Air Force

Series

Reference Analog Turntables with Air Technology

TechDAS

Philosophy

In pursuit of the ideal analog reproduction

TechDAS Air Force Series analog turntables have been developed under the supervision of Hideaki Nishikawa, chief designer of Micro Seiki SX-8000, a legendary turntable in the heyday of vinyl.

Since the introduction of the Air Force One in 2011, this series has obtained overwhelming support and praise for its design philosophy to attain the ultimate in analog reproduction as well as its high quality Japanese build. Our Air Force Series turntables are now being used world-wide by analog audio enthusiasts.

Across the world TechDAS has been established as a renowned high end audio brand and is now represented in 39 countries by its partners.

The Air Force turntables are highly acclaimed for their innovative design ideas, unique construction and core “air” technologies, all developed to accomplish our goal of realizing ideal analog reproduction.

To attain the ideal analog reproduction we tried to approach it in the same way a lacquer disc is produced.

The process of manufacturing an LP record is critical to the sound. When the lathe carves a groove into a lacquer disc, the disc is held down onto the platter using a vacuum. This reduces wow and flutter, any degradation of sound quality, and also increases the signal to noise ratio, thus avoiding anything that may have a negative effect when creating a very high quality master.

Then the engineer lowers the pickup into the groove in the lacquer disc and listens to ensure the groove is properly cut. This lacquer will be the master to produce the vinyl records.

To re-enact the same status in record playback, all the models of the Air Force series feature a vacuum LP hold-down.

Our goal for the Air Force Series is to precisely extract and reproduce all information embedded in the groove, with nothing added or sacrificed.

Technology

To achieve the ultimate in analog production using “air” technologies, replicating the energy contained in real music

Air bearing to float the platter

The key to the performance of a turntable is to achieve a precise, quiet and stable rotation. To attain such a rotation, sufficient inertia is required. Therefore it is necessary for any turntable platter to contain enough mass. This has thus been incorporated into all the Air Force series turntables platters.

Conversely, any conventional bearing unit would be subject to huge loads because of such a massive platter and even the highest precision bearing would become impaired over time, which would then lead to a compromised precision movement, creating friction and an unstable rotation.

TechDAS Air Force Series therefore employ their own unique air bearing method, which is a departure from conventional bearing systems. The platter sits on a polished glass flat surface, making it a unique system. The platter rests absolutely still on the glass surface. Once air is injected from the Air Pump, the platter will immediately float to a height of 0.03mm and be ready for extremely quiet rotation – all because of this unique air bearing. Furthermore, the weight of the platter will not place any load on the bearing. This ensures the initial performance will continue maintenance free for many years without any friction sounds or abrasion.

Vacuum LP hold-down

If a record is warped and the tonearm rides up and down as the record spins, even the most precise and smooth rotation of a platter cannot attain a high precision signal pickup. Not only can this put a strain on the cartridge but also the up and down movements of the stylus will generate unwanted subsonics that may compromise fidelity in various aspects.

To avoid this, the TechDAS Air Force Series features our vacuum LP hold-down system.

Glass base that accommodates and floats the platter.
At the center of the glass disk is the center shaft that connects with the platter.
While the platter is floating, the center shaft floats in unison, there is no mechanical contact.
All the models of the Air Force Series share this air bearing system
- the photo shows the Air Force One.

You only have to set a record on the platter and press the suction button, and the record will be firmly and immediately held down, flattened onto the platter while the platter is floating.

As well as eliminating unwanted resonance from the record, this hold-down function will dramatically elevate the tracing performance of a cartridge, especially in low frequency range, as the record – combined with the platter - will have enough mass to form a stable platform for the stylus.

Unparalleled insulation from external vibration with “air” technologies

The heavy weight chassis and platter sit on the feet which incorporate “air” technologies developed by TechDAS. The feet are optimally designed for each model to provide outstanding vibration insulation by applying a wide range of air technologies.

A unique and highly sophisticated system to maintain the rated speeds without using servo for the best sound

- The Air Force Series has two 150W DC power amplifiers to drive its synchronous motor. By using two power amplifiers, it supplies electric current to drive the motor with an accurate phase difference.
- The dual rotational speeds of the motor are controlled by having the oscillator and a digital direct synthesizer control the frequencies of the current.
- At the same time, the rotational speed of the platter is constantly monitored with a non contacting sensor incorporated in the glass base.
- When it is turned on, the microprocessor demands an increase in the output power of the amplifiers and also has torque increase. When the sensor finds that it has reached a correct speed, it lowers the output power and the motor torque is reduced to a minimum.
- At the same time the frequencies of the digital direct synthesizer are fixed, the motor rotation is locked and thus enters the rated speed mode.
- During operation at a rated speed it should be noted that no servo control is engaged, yet the sensor will always monitor the rotational speed for perfect accuracy of operation.
- If the sensor detects a change in the platter rotation, the microprocessor will convey the difference from the rated speed to the digital direct synthesizer which controls the motor speed. Once accurate rotation is resumed, it will again enter the rated rotation mode.

Air Force Two

Premium

The Air Force Two Premium consists of two units: the Main Unit (including outboard motor) and the Pump / Power Supply / Air Condenser Unit.

Evolutionary improvements from the standard Air Force Two with a new gunmetal platter

Our aim in developing the Air Force Two Premium was to achieve almost the same level of musicality as our flagship the Air Force One. To this end we looked at the material of the main platter. The Air Force One uses a stainless steel main platter while the standard Air Force Two uses a platter made of aluminum. Since the beginning of the standard Air Force Two, it has been found that the difference in material of the platter is even more critical for tonality than the difference in weight. This is why we began testing new materials.

As a result of various experiments, gunmetal was chosen for the platter of the Air Force Two Premium. This material is an alloy of copper and tin, and was often used in audio equipment in the heyday of analog audio. As gunmetal is relatively soft and tensile, a subtle glow is added to the sound while its heavy weight further increases the scale of the sound stage.

The platter for the Air Force Two Premium is precision cast and surface polished with a solid construction, unlike most conventional gunmetal platters that have a hollow construction. The result is a platter of huge mass, some 34 kg.

Pump / Power Supply / Air Condenser Unit
for the Air Force Two Premium

Specifications

■ Main Unit and Motor

Chassis:	Cast aluminum alloy (AC4C)
	Dark gray hammertone coating
	Weight: 33 kg
Platter:	Gunmetal
	Surface protection coating
	Weight: 33 kg
Total moment of inertia:	4,148 kg・cm^2
Drive System:	Belt-drive, polished and nonflexible polyurethane fiber belt
Motor:	AC synchronous motor
	Rotation speed controlled by DC amplifiers
Rotation speed:	33.3 rpm / 45 rpm
	Precise speed adjustment function.
Wow & Flutter:	below 0.03 %
Dimension:	684 (W) x 176 (H) x 450 (D) mm
Minimum Dimensions for setting up:	684 (W) x 460 (D) mm
Total Weight:	71 kg

■ Pump / Power Supply / Air Condenser Unit

Power consumption:	50 W
Dimension:	430 (W) x 175 (H) x 370 (D) mm
Weight:	14.5 kg
Minimum depth for setting up:	430 (D) mm

■ Included accessories

- Tonearm base x 1 (drilled for specified tonearm)
  An extra cost may be required according to the tonearm.
- Platter Cover x 1
- Cables, Air hoses, Platter setup tools, Users manuals

■ Optional Items & Accessories

- Extra tonearm base
- Disc Stabilizer
- Exclusive rack manufactured by Artesania Audio

Air Force III

Premium

The Air Force III Premium consists of two units: the Main Unit (including outboard motor) and the Pump / Power Supply / Air Condenser Unit.

New premium model with improvements refining the sound, based on the compact Air Force III

Building on the success of a hugely popular model - the Air Force III, a turntable which has a compact sized chassis and yet delivers a high performance and flexibility of installation. The new Air Force III Premium has integrated further new concepts for an even higher quality while retaining the same compact size.

The weight and sound of an analog turntable have a strong correlation. In order to make a heavier turntable while keeping the chassis size to the original Air Force III, our team chose gunmetal for the platter of this Premium model. This material is an alloy of copper and tin and was often used for audio equipment in the heyday of analog audio.

The platter for the Air Force III Premium is precision cast and surface polished with a solid structure, unlike most conventional gunmetal platters that have a hollow construction. This results in a heavy platter of 29 kg, more than three times heavier than the aluminum platter used in the original III which weighs in at 9 kg. With this new gunmetal platter, the total weight of the main unit is more than 50 kg.

As a result of the increase in total weight, an extended frequency range is delivered and dynamics are noticeably enhanced. At the same time it has achieved a significantly lower noise floor thanks to the use of our air bearing. Furthermore, as gunmetal is relatively a soft and tensile metal, you will notice that a subtle glow is added to the sound.

The chassis is made of solid aluminum just like the original model. The black anodized and highly polished surface contrasts very nicely with the gold colored gunmetal platter.

Pump / Power Supply / Air Condenser Unit
for the Air Force III Premium

Specifications

■ Main Unit and Motor	
Chassis:	Precision machined aluminum alloy (A5056)
	Black anodized and high gloss polished
	Weight: 21 kg
Platter:	Gunmetal
	Surface protection coating
	Weight: 29 kg
Total moment of inertia:	3,506 kg•cm^2
Drive System:	Belt-drive, polished and nonflexible polyurethane fiber belt
Motor:	AC synchronous motor
	Rotation speed controlled by DC amplifiers
Rotation speed:	33.3 rpm / 45 rpm
	Precise speed adjustment function.
Wow & Flutter:	below 0.03 %
Dimension:	473 (W) x 170 (H) x 363 (D) mm
Minimum Dimensions for setting up:	564 (W) x 413 (D) mm
Total Weight:	55 kg
■ Pump / Power Supply / Air Condenser Unit	
Power consumption:	50 W
Dimension:	430 (W) x 175 (H) x 370 (D) mm
Weight:	14 kg
Minimum depth for setting up:	430 (D) mm
■ Included Accessories	
- Tonearm base x 1 (drilled for specified tonearm)	
An extra cost may be required according to the tonearm.	
- Platter Cover x 1	
- Cables, Air hoses, Platter setup tools, Users manuals	
■ Optional Items & Accessories	
- Extra tonearm base	
- Disc Stabilizer	

Air Force V

The Air Force V consists of two units: the Main Unit (including built in motor) and the Pump / Power Supply / Air Condenser Unit.

Our most affordable model that preserves the “Air Force” technologies

The Air Force turntables feature unique and refined “air” technologies which include our air bearing that allows the platter to flow on a very thin layer of air. This mechanically isolates the rotating platter and the record from any vibration. Additionally our vacuum hold-down system clamps an LP onto the platter itself.

With these technologies the Air Force turntables have distinguished themselves from conventional turntables in terms of sound and performance.

While most turntables on the market deliver a similar sound from that of the old analog age, in our opinion, analog sound should not remain static, much the same as we have witnessed decades of advancements in the digital audio sector. We at TechDAS believe that the analog sound we produce has gone beyond previous levels of signal to noise ratios and is more inline with the signal to noise ratios achieved in modern digital audio. And TechDAS “Air Force” technologies bring about the ultimate state-of-the-art analog sound.

The Air Force V has been developed to deliver another dimension of analog sound to more analog enthusiasts at a more affordable price. This model has a similar sized compact chassis as the Air Force III, and by designing an elaborate drive system successfully reduces any motor vibrations. Thus we have achieved an integration of the motor in the plinth. The result is an even more compact turntable without a separate motor unit that can be fitted with up to four tonearms.

Pump / Power Supply / Air Condenser Unit
for the Air Force V

Specifications

■ Main Unit and Motor

Chassis:	Aluminum(A5052)/Super drumlin (A7075) assembly
	Satin silver anodized finish
	Weight: 11 kg
Platter (main and sub platters):	Precision machined aluminum (A5056)
	Black anodized and high gloss polished
	Weight: 6.7 kg
Total moment of inertia:	734 kg・cm^2
Drive System:	Sub-platter belt drive
Motor:	AC synchronous motor built in the main chassis
Rotation speed:	33.3 rpm / 45 rpm
Wow & Flutter:	below 0.03 %
Dimension:	312 (W) x 168 (H) x 368 (D) mm
Minimum Dimensions for setting up:	413 (W) x 418 (D) mm
Total Weight:	18 kg

■ Pump / Power Supply / Air Condenser Unit

Power consumption:	50 W
Dimension:	350 (W) x 160 (H) x 270 (D) mm
Weight:	9 kg
Minimum depth for setting up:	330 (D) mm

■ Included Accessories

- Tonearm base x 1 (drilled for specified tonearm)
  An extra cost may be required according to the tonearm.
- Platter Cover x 1
- Cables, Air hoses, Platter setup tools, Users manuals

■ Optional Items & Accessories

- Extra tonearm base
- Disc Stabilizer

Air Force One Premium

Top-of-the-line model, evolved from the Air Force One, with new integrated concepts and technologies refining the sound, user-friendliness and external finish.

- Tapered spindle to absorb any swaying of an off center LP.
- Optimal air suspension adjustment through automatic and continuous monitoring of air suspension level and the air charger unit.
- Double capacity air condenser allows even smoother air flow and more dynamic sound.
- Titanium Upper Platter is included as standard equipment. Alternatively, Super Duralumin (A7075) Upper Platter is selectable.
- TechDAS Disc Stabilizer comes with the turntable as a standard item.

Air Force One

TechDAS's very first model featuring cutting edge “air” technologies, a groundbreaking evolution in analog reproduction.

- To provide perfect isolation from external vibrations, it features three major “air” technologies: air bearing for the platter to float, vacuum hold down of an LP and air suspension feet.
- Exquisitely finished, the main chassis has a “sandwich” construction combining two different aluminum alloys that insulate specific resonance frequencies.
- Complex platter system consisting of the main platter made of non-magnetic stainless steel weighing 19 kg and the upper platter of Super Duralumin weighing 4 kg.

Air Force Two

A standard model which inherits all the core features of the reference model, Air Force One

- The precision cast aluminum chassis consisting of two separate pieces weighs 33 kg, which provides a firm platform for energetic music reproduction.
- Heavy weight platter (10 kg) CNC machined from solid aluminum: offers sufficient inertia to enable extremely quiet and smooth rotation along with the air bearing system.
- Newly developed hybrid suspension system for the four feet, each consisting of the air chamber and the rubber diaphragm enclosing a spring and oil within. The result is a great amount of vibration insulation.

Air Force III

A compact model with a minimal sized chassis that can be fitted with up to four tonearms, allowing for maximum flexibility for setup

- CNC machined from solid aluminum, the chassis weighs 21 kg, offering sufficient mass while maintaining a compact body.
- It can be fitted with up to four tonearms, offering a significantly high flexibility in installation.
- Excellent suspension provided through pin-point supports and air dampers, achieving an excellent howling margin.

The Air Force turntables do not come with tonearms, cartridges or damping tables.

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Designed and manufactured by TechDAS
TechDAS is the brand of genuine highend audio produced by STELLA Inc.
All TechDAS products are MADE IN JAPAN