# ONEDYN AND TWODYN MOTION PLATFORMS

The family of OneDyn and TwoDyn platforms are able to accurately reproduce motion reference profiles in one or two horizontal degrees of freedom. Thanks to its advanced real-time control system, they can be used in many applications such as earthquake simulation and teaching of subjects like Vibrations or Structural Dynamics.

APPLICATIONS

- **Academic resource. Programmed in National Instruments ® LabVIEW ®**
  - Seismic simulation
  - Structural Dynamics and Vibrations
  - Robotics
  - Control Theory

- **Hardware/Human in the Loop Testing. Customizable sets of inputs and outputs.**

TwoDyn 200 KG

KEY FEATURES

- **Standard payload: 200 kg (other payloads on demand)**

- **One or two degrees of freedom: X and Y**

- **Easily upgradeable from one to two degrees of freedom**

- **Optional baseplate**

- **Electromechanical actuation technology. BLDC servomotors**

- **Frequency range: 0-20 Hz**

- **Ethercat communication to minimize cabling and associated noise**

- **Advanced control algorithms**

- **Easy integration with third party software for DoF references generation in real time**

- **Rugged and reliable design**

- **Low maintenance requirements**
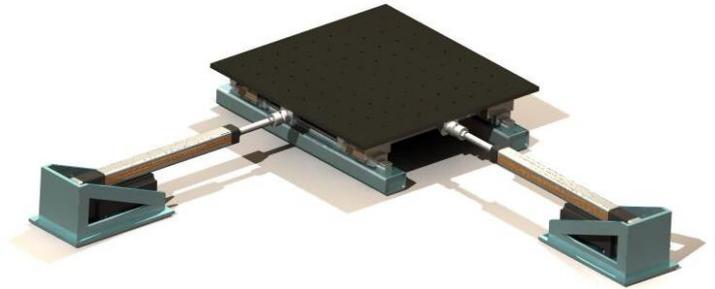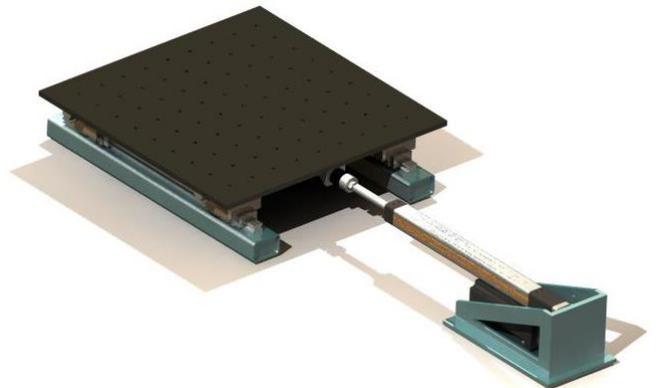

OneDyn 200 KG

Control rack

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SGP CONTROL SOFTWARE SUITE

- **RPD: Reference Profile Definition per DoF**:
    - Basic waveforms: sine, square, etc.
    - From ASCII file
    - Time-magnitude pairs
    - Swept sine and Random
    - External (third party software)

- **TME: Test Management and Execution**
    - Load and review of previously defined tests
    - Real time tuning of control parameters
    - Test execution management: run/stop test, pause, abort test. Data saving
    - Waveform visualization: Reference and actual waveform in DoF/Actuator space

- **TDR: Test Data Review**
    - Load and review test results from previously completed tests
    - Calculated channels in Time and Frequency domains
    - Basic reporting tools

- **RTC: Real time Control**
    - Inverse and Direct Kinematics solution
    - Predictive PID real time control of servoactuators individual trajectories
    - Predictive/Adaptive Degree of Freedom control loops

- **TestSim**
    - Simulation of test previous to execution to assess test feasibility
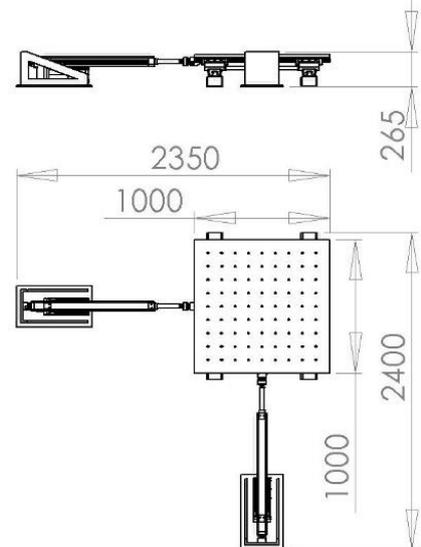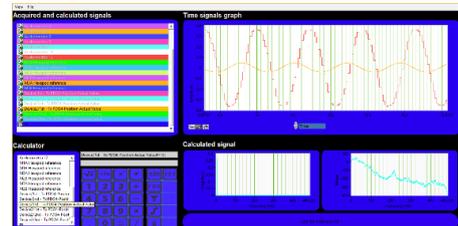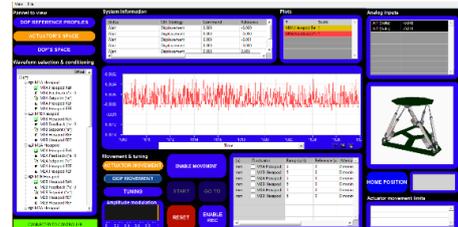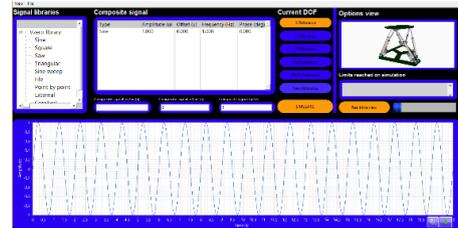
PERFORMANCES TABLE	
MODEL	TWODYN 200
Rated payload	200 [kg]
Table size	1000 x 1000 [mm]
Maximum height of CoG	1500 [mm]
Frequency range	0-20 [Hz]
Power	6 [kW]. 400 Vac, 3 Ph + N + PE, 50/60 Hz

DOF PERFORMANCES			
MODEL	TWODYN 200		
DoF	**Displacement**	**Speed**	**Acceleration**
X	± 150 [mm]	± 1.00 [m/s]	± 10 [m/s²]
Y	± 150 [mm]	± 1.00 [m/s]	± 10 [m/s²]

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