Modal Impact Hammer

Bently Nevada* Asset Condition Monitoring

Description

The Bently Nevada* Impact Hammer Kit is used with our ADRE* 408 DSPi and other compatible instruments to determine the dynamic behavior of mechanical structures.

Impact hammer testing involves striking a mechanical structure with an instrumented hammer and collecting response information from transducers mounted on the structure. The response from a single accelerometer yields transfer and transactional characteristics of the structure. The integration of response information from multiple accelerometers at various points of interest allows for modal analysis (velocity compliance, impedance, mobility).

The hammer excites resonance frequencies in the structure over a broad range. The physical properties of the hammer (size and mass) and the strike velocity determine the amplitude and frequency content in the force impulse. The hammer tip material determines the energy content of the impulse. Extender masses can be used to concentrate more energy at lower frequencies.

Specifications

Modal Impact Hammer

Performance

	285770-01	*285770-02*	*285770-03*
Sensitivity (± 15 %)	10 mv/lbf (2.3 mV/N)	5 mv/lbf (1.1 mV/N)	1 mv/lbf (0.23 mV/N)
Measurement Range (pk)	± 500 lbf (± 2,224 N)	± 1,000 lbf (± 4,448 N)	± 5,000 lbf (± 22,240 N)
Resonant Frequency	≥ 22 kHz		≥ 12 kHz
Non-Linearity	≤ ± 1 %		

Electrical

	285770-01	*285770-02*	*285770-03*
Excitation Voltage	20 to 30 VDC		
Constant Current Excitation	2 to 20 mA		
Output Impedance	< 100 Ω		
Output Bias Voltage	8 to 14 VDC		
Discharge Time Constant	≥ 2,000 seconds		≥ 1,400 seconds

Physical

	285770-01	*285770-02*	*285770-03*
Sensing Element	Quartz		
Sealing	Epoxy		Hermetic
Mass	0.34 lbm (0.16 kg)		2.4 lbm (1.1 kg)
Head Diameter	0.62" (1.57 cm)		2.0" (5.1 cm)
Tip Diameter	0.25" (0.63 cm)		2.0" (5.1 cm)
Length	8.5" (21.6 cm)		14.5" (37 cm)
Electrical Connection	BNC Jack, Bottom of Handle		

Accessories

Each hammer comes with a calibration certificate. Periodic hammer recalibration and recertification is optional.

Standard with 285570-01 and 285570-02

2 Mounting Studs, 10-32 to 10-32

1 Extender, Steel, 0.6" diameter, 2.6 oz (75 gm)

1 Hard Tip, Stainless Steel

1 Medium Tip, Plastic, White

2 Soft Tips, Black

2 Supersoft Tips, Red

2 Covers for Medium Tip, Vinyl, Blue

Standard with 285570-03

1 Hard Tip, Plastic, Black

1 Medium Tip, Plastic, Red

1 Soft Tip, Plastic, Brown

1 Supersoft Tip, Plastic, Gray

CE Mark Directives

This equipment complies with EMC directive 2004/108/EC and amendments.

EMC

EN 61326-1:2006

EN 61326-2-3:2006

Safety

EN 61010-1:2001

Ordering Information

Modal Impact Hammer

285570-AXX-BXX

A: Hammer Type

- **00** 8.5", 0.34lbm, 500lbf peak
- **01** 8.5", 0.34lbm, 1000lbf peak
- **02** 14.5", 2.4lbm, 5000lbf peak†

B: Calibration

- **00** No Recalibration
- **01** Periodic recalibration and recertification†

† Option currently unavailable

Graphs and Figures

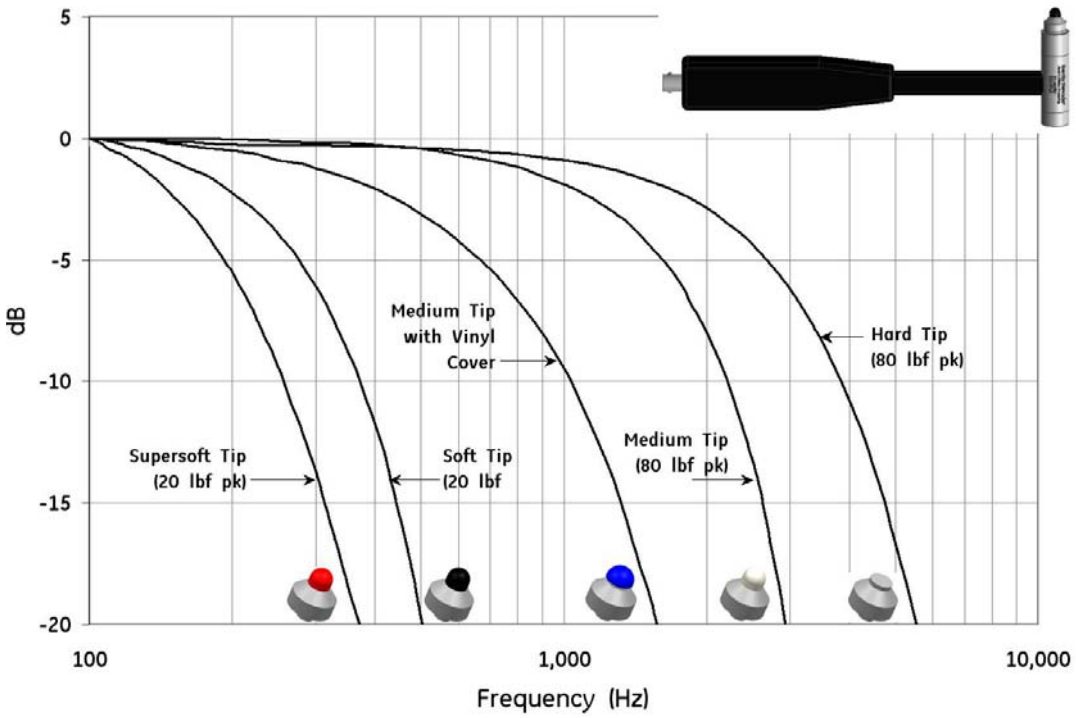

Figure 1. Impact Hammer Response Curves for 285570-01 and 285570-02

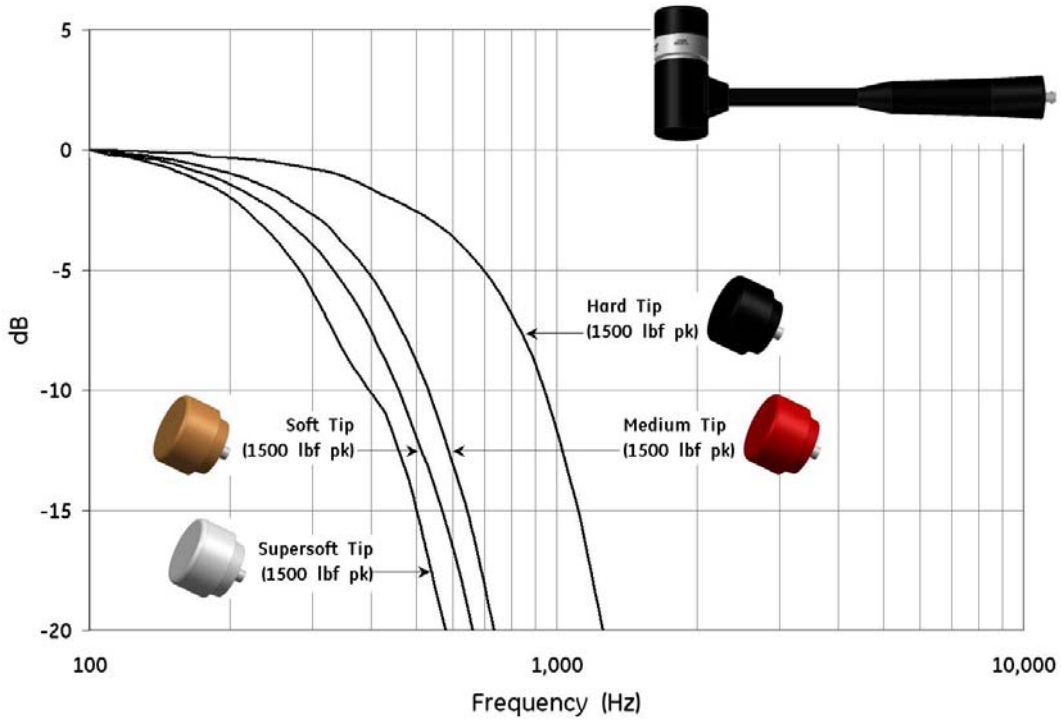

Figure 2. Impact Hammer Response Curves for 285570-03

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1631 Bently Parkway South, Minden, Nevada USA 89423
Phone: 775.782.3611 Fax: 775.215.2873
www.ge-energy.com/bently