

# M-3030 "DC" STEREO POWER AMPLIFIER



An ordinary stereo power amplifier is put to a very simple task: Accurate amplification of miniscule signals from the paired preamplifier. With a high-power amplifier like the M-3030, this simple task becomes more difficult, for it must handle a wide range of power from several milliwatts to several hundred watts with no noticeable distortion.

Accuracy is the hallmark of the JVC M-3030. Its DC amp configuration assures minimum dynamic distortion (or "transient intermodulation distortion"), that kind of distortion which becomes apparent when an amplifier handles program material, i.e. music.

The JVC M-3030 has separate power supplies for Class-A and B operated circuits. This assures distinctive localization and imaging in a reproduced sound field. Its ICL construction without input coupling capacitors removes the major cause of harm to tonal quality. Twin-mono amp construction reduces steady-state crosstalk distortion.

How accurate is this outstanding JVC power amp? Here's proof: Total harmonic distortion of less than 0.007% (at 1kHz) at rated output. Less than 0.05% intermodulation distortion. Wide DC to 100,000Hz frequency response at 1W output. For more evidence of M-3030 accuracy, please read on.

## DC Amplifier Configuration

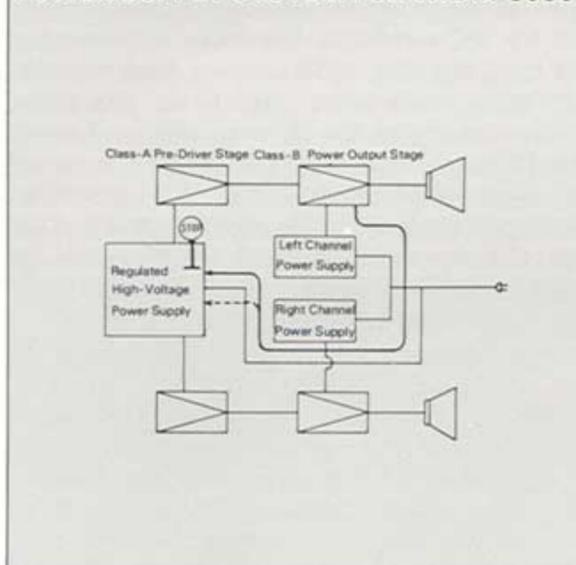
A DC design is not new for ordinary amplifiers. But when the DC configuration is applied in *high fidelity* audio equipment, that's new! The difference between the DC and the conventional AC amplifier is this: The new configuration amp hasn't even one capacitor in its circuit — not in the signal path nor in the negative feedback loop. A capacitor in a circuit causes delay for the amplified signal; the more complex information the signal contains, the more delay, or the more distortion, it causes. An audio amplifier of DC configuration does not amplify

DC signals, nor does it need to; however, we've employed the DC configuration for the M-3030 to accurately reproduce complex signals and to further reduce dynamic distortion.

The Double Differential Common-Mode Feedback input circuit assures stable balanced voltages, eliminating possible harmful direct-current components. This means the JVC M-3030 delivers The Musical Truth, always.

## Separate Power Supplies for Class-A/B Amplifiers

### POWER SUPPLY SYSTEM FOR THE M-3030



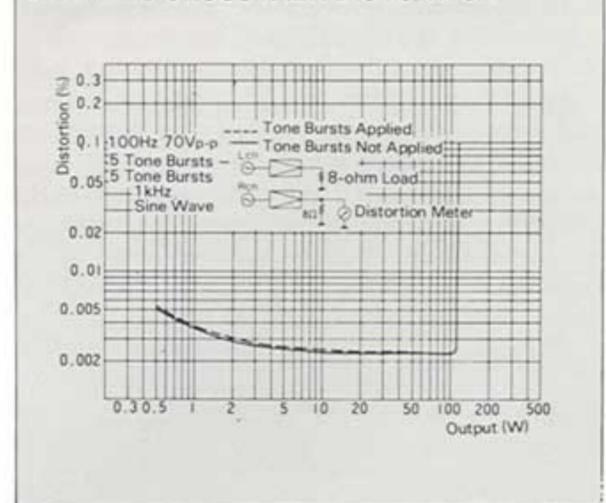
The M-3030 has three separate power supplies — one for the Class-A predriver stages, one for the Class-B left-channel power driver and one for the Class-B right-channel power driver. This JVC-originated triple-power supply construction effectively suppresses crosstalk distortion in dynamic conditions of a power amplifier.

There are two kinds of dynamic *crosstalk* distortion — intra-channel and inter-channel. Intra-channel crosstalk is generated when operation of the Class-A operated predriver amps is

affected by the fluctuations in primary voltage or balanced voltages, often caused when massive power is drained in the Class-B power driver. With the M-3030, the power supplies for the Class-A amps and Class-B amps are separated. In addition, the power supply for the predriver stages is provided with stabilized high voltages. It is thanks to this construction that the M-3030 delivers clear transients and clean overtones.

Inter-channel crosstalk distortion, on the other hand, is generated when one of the two channels delivers much of aggregate energy during loud passages. This causes blurred imaging in a stereo perspective. We've separated power supplies for the Class-B amps, one for each channel. Thus the M-3030 has dramatically reduced dynamic crosstalk distortion, it permits clear and resolute stereo imaging, and it can even be a touchstone of accuracy for an audio system.

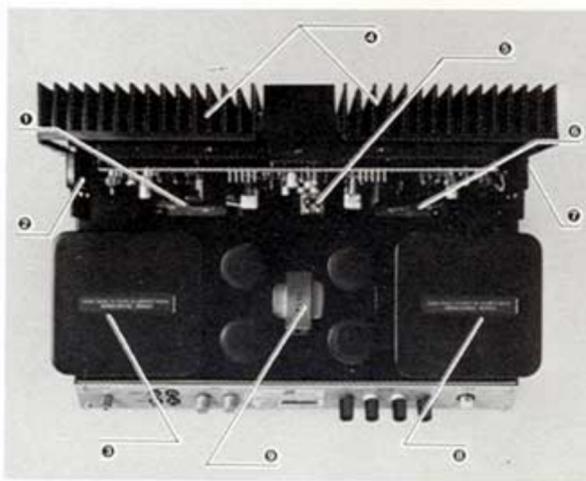
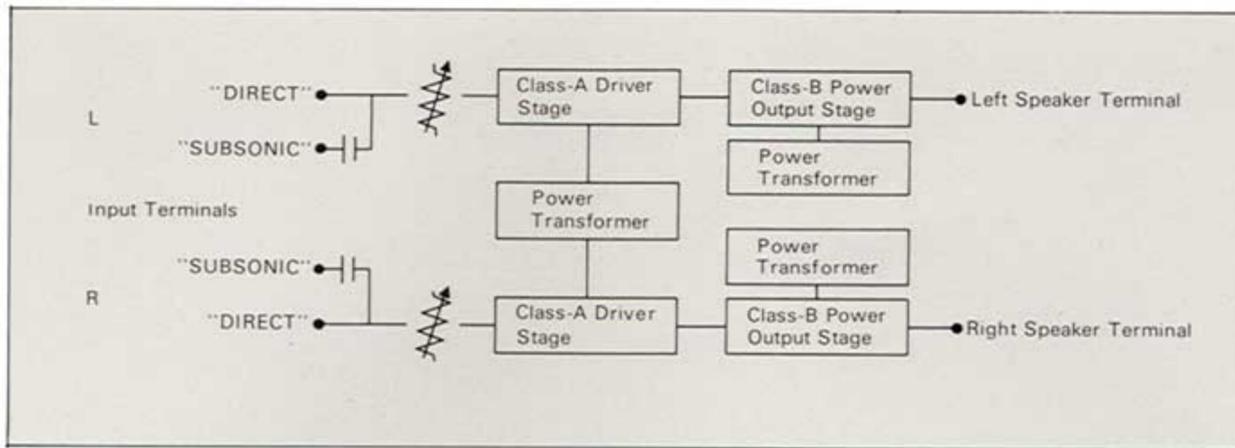
## DYNAMIC CROSSTALK DISTORTION



## ICL Circuit Configuration

As noted earlier, a capacitor in a signal path causes delay for the amplified signal. So we've eliminated input coupling capacitors used bet-

## BLOCK DIAGRAM



- ① Right Channel Driver CB
- ② Right Channel Power Transistors
- ③ Right Channel Power Transformer
- ④ Heavy-Duty Heat Sinks
- ⑤ Protector CB
- ⑥ Left Channel Driver CB
- ⑦ Left Channel Power Transistors
- ⑧ Left Channel Power Transformer
- ⑨ Power Transformer for Class-A Amps

ween amplifier stages. This new, JVC-patented circuit configuration, called ICL (Input-Capacitor-Less), has improved transient response, keeping the phase distortion minimum. Since the M-3030 is also an OCL (Output-Capacitor-Less) configuration, there are no capacitors at all. Fluctuation in the balanced voltages — a very possible hazard with capacitor-less amps — is eliminated by the JVC-exclusive Double Differential Common-Mode Feedback circuit.

### Twin-Mono Amplifier Construction

To further reduce distortion — of any type — we've employed a twin-mono amp construction. At JVC, this construction means not only two separate power supplies, one for each channel; it also means that circuit boards and grounding buses are physically separated. Thus dynamic crosstalk distortion and steady-state crosstalk distortion are drastically cut.

### 3-Darlington Connected Power-Output Stage

A 3-Darlington connected power-output stage is employed to reduce the output impedance of the driver stage to avoid impedance mismatch. This construction results in improved transistor linearity and reduced distortion. The circuitry — separate power supplies to Class-A and B operated amps, ICL configuration, Double Differential Common-Mode Feedback design, two-mono amp construction, 3-Darlington connected power

output — permits the M-3030 to deliver 100 watts per channel, min. RMS, both channels driven, into 8 ohms from 20Hz to 20,000Hz with no more than 0.05% total harmonic distortion. This circuit is so stable that even clipping power, if it's short enough, doesn't cause circuit instability. Whatever the input levels, low or high, and whatever the reproduced frequencies, low or high, the M-3030 offers low-distortion, high-stability performance.

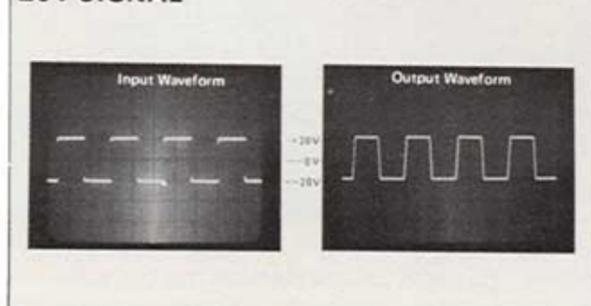
### Rugged Construction

The M-3030 is rugged and heavy — 19.2kg (42.2 pounds). Its appearance suggests, and underscores the dynamic, low-distortion performance. For control versatility it has separate input level controls (one for each channel) and two pairs of input terminals, DIRECT and SUBSONIC. When the DIRECT terminals are used, the M-3030 and a paired preamplifier are direct connected. When the SUBSONIC terminals are employed, this equipment is capacitor coupled, with subsonic components filtered. Two sets of terminals are provided to obtain both stability and excellent tone quality depending on the quality of other audio equipment and program materials.

**130 Watts per channel, min. RMS, both channels driven, into 4 ohms from 20 to 20,000Hz with no more than 0.05% total harmonic distortion**

Total Harmonic Distortion:	
Rated Output	0.007% or less (1kHz)
	0.05% or less (20-20,000Hz)
50 Watt Output	0.01% or less (20-20,000Hz)
10 Watt Output	0.01% or less (20-20,000Hz)
Intermodulation Distortion (50Hz : 7kHz = 4 : 1)	
Rated Output	0.05% or less
50 Watt Output	0.03% or less
10 Watt Output	0.03% or less
Power Bandwidth (Rated Output - 3dB):	
	5-30,000Hz (THD: 0.02%)
	5-100,000Hz (THD: 0.3%)
Frequency Response:	
"Direct" Input:	DC - 100,000Hz
	+0, -1dB (1 Watt Output)
"Subsonic" Filter:	18Hz (-6dB/Oct.)
Input Sensitivity/Impedance:	
	1.0 V/more than 50k ohms
Signal to Noise Ratio: 116dB	
	(IHF A Network Short Circuited)
Damping Factor: more than 75 (20Hz-20kHz)	
Output Impedance: 4-16 ohms	
Power Consumption: 243 watts (U.S.A.)	
	820 watts (Other areas)
Power Sources:	
	U.S.A. & Canada: 120V/60Hz
	Europe (Continent): 220V/50Hz
	U.K. & Australia: 240V/50Hz
	Other Countries: Selectable
Dimensions (H x W x D): 166mm x 420mm x 300mm	
	16.9/16" x 16.9/16" x 11.13/16"
Weight: 19.2 kg (42.2 lbs.)	

### OUTPUT WAVEFORM OF 20kHz, 20V SIGNAL



### INPUT TERMINALS AND INPUT LEVEL CONTROLS



### SPECIFICATIONS

Power Output: **100 Watts per channel, min. RMS, both channels driven, into 8 ohms from 20 to 20,000Hz with no more than 0.05% total harmonic distortion**

### OUTPUT VS. DISTORTION

