HD-2

High Definition Mid-Field Monitor

Operating Instructions

The HD-2 High Definition Mid-Field Monitor* is a self-contained, precision loudspeaker for music recording and reproduction.

Aligned to closely approximate a true point source radiator within its coverage area, the HD-2 features exceptionally controlled directivity. Its time delay response is very tightly controlled, with minimal deviation from linear phase across the full frequency range of its operation. Each unit is individually factory-calibrated to ensure unprecedented consistency of performance, and both wide horizontal (HD-2w) and narrow horizontal (HD-2n) versions are available.

The HD-2 is a two-way system utilizing a 10-inch cone low-frequency driver that features an exceptionally large magnet structure and a 2-inch voice coil for greatest efficiency and heat dissipation. The high-frequency driver is of an entirely new patented, low-distortion design, employing a titanium dome and silk suspension. In the wide horizontal version it is loaded by a 40° by 90° horn, and in the narrow horizontal version by a unique, aspherical waveguide with symmetrical 60° coverage. Both drivers are of a proprietary design, and are individually selected for maximum linearity.

The HD-2 incorporates line-level control electronics mounted within a rear-panel chassis, including:

- an active balanced input circuit with switchable sensitivity (+4 dBu or -10 dBV);
- an active crossover utilizing optimized pole-zero filter combinations to achieve acoustical transparency and linear phase;
- independent protection circuits for each loudspeaker driver;
- dual power amplifiers for biamplification.

The driver protection circuits employ thermo-predictive limiters and soft peak clamps to guard against damage from excessive amplifier power and ensure graceful overload characteristics.

Independent power biamplifiers maximize system headroom, efficiency and damping while minimizing distortion. The low frequency amplifier delivers 200 watts output power, while the high frequency amplifier provides 100 watts. Both employ complementary power MOSFET output stages operating class A at low-to-moderate listening levels (<90 dB SPL), and class AB at high levels.

The HD-2's frequency response is flat within ±1.5 dB from 50 Hz to 20 kHz (-3 dB at 32 Hz and 22 kHz). It delivers high peak SPL with >100 dB dynamic range and extremely low distortion.

*** U.S. patents #4,152,552 and #5,185,801; additional patent applied for.**

Meyer Sound

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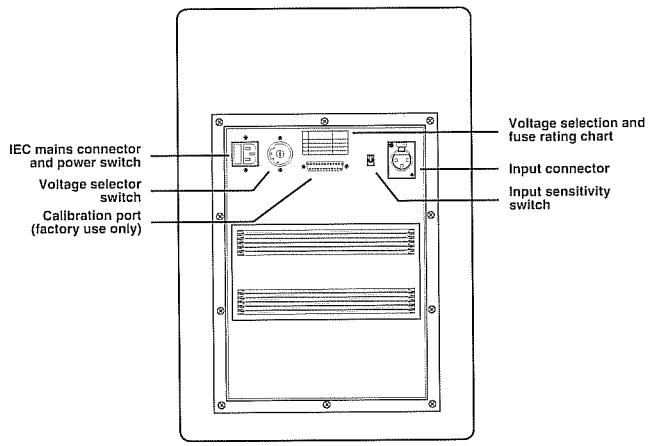
Setup & Operation



Locations of HD-2 Controls and Connectors

Power

- Set the voltage selector switch before you connect and operate the unit.

The HD-2 accepts AC voltages from 90 to 260 VAC, at 50 or 60 Hz, in four ranges. Select the range that is closest to the local mains AC voltage.

Do not switch among AC voltage ranges with the power cable connected to an outlet.

Fuse

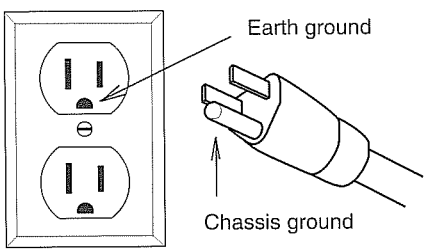
The HD-2 is protected by a fast-acting fuse in the voltage selector switch.

- If the fuse blows, *check the line voltage and the voltage selector setting.*
- Always replace the fuse with a component of the same type and rating.

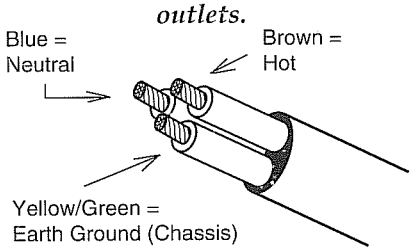
Power Cable

- Connect the HD-2 to a three-prong outlet.

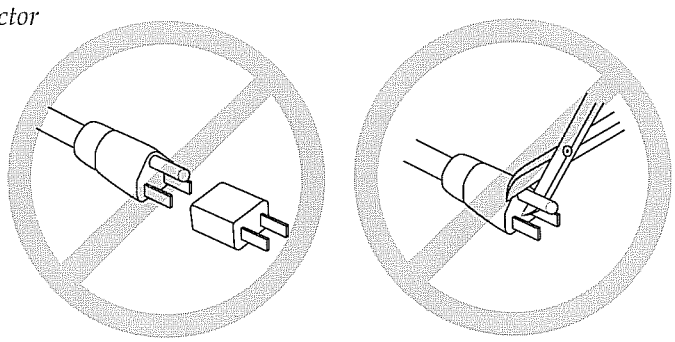
If the power cable appears frayed or broken, replace it immediately before operating the unit.



The HD-2 requires a grounded outlet. Use a grounding adapter when connecting to ungrounded outlets.



AC cable color code for wiring international or special-purpose power connectors



Never use ground-lifting adapters. Do not cut the AC cable ground pin.

Placement

The HD-2 is designed for "mid-field" operation. The best listening distance is between 6 and 12 feet from the speaker face.

The HD-2 is aligned for flat frequency response in free field (no adjacent boundary surfaces). Placing it next to a wall or on the floor will cause the low frequencies to be exaggerated.

The speakers should be placed and angled to avoid reflections from nearby surfaces (such as a mixing console control surface) and should be aimed toward the listener. Where possible, the geometry of adjacent boundaries should be symmetrical (i.e., don't place one speaker in a corner and the other away from the wall).

- Always allow at least 6 inches clearance behind the speaker for cooling airflow.

In recording studios the speakers should be placed on stands behind the console meter bridge, angled so that the engineer is on axis of the high horns.

Input Connection

The HD-2 presents a 10k ohm input impedance at a three-pin XLR-type receptacle wired as follows:

Pin 1	Audio common
Pin 2	Signal low (-)
Pin 3	Signal high (+)
Case	Earth (AC) ground

Shorting any input connector pin to the case may form a ground loop and cause hum.

Standard audio cables with XLR-type connectors may be used for balanced signal sources. Unbalanced sources will require an in-line adapter.

A specially-wired XLR-to-RCA cable for unbalanced source connections is available from Meyer Sound. Contact your dealer for ordering information.

Sensitivity Switch

- For professional balanced equipment, use the +4 dBu setting.
- For semiprofessional and consumer unbalanced equipment, use the -10 dBV setting.

Note that the -10 dBV setting is *more sensitive* (designed for *lower* signal levels) than the +4 dBu setting. Driving the HD-2 from a +4 dBu source with the switch set to -10 dBV will result in increased noise, and is not advised.

Operation

In normal operation, the front-panel LED will glow green.

At high listening levels, the LED may flash red on program peaks. This indicates the onset of overload, where the loudspeaker protection limiters are activated.

If the LED is continuously red for an extended period (8 hrs.), thermal damage may result.

Calibration Port

The calibration port is for factory use only. Do not apply external voltages to any of the connector pins.

Troubleshooting

Problem	Condition	Possible Cause	Action
No sound	Power switch on but switch not lit	Bad AC connection	Check AC outlet and power cord.
	Power switch on and lit, LED out	Blown fuse	Check voltage selector and AC line. Replace fuse.
	Power switch on and lit, LED lit	Signal source disconnected	Check input cables, connectots and signal source.
Distorted sound with hum		AC voltage selector incorrectly set	Turn off HD-2. Check AC outlet voltage and selector switch setting.
	Selector switch setting correct	Power brownout	Turn off HD-2. Check AC outlet voltage; if low, contact power company.
Low sound levels		Insufficient drive from signal source	Increase source equipment output level.
		Input sensitivity incorrectly set	Set input sensitivity switch to -10 dBV.
Hiss		Input sensitivity incorrectly set	Check sensitivity switch and source equipment output.
	Sensitivity setting correct	Program material	Stop playback. If hiss disappears, check program.
	Program material OK	Source equipment malfunction	Unplug input connector. If hiss disappears, check source equipment.
Distorted or intermittent sound	Input cables OK	Bad input connection	Check input cables.
		Defect in signal source equipment	Substitute known good signal source. If problem stops, replace signal source equipment.

Specifications

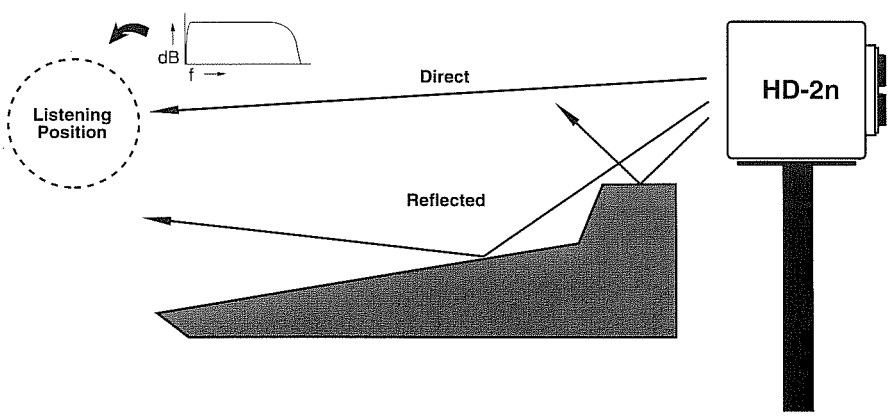
Acoustical (each loudspeaker)	
Frequency Response[1]	-3 dB at 32 Hz and 22 kHz
	±1.5 dB from 50 Hz to 20 kHz
Phase Response[1]	+60°, -0° from 120 Hz to 20 kHz
Maximum SPL	124 dB peak @ 1 meter
Signal-to-Noise Ratio	> 100 dB
Coverage Angle	90° horizontal by 40° vertical (HD-2w)
	60° horizontal and vertical (HD-2n)
Audio Input	
Type	Electronically balanced, 10k ohms impedance
Connector	XLR (A-3) female
Nominal Input Level	Accepts either +4 dBu or -10 dBV, switchable
Amplifiers	
Type	Complementary power MOSFET output stages
Power Output	
Low Frequency	200 watts burst capability
High Frequency	100 watts burst capability
THD, IM, TIM	< .02 %
Crossover	Optimized pole-zero filter combinations to
	complement transducer response and to achieve
	acoustical transparency and flat phase[2]
Transducers	
Low Frequency	10" diameter cone (2" voice coil)
High Frequency	1" titanium dome horn driver (1" voice coil)[3]
Power	3-pin IEC male receptacle. Voltage selector switch
	for 100/120/220/240 VAC, 50 or 60 Hz (accepts
	voltages from 90 to 260 VAC), 175 W maximum.
Physical	
Dimensions	14" W x 20 ¾" H x 14" D (+ 2 ½" additional depth
	for amplifier chassis)
Weight	70 lbs (32 kg)

Notes:

1. **Subject to room loading. Specified for 8 feet actual distance between HD-2 cabinet and a single boundary surface, measured with one-third octave frequency resolution in fixed ISO bands.**
2. **U.S. patent #5,185,801 (additional patent pending)**
3. **U.S. patent #4,152,552**

Unless otherwise specified, all acoustical measurements are performed at ½ meter from front baffle on high-frequency horn axis. Acoustical decibels are specified re 20 µPa.

Mid-Field Placement



Destructive reflections from console surface are avoided, preserving flat frequency response at the listening position.