PIONEER®

Stereo Preamplifier / Stereo Power Amplifier

EXCLUSIVE

C3 · M3

EXCLUSIVE C3

Stereo Preamplifier

C3

EXCLUSIVE C3 STEREO PREAMPLIFIER

We call it the EXCLUSIVE C3, a unique stereo preamplifier of ultimate quality, blending the art of advanced electronics with the soul of audio excellence.

In terms of electronic design, the Pioneer C3 presents a number of highly-sophisticated concepts: a balanced positive/negative power supply with differential amplifiers; a class-A operation SEPP equalizer with (extra-high) voltage-endurance transistors; precise tone control and filter circuits, and more. The C3 not only performs flawlessly in the area of low noise and low distortion, it also assures excellent transient response and other important characteristics of both dynamic and pulsive nature.

Exhaustive analysis of signal path and dynamic character, using the latest testing instruments (as well as the oldest and most trusted instrument, the human ear) have resulted in superb tonal quality and musicality.

In terms of versatility, the C3 presents a selection of ten stereo sources (3 PHONO, 3 TAPE, 3 AUX and TUNER), Twin Tone Controls, low and high filters with dual-combination passive/active circuits, and much more.

And as is fitting for a preamplifier in this class, each Pioneer EXCLUSIVE C3 comes fresh from the factory with an attached technical data sheet giving the results of that individual unit's performance in exact and thorough terms.

PHONO EQUALIZER

A balanced positive/negative power supply system and the all-stage direct-coupled class-A operated SEPP equalizer provide top tonal quality and dependable stability. By applying an extra–high 140V voltage, an increased phono overload level and transient characteristics are assured. Overload at 1KHz is a big 700mV (rms) while rated input is 2.5mV. This means an extra-wide dynamic range so that signals from any cartridge is never clipped or flattened.

RIAA EQUALIZATION

Another indispensable hi-fi factor is maintaining close adherence to the RIAA equalization curve. In order to minimize deviation, the C3's equalizer uses special film resistors of ±1% tolerance plus special styrol capacitors of ±2% tolerance. These were selected only after complete, computer-assisted analyses of ideal resistor ratio and capacitance figures, and the results are found in the C3's precision ability to stick to the RIAA curve within ±0.2dB. You hear only the information the recording engineer wants you to hear, with no coloration or odd "dips" in sound-to-sound level.

TWIN TONE CONTROLS

Wide tonal adjustment is essential in a top-class component, and the C3 uses a special twin tone control system for this very reason. Both MAIN and SUB controls are the CR type, distinguished by excellent phase linearity and transient response. Each step has its own capacitor and resistor so that tonal adjustment is precise. The MAIN and SUB sections, used together, can create up to 9,801 minutely different tonal responses so that you have extremely wide compensation for the characteristics of room acoustics, speaker systmes and phono cartridge frequency response.

PRECISION VOLUME CONTROL

Volume control, too, is an extremely critical factor in dependable hi-fi equipment. In Pioneer's C3, a professional class micro-tolerance (±0.2dB) volume controller with 22 contact points is employed for precision and durability. Volume control range is wide and versatile when you use the main controller in combination with the separate 3-position level attenuator (0dB, −15dB, −30dB).

HIGH & LOW FILTERS

There are two kinds of low filters in the C3: the passive (CR type) low filter with a cutoff at 15Hz (12dB/oct.) and the active (NF type) low filter with cutoff at 30Hz (18dB/oct.). The passive low filter cancels all subsonic noise, the harmonics of which could possibly cause problems in the sonic range. The active low filer eliminates other barely-audible but annoying sonics in the low registers. The same passive/active concept is applied to the high filters. One (passive) handles the highs (cutoff at 12KHz, 12dB/oct.) and the other (active) cuts unwanted noise above 8KHz (18dB/oct.).

RELIABLE PARTS AND MATERIALS

To enhance professional performance and reliability, all circuit boards are encased in strong and stable glass-epoxy. All transistors are can-sealed for noise-free performance and input coupling capacitors are the polyester-film variety to further reduce noise and increase reliability.

SOURCE-COMPONENT VERSATILITY

The C3 handles a wide number of input sources. For instance, can handle up to three tape decks with tape duplication capability. There is a special jack for high level input on the front sub-panel (in addition to the rear-panel terminals) to accept AUX 3 sources. Additionally, special input level controls for the PHONO 2 and AUX 3 circuits are provided to optimum level adjustment. PHONO 2 circuit impedance can be switched to accept inputs of 25k Ohms, 50k Ohms or 100k Ohms. Two pairs of output terminals are provided for convenience, you can select between Output A, Output B with a position for A+B also. Other features include a headphone jack with level control and a convenient sub-panel lid, etc.

LAB REPORTS ATTACHED

The specifications quoted in our literature for the C3 are the minimum guaranteed figures; each and every individual unit leaving our factory has its own lab reports and specification-testing sheets attached showing actual performance.

LUXURIOUS CABINET

Housing all the sophisticated features of the C3 could only be properly accomplished with an appropriate cabinet. And the rosewood finish and smart looks of the cabinet fill the bill with style and luxury.

EXCLUSIVE M3

Stereo Power Amplifier

M3

EXCLUSIVE M3 STEREO POWER AMPLIFIER

The "soul of audio" combined with the advanced art of high fidelity electronics is behind the unique concept of the EXCLUSIVE M3 stereo power amplifier by Pioneer.

Analyses of both the "dynamic" and the "pulsive" characteristics of audio were studied carefully in the creation of the M3. These include transient response, crossover distortion and many other critical aspects of performance. Such static characteristics as power bandwidth and frequency response were also closely examined.

The results are as brilliant as they are daring. To illustrate, consider the problem of providing stability versus the question of assuring wide frequency response and minimum distortion. Pioneer designed an entirely new type of circuit for the M3 to achieve both: it features the reliable circuit design and high quality parts for stability, yet allows a small amount of negative feedback to be applied to improve frequency response and assure low-distortion performance.

Sophisticated features like peak-power level meters, a front sub-panel providing access to speaker selector and individual level controls, an automatic power protection circuit, and more complement the performance and function of the M3. Individual technical-data sheets giving the exact test information for each unit is packed with every M3 as it leaves the Pioneer factory.

The EXCLUSIVE M3 is the perfect blend of technology and musicality, the stereo power amplifier you can depend on to deliver the "soul of audio" without compromise.

ADVANCED CIRCUITRIES

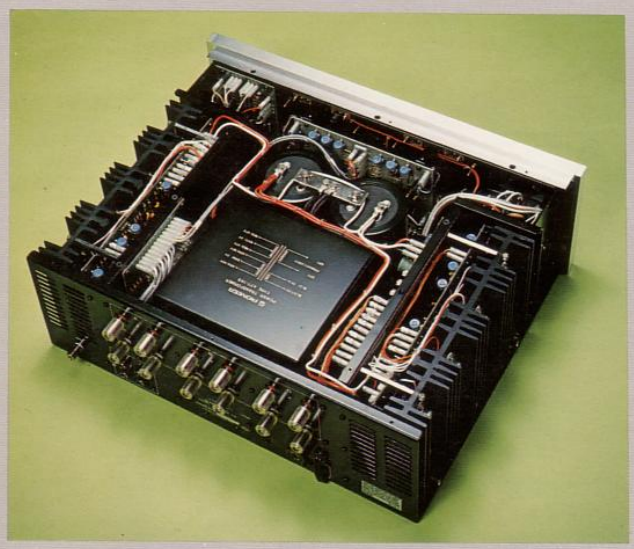
The power amplifier circuits employ several highly sophisticated techniques. First, 2-stage differential amplifiers are used for stability against temperature fluctuations. Next, the pre-driver stage is of the class-A operated push-pull type with the main emphasis on tonal quality. Totally, the output stage forms a 3-stage Darlington-connected triple push-pull direct-coupled OCL type for high power and linearity. In the 2-stage differential amp section, too, ideal balance of excellent open-loop characteristics and a small amount of negative feedback, is achieved to contribute to linearity and objective performance. Further, the DC balance in the pre-driver stage is adjusted for optimum low distortion and transient response.

150W x 2 CONTINUOUS POWER

As a quality power amplifier for musical reproduction, the M3 has no peer. It offers you RMS 150 watts+150 watts of continuous power (both channels driven at 8 ohms) within critical 20—20,000Hz frequency range, with both harmonic and intermodualtion distortion held to less than 0.1%.

PEAK POWER LEVEL METERS

There are two large, very precise peak power level meters on the front panel of the M3. The peak transient levels as high as 20dB contained in any audio signal are indicated instantly and accurately. Compared with ordinary VU meters, the power indication range of this peak meter is exceedingly wide: 0.01W to 200W on a logarithmic compression scale, operating from a built-in circuit, thus, you can read the power level without changing meter sensitivity.



AUTO PROTECTION CIRCUIT

To ensure safe operation at all times, a multi-purpose automatic protection circuit is built-into the M3. It (1) prevents dangerous DC voltage from entering the speakers, (2) acts as a muting circuit to cancel power-on shock noise, and (3) protects power transistors by controlling overcurrent.

3-SYSTEM SPEAKER CONNECTION

3 pairs of speaker system can be connected to and operated from the M3. Individual output level controls are provided with each set of stereo speaker outputs (A, B, and C). These allow you to compensate for the varying sensitivities and efficiencies of different speaker systems.

INPUT SENSITIVITY SELECTORS

Matching pre-amp output with power amp input sensitivity is vital in obtaining a high signal-to-noise ratio. The M3 is equipped with a special input sensitivity selector with 1V or 2V choice to expand practical use.

BUILT-IN SUBSONIC FILTERS

Irritating noise in the extremely low frequency ranges can cause havoc with high-fidelity sound. The M3 has a built-in subsonic filter (8Hz cutoff, 6dB/oct.) with a simple ON/OFF switch to cancel such noises.

RELIABLE QUALITY PARTS

In the M3, all printed boards are of glass-epoxy for strength and reliability. Volume controls for speaker output level are sealed and of the type used in professional communications equipment. The power supply section has an extra large, cut-core type power transformer and a pair of 33,000μF electrolytic capacitors for stable current regulation.

SUB-PANEL CONTROLS

The speaker selector switch and speaker level controls, input sensitivity selector, and subsonic filter switch are arranged and mounted in a special sub-panel on the front of the M3. Set them once and close the sub-panel lid.

FACTORY-TEST DATA SHEET ATTACHED

Power and distortion, power bandwidth and frequency response specifications are listed in our literature; but each and every unit that leaves our factory also has its own factory-proved technical data sheet attached, showing the actual performance of the particular M3 you own and use.

EXCLUSIVE C3 · M3

EXCLUSIVE C3 SPECIFICATIONS

Semiconductors:	Transistors.....64, Diodes.....36
Input Terminals (Sensitivity/Impedance):	PHONO 1, 3; 2.5mV/50Kohms PHONO 2; 2.5mV to 10mV/ 25Kohms, 50Kohms, 100Kohms (switchable) TUNER, AUX 1, 2; 150mV/ 100Kohms AUX 3; 150mV to ∞/100Kohms TAPE PB 1, 2, 3; 150mV/100Kohms
PHONO Overload Level (T.H.D.: 0.05%):	PHONO 1, 3; 700mV (rms)/1.97V (p-p) at 1KHz PHONO 2; 700mV (rms) to 1.4V (rms)/1.97V (p-p) to 3.95V (p-p) at 1KHz
Output Terminals (Level/Impedance):	TAPE REC 1, 2, 3; 150mV/ 2.5Kohms OUTPUT A, B (RL: 50Kohms): 2V/600 ohms (rated), 15V/ 600 ohms (max.) HEADPHONES (RL: 8 ohms): 170mV/40 ohms (OUTPUT, 100mV) 500mV/40 ohms (max.)
Total Harmonic Distortion (20Hz to 20KHz):	Less than 0.03% (OUTPUT, 2V) Less than 0.05% (OUTPUT, 15V)
Frequency Response	
PHONO RIAA Equalization:	30Hz to 15KHz ±0.2dB
TUNER, AUX, TAPE PB:	20Hz to 20KHz, +0dB, −0.5dB (10Hz to 90KHz, +0dB, −1dB)
Tone Controls	
BASS:	MAIN; ±7.5dB (100Hz), SUB; ±6dB (50Hz)
TREBLE:	MAIN; ±7.5dB (10KHz), SUB; ±6dB (20KHz)
Low-cut Filter:	15Hz(12dB/oct.), 30Hz(18dB/oct.)
High-cut Filter:	12KHz (12dB/oct.), 8KHz (18dB/oct.)
Signal-to-Noise Ratio (IHF, short-circuited A network):	PHONO; more than 70dB TUNER, AUX, TAPE PB; more than 90dB
Attenuator:	−15dB, −30dB
Power Requirements:	AC 220V 50Hz
Power Consumption:	28 watts
AC Outlets:	Switched.....3, Unswitched.....3
Dimensions:	468(W) × 206(H) × 342(D) mm
Weight:	12.5kg/27 lb. 9oz.

EXCLUSIVE M3 SPECIFICATIONS

Semiconductors:	ICs.....6, Transistors.....85, Diodes and others.....88
Continuous Power Output (20Hz to 20KHz, both channels driven):	150 watts + 150 watts (8 ohms) 180 watts + 180 watts (4 ohms)
Total Harmonic Distortion:	Less than 0.1% (continuous power output) Less than 0.05% (1 watt + 1 watt output: 8 ohms)
Intermodulation Distortion:	Less than 0.1% (continuous power output, 8 ohms) Less than 0.05% (1 watt + 1 watt output, 8 ohms)
Power Bandwidth (IHF: both channels driven):	5 to 35,000Hz (THD: 0.1%)
Frequency Response (1 watt output):	10 to 80,000Hz, +0dB, −1dB
Inputs (Sensitivity/Impedance):	INPUT 1, 2; 1V, 2V/50Kohms SPEAKER; A, B, C (4 to 16 ohms) SPEAKER Level Control; 0 to −20dB (attached to A, B, C terminals)
Damping Factor:	More than 35 (20Hz to 20KHz, 8 ohms)
Subsonic Filters:	8Hz (6dB/oct.)
Signal-to-Noise Ratio (IHF, short-circuited A network):	More than 100dB
Power Requirements:	AC 220V 50Hz
Maximum Power Consumption:	870 watts
Dimensions:	468(W) × 206(H) × 370(D) mm
Weight:	27kg/59 lb. 8oz.

NOTE: Specifications and design subject to possible modification without notice.

PIONEER®

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