

# PHILIPS *Service*

## GRAMOPHONES

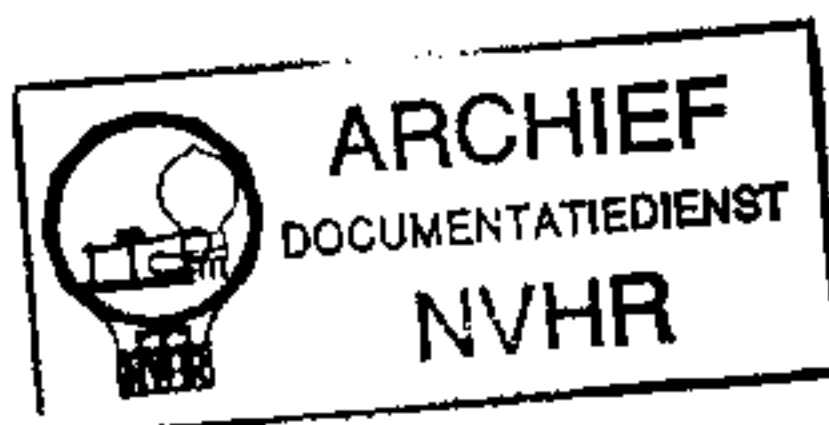
22GC043/00S/01S/04S/64S/76S/00L/00M



TGR2151



Ned. Ver. v. Historie v/d Radio



### SPECIFICATIONS

The 22GC043/00S/01S/04S/00L/00M is suitable for 110 - 127 - 220 - 240 V, 50 Hz

The 22GC043/64S/76S is suitable for 110 - 127 - 220 - 240 V, 60 Hz

|                   |                                    |
|-------------------|------------------------------------|
| Turntable speeds  | : 16 2/3 - 33 1/3 - 45 - 78 r.p.m. |
| PU heads          | : 22GP200 - 22GP300                |
| Stylus pressure   | : 6 ± 1 g (not adjustable)         |
| Stacking height   | : 18 mm (7 records)                |
| Power consumption | : 6 W                              |

Stylus : 22GP200,  
          22GP300

4822 251 20001  
4822 251 20002

## LIST OF MECHANICAL PARTS

| Item | Description                    | Code number    |
|------|--------------------------------|----------------|
| 1    | Circlip 9 mm                   | 4822 530 70036 |
| 2    | Circlip 4 mm                   | 4822 530 70116 |
| 3    | Tap screw 10Nx $\frac{1}{2}$ " | 4822 502 30055 |
| 4    | Tap screw 4Nx $\frac{1}{2}$ "  | 4822 502 30001 |
| 5    | Circlip 2 mm                   | 4822 530 70114 |
| 6    | Ring 3.2 mm                    | 4822 532 10332 |
| 7    | Circlip 2 mm                   | 4822 530 70043 |
| 8    | Ring 4.3 mm                    | 4822 532 10333 |
| 9    | Circlip 3 mm                   | 4822 530 70115 |
| 10   | Screw M2x4                     | 4822 502 10004 |
| 11   | Ring 5 mm                      | 4822 532 10203 |
| 12   | Circlip 3.2 mm                 | 4822 530 70123 |
| 13   | Circlip 4 mm                   | 4822 530 70124 |
| 14   | Circlip 1.9 mm                 | 4822 530 70122 |
| 15   | Grub screw M2.6x8              | 4822 502 10555 |
| 16   | Ring 4 mm                      | 4822 532 10202 |
| 17   | Tap screw 4Nx3/8"              | 4822 502 30062 |
| 18   | Screw M3x8                     | 4822 502 10689 |
| 19   | Nut M3                         | 4822 505 10408 |
| 20   | Circlip 2 mm                   | 4822 530 70043 |
| 50   | Ornamental segment/00L/00M     | 4822 460 20036 |
| 51   | Ornamental ring                | 4822 460 20035 |
| 52   | Mat                            | 4822 466 50066 |
| 53   | Turntable                      | 4822 528 10198 |
| 54   | Spring                         | 4822 492 40325 |
| 55   | Mounting plate                 | 4822 444 30123 |
| 56   | Spring                         | 4822 492 50709 |
| 57   | Ring                           | 4822 532 10001 |
| 58   | Ball race                      | 4822 520 40023 |
| 59   | Ball                           | 4822 520 40011 |
| 60   | Ring                           | 4822 532 50392 |
| 61   | Spindle                        | 4822 535 70302 |
| 62   | Clamping spring                | 4822 492 60424 |
| 63   | Ring                           | 4822 532 50043 |
| 64   | Idler wheel                    | 4822 528 70075 |
| 65   | Idler wheel bracket            | 4822 402 40022 |
| 66   | Button                         | 4822 410 20817 |
| 67   | Button                         | 4822 410 20818 |
| 68   | Button                         | 4822 410 20819 |
| 69   | Spring                         | 4822 492 30395 |
| 70   | Scanner                        | 4822 402 30043 |
| 71   | Spring                         | 4822 492 60834 |
| 72   | Clip                           | 4822 402 60153 |
| 73   | Spring                         | 4822 492 50707 |
| 74   | Bracket                        | 4822 402 60259 |
| 75   | Spring                         | 4822 492 30693 |
| 76   | Ring                           | 4822 532 10139 |
| 77   | Spring                         | 4822 492 30401 |
| 78   | Bracket                        | 4822 402 50101 |
| 79   | Spring                         | 4822 492 30399 |
| 80   | Idler bracket                  | 4822 402 40021 |
| 81   | Bracket                        | 4822 402 60262 |
| 82   | Spring                         | 4822 492 50434 |
| 83   | Loading arm                    | 4822 402 10017 |
| 84   | PU arm                         | 4822 251 70106 |
| 85   | Pin 2x10 mm                    | 4822 535 10029 |
| 86   | Spring                         | 4822 492 50708 |
| 87   | Spring                         | 4822 492 30697 |
| 88   | Bracket                        | 4822 402 30041 |
| 89   | Spring                         | 4822 492 30541 |
| 90   | Lift                           | 4822 402 60261 |
| 91   | Spring                         | 4822 492 30398 |
| 92   | Spring                         | 4822 492 50433 |
| 93   | Mains switch                   | 4822 276 10286 |
| 94   | Bracket                        | 4822 402 60263 |
| 95   | Spring                         | 4822 492 30696 |

| Item | Description         | Code number    |
|------|---------------------|----------------|
| 96   | Ring                | 4822 532 10252 |
| 97   | Ball                | 4822 520 40011 |
| 98   | Ball race           | 4822 520 40022 |
| 99   | Screw               | 4822 813 10213 |
| 100  | Command disc        | 4822 528 30111 |
| 101  | Drive wheel         | 4822 528 70115 |
| 102  | Spring              | 4822 492 40327 |
| 103  | Drive wheel bracket | 4822 402 20043 |
| 104  | Spring              | 4822 492 30694 |
| 105  | Roller              | 4822 528 90043 |
| 106  | Bracket             | 4822 402 30042 |
| 107  | Spring              | 4822 492 30695 |
| 108  | Buffer              | 4822 325 80099 |
| 109  | Ring                | 4822 532 50171 |
| 110  | Spindle             | 4822 535 90599 |
| 111  | Motor 50 Hz         | 4822 361 70199 |
|      | Motor 60 Hz         | 4822 361 70201 |
| 112  | Spring              | 4822 492 50432 |
| 113  | Frame               | 4822 444 60164 |
| 114  | Washer 4.3 mm       | 4822 532 50741 |
| 115  | Speed fix           | 4822 492 61397 |
| 116  | Changing pin        | 4822 535 60006 |
| 117  | Centre pin          | 4822 535 90548 |
| 118  | Centre ring         | 4822 532 60027 |

If the record changer is spring-mounted, such as in radio-gramophones, a special provision has been made (movable bracket) to restrict the vertical movement of the record changer.

With this construction the record changer can be removed by moving the above-mentioned bracket with the aid of a screw driver. The bracket is located at the front of the record changer, on the right.

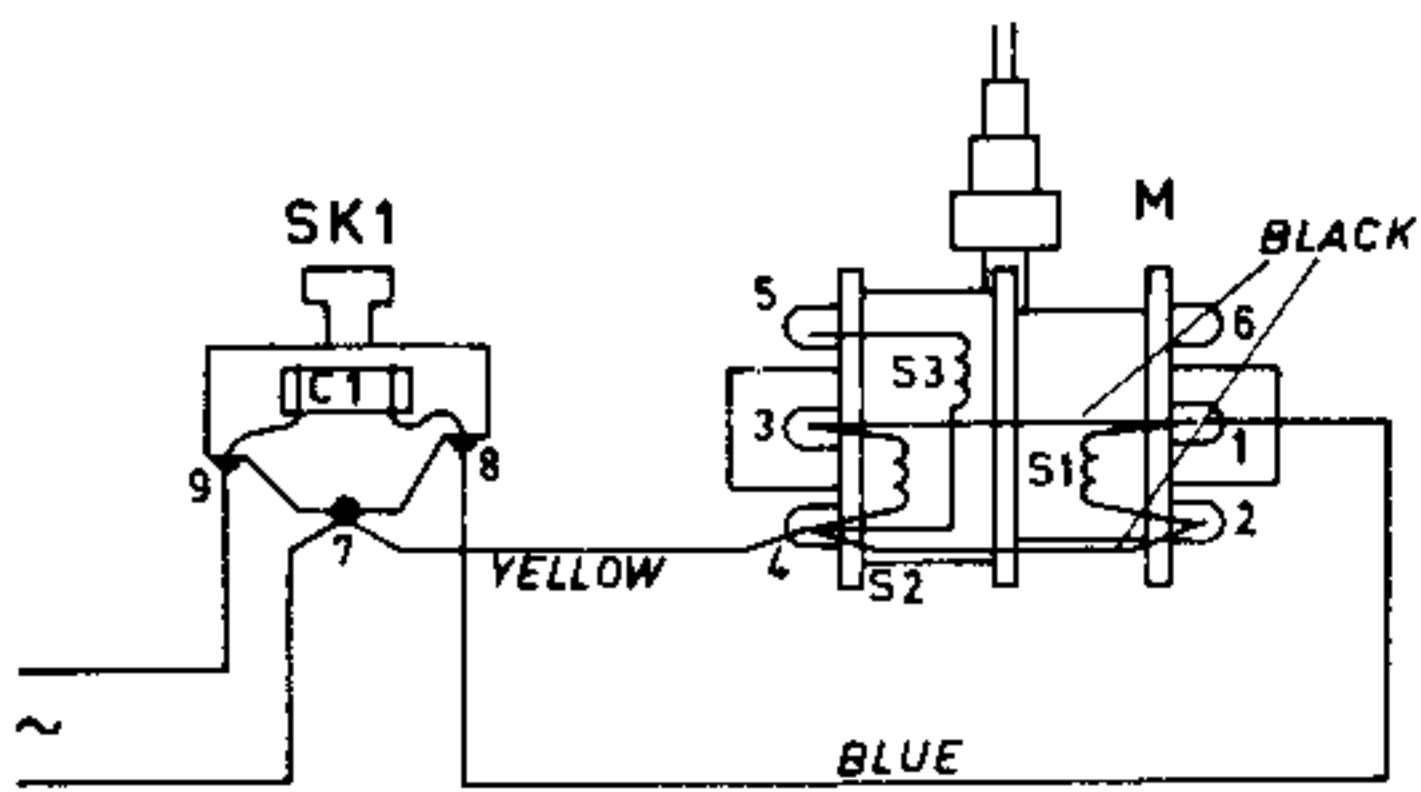


Fig. 5

TGR 2102

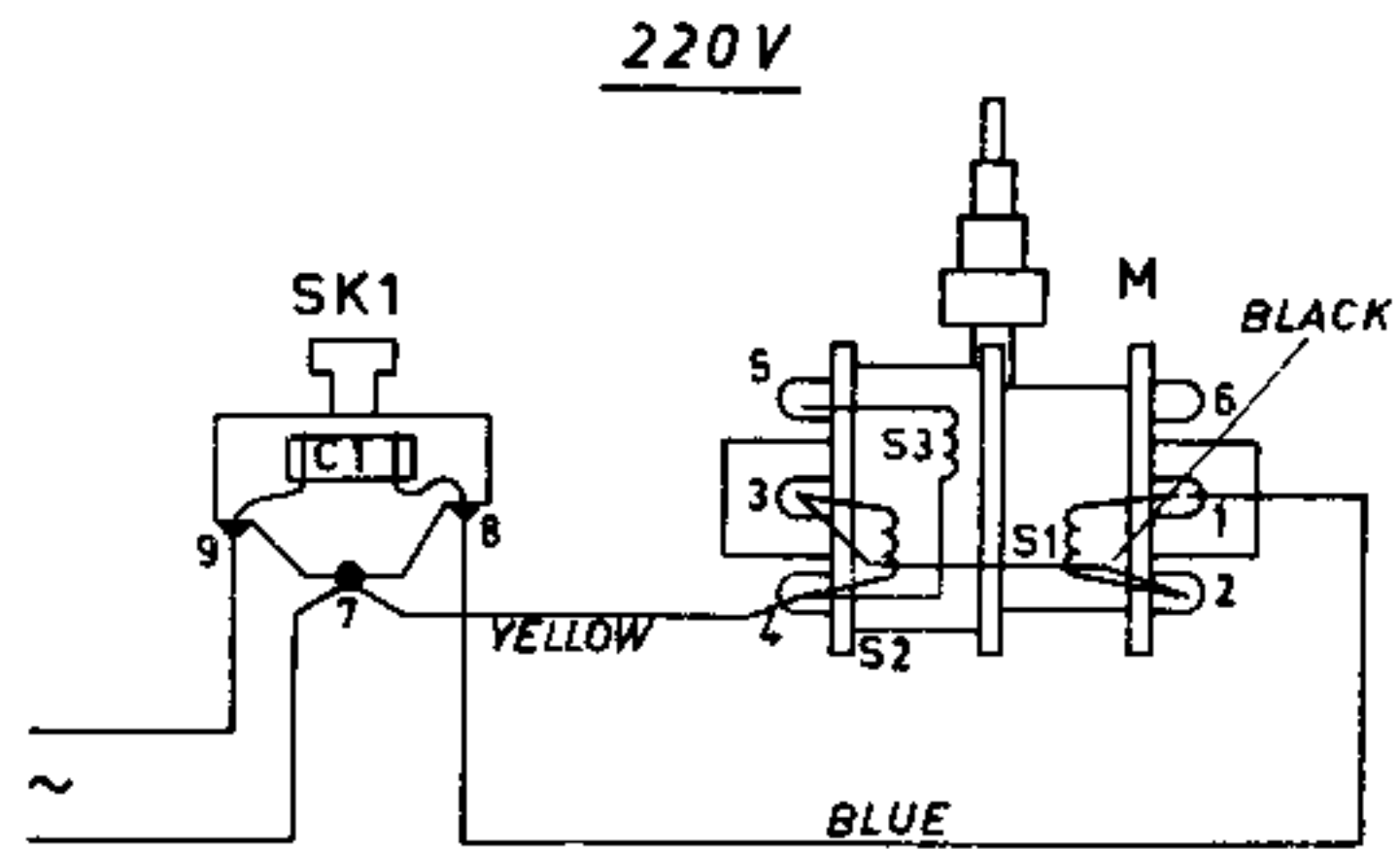


Fig. 6

TGR 2104

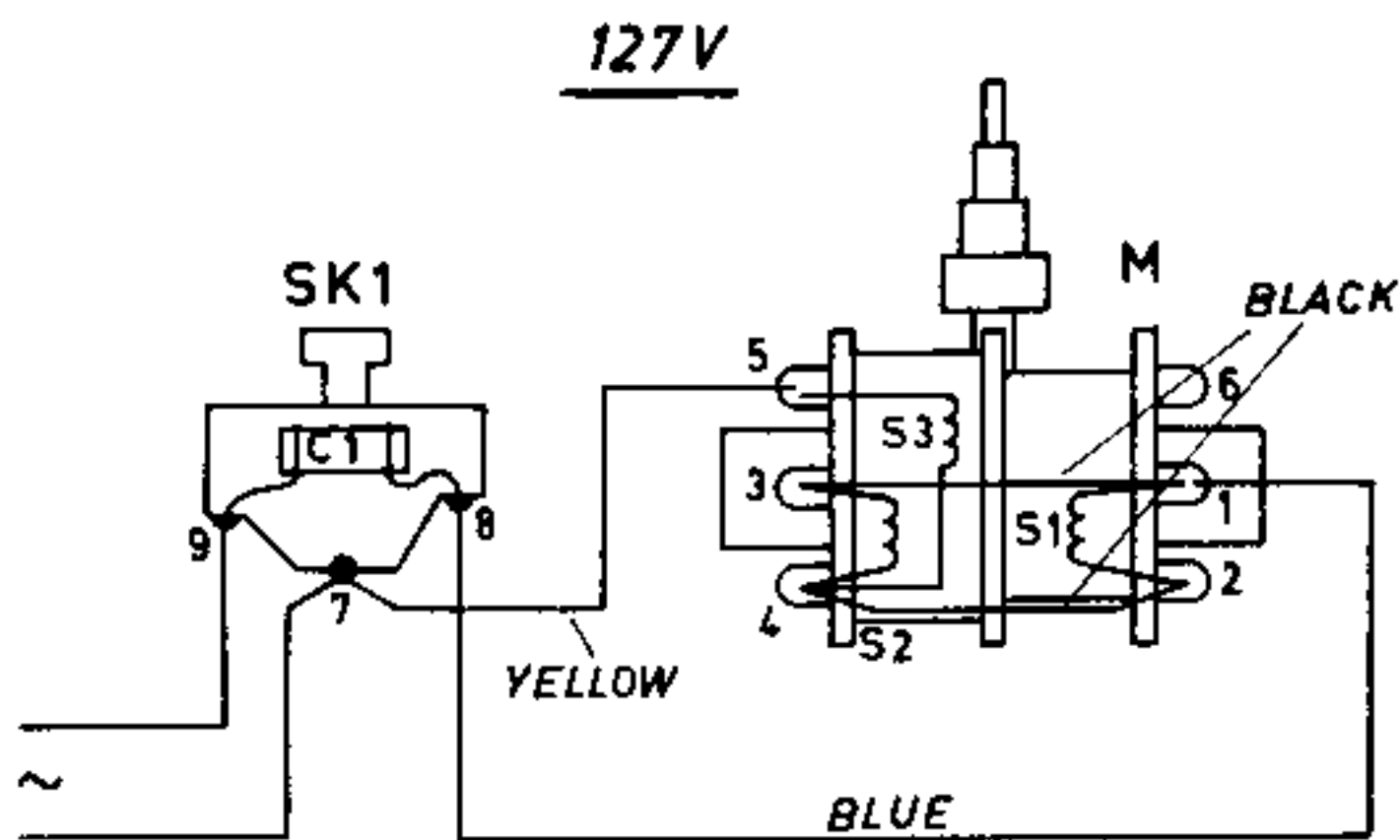


Fig. 7

TGR 2103

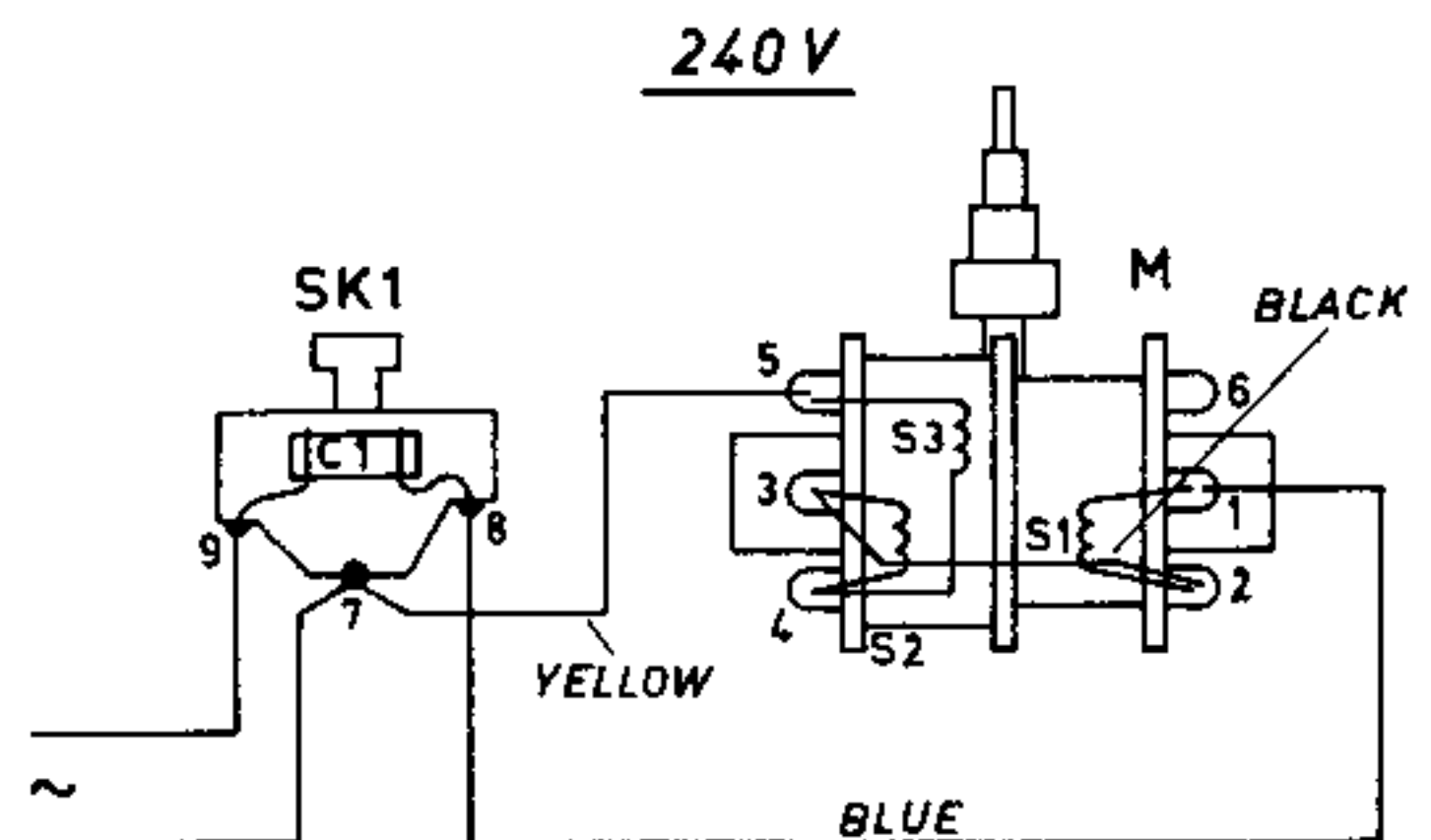


Fig. 8

TGR 2105

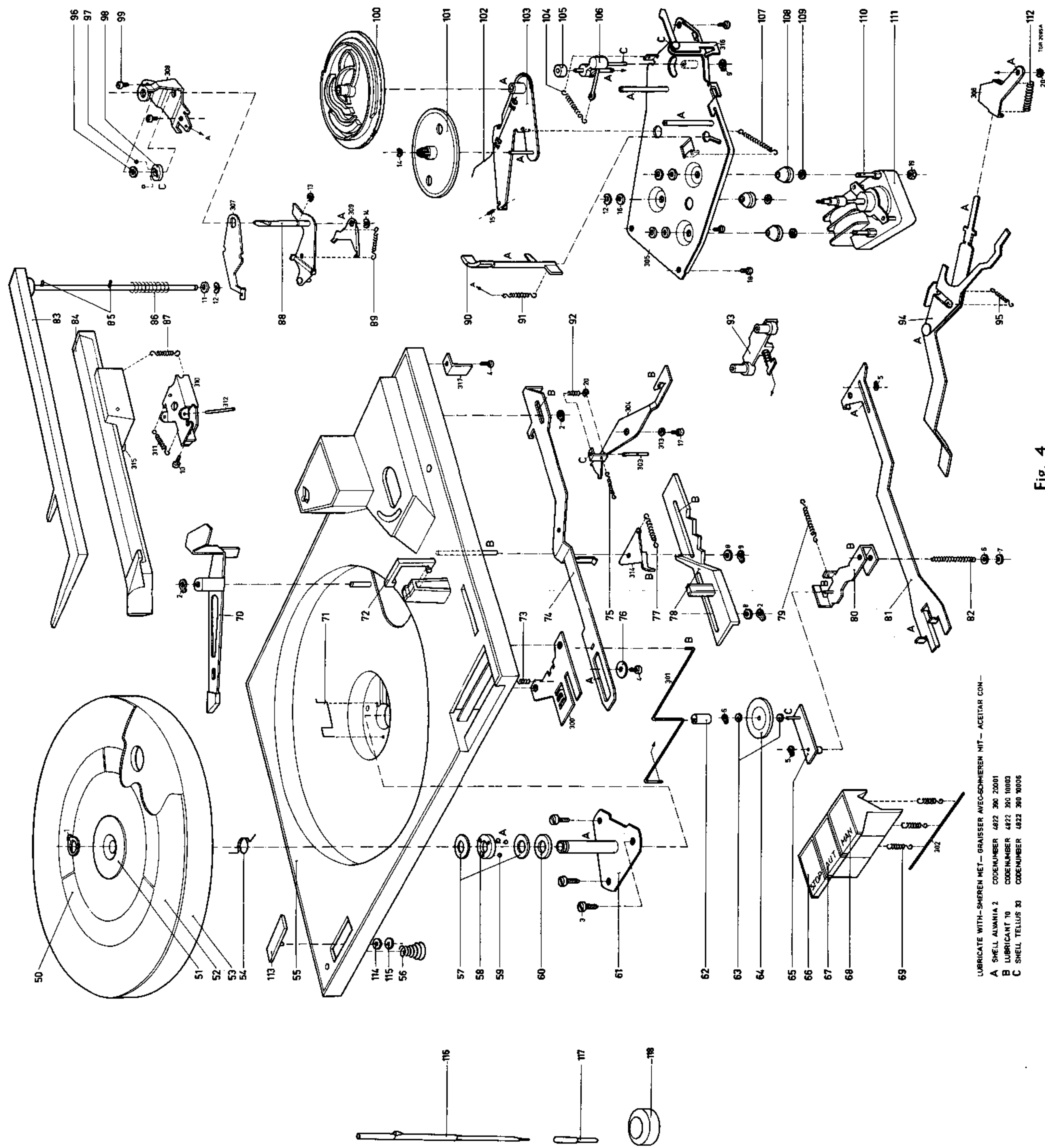


Fig. 4

LUBRICATE WITH-SHEREN MET - GRAISSER AVEC-SCHMIEREN MIT - ACETAR CON-

|   |                 |            |      |     |       |
|---|-----------------|------------|------|-----|-------|
| A | SHELL ALVANIA 2 | CODENUMBER | 4822 | 390 | 20001 |
| B | LUBRICANT 70    | CODENUMBER | 4822 | 390 | 10003 |
| C | SHELL TELLUS 33 | CODENUMBER | 4822 | 390 | 10006 |

## WORKING PRINCIPLE

### Automatic system

When button "AUT." (item 67) is depressed, the mains switch and idler wheel item 64 are released. As a result the turntable starts rotating. Moreover, drive wheel item 101 is released via brackets item 81, 94 and 103, so that the drive wheel makes contact with the motor spindle. Command disc item 100 then also starts rotating.

Roller item 105 is cleared from the stop in the bottom of the command disc (Fig. 2, item H), so that plate item 103 turns anti-clockwise and drive wheel item 101 remains positioned against the motor spindle. The pick-up arm is now lifted by means of the cam on pick-up arm lift item 90, which is pulled against the bottom of the command disc by spring item 91. The pin of plate assy. item 88 runs in the upper side of the command disc and guides the pick-up arm so far inwards that the diameter scanner on the pick-up arm touches the edge of the record. Thus the cocking diameter for the various records is determined and the pin of plate assy. item 88 will run in one of the slots a, b or c (Fig. 1) of the command disc for 17.5, 25 or 30 cm records respectively.

Selection of the correct diameter is effected by means of bracket item 309 and spring item 89 which couple bracket item 309 to plate assy. item 88. A tag on bracket item 309 hits collar d (Fig. 1) on the command disc during the inward movement of the pick-up arm, so that bracket item 309 is pushed inwards. As a result spring item 89 will pull plate assy. item 88 and the pick-up arm mounted on it, further or less far inwards. When the pick-up arm is not retained the smallest diameter will always be selected.

At the end of slots a, b or c the pick-up arm is moved slightly further inwards for diameter correction, because the diameter scanner and the stylus point are not located at the same diameter (see Fig. 1, item F). Roller item 105 now engages the stop (Fig. 2 item H), so that rotary plate item 103 turns back and drive wheel item 101 is lifted off the motor spindle. The command disc is now stopped. The cam on bracket item 88 is also moved out of groove a, b or c, so that bracket item 88 with the pick-up arm can move freely. At the same time the cam on pick-up arm lift item 90 is pressed down by the bevelled edge on the command disc. The pick-up arm is lowered onto the record and the record player is in the position for playing (Fig. 1, item H).

At the end of the record, scanner item 70 is pressed aside by spring item 54, so that bracket item 103 is released via bracket item 94. Drive wheel item 101 is now again positioned against the motor spindle and drives the command disc, so that roller item 105 is released by the stop.

The pick-up arm is lifted by the collar on the command disc after which it is moved outwards (item B, Fig. 1).

The changing cycle is then repeated.

After changing the last record, pin item 85 from the loading arm drops onto tilting bracket item 304 and presses this bracket down. As a result pin item 303 of tilting bracket item 304 is pushed into track e (Fig. 1) at the top of the command disc. When this pin returns to point g (Fig. 1) bracket item 304 will press back bracket item 74. Bracket item 74 releases the idler and also switches off the mains switch. Simultaneously the command disc moves back to its stop position.

A lug on bracket item 300 ensures that strip item 74 remains blocked in its extreme position. The record changer is then in the stop position.

### Manual operation

When button "MAN" (item 68) is depressed, strip item 74 is released, so that the mains switch is closed and the idler wheel is released. The turntable will then rotate. The pick-up arm can then be manually lowered onto the record.

As the loading arm is in its lowest position, the record changer will be switched off in the same way as described for automatic operation.

### Stop button

When the stop button (item 66) is depressed, bracket item 103 is released, drive wheel item 101 starts rotating and the changing cycle is repeated.

However, by depressing the stop button, tilting bracket item 304 is also tilted, so that the record player is switched off as described for automatic operation.

## ADJUSTMENTS

### Drive mechanism

- The contact surface of idler item 64 should be at least 0.5 mm clear of the pulley edge. This can be adjusted by bending bracket item 65 (Fig. 3).  
Ensure that the idler spindle and the pulley remain parallel.
- In the switched-off condition the idler should have a clearance of at least 2 mm with respect to the pulley.  
Adjustment is possible by bending the tag on bracket item 74.

### Changing mechanism

- When drive wheel item 64 is positioned against the motor spindle, the distance between mounting plate item 305 and grub screw item 15 should be 0.5...0.7 mm.  
Adjustment is possible by turning grub screw item 15.
- When the stylus is at 60...65 mm from the turntable centre, spring item 54 should just touch the diameter scanner item 70.  
Adjustment can be effected by bending the tag of bracket item 307 which contacts the scanner.

### Lifting and turning system

- When the stylus is on a 17 mm record, the clearance between screw item 315 and lift item 90 should be at least 0.5 mm. Moreover, the stylus should be at least 0.2 mm underneath the turntable edge in the lowest position of the pick-up arm, while in the highest position, when the pick-up arm moves outwards, this distance should be 24 mm.  
Adjustment is possible by turning screw item 315 (accessible at the top of the pick-up arm).

- When the arm is lowered, the stylus should come into the lead-in groove of the record.

Adjustment is possible by turning screw item 10.

- The stylus pressure should be 5...7 g.  
Adjust by replacing spring item 87.

### Start and stop mechanism

- When button "AUT." is depressed, bracket item 304 may not be stopped by clamping spring item 317. Bracket item 103 should be released.  
Adjust by bending the tag on bracket item 81 against which the "AUT." button presses.
- When the "STOP" button is depressed, bracket item 304 should be stopped by clamping spring item 317.  
Adjust by bending the tag on bracket item 316, which contacts bracket item 81. After this re-check that bracket item 304 is still retained when the "AUT." button is depressed (see a).

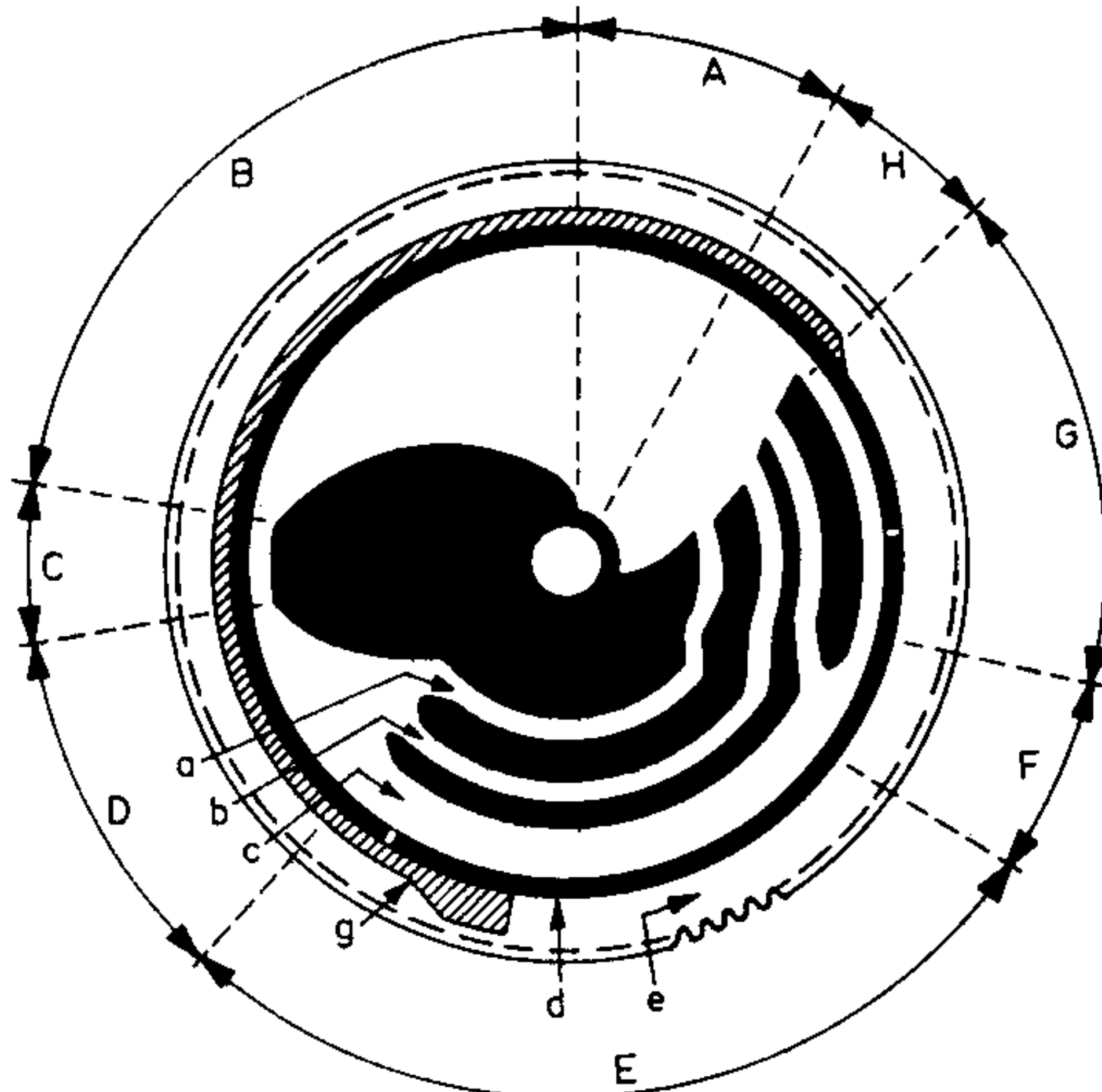


Fig. 1

TGR 1191

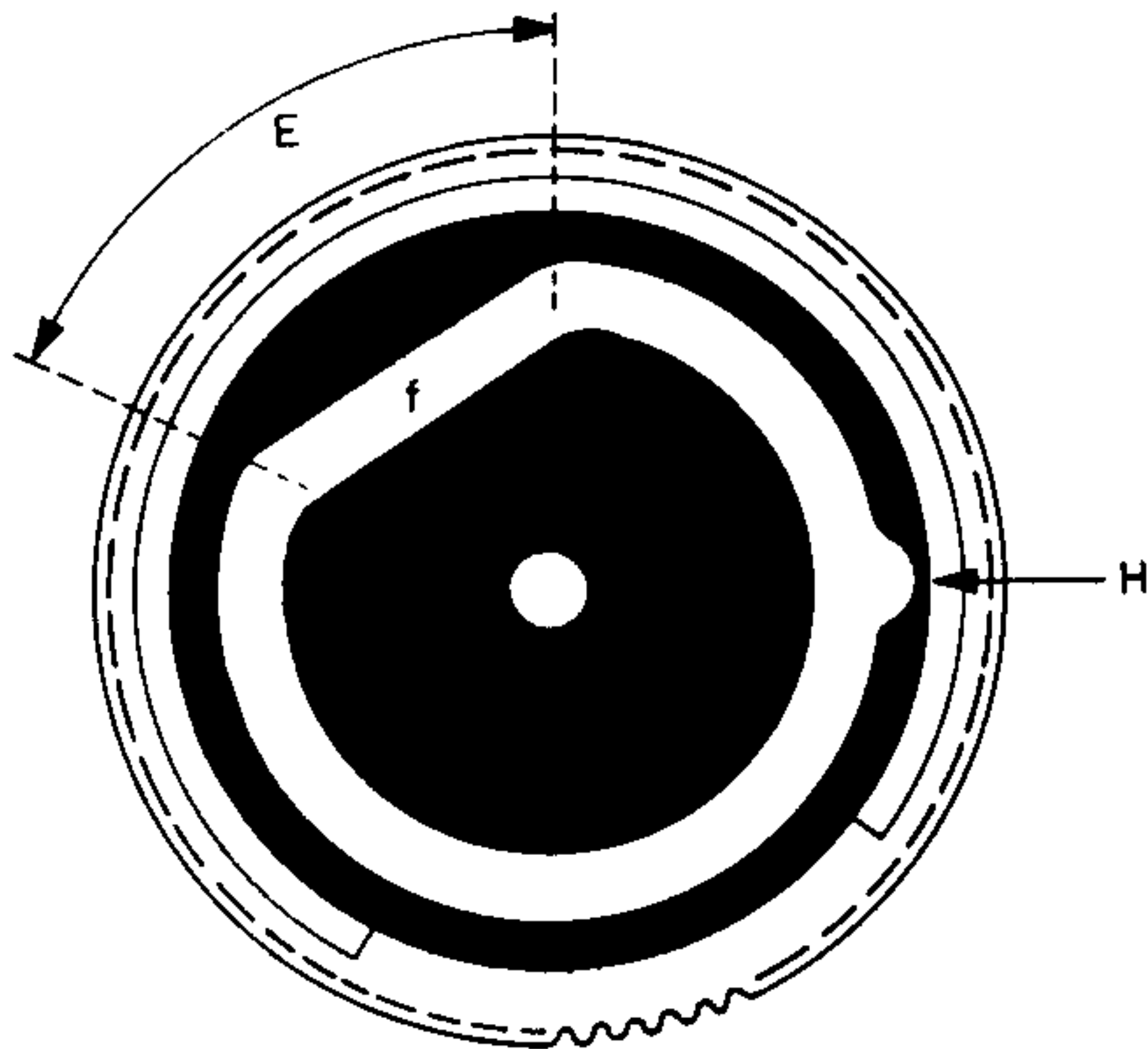
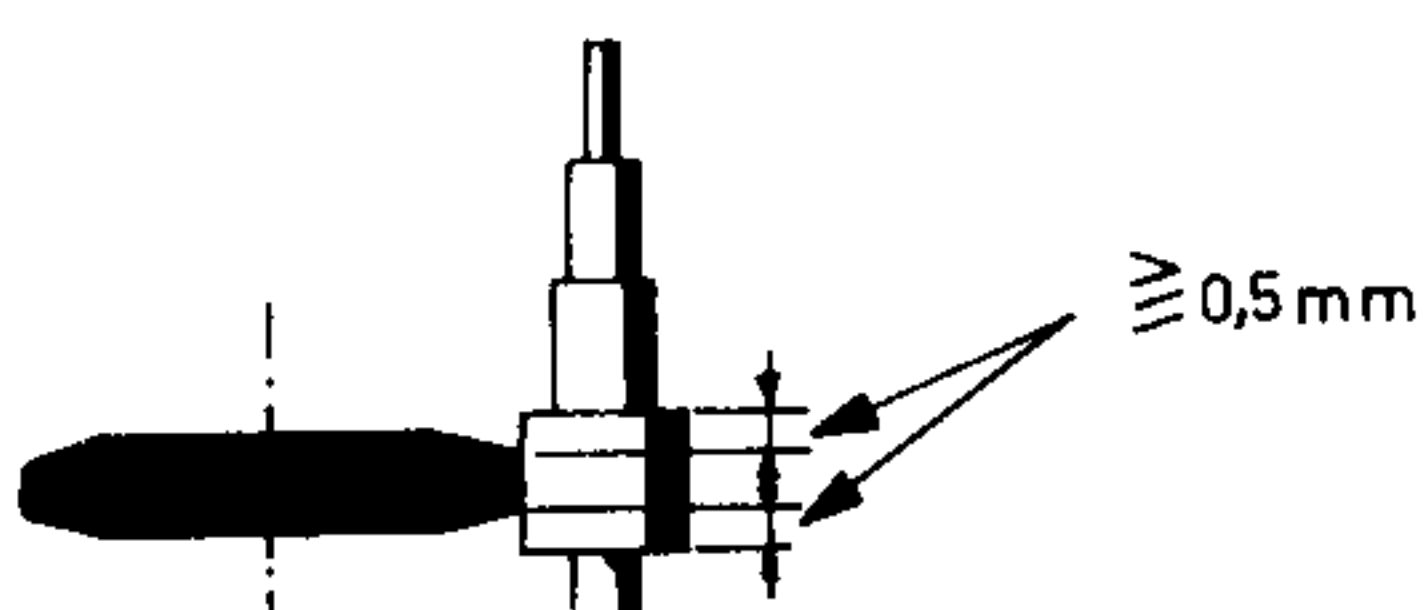


Fig. 2

TGR 1192



$\geq 0,5\text{ mm}$

TGR 2117

Fig. 3



Betreft: a. Wijziging beugel 106  
b. Gebruik smeermiddelen

- ad a. Vanaf stempeling 038 zijn beugel 106, bestelnummer 4822 402 30042 en samenstelling motormontageplaat 305 gewijzigd.  
In apparaten met stempeling lager dan 038 kan men in geval van vastzitten van beugel 106 in de bus van motormontageplaat 305, de beugel demonteren, de as en de bus schoonmaken en smeren met Shell Tellus 33, bestelnummer 4822 390 10006.  
Bij vervanging van de oude beugel 106 door de nieuwe beugel 106, moet tevens de motormontageplaat 305, vervangen worden.  
Bestelnummer nieuwe beugel 106: 4822 402 30054  
Bestelnummer motormontageplaat 305: 4822 520 10325
- ad b. Bij het smeren van de diverse onderdelen, moet men erop letten dat geen vet op de montageplaat 55 komt, daar deze aangetast wordt door vet.
-



## GRAMMOFOON

Betreft: a. wijziging veer pos. 120.

b. Toevoeging van veer onder taster 70.

a. Omegaveer (pos. 120) bestelnummer 4822 492 40326 is vervangen door een nieuwe veer pos. 120, bestelnummer 4822 492 30968.

Tevens is aan beugel 74 bestelnummer 4822 402 60259 een lip toegevoegd (Zie fig. 1.)

Voor service doeleinden wordt de nieuwste uitvoering van beugel 74 geleverd.

b. Een veer pos. 121, bestelnummer 4822 492 40428 is onder taster 70, bestelnummer 4822 402 30043, toegevoegd om ongewenste afslag te voorkomen door een te licht draaiende taster.

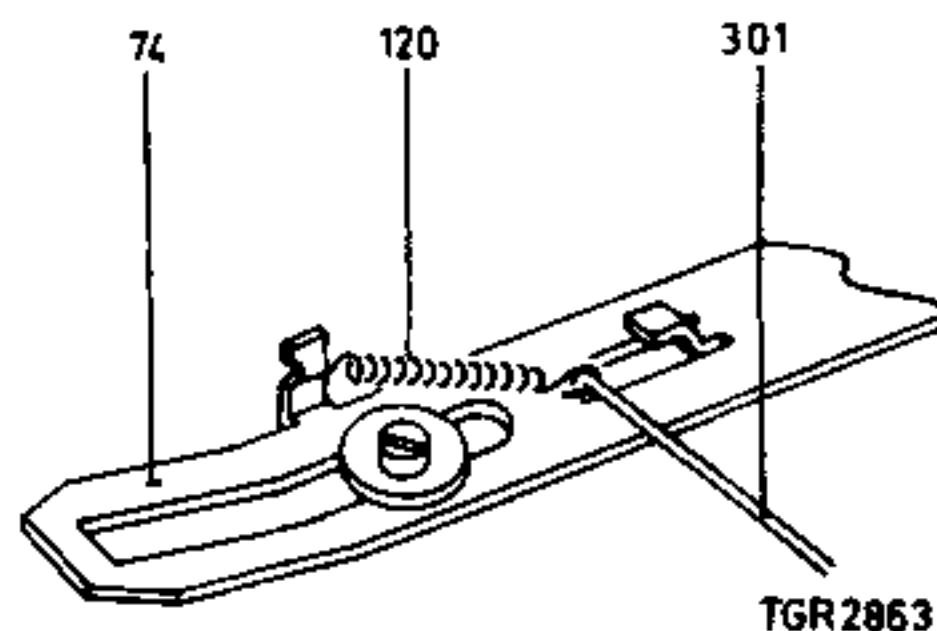


Fig. 1

# PHILIPS SERVICE-MEDEDELING



Vertrouwelijke mededeling voor service-handelaren. Copyright

|       |          |      |                    |            |     |      |       |
|-------|----------|------|--------------------|------------|-----|------|-------|
| Datum | 1-7-1969 | Type | 22GC040<br>22GC042 | Ref. Afsp. | 122 | Tel. | 88715 |
|-------|----------|------|--------------------|------------|-----|------|-------|

## 1. Wijziging afslagmechanisme

Met ingang van fabrieksstempeling PW 06 is het afslagmechanisme gewijzigd.

Hiervoor worden onderstaande onderdelen gebruikt:

|                                        |                |
|----------------------------------------|----------------|
| Codenummer nieuwe ring pos. 31         | 4822 528 30122 |
| Codenummer nieuwe grijphaak pos. 42    | 4822 402 60283 |
| Codenummer nieuwe draaitafelas pos. 35 | 4822 535 70263 |

Omdat de nieuwe onderdelen niet in de oude uitvoering kunnen worden toegepast, blijven de oorspronkelijke onderdelen onder hun eigen codenummers eveneens beschikbaar.

|       |          |      |         |            |     |      |       |
|-------|----------|------|---------|------------|-----|------|-------|
| Datum | 1-7-1969 | Type | 22GF228 | Ref. Afsp. | 123 | Tel. | 88715 |
|-------|----------|------|---------|------------|-----|------|-------|

## 1- Wijziging codenummer luidspreker

Gelieve in de documentatie het codenummer van de luidspreker te veranderen in 4822 240 10018.

|       |          |      |         |            |     |      |       |
|-------|----------|------|---------|------------|-----|------|-------|
| Datum | 1-7-1969 | Type | 22GF040 | Ref. Afsp. | 124 | Tel. | 88715 |
|-------|----------|------|---------|------------|-----|------|-------|

## 1. Wijziging codenummer luidspreker

Gelieve in de documentatie het codenummer van de luidspreker te veranderen in 4822 240 10018.

|       |          |      |         |            |     |      |       |
|-------|----------|------|---------|------------|-----|------|-------|
| Datum | 1-7-1969 | Type | 22GC043 | Ref. Afsp. | 125 | Tel. | 88715 |
|-------|----------|------|---------|------------|-----|------|-------|

## 1. Aanvulling codenummerlijst

|                             |                |
|-----------------------------|----------------|
| Codenummer wisselpen        | 4822 535 60006 |
| Codenummer korte pen        | 4822 535 90548 |
| Codenummer 45-toerenadaptor | 4822 532 60027 |