

SERVICE

The stylus must be centered exactly between the pole pieces for proper operation. Also, the stylus baton must not touch the stylus holder channel. Should the stylus be bent off center, it may be brought into proper alignment by the slight pressure of a thin knife inserted between Channel "B" and the stylus baton at point "Z" (Fig. 2).

To take up any lateral play of the slides at "P-P" (Fig. 2), bend the slides up (away from stylus tip) slightly at "X-X" with tweezers. This will allow the slides at "P-P" to make contact with vee slots in the cartridge body, thus keeping the slides aligned.

To insure optimum performance from the General Electric Variable Reluctance Cartridge, its stylus, magnetic pole pieces, and gaps, should be cleaned of foreign particles periodically. A soft bristle brush, G.E. Cat. No. ROB-001 or equivalent, should be used.

RKP-009A—Knob Kit—Contains four knobs, a "C" washer, flat washer, and spring. The longest knob is for use with Garrard RC-80 record changers, which formerly required a knob extension shaft. The next to the shortest knob (.34" is used with the G.E. Baton Pickup Arm, Models AI-500 and AI-501.

INDIVIDUAL REPLACEMENT "SLIDE-IN" STYLI

G.E. CAT. NO.	STYLUS TIP	RECOMMENDED USE	COLOR CODE †
RPJ-01S	1 MIL SAPPHIRE	*MICROGROOVE	RED
RPJ-02S	2.5 MIL SAPPHIRE	*N.A.B. TRANSCRIPTIONS	WHITE
RPJ-03S	3 MIL SAPPHIRE	*WIDE GROOVE	NONE
RPJ-01D	1 MIL DIAMOND	MICROGROOVE	BLACK
RPJ-02D	2.5 MIL DIAMOND	N.A.B. TRANSCRIPTIONS	YELLOW
RPJ-03D	3 MIL DIAMOND	WIDE GROOVE	VIOLET

* SYNTHETIC SAPPHIRE † COLOR CODE ON END OF STYLUS

DUAL STYLI ASSEMBLIES

G.E. CAT. NO.	EQUIPPED WITH "SLIDE-IN" STYLI NOS.
RPJ-007A	RPJ-01S AND RPJ-02S
RPJ-010A	RPJ-01S AND RPJ-03S
RPJ-011A	RPJ-01D AND RPJ-02D
RPJ-012A	RPJ-01D AND RPJ-03D
RPJ-013A	RPJ-01D AND RPJ-03S

GENERAL ELECTRIC CUSTOM MUSIC ENSEMBLE

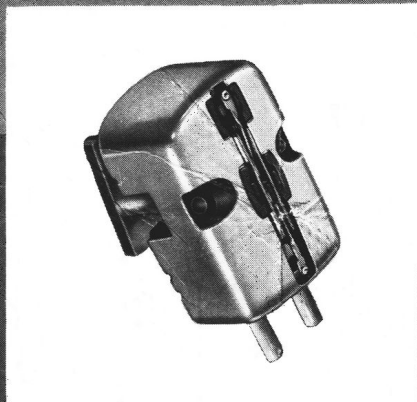
PHONO ACCESSORIES AND MATCHED HIGH FIDELITY COMPONENTS
DIAMOND AND SAPPHIRE *STYLI PREAMPLIFIER CONTROL UNITS
VARIABLE RELUCTANCE CARTRIDGES POWER AMPLIFIERS
"BATON" TONE ARMS EXTENDED RANGE SPEAKERS
RECORD COMPENSATORS DUAL CO-AXIAL HIGH FIDELITY SPEAKERS
HIGH FIDELITY EQUIPMENT CABINETS "DISTRIBUTED PORT" SPEAKER ENCLOSURES

ER-A-RPX-040A-4 12-55

* SYNTHETIC SAPPHIRE

Progress Is Our Most Important Product

GENERAL ELECTRIC



VARIABLE RELUCTANCE CARTRIDGES

SPECIFICATIONS

	CARTRIDGE CAT. NO.	STYLUS RADIUS	RECOMMENDED USE	EQUIPPED WITH STYLUS CAT. NO.
SINGLE:	RPX-040A	.003 IN.	WIDE GROOVE (78 RPM)	RPJ-03S
	RPX-041A	.001 IN.	MICROGROOVE (33 1/3 & 45 RPM)	RPJ-01S
	RPX-061A	.001 IN.	MICROGROOVE (33 1/3 & 45 RPM)	RPJ-01D
	RPX-063A	.003 IN.	WIDE GROOVE (78 RPM)	RPJ-03D
DUAL:	RPX-050A	.001 & .003 IN.	WIDE AND MICROGROOVE	RPJ-010A
	RPX-052A	.001 & .003 IN.	WIDE AND MICROGROOVE	RPJ-013A
	RPX-053A	.001 & .003 IN.	WIDE AND MICROGROOVE	RPJ-012A

STYLUS PRESSURE	6 TO 8 GRAMS
RESISTANCE (DC)	420 OHMS
INDUCTANCE	520 MILLIHENRIES
NOMINAL OUTPUT VOLTAGE AT:	
5 1/2 CM/SEC. STYLUS VELOCITY (INNER BAND OF RCA #12-5-49 TEST RECORD)	12 MILLIVOLTS
11 CM/SEC. STYLUS VELOCITY	24 MILLIVOLTS

GENERAL

These cartridges have been designed for use in one-, two-, or three-speed record player equipment and feature a replaceable "slide-in" styli.

All of the styli assemblies and "slide-in" styli available are catalogued in the chart on the back cover of this booklet. These styli are identified by the color code on their tips (Note Fig. 2), and may be used in either the single or the dual cartridge.

The single cartridges are equipped with a single "slide-in" styli mounted in a single styli holder (see Fig. 2). The dual cartridges is identical to this with one exception: two "slide-in" styli are mounted in a dual styli holder (Fig. 2).

Two 3-48 x 1/4 inch round head machine screws are supplied with these cartridges for mounting purposes. The dual cartridges are supplied with the particular tone arm installation. The knob used is self explanatory with the point of the arrow pointing to the microgroove styli.

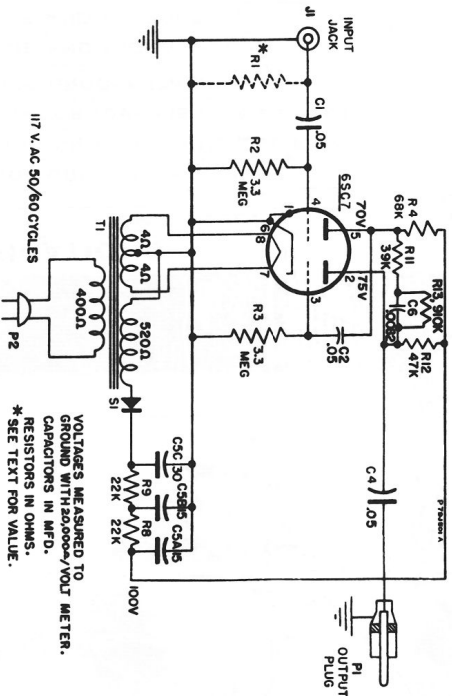


FIG. 1. UPX-003A PREAMPLIFIER CIRCUIT

AMPLIFIER DESIGN

For optimum performance, the amplifier chosen should be capable of full output with 10 millivolts input. Equalization must be employed to compensate for various recording characteristics of different record manufacturers. For applications involving music amplifiers and radio receivers, the G.E. Cat. No. UPX-003A preamplifier is recommended to provide the necessary preamplification of the cartridge's low level output, and equalization for recording characteristics. Low frequency equalization is provided by R11 and C6 and high frequency equalization is provided by R1 (Fig. 1). Low frequency boost is 18db with a cross-over of approximately 700 cps. R1 may be selected in the range of 3900 to 50,000 ohms and added as shown in Fig. 1. The higher values provide less equalization (more high frequencies) while the lower values provide maximum equalization. The recommended value of R1 for general application is 6200 ohms. In the receiver or amplifier to be used with these units, *previously employed circuit compensation for phonograph frequency response must be removed.*

The General Electric model A1-901 RECORD FILTER affords a convenient method of compensating for all recording characteristics as well as reducing or eliminating unwanted low frequency and/or high frequency noise. This 3-way record filter offers: a "Lo Cut-Off" filter (attenuation-12db/octave at 40, 60, or 80 cps); a compensator control (6 positions including the new RIAA standard) and a "Hi Cut-Off" filter (attenuation-12db/octave at 3, 5, and 9 kc.). Each of the three controls has a "FLAT" position. When using this filter with the UPX003A, R1 should be at least 62,000 ohms.

TRACKING ARM REQUIREMENTS

The design and construction of the tone arm are important factors in proper functioning of the variable reluctance cartridge. In order to obtain good tracking of records, the tone arm must meet the following requirements:

1. Provision for obtaining correct tracking pressure of 6-8 grams.
 2. Precision bearings for a minimum (less than 1 gram) of friction of movement in the lateral and vertical planes.
 3. Freedom from torsional resonances at all audible frequencies. Fundamental resonance of the tone arm and cartridge combination should be below 20 cps to assure good low frequency tracking and smooth response.
- "BAYON" TONE ARMS—The General Electric Models A1-500 (for records up to 12 inches in diameter) and A1-501 (for records up to 16 inches in diameter) tone arms are recommended for use with G-E variable reluctance cartridges.

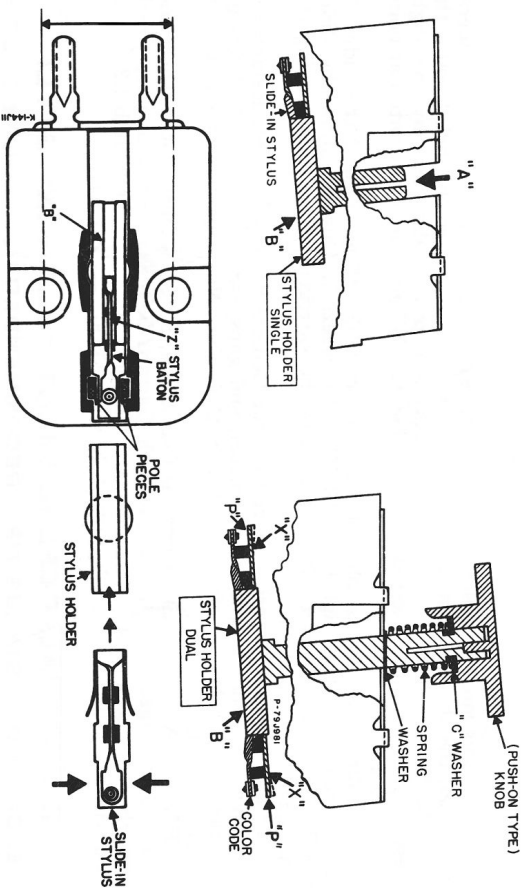


FIG. 2. CARTRIDGE AND STYLUS DETAIL

MOUNTING

The outline drawing of Fig. 2 shows the pick-up cartridge viewed from the bottom with dimensions for the screw mounting centers. The cartridge should be mounted with its top surface parallel to the top of the tone arm in order that the styli will contact the record at the proper angle.

For mounting the dual cartridge, a 1/8-inch hole must be drilled through the top of the tone arm for the styli assembly shaft to pass through. This hole must be accurately placed. This is accomplished by removing the dual styli assembly as described in "Styli Assembly Removal," and mounting the cartridge in the tone arm. A marking tool that will fit through the cartridge center hole (Fig. 2 "A") will scribe a mark on the tone arm in the proper place.

After removing the cartridge the hole may be drilled. The styli assembly is then re-installed in the cartridge and the cartridge is mounted in the tone arm. The styli pressure should now be adjusted to between 6 and 8 grams, as shown in the cartridge specifications.

CAUTION:—General Electric Variable Reluctance cartridges are a type of magnetic cartridge, and are therefore subject to hum pickup from stray magnetic fields. Although hum bucking measures have been taken in their design and construction, it is advisable to keep these cartridges as far from any stray magnetic (A-C) fields as possible.

TO INSTALL OR REMOVE SLIDE-IN STYLI (SINGLE OR DUAL)

Push styli holder out and twist sufficiently to render Channel "B" accessible from both ends. Clasp the slide-in styli at the arrows (Fig. 2) by your thumb and forefinger. Insert the slide-in styli into Channel "B," being sure it is in all the way. Push styli holder back into the slot in the Cartridge by thumb pressure on Channel "B." The end of the channel with the small hole drilled in it should be used for the .001 styli, thus aligning the shaft keyway so the knob will point out the proper styli (Dual only).

CAUTION:—When inserting the slide in the styli holder, be certain the flat side is flush with the bottom of the channel.

The removal of the styli is accomplished by reversing the installation procedure.

STYLUS HOLDER REMOVAL

SINGLE:—Insert a small nail or equivalent tool into the hole marked "A" in Fig. 2 and push the styli holder out of the cartridge.

DUAL:—Pull off the knob, compress the spring slightly and remove the "C" washer. Pick off the spring and flat washer and slide the styli holder out of the cartridge.

STYLUS HOLDER INSTALLATION

SINGLE:—Place round, split part of styli holder in the hole in the bottom of the cartridge. Press firmly on part "B," shown in Fig. 2, to seat holder in the slot provided for it in the cartridge. Make sure the holder is in as far as it will go.

DUAL:—Insert styli holder shaft into cartridge so that it slides in as far as it will go. Place the flat washer and the spring over the styli holder shaft. Compress the spring slightly so that the "C" washer may be inserted in the slot provided. The knob may be slid on the shaft after the cartridge has been mounted in the tone arm. When mounting the knob, make sure that the key in the knob matches the slot in the styli holder shaft. The elongated slot in the dual styli holder shaft may be adjusted to correct for loose fitting knobs.