

TestBench Instruments

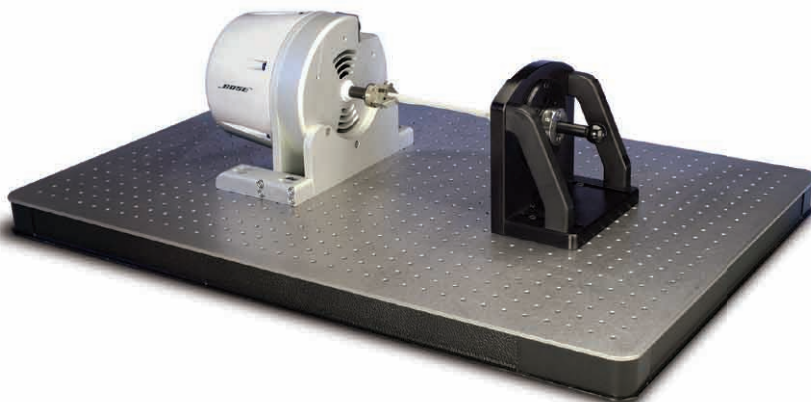
Versatility for Component and Material Testing Applications

TestBench configurations are a versatile addition to both the ElectroForce® and SmartTest® lines of high performance test instruments from Bose. They were designed with component testing in mind, and thanks to their modular approach, a wide array of configurations and performance capabilities are possible. The multiple specimen inputs can be synchronized and phased with one another to provide complex loading and simulations. If your needs change, you can reconfigure your existing components or add new components or capabilities at any time.

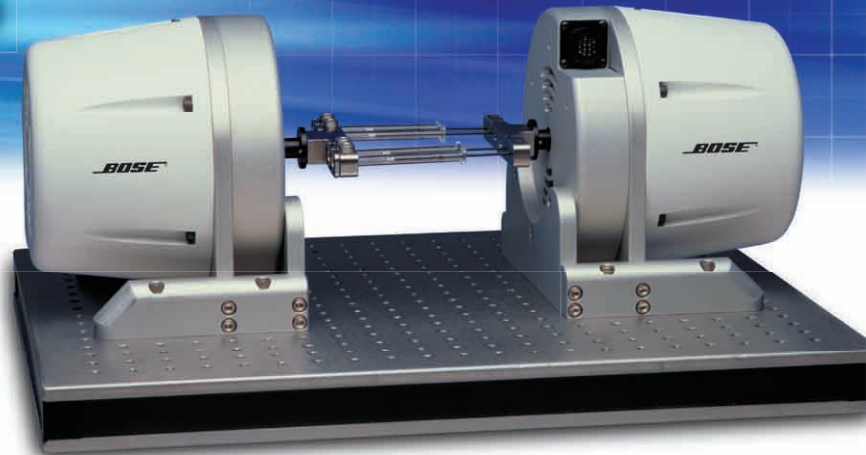
Benefits

Some of the many benefits of Bose® TestBench instruments include:

- The modular design allows you to choose the components and configurations to suit your testing needs in one small, compact, space-saving package
- TestBench systems can be configured for different test applications
- TestBench systems can be multi-channel and multi-axis. The WinTest® PCI controller can provide control for up to eight channels at a time.



ElectroForce® 200 N Motor
with Reaction Bracket



Dual ElectroForce® LM1 Linear Motors

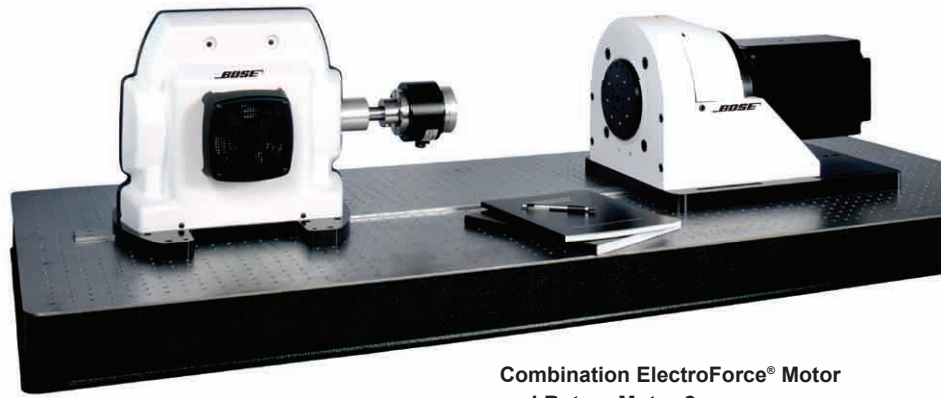
Actuator Technologies

Choose the type of actuators that are best suited for your needs: ElectroForce motors for high bandwidth performance or SmartTest servopneumatics for lower bandwidth, higher force performance.

- **Bose ElectroForce linear actuators** are the same proprietary high-bandwidth, low-distortion actuators used with ElectroForce test instruments. They feature “plug-in-the-wall” operation, making them clean, quiet, energy efficient and practically maintenance-free.
- **Rotary brushless motors** are available for fine control, low torque applications. They are also available with continuous rotation for applications such as screw simulation.
- **SmartTest servopneumatic (SP) linear actuators** provide a high value alternative for tests where higher forces and displacements are required.
- **SmartTest rotary actuators** provide a suitable alternative where higher torque is desired or constant rotation is not needed. Both the linear SP actuator and the rotary SP actuator can be connected to existing shop air systems, making them cost effective to operate.

BOSE®

Flexibility for a Variety of Applications



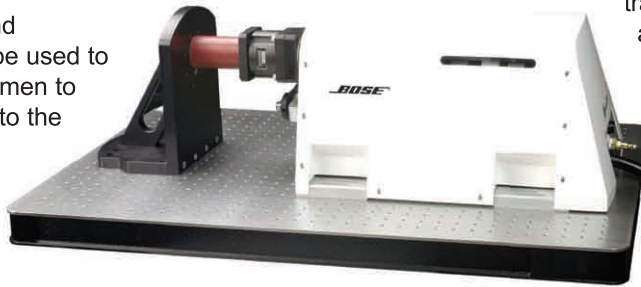
Combination ElectroForce® Motor and Rotary Motor 2

Fixturing

Base plates can be provided in a variety of sizes. All are supplied with a bolt pattern that makes it easier to mount the TestBench components for your desired configuration.

Reaction brackets are pre-designed to allow you to attach your components or test specimen to the base plate in vertical or horizontal configurations. A microadjuster is included for easier adjustment.

Standard grips and accessories can be used to connect the specimen to the base plate or to the movers. We can also customize grips for your specific test requirements.



Transducers and Environmental Systems

Displacement or rotation transducers are included with the actuator, and there are many options for local measurement including laser micrometers, strain gages and a video extensometer.

Single or multi-axis force or torque transducers are also included depending on the configuration. Because the use of these transducers is often application specific, consult with our applications engineers for details.

Environmental options, including hot/cold chambers, saline baths and other environmental conditioning systems can be provided. For real life simulations and wear applications, these accessories provide the proper solution for your test needs.

Combined SP Axial/Torsion Test Configuration

Typical TestBench Component Specifications*

	Peak Force/Torque	Stroke/Rotation	Maximum Velocity [†]	Dimensions	Weight
ElectroForce LM1-L	± 22 N (± 5 lb)	± 2.5 mm (± 0.1 in)	1.0 m/s (49 in/s)	200 X 200 X 200 mm (8 X 8 X 8 in)	4.5 kg (10 lb)
ElectroForce LM1	± 200 N (± 45 lb)	± 6.5 mm (± 0.25 in)	3.2 m/s (157 in/s)	200 X 200 X 200 mm (8 X 8 X 8 in)	4.5 kg (10 lb)
ElectroForce LM2	± 2000 N (± 450 lb)	± 12.5 mm (± 0.50 in)	2 m/s (79 in/s)	400 X 225 X 300 mm (16 X 9 X 12 in)	17.8 kg (40 lb)
Rotary Motor 1	± 2.8 Nm (± 25 in-lb)	Multi-turn (± 10 revolutions)	9000°/s	100 X 100 X 300 mm (4 X 4 X 12 in)	8.2 kg (18 lb)
Rotary Motor 2	± 5.6 Nm (± 50 in-lb)	Multi-turn (± 10 revolutions)	9000°/s	100 X 100 X 300 mm (4 X 4 X 13 in)	9.6 kg (211 lb)
Rotary Motor 3	± 27.7 Nm (± 250 in-lb)	Multi-turn (± 10 revolutions)	9000°/s	125 X 125 X 350 mm (5 X 5 X 14 in)	37 kg (82 lb)
SP 1250	± 5.6 kN (± 1250 lb)	± 25 mm, ± 50 mm (± 1.00 in, ± 2.00 in)	0.1 m/s (4 in/s)	165 X 240 X 215 mm (6.5 X 9.5 X 8.5 in)	5 kg (15 lb)
SP Rotary 1	± 90 Nm (± 800 in-lb)	± 50°	50°/s	130 X 260 X 250 mm (5.25 X 10.25 X 10 in)	7.7 kg (17 lb)
Base 1[‡]	N/A	N/A	N/A	600 X 600 X 50 mm (24 X 24 X 2 in)	35.4 kg (78 lb)
Base 2[‡]	N/A	N/A	N/A	500 X 1000 X 100 mm (20 X 40 X 4 in)	70.9 kg (156 lb)

* Components can be combined to meet your unique testing needs. Other components available upon request. Some actuators are not compatible with other actuators. Please consult Bose for further details.

[†] Maximum velocities achieved under special conditions.

[‡] Some actuator options and applications may require alternate bases.

Specifications are subject to change

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