



©M/RAD Corporation
71 Pine Street
Woburn, MA 01801
888-500-9578 • 781-935-5940
Fax: 781-933 -7210
www.mradcorp.com • inquiries@mradcorp.com

Technical Data Sheet

TDS-2

Free Fall Vs. Pneumatic Shock Machine

- a. Pneumatic Shock Machine has Velocity of 330 in/sec standard. Free Fall only 200 in/sec. In addition, an air amplifier may be readily added to the Pneumatic Shock Machine to virtually double its velocity capability.
- b. Pneumatic Shock Machine is only 6 ft tall. Free Fall can be as high as 12 – 14 ft., which can pose ceiling problems.
- c. Pneumatic Shock Machine equipped with SAFETY SHIELD standard so that operator can not place hands under shock carriage. Free Fall does not offer.
- d. Pneumatic Shock Machine can provide 8 shocks/minute. Free Fall cannot.
- e. Pneumatic Shock Machine can abort readily if table is set and ready to shock. Free Fall cannot lower readily.
- f. Pneumatic Shock Machine has no structure on the sides of the carriage to prevent test item from overhanging, if necessary. Free Fall has Thompson Rod and Bearings, which does not permit for any test item to be larger than the shock carriage.
- g. Pneumatic Shock Machine has no restriction on test item height. Free Fall may have limitations due to lifting mechanism.
- h. All the controls for the Pneumatic Shock Machine are located on the base of the machine itself. Free Fall controls are located on a remote bay away from the machine.
- i. The Pneumatic Shock Machine carriage is situated around 5 ft. (shoulder level) for ease of test item set up. Free Fall machine is low to the ground so that the operator must bend over to load/unload test specimen.
- j. M/RAD manufactures both Free Fall and Pneumatic Shock Machines. The majority of M/RAD customers purchase Pneumatic.

Shock Testing Equipment: Pneumatic Shock Machine

SPECIFICATIONS

Model No.	0909(50)P-MP	1616(100)PA-MP	1616(200)P-MP	2424(550)P-MP
Table Size and Weight	9 in x 9 in 40 lbs	16 in x 16 in 150 lbs	16 in x 16 in 150 lbs	24 in x 24 in 450 lbs
Maximum Specimen Weight	50 lbs	100 lbs	200 lbs	550 lbs
Maximum Specimen Height	Unlimited	Unlimited	Unlimited	Unlimited
Maximum Specimen Size	15 in x Unlimited	22 in x Unlimited	22 in x Unlimited	30 in x Unlimited
Velocity Change (standard)	330 in/sec (no load)	-----	400 in/sec (no load)	330 in/sec (no load)
	260 in/sec (30 lb load)	-----	285 in/sec (150 lb load)	260 in/sec (400 lb load)
Velocity Change (air amplifier)	600 in/sec (no load)	600 in/sec (no load)	750 in/sec (no load)	600 in/sec (no load)
	500 in/sec (30 lb load)	500 in/sec (70 lb load)	570 in/sec (150 lb load)	500 in/sec (400 lb load)
Stroke	18 inch maximum	18 inch maximum	18 inch maximum	21 inch maximum
Cycling Rate	8 cycles per minute	8 cycles per minute	8 cycles per minute	8 cycles per minute
Maximum Deviation of specimen cg from table center	1 inch	1 inch	1.5 inch	2 inch
Base Weight	1700 lbs	1700 lbs	5000 lbs	5000 lbs
Floor Space	32 in x 36 in	32 in x 36 in	45 in x 60 in	45 in x 60 in
Utilities Required	Plant air or bottled nitrogen 80- 120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz

SPECIFICATIONS AND PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Shock Testing Equipment: Free Fall Shock Machine

SPECIFICATIONS

Model No.	0505-20	1010-100	1919-250	2424-500	3232-1000	4949-2000
Table Size and Weight	5 in x 5 in 12 lbs	10 in x 10 in 25 lbs	19 in x 19 in 100 lbs	24 in x 24 in 150 lbs	32 in x 32 in 190 lbs	49 in x 49 in 650 lbs
Maximum Specimen Weight	20 lbs	100 lbs	250 lbs	500 lbs	1000 lbs	2000 lbs
Maximum Terminal Velocity	200 in/sec	200 in/sec	200 in/sec	200 in/sec	200 in/sec	200 in/sec
Maximum Drop Height	60 in	60 in	60 in	60 in	60 in	60 in
Minimum Pulse Duration	0.5 ms	1 ms	1.5 ms	3 ms	3 ms	4 ms
Height Above Floor	8 feet	10 feet	12 feet	13 feet	13 feet	14 feet
Lift Mechanism	Electric Winch	Electric Winch	Air Cylinder or Hydraulic Cylinder or Electric Winch	Air Cylinder or Hydraulic Cylinder or Electric Winch	Air Cylinder or Hydraulic Cylinder or Electric Winch	Air Cylinder or Hydraulic Cylinder or Electric Winch
Foundation	Seismic supplied with machine	Seismic supplied with machine	Seismic supplied with machine	Seismic supplied with machine	Seismic supplied with machine	Seismic supplied with machine
Floor Space	18 in x 18 in	28 in x 28 in	31 in x 31 in	36 in x 36 in	40 in x 40 in	73 in x 73 in
Utilities Required	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz	Plant air or bottled nitrogen 80-120 psig 115V, Single Phase, 50 or 60 Hz

Customer to specify desired bolt hole pattern

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