

Major Shake Table Systems installed by MTS Systems Corporation

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Institution	Date	Size (m)	Max. Spec Mass (mTon)	Vibration Direction	Max. Disp. (mm)	Number of Actuators	Max. Velocity m/sec	Max. Accel. (g's)	Freq. Rge (Hz)
EETI, China	2012	2.5 x 2.5	5	Triaxial(6DOF)	X ±190 Y ±190 Z ±150	4 4 4	±2.5 ±2.5 ±2.5	±7.0 ±7.0 ±7.0	0.1-100
Chongqing University, China	2012	6 x 6	60 (max 80)	Triaxial(6DOF)	X ±250 Y ±250 Z ±200	4 4 4	±1.2 ±1.2 ±1.0	±1.5 ±1.5 ±1.2	0.1-50
Tong Ji University Shanghai, China Note: Two tables can be combined to make large 6 x 10 table	2011	4 x 6	30	Biaxial (3 DOF)	X ±500 Y ±500	2 2	±1.0 ±1.0	±1.5 ±1.5	0.1-50
	2011	4 x 6	70	Biaxial (3 DOF)	X ±500 Y ±500	2 2	±1.0 ±1.0	±1.5 ±1.5	0.1-50
	2011	4 x 6	70	Biaxial (3 DOF)	X ±500 Y ±500	2 2	±1.0 ±1.0	±1.5 ±1.5	0.1-50
	2011	4 x 6	30	Biaxial (3 DOF)	X ±500 Y ±500	2 2	±1.0 ±1.0	±1.5 ±1.5	0.1-50
	2011	4 x 6	30	Biaxial (3 DOF)	X ±500 Y ±500	2 2	±1.0 ±1.0	±1.5 ±1.5	0.1-50
EETI	2011	4 x 4	20 (max 40)	Triaxial (6 DOF)	X ±300 Y ±300	2 2	±1.5 ±1.5	±1.5 ±1.5	1-50
		4 x 4			Z ±150	4	±1.3	±1.0	
Nippon Telephone and Telegraph (NTT), Japan	2010	3.0 x 4.0	7	Triaxial(6 DOF)	X ±1100 Y ±1100 Z ±500	2 2 4	±2.0 ±2.0 ±1.5	±2.0 ±2.0 ±1.5	1-100
Kajima Corp. Tokyo, Japan (small table can be mounted on top of large table)	2010	5 x 7	60 (max 100)	Triaxial (6 DOF)	X ±500 Y ±700 Z ±300	4 4 4	±2.0 ±2.0 ±1.0	±2.0 ±2.0 ±2.0	0.1-40
		2x2	5	Biaxial	X ±2000 Y ±2000	2 1	±2.5 ±2.5	±0.5 ±0.5	0.01-1
University of Philippines, Philippines	2009	3 x 3	10	Biaxial	X ±250 Y ±250	1 1	±1.0 ±1.0	±1.0 ±1.0	.1 – 50
Xian University of Arch. & Tech. Xian, China	2010	4 x 4	30	Triaxial (6 DOF)	X ±150 Y ±250 Z ±100	2 2 4	±1.0 ±1.25 ±1.0	±1.2 ±1.0 ±0.9	0.1-60
Pusan National University Pusan, South Korea	2009	4 x 4	20 (max 30)	Triaxial (6 DOF)	X ±300 Y ±200 Z ±150	2 2 4	±1.0 ±1.25 ±0.8	±1.5 ±1.5 ±1.0	0.1-60
	2009	5 x 5	50 (max 60)	Biaxial (3 DOF)	X ±300 Y ±200	2 2	±1.0 ±1.0	±1.25 ±1.25	0.1-60
	2009	5 x 5	20 (max 30)	Biaxial (3 DOF)	X ±300 Y ±200	2 2	±1.0 ±1.0	±1.0 ±1.0	0.1-60
CGS, Algiers, Algeria	2010	6 x 6	60 (max 80)	Triaxial(6DOF)	X ±250 Y ±150 Z ±100	4 4 4	±1.1 ±1.1 ±0.8	±1.0 ±1.0 ±0.8	0.1-50
National Center for Research on Earthquake Engineering, Taiwan	2008	2.5 x 6.5	4000 bearing system	Triaxial (6 DOF)	X ±1200 Y ±100 Z ±75	4 4 7	±0.5 ±0.1 static		0.1-20
University of Granada, Spain	2008	3 x 3	10	Biaxial	X ±250 Y ±250	1 1	±1.0 ±1.0	±1.0 ±1.0	.1 – 50
University of Cairo, Egypt	2007	1.5 x 1.5	2	Uniaxial	X ±200	1	±1.0	±1.0	.1 – 50
Institute of Building Science and Technology, Vietnam	2007	3 x 3	10	Biaxial	X ±250 Y ±250	1 1	±1.0 ±1.0	±1.0 ±1.0	.1 - 50
University of Colorado	2006	3 x 3	10	Uniaxial	X ±250	1	±1.0	±1.0	.1 - 50
Tsinghua University	2006	1.5 x 1.5 (Dual Tables)	2	Uniaxial	X ±200	1	±1.0	±1.0	.1 - 50
Eucentre Pavia, Italy	2005	6 x 8	60	Uniaxial	X ±500	1	±1.8	±2	0.1-50
University of California San Diego LHPOST	2004	7.6x12.2	2000	Uniaxial	X ±750	2	±1.8	±1.0	0.1-20
China Academy of Building Research (CABR), Beijing, China	2004	6x6	60 (max 80)	Triaxial(6DOF)	X ±150 Y ±250 Z ±100	4 4 4	±1.0 ±1.25 ±0.8	±1.5 ±1.0 ±0.8	0.1-50

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Structural Engineering and Earthquake Simulation Lab. (SEESL) Buffalo, New York	2004	3.6 x 3.6 (dual tables)	20	Triaxial (6DOF) Independent and combined	X ±150 Y ±150 Z ±75	2 2 4	±1.25 ±1.25 ±0.5	±1.15 ±1.15 ±1.15	0.1-50
Simpson Strong Wall, California (Digital controller)	2003	0.8 x 7.9	30	Uniaxial	X ±406	1	±1.8	±1.0	0.1-40
Hanyang, University, Seoul Korea	2003	3 x 3	10	Uniaxial	X ±100	1	±0.8	±1.0	0.1-50
University of California San Diego SRMD/LDC	1999	4x3.7	400	Triaxial(6DOF)	X/Y ±1200 Z ±200	4 4	±1.8 ±0.8	±1.9 ±1.3	0.1-10
EPDC, Tokyo Japan	1999	3.5 (Dia)	10	Triaxial (6DOF)	X ±200 Y ±200 Z ±200	2 2 4	±0.6 ±0.6 ±0.38	±1.0 ±1.0 ±1.0	0.1-100
Hong Kong Polytechnique University, HK PRC	1999	3 x 3	10	Uniaxial	X ±100	1	±0.8	±1.0	0.1-50
National Institute of Earth Science Disaster Prevention, STA Japan (6x6 m prototype of 15x20 m system in conjunction with MHI)	1998	6x6	50	Triaxial(6DOF)	X ±1000 Y ±1000 Z ±500	2 2 4	±2.0 ±2.0 ±0.7	±.4 ±.4 (limited by bld.)	0.1-20
Nippon Telephone & Telegraph, Japan	1998	3 x 3	7	Triaxial(6 DOF)	X ±350 Y ±350 Z ±200	2 2 4	±1.5 ±1.5 ±1.0	±1.0 ±1.0 ±1.0	0.1-50
Seoul City University, Korea	1998	3 x 3	10	Uniaxial	X ±100	1	±0.5	±1.0	0.1-40
Housing Urban Develop. Research Institute, Japan	1997	3 x 4	4	Triaxial(6 DOF)	X ±250 Y ±200 Z ±100	1 2 4	±0.75 ±0.75 ±0.75	±1.2 ±1.2 ±0.8	0.1-50
Kyoto University Disaster Prevention Research Center Japan (Underwater Table)	1996	3.5 (Dia)	10	Triaxial(6 DOF)	X ±200 Y ±200 Z ±200	2 2 4	±0.6 ±0.6 ±0.38	±1.0 ±1.0 ±1.0	0.1-50
Ministry of Construction, Japan	1996	8 x 8	100 (300 max.)	Triaxial(6 DOF)	X ±600 Y ±600 Z ±300	6 6 4	±2.0 ±2.0 ±1.0	±2.0 ±2.0 ±1.0	0.1-50
Power Reactor Nuclear Fuel Development Corp. (Dohnen) Japan (Three Tables)	1996	1.3 x 1.1	3	Uniaxial	X ±75	1	±1.4	±10	0.1-33
University of Mexico	1996	4 x 4	20	Biaxial	X ±150 Z ±75	4 4	±1.14 ±0.44	±2.0 ±1.0	0.1-50
Ecole Polytechnique Montreal, Canada	1995	3.4 x 3.4	15	Uniaxial	X ±125	1	±0.8	±1.0	0.1-50
Portland State University, USA(Digital controller)	1995	3 x 3	10	Uniaxial	X ±150	1	±0.5	±1.0	0.1-40
University of Nevada, Reno (Two Tables), USA	1995	4.3 x 4.5	45	Uniaxial or Biaxial	X ±300	1	±1.0	±1.0	0.1-33
South China Construction University, Guangzhou, PRC	1994	3.0 x 3.0	10	Triaxial(6 DOF)	X ±100 Y ±100 Z ±50	2 2 4	±0.8 ±0.8 ±0.8	±1.0 ±1.0 ±1.0	0.1-50
The National Center for Research on Earthquake Engineering (NCREE) Taipei, Taiwan	1994	5 x 5	30	Triaxial(6 DOF)	X ±80 Y ±200 Z ±50	4 4 4	±0.6 ±1.0 ±0.5	±3.0 ±1.0 ±1.0	0.1-50
University of Technology Sydney Sydney, Australia(Digital controller)	1994	3 x 3	10	Uniaxial	X ±100	1	±0.55	±0.9	0.1-40

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CEDEX Madrid, Spain	1993	3.0 x 3.0	10	Triaxial(6 DOF)	X ±100 Y ±100 Z ±50	2 2 4	±0.8 ±0.8 ±0.8	±1.0 ±1.0 ±1.0	0.1-50
U.S. Army Construction Engineering, USA (upgrade)	1993	3.65 x 3.65	60	Triaxial(6 DOF)	X ±73 Y ±150 Z ±35	6 2 9	±0.75 ±0.75 ±0.5	±2.0 ±2.0 ±1.0	0.1-60
Nippon Yusen Yokohama, Japan	1992	2.6 x 6.2	5	Triaxial(6 DOF)	X ±200 Y ±200 Z ±225	2 2 4	±0.6 ±0.6 ±0.6	±2.0 ±2.0 ±3.0	0.1-80
National Taiwan Institute of Technology, Taipei, Taiwan	1991	3.0 x 3.0	10	Uniaxial	X ±150	1	±0.8	±1.2	0.1-50
Kajima Corp., Japan	1990	5.0 x 5.0	50	Triaxial(6 DOF)	X ±200 Y ±200 Z ±100	4 4 4	±1.0 ±1.0 ±0.5	±2.0 ±2.0 ±2.0	0.1-60
Korea Institute of Machinery and Metals, Taejon, South Korea Digital controller upgrade - 2002	1989	4.0 x 4.0	30	Triaxial(6 DOF)	X ±200 Y ±200 Z ±134	2 2 4	±0.75 ±0.75 ±0.5	±1.5 ±1.5 ±1.0	0.1-50
Power Reactor and Nuclear Fuel Development Corp. (DOHNEN) Japan	1988	2.5x3.0	6	Biaxial(4 DOF)	X ±100 Z ±75	1 4	±1.0 ±1.0	±3.0 ±3.0	0.1-100
Kumagai-Gumi Corp., Japan	1987	5.0 x 5.0	70	Triaxial(6DOF)	X ±80 Y ±260 Z ±50	4 4 4	±0.6 ±1.5 ±0.5	±3.0 ±1.0 ±1.0	0.1-70
Center D'Etudes Nucleaires (CEN) Paris, France (Digital controller)	1986	6.0x6.0	100	Biaxial(3DOF)	X ±125 Y ±125	2 2	±0.7 ±0.7	±1.0 ±1.0	0.1-100
Research Institute for the Electrotechnical Industry (ICPE), Bucharest, Romania	1986	2.0 x 2.0	0.5	Triaxial(6 DOF)	X ±265 Y ±265 Z ±177	2 2 4	±2.14 ±2.14 ±1.43	±5.0 ±5.0 ±3.3	0.5-33
		0.75x0.75	0.06	Triaxial(4 DOF)	X ±324 Y ±324 Z ±217	1 1 2	±4.7 ±4.7 ±3.15	±7.7 ±7.7 ±5.0	0.5-33
German Army Testing Institute Meppen, Germany	1986	1.5x3.0	1.5	Triaxial (6 DOF)	X ±50 Z ±50	1 2	±2.0 ±2.0	±5.0 ±5.0	0.1-100
National Committee for R&D of Nuclear and Alternative Energies (ENEA), Italy	1985	4.0 x 4.0	10	Triaxial(6 DOF)	X ±125 Y ±125 Z ±125	2 2 4	±0.5 ±0.5 ±0.5	±3.0 ±3.0 ±3.0	0.5-50
		2.0 x 2.0	1	Triaxial(6 DOF)	X ±150 Y ±150 Z ±150	2 2 4	±1.0 ±1.0 ±1.0	±5.0 ±5.0 ±5.0	1-100
Nippon Telephone and Telegraph (NTT), Japan	1985	3.0 x 3.0	10	Triaxial(6 DOF)	X ±100 Y ±100 Z ±120	2 2 4	±0.65 ±0.65 ±0.65	±1.0 ±1.0 ±1.0	1-100
Yunnan Institute of Tech. Kunming, China	1985	1.5 x 2.0	2.5	Biaxial (3 DOF)	X ±75 Z ±50	1 2	±0.8 ±0.8	±2.4 ±1.7	0.1-80
East China Technical University Of Water Resources, Nanjing, China	1984	2.0 x 2.8	6	Biaxial(4 DOF)	X ±50 Z ±34	1 2	±0.5 ±0.34	±1.2 ±0.62	0.1-80
ISMES, Italy (upgraded to 6 DOF 1986)	1984	4.0 x 4.0	20	Biaxial	X ±90 Y ±90 Z ±90	2 2 4	±0.9 ±0.9 ±0.6	±1.0 ±1.0 ±1.7	0.1-60

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Dalian Institute of Technology, PRC (Digital controller)	1984	3.0 x 3.0	10	Uniaxial	X ±75	1	±0.5	±1.0	0.1-50
Tong Ji University Shanghai, PRC	1983	4.0 x 4.0	15	Biaxial (6 DOF 1990)	X ±100 Y ±50 Z ±50	2 2 4	±1.0 ±0.6 ±0.6	±1.2 ±0.8 ±0.7	0.1-50
Ishikawajima-Harima Heavy Industries, Japan	1983	4.5 x 4.5	35	Triaxial (6 DOF)	X ±100 Y ±100 Z ±67	2 2 4	±0.75 ±0.75 ±0.5	±1.5 ±1.5 ±1.0	0.1-50
National Technical University, Athens Greece	1983	4.0 x 4.0	10	Triaxial (6 DOF)	X ±100 Y ±100 Z ±100	2 2 4	±0.9 ±0.6 ±0.8	±1.5 ±1.1 ±1.8	0.1-60
State University of New York, USA (Digital controller)	1983	3.7 x 3.7	20	Biaxial	X ±150 Z ±75	2 2	±0.76 ±0.5	±1.0 ±1.0	0.1-60
Ministry of Construction, Japan	1981	2.0 x 3.0 (4 tables)	25	Uniaxial	X ±75	1	±0.6	±0.7	0.1-50
University of "Kiril and Metodij", Yugoslavia	1980	5.0 x 5.0	40	Biaxial	X ±125 Z ±50	4 4	±0.635 ±0.38	±0.67 ±0.40	0.1-30
Ansaldo Impianti (AMN) Genoa, Italy	1980	3.5 x 3.5	7	Biaxial	X ±70 Y ±70	2 4	±0.86 ±0.55	±1.3 ±0.63	0.1-60
Toshiba Electric Co., Japan	1980	5.0 x 5.0	20	Biaxial	X ±75 Z ±38	4 4	±0.4 ±0.25	±1.0 ±0.7	0.1-30
Ministry of Construction, Japan	1979	6.0 x 8.0	100	Uniaxial (Biaxial, 1983)	X ±75	2 4	±0.6	±0.7	0.1-30
University of Mexico	1975	4.5 x 2.5	20	Uniaxial	X ±51	1	±0.381	±1.2	0.1-50
University of British Columbia, Canada	1975	3.0 x 3.0	15	Uniaxial	X ±75	1	±1.25	±2.5	0.1-50
Kajima Institute of Construction Technology, Japan	1975	4.0 x 4.0	20	Biaxial	X ±150 Z ±75	4 4	±1.14 ±0.445	±2.0 ±1.0	0.1-50
University of Illinois, USA	1968	3.65 x 3.65	4.5	Uniaxial	X ±51	1	±0.381	±5	0.1-50