Professional Series
Model 2425 H/J
Compression Driver

70 watts continuous program at 800 Hz
100 watts continuous program at 1.2 kHz or higher
Diamond-pattern diaphragm suspension
44 mm (1¾ in) edgewound aluminum ribbon voice coil
44 mm (1¾ in) pure titanium diaphragm
25 mm (1 in) horn throat diameter
Silver plated pole piece

The model 2425 H/J is a professional quality high frequency compression driver which incorporates JBL's newly developed and unique titanium diamond diaphragm. This titanium diamond structure combines the ruggedness of phenolic and composite type diaphragms with the outstanding frequency response of the fragile aluminum and exotic metal diaphragms. Nontoxic titanium has no fatigue limit; it can last forever if not overdriven. The recent availability of a commercially pure grade of titanium that can be formed under the stringent conditions required in loudspeaker manufacturing, coupled with the advanced research techniques of laser interferometry, have made the awesome combination of a pure titanium diaphragm and a diamond-pattern surround (patent pending) a reality.

A new ferrite magnet structure provides a high flux level for extended frequency response with maximum efficiency, while maintaining traditional JBL tolerances in assembly and manufacture. The mathematically determined phasing plug consists of concentric exponential horns to minimize phase cancellations. JBL's exclusive suspension, consisting of a three-dimensional diamond pattern, reduces 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. A machined ring of pure silver surrounds the pole piece to counteract the inductance of the voice coil at high frequencies. After manufacture, the frequency response of each driver is tested for conformity to rigid performance standards.

Model 2425 H/J—Compression Driver

The 2425 is ideally suited for critical playback systems or reinforcement systems of the highest quality. Its high efficiency and high power capacity permit excellent dynamic range. The peak-free response of the 2425 allows greater system gain without acoustic feedback. For maximum flexibility in system design, the driver is offered in two impedance ratings: the 2425J at 16 ohms, and 2425H at 8 ohms.

Architectural Specifications

The compression driver shall consist of a ferrite magnetic structure. 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 cast aluminum to control ringing resonances. The diaphragm shall be 0.05 mm (0.002 in) pure titanium 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 44 mm (1¾ in) in diameter, operating in a magnetic field of not less than 1.7 tesla (17,000 gauss). An impedance controlling ring shall be affixed to the pole piece in order to increase efficiency at high frequencies and maintain flat response.

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 117 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 110 dB SPL. As an indication of electromechanical conversion efficiency, the BI factor shall be at least 7.8 (6.1) newtons per ampere. Frequency response, measured on a terminated tube, shall be flat within ±5 dB from 500 Hz to 12 kHz. On a JBL Model 2350 horn, response shall be ±3 dB from 500 Hz to 15 kHz. Nominal impedance shall be 16 (8) ohms and power capacity shall be at least 70 watts normal speech or music program material.

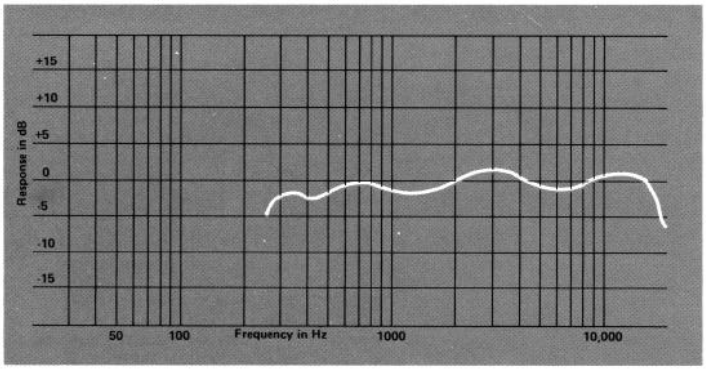
The compression driver shall be JBL Model 2425. Other drivers will be considered for equivalency provided that submitted data from a recognized independent test laboratory verify that the above performance specifications are met.

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.

Specifications

Horn Throat Diameter	25 mm	1 in
Nominal Impedance	2425H 8 Ω 2425J 16 Ω	
Power Capacity[1]	70 W continuous program at 800 Hz, 12 dB/octave slope 100 W continuous program at 1.2 kHz or higher, 18 dB/octave slope	
Sensitivity	110 dB SPL, 1 W @ 1 m on JBL 2350 horn[2] 117 dB SPL, 1 mW on plane wave tube[3]	
Nominal Efficiency	25% (500 Hz to 2.5 kHz)	
Frequency Range	800 Hz to 20 kHz	
Recommended Crossover[4]	800 Hz or higher	
Diaphragm	0.05 mm (0.002 in) pure titanium	
Voice Coil Diameter	44 mm	1¾ in
Voice Coil Material	Edgewound aluminum ribbon	
Flux Density	1.7 T (17,000 gauss)	
BI Factor	6.1 (H) 7.8 (J)	
Positive voltage to black terminal gives diaphragm motion toward the phasing plug		
Dimensions	146 mm (5¾ in) diameter 108 mm (4¼ in) depth	
Net Weight	4.8 kg	10½ lb
Shipping Weight	5.2 kg	11½ lb

[1]Continuous program power is defined at 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 1 W input a 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, 0.089 V into 8 Ω) swept from 800 Hz to 2.5 kHz. The sensitivity rating with a 1 W input would be 30 dB greater.
[4]A 2425 can be used to 500 Hz, however power capacity will be reduced to 20 W continuous program in the region between 500 Hz and 800 Hz.



Frequency response contour of Model 2425 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.

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