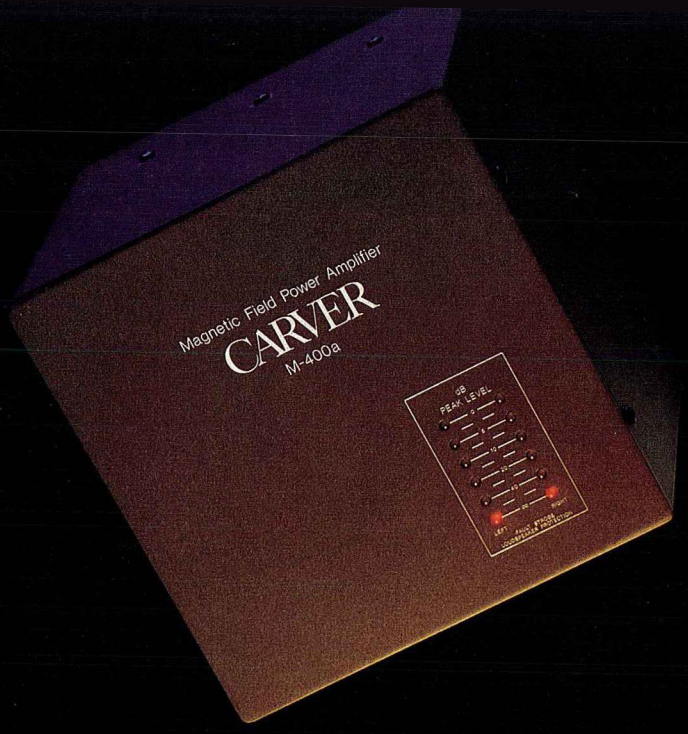
CARVER



MAGNETIC

FIELD

POWER

AMPLIFIER

MODEL M-400a

Why you need every bit of the M-400's power. The remarkable Carver M-400 may very well put out more power than you ever considered necessary for accufate music reproduction at normal listening levels. The surprising fact is, you need every watt of the power provided by this remarkable little ten-pound cube. Here's why.

Music is full of surprises such as lightning transients, combinant crests of demand created by multiple music waveforms and the explosive levels that some well-recorded instruments can instantly attain. We hear all this in live music; indeed, this is what makes music live. But we don't hear these incredibly intense bursts of sound as being loud — they are too short in duration — just live.

Nonetheless these quick, high-intensity peaks MUST be reproduced to make recorded music feel live.

And that's up to the power amplifier. If the amplifier cannot provide the instantaneous power to surmount these rigorous musical peaks when they are presented at its inputs, it makes a sound of its own devising, literally an electronic squeal of anguish. It may be an inoffensive "click" at low levels, a sound you've come to accept as part of the music — or it may be an annoying "snap" which we call hard clipping, a sure sign the amplifier's reserves are being drained with each waveform.

The result is audible degredation of your system's sound. Instantaneous clipping that even one hundred and fifty watts per channel cannot alleviate. Compare the M-400 and any lower-powered amplifier with the same signal chain and speakers to prove to yourself that all along you've been putting up with regular clipping distortion.

Having accepted the audible reasons for at LEAST 200 watts per channel, you must also deal with several Power Myths:

MYTH 1. Power means loudness. Certainly to play music at high sound levels, speakers require more power. But we're talking high fidelity not sound reinforcement. The point of more power is to have much in reserve, not use it blasting the neighbors. We don't intend you to play your music any louder than you did when you under powered your system without an M-400.

MYTH 2. High power kills speakers. Actually, LOW power destroys many more speakers. Yes, illogical as it may seem, the lowly 40-watt receiver can "kill" a speaker far faster than the M-400! Here's why.

To produce a bass note, a woofer cone must move up to a half inch in a few hundredths of a second against the static room air mass. That can take up to 80% of an amp's power. That's fine if it has the power. If it doesn't, clipping occurs. At reasonable levels, this just generates distortion. At higher levels the speaker crossover duly routes this nasty pulse directly to the tweeter which either cumulatively burns out or actually burns up within seconds! With the power reserves of an M-400, the tweeter is PROTECTED from the woofer's massive power consumption.

MYTH 3. High power means heat and weight.

How can the M-400 weigh less than most preamps and yet pack more muscle than power amps weighting five times as much?

Afterall, no cooling fans vent its behind, no extruded fins protrude and the unit runs barely warm to the touch. Let's compare.

The M-400 vs. convention. In a traditional amplifier, the power supply only has two changes during each AC line voltage cycle to recharge and store power. To meet musical demands in between it must maintain a reservoir of power. A good analogy would be a tank of water. A faucet perodically squirts some water into a tank, while on the other end, a valve opens in time to demand, letting water (power) out. The tank has to be big enough to allow for the drain on it even when it can't be resupplied by the faucet (line current) at its top.

In reality this means as conventional amplifiers grow more powerful, their transformers and supply capacitors (storage tank) must grow proportionately larger.

But, while conventional amps continually court meltdown by converting up to 60% of their energy into heat, the M-400 transforms fully 80% of its power into useable audio energy with a patented power supply engineered to be directly responsive to the moment-to-moment power requirements of your music. In our water analogy, think of it as a direct valve from the water main to the outlet with no need of bulky storage. Your speakers are literally getting their power from the power dynamo.

This is no simple feat, however, and requires a special Triac commutator and Magnetic Field Coil which actually spend most of their time stepping UP line voltage values and are only called upon to handle maximum live voltages at times of maximum demand.

A 400-watt brute hides within. The M-400's two hundred watts per channel are "combinable" into a herculean FOUR hundred watts mono without so much as a switch. (Compare it to other designs which are either not switchable or require internal modification.) Either by pairing the units or by bi-amplification (using the 400 watts for subwoofer or low-end power), a system of great transient capability and tight response can be achieved.

Sophisticated protection for your system. To appreciate an amplifier as powerful and accurate as the M-400, you must have high quality, hi-fi speakers. The M-400 dutifully responds to musical input and will transmit those demands to your speakers. To protect against possible damage, the M-400 has an elaborate logic-controlled protection system to prevent over-driving your valuable speakers, and to prevent clipping when power demands outstrip even the M-400. The system simply shuts down output for several seconds before resumption, testing output demand before continuing. Should the problem be a short or other massive malfunction, no damage can occur. Instead of controlling input stages, which can cause delays and distortion, the M-400's computer acts as a FINAL gate, just before the speaker terminals, for instant overload protection.

Physically the M-400 is simplicity itself. Only a matched set of power LED's accent its front. Volume is controlled by the input signal eliminating the need for gain controls.

The M-400's back utilities are spare and to-the-point: speaker terminals and input sockets.

Justice done to any input. While a superb preamplifier such as the Carver C-400 or C-1 makes a good match to the M-400, even a good receiver or integrated amplifier can be paired to take advantage of tuner, phono and switching sections you're satisfied with already. Simply exit the unit at the sockets marked "pre-out" and directly into the M-400's inputs. If your unit doesn't have "pre/main" sockets, we have developed a special coupler which lets you connect speaker outputs directly to the M-400. Called the Z-1, this inexpensive device lets you enjoy 400 watts of power from any receiver or integrated amplifier.

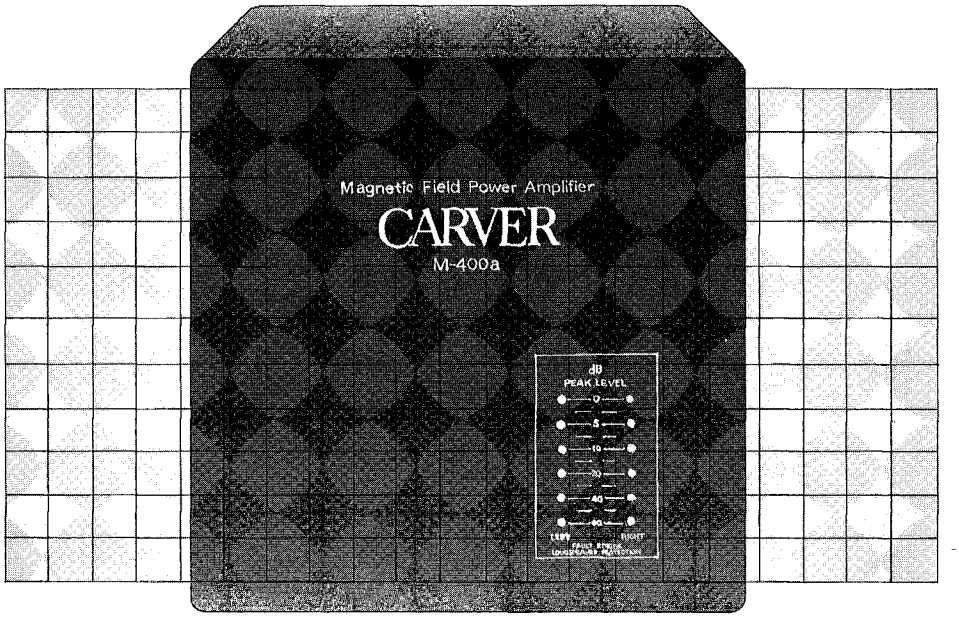
The most important test. Hardware, buzzwords and specmanship aside, your final decision should be made by the sound of an amplifier. Compare the Carver M-400 to any 200-250 watt/channel conventional power amplifier around, Class A, B, H, G, Z, Q or otherwise. The class that stands out will be the superb colorless sound of the cool, unruffled, light-heavyweight M-400.

Next compare price tags and discover what designing away all that scrap metal does to the watts-per-dollar price of a Carver Magnetic Field Amplifier.

You'll be amazed at how an amp can be at once affordable, powerful and above all absolutely accurate and musical.

SPECIFICATIONS

Power, 201 watts/channel into 8 ohms, 20Hz-20K Hz with no more than .05% THD; Power at Clipping 250 watts/channel into 8 ohms at 1K Hz, 300 watts into 4 ohms at 1K Hz, 500 watts RMS into 8 ohms single channel!; Noise, 100dB down, IHF-A weighted, Harmonically related commutation noise is equal to or less than non linear distortion components, IHF-A weighted; IM Distortion, 0.05% SMPTE; TIM Distortion, Unmeasurable; Frequency Bandwidth, +0-3dB, 1Hz-100K Hz at 1 watt; Slew Factor, 200, Display Tracking, ± 1dB; Display Ballistics, Peak responding 5 millisecond attack, 1 second decay; Input Impedance. 30K ohms. Size: 6¾" cube; wt. 9 lb.



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