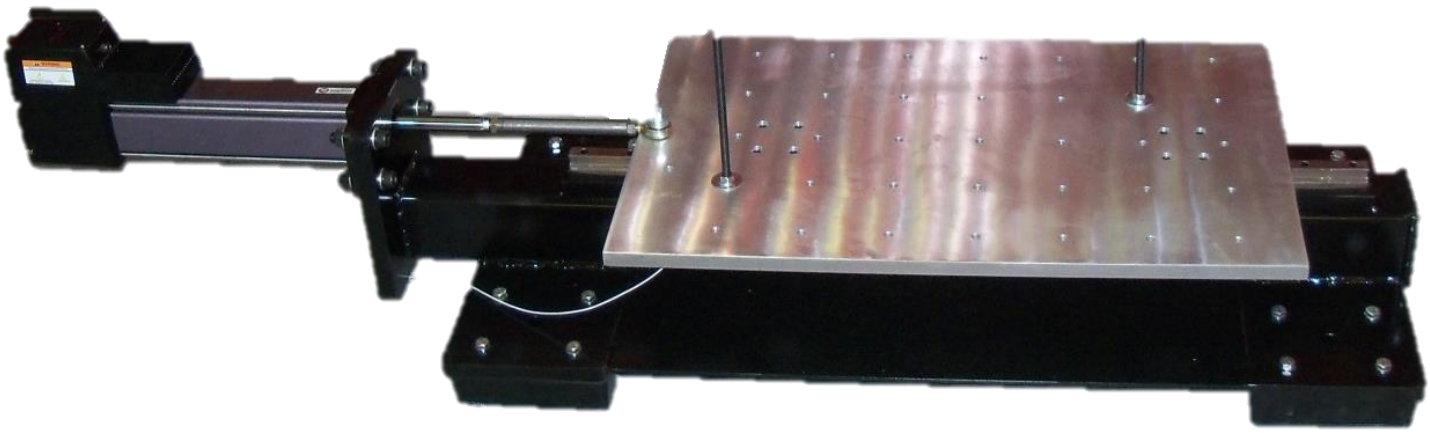
ANCO Engineers, Inc.
1965-A 33rd Street, Boulder, CO 80301, USA
www.ancoengineers.com, (303) 443-7580

R-200: Low Cost Educational Shake Table

The ANCO R-201/202 earthquake shake tables are a 1 DOF and 2 DOF economical research and teaching tool for earthquake engineering, vibration, system dynamics, control systems, and data acquisition and processing studies and demonstrations.

- Portable, total weight <90/160 kg (R-201/R-202), no anchorage required
- Table top: 50x75 cm (R-201) or 60x60 cm (R-202) with tapped hole grid
- Achieves 1.5 g acceleration with an 80 kg payload
- Peak displacement of ±12 cm
- Peak velocity of 50 cm/s
- Frequency range of operation 0 to 20 Hz
- Can also be used as a large structure vibrator with 1.2 kN force
- Uses all electric roller screw actuator
- Requires single phase 3/6 kW (R-201/R-202) 208 Vac power
- Allows for one passenger riding to experience earthquake motions such as at science parks and museums
- Includes ANCO SPECTIME program for user generation of spectrum compatible earthquake time histories
- Provided with either of two digital controllers:

    1. Powerful closed loop ANCO PC based **DANCE** equalizing controller with 16 channels data acquisition, earthquake library, and SINE sweeps
    2. Economical open loop ANCO **FOX TROT** controller run from your PC or handheld MP3 player with library of preprogramed and user supplied earthquake drive signals



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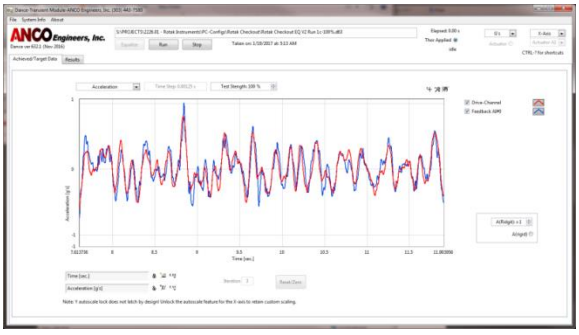
R-201

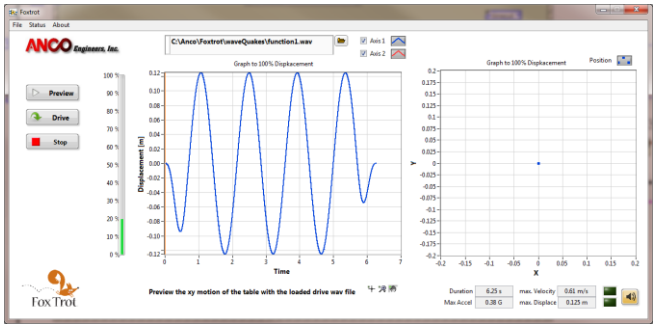
FOX TROT is a open loop controller that provides one or two channels of displacement drive signals to the roller screw drive(s). This program allows the user to convert external real or generated earthquake drive motions (or other wave forms) into the audio format that drives the table. These audio files can be output using your PC or an MP3 player. Audio volume adjustment allows the user to scale the table motion from 0%-100%. As an open loop controller FOX TROT does not use a table feedback accelerometer and has good fidelity in reproducing drive time histories.

DANCE is a PC based closed loop controller and uses feedback from a table accelerometer, thereby providing improved table fidelity. DANCE performs an equalization process using the table feedback accelerometer to improve fidelity and record the actual table response as well as a total of 16 channels of transducer data. All data can be displayed (time histories, FFT, Response Spectra) and also exported for use by other programs. The PC and feedback accelerometer and power supply are included.

SPECTIME is a program that allows the user to enter the break points of a Required Response Spectrum (RRS) and then computes a time history with a similar RRS. This time history(s) can then be imported to FOX TROT or DANCE to drive the shake table.

DANCE and FOXTROT GUI





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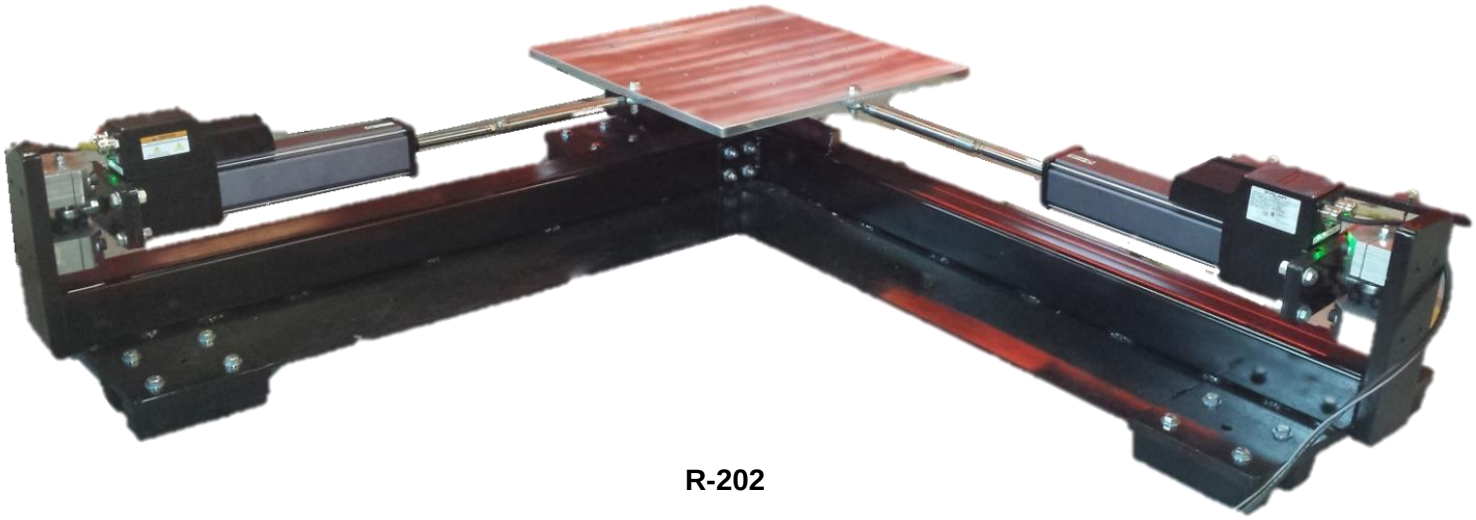
ROLLER SCREW DRIVES accept a calibrated analog voltage corresponding to ±100% displacement. This drive signal can be provided by FOX TROT, DANCE, or a user supplied signal source. Roller screws use an electric servo motor with internal encoder and digital PID servo loop to drive the roller screw under displacement command. The highest frequency response is approximately 20 Hz depending on the table mass loading.

OPTIONAL EQUIPMENT:

- Additional accelerometers and ICP power supplies
- Anti-Aliasing filters
- T bar table attachment or seat attachment for passenger stability
- Sample models for study including multi-story building, piping system, water tank, and base isolated simulated electronic cabinet
- Work book with 8 suggested student lab projects using the shake table
- The R-201 is a 1 DOF option
- The R-202 is a 2 DOF option
- The R-202b is a 1 DOF option that can be upgraded to 2 DOF at a later time

Contact ANCO for additional details and specification options. Also view information at

www.ancoengineers.com



R-202