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DENON

DIRECT DRIVE TURNTABLE
DENON QUARTZ

DP-100M/80/75/72L/62L/52F/51F
DP-45F/35F/30LII/11F



The Philosophy behind DENON's Turntable Designs

To function as an essential part of a true high fidelity reproduction system, a turntable must maintain sufficiently stable rotational performance in spite of load changes taking place during the course of play.

To accomplish this, DENON's turntables use as the drive motor, the core of the rotation system, a highly sophisticated AC servo motor.

This servo motor is virtually free from "cogging" and thus delivers a high signal-to-noise ratio in addition to its highly precise rotation.

The performance of any servo motor depends greatly upon the speed and precision of its detection system. DENON's highly responsive servo motor is actually a magnetic record detecting system in which a magnetic head (much like that found on tape decks) is used to detect 1000 pulse signals which have been precisely recorded on the inner circumference of the turntable platter. The combination of this system with DENON's Quartz Speed Control offers extremely low wow and flutter even in the presence of warped records and large variable loads.

To determine the ever decreasing amounts of wow and flutter, DENON developed a unique Pulse Wheel Measurement technique. With this method, even small residual amounts of wow and flutter can be measured, so that further improvement of the performance of DENON DP Series turntables can be accomplished. All DENON turntable mats have been improved to prevent the disc from vibrating. Recent developments in recording technology, namely those in direct cutting and pressing, have made the appearance of high quality recording widespread.

DENON, after thoroughly researching the problem of tracing performance, has developed the electronic dynamic servo tracer tonearm design, working together with an extremely stiff and light straight tonearm, dramatic improvements in sound quality.

DENON is proud to introduce its unique "non-resonance concept" design.

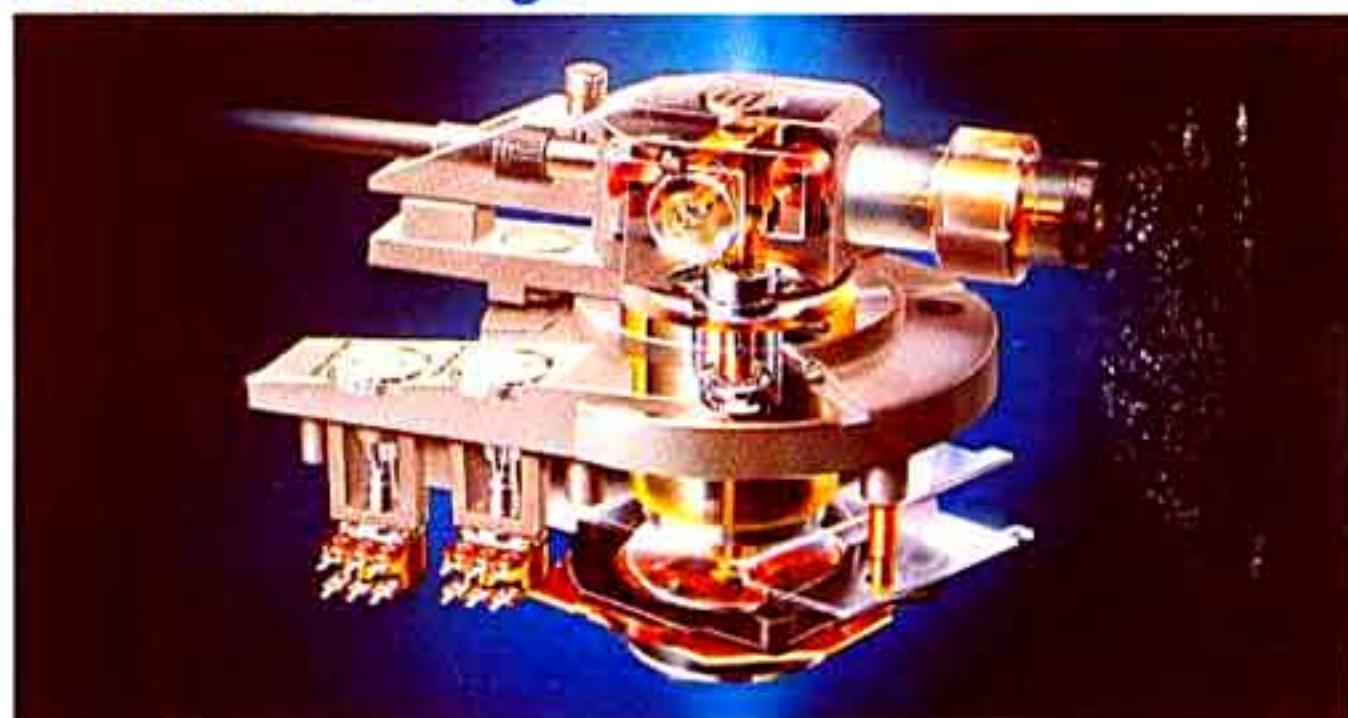
DENON's Innovations in High Performance Turntable Design

DENON's Dynamic Servo Tracer Turntable

Generally speaking, the occurrence of low frequency resonance in tonearm assemblies is inevitable. The point of this resonance is usually determined in conventional systems, as a function of both the compliance of the cartridge and the effective mass of the tonearm.

These bad effects from low frequency resonance are minimized by the adoption of electronic tonearm damping in both the horizontal and vertical, planes.

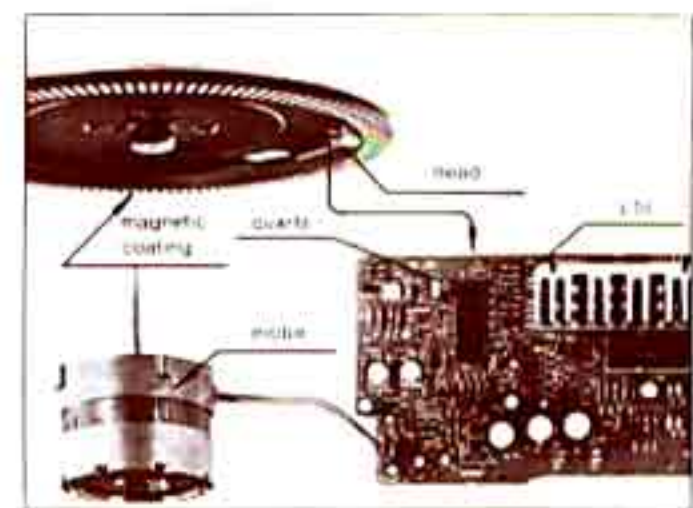
The Dynamic Servo Tracer Tonearm has been adopted to fully exploit the advantages of lightweight tonearm for improved tracing performance and dramatic decrease in intermodulation distortion, resulting in sharp, clear sound reproduction.



DENON's Magnetic Record Detection System

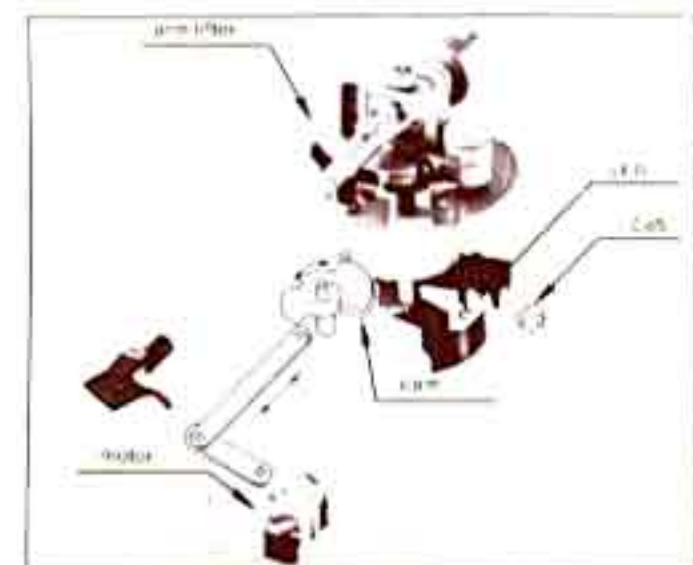
DENON's magnetic recording detection system employs a magnetic head to detect 1,000 pulse signals which have been precisely recorded on the inner circumference of the turntable platter (inside its rim). It is at this point that changes in rotational speed of the turntable are easiest to check, unlike conventional FG servo systems which employ a frequency generator (FG) directly connected to a motor for detection.

Its accuracy is more than 10 times higher than that of other systems, accounting for its excellent responsiveness and speed. Coupled with DENON's quartz lock (phase control based on quartz oscillation), the absolute highest level of rotational accuracy is achieved.



Fully-Automatic Completely Non-contact Electronically Controlled Tonearm

DENON firmly believes that fully-automatic operation should offer increased ease-of-use without sacrificing intrinsic performance. Strictly adhering to the principle of non-contact design, DENON engineers developed a fully-automatic electronically controlled tonearm. This non-contact electronically controlled servo tonearm is driven by a MC (moving coil) tape angular control motor.



Auto-lift Mechanism with Non-contact End-of-Play Sensor

DENON's auto-lift mechanism uses a non-contact optical detection system to sense the end of the record. This applies no load on the tonearm and thus has no influence on tonal quality. (The tonearm moves freely by hand.)

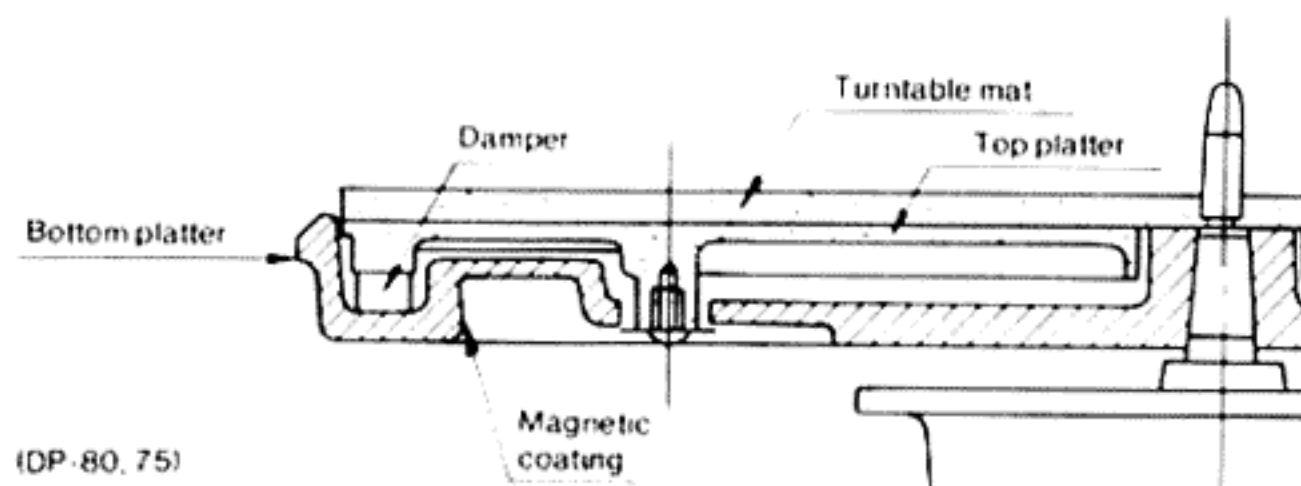
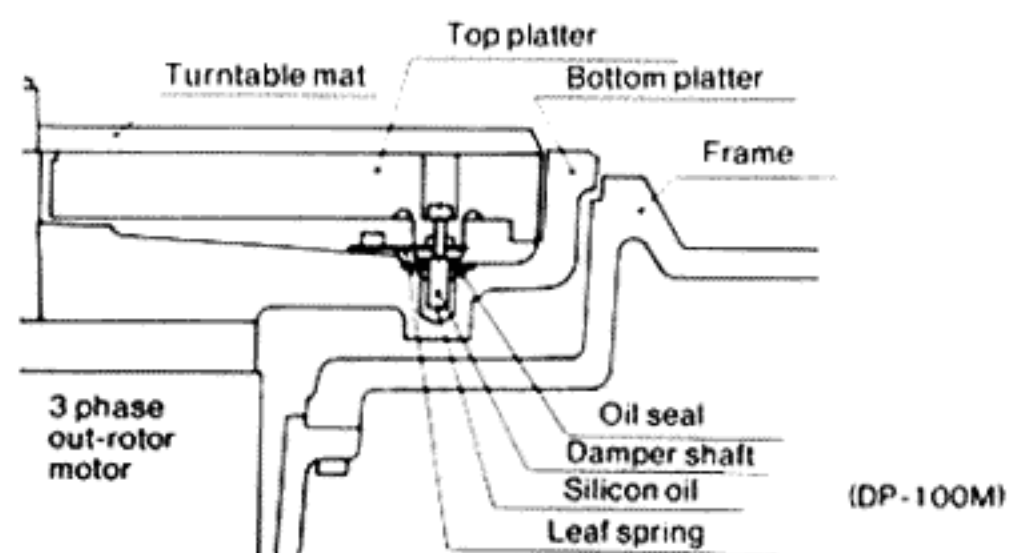
Newly Developed Split Platter Construction to Effectively Cut Off The "ACOUSTIC FEEDBACK", One of The Factors in Deterioration of The Sound Quality of The Turntable (DP-100M/80/75)

Once the platter resonates due to the sound pressure from the speakers, it becomes the echo to the signals cut to the record disc and impairs of the sound. One of the important factors to prevent the deterioration in the sound quality then is to provide the structure where "resonance" is difficult to occur. A design born from such idea, is this split platter construction turntable based on the totally new theory. The turntable platter consists of two structures; upper platter where the record disc is mounted on, and the lower platter fixed to the motor shaft. The two structures are connected by the spring and damper. That is, the upper part is isolated from the motor and cabinet in view of vibration, a kind of high-cut filter is formed by the mass of upper platter and the compliance of the spring.

Also the upper platter and the lower designed in such a way so that they rotate together in the direction around the spindle thus the wow and flutter due to the rotational lag does not occur.

As a result, even if the player comes under the influence of the surrounding vibration or the reproduced sound from the speakers, such vibration is cut off by the split platter construction before it is transmitted to the upper platter or the record disc.

In addition, the sound pressure which is directly transmitted from the speaker to the record disc or the upper platter is effectively absorbed to realize the high-quality record sound reproduction.



The Incomparable Performance And Reliability (DP-100M)

The crystallization of the high technology and vast experience are now available in model DP-100M professional equipments with a smooth out-rotor 3 phase AC servo motor for

disc cutting lathe, split platter construction with spring and oil damper mechanism.

Cartridges

DL-1000A Lightest Amorphous Boron Cantilever MC Cartridge

Frequency response 20 Hz—110 kHz
 Stylus force 0.8 ± 0.1 g
 Weight 6.0 g

DL-301 Light Weight High Tracking Performance MC Cartridge

Frequency response 20 Hz—60 kHz
 Stylus force 1.4 ± 0.2 g
 Weight 4.7 g

DL-103M Light Weight MC Cartridge

Frequency response 20 Hz—60 kHz
 Stylus force 1.4 ± 0.2 g
 Weight 4.8 g

DL-305 Light Weight Amorphous Boron Cantilever MC Cartridge

Frequency response 20 Hz—75 kHz
 Stylus force 1.2 ± 0.2 g
 Weight 5.8 g

DL-300 Light Weight MC Cartridge
DL-300/T

- DL-300/T includes wide band range transformer.

Frequency response 20 Hz—40 kHz
 Stylus force 1.8 ± 0.3 g
 Weight 4.2 g

DL-103D, DL-103S High Performance MC Cartridge

	DL-103D	DL-103S
Frequency response	20 Hz—65 kHz	20 Hz—60 kHz
Stylus force	1.5 ± 0.2 g	1.8 ± 0.3 g
Weight	7.5 g	7.8 g

DL-303 Lightest Vibration System MC Cartridge

Frequency response 20 Hz—70 kHz
 Stylus force 1.2 ± 0.2 g
 Weight 5.8 g

DL-207 Light Weight Amorphous Boron Cantilever MC Cartridge

Frequency response 20 Hz—60 kHz
 Stylus force 1.4 ± 0.2 g
 Weight 4.7 g

DL-103 High Performance MC Cartridge

Frequency response 20 Hz—45 kHz
 Stylus force 2.5 ± 0.3 g
 Weight 8.5 g

DP-100M DENON Quartz, Double PLL Servo with dynamic Servo Tracer Tonearm

- The top of the line in the DP series of high technology and vast experience with a wealth of know-how in professional equipments.
- Employing a smooth out-rotor 3-phase AC servo motor for disc cutting lathe and professional turntable, achieving high S/N 90 dB (DIN-B).
- A split platter construction, consisting of the upper and lower platters are connected by the spring and oil damper, perfectly eliminates the acoustic feedback.
- DENON dynamic servo tracer system controls low frequency resonance in the tonearm, thereby optimizing tracing performance of the widest range of top quality cartridge.
- Interchangeable universal S-shaped tonearm and light-weight straight tonearm and both included.
- DENON's newly developed tonearm float system prevents the degradation of tone quality.
- Newly designed spring insulators efficiently reduce vibration.



(without cartridge)

DP-80 DENON Quartz, DD Turntable with a split platter construction

- DENON's unique magnetic record detection high quality turntable featuring quartz phase locked loop control system.
- A split platter construction, consisting of the upper and lower platters are connected by the spring and rubber damper, eliminates the external vibration.
- Newly developed out-rotor 3-phase AC servo motor makes more of the merits of split platter construction turntable.
- 3-phase AC servo motor and magnetic speed detection system assure absolute speed accuracy and extraordinary stability against the temperature change or load variation.
- Turntable mat designed with the aid of laser holographic analysis.
- Bi-directional servo and electronic brake quick rise and full characteristics for starting and speed changeover.



DP-75 DENON Quartz, DD Turntable with a split platter construction

- A high precision turntable speed control servo system achieved by the highly responsive AC servo motor and magnetic record detection system that maintains extraordinary stability against the temperature change or load variation for long years.
- Newly introduced split platter construction turntable isolates external vibration.
- Bi-directional servo and electric brake quick raise and full characteristics for starting and speed changeover.
- Smooth AC out-rotor type servo motor produce unprecedented high performance a S/N ratio above 80 dB (DIN-B)
- Turntable mat designed with the aid of laser holographic analysis.



- DENON's dynamic servo tracer tonearm has improved tracing performance and a dramatic decrease in inter-modulation distortion, resulting in sharp, clear sound reproduction.
- Model DP-72L tonearm is made from a newly developed heat-tempered straight tube and a light and stiff lamination damped headshell to realize a great improvement in sound quality.
- DENON's AC servo motor with the exclusive magnetic record detection system.
- Interchangeable lightweight straight tonearm and universal S-shaped tonearm makes the DP-72L perfectly compatible with cartridges of all types, including high compliance designs.
- Non contact anti-skating system with an electronic servo control.
- Acoustic feedback is greatly reduced through the use of 90 mm laminated thick wooden base a special thick aluminum turntable and aluminum diecast phono motor frame.

DP-72L

DENON Quartz, Auto Lift D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

- The DP-62L turntable features the dynamic servo tracer system with its unique "non-resonance concept" design for a dramatic improvement in sound quality.
- Low frequency resonance is minimized by the adoption of an electronic tonearm damping system, resulting in sharp, clear sound reproduction.
- Light weight straight tonearm equipped with a laminate damped headshell.
- DENON's AC servo motor with the exclusive magnetic record detection servo system.
- Electronic auto lift system with non-contact end sensor.
- Non-contact anti-skating system with an electronic servo control.
- A natural wood laminate base provides excellent isolation from vibration.
- Heavy die-cast platter with excellent acoustic characteristics.
- Stable die-cast tonearm base with a resonance-resistant design.

DP-62L

DENON Quartz, Auto Lift D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

- Microprocessor-controlled tonearm combines absolute safety and convenience of operation. Contactless design preserves fidelity while automatic functions protect delicate stylus tips and records. Program search feature lets you locate cuts in either direction via "hands-off" operation.
- DENON's dynamic servo tracer system controls low frequency resonances in the tonearm, thereby optimizing tracing performance of the widest range of top quality cartridges.
- Automatic record size detection system: When no record is present, the tonearm won't function thereby protecting the stylus tip from any potential damage.
- The DP-52F's rotation system consists of DENON's quartz speed control; dual-direction speed servo; and DENON's high performance AC servo motor.
- Features a non-contact electronic servo tonearm and an electronic servo lifter.
- Electronic stylus pressures and anti-skating adjustment system automatically sets optimal stylus pressure and anti-skating without contact with the tonearm.

DP-52F

DENON Quartz, Fully-automatic D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

- Features DENON's non-contact electronic servo tonearm and electronic servo lifter.
- Automatic record size detection system. When no record is present on the turntable, the tonearm won't function, thereby protecting the stylus tip from any potential damage.
- The DP-51F's rotation system consists of DENON's quartz speed control system; dual direction speed servo; and DENON's patented high performance AC servo motor.
- DENON's dynamic servo tracer system controls low frequency resonance in the low mass, straight tonearm; thereby optimizing the tracing performance of the widest range of top quality cartridges.
- Electronic stylus pressure and anti-skating adjustment system automatically sets optimal stylus pressure and anti-skating levels without contact with the tonearm.
- Microprocessor-controlled tonearm combines absolute safety and convenience of operation. Contactless design preserves fidelity, while automatic functions protect delicate stylus tips and records.

- DENON's dynamic servo tracer system controls low frequency resonance in the low mass straight tonearm, thereby optimizing the performance and tracing ability of the widest range of top quality cartridges.
- Features DENON's non-contact electronic servo tonearm and electronic servo lifter.
- Automatic record size detection system. When no record is present on the turntable, the tonearm won't function thereby protecting the stylus tip from any potential damage.
- Lightweight straight tonearm extracts the maximum performance from the latest generation of high quality phono cartridges.
- A wood laminate base provides excellent isolation from vibration.
- Precise rotation speed is maintained by the DENON quartz magnetic record detection system.

- DENON's dynamic servo tracer system controls low frequency resonance in the low-mass straight tonearm, and the resonance is minimized by the adoption of electronic tonearm damping in both the horizontal and vertical planes.
- Outstanding anti-howling characteristics through a cabinet made of a new high density compound that offers excellent vibration damping.
- Lightweight straight tonearm extracts the high performance of today's light and high compliance cartridges.
- Precise rotation speed is maintained by the DENON quartz magnetic record detection system.
- Features DENON's non-contact electronic servo tonearm and electronic servo lifter.
- Built in quick repeat system.
- Non-contact anti-skating system with an electronic servo control.

DP-51F DENON Quartz, Fully-automatic D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

DP-45F DENON Quartz Fully-automatic D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

DP-35F DENON Quartz Fully-automatic D.D. Turntable with Dynamic Servo Tracer Tonearm



(without cartridge)

- The DP-30LII tonearm employs an auto-lift system with a non-contact record-end sensor that doesn't affect sound quality.
- Lightweight straight tonearm extracts maximum performance from the latest generation of high quality phono cartridge.
- Outstanding anti-howling characteristics through a cabinet made of new compound HDC (High Density Compound— a mixture of special materials). HDC has a specific gravity of close to 2 (two to three times greater than ordinary wooden cabinets), and offers excellent vibration damping characteristics.
- Trim and slim profile with up-front control system.
- Unique magnetic record detection system for speed servo and AC motor.

DP-30LII Auto Lift D.D. Turntable



(without cartridge)

- The tonearm drive system of the DP-11F, the most critical element of any automatic turntable, is a totally non-contact design, and is under the control of a microprocessor. An electronic servo lifter is employed for smooth, safe (and contactless) movement of the tonearm.
- A lightweight straight arm is mounted to extract maximum performance from even the latest generation of low mass cartridges. However, its DENON servo tracer system assures proper matching with all types of cartridges.
- DENON's quick repeat system provides faster return to the lead-in groove of a record by not returning to rest.
- DENON's quartz speed control system assures highly accurate rotation stability.
- Flat, front panel, soft push-button controls eliminate the potential disturbances and inconvenience caused by conventional turntable switches.

DP-11F DENON Quartz, Fully-automatic D.D. Turntable



(without cartridge)

Head Shells

PCL-67 Straight tonearm for DP-72L/62L

PCL-75 Straight tonearm for DP-100M



PCL-5 Magnesium Alloy Diecast Head Shell

Weight 6 g



PCL-50 Head Shell for DP-52F/51F
PCL-30 Head Shell for DP-45F/35F/30LII

Weight 3.3 g



PCL-4 Magnesium Alloy Head Shell

Weight 9 g



	DP-100M	DP-80	DP-75	DP-72L
Phono Motor Section				
Drive System	Bi-directional servo (Double PLL) control direct drive system	Bi-directional servo control direct drive system	Bi-directional servo control direct drive system	Bi-directional servo control direct drive system
Motor	3 phase AC servo motor	3 phase AC servo motor	Out-rotor AC servo motor	Hi-torque AC servo motor
Speed control system	Servo control with frequency detection	Servo control frequency detection	Servo control frequency detection	Servo control with frequency detection
Speed	33-1/3 45 78 rpm	33-1/3 45 rpm	33-1/3 45 rpm	33-1/3 45 rpm
Speed deviation	Less than 0.002%	Less than 0.002%	Less than 0.002%	Less than 0.002%
Wow & Flutter	Less than 0.003% wrms (servo system)	Less than 0.008% wrms (servo system)	Less than 0.008% wrms (servo system)	Less than 0.008% wrms (servo system)
Signal to noise ratio	90 dB (DIN-B)	80dB (DIN-B)	80dB (DIN-B)	82 dB (DIN-B)
Rotation stability time	Less than 0.4 sec. to reach nominal speed (33 1/3 rpm)	Less than 1.2 sec. to reach nominal speed (33 1/3 rpm)	Less than 1.6 sec. to reach nominal speed (33 1/3 rpm)	Less than 1.3 sec. to reach nominal speed (33 1/3 rpm)
Load characteristics	0% (under stylus force 1.5 kg)	0% (under stylus force 250 g)	0% (under stylus force 150 g)	0% (under stylus force 200 g)
Turntable platter	Fluid damping split platter aluminum alloy diecast	Split platter construction aluminum alloy diecast 308 mm dia.	Split platter construction aluminum alloy diecast 308 dia.	Aluminum diecast 300mm
Tonearm Section				
Type	Both straight and S-shaped equipped and interchangeable with automatic armlift			Both straight and S-shaped equipped and interchangeable with automatic armlift
Effective length	282 mm			244 mm
Overhang	12.5 mm			14 mm
Tracking error	within 2.00			Within 2.5°
Stylus force range	0-3 g			0-3 g
Acceptable weight of cartridge	4-28 g (straight tonearm) 6.5-31 g (S-shaped tonearm)			4-15 g (straight tonearm) 11-20 g (S-shaped tonearm)
Head shell NO.	PCL-75			PCL-67
Power consumption	25W	8W	9W	13W
Power supply	AC 120,200,220,240 V 50/60Hz	AC 100V 50/60Hz	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz
Dimensions	570(W) x 310(H) x 465(D)mm	376 diam. 140 (H)mm	376 dia. 140(H)mm	485(W) x 195(H) x 410(D)mm
Weight	48 kg	10 kg	10 kg	15 kg
DP-62L				
Drive system	Bi-directional servo control direct drive system	Bi-directional servo control direct drive system	Bi-directional servo control direct drive system	Bi-directional servo control direct drive system
Motor	Hi-torque AC servo motor	Ac servo motor	AC servo motor	Linear drive motor
Speed control system	Servo control with frequency detection	Servo control with frequency detection	Servo control with frequency detection	Servo control with frequency detection
Speed	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm
Speed deviation	Less than 0.002%	Less than 0.002%	Less than 0.002%	Less than 0.002%
Wow & Flutter	Less than 0.008% wrms (servo system)	Less than 0.01% wrms (servo system)	Less than 0.01% wrms (servo system)	Less than 0.012% wrms (servo system)
Signal to noise ratio	82 dB (DIN-B)	78 dB (DIN-B)	78 dB (DIN-B)	78 dB (DIN-B)
Rotation stability time	Less than 1.5 sec. to reach nominal speed (33-1/3 rpm)	Less than 1.8 sec. to reach nominal speed (33-1/3 rpm)	Less than 1.8 sec. to reach nominal speed (33-1/3 rpm)	Less than 2.0 sec. to reach nominal speed (33-1/3 rpm)
Load characteristics	0% (under stylus force 150 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)
Turntable platter	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm
Tonearm Section				
Type	Both straight and S-shaped equipped and interchangeable with automatic armlift	Dynamic balance type, light weight, straight tonearm	Dynamic balance type, light weight, straight tonearm	Dynamic balance type, light weight, straight tonearm
Effective length	244 mm	244 mm	244 mm	220 mm
Overhang	14 mm	14 mm	14 mm	16 mm
Tracking error	Within 2.5°	Within 2.5°	Within 2.5°	Within 2.5°
Stylus force range	0-3 g	0-3 g	0-3 g	0-3 g
Acceptable weight of cartridge	4-15 g (straight tonearm) 11-20 g (S-shaped tonearm)	3-12 g	3-12 g	4-9 g
Head shell NO.	PCL-67	PCL-50	PCL-50	PCL-30
Power consumption	13W	14W	14W	8W
Power supply	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz
Dimensions	485(W) x 185(H) x 410(D)mm	455(W) x 130(H) x 424(D)mm	455(W) x 130(H) x 424(D)mm	434(W) x 135(H) x 412(D)mm
Weight	11.5 kg	9 kg	9 kg	7 kg
DP-52F				
Drive system	Bi-directional servo control direct drive system	Servo control direct system	Servo control direct drive system	Servo control direct drive system
Motor	Linear drive motor	AC servo motor	Linear drive motor	Linear drive motor
Speed control system	Servo control with frequency detection	Servo control with frequency detection	Speed servo control with frequency detection	Speed servo control with frequency detection
Speed	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm
Speed deviation	Less than 0.002%	Less than 0.002%	Less than 0.002%	Less than 0.002%
Wow & Flutter	Less than 0.012% wrms (servo system)	Less than 0.015% wrms (servo system)	Less than 0.02% wrms (servo system)	Less than 0.02% wrms (servo system)
Signal to noise ratio	78 dB (DIN-B)	78 dB (DIN-B)	75 dB (DIN-B)	75 dB (DIN-B)
Rotation stability time	Less than 2.0 sec. to reach nominal speed (33-1/3 rpm)	Less than 1.5 sec. to reach nominal speed (33-1/3 rpm)	Less than 2 sec. to reach nominal speed (33-1/3 rpm)	Less than 2 sec. to reach nominal speed (33-1/3 rpm)
Load characteristics	0% (under stylus force 80 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)
Turntable platter	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm
Tonearm Section				
Type	Dynamic balance type, light weight, straight tonearm	Static balance type straight tonearm	Dynamic balance type integrated straight tonearm	Dynamic balance type integrated straight tonearm
Effective length	220 mm	220 mm	220 mm	220 mm
Overhang	16 mm	16 mm	16 mm	16 mm
Tracking error	Within 2.5°	Within 3°	Within 3°	Within 3°
Stylus force range	0-3 g	0-2.5 g	0-3 g	0-3 g
Acceptable weight of cartridge	4-9 g	4.5-9.0 g	4-6 g	4-6 g
Head shell NO.	PCL-30	PCL-30		
Power consumption	8W	15W	7W	
Power supply	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	
Dimensions	434(W) x 135(H) x 412(D)mm	450(W) x 140(H) x 403(D)mm	365(W) x 100(H) x 335(D)mm	
Weight	7 kg	9.5 kg	5 kg	
DP-35F				
Drive system	Bi-directional servo control direct drive system	Servo control direct system	Servo control direct drive system	Servo control direct drive system
Motor	Linear drive motor	AC servo motor	Linear drive motor	Linear drive motor
Speed control system	Servo control with frequency detection	Servo control with frequency detection	Speed servo control with frequency detection	Speed servo control with frequency detection
Speed	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm	33-1/3, 45 rpm
Speed deviation	Less than 0.002%	Less than 0.002%	Less than 0.002%	Less than 0.002%
Wow & Flutter	Less than 0.012% wrms (servo system)	Less than 0.015% wrms (servo system)	Less than 0.02% wrms (servo system)	Less than 0.02% wrms (servo system)
Signal to noise ratio	78 dB (DIN-B)	78 dB (DIN-B)	75 dB (DIN-B)	75 dB (DIN-B)
Rotation stability time	Less than 2.0 sec. to reach nominal speed (33-1/3 rpm)	Less than 1.5 sec. to reach nominal speed (33-1/3 rpm)	Less than 2 sec. to reach nominal speed (33-1/3 rpm)	Less than 2 sec. to reach nominal speed (33-1/3 rpm)
Load characteristics	0% (under stylus force 80 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)	0% (under stylus force 80 g)
Turntable platter	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm	Aluminum diecast 300 mm
Tonearm Section				
Type	Dynamic balance type, light weight, straight tonearm	Static balance type straight tonearm	Dynamic balance type integrated straight tonearm	Dynamic balance type integrated straight tonearm
Effective length	220 mm	220 mm	220 mm	220 mm
Overhang	16 mm	16 mm	16 mm	16 mm
Tracking error	Within 2.5°	Within 3°	Within 3°	Within 3°
Stylus force range	0-3 g	0-2.5 g	0-3 g	0-3 g
Acceptable weight of cartridge	4-9 g	4.5-9.0 g	4-6 g	4-6 g
Head shell NO.	PCL-30	PCL-30		
Power consumption	8W	15W	7W	
Power supply	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	AC 120,200,220,240 V 50/60Hz	
Dimensions	434(W) x 135(H) x 412(D)mm	450(W) x 140(H) x 403(D)mm	365(W) x 100(H) x 335(D)mm	
Weight	7 kg	9.5 kg	5 kg	

* Specifications are subject to change without notice.