



Flagship HiFi 5000 Series



## **Nothing between you and the music.**

The moment you close your eyes, your surroundings disappear, and you are enveloped completely in music. Immersed in a feeling of unity — as if in a live concert. With that in mind, we sought to develop a level of musical expression only possible with Yamaha.

Introducing the Flagship HiFi 5000 Series.

We aimed for ideal sound reproduction — from start to finish, input to output — to deliver the most profound listening experience, as if you were right there where the music was created.

Because it is fully analogue, has independent construction, and is perfectly balanced transmission in all stages, the 5000 Series brings a matchless, unprecedented stage of musical expression that unfolds right in front of you.

Leaving absolutely nothing between you and the music. True sound. To those who truly love music.



Flagship HiFi 5000 Series

Flagship HiFi 5000 Series

# GT-5000 Turntable



## **Striving for the true essence of analogue playback Introducing the new GT**

Drawing on the traditional design concept of the original Yamaha GT turntable, "Gigantic and Tremendous," the new GT-5000 represents a simple and even mainstream way to discover the essence of sound. It is the culmination of our quest for the heart of superior analogue playback, achieved by actively introducing innovative technologies and optimum materials suitable for the modern era.

Starting with an unprecedented ultra-heavy wood cabinet as the core, we meticulously considered all the elements that make up a turntable — the drive system, platter, tonearm, and so on — focusing on the single, central point of sonic integrity, and refined all parts with human sensitivity.

We sought to extract every last bit of audio information contained in the record grooves, ensure balanced transmission throughout, and deliver pure, feedback-free sound of absolute clarity to the amplifier. Now, 36 years after the GT-2000, we proudly announce the new and advanced heir to the GT throne.





## Highly rigid, heavy wooden cabinet embodies “GT” concept

Measuring an impressive 546 × 395 × 120 mm (W x D x H) and weighing in at a hefty 14.3 kg, the GT-5000 perfectly embodies the “GT” concept — adopting traditional wooden material, crafted from high-density particle board and sporting four-layer lamination. The size, weight and materials used are virtually the same as the famed GT-2000. This is because the dimensions, weight distribution and material properties of that former flagship model ensured finely balanced, optimum sound quality, and there was no need to change those aspects. Particle board is, of course, not a special material; yet its damping characteristics and homogeneity of fast transient sounds made it ideal for achieving the desired sound. Meanwhile, the cabinet feet have evolved dramatically, developed jointly with Tokkyokiki Corporation, a company that specialises in vibration control. The feet suppress unnecessary resonance with specially tuned coil springs — resulting in a rhythmic low end and a supple high range. This small part makes a large contribution to the accuracy and warmth of the sound.

## Belt-drive system with synchronous motor

Generally, feedback control of the servo motor is the greatest challenge in realising honest, accurate turntable sound. Even though on average, rotation of servo motors is accurate, we tested with repeated infinitesimal and instantaneous unnatural movements, and found the sound to be ‘cloudy’ with less transparency and realism. Therefore, we gave the GT-5000 a belt-drive system with a 24-pole, 2-phase AC synchronous motor (without servo). Synchronous motor

operation is a long-used technology; however, by using an accurate quartz-generated sine wave for the AC power source as the rotation reference, we also ensured accuracy suitable for modern high-end devices. Rather than the torque of the motor, the mass of the platter itself stabilises the rotation — excluding electrical feedback from the drive system, and providing exceptionally clear sound.

## Double structure platter for huge rotational inertia value of 0.92 t/cm<sup>2</sup>

Another crucial piece of the “GT” concept is the platter — a double structure in which a cut aluminium main turntable (350 mm in diameter, 5.2 kg) is mounted on a cut brass inner turntable (143 mm in diameter, 2.0 kg). By superimposing dissimilar metals with different natural resonance points, we were able to suppress any unnatural vibration in the turntable and yet maintain the beauty of the sound. The rotational inertia generated by the platter with the thicker outer edge reaches a massive value of 0.92 t/cm<sup>2</sup>.

## Straight, short tonearm delivers unmatched simplicity

Yamaha’s original straight, short tone arm has further enhanced and refined the strong qualities of past straight tonearms — their superb weight balance and mechanical balance — with an optimally simple structure free from any ancillary mechanisms, such as an inside force canceller and arm rotation stopper. By adopting a short, double structure in which a tapered carbon outer tube is combined with a copper-plated aluminium inner tube, the armtube portion achieves exceptionally high rigidity, low resonance

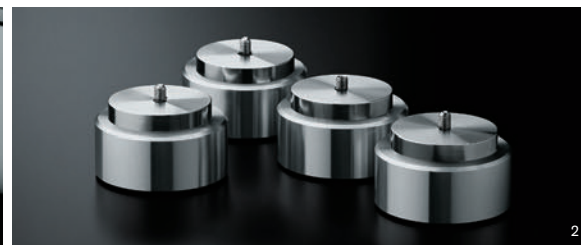
characteristics and outstanding noise shielding. All audio wiring features the new-generation PC-Triple C copper conductor — also utilised to great effect on the 5000 Series power amplifiers and speakers — achieving a rich and powerful sound over the entire frequency spectrum.

## Extensive output terminals, including balanced phono cartridge out

In addition to conventional RCA audio terminals, the rear panel audio output terminals include XLR balanced terminals for the phono cartridge output. By combining the GT-5000 with the C-5000 pre-amplifier and the M-5000 power amplifier, which feature complete balanced audio at all stages, including the MC head amp and phono equaliser, you get total, end-to-end balanced audio transmission from phono cartridge to speaker output.

## Traditional exterior design devoted to faithful reproduction of vinyl records

The simple external design of the GT series which eliminated the stroboscope, has an elegant arrangement of just three circular buttons on the top surface: power on/off, rotation/stop and 33/45 rpm speed switch — resulting in full, faithful reproduction of vinyl records. A single column seems to jut into the large 350 mm diameter platter, and provides a finger rest that prevents your palm from touching the outer edge of the platter when lowering the needle to the disc. Built into the column is fine pitch control knob that conveniently allows setting the rotation speed over a range of ± 1.5%. And the traditional looking cabinet has a luxurious piano black finish — exuding an immortal value that never fades.



[1] Taking the GT concept even further — massive turntable inertia stabilises rotation, and features belt-drive inner turntable. [2] Specially designed feet with highly tuned coil springs for controlling unwanted resonance. [3] Cut aluminium headshell included (replaceable).

**Other functions and features**

- Includes Yamaha's original cut aluminium headshell (which can be replaced with commercially available headshells).
- Detent-type pitch control knob with range of  $\pm 1.5\%$ , in 0.1% steps to satisfy even the most demanding musicians/audiophiles.
- Includes strobe light and stroboscope, which can be connected to the dedicated rear-panel terminal.



Turntable **GT-5000**

Specifications

|           |                             |                                                           |
|-----------|-----------------------------|-----------------------------------------------------------|
| Turntable | Drive Method                | Belt drive                                                |
|           | Motor                       | AC synchronous motor                                      |
|           | Motor Drive                 | Crystal sine wave                                         |
|           | Rotation Speed              | 33-1/3 rpm, 45 rpm                                        |
|           | Rotation Speed Variation    | $\pm 0.1\%$                                               |
|           | Rotation Speed Adjustment   | Adjustment Step: 0.1 %, Adjustment Range: $\pm 1.5\%$     |
|           | Wow And Flutter             | less than 0.04 % (WRMS)                                   |
|           | Outer Platter               | Machined aluminium (Diameter 35 cm)                       |
|           | Inner Platter               | Brass (Diameter 14.3 cm)                                  |
|           | Tonearm                     | Static balance straight tonearm                           |
| Tonearm   | Effective Arm Length        | 223 mm                                                    |
|           | Overhang                    | -17 mm                                                    |
|           | Acceptable Cartridge Weight | 13.5-36 g (including headshell / 25-36 g need sub weight) |
|           | Head-shell Weight           | 14 g (including screws, nuts and wires)                   |

|                   |                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Terminal   | Analogue Audio: 2 (XLR balance 1, RCA unbalance 1), Strobe: 1 (3.5 mm mini jack)                                                                                                                                                                                                                           |
| Power Consumption | 15 W                                                                                                                                                                                                                                                                                                       |
| Dimension (W×H×D) | 546 x 221 x 411 mm                                                                                                                                                                                                                                                                                         |
| Weight            | 26.5 kg                                                                                                                                                                                                                                                                                                    |
| Accessories       | Platter, Sub platter, Turntable mat x 2 (Felt, Silicone rubber), Dial cover, Head shell, Counter weight x 2, Belt, 45 rpm adaptor, Handle x 2, Cable clamp, Stroboscopic disc, Strobe light, Hexagonal wrench (*To adjust the tonearm height), Power cord, Hinge base x 2, Dust cover hinge x 2, Screw set |



Flagship HiFi 5000 Series

# C-5000

Pre-Amplifier



## Expansive, expressive sound that makes you forget the equipment

Delicate sonic nuances delivered with overwhelming expressive power.

Introducing the C-5000 — the first pre-amplifier to employ Yamaha's patented Floating and Balanced technology. It also features circuitry design that creates a remarkably smooth and stable signal flow, along with construction that eliminates all noise and vibration.

Above all, it delivers the stellar performance required of a true HiFi amplifier, including a power supply/ground with high current capacity and low impedance — realised through our accumulation of authentic design methods, backed by long tradition, vast experience, and innovative ideas.

Combined with the M-5000 power amplifier, the C-5000 makes it possible to have completely balanced audio transmission — at all stages, in all circuitry, and through all signal paths. Reproducing all your music sources with an enormously expansive sound field and amazing expressive power that makes you forget you're listening to the equipment. Lose yourself.



## Book-matched construction for a pure and minimal signal path

Book-matching is a woodworking process in which a board is sliced into two, and the two adjoining surfaces are matched and mirror each other, making them seem like an opened book — showing beautifully symmetrical wood grain. The C-5000 employs a “book-matched” construction which puts all audio circuitry, including the input/output terminals, ground lines and local power supply regulator (responsible for supplying power to each stage) to a single board per channel. Furthermore, the structure is unprecedented in that the two left/right sections are mounted back to back. The two boards are in perfect symmetry as if reflected in a mirror — from the part arrangement to the circuit pattern, and the pattern surfaces of the two boards are stacked so that they face each other. As a result, the signal flow is aligned in one direction, and the distance of ground between the left and right sections is as close to zero as possible. Naturally, jumper wires and connectors that previously connected multiple boards are no longer necessary, and all signal transmission, power supply, and ground connections have been minimised in a revolutionary way. In particular, delicate circuits such as the MC head amp and phono equaliser are unshielded and the entire board is exposed. The C-5000 features an open layout that delivers perfectly balanced audio transmission, is impervious to external noise, and reproduces the sound as it is — with exceptional transparency and profound depth.

## Chassis layout with power transmission at equal left/right lengths and shortest distances

Looking at the inside of the C-5000 from directly above, there are two main power transformers on the left and right ends on the front side, and there is a main regulator (rectifier circuit) board in

which six block-capacitors are lined up. The main regulator board has two layers — upper for the left channel and lower for the right — and is structured such that the power feed to the local regulators on the main board is kept at the back to ensure the shortest distance and equal left/right lengths. The power supply wires are 12 AWG (3.5 squares) in thickness. Using custom-made brass screws and brass lugs, the wiring is performed tightly like on a power amp. The upper and lower two-stage (L/R) main book-matched boards are supported by an aluminium stabiliser block of 10 mm thickness, that runs all along the right-left width of the board, providing support parallel to the rear panel terminals. By inserting this stabiliser block between the upper and lower substrates, we have given the sound dramatically greater focus, through aligning the vibration modes of each substrate. Moreover, we adopted newly developed feet (patents pending) which allow the user to select pinpoint spike installation for supporting the entire chassis.

## Floating and Balanced technology adopted for entire audio circuitry

Yamaha's patented Floating and Balanced Power Amplifier technology delivers fully balanced amplification, with all amplifier circuitry including the power supply “floating” from the electrical ground. This technology which has shown great results in power amplifier circuitry so far was advantageous on pre-amplifiers, which handle delicate small signals — because this technology is, in principle, not influenced by ground noise. However, since Floating and Balanced technology requires two pairs of amplifier circuits and power supply circuits for each channel, it is difficult to apply the technology to pre-amplifiers with multiple independent amplification stages. Therefore, when developing the C-5000, we established a unique technology to create a virtual floating and balanced power source while avoiding complication

of the circuit configuration. Thus, Floating and Balanced technology has been achieved for all amplifier circuits — phono equaliser, input, output buffer and headphones (excepting the MC head amplifier).

## Balanced transmission of phono equaliser, including MC head amp

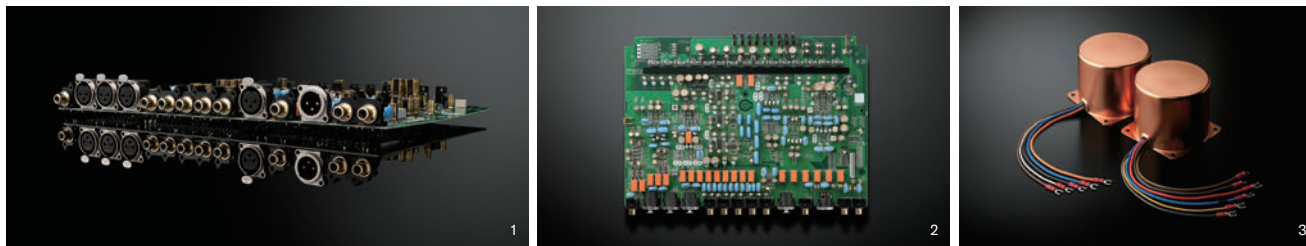
One of the main goals of C-5000 development was to have completely balanced transmission of phono equaliser output, including the MC head amp. The MC phono cartridge, which converts the record's sound groove information into an electric signal by coil generation, can output the sound as a balanced signal. We thought it ideal to preserve the balanced signal from start to finish. Balanced transmission is well-known to be less susceptible to external noise, and these qualities are especially dramatic for minute signals between the phono cartridge and pre-amplifier. You'll experience the extraordinary difference in expressive power and dynamics when you hear it for the first time.

## Toroidal power transformers in independent left/right copper-plated cases

Featuring low magnetic leakage and excellent regulation, toroidal power transformers enclosed in copper-plated cases with ideal pre-amplifier characteristics are independently mounted on the left and right. With a capacity of 25 VA (× 2), the power supply wiring is drawn directly from the winding with a brass lug, contributing to low impedance. And on the bottom, we layered a 3-mm brass base plate, selected by exhaustive listening tests.

## Unique Flagship style with luxurious, firm response

Featuring a solid, 9-mm thick aluminium front panel, a solid aluminium top panel of 6 mm, and piano-finish wooden side panels that all fit flush against each other, the clean and smooth exterior reflects the unique Yamaha Flagship styling. The impressively tapered cut aluminium volume knob with integrated pointer utilises ball-bearings for rotation. The pointer rotates smoothly along the indented obliquely tapered front panel, demonstrating the accuracy and rigid support of the controls. Moreover, the lever switches have been newly designed from repeated trial production to provide luxurious tactile response and other qualities. The C-5000 has been crafted for optimum touch and feel, as befitting a pre-amp of the highest class.

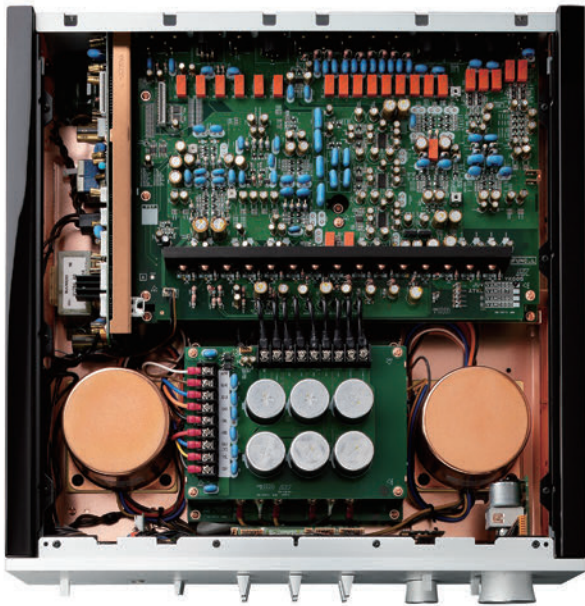


[1] Book-matched construction in which the left channel board (upper) and the right channel board (lower) are arranged symmetrically as if mirrored. The printed pattern surfaces face each other, resulting in virtually no difference in the ground distance between the channels. [2] Signal path has been significantly simplified and minimised by installing all audio circuits on one board. Shielding between stages has also been eliminated, thanks to fully balanced transmission throughout. [3] Toroidal power transformers enclosed in independent right/left copper-plated cases.



### Other functions and features

- Subsonic filter cuts noise in the ultra-low frequency range which occurs in turntable tonearm resonance and because of warpage in the record.
- Trigger terminals allows power switch sync with power amplifier, etc.
- Balanced audio input terminals equipped with attenuators and phase inverters
- Wireless remote control with stylish aluminium case
- Auto power standby function turns off power when not in use.



### Pre-Amplifier C-5000

#### Specifications

|                                                                    |                                                                                                                                      |                                                                                                                                     |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Input Terminal                                                     | RCA: 6 (PHONO, TUNER, CD, LINE 1, LINE 2 IN, EXT IN), BAL: 4 (PHONO, BAL 1, BAL 2, EXT IN), TRIGGER IN: 1 (Slave mode), REMOTE IN: 1 |                                                                                                                                     |
| Output Terminal                                                    | RCA: 3 (LINE 2 OUT, LINE 1, LINE 2), BAL: 1 (BAL)                                                                                    |                                                                                                                                     |
| Other Terminal                                                     | TRIGGER IN: 1, TRIGGER OUT: 2, REMOTE IN: 1, REMOTE OUT: 1                                                                           |                                                                                                                                     |
| Input Sensitivity / Input Impedance                                | BAL / LINE OUT: 1V                                                                                                                   | BAL 200 mVrms / 52 k $\Omega$                                                                                                       |
|                                                                    | LINE etc.                                                                                                                            | 200 mVrms / 47 k $\Omega$                                                                                                           |
|                                                                    | EXT IN                                                                                                                               | 1 Vrms / 20 k $\Omega$                                                                                                              |
|                                                                    | LINE 2 OUT: 150 mV (1 kHz)                                                                                                           | PHONO (MC) 100 $\mu$ Vrms / 300 $\Omega$ , 100 $\mu$ Vrms / 100 $\Omega$ , 100 $\mu$ Vrms / 30 $\Omega$ , 100 $\mu$ V / 10 $\Omega$ |
|                                                                    |                                                                                                                                      | PHONO (MM) 2.5 mVrms / 47 k $\Omega$                                                                                                |
|                                                                    |                                                                                                                                      | PHONO BAL (MM) 2.5 mVrms / 52 k $\Omega$                                                                                            |
| Maximum Input Signal Voltage                                       | BAL / LINE OUT (1 kHz, 0.05 % THD)                                                                                                   | BAL 2.8 Vrms                                                                                                                        |
|                                                                    |                                                                                                                                      | BAL (ATT) 5.6 Vrms                                                                                                                  |
|                                                                    |                                                                                                                                      | LINE etc. 2.8 Vrms                                                                                                                  |
|                                                                    | LINE 2 OUT (1 kHz, 0.05 % THD)                                                                                                       | PHONO (MC) 2 mVrms                                                                                                                  |
|                                                                    |                                                                                                                                      | PHONO (MM) 50 mVrms                                                                                                                 |
|                                                                    |                                                                                                                                      | EXT IN 5.6 Vrms                                                                                                                     |
| Rated Output Voltage / Output Impedance (20 Hz-20 kHz, 0.01 % THD) | BAL (BYPASS)                                                                                                                         | 2 Vrms / 150 $\Omega$                                                                                                               |
|                                                                    | BAL (ATT)                                                                                                                            | 1 Vrms / 150 $\Omega$                                                                                                               |
|                                                                    | LINE 1 / LINE 2                                                                                                                      | 1 Vrms / 150 $\Omega$                                                                                                               |
|                                                                    | LINE 2 OUT                                                                                                                           | 200 mVrms / 1.2 k $\Omega$                                                                                                          |
| Maximum Output Voltage (1 kHz, 0.05 % THD)                         | BAL                                                                                                                                  | 6 Vrms                                                                                                                              |
|                                                                    | LINE 1 / LINE 2                                                                                                                      | 3 Vrms                                                                                                                              |
|                                                                    | LINE 2 OUT                                                                                                                           | 3 Vrms                                                                                                                              |
| Frequency Response (JEITA, Load 22 k $\Omega$ )                    | BAL / LINE etc. (10 Hz-100 kHz)                                                                                                      | +0 / -3 dB                                                                                                                          |
|                                                                    | BAL / LINE etc. (20 Hz-20 kHz)                                                                                                       | +0 / -0.3 dB                                                                                                                        |

|                                                                                    |                                                         |                   |
|------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------|
| Total Harmonic Distortion (JEITA, Input 1.0 k $\Omega$ terminated, 1 kHz / 10 kHz) | BAL / LINE etc. to BAL / LINE                           | 0.0100 %          |
|                                                                                    | PHONO (MC) / PHONO BAL (MC) to LINE 2 OUT               | 0.0200 %          |
|                                                                                    | PHONO (MM) / PHONO BAL (MM) to LINE 2 OUT               | 0.0200 %          |
| Channel Separation (JEITA, Input 1.0 k $\Omega$ terminated, 1 kHz / 10 kHz)        | BAL / LINE etc.                                         | 110 dB or higher  |
|                                                                                    | PHONO (MC) / PHONO BAL (MC)                             | 80 dB or higher   |
|                                                                                    | PHONO (MM) / PHONO BAL (MM)                             | 98 dB or higher   |
| Function Separation (JEITA, IHF-A Network, Input 1.0 k $\Omega$ terminated)        | BAL / LINE etc.                                         | 110 dB or higher  |
|                                                                                    | PHONO (MC) / PHONO BAL (MC)                             | 75 dB or higher   |
|                                                                                    | PHONO (MM) / PHONO BAL (MM)                             | 95 dB or higher   |
| Signal-to-Noise Ratio (JEITA, IHF-A Network, Input 1.0 k $\Omega$ terminated)      | BAL / LINE etc.                                         | 110 dB or higher  |
|                                                                                    | PHONO (MC 300 $\Omega$ ) / PHONO BAL (MC 300 $\Omega$ ) | 80 dB or higher   |
|                                                                                    | PHONO (MM) / PHONO BAL (MM)                             | 98 dB or higher   |
| Residual Noise (IHF-A-Network)                                                     | BAL / LINE OUT                                          | 3 $\mu$ V         |
| Tone Control Characteristics                                                       | Bass Boost / Cut (30 Hz)                                | $\pm$ 9 dB        |
|                                                                                    | Turnover Frequency                                      | 350 Hz            |
|                                                                                    | Treble Boost / Cut (20 kHz)                             | $\pm$ 9 dB        |
|                                                                                    | Turnover Frequency                                      | 3.5 kHz           |
| Headphone Jack Rated Output Power                                                  | CD etc., 32 $\Omega$ 1 kHz 0.2 % THD                    | 35 mW $\pm$ 35 mW |
| Deviations from RIAA Equaliser                                                     | PHONO (MC / MM) / PHONO BAL (MC / MM)                   | $\pm$ 0.5 dB      |
| Subsonic Filter                                                                    | PHONO (MC / MM) / PHONO BAL (MC / MM)                   | 15 Hz, -3 dB      |
| Power Consumption                                                                  | 60 W                                                    |                   |
| Standby Power Consumption                                                          | Off mode: 0.1 W, Standby mode: 0.2 W                    |                   |
| Dimension (W×H×D)                                                                  | 435 x 142 x 451 mm                                      |                   |
| Weight                                                                             | 19.1 kg                                                 |                   |
| Accessories                                                                        | Remote control, Power cord                              |                   |

Flagship HiFi 5000 Series

# M-5000

Power Amplifier





## New dimensions in sound reproduction Floating and Balanced power amplifier

Searching for a fresh and innovative new standard in HiFi amplifiers, Yamaha developed its patented Floating and Balanced technology, the third amplification method we've developed in our quests. The M-5000 power amplifier takes Floating and Balanced technology and expands the merits to separate component configuration, refining it with ultimately simple circuitry to deliver the ultimate sound quality — and reproducing the true emotional impact in music and a dimension of unshakably accurate sound which has never been achieved before.

Ensuring thorough ground reinforcement and low impedance, and detailed refinement of the chassis based on our long, comprehensive experience, we've attained remarkable drivability that delivers outstanding sound in all types of low-impedance speakers.

However, our foremost pursuits — those we've obsessed over for many years — were integrity and accuracy in reproduction, and a truly musical bass. The advent of this impressive power amplifier will open up new realms for both.



## Floating and Balanced power amplifier

The Floating and Balanced power amplifier is the culmination of Yamaha's quest to create the ideal 21st century HiFi audio amplifier. This system is completely different from pure complementary circuit design, which has been the mainstream of HiFi amplifiers since the 1970s. This Yamaha original patented technology uses output elements of the same polarity on the plus and minus sides of the output stage, and completely separates the NFB (Negative Feedback) circuit and power supply into a total of four plus and minus sides of the left and right channels — resulting in thoroughly symmetric push-pull operation of the output stage. Completely floating the entire power amplifier circuit from the electrical ground eliminates any negative impact of minute voltage fluctuations (which had previously been overlooked) or ground noise. Moreover, this system simplifies the signal path, since the number of parts required for the circuitry for each channel is reduced, delivering a fresher and more lively sound. The M-5000 also realises improved low-impedance drive capability by using MOSFET output elements in parallel, a technology proven in the A-S3000 pre-main amplifier.

## Rigid streamlined construction

Rigid streamlined construction means that the entire chassis has a dual inner/outer structure, and features an original structure housing the three blocks — the two power amplifier units (left and right) and the power supply unit — which are supported by respective independent base frames. A three-dimensional base frame (inner chassis) consisting of five copper-plated steel sheets (of 2 mm and 1.6 mm) forms a strong skeleton. Moreover, by adopting a design in which the power supply and the power amplifier sections are indirectly mounted on the outer chassis, we have attained omnidirectional blocking of all unnecessary vibration. In addition, by effectively utilising the underfloor space between the inner chassis and the outer chassis of this structure for wiring, it enables ideally equal, shortest-distance transmission, from the power transformer to the power amplifier, and from the power amplifier to the speaker output terminal, of both the power supply and the audio signal. In addition, we worked jointly with specialty capacitor makers to develop the block-capacitors for the power supply and enhance the contact points between the aluminum foil affecting the internal impedance and the wiring tabs, and made sure that all of the main wiring of the large current path employs screw connections using specially made brass screws and brass lugs. In all we continued our relentless, meticulous effort to achieve extremely low impedance at the power source and throughout.

## Mechanical Grounding concept

Power amplifiers are, of course, heavy — and contain a large number of massive components and parts. As such, countermeasures to suppress vibration are among the most crucial factors affecting the sound. One way we have achieved this is through the rigid streamlined construction mentioned above. However, we needed an additional breakthrough to deliver exceptionally realistic bass and an exhilaratingly open sound at even high volume. The result was a Mechanical Grounding concept that we have applied to the massive and heavy parts subject to vibration, such as power transformers and block-capacitors. Basing design considerations on maintaining perfect left/right weight balance as well as the selection of the chassis mechanism and specific mounting positions, methods for securing the components were examined comprehensively, considering both optimum sound and mechanical grounding. Adding the final touches of newly developed feet of cut brass (patents pending) that provide both pinpoint support and protection, we have attained an expressive, expansive sound with richly powerful bass. We've achieved it also through the indispensable factor of strict quality control that ensures each and every screw is given proper tightening torque. In other words, all production processes — from the development team to the manufacturing division — aim at optimum sound, much like that of crafting musical instruments.

## Massive toroidal transformer for awesome sound

For the power transformer, we selected a toroidal transformer with a capacity of 1200 VA that boasts less flux leakage and has excellent power conversion efficiency and regulation. Direct drawing of the internal winding and direct connection of the circuit with a brass lug terminal ensure thorough power supply with no signal loss and low impedance. We also interposed a carefully selected brass base plate of 3 mm between the bottom of the transformer and the inner chassis, enabling overwhelming power and strength in the bass and a vast, expansive sound field.

## Stylish design and appearance exude an unparalleled sense of accuracy and authority

Featuring elegant, high-precision level meters (switchable between VU and peak display) illuminated warmly with a dimmed centre, as well as piano-finish wood side panels, the exterior appearance of the M-5000 radiates Yamaha quality. It emanates a sense of accuracy and authority with simple, basic elements — as befits its

status as the flagship power amplifier. The front and top panels (9 mm and 6 mm thickness, respectively) are both cut from solid aluminium, and the top panel in particular has been designed with the care of a musical instrument maker, featuring a heat sink with a 5-line musical staff motif, in addition to its high rigidity and heat dissipation efficiency. The elegant rectangular meter window is comprised of crystal glass, 8 mm thick, and taper cut at the upper and lower ends to form a seamless pair with the panel, and is designed so that you can enjoy the musical dynamics visually as well. As with its series sibling the C-5000 pre-amplifier, the M-5000 has newly designed switches and controls possessing luxurious tactile response.



[1] Innovative chassis with rigid streamlined construction and Mechanical Grounding, which is applied to massive and heavy parts subject to vibration, such as power transformers and block-capacitors. [2] Newly developed feet of cut brass employ a screw-in structure with separate upper and lower sections that incorporate a spike at contact point, provide both pinpoint support and protection. [3] Massive toroidal power transformer with combined left/right capacity of 1200 VA maximises the overwhelming power and strength of the low-frequency sound.

**Other functions and features**

- Specially designed speaker terminals cut from solid brass.
- Balanced audio input terminals with phase inverters.
- Bridge connection capability for use as a monaural amplifier.
- Trigger terminals allows power switch sync with pre-amplifier, etc.
- Auto power standby function turns off power when not in use.



Silver/Piano Black



Black/Piano Black

Power Amplifier **M-5000**

Specifications

|                                                                           |                                                                 |                                                       |
|---------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------|
| Rated Output Power                                                        | 8 $\Omega$ , 20 Hz-20 kHz 0.07 % THD, 2-ch driven               | 100 W + 100 W                                         |
|                                                                           | 4 $\Omega$ , 20 Hz-20 kHz 0.07 % THD, 2-ch driven               | 200 W + 200 W                                         |
|                                                                           | 8 $\Omega$ , 20 Hz-20 kHz 0.07 % THD, Monaural driven           | 400 W                                                 |
| Dynamic Power Per Channel (IHF)                                           | 8 / 6 / 4 / 2 $\Omega$                                          | 125W + 125W / 170W + 170W / 250W + 250W / 500W + 500W |
| Dynamic Headroom                                                          | 8 $\Omega$                                                      | 0.97 dB                                               |
| Maximum Effective Output Power (JEITA)                                    | 8 $\Omega$ , 1 kHz 10 % THD                                     | 135 W + 135 W                                         |
|                                                                           | 4 $\Omega$ , 1 kHz 10 % THD                                     | 270 W + 270 W                                         |
| Input Terminal                                                            | RCA: 1, BAL: 1                                                  |                                                       |
| Output Terminal                                                           | Speaker (A / B)                                                 |                                                       |
| Other Terminal                                                            | TRIGGER IN: 1, TRIGGER OUT: 1                                   |                                                       |
| MODE Selector                                                             | NORMAL, DUAL MONO / BRIDGE                                      |                                                       |
| Power Bandwidth                                                           | 8 $\Omega$ , 0.1 % THD, 45 W                                    | 10 Hz-50 kHz                                          |
| Damping Factor                                                            | 8 $\Omega$ , 1 kHz                                              | 300 or higher                                         |
| Input Sensitivity / Input Impedance (1 kHz 100 W / 8 $\Omega$ conversion) | BAL                                                             | 2.0 Vrms / 47 k $\Omega$                              |
|                                                                           | LINE                                                            | 1.0 Vrms / 47 k $\Omega$                              |
| Maximum Input Signal Voltage                                              | BAL (1 kHz, 0.5 % THD)                                          | 2.20 Vrms                                             |
|                                                                           | LINE (1kHz, 0.5 % THD)                                          | 1.10 Vrms                                             |
| Total Harmonic Distortion                                                 | 2-ch driven: LINE to SPEAKERS (20 Hz-20 kHz 50 W / 8 $\Omega$ ) | 0.035 %                                               |

|                                                      |                                                                      |                                   |
|------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------|
| Total Harmonic Distortion                            | 2-ch driven: BAL to SPEAKERS (20 Hz-20 kHz 50 W / 8 $\Omega$ )       | 0.035 %                           |
|                                                      | Monaural driven: LINE to SPEAKERS (20 Hz-20 kHz 200 W / 8 $\Omega$ ) | 0.05 %                            |
|                                                      | Monaural driven: BAL to SPEAKERS (20 Hz-20 kHz 200 W / 8 $\Omega$ )  | 0.05 %                            |
| Signal-to-Noise Ratio                                | IHF-A network, Input 1 k $\Omega$ shorted                            | 110 dB                            |
| Residual Noise                                       | BAL (IHF-A network)                                                  | 40 $\mu$ Vrms                     |
|                                                      | LINE (IHF-A network)                                                 | 50 $\mu$ Vrms                     |
| Channel Separation (Input 1.0 k $\Omega$ terminated) | 1 kHz / 10 kHz                                                       | 90 dB or higher / 70 dB or higher |
| Power Consumption                                    | 400 W                                                                |                                   |
| Standby Power Consumption                            | Off Mode: 0.1 W, Standby Mode: 0.2 W                                 |                                   |
| Dimension (W×H×D)                                    | 435 x 180 x 464 mm                                                   |                                   |
| Weight                                               | 26.9 kg                                                              |                                   |
| Accessories                                          | Power cord, System cable                                             |                                   |

Flagship HiFi 5000 Series

# NS-5000 Speaker







## **Completely faithful to the artist's true intent Yamaha's new standard in HiFi sound**

The NS-5000 is the world's first 3-way speaker in which all diaphragms are made from ZYLON® — an ultra-strong synthetic fiber with exceptionally high acoustic velocity comparable to that of beryllium. The result is sonic reproduction of extraordinarily wide frequency range and yet remarkably flat throughout the spectrum — delivering unified tonal response with no colouration.

We thoroughly analysed all of the acoustic qualities we felt should be in a true flagship speaker, and brought heretofore unknown technologies and materials together for the first time to create a completely new audio standard.

Combined with the other Flagship Series models — the GT-5000 turntable, C-5000 pre-amplifier and M-5000 power amplifier, all created with this speaker in mind — Yamaha, the world-class musical instrument maker, 'plays' the sound from start to finish, input to output. We've reached the pinnacle of HiFi audio reproduction and now proudly deliver it to all music lovers.



### 30 cm 3-way bookshelf type continues the tradition of the NS-1000M

After researching the possibilities of various enclosure shapes, we finally settled on a bookshelf style that harkens back to the tradition of the NS-1000M (released in 1974) — representing our experience in monitor speakers.

The NS-5000 features a bass reflex enclosure with an internal volume of 65 liters — the minimum possible size for 30 cm 3-way configuration — and has been securely assembled by traditional methods. We've ensured minimal time lag from the six enclosure sides through the action of reinforcing bars based on FEM analysis, and effectively reduced “box ringing” to a level undetectable by the human ear. We thoroughly analysed how the unit's sound is transmitted to the six sides and how it is re-radiated and, using the latest results with precise simulation, we perfectly synchronised the timing, offering a listener an unprecedentedly immersive audio experience.

### 100% ZYLON® 8 cm soft-dome midrange — the JA-08B5

Among dome speakers, this JA-08B5 is the world's largest caliber 8 cm soft-dome midrange, and exemplifies the advanced NS-5000 concept — that of tapping the full potential of 100% ZYLON® diaphragm composition. Since it is a dome type, it can be driven without loss, delivering a luxuriously expansive sound field with wide directivity. Thanks to our proprietary special molding technology that molds 100% ZYLON® seamlessly from the diaphragm to the surround (edge), it demonstrates the outstanding acoustic velocity and realistic acoustic density of the material.

### 100% ZYLON® 3 cm soft dome tweeter — the JA-05K6

Just as with the 8 cm mid-range, the JA-05K6 3 cm soft-dome tweeter is made of 100% ZYLON®, molded seamlessly from the diaphragm to the surround (edge). Since the woven material for the diaphragm was specially developed for the tweeter, differing from the mid-range in the number of threads and their thickness for the warp and woof, and since the yoke of the magnetic circuit features fully cutting-processed parts (avoiding stress deformities caused by machine pressing) and achieve higher magnetic performance, the system delivers smooth response up to the high-end frequencies, as well as superior S/N performance, high resolution, and increased audio information. The voice coil consists of a square copper wire with sectional shape identical to that of the mid-range and woofer, ensuring maximum efficiency of electro-acoustic conversion, and even finer, more accurate reproduction of audio information through high driver power — as well as achieving reduced transmission loss and lighter weight by directly linking the voice coil to the terminal board instead of another relay wire.

### 100% ZYLON® 30 cm concave cone woofer — the JA-3132

The JA-3132 30 cm woofer features a 100% ZYLON® cone without a centre cap. In order to maintain optimum performance and continuity with the higher low-pass crossover frequency of 750 Hz required by the 8 cm midrange, it offers an unusually wide frequency range for a 30 cm woofer. Furthermore, the specially constructed aluminium die-cast frame was developed based on rigorous FEM analysis

in an enclosure-mounted state, achieving high rigidity while minimising air resistance at the rear.

### R.S. (Resonance Suppression) Chambers cancel unwanted resonance in the mid and high ranges with two resonance tubes

In order to suppress unnecessary acoustic radiation from the rear surfaces of the tweeter and the midrange, a variety of practical approaches have been taken. However, almost all conventional methods degrade the original, natural sound of the music since they require a large amount of sound-absorbing materials to eliminate the strong resonance inside the chamber. Therefore, instead of absorbing the peaks of the resonance generated in the main chamber of the central part behind the NS-5000's midrange and tweeter, our patented R.S. (Resonance Suppression) technology uses two resonance tubes of different lengths to cancel the resonance. This restores the original flat frequency characteristics of each unit and accurately reproduces delicate nuances in the music as well.

### Acoustic Absorber revives the original presence of the music

Applying expertise gained in developing acoustic “articulatory” panels, we developed a patented Acoustic Absorber that removes standing waves of the target frequency with a special J-shaped resonance tube. Using a simple rectangular parallel-pipe shaped enclosure, we unified standing waves at specific frequencies, targeted them for cancellation with pin-point accuracy — eliminating the need for most of the sound-absorbing material and successfully reviving the



[1] The world's first 100% ZYLON® speaker, the JA-08B5 8 cm soft-dome midrange (rear), with seamlessly molded diaphragm and surround, and the 100% ZYLON® JA-05K6 3 cm soft-dome tweeter (front). [2] The 100% ZYLON® JA-3132 30 cm diameter concave woofer, designed for exceptionally wide frequency range — providing flawless continuity in tone from the woofer to the midrange and to the tweeter, and delivering optimum performance at the low pass frequency of 750Hz. [3] Newly developed R.S. Chamber negates the resonance created inside the centre of the main chamber, featuring two resonance tubes of different left/right lengths installed on the back surfaces of the mid-range and tweeter. [4] Newly developed Acoustic Absorber installed inside the enclosure. [5] The sturdy cabinet is assembled using a 3-way mitered joint construction technique and other Yamaha traditional wood-crafting methods. [6] Brass-cut single speaker terminal.

essential presence of the music. Furthermore, compared with conventional enclosures filled with sound-absorbing material, the high frequency energy of the woofer remains intact, further enhancing continuity with the midrange.

**Enclosure uses laminated plywood made from carefully selected Japanese white birch from Hokkaido**

Considering the outstanding mechanical strength and acoustic properties of the wood, we selected laminated plywood made of white birch from Hokkaido for the enclosure, painstakingly removing every knot and hole from the lumber to ensure superior quality and durability. The front baffle is 29.5 mm thick and the other five sides of the enclosure are all 20 mm (excluding paint primer and coating layers).

**Improved signal-to-noise performance, and the satisfying joy of ownership. Glossy black finish identical to that of a grand piano**

All six external surfaces of the enclosure have a glossy black piano finish created with the same dedicated primer, paint, and polishing processes used on Yamaha grand pianos. The uniform hardness of the coating further enhances the rigidity of the entire enclosure, and suppresses fine vibrations, contributing to the bright sound and the outstanding signal-to-noise performance.

**Crossover network circuitry with positive phase drive and single wiring for all drivers – for natural, enjoyable audio**

In the crossover network we connected all drivers in positive phase with single wiring to deliver a natural, pleasing listening experience, and adopted a double-sided circuit board with extra-thick copper traces of 140 μ in thickness to thoroughly achieve the shortest possible signal path. Moreover, in order to effectively eliminate signal loss, we used only the highest quality handpicked parts for the network, such as the MCap SUPREME EVO audio capacitor, made by Mundorf of Germany and renowned as the pinnacle of audio-use capacitors, Mundorf’s MResist SUPREME attenuator, and a woofer coil that weighs up to 1.6 kg.



Speaker **NS-5000**

| Specifications         |                                                                                                       |
|------------------------|-------------------------------------------------------------------------------------------------------|
| Type                   | 3-way bookshelf, bass-reflex system                                                                   |
| Frequency Response     | 26 Hz-40 kHz (-10 dB), -100 kHz (-30 dB)                                                              |
| Normal Input power     | 200 W                                                                                                 |
| Maximum input power    | 600 W                                                                                                 |
| Sensitivity            | 88 dB / 2.83V, 1m                                                                                     |
| Nominal Impedance      | 6 Ω (minimum 3.5 Ω)                                                                                   |
| Diaphragm              | ZYLON®                                                                                                |
| Voice Coil             | Square Copper Wire                                                                                    |
| Tweeter                | 3 cm, ferrite, non-magnetically shielded                                                              |
| Midrange               | 8 cm, ferrite, non-magnetically shielded                                                              |
| Woofer                 | 30 cm, ferrite, non-magnetically shielded                                                             |
| Crossover frequencies  | 750 Hz / 4.5 kHz                                                                                      |
| Dimensions (W × H × D) | 395 × 690 × 381 mm<br>395 × 690 × 422 mm (including speaker terminals)                                |
| Weight                 | 35.0 kg                                                                                               |
| Accessories            | Separate protectors (for tweeter, midrange and woofer), port plug<br>*Speaker cables are not included |



Speaker Stand **SPS-5000**

| Specifications         |                                                                                  |
|------------------------|----------------------------------------------------------------------------------|
| Material               | Aluminium (four legs are solid aluminium);<br>Steel (top plate, spikes, spacers) |
| Dimensions (W × H × D) | 393 × 304 × 376 mm (with spikes)<br>393 × 285 × 376 mm (without spikes)          |
| Weight                 | 8.0 kg                                                                           |
| Accessories            | Speaker fixing screws                                                            |

This stand strongly supports the weight of the NS-5000 and features a special design that does not radiate unnecessary sound. The four legs are arranged at an angle of 42 degrees with respect to the baffle surface, and the stand height is set to 304 mm so that the height of a seated listener’s ears is the same as the height of the tweeter.

\* Spikes included.