

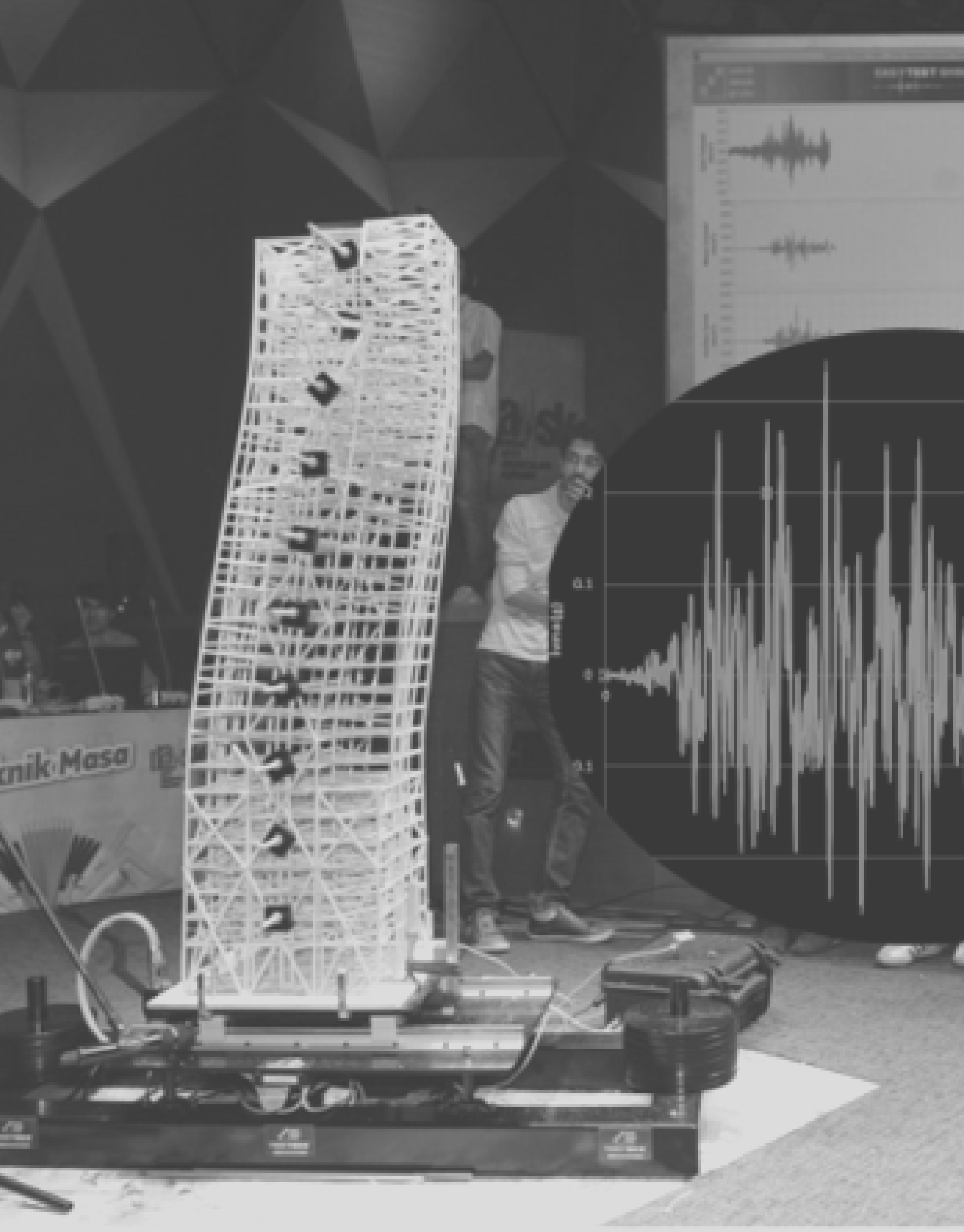


Seismic and Structural Health
Monitoring Systems

TDG INSTRUMENTATION SOLUTIONS

**CIVIL ENGINEERING,
STRUCTURAL MECHANICS & HEALTH MONITORING
EARTHQUAKE ENGINEERING LAB**

TDG IS SOLUTION PARTNER THAT PRODUCES COMPLETE
SOLUTIONS FROM TEST MACHINES TO MEASUREMENT
SYSTEMS



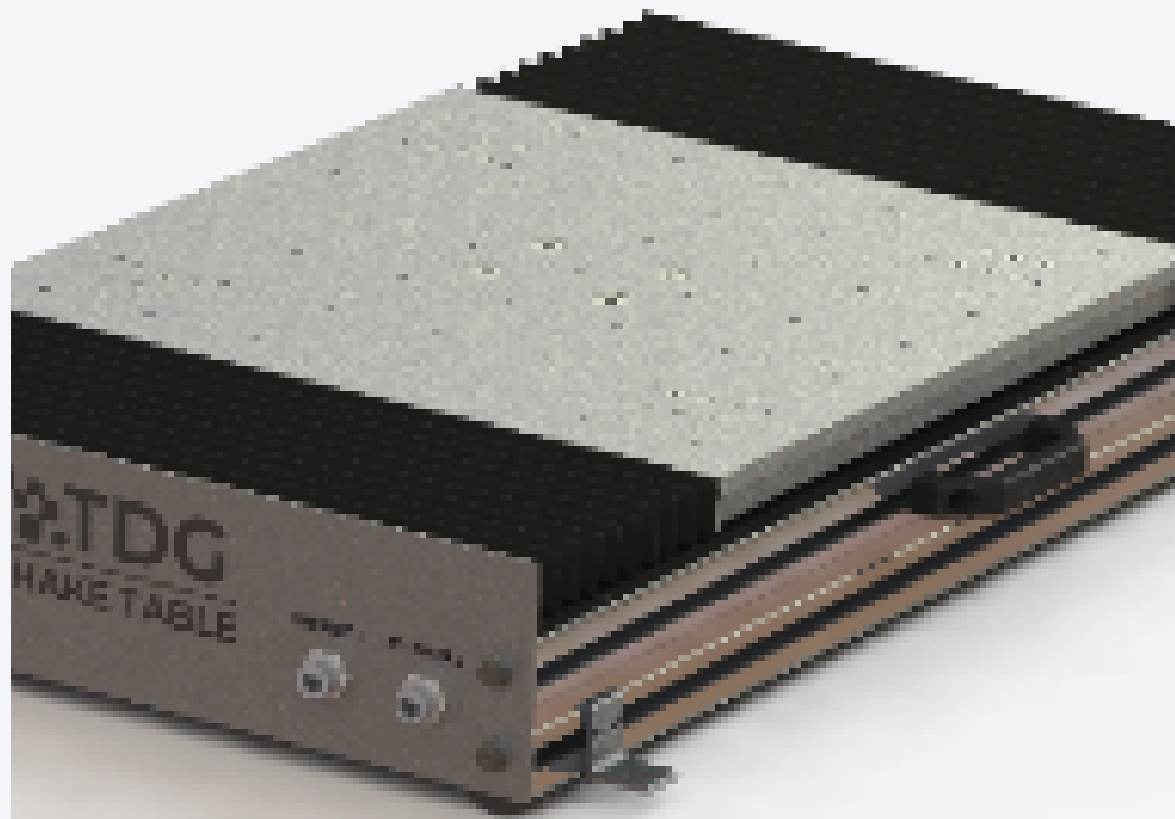
SUMMARY

OUR PRODUCTS

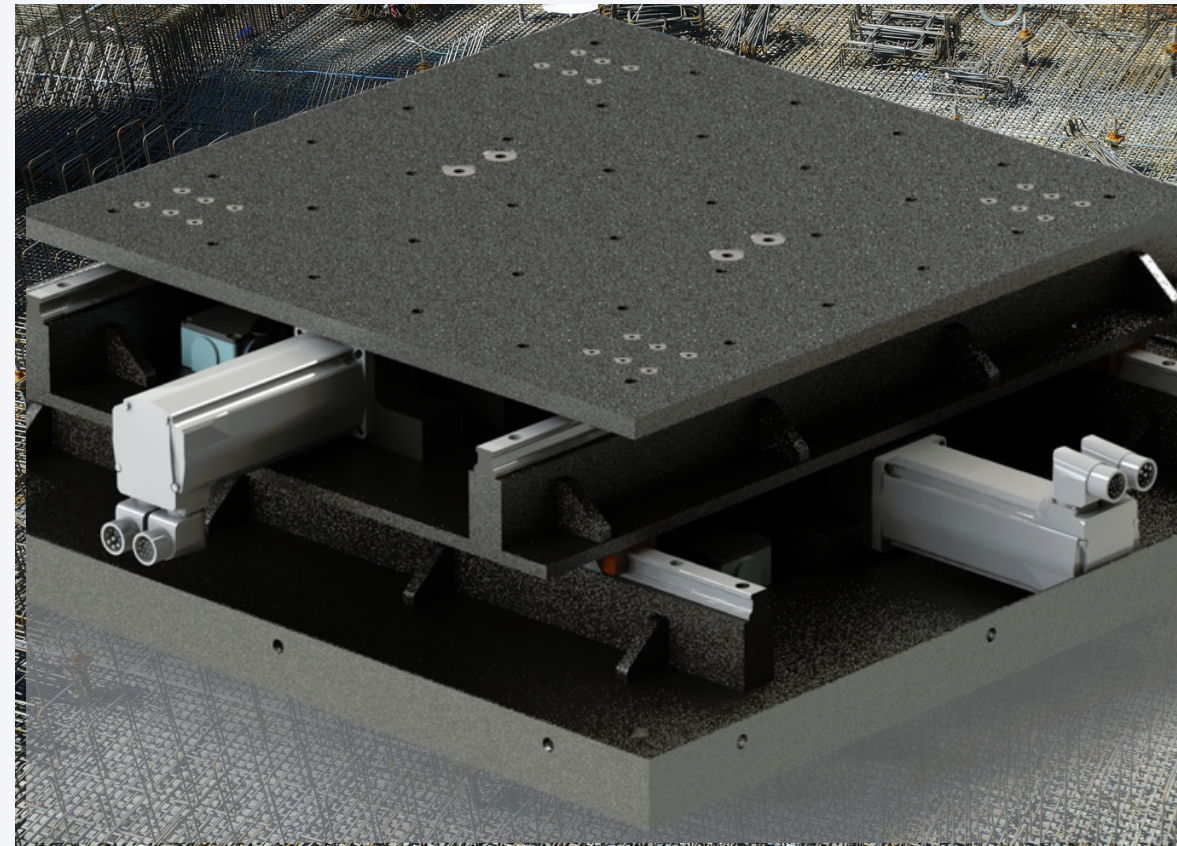
- **SMALL SCALE SHAKE TABLES**
- **HIGH CAPACITY SHAKE TABLES**
- **SERVO HYDRAULIC LOADING**
- **SERVO TEST MACHINES**
- **TESTBOX DATA ACQUISITION SYSTEM & SENSORS**

SMALL SCALE SHAKE TABLES

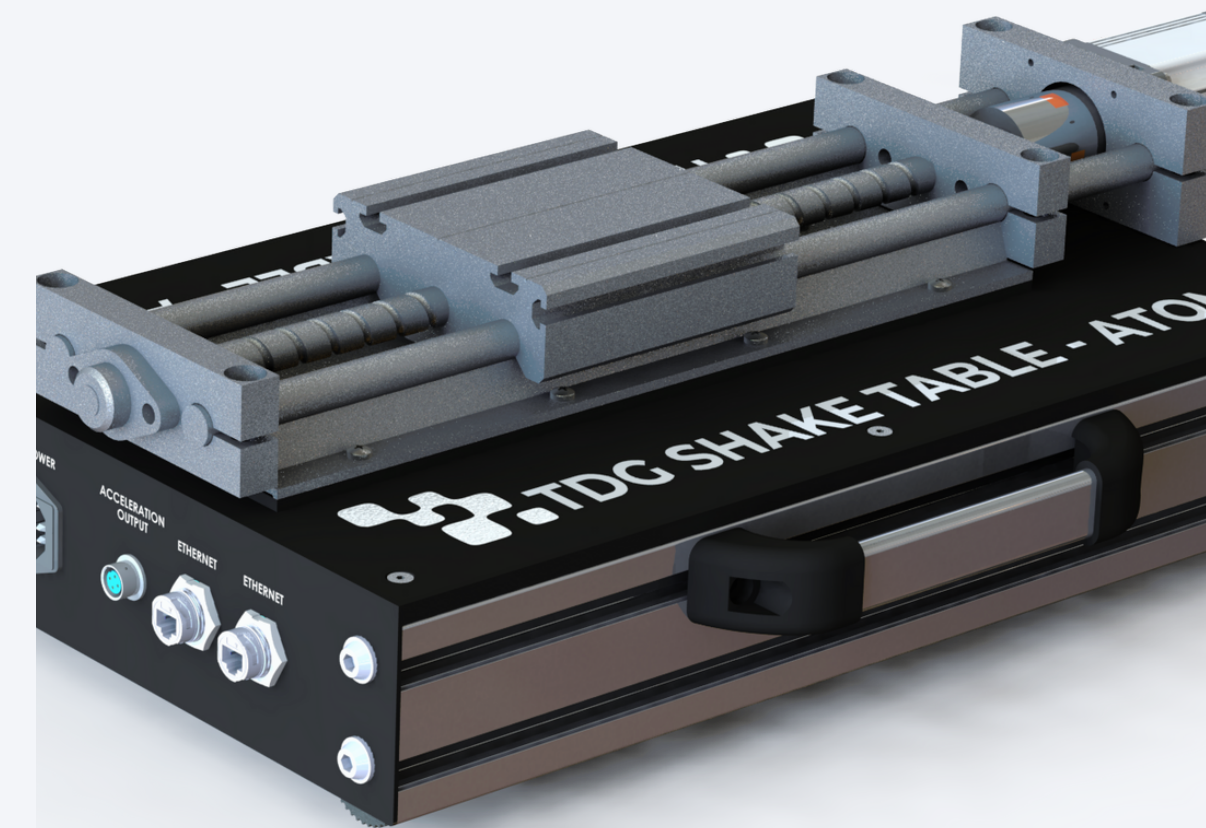
- Mobile, Practical, Servo Earthquake Simulator
- Verification of Seismic Components
- Calibration Services
- Supports Graduate/Undergraduate Education



SHAKETABLE V2



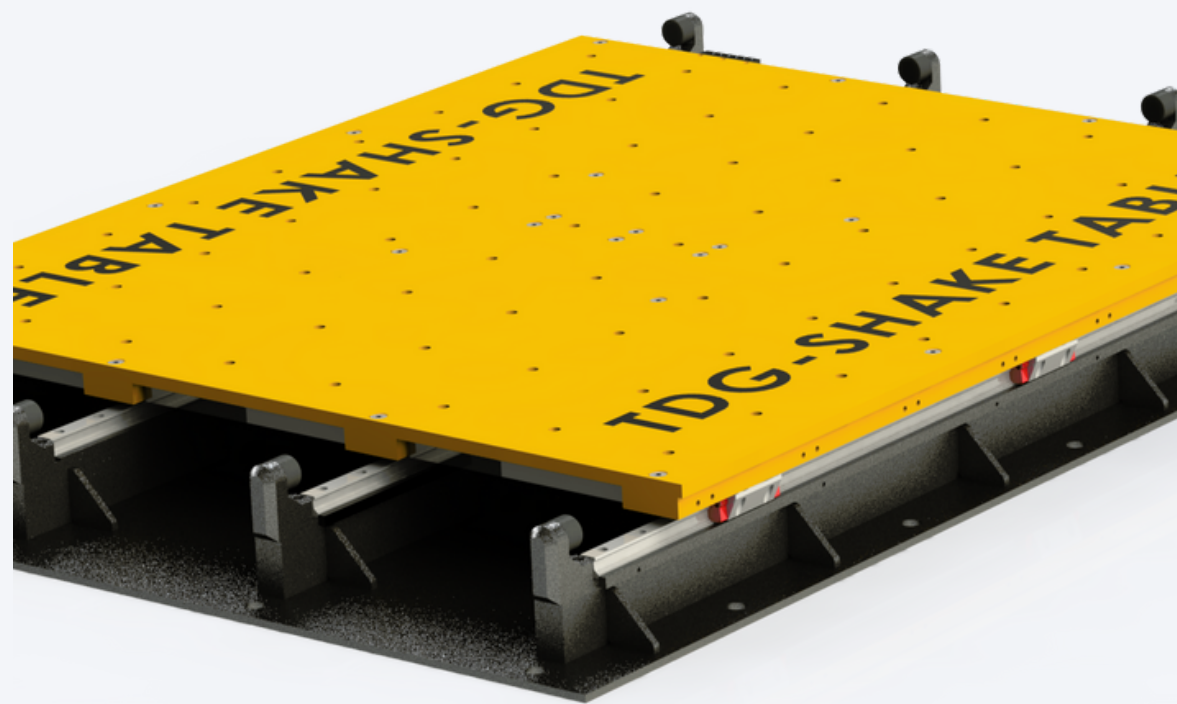
SHAKETABLE-
BIAXIAL



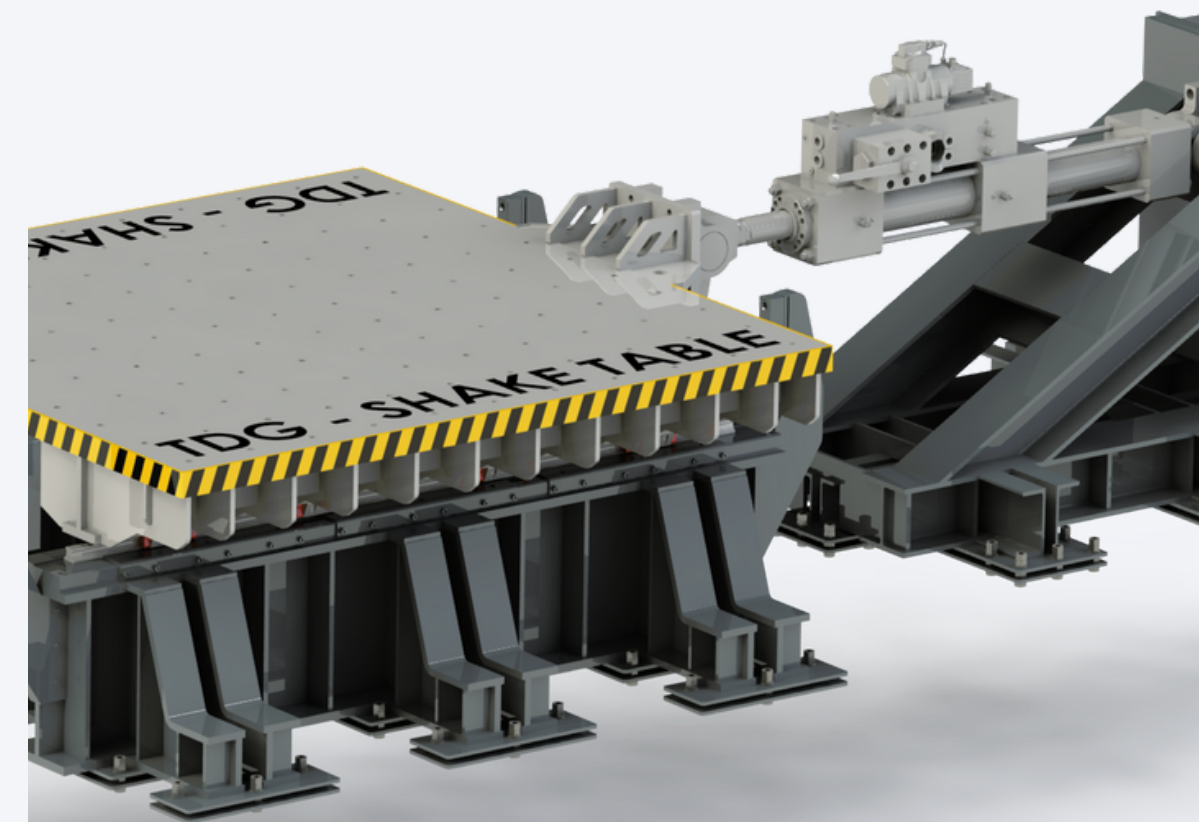
SHAKETABLE-ATOM

HIGH CAPACITY SHAKE TABLES

- Custom Payload, Table Size and Speed.
- Servo-Hydraulic or Electro-Mechanical, Based on Payload
- Structural Mechanics, Earthquake Engineering, Soil and Geological tests.



TDG SHAKETABLE
ELECTRO MECHANIC



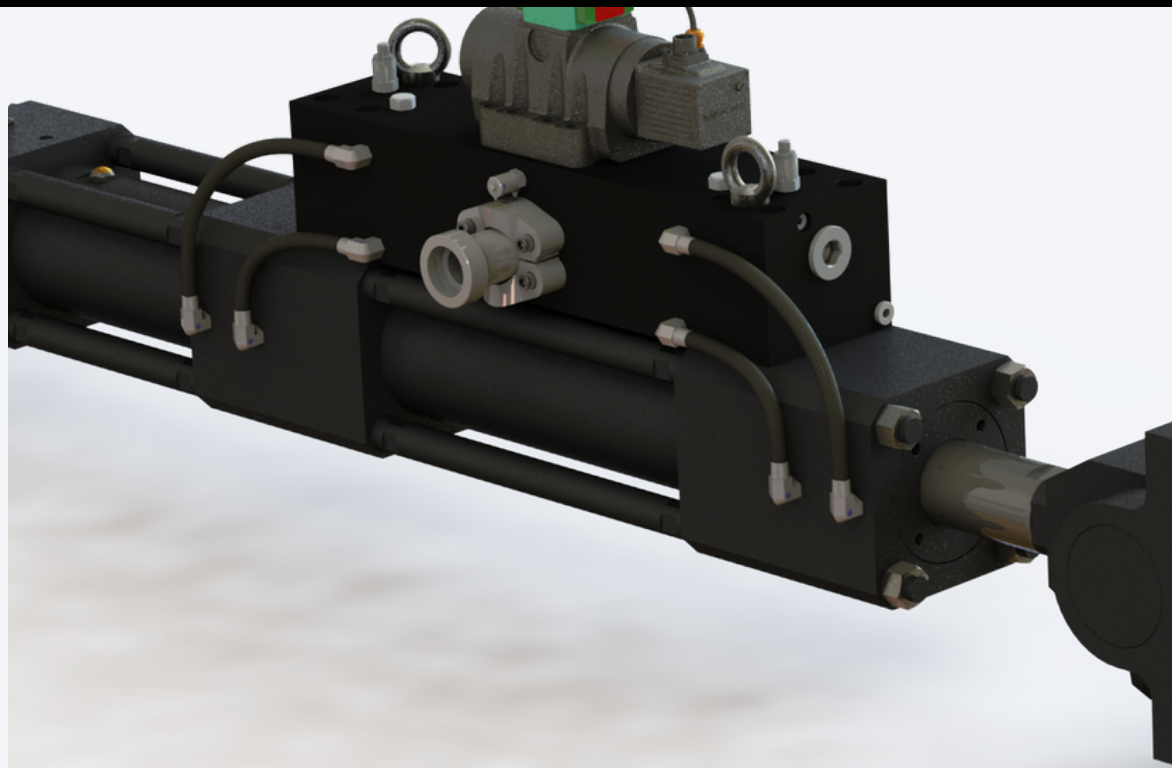
TDG SHAKETABLE
HYDRAULIC

SERVO HYDRAULIC LOADING

General purpose, or custom innovative solutions for structure and earthquake tests. The system can be customized for different force and speed capacities, and installed as a turnkey solution including hydraulic actuator, hydraulic power pack, electronic control and data acquisition system and software.

It is possible to use 2 or more actuators in separate or synchronized modes.

SYSTEM ELEMENTS



GENERAL-PURPOSE
ACTUATORS



HYDRAULIC POWER UNITS &
HYDRAULIC ACCUMULATORS /
DISTRIBUTION UNITS



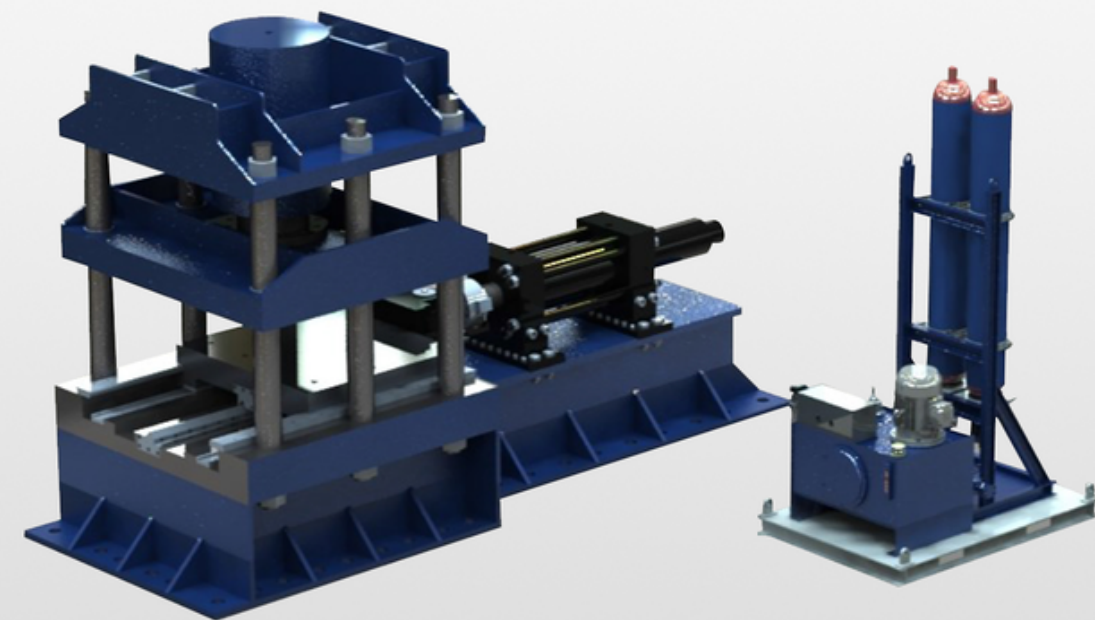
TDG CONTROLBOX

SERVO TEST MACHINES

Fields Of Application: Material Testing, Re-Bar Tests Universal Tension and Compression Tests, Fatigue Test, Machine / Materials / Metallurgical Engineering Tests



TDG - UTM/FATIGUE



**SEISMIC ISOLATOR
TEST MACHINE**

TESTBOX DATA ACQUISITION SYSTEM & SENSORS

General Purpose High Resolution Dataloggers
Fully Compatible with Civil Engineering Transducers
(Strain Gauge, Load Cells, Displacement Transducers, Accelerometers)



TESTBOX2010
RACK

DYNAMIC DATA
ACQUISITION SYSTEM



TESTBOX2010
FIELD

DYNAMIC DATA
ACQUISITION SYSTEM



TESTBOX1001

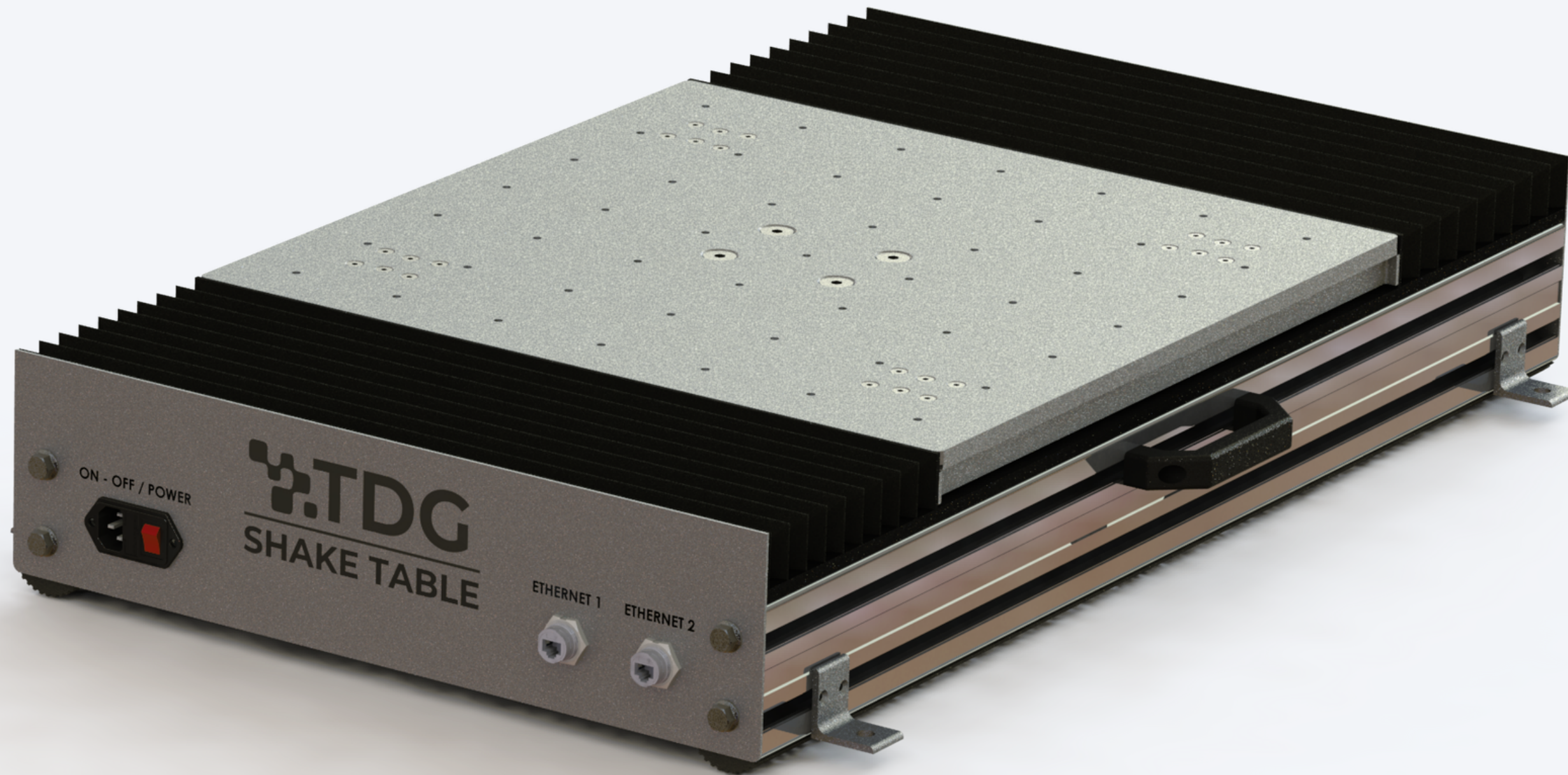
MULTI CHANNEL QUASI-
STATIC DATA
ACQUISITION



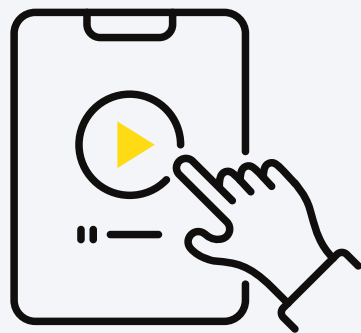
ACCELEROMETERS

ULTRA SENSITIVE FORCE-
BALANCE
ACCELEROMETER and
HIGH SENSITIVE
ACCELEROMETER

SHAKETABLE V2

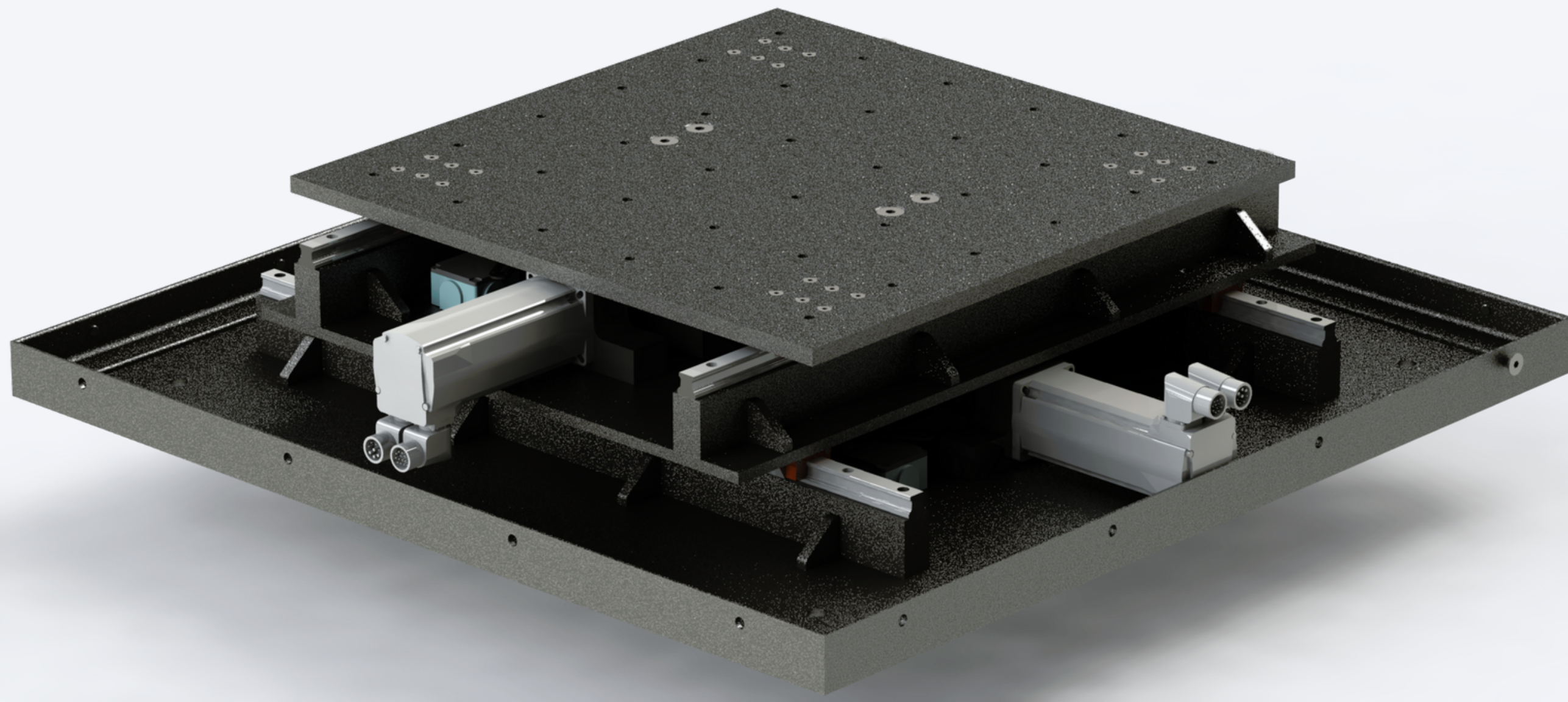


- Uniaxial
- 1g @ 110 Kg Capacity
- 50 x 50 cm top table
- Portable, Desktop
- Precise Control
- Maintenance Free
- Accelerometer Calibration
- Under Graduate and Graduate Education Purpose
- Earthquake Simulation (Arbitrary User-Defined Waveforms)
- Easy Setup, Plug & Play



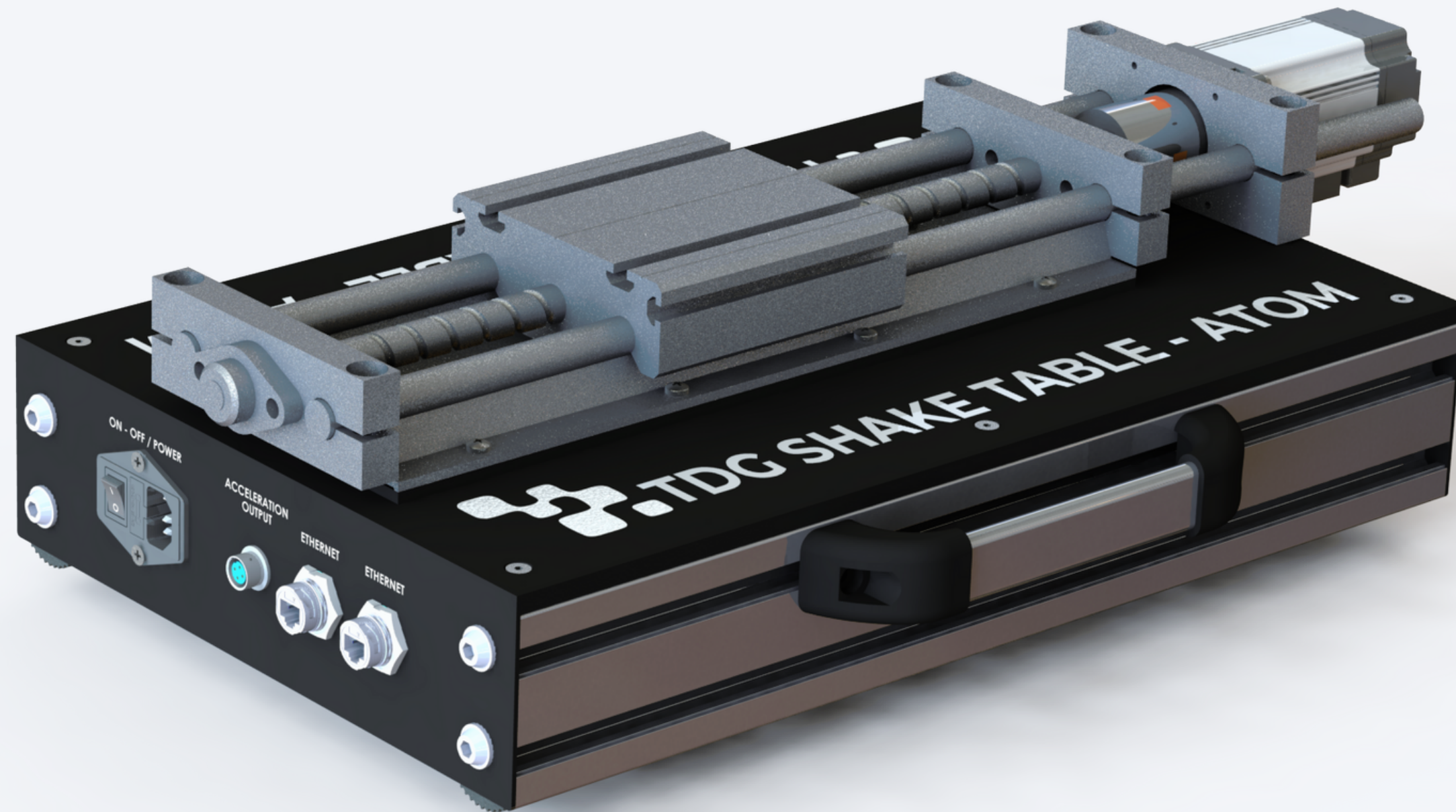
Please click for product video

SHAKETABLE-BIAXIAL

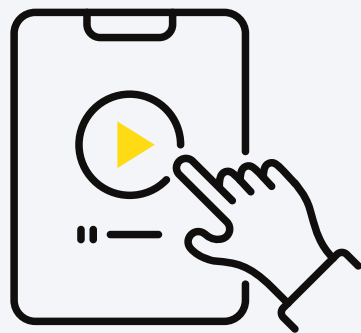


- Biaxial
- 1g @ 100 Kg Capacity
- 50 x 50 cm top table
- Portable, Desktop
- Precise Control
- Maintenance Free
- Accelerometer Calibration
- Under Graduate and Graduate Education Purpose
- Earthquake Simulation (Arbitrary User-Defined Waveforms)
- Easy Setup, Plug & Play

SHAKETABLE ATOM

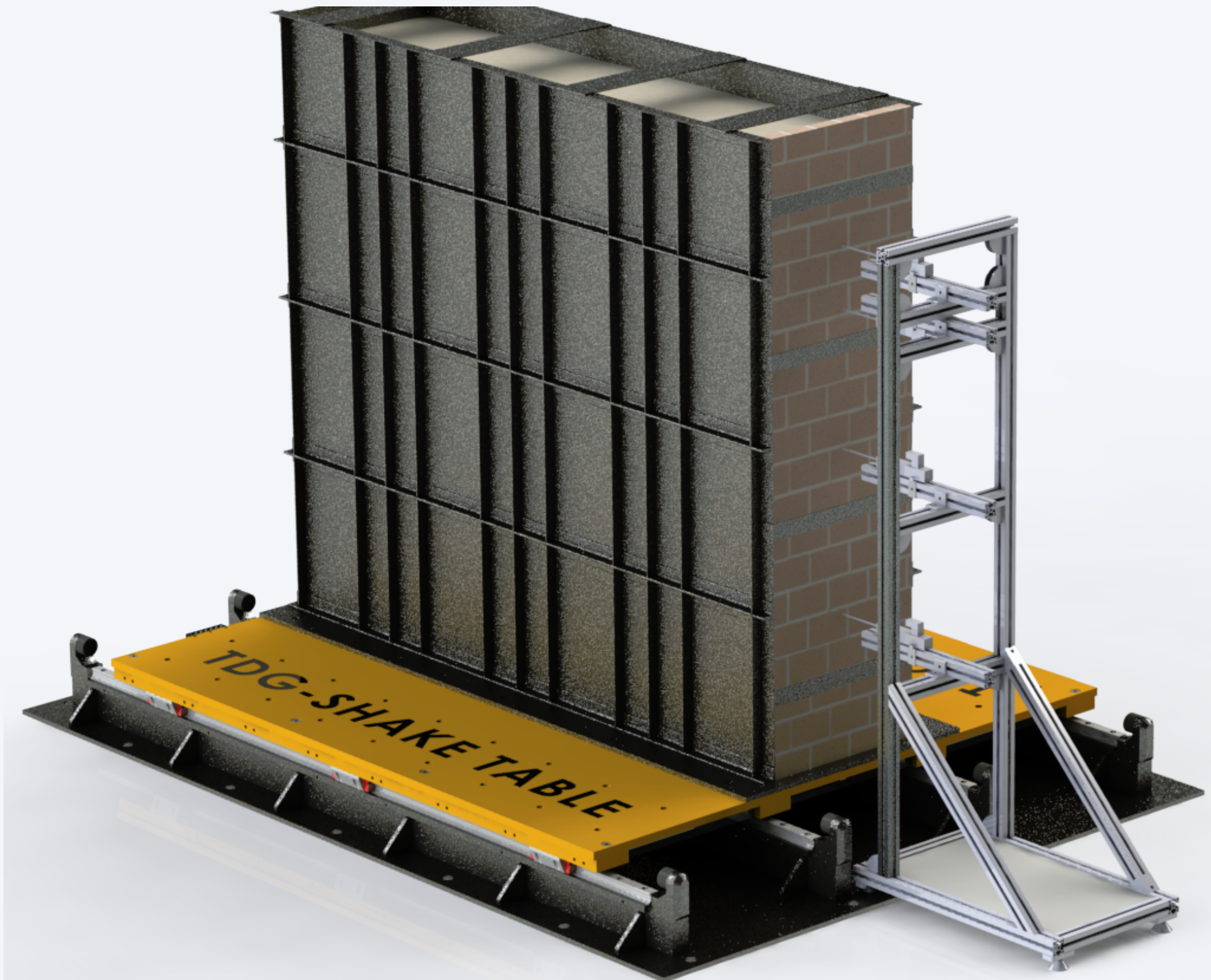


- Uniaxial
- 1g @ 50 Kg Capacity
- 25 x 25 cm top table
- Portable, Desktop
- Precise Control
- Maintenance Free
- Accelerometer Calibration
- Under Graduate and Graduate Education Purpose
- Earthquake Simulation (Arbitrary User-Defined Waveforms)
- Easy Setup, Plug & Play



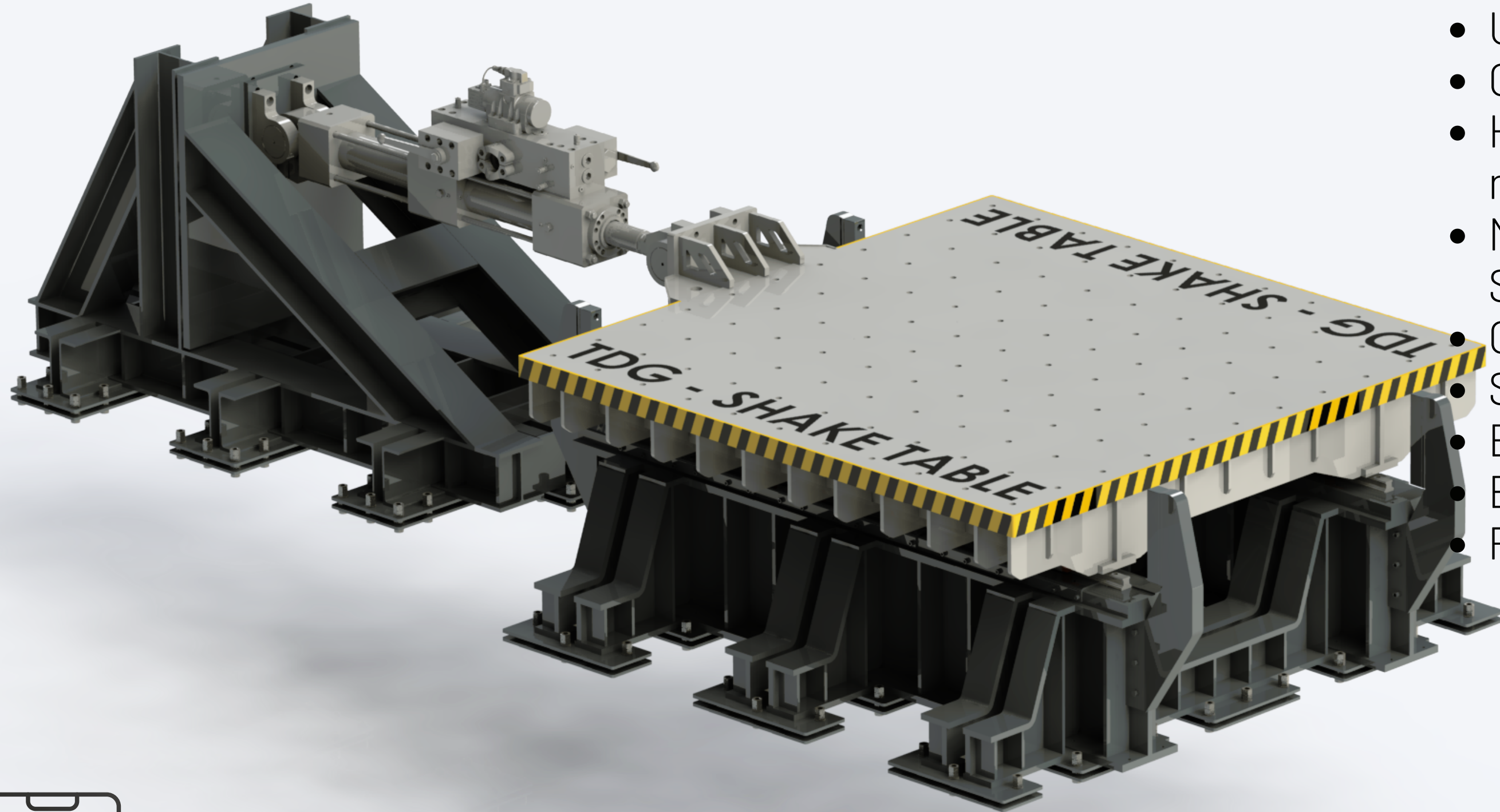
Please click for product video

TDG SHAKETABLE ELECTRO MECHANIC

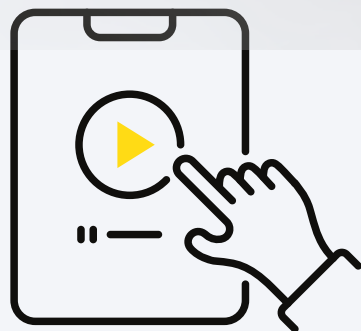


- Up to 5 Tons
- 2m x 2m Standard Table Size
- Unmatched Price / Performance
- Mid-Scale Structural Tests
- Soil Engineering Test
- Seismic Resistance Tests
- Earthquake Simulation
- Maintenance Free
- Precise Control

TDG SHAKETABLE HYDRAULIC

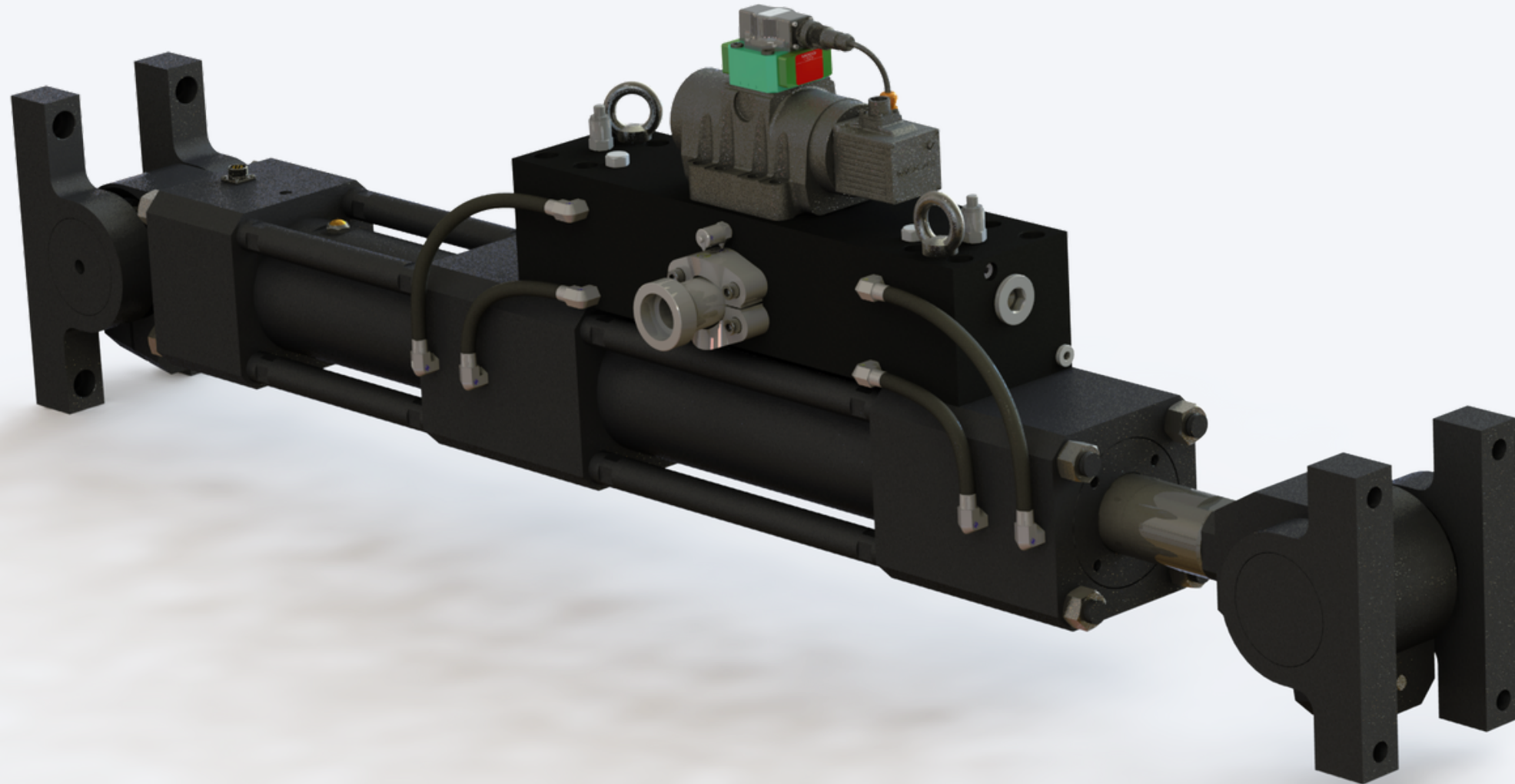


- Up to 30 tons
- Custom Table Size
- High Speed Operation (1 m/s standart)
- Mid & Large Scale Structural Tests
- Component Testing
- Seismic Resitance Tests
- Earthquake Simulation
- Excellent Durability
- Precise Control



Please click for product video

GENERAL-PURPOSE ACTUATORS



TDG designs and manufactures actuators matching all the test requirements of Civil, Structural and Earthquake Engineering laboratories. Quasi-static, dynamic, single or double ended actuators are available in various force, speed and stroke options.

- Pushover Tests
- Pseudo-Dynamic Tests
- Cyclic and Fatigue Tests
- Real Structure Loading Tests
- Multi Axis Loading Tests
- Earthquake Simulation

Field of Application

Structural Mechanics/Earthquake/Materials/Soil Mechanics Tests, Structure and Earthquake Engineering Laboratories, Pushover Tests, Pseudo-Dynamic Tests, Cyclic and Fatigue Tests, Real Structure Loading Tests, Multi Axis Loading Tests, Earthquake Simulation

HYDRAULIC POWER UNITS & HYDRAULIC ACCUMULATORS / DISTRIBUTION UNITS



TDG provides Hydraulic Power Units which generate the necessary oil flow to actuators, being used in Civil, Structure and Earthquake laboratory tests.

Different flow rates and tank volume options are available for quasi-static and dynamic tests.

Field of Application

Structural Mechanics/Earthquake/Materials/Soil Mechanics Tests, Structure and Earthquake Engineering Laboratories, Pushover Tests, Pseudo-Dynamic Tests, Cyclic and Fatigue Tests, Real Structure Loading Tests, Multi Axis Loading Tests, Earthquake Simulation

TDG CONTROLBOX



This product is a flexible controller, designed to satisfy all the requirements of tests done with single or multi axis servo-hydraulic or electro-mechanical actuators.

It provides synchronous control up to 8 axes and Panel type and Rack type enclosure options are available.

Field of Application

Civil Engineering Laboratories, Structural Mechanics/Earthquake/Materials/Soil Mechanics Tests, Structure and Earthquake Engineering Laboratories, Pushover Tests, Pseudo-Dynamic Tests, Cyclic and Fatigue Tests, Real Structure Loading Tests, Multi Axis Loading Tests, Earthquake Simulation, MOTION CONTROL AND SIMULATION

TDG - UTM/FATIGUE



Both Servo-Hydraulic and Electro-Mechanic Available

Customization is possible to provide various force, speed capacities and specimen size.

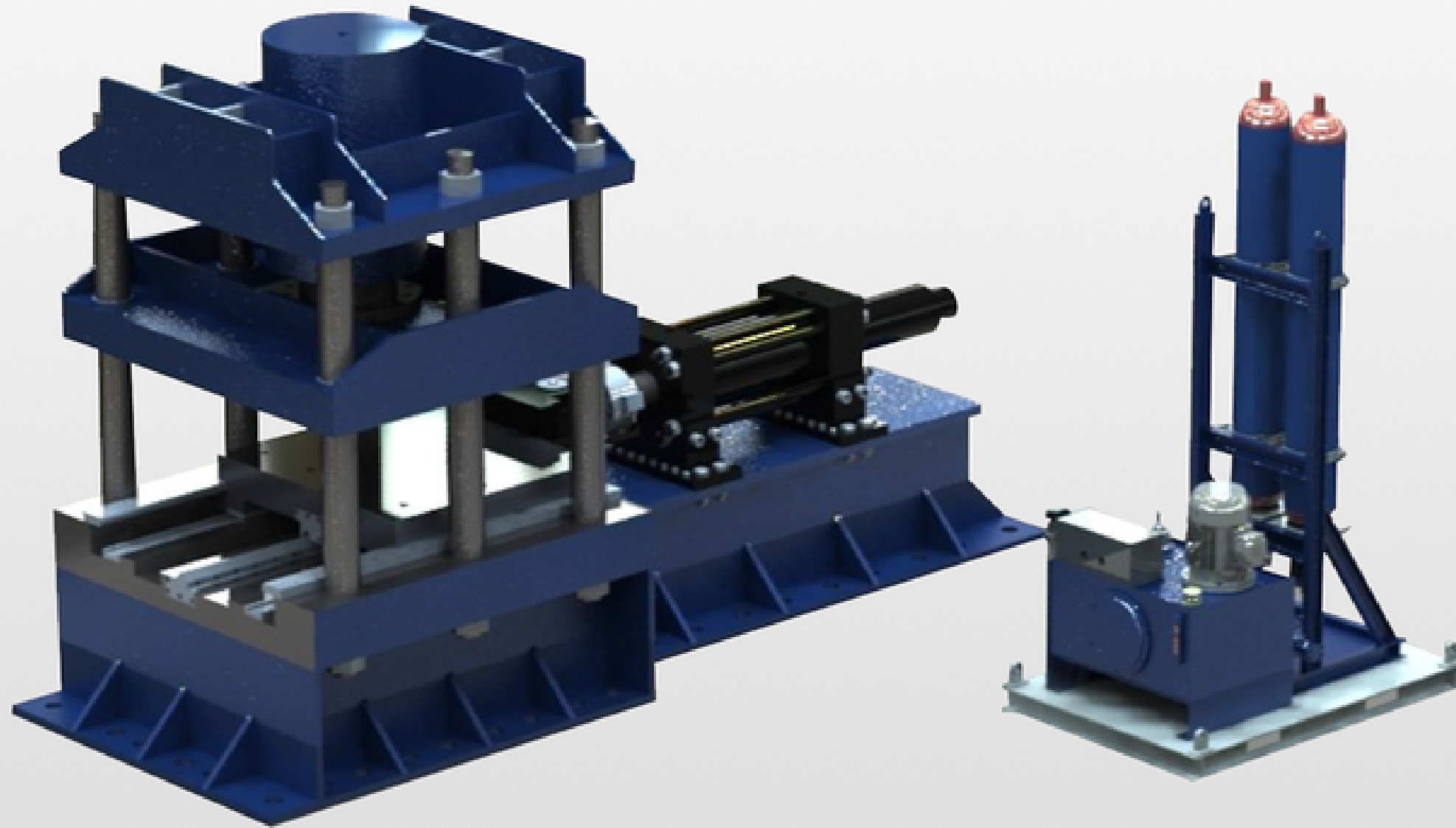
Displacement and Position Controlled Testing

Force, Displacement and Extensometer Channels

Field of Application

Material Testing, Re-Bar Tests Universal Tension and Compression Tests, Fatigue Test, Machine / Materials / Metallurgical Engineering Tests

SEISMIC ISOLATOR TEST MACHINE



TDG offers custom solutions for Seismic Isolator and Bearing Tests with varying specimen size, displacement, speed, vertical & horizontal force capacities.

Using seismic isolators are getting more common in Turkey and in the world and they are required to be tested before actual installation. Very few laboratories have the capacity for such tests, resulting the manufacturers wait for long periods to get test services.

Field of Application

Seismic Isolator Tests, Bearing Tests, Rubber and Pendulum Type Isolator Tests, Seismic Isolator Factory R&D Tests, Seismic Isolator Prototype Testing

TESTBOX2010 RACK/FIELD DYNAMIC DATA ACQUISITION SYSTEM



24 Bit ADC Resolution,
145 dB Dynamic Range
Up to 32 Accelerometer Connection
Channels on Single Unit
GPS Based 1 Microsecond Time-
Synchronization
Easy Access with Ethernet & TCP/IP
Automatic Warning Output and
Triggered Data Logging During an
Earthquake
Supports Ambient Vibration Testing and
Operational Modal Analysis
Dynamic Field and Laboratory Tests
Wide Sensor Compatibility

Field of Application

Structural Health Monitoring Measurements, 24/7-365 Days-Real-Time Monitoring, Operational Modal Analysis, High-Rise Buildings/ Bridges & Tunnels / Hospitals, Historical Structures / Industrial Plants, Schools & Public Buildings, Urban Emergency & Disaster Risk Management / High-Risk Building Stock Dynamic Data Acquisition

TESTBOX1001 MULTI CHANNEL QUASI-STATIC DATA ACQUISITION DEVICE



The device is quite easy-to-use and optimized for strain gauges, LVDTs, potentiometers, load cells, thermocouples and all voltage-output sensors.

includes 16-Bit ADCs (Analogue Digital Convertors), as well as, specially designed linear power supply, sensor excitation, analogue signal conditioner, filtering circuits are integrated.

It can be connected to the computer over a single USB port from 8 to 64 channels.

Field of Application

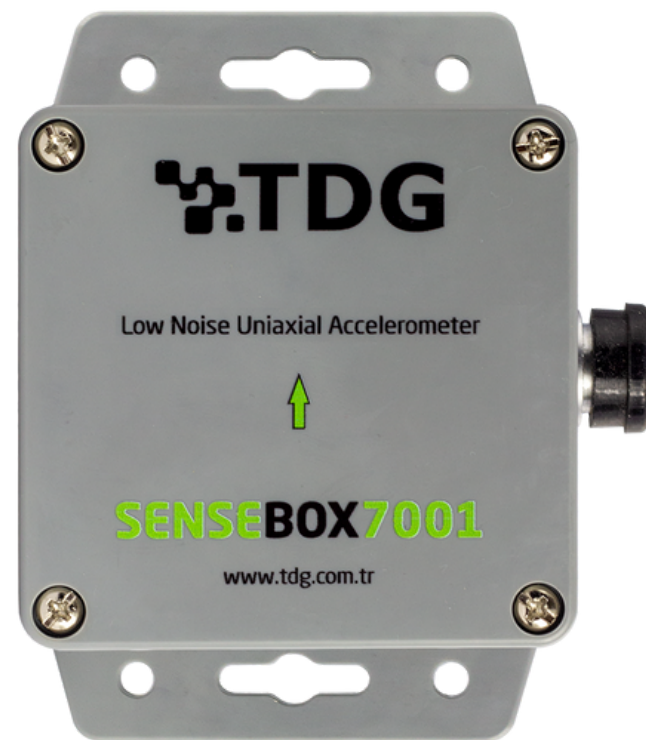
Fields Of Application: Quasi-Static Data Acquisition, Laboratories & Testing Facilities, Civil Engineering Laboratories, Metallurgy & Material, Mining, Geology Eng, Mechanical Eng.

SENSEBOX 7021/7022/7023 – ULTRA SENSITIVE FORCE-BALANCE ACCELEROMETER



- Uniaxial, Biaxial, Triaxial Options
- 147 Db Dynamic Range
- 0.01-200 Hz Frequency Response
- 100 ng RMS @ 1 Hz Noise Level
- $\pm 2g$ Measurement Range
- Structural Health Monitoring
- Ambient Vibration
- Operational Modal Analysis
- Seismic Strong Ground Motion Measurements

SENSEBOX 7001/7002/7003 – HIGH SENSITIVE ACCELEROMETER



- Uniaxial, Biaxial, Triaxial Options
- Wide Selection Option From $\pm 2g$ – 400g Measurement Range and 0-4000 Hz Bandwidth
- Ideal for Forced Vibration and Shake Table Test