



Bock Audio Model 251

User Manual



Introduction

The 251 is THE vocal sound people ask for, but the original (vintage) versions are 50+ years old and sound very different from one another. Repairing, rebuilding and “nursing” original 251’s has been David Bock’s work spanning over 30 years. The risk for a modern studio or end user to depend on a vintage mic on a daily basis is increasingly problematic. The 251 is David Bock’s answer to the vintage mic dilemma of getting “that sound” without the headaches. It is a premier lead microphone for premier voices. It is built to last and provide the studio and user with many years of daily, high end performance.

Description

The Bock Audio 251 is a high quality variable directivity studio condenser microphone utilizing vacuum tube electronics. Modeled after the AKG designed and manufactured classic ela M251 (90% of which were branded “Telefunken” named after the giant German appliance and tube manufacturing company), originally built in the 1950’s, this mic takes that platform and expands the electronics bandwidth. It utilizes its own proprietary cable and power supply. The microphone’s audio output is standard male XLR3, with positive excitation of the diaphragm at the front of the mic resulting in a positive voltage at the output XLR’s pin 2. Audio output is fully transformer balanced.

Additional Circuit Notes

The Bock Audio 251 uses classic single triode circuitry with no additional negative feedback and high quality through-hole components. Through-hole components are more mechanically robust than surface mount and allow for worldwide ease of repair. Single triode mic circuits demand excellent capsules before them and excellent transformers after them, with a reward of low noise, simplicity of troubleshooting, and classic sound unachievable otherwise. The Bock 251 departs from the classic 251 of the 1950’s in its expansion of the bandwidth of the electronics, which has had its low frequency cutoff frequency decreased from 80 Hz to 10 Hz, without any loss of high frequencies, by use of a larger transformer. As well, the cathode bias cap has been increased to maximize warmth.

Getting Started

It is recommended that the user place the mic in it’s shockmount on a stand and connect all the cables before applying power to the unit. Allow a few minutes for the mic to warm up.

Power Supply and Cable

The Bock Audio P-251 full linear power supply features simple shunt B+ regulation and active current source for the heater. The outputs and cable pinouts are shown in the table at right.

Pin #	Output
1	audio (-)
2	audio (+)
3	pattern (if applicable)
4	heater (5.9v typical)
5	B+ (120v typical)
6	ground
case	shield

Specifications

Patterns:	Cardioid, omni, figure 8 (switchable on mic)
Frequency Range:	10 Hz to 18 kHz, ± 2 dB
Sensitivity:	19 mv/Pa
Equivalent Noise:	18 dB ("A" weighted), 32 dB (unweighted)
Distortion vs. SPL @ 1 kHz:	(increasing distortion is non-exponential, nearly linear, and primarily 2nd harmonic) 112 dB = 0.5% THD 118 dB = 1% THD 129 dB = 2% THD
Impedance:	200 Ohms true transformer balanced
Recommended load:	2K Ohms
Dynamic range:	94 dB (max SPL - "A" noise)
S/N (94 dB-noise):	76 dB ("A" weighted), 62 dB (unweighted)
Capsule size:	1" diameter, dual asymmetrical backplate CK12 type
Tube type:	New Old Stock 6201 or ECC801s
Dimensions:	2" dia x 8.5" oal (52 x 216 mm)
Weight:	1 lb 9.3 oz (1.58 lbs) = 716 g
Shipping weight:	12 lbs
Power Supply:	P251 true linear, factory wired 115v or 230v operation

Safety

- CAUTION: Shock Hazard: Do not open microphone when connected to power source. No user serviceable parts inside. Refer failed units to qualified service personnel.
- VORTICHT: Shock gefar: Bitte nicht das Mikrofon öffnen wenn es eingeschaltet ist einen stoppkontakt.
- Keine zu wartenden Teile im Inneren. Beziehen gescheitert Einheiten qualifiziertem Service-Personal.
- ATTENCIONE: Choc hazard: N'ouvrez pas le microphone quand il y a une connexion avec une source d'électricité. Aucune pièce réparable par l'utilisateur. Référez les unités défectueuses à un personnel qualifié.
- ATTEZIONE: Rischio di scossa: Non aprire il microfono quando è attaccato all'elettricità. Non contiene parti riparabili. Riferimento unità riuscite a personale qualificato.
- Read the instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat source such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use with attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Bock Audio 251
- UL 62368-2
- EN 62368-1
- Part 10004701 v201210