

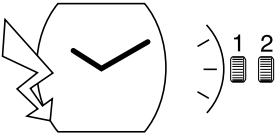
# ETA 282.001

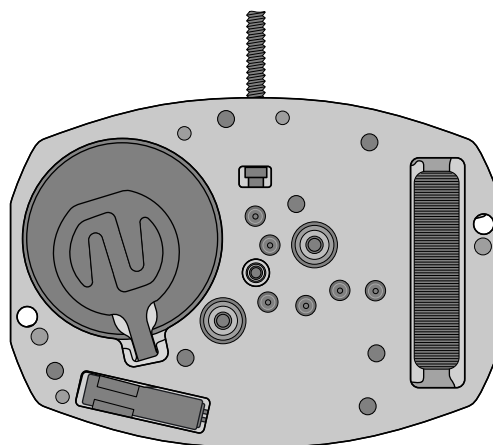
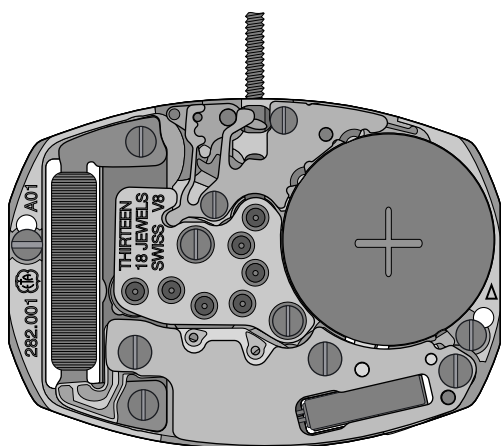
TECHNICAL  
COMMUNICATION

COMUNICACIÓN  
TÉCNICA

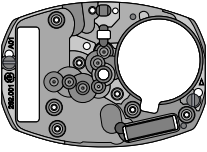















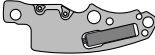



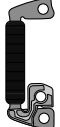



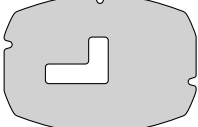
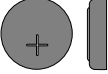
COMUNICAZIONE  
TECNICA

5<sup>1</sup>/<sub>2</sub>" x 8"

|   |   |  |
|---|---|--|
| <p>5<sup>1</sup>/<sub>2</sub>" x 8"</p> <p>13,00 x 18,20 mm</p> |   |  |
| <p>HEIGHT<br/>ALTURA      mm<br/>ALTEZZA</p>                    | <p>on movement<br/>sobre movimiento<br/>sopra movimento</p> | <p>1,20</p>  |
|   | <p>on battery<br/>sobre pila<br/>sopra pila</p>             | <p>1,40</p>  |



|                     |           |    |  |  |   |         |
|---------------------|-----------|----|--|--|---|---------|
|                     |           |    |  |  |   |         |
| 100                 | 10.020.07 |    | Main plate, jewelled                         | Platina, empedrada                                       | Piastra, con pietre   | 282.001 |
| 110                 | 10.048.07 |    | Train wheel bridge, jewelled                 | Puente de rodaje, empedrado                              | Ponte del ruotismo, con pietre                              | 282.001 |
| 144                 | 10.300.00 |    | Dial fastener                                | Sujetador de cuadrante                                   | Ferma-quadrante   | 282.001 |
| 201                 | 30.015.00 |    | Centre wheel, assembled<br>(cannon pinion)   | Rueda de centro, ajustada<br>(cañón de minutos)          | Ruota di centro, montata<br>(pignone calzante)              | 282.001 |
| 203                 | 30.012.00 |    | Intermediate wheel                           | Rueda intermedia   | Ruota intermedia  | 282.001 |
| 210                 | 30.025.00 |    | Third wheel                                  | Rueda primera  | Ruota mediana   | 282.001 |
| 228                 | 30.013.00 |    | Transmission wheel for<br>intermediate wheel | Rueda de conexión de rueda<br>intermedia                 | Ruota di trasmissione della<br>ruota intermedia             | 282.001 |
| 250                 | 31.046.00 |    | Hour wheel                                   | Rueda de horas   | Ruota delle ore   | 282.001 |
| 260                 | 31.041.00 |    | Minute wheel                                 | Rueda de minutos   | Ruota della minuteria                                       | 282.001 |
| 405                 | 51.020.21 |    | Handsetting stem, thread<br>diameter 0.90 mm | Tija de puesta en hora, diámetro<br>de fileteado 0,90 mm | Albero di messa all'ora,<br>diámetro di filettatura 0,90 mm | 282.001 |
| 407                 | 31.121.00 |    | Sliding pinion                               | Piñón corredizo  | Pignone scorrevole  | 282.001 |
| 435                 | 51.050.00 |    | Spring-yoke                                  | Báscula-muelle   | Bascula-molla   | 282.001 |
| 443                 | 51.080.00 |    | Setting lever                                | Tirete   | Tiretto   | 282.001 |
| 445                 | 51.090.00 |    | Setting lever jumper                         | Muelle flexible de tirete                                | Scatto del tiretto  | 282.001 |
| 450                 | 31.100.00 |    | Setting whell                                | Rueda de transmisión                                     | Rinvio  | 282.001 |
| 499                 | 61.241.00 |    | Friction spring for hour wheel               | Muelle-fricción de rueda de<br>horas                     | Molla-frizione della ruota delle<br>ore                     | 282.001 |
| 4000                | 10.513.00 |    | Electronic module                            | Módulo electrónico                                       | Modulo elettronico  | 282.001 |
| 4021                | 20.582.00 |    | Stator                                       | Estátor  | Statore   | 282.001 |
| 4045                | 20.653.00 |    | Power connection insulator                   | Aislador de brida de<br>alimentación                     | Isolatore della brida di<br>alimentazione                   | 282.001 |
| 4060                | 20.590.00 |    | Coil   | Bobina   | Bobina  | 282.001 |
| 4085                | 20.657.00 |    | Contact insulator                            | Aislador de contacto                                     | Isolatore del contatto                                      | 282.001 |
| 4211                | 20.580.00 |    | Rotor  | Rotor  | Rotore  | 282.001 |
| 4401                | 20.761.00 |    | Bridle +                                     | Brida +  | Brida +   | 282.001 |
| 4402                | 20.763.00 |    | Bridle -                                     | Brida -  | Brida -   | 282.001 |
| 4800                | 90.950.00 |    | Dial insulator                               | Aislador de cuadrante                                    | Isolatore del quadrante                                     | 282.001 |
| 4929                | 20.570.00 |    | Battery                                      | Pila   | Pila  | 282.001 |
| 1) 5110             | 10.048.01 | 2x | Screw for train wheel bridge                 | Tornillo del puente de rodaje                            | Vite del ponte del ruotismo                                 | 282.001 |
| 5445                | 51.090.01 | 2x | Screw for setting lever jumper               | Tornillo del muelle flexible de<br>tirete                | Vite dello scatto del tiretto                               | 282.001 |
| 54000               | 10.513.01 | 2x | Screw for electronic module                  | Tornillo del módulo electrónico                          | Vite del modulo elettronico                                 | 282.001 |
| 54000 <sup>1)</sup> | 10.513.02 | 1x | Screw for electronic module                  | Tornillo del módulo electrónico                          | Vite del modulo elettronico                                 | 282.001 |
| 1) 54060            | 20.590.01 | 2x | Screw for coil                               | Tornillo de la bobina                                    | Vite della bobina   | 282.001 |

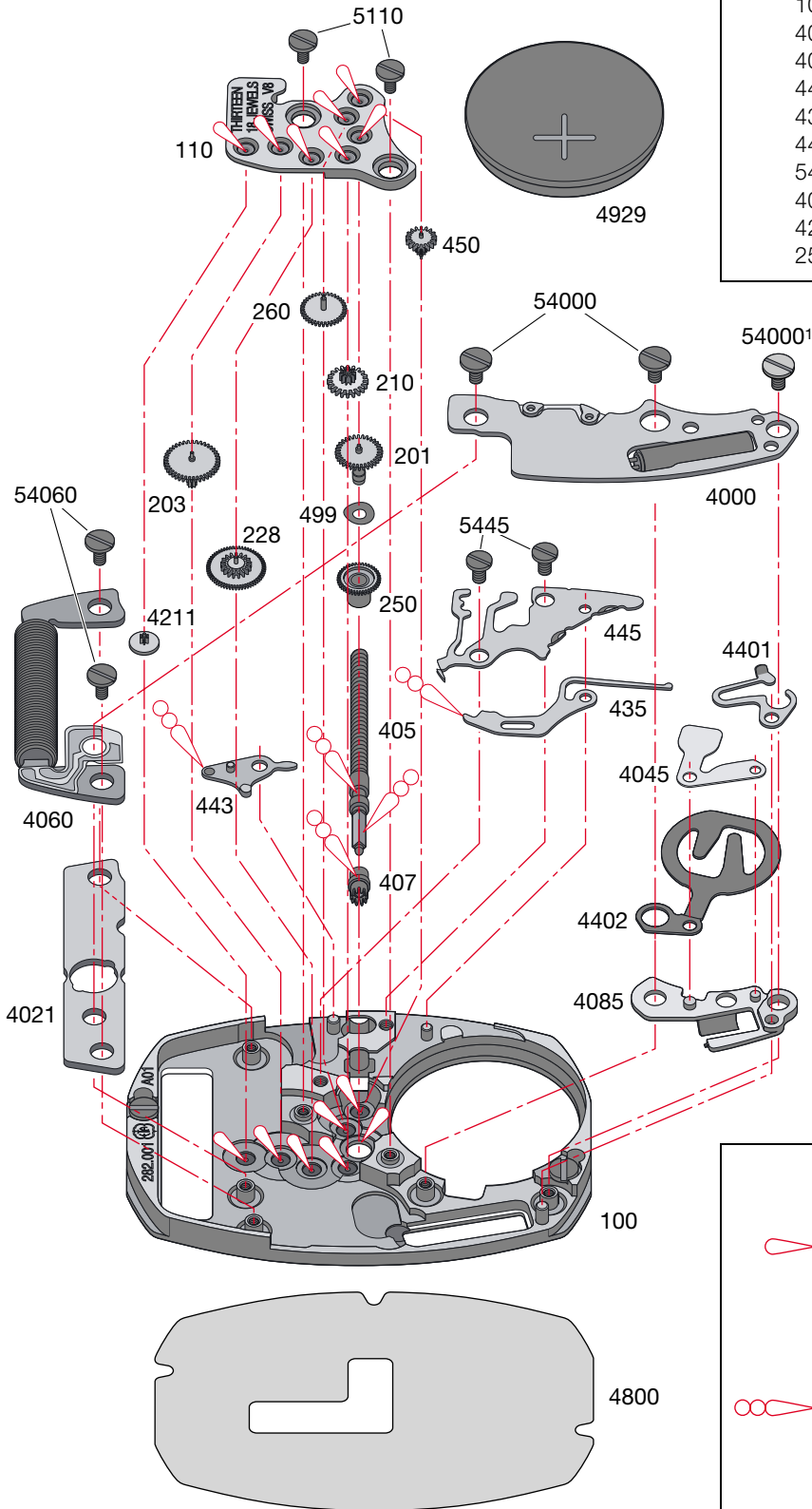
|   |   |   |   |   |   |   |   |   |                                   |
|---|---|---|---|---|---|---|---|---|-----------------------------------|
|  |  |  |  |  |  |  |  |  | <p>T</p> <p>5110</p> <p>54060</p> |
| 100   | 110   | 144   | 201   | 203   | 210   | 228   | 250   | 260   |                                   |
|  |  |  |  |  |  |   |  |  | <p>T</p> <p>5445</p>              |
| 405   | 407   | 435   | 443   | 445   | 450   | 499   | 4000  | 4021  |                                   |
|  |  |  |  |  |  |   |  | <p>T</p> <p>54000</p>   |                                   |
| 4402  | 4045  | 4060  | 4085  | 4211  | 4401  | 4800  | 4929  |   | <p>T</p> <p>54000<sup>1</sup></p> |

(Parts listed in order of assembly)

(Lista de forniture por orden de ensamblado)

(Elenco delle forniture in ordine di montaggio)


|           |           |                    |
|-----------|-----------|--------------------|
| 100       | 499       | 54060 (2x)         |
| 407       | 228       | 4085               |
| 405       | 203       | 4402               |
| 443       | 210       | 4045               |
| 435       | 260       | 4401               |
| 445       | 201       | 4000               |
| 5445 (2x) | 450       | 54000 (2x)         |
| 4021      | 110       | 54000 <sup>1</sup> |
| 4211      | 5110 (2x) | 4929               |
| 250       | 4060      | 4800               |

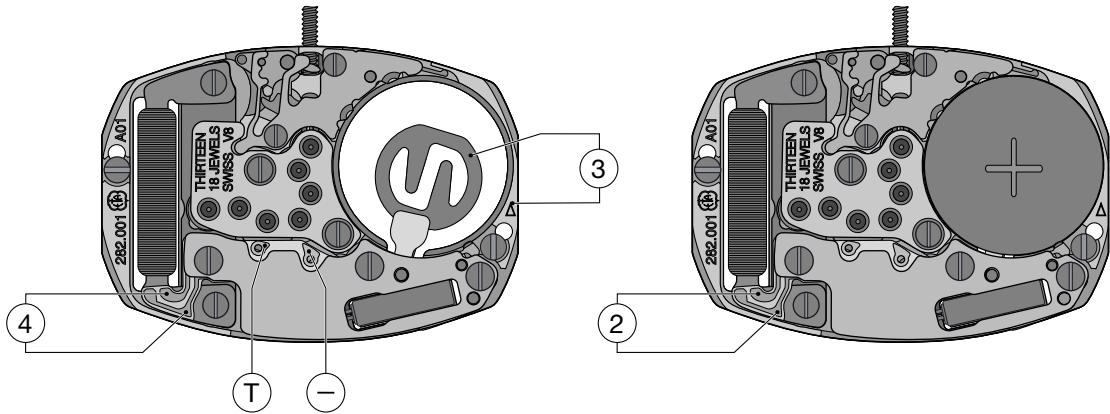


Fine oil

 Aceite fino  
 Olio fluido

Thick, pressure-resistant oil or grease

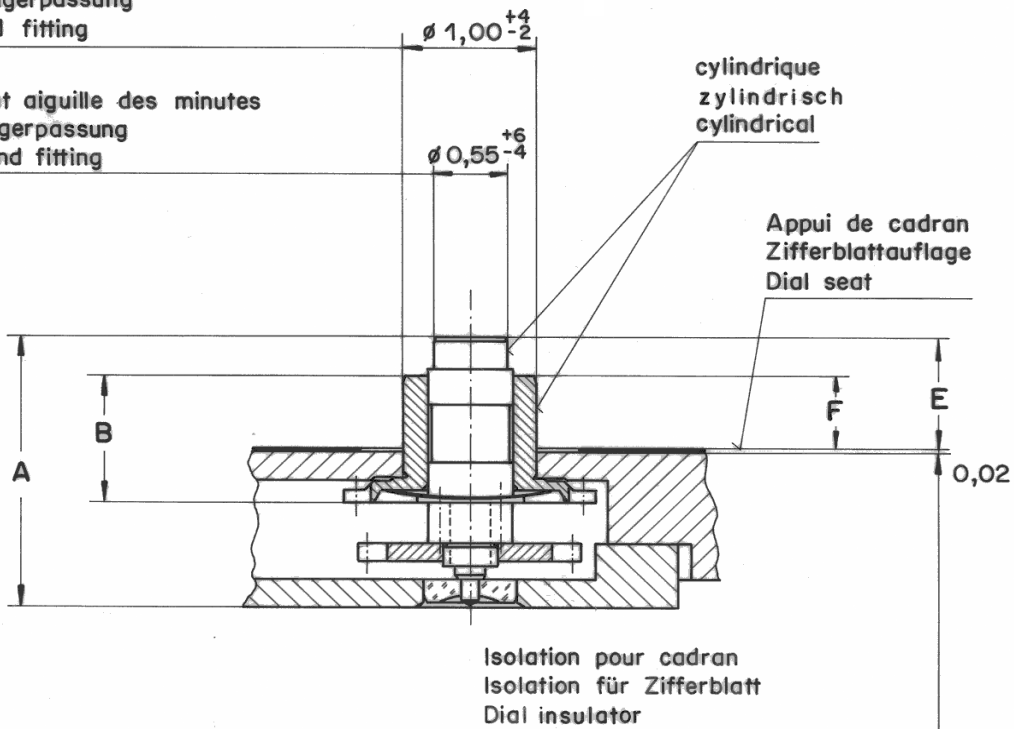
 Aceite espeso de viscosidad elevada o grasa  
 Olio denso a viscosità elevata o grasso



|   |   |   |   |   |
|---|---|---|---|---|
|   | 2 V<br>( $R_i \geq 10 \text{ k}\Omega / \text{V}$ ) | 1,55 V  | Battery voltage<br>Tensión de la pila<br>Tensione della pila  | Measurement with battery.<br>Medición con pila.<br>Misura con pila.   |
|   | 2 V<br>( $R_i \geq 10 \text{ k}\Omega / \text{V}$ ) | Hand of the measuring apparatus oscillates in + and - direction.<br>La aguja del multimetro oscila en sentido + y -.<br>La lancetta del multimetro oscilla nel senso + e -.   | Impulses at output of integrated circuit : 5 every minute<br>Impulsos a la salida del circuito integrado : 5 cada minuto<br>Impulsi all'uscita del circuito integrato : 5 al minuto | Measurement with controlled battery.<br>Medición con una pila controlada.<br>Misura con una pila controllata.   |
|   | 2 V   | Motor driven with 16 steps/s. Connect T point with the - conductor.<br>Mando del motor con 16 pasos/s. Conectar el punto T con la pista -.<br>Comando del motore con 16 passi/s. Mettere in contatto il punto T con la pista -. | Lower working-voltage limit.<br>Límite inferior de la tensión de funcionamiento.<br>Limite inferiore della tensione di funzionamento.   | Measurement without battery with variable external supply.<br>Medición sin pila, con alimentación exterior variable.<br>Misura senza pila con alimentazione esterna variabile.        |
|   | 10 $\mu\text{A}$                                    | $\leq 0,50 \mu\text{A}$   | Consumption of movement.<br>Consumo de la máquina.<br>Consumo del movimento.  | Measurement without battery, with external power supply 1.55 V.<br>Medición sin pila, con alimentación exterior de 1,55 V.<br>Misura senza pila, con alimentazione esterna di 1.55 V. |
|   | 10 $\text{k}\Omega$                                 | 1,2 - 1,5 $\text{k}\Omega$  | Resistance of coil.<br>Continuidad de la bobina.<br>Continuità della bobina.  |   |
| *Ohmmeter with a test voltage higher than 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>Ohmetri con tensione di misura superiore a 0,40 V inappropriati, tensione raccomandata 0,20 V. |   |   |   | Ambient temperature 20°C.<br>Temperatura ambiente 20°C.<br>Temperatura ambiente 20°C.   |

Ajustement aiguille des heures  
Stundenzeigerpassung  
Hour hand fitting

Ajustement aiguille des minutes  
Minutenzeigerpassung  
Minute hand fitting






Aiguille des minutes : balourd  
Minutenzeiger : Unwucht  $\leq 0,20 \mu\text{Nm} (0,020 \text{ pmm})$   
Minute hand : unbalance  
masse  $\leq 5 \text{ mg}$   
Masse  
mass

\* Livraison contre supplément de prix  
Délais sur demande  
Commercialisation sous réserve  
Lieferung gegen Aufpreis  
Lieferfrist auf Anfrage  
Vertrieb mit Vorbehalt  
Delivery with surcharge  
Delivery schedule on demand  
Market launch with specific conditions

| Aiguillage<br>Zeigerwerk-<br>höhe<br>Hand fitting<br>height | Longueur / Länge / Length                |  |  | Dépassement<br>Höhe über Zifferblattauflage<br>Height over dial seat |  |  | Cadran ép<br>Zifferblatt-<br>dicke<br>Dial<br>thickness |
|---|--|--|--|--|--|--|---|
|   | A  | B  |  | E  | F  |  |   |
|   | Chaussée<br>Minutenrohr<br>Cannon-pinion | Roue des<br>heures<br>Stundenrad<br>Hour wheel |  | Chaussée<br>Minutenrohr<br>Cannon-pinion                             | Roue des<br>heures<br>Stundenrad<br>Hour wheel |  |   |
| 0   | 1,85                                     | 0,80   |  | 0,63   | 0,38   |  | 0,20  |
| 1   | 2,10                                     | 1,00   |  | 0,88   | 0,58   |  | 0,30  |
| 2 *   | 2,35                                     | 1,25   |  | 1,13   | 0,83   |  | 0,30-0,50   |
| 4 *   | 2,80                                     | 1,70   |  | 1,58   | 1,28   |  | 0,30-0,85   |

Aiguillages  
Zeigerwerkhöhen  
Hand fitting heights

Cal. 282.001

|                               |  |  |  |   |   |   |
|-------------------------------|--|--|--|---|---|---|
| Änderungen:<br>Modifications: |  |  | <br>ETA SA Fabriques d'Ebauches<br>CH-2540 Grenchen | Masse in mm<br>Dim. en mm<br>Dim. in mm | Tol. in 1/1000 mm<br>Tol. en 1/1000 mm<br>Tol. in 1/1000 mm | <br>Gezeichnet:<br>Dessiné: <b>Fs.</b><br>Drawn:<br>Kontrolliert:<br>Contrôlé: <br>Checked: |
| 92045726hm                    |  |  |  | Masstab:<br>Echelle:<br>Scale:          |   |   |
| 93066734hm                    |  |  |  | Datum:<br>Date:                         | 20. 2. 1991   |   |
| 990312658hm                   |  |  |  |   |   |   |

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ETA SA Manufacture Horlogère Suisse

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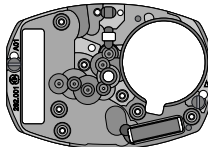

















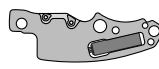









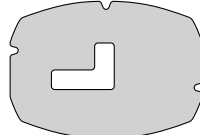
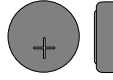


[www.eta.ch](http://www.eta.ch)



## Interchangeability – Intercambiabilidad – Intercambiabilità

| No<br>No<br>No      | No<br>No<br>CS<br>No |    | LIST OF MATERIALS  | LISTA DE<br>FORNITURAS                                   | ELENCO DELLE<br>FORNITURE                                   | Cal.<br>Cal.<br>Cal. |
|---------------------|----------------------|----|--|--|---|----------------------|
| 100                 | 10.020.07            |    | Main plate, jewelled   | Platina, empedrada                                       | Piastra, con pietre   | 282.001              |
| 110                 | 10.048.07            |    | Train wheel bridge, jewelled                                       | Puente de rodaje, empedrado                              | Ponte del ruotismo, con pietre                              | 282.001              |
| 144                 | 10.300.00            |    | Dial fastener  | Sujetador de cuadrante                                   | Ferma-quadrante   | 282.001              |
| 201                 | 30.015.00            |    | Centre wheel, assembled<br>(cannon pinion)                         | Rueda de centro, ajustada<br>(cañón de minutos)          | Ruota di centro, montata<br>(pignone calzante)              | 282.001              |
| 203                 | 30.012.00            |    | Intermediate wheel   | Rueda intermedia   | Ruota intermedia  | 282.001              |
| 210                 | 30.025.00            |    | Third wheel  | Rueda primera  | Ruota mediana   | 282.001              |
| 228                 | 30.013.00            |    | Transmission wheel for<br>intermediate wheel                       | Rueda de conexión de rueda<br>intermedia                 | Ruota di trasmissione della<br>ruota intermedia             | 282.001              |
| 250                 | 31.046.00            |    | Hour wheel   | Rueda de horas   | Ruota delle ore   | 282.001              |
| 260                 | 31.041.00            |    | Minute wheel   | Rueda de minutos   | Ruota della minuteria                                       | 282.001              |
| 405                 | 51.020.21            |    | Handsetting stem, thread<br>diameter 0.90 mm                       | Tija de puesta en hora, diámetro<br>de fileteado 0,90 mm | Albero di messa all'ora,<br>diámetro di filettatura 0,90 mm | 282.001              |
| 407                 | 31.121.00            |    | Sliding pinion   | Piñón corredizo  | Pignone scorrevole  | 282.001              |
| 435                 | 51.050.00            |    | Spring-yoke  | Báscula-muelle   | Bascula-molla   | 282.001              |
| 443                 | 51.080.00            |    | Setting lever  | Tirete   | Tiretto   | 282.001              |
| 445                 | 51.090.00            |    | Setting lever jumper   | Muelle flexible de tirete                                | Scatto del tiretto  | 282.001              |
| 450                 | 31.100.00            |    | Setting whell  | Rueda de transmisión                                     | Rinvio  | 282.001              |
| 499                 | 61.241.00            |    | Friction spring for hour wheel                                     | Muelle-fricción de rueda de<br>horas                     | Molla-frizione della ruota delle<br>ore                     | 282.001              |
| 4000                | 10.513.00            |    | Electronic module  | Módulo electrónico                                       | Modulo elettronico  | 282.001              |
| 4021                | 20.582.00            |    | Stator   | Estátor  | Statore   | 282.001              |
| 4045                | 20.653.00            |    | Power connection insulator   | Aislador de brida de<br>alimentación                     | Isolatore della brida di<br>alimentazione                   | 282.001              |
| 4060                | 20.590.00            |    | Coil   | Bobina   | Bobina  | 282.001              |
| 4085                | 20.657.00            |    | Contact insulator  | Aislador de contacto                                     | Isolatore del contatto                                      | 282.001              |
| 4211                | 20.580.00            |    | Rotor  | Rotor  | Rotore  | 282.001              |
| 4401                | 20.761.00            |    | Bridle +   | Brida +  | Brida +   | 282.001              |
| 4402                | 20.763.00            |    | Bridle -   | Brida -  | Brida -   | 282.001              |
| 4800                | 90.950.00            |    | Dial insulator   | Aislador de cuadrante                                    | Isolatore del quadrante                                     | 282.001              |
| 4929                | 20.570.00            |    | Battery  | Pila   | Pila  | 282.001              |
| 1) 5110             | 10.048.01            | 2x | Screw for train wheel bridge                                       | Tornillo del puente de rodaje                            | Vite del ponte del ruotismo                                 | 282.001              |
| 5445                | 51.090.01            | 2x | Screw for setting lever jumper                                     | Tornillo del muelle flexible de<br>tirete                | Vite dello scatto del tiretto                               | 282.001              |
| 54000               | 10.513.01            | 2x | Screw for electronic module  | Tornillo del módulo electrónico                          | Vite del modulo elettronico                                 | 282.001              |
| 54000 <sup>1)</sup> | 10.513.02            | 1x | Screw for electronic module  | Tornillo del módulo electrónico                          | Vite del modulo elettronico                                 | 282.001              |
| 1) 54060            | 20.590.01            | 2x | Screw for coil   | Tornillo de la bobina                                    | Vite della bobina   | 282.001              |
|                     |                      |    | <b>Identical screws<br/>Tornillos idénticos<br/>Viti identiche</b> | <b>1) 5110<br/>54060</b>                                 |   |                      |

## Materials – Fornituras – Forniture

|   |   |   |   |  |  |   |   |   |   |
|---|---|---|---|--|--|---|---|---|---|
|  |  |  |  |   |   |  |  |  | <br>5110<br>54060      |
| 100   | 110   | 144   | 201   | 203  | 210  | 228   | 250   | 260   |   |
|  |  |  |  |   | <br> |   |  |  | <br>5445               |
| 405   | 407   | 435   | 443   | 445  | 450  | 499   | 4000  | 4021  |   |
|  |  |  |  | <br> |   |   |   |  | <br>54000              |
| 4402  | 4045  | 4060  | 4085  | 4211   | 4401   | 4800  | 4929  |   | <br>54000 <sup>1</sup> |

### Assembling of the basic movement

(Parts listed in order of assembly)

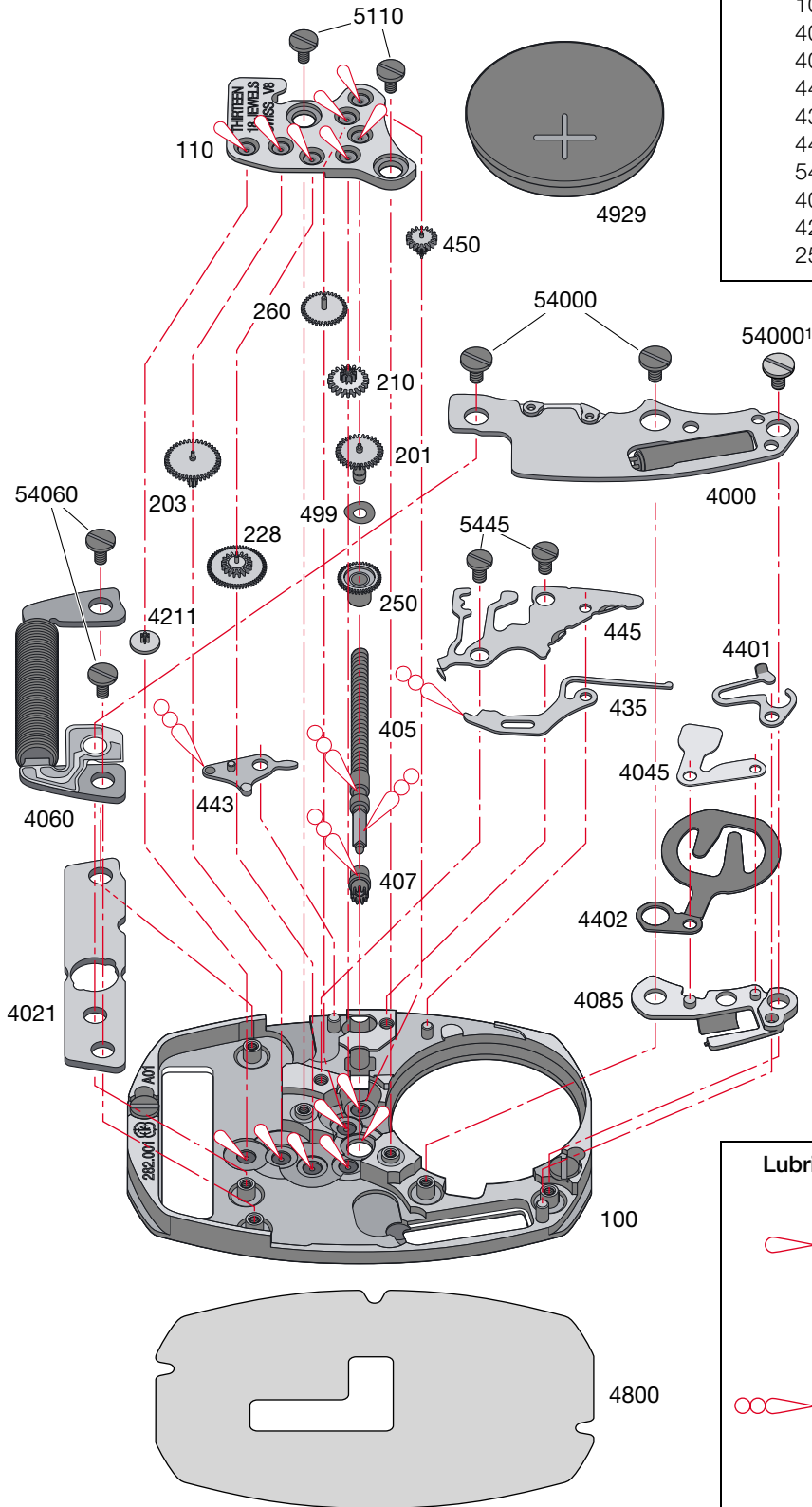
### Montaje de la máquina de base

(Lista de fornitureas por orden de ensamblado)

### Montaggio del movimento di base

(Elenco delle forniture in ordine di montaggio)

|           |           |                    |
|-----------|-----------|--------------------|
| 100       | 499       | 54060 (2x)         |
| 407       | 228       | 4085               |
| 405       | 203       | 4402               |
| 443       | 210       | 4045               |
| 435       | 260       | 4401               |
| 445       | 201       | 4000               |
| 5445 (2x) | 450       | 54000 (2x)         |
| 4021      | 110       | 54000 <sup>1</sup> |
| 4211      | 5110 (2x) | 4929               |
| 250       | 4060      | 4800               |



### Lubrication – Lubricación – Lubrificazione

Fine oil  
 Aceite fino  
 Olio fluido

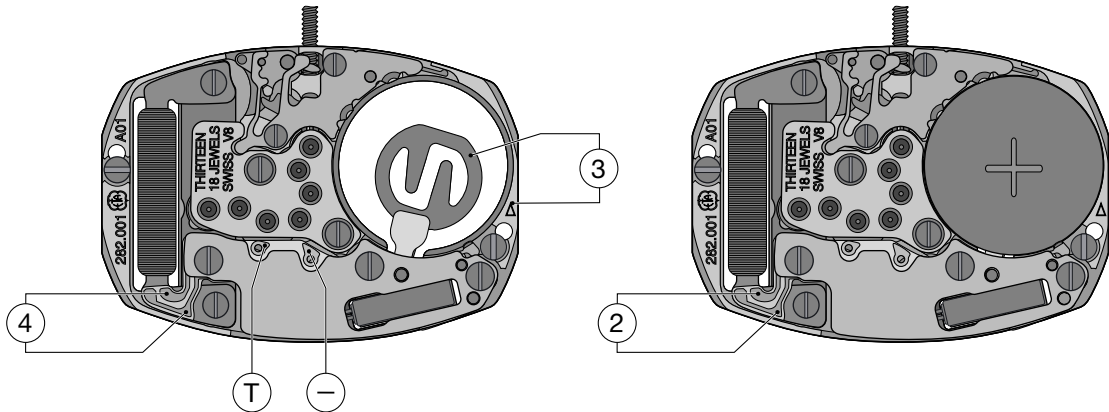
**Moebius 9030**  
 or / o / o  
**Moebius 9014**

Thick, pressure-resistant  
 oil or grease

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

**Moebius D5**

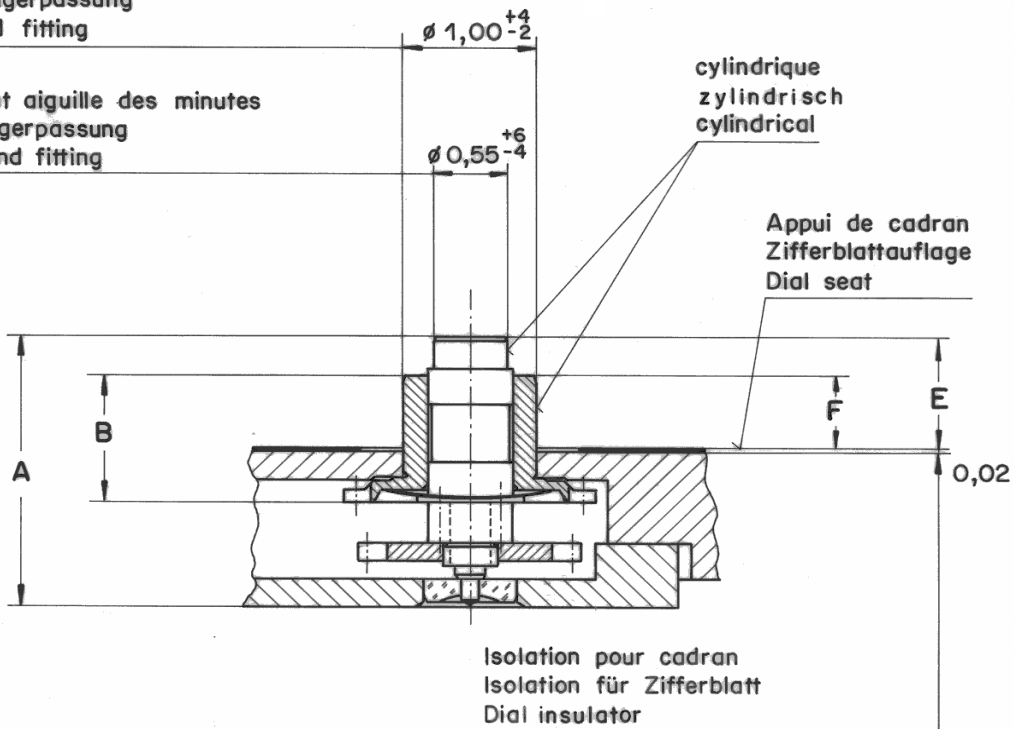
## Electrical tests – Controles eléctricos – Controlli elettrici



| 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>Observaciones<br>Osservazioni  |
|--|---|---|---|---|
| 1  | 2 V<br>( $R_i \geq 10 \text{ k}\Omega / \text{V}$ )           | 1,55 V  | Battery voltage<br>Tensión de la pila<br>Tensione della pila  | Measurement with battery.<br>Medición con pila.<br>Misura con pila.   |
| 2  | 2 V<br>( $R_i \geq 10 \text{ k}\Omega / \text{V}$ )           | Hand of the measuring apparatus oscillates in + and – direction.<br>La aguja del multimetro oscila en sentido + y –.<br>La lancetta del multimetro oscilla nel senso + e –.   | Impulses at output of integrated circuit : 5 every minute<br>Impulsos a la salida del circuito integrado : 5 cada minuto<br>Impulsi all'uscita del circuito integrato : 5 al minuto | Measurement with controlled battery.<br>Medición con una pila controlada.<br>Misura con una pila controllata.   |
| 3  | 2 V   | Motor driven with 16 steps/s. Connect T point with the – conductor.<br>Mando del motor con 16 pasos/s. Conectar el punto T con la pista –.<br>Comando del motore con 16 passi/s. Mettere in contatto il punto T con la pista –. | Lower working-voltage limit.<br>Límite inferior de la tensión de funcionamiento.<br>Limite inferiore della tensione di funzionamento.   | Measurement without battery with variable external supply.<br>Medición sin pila, con alimentación exterior variable.<br>Misura senza pila con alimentazione esterna variabile.        |
|  | 10 $\mu\text{A}$  | $\leq 0,50 \mu\text{A}$   | Consumption of movement.<br>Consumo de la máquina.<br>Consumo del movimento.  | Measurement without battery, with external power supply 1.55 V.<br>Medición sin pila, con alimentación exterior de 1,55 V.<br>Misura senza pila, con alimentazione esterna di 1.55 V. |
| *4   | 10 $\text{k}\Omega$   | 1,2 - 1,5 $\text{k}\Omega$  | Resistance of coil.<br>Continuidad de la bobina.<br>Continuità della bobina.  |   |
| *Ohmmeter with a test voltage higher than 0.40 V unsuitable, recommended voltage 0.20 V.<br>Ohmímetros con tensión de medición superior a 0,40 V inapropiados, tensión recomendada 0,20 V.<br>Ohmetri con tensione di misura superiore a 0,40 V inappropriati, tensione raccomandata 0,20 V. |   |   |   | Ambient temperature 20°C.<br>Temperatura ambiente 20°C.<br>Temperatura ambiente 20°C.   |

Ajustement aiguille des heures  
Stundenzeigerpassung  
Hour hand fitting

Ajustement aiguille des minutes  
Minutenzeigerpassung  
Minute hand fitting






Aiguille des minutes : balourd  
Minutenzeiger : Unwucht  $\leq 0,20 \mu\text{Nm} (0,020 \text{ pmm})$   
Minute hand : unbalance  
masse  $\leq 5 \text{ mg}$   
Masse  
mass

\* Livraison contre supplément de prix  
Délais sur demande  
Commercialisation sous réserve  
Lieferung gegen Aufpreis  
Lieferfrist auf Anfrage  
Vertrieb mit Vorbehalt  
Delivery with surcharge  
Delivery schedule on demand  
Market launch with specific conditions

| Aiguillage<br>Zeigerwerk-<br>höhe<br>Hand fitting<br>height | Longueur / Länge / Length                |  |  | Dépassement<br>Höhe über Zifferblattauflage<br>Height over dial seat |  |  | Cadran ép<br>Zifferblatt-<br>dicke<br>Dial<br>thickness |
|---|--|--|--|--|--|--|---|
|   | A  | B  |  | E  | F  |  |   |
|   | Chaussée<br>Minutenrohr<br>Cannon-pinion | Roue des<br>heures<br>Stundenrad<br>Hour wheel |  | Chaussée<br>Minutenrohr<br>Cannon-pinion                             | Roue des<br>heures<br>Stundenrad<br>Hour wheel |  |   |
| 0   | 1,85                                     | 0,80   |  | 0,63   | 0,38   |  | 0,20  |
| 1   | 2,10                                     | 1,00   |  | 0,88   | 0,58   |  | 0,30  |
| 2 *   | 2,35                                     | 1,25   |  | 1,13   | 0,83   |  | 0,30-0,50   |
| 4 *   | 2,80                                     | 1,70   |  | 1,58   | 1,28   |  | 0,30-0,85   |

Aiguillages  
Zeigerwerkhöhen  
Hand fitting heights

Cal. 282.001

|                               |  |  |  |   |   |   |
|-------------------------------|--|--|--|---|---|---|
| Anderungen:<br>Modifications: |  |  | <br>ETA SA Fabriques d'Ebauches<br>CH-2540 Grenchen | Masse in mm<br>Dim. en mm<br>Dim. in mm | Tol. in 1/1000 mm<br>Tol. en 1/1000 mm<br>Tol. in 1/1000 mm | <br>Gezeichnet:<br>Dessiné: <b>Fs.</b><br>Drawn:<br>Kontrolliert:<br>Contrôlé: <br>Checked: |
| 92045726hm                    |  |  |  | Masstab:<br>Echelle:<br>Scale:          |   |   |
| 93066734hm                    |  |  |  | Datum:<br>Date:                         | 20. 2. 1991   |   |
| 990312658hm                   |  |  |  |   |   |   |

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