






# ETA 255.1xx / 255.4x1

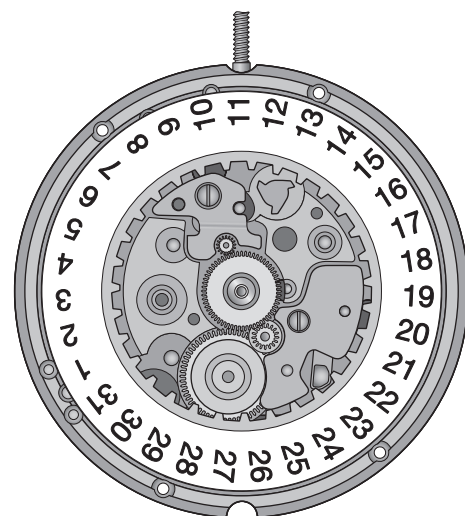
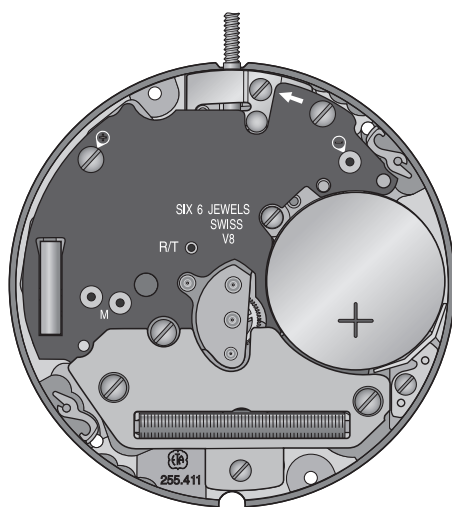
TECHNICAL  
COMMUNICATION

COMUNICACIÓN  
TÉCNICA

COMUNICAZIONE  
TECNICA

10½" - 11½"

|  |   |   |  |   |   |
|--|---|---|--|---|---|
|  |  |  |  |  |  |
| Movement height<br>Altura sobre máquina<br>Altezza sopra movimento | 1,95 mm   |   |  | 2,45 mm   |   |
| Height on battery<br>Altura sobre pila<br>Altezza sopra pila       | 2,10 mm   |   |  | 2,60 mm   |   |
| 11½"<br>Ø 25,60 mm   |   |   | 255.111  | 255.121   | 255.122   |
| 10½"<br>Ø 23,30 mm   | 255.431   | 255.441   | 255.411  | 255.421   |   |



**ETA** SA  
MANUFACTURE HORLOGÈRE SUISSE  
DEPUIS 1793

## Interchangeability – Intercambiabilidad – Intercambiabilità

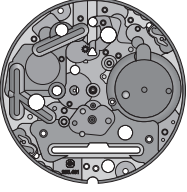


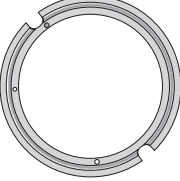































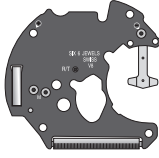


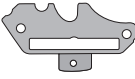







| No     | No CS     | LIST OF MATERIALS  | LISTA DE FORNITURAS  | ELENCO DELLE FORNITURE   | Cal.    |         |         |         |         |         |         |
|--------|-----------|--|--|--|---------|---------|---------|---------|---------|---------|---------|
|        |           |  |  |  | 255.111 | 255.121 | 255.122 | 255.411 | 255.421 | 255.431 | 255.441 |
| 100    | 10.020.07 | Main plate, jewelled                                       | Platina, empedrada   | Piastra con pietre   | 255.111 | 255.121 | 255.122 | 255.411 | 255.421 | 255.431 | 255.441 |
| 110    | 10.048.07 | Train wheel bridge, jewelled                               | Puente de rodaje, empedrado                                  | Ponte del ruotismo, con pietre                                       | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 144    | 10.30000  | Dial fastener  | Fijador de esfera  | Ferma-quadrante  | 950.001 | 950.001 | 950.001 | 950.001 | 950.001 | 950.001 | 950.001 |
| 145    | 10.106.00 | Dial support   | Soporte de la esfera   | Supporto del quadrante   | ---     | 255.121 | 255.121 | ---     | 255.421 | ---     | ---     |
| 161    | 80.400.00 | Centre tube  | Tubito de centro   | Tubo di centro   | 255.111 | 255.121 | 255.121 | 255.111 | 255.121 | 255.111 | 255.111 |
| 203    | 30.012.00 | Intermediate wheel   | Rueda intermedia   | Ruota intermedia   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 210    | 30.025.00 | Third wheel  | Rueda primera  | Ruota mediana  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.441 | 255.441 |
| 227    | 30.027.00 | Second wheel   | Rueda de segundos  | Ruota dei secondi  | 255.111 | 255.121 | 255.121 | 255.111 | 255.121 | ---     | ---     |
| 277/3  | 30.027.18 | Second wheel, without sweep second                         | Rueda de segundos, sin segundero en el centro                | Ruota dei secondi, senza segundero al centro                         | ---     | ---     | ---     | ---     | ---     | 255.441 | 255.441 |
| 242    | 31.083.00 | Cannon pinion with driver                                  | Cañón de minutos con arrastrador                             | Pignone calzante con conduttore                                      | 255.111 | 255.121 | 255.121 | 255.111 | 255.121 | ---     | ---     |
| 242/1  | 31.083.18 | Cannon pinion with driver, without sweep second            | Cañón de minutos con arrastrador, sin segundero en el centro | Pignone calzante con conduttore, senza secondo al centro             | ---     | ---     | ---     | ---     | ---     | 255.441 | 255.441 |
| 255/1  | 31.046.06 | Hour wheel, assembled                                      | Rueda de horas, montada                                      | Ruota delle ore, montata   | 255.111 | 255.121 | 255.121 | 255.111 | 255.121 | 255.111 | 255.111 |
| 260    | 31.041.00 | Minute wheel   | Rueda de minutería   | Ruota della minutería  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 405    | 51.020.21 | Handsetting stem, thread diameter 0.90 mm                  | Tija de puesta en hora, diámetro fileteado 0,90 mm           | Albero di messa all'ora, diametro filettatura, 0,90 mm               | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 405/4  | 51.021.26 | Handsetting stem, movement part with beak                  | Tija de puesta en hora, parte movimiento de pico             | Albero di messa all'ora, parte movimento di becco                    | 255.111 | 255.111 | 255.111 | 255.411 | 255.411 | 255.411 | 255.411 |
| 407    | 31.121.00 | Sliding pinion   | Piñón corredizo  | Pignone scorrevole   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 435/1  | 51.050.06 | Yoke, assembled  | Báscula de piñón corredizo, montada                          | Bascula del pignone scorrevole, montata                              | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 443/1  | 51.080.06 | Setting lever, assembled                                   | Tirete montado   | Tiretto montato  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 445    | 51.090.00 | Setting lever jumper                                       | Muelle flexible de tirete                                    | Scatto del tiretto   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 450    | 31.100.00 | Setting wheel  | Rueda de transmisión   | Rinvio   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 462    | 10.062.00 | Minute train bridge  | Puente de rodaje de minutería                                | Ponte del ruotismo di minutería                                      | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 466    | 10.210.00 | Setting mechanism cover                                    | Cubremecanismo   | Copri-meccanismo   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 479    | 61.090.00 | Setting lever spring                                       | Muelle de tirete   | Molla del tiretto  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 560    | 56.071.00 | Stop lever and switch                                      | Palanquita de parada e interruptor                           | Leva di arresto e interruttore                                       | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 2521   | 33.081.00 | Day corrector setting wheel                                | Rueda de transmisión correctora del día                      | Rinvio correttore dei giorni   | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2543   | 33.011.00 | Intermediate date wheel                                    | Rueda intermedia de fecha                                    | Ruota intermedia del datario   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2555   | 33.028.00 | Calendar driving wheel                                     | Rueda de arrastre del calendario                             | Ruota conduttrice del calendario                                     | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2556   | 33.020.00 | Date indicator driving wheel                               | Rueda de arrastre del indicador de fecha                     | Ruota conduttrice dell'indicatore della data                         | 255.111 | ---     | ---     | 255.111 | ---     | ---     | 255.111 |
| 2557/1 | 91.440.22 | Date indicator, for opening at 3 o'clock                   | Indicador de fecha, abertura de ventanilla en las 3 h        | Indicatore della data, apertura dello sportellino sulle ore 3        | 255.111 | 255.121 | ---     | 255.411 | 255.421 | ---     | 255.411 |
| 2557/1 | 91.440.23 | Date indicator, for opening at 6 o'clock                   | Indicador de fecha, abertura de ventanilla en las 6 h        | Indicatore della data, apertura dello sportellino sulle ore 6        | ---     | ---     | 255.122 | ---     | ---     | ---     | ---     |
| 2561/1 | 91.441.21 | Day indicator, circular arc opening at 12 o'clock          | Indicador de día, abertura en arco de círculo en las 12 h    | Indicatore dei giorni, apertura ad arco di cerchio sulle ore 6       | ---     | ---     | 255.122 | ---     | ---     | ---     | ---     |
| 2561/1 | 91.441.42 | Day indicator, horizontal rectangular opening at 3 o'clock | Indicador de día, abertura rectangular horizontal en las 3 h | Indicatore dei giorni, apertura rettangolare orizzontale sulle ore 6 | ---     | 255.121 | ---     | ---     | 255.421 | ---     | ---     |
| 2566   | 53.200.00 | Date corrector   | Corrector de fecha   | Correttore della data  | 255.111 | ---     | ---     | 255.111 | ---     | ---     | 255.111 |
| 2569   | 53.204.00 | Double corrector   | Corrector doble  | Correttore doppio  | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2575   | 63.030.00 | Date jumper spring   | Resorte del muelle flexible de fecha                         | Molla dello scatta-data  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2576   | 53.080.00 | Date jumper  | Muelle flexible de fecha                                     | Scatta-data  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2577   | 53.081.00 | Day jumper   | Muelle flexible de días                                      | Scatta-giorni  | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2595   | 13.111.00 | Maintaining plate with date jumper                         | Placa de sujeción con muelle flexible de fecha               | Placca di guardia con scatta-data                                    | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2663   | 13.107.00 | Day indicator maintaining plate                            | Placa de sujeción del indicador de día                       | Placca di guardia dell'indicatore dei giorni                         | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2743   | 33.082.00 | Date corrector intermediate setting wheel                  | Rueda de transmisión del corrector de fecha                  | Rinvio intermedio del correttore del datario                         | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2780   | 83.171.00 | Day indicator spring-clip                                  | Claveta del indicador del día                                | Chiavetta dell'indicatore dei giorni                                 | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 4000   | 10.513.00 | Electronic module  | Módulo electrónico   | Modulo elettronico   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.441 | 255.441 |
| 4021   | 20.582.00 | Stator   | Estátor  | Statore  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4038   | 20.584.00 | Magnetic screen, upper                                     | Pantalla magnética, superior                                 | Schermo magnetico, superiore   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |

## Interchangeability – Intercambiabilidad – Intercambiabilità

| No       | No CS     | LIST OF MATERIALS   | LISTA DE FORNITURAS  | ELENCO DELLE FORNITURE                                     | Cal.    |         |         |         |         |         |         |
|----------|-----------|---|--|--|---------|---------|---------|---------|---------|---------|---------|
|          |           |   |  |  | 255.111 | 255.121 | 255.122 | 255.411 | 255.421 | 255.431 | 255.441 |
| 4039     | 20.585.00 | Magnetic screen, lower  | Pantalla magnética, inferior                               | Schermo magnetico, inferiore                               | ---     | ---     | ---     | ---     | ---     | 255.431 | ---     |
| 4046     | 20.651.00 | Battery insulator, bottom                                       | Aislador de pila, inferior                                 | Isolatore della pila, inferiore                            | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4046'    | 20.651.18 | Battery insulator, on bridle -                                  | Aislador de pila, sobre brida -                            | Isolatore della pila, sulla flangia                        | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4160     | 20.780.00 | Connection, for case  | Conexión de caja   | Collegamento, de cassa                                     | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4211     | 20.580.00 | Rotor   | Rotor  | Rotore   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4233     | 80.246.00 | Stator rivet  | Remache del estátor  | Ribattino dello statore                                    | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 4407     | 20.764.00 | Earth connector   | Brida de masa  | Brida della massa  | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 |
| 4412     | 10.601.00 | Battery limiting spring   | Muelle de limitación de pila                               | Molla di limitazione della pila                            | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 | 955.101 |
| 4929     | 20.570.00 | Battery   | Pila   | Pila   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 9716     | 66.140.00 | Corrector spring  | Muelle del corrector                                       | Molla del correttore                                       | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 5101     | 10.020.01 | 2x Screw for case   | Tornillo de sujeción                                       | Vite di fissaggio  | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 5102     | 10.020.02 | 2x Screw for case, special                                      | Tornillo de sujeción, especial                             | Vite di fissaggio, speciale                                | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 1) 5110  | 10.048.01 | 1x Screw for train wheel bridge                                 | Tornillo de puente de rodaje                               | Vite del ponte del ruotismo                                | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 2) 5145  | 10.106.01 | 2x Screw for dial support                                       | Tornillo de soporte de esfera                              | Vite di supporto del quadrante                             | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 5166     | 93.030.01 | 2x Screw for casing clamp                                       | Tornillo de brida de encajado                              | Vite del tubo di protezione                                | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 2) 5462  | 10.062.01 | 1x Screw for minute train bridge                                | Tornillo de puente de rodaje de minutería                  | Vite del ponte del ruotismo di minutería                   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 1) 5466  | 10.210.01 | 1x Screw for winding and setting mechanism cover                | Tornillo de cubremecanismo                                 | Vite del copri-mecanismo                                   | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 1) 5479  | 61.090.01 | 1x Screw for setting lever spring                               | Tornillo de muelle de tirete                               | Vite della molla del tiretto                               | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 52577    | 53.081.01 | 1x Screw for day jumper   | Tornillo de muelle flexible de días                        | Vite dello scatto dei giorni                               | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 2) 52595 | 13.111.01 | 1x Screw for date jumper maintaining plate                      | Tornillo de placa de sujeción del muelle flexible de fecha | Vite della placca di guardia dello scatta-data             | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | ---     | 255.111 |
| 2) 52663 | 13.107.01 | 2x Screw for day indicator maintaining plate                    | Tornillo de placa de sujeción del indicador del día        | Vite della piastra di fissaggio dell'indicatore del giorno | ---     | 255.121 | 255.121 | ---     | 255.121 | ---     | ---     |
| 54000    | 10.513.01 | 4x Screw for electronic module                                  | Tornillo de módulo electrónico                             | Vite del modulo elettronico                                | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 1) 54038 | 20.584.01 | 1x Screw for upper magnetic screen                              | Tornillo de pantalla magnética, superior                   | Vite dello schermo magnetico, superiore                    | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
| 2) 54039 | 20.585.01 | 1x Screw for lower magnetic screen                              | Tornillo de pantalla magnética, inferior                   | Vite dello schermo magnetico, inferiore                    | ---     | ---     | ---     | ---     | ---     | 255.431 | ---     |
| 1) 54407 | 20.764.01 | 1x Screw for earth connector                                    | Tornillo de brida de masa                                  | Vite della flangia della massa                             | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 | 255.111 |
|          |           | 1) 2) Identical screws<br>Tornillos idénticos<br>Viti identiche | 1) 5110<br>5466<br>5479<br>54038<br>54407                  | 2) 5145<br>5462<br>52595<br>52663<br>54039                 |         |         |         |         |         |         |         |

| Screws<br>Tornillos<br>Vite | M <sub>L</sub> Minimum torque for loosening<br>M <sub>L</sub> Par mínimo para desatornillar<br>M <sub>L</sub> Coppia minima per svitare |
|-----------------------------|---|
| 5101<br>5102                | 1,0 Ncm   |

# Materials - Fornituras - Forniture

|   |   |   |   |   |  |   |   |   |   |       |
|---|---|---|---|---|--|---|---|---|---|-------|
|    |    |    |    |    |   |    |    |    | 5110<br>5466<br>5479<br>54038<br>54407  |       |
| 100   | 110   | 144   | 145   | 161   | 203  | 210   | 227   |   |   |       |
|    |    |    |    |    |    |    |    |    |   |       |
| 242   | 255/1   | 260   | 405   | 407   | 435/1  | 443/1   | 445   |   |   |       |
|    |    |    |    |    |   |    |    |    | 5145<br>5462<br>52595<br>52663<br>54039   |       |
| 450   | 462   | 466   | 479   | 560   | 2521   | 2543  | 2556  |   |   |       |
|    |    |    |    |    |     |     |    |    |  | 52577 |
| 2557/1  | 2561/1  | 2575  | 2576  | 2577  | 2595   | 2663  | 2780  | 4000  |   |       |
|  |  |  |  |  |  |  |  |  | 54000   |       |
| 4021  | 4038  | 4046  | 4046  | 4211  | 4407   | 4412  | 4929  |   |   |       |

### Assembling of the calendar mechanism

(Parts listed in order of assembly)

### Montaje del mecanismo de calendario

(Lista de fornitureas por orden de ensamblado)

### Montaggio del meccanismo del calendario

(Elenco delle forniture in ordine di montaggio)

|     |           |            |
|-----|-----------|------------|
| 100 | 5462 (1x) | 2557/1     |
| 242 | 2556      | 2595       |
| 260 | 2543      | 52595 (1x) |
| 450 | 2576      | 255/1      |
| 462 | 2575      |            |

### Lubrication – Lubricación – Lubrificazione

Thick, pressure-resistant oil  
or grease



Aceite espeso de viscosidad  
elevada o grasa  
Olio denso a viscosità elevata  
o grasso

**Moebius D5**  
or / ó / o  
**HP-1300**

Very small quantity  
Lubricación muy reducida  
Lubrificazione molto lieve



**Moebius D5**  
or / ó / o  
**HP-1300**

Fine oil  
Aceite fino  
Olio fluido



**Moebius 9014**  
or / ó / o  
**Moebius 9034**

Thick oil or grease  
Aceite espeso o grasa  
Olio denso o grasso



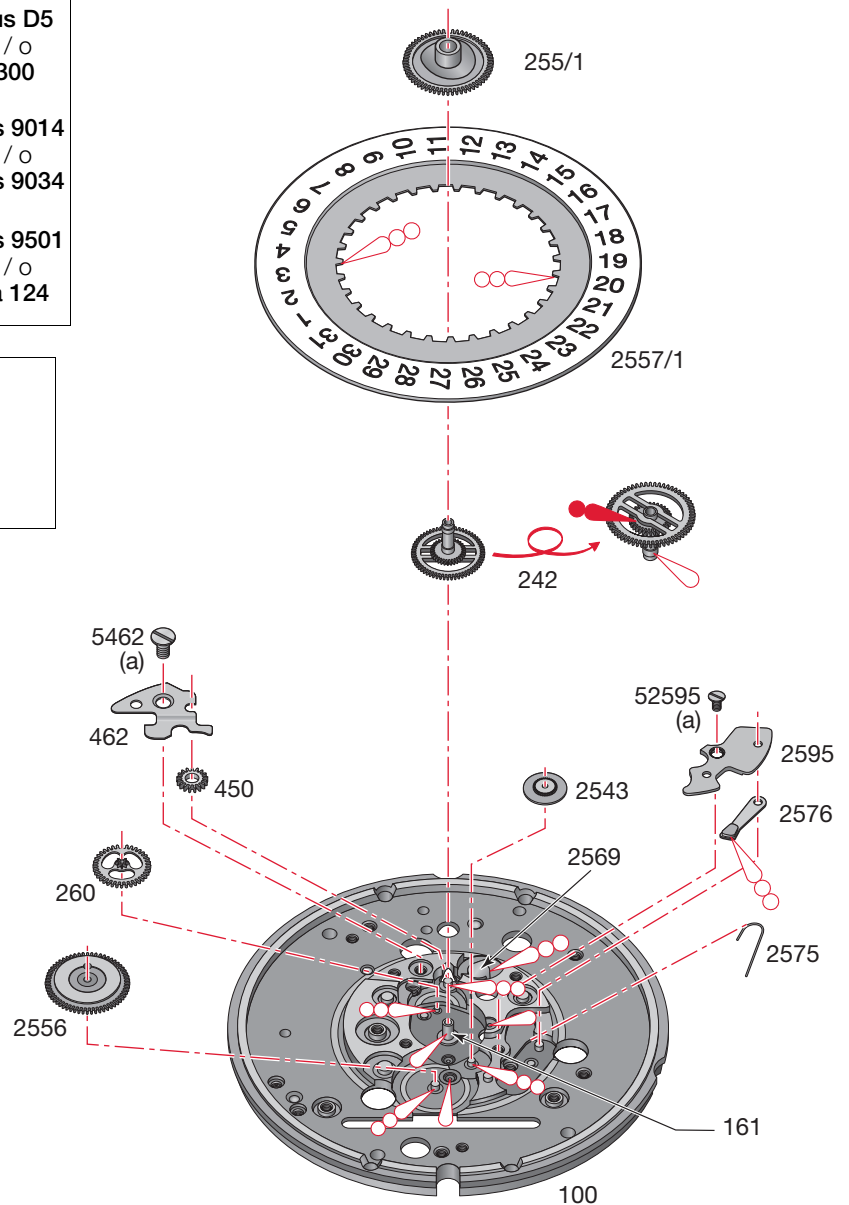
**Moebius 9501**  
or / ó / o  
**Jismaa 124**

**M<sub>L</sub>** Minimum torque for loosening

**M<sub>L</sub>** Par mínimo para destornillar

**M<sub>L</sub>** Coppia minima per svitare

(a) 0,6 Ncm



### Assembling of the calendar mechanism

(Parts listed in order of assembly)

### Montaje del mecanismo de calendario





(Lista de fornitureas por orden de ensamblado)

### Montaggio del meccanismo del calendario

(Elenco delle forniture in ordine di montaggio)

|           |            |            |
|-----------|------------|------------|
| 100       | 2556       | 52663 (2x) |
| 145       | 2543       | 2577       |
| 5145 (2x) | 2576       | 52577 (1x) |
| 242       | 2575       | 2561/1     |
| 260       | 2595       | 2780       |
| 450       | 52595 (1x) |            |
| 2557/1    | 255/1      |            |
| 462       | 2663       |            |
| 5462 (1x) | 2521       |            |

### Lubrication – Lubricación – Lubrificazione

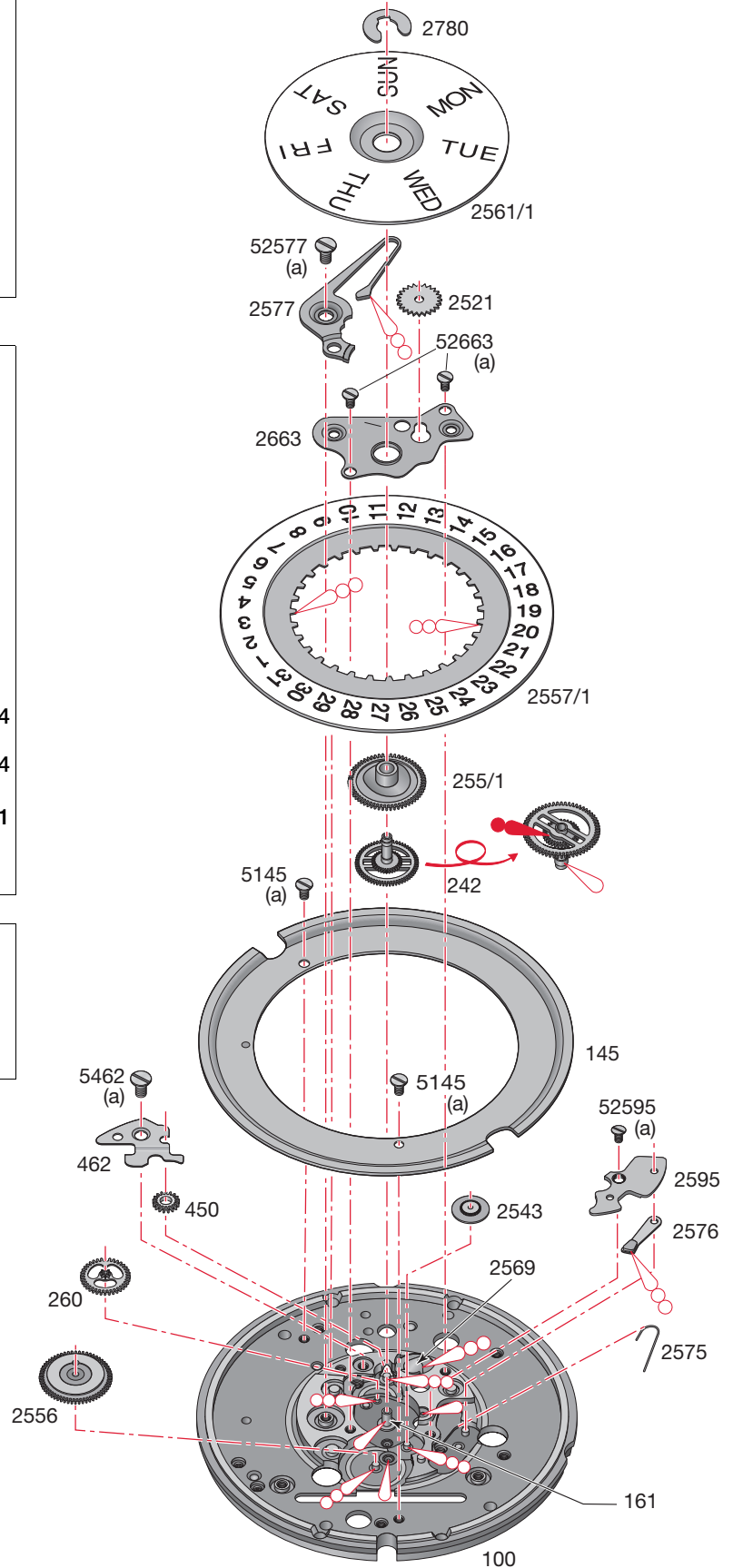
|   |   |  |
|---|---|--|
|    | Thick, pressure-resistant oil or grease<br>Aceite espeso de viscosidad elevada o grasa<br>Olio denso a viscosità elevata o grasso | <b>Moebius D5</b><br>or / ó / o<br><b>HP-1300</b>        |
|  | Very small quantity<br>Lubrificación muy reducida<br>Lubrificazione molto lieve   | <b>Moebius D5</b><br>or / ó / o<br><b>HP-1300</b>        |
|  | Fine oil<br>Aceite fino<br>Olio fluido  | <b>Moebius 9014</b><br>or / ó / o<br><b>Moebius 9034</b> |
|  | Thick oil or grease<br>Aceite espeso o grasa<br>Olio denso o grasso   | <b>Moebius 9501</b><br>or / ó / o<br><b>Jismaa 124</b>   |

**M<sub>L</sub>** Minimum torque for loosening

**M<sub>L</sub>** Par mínimo para destornillar

**M<sub>L</sub>** Coppia minima per svitare

(a) 0,6 Ncm



**Assembling of the handsetting mechanism and the basic movement**

(Parts listed in order of assembly)

**Montaje del mecanismo de puesta en hora y de la máquina de base**

(Lista de fornitureas por orden de ensamblado)

**Montaggio del meccanismo della messa all'ora e del movimento di base**

(Elenco delle forniture in ordine di montaggio)

|           |            |                   |
|-----------|------------|-------------------|
| 100       | 203        | 4046              |
| 407       | 110        | 4000              |
| 405       | 5110 (1x)  | 54000 (4x)        |
| 9716      | 560        | 4038              |
| 443/1     | 435/1      | 54038 (1x)        |
| 479       | 445        | 4046 <sup>1</sup> |
| 5479 (1x) | 466        | 4929              |
| 210       | 5466 (1x)  |                   |
| 227       | 4407       |                   |
| 4211      | 54407 (1x) |                   |

**M<sub>L</sub> Minimum torque for loosening**

**M<sub>L</sub> Par mínimo para destornillar**

**M<sub>L</sub> Coppia minima per svitare**

(b) 0,6 Ncm

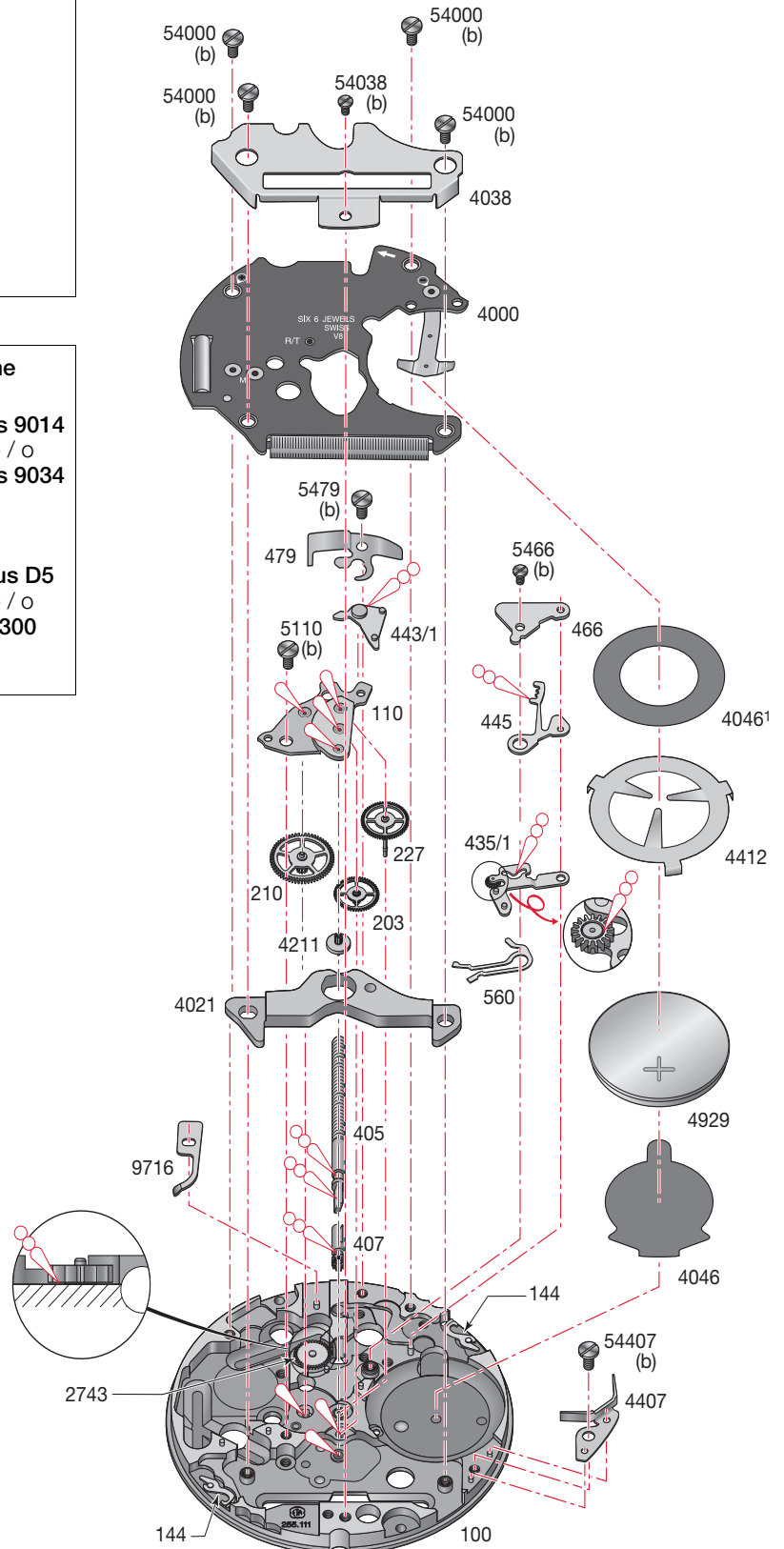
**Lubrication – Lubricación – Lubrificazione**

Fine oil  
Aceite fino  
Olio fluido

**Moebius 9014**  
or / ó / o  
**Moebius 9034**

Thick, pressure-resistant oil  
or grease  
Aceite espeso de viscosidad  
elevada o grasa  
Olio denso a viscosità elevata  
o grasso

**Moebius D5**  
or / ó / o  
**HP-1300**



## Electrical tests – Controles eléctricos – Controlli elettrici

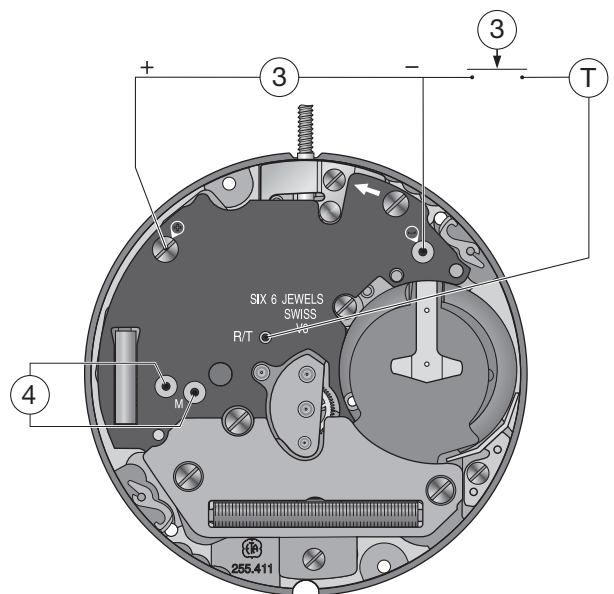
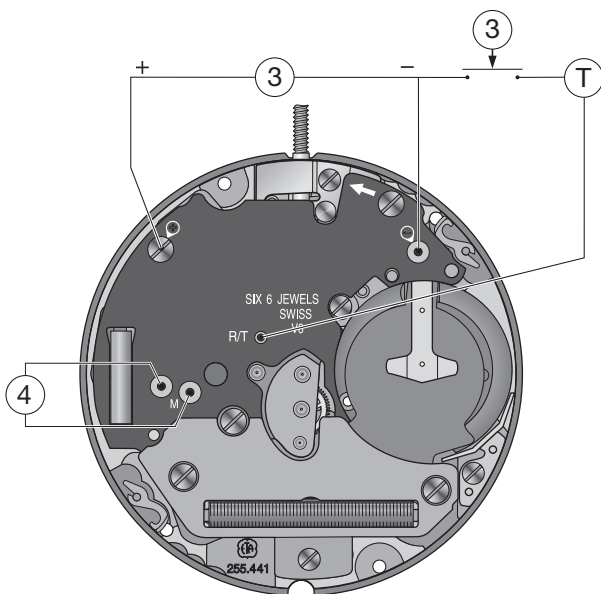
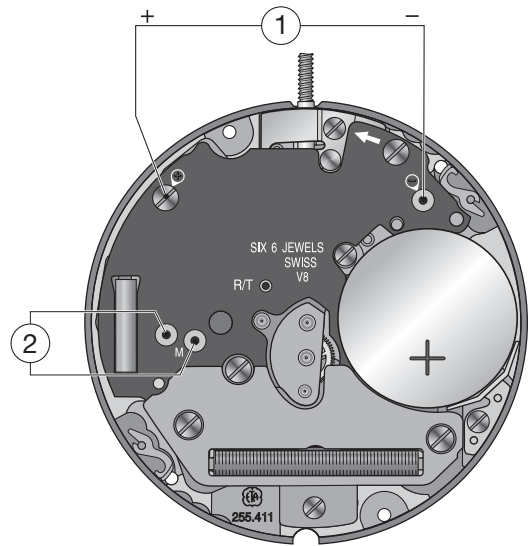
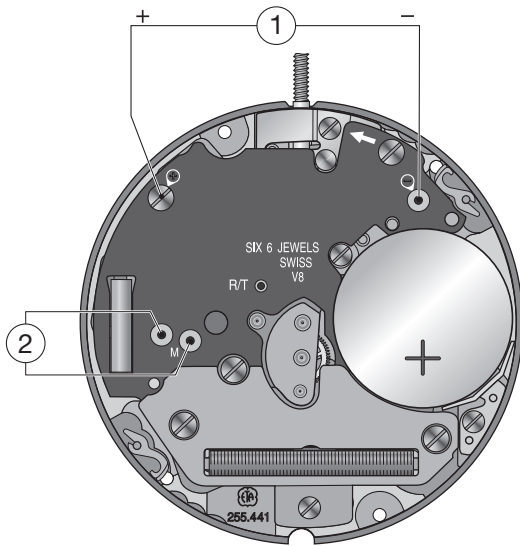
| Position<br>Posición<br>Posizione   | Setting of apparatus<br>Escala de medición<br>Scala di misura | Measurement<br>Medición<br>Misura   | Test<br>Control<br>Controllo   | Remarks<br>Notas<br>Osservazioni  |   |
|---|---|---|--|---|---|
| 1   | 2 V<br>(Ri ≥ 10 kΩ/V)   | 1,55 V  | Battery voltage<br>Tensión de la pila<br>Tensione della pila   | Measurement with battery<br>Medición con una pila<br>Misura con una pila  |   |
| 2   | 1 V<br>(Ri ≥ 10 kΩ/V)   | Hand of measuring apparatus oscillates in + and - direction.<br><br>La aguja del multímetro oscila en sentido + y -.<br><br>La lancetta del multimetro oscilla nel senso + e -.   | Impulses at output of integrated circuit.<br><br>Impulsos a la salida del circuito integrado.<br><br>Impulsi all'uscita del circuito integrato<br><br>255.431   255.421<br>255.441   255.411<br>  255.111<br>  255.121<br>  255.122<br><br>12 / min   1 / s  | Measurement with controlled battery<br><br>Medición con una pila controlada<br><br>Misura con una pila controllata  |   |
| 3   | 2 V   | ≤ 1,30 V  | 255.431 / 255.441   255.421/411/111/121/122  |   |   |
|   |   | Connect <b>R/T</b> point with the - conductor. Motor driven with 6 steps/s.<br><br>Conectar el punto <b>R/T</b> con la pista -. Mando del motor con 6 pasos/s.<br><br>Mettere in contatto il punto <b>R/T</b> con la pista -. Comando del motore con 6 passi/s. | Connect <b>R/T</b> point with the - conductor. Motor driven with 8 steps/s at 1,55 V and 32 steps/s with voltage ≤ 1,30 V (E.O.L.).<br><br>Conectar el punto <b>R/T</b> con la pista -. Mando del motor con 8 pasos/s a 1,55 V y 32 pasos/s con tensión ≤ 1,30 V (E.O.L.).<br><br>Mettere in contatto il punto <b>R/T</b> con la pista -. Comando del motore con 8 passi/s a 1,55 V e 32 passi/s con tensione ≤ 1,30 V (E.O.L.). | Lower working voltage limit.<br><br>Límite inferior de la tensión de funcionamiento<br><br>Limite inferiore della tensione di funzionamento   | Measurement without battery, with variable external power supply, starting with 1.55 V, lower tension until movement stops.<br><br>Medición sin pila, con alimentación exterior variable bajando de 1,55 V hasta la parada de la máquina.<br><br>Misura senza pila con alimentazione esterna variabile, scendendo da 1,55 V fino all'arresto del movimento. |
|   | 10 μA   | ≤ 0,70 μA   | ≤ 1,20 μA  | Power consumption of movement<br><br>Consumo de la máquina<br><br>Consumo del movimento   | Measurement without battery, with power-supply unit 1.55 V.<br><br>Medición sin pila, con alimentación exterior de 1,55 V.<br><br>Misura senza pila con alimentazione esterna di 1,55 V.  |
|   |   | 4-steps jump every 4 seconds when supply voltage < 1.30 V.<br><br>Salto de 4 pasos cada 4 segundos, con tensión de alimentación < 1,30 V.<br><br>Scatto di 4 passi ogni 4 secondi quando la tensione di alimentazione < 1.30 V.                                 | E.O.L. Consumption higher than in normal operation.<br><br>E.O.L. Consumo superior al valor normal.<br><br>E.O.L. Consumo superiore al valore normale.   | Measurement without battery, with supply voltage < 1.30 V, EOL-function after about 2 minutes.<br><br>Medición sin pila, con tensión de alimentación < 1,30 V. EOL- funcionamiento después de ~ 2 minutos.<br><br>Misura senza pila, con tensione di alimentazione < 1,30 V. EOL funzionamento dopo 2 minuti. |   |
|   | < 0,50 μA   | < 0,50 μA   | Function of stop lever, pos. 3 of handsetting stem.<br><br>Funcionamiento del interruptor en pos. 3 de la tija de puesta en hora.<br><br>Funzionamento dell'interruttore in posizione 3 dell'albero di messa all'ora.  | Measurement without battery, with power-supply unit 1.55 V.<br><br>Medición sin pila, con alimentación exterior de 1,55 V.<br><br>Misura senza pila con alimentazione esterna di 1,55 V.  |   |
| 4   | • 10 kΩ<br><br>200 μA   | 1,30 - 1,75 kΩ<br><br>115 - 155 μA  | 1,30 - 1,75 kΩ<br><br>115 - 155 μA   | Condition of coil<br>Continuidad de la bobina<br>Continuità della bobinatura  |   |
| Ohmmeter with a test voltage exceeding 0.40 V unsuitable, recommended voltage 0.20 V.<br>• Ohmiómetros con tensión de medición superior a 0,40 V inapropiados; tensión recomendada 0,20 V.<br>Ohmmetri con tensione di misura superiore a 0,40 V sono inadeguati; tensione raccomandata 0,20 V. |   |   | Ambient temperature 20°C.<br>Temperatura ambiente 20°C.<br>Temperatura ambiente 20°C.  |   |   |



# Electrical tests – Controles eléctricos – Controlli elettrici

255.441 / 255.431

255.411 / 255.111 / 255.121  
255.122 / 255.421



### Extracting the stem

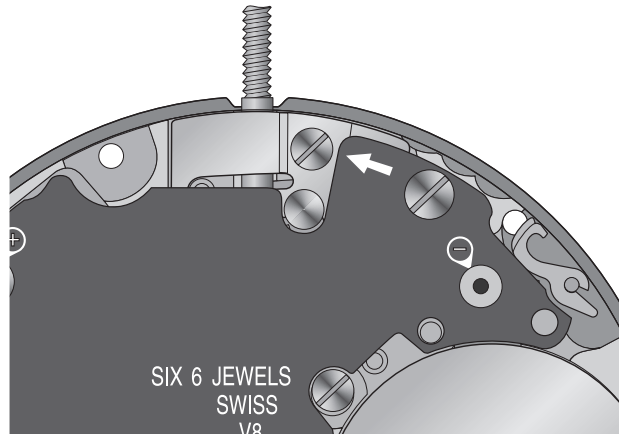
Loosen slightly the screw for setting lever spring  
No 5479, marked by the arrow.

### Extacción de la tija de puesta en hora

Destornillar ligeramente el tornillo de muelle de tirete  
No 5479, indicado por una flecha.

### Estrazione dell'albero di messa all'ora

Svitare leggermente la vite della molla del tiretto  
No 5479, segnata con una freccia.



### Fitting dial and hands

Fit dial by pressing simultaneously, with a leather buff in both dial feet. The dial is held by two dial fasteners.

### Colocación de la esfera y las agujas

Colocar la esfera apretando simultáneamente, con ayuda de un pulidor de piel, en el lugar de los 2 pies, los cuales están sujetos ahora en 2 sujetador de cuadrante.

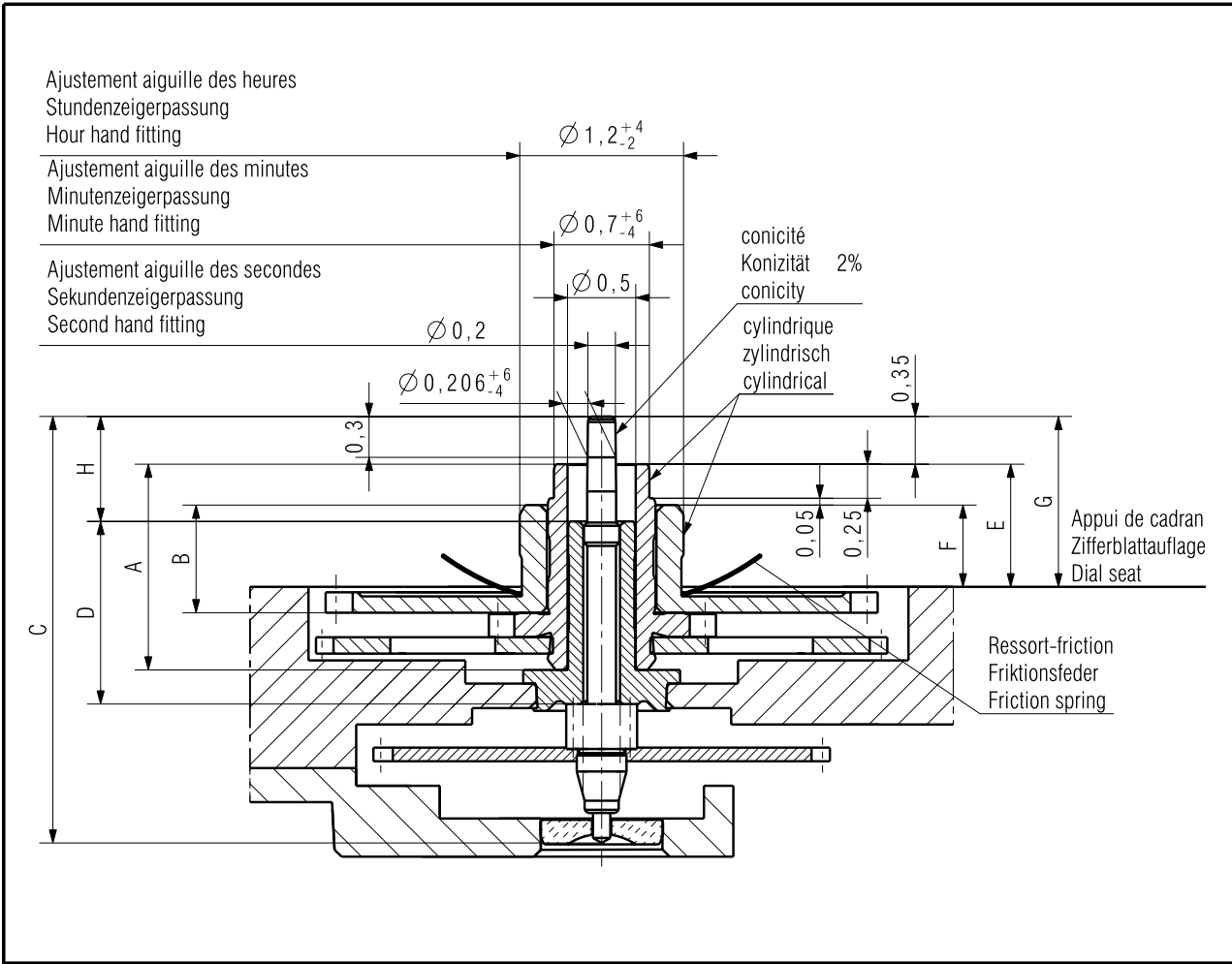
### Posa del quadrante e delle lancette

Posare il quadrante premendo con un pezzo di pelle di camoscio simultaneamente dove si trovano i 2 piedini, essendo questi mantenuti da 2 ferma-quadrante.

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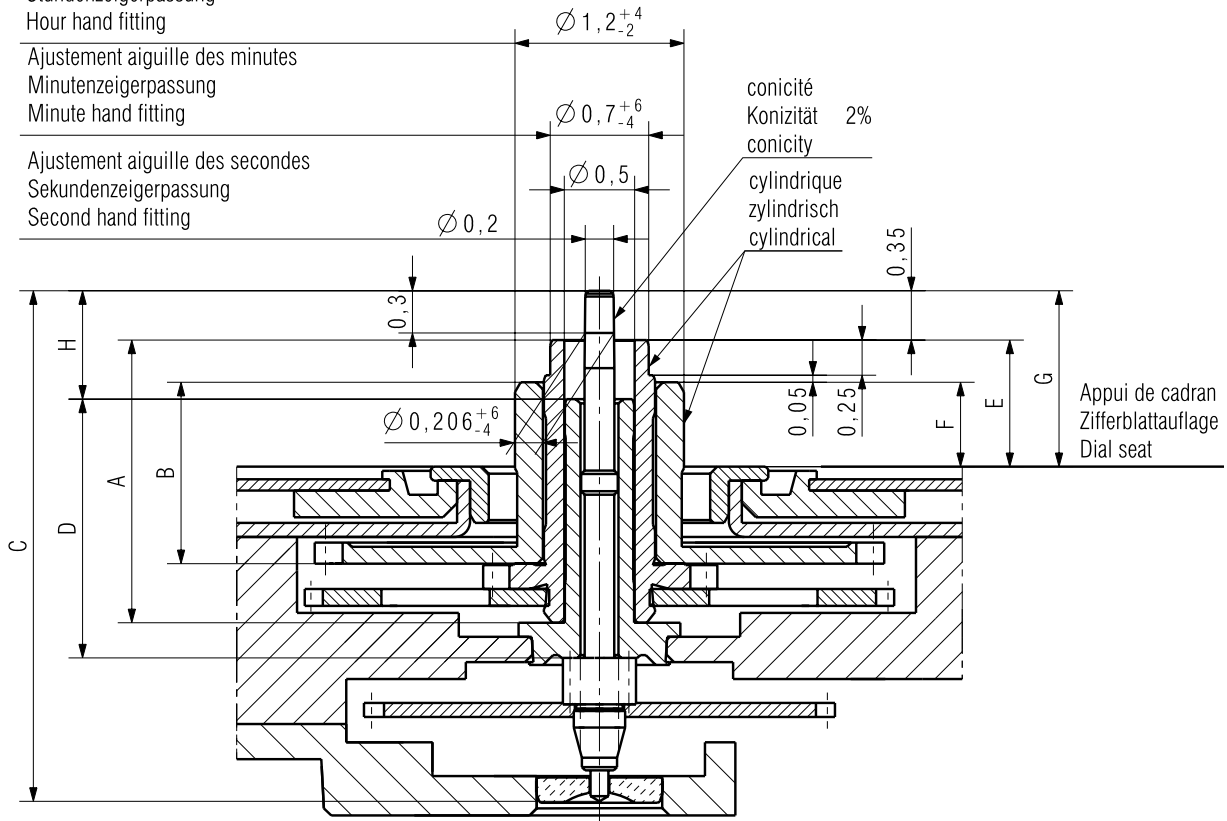


| Aiguillage<br>Zeigerwerkhöhe<br>Hand fitting height                                    | Longueur/Länge/Length |      |      |   | Dépassement<br>Höhe über Zifferblattauflage<br>Height over dial seat |                                     |  | H  | Ep.cadran<br>Zifferblattdicke<br>Dial thickness      |   |  |   |  |   |  |
|--|-----------------------|------|------|---|--|-------------------------------------|--|--|--|---|--|---|--|---|--|
|  | A                     | B    | C    | D   | E  | F                                   | G  |  |  |   |  |   |  |   |  |
| réduit<br>niedrig<br>reduced<br>normal   | 1,51                  | 0,79 | 3,13 | 1,34  | 0,9  | 0,6                                 | 1,25   | 0,77   |  |   |  |   |  |   |  |
| 1  | 1,76                  | 1,04 | 3,38 | 1,34  | 1,15   | 0,85                                | 1,5  | 1,02   |  |   |  |   |  |   |  |
| 2  | 2,01                  | 1,29 | 3,63 | 1,34  | 1,4  | 1,1                                 | 1,75   | 1,27   |  |   |  |   |  |   |  |
| 3  | 2,26                  | 1,54 | 3,88 | 1,34  | 1,65   | 1,35                                | 2  | 1,52   |  |   |  |   |  |   |  |
| 3 S  | 2,46                  | 1,54 | 4,23 | 1,34  | 1,85   | 1,35                                | 2,35   | 1,87   |  |   |  |   |  |   |  |
| Aiguilles<br>Zeiger<br>Hands   |                       |      |      |   | Aiguille d'heure<br>Stundenzeiger<br>Hour hand                       |                                     | Aiguille de minute<br>Minutenzeiger<br>Minute hand |  | Aiguille de seconde<br>Sekundenzeiger<br>Second hand |   |  |   |  |   |  |
| Masse/Masse/Mass   | max.                  |      |      |   | mg   |                                     |  |  | 10   |   |  |   |  |   |  |
| Balourd/Unwucht/Unbalance  | max.                  |      |      |   | µNm  |                                     | 3  |  | 0,04   |   |  |   |  |   |  |
| Kaliber / Calibre / Caliber<br>255.111 / 255.411 / 255.513                             |                       |      |      |   |  | Massestab<br>Echelle<br>Scale<br>-- |  | CATIA V5<br>Masse in mm<br>Dimensions en mm<br>Dimensions in mm<br>Tol.1/1000 mm |  |   |  |   |  |   |  |
| AIGUILLAGES<br>ZEIGERWERKHÖHEN<br>HAND FITTING HEIGHTS                                 |                       |      |      |   |  | Z0091663                            |  | Version<br>02  |  | Revision<br>00                                  |  | Blatt<br>Feuille<br>Sheet<br>01/01                  |  |   |  |
| ETA SA<br>MANUFACTURE HORLOGÈRE SUISSE<br>DEPUIS 1793<br>A COMPANY OF THE SWATCH GROUP |                       |      |      | Ersatz für/En remplacement de/Remplacement for<br>Aenderung/Modification<br>22656 |  | Klass.<br>ZVACC                     |  | KUN  |  | Erstellt<br>Etabli<br>Created<br>17.09.2007 SCA |  | Geprüft<br>Contrôlé<br>Controlled<br>19.09.2007 CHI |  | Freigegeben<br>Libéré<br>Released<br>24.09.2007 BUF |  |

Ajustement aiguille des heures  
Stundenzeigerpassung  
Hour hand fitting

Ajustement aiguille des minutes  
Minutenzeigerpassung  
Minute hand fitting

Ajustement aiguille des secondes  
Sekundenzeigerpassung  
Second hand fitting



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| Aiguillage<br>Zeigerwerkhöhe<br>Hand fitting height          | Longueur/Länge/Length                    |   |   |   | Dépassement<br>Höhe über Zifferblattauflage<br>Height over dial seat |   |  | H  | Ep.cadran<br>Zifferblattdicke<br>Dial thickness |
|--|--|---|---|---|--|---|--|--|---|
|  | A  | B   | C   | D   | E  | F   | G  |  |   |
|  | Chaussée<br>Minutenrohr<br>Cannon-pinion | Roue des heures<br>Stundenrad<br>Hour wheel | Pig.des sec.<br>Sekundentrieb<br>Sec.wheel pin. | Tube de centre<br>Zentrumrohr<br>Centre tube                                      | Chaussée<br>Minutenrohr<br>Cannon-pinion                             | Roue des heures<br>Stundenrad<br>Hour wheel         | Pig.des sec.<br>Sekundentrieb<br>Sec.wheel pin.    |  |   |
| 2<br>normal  | 2,01                                     | 1,29  | 3,63  | 1,84  | 0,9  | 0,6   | 1,25   | 0,78   |   |
| 3  | 2,26                                     | 1,54  | 3,88  | 1,84  | 1,15   | 0,85  | 1,5  | 1,03   |   |
| Aiguilles<br>Zeiger<br>Hands                                 |  |   |   |   | Aiguille d'heure<br>Stundenzeiger<br>Hour hand                       |   | Aiguille de minute<br>Minutenzeiger<br>Minute hand | Aiguille de seconde<br>Sekundenzeiger<br>Second hand |   |
| Masse/Masse/Mass   | max.                                     |   |   |   | mg   |   |  |  | 10  |
| Balourd/Unwucht/Unbalance                                    | max.                                     |   |   |   | µNm  |   | 3  |  | 0,04  |
| Kaliber / Calibre / Caliber<br>255.121 / 255.122 / 255.421   |  |   |   |   |  | Masstab<br>Echelle<br>Scale<br>--                   |  | CATIA V5   |   |
|  |  |   |   |   |  | Masse in mm<br>Dimensions en mm<br>Dimensions in mm |  | Tol.1/1000 mm  |   |
| AIGUILLAGES<br>ZEIGERWERKHÖHEN<br>HAND FITTING HEIGHTS       |  |   |   |   |  | Version<br>Z0091664 01                              |  | Revision<br>Révision<br>00                           | Blatt<br>Feuille<br>Sheet<br>01/01              |
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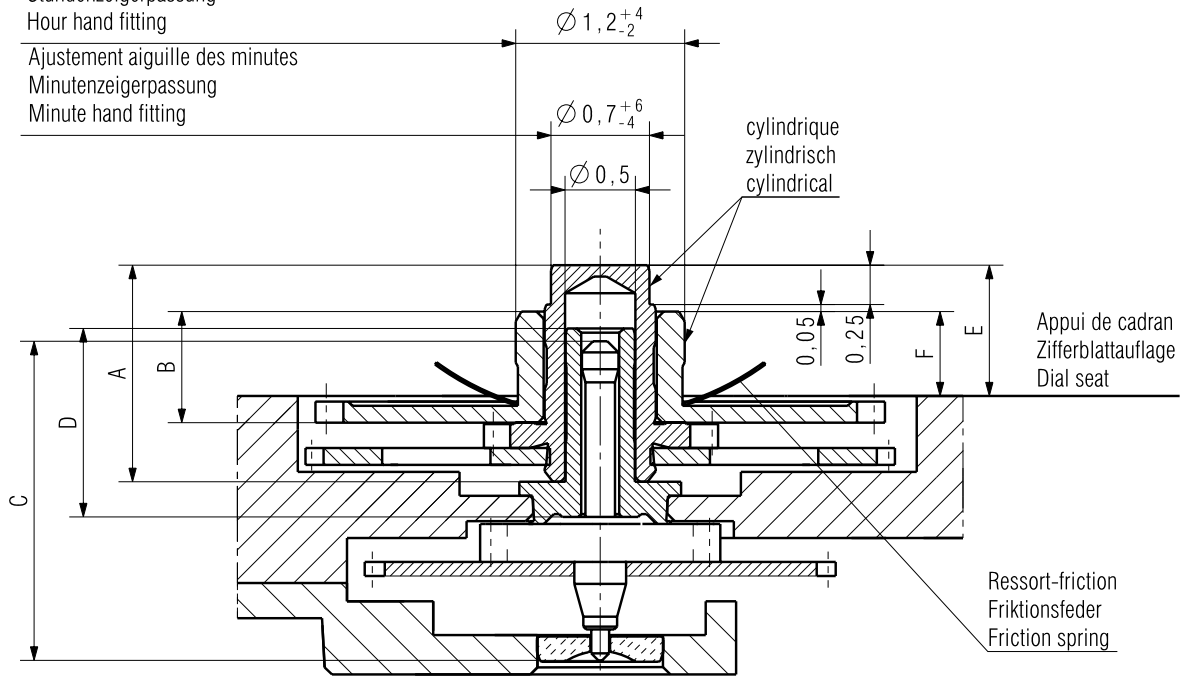
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Ajustement aiguille des heures  
Stundenzeigerpassung  
Hour hand fitting

Ajustement aiguille des minutes  
Minutenzeigerpassung  
Minute hand fitting



| Aiguillage<br>Zeigerwerkhöhe<br>Hand fitting height   | Longueur/Länge/Length |      |      |      | Dépassement<br>Höhe über Zifferblattauflage<br>Height over dial seat        |   | Ep. cadran<br>Zifferblattdicke<br>Dial thickness                         |
|---|-----------------------|------|------|------|---|---|--|
|   | A                     | B    | C    | D    | E   | F   |  |
| réduit<br>niedrig<br>reduced<br>normal  | 1,51                  | 0,79 | 2,27 | 1,34 | 0,9   | 0,6   | 0,3  |
| 1   | 1,76                  | 1,04 | 2,27 | 1,34 | 1,15  | 0,85  | 0,4  |
| 2   | 2,01                  | 1,29 | 2,27 | 1,34 | 1,4   | 1,1   | 0,4 - 0,8  |
| 3   | 2,26                  | 1,54 | 2,27 | 1,34 | 1,65  | 1,35  | 0,4 - 0,95   |
| Aiguilles<br>Zeiger<br>Hands  |                       |      |      |      | Aiguille d'heure<br>Stundenzeiger<br>Hour hand                              |   | Aiguille de minute<br>Minutenzeiger<br>Minute hand                       |
| Masse/Masse/Mass  |                       |      |      |      | max.  | mg  | 10   |
| Balourd/Unwucht/Unbalance   |                       |      |      |      | max.  | µNm   | 3  |
| Kaliber / Calibre / Caliber<br>255.431 / 255.441  |                       |      |      |      | Massstab<br>Echelle<br>Scale<br>--  |   | <br>Masse in mm<br>Dimensions en mm<br>Dimensions in mm<br>Tol.1/1000 mm |
| AIGUILLAGES<br>ZEIGERWERKHÖHEN<br>HAND FITTING HEIGHTS  |                       |      |      |      | Z0091669  |   | Version<br>01<br>00<br>01/01   |
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| Aenderung/Modification<br>22226   |                       |      |      |      | Erstellt<br>Etabli<br>Created<br>19.04.2007 SCA                             | Geprüft<br>Contrôlé<br>Controlled<br>19.04.2007 CHI | Freigegeben<br>Libéré<br>Released<br>20.04.2007 FEU                      |

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*Modifiche comparate con le versio-  
ni precedenti del documento*

| Version<br>Versión<br>Version | Date<br>Fecha<br>Data | Modification  | Modificación    | Modifica         | Page<br>Página<br>Pagina |
|-------------------------------|-----------------------|---------------|-----------------|------------------|--------------------------|
| 02                            | 19.10.07              | Basic version | Versión de base | Versione di base | --                       |



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