YAMAHA A-1000/A-700

Natural Sound Stereo Integrated Amplifiers

Auto Class A/Class AB Power Switching

Zero Distortion Rule Amplification

Extended Rolloff Equalizer and Pure Current Dam

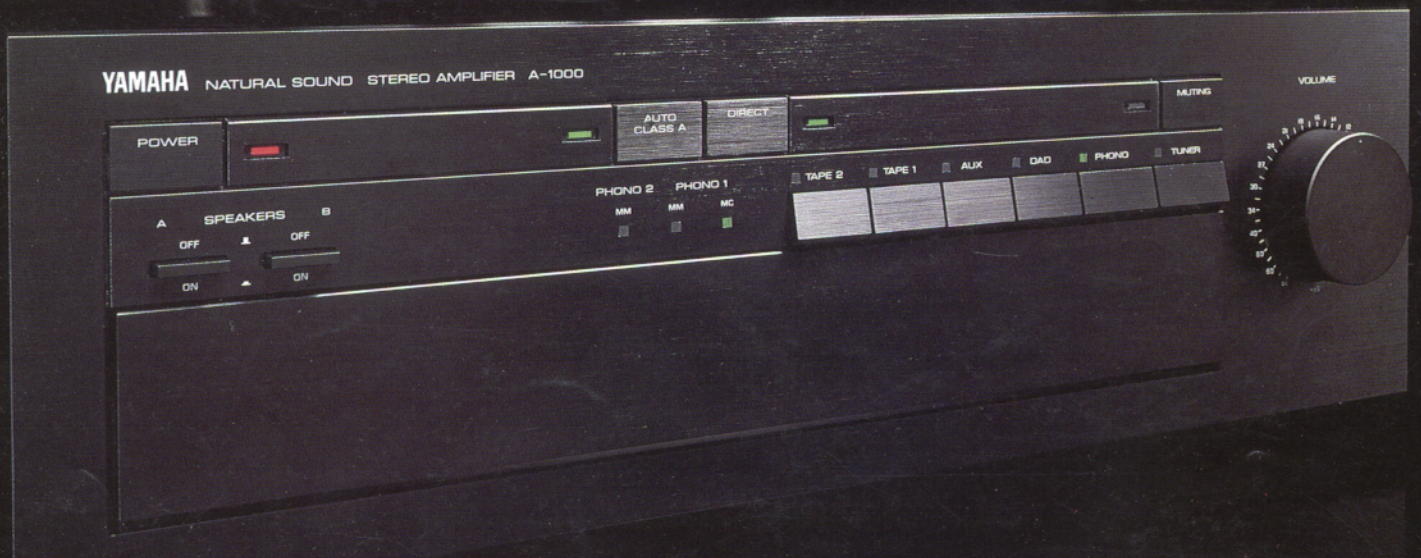
Direct MC Cartridge Input

Selectable Cartridge Load (A-1000)

Direct Switch, Continuously Variable Loudness Control, Rec Out Selector

120 Watts RMS (A-1000), 100 Watts RMS (A-700) per Channel,

Less Than 0.005% THD (8 ohms, 20 – 20,000 Hz)



Behind the Superior Yamaha Sound

Yamaha's foundation as a manufacturer spans more than a hundred years in a number of specialized fields. Since the company began as a producer of reed organs, it has expanded steadily until today, Yamaha music instruments, sound reinforcement gear, music education and popularization programs, motor products, sports equipment, and of course, audio products, are renowned worldwide for their highly refined performance. Naturally, the many years spent in intensive research and development in all these fields has resulted in a vast and varied store of technology. Moreover, the finely balanced interrelationship between the many Yamaha in-house technologies, production facilities and product groups creates a highly efficient network that makes it possible to achieve optimum quality and performance in every product. Yamaha audio know-how, however, does not stop at technology. Each and every new audio product must face the most demanding challenge imaginable: the critical ears of Yamaha music instrument designers. Unless the reproduced sound is exactly like the real thing, the product is not considered finished. Yamaha gives you vast technology tamed by musical sensitivity—a claim no other audio manufacturer can honestly make.

YAMAHA AUDIO TECHNOLOGY TAKES 'STATE-OF-THE-ART' TO NEW LEVELS OF PERFORMANCE AND SOPHISTICATION

Nowhere is the Yamaha philosophy of audio component development more brilliantly reflected than in the new A-1000/A-700 integrated amplifiers. Because every one of the exciting new features incorporated in these new models contributes directly to greater sound reproduction performance. And because these are the successors to previous Yamaha top-line integrated amplifiers, 'top-of-the-line' at Yamaha continues to signify 'state-of-the-art' in audio.

For example, both the A-1000 and A-700 amplifiers are big on power—120 and 100 watts per channel (rated), respectively—but more importantly incorporate a new Auto Class A/Class AB power amplification system that delivers the ultimate in reproduction purity while maintaining dynamic power output capability. Another significant feature is Yamaha's unique Extended Rolloff Equalizer, which provides distortion-free response in the RIAA equalizer to 100 kHz. And not only is the exclusive Yamaha Zero Distortion Rule System used in the power amplification stage, but in the A-1000 it has been applied to the RIAA equalization stage as well. Larger capacity capacitors, Pure Current Dam circuitry, and one-point grounding are some of the other major features that contribute to the unsurpassed music reproduction quality of these new Yamaha integrated amplifiers. On the outside, sophisticated new control features give you more flexibility than ever in setting up your system to deliver maximum performance. These include MM and MC cartridge selection, Yamaha's exclusive Continuously Variable Loudness Control and Rec Out functions, Direct switch, subsonic filter, −20 dB audio muting switch, and a new digital audio disc player source position on both amps. Then there's selectable cartridge load, tone controls with turnover frequency selection, high filter, PHONO 1/2 selection, and a hidden control panel on the A-1000. And, of course, both are as classy in design as they are in performance—one look tells you you're in for great listening with these Yamaha components.

With performance and features like these, the A-1000 and A-700 integrated amplifiers demonstrate again that there's just one definition of superior audio performance —Yamaha.

A-1000

Natural Sound Stereo Integrated Amplifier

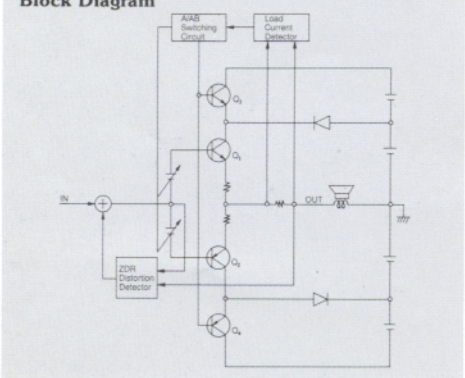
THE ULTIMATE IN INTEGRATED AMPLIFIER PERFORMANCE

The new technologies incorporated in the A-1000 put it virtually in a class by itself in integrated amplifier performance. Indeed, the A-1000 outperforms all but the finest—and much more expensive—top-line separate component systems. It's that good.

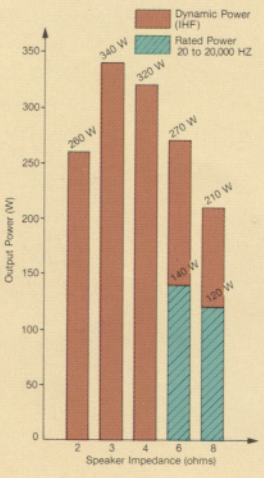
Auto Class A—Superior Sound Reproduction at Every Output Level

In the quest for higher amplification power, audio engineers have developed a whole new alphabet soup of amplifier classes, each with alleged advantages. But what the smart audiophile knows—and Yamaha audio research has confirmed—is that nothing can exceed Class A amplification in low distortion performance. Here's something else that Yamaha audio research has found: in the laboratory, we've tested amplifier output at high volume levels you'd never use at home,

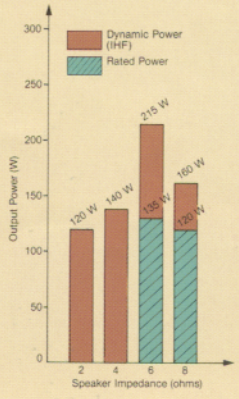
Auto Class A/Zero Distortion Rule Power Stage Block Diagram



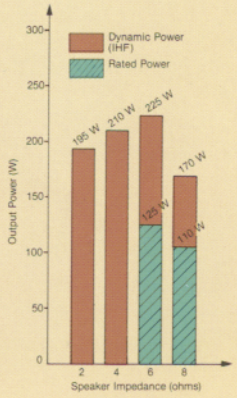
A-1000 Output Power vs. Speaker Impedance



Output Power vs. Speaker Impedance, Competing Model A



Output Power vs. Speaker Impedance, Competing Model B



and discovered that even then output is very low—right where Class A provides the highest performance—almost 100% of the time! Since other power class systems deliver maximum performance only at high output levels, you can easily understand that they're providing optimum audio reproduction performance only a fraction of the time.

Ideally, then, an amplifier should include Class A amplification to deliver superior performance for average music levels, and another system to provide the high power necessary to faithfully render transient peaks, free from clipping distortion. Characteristically, Yamaha has made the ideal the real—with Auto Class A amplification in the A-1000. During the time that the amplifier is operating at average output levels, the A-1000 is in the Class A mode. When a larger output occurs, anything higher than 10 watts, the A-1000 automatically switches to Class AB.

As a result, you get the best of both worlds—and superior reproduction performance for all types of music, at any volume setting. Auto Class A capability will change the way you evaluate amplifier performance.

Incredible Dynamic Power

Most manufacturers like to show their rated power under optimum operating conditions, where the best rated power and distortion figures can be obtained. With 120 watts per channel RMS and just 0.005% THD at 8 ohms, the A-1000 provides exceptional performance. But what happens when really big dynamic power is required, as it is when low impedance speakers are used, or during sudden output peaks? The A-1000 is even more exceptional—at 3 and 4 ohms, the A-1000 delivers an incredible 340 and 320 watts per channel, respectively! That's more than enough power to handle any requirement, and more than you'll find in all but the best separates.

How does the A-1000 do it? With fantastic reserve power, provided by huge chemical capacitors—33,000 μF × 2 + 22,000 μF × 2—and newly developed heavy duty circuitry throughout. So if you're building a really high-class system, make sure that it's high-powered as well—build it around the Yamaha A-1000.

Large-Capacity, Divided-Foil Multi-Terminal Chemical Capacitors (33,000 μF × 2, 22,000 μF × 2)

Zero Distortion Rule – The End of Amp-Induced Distortion

Yamaha's development of Zero Distortion Rule (ZDR) circuitry is an audiophile's dream-come-true, for at last amplifier-induced distortion can be completely eliminated in certain amplifier stages. ZDR was originally introduced in the output power amplification stages of top-line Yamaha components—and quickly drew raves for the outstanding musical clarity and precision it delivered. With the A-1000, we've gone previous amplifiers one better, and incorporated ZDR circuitry in the other major source of amplifier distortion—the phono equalizer stage.

Though sophisticated in application, the principle behind the ZDR system is quite simple. Basically, the system consists of a distortion detector and a summing circuit. The distortion detector derives a signal equivalent to the distortion inherent in the amplifier by comparing the input signal to the output signal—any differences in the shape of the signal are distortion. The pure distortion signal thus derived is inverted and added to the input signal via the summing circuit, so the amplifier's internal distortion is effectively cancelled.

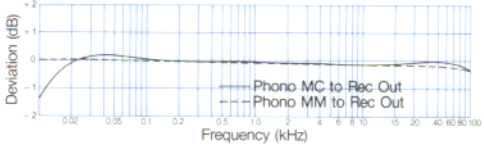
Additional Zero Distortion Rule Benefits

Transistors are likely to heat up in the process of power amplification, introducing distortion into the audio signal. Conventional amplifiers cannot eliminate this distortion product, but the ZDR distortion detector isolates and cancels it just as it does all forms of distortion generated in the EQ and power stages. There's another bonus—ZDR also effectively cancels distortion caused by back EMF from the speakers. Ordinary amplifiers, regardless of how low their distortion figures, cannot prevent back EMF distortion.

100 kHz Extended Rolloff Equalizer

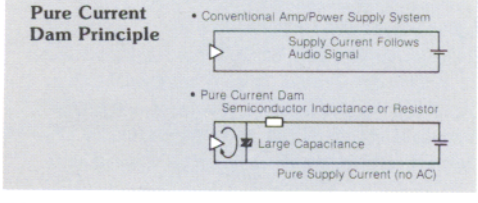
In modern amplifiers, overall performance has been increased to the point where virtually distortion-free response is possible up to 100 kHz. However, it has been traditionally impossible to bring the performance of the RIAA equalizer up to the same standard because of instability caused by deviation from the RIAA curve at high frequencies. Yamaha audio engineering has changed all that, through the development of a new Extended Rolloff Equalizer which eliminates this instability to provide an accurately extended high frequency curve right up to 100 kHz. As a result, an entirely new level of precision in reproduction has been achieved—one more reason why the A-1000 delivers superior sound.

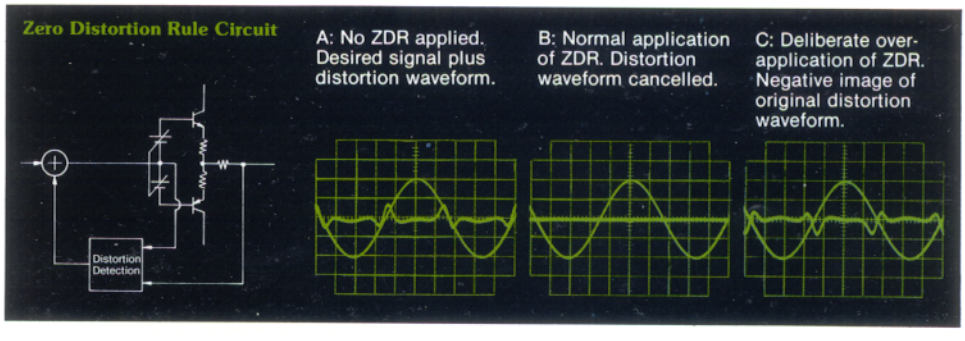
RIAA Equalization Characteristics



Pure Current Dam

Most amplifiers would sound better just by the incorporation of Yamaha's new Extended Rolloff Equalizer and ZDR EQ circuitry. But even then they couldn't match up to the A-1000 in pure reproduction performance. Because in the search for maximum reduction of distortion and crosstalk, Yamaha has eliminated a source of crosstalk and distortion in the power supply itself with a unique system called the Pure Current Dam. This





exclusive system effectively prevents audio modulation of the power supply lines, acting as a dam to create power "reservoirs" for each low-level amplification stage. Since the amplifier stages draw their power from these reservoirs instead of feeding off a "modulated" power supply, intermodulation distortion and crosstalk are significantly reduced. You'll notice the difference in more natural-sounding phono reproduction, with beautiful stereo imaging.

Hear it Straight From the Source – the Direct Switch

If you're an audiophile who makes a special effort to find nothing but the highest-quality discs and tapes to play on your system, you'll appreciate the special circuitry Yamaha has designed to bring more "pure pleasure" to your listening—the Direct switch. Turning this switch ON completely bypasses the entire tone control circuit, loudness control circuit and high filter. This simplified signal path provides optimum reproduction fidelity—you'll enjoy your high-quality sources exactly as they were recorded.

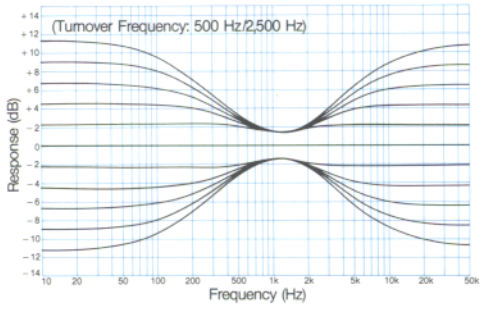
Phono 1/2 With Direct MC Cartridge Input/Cartridge Load Selection

Many people prefer to use moving coil (MC) cartridges because of the clearer, more detailed sound reproduction quality they provide compared to most moving magnet (MM) cartridges. However, an MC cartridge's output level is so low that it cannot be fed directly to most equalizer amplifiers, requiring the addition of a separate head amplifier. Not only does the A-1000 allow direct input of an MC cartridge equipped turntable in the PHONO 1 position, but you can hook up another MM cartridge equipped turntable as well. What's more, MM cartridge load impedance/capacitance is selectable in four positions, allowing you to perfectly match the A-1000 to the cartridge in use for unsurpassed phono playback quality.

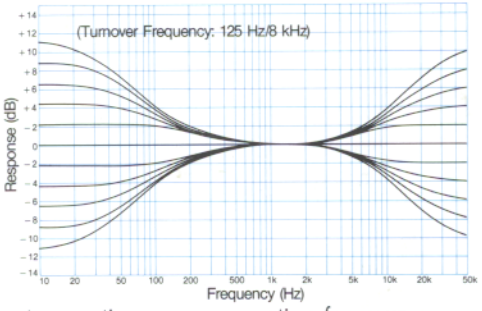
Selectable Tone Control Turnover Frequencies

In its quest to maximize sound reproduction quality, Yamaha has considered every aspect of amplifier operation that affects playback. One tangible result of this process is the ability to select the turnover frequencies of the tone controls: 125 or 500 Hz for Bass, 2.5 or 8 kHz for Treble. You'll appreciate this attention to detail—the range of response curves is much wider than provided by conventional tone control systems, letting you

Characteristics of Tone Control



Characteristics of Tone Control



set up optimum compensation for your sound system.

Continuously Variable Loudness Control

Loudness controls on most of today's amplifiers are usually simple On/Off controls which provide accurate tonal compensation only at a single listening level. The unique Yamaha loudness control, however, is continuously variable, so you get correct subjective tonal balance at any listening level—for full musical impact even at low volumes.

Rec Out Selector

This is another Yamaha original feature that adds significantly to operating convenience, because it allows you to record one source while listening to another. For example, you can set the Rec Out selector to Phono and the Input selector to Tuner, then settle back and listen to the radio while simultaneously recording a disc.

DAD Inputs

If you're looking at integrated amplifiers in the A-1000's class, chances are good that you already own a digital audio disc (DAD) player, or are planning to purchase one soon. Through the development of our own DAD players, we understand what all the excitement is about. Therefore, we included a special DAD input position in the A-1000, so you don't have to use the AUX or TUNER inputs.

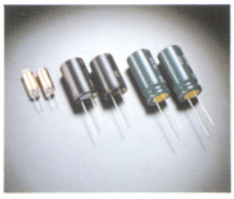
Fold-Down Front Panel

If you believe that a sophisticated audio component should look that way, one look at the A-1000 will convince you that Yamaha agrees. Hence we put the infrequently used controls behind a fold-down door on the front panel, elegantly out of sight, but just a push of a finger away.

Critical Component Selection

Besides basic circuit design, the type and quality of individual components used in

High-Quality Audio Capacitors: Plastic-Housing Capacitors, Copper Foil Styrol Capacitors



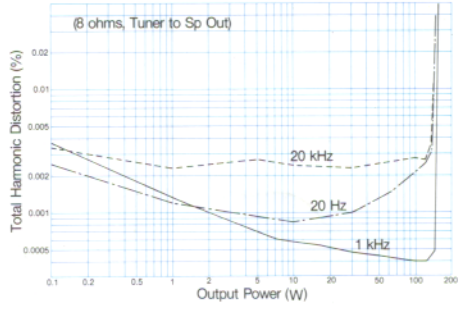
Gold-Plated Phono Terminals

an audio amplifier greatly influence sound reproduction quality. Absolutely no compromises have been made in the selection of components for the A-1000. The highest quality chemical capacitors are used in the power supply, and select audio capacitors include special chemical types with non-inductive plastic housings and top-quality copper-film styrol types. For grounding, we did something few other manufacturers bother to do these days—brought all ground wires to a single point for ideal amplifier grounding, rather than grounding at separate parts of the chassis. Oxygen-free copper wiring is used throughout for the most accurate signal transmission.

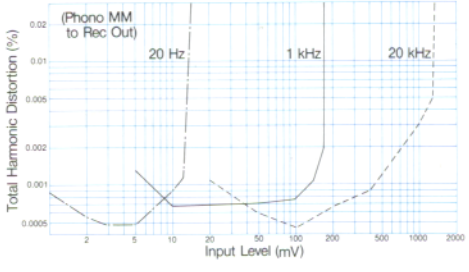
Other Features

• –20 dB Audio Muting Switch • Switchable High (10 kHz, –12 dB/oct) Filter • Switchable Subsonic (15 Hz, –12 dB/oct) Filter • Stereo/Mono Mode Selector • A/B/A+B/Off Speaker Selector

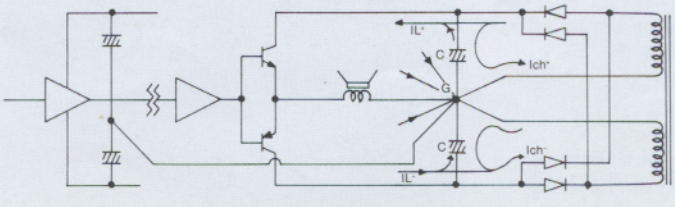
Output Power vs. Total Harmonic Distortion



Phono Harmonic Distortion vs. Input Level



One-Point Chassis Grounding System



Careful one-point grounding maintains the ideal ground potential for the entire amplifier circuit.

A-700

Natural Sound Stereo Integrated Amplifier

AN EXCEPTIONAL VALUE IN POWER AND PERFORMANCE

Like the A-1000, the A-700 is loaded with special Yamaha audio technologies which put it truly ahead of the competition. And here's another bonus—the A-700 gives you all that great Yamaha sound and operating convenience at a surprisingly competitive price.

Auto Class A, High Dynamic Power – Superb Sound Over the Entire Audio Spectrum

The measure of any integrated amplifier is the audio reproduction performance it delivers. At 100 watts RMS and a mere 0.005% THD at 8 ohms, the A-700 is measurably superior to competitive amplifiers. But there's more to judge an amplifier by than its traditional specs, and it's in these additional categories that the A-700 really excels.

To begin with, the A-700 features the same Auto Class A amplification system incorporated in the A-1000. This super low-distortion system is actually two systems in one—Pure Class A amplification for average music levels (Levels below 5 watts output—more than 95% of program time), and Class AB amplification to handle transient peaks. So the A-700 is always in the amplification mode that provides optimum audio reproduction performance with the lowest distortion—and this is all done automatically.

Another feature in common with the A-1000 is outstanding dynamic power—the power required to drive low-impedance speakers and to handle sudden signal surges. With special chemical capacitors (22,000 mF × 2) and new heavy-duty circuitry, the A-700 is more than up to the challenge—output power at 3 and 4 ohms impedance is an impressive 250 and 230 watts per channel, respectively. Compared to other integrated amplifiers in its class, the A-700 delivers truly outstanding power, no matter how you measure it. And that translates directly into superior audio reproduction performance.

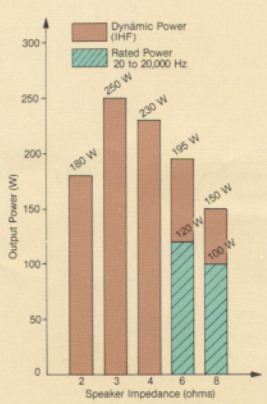
Zero Distortion Rule – Distortion-Free Power Amplification

Audio engineers have long tried to devise ways to effectively eliminate amplifier-induced distortion, but again it was Yamaha that turned this audiophile dream into reality—with the revolutionary Zero Distortion Rule (ZDR) system. In the A-700, ZDR circuitry is applied to the power amplification stage, the source of the overwhelming majority of amplifier distortion. And not only does ZDR circuitry eliminate distortion at its source, but also effectively eliminates distortion caused by transistor heatup and back EMF from the speakers. Lower distortion means unsurpassed musical clarity and precision, and is one more reason behind the superb sound of the A-700.

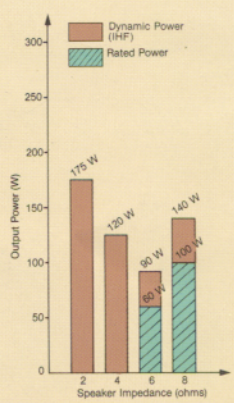
Higher Phono Reproduction Performance

Two exclusive Yamaha audio technologies incorporated in the A-1000—Pure Current Dam circuitry and the 100 kHz Extended Rolloff Equalizer (ERE)—are also incorporated in the A-700 for significantly enhanced reproduction performance. Pure Current Dam prevents audio modulation of the power supply lines to low-level amplifier stages, thereby dramatically reducing crosstalk and intermodulation distortion. With the new ERE, Yamaha has brought the performance of the RIAA equalizer up to that of the overall amplifier itself, achieving stability of the high frequency curve up to 100 kHz—a level which to now has been impossible to achieve. And if the technology is dazzling, so is the sound—you'll notice more fidelity and stereo

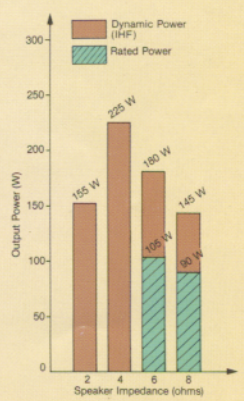
A-700 Output Power vs. Speaker Impedance



Output Power vs. Speaker Impedance, Competing Model C



Output Power vs. Speaker Impedance, Conventional Model D



A-1000/A-700

Natural Sound Stereo Integrated Amplifiers

$590 $450

imaging in your records than you ever thought possible.

Continuously Variable Loudness Control

Loudness controls on most integrated amplifiers compensate for the ear's loss of sensitivity to high and low frequencies at low volumes by boosting these frequencies. And since they are normally On/Off controls, their compensation is accurate only at a single listening level. Yamaha, again, developed a better way—Continuously Variable Loudness Control. First, compensation is achieved by attenuation of the midrange, which avoids the addition of distortion that comes with boosting the low and high frequency ranges. Second, since it is continuously variable, you get perfect subjective balance at all listening levels. It all adds up to audibly superior low volume listening.

Rec Out Selector

Yamaha's exclusive REC OUT function is a very popular feature because of the flexibility it gives you in monitoring—now you can actually record one source while listening to another. So you can listen to the radio while taping a record, or record and listen to any other combination of sources.

Direct Switch

Turning this switch ON completely bypasses the entire tone control circuit as well as the loudness control circuit, providing the most direct signal path for the purest reproduction quality possible.

Other Features

•MC/MM Cartridge Selector •Switchable Subsonic (15 Hz, −12 dB/oct) Filter •DAD Input Position •−20 dB Audio Muting Switch •Stereo/Mono Mode Selector •Speaker A/B/A+B/Off Selector •Gold-Plated Phono Input Jacks •Front Panel Headphone Jack

A-1000/A-700 SPECIFICATIONS

A-1000: Minimum RMS Output Power per Channel: 120 Watts (8 ohms) from 20 to 20,000 Hz at no more than 0.005% Total Harmonic Distortion
140 Watts (6 ohms) from 20 to 20,000 Hz at no more than 0.007% Total Harmonic Distortion
Class A Operation: 10 Watts (8 ohms)

A-700: Minimum RMS Output Power per Channel: 100 Watts (8 ohms) from 20 to 20,000 Hz at no more than 0.005% Total Harmonic Distortion
120 Watts (6 ohms) from 20 to 20,000 Hz at no more than 0.007% Total Harmonic Distortion
Class A Operation: 5 Watts (8 ohms)

	A-1000	A-700
Minimum RMS Output Power per Channel		
8 ohms, 1 kHz, 0.005% THD	130 W	105 W
6 ohms, 1 kHz, 0.005% THD	150 W	125 W
Dynamic Power per Channel (IHF)		
4 ohms/3 ohms	320 W/340 W	230 W/250 W
Total Harmonic Distortion (20 to 20,000 Hz)		
Phono MC to Rec Out (3 V)	0.005%	0.006%
Phono MM to Rec Out (3 V)	0.003%	←
Aux/DAD/Tape/Tuner to Sp Out		
(Half Rated Power/8 ohms)	0.005%	←
IM Distortion (Aux/DAD/Tape/Tuner)		
(Rated Power/8 ohms)	0.002%	←
(1 W/8 ohms)	0.003%	←
Power Bandwidth		
(Half Rated Power, 0.03% THD, 8 ohms)	10 to 100,000 Hz	←
Damping Factor (1 kHz, 8 ohms)	90	←
Input Sensitivity/Impedance		
Phono MC	160 μV/100 ohms, 10 k-ohms	160 μV/220 ohms
Phono MM	2.5 mV/100 ohms, 47 k-ohms (200 pF, 330 pF)	2.5 mV/47 k-ohms
Aux/DAD/Tape/Tuner	150 mV/47 k-ohms	←
Input Sensitivity (New IHF)		
Phono MC	15 μV	16 μV
Phono MM	0.23 mV	0.25 mV
Aux/DAD/Tape/Tuner	14 mV	15 mV
Maximum Input Level (1 kHz, 0.01% THD)		
Phono MC	10 mV	←
Phono MM	165 mV	←
Output Level/Impedance (Rec Out)	150 mV/470 ohms	←
Headphone Output/Impedance		
(0.005% THD)	0.89 V/8 ohms	0.81 V/8 ohms
Frequency Response (Direct)	20 to 20,000 Hz,	←
(Aux/DAD/Tape/Tuner to Sp Out)	+0 −0.5 dB	←
RIAA Deviation		
20 to 20,000 Hz		
Phono MC/MM	±0.3 dB/±0.2 dB	←

	A-1000	A-700
20 to 100,000 Hz		
Phono MC/MM	±0.5 dB/±0.5 dB	±1 dB/±1 dB
Signal-to-Noise Ratio (IHF A Network)		
Phono MC (500 μV, Input Shorted)	80 dB	76 dB
Phono MM (5 mV, Input Shorted)	94 dB	92 dB
Aux/DAD/Tape/Tuner		
(Direct, 5.1 k-ohms, Shorted)	106 dB	←
Signal-to-Noise Ratio (New IHF)		
Phono MC	76 dB	74.5 dB
Phono MM	79 dB	78 dB
Aux/DAD/Tape/Tuner	86 dB	85 dB
Residual Noise (IHF A Network)	125 μV	65 μV (Direct)
Channel Separation		
(1 kHz, Vol −30 dB, Shorted)	70 dB	←
Tone Control Characteristics		
Bass	(Turnover: 125 Hz, 500 Hz)	(Turnover: 350 Hz)
	±10 dB at 20 Hz	←
Treble	(Turnover: 2.5 kHz, 8 kHz)	(Turnover: 3.5 kHz)
	±10 dB at 20 kHz	←
Filter Characteristics		
Low (Subsonic)	15 Hz, −12 dB/oct	←
High	10 kHz, −12 dB/oct	——
Continuous Loudness Control (Level-Related Equalization)		
Max. Attenuation	−20 dB at 1 kHz	←
Audio Muting	−20 dB	←
Gain Tracking Error (0 to −60 dB)	2 dB	←
Power Supply	Matched to supply voltage and frequency of each area	
Power Consumption		
U.S.A. and Canada	280 W	360 W
Europe, U.K., and Australia	680 W	630 W
Other Areas	280 W	215 W
Dimensions (W×H×D)	435×146×424.5 mm	435×136×401.5 mm
	17-1/8"×5-3/4"×16-3/4"	17-1/8"×5-3/8"×15-3/4"
Weight	13 kg (28 lbs. 10 oz.)	11.2 kg (24 lbs. 10 oz.)

Specifications subject to change without notice.

For details please contact:

SINCE 1887 YAMAHA
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