

+2 HP 22AH 492/11S

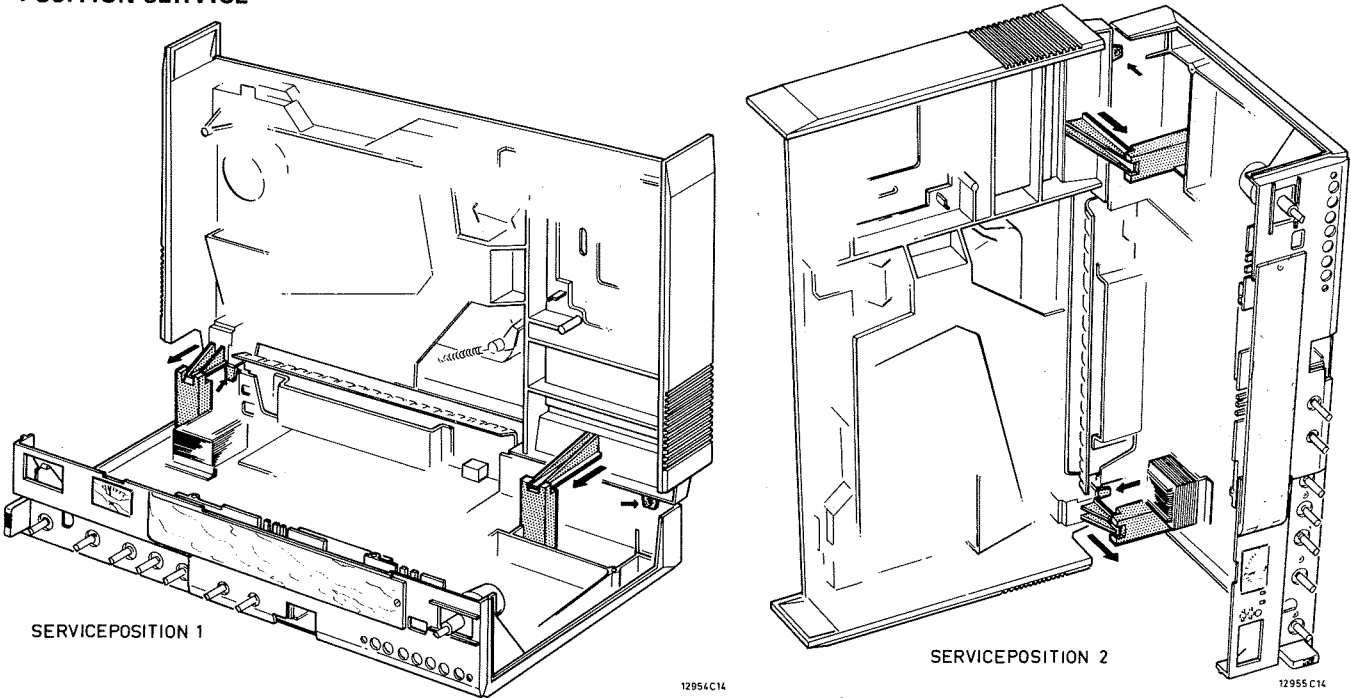
# Service Manual



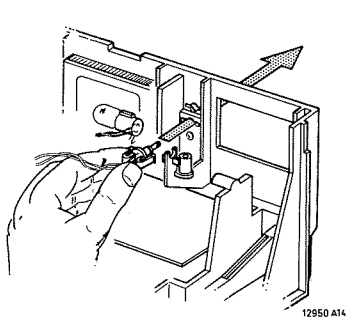
# PHILIPS

REPAIR HINTS  
CONSEILS REPARATION

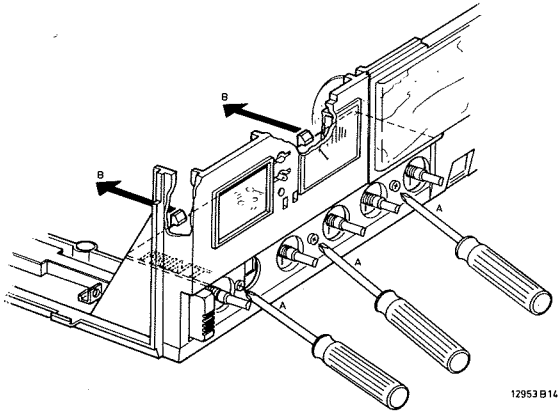
SERVICE POSITION  
POSITION SERVICE



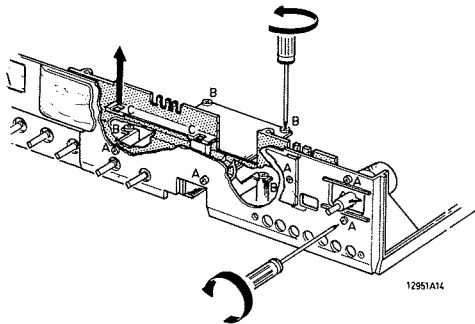
POSITION OF LED  
ETAT DE LA DIODE ELECTROLUMINESCENTE



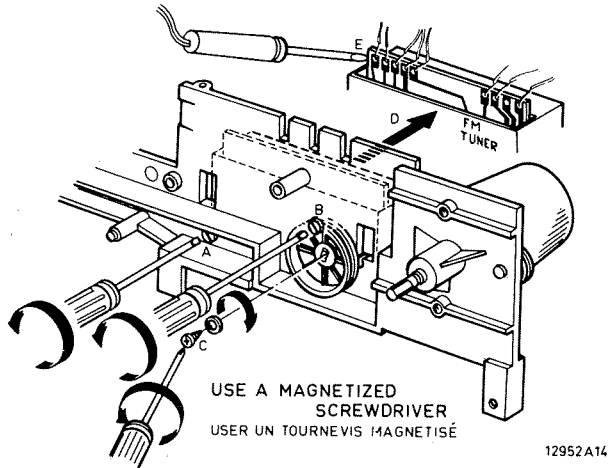
DEMOUNTING OF TONE CONTROL PANEL  
DEMONTAGE DU PANNEAU D'ACCORD DE TONALITE



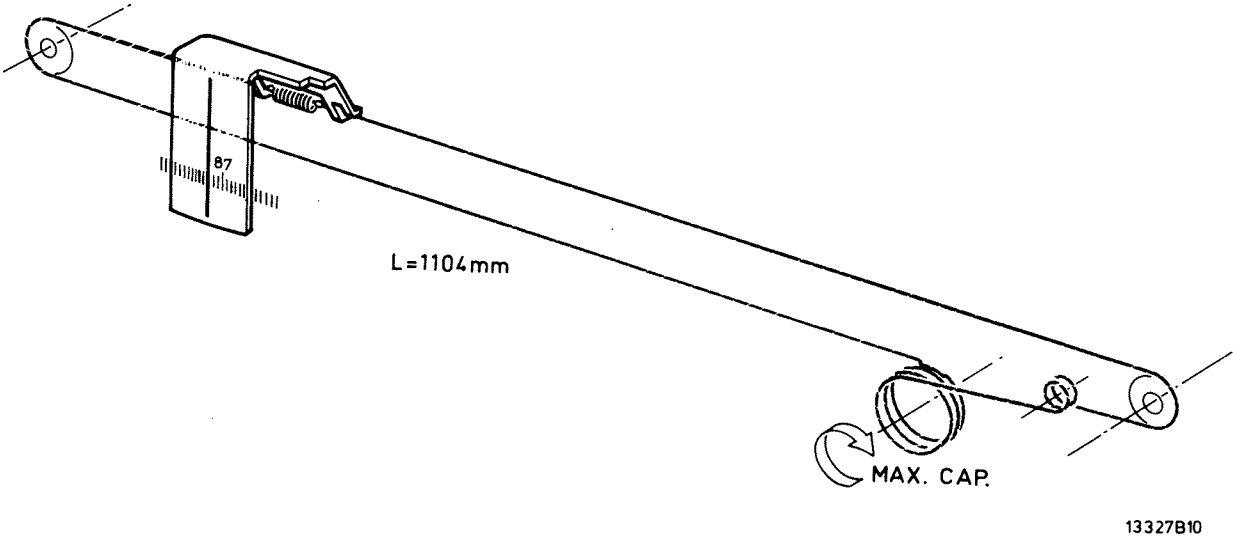
DEMOUNTING OF SUB-FRAME  
DEMONTAGE DU SOUS-CHASSIS



REPLACEMENT OF FM-TUNER  
REPLACEMENT DE L'ADAPTATEUR FM



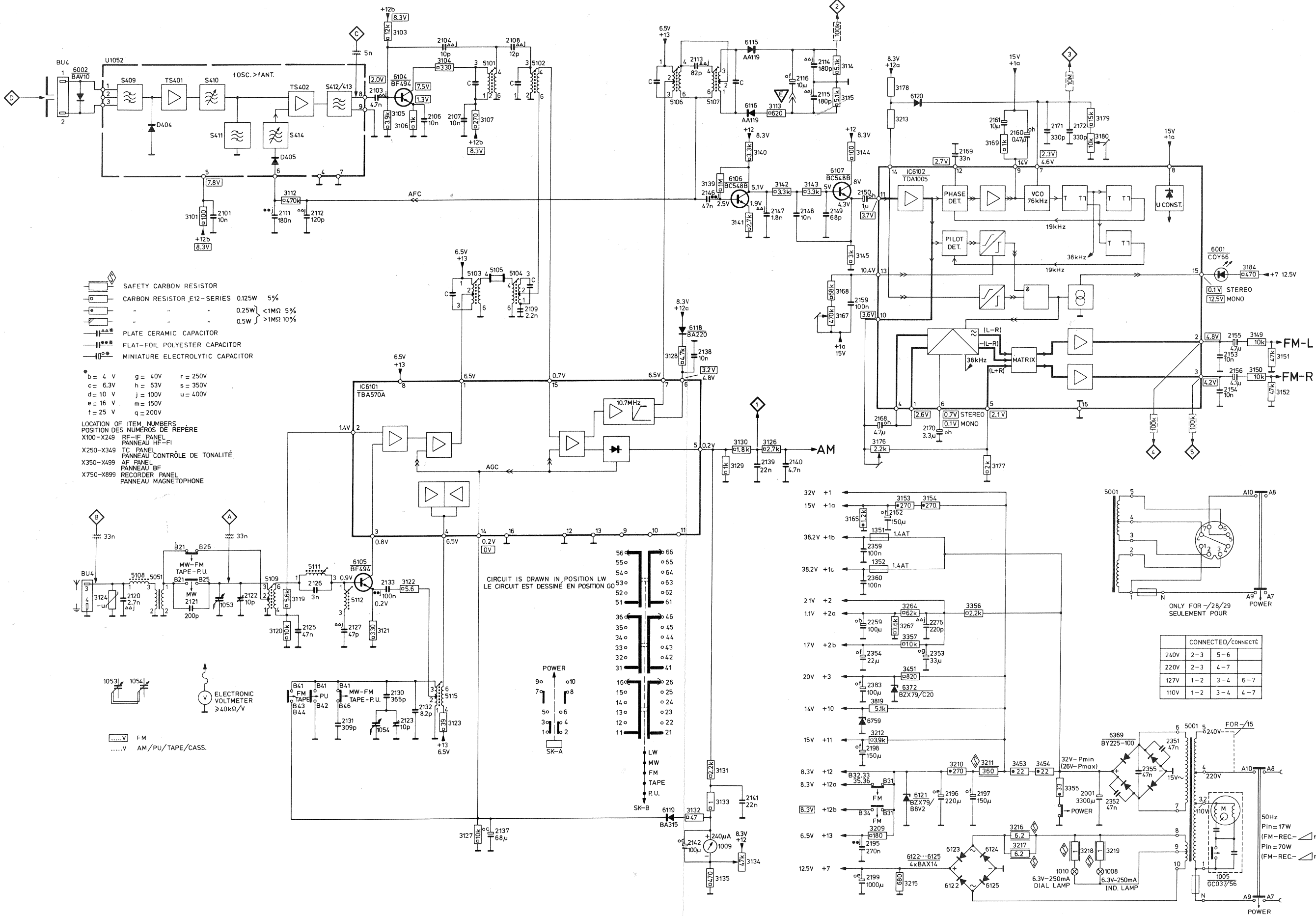
DRIVE CORD RUN  
TRAJET DE LA FICELLE D'ENTRAINEMENT



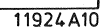
REMOVING THE UPPER CABINET  
RETRAIT DE LA SECTION SUPERIEURE

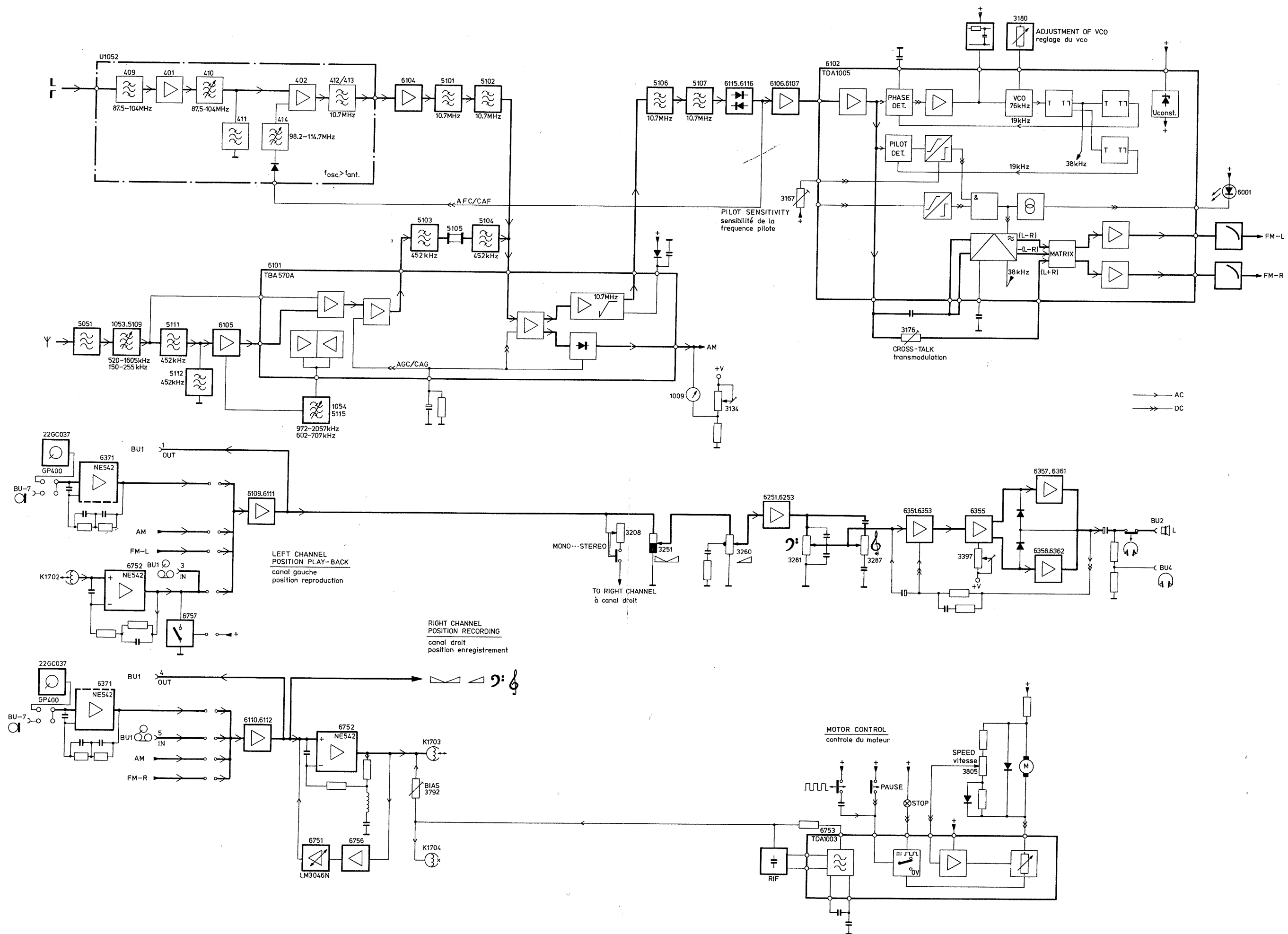
REMOVE THE 6 SCREWS MARKED WITH A ► AT THE BOTTOM OF THE SET  
ENLEVER LES 6 VIS MARQUEES ► AU FOND DE L'APPAREIL

|      |      |       |             |  |           |      |                |      |                                    |      |                     |                                    |      |                          |             |                                                                  |                                                                                |  |           |  |                |      |                                    |             |                |  |      |  |
|------|------|-------|-------------|--|-----------|------|----------------|------|------------------------------------|------|---------------------|------------------------------------|------|--------------------------|-------------|------------------------------------------------------------------|--------------------------------------------------------------------------------|--|-----------|--|----------------|------|------------------------------------|-------------|----------------|--|------|--|
| MISC | 6002 | U1052 | 6105,IC6101 |  |           |      |                | 6104 | SK-A                               |      |                     | 6119,6118,SK-B,1009,6106,6115,6116 |      |                          |             |                                                                  | 6759 6107 1351,1352 IC6102,6121 6372,6120 6122...6125                          |  |           |  |                | 1010 | 1008                               | 6369        | 6001           |  |      |  |
| S    | 5108 |       | 5051        |  | 5109      |      | 5111           | 5112 | 5115                               |      | 5103,5101,5105,5104 |                                    |      | 5102                     | 5106        |                                                                  | 5107                                                                           |  |           |  |                |      |                                    | 5001        |                |  |      |  |
| C    |      |       |             |  | 2101      |      | 2111           |      | 2112                               | 2103 |                     | 2106 2104                          |      | 2107                     | 2108        |                                                                  | 2109                                                                           |  |           |  |                |      |                                    | 2153...2156 |                |  |      |  |
| C    | 2120 |       | 2121        |  | 1053      | 2122 | 2125,2126      |      | 2131,2127,1054,2133,2130,2123,2132 |      | 2137                |                                    |      |                          | 2142        |                                                                  | 2141,2139                                                                      |  | 2140      |  | 2259,2354,2368 |      | 2198,2195,2199,2276,2353,2196,2197 |             | 2001,2352,2355 |  | 2351 |  |
| R    |      |       | 3101        |  | 3112      |      | 3103,3105,3106 |      | 3104                               |      | 3107                |                                    | 3128 |                          | 3139...3142 |                                                                  | 3113...3115,3143...3145,3168,3167,3176,3170,3267,3264,3153,3154,3356,3177,3169 |  | 3179,3180 |  |                |      | 3149...3152,3184                   |             |                |  |      |  |
| R    | 3124 |       |             |  | 3119,3120 |      | 3121           |      | 3122                               | 3123 |                     | 3127                               |      | 3165,3212,3209,3213,3178 |             | 3357,3451,3819,3210,3215,3211,3453,3216,3217,3454,3355,3219,3218 |                                                                                |  |           |  |                |      |                                    |             |                |  |      |  |



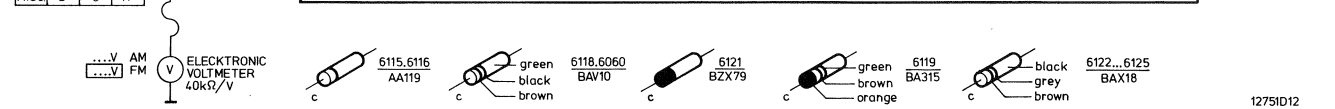
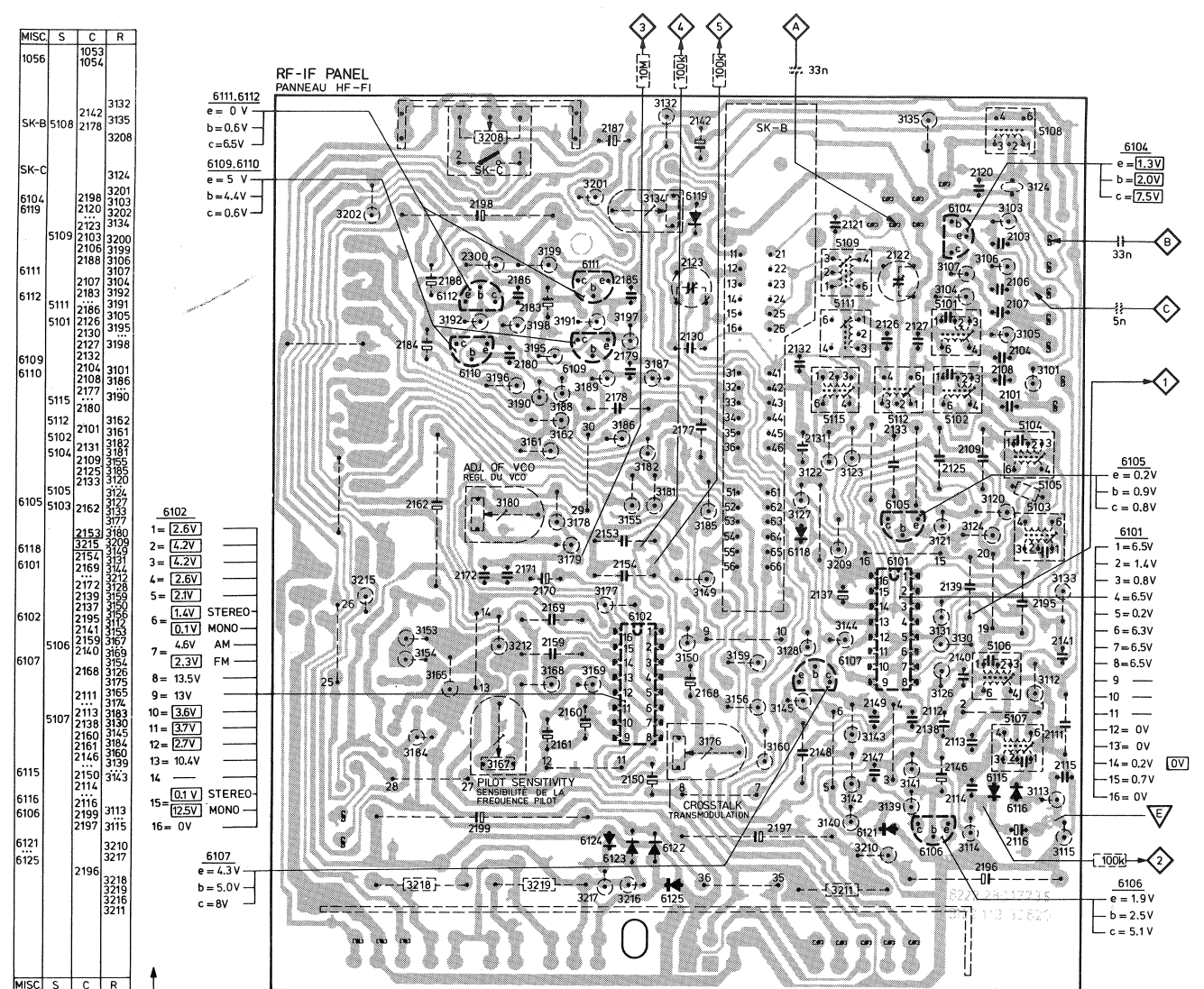
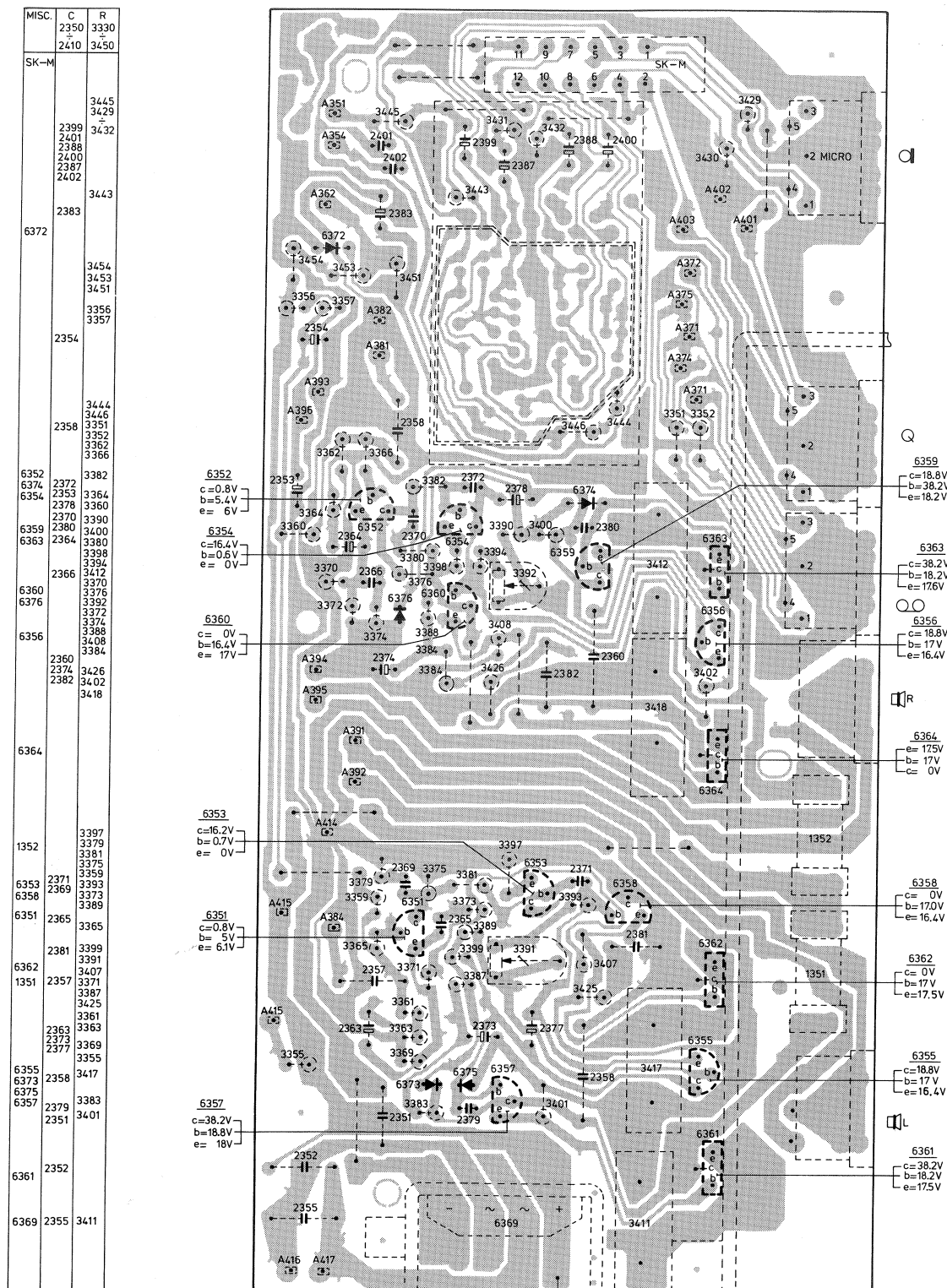
## 4822 210 10188



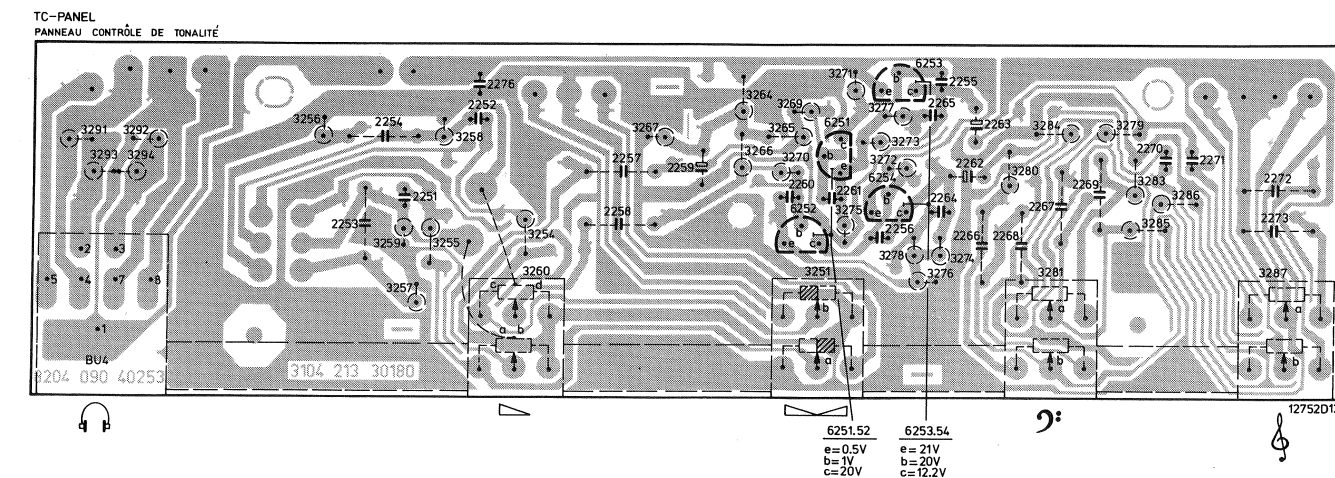


FM-L





| MISC. | 2253        | 2254 | 2255                | 2252,2276 | 2258,2257 | 2259                         | 2260        | 2261           | 2256                | 2255,2262...2266 | 2268 | 2267 | 2269 | 2270 | 2271 | 2272,2273 |
|-------|-------------|------|---------------------|-----------|-----------|------------------------------|-------------|----------------|---------------------|------------------|------|------|------|------|------|-----------|
| C     | 3291...3294 | 3256 | 3259,3257,3255,3258 | 3254,3260 | 3267      | 3264...3266,3251,3269...3271 | 3272...3278 | 3280,3281,3284 | 3279,3283,3285,3286 | 3287             |      |      |      |      |      |           |
| R     |             |      |                     |           |           |                              |             |                |                     |                  |      |      |      |      |      |           |



32V

REC

PLAY

PAUSE

STOP

REWIND

F.WIND

PLAYBACK REPRODUCTION

REC ENREGISTREMENT

LOCATION OF ITEM NUMBERS  
POSITION DES NUMÉROS DE REPÈRE

X100-X249 → RF-IF PANEL  
PANNEAU HF-FI

X250-X349 → TC-PANEL  
PANNEAU CONTRÔLE DE TONALITÉ

X350-X499 → AF-PANEL  
PANNEAU BF

X750-X899 → RECORDER PANEL  
PANNEAU MAGNETOPHONE

THE CIRCUIT DIAGRAM IS DRAWN IN POSITION RECORDING  
LE CIRCUIT EST DESSINÉ EN POSITION ENREGISTREMENT

POS. f osc.

56-62 kHz

$\Delta f1 = 5.6-6.2 \text{ kHz}$

$\Delta f2 = 0.8-1.2 \text{ kHz}$

ADJUSTMENT OF MOTOR SPEED  
REGLAGE DE LA VITESSE DU MOTEUR

SPEED CONTROL  
CONTRÔLE DE LA VITESSE

SAFETY CARBON RESISTOR

CARBON RESISTOR E12-SERIES 0.125W 5%

CARBON RESISTOR E12-SERIES 0.25W

CARBON RESISTOR E12-SERIES 0.5W

PLATE CERAMIC CAPACITOR

FLAT-FOIL POLYESTER CAPACITOR

MINIATURE ELECTROLYTIC CAPACITOR

ELECTRONIC VOLTMETER  
 $\geq 40 \text{ k}\Omega/\text{V}$

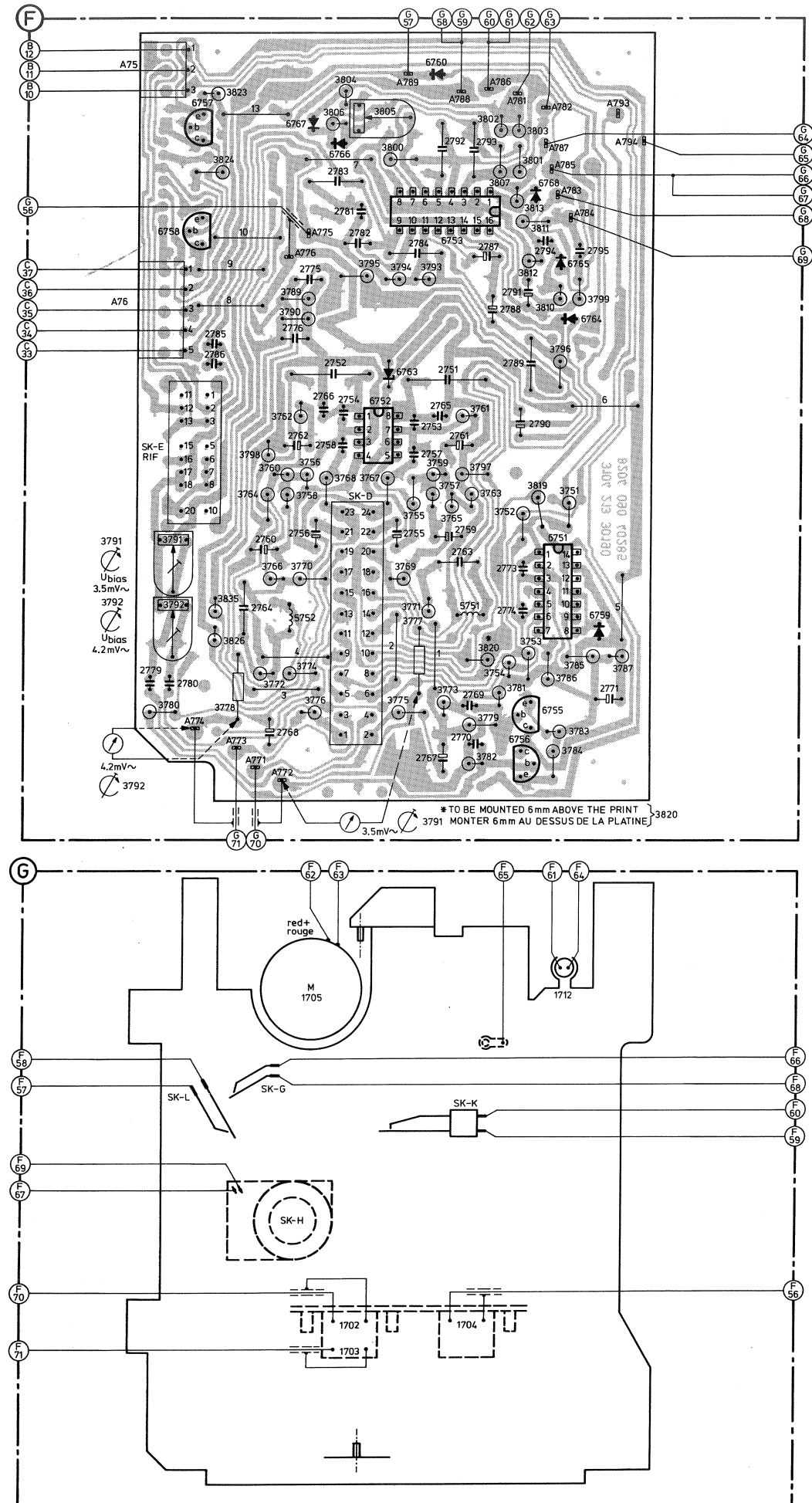
b=4V c=6.3V d=10V e=16V f=25V g=40V h=63V j=100V m=150V q=200V r=250V s=350V u=400V

REST POSITION/POS. DE REPOS

POSITION PLAY

POSITION RECORDING

|       | MISC. | C    | R    |
|-------|-------|------|------|
|       | 6756  |      |      |
|       |       | 2767 | 3782 |
| SK-D  | 2770  | 3784 |      |
| 6755  | 2768  | 3783 |      |
|       |       | 2769 | 3772 |
|       |       | 2771 | 3781 |
|       |       | 2779 | 3820 |
|       |       | 2780 | 3785 |
|       |       |      | 3787 |
|       |       |      | 3754 |
| 6759  |       |      | 3826 |
| 6751  |       |      | 3753 |
| 5751  | 2774  | 3792 |      |
| 5752  | 2764  | 3825 |      |
|       |       | 3766 |      |
|       | 2763  | 3770 |      |
|       |       | 3769 |      |
|       | 2773  | 3791 |      |
|       | 2760  | 3751 |      |
|       | 2759  | 3752 |      |
|       | 2755  | 3755 |      |
|       | 2756  | 3763 |      |
|       |       | 3765 |      |
|       |       | 3768 |      |
|       |       | 3756 |      |
| SK-E  | 2757  | 3760 |      |
|       | 2762  | 3819 |      |
|       | 2761  | 3767 |      |
|       | 2758  | 3797 |      |
|       | 2765  | 3798 |      |
|       | 2790  | 3761 |      |
|       | 2751  | 3762 |      |
| 6752  | 2754  |      |      |
|       | 2766  |      |      |
|       | 2786  |      |      |
|       | 2789  |      |      |
| 6763  | 2785  | 3796 |      |
|       |       | 3770 |      |
| 6764  |       |      |      |
|       | 2788  | 3789 |      |
|       |       | 3810 |      |
|       | 2791  | 3889 |      |
|       | 2795  | 3793 |      |
| 6765  | 2787  | 3795 |      |
|       | 2784  | 3812 |      |
| 6753  | 2795  |      |      |
| 6758  | 2794  | 3811 |      |
|       | 2781  | 3813 |      |
| 6768  | 2783  | 3807 |      |
|       |       | 3824 |      |
|       |       | 3800 |      |
|       |       | 3801 |      |
| 6766  | 2792  | 3803 |      |
|       | 2793  | 3802 |      |
| 6757  |       | 3805 |      |
| 6767  |       | 3806 |      |
|       |       | 3821 |      |
|       |       | 3823 |      |
| 6760  |       | 3804 |      |
|       | 2799  |      |      |
| MISC. | C     | R    |      |

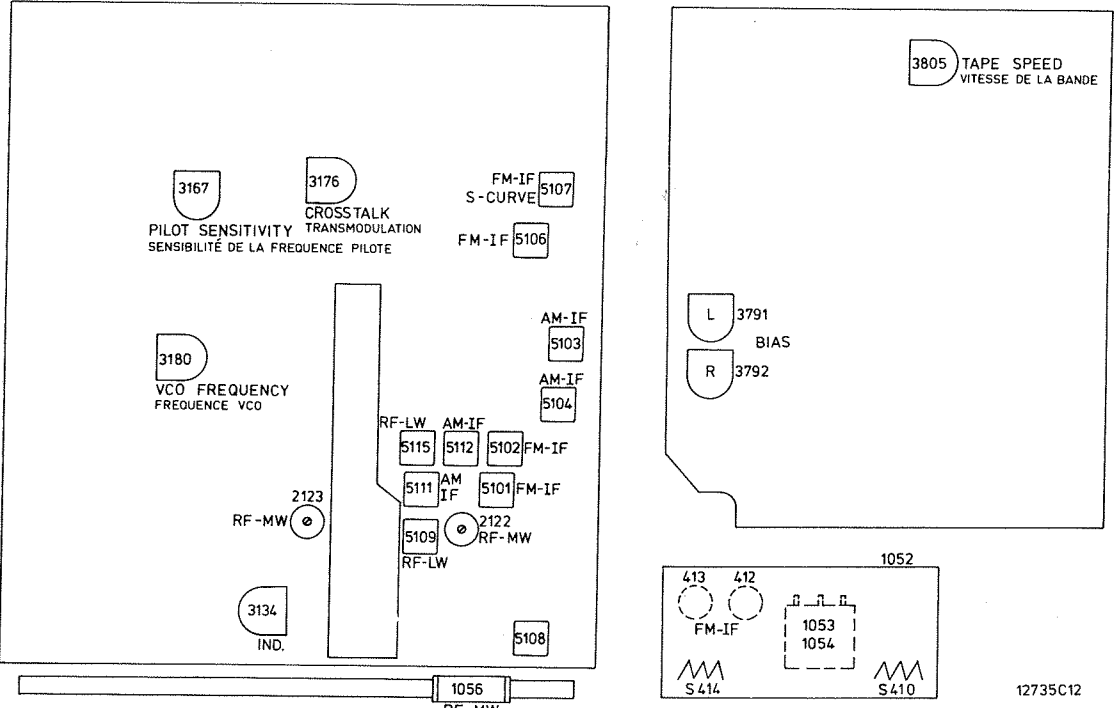


|      | MISC.                | C                                                    | R                                                    |
|------|----------------------|------------------------------------------------------|------------------------------------------------------|
|      | 6760                 |                                                      | 3804<br>3823                                         |
|      | 6757<br>6767         |                                                      | 3805<br>3806                                         |
|      | 6766                 | 2792<br>2793                                         | 3802<br>3803                                         |
|      | 6758<br>6758         | 2783                                                 | 3800<br>3824                                         |
|      | 6758                 | 2781<br>2782<br>2783<br>2784<br>2785<br>2786<br>2787 | 3801<br>3807                                         |
|      | 6765                 | 2775<br>2791                                         | 3813                                                 |
|      | 6764                 | 2788                                                 | 3811                                                 |
|      | 6763                 | 2776<br>2775<br>2752<br>2751                         | 3812                                                 |
| SK-E | 6752                 | 2775<br>2762<br>2753<br>2750<br>2761<br>2762<br>2757 | 3793<br>3795<br>3789<br>3790                         |
| SK-D | 6751                 | 2755<br>2756<br>2759<br>2763<br>2773                 | 3796                                                 |
|      | 6751<br>6752<br>6759 | 2764<br>2774                                         | 3791                                                 |
|      | 6755                 | 2779<br>2780<br>2771<br>2769                         | 3797<br>3797<br>3757<br>3759                         |
|      | 6756                 | 2768<br>2770                                         | 3757<br>3763<br>3819<br>3764<br>3751<br>3765<br>3752 |
|      | 6756                 | 2767                                                 | 3835<br>3792<br>3771                                 |
|      |                      |                                                      | 3826<br>3777                                         |
|      |                      |                                                      | 3772<br>3772<br>3778                                 |
|      |                      |                                                      | 3775<br>3776<br>3780                                 |
|      |                      |                                                      | 3779                                                 |
|      |                      |                                                      | 3782<br>3784                                         |
|      | 712                  |                                                      |                                                      |
|      | 705                  |                                                      |                                                      |
| K-G  |                      |                                                      |                                                      |
| K-L  |                      |                                                      |                                                      |
| K-K  |                      |                                                      |                                                      |
| K-H  |                      |                                                      |                                                      |
|      | 702<br>704<br>703    |                                                      |                                                      |

| AM                    |                                                                                 |   |                        |                              |  |                                    |
|-----------------------|---------------------------------------------------------------------------------|---|------------------------|------------------------------|--|------------------------------------|
| SK...                 |                                                                                 |   |                        |                              |  |                                    |
| MW (520-1605 kHz)     | via 33 nF<br>/00/00X 452 kHz<br>/28/29/50 +1 kHz<br>/22/72/78 460 kHz<br>+1 kHz | A | Min.cap.<br>C1053/1054 | 5111<br>5112<br>5103<br>5104 |  | 1 max.~<br>(= f <sub>o</sub> 5105) |
|                       | f <sub>o</sub> 5105                                                             |   |                        | S5104<br>S5103               |  | 1 max.~                            |
|                       |                                                                                 |   |                        | S5111<br>S5112               |  | 1 min.~                            |
| 2<br>LW (150-255 kHz) | 147 kHz<br>+1 kHz<br>via 33 nF                                                  | A | C1053/1054<br>Max.cap. | S5115                        |  | 1 max.~                            |
| MW (520-1605 kHz)     | 1635 kHz<br>+1 kHz<br>via 33 nF                                                 |   | C1053/1054<br>Min.cap. | C2123                        |  |                                    |
| MW                    | 550 kHz<br>+1 kHz<br>via 33 nF                                                  | B | C1053/1054             | S5051                        |  | 1 max.~                            |
|                       | 1500 kHz<br>+1 kHz<br>via 33 nF                                                 |   |                        | C2122                        |  |                                    |
|                       |                                                                                 |   |                        | S5109                        |  |                                    |
| LW                    | 155 kHz<br>+1 kHz<br>via 33 nF                                                  |   |                        |                              |  |                                    |
|                       |                                                                                 |   | C1053/1054<br>Max.cap. | R3134                        |  | Ind. 1009 at 0                     |

| FM                |                                                      |   |          |                                       |  |                         |
|-------------------|------------------------------------------------------|---|----------|---------------------------------------|--|-------------------------|
| SK...             |                                                      |   |          |                                       |  |                         |
| FM (87.5-104 MHz) | 3<br>10.7 MHz<br>Δf = 250 kHz<br>(50 Hz)<br>via 5 nF | C |          | 1<br>S5106<br>S5102<br>S5101<br>S5107 |  | 2<br>via 100 kΩ         |
|                   | 98 MHz<br>Δf = 250 kHz<br>(50 Hz)                    | D | S410/414 | S413<br>S412<br>S410<br>S414          |  | 2<br>via 100 kΩ<br>max. |

| FM                |                                             |   |          |       |                                       |
|-------------------|---------------------------------------------|---|----------|-------|---------------------------------------|
| Stereodecoder     |                                             |   |          |       |                                       |
| FM (87.5-104 MHz) |                                             |   |          | R3180 | 3<br>76 kHz ± 300 Hz<br>via 10 MΩ     |
|                   | 98 MHz<br>Multiplex<br>(1 kHz)<br>4...12 μV | D | S410/414 | R3167 | 6                                     |
|                   | 98 MHz<br>Pilot+R+1 kHz<br>(pilot+L+1 kHz)  |   |          | R3176 | Min L<br>via 100 kΩ<br>(Min R) 4<br>5 |



- GB** 1 Turn out the cores of the coils so that these cores are flush with the upper edges of the coil cans

2 First set C2122 and C2123 to mid-position

3 Interrupt

4 Adjust for max. amplitude and symmetry.

5 Close

Adjust for max. slope and symmetry of the "S" curve S5107.

6 First turn R3167 to the stop where the stereo indicator is extinguished, then adjust in such a way that the indicator will just light.
- NL** 1 De kernen van de spoelen gelijkzetten met de bovenkant van de spoelbus.

2 Zet eerst C2122 en C2123 in de middenstand.

3 Open brug

4 Afregelen op maximum hoogte en symmetrie

5 Sluit brug

S-kromme controleren op lineariteit en symmetrie. Eventueel S5107 naregelen.

6 R3167 eerst tegen de aanslag draaien waarbij de stereo-indicator gedooft is en vervolgens zodanig afregelen dat de indicator juist gaat branden.
- F** 1 Tourner les noyaux des bobines pour qu'ils soient à la même hauteur que la partie supérieure de la douille de bobine.

2 Mettre C2122 et C2123 au préalable, en position médiane.

3 Interrompre

4 Régler à la hauteur et la symétrie max.

5 Fermer

Régler à la pente et à la symétrie max. de la courbe "S" S5107.

6 Tourner d'abord R3167 jusqu'à la butée, l'indication stéréo s'éteint, régler ensuite pour que l'indication s'allume de justesse.
- D** 1 Die Kerne der Spulen mit der Oberseite der Spulenbücks gleichstellen.

2 C2122 und C2123 zuvor in die Mittelstellung bringen.

3 Unterbrechen

4 Justiere auf maximale Höhe und Symmetrie.

5 Schliesse

Justiere auf maximale Schräge und Symmetrie der "S"-Kurve S5107.

6 R3167 zuerst bis zum Anschlag drehen wo der Stereoindikator gelöscht ist, danach auf eine solche Weise einstellen dass der Indikator gerade brennt.
- I** 1 Girare i nuclei delle bobine perchè siano alla stessa altezza che l'alto della bussola di bobina.

2 Mettere prima C2122 e C2123 in posizione intermedia.

3 Interrompere

4 Regolare per altezza e simmetria massima.
- 5** Chiudere

Regolare per pendenza e simmetria massima della curva ad "S" S5107.

**6** Ruotare prima R3167 fino all'arresto, l'indicazione della stereofonica si spegne allora. Regolare poi perchè l'indicazione si accende appena.

↑ Repeat - Herhalen - Répéter - Wiederholen - Ricominciare - Repetera - Gentage - Gjentagelse - Toista





| <b>-IC-</b>   |                          |                | <b>-R-</b>  |                                    |                |
|------------------------------------------------------------------------------------------------|--------------------------|----------------|----------------------------------------------------------------------------------------------|------------------------------------|----------------|
| 6101                                                                                           | TBA570A                  | 4822 209 80358 | 3124                                                                                         | VDR                                | 4822 116 20073 |
| 6102                                                                                           | TDA1005                  | 4822 209 80315 | 3134                                                                                         | Trimpotm. 47 kΩ                    | 4822 100 10079 |
| 6371, 6752                                                                                     | NE542                    | 4822 209 80359 | 3167                                                                                         | Trimpotm. 470 kΩ                   | 4822 100 10107 |
| 6751                                                                                           | LM3046N                  | 4822 209 80366 | 3176                                                                                         | Trimpotm. 2.2 kΩ                   | 4822 100 10029 |
| 6753                                                                                           | TDA1003                  | 4822 209 80429 | 3180                                                                                         | Trimpotm. 10 kΩ                    | 4822 100 10193 |
|                                                                                                |                          |                | 3208                                                                                         | Potm. + switch 220k (stereo)       | 4822 101 50217 |
| <b>-TS-</b>   |                          |                | 3211                                                                                         | Saf.res. 1/4 W - 360 Ω             | 5322 116 54954 |
| 6104,6105                                                                                      | BF494                    | 5322 130 44195 | 3215,3517                                                                                    | Saf.res. 1/8 W - 1 Ω               | 4822 111 30215 |
| 6106,6107                                                                                      | BC548B                   | 4822 130 40937 | 3218                                                                                         | Saf.res. 1/4 W - 1 Ω               | 4822 111 30339 |
| 6111,6112                                                                                      |                          |                | 3219                                                                                         | Saf.res. 1/8 W - 2.2 Ω             | 4822 111 30437 |
| 6355,6356                                                                                      |                          |                | 3251                                                                                         | Potm. balance 2x22k                | 4822 102 30256 |
| 6109,6110                                                                                      | BC559B                   | 5322 130 44358 | 3260                                                                                         | Potm. volume log. 2x20 +80 kΩ      | 4822 102 30257 |
| 6251,6252                                                                                      | BC548C                   | 5322 130 44196 | 3281,3287                                                                                    | Potm. bass/treble semi-log 2x47 kΩ | 4822 102 30258 |
| 6755,6756                                                                                      |                          |                | 3369,3370                                                                                    | Metal res. 4K32                    | 5322 116 54594 |
| 6253,6254                                                                                      |                          |                | 3371,3372                                                                                    | Metal res. 6K81                    | 5322 116 54012 |
| 6351,6352                                                                                      | BC558                    | 4822 130 40941 | 3391,3392                                                                                    | Trimpotm. 2.2 kΩ                   | 4822 100 10029 |
| 6357-6360                                                                                      | BC635/636                | 4822 130 41058 | 3397,3398                                                                                    | Saf.res. 5,6 Ω                     | 4822 111 30435 |
| 6361-6364                                                                                      | BD201/202                | 4822 130 41043 | 3409,3410                                                                                    | Saf.res. 1/4 W - 10 Ω              | 4822 111 30114 |
| 6353,6354                                                                                      | BC547B                   | 4822 130 40959 | 3425,3426                                                                                    |                                    |                |
| 6757,6758                                                                                      | BC548                    | 4822 130 40938 | 3411,3412                                                                                    |                                    |                |
|                                                                                                |                          |                | 3417,3418                                                                                    | Saf.res. 0.33 Ω - 3 W              | 4822 113 80214 |
| <b>-D-</b>    |                          |                | 3791,3792                                                                                    | Trimpotm. 100 kΩ                   | 4822 100 10052 |
| 6001                                                                                           | CQY66 (LED)              | 4822 130 30937 | 3805                                                                                         | Trimpotm. 1 kΩ                     | 4822 100 10037 |
| 6002,6118                                                                                      | BA220                    | 4822 130 34221 |                                                                                              |                                    |                |
| 6115,6116                                                                                      | 2-AA119 (pair)           | 4822 130 30312 | <b>-C-</b>  |                                    |                |
| 6119,6767                                                                                      | BA315                    | 4822 130 30843 | 2001                                                                                         | El.cap. 3300 μF - 40 V             | 4822 124 70237 |
| 6121                                                                                           | BZX79/B8V2               | 5322 130 34382 | 2101,2106                                                                                    | Plate cap. 10 nF -20+ 100 %        | 4822 122 30043 |
| 6122-6125                                                                                      | BAX14                    | 4822 130 34193 | 2107,2138                                                                                    |                                    |                |
| 6373-6376                                                                                      | BAW62                    | 5322 130 30613 | 2104                                                                                         | Plate cap. 10 pF, 2 %              | 4822 122 31054 |
| 6120,6760                                                                                      |                          |                | 2111                                                                                         | Flat cap. 180 nF                   | 4822 121 40425 |
| 6765,6768                                                                                      |                          |                | 2141,2794                                                                                    | Plate cap. 22 nF -20+ 100 %        | 4822 122 30103 |
| 6369                                                                                           | BY225-100 (bridge)       | 4822 130 30917 | 2121                                                                                         | Micropoco 200 pF - 1 %             | 4822 121 50532 |
| 6372                                                                                           | BZX79/C20                | 5322 130 34499 | 2122,2123                                                                                    | Trimmer 10 pF                      | 4822 125 50062 |
| 6763,6764                                                                                      | BZX79/C12                | 5322 130 34197 | 2126                                                                                         | Micropoco 3 nF - 5 %               | 4822 121 50414 |
| 6766                                                                                           | OA95                     | 5322 130 30191 | 2130                                                                                         | Micropoco 365 pF - 1 %             | 4822 121 50551 |
|                                                                                                |                          |                | 2131                                                                                         | Micropoco 316 pF - 1 %             | 4822 121 50531 |
| <b>-S-</b>  |                          |                | 2161                                                                                         | Solid tant.cap. 10 μF-3 V          | 5322 124 14084 |
| 5001                                                                                           | Mains transformer        | 4822 146 40233 | 2266,2267                                                                                    | Flat cap. 27 nF - 10 %             | 4822 121 40408 |
| 5101,5102                                                                                      |                          | 4822 153 50205 | 2369,2370                                                                                    | PPC 100 nF - 100 V                 | 4822 121 40334 |
| 5103                                                                                           |                          | 4822 156 30577 | 2381,2382                                                                                    | PPC 47 nF - 100 V                  | 4822 121 40336 |
| 5104                                                                                           |                          | 4822 156 30578 | 2351,2352                                                                                    |                                    |                |
| 5105                                                                                           |                          | 4822 242 70255 | 2355                                                                                         |                                    |                |
|                                                                                                | Cer. resonator 452 kHz   | 4822 242 70256 | 2387,2388                                                                                    | Elco 1.5 μF - 50 V                 | 4822 124 20828 |
|                                                                                                | Cer. resonator 460 kHz   | 4822 242 70257 | 2389,2390                                                                                    | Plate cap. 120 pF - 2 %            | 4822 122 30093 |
| 5106                                                                                           |                          | 4822 153 50207 | 2391,2392                                                                                    | Plate cap. 37 pF - 2 %             | 4822 122 31069 |
| 5107                                                                                           |                          | 4822 153 50208 | 2501,2502                                                                                    | Elco 1500 μF - 40 V                | 4822 124 20796 |
| 5108                                                                                           |                          | 4822 156 30581 | 2757,2758                                                                                    | Flat cap. 100 nF                   | 4822 121 40522 |
| 5109                                                                                           |                          | 4822 156 30564 | 2763,2764                                                                                    | Flat cap. 12 nF - 10 %             | 4822 121 40405 |
| 5111                                                                                           |                          | 4822 156 30582 | 2783                                                                                         |                                    |                |
| 5112                                                                                           |                          | 4822 156 30583 | 2782                                                                                         | Micropoco 12 nF - 5 %              | 5322 121 54162 |
| 5115                                                                                           |                          | 4822 156 30579 | 2783,2272,2273                                                                               | Flat.cap. 22 nF - 10 %             | 4822 121 40407 |
| 6751,6752                                                                                      |                          | 4822 156 20688 | 2789,2793                                                                                    |                                    |                |
|                                                                                                |                          |                |                                                                                              |                                    |                |
| <b>-Miscellaneous - units-</b>                                                                 |                          |                |                                                                                              |                                    |                |
| 1009                                                                                           | Tuning indicator 240 μA  | 4822 347 10181 |                                                                                              |                                    |                |
| 1008,1010                                                                                      | Dial lamp 6.3 V - 250 mA | 4822 134 40007 |                                                                                              |                                    |                |
| 1052                                                                                           | FM-tuner + gang.cap.     | 4822 210 10188 |                                                                                              |                                    |                |
| 1351,1352                                                                                      | Fuse 1.4 AT              | 4822 253 30023 |                                                                                              |                                    |                |
| 1712                                                                                           | Lamp rec. 6 V - 30 mA    | 4822 134 40302 |                                                                                              |                                    |                |

## INSTELLINGEN EN CONTROLES

Hoogteinstelling van de opname/weergavekop 1702/1703  
(Fig. 12076A)

- Het loopwerk demonteren
- "Playback" toets indrukken.
- De mal 4822 402 60245 over de toonas schuiven terwijl de drukrol wordt teruggetrokken
- De mal moet zover over de toonas geschoven worden dat deze zich in het verlengde bevindt van de wiskopbandgeleiders.
- Met de moertjes "a en b" de opname/weergavekop zodanig instellen dat de mal zich precies tussen de bandgeleiders van beide koppen bevindt.

*N.B.:*

Als de opname/weergavekop vervangen wordt, gebruik dan nieuwe zelfborgende moeren.

**Azimuthinstelling van de opname/weergavekop 1702/1703  
(Fig. 12076A)**

- Gebruik hiervoor de cassette service set 801/CSS met de 8 kHz-cassette 812/MCT, en druk de "playback" toets in. Het loopwerk behoeft niet gedemonteerd te worden bij deze instelling.  
De betreffende instelmoer kan bereikt worden van bovenaf als het bovenste deel van de cassetteklep erafgeschoven wordt (Fig. 10029B14).
- Met het 8 kHz-signaal van de testcassette de uitgangsspanning op punt 4-2 (1-2) van BU1 afregelen op maximum door middel van moer "a".  
Het linker en rechter kanaal moeten in fase zijn. Dit kan gecontroleerd worden met een dubbelstraaloscilloscoop. Functieschakelaar SK-B in stand "Tape".  
Mono-stereoschakelaar SK-C in stand stereo zetten.

### Hoogteinstelling van de wiskop 1704 (Fig. 12076A)

De wiskop op dezelfde manier instellen als de opname/weergavekop 1702/1703, die dan als referentie punt fungeert. Instellen met moer "C".

**Drukrol**

De kracht die nodig is om de drukrol juist van de toonas te trekken moet liggen tussen 360 en 440 g, gemeten op de as van de drukrol. De drukkracht kan ingesteld worden door veer 67 achter een andere lip van de drukrolbeugel te bevestigen (Fig. 10026A14) of door de veer een slag om het bevestigingspunt aan beugel 54 te draaien.

## Koppenbeugel

De slag van de koppenbeugel 54 kan ingesteld worden met lip A, Fig. 12075A.

## Opspoelfrictie controleren

De kracht van de frictie wordt gemeten in positie "playback" met behulp van de frictiemeet cassette 811/CTM, 4822 395 30054.

De cassette moet de volgende waarden aangeven:

- Aan de opspoelzijde 25...45 g
- Aan de terugspoelzijde 4...8 g

De indicatie moet zo constant mogelijk zijn.

## Wow en flutter controleren

- Sluit een wow en flutter meter aan op BU1.
- Met de 3150 Hz testcassette TC-FL3.15, 8945 600 14701, kan de waarde gemeten worden. Maximum 0,3 %

## Bandsnelheid controleren

- Controle met de wow en flutter meter: sluit deze aan op BU1. Zet de recorder in stand "playback" met de 3150 Hz testcassette TC-FL3.15 in het apparaat. De snelheid wordt ingesteld met trimpotentiometer 3805 op de recorderprint. De maximum toelaatbare afwijking is  $\pm 2\%$
- Controle met de cassette service set 801/CSS, met de 50 Hz cassette 812/MCT. Sluit deze set aan op een luidsprekeruitgang en zet de recorder in stand "playback". Stel met behulp van trimpotentiometer 3805 in op minimale uitslag van de testindicator.

## ONDERHOUD EN SMEERVOORSCHRIFT

Aanbevolen wordt de rekorder na ca. 500 bedrijfsuren schoon te maken en op de belangrijkste punten te smeren.

a. Schoonmaken met alcohol of spiritus

- Wiskop
- Opneem/weergeefkop
- Snaren
- Spoelschotels
- Tussenwielen
- Toonas
- Drukrol

### b. Smeerinstructie

- Shell Alvania 2 (4822 389 10001) voor kogelbanen
- Lubricant 10 (4822 390 10003) voor glijvlakken
- All purpose oil (4822 390 10048) voor assen en lagers
- Silicone paste (4822 390 20023) voor kunststof onderdelen.

## WENKEN VOOR HET DEMONTEREN

### Koppenschuif 54

- Verwijder de veren 104
- Verwijder schakelstuk 68 van de koppenschuif

### Knoppen 58 en 77

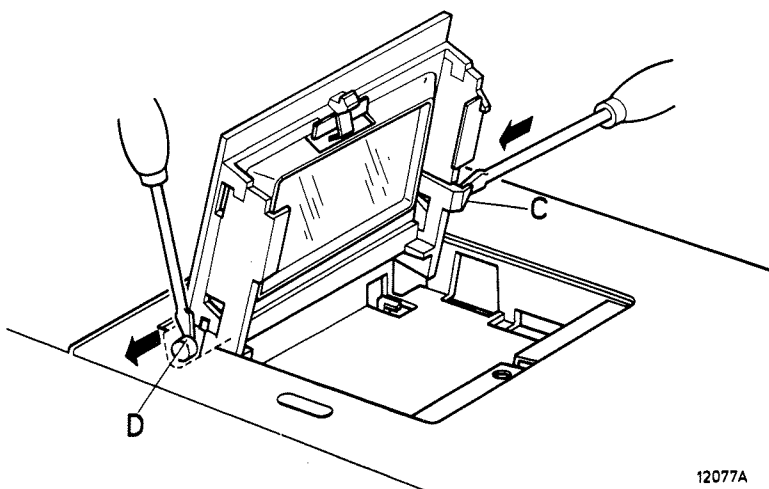
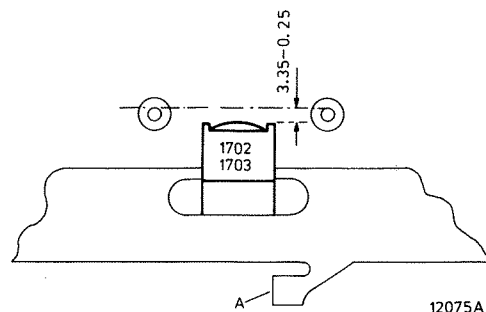
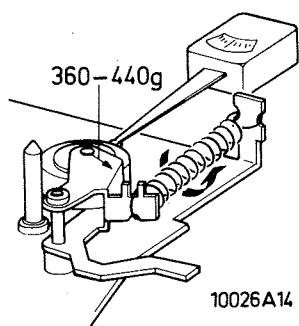
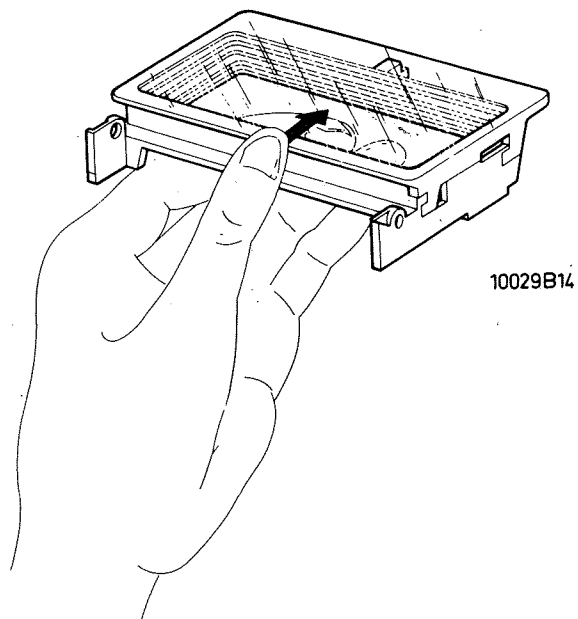
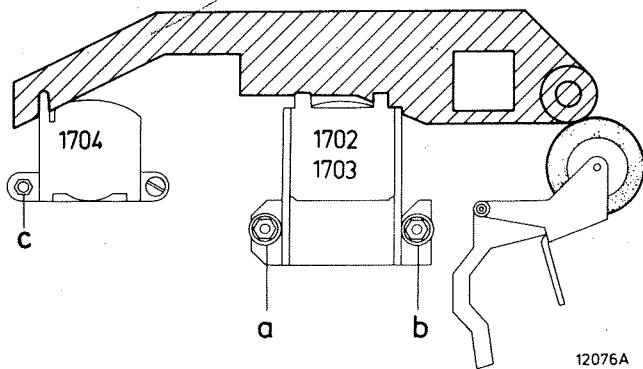
- Verwijder de veren 104 en 106
- Verwijder de schuif 109 door de lip aan beugel 529 terug te buigen
- Verwijder de 2 schroeven in beugel 529

### Cassettedeksel (Fig. 12077A)

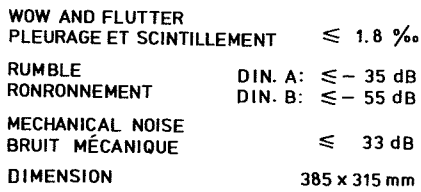
- Lip C met een schroevendraaier iets naar binnen drukken
- Het deksel recht omhoog draaien
- Lip D van het bovenste deel van het cassettedeksel naar buiten drukken.
- Het deksel eruit halen.

*Opmerking:*

Het deksel bestaat uit 2 delen. Het bovenste deel zit op het onderste deel geklemd (Fig. 10029B14).



# Hi-Fi record player 22GC037/00



4822 726 12008  
Printed in The Netherlands



TURNTABLE HEIGHT  
HAUTEUR DU PLATEAU

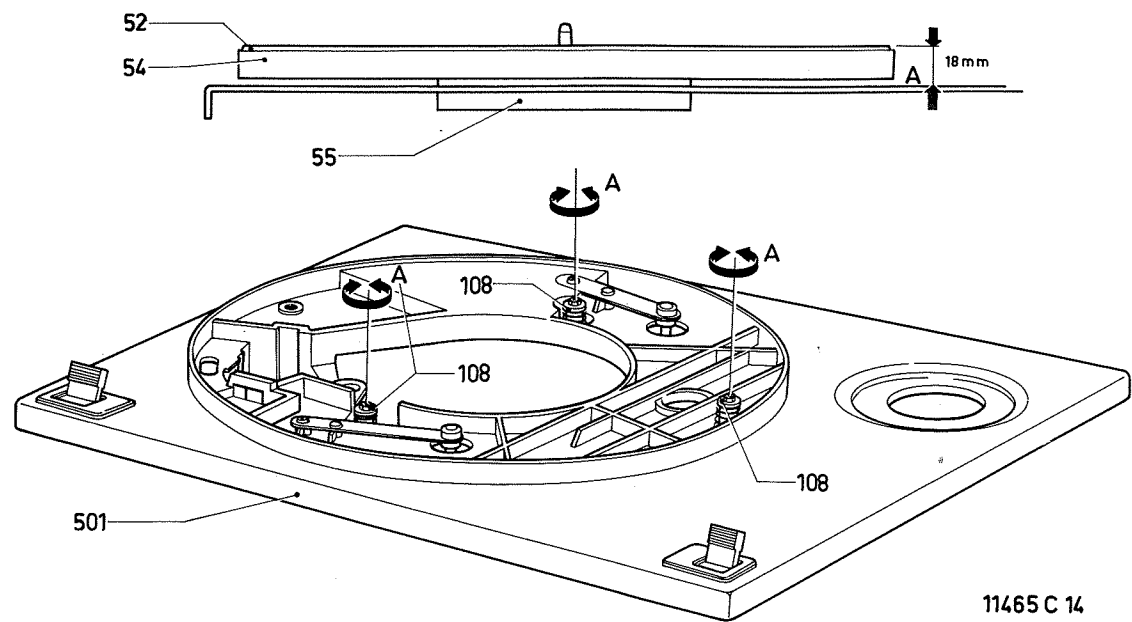


Fig. 2

11465 C 14

AUTOMATIC STOP  
ARRET AUTOMATIQUE

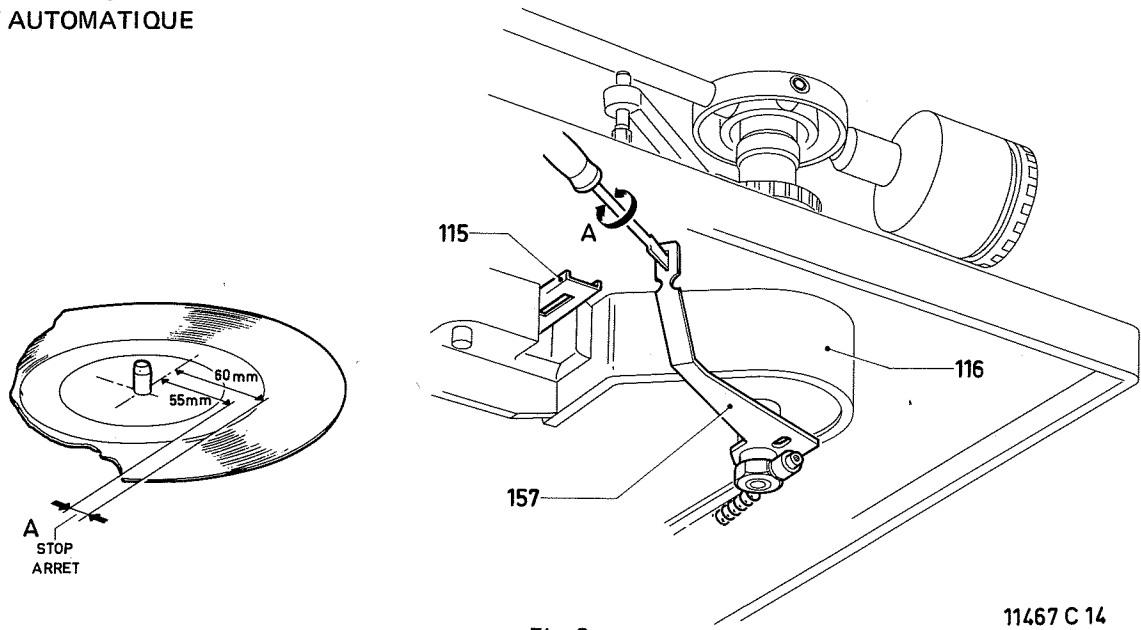


Fig. 3

11467 C 14

BOWDEN CABLE POS. 93  
CABLE BOWDEN POS. 93

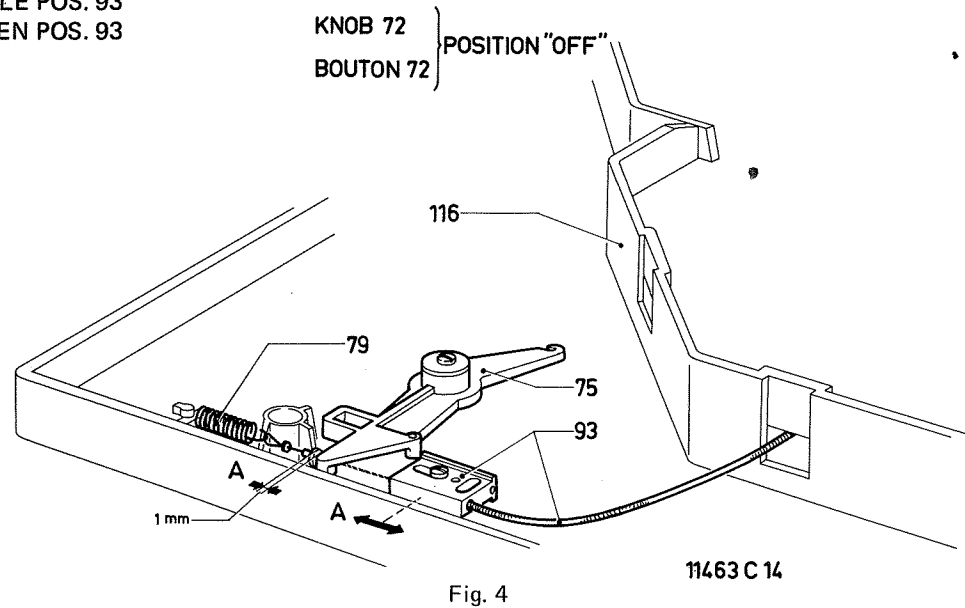


Fig. 4

11463 C 14

BOWDEN CABLE POS. 94  
CABLE BOWDEN POS. 94

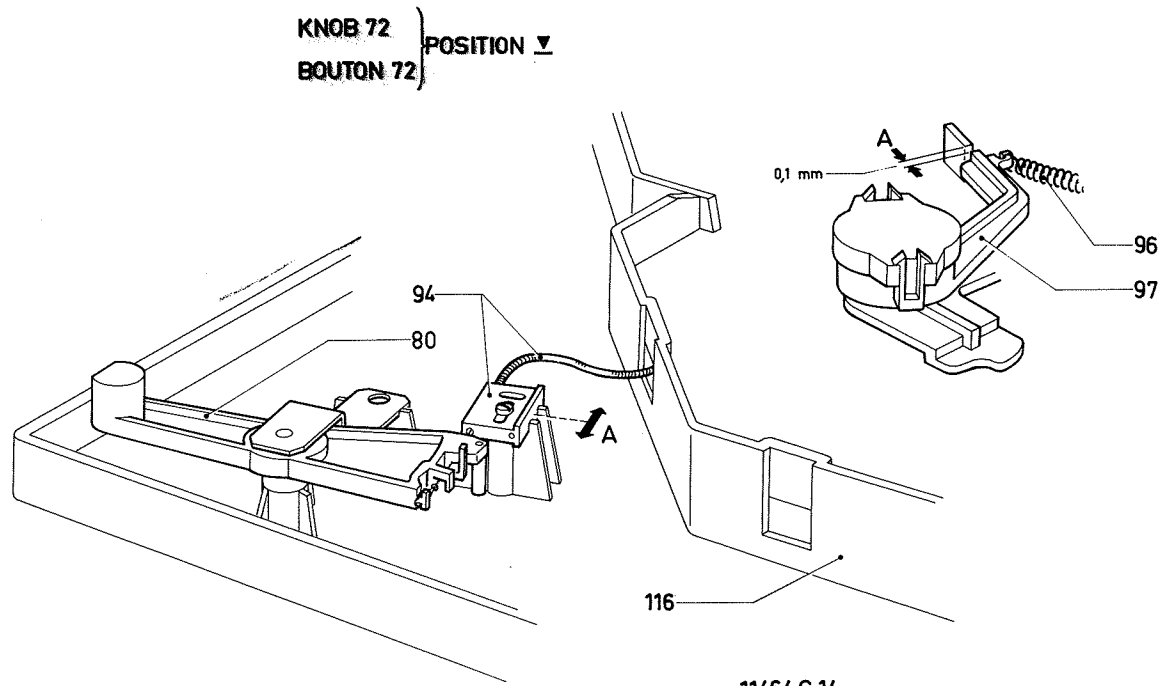


Fig. 5

11464 C 14

LIFT MANUAL  
LEVIER MANUEL

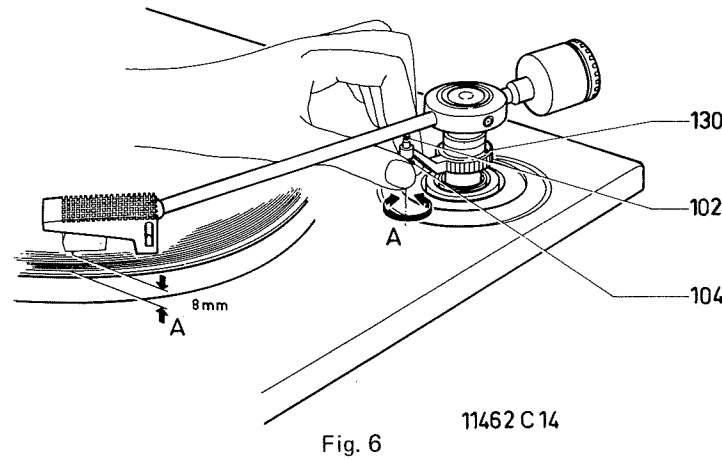


Fig. 6

11462 C 14

FREE RUNNING PU ARM 101  
LIBERATION DU BRAS DE LECTURE 101

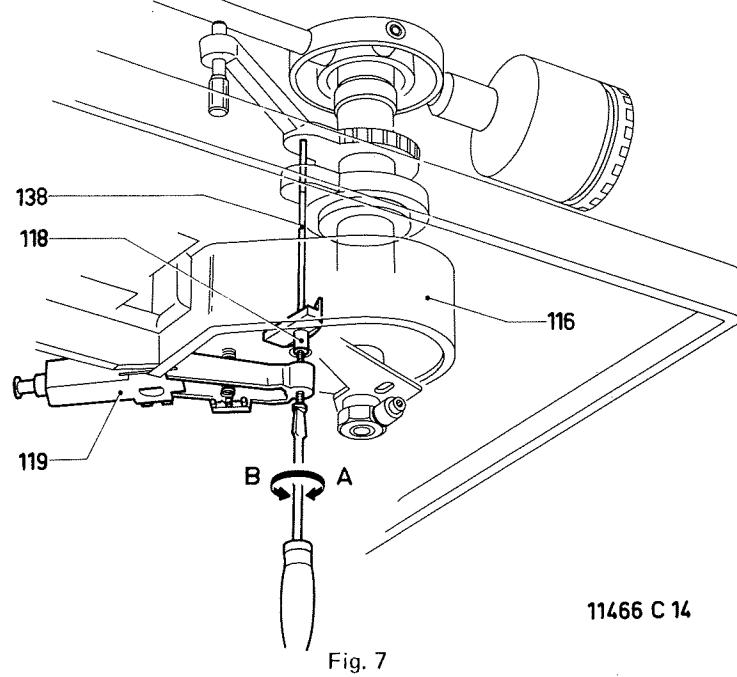


Fig. 7

11466 C 14

SEE TEXT  
VOIR TEXTE

GB

SEE  
VOIR Fig. 7

1. Lift in position ▼
2. PU arm near PU arm support
3. Turn the screw with cap. 118 so far clockwise (A) that, by means of lift piece 138, the PU arm just starts lifting.
4. Turn the screw two revolutions counterclockwise (B).

NL

1. Lift in positie ▼
2. P.U. arm naast P.U. arm steun.
3. Schroef met dopje 118 zover rechtsom (A) draaien totdat d.m.v. liftstuk 138 de P.U. arm juist gaat liften.
4. Daarna de schroef twee hele omwentelingen linksom (B) terug draaien.

F

1. Commande de montée/descente bras de lecture sur ▼
2. Bras de lecture à côté du support.
3. Tourner la vis avec capuchon 118 aussi loin dans le sens horaire (A) que grâce à la pièce de levage 138, le bras de lecture se soulève à peine.
4. Resserrer la vis de deux tours complets dans le sens anti-horaire (B).

D

1. Lift in Stellung ▼
2. Tonarm neben Tonarmstütze
3. Schraube mit Kappe 118 so weit linksherum - drehen (A), dass durch Liftstück 138, der Tonarm sich gerade anhebt.
4. Schraube zwei Umdrehungen linksherumdrehen (B).

I

1. Controllo deviazione/discesa del braccio di lettura su ▼
2. Braccio di lettura accanto al suo supporto.
3. Allentare la vite col capuccio 118 il piu lontano possibile nel senso orario (A) fino a quando grazie al pezzo di elevazione 138, il braccio si solleva a peu appena.
4. Stringere la vite di due giri completi nel senso antiorario (B).

C601 4700 pF ± 20% 400 V 4822 122 10113  
C602 (50 Hz) 0,22 µF ± 10% 400 V 4822 121 40181  
C602 (60 Hz) 0,18 µF ± 10% 400 V 4822 121 40011

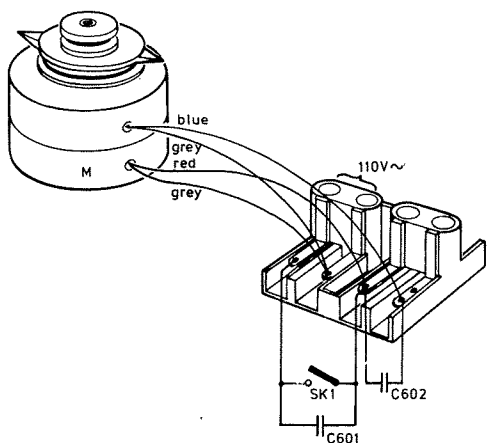


Fig. 8

11295A2

S

1. Tonarmslyften i läge. ▼
2. Tonarmen nära tonarmsstödet.
3. Vrid skruven med kåpa 118 så långt medurs (A) att tonarmen via stycke 138 precis börjar höjas.
4. Vrid skruven två varv moturs (B).

DK

1. Løft i stilling ▼
2. Pick-uparmen lidt væk fra pick-upstøtten.
3. Drej skruen med kappe 118 så meget højre om (A) at løftestykket 138 lige netop begynder at løfte pick-uparmen.
4. Drej skruen to omgange venstre om (B).

N

1. Løfteanordning i stilling ▼
2. PU-arm nær pu-arm støtte
3. Drei skrue med kappe 118 så langt med urviseren (A) at, med hjælp av løftestykke 138, pu-armen såvidt begynner å løfte.
4. Drei skruen to omdreininger mot urviseren (B).

SF

1. Nostolaite asennossa ▼
2. Äänivarsi lähelle äänivarren tukea.
3. Käännä ruuvia hattuiheen 118 niin paljon myötäpäivään (A), että nosto-osan 138 avulla äänivarsi alkaa juuri ja juuri nousta.
4. Käännä ruuvia kaksi kierrosta vastapäivään (B).

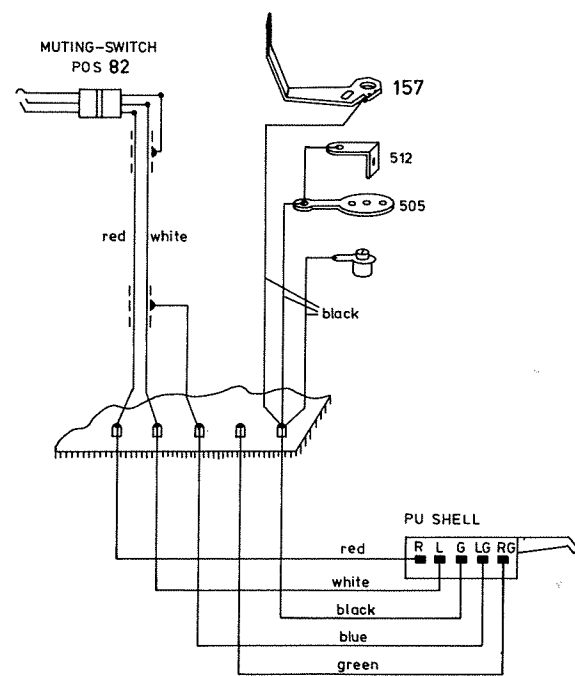


Fig. 9

11311A2

|                     |                |                                            |                |             |                |
|---------------------|----------------|--------------------------------------------|----------------|-------------|----------------|
| 51                  | 4822 532 60579 | 88                                         | 4822 402 60566 | 125         | 4822 691 30066 |
| 52                  | 4822 466 50117 | 89                                         | 4822 402 60569 | 128         | 4822 460 20166 |
| 53                  | 4822 492 61215 | 90                                         | 4822 520 10379 | 129         | 4822 323 50054 |
| 54                  | 4822 528 10319 | 93                                         | 4822 321 30159 | 130         | 4822 402 60568 |
| 55                  | 4822 528 90266 | 94                                         | 4822 321 30158 | 131+136+138 | 4822 402 60574 |
| 58                  | 4822 358 30122 | 95                                         | 4822 277 60065 | 132         | 4822 492 40688 |
| 59 (50 Hz)          | 4822 361 70292 | 96                                         | 4822 492 31364 | 135         | 4822 454 30261 |
| 59 (60 Hz)          | 4822 361 70295 | 97                                         | 4822 402 60573 | 136         | 4822 492 31355 |
| 60                  | 4822 454 30262 | 100                                        | 4822 492 40687 | 137         | 4822 413 10148 |
| 61 (silver, argent) | 4822 411 50434 | 101+123+124<br>+128 +129+ } 4822 251 70154 |                | 138         | 4822 535 70511 |
| 61 (black, noir)    | 4822 411 50439 |                                            |                | 139         | 4822 454 30264 |
| 62                  | 4822 535 70512 |                                            |                | 142         | 4822 532 10719 |
| 65                  | 4822 492 40686 | 102                                        | 4822 462 71076 | 143         | 4822 532 10716 |
| 66                  | 4822 492 31367 | 103                                        | 4822 444 30169 | 144         | 4822 520 10381 |
| 67                  | 4822 462 70913 | 104                                        | 4822 535 80551 | 145         | 4822 402 50141 |
| 68                  | 4822 492 50845 | 108                                        | 4822 532 10718 | 149         | 4822 402 60576 |
| 69                  | 4822 535 70513 | 109                                        | 4822 325 80066 | 150         | 4822 454 30263 |
| 72 (silver, argent) | 4822 411 50434 | 110                                        | 4822 492 31359 | 151         | 4822 492 31367 |
| 72 (black, noir)    | 4822 411 50439 | 111                                        | 4822 492 31358 | 152         | 4822 535 60029 |
| 73                  | 4822 492 31362 | 112                                        | 4822 492 31356 | 153         | 4822 691 30067 |
| 74                  | 4822 492 62082 | 114                                        | 4822 402 30093 | 156         | 4822 402 60572 |
| 75                  | 4822 402 30094 | 115                                        | 4822 402 60564 | 157         | 4822 402 60575 |
| 76                  | 4822 535 91064 | 116                                        | 4822 464 50061 | 158         | 4822 492 31363 |
| 79                  | 4822 492 31361 | 117                                        | 4822 492 31365 | 159         | 4822 462 71079 |
| 80                  | 4822 402 60571 | 118                                        | 4822 462 71076 |             |                |
| 81                  | 4822 402 60565 | 119                                        | 4822 535 70514 |             |                |
| 82                  | 4822 278 90373 | 121                                        | 4822 492 40689 |             |                |
| 83                  | 4822 492 31366 | 122                                        | 4822 492 31145 |             |                |
| 86                  | 4822 402 60567 | 123                                        | 4822 462 50205 |             |                |
| 87                  | 4822 402 30092 | 124                                        | 4822 535 60031 |             |                |

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

DK

Myndighedernes sikkerheds- og radiostøjbestemmelser kræver, at enhver reparation skal udføres korrekt m.h.t. overholdelse af originalplacering og montering af komponenter, ledningsbundter, etc., og ved anvendelse af de foreskrevne reservedele.

SF

Korjattessa laitetta on turvallisuussyistä ehdottomasti eneteltävä oikein ja käytettävä tehtaan määräämiä alkuperäisvaraosia.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

D

Die Sicherheitsvorschriften erfordern, dass das Gerät sich nach der Reparatur in seinem originalen Zustand befindet und dass die benutzten Einzelteile den aufgeführten Teilen identisch sind.

S

Säkerhetsbestämmelserna kräver att varje reparation skall utföras korrekt med hänsyn till ursprunglig placering av komponenter, ledningar etc. och med användning af föreskrivna reservdelar.

N

Sikkerhetsbestemmelser kreves at apparatet blir gjenopprettet til original utførelse og at deler som er identiske med de som er spesifisert, blir benyttet.

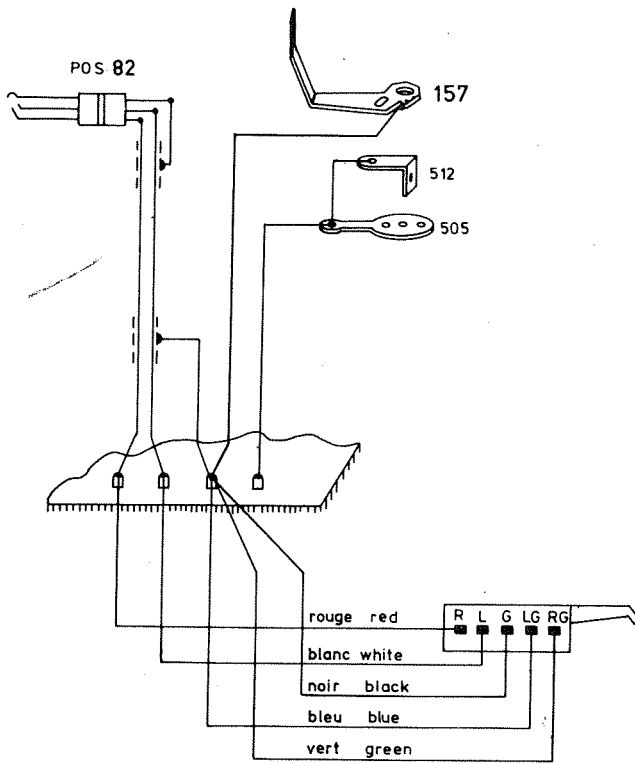


Fig. 10

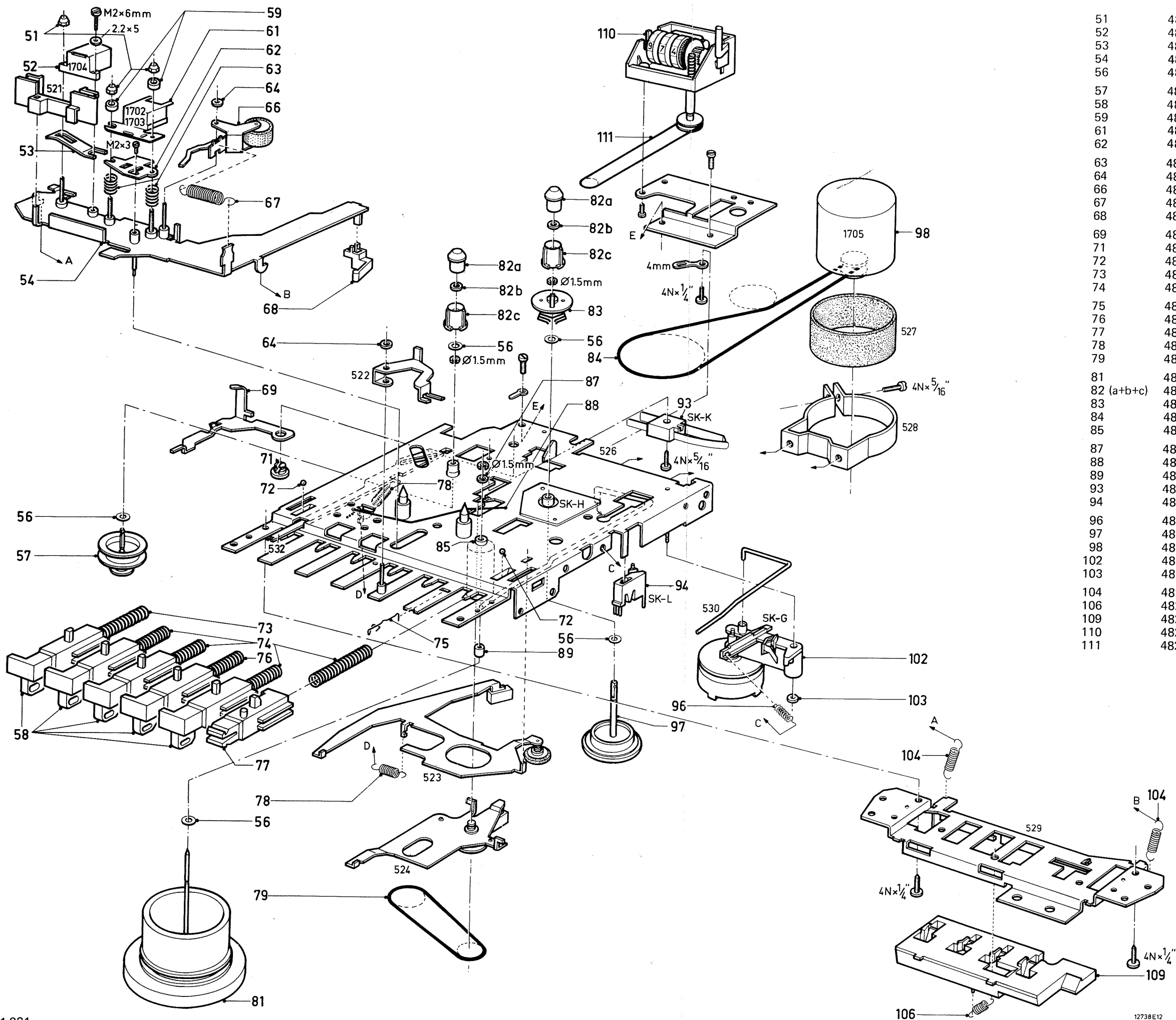
I2105A2

**NOTE:**

From LF01 on, V-plate 116, bearing bush 142 and the 2 washers 143 have been changed.  
For service purposes, we supply the changed V-plate only, under the old codenumber 4822 464 50061.

Codenumber new bearing bush 142 : 4822 532 20667  
Codenummer new washers 143 : 4822 532 10724

When V-plate 116 is exchanged in sets marked LF00 and up, also the new bearing bush 142 and the new washers 143 have to be fitted.



|            |                |
|------------|----------------|
| 51         | 4822 506 90024 |
| 52         | 4822 249 40075 |
| 53         | 4822 492 62053 |
| 54         | 4822 403 20126 |
| 56         | 4822 532 50692 |
| 57         | 4822 528 80626 |
| 58         | 4822 410 21747 |
| 59         | 4822 532 10693 |
| 61         | 4822 249 10081 |
| 62         | 4822 403 50964 |
| 63         | 4822 492 51173 |
| 64         | 4822 532 50268 |
| 66         | 4822 403 40067 |
| 67         | 4822 492 31245 |
| 68         | 4822 277 10401 |
| 69         | 4822 403 50885 |
| 71         | 4822 535 91041 |
| 72         | 4822 520 40005 |
| 73         | 4822 492 51028 |
| 74         | 4822 492 51029 |
| 75         | 4822 492 40525 |
| 76         | 4822 492 31385 |
| 77         | 4822 410 40113 |
| 78         | 4822 492 31197 |
| 79         | 4822 358 30197 |
| 81         | 4822 528 60097 |
| 82 (a+b+c) | 4822 528 10287 |
| 83         | 4822 464 50051 |
| 84         | 4822 358 30219 |
| 85         | 4822 532 30272 |
| 87         | 4822 532 40115 |
| 88         | 4822 492 40629 |
| 89         | 4822 520 30276 |
| 93         | 4822 278 90007 |
| 94         | 4822 277 10414 |
| 96         | 4822 492 31297 |
| 97         | 4822 535 91042 |
| 98         | 4822 361 20142 |
| 102        | 4822 528 80638 |
| 103        | 4822 532 50265 |
| 104        | 4822 492 31099 |
| 106        | 4822 492 31296 |
| 109        | 4822 403 50888 |
| 110        | 4822 349 50075 |
| 111        | 4822 358 30198 |