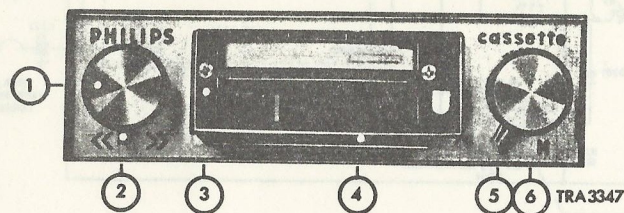


PHILIPS Service

CASSETTE CARRADIO

22RN582/15



CONTROLS

- ① Volume control and on/off switch
② Accelerated winding and rewinding 6 Tuning
③ Playback button (depress)

R111
+ SK-D
SK-B

- ④ Ejector button for cassette SK-C
⑤ Wave range selector SK-A
⑥ Tuning S1, S2, S5, S6

SPECIFICATION RADIO:

Dimensions 178x44x132 mm
I. F. 452 kHz (100)
460 kHz (119)
470 kHz (115)
Consumption Radio without signal 190 mA
Recorder without cassette 250 mA
Output impedance 4 Ω
Output power 3 W (at 14.4 V)
Voltage 12 V - ⚡

WAVE RANGES:

LW : 150 - 290 kHz (2000 - 1035 m)
MW : 512 - 1622 kHz (585.9 - 185.2 m)

TRANSISTORS

TS1 - BF194
TS2 - BF195
TS3 - BF195
TS101 - BC149
TS102 - BC146
TS103 - BC149
TS104 - AC128
TS105 - AD181
TS106 - AD162
TS201 - BC148
TS202 - BC148
TS301 - BC148
TS302 - AD162

SPECIFICATION RECORDER:

Tape speed 4.75 cm/sec
Tape width 3.8 mm
Track width 1.5 mm
Number of tracks 2

DIODES

GR1 - AA119
GR2 - AA119
GR3 - AA119
GR4 - BZY63
GR201 - OA90
GR301 - BA114
GR302 - BA114
GR303 - BA114

Serv-o-Mecum TE-a-1	Wave range Golgebied Gamme d'ondes Wellenbereich Margen de ondas	Tuning Afstemming Sintonisation Abstimmung Sintonia	Signal Signaal Signal Signal Senal	Applied to Toegevoerd aan Appliqué à Zuggeführt an Aplicada a	Trim Afregeien Régler Abgleichen Ajustese	Indication Aanwijzing Indication Anzeige Indicación
IF-MF-ZF-FI	MW-MG-PO-OM	Min. L 2)	452 kHz (/00) 1) 460 kHz (/19) 470 kHz (/15) via 33 kpF	b-TS3 b-TS3	S12/13, S14/15 S8/9, S10/11, S12/13	Max. output
	MW-MG-PO-OM	Max. L 3) 5)	508 kHz 840 kHz 1450 kHz	6) 6)	S6 4) S5, S1 4) C7	
	LW-LG-GO-OL	Max. L 3) 5)	147 kHz 170 kHz 290 kHz 1 MHz	6) 6)	S7 S2 S3 S4	Max. output Min. output

1. Turn in the cores S14/15, S10/11 and S8/9
2. Corresponds to minimum self-inductance of the tuning unit
3. Corresponds to maximum self-inductance of the tuning unit
4. Put C7, being mounted in the aerial socket, in the intermediate position
5. Tune the set
6. Apply the signal to an aerial socket via an artificial aerial (Fig. A).

Note: C432 serves to adapt the car aerial to the set. Slide out the aerial completely and tune the set to a weak station near 100 m (MW). Tune C432 by ear to max. output power.

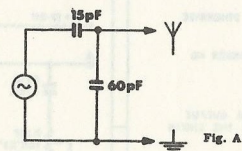
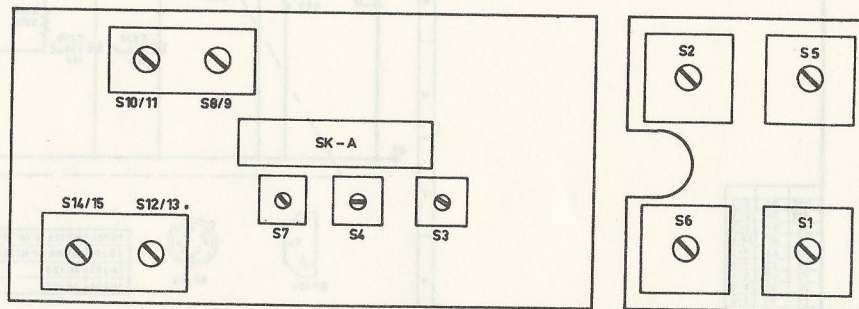


Fig. A



TRA 3148

MECHANICAL REPAIR HINTS AND ELECTRIC ADJUSTMENTS OF THE RADIO SECTION

Removing the HF and IF unit

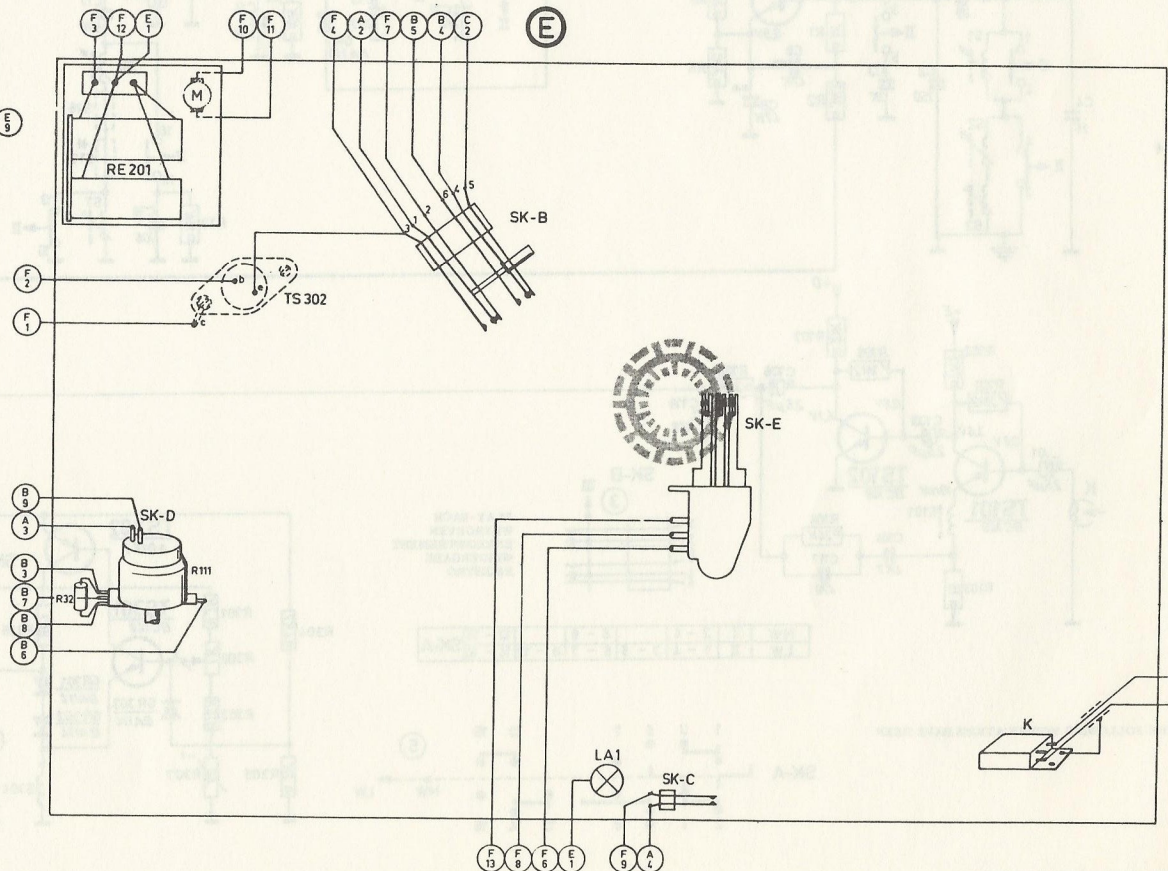
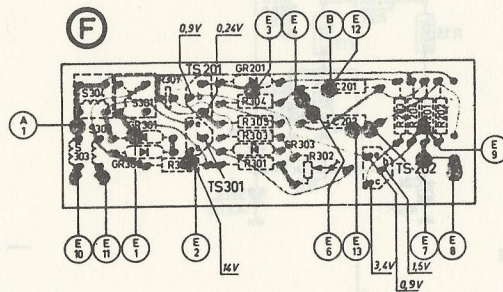
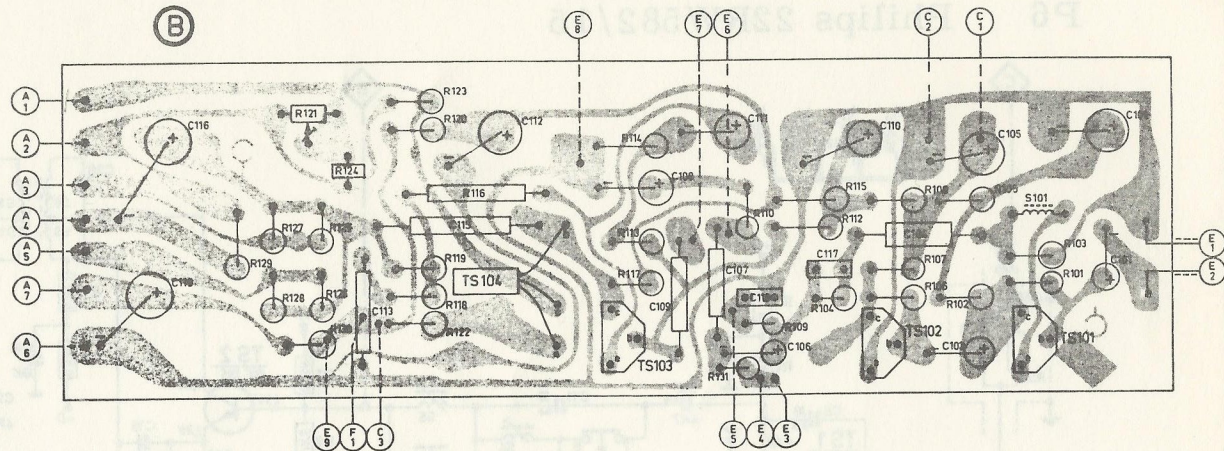
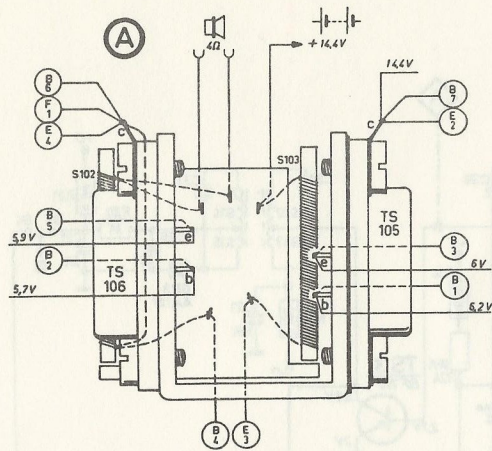
- Remove the side bracket on this unit and loosen the two screws 134.
- Unsolder the aerial connection and the connection wires to the LF print.
- Loosen the cord drive mechanism and remove the mounting bracket 345.
- Next, remove the unit in backward direction.

Adjusting the quiescent current of output transistors TS105, TS106

Connect an ammeter between the collector of TS105 and the "G". After a heating-up time of approx. 3 mins. the collector current should be 50 mA. This can be adjusted with R121.

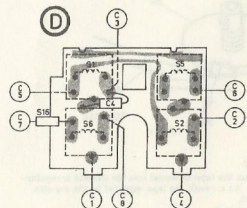
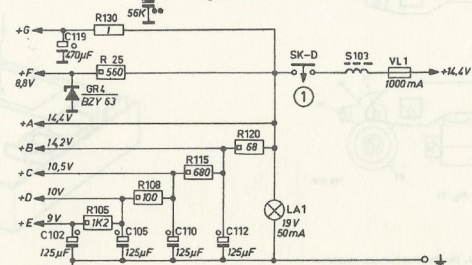
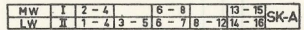
Determining the value of R24 when replacing TS3

If TS3 is replaced by a BF195, the value of R24 should be adapted so that the voltage across R18 is between 1.6 V and 2.1 V. The value of R24 should be between 1.5 and 15 kΩ. If necessary, change the value of R14 into 56 kΩ.



Wiring example

: Wire (U) (mentioned under unit A) leads
to unit D and is then mentioned (A)



MM SEE ADJUSTING INSTRUCTIONS

P6 Philips 22RW582/15

MECHANICAL ADJUSTMENTS AND CHECKS OF THE RECORDER SECTION

Command bracket 88, (Fig. 46)

In position playback bracket 88 should be moved so that it is just in contact with stop A.
It is adjustable by shifting bracket 312 photograph page 13.
After this the fixing screws of bracket 312 should be lock-painted.

Pressure roller lever (Fig. 6)

The force required to pull pressure roller 83, in position "playback" just clear of the capstan should be between 330 and 360 g.

This force can be adjusted by hooking the end of torsion spring 86 into another hole.
This adjustment may be carried out only after adjusting the command bracket.

In position playback the clearance between pressure roller lever 85 and tag B should be approx. 0.3 mm. This can be adjusted by bending cam B of bracket 88.

Rubber idler wheel 108 (Fig. 1)

First check the adjustment of command bracket 88 and, if necessary, readjust.

If, when switching on the cassette recorder, pressure roller 83 just touches the capstan, tag C of bracket 88 should be just clear of the cam of bracket 111 (Fig. 6).

This can be adjusted by inserting two screwdrivers in the slotted holes and bending bracket 88.

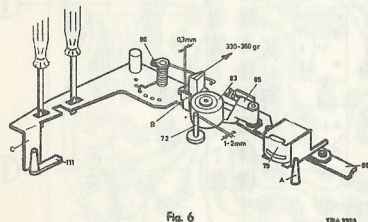


Fig. 6

TGA 3912

Brake bracket 81 (Fig. 8)

In the playback position the felt on the brake bracket should press against the frontmost turntable with a force of approx. 30 g. This can be adjusted by bending the brake bracket.

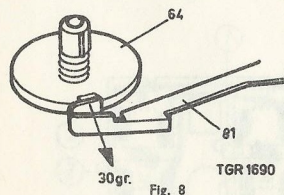


Fig. 8

TGR 1690

Winding friction

It is possible that the tape is wound into the cassette irregularly or not at all. As a result the tape supplied by the capstan may be damaged.

This may be caused by:

- Insufficient winding friction
- Excessive winding friction in the cassette.

To determine the cause of the fault, the torque of the winding friction should first be measured. This is effected as follows: Insert a test cassette (4822 395 90037, Fig. 9) into the recorder. Switch on the recorder and check that the torque of the winding friction is between 40 and 55 g.

Also check whether slip occurs by blocking the right-hand turntable. In that case idler wheel 108 and the nylon disc of the winding friction 67 should continue to rotate.

If necessary, check whether lever 111 runs heavily. Replace idler and/or winding friction, if required.
After replacement again check the winding friction.

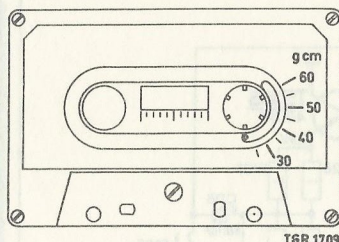


Fig. 9

TGR 1709

Adjusting the flywheel capstan

As the tape guide, playback head and pressure roller of the 22RW582 are always in line, the capstan is the only part with which the line-up should be adjusted. The capstan should be perpendicular to the tape direction. Adjustment can be effected with the aid of an adjusting device (4822 402 60245).

Remove cover 57 from the cassette compartment and remove pressure roller lever 85.

Set the recorder to position playback and slide the adjusting device over the capstan. The capstan should not move in the tape guide without friction, as shown in Fig. 11.

If it does not, the position of the capstan can be adjusted with the aid of screw 89. Then lock-paint this screw.

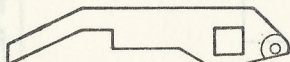


Fig. 11

TRA 3318

Adjusting relay RE201

When the relay is energised, the distance between setscrew 114 and the frame should be 0.6 mm.

Checking

When the relay is energised, the point of lever 41 should be positioned freely in the hole of the relay yoke.
When the cassette recorder is switched on (without voltage) the point of lever 41 should move just along the relay yoke.

Adjusting the playback head

Insert a cassette with a 6300 Hz test tape (code number: 4822 397 30005). Switch on the recorder and adjust for maximum output power with screw 102.
Then lock-paint this screw.

ELECTRICAL CHECK OF THE RECORDER SECTION

Motor current consumption

The current consumption of the unloaded motor (i.e. without drive cord) should be smaller than 20 mA. At the end of the tape the current consumption should be less than 75 mA with idler wheel 96, blocked.
During fast winding and fast rewinding the current consumption at the beginning of the tape should be smaller than 120 mA, while at the end of the tape it should be smaller than 140 mA. The above-mentioned values should be measured at a supply voltage of 14.4 V. The figures also include the current consumption of the control circuit (TS301 and TS302) of the motor. It is advisable to measure the current between points 1 and 3 of SK-B.

Tape speed check 1

The tape speed check is carried out with the aid of test tape 4822 397 30005, onto which a 400 Hz signal has been modulated every 4.75 m. Insert the cassette with the test tape in the recorder. Switch the recorder to position "playback".

The time between two subsequent 400 Hz signals should be between 98 and 102 secs. If the time is smaller than 98 secs., the speed is too high.

In the latter case one or more parts of the recorder might not run smoothly, e.g. the pressure roller, winding friction, flywheel or turntable. These parts should then be cleaned and re-lubricated.

If the speed is still too high, this can be adjusted with the aid of R302. This method of checking is rather time-consuming; the following method does not take up so much time.

Tape speed check 2 (Fig. 5)

Open a cassette at the side, so that the tape can be pulled out through the opening.

Remove the cabinet from the recorder and insert the cassette. Position a stroboscopic disc (code number 4822 395 90001) for 50 Hz and 4822 395 90002 for 60 Hz) next to the recorder and lead the tape past it.

If the recorder is switched on, it can be read on the stroboscopic disc whether the speed is too high or too low.

If the speed is too low, this may be caused by the pressure roller, winding friction, flywheel or turntables. These parts should then be cleaned and re-lubricated.

If the speed is not yet correct, this can be adjusted with R302. The time required for fast rewinding of a full cassette should be smaller than 60 secs.

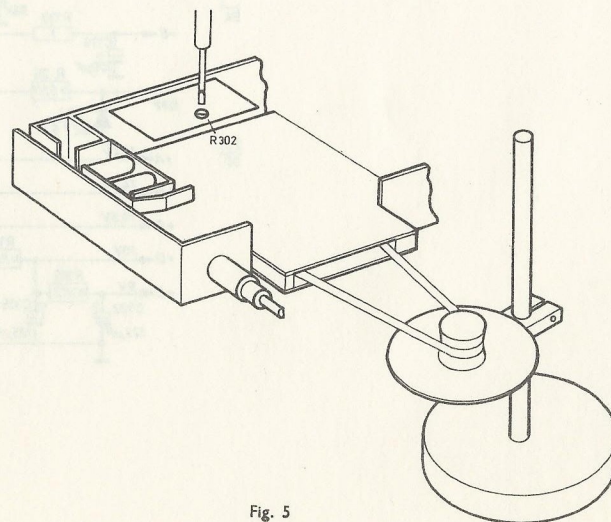


Fig. 5

WORKING OF THE RELAY AND THE AUTOMATIC STOP MECHANISM

In the rest position contacts 1 and 2 of SK-B are closed. Transistor TS202 is turned on, if the supply voltage is switched on, TS201 will also be conductive. As a result relay RE201 is energised. If the cassette compartment is pressed down (the cassette recorder is switched on), points 1 and 3 of SK-B will be closed. Consequently, the motor and also the turntable will become operative, so that SK-E is very quickly switched from the one position to the other.

If at a certain moment contacts 1 and 2 of SK-E are closed, C202 will be charged via C201 and R202. As a result a current will be applied to the base of TS202, large enough to energise the relay.

Simultaneously C201 is very quickly discharged via R201. The next moment SK-E is in the second position. C201 is then charged via R201 and C202, so that the relay remains energised. C202 then discharges via R201. Since switching is effected very quickly and since C201 and C202 are rather large, a practically constant charging current will flow through R202, so that the base of TS202 has a practically constant positive voltage. Consequently, the relay remains energised.

If the end of the tape is reached, the turntable stops, so that SK-E stops in a certain position. C201 or C202 is then charged.

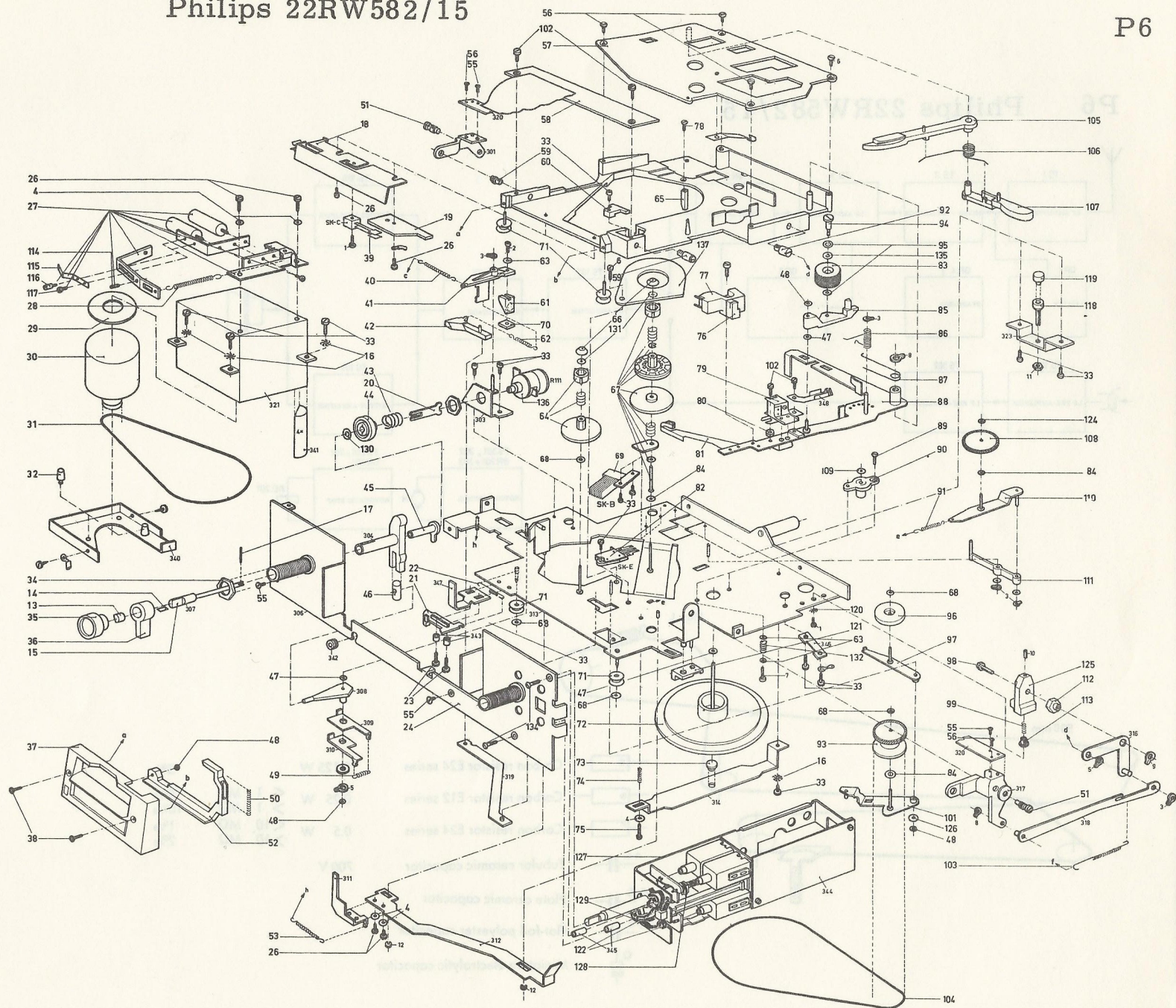
After some time (a few seconds) the charging current will have become too small, so that the base voltage of TS202 becomes too low.

As a result the relay will be de-energised, so that the cassette compartment automatically moves up.

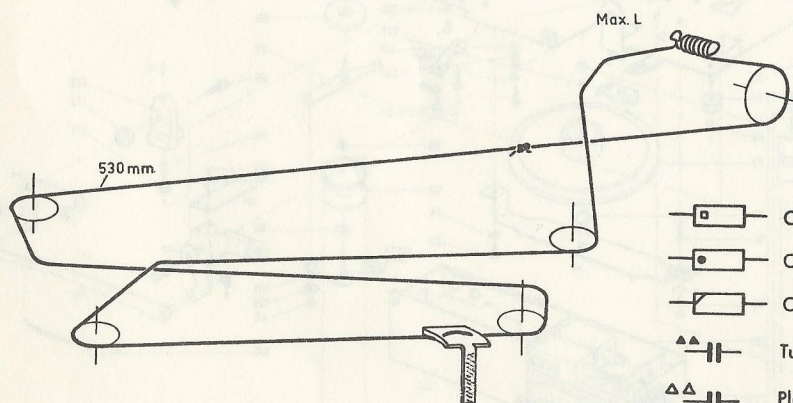
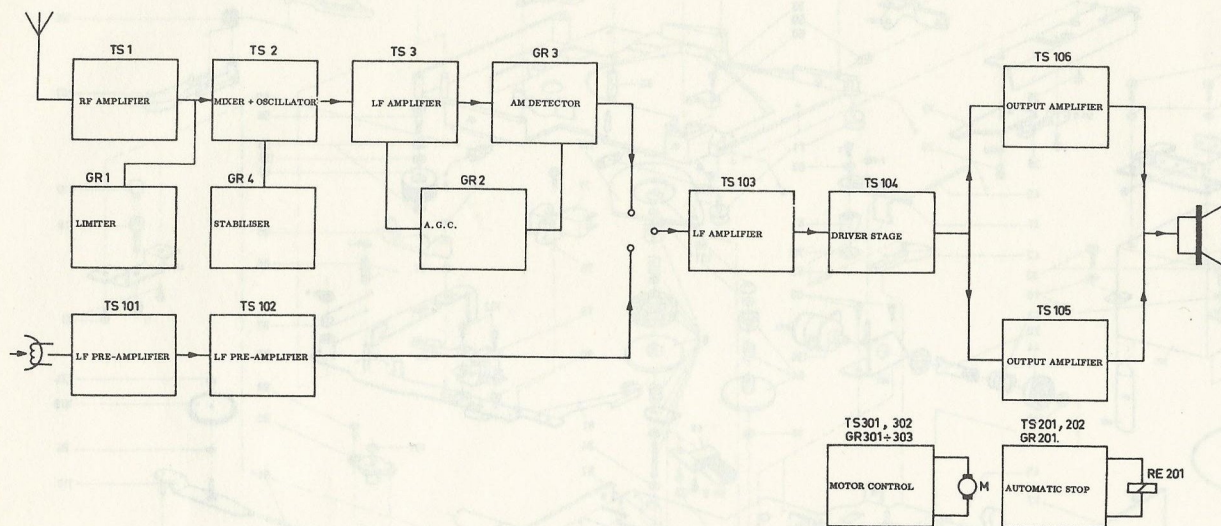
Contacts 1 and 2 of SK-B are closed again, so that the relay is re-energised (rest position). The next cassette can then be played back. If during playback, control 4 is depressed, switch SK-C is closed. Resistor R204 is then short-circuited and relay RE201 is de-energised. The cassette compartment returns to the rest position.

Philips 22RW582/15

P6



P6 Philips 22RW582/15



	Carbon resistor E24 series	0.125 W		5%
	Carbon resistor E12 series	0.25 W	< 1 MΩ	5%
	Carbon resistor E24 series	0.5 W	> 1 MΩ	10%
	Carbon resistor E24 series	0.5 W	< 10 MΩ	1%
	Carbon resistor E24 series	0.5 W	> 10 MΩ	2%
	Tubular ceramic capacitor	700 V		
	Plate ceramic capacitor			
	Flat-foil polyester capacitor			
	Miniature electrolytic capacitor			

REPAIR HINTS OF THE RECORDER SECTION

Since with bracket 320 the cassette compartment can be adjusted and this adjustment should be effected very accurately, it is recommended NEVER to remove this bracket for repair purposes. This bracket may, however, be removed together with brackets 301 and 317 as one unit.

1. Replacing the cords

- When fitting the new cord, ensure that it remains free of grease.
- After fitting, readjust the axial plus of flywheel 72 to 0.1 mm. This is possible with the aid of screw 75, which should be lock-painted after the adjustment.

2. Replacing flywheel 72

- After replacing the flywheel, degrease the capstan and adjust the axial plug of the flywheel to 0.1 mm.
- Next, lock-paint screw 75.
- Check oil seal 109.

3. Replacing drive roller 93 and idler bracket 97

- Remove tension spring 53 and remove cord 104.
- Remove circlip 12.
- Remove bracket 319 from plastic pin 42.
- Remove bracket 101 with drive roller 93.
- Remove circlip 68 and replace the drive roller.
- Bracket 97 can then also be replaced.

4. Replacing rubber idler wheel 108

- Remove the flywheel (see point 2).
- Remove circlip 3, fixing lever 111.
- Lever 111 can then be removed together with bracket 110 and idler wheel 108.
- Next, remove ring 124. The idler wheel can then be replaced.

5. Replacing command bracket 88

- Remove cover plates 57 and 58.
- Remove circlip 8 and spring 87.
- Remove guide 60. The bracket assy. can then be removed from the recorder, when the cassette compartment is pressed down.
- For adjusting the new bracket, see under "Mechanical adjustments and checks".

6. Replacing brake spring 81

- Remove the command bracket assy. 88 from the recorder (see point 5).
- Cut the old and the new brake spring as shown in Fig. 4.
- The new brake spring has been provided with two holes. Fit the new brake spring onto the old one in such a way that the two holes coincide exactly.
- The new and the old spring can then be soldered onto each other.

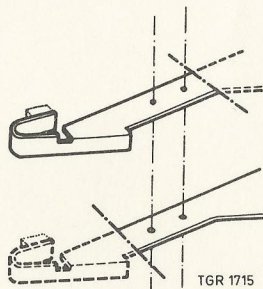


Fig. 4

7. Replacing items 45, 44, 43 or 42

- Remove the plastic pressure bracket 21, spring 40 and circlip 3.
- Replace front bracket 24.
- Mind the cord and the connection wires to LA1 and SK-C.
- The above-mentioned parts can now be replaced. However, to replace 42 circlip 3 should first be removed.

8. Replacing volume control 136 (R111)

- Remove spring 40, circlip 3 and hexagonal nut of volume control.
- The volume control can then be removed after unsoldering the wires.

9. Replacing turntable 64

- Remove cover plates 57 and 58.
- Do not remove connection bracket 320.
- Remove cap 66.
- The turntable can then be replaced.

10. Replacing turntable 67

- Remove cover plate 57, dust cover 137, switch SK-E and cap 66.
- The turntable can then be replaced.

11. Replacing flywheel bearing 90

- Remove the flywheel (see point 2).
- Loosen screws 89 and 7.
- The bearing can then be replaced.
- For adjustment of the bearing, see under "Mechanical adjustments and checks".

1	Screw (3x10)	4822 502 10041	78	Self-tapping screw (2x3/8")	4822 502 30064
2	Screw (2x8)	4822 502 10681	79	Playback head	4822 249 10041
3	Circlip (3 mm Ø)	4822 530 70115	80	Ring	4822 532 50663
4	Ring	4822 532 10215	81	Brake spring with felt	4822 403 10095
5	Circlip (5 mm Ø)	4822 530 70117	82	Switch SK-E	4822 278 90229
6	Countersunk screw (2x6)	4822 502 10089	83	Pressure roller	4822 528 70185
7	Screw	4822 502 10681	84	Ring (1,5 mm Ø)	4822 532 50648
8	Circlip (4 mm Ø)	4822 530 70115	85	Pressure roller lever	4822 403 40029
9	Circlip (6 mm Ø)	4822 530 70118	86	Torsion spring for pressure roller lever	4822 492 40268
10	Screw (3x10)	4822 502 10012	87	Torsion spring	4822 492 40267
11	Nut (M3)	4822 505 10005	88	Lever	4822 403 40031
12	Circlip (2,3 mm Ø)	4822 530 70043	89	Set screw for flywheel (2,5x4)	4822 502 10816
13	Spring in knob	4822 492 61155	90	Flywheel bearing	4822 520 10226
14	Spring in knob	4822 492 60752	91	Tension spring	4822 492 30375
15	Spindle	4822 535 90575	92	Screw	4822 535 90586
16	Ring	4822 530 80081	93	Drive roller	4822 528 80305
17	Pin	4822 529 50038	94	Screw	4822 502 10845
18	Scale background with lamp holder	4822 410 20687	95	Ring (2,6 mm Ø)	4822 532 10456
19	Guide bracket	4822 404 20087	96	Idler wheel	4822 528 70184
20	Coupling piece	4822 466 80353	97	Bracket	4822 403 20027
21	Guide bracket	4822 466 70158	98	Screw	4822 500 10123
22	Tension spring	4822 492 30671	99	Pressure spring	4822 492 50619
23	Screw	4822 502 10902	101	Bracket	4822 403 20028
24	Front plate with threaded bushes	4822 404 20086	102	Screw (2x5)	4822 502 10026
26	Screw (2,5x6)	4822 502 10813	103	Tension spring	4822 492 30594
27	D. c. relay	4822 280 80308	105	Lever	4822 403 50436
28	Tension spring	4822 492 30597	106	Torsion spring	4822 492 40269
29	Rubber grommet	4822 532 70078	107	Lever	4822 403 50435
30	Motor	4822 361 20038	108	Idler wheel	4822 528 70186
31	Drive cord	4822 358 30137	109	Ring (2 mm Ø)	4822 532 50705
32	Spacer for cover	4822 462 70486	110	Bracket	4822 403 20029
33	Screw (2,5x4)	4822 502 10812	111	Lever	4822 403 20031
34	Nut (M10)	4822 505 10042	112	Nut	4822 505 10382
35	Knob	4822 413 40391	113	Nut	4822 505 10381
36	Knob	4822 411 20117	114	Screw (2,5x10)	4822 502 10828
37	Cap	4822 331 20026	115	Bracket	4822 492 61217
38	Ornamental screw	4822 502 10885	116	Screw	4822 502 10832
39	Switch SK-C	4822 278 90226	117	Screw (1,6x3)	4822 462 40191
40	Tension spring	4822 492 30595	118	Set screw	4822 502 10831
41	Lever	4822 403 20032	119	Buffer	4822 462 40191
42	Slide	4822 403 50433	120	Ring (4 mm Ø)	4822 532 10202
43	Pressure spring	4822 492 50621	121	Guide bracket	4822 466 70157
44	Disc	4822 413 40356	124	Ring	4822 532 50719
45	Pipe	4822 520 30175	125	Bearing block	4822 520 10243
46	Guide pin	4822 535 90511	126	Ring	4822 532 50718
47	Ring (2,2 mm Ø)	4822 532 50043	127	Tuner (without IF board)	4822 210 10125
48	Ring (1,85 mm Ø)	4822 532 50286	128	Spring for worm shaft (tuning)	4822 492 61339
49	Tension spring	4822 492 30592	129	Pressure spring	4822 492 61286
50	Pressure spring	4822 492 50622	130	Ring	4822 532 10479
51	Screw	4822 502 10844	131	Ring (1,55 mm Ø)	4822 532 50704
52	Ejector button	4822 410 20687	132	Pressure spring	4822 492 50659
53	Tension spring	4822 492 30593	134	Countersunk screw	4822 502 10861
55	Countersunk screw (2,5x4)	4822 502 10816	135	Ring (2,5 mm Ø)	4822 532 10476
56	Countersunk screw (2,5x6)	4822 502 10815	136	Volume control	4822 101 50095
57	Lid for cassette housing	4822 466 90473	137	Cover	4822 443 60276
58	Lid	4822 466 90484			
59	Screw	4822 502 10868			
60	Guide	4822 462 70485			
61	Cam	4822 403 20033			
62	Tension spring	4822 492 30596			
63	Ring	4822 532 10201			
64	Turntable	4822 528 10166			
65	Cam for switch	4822 535 90509			
66	Cap for turntable	4822 462 70485			
67	Turntable	4822 528 10193			
68	Ring (1,2 mm Ø)	4822 532 50262			
69	Switch SK-B	4822 278 90228			
70	Nut	4822 505 10003			
71	Pulley	4822 528 80352			
72	Flywheel	4822 520 60048			
73	Thrust bearing	4822 520 10227			
74	Pressure spring	4822 492 50312			
75	Screw (2,5x10)	4822 502 10814			
76	Support	4822 401 10474			
77	Tape guide	4822 403 50434			

LUBRICATING INSTRUCTIONS

Lubricate the spindles with Shell Tellus 33, 4822 390 10006
Lubricate the contact surface with Lubricant 10, 4822 390 10003