration (eg., weapon, periscope)
- Demonstration of turret performance to customers
- End-of-line production testing

SPECIFICATIONS

The Moog Turret Tester is based on a commercial motion system, using electric actuators, servo drives and enhanced real time motion software.

The Moog Replication Software Module ensures that the motion profile is accurately reproduced using an automatic 6-DOF multi frequency iterative process. Moog can extensively customize motion systems and top platforms to meet your performance and interface requirements.

KEY FEATURES

- Proven Moog Replication software module
- Industry Leading Performance
- Possibility to customize the design of the Turret Tester

Model *	MB-E-6DOF/ 24/1800KG	MB-EP-6DOF/24/2800KG	MB-EP-6DOF/40/8000	MB-EP-6DOF/20/28000KG
Maximum single DOF excursion at neutral position				
Surge	-0.44m/+0.56m(-17.0in/+22.0in)	-0.44m/+0.56m(-17.0in/+22.0in)	-0.73m/+0.81m(-28.0in/+31.0in)	± 0.34 m (± 14.0 in)
Sway	± 0.46 m (± 18.0 in)	± 0.46 m (± 18.0 in)	± 0.70 m (± 27.0 in)	± 0.32 m (± 12.0 in)
Heave	± 0.38 m (± 15.0 in)	± 0.38 m (± 15.0 in)	± 0.68 m (± 26.0 in)	± 0.36 m (± 14.0 in)
Roll	± 22.0 °	± 22.0 °	± 22.0 °	± 10.0 °
Pitch	- 22.0 °/ + 25.0 °	- 22.0 °/ + 25.0 °	± 21.0 °	- 10.0 °/+ 11.0 °
Yaw	± 24.0 °	± 24.0 °	± 22.0 °	± 9.0 °
Maximum velocity at full payload				
Surge	± 0.70 m/s (± 28.0 in/s)	± 0.70 m/s (± 28.0 in/s)	± 0.90 m/s (± 36.0 in/s)	± 0.95 m/s (± 38.0 in/s)
Sway	± 0.70 m/s (± 28.0 in/s)	± 0.70 m/s (± 28.0 in/s)	± 0.90 m/s (± 36.0 in/s)	± 0.90 m/s (36.0 in/s)
Heave	± 0.55 m/s (± 22.0 in/s)	± 0.55 m/s (± 22.0 in/s)	± 0.80 m/s (± 31.0 in/s)	± 1.00 m/s (± 40.0 in/s)
Roll	± 33.0 °/s	± 33.0 °/s	± 28.0 °/s	± 30.0 °/s
Pitch	± 34.0 °/s	± 34.0 °/s	± 26.0 °/s	± 29.0 °/s
Yaw	± 35.0 °/s	± 35.0 °/s	± 26.0 °/s	± 26.0 °/s
Maximum acceleration at full payload				
Surge	± 6.5 m/s ² (± 0.65 G)	± 6.5 m/s ² (± 0.65 G)	± 13.0 m/s ² (± 1.30 G)	± 8.0 m/s ² (± 0.80 G)
Sway	± 6.5 m/s ² (± 0.65 G)	± 6.5 m/s ² (± 0.65 G)	± 12.0 m/s ² (± 1.20 G)	± 8.0 m/s ² (± 0.80 G)
Heave	± 9.0 m/s ² (± 0.90 G)	± 9.0 m/s ² (± 0.90 G)	± 15.0 m/s ² (± 1.50 G)	± 12.0 m/s ² (± 1.20 G)
Roll	± 220 °/s ²	± 220 °/s ²	± 400 °/s ²	± 300 °/s ²
Pitch	± 220 °/s ²	± 220 °/s ²	± 400 °/s ²	± 300 °/s ²
Yaw	± 360 °/s ²	± 360 °/s ²	± 450 °/s ²	± 400 °/s ²
Gross Moving Load (GML) up to	1,800 kg (4,000 lb)	2,800 kg (6,200 lb)	8,000 kg (17,600 lb)	28,000 kg (61,000 lb)
Indicative net payload	1,500 kg (3,300 lb)	2,500 kg (5,500 lb)	6,000 kg (13,200 lb)	24,000 kg (53,000 lb)
GML moment of Inertia about X-axis	3,000 kg.m ² (71,000 lb*ft ²)	5,000 kg.m ² (118,000 lb*ft ²)	14,000 kg.m ² (332,000 lb*ft ²)	70,000 kg.m ² (1,660,000 lb*ft ²)
GML moment of Inertia about Y-axis	3,000 kg.m ² (71,000 lb*ft ²)	5,000 kg.m ² (118,000 lb*ft ²)	14,000 kg.m ² (332,000 lb*ft ²)	70,000 kg.m ² (1,660,000 lb*ft ²)
GML moment of Inertia about Z-axis	3,000 kg.m ² (71,000 lb*ft ²)	5,000 kg.m ² (118,000 lb*ft ²)	20,000 kg.m ² (474,000 lb*ft ²)	70,000 kg.m ² (1,660,000 lb*ft ²)
GML CoG above moving platform centroid	≤ 1.0 m (≤ 40.0 in)	≤ 1.0 m (≤ 40.0 in)	≤ 1.0 m (≤ 40.0 in)	≤ 1.0 m (40.0 in)
Indicative frequency performance	25 Hz	25 Hz	25 Hz	25 Hz

*) Specifications for specific systems or applications may vary. These are only examples. For more details, please contact test@moog.com.

Moog has offices around the world.

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This technical data is based on current available information and is subject to change at any time by Moog. Specifications for specific systems or applications may vary.

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