

START

START with Tuner amplifier or amplifier alone. Disconnect all inputs, leaving only loudspeakers, mains and aerials connected. If you have a separate tuner, leave it disconnected for now. Select pickup input and set volume at 12 o'clock.

Is hum present now? NO

YES

Is the earth lead of the mains cable connected inside the mains plug?

YES

NO

Connect earth inside the mains plug.

Is hum present now? NO

YES

Disconnect earth lead of mains cable from plug and run a separate wire between the cabinet fixing screw of the unit and a water pipe or earth rod.

Is hum present now? NO

YES

Return unit direct to manufacturer for servicing.

On Tuner-amplifiers select FM. If you have an amplifier with a separate tuner connect these using screened lead and soldered connections. DO NOT connect earth lead of mains cable to plug on separate tuners. Tune in a station.

Not applicable. Amplifier only.

Is hum present now? NO YES

Are you using a communal aerial system? NO YES

Fit a separate aerial of the correct type.

Is hum present now? YES NO

Return unit direct to manufacturer for servicing.

If you use a tape recorder, connect this now using screened lead according to manufacturer's instructions. DO NOT connect earth lead of mains cable to plug. With recorder switched on check each input, tape, radio and phono.

Is hum present now? NO

YES

Not applicable. No tape recorder.

Consult tape recorder manufacturer for advice, giving full details.

Connect record deck following manufacturer's instructions and using screened leads with soldered connections. DO NOT connect any earth lead from turntable to mains plug. Select pickup input and set volume to 12 o'clock.

Is hum present now? NO

YES

If motor has an earth lead, connect to cabinet-fixing screw on rear of amplifier or tuner-amplifier.

Is hum present now? NO

YES

Inspect underside of turntable. If motor earth is connected to the screening of the pick-up leads, disconnect this and run a separate wire from the motor earth to a cabinet fixing screw on the amplifier or tuner amplifier.

Is hum present now? NO

YES

Check that pick-up cartridge has been wired into its shell correctly and in accordance with manufacturer's instructions.

Is hum present now? NO

YES

Consult turntable and/or cartridge manufacturer for advice.

Are there any other forms of interference? NO YES

NO

YES

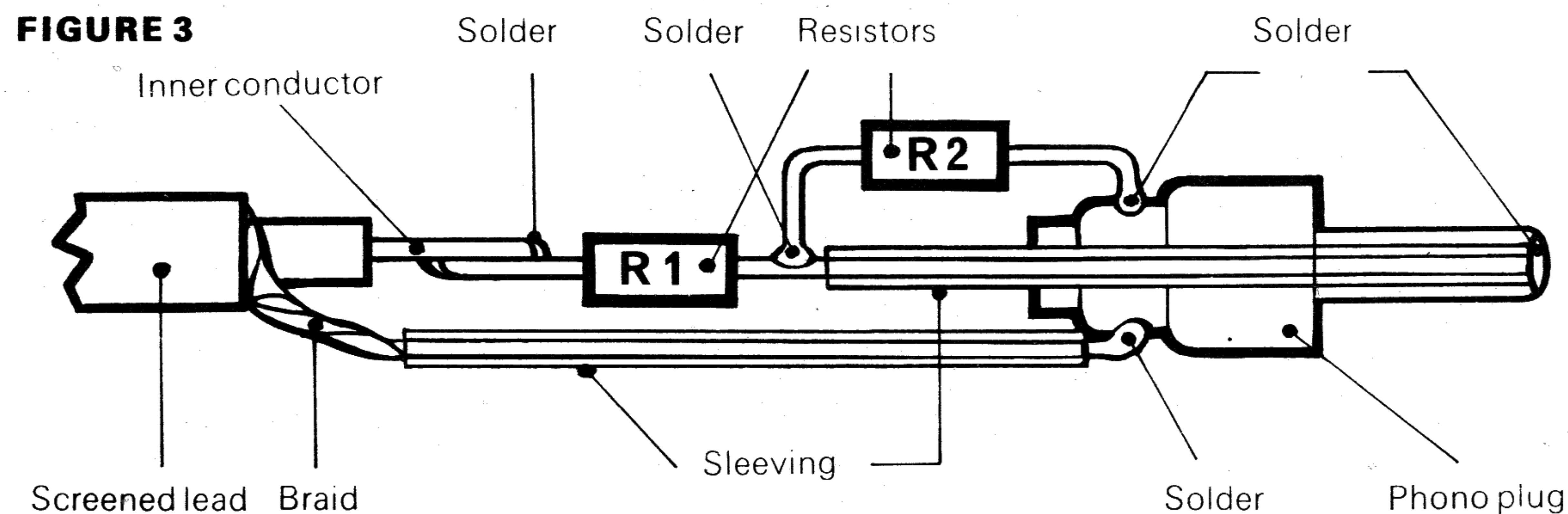
Problem solved.

Continue list on page 1.

MATCHING TO A TAPE RECORDER

Most makes and models of tape recorders can be connected directly to Armstrong amplifiers and will match satisfactorily. However, in certain cases mismatching may occur. In the recording mode this usually means that the meter or magic eye shows full modulation when the gain control is barely past the zero mark, and this condition can produce severe distortion. On **replay** a mismatch sometimes occurs when there is no gain control fitted to the tape recorder and the control unit of the amplifier or tuner-amplifier is overloaded. Both these conditions can be remedied by fitting a simple circuit to the connecting leads. Two resistors are needed for each lead, the values being taken from the tables. A stereo machine will need two identical circuits, one in each lead. For DIN plugs or other forms of connectors the same system may be used as long as the correct live and earth pins are located and used accordingly.

IMPORTANT. Figure 3 shows the method of connecting the two resistors to a phono plug. For **recording leads** the components should be connected to the plug at the **tape recorder** end. For **replay leads** the components should be connected to the **amplifier or tuner-amplifier** end.



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RECORDING		
TAPE RECORDER INPUT	RESISTOR VALUE	
	R1	R2
0.25MV	100KΩ	220Ω
2 MV	100KΩ	470Ω
5 MV	100KΩ	1.2KΩ
10 MV	100KΩ	2.7KΩ
25 MV	100KΩ	6.8KΩ
50 MV	82KΩ	12KΩ
100 MV	68KΩ	27KΩ
150 MV	68KΩ	33KΩ
200 MV	47KΩ	47KΩ

REPLAY		
TAPE RECORDER OUTPUT	RESISTOR VALUE	
	R1	R2
0.75V	33KΩ	68KΩ
1.00V	47KΩ	47KΩ
1.50V	68KΩ	33KΩ
2.00V	82KΩ	22KΩ

Armstrong SERIES 400 & 500 TECHNICAL ADVICE

HOW TO ELIMINATE HUM AND INTERFERENCE

1. Work throughout the chart overleaf systematically, dealing with each instruction in turn.

2. If interference persists use the list below. Each recommendation should be carried out in the order shown, checking after each stage to find out if the interference has been cured by that step.

- If the interference is on pick-up input only, fit the two capacitors as shown in Fig. 1.
- Solder capacitor to each of the loudspeaker plugs as in Fig. 2.
- Fit coaxial cable as loudspeaker leads. Connect screening (outer braid) to LARGE pin of loudspeaker plug.

d. If the interference occurs when a light switch is operated connect a 0.01 mfd. 500V AC capacitor in series with a 220 ohm ½ watt resistor between the line and neutral contacts of each offending switch. The same components should be used to suppress thermostats and relays in domestic appliances which cause interference. In each case connect suppressors as near as possible to the interference source.

3. If the interference still persists after all the above steps have been carried out, contact our Technical Advice Department who will be pleased to advise you further.

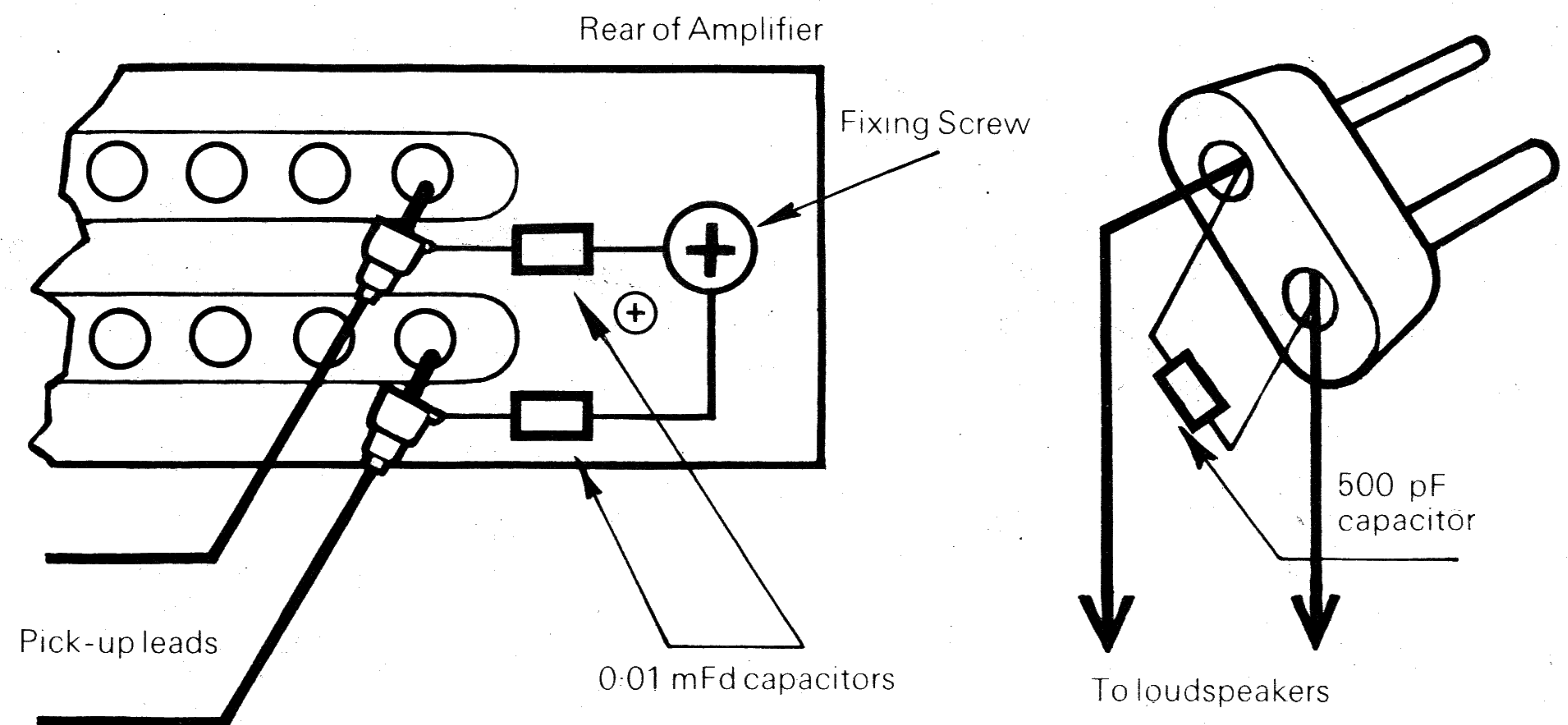


FIGURE 1

FIGURE 2