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PHILIPS

SERVICE MANUAL

FOR CONSOLE RECEIVER
TYPE 701AX.

702

AND

RADIOGRAM
TYPE 702A.

The 701AX receiver is a console type fitted with a chassis identical with the 785AX. For trimming, fault-finding and repairs, reference should therefore be made to the manual for the 785AX.

It should be noted that this console receiver has a sub-base which will allow access to the majority of the components and consequently it will not be necessary to remove the chassis on all occasions. If, however, it is desired to remove chassis, proceed as follows :—

How to Remove the Chassis 701AX.

1. Remove Fibre Back plate.
2. Unsolder "E" connections to Base foil.
3. Remove screws from front of mains switch and withdraw same.
4. Remove speaker switch from top of cabinet.
5. Unsolder speaker leads.

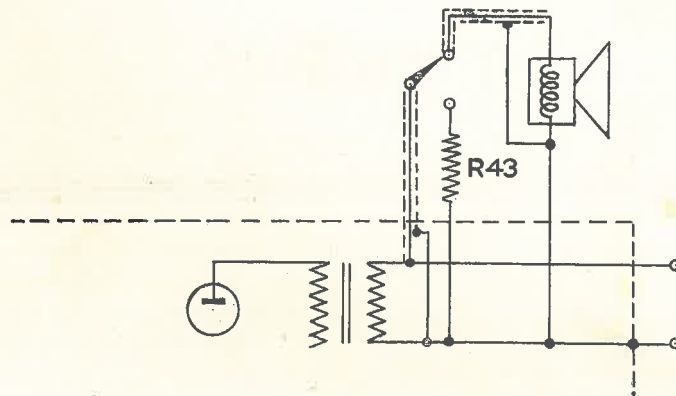
6. Remove the six wood-screws holding metal brackets of escutcheon.
7. Remove the grub screw, holding monoknob in front of cabinet.
8. Remove the four bolts at bottom of chassis.
9. Ease escutcheon inwards and withdraw chassis from cabinet.

To recase, reverse process.

The only difference in the circuit is that the 701AX incorporates an extra switch for cutting out the loudspeaker (when an extension speaker is being used), a resistance of 50 ohm (R43) being simultaneously connected across the external speaker sockets to prevent the output valve from being left without load. This switch is located at the top left-hand corner of the backplate, and the resistance is close to the chassis. The following is a list of components applicable **only** to the 701AX ; for the remainder see 785AX Service Manual.

701AX.

Description.	Code No.
Cabinet	28.857.740
Backplate, upper	28.401.830
Backplate, lower	28.401.820
Loudspeaker silk	06.601.090
Components for loudspeaker type 9632 :—	
Centring jig	09.992.410
Paper ring	28.445.880
Spinning ring (Service Clamping Ring)...	28.446.750
Screen cap (chassis)	28.256.080
Cone and Coil	28.220.610
Speaker transformer	28.533.660
R43, 50 ohm, 1 watt	28.770.770



TYPE 701AX

(Modification to Circuit 785AX.)

702A RADIOGRAM.

GENERAL.

This set is in the form of a radiogram in which the gramophone motor and pick-up are located side by side with the station scale under the lid. With one or two small exceptions the chassis is the same as that in the 785AX receiver. For trimming, fault-finding and repairs, therefore, reference should be made to the manual for the 785AX. (See theoretical diagram.)

The operation of the Monoknob is identical with that of the 785AX. The gramophone motor is connected to the 110V. winding of the mains transformer.

When repairs are necessary, it should be noted that a sub-base is provided to allow access to the majority of the components. Should it be necessary to remove the chassis proceed as follows :—

HOW TO REMOVE CHASSIS.

1. Remove two screws holding voltage panel to baseboard and unsolder earth lead connected to screening foil.

2. Remove nuts connecting leads from mains transformer and gramophone motor and loosen the clamps holding the leads.
3. Loosen clamp holding pick-up leads and unsolder earth lead from pick-up.
4. Remove knobs on loudspeaker and base response switches and unscrew wood-screws holding mains switch to side of cabinet.
5. Remove the wood-screws on either side of the escutcheon (three each) and allow latter to rest on chassis.
6. Unsolder speaker leads and remove the grub screws from the monoknob and remove.
7. Remove the four chassis bolts and withdraw chassis by slightly lifting it, but taking care that the escutcheon is not damaged.

GRAMOPHONE MOTOR.

Maintenance.

The rotor bearings are self-lubricating and require very little attention.

Only a few drops of oil should be placed in the holes in the phosphor bronze bearing at the one end and in the casting at the other, every 1,000 hours.

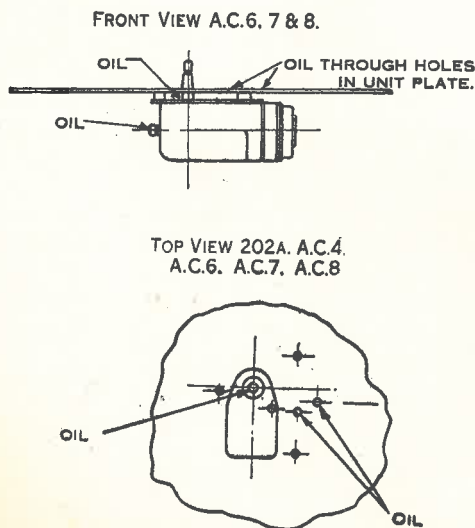


Fig. 1.

The pieces of felt on the regulator must be kept greased and not allowed to become dry.

The lubricating points are shown in Fig. 1, and the oil used should be Mobiloil A.

The Speed Regulator.

The motor has a wide range of speed, so that the speed of the record can be increased or decreased at will. The motors are adjusted at the factory to the correct speed of 78 r.p.m. on 110 volts, with the speed regulator set to 78. This is the correct speed for the majority of present-day records. Differences in the mains voltage may cause a variation in the speed, and this can be checked by means of the stroboscope supplied with the set. If any adjustment in the speed is necessary, this can be done by re-setting the regulator lever for the required speed. For this purpose remove the turntable, loosen the screw in the regulator quadrant, set the pointer to 78 and re-tighten the screw.

Starting the Motor.

To start the motor, the pick-up is raised and moved slightly to the right : this raises the brake and switches in the motor.

At the end of the record (with run-off or eccentric track) the motor is automatically switched off and braked.

Principle and adjustment of the Automatic Brake.

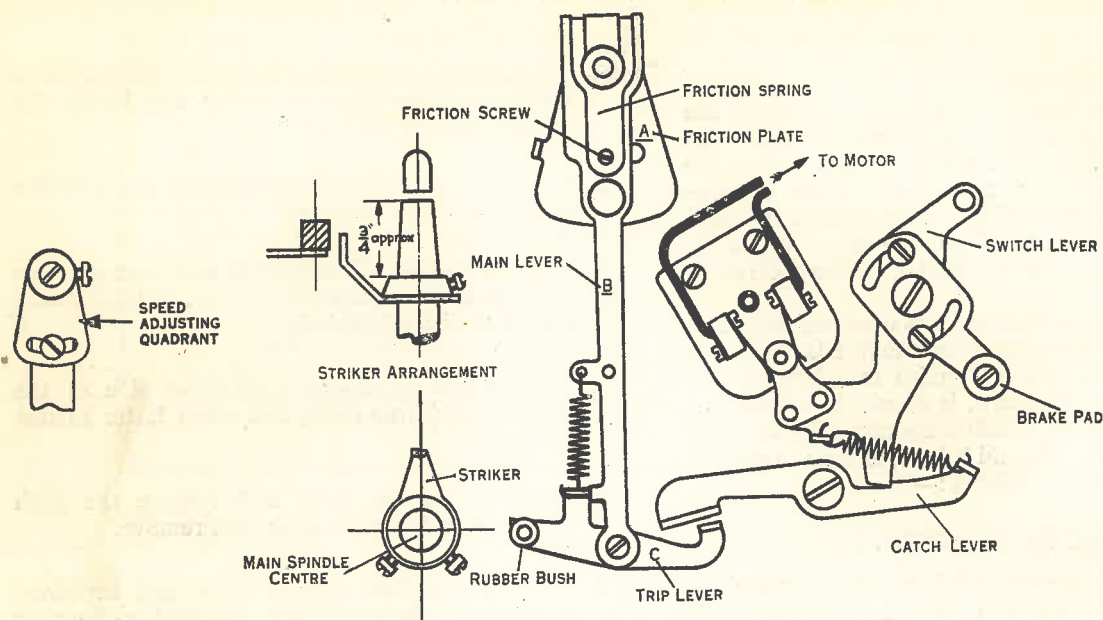


Fig. 2.

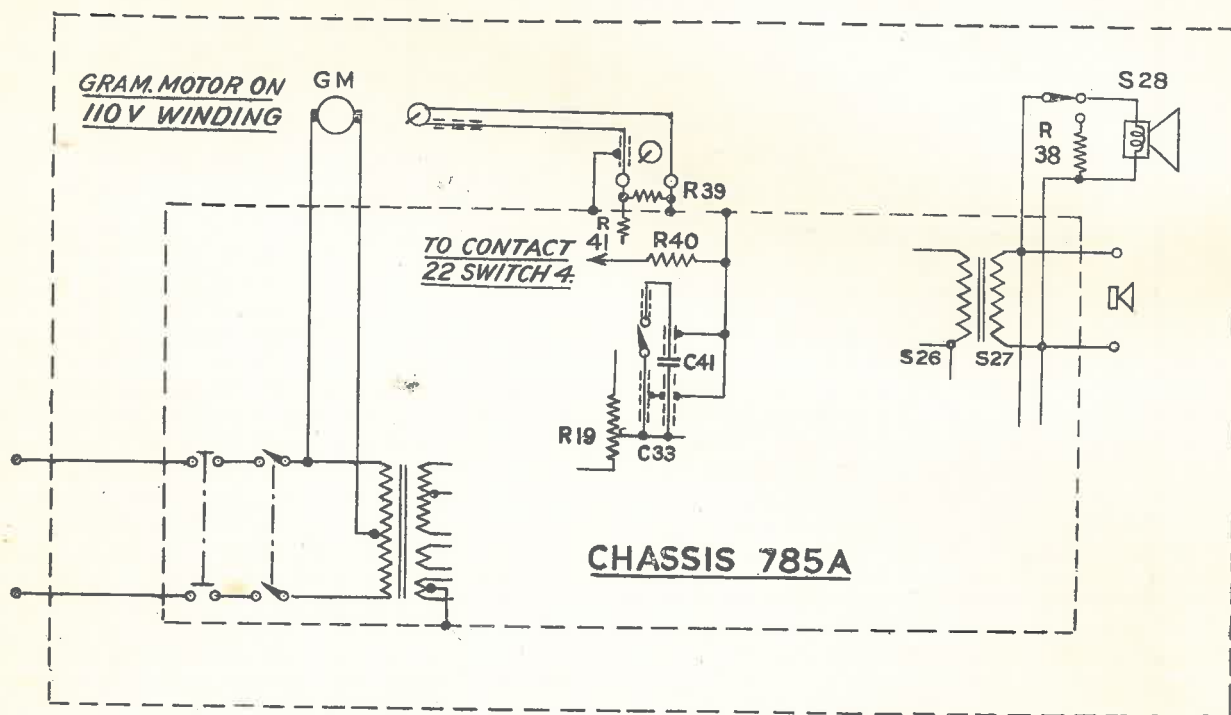
When the needle is travelling towards the centre of the record, the pick-up arm moves the friction plate A (see Fig. 2) which, by means of a spring and friction block, actuates the large lever B and tumbler C. Lever B moves towards the turntable spindle and the latter carries a lug which at every revolution lightly knocks against the rubber roller at the end of the tumbler C. This pushes back lever B, due to the slipping of the friction coupling. The lever continues to be knocked back until the needle reaches the centre of the record, when the tumbler is suddenly placed in the track of the lug, is rotated by the latter and opens the switch. The brake and switch are fully automatic. If the mechanism does not function at the end of a record, this is probably due to insufficient friction between A and B, which can be increased by loosening screw F in the lever B. Should the mechanism come into action before the record has been played to a

finish, it will be found that there is too much friction between A and B, or that the rubber roller is worn. Friction can be decreased by tightening screw F while if the roller is worn, this can be turned slightly.

As the friction adjustment is very critical, the screw should not be turned more than one quarter turn at a time. Too much friction may cause a knocking sound in the receiver, and excessive wearing of the record. If it is necessary to adjust the piece of leather G on the brake, care should be taken to see that the switch contacts are sufficiently open before the brake operates.

Remark.

Should it be required to stop the turntable by hand, the pick-up must be moved to the centre of the record, so that the brake comes into action.



TYPE 702A.

(Modification to Circuit Type 785A.)