

Vibration systems from 9 N to 400 N

TIRA products are subject to strict quality assurance procedures designed to meet CE requirements as well as national and international norms. This also applies to our proven testing and measuring systems where feedback from our customers helps us to retain high standards of quality and profitability now and in the future. Quality management has been certified in terms of DIN ISO 9001 since 1995, and DIN EN ISO 9001: 2008 since February 2010.

These shakers use permanent magnets and are available as portable and stationary systems for simulating ambient vibration conditions. Robust design ensures a long service life, and typical applications include **structure analysis** and testing **smaller subassemblies**. These exciters are characterized by **high lateral and axial stiffness** and come in **lightweight construction** as specified by industrial users.

New rare earth magnets have been added to the range of conventional Alnico magnets, **reducing weight** from 30 kg to 10 kg for **easy handling** particularly in **mobile applications**. Our vibration generators have proven their worth in environmental labs, universities and industrial production lines both for components and calibration. These complete systems enable testing in accordance with national and international standards such as DIN, ISO, BS, MIL, IEC and ASTM.



Shakers 9 N - 400 N

System	TV 50009	TV 50018	TV 51110
Shaker	S 50009	S 50018	S 51110
Amplifier	BAA 60	BAA 60	BAA 120
Rated peak force (N) Sine _{pk} / Random _{RMS}	9/-	18/-	100/70
Frequency range (Hz)	2 - 20000	2 - 20000	2 - 7000
Max. displacement (mm) Pk - Pk	3	5	13
Max. velocity (m/s) Sine/Random	1.5/-	1.5/-	1.5/1.5
Max. acceleration (g) Sine/Random	60/-	65/-	45/30
Suspension stiffness (N/mm)	4	4.4	8
Effective moving mass (kg)	0.015	0.028	0.23
Main resonance frequency (Hz)	>13000	>13000	>6500
Weight (without trunnion) (kg)	2.2 (1.7)	5.0 (3.7)	12
Armature (ø mm)	M4	M4	60
Max. power consumption at 230V (kVA)	0.05	0.05	0.08

System	TV 51120	TV 52110	TV 52120	TV 51140
Shaker	S 51120	S 52110	S 52120	S 51140
Amplifier	BAA 500	BAA 120	BAA 500	BAA 1000
Blower	TB 0080	-	TB 0080	TB 0140
Rated peak force (N) Sine _{pk} / Random _{RMS}	200/140	100/50	200/100	400/311
Frequency range (Hz)	2 - 7000	2 - 7000	2 - 7000	2 - 6500
Max. displacement (mm) Pk - Pk	13	15	15	20
Max. velocity (m/s) Sine/Random	1.5/1.5	1.5/1.5	1.5/1.5	1.5/1.5
Max. acceleration (g) Sine/Random	89/62	50/25	100/50	100/50
Suspension stiffness (N/mm)	8	5	5	5
Effective moving mass (kg)	0.23	0.25	0.25	0.4
Max. weight tested (kg)	3.0	3.0	3.0	6.0
Main resonance frequency (Hz)	>6500	>5700	>5700	>5500
Weight with trunnion (kg)	12	36	36	18
Armature (ø/mm)	60	60	60	60
Max. power consumption at 230V (kVA) Amplifier/Blower	0.35/0.46	0.08/-	0.35/0.46	1.22/1.4