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THE VINYL **ENGINE**®

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Enjoy the Best

F[#]9 Series



F-9F / Discrete 4
F-9E / Extended Range 4
F-9L / Advanced Luminal Trace
F-9U / Utility 4
F-9D / Playback Standard
F-9P / Professional Use

Features of the F-9 Series

- * Flat frequency response for the entire audio range.
- * Response beyond 60 KHz. — suitable for all CD-4 records.
- * An area of contact on the F-9F and F-9U similar to a cutter stylus — a design based on extensive studies of record grooves and their relationship to an ideal stylus.
- * An F-9F stylus that reproduces the highest frequencies.
- * An F-9E elliptical stylus that reproduces stereo and CD-4 with complete compatibility and excellence.
- * An F-9D and an F-9P with the world standard 16.5 μ (0.65 mil) conical stylus specified by the IEC for uniform tracking ability.
- * Extremely small magnet made from a rare earth cobalt formulation on each stylus.
- * Extremely light but strong cantilever, made from a special low mass alloy, for excellent transient response.
- * One point support of the stylus assembly which guarantees ideal reproduction in accordance with the laws of motion.
- * Excellent channel balance and low cross-talk through unique matrical-flux magnetic circuit of the "Grace" cartridges.
- * Universal acceptance by broadcasters and record manufacturers.
- * Optimum performance with interchangeable F-9 styli to match your need.

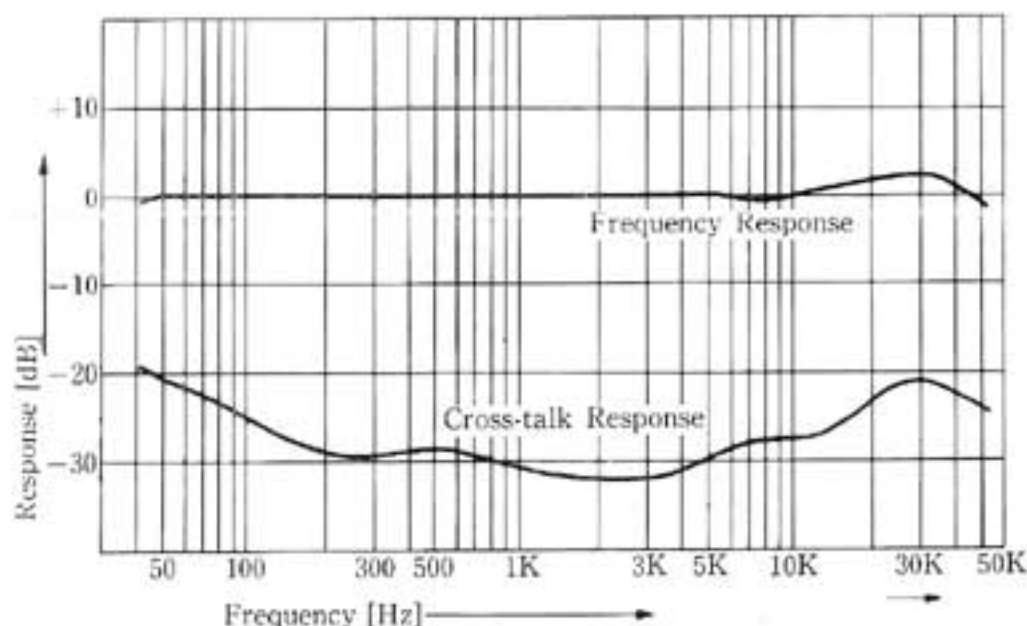
Model F-9F Stereo Cartridge:

Equipment used for obtaining Characteristics and Statistics — Measuring Instruments:-

Test Records:	CBS STR-100 & Victor TRS-1007
Tone Arm:	"Grace" Model G-945
Turntable:	"Garrard" Model 401
Level Recorder:	GR-1521-A
Pre Amp.:	flat 40 dB. amp.

Operation Conditions:

Overall Capacity:	80 pF.
Load Resistance:	100 K ohms.
Stylus Pressure:	1.2 grams.
Ambient Temperature:	20°C



Manufacturers: SHINAGAWA MUSEN CO., LTD.

Sole Agents: SUIKO DENPA COMPANY, LTD.

TOKYO, JAPAN.

The **F-9F** is a high output moving magnet cartridge, and is the finest cartridge in the F-9 series suitable for reproduction of compatible discrete 4-channel records as well as 2-channel and matrix 4-channel records. The F-9 series minimizes the mass of the stylus, the essential component of a cartridge and supports the cantilever at one point, thus obtaining excellent frequency response, high compliance and low distortion.

The stylus assembly consists of a high energy rare earth cobalt magnet which is extremely compact. This design minimizes the most massive part to allow positioning of the stylus tip close to the supporting point. This technique eliminates the undesirable effects of a cantilever. The stylus tip is the type F/Discrete 4 design based on a careful study of record materials and cutter stylus shapes. It will reproduce the ultra-high frequencies.

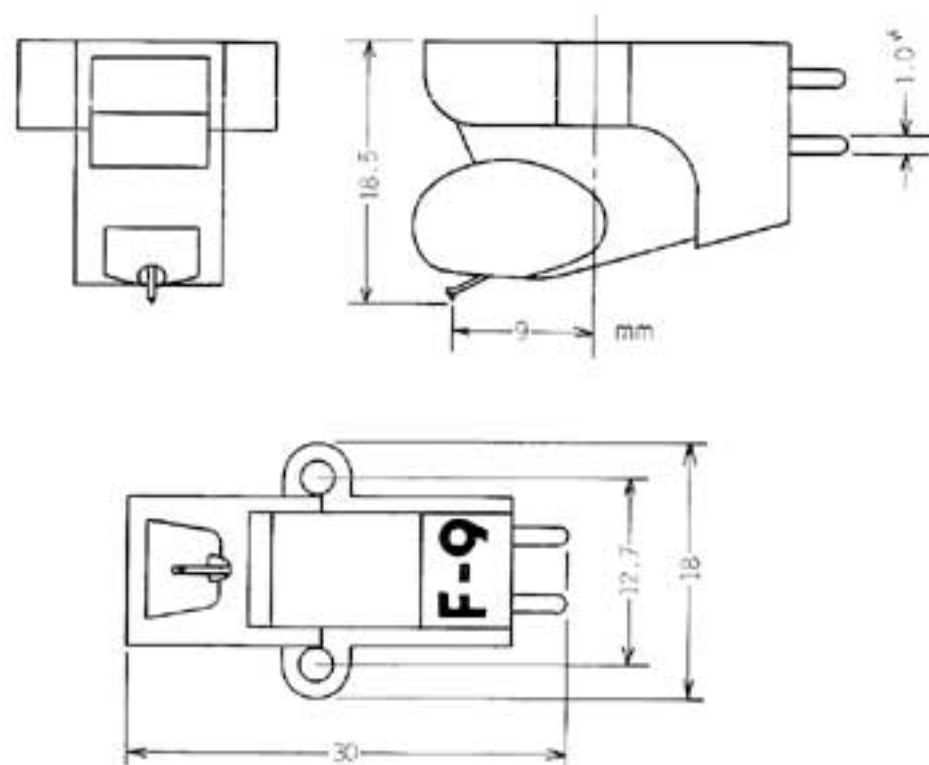
The cartridge body is based on the excellent and proven F-8 design, but has been improved by the reduction of impedance and tip mass to allow reproduction to over 60 KHz.

The **F-9E** has, in addition to the excellent features of the F-9F, the ability to provide the finest reproduction of stereo records. The stylus is an elliptical Type E/Extended-range type, which is particularly well suited for the reproduction of 2-channel stereo and matrix 4-channel records. The extended high frequency response of the F-9E provides excellent CD-4 reproduction.

The **F-9U** is the same as the F-9F in all respects except the type of stylus, which is the U/Utility. This type of stylus permits a higher range of frequencies to be reproduced, and is suitable for reproducing CD-4, matrix 4-channel and 2-channel stereo records.

The **F-9D** has the same body and stylus assembly as the F-9F, but with a 0.65 mil conical diamond tip in place of the Shibata type. The conical type stylus, because of its stable, high tracking ability, is recommended for monaural, 2-channel stereo and matrix 4-channel records. "Grace" deems the F-9D a playback standard and recommends it with pride to music lovers, audio enthusiasts and professional users.

The **F-9P**, based on the F-9F design, is recommended for professional use. To withstand the constant and demanding use by broadcasting stations, recording studios and record producers, the F-9P has been designed for increased stability under strict requirements. The stylus tip is a 0.65 mil conical type, the standard for broadcast stations. The stylus pressure range is from 2.5 to 4.0 grams. The F-9P satisfies the extraordinary demands made by professionals, while providing the F-9F quality. F-9P's are also available in various special types, i. e. monaural only, 600 ohm output, etc.



Specifications

	F-9F	F-9E	F-9L	F-9U	F-9D	F-9P
Frequency Response (Hz)	10-50,000	10-45,000	10-40,000	10-45,000	10-35,000	20-20,000(±2dB)
Output (mV, 5cm/sec. 45°, 1KHz)	35	3.5	5.5	3.5	3.5	3.5
Impedance (KΩ, 1 KHz)	2.4	2.4	2.4	2.4	2.4	2.4
Load Impedance (KΩ)	47	47	47	47	47	47
Channel Balance (dB, 1 KHz)	± 1	± 1	± 1	± 1	± 1	± 1
Channel Separation (dB, 1 KHz)	Better than 28	Better than 28	Better than 28	Better than 28	Better than 28	Better than 28
Stylus (mil)	Line Contact	Elliptical 0.2x0.8(vital)	Elliptical 0.2x0.8(vital)	Line Contact	Conical 0.65	Conical 0.65
Standard Stylus Pressure (gm)	1.2	1.2	1.2	1.2	1.2	2.5
Compliance (cm/dyne)	12x10 ⁻⁶	12x10 ⁻⁶	14x10 ⁻⁶	12x10 ⁻⁶	12x10 ⁻⁶	8x10 ⁻⁶
Tracking Angle	22°	22°	22°	22°	22°	22°
Effective Moving Mass (mg)	0.55	0.55	0.55	0.6	0.55	0.7
Weight (gm)	6.1	6.1	5.9	6.1	6.1	6.1
Replacement Stylus	RS-9F	RS-9E	RS-9L	RS-9U	RS-9D	RS-9P

All Grace cartridges are made to the specifications of the JIS, EIA and IEC. Changes may be made without notice.