

Professional Series

Model 2441 Compression Driver

70 watts continuous program at 500 Hz
150 watts continuous program at 1 kHz or higher
Diamond-pattern diaphragm suspension
100 mm (4 in) edgewound aluminum ribbon voice coil
100 mm (4 in) aluminum alloy diaphragm
49 mm (2 in) horn throat diameter



Model 2441 is a powerful, professional-quality compression driver built to typical JBL standards of precision. Featuring a 100 mm (4 in) voice coil and an Alnico V magnetic structure weighing more than 10 kg (23 lb), it can take the most explosive transients in stride and reproduce them at thunderous levels with flawless accuracy.

The phasing plug, a mathematically generated design, consists of die cast concentric exponential horns, configured to eliminate phase cancellations. The magnetic assembly is cast and machined to hold tolerances considered impractical by industry standards. The diaphragm of aluminum alloy is pneumatically drawn to shape to minimize crystal stresses that cause fatigue. After manufacture, the frequency response of each driver is tested, and any deviation in response is cause for rejection.

A new suspension (Patent Applied For), consisting of a three-dimensional diamond pattern, has been designed to reduce bending stresses in the diaphragm support structure. The depth of the diamond pattern is closely controlled to provide predictable frequencies for the 2nd and 3rd normal resonance modes and for the basic suspension resonance. This suspension design and precise manufacturing control give the 2441 a frequency response extending approximately *one octave* beyond that of its predecessor.

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Model 2441- Compression Driver

The compression driver shall consist of an Alnico V magnet encased in a cast iron return circuit. All magnetic assembly parts shall be machined from cast or extruded billet stock. The phasing plug shall be assembled of concentric horns to minimize phase cancellations, and it shall be further coupled to a tapered throat, the mouth of which shall be 49 mm (2 in) in diameter. The back cover shall be cast aluminum with reinforcing ribs to prevent ringing resonances. The diaphragm shall be 0.08 mm (0.003 in) aluminum alloy pneumatically drawn to shape. High frequency response shall be controlled through the use of a three-dimensional suspension structure. The voice coil shall be edgewound aluminum ribbon of not less than 100 mm (4 in) in diameter, operating in a magnetic field of not less than 1.8 tesla (18,000 gauss).

Performance specifications of a typical production unit shall be as follows:

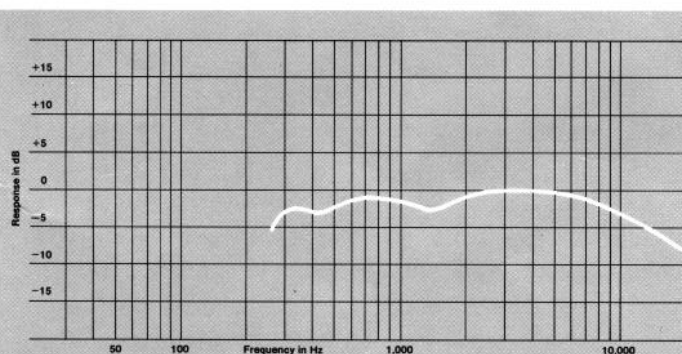
Measured sensitivity with a 1 mW input on a 25 mm (1 in) terminated tube, averaged from 500 Hz to 2.5 kHz, shall be at least 118 dB SPL. Measured sensitivity with a 1 W input at 1 m distance on-axis from the mouth of a JBL model 2350 90° radial horn, averaged from 500 Hz to 2.5 kHz, shall be at least 111 dB SPL. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 17 newtons per ampere. Frequency response, measured on a terminated tube, shall be flat within ± 5 dB from 500 Hz to 8 kHz. On a JBL Model 2350 horn, response shall be ± 3 dB from 500 Hz to 12 kHz. Nominal impedance shall be 16 ohms and power capacity shall be at least 70 watts normal speech or music program material.

The compression driver shall be JBL Model 2441. Other drivers will be considered for equivalency provided that submitted data from a recognized independent test laboratory verify that the above performance specifications are met.

Specifications

Horn Throat Diameter	49 mm	2 in
Nominal Impedance	16 Ω	
Power Capacity ¹	70 W continuous program at 500 Hz, 12 dB/octave slope	150 W continuous program at 1 kHz or higher, 18 dB/octave slope
Sensitivity	111 dB SPL, 1 W @ 1 m on JBL 2350 horn ²	118 dB SPL, 1 mW on plane wave tube ³
Nominal Efficiency	25% (500 Hz to 2.5 kHz)	
Frequency Range	500 Hz to 18 kHz	
Recommended Crossover	500 Hz or higher	
Diaphragm	0.08 mm (0.003 in) aluminum alloy	
Voice Coil Diameter	100 mm	4 in
Voice Coil Material	Edgewound aluminum ribbon	
Flux Density	1.8 T (18,000 gauss)	
BI Factor	17 N/A	
Positive voltage to black terminal gives diaphragm motion toward the phasing plug		
Dimensions	178 mm (7 in) diameter	138 mm (5 $\frac{3}{8}$ in) depth
Net Weight	11.3 kg	24 $\frac{7}{8}$ lb
Shipping Weight	11.8 kg	26 lb

1. Continuous program power is defined as 3 dB greater than continuous sine wave power and is a conservative expression of the transducer's ability to handle normal speech and music program material.
2. Sensitivity measured with a 1 W input at 1 m distance on-axis from the mouth of a JBL 2350 90° radial horn (nominal Q=6.3) with an input signal swept from 500 Hz to 2.5 kHz.
3. As specified by recognized standards organizations, sensitivity is measured with the driver coupled to a terminated tube. The JBL sensitivity rating represents the SPL in a 25 mm (1 in) terminated tube, using a 1 mW input signal (0.126 V into 16 Ω) swept from 500 Hz to 2.5 kHz. The sensitivity rating with a 1 W input would be 30 dB greater.



Frequency response contour of Model 2441 coupled to a 2350 horn. Measured response of a typical production unit, including all peaks and dips, does not deviate more than 2 dB from the above curve.

JBL continually engages in research related to product improvement. New materials, production methods, and design refinements are introduced into existing products without notice as a routine expression of that philosophy. For this reason, any current JBL product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise stated.

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