

PERMAREC



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THERE have been many attempts to produce a permanent, flexible, home-recording record for use on a standard gramophone or radio-gram.

In all cases these productions have failed to achieve their object for one or more of the following reasons :

- (a) Inferior reproduction with metal records using soft or trailing needles.
- (b) Metal records which have to be re-made from metal matrix or pattern. This system is not only expensive and lengthy, but also renders quick recording in the home impossible.
- (c) Short life of metal records when used as recorded without further processing.

Musikon Limited, who for the past four years have been designing and producing sound recording and reproduction apparatus, and indeed have equipped many cinemas and theatres throughout the country, are now able to supply the Permaret flexible, unbreakable, home-recording permanent record, which has the following remarkable properties and advantages :

- (a) Can be recorded and permanently hardened for use within three hours.
- (b) Can be played on any standard gramophone or radio-gram with steel needles.
- (c) Reproduction is equal to any standard proprietary record.
- (d) Has the playing life of any standard record.
- (e) The record, consisting of a metal base, with pigment covering can be bent and dropped without fear of breakage.
- (f) The record is 10 in. in diameter and gives three minutes running either side and weighs two and one-quarter ounces, against six ounces, the weight of a standard record. Three of these records take up the space of only one standard record.
- (g) Can be recorded by anyone, with excellent results, on a radio-gramophone with the small additional expense of a microphone, a groove-cutter and recorder.

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APPLICATIONS OF THE "PERMAREC" RECORD.

- (a) The home-recording of special items from the wireless programmes.
- (b) The home-recording of speech and music by members of the family.
- (c) The home-recording of special greetings, and letters, to be sent to friends and relations abroad.
- (d) The adding of sales talks, in any language, to new or old advertising sub-standard films.
- (e) The recording of educational lectures and talks.
- (f) The recording of pupils progress, in music and language schools.
- (g) The amateur recording of speech and music, etc., synchronised and arranged as a running commentary to films already taken with 16 or 9.5 m/m Cine Cameras.
- (h) The amateur recording of sound during the taking of 16 or 9.5 m/m films.

From the foregoing description of the uses to which the "Permarec" can be applied it will readily be appreciated that here is the most interesting form of entertainment for the home.

Through the medium of the "Permarec" it is possible for the musically inclined members of the family to make a permanent and true record of their capabilities.

Children's progress in speech and music can be faithfully recorded for future enjoyment and interest; and, duplicate records sent to relations in distant parts of the world.

Any particularly interesting turn, nationally important speech, or instructive talk on the wireless can be permanently recorded for future reference.

By means of the foregoing examples, and many others, it will be understood that a fascinating library of home-recorded records can be built up.

For the "Home Cine" enthusiast there is unlimited scope for the use of the "Permarec" record and Home Cine Talkie attachment.

Films, no matter how old, can be given new life by adding to them music or an interesting running commentary.



Recording can be done at home by anyone possessing an ordinary radiogram or wireless set with very little further expense, the only apparatus required being "Permarec" Outfit A. Consisting of:

"Permarec" Recording Pick-up, Groove-cutting attachment and Records.

In cases where speech or song is recorded at home a microphone is required which is supplied in "Permarec" Outfits "B" and "C."

Detailed instructions for recording are given in the following pages.

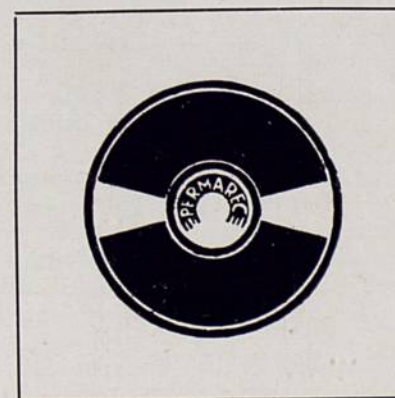
For recording speech and music synchronised to 16 or 9.5 m/m films, "Permarec" Outfit A.T. covers normal requirements; additional apparatus where required is covered by "Permarec" Outfits "B.T.," "C.T.," "D.T."

A visit to our showrooms will convince you that here is the most interesting entertainment for the whole family. We also have a fully equipped studio and our technical staff will be happy to afford any assistance or give advice to purchasers.

For professional people our service will prove convenient and attractive. Records can be recorded in our studios, processed and delivered in three hours at a cost of only 10/6d. each. Double-sided.

We shall be happy to receive your enquiries.

Records can be baked at our Depot for 6d. each.



INSTRUCTIONS FOR USE OF "PERMAREC" EQUIPMENT.

HOME-RECORDING is very similar to amateur photography; you may therefore remember, that the first snaps you took were by no means the best. If you, therefore, read and study the instructions carefully, you should obtain fair results with your first record. A little further practice, however, will enable the operator to produce records with a performance equal to that of a standard record. Whilst it is not essential to use the entire "Permarec" range we have proved from tests carried out that the best results are obtained only when using "Permarec" apparatus. For instance, the "Permarec" Thermion is adjusted to give the exact temperature to bake the Records, so guaranteeing perfect reproduction and life of Record.

The "Permarec Tonator" is adaptable for recording or reproducing. We have found that when once the correct tension is obtained to give the exact cut required when recording, it is better to reproduce by means of an ordinary pick-up, thus ensuring perfect recording on all occasions. The above applies to all the "Permarec" range, and where "Permarec" accessories are used, and the instructions followed carefully, first-class results can be obtained.

To use any apparatus successfully, and obtain the best results from it, it is necessary to understand thoroughly what its work is, and how it does it. We therefore give you a detailed explanation of each component which comprises the "Permarec" Home Recording System.

THE RECORD is a metal disc covered on both sides with a soft substance in which the recording grooves are to be cut.

(Fig. A).



The Record, as *originally* recorded, is positive, and in order to retain all the essential characteristics, we strongly advise the baking to be done by means of the "Permarec" Electric or Gas Thermion, which is designed to give the best results.

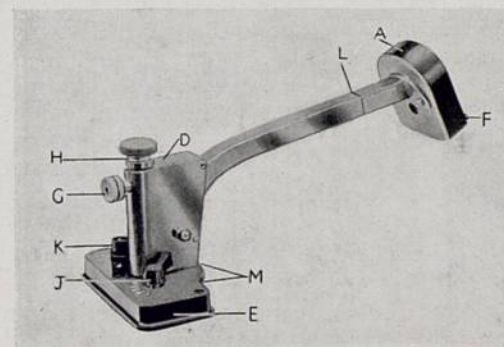
The baking, after recording, is for a period of not less than ~~two and~~ ²⁰⁰ half hours at 80/100 deg. cent., and the Record must not be played until it is quite cold. We advise leaving Record for several hours before playing.

The recording substance maintains its correct plasticity for a period, the expiry date of which is stamped on cover of Record. Recording after this period cannot be guaranteed unless the Records are kept in a frigidaire or similar form of cold storage.



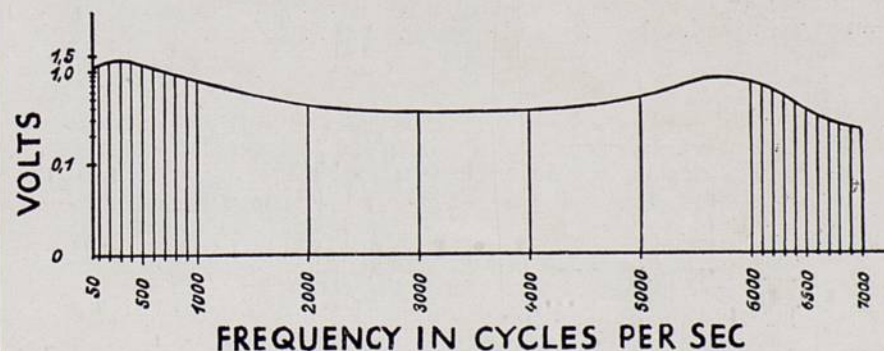
After baking the substance becomes so hard that the Records can be played with ordinary steel needles without damage to the recording, but we recommend the "Permarec" reproducing needle for best results. A special cutting or recording needle is supplied with each record.

THE "PERMAREC" RECORDING AND REPRODUCING PICK-UP.



(Fig. B).

Being a specially designed Pick-up with a frequency curve as shown in Fig. C, and incorporating: Volume control (k), automatic electric-motor stop (j), nut for adjusting the weight of the Pick-up when recording (g), connection screw for clamping conveying arm of groove-cutter (h), junction contacts for head-phones, for controlling the sound when recording (m), spring nut for holding needles (f), Pick-up head (a), head swivel (l), bakelite base (e), nickel-plated centre pillar (d), complete with necessary wiring, porcelain dual connections, and earth clip.



(Fig. C.)

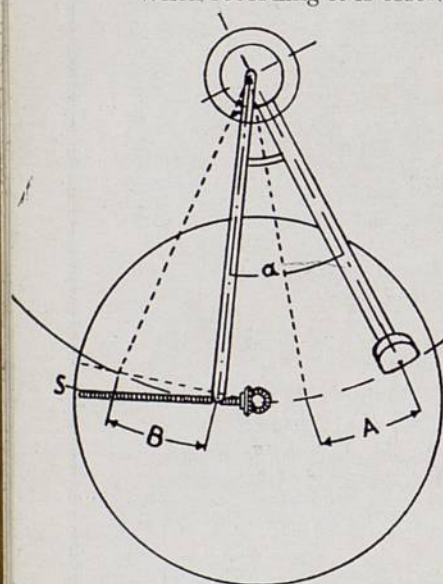
The Pick-up's duty is to cut a spiral groove in the plastic surface of the Record with sound-producing modulations.

The cutting needle must be sufficiently sensitive to record high and low frequencies efficiently, but great care must be taken to ensure that the cutting needle never cuts through the plastic surface of the Record on to the metal base, also that the Pick-up arm (c) Fig. B. is parallel to the Record when in cutting position. The depth of cut is controlled by a nut on back of centre pillar (g) Fig. B. When mounting care must be taken to see that the point of the cutting needle on its radius crosses the centre of the turntable spindle as shown in Fig. D.

When recording it is essential to see that the volume control, on base of central pillar (k) Fig. B, is set at No. 8, otherwise maximum volume will not be recorded.

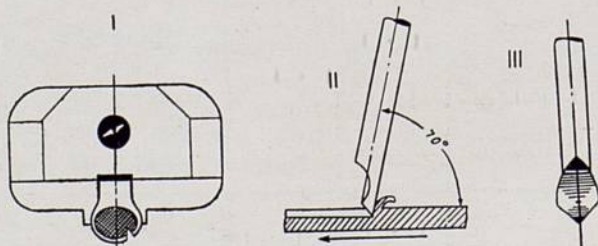
After mounting the recording Pick-up the cutting needle supplied with the Record is inserted in the Pick-up head by pressing on spring nut (f) Fig. B, which when released holds the needle firmly in position. Great care must be used to see that the needle is inserted in the Pick-up head at the correct angle, i.e., 30 deg. between the lateral axis of the needle and the back plate of the Pick-up, also the hollow spoon face of the needle point to be facing the direction of the rotation of the Record (see Fig. E).

Whilst recording it is desirable to control the volume and quality of the sound, therefore, in the base of the recording Pick-up, junction contacts are provided for headphone leads (m) Fig. B; it is necessary, however, to connect in series with the headphones a 3 megohm resistance, with the headphones and resistance connected in parallel with



(Fig. D.)

ance, with the headphones and resistance connected in parallel with



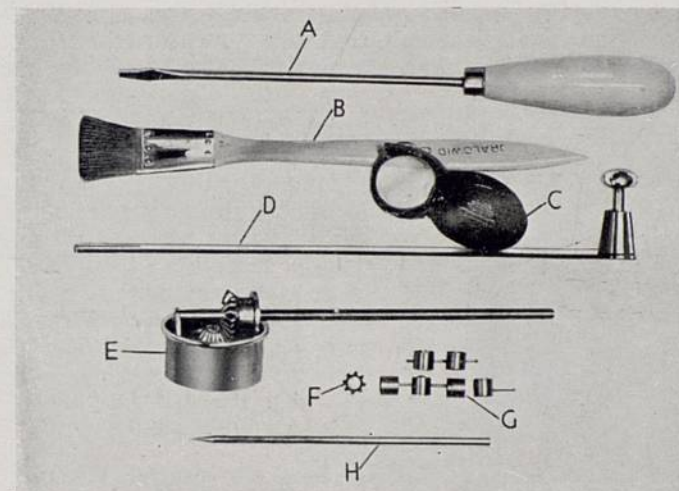
(Fig. E.)

the recording Pick-up. A better control is obtained by use of the "Permarec" Volume Indicator and Output Transformer explained on page 8.



THE "PERMAREC" GROOVE CUTTING ATTACHMENT.

(Fig. F)



Consisting of: (a) Screwdriver, (b) Camel hair brush, (c) magnifying glass, (d) conveying arm and spring-loaded tracker, (e) driving mechanism, being a centre boss in which is mounted a pair of bevel gears on a ball race, actuating a threaded tracking arm with a standard groove-spacing of 50 to the inch, (f) a spring washer for placing between the conveying arm and nut (k) Fig. B, (g) split collars of varying size for adapting the hole in the base of the centre boss (e) to different sizes of turntable spindles, (h) a scriber for writing title of Record before baking. The duty of this attachment is to convey the recording Pick-up across the surface of the record whilst recording.



(Fig. G.)

THE "PERMAREC" ELECTRIC THERMION.

(Fig.) G

The "Permarec" Electric Thermion (Fig. G), consisting of: An aluminium container and lid with an electric heating element in the base; The Record carrier (B), with a spacer (D) between each record, and

protective plates (c) is placed on centre pin (E); a hook (A) is supplied for removing the complete record assembly from the oven when hot; a socket connection (F) is provided for attaching the electricity supply by means of the plug and flex.

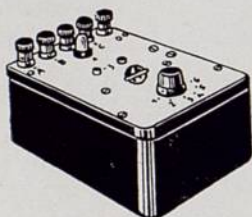
THE "PERMAREC" GAS THERMION

Is designed for use where electric current is not available, and is designed to fill the necessary requirements. The dimensions are: 12 ins. \times 12 ins. \times 24 ins. high, and incorporates protected gas ring and Record holder and spacers, together with Centigrade thermometer.

"PERMAREC" VARIABLE OUTPUT TRANSFORMER.

(Fig. H).

For adapting to Wireless Sets and amplifiers without output transformers or choke output when recording. Being a special matching device consisting of an auto transformer, a condenser, a quality corrector, a safety bulb and connections across a resistance for headphones; two sockets are also provided for use with the "Permarec" Volume Indicator, Fig. J.



(Fig. H)

"PERMAREC" VOLUME INDICATOR

(Fig. J).

Which is used to measure the alternating speech current to the recording Pick-up, to indicate when too much volume or distortion is being applied to the recording needle. It comprises a voltmeter, and a Valve rectifier for alternating current of any frequency. This is a first-class instrument for use with the output transformer by the serious experimenter and constructor, and best results are obtained with an indication of about 20.



(Fig. J).

THE "PERMAREC" D.R.I. MICROPHONE.

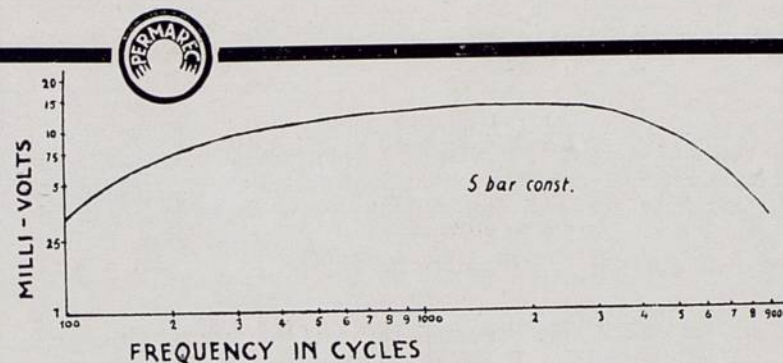
(Fig. K).

This is an instrument of unusually good quality, with a response curve as shown in Fig. L.

It is a carbon granule microphone suspended by rubber strings in a metal ring. In the base is an output transformer with three alternative connections, also the microphone feeding battery. On the top of the base is a control switch with an indicating light.



(Fig. K.)



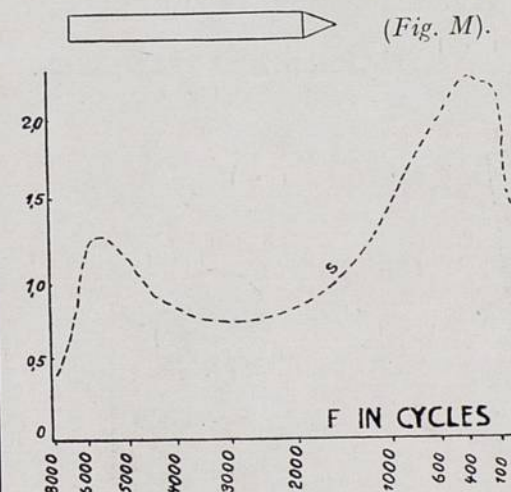
(Fig. L).

THE "PERMAREC" SPECIAL NEEDLE.

(Fig. M.)

With a response curve as shown in Fig. N.

This is a specially designed and tempered needle giving the very best results when used with "Permarec" Records



(Fig. N)

THE "PERMAREC" RECORDING TURNTABLE

(Fig. O).

For use when re-recording gramophone records or wireless items, and is used in conjunction with a radiogram, gramophone and wireless Receiver.



(Fig. O.)

The recording turntable consists of a high grade spring motor, driving a turntable through a governor. It is mounted in a completely enclosed leatherette covered case with clips and handle for portability. A speed controlling lever and scale, together with needle cup is fitted. A mounting is arranged for the "Permarec" Recording Pick-up, and a reproducing Pick-up is fitted and wired for use.

We can also supply a unit comprising two turntables for recording and reproducing with fader mounted between the turntables, spring motors or electric motors. Both turntable units can be supplied in Oak, Mahogany or Walnut finish.

The method of wiring is given in detail on page 16.

THE "PERMAREC" HOME CINE SYNCHRONISING TURNTABLE.

(Fig. P).



(Fig. P).



For use when recording and reproducing speech and music, synchronised to 16 and 9.5 m/m films. This unit can be also adapted to any 16 or 9.5 m/m Camera by means of a supplementary unit, containing an electric motor, which enables sound and film to be taken together.

The synchronising turntable comprises a leatherette covered case with clip fastenings and handle, containing a Special Design Floating Drive Motor (patent applied for), driving a turntable through a governor. This motor has a flexible drive approximately two feet long for connecting to any Cine projector.

A mounting for the "Permarec" recording Pick-up is arranged and a reproducing Pick-up is wired and fitted ready for use. A needle cup is supplied and a special speed controlling lever and scale which enables the speed of the projector to be controlled from the turntable.

The flexible drive can be attached to the main spindle of any sub-standard Cine projector, such as the Kodascope, Pathe, Bolex, Bell Howel, Butcher and Ensing, etc.

THE "PERMAREC" TWO-STAGE AMPLIFIER. T110A

For use in conjunction with the "Permarec" Recording Pick-up, and is designed for portability, or for use where a Radio or Radiogram is not available.

It is operated from A.C. Mains, 200/250 volts, 40/60 cycles, and contains: First stage, AC/HL valve, Output stage, AC/PEN valve, and Rectifier UU60/250 valve, and has an undistorted output of 2½ watts.

The dimensions are: 15 ins. × 10 ins. × 5 ins., and weighs 20 lbs., and the consumption is approximately 45 watts.

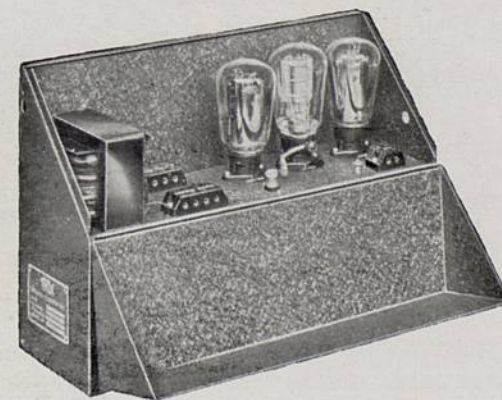
A D.C. model (T.120A) is also available, using DC3/HL valve and DC2/PEN valve, with choke filter output, and a consumption of 34 watts.

This amplifier embodies volume control and dual output, with tapings for loud-speaker and recording Pick-up.

THE "PERMAREC" PRE-STAGE AMPLIFIER.

This unit is for use in conjunction with a microphone for super recording, and is necessary when the voltage from the microphone is not sufficient to fully load the first valve of the amplifier.

The "Permarec" Pre-Stage Amplifier consists of a single stage PM1HF amplifier valve in metal case, with dry batteries and 2-volt L.T. accumulator, complete with screened leads.



DETAILED INSTRUCTIONS FOR THE USE OF "PERMAREC" RECORDING EQUIPMENT.

To obtain the best results from your efforts the following instructions must be carefully studied, and in cases where "Permarec" components are not used, exactly the same equivalent must be obtained.

"Practice makes perfect," therefore, if your first attempt is not completely satisfying, it is, no doubt, through inattention to some small detail, and you will find that further attempts are successful.

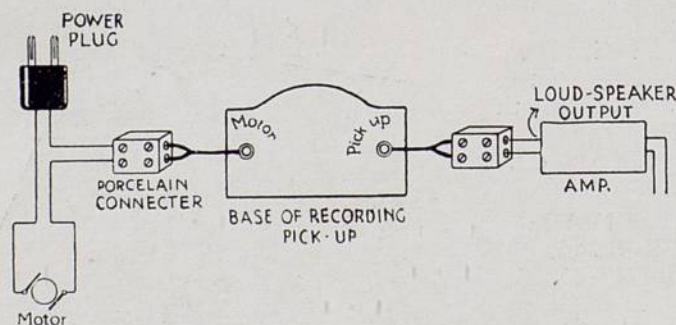
It is first necessary to have an electric or spring motor which is capable of rotating the turntable at 78 r.p.m., when the recording Pick-up is in operation.

The board under the turntable, as is usual with most gramophones and radiograms, must be sufficiently large for the attachment of the "Permarec" recording Pick-up by three wood screws, using the template on the bottom of the Pick-up box to ascertain the position. The "Permarec" recording turntables are supplied with a mounting in position, with three studs and wing nuts.

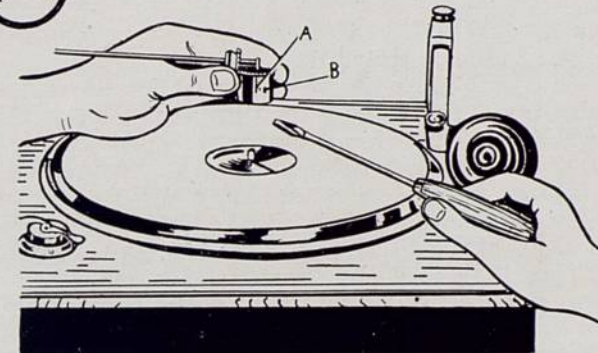
The Mounting of the Recording Pick-up.

When mounting the Pick-up on your own turntable, gramophone or radiogram, great care must be taken to mount it in the correct position, with the cutting needle on its radius passing the centre of the turntable spindle, as shown in Fig. D, page 6.

With the Pick-up in the cutting position on the record the Pick-up arm must be parallel to the face of the record. If necessary the base of the Pick-up should be raised with a piece of wood or vulcanite. The wiring of the Pick-up is as shown in the following diagram.



The "Permarec" Groove Cutting attachment is mounted by fixing the centre boss to the turntable spindle, after placing a blank standard record on the turntable and then the "Permarec" Record upon which the recording is to be done, by first selecting the split collar (see page 13) which fits the turntable spindle without opening. The boss (a) Fig. 1. is then pressed on to the spindle with the collar in place and the locking screw (b) Fig. 1, tightened, care being taken to see that the centre boss is pressed tightly on to the Records.

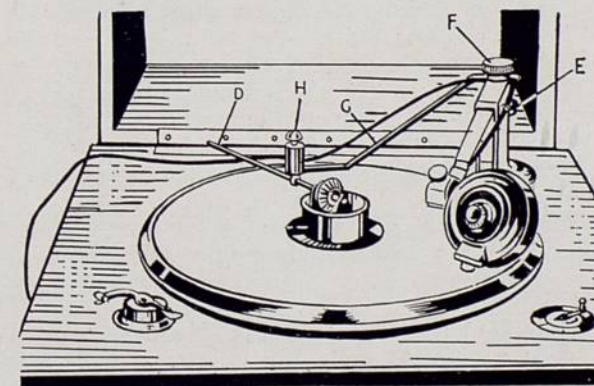


(Fig. 1).

If the Groove Cutting attachment works properly, the worm axis (d) Fig. 2, will not oscillate when held at the end with the turntable running.

Having mounted the "Permarec" recording Pick-up as already explained the

conveying arm (g) Fig. 2 is placed with the fork end under locknut (f) Fig. 2 with the star spring washer between the conveying arm and the nut. In most cases it will be found necessary to bend the conveying arm (g) Fig 2 so that the



(Fig. 2).

spring-loaded tracker is lying with a soft pressure on the threaded tracking arm, attention being given to see that the nut (h) Fig. 2 is in a vertical position. The cutting needle is now inserted as described on page 6, and the needle held 1/8 in. from the outside edge of the record. The nut (h) Fig. 2 must be not less than one inch from the centre boss on the threaded tracking arm (d) Fig. 2, in this position the nut (f) Fig. 2 is tightened firmly. The depth of cut to be made when recording is adjusted by turning nut (e) Fig. 2.

Take care to see that the turntable is revolving at the standard speed of 78 r.p.m., and the volume control on the recording Pick-up base is set at its maximum position, i.e., No. 8.

It is recommended that a spare unbaked record be kept for making trial cuts of a few grooves to obtain the correct setting of the spring adjustment of the Pick-up arm. The correct setting is when the width

of a groove cut is equal to the space between two grooves when examined with the magnifying glass supplied.

Never at any time must the recording needle be allowed to cut right through the soft coating, exposing the metal base of the disc.

It is desirable to control the subject being recorded so that the beginning and end will not be missed. The "Permarec" Record gives three minutes playing on either side, and we recommend a trial of the subject for recording with the Pick-up and groove cutting attachment in position and the motor running, the Pick-up, however, turned up to clear the record. In this way the length of the subject can be accurately gauged by the travel of the Pick-up across the disc.

During this trial all connections can be made and the operator can, by use of the headphones, or loud speaker connected in place of the Pick-up, adjust the volume and quality of the subject to be recorded. With these adjustments made, and the Pick-up connected to the output or speaker terminals of the amplifier or radiogram, you are ready to commence recording.

Start the turntable motor, place the recording Pick-up on the disc 1/8th of an inch from the outside edge; allow two or three grooves to be cut before fading in, or commencing to record.

The fine shaving which is cut from the face of the disc when recording should be lightly brushed towards the centre of the disc.

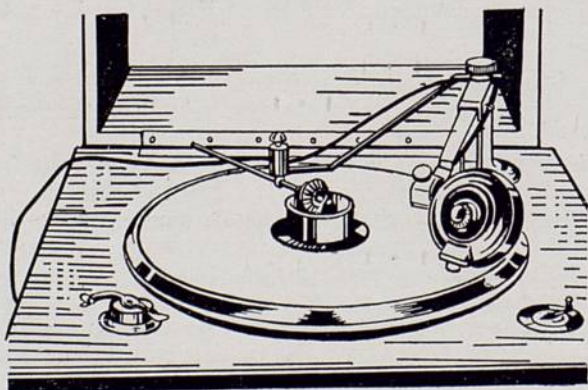
The recording must be continuous to produce a first-class record, and the Pick-up lifted off the record when it has completed two or three grooves after the recording has stopped.

Remove the record and write in the title while the record surface is still soft.

When both sides of the record have been recorded it is placed in a suitable oven, suspended correctly and baked at a temperature of not less than 80 deg. centigrade for a period of not less than two-and-half hours.

When cold the record can be played with steel needles for several hundred times without material loss in the quality of the recording. Being on a metal base, the record can be dropped without fear of breakage.

A diagram of the equipment set up for recording is given below.



"PERMAREC" HOME-RECORDING OUTFIT.

This is an outfit which will appeal to the serious Home-recorder, and is sure to prove very popular.

It consists of a leatherette-covered case, which can be supplied in various colours, measuring 23 ins. × 15 ins. × 16 ins., built into which is a 2-stage amplifier for A.C. or D.C. Mains, using AC/HL, AC/PEN and UU60/250 or DC3/HL and DC2/PEN Valves, and has an undistorted output of 2½ watts; also a special heavy duty spring motor. Mounted on the turntable board is a "Permarec" reproducing Pick-up in bakelite, and "Permarec" recording Pick-up, together with stands, also a needle cup, speed control lever and scale, jack for headphones, amplifier mains switch and dual switch for microphone or reproducing Pick-up and volume control knob.

In the back panel of the case jacks are arranged for mains input, microphone input and speaker output. In the lid of the case a compartment is arranged for the Groove-cutting attachments and necessary tools, whilst a drawer is built into the main body for the accommodation of records.

A "Permarec" D.R.I. Microphone is supplied with each outfit together with the plugs and connections, and the complete outfit costs only £40, complete with headphones.

THE "PERMAREC" ATTACHMENT FOR RECORDING AND REPRODUCING SOUND IN SYNCHRONISATION WITH FILMS.

This is a complete unit for recording sound whilst taking a film. The apparatus is also used in conjunction with the projector for the reproducing of same.

It consists of a leatherette-covered case measuring: 17 in. × 12½ in. × 10 in., and weighing approximately 40 lbs., complete with clips and handle, and contains a Class "B" amplifier with a 2 speech-watt output and the necessary batteries, also a special turntable with electric motor drive which is utilised to run both turntable and camera or projector incorporated with which is a special battery for the electric motor.

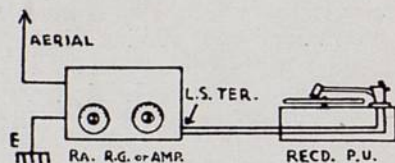
Recording and reproducing Pick-ups are already mounted and the Grooving attachment is stored away in a special compartment, as also is the "Permarec" D.R.I. Microphone.

The necessary plugs and connections are carried out inside the case, therefore the only connections to be made for recording are the camera, and the microphone; and for reproducing the projector and loud-speaker.

This unit has been designed specially for use with any type of Pathe camera or projector, and will undoubtedly appeal to the enthusiast. The price complete is £35.

METHODS OF RECORDING.

1. The Recording of Radio Programmes. This is accomplished with the "Permarec" Recording Turntable in conjunction with any Radio, Radiogram or Amplifier (Fig. 1), with a minimum output of 0.5 watt, by connecting the recording Pick-up leads to the loud speaker terminals in the Set, and controlling the volume by use of headphones as already described (see Fig. 2).

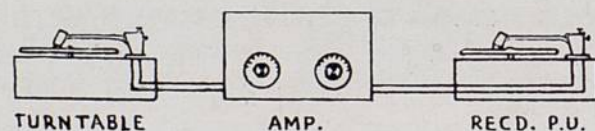


(Fig. 1).



(Fig. 2).

2. The Re-recording of Gramophone Records. This is accomplished with the "Permarec" Recording Turntable and Recording apparatus in conjunction with an ordinary Gramophone, with electrical Pick-up and amplifier, Radio-gram, or dual turntables and Wireless Receiver or amplifier, by connecting the recording Pick-up to the loudspeaker output connections, and the playing Pick-up to the input (Pick-up input) connections of the amplifier, Wireless Set or Radio-gram, as shown in Fig. 3.



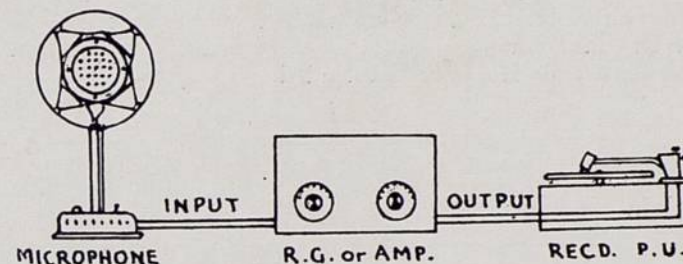
(Fig. 3).

3. The Recording of Speech, Music, Songs, etc., with Microphone. This is necessary where it is desired to record friends or relations singing, speaking or playing musical instruments, or instructional and educational talks for distribution to various centres, and is accomplished in the following manner.

The "Permarec" Recording Turntable with recording Pick-up is connected to the loud speaker output connections of the amplifier or Radio, and the microphone leads connected to the input connections (that is, Pick-up input connections), as shown in Fig. 4.

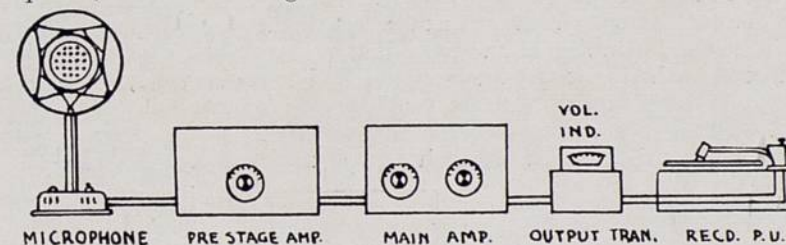
4. Special Recording of Speech, Music, Songs, etc. This equipment is for the enthusiast desirous of the very best results, and covers all kinds of microphone recording.

In this case the "Permarec" Recording Turntable and Recording Pick-up is connected to the "Permarec" Output transformer, upon which is mounted the "Permarec" volume indicator. This in turn is



(Fig. 4).

connected to the loud speaker terminals of the Radio, Radiogram or Amplifier, while a special single valve pre-stage amplifier is connected to the Pick-up input connections of the Radio, Radiogram or Amplifier, and the microphone connected to the input connection of the pre-stage amplifier, as shown in Fig. 5.



(Fig. 5).

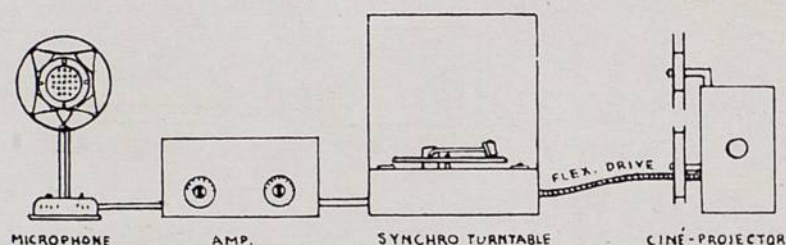
5. The Recording of Speech and Music as a running commentary to Home Cine Films. In this case the "Permarec" Synchronising Turntable, with recording Pick-up mounted, is connected to the projector by means of the flexible drive (see Fig. 6), which attaches on to the main spindle or other suitable shaft of the projector and to the main spindle of the turntable. The recording Pick-up is then connected to the loud speaker terminals of the Radio, Radiogram or amplifier, and the microphone connected to the Pick-up input terminals. The film is then marked START not less than six feet from the commencement of the pictures, and must always be threaded with that mark in the picture gate. This allows for the floating drive motor to become energised to give constant speed.

The projector is then started, which automatically starts the recording turntable, the recording Pick-up is placed on the record 1/8th of an inch from the outside edge, and as the first picture appears on the screen the commentator commences to speak into the microphone.

The length of the commentary must be made to fit the length of the film (that is running time.)

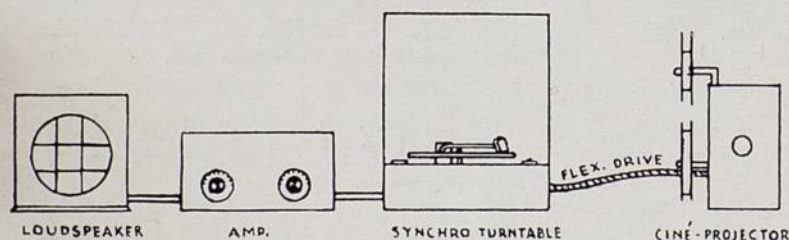
Where a background of music is required an additional turntable with electric Pick-up is connected to the input terminals of Radio, Radiogram or amplifier, together with microphone leads. A volume

control is required between turntable and input connection to amplifier for controlling volume of music. Music only, can be synchronised by connecting an ordinary music gramophone with electric Pick-up in place of the microphone. For special recording the equipment as described in paragraph 4 is recommended.



(Fig. 6).

For reproducing sound and film together, the film is threaded with the start mark in the picture gate, the recorded record placed on the "Permarec" synchronising turntable, and the reproducing Pick-up placed at the beginning of the recording groove. The Pick-up is then connected to the input terminals of the Radio, Radiogram or amplifier (that is Pick-up input), and the loud speaker connected in the usual manner; thus, when the projector is started the record plays in synchronisation with the film being shown by the projector (see Fig. 7).

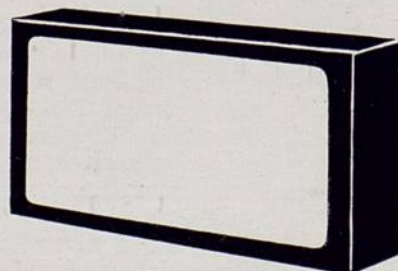


(Fig. 7).

THE "PERMAREC" SPECIAL HOME TALKIE SCREEN.

A refinement for the "Home Talkie" enthusiast.

This is a Box Screen with a Marconi speaker built in, and can be supplied in any size.



PRICE LIST OF "PERMAREC" EQUIPMENT.

	£	s.	d.
"Permarec" Home recording, flexible, unbreakable, Record with cutting needle, each		3	0
"Permarec" Recording Pick-up	4	12	6
"Groove cutting attachment, complete	1	16	0
"Electric Thermion, 200/220 or 220/250 volts	3	12	0
"Gas Thermion, with Record holder	2	10	0
"Output Transformer, each	4	14	4
"Volume Indicator, each	7	10	0
"Microphone, D.R.I., each	5	5	0
"Reproducing needles, per box of 200		1	9
"Recording Turntable (Electric £2 15s. extra)	5	0	0
"Home Cine Synchronising Turntable, complete	7	7	0
"T110A Amplifier, complete with valves, each	12	12	0
"T120A for D.C.	12	12	0
"T242 6-Watt	21	0	0
"T10 Pre-stage	6	0	0
Special G.E.C. Microphone, each		18	6
"Centigrade Thermometer, each		4	6
"Headphones		12	6
""Permarec" Talkie Screen	6	0	0

OUTFITS FOR HOME RECORDING AND REPRODUCING.

OUTFIT "A" consisting of:

- One "Permarec" Recording and Reproducing Pick-up.
- One "Permarec" Groove-cutting Attachment, with accessories.
- Three "Permarec" Records.

Price £6 17 6

OUTFIT "B" consisting of:

Outfit "A" including G.E.C. Microphone.

Price £7 16 0

OUTFIT "C" consisting of:

Outfit "A" including "Permarec" D.R.I. Microphone.

Price £12 2 6

OUTFITS FOR HOME CINE TALKIE RECORDING.

OUTFIT "A.T." consisting of:

- "Permarec" leather-covered case containing floating drive Motor, Turntable and flexible Drive. With Pick-up mounted and wired for use.
- "Permarec" Recorder.
- "Permarec" Groove-cutting Attachment, and accessories.
- Three "Permarec" Records.

Price £14 4 6

OUTFIT "B.T." comprising :

Outfit "A.T." including G.E.C. Microphone.

Price £15 3 0

OUTFIT "C.T." comprising :

Outfit "A.T." including Special "Permarec" D.R.I. Microphone.

Price £19 9 6

Radiograms, Amplifiers, Speakers, Microphones, Headphones, etc.,
quoted for on application.

De luxe models in Oak, Mahogany and Walnut, of the "Permarec"
Synchronising Turntable can be supplied.

Price £10 10 0

Recording and Synchronising Turntables can be had in any colour
to choice at an extra charge of £1 10s. When ordering synchronising
turntables please state what projector this unit is to be used in con-
junction with.

We can also supply a unit comprising two turntables for recording
and reproducing with fader mounted between the turntables, spring
motors or electric motors. Both turntable units can be supplied in
Oak, Mahogany or Walnut finish.

The Special "Permarec" Home-Recording Outfit, complete as
described on page 15.

Price £40.

The Special "Permarec" attachment, complete as described on
page 15.

Price £35



IMPORTANT

The Vendors cannot accept any liability for the use of Permarec Records in any
manner inconsistent with the provisions of the existing copyright Law. The
records cut by the Permarec Method are intended for private and domestic use only.
Under no circumstances are they to be sold or played in any building patronised
by the general public.

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