

Fig. 6

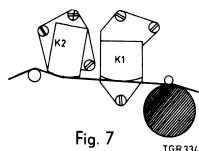


Fig. 7

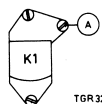


Fig. 8

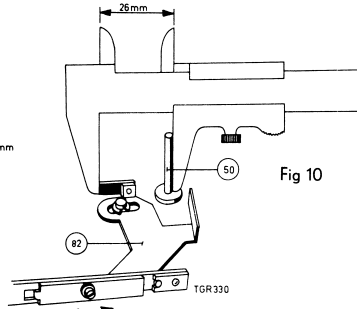


Fig. 10

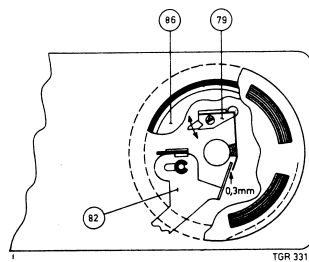


Fig. 11

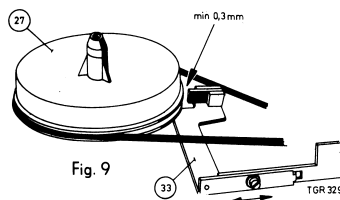


Fig. 9

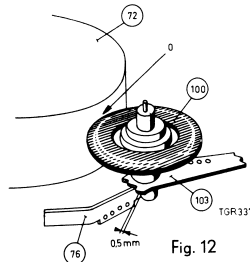


Fig. 12

Brakes Spring 79

Put the apparatus into position "Fast Rewinding".
The felt pad on the brake spring 79 must touch the reel disc shaft.
The distance between the brake spring and the lip of the brake bracket 82 must be 0.3 mm. This can be adjusted by bending the lip on bracket 82, fig. 11.
The felt pad of the brake spring must press against the reel disc shaft with a force of 60-80 grammes.
This can be adjusted by turning the brake spring 79 by means of a screwdriver from underneath through the triangular hole in the mounting plate.

Winding friction, 100

Put the apparatus into position "Playback".
The friction of the winding wheel 100 must be so great that a tape on a 3" reel pulls with a force of 8-15 grams.
If necessary, check the adjustment of the stop bracket.

Stop bracket 76

If the rubber of the winding wheel touches the flywheel 72, and the aluminium pulley touches the right-hand reel disc, then the clearance between the stop bracket 76 and the insert bush on the coupling bracket 103 must be 0.5 - 1.0 mm., fig. 12.
This can be adjusted by bending the stop bracket 76. In position "playback", the pulley of the winding wheel must press against the right-hand reel disc with a force of 25 to 30 grams., fig. 13.

Slide 69 and pressure roller lever 49

The stroke of slide 69 can be adjusted by means of plate 304, fig. 14.
Put the apparatus in position "playback".
Remove spring pos. 68.
Undo the screw of plate 304.
Push slide 69 away as far as possible by hand.
Press an adjustment plate against tumbler 73; and tighten it.

- The clearance between adjustment plate 304 and tumbler 73 must be greater than 0.1 mm.
- Fit spring pos. 68.
- The distance between the lip on slide 69 and the lip on the pressure roller lever 49 must be 0.3 - 1.5 mm., fig. 15.

The recording button 84 must be locked when the start button is depressed.

This can be adjusted by positioning bracket 303.

This is possible after the two screws C have been loosened.

The force necessary to lift the pressure roller from the capstan must be 300 ± 25 grams., fig. 15. This can be adjusted by bending the fixing lip of spring 68 on slide 69.

Pressure bracket 45.

In position "playback" the pressure bracket must be pulled with a force of 8-12 grams by spring 46 when the felt pad is released from the head, fig. 16.

This can be adjusted by bending lip A on the pressure roller lever. The clearance between the pressure bracket and the stop lip on the pressure roller lever must be 0.5 - 1.5 mm.

The felt pad on the phosphor bronze leaf spring must be able to bend when the start button is depressed.

This can be adjusted by bending lip A on the pressure roller lever.

Winding roller 69

The winding roller 69 must have a clearance of at least 0.5 mm. from the flywheel 72 and the reel disc 86 in the positions "recording" and "playback", fig. 13.

Adjustment is done by bending coupling strip 101, fig. 17.

In position "fast winding", attention should be paid that the coupling strip 101 is free from the coupling bracket 99.

In position "fast rewinding", the clearance between the coupling strip and the lower plate 74 must be at least 0.3 mm.

In position "fast winding", the winding roller must press against the flywheel and the reel disc with a force of 60-70 grams, fig. 18.

Belt drive wheel 36

In position "playback" the clearance between the flywheel 72 and the belt drive wheel 36 must be at least 0.5mm., fig. 13.

This can be adjusted by bending lip A (fig. 19) of the mounting plate.

In position "fast rewinding" lip B of bracket 37 must remain free from lip A and the torsion spring 39 by at least 0.3 mm.

In the stop position of the apparatus, the force for releasing the drive wheel from the flywheel must be 20-30 grams, fig. 20.

Idler Wheel 55

In position "playback", the idler wheel 55 must be pulled between the flywheel 72 and the motor pulley with a force of 30 ± 3 grams. This force can be adjusted by bending the connecting point of the spring of the idler wheel lever on the motor mounting plate.

Checking and adjustment of the tape speed

The tape speed must be 4.75 cm/sec.

This can be checked as follows:

- Mark a part of the tape for 4.75 metres with, for instance, a piece of adhesive tape.
- Place the tape into the apparatus with the first mark near the capstan.
- Switch the apparatus into position "playback".
- Measure the time between the start and the moment at which the second mark passes the capstan.
- This time must be between 95 and 103 seconds.
- Should this time be incorrect, then check whether one of the parts of the mechanism runs heavily, for instance, pressure roller 48, winding friction 100, and flywheel bearing 58. If this is not the case, and all forces and clearances are correct, then correct the speed, if necessary, by turning the adjustment screw of the regulator on the motor shaft, fig. 21.

This adjustment screw is accessible through a hole in the screening bush.

The motor speed is increased by turning the adjustment screw in direction A and decreased by turning it in direction B.

After the adjustment, seal the adjustment screw with cellulose lacquer in order to prevent the speed from altering.

RECORDERS

EL 3586/00



PHILIPS MODEL EL 3586-00 TECHNICAL DATA

Tape speed	: 4,75 cm/sec. (1 7/8" /sec.)
Supply voltage	: 9 V (6 x 1½ V)
Output power	: 500 mW (line output 500 mV)
Loudspeaker	: AD 2400 W
Reel diameter	: without lid 10 cm (4") with lid 7,5 cm (3")
Life of battery	: approx. 40 hrs, long life cells
Microphone	: EL 3755-00A
Dimensions	: 280 x 97 x 200 mm
Weight	: 3,65 kg
Input sensitivity for radio and gramophone	: 0,3 mV across 2 kΩ
Current consumption	: approx. 100 mA without signal
Number of tracks	: 2
Transistors	: TS1 AC125 TS2 AC125 TS3 AC126 TS4 AC126 TS5) AC128 TS6) AC128 TS7 OC70 GR1 OA79

Hints for Repair

Removing the apparatus from the case, fig. 1.

- Remove the lid and the handle.
- Remove the batteries and the microphone.
- Undo the two screws "A".
- Remove the two outer circlips by means of the pliers A9 600 30.
- Loosen the three screws "B". Do not loosen the 4th screw.
- The two case halves can now be parted carefully.
- Encasing is done in the reverse order.

Replacement of the Bowden cable, pos. 85, fig. 2

- Put the lever of switch SK1-2 into the recording position.
- Pass a locking pin approx. 1 mm thick through the hole in the switch.
- Fit the Bowden cable.
- Then remove the locking pin.

Replacement of the reel shafts, pos. 50, fig. 3

When the reel shafts have to be replaced, the original shaft must be tapped out of the fixing bush by means of a punch. The fixing bush should be supported on the upper side of the mounting plate. Then carefully tap the new shaft into the fixing bush by means of a plastic hammer, so that smoothly finished side is on top.

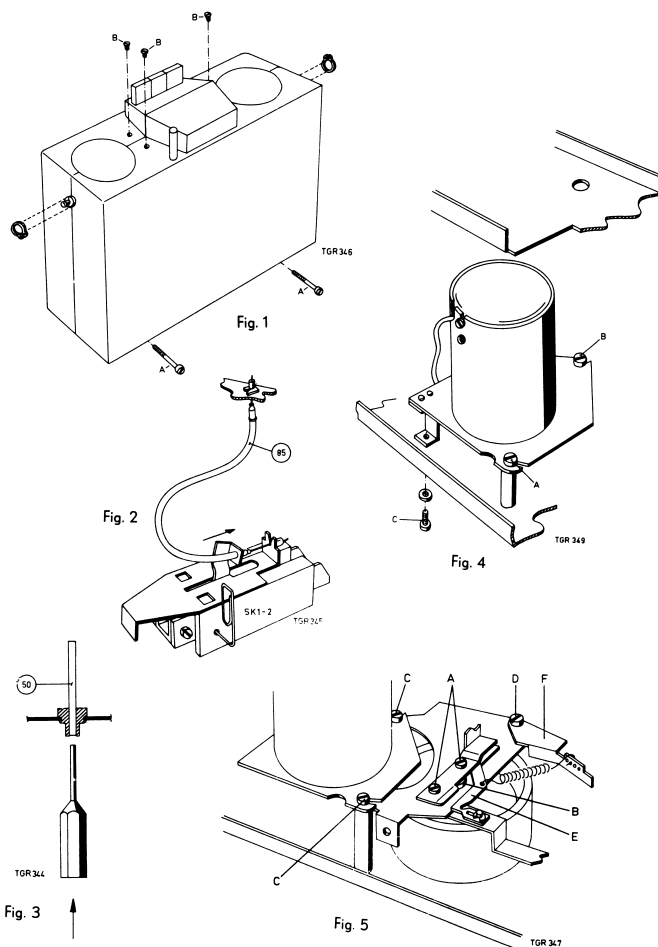
Replacement of the motor, fig. 4

- For this, use a long thin screwdriver.
- Loosen the printed panel.
- Loosen the two screws "A" and "B" a few turns. Screw "B" is accessible through a hole in the bottom plate.
- Undo the third screw by means of which the motor is fitted to the mounting plate.
- The complete motor with drive unit can now be taken out of the apparatus (this should be done carefully in view of the wiring).
- Unsolder the three connection wires of the motor from the wire support.
- The motor can be removed from the mounting plate by loosening the three screws pos. 19.

The motor must be checked for speed after the replacement. For this, see "Adjustment and Checking of the Tape Speed". The regulator screw must be sealed after the adjustment.

Replacement of the flywheel, pos. 72, fig. 5

- Undo the four screws on the printed panel.
- Push the bracket of SK1-2 forwards, and disconnect the Bowden cable, pos. 85.
- Undo the two screws "A". Mind the spacing bushes!
- Remove the lower bearing "B" of the flywheel.



- Disconnect the three springs under the control buttons and the spring on the bracket for the belt drive wheel.
- Undo the two screws C on the motor mounting plate.
- Undo the screw D under the control buttons.
- Remove the coupling strip E and the stop bracket F.
- Undo screw, pos. 20, on the starting strip and remove bushing 311.
- Loosen the third screw, by means of which the motor is fitted to the mounting plate.
- The lower plate can be slid downwards by taking the motor out of the apparatus.
- After having moved bracket, pos. 99, out of the way, the flywheel can be taken out of the apparatus.
- Mounting is done in the reverse order. (mind the correct position of the tumbler, pos. 73 !)

Mechanical adjustments

Reel discs 27 and 86, and recording/playback head

The distance between the upper side of the reel discs and the mounting plate must be 14 ± 0.2 mm, fig. 6. This can be adjusted by means of the pivot screws, 26. The tape must run through the tape guide of the erasing head without twisting. The height of the recording/playback head must be so that the tape runs through the tape guide without twisting. The front of the recording/playback head must be parallel to the front of the erasing head, and the capstan (vertical), fig. 7. The air gap should be perpendicular to the tape. This must be adjusted as follows:

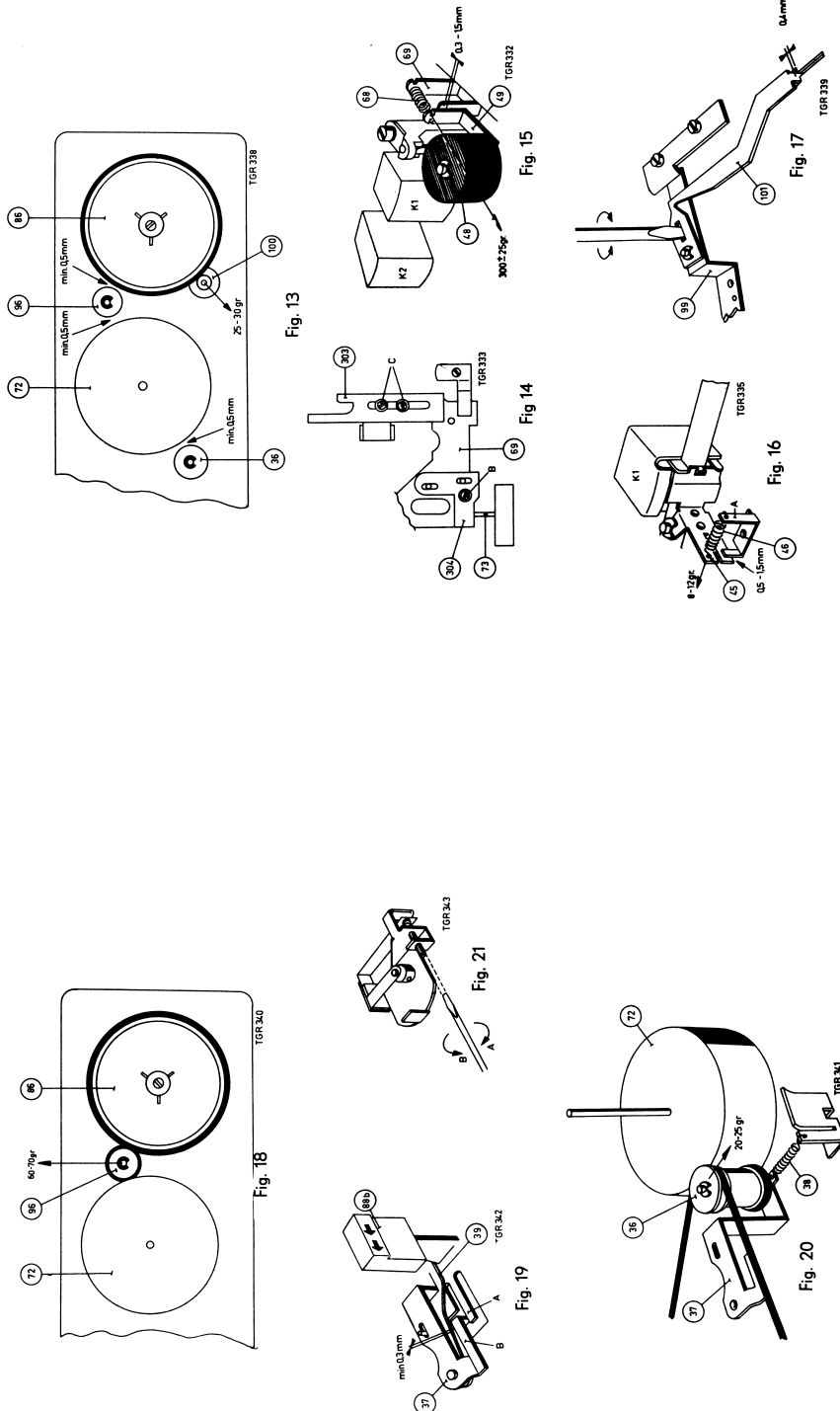
- Place a test tape WT 939 15 into the apparatus.
- Connect a valve voltmeter to the points 2 and 3 of BU1.
- Switch the apparatus into position "Playback".
- Now adjust for maximum output voltage with screw A, fig. 8.

Brakes

Put the apparatus into position "Fast rewinding". There must be a clearance of at least 0.3 mm. between the brake blocks and the reel discs, fig. 9. For the right-hand reel disc, this distance amounts to 26 mm., as indicated in fig. 10. The adjustment can be done by moving bracket 33 for the left-hand brake, and bracket 82 for the right-hand brake.

LIST OF MECHANICAL PARTS

Pos.	Code number	Description
1	988/4	Washer 4 mm
2	988/3	Washer 3 mm
3	987/3	Toothed spring washer 3 mm
4	999/2x5	Screw with cylindrical head 2x5mm
5	999/2,6x15	Screw with cylindrical head 2,6x15mm
6	999/2,6x8	Screw with cylindrical head 2,6x8mm
7	999/3x10	Screw with round head 3 x10 mm
8	999/3x15	Screw with cylindrical head 3 x15 mm
9	998/2,6x8	Screw, countersunk 2,6x 8 mm
10	987/4	Toothed spring washer 4 mm
11	999/3x30	Screw with cylindrical head 3x30 mm
12	993/M2,6	Hexagonal nut 2,6 mm
13	984/2	Circlip \varnothing 2 mm
14	986/3	Pressure washer 3 mm
15	990/3,5x35	Spacer 3,5 mm
16	985/3	Retaining ring \varnothing 3 mm
17	985/4	Retaining ring \varnothing 4 mm
18	985/5	Retaining ring \varnothing 5 mm
19	999/3x6	Screw with cylindrical head 3x6 mm
20	999/2,6x23	Screw with cylindrical head 2,6x23 mm
21	998/2,6x8	Screw, countersunk 2,6x 8 mm
22	987/2	Toothed spring washer 2 mm
23	999/4x50	Screw with cylindrical head 4x50 mm
25	P7 520 45/000	Driving belt
26	P5 511 30/334HA	Pivot screw for reel discs
27	AE 571 81	Left-hand reel disc
28	P5 512 62/NB	Nylon bracket for erase head
33	AE 606 13	Brake bracket, left
34	AE 506 59	Tension spring for left-hand brake bracket
35	AE 017 49	Ring
36	AE 571 16	Belt drive wheel
37	AE 606 05	Bracket and shafts
38	AE 504 89	Tension spring for bracket pos. 37
39	AE 504 88	Torsion spring for bracket pos. 37
41	JW 527 01	Motor assy
41a	AE 607 13	Motor mounting plate assy
42	AE 504 69	Tension spring, recording/playback head
43	AE 504 67	Pressure spring, recording/playback head
44	AE 571 35	Erase head
45	AE 606 04	Pressure bracket for recording/playback head
46	AE 505 12	Spring for pressure bracket
48	AE 571 76	Pressure roller
49	AE 606 15	Pressure roller lever assy
50	AE 571 07	Shaft for reel discs
51	AE 504 34	Insert pin for slide guide
52	AE 504 36	Insert pin for brake bracket guide
53	AE 504 37	Insert pin for drive wheel
54	AE 508 16	Spring for idler wheel bracket
55	AE 607 14	Idler wheel + bracket
56	TD 050 78	Lever for idler wheel
58	P5 511 95/334HL	Lower bearing, flywheel
59	P5 511 93/334HL	Pivot plate for flywheel shaft
60	P5 512 18/GE	Switch assy SK7 + SK6
63	P5 512 26/159HA	Switch SK3 + SK5
64	AE 505 68	Screening for recording/playback head
65	AE 571 34	Recording/playback head assy
66	AE 504 68	Pressure spring under recording/playback head
68	AE 505 13	Tension Spring for slide
69	AE 606 11	Slide
70	AE 504 33	Insert pin for locking bracket guide
72	175 01002	Flywheel
73	AE 606 06	Tumbler assy
74	AE 504 42	Supporting plate
75	AE 012 54	Tension spring for stop bracket
76	AE 505 76	Stop bracket



77	AE 507 01	Retaining plate for upper bearing flywheel
78	AE 504 39	Leaf spring, capstan
79	AE 606 02	Brake bracket under right-hand reel disc
80	P5 511 98/334HL	Upper bearing, flywheel
81	AE 507 49	Fixing bracket
82	AE 606 14	Brake bracket, right
83	AE 507 08	Torsion spring under fixing bracket
84	AE 571 21	Recording button
85	AE 572 36	Bowden cable
86	AE 571 82	Reel disc, right
87	AE 606 12	Brake slide assy
88	AE 607 00	Control buttons
89	AE 504 77	Rewinding strip
90	AE 504 75	Start strip
91	AE 504 76	Winding strip
93	AE 507 58	Tension spring on rewinding strip
94	AE 508 00	Tension spring on start strip
95	AE 504 78	Tension spring on winding strip
96	AE 571 12	Winding roller assy
97	AE 606 07	Leaf spring + bracket
98	988/3	Ring
99	AE 606 10	Winding roller bracket
100	AE 571 58	Winding friction
101	AE 504 59	Coupling strip
102	AE 012 54	Tension spring on coupling strip
103	AE 606 08	Bracket for winding friction
104	AE 017 48	Ring

List of the parts of the case

Pos.	Code number	Description
105	AE 572 37	Handle
106	P5 513 38/931AB	Transparent lid
107	AE 606 17	Cover assy., above heads
108	AE 572 31	Case-half, rear
109	175 01032	Tension spring for microphone fitting
110	P5 512 30/332GR	Fitting hook, microphone
111	AE 505 30	Contact spring for battery (short)
112	940/AD2400W	Loudspeaker
113	B 045 BF/13	Locking ring for fitting of case-halves
114	AE 505 31	Contact spring for battery (long)
115	AE 508 13	Rubber plate under indicator
116	AE 606 18	Cover assy. above pressure roller
117	175 00975	5-pole female plug
118	175 00976	6-pole female plug
119	AE 504 26	Modulation indicator
120	AE 572 33	Knobs for volume and tone control
121	AE 607 15	Case-half assy., front
122	AE 606 16	Lid assy. for battery compartment

Lubrication instructions

Lubricant 10 (A9 881 46/F10)

- Lip of locking bracket 303
- Insert pin 51
- Guide pin 70
- Three lips of slide 69, slotted hole and embossments,
- Slots in lower plate 74
- Brake slide 87
- Hinge point of tumbler 73
- Slot in mounting plate for lip of coupling bracket 103

Hydraulic oil (A9 881 20/F100)

- Reel disc shafts 50 (oil the right-hand reel disc shaft very lightly in view of braking felt)
- Shaft of pressure roller 48
- Shaft of winding roller 96
- Shaft of belt drive wheel 36
- Shaft of drive wheel bracket 37
- Shaft of winding wheel 100
- Upper bearing of flywheel 80 (oil very lightly in view of pressure roller)
- Hinge point of lever 56
- Shaft of idler wheel 55
- Shafts of pressure roller lever 49

Ball-bearing grease (A9 881 22/P50)

- Grease cup of pressure roller 48
- Lower bearing 58 of flywheel 72
- Pin of tumbler 73
- Contact surfaces of brake brackets 82 and 33 with the mounting plate
- Contact surfaces of coupling strip 101 and lower plate 74

List of electrical parts

TS1	AC125	
TS2	AC125	
TS3	AC126	
TS4	AC126	
TS5)		
TS6)	2AC128	
TS7	OC70	
D1	OA79	
S2	A3 910 37	
T1	A3 240 19	
T2	107 00277	
C1	C 425 CF/E2,5	2,5 uF
C2	C 425 AL/C32	32 uF
C3	909/W200	200 uF
C4	C 425 CF/E2,5	2,5 uF
C5	C 425 CF/E2,5	2,5 uF
C6	909/W200	200 uF
C7	C 425 AL/C32	32 uF
R5/R6	E 091 CG/OOB30	Potentiometer 20 kΩ
R30	E 097 AC/5K	Adjustment potentiometer
R40	E 097 AC/50K	Adjustment potentiometer
R38	916/GL20K	Carbon potentiometer 20 kΩ

Electrical measurements

Take the supply voltage for the apparatus from new batteries or supply unit EL 3786.

Playback sensitivity

- Replace the loudspeaker by a resistor of 3Ω.
- Turn the volume and tone controls to maximum.
- Connect a resistor of 22 kΩ to measuring point MP
- Apply a signal of 1000 c/s to the measuring point via the resistor of 22 kΩ.
- Adjust the signal applied so that a voltage of 390 mV is measured across the resistor of 3Ω.
- The input voltage must then be 40 mV ± 2 dB.
- The voltage measured at the line output, point 3, BU1, must be 33 mV ± 2 dB.

Recording sensitivity, fig. 28

- Connect a resistor of 470Ω to the points 1 and 2 of the microphone input
- Apply a signal a 1000 c/s via a resistor of 47 kΩ
- Connect a valve voltmeter (e.g. GM 6012) to the measuring point MP.
- Turn the volume and tone controls to maximum.
- Adjust the voltage at the measuring point MP to 3,3 mV by means of a signal generator.
- The voltage of the signal supplied must amount to 20 mV, ± 2 dB.

Overall sensitivity, fig. 29

- Connect a resistor of 470Ω to the points 1 and 2 of the microphone input.
- Short-circuit the erase head.
- Turn the volume and tone controls to maximum.
- Apply a signal of 1000 c/s via a resistor of 470 kΩ.
- Record frequencies of 1000 and 8000 c/s with an input voltage of 20 mV.
- The output voltage at 1000 c/s must be at least 200 mV, whilst the difference at 8000 c/s should not be more than 3 dB. (Measured at the line output, volume control at minimum.)

Modulation indicator, fig. 30

- Take the supply voltage for the apparatus from new batteries, or the supply unit.
- Put the apparatus into position "playback".
- The needle must then be positioned approx. 1 mm on the left-hand side of the centre of the green sector.
- If necessary, readjust with R40.



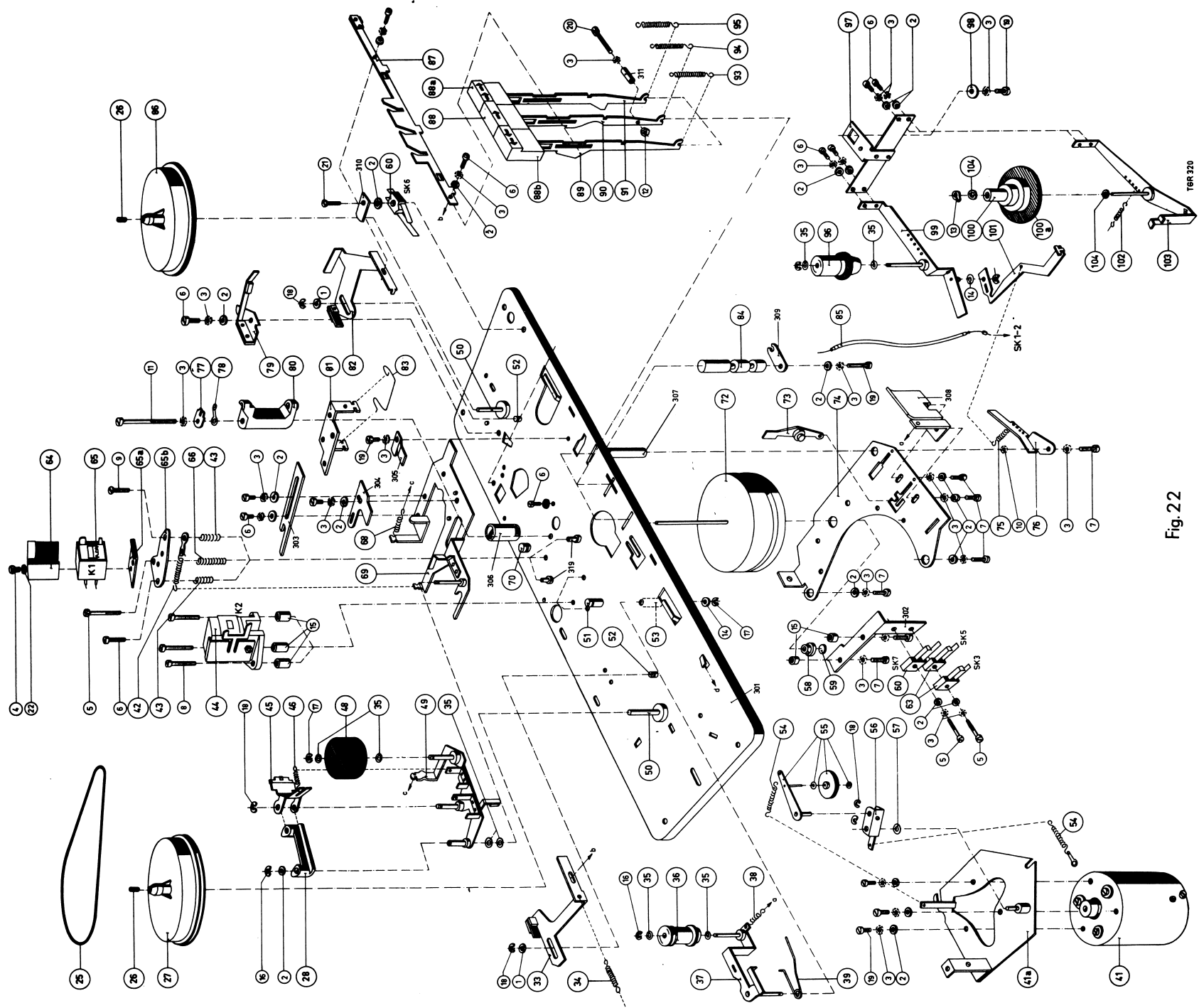
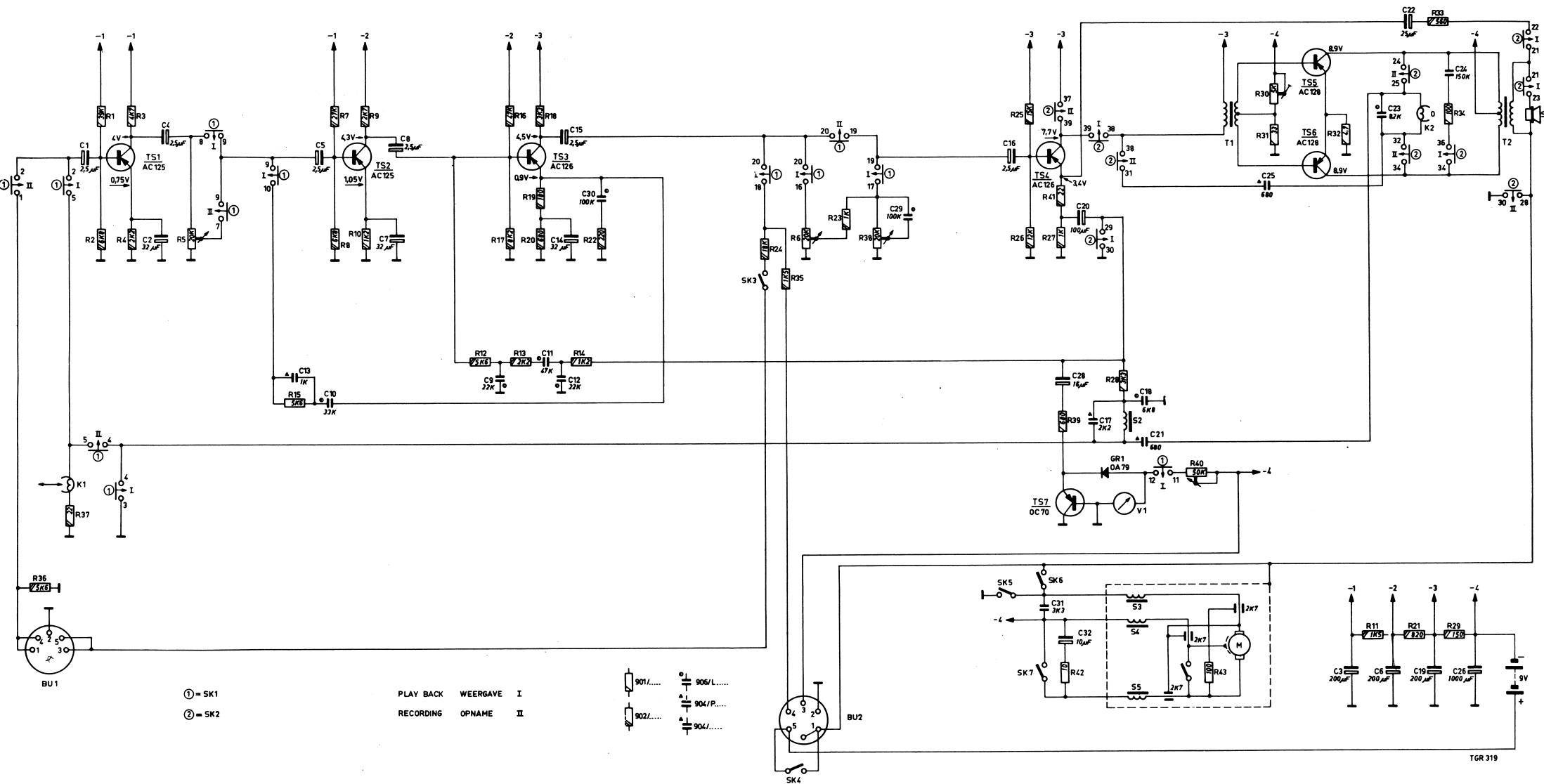


Fig. 22

R:	36,	37,	1, 2, 3, 4,	5,	15,	7, 8,	9, 10,	12, 16, 17,	18, 19, 20, 14,	22,	35, 24,	6,	23,	38,	25, 26,	21, 41, 39, 42,	28,	40, 43,	30, 31,	32, 11,	21,	33, 29, 34,
C:	1,	2, 4,			13, 5, 10,	7, 8,		9,	11, 12, 14, 15, 30,		29,				16,	32, 28-31, 20, 12,	18, 21,		25,	3, 6, 23,	22,	19, 24, 26,



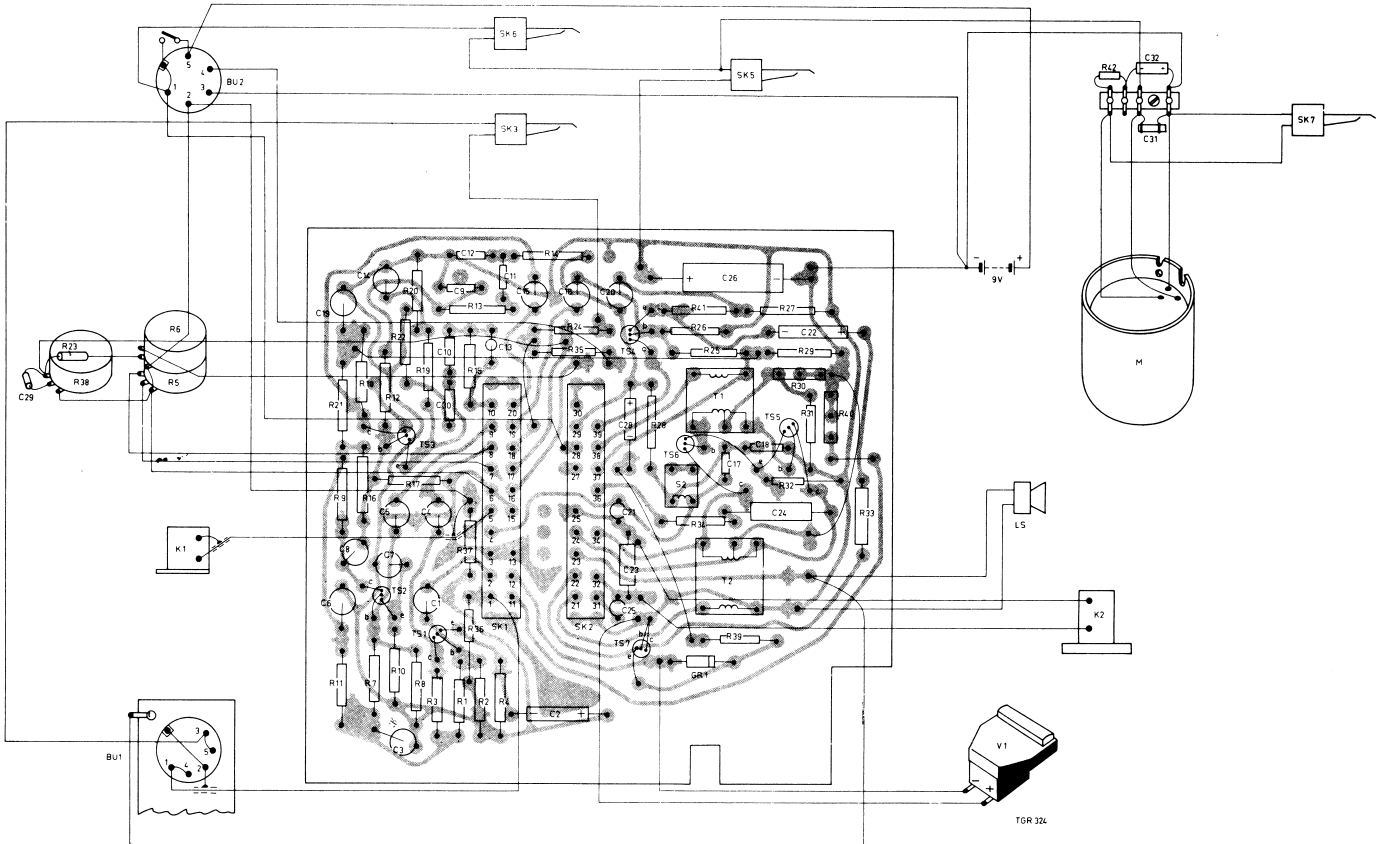


Fig. 26

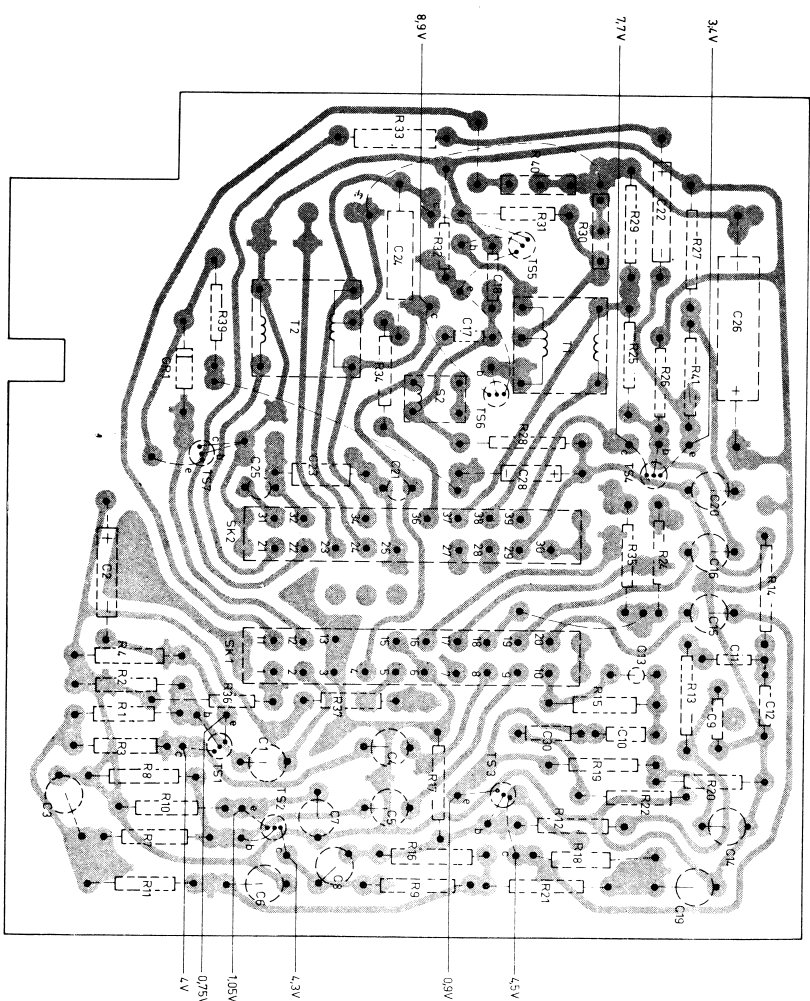


Fig. 31

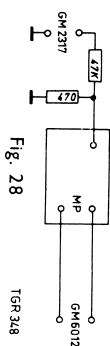


Fig. 28

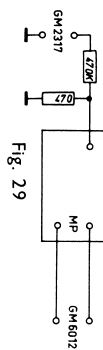


Fig. 29

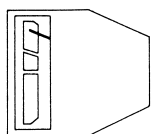


Fig. 30

Biasing current

The biasing current must be adjusted so that the overall sensitivity is correct. The value of the biasing current at measuring point MP must be between 10 and 25 mV. This can be adjusted by means of the core of S2. Increasing the biasing current results in a decrease of the treble notes, whilst decreasing results in an increase of the treble notes. Too low a biasing current will cause distortion at a modulation depth of 100 %.

SUPPLEMENT

Microphone EL 3755-00A

List of Mechanical Parts

Pos.	Code number	Description
1	169 00494	Housing assy
3	V3 189 52	Relief plate
4a	R 367 KA/03AA10	Flex
4b	978/M3x1,5	Plug
6	P7 630 63/319	Strip
7	EL 6084/10	Microphone button
9	P7 630 84/319	Ring
13	V3 006 02	Bracket
14	V3 458 23	Weight
15	999/2x5	Screw

The upper bearing of the EL 3586 has been provided with a bronze bushing. This is to prevent the flywheel spindle from starting to vibrate in the upper bearing.
The new bearing bracket is available under code number 4822 175 01162.

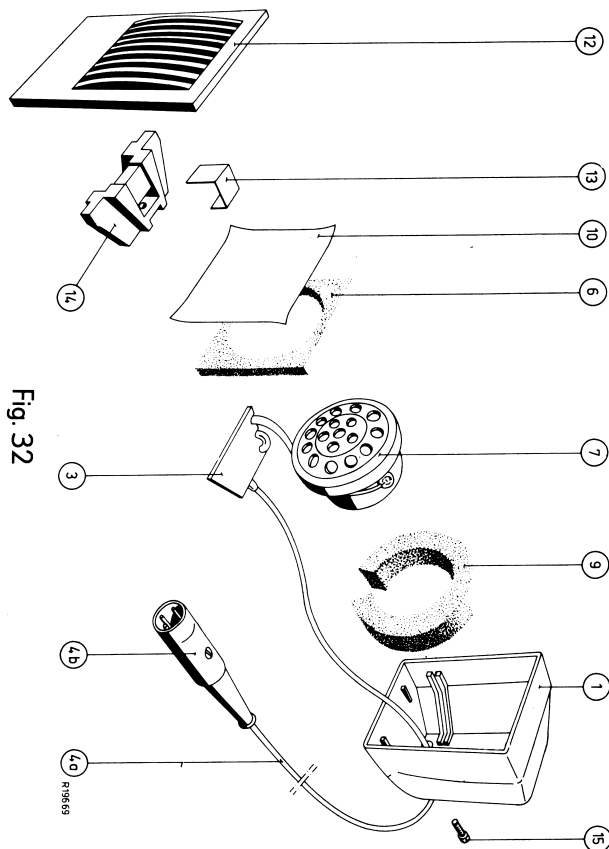


Fig. 32

30-9-63 (Bc 423)

In the course of production the playback amplifier of the EL 3586 has been provided with a physiological volume control.
In Connection with this, R6 is replaced by a potentiometer with an additional tapping. R44 (820 Ω) and C27 (150 K) are added to the circuit.
R44 is available under code number 902/820E.
C27 is available under code number 906/L150K.

The modified code number of R5/R6 is 071 00621.

8-10-63 (Bc 426)

In the Service Notes to the EL 3586 under Parts list of the cabinet, item 109 tension spring for microphone fixing has code number 175 01032. This code number has been changed into AE 505 34.

28-5-64 (Bc 489)

The upper bearing of the EL 3586 has been provided with a bronze bushing. This is to prevent the flywheel spindle from starting to vibrate in the upper bearing.
The new bearing bracket is available under code number 4822 175 01162.

26-4-65 (Bc 539)

Re : Pressure roller assembly

From AH01, week 44, the pressure roller of the EL 3586 is changed. It now consists of a rubber track pressed between two delrin halves. The pressure rollers are not interchangeable. The code number of the new pressure roller is : 4822 175 01101.

Bowden cable

When replacing the Bowden cable, it is recommended first to treat the steel cable with lubricant 10 to prevent the cable from breaking.

11-5-65 (Bc 547)

EL 3586/00/15/22/30/52/54

In some apparatuses it may occur that oscillator coil S2 has a fixed coil core. This coil can then be adjusted by means of a variable resistor R, see Fig. 1, which is accessible through a hole in the top of the mounting plate.
Capacitor C21 in this case is changed to 2K2.
When replacing, a standard coil can be used again; however, R should then be interconnected and C21 replaced by a 680E capacitor.

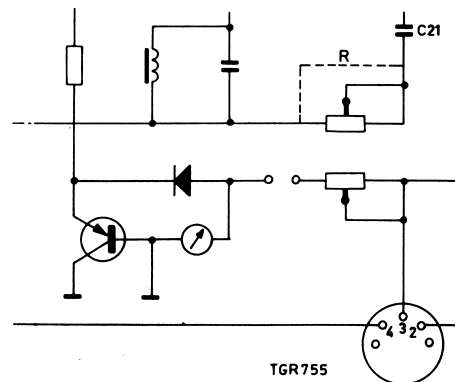


Fig. 1.

14-7-65 (Bc 563)

EL 3585-3586

From now on loudspeaker AD 2400Z is obtainable again.

23-8-65 (Bc 575)

Re : EL 3586

Referring to Bc 509, from mark W28-65 onwards the adjusting screw of the motor has been entirely removed. The motor is factory adjusted to the correct number of revolutions and can be built in without any further adjustment.

3-2-66 (Bc 589)

During production, the EL 3586 has been modified as follows:

- Starting with marking AH01 week 31, capacitor C28 has been added (code number 909/C25). The value of C26 was changed from 1000 μ F to 400 μ F (code number C26: 909/U400). Diode OA79 and transistor TS7 were replaced by an OA70, see Fig. 1.
- Starting with marking AH01 week 33, a new coil S2 is used in the EL 3586.
Since the connections of this coil are different, the print tracks should be interconnected when replacing, see Fig. 2.
In future however, the print plate itself will be modified so that this interconnection will no longer be necessary.
These coils however, can no longer be readjusted so that a new coil must be mounted when readjustment is required.
The code number of the new coil S2 is WT 56230.
- Starting with marking AH01 week 43, trimming potentiometer R40 has been replaced by a resistor of 22 k Ω .

P25-9 PHILIPS MODEL EL3586

R1	36/46	37	1, 2, 3, 4	5	15	7	8	9	10	12	13	14	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	122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