

Type 9724A2000, 9724A5000

9724A IMPULSE FORCE HAMMER

The dynamic response of a mechanical structure while either in a development phase or an actual use environment can readily be determined by impulse force testing. Using a FFT analyzer, the transfer function of the structure can be determined from a force pulse generated by the impact of a hammer and the response signal measured with an accelerometer. The impulse force test method, yields extensive information about the frequency and attenuation behavior of the system under test.

The stainless steel head of an impulse force hammer, is equipped with a quartz, low impedance force sensor which accepts impact tips varying in hardness. A selection of steel, plastic, PVC and rubber tips along with an extender mass allow the hammer to be tailored to impart to the test structure, a desired spectrum of frequencies. Shear quartz accelerometers operating in a voltage mode and featuring insensitivity to base strain, thermal transients and transverse motion are available to measure the response of the test

- Low impedance voltage mode
- Quartz Force sensing element guarantees long-term stability
- Accessories for various applications
- Sensor cable integrated to handle of hammer
- Conforming to CE



Technical Data	Units	9724A2000	9724A5000
Force Range	N	0 ... 2000	0 ... 5000
	lbf	0 ... 500	0 ... 1000
Maximum Force	N	10000	12500
	lbf	2500	2500
Sensitivity nom.	mV/N	2	1
	mV/lbf	10	5
Resonant Frequency	kHZ	27	27
Frequency range with steel impact tip (-10 dB)	Hz	6600	6900
Time Constant nom.	s		500
Rigidity	kN/μm		0,8
	lbf/μin		4.8
Temperature Range Operating	°F		-5 ... 160
	°C		-20 ... 70
Output			
Voltage F.S.	V		±5
Bias nom.	VDC		11
Impedance	Ω		<100
Source			
Voltage	V	20 ... 30	
Constant current	mA	2 ... 20	
Hammer head dimension			
Diameter	in (mm)	0.91 (23)	
Length	in (mm)	3.5 (89)	
Weight	g	250	
Length of handle	in (mm)	9.1 (231)	
Connector	type	BNC neg.	

1 N = 0.2248lb, 1 g = 9.80665 m/s², 1 inch = 25.4 mm, 1 gram = 0.03527 oz

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specimens ranging from thin-walled structures to steel bridge members.

The hammer incorporates a quartz measuring cell with built-in Piezotron® low impedance electronics. The cell's voltage mode operation, guarantees a stable signal transmission insensitive to ambient influences. A wide selection of single or multi-channel couplers are available to provide power and signal processing for the hammer and accelerometers.

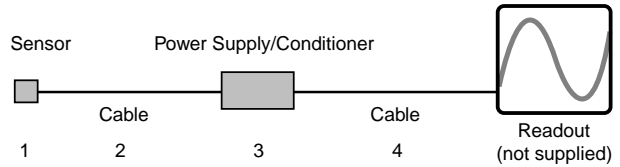
Applications

The hammer may be used for testing structures such as small rotating machinery and aerospace structural components at medium to high frequencies. The impulse force hammer is used to analyze the dynamic behavior of mechanical structures. The vibrations induced by the hammer impact are measured by an accelerometer.

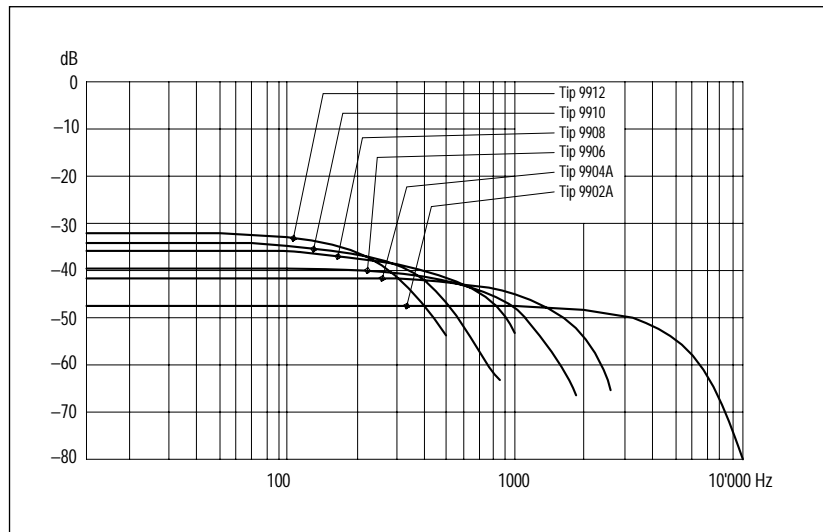
Supplied Accessories

- 9902A impact tip, steel
- 9904A impact tip, plastic
- 9906 impact tip, soft PVC
- 9908 impact tip, rubber hard (green)
- 9910 impact tip, rubber medium (red)
- 9912 impact tip, rubber soft (gray)
- 9928 adapter for rubber impact tips
- 9924 extender mass (125 grams)
- 1370 impact tip wrench
- Plastic carrying case

Ordering Information



- Specify
- 1- 9724A2000 force hammer or
9724A5000 force hammer
 - 2- 1601B... light weight cable, 0.12 in. [3 mm] dia. cable, BNC pos. to BNC pos, specify length in meters or
1511... cable, 0.25 in. [6,3 mm] dia. BNC pos. to BNC pos, specify length in meters
 - 3- 5100 series coupler
 - 4- 1511... output cable, 0.25 in. [6,3 mm] dia. BNC pos. to BNC pos, specify length in meters



Typical Impulse Power Spectra

000-273e-09.00 (DBK8.9724e)